# VILLAGE OF PALATINE

VILLAGE HALL - COUNCIL CHAMBERS 200 E. WOOD STREET
PALATINE, IL 60067-5339 – (847) 359-9050
http://www.palatine.il.us

## PLAN COMMISSION

## AGENDA ● JUNE 21, 2022

**Village Hall - Council Chambers** | **Regular Meeting** | **7:00 PM**

## I. CALL TO ORDER

## II. APPROVAL OF MINUTES

1. Plan Commission - Regular Meeting - Jun 7, 2022 7:00 PM

## III. PUBLIC HEARING

1. 1025 and 1037 W. Kenilworth Avenue

1. Preliminary and Final Planned Development
2. Preliminary and Final Plat of Subdivision to permit a 4-lot single-family residential development
3. Rezoning from R-1 Single-Family Residential to Planned Development Single-Family Residential

2. 2240-2296 N. Rand Road

    1. Preliminary and Final Planned Development
    2. Preliminary and Final Plat of Subdivision
    3. Rezoning to Planned Development

## IV. COMMUNICATIONS

## V. ADJOURNMENT

# VILLAGE OF PALATINE

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## PLAN COMMISSION

## MINUTES ● JUNE 7, 2022

**Village Hall - Council Chambers** | **Regular Meeting** | **7:00 PM**

## I. CALL TO ORDER

| Attendee Name | Title | Status | Arrived |
|---|---|---|---|
| Dennis Dwyer | Chairman | Present | |
| Patrick Noonan | Plan Commissioner | Absent | |
| Teri Williams | Plan Commissioner | Present | |
| Eric Friedman | Plan Commissioner | Present | |
| Rodney Bettenhausen | Plan Commissioner | Present | |
| Robert Kolososki | Plan Commissioner | Absent | |
| Stephen Fedota | Plan Commissioner | Present | |

## II. APPROVAL OF MINUTES

1. Plan Commission - Regular Meeting - Apr 19, 2022 7:00 PM **- Accepted as Amended**

| | |
|---|---|
| **RESULT:** | **ACCEPTED AS AMENDED [UNANIMOUS]** |
| **MOVER:** | Rodney Bettenhausen, Plan Commissioner |
| **SECONDER:** | Stephen Fedota, Plan Commissioner |
| **AYES:** | Dwyer, Williams, Friedman, Bettenhausen, Fedota |
| **ABSENT:** | Noonan, Kolososki |

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

## III. PUBLIC HEARING

1. Text Amendments to Article 14 - 14.03 Variations, 14.05 Special Uses, and 14.11 Notification of the Village of Palatine Zoning and Subdivision Ordinance **- Recommended to Approve**

   Chairman Dwyer read the notice of public hearing that was published in the Daily Herald on May 23rd, 2022.

   The following petitioner's exhibits were introduced:
1. Text Amendment
2. Public Notice

**Sworn in Staff: Mr. Vyverberg**

Mr. Vyverberg presents a power point presentation and explains this meeting is to review Text Amendments to Article 14 - 14.03 Variations, 14.05 Special Uses, and 14.11 Notifications to ensure consistency in application and evaluate the process to determine if amendments are recommended.

He provides background information and explains the process pre 2004. Mr. Vyverberg provides examples of signs that were previously provided for posting at property locations and explains that standard zoning requirements for most zoning processes is written notification. Written notification requires mailing to the taxpayers of record, within 250 feet of the Subject Property (not inclusive of right-of-way). Notice to taxpayers of record is a State statute requirement.

In 2004, the Village amended the Zoning Ordinance to also include written notification to occupants, which remains the current Code Requirement. Current Village Administration has taken steps to improve the various types of notification through enhanced signage and website content/availability related to zoning proposals.

Post 2004, Staff introduced framework and structure to allow for an expanded scope of administrative review process. Those processes have been in place for 5 years and staff is proposing to further refine the process.

Mr. Vyverberg further explains the notification process and states that there are several types of required notification which includes public hearing signs, posting public notice to the legal section of the Daily Herald and written notification.

He states that the Village has also enhanced their website to include Public Notice information with a Link on the Home Page. Residents are provided various ways to access information via the Village website or can watch the proceedings live on Channel 6. These elements have been available since 2015 to any resident wishing to review the materials regardless of their proximity to the

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

zoning address.

He explains that the current process to include notice to all occupants both exceeds the State requirement and has become a significant resource drain and results in redundancy. He states that including occupants as part of the mailing is not furthering the notice requirements and staff is recommending the elimination of notices to occupants.

Staff is also proposing that the Subdivision Ordinance notification requirements align with the sign posting and taxpayer of record notification requirements for consistency.

Mr. Freidman questions the 250' boundary overlapping into multifamily properties with a higher density of occupants. He asks if there would be 1 mailing notification to the property owner for rental properties but Condo Owners in the same type of multi dwelling location would each receive notification.

Mr. Vyverberg states that is correct and does not believe this would be favoring condo owner's vs apartment renters. The Public Notice Sign posted at property locations and the other various ways to access the information are an effective way to provide notification.

Mr. Dwyer questions the taxpayer of record vs. owner and states that the taxpayer of record may not be the same as the owner in some instance and could be the mortgage servicer.

Mr. Freidman states that the tax records don't record the mortgage companies as the tax payer. He believes it is recorded as the owner.

Mr. Fedota further discusses the public notice signs vs. the post card notifications and notes that fees and staff time are a drain to resources.

Mr. Dwyer conquers that the website is good but notes that it requires residents to check the website. He also states that another solution for notifications could be to reduce the 250' surrounding area to 150' and states that post cards should still be a viable way to notify.

Mr. Freidman & Mr. Dwyer discuss the notification guidelines.

Mr. Vyverberg clarifies that the Tax Payer of record is the Person receiving the tax bill.

Mr. Dwyer would like to clarify if the taxpayer is for income tax or property tax and should the ordinance be changed to specifically state Tax Payer of Record?

Mr. Vyverberg states that it was discussed with the Village Attorney and it was his opinion that it is the person that receives the tax bill but will check with the Village attorney as to how it should be defined in the village ordinance.

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

Mr. Vyverberg reviews the zoning process and states that in 2017 Staff processed a series of amendments to evaluate the potential for more administrative reviews for certain defined zoning processes, which would be initially reviewed by Staff and, under certain circumstances, could be approved administratively. The amendments attempted to address numerous potential situations and scenarios and provide appropriate latitude, with the potential for Village Council review. These amendments created circumstances where surrounding property owner approvals were provided, but still required Village Council review. In other cases, Staff would review and either approve or forward to the Village Council for review. After review, over the last 5-6 years, Staff is proposing to amend the processes, where requests could/must go to the Village Council and provide additional consistency in how items are reviewed.
Mr. Vyverberg states that staff is proposing to eliminate minor special uses and Special use amendment be reviewed administratively along with the administrative use special use process.

Mr. Vyverberg also notes that Mr. Bettenhausen provided clarifications that would be noted.

Discussion between the commissioners regarding the 250' notification process and who is notified.

Mr. Vyverberg provides clarity and states language reflects how it is read in the State Statue.

Further discussion by commissioners regarding information available on website. Discussion also ensued regarding postage costs and fees that are paid through the application fees. Mr. Vyverberg states that there are more effective avenues out there and the change is more of a staff management vs. costs.

**STAFF RECOMMENDATION:**
Staff is recommending the proposed text amendments to the notification process and review process, as outlined.

**Mr. Fedota made a motion to close the public hearing - 2nd by Mr. Freidman**

**DELIBERATIONS:**
Council members further discuss the Tax Payer of Record Clarification and Notification process - specifically whether the 250' surrounding property notification and be reduced to 150'.

Mr. Vyverberg states that the State Statue does not have a requirement. Procedures for variations also discussed. Mr. Freidman asks if the packet materials are available on the website and questions if they would still be available at the Village Hall.

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

Mr. Vyverberg states that the website does not accommodate the packet information as changes would have to be updated and this would require further discussion.

**Mr. Fedota made a motion to approve the text amendments with the following changes: maintaining the surrounding property notification for occupants with the reduction of 250 feet to 125 feet required seconded by Mr. Bettenhausen. This was unanimously approved.**

**COMMUNICATIONS:**
This matter will go to Village Council on 6/20/22

| | |
|---|---|
| **RESULT:** | **RECOMMENDED TO APPROVE [UNANIMOUS]** |
| **MOVER:** | Stephen Fedota, Plan Commissioner |
| **SECONDER:** | Rodney Bettenhausen, Plan Commissioner |
| **AYES:** | Dwyer, Williams, Friedman, Bettenhausen, Fedota |
| **ABSENT:** | Noonan, Kolososki |

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

## IV. COMMUNICATIONS

There is a full Agenda for the 6/21/22 meeting which includes a 145,000 sq. ft. warehouse on Rand Rd and a proposed 4-Lot subdivision.

## V. ADJOURNMENT

Minutes Acceptance: Minutes of Jun 7, 2022 7:00 PM (Approval of Minutes)

VILLAGE OF PALATINE

**VILLAGE OF PALATINE**
**Plan Commission**

**SCHEDULED 06/21/22 07:00 PM**

**CASE STAFF STATEMENT (ID # 7553)**

# 1025 and 1037 W. Kenilworth Avenue

CASE NUMBER: 2020-10

PETITIONER: George Borawski

LOCATION: 1025 & 1037 W. Kenilworth Avenue

PROPOSAL: Preliminary and Final Planned Development
Preliminary and Final Plat of Subdivision to permit a 4-lot single-family residential development; and,
Rezoning from R-1 Single-Family Residential to P Planned Development.

ZONING AND LAND USE: R-1 Single-Family Residential

SURROUNDING CONDITIONS:

| | |
|---|---|
| North: | R-1 Single-Family Residential |
| South: | R-1 Single-Family Residential |
| East: | R-2 and R-1 Single-Family Residential |
| West: | R-1 Single-Family Residential |

COMPREHENSIVE PLAN: Single-Family Residential

BACKGROUND:
This project contains two single family residential lots that are a combined total of 1.39 acres. The Petitioner, owner, is seeking to rezone the Subject Property from R-1 to Planned Development and subdivide the lots into four separate lots. Therefore, the Petitioner is seeking approval of the following:

1. **Preliminary and Final Planned Development**
2. **Preliminary and Final Plat of Subdivision to permit a 4-lot single-family residential development**
3. **Rezoning from R-1 Single-Family Residential to Planned Development Single-Family Residential**

ANALYSIS:

***Zoning and Site Design***

- The Subject Properties are currently zoned R-1 Single-Family Residential. The combine lot are 60,593 square feet or 1.39 acres.
- The proposed lots meet all of the bulk and setback requirements for the R-2 district. The following table provides an analysis of the proposed lots:

| | **Proposed Lot Size** (9,000 sq. ft. for interior lots; 10,000 sq. ft. for corner lots) | **Lot Width** (75' for interior lots; 85' for corner lots) | **Lot Depth** (110' required) |
|---|---|---|---|
| **Lot 1** - Currently 1037 | 14,997 | 102.16' | 146.89' |
| **Lot 2** - Currently 1025 | 14,999 | 102.16' | 148.89' |
| **Lot 3** | 15,303 | 75' | 203.98' |
| **Lot 4** | 15,294 | 75' | 203.98 |

- Properties directly north, west, south and southeast of the subject site remain mostly R-1 zoning with larger lots (approximately 15,000 square feet or more). Recent surrounding developments to the northwest, northeast and east have been rezoned to Planned Development that generally conform to the R-2 residential requirements with regards to setbacks and bulk restrictions or have been rezoned R-2.
- Recent Developments in the surrounding area, include the following:
    - 2002 - Clyde Place Subdivision located at northeast corner of Kenilworth Avenue and Clyde Avenue, received approval for a 4-lot subdivision, and Planned Development.
    - 2013 - Parkway Subdivision located at southwest corner of Glencoe and Middleton, received approval for a 4-lot subdivision, and rezoning from R-1 to R-2.
    - 2003 - Birchtree Subdivision located at northeast corner of Kenilworth Avenue and Clyde Avenue, received approval for a 4-lot subdivision, and Planned Development.
    - 2002 - Harrison Place Subdivision located at southeast corner of S. Harrison Court and Kenilworth Avenue, received approval for a 4-lot subdivision, and

Planned Development.

- The subject properties are located within Sub-Area “A”. This section of Sub-Area “A” still maintains the large lots from the 1994 plan, however there have been multiple Planned Development approvals in the area consistent with the proposed subdivision and aligned with the current R-2 standards.
- Middleton Avenue running south from Kenilworth Avenue narrows to a substandard width at approximately 10 feet wide and services two single-family residences. The street terminates at the 10-acre detention basin would, therefore,not be further extended.

***Engineering***

- Sanitary sewer would be provided through connecting to the existing services in the S. Middleton Avenue right-of-way.
- Water service would connect to the new water main, which will be installed along Middleton Avenue right-a-way, per engineering plans.
- Storm water generally drains to the south and east currently and the proposed plan would not significantly alter the drainage pattern. Storm water will be conveyed through biodetention facilities. These facilities will satisfy MWRD’s required volume control measures. Cash in lieu of detention will be required.
- Sidewalks shall be constructed along the frontage of each new lot, along Middleton Avenue. Parkway trees would be planted in accordance with Code.

RECOMMENDATIONS:

While some of the immediately adjacent properties remain R-1 zoning with larger lots, the proposal is consistent with recent developments immediately northwest, northeast and east of the Subject Property. Therefore, Staff recommends approval of the proposal, subject to the following conditions:

1. The development shall substantially conform to the Plat of Subdivision prepared by Murry and Moody, LTD. and the Engineering Plans prepared by Bono Consulting Civil Engineers., dated 11/22/2019 last revised 06/01/2022, except as such plans may be revised to conform to Village Codes and Ordinances.
2. All future residences shall follow the Village’s R-2 Standards.
3. A Public Improvement letter of credit or appropriate security deposit shall be

submitted in a manner acceptable to the Village Engineer.

4. Review fees in the amount of 1.5% of the total project improvement costs (as defined in the Village Code) shall be submitted in a manner acceptable to the Village Engineer.
5. A Planned Development letter of credit shall be submitted in a manner acceptable to the Director of Planning and Zoning.
6. The Final Plat of Subdivision shall be submitted on Mylar with the required signatures and significantly conform to the Plat of Subdivision prepared by Murry and Moody, LTD.
7. A Subdivision Improvement Agreement shall be submitted in a manner acceptable to the Village Attorney.
8. Recording fees in the amount of $300 shall be submitted.
9. The Final Engineering Plans and Final Engineer's Cost Estimate shall be revised in a manner acceptable to the Village Engineer.
10. Cash-in-lieu of detention shall be submitted in a manner acceptable to the Village Engineer.
11. A construction management plan, indicated the proposed material delivery routes and contractor parking areas, shall be submitted to the Village Engineer.
12. A MWRD permit shall be submitted.

**ATTACHMENTS:**

- Aerial Map
- Applications
- Project Narrative
- Plat of Survey
- Plat of Subdivision
- 1025 & 1037 Kenilworth Engineering Plans
- Letter of Objection
- Public Notice

# 1025 and 1037 W Kenilworth Ave.




Attachment: Aerial Map (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

VILLAGE OF PALATINE

# PRELIMINARY & FINAL PLAT OF SUBDIVISION

**Department of Planning & Zoning**
200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | | |
|---|---|---|
| | Project Planner: KR | Zoning Case #: 20-10 |
| | Filing Fee: $510 | Notification Deadline: |
| | PC Public Hearing Date: | Village Council Date: |

RECEIVED
FEB 18 2020
PLANNING & ZONING DEPARTMENT
*date received*

PLEASE TYPE OR PRINT IN INK:

1. Name of Petitioner(s): George Borawski

2. Authorized Agent of Petitioner (if different):

   Name: N/A

   Address: N/A

   Telephone No. N/A Business No. N/A

   Email: N/A

   Relationship to Petitioner: N/A

3. Property Interest of Petitioner(s): Owner
   Owner, Lessee, Contract Purchaser, etc.

4. Address of the property for which this application is being filed:

   1025 W. Kenilworth Ave. Palatine, IL 60067

5. All existing land use(s) on the property are:

   vacant land

6. The proposed use(s) on the property, if this petition is approved is (are):
   subdivide property into two separate lots and build two new homes

7. Current zoning of property: R-1 Size of the property: .70 acres

8. State the specific action requested:
   we are requesting to subdivide an existing piece of property into two lots per submitted engineering. The desired use of these two lots is to construct a new custom home on each of the lots.



Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

9. The petitioner's signature below indicates that the information contained in this application and on any accompanying documents is true and correct to the best of his/her knowledge.

Signature: George M Borawski Date: 2-14-20

State of Illinois

County of Cook

This instrument was acknowledged before me on February 14th, 20 20 by George Borawski

ALEXANDRO MONTIEL
Official Seal
Notary Public - State of Illinois
My Commission Expires Feb 14, 2023

(Seal)

A Montiel

Notary Public

Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

VILLAGE OF PALATINE

# PRELIMINARY & FINAL PLANNED DEVELOPMENT

## Department of Planning & Zoning

200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | | |
|---|---|---|
| | Project Planner | Zoning Case # |
| | Filing Fee | Notification Deadline |
| | PC Public Hearing Date | Village Council Date |

*date received*

PLEASE TYPE OR PRINT IN INK

1. Name of Petitioner(s): George M Borawski

2. Authorized Agent of Petitioner (if different)

Name

Address

Telephone No. Business No.

Email

Relationship to Petitioner

3. Property Interest of Petitioner(s): OWNER
Owner, Lessee, Contract Purchaser, etc

4. Address of the property for which this application is being filed:
1025 W Kenilworth Palatine 60067

5. All existing land use(s) on the property are

6. Current zoning of property: R1 Size of the property: 1.5 acres

7. Briefly describe the proposed Planned Development with regards to types of uses proposed, number and types of units, development mix, amenities to be provided, etc.

2 ADDITIONAL LOTS ADDED



Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

VILLAGE OF PALATINE

# REZONING

**Department of Planning & Zoning**
200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | Project Planner | Zoning Case # |
|---|---|---|
| | Filing Fee | Notification Deadline |

RECEIVED
SEP 01 2021
Date received
VILLAGE OF PALATINE

**PLEASE TYPE OR PRINT IN INK:**

1. Name of Petitioner(s): George M Borawski

2. Authorized Agent of Petitioner (if different):

   Name: _____

   Address: _____

   Telephone No. _____ Business No. _____

   Relationship to Petitioner: _____

3. Property Interest of Petitioner(s): OWNER
   Owner, Lessee, Contract Purchaser, etc.

4. Address of the property for which this application is being filed:
   1025 W Kenilworth / 1037 W Kenilworth

5. This petition is for: (check one)

   X Rezoning of currently incorporated property (within Village limits)

   _____ Rezoning of currently unincorporated property, in conjunction with annexation

6. All existing land use(s) on the property are:

7. The proposed use(s) on the property, if this petition is approved is (are):

8. Current zoning of property: R1 Size of the Property: 1:50 acres

9. Proposed new zoning classification: ?



Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

PETITIONER JUSTIFICATION:

The Petitioner is required to present specific evidence, not opinions, to justify the proposed rezoning. Please respond to the following questions, attaching a separate sheet if necessary:

10. Describe why the subject property cannot be reasonably developed in accordance with the existing zoning classification.

ADDing TWO ADDitionaL LOT'S

11. Is the proposed zoning classification similar to or harmonious with the existing zoning of surrounding properties? Explain.

Yes Single Family Homes

12. Does the proposed zoning classification conflict with the Village's Comprehensive Plan? Explain.

NO Fits into Existing Plan!

13. Will any of the uses permitted under the proposed zoning classification have an injurious effect on the value and/or the use and enjoyment of surrounding properties?

NO - IMPROVE Values OF Existing Property Surrounding.



Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

14. The petitioner's signature below indicates that the information contained in this application and on any accompanying documents is true and correct to the best of his/her knowledge.

Signature: George M Borawski Date: 8/26/21

Attachment: Applications (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

B C I

B O N O  C O N S U L T I N G,  I N C.

June 2, 2022

Village of Palatine
Planning and Zoning Department

RE: Project Narrative
Proposed 4-Lot Subdivision
1025 & 1037 W. Kenilworth Ave.
Palatine, IL 60067

To Whom It May Concern,

The owner of this properties wishes to subdivide the existing two lots into 4 new lots. The two existing houses at 1025 & 1037 Kenilworth would remain, while the two, new lots will be available for development of new single family homes.

The vacant lots resulting from the subdivision will provide the opportunity for a builder or user to purchase the vacant lots and construct new homes. This would add quality new construction to the neighborhood, evincing confidence in the area and supporting investment in existing homes.

There is no immediate plan to develop the vacant lots. The site plan included in the submittal is not specific to particular proposed structures, but the structures shown were sized to be about the maximum building size for the lots so that the subdivision engineering design would be for the maximum. When the lots are proposed for development, the site plan and landscaping proposed in conjunction with the construction of the single family homes would have to comply with the Village of Palatine ordinances.

The owner, George Borawski, will also be the petitioner.

If you have any questions regarding the drawings, please contact me at (847) 823-3300 or whepburn@bonoconsulting.com.

Sincerely,

Will Hepburn, P.E.
Engineer III

**Civil Engineers** Specializing In Drainage & Grading Plans
1018 Busse Highway • Park Ridge, Illinois 60068 • Phone (847) 823-3300 • Fax (847) 823-3303

Attachment: Project Narrative (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)




# MURRY AND MOODY, LTD.

*Land Surveyors*

*Illinois Professional Land Surveying Firm Corporation License No. 184–002845*

*933 S. Plum Grove Road, Suite 101*
*Palatine, Illinois 60067*

*www.murrysurvey.com* *info@murrysurvey.com* *Phone: (847)358–5960*


# TOPOGRAPHICAL SURVEY

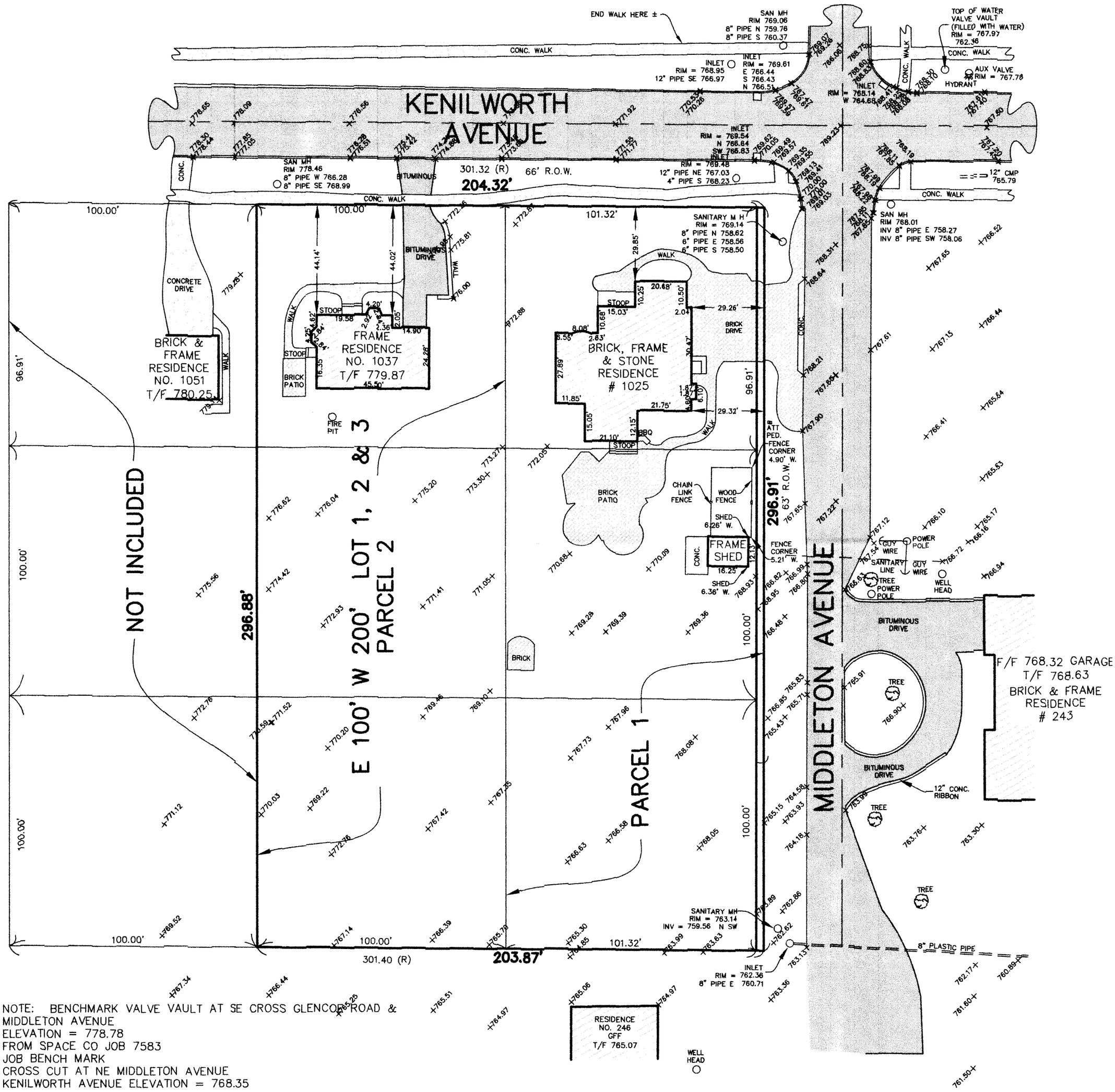
## OF

PARCEL 1: LOTS 1, 2 AND 3 (EXCEPT THE WEST 200 FEET THEREOF) IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, TOGETHER WITH THE WEST 3 FEET OF MIDDLETON AVENUE, AS VACATED BY DOCUMENT 0733415030, IN COOK COUNTY, ILLINOIS.

PARCEL 2: THE EAST 100 FEET OF THE WEST 200 FEET OF LOTS 1, 2 AND 3 IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

AREA = 29994.82± S.F. / 0.689 ACRES

N
W E
S
*1" = 30'*




NOTE: BENCHMARK VALVE VAULT AT SE CROSS GLENCOE ROAD & MIDDLETON AVENUE
ELEVATION = 778.78
FROM SPACE CO JOB 7583
JOB BENCH MARK
CROSS CUT AT NE MIDDLETON AVENUE
KENILWORTH AVENUE ELEVATION = 768.35

### LEGEND AND NOTES

*Dimensions shown thus: 50.25 are feet and decimal parts thereof. Angular data shown thus: 90°00'00" indicate degrees, minutes and seconds.*

*50.25 / N 90°00'00" E indicates measure dimension / bearing.*
*(50.25) / (N 90°00'00" E) indicates record dimension / bearing.*
*[50.25 d] / [N 90°00'00" E d] indicates deed dimension / bearing.*

*Bearings shown hereon, if any, per local or assumed data, unless shown otherwise.*

*Compare your points before using same and report any differences immediately.*

*Check legal description with deed or title policy and report any discrepancy immediately. Building lines and easements, if any, shown hereon are as shown on the recorded subdivision plat or as indicated.*

*Order Number: 19-1232*
*Survey Made For: George Borawski*

FEB 18 2020

**STATE OF ILLINOIS } S.S.**
**COUNTY OF COOK }**

*I, BARBARA C. MURRY, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THIS PROFESSIONAL SERVICE CONFORMS TO THE CURRENT ILLINOIS MINIMUM STANDARDS FOR TOPOGRAPHIC SURVEYS.*

*Date of completion of field work: November 22, 2019*

*Palatine, Illinois: January 29, 2020*

BARBARA C. MURRY
3529
PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS
PALATINE IL

*Illinois Professional Land Surveyor - Barbara C. Murry 035-003529*
*License Renewal date: November 30, 2020*

*Project Number: 19123200*
*Field Book: 324L-39-44*
*Drawing File: 19123200.dwg*

Attachment: Plat of Survey (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)




# MURRY AND MOODY, LTD.
*Land Surveyors*

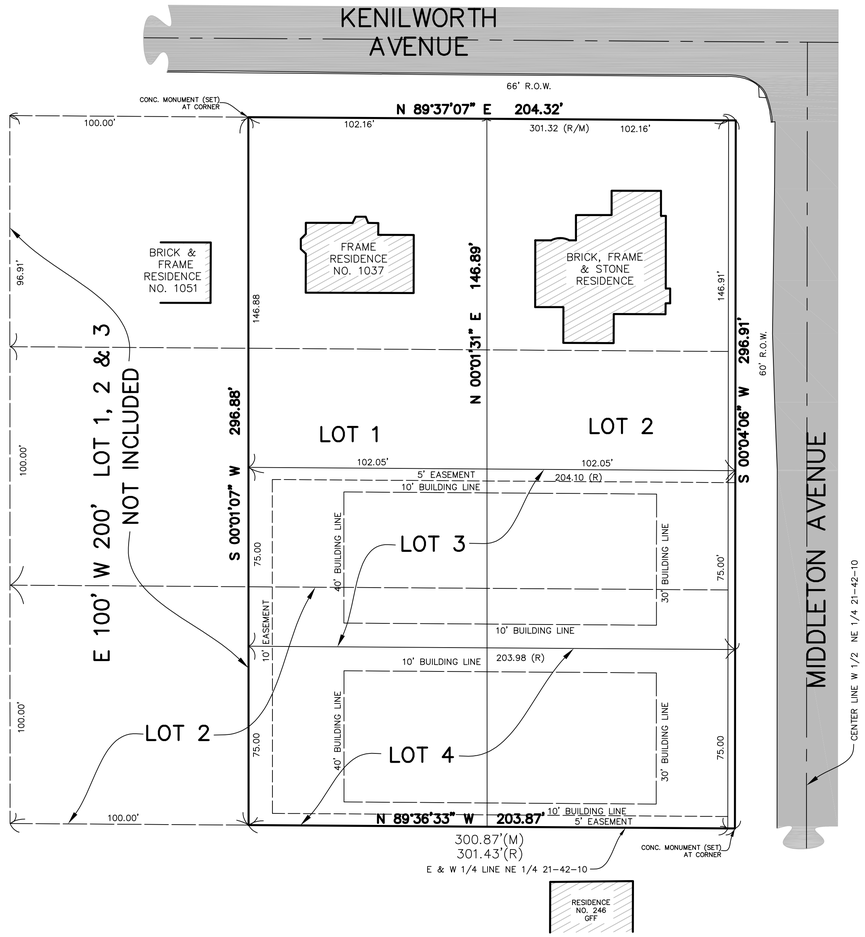
*Illinois Professional Land Surveying Firm Corporation License No. 184–002845*
*933 S. Plum Grove Road, Suite 101*
*Palatine, Illinois 60067*
www.murrysurvey.com info@murrysurvey.com Phone: (847)358–5960

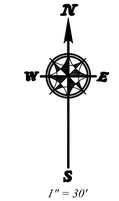

# GARDEN GATE RESUBDIVISION

**OF**

LOTS 1, 2 AND 3 (EXCEPT THE WEST 200 FEET THEREOF) IN BLOCK 5, TOGETHER WITH THE WEST 3 FEET OF MIDDLETON AVENUE, AS VACATED BY DOCUMENT 0733415030, AND THE EAST 100 FEET OF THE WEST 200 FEET OF LOTS 1, 2 AND 3 IN BLOCK 5 ALL IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

AREA = 29994.82± S.F. / 0.689 ACRES




1" = 30'

10 20 30 40

| | |
|---|---|
| LOT 1 | 14,997.33 SQ. FT / 0.3343 ACRE |
| LOT 2 | 14,999.18 SQ. FT / 0.3443 ACRE |
| LOT 3 | 15,302.73 SQ. FT / 0.3513 ACRE |
| LOT 4 | 15,294.18 SQ. FT / 0.3511 ACRE |
| GROSS AREA | 60,593.42 SQ. FT./ 1.3910 ACRES |

NOTE:
1" IRON PIPE SET AT ALL LOT CORNERS, ETC.

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

THIS IS TO CERTIFY THAT I, BARBARA C. MURRY, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, HAS SURVEYED AND SUBDIVIDED THE FOLLOWING DESCRIBED PROPERTY:

PARCEL 1: LOTS 1, 2 AND 3 (EXCEPT THE WEST 200 FEET THEREOF) IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, TOGETHER WITH THE WEST 3 FEET OF MIDDLETON AVENUE, AS VACATED BY DOCUMENT 0733415030, IN COOK COUNTY, ILLINOIS.
PARCEL 2: THE EAST 100 FEET OF THE WEST 200 FEET OF LOTS 1, 2 AND 3 IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

I FURTHER CERTIFY THAT THE PROPERTY SHOWN HEREON IS NOT IN THE FLOOD PLAIN, AS PER COMMUNITY PANEL NO. 17031C0177J EFFECTIVE DATE AUGUST 8, 2008

I FURTHER CERTIFY THAT ALL REGULATIONS ENACTED BY THE BOARD OF TRUSTEES OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS RELATIVE TO PLATS AND SUBDIVISIONS HAVE BEEN COMPLIED WITH IN THE PREPARATION OF THIS PLAT.

I FURTHER CERTIFY THAT LAND INCLUDED BY SAID SURVEY IS WITHIN THE CORPORATE LIMITS OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS.

ALL DISTANCES ARE SHOWN IN FEET AND DECIMAL PARTS THEREOF, AS SHOWN BY THE ANNEXED PLAT WHICH IS A CORRECT REPRESENTATION OF THE SURVEY AND RESUBDIVISION.

GIVEN UNDER MY HAND AND SEAL, AT PALATINE, ILLINOIS THIS 30th DAY OF JULY, 2019.

_____
BARBARA C. MURRY, P.L.S.
ILLINOIS LAND SURVEYOR NO. 3529
LICENSE RENEWAL DATE NOVEMBER 30, 2020




*Order Number: 19-1232*
*Survey Made For: George M. Borawski*
*SHEET 1 OF 2*

*Project Number: 19123200*
*Field Book: 324L-39-44*
*Drawing File: 19123200.dwg*

Attachment: Plat of Subdivision (1025 and 1037 W Kenilworth Ave - 4 lot Su, PFPD, Rezoning)

# MURRY AND MOODY, LTD.

*Land Surveyors*

*Illinois Professional Land Surveying Firm Corporation License No. 184–002845*
*933 S. Plum Grove Road, Suite 101*
*Palatine, Illinois 60067*
www.murrysurvey.com info@murrysurvey.com Phone: (847)358–5960


# GARDEN GATE RESUBDIVISION

SURFACE WATER DRAINAGE

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

WE HEREBY CERTIFY TO THE BEST OF OUR KNOWLEDGE THAT ADEQUATE PROVISIONS HAVE BEEN MADE FOR THE DIVERSION AND DETENTION OF SURFACE WATERS INTO PUBLIC AREAS OR DRAINS WITHIN THE RIGHTS OF THE SUBDIVIDER AND THAT THE SURFACE WATERS WILL NOT BE DEPOSITED ON ADJACENT LAND OWNERS' PROPERTY IN SUCH CONCEN– TRATION AS MAY CAUSE DAMAGE BY EROSION OR SEDIMENTATION TO SUCH PROPERTY BECAUSE OF CONSTRUCTION OF THE SUBDIVISION.

DATED: _____

SIGNED: _____
OWNER

DATED: _____

SIGNED: _____
ILLINOIS PROFESSIONAL ENGINEER

VILLAGE COLLECTOR

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

I DO HEREBY CERTIFY THAT THERE ARE NO DEFERRED SPECIAL ASSESSMENTS OR UNPAID CURRENT SPECIAL ASSESSMENTS DUE AGAINST THE LAND INCLUDED IN THE ABOVE PLAT.

DATED THIS _____DAY OF _____, A.D., 2019.

SIGNED: _____
VILLAGE COLLECTOR

VILLAGE ENGINEER

THIS PLAT HAS BEEN CHECKED FOR CONFORMANCE TO THE VILLAGE OF PALATINE STANDARDS AND REQUIREMENTS AND WORKING DRAWINGS AND SPECIFICATIONS FOR IMPROVEMENTS HAVE BEEN PREPARED IN CONFORMANCE WITH THE VILLAGE STANDARDS AND REQUIREMENTS AND ALL ENGINEERING FEES DUE THE VILLAGE OF PALATINE HAVE BEEN PAID.

DATED: _____

SIGNED: _____
VILLAGE ENGINEER

VILLAGE OF PALATINE EASEMENT

WHENEVER THE WORDS "PUBLIC UTILITIES" OR "PUBLIC UTILITIES EASEMENT" SHALL APPEAR ON THIS PLAT THE VILLAGE OF PALATINE, A MUNICIPAL CORPORATION, COOK COUNTY, ILLINOIS, AND ITS SUCCESSORS OR ASSIGNS JOINTLY AND SEVERALLY SHALL HOLD A PERPETUAL EASEMENT UNDER, OVER AND ACROSS THE SURFACE OF THE PROPERTY SHOWN WITHIN THE LINES OF THE PLAT MARKED AS SUCH FOR THE INSTALLATION, CONSTRUCTION, USE, REPAIR AND MAINTENANCE OF ALL PUBLIC UTILITY EQUIPMENT INCLUDING BUT NOT LIMITED TO, FACILITIES USED IN CONNECTION WITH THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND SOUNDS AND SIGNALS, WATER AND SEWAGE MAIN AND PIPING, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES AND ROOTS, AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE SUBDIVIDED PROPERTY FOR ALL SUCH PURPOSES. OBSTRUCTION SHALL NOT BE PLACED OVER GRANTEES FACILITIES OR IN, UPON OR OVER THE PROPERTY WITHIN THE LINES MARKED "EASEMENT" WITHOUT THE PRIOR WRITTEN CONSENT OF THE GRANTEES, PROVIDED, HOWEVER, THAT SUCH CONSENT OF THE GRANTEE SHALL NOT RELIEVE THE GRANTORS, THEIR SUCCESSORS OR ASSIGNS FROM THE DUTY AND OBLIGATION TO REMOVE ANY SUCH OBSTRUCTIONS AT THEIR SOLE EXPENSE UPON THE DIRECTION OF THE GRANTEE, WHENEVER THE GRANTEE DEEMS SUCH REMOVAL NECESSARY IN ITS SOLE JUDGMENT TO ENABLE THE GRANTEE TO REPAIR OR MAINTAIN ANY FACILITIES WITHIN THE EASEMENT OR OTHERWISE ALLOW THE GRANTEE FULL USE AND ENJOYMENT OF THE EASEMENT RIGHTS GRANTED HEREUNDER, AFTER INSTALLATION OF ANY SUCH FACILITIES. THE GRADE OF THE SUBDIVIDED PROPERTY SHALL NOT BE ALTERED IN A MANNER SO AS TO UNREASONABLY INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THEREOF.

ELECTRIC AND TELEPHONE

A PERMANENT, NONEXCLUSIVE EASEMENT FOR SERVING THE SUBDIVISION AND OTHER PROPERTY WITH ELECTRIC AND COMMUNICATION SERVICE IS HEREBY RESERVED FOR AND GRANTED TO ANY ELECTRIC, TELEPHONE AND/OR COMMUNICATION COMPANY OR COMPANIES AUTHORIZED BY THE VILLAGE OF PALATINE, ILLINOIS (HEREIN AFTER "GRANTEE") JOINTLY AND SEVERALLY, TO INSTALL, OPERATE, MAINTAIN, AND REMOVE FROM TIME TO TIME, FACILITIES USED IN CONNECTION WITH THE UNDERGROUND TRANSMISSION AND DISTRIBUTION OF ELECTRICITY, SOUNDS AND SIGNALS IN, UNDER, ACROSS, ALONG AND UPON THE SURFACE OF THE PROPERTY SHOWN AS AND/OR LABELED A "UTILITY EASEMENT," "UTILITY AND DRAINAGE," OR "UTILITY AND LANDSCAPING EASEMENT," WITHIN DASHED LINES ON THE ATTACHED PLAT OF SUBDIVISION AND PROPERTY DESIGNATED ON THE PLAT FOR STREET AND ALLEYS, TOGETHER WITH THE RIGHT TO INSTALL REQUIRED SERVICE CONNECTIONS UNDER THE SURFACE OF EACH LOT TO SERVE IMPROVEMENTS THEREON, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES AND ROOTS AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE SUBDIVIDED PROPERTY FOR ALL SUCH PURPOSES. OBSTRUCTIONS SHALL NOT BE PLACED OVER THE GRANTEE'S FACILITIES OR IN, UPON OR OVER SUCH EASEMENTS WITHOUT THE PRIOR WRITTEN CONSENT OF GRANTEES, SUCH FACILITIES SHALL GENERALLY BE LOCATED UNDERGROUND AND AFTER INSTALLATION OF ANY SUCH FACILITIES, THE GRADE OF THE SUBDIVIDED PROPERTY SHALL NOT BE ALTERED IN A MANNER SO AS TO INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THEREOF. THE LOCATION OF FACILITIES BY GRANTEES SHALL NOT CONFLICT OR INTERFERE WITH PUBLIC IMPROVEMENTS AND ANY CONFLICTS IN USE SHALL BE SUBJECT TO RESOLUTION AND APPROVAL OF GRANTEES.

GAS

A PERMANENT, NONEXCLUSIVE EASEMENT FOR SERVING THE SUBDIVISION AND OTHER PROPERTY WITH GAS IS HEREBY RESERVED FOR AND GRANTED TO ANY NATURAL GAS COMPANY AUTHORIZED BY THE VILLAGE OF PALATINE, ILLINOIS, IN ALL PLATTED "EASEMENTS" AREAS, STREETS, ALLEYS AND OTHER PUBLIC WAYS AND PLACED SHOWN ON THIS PLAT. SUCH EASEMENT TO BE FOR THE INSTALLATION, MAINTENANCE, RELOCATION, RENEWAL AND REMOVAL OF GAS MAINS AND APPURTENANCES FOR THE PURPOSES OF SERVING ALL AREAS SHOWN ON THE PLAT AS WELL AS OTHER PROPERTY, WHETHER OR NOT CONTIGUOUS THERETO. NO BUILDINGS OR OTHER STRUCTURES SHALL BE CONSTRUCTED OR ERECTED IN ANY SUCH "EASEMENT" AREAS, STREETS, ALLEYS OR PUBLIC WAYS OR PLACES. ALL SUCH GAS MAINS AND APPURTENANCES SHALL BE GENERALLY LOCATED UNDERGROUND AND USE OF SAID EASEMENTS SHALL NOT CONFLICT OR INTERFERE WITH ANY PUBLIC IMPROVEMENTS, AND CONFLICTS IN USE SHALL BE SUBJECT TO RESOLUTION AND APPROVAL BY THE VILLAGE.

EASEMENTS APPROVED AND ACCEPTED BY:

Commonwealth Edison Company

By: _____

Date: _____

Title: _____

Ameritech Illinois

By: _____

Date: _____

Title: _____

AT&T Comcast

By: _____

Date: _____

Title: _____

Northern Illinois Gas Company (NICOR)

By: _____

Date: _____

Title: _____

CABLE TELEVISION

A PERMANENT, NONEXCLUSIVE EASEMENT IS HEREBY RESERVED FOR AND GRANTED TO THE VILLAGE OF PALATINE, ILLINOIS, AND/OR TO ANY CABLE TELEVISION COMPANY OR COMPANIES AUTHORIZED BY THE VILLAGE TO INSTALL CABLE TELEVISION FACILITIES WITHIN THE SUBDIVISION (THE "COMPANY") AND THEIR SUCCESSORS AND ASSIGNS IN, UNDER, ACROSS, ALONG, THROUGH AND UPON THE SURFACE OF THE PROPERTY KNOWN AS AND/OR LABELED AS "UTILITY EASEMENT," WITHIN DASHED LINES ON THE ATTACHED PLAT OF SUBDIVISION FOR THE PURPOSE OF INSTALLING, CONSTRUCTING, OPERATING, INSPECTING, MAINTAINING, REMOVING, REPLACING, RENEWING, ALTERING, AND ENLARGING TELEVISION LINES OR APPURTENANCES FROM TIME TO TIME, AND WITHOUT LIMITATION, SUCH OTHER INSTALLATIONS AS MAY BE REQUIRED TO FURNISH CABLE TELEVISION SERVICE TO THE ATTACHED AREA AND SUCH APPURTENANCES AND THERETO AS THE VILLAGE AND COMPANY MAY DEEM NECESSARY, TOGETHER WITH THE RIGHT OF ACCESS ACROSS THE EASEMENTS INCLUDED IN THE PLAT OF SUBDIVISION FOR THE NECESSARY MEN AND EQUIPMENT TO DO ANY AND ALL OF THE ABOVE WORK. THE RIGHT IS ALSO HEREBY GRANTED TO THE VILLAGE AND THE COMPANY TO CUT DOWN, TRIM, OR REMOVE ANY TREES, SHRUBS OR OTHER PLANTS THAT INTERFERE WITH THE OPERATION OF OR ACCESS TO SUCH LINES IN, ON, UPON, ACROSS, UNDER OR THROUGH SUCH EASEMENTS. NO PERMANENT BUILDINGS OR TREES SHALL BE PLACED ON SUCH EASEMENTS, BUT SAME MAY BE USED FOR GARDENS, SHRUBS, LANDSCAPING, AND OTHER PURPOSES THAT DO NOT THEN OR LATER INTERFERE WITH THE AFORESAID USES AND RIGHTS. SUCH FACILITIES SHALL BE GENERALLY LOCATED UNDERGROUND, AND USE OF SAID EASEMENTS SHALL NOT CONFLICT OR INTERFERE WITH ANY PUBLIC IMPROVEMENTS AND ANY CONFLICTS IN USE SHALL BE SUBJECT TO RESOLUTION AND APPROVAL BY THE VILLAGE.

PLAN COMMISSION

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

APPROVED BY THE PLAN COMMISSION OF THE VILLAGE OF PALATINE, COOK

COUNTY, ILLINOIS, AT A MEETING HELD THIS _____DAY OF

_____, A.D., 2019.

SIGNED _____
CHAIRMAN

SIGNED _____
SECRETARY

VILLAGE COUNCIL

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

APPROVED BY THE COUNCIL OF THE VILLAGE OF PALATINE, COOK COUNTY,

ILLINOIS, THIS _____ DAY OF _____, A.D., 2019.

SIGNED _____
MAYOR

SIGNED _____
VILLAGE CLERK

SURVEYOR'S DESIGNATION OF RECORDING

I, BARBARA C. MURRY, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF ILLINOIS, HEREBY DESIGNATE THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS, TO RECORD A CERTAIN PLAT OF RESUBDIVISION KNOWN AS GROVE AVENUE RESUBDIVISION WITH THE COOK COUNTY RECORDER OF DEEDS OR REGISTRAR OF TITLES. THIS DESIGNATION IS GRANTED UNDER THE RIGHT TO DESIGNATE SUCH RECORDING UNDER CHAPTER 109, SECTION 2 OF THE ILLINOIS REVISED STATUTES.

DATE: _____

_____
BARBARA C. MURRY, P.L.S.
ILLINOIS LAND SURVEYOR NO. 3529
LICENSE RENEWAL DATE NOVEMBER 30, 2020.

BARBARA C. MURRY 3529 PROFESSIONAL LAND SURVEYOR STATE OF ILLINOIS PALATINE, IL

PLAT RECORDED BY: NAME: _____

FIRM/ENTITY: _____

ADDRESS: _____

_____

PHONE: _____

SEND NEXT TAX BILL TO: _____

_____

_____

PERMANENT INDEX NUMBER: 02–24–101–007–0000

OWNER'S CERTIFICATE

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

THE UNDERSIGNED, AS TRUSTEE UNDER THE PROVISIONS OF GEORGE M. BORAWSKI DECLARATION OF TRUST, THE OWNER OF THE PROPERTY DESCRIBED HEREON, AND THAT AS SUCH OWNER, HAVE CAUSED THE SAME TO BE SURVEYED AND RESUBDIVIDED, AS SHOWN HEREON, FOR THE USES AND PURPOSES THEREON SET FORTH, AND DO HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE TITLE HEREON INDICATED.

AND FURTHER CERTIFY, AS OWNER OF THE PROPERTY DESCRIBED HEREON, THAT TO THE BEST OF OUR KNOWLEDGE, THE SCHOOL DISTRICT IN WHICH EACH LOT LIES:

LOTS 1, 2, 4 AND 4, INCLUSIVE:
SCHOOL DISTRICTS

ELEMENTARY SCHOOL DISTRICT: COMMUNITY CONSOLIDATED #15
HIGH SCHOOL DISTRICT: PALATINE TOWNSHIP #211
COLLEGE DISTRICT: HARPER COMMUNITY #512

THIS_____DAY OF_____, 2020.

SIGNED_____
GEORGE M. BORAWSKI TRUSTEE

NOTARY CERTIFICATE

STATE OF ILLINOIS)
COUNTY OF COOK ) S.S.

I, _____, A NOTARY PUBLIC IN AND FOR SAID

COUNTY IN THE STATE AFORESAID, DO HEREBY CERTIFY THAT

_____ IS PERSONALLY KNOWN TO ME TO BE THE SAME PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, APPEARED BEFORE ME THIS DAY IN PERSON, AND AT THE SAME TIME OF SAID APPEARANCE ACKNOWLEDGED THAT HE, AS SAID OWNER OF THE PROPERTY DESCRIBED IN THE ABOVE CAPTION, THAT HE SIGNED AND SEALED THE FOREGOING INSTRUMENT AS HIS OWN FREE AND VOLUNTARY ACT AND DEED FOR THE USES AND PURPOSES THEREON SET FORTH.

GIVEN UNDER MY HAND AND NOTARY SEAL THIS_____DAY

OF_____, 2020.

_____
Notary Public Signature and Seal

*Order Number: 19-1232*
*Survey Made For: George M. Borawski*
*SHEET 2 OF 2*

*Project Number: 19123200*
*Field Book: 324L-39-44*
*Drawing File: 19123200.dwg*

Attachment: Plat of Subdivision (1025 and 1037 W Kenilworth Ave - 4 lot Su, PFPD, Rezoning)

# PROPOSED SUBDIVISION OF EXISTING RESIDENTIAL LOTS
# SITE DEVELOPMENT PLAN
# 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

BENCHMARK INFO
JOB BENCH MARK: CROSS CUT AT NE MIDDLETON AVENUE & KENILWORTH AVENUE, ELEV= 768.35
TRANSFERRED FROM VALVE VAULT RIM BENCHMARK AT SE CROSS GLENCOE ROAD & MIDDLETON AVENUE, ELEV = 778.78. FROM SPACE CO JOB 7583

**SECTION: 21**
**TOWNSHIP: 42N**
**RANGE: 10E**

**PIN(S):**
**02-21-213-014,**
**02-21-213-015**

DRAWING INDEX:

SUBDIVISION PLANS:
1. TITLE SHEET, LEGEND, SITE LOCATION, & AERIAL MAP
2. EXISTING TOPOGRAPHY, DEMOLITION & TREE PRESERVATION PLAN
3. PROPOSED GRADING & DRAINAGE PLAN
4. PROPOSED UTILITY PLAN
5. SITE PLAN & GEOMETRIC PLAN
6. CONSTRUCTION NOTES
7. STANDARD DETAILS

WATERMAIN PLANS:
1. PROPOSED WATERMAIN PLAN
2. STANDARD NOTES & DETAILS
3. DETAILS
4. DETAILS (CONT.)
5. DETAILS (CONT.)

## AERIAL MAP




**LEGEND:**

| | EXISTING | PROPOSED |
|---|---|---|
| PROPERTY LINE | | |
| SANITARY SEWER LINE | | |
| WATER LINE | W | W |
| STORM SEWER LINE | | |
| STORM MANHOLE | | |
| SANITARY MANHOLE | | |
| COMBINED SEWER | | |
| COMBINED MANHOLE | | |
| CATCH BASIN | | |
| INLET | | |
| WATER VALVE VAULT | | W |
| WATER VALVE | | V |
| GRADE | 768.32 | 887.50 |
| DRAINAGE DIVIDE | | |
| CURB & GUTTER | | |
| CLEANOUT | | CO |
| DOWNSPOUT (ROOF DRAINS) | DS | DS |
| WATER B. BOX | | CBB |
| TREE PROTECTION FENCE | | |
| CONSTRUCTION FENCE | | CF |
| INLET FILTER BASKET | | |
| TRAFFIC DIRECTION PAVEMENT MARKING | | |
| FIRE HYDRANT | | |
| RETAINING WALL W/RAILING | | |
| TOP OF CURB<br>BOTTOM OF CURB | | T/C XXX.XX<br>B/C XXX.XX |
| TOP OF CURB<br>BOTTOM OF GUTTER | | T/C XXX.XX<br>B/G XXX.XX |
| WALK<br>BOTTOM OF WALK | | W XXX.XX<br>B/W XXX.XX |
| DESPRESSED CURB<br>BOTTOM OF GUTTER | | D/C XXX.XX<br>B/G XXX.XX |
| MOUNTABLE CURB<br>BOTTOM OF GUTTER | | M/C XXX.XX<br>B/C XXX.XX |

PUBLIC IMPROVEMENTS REQUIRED AT TIME OF SUBDIVISION APPROVAL

1. WATER SERVICES
 1.1. MAIN TAP WITH CORP. STOP
 1.2. 1.5" COPPER PIPE
 1.3. B-BOX
2. SANITARY SERVICES
 2.1. NEW WYE CONNECTIONS
 2.2. CAPPED 6" PVC SERVICES
3. ROADWAY IMPROVEMENTS
 3.1. RIBBON CURB
 3.2. ROAD PATCHING ALONG CURB
 3.3. SIDEWALK
4. STORM SEWER
 4.1. NEW STRUCTURES AND 8" MAIN
 4.2. SERVICE STUBS FOR ALL LOTS
5. BIORETENTION FACILITIES
6. MAIN GRADING ELEMENTS:
 6.1. SOUTH SIDEYARD SWALE AND MIDLOT SWALE

PROJECT DESCRIPTION

THE REAR YARDS OF 1025 & 1037 W. KENILWORTH AVENUE WILL BE SPLIT OFF TO CREATE TWO NEW LOTS ON S. MIDDLETON AVENUE.

PROPOSED LOT SIZES:

1025 W. KENILWORTH – 14,998 S.F.
1037 W. KENILWORTH – 14,997 S.F.
LOT 3 S. MIDDLETON – 15,302 S.F.
LOT 4 S. MIDDLETON – 15,296 S.F.

TOTAL DISTURBED AREA FOR PROJECT = 30,598 S.F. (LOTS 3 & 4)

NOTE

The location of existing underground utilities, such as water mains, sewers, gas lines, etc., as shown on the plans, has been determined from the best available information and is given for the convenience of the Contractor. However, the Owner and the Engineer do not assume responsibility in the event that during construction, utilities other than those shown may be encountered, and that the actual location of those which are shown may be different from the location as shown on the plans.

Bono Consulting, Inc. is not responsible for the safety of any party at or on the construction site. Safety is the sole responsibility of the contractor and any other person or entity performing work or services. Neither the owner nor engineer assumes any responsibility for the job site safety of persons engaged in the work or the means or methods of construction.

Current Standard Specifications of the Judicial Authority shall apply to the construction on this project.

*Note: The exact location of all utilities shall be verified by the contractor prior to construction activities. For utility locations call:*
*J.U.L.I.E. 1 (800) 892-0123*

1. I HEREBY CERTIFY THAT THE PROPOSED IMPROVEMENTS WILL NOT ADVERSELY IMPACT THE SUBJECT PROPERTY, THE SURROUNDING PROPERTIES OR THE PUBLIC RIGHT-OF-WAY WITH RESPECT TO STORMWATER DRAINAGE, AND THAT A SAFE OVERFLOW ROUTE HAS BEEN ESTABLISHED.
2. I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE PROPOSED IMPROVEMENT IS NOT LOCATED IN FLOOD PROTECTION AREAS BASED ON THE INFORMATION FROM THE FEMA MAPS.

ENGINEER — DATE: 6-2-2022

LICENSED PROFESSIONAL ENGINEER
WILLIAM A. HEPBURN
062-073376
OF ILLINOIS
EXP. 11-30-23

REVISIONS

| ISSUE | | DATE |
|---|---|---|
| 1 | PERMIT DRAWINGS | 3-14-20 |
| 2 | REVISED PER VILLAGE COMMENTS | 12-4-20 |
| 3 | REVISED PER VILLAGE COMMENTS | 4-8-21 |
| 4 | REVISED PER VILLAGE COMMENTS | 6-1-22 |

PROJECT STAFF

| | |
|---|---|
| PROJECT MANAGER: | B. BONO P.E. |
| ENGINEER: | A. KEEP P.E. |
| ENGINEER: | W. HEPBURN |
| TECHNICIAN: | |

BCI
BONO CONSULTING, INC.
CIVIL ENGINEERS
1018 BUSSE HIGHWAY PH : (847) 823-3300
PARK RIDGE, IL 60068 FAX: (847) 823-3303
bonno@bonoconsulting.com

TITLE SHEET, LEGEND, SITE LOCATION MAP, & AERIAL MAP
PROPOSED SUBDIVISION OF EXISTING LOTS
1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

NOT FOR CONSTRUCTION

COPYRIGHT:
THIS DRAWING SHALL NOT BE USED, REPRODUCED, MODIFIED OR SOLD EITHER WHOLLY OR IN PART, EXCEPT WHEN AUTHORIZED IN WRITING BY THE ENGINEER.

PROJECT NUMBER: 19459
START DATE: NOV. 22, 2019
GRAPHIC SCALE
SCALE: NTS

SHEET NUMBER
1 OF 7

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

# TOPOGRAPHICAL SURVEY

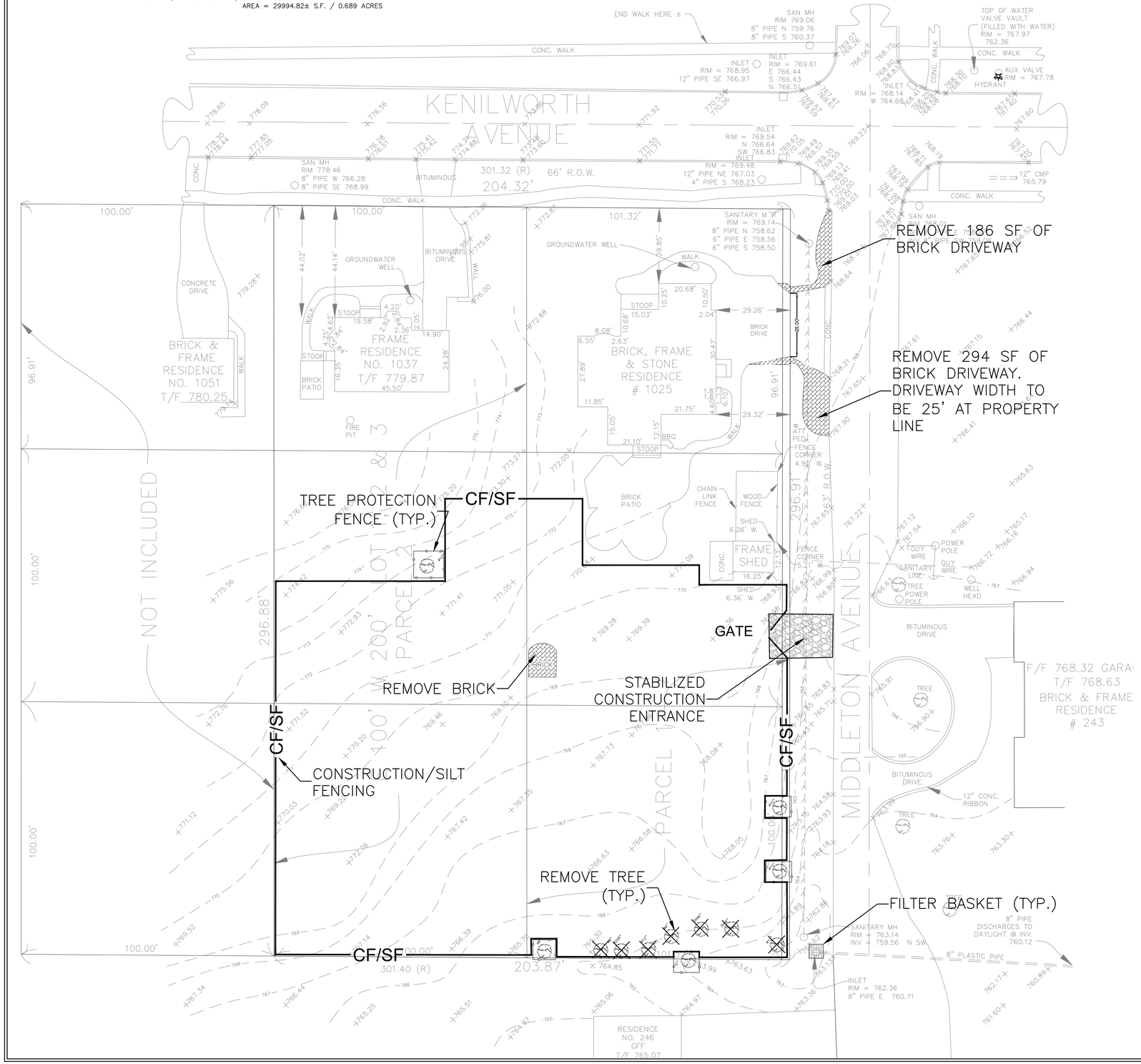
## OF

PARCEL 1: LOTS 1, 2 AND 3 (EXCEPT THE WEST 200 FEET THEREOF) IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, TOGETHER WITH THE WEST 3 FEET OF MIDDLETON AVENUE, AS VACATED BY DOCUMENT 0733415030, IN COOK COUNTY, ILLINOIS.

PARCEL 2: THE EAST 100 FEET OF THE WEST 200 FEET OF LOTS 1, 2 AND 3 IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

AREA = 29994.82± S.F. / 0.689 ACRES


**MURRY AND MOODY, LTD.**
*Land Surveyors*
*Illinois Professional Land Surveying Firm Corporation License No. 184-002845*
*933 S. Plum Grove Road, Suite 101*
*Palatine, Illinois 60067*
*www.murrysurvey.com info@murrysurvey.com Phone: (847)358-5960*


## BEST MANAGEMENT PRACTICES SEQUENCE

NOTE: UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS. IN ADDITION, NOTE ANY OFF-SITE AREAS WHERE FILL IS IMPORTED FROM OR SOIL IS EXPORTED TO ON THE SITE MAPS.

PHASE – I
1. INSTALL TREE PROTECTION FENCING AND EROSION CONTROL SILT FENCE, INLET FILTER BASKETS, MAINTAIN THROUGH OUT PROJECT.
2. USE MIDDLETON AVE. FOR CONSTRUCTION ACCESS, USE DRIVEWAY FOR CONSTRUCTION. INSTALL STABILIZED CONSTRUCTION ENTRANCE. OBSERVE ALL APPROPRIATE MUTCD/IDOT TRAFFIC CONTROL MEASURES FOR CONSTRUCTION TRAFFIC ENTERING HIGHWAY. CONTRACTOR IS RESPONSIBLE FOR KEEPING ROADS FREE OF MUD AND DEBRIS.
3. PROTECT TREES THAT ARE SHOWN TO BE PROTECTED.
4. CLEAR AND REMOVE BRUSH AND TREES.
5. ~~CONSTRUCT DETENTION FACILITY WITHIN 300FT'S OF TREE REMOVAL/BRUSH CLEARING.~~
6. INSTALL UTILITIES AND PERFORM MASS GRADING.

HALT ALL ACTIVITIES AND CONTACT THE VILLAGE TO PERFORM INSPECTION AND CERTIFICATION OF BMPs. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT THE STORMWATER PRE-CONSTRUCTION MEETING WITH THE CONSTRUCTION MANAGER, AGENCY(IES) AND GROUND-DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

ALL EXCEPTIONS NOTED ON THE BMP CERTIFICATION FORM MUST BE ADDED TO THE FIRST DAILY REPORT AS A DEFICIENCY OR DEFICIENCIES AND RESOLVED WITHIN 24-HOURS. BMPs CAN NOT BE CERTIFIED IF ANY EXCEPTION REQUIRES GREATER THAN 24-HOURS TO RESOLVE.

DAILY INSPECTIONS AND REPORTING USING THE SWPPP MANAGEMENT TOOL MUST START THE DAY OF OR IMMEDIATELY AFTER BMP CERTIFICATION.

7. CONSTRUCT ~~AND STABILIZE SEDIMENT BASIN(S) AND~~ SEDIMENT TRAP(S) WITH APPROPRIATE OUTFALL STRUCTURES (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL BASINS AND TRAPS).
8. INSTALL AND STABILIZE HYDRAULIC CONTROL STRUCTURES (DIKES, SWALES, CHECK DAMS, ETC.).
9. BEGIN CLEARING/DEMO AND GRUBBING THE SITE.
10. BEGIN FINAL GRADING THE SITE.

PHASE II
1. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE. IF ACTIVITY WILL RESUME WITHIN 14 DAYS, TEMPORARY SEEDING IS NOT REQUIRED.
2. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
3. ~~INSTALL TSP AROUND OUTLET STRUCTURE AS EACH OUTLET STRUCTURE IS INSTALLED.~~
4. INSTALL INLET PROTECTION AT ALL STORM SEWER STRUCTURES AS EACH INLET STRUCTURE IS INSTALLED.
5. ~~PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.~~
6. PREPARE SITE FOR HOUSE CONSTRUCTION.
7. ~~PAVE DRIVEWAYS.~~
8. INSTALL APPROPRIATE INLET PROTECTION DEVICES FOR PAVED AREAS AS WORK PROGRESSES.
9. COMPLETE GRADING AND INSTALLATION OF PERMANENT STABILIZATION OVER ALL AREAS.
11. CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION REPORT, MARKED "READY TO TERMINATE PERMIT", IS SIGNED BY THE CONSTRUCTION MANAGER AND SUBMITTED VIA THE SWPPP MANAGEMENT TOOL.
12. STABILIZE SITE AND INSTALL ALL FENCES CONCURRENTLY.

NOTE: THE GENERAL CONTRACTOR MAY COMPLETE CONSTRUCTION-RELATED ACTIVITIES CONCURRENTLY ONLY IF ALL PRECEDING BMPs HAVE BEEN COMPLETELY INSTALLED.

### EARTHWORK / EROSION & SEDIMENTATION CONTROL

1) All construction activities that involve earthwork shall meet the National Pollutant Discharge Elimination System Phase II requirements:
   a) Submittal of a Notice of Intent (NOI) to IEPA.
   b) Possession of a completed and signed Stormwater Pollution Prevention Plan (SWPPP) and a graphic Erosion and Sediment Control (ESC) plan.
   c) Implementation of the SWPPP.
   d) Submittal of an Incidence of Noncompliance (ION) if an event occurs.
   e) Weekly reports after ½" rainfall or 5" snowfall.
   f) Documentation of changes to ESC plan.
   g) Submittal of a Notice of Termination (NOT) when final stabilization is achieved.
   h) Follow Illinois Urban Manual (IUM) for sediment and erosion control guidelines.
2) Any wetland mitigation shall begin prior to any grading work and shall be in accordance with the approved mitigation permit plan and requirements.
3) In order to protect and ensure against flooding, all top of foundations shall be set a minimum of one (1') foot above the high water level of adjacent stormwater management facilities such as retention/detention ponds.
4) The contractor shall maintain existing positive drainage from off-site at all times during construction.
5) Within the limits of proposed grading the soil shall be compacted to not less than the following percentages of modified proctor dry density in accordance with ASTM D 1557-78:
   a) Under structures. Building slabs, steps and pavements Compact six (6") inch maximum lifts of subgrade. Backfill or fill material at 95% modified proctor dry density.
   b) Under walkways. Compact six (6") inch maximum lifts of dry subgrade, backfill, or fill material at 95% modified proctor dry density.
   c) Under lawn or unpaved areas. Compact six (6") inch maximum lifts of subgrade, backfill, or fill material at 85% modified proctor dry density.
6) All erosion control work shall comply with "Illinois Procedures and Standards for Urban Soil Erosion and Sedimentation Control."
7) Stripping of vegetation, grading or other soil disturbance, especially in designated wetland areas, shall be done in a manner which will minimize soil erosion, and shall be in accordance with the approved drawings, mitigation and permit requirements.
8) The contractor shall take precautionary measures to minimize earthwork in areas where trees are to be saved as shown on the plans or determined in the field.
9) The extent of the area which is exposed and free of vegetation and the duration of its exposure shall be kept within practical limits as directed by the Village Engineer.
10) Sedimentation shall be retained on site. Sediment fence shall be installed along the perimeter of all regraded areas or as required to prevent sediment from entering and/or leaving the site.
11) Dust produced from the site shall be kept to a minimum during dry periods by spraying water as required to the Village Engineer's satisfaction and is to be considered incidental.
12) All mud shall be removed from all tires before leaving the site and the roads shall be kept clean and clear of mud and debris at all times.
13) Culverts and drainage ditches shall be kept clean and clear of obstructions during the construction period.
14) Silt fences shall be inspected frequently and maintained or replaced as required to maintain both their effectiveness and integrity. The underside of bales shall be kept in close contact with the earth below at all times to prevent water from washing beneath them.
15) Water courses and drainage swales adjacent to construction activities shall be monitored as necessary, for evidence of silt intrusion and other adverse environmental impacts. Any problems or deficiencies shall be corrected immediately upon their discovery.
16) ~~Sod all unpaved areas of parkways, right-of-ways and front yards to rear wall of the building. Any and all other~~ site seeding **may** be used, in some instance particularly for the back yard, only with ~~prior approval by the Village Engineer~~.
17) The contractor shall install all erosion control items prior to commencement of any work.
18) The contractor shall install temporary orange fence around all trees to remain and wetland areas to be mitigated.

### DEMOLITION NOTES

1. Install temporary tree protection fencing prior to any demolition work..
2. Install temporary 6' high chain link fence with fabric around the proposed work area as shown on the drawing.
3. Contractor to call JULIE at 1-800-892-0123. minimum of 48 hours prior to initiating any excavation or demolition.
4. Contractor shall verify the exact elevation and location of all existing utilities and appurtenances prior to construction, to avoid interferences.
5. Appropriate precautions shall be taken to avoid damage to and to protect existing utilities and appurtenances in the vicinity of work. Contractor shall be responsible for the protection of all underground or overhead utilities even though they may not be shown on the plans. any utility that is damaged during construction shall be repaired to the satisfaction of the Village and the owner, or replaced.
6. Any open excavations, or potentially dangerous areas shall be fenced or guarded in an acceptable manner at the end of each day for the protection of the contractor's employees and general public safety.
7. **Bono Consulting Inc is not liable for any construction site safety**. Contractor to take all OSHA regulated and applicable local safety precautions to safe guard all potentially hazard sites/work.
8. Contractor is responsible for keeping roads free of excessive debris at all times.
9. Any soil, mud or debris that is washed, tracked, or deposited onto the street shall be removed before the end of each day.
10. Topographic survey by Murry and Moody, LTD.
11. All excavation shall be tapered, or, shored and maintained pumped dry.
12. Do not create dust or other nuisance to neighboring properties during construction
13. "No trespassing" signs shall be mounted on the fencing in conspicuous locations until construction is completed and approved
14. Any gate in the perimeter fence shall be adequately hinged to prevent entry, except to allow ingress and egress to and from site, such gate must be looked at all times, other than permitted hours of construction.

| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | B. BONO P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | A. VEER P.E. | 2 | REVISED PER VILLAGE COMMENTS | 12-4-20 |
| ENGINEER: | W. HEPBURN | 3 | REVISED PER VILLAGE COMMENTS | 4-8-21 |
| TECHNICIAN: | | 4 | REVISED PER VILLAGE COMMENTS | 6-1-22 |


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# EXIST. TOPOGRAPHY, DEMOLITION & TREE PRESERVATION PLAN

## PROPOSED SUBDIVISION OF EXISTING LOTS 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

NOT FOR CONSTRUCTION


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PROJECT NUMBER: 19459

START DATE: NOV. 22, 2019

GRAPHIC SCALE
20 0 20

SCALE: 1"=20'-0

SHEET NUMBER
2 OF 7


Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

N

301.32 (R)

102.16'

102.16'

100.00'

100.00'

101.32'

96.91'

146.88'

146.89'

146.91'

BRICK & FRAME RESIDENCE NO. 1051 T/F 780.25

FRAME RESIDENCE NO. 1037 T/F 779.87

BRICK, FRAME & STONE RESIDENCE # 1025

PROPOSED LOT 1 14,997 S.F.

PROPOSED LOT 2 14,998 S.F.

PROPOSED LOT 3 5,302 S.F.

PROPOSED LOT 4 15,296 S.F.

PROPOSED 2-STORY SFR T/F 771.50

PROPOSED 2-STORY SFR T/F 768.25

FRAME SHED

F/F 768.32 GARAGE T/F 768.63 BRICK & FRAME RESIDENCE # 243

RESIDENCE NO. 246 GFF T/F 765.07

102.05'

204.10'

203.98'

203.87'

301.40 (R)

75.00'

771.00 RIM

766.50 RIM

764.70 RIM

763.20

762.60

762.90

771.50

771.10

769.50

769.20

769.40

768.80

768.50

766.50

767.50

768.00

767.00

766.00

764.00

764.50

763.80

766.40

765.50

767.10

768.00 T/BERM

767.00 T/BERM

766.50 T/BERM

766.00 T/BERM

1' WIDE BERM

SWALE TO HAVE 2.5' BOTTOM WIDTH

8" PIPE DISCHARGES TO DAYLIGHT @ INV. 760.12

INLET RIM = 762.36 8" PIPE E 760.71

10' SIDEYARD SETBACK

30' BUILDING LINE

10' EASEMENT

| PROPOSED FLOW ANALYSIS OF BACKYARD SWALE | |
|---|---|
| TRIBUTARY AREA: | 0.531 ACRES |
| IMPERVIOUS AREA: | 0.000 ACRES |
| COMPOSITE C: | 0.40 |
| RAINFALL INTENSITY (24 HR-100 YR) | 12.34 IN./HR |
| RUNOFF VOLUME (Q) | 2.62 CFS |
| **CAPACITY ANALYSIS OF BACKYARD SWALE** | |
| SLOPE | 0.03 |
| MANNING'S n | 0.03 |
| FLOW DEPTH d | 0.25 FEET |
| BOTTOM WIDTH | 2.5 FEET |
| FLOW AREA (Trapezoidal shaped) | 1.29 SQ. FT. |
| WETTED PERIMETER | 10.45 FEET |
| HYDRAULIC RADIUS | 0.12 |
| SWALE CAPACITY | 2.75 CFS |

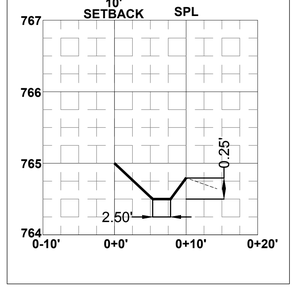
## 1025 & 1037 W. KENILWORT AVE.

## SOUTH P.L. SWALE CROSS SECTION

**SCALE:**
**HORIZONTAL: 1" = 10'**
**VERTICAL : 1" = 1'**

**PREPARED BY**
**WILL HEPBURN**
**DATE: 04-28-2021**

### SECTION A-A'




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| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | B. BONO P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | A. VEER P.E. | 2 | REVISED PER VILLAGE COMMENTS | 12-4-20 |
| ENGINEER: | W. HEPBURN | 3 | REVISED PER VILLAGE COMMENTS | 4-8-21 |
| TECHNICIAN: | | 4 | REVISED PER VILLAGE COMMENTS | 6-1-22 |

# PROPOSED GRADING & DRAINAGE PLAN
# NEW LOTS 3 & 4 IN SUBDIVISION
## PROPOSED SUBDIVISION OF EXISTING LOTS 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

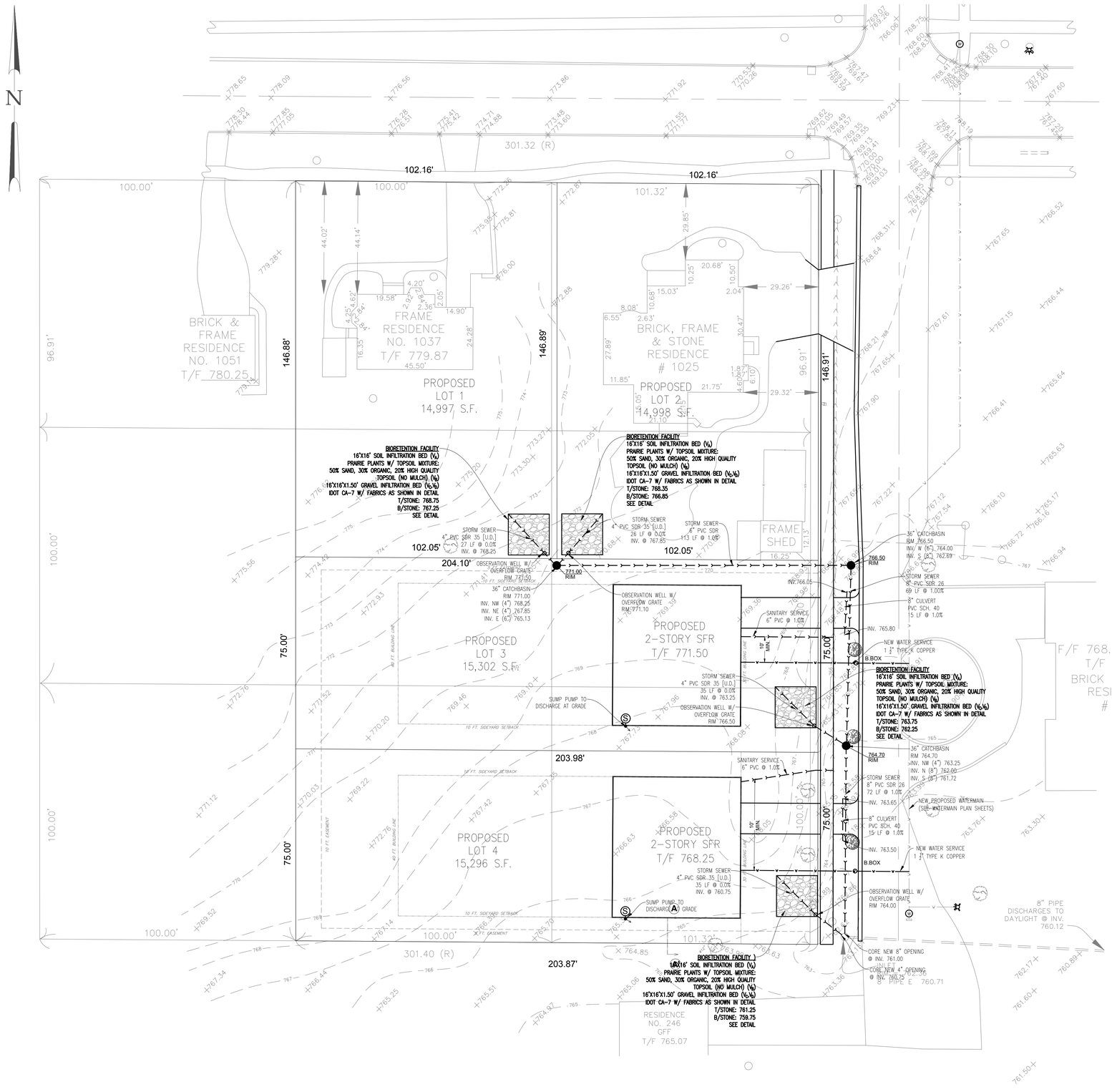
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PROJECT NUMBER: 19459
START DATE: NOV. 22, 2019
GRAPHIC SCALE 20 0 10
SCALE: 1"=10'-0

SHEET NUMBER
3 OF 7

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)




**BEST MANAGEMENT PRACTICES**

| | |
|---|---|
| Impervious Area (Max Imperv. coverage for Lots 3&4 incl.) | 19,130 s.f. |

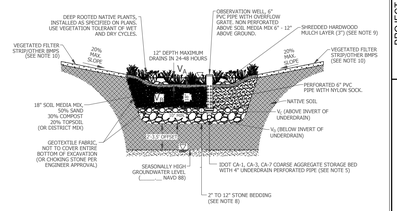
**VOLUME CONTROL BEST MANAGEMENT PRACTICES**

| | | | |
|---|---|---|---|
| Volume Control Requirements | | 1" | Rainfall |
| Volume Control Storage Required | | 1,594 | Cu. Ft. |
| Bioretention Facility Size = | *16' X 16'* = *256* | SF | |

MWRD Infiltration Calculations

| Bioretention Facility Area = | 256.00 | SF | | | |
|---|---|---|---|---|---|
| VOLUME TYPE | POROSITY | | DEPTH | MEDIA VOLUME | STORAGE VOLUME |
| Surface Storage | 1 | VA | 1.00 | 256 | 1 x VA = 256 |
| Soil Media Mix | 0.25 | VB | 1.50 | 384 | 0.5 x 0.25 x VB = 48 |
| Course Agg. (Above Invert) | 0.36 | VC | 0.50 | 128 | 0.5 x 0.36 x VC = 23 |
| Course Agg. (Below Invert) | 0.36 | VD | 1.00 | 256 | 0.36 x VD = 92 |
| | | | | | 419 Cu. Ft. Per Facility |

| | | | |
|---|---|---|---|
| **Total Volume Control Provided (4 Facilities) =** | **1,677** | **>** | **1,594** Cu. Ft. |
| | 0.038 | | 0.037 ac-ft |




| | |
|---|---|
| BOTTOM OF THE FACILITY: | ELEV. VARIES |
| SEASONALLY HIGH GROUNDWATER SEPARATION: | ELEV. NOT FOUND IN SOIL BORINGS<br>FEET N/A |

| VOLUME TYPE | SURFACE AREA | DEPTH | POROSITY | STORAGE VOLUME | VOLUME PROVIDED |
|---|---|---|---|---|---|
| $V_A$ : SURFACE STORAGE | 256 SF | 1.0' | 1.00 | 1.00 X $V_A$ | 256 CU. FT. |
| $V_B$ : SOIL MEDIA MIX | 256 SF | 1.50' | 0.25 | 0.50 X 0.25 X $V_B$ | 48 CU. FT. |
| $V_C$ : COARSE AGGREGATE (ABOVE INVERT) | 256 SF | 0.50' | 0.36 | 0.50 X 0.36 X $V_C$ | 23 CU. FT. |
| $V_D$ : COARSE AGGREGATE (BELOW INVERT) | 256 SF | 1.00' | 0.36 | 0.36 X $V_D$ | 92 CU. FT. |
| | | | | TOTAL | 419 CU. FT. |
| | | | | 4 FACILITIES = | 1,676 CU. FT. |

NOTES:
1. THE PERIMETER OF THE VOLUME CONTROL FACILITY SHALL MAINTAIN THE MINIMUM HORIZONTAL SEPARATION DISTANCE OF: 10-FEET FROM FOUNDATIONS, UNLESS WATERPROOFED; 20-FEET FROM ROADWAY GRAVEL SHOULDER; AND 100-FEET FROM POTABLE WATER WELLS, SEPTIC TANKS/FIELDS, OR OTHER UNDERGROUND TANKS.
2. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED WITHIN THE VOLUME CONTROL FACILITY. SANITARY OR COMBINED SEWERS SHALL NOT BE LOCATED BELOW THE FOOTPRINT OF THE VOLUME CONTROL FACILITY - WHEN LOCAL CONDITIONS PREVENT THE SEWER FROM BEING LOCATED OUTSIDE THE FOOTPRINT OF THE FACILITY, THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN QUALITY STANDARDS, OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.
3. AVOID INSTALLATION ON SLOPES GREATER THAN 3.00%. AVOID COMPACTING NATIVE SOILS. SCARIFY ANY COMPACTED SOIL.
4. GEOTEXTILE FABRIC SHALL MEET REQUIREMENTS OF IUM MATERIAL SPECIFICATION 592. FOR WOVEN: APPARENT OPENING SIZE OF 0.50 MM (TABLE 1, CLASS 1). FOR NON WOVEN: APPARENT OPENING SIZE OF 0.30 MM (TABLE 2, CLASS II).
5. STONE STORAGE OPTIONS ARE IDOT CA-1, CA-3, CA-7, DISTRICT VULCAN MIX, OR APPROVED ALTERNATE. NO RECYCLED MATERIALS.
6. MINIMUM DISTANCE OF 2 FEET (3.5 FEET IN COMBINED SEWER AREAS) BETWEEN BOTTOM OF BMP AND SEASONALLY HIGH GROUNDWATER LEVEL.
7. UNDERDRAINS ARE REQUIRED IN TYPICAL CLAYEY SOILS WHERE INFILTRATION RATES ARE LESS THAN 0.5 INCH/HOUR. NO MORE THAN 1 UNDERDRAIN EVERY 30 FEET ON CENTER. PROVIDE A SOIL REPORT DOCUMENTING NATIVE INFILTRATION RATE TO FOREGO UNDERDRAINS. NO FILTER FABRIC COVER/SOCK.
8. MINIMUM UNDERDRAIN BEDDING OF 2 INCHES, MAXIMUM OF 12 INCHES.
9. MULCH LAYER SHALL BE HARDWOOD MULCH OR OTHER NON-FLOATING GROUND COVER.
10. FOLLOW THE REQUIRED PRETREATMENT MEASURES LISTED ON THE VOLUME CONTROL PRETREATMENT MEASURES DETAIL.

NOT TO SCALE

| | | |
|---|---|---|
| | TECHNICAL GUIDANCE MANUAL | 10/11/18 |
| | BIORETENTION FACILITY DETAIL | STD. DWG. NO.1<br>PAGE NO.1 |

| ISSUE | | DATE |
|---|---|---|
| 1 | PERMIT DRAWINGS | 2-14-20 |
| 2 | REVISED PER VILLAGE COMMENTS | 12-4-20 |
| 3 | REVISED PER VILLAGE COMMENTS | 4-8-21 |
| 4 | REVISED PER VILLAGE COMMENTS | 6-1-22 |

PROJECT STAFF
PROJECT MANAGER: B. BONO P.E.
ENGINEER: A. VEER P.E.
ENGINEER: W. HEPBURN
TECHNICIAN:

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# PROPOSED UTILITY PLAN
## NEW LOTS 3 & 4 IN SUBDIVISION
### PROPOSED SUBDIVISION OF EXISTING LOTS 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

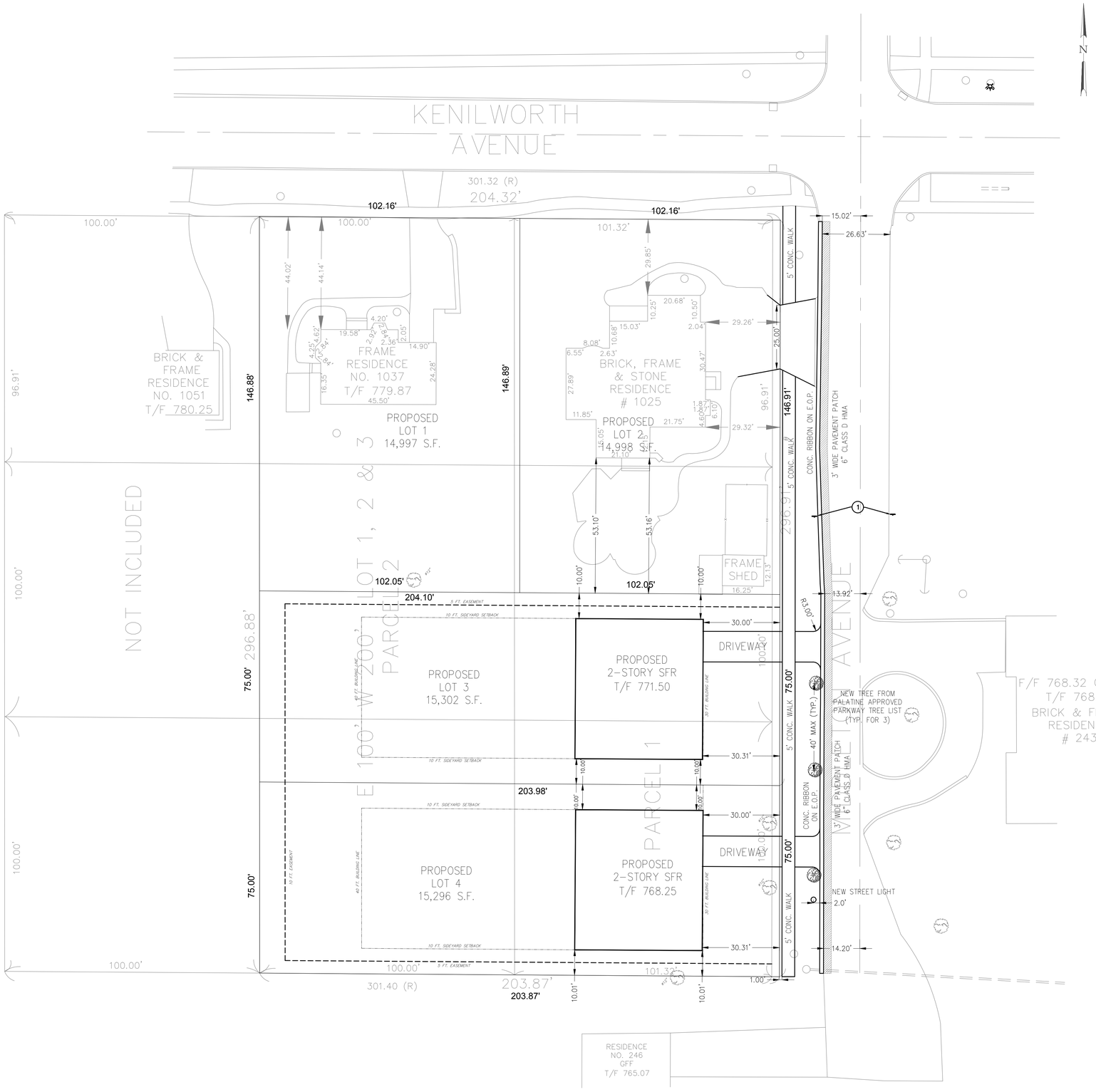
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PROJECT NUMBER: 19459
START DATE: NOV. 22, 2019
GRAPHIC SCALE
20 0 10
SCALE: 1"=10'-0

SHEET NUMBER
4 OF 7

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)




**1025 Kenilworth, Palatine**

Date: 9.25.20

| | Existing | | Proposed | |
|---|---|---|---|---|
| | Sq. Ft. | Acres | Sq. Ft. | Acres |
| Lot Area | 30906 | 0.709 | 14998 | 0.344 |
| Building | 2737 | 0.063 | 2737 | 0.063 |
| Driveway, Walks, Stoops, Patio, etc. | 3295 | 0.076 | 3156 | 0.072 |
| Impervious Area | 6031 | 0.138 | 5893 | 0.135 |
| Pervious Area | 24874 | 0.571 | 788 | 0.018 |
| Percantage Impervious Area (%) | 19.51% | | 39.29% | |
| Increase in Impervious Area | -138 SF | | | |

**1037 Kenilworth, Palatine**

Date: 9.25.20

| | Existing | | Proposed | |
|---|---|---|---|---|
| | Sq. Ft. | Acres | Sq. Ft. | Acres |
| Lot Area | 29688 | 0.682 | 14977 | 0.344 |
| Building | 1280 | 0.029 | 1280 | 0.029 |
| Driveway, Walks, Stoops, Patio, etc. | 1248 | 0.029 | 1248 | 0.029 |
| Impervious Area | 2528 | 0.058 | 2528 | 0.058 |
| Pervious Area | 27160 | 0.623 | 788 | 0.018 |
| Percantage Impervious Area (%) | 8.52% | | 16.88% | |
| Increase in Impervious Area | 0 SF | | | |

| | SIGNAGE LEGEND |
|---|---|
| 1 | NO PARKING THIS SIDE OF STREET (R7-13) |

| DATE | REVISIONS | ISSUE |
|---|---|---|
| 2-14-20 | PERMIT DRAWINGS | 1 |
| 12-4-20 | REVISED PER VILLAGE COMMENTS | 2 |
| 4-8-21 | REVISED PER VILLAGE COMMENTS | 3 |
| 6-1-22 | REVISED PER VILLAGE COMMENTS | 4 |

PROJECT STAFF

| | | |
|---|---|---|
| PROJECT MANAGER: | B. BONO P.E. | |
| ENGINEER: | A. VEER P.E. | |
| ENGINEER: | W. HEPBURN | |
| TECHNICIAN: | | |

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# SITE PLAN & GEOMETRIC PLAN
## ENTIRE SUBDIVISION
## PROPOSED SUBDIVISION OF EXISTING LOTS 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

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PROJECT NUMBER: 19459
START DATE: NOV. 22, 2019
GRAPHIC SCALE
20 0 20
SCALE: 1"=20'-0

SHEET NUMBER
5 OF 7

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

## GENERAL CONSTRUCTION NOTES

1. The construction shall be under the general inspection of the Village engineer and the owner's engineer.
2. All work shall be in accordance with the applicable sections of the following specifications:
   a. Illinois Department of Transportation (I.D.O.T.) "Standard Specifications for Road and Bridge Construction" April 1, latest edition.
   b. "Standard Specifications for Water and Sewer Main Construction in Illinois" latest edition.
   c. "Illinois Recommended Standards for Sewage Works" as published by the I.E.P.A.
   d. "Manual on Uniform Traffic Control Devices" (M.U.T.C.D.) latest edition.
   e. The Subdivision and Development Codes and Standards of the local authority.
   f. "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois" published by the Association of Illinois Soil and Water Conservation Districts.

   Where a contradiction occurs with any part of the standard specifications, the most stringent requirement shall take precedence, as determined by the engineer.

   The contract documents (Plans and Specifications/General Notes) shall supersede the standard specifications. If there is a conflict between the plans and specifications, the most stringent requirement shall take precedence, as determined by the engineer.

   The contractor shall have at least one copy of all applicable specifications as well as one copy of the contract documents (Plans and Specifications) available at the job site at all times that work is in progress.
3. Should any discrepancies or conflicts on the plans, quantities or specifications be discovered by the contractor, whether prior to awarding or after the award of the contract, the engineer's attention shall be called to the same before work is begun thereon and so that proper corrections can be made.
4. Contract Documents and Drawings:
   A. The engineer's drawings (The Plans) shall be included as part of the contract documents.
   B. The contractor is required to review the soils report for the site.
   C. All bidders shall carefully examine the drawings and specifications prepared for the work. They shall visit the site of the work and acquaint themselves with all local conditions, codes, and requirements affecting the contract. If awarded the contract, they shall not be allowed extra compensation by reason of any unforeseen difficulties or obstacles which the bidder could have discovered or reasonably anticipated prior to the bidding.
   D. Should it appear that the work covered by the contract documents is not sufficiently detailed or explained, an RFI form shall be submitted to the engineer for further drawings or explanations as may be necessary to clarify the point in question prior to the contract award. It is the intention of the contract documents to provide a job complete in every respect. The contractor is responsible for this result and to turn over the project in complete operating condition, irrespective of whether the contract documents cover every individual item in minute detail.
5. The Local Department of Public Works and Community Development shall be notified 24 hours in advance to schedule inspections for sidewalk, curb and gutter driveways, aprons, paving, grading, watermain, sewer main and utility services.
6. Work shall not take place without required traffic control devices and barricades in place per the M.U.T.C.D. Any deficiency of safety or traffic control devices shall be just cause to stop the project until such time as the deficiency is corrected.
7. Village streets shall not be closed without the written permission of the Local Department of Engineering and Community Development and then only after proper notification has been given to the Police and Fire Departments.
8. The contractor shall immediately remove mud, soil or debris deposited on public streets and alleys. Failure to keep streets & alleys clean shall be just-cause for issuance of a Stop Work Order or citation.
9. Signs located in the public right-of-way must not be removed or damaged. If a sign needs to be moved, notify the Public Works Department.
10. Construction materials shall not be stored within the Village Right-Of-Way.
11. The owner/contractor shall be responsible for obtaining all required Federal, State, County, I.E.P.A. permits.

    The contractor shall, at his own expense, obtain all other permits, licenses, etc., as may be required for the execution of this work, give all necessary notices, pay all fees required, post all bonds, and comply with all laws, ordinances, rules and regulations relating to the work and to the preservation of public health and safety.

    All required insurance and/or bonds shall be provided by the contractor as may be required by the permitting agency.

    The contractor shall meet all of the requirements of any permits as might be issued for this work by other agencies, and shall pay for at their sole expense any surety or bonds as may be required by the permitting agency.

12. The contractor is responsible for having a set of approved engineering plans with the latest revision date on the job site at all times during the construction period.
13. The contractor shall indemnify and save harmless the owner, Bono Consulting Inc., and their officers and employees; the Village and their officers, employees, agents, and engineers, and from and against all losses, claims, demands, payments, suits, actions, recoveries, and judgment of every nature and description brought or recovered against them, by reason of any act or omission of said contractor, their agents, subcontractors or employees, in the execution of the work or in the guarding of it.
14. The location of existing underground utilities, such as water mains, sewers, gas lines, etc., as shown on the plans, has been determined from the best available information and is given for the convenience of the Contractor. However, the Owner and Engineer do not assume responsibility in the event that during construction, utilities other than those shown may be encountered and that the actual location of those which are shown may be different from the location as shown on the plans. The contractor is to verify the location of all utilities prior to the start of work and is responsible for damage to same. The contractor shall call J.U.L.I.E. 1-800-892-0123 and the Village public works department for utility locates before excavating.
15. Existing utilities are shown on the plans according to information obtained from utility companies and surveys. The owner and engineer do not guarantee the accuracy or completeness of this information. The contractor shall make their own investigation to determine the existence, nature and location of all utility lines and appurtenances within the limits of the improvement. The contractor shall locate all utilities far enough in advance to avoid all conflicts in grade separation between existing utilities and proposed improvements. If the contractor encounters a conflict between the proposed improvement and existing utility that was not located in advance by the contractor, then the contractor shall at no cost to owner, relocate the proposed improvements and/or utility to avoid the conflict.

    The contractor will be required to cooperate with all utility companies involved in connection with the removal, temporary relocation, reconstruction or abandonment by these companies of any and all services or facilities owned or operated by them within the limit of this improvement.

    Before doing any work which will damage, disturb or leave unsupported or unprotected any utility lines or appurtenances encountered, the contractor shall notify the respective owner thereof, who will make all arrangements for relocating, adjusting, or otherwise maintaining or abandoning service on lines that fall within the limits of the proposed construction without cost to the contractor, including the removal of all cables, manhole covers and other appurtenances which the owner desires to salvage. After such arrangements have been made, the contractor will proceed with the work as directed by the engineer. All utility lines and appurtenances which are abandoned shall be removed and legally disposed of by the contractor.

    No extra compensation will be allowed by the contractor for any expense incurred by complying with these requirements or because of delays, inconvenience or interruptions in their work resulting from the failure of any utility company to remove, relocate, reconstruct or abandon their services. The responsibility for prompt and timely removal, relocation, reconstruction or abandonment of their facilities by all utility companies involved, and the coordination of their own work with that of these companies to the end that work on this improvement is not delayed because of the necessary changes in the existing utilities, public or private, shall rest upon the contractor.

16. The flow from any field tiles draining off-site properties shall be maintained. The contractor shall notify the engineer if any such field tiles are encountered and shall show them on a set of as-built plans.
17. All existing utilities or improvements, including walks, curbs, pavements and parkways damaged or removed during construction shall be promptly restored to their respective original condition.
18. All existing pavement or concrete to be removed shall be saw cut along the limits of the proposed removal. Payment for sawing shall be included in the cost of the removal of each item.
19. The contractor is to verify all critical elevations prior to commencing work and if there are any discrepancies, is to notify the engineer immediately. The contractor shall call to the attention of the engineer any errors or discrepancies which may be suspected in the lines and grades which are established by the surveyor, and shall not proceed with the work until any lines and grades which are to believed to be in error have been verified or corrected by the engineer.
20. No holes are to be left open in the pavement or the parkway over a holiday, weekend, or after 3 p.m. on the day preceding a holiday or weekend.
21. Any bracing, sheeting or special construction methods deemed necessary by the contractor in order to install the proposed improvements shall be considered incidental to the cost of the project. Any additional soils data needed to confirm the contractor's opinions of the subsoil conditions shall be done at the contractor's expense. The contractor shall obtain the owner's written authorization to access the site to conduct a supplemental soils investigation.
22. Whenever the performance of work is indicated on the plans, and no item is included in the contract for payment, the work shall be considered incidental to the contract and no additional compensation will be allowed.
23. All items shown to be removed, shall be legally disposed of off-site.
24. All work performed under this contract shall be guaranteed against all defects in materials and workmanship of whatever nature by the contractor and his surety for a minimum period of 12 months from the date of final acceptance of the work by the Village, other applicable governmental agencies, and the owner.
25. No work shall be performed on adjacent private property without the written permission of the property owner.
26. During construction the contractor and their subcontractors shall remove from the premises, rubbish, waste material and accumulations, and shall keep the premises clean. The contractor shall clean the premises to the satisfaction of the owner, engineer, and Village.
27. The contractor shall have appropriate equipment, including street sweepers and end loaders available on-site at all times when equipment or vehicles are using existing public or private pavement. The contractor shall immediately remove any dirt, mud, clay, sediment, concrete, gravel, sand, stones, plant matter, debris, refuse, garbage, etc. deposited on any street, sidewalk or alley by any equipment, vehicles or people associated with this project. The contractor is responsible for complying with all Village ordinances including any and all assessments of cost that may result. This work shall not be paid for separately, but shall be included in the cost of the work.
28. All trenching, shoring, and construction work performed shall be in accordance with O.S.H.A. Standards. The contractor shall at all times maintain proper dust control at the site and shall have a watering truck readily available during all working hours. Contractor is solely responsible for maintaining stability of adjacent building foundations during excavation/construction.
29. The contractor shall water the entire site whenever the site conditions become unhealthy due to blowing soil or dust. The site shall be watered as many times per day as necessary to maintain a healthy work site as determined by the owner or engineer. Water for non-emergency use shall not be obtained from any fire hydrant, unless the fire hydrant is metered in accordance with Village requirements. The cost to furnish dust control shall be incidental to the cost of construction.
30. The contractor must follow the requirements of the Village Specification for all pavement openings and repairs.
31. Tree removal permit is required for removal of all trees 10" diameter or greater.
32. An inspection of the top of foundation will be required prior to pouring.
33. A final inspection of grading will be required before placement of any sod.
34. All street openings shall be in accordance with IDOT standards for work within an IDOT R.O.W.
35. All retaining walls greater than 36" high need to be approved by a licensed structural engineer. Retaining wall shop drawings to be submitted by contractor for approval.
36. Construction staking shall be provided by the contractor and shall be included in the contract price. A licensed surveyor must stake all grading, utility and paving work.
37. Upon completion of the project, the contractor or engineer shall submit a sets of as-built engineering plan and a grading certificate. These documents shall be submitted within thirty (30) days of final approval to the Village. The price per this work shall be included in contractors fee.

## IEPA NOTES:

Sewers crossing water mains shall be laid to meet the following specifications:

1. Horizontal Separation:
   A. Whenever possible, a water main must be laid at least ten feet horizontally from any existing or proposed drain or sewer line.
   B. Should local conditions exist which would prevent a lateral separation of ten feet, a water main may be laid closer than ten feet to a storm or sanitary sewer provided that the water main invert is at least eighteen inches above the crown of the sewer, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.
   C. If it is impossible to obtain proper horizontal and vertical separation as described in 1 and 2 above, both the water main and sewer must be constructed of pipe material which would conform to water main standards and be pressure tested to assure water tightness before backfilling.
2. Vertical Separation:
   - Whenever water mains cross house sewers, storm drains or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located within ten feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer.
   - Where conditions exist that the minimum vertical separation set forth in 1 above cannot be maintained, or it is necessary for the water main to pass under a sewer or drain, one of the following two measures must be taken:
     - A. The water main shall be installed within a PVC carrier pipe and the carrier pipe shall extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten (10) feet.
     - B. The involved sewer or drain shall be constructed of pipe material which would conform to water main standards until the normal distance from the water main to the sewer is at least ten (10) feet.
3. In making such crossings, center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer and as remote there from as possible. Where a water main must cross under a sewer, a vertical separation of eighteen inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized sewer lines to prevent their settling and breaking the water main. The horizontal and vertical separation between water service lines and all sanitary sewers, storm sewers, or any drain should be the same as for water mains, as detailed above, except that when minimum horizontal and vertical separation cannot be maintained, water pipe as described under Vertical Separation above, may be used for sewer service lines.

## EARTHWORK AND GRADING

1. All earthwork shall be done in accordance with the state of Illinois, "Standard Specifications for Road and Bridge Construction," latest edition and "Supplemental Specifications and Recurring Special Provisions," latest edition. Included in this work, but not necessarily limited to the following are: clearing, stripping and stockpiling of topsoil, mass grading and fine grading of the site and roadways, excavation of unsuitable materials and excavation of detention ponds, landscape mound construction, and miscellaneous topsoil respread and seeding.
2. Any earthwork summaries provided by the engineer are intended to be used as a guide for the contractor in determining the scope of the completed project. It is the responsibility of the contractor to determine all material quantities and appraise themselves of all site conditions. The contract price submitted by the contractor shall be considered as lump sum for the complete project. **No claims for extra work will be recognized unless ordered in writing by the owner.**
3. The initial establishment of erosion control procedures and the placement of erosion control fence, etc. shall be installed by the contractor prior to the start of mass grading.
4. All grading operations are to be supervised and inspected by the owner's engineer or their representative. All testing, inspection, and supervision of soil quality, unsuitable soil removal and its replacement, and other soils related operations shall be entirely the responsibility of the soils engineer. No undercut shall be performed or claims for extra work without authorization by the owner and documentation by the soils engineer.
5. Clearing shall consist of the removal and disposal of all obstructions such as trees, hedges, fences, walls, accumulations of rubbish of whatever nature, and all logs, shrubs, brush, grass, weeds, and other vegetation and stumps. These items shall be performed whenever they occur within the street right of ways, and within the limits of construction. Trees to be saved shall be identified by the Engineer on the construction plans. All trees, except those designated to be saved, and all stumps shall be cut and legally disposed of. Trees, stumps, and hedges within the limits of construction shall be removed completely. Trees designated to be saved as indicated on the plans, or as directed by the engineer, shall be protected in accordance with the procedures outlined in Article 201.05 of the "Standard Specifications for Road and Bridge Construction."
6. Strip topsoil down to firm subbase. stockpile quantity necessary for landscaping, and remove other materials from the site.
7. Excavation shall consist of the excavation, removal, and satisfactorily disposal or placement and compaction of all materials taken from within the site for the construction of embankments, subgrade, subbase, shoulders, intersections, ditches, waterways, entrances, approaches and incidental work, and the removal and satisfactory disposal of unstable and unsuitable materials and their replacement with satisfactory materials where required.
8. After stripping and excavating to the proposed subgrade level, as required, the building and parking areas should be proof-rolled with a loaded, tandem-axle dump truck or similar rubber tired vehicle, loaded with at least 9 tons per axle. Proof-rolling aids in providing a firm base for compaction of fills, and help to delineate soft, loose, or disturbed areas that may exist below subgrade level. Proof-rolling is especially important to help evaluate the surficial stability of existing fill soils that may be left in place below floor slabs and pavements. Soils which are observed to rut or deflect excessively (more than 1 inch) under the moving load should either be scarified and re-compacted with a smooth drum vibratory roller for granular soils, a sheeps foot roller for cohesive soils, or undercut and replaced with properly compacted and documented structural fill. The proof-rolling and undercutting activities should be observed and documented by a representative of the geotechnical engineer and should be performed during a period of dry weather. In addition to proof-rolling, the subgrade soils should be scarified and compacted to at least 90 percent of the Modified Proctor maximum dry density ASTM D 698 for a depth of at least 8 inches below the surface.
9. Where encountered, loose sands and asphalt grindings should be re-compacted with a vibratory roller. Clay subgrade soils can be easily disturbed by construction activities and are sensitive to moisture. Therefore, extra care should be used to avoid disturbing these soils during construction activities. If the soils become unstable during construction, or if near surface soft subgrade soils are encountered, it is recommended that coarse aggregate be placed on the subgrade until a stable base for compaction of fill is achieved. Typically, 12 to 24 inches of course aggregate are required, depending in the consistency of the subgrade. the course aggregate should consists of clean, crushed stone gravel between 1/4 and 3 inches in size. The course aggregate should be spread in a max. of 12-inch layers and consolidated with compaction equipment until it is "locked" in place.
10. Topsoil excavation shall consist of the removal and stockpiling, or placing on fill slopes or placing in mounds, of the uppermost layers of organic soil. Topsoil shall be stockpiled on the areas as shown on the plans or as directed by the engineer.
11. Topsoil respread shall consist of placing a minimum of a four (4) inch layer of topsoil over the unpaved areas within the construction limits.
12. 4" topsoil & sod shall be placed on all disturbed areas within the right of way.
13. Refer to the landscape plans for additional information on ground cover & planting requirements.
14. Embankment shall be placed in accordance with Section 205 of the "Standard Specifications for Road and Bridge Construction." All embankments located within structural fill areas shall be constructed to a minimum 95% of the modified proctor density (ASTM D1557). Embankments located in non-structural fill areas shall be constructed to a minimum of 90% of the modified proctor density (ASTM D1557).
15. Completed grading (finished fine grade) for all proposed improvements shall be within a tolerance of plus or minus one-tenth (0.1) feet of design subgrade elevations.
16. The subgrade for the proposed streets and pavement areas shall be proof-rolled by the contractor in the presence of the Village engineer and soils engineer. Any unstable areas encountered shall be removed and replaced as directed by the Village engineer and soils engineer. Any unstable areas shall be documented by the soils engineer.
17. It shall be the responsibility of the contractor to remove from the site any and all materials and debris which results from their construction operations at no additional expense to the owner.
18. When in the opinion of the soils engineer, unsuitable soil conditions are encountered within utility trenches which require the removal of unsuitable materials below the depth of the bedding specified, the contractor shall obtain approval by the owner and the owner's engineer prior to removing the unsuitable soils and replace the material with granular compacted bedding material as directed by the soils engineer and the Village. The depth of the removal and replacement shall be documented by the owner's engineer and witnessed by the contractor.

    This work, when approved by the owner and owner's engineer, will be measured and paid for at the contract unit price per cubic yard in place for unsuitable soil which price shall include the removal and off-site disposal of unsuitable soil, the additional bedding material, and all labor, materials and equipment required to perform the work as specified.
19. The contractor shall be responsible for hiring and scheduling a qualified testing firm for all soil testing including CCDD testing.This shall be included in the cost of work.
20. Contractor to install salt-tolerant grass in areas shown to be used for snow stockpiles.
21. Pavement areas to be compacted to 95% mod. proctor and 90% mod. proctor for non-pavement areas.

| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | B. BONO P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | A. VEER P.E. | 2 | REVISED PER VILLAGE COMMENTS | 12-4-20 |
| ENGINEER: | | 3 | REVISED PER VILLAGE COMMENTS | 4-9-21 |
| ENGINEER: | W. HERBURN | 4 | REVISED PER VILLAGE COMMENTS | 6-1-22 |
| TECHNICIAN: | | | | |

BCI
BONO CONSULTING, INC.
CIVIL ENGINEERS
1018 BUSSE HIGHWAY PH : (847) 823-3300
PARK RIDGE, IL 60068 FAX: (847) 823-3303
bbono@bonoconsulting.com

# CONSTRUCTION NOTES

PROPOSED SUBDIVISION OF EXISTING LOTS
1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

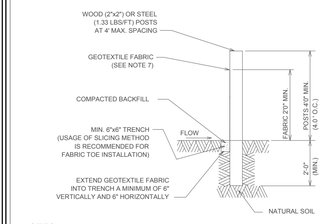
NOT FOR CONSTRUCTION

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PROJECT NUMBER: 19459
START DATE: NOV. 22, 2019
GRAPHIC SCALE
0
SCALE: NTS
SHEET NUMBER
6 OF 7

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

## ER-3




NOTES:

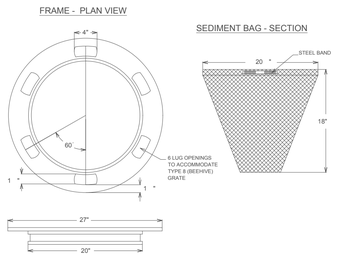
1. SILT FENCE SHALL BE PLACED AT LOCATIONS SHOWN ON THE PLANS AND WHERE INDICATED BY VILLAGE ENGINEERING.
2. ATTACH GEOTEXTILE FABRIC TO WIRE MESH WITH HOG RINGS, TO WOOD POSTS WITH NAILS, AND TO STEEL POSTS WITH TIE-WIRES AT TOP AND MID-SECTION.
3. OVERLAP GEOTEXTILE FABRIC BY 6" AND FOLD WHERE 2 SECTIONS ADJOIN.
4. INSPECTION OF SILT FENCES SHALL BE AT LEAST ONCE PER WEEK AND AFTER RAIN EVENTS IN EXCESS OF HALF INCH (½") PER DAY OR EQUAL SNOW MELT. REPAIR OR REPLACEMENT OF SILT FENCE SHALL BE MADE PROMPTLY AS NEEDED.
5. SEDIMENT TRAPPED BY THE SILT FENCE SHALL BE REMOVED (AND PROMPTLY DISPOSED OF) WHENEVER SEDIMENT ACCUMULATION DEPTH AT THE SILT FENCE IS APPROXIMATELY EQUAL TO TWELVE (12) INCHES (ONE-HALF OF SILT FENCE HEIGHT).
6. MATERIAL (GEOTEXTILE & POST) INSTALLATION, MAINTENANCE, AND SILT FENCE REMOVAL SHALL COMPLY WITH AASHTO, M 288 REQUIREMENTS.
7. THE FABRIC FOR SILT FENCE SHALL BE A WOVEN FABRIC MEETING THE REQUIREMENTS OF AASHTO M 288 (TABLE 7) FOR UNSUPPORTED SILT FENCE WITH LESS THAN 50 PERCENT GEOTEXTILE ELONGATION.
8. SILT FENCE SHALL BE MAINTAINED IN PLACE UNTIL COMPLETION OF CONSTRUCTION AND THE UPSLOPE AREA HAS BEEN STABILIZED, AND SHALL BE REMOVED ONLY WHEN DIRECTED BY VILLAGE ENGINEERING.

NOT TO SCALE

**SILT FENCE DETAIL**

REVISED:1-1-20

## ER-8







GENERAL NOTES:

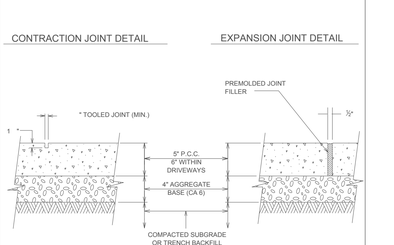
FRAME: TOP FLANGE FABRICATED FROM ⅜" FLAT STOCK. BASE RIM FABRICATED FROM ½"X1½"X1/8" CHANNEL. ALL STEEL CONFORMING TO ASTM-A36.
SEDIMENT BAG: BAG FABRICATED FROM 4 OZ./ SQ.YD. NON-WOVEN POLYPROPYLENE GEOTEXTILE REINFORCED WITH POLYESTER MESH. BAG SECURED TO BASE RIM WITH A STAINLESS STEEL STRAP AND LOCK.

NOT TO SCALE

**FILTER FOR BEEHIVE GRATE (TYPE 8) DETAIL**

REVISED:1-1-20

## P-6




NOTES:

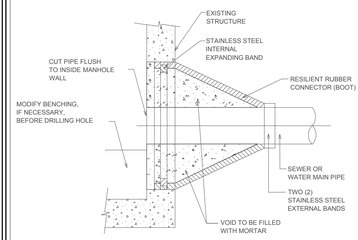
1. UNLESS OTHERWISE NOTED ON PLANS, CONTRACTION JOINTS TO BE AT 5'-0" O.C.
2. EXPANSION JOINTS TO BE 50'-0" O.C. MAX. OR AT BACK OF CURB, CHANGE OF DIRECTION, OTHER WALK, UTILITY APPURTENANCE, OR FACE OF STRUCTURE.
3. PORTLAND CEMENT CONCRETE SHALL CONFORM TO IDOT CLASS SI, MIN. 3,500 PSI AT 14 DAYS, WITH 5% TO 8% AIR ENTRAINMENT.

NOT TO SCALE

**CONCRETE WALK JOINT DETAIL**

REVISED:1-1-20

## U-5




SECTION

NOTES:

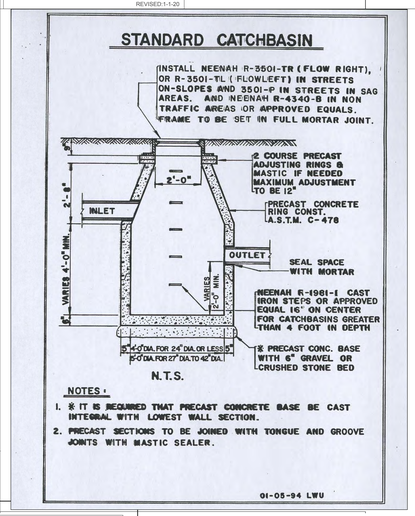
1. RESILIENT RUBBER CONNECTOR COMPLYING WITH ASTM STANDARD C-923 (MOST RECENT EDITION) SHALL BE USED.
2. CORE-DRILL CIRCULAR OPENING IN STRUCTURE WALL OF DIAMETER NECESSARY TO FIT THE REQUIRED BOOT SIZE.
3. KOR-N-SEAL FLEXIBLE RUBBER BOOT (MANUFACTURED BY NATIONAL POLLUTION CONTROL SYSTEMS, INC.) MAY BE USED IF APPROVED BY VILLAGE ENGINEERING.
4. CUT, SHAPE AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW FROM NEW CONNECTION.
5. CLEAN EXISTING STRUCTURE AND SEWER PIPE OF ANY DIRT, CONCRETE OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.

NOT TO SCALE

**PIPE CONNECTION TO STRUCTURE DETAIL**

REVISED:1-1-20

## STANDARD CATCHBASIN

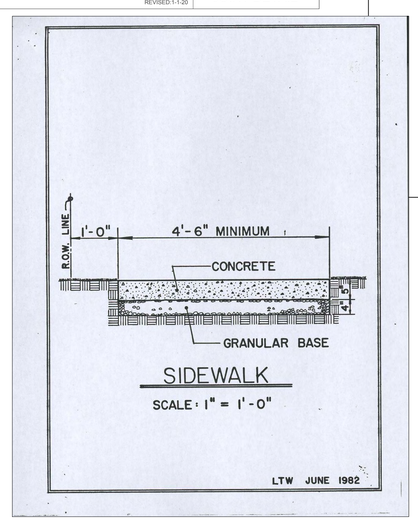



N.T.S.

NOTES:

1. * IT IS REQUIRED THAT PRECAST CONCRETE BASE BE CAST INTEGRAL WITH LOWEST WALL SECTION.
2. PRECAST SECTIONS TO BE JOINED WITH TONGUE AND GROOVE JOINTS WITH MASTIC SEALER.

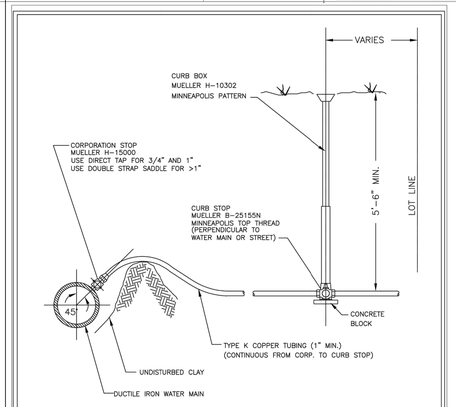
01-05-94 LWU




SIDEWALK

SCALE: 1" = 1'-0"

LTW JUNE 1982




NOTES:

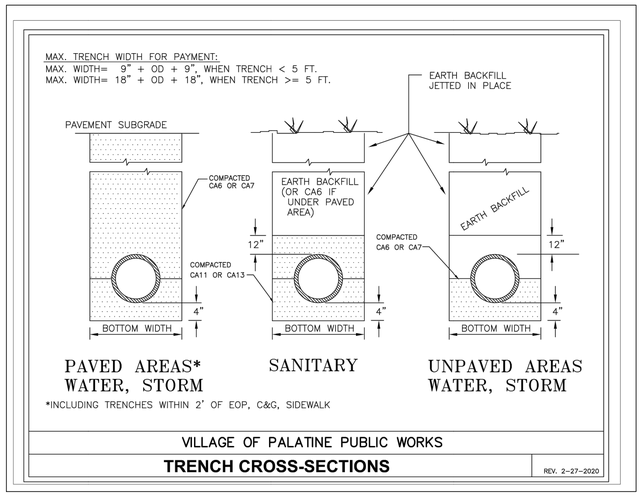
WATER SERVICE LINE SHALL BE IN A SEPARATE TRENCH 10 FT. FROM THE SANITARY SEWER SERVICE LINE OR IN THE SAME TRENCH BUT ON A SHELF 18" ABOVE THE SEWER LINE, IN WHICH CASE THE SEWER PIPE MATERIAL SHALL BE DUCTILE IRON OR SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS.

TAPS TO HDPE WATER MAIN REQUIRE ELECTROFUSION SADDLE
TAPS TO PVC WATER MAIN REQUIRE STAINLESS STEEL TAPPING SLEEVE

VILLAGE OF PALATINE PUBLIC WORKS

**WATER SERVICE**

REV. 2-27-2020




VILLAGE OF PALATINE PUBLIC WORKS

**TRENCH CROSS-SECTIONS**

REV. 2-27-2020

# CURB BOXES - EXTENSION TYPE WITH MINNEAPOLIS PATTERN BASE

Mueller Co. **7.27**

Rev. 8-04

## Dimensions and Optional Stationary Rod

### H-10300, H-10302 and H-10304 Curb boxes

| Curb box catalog number | Box length extended | | Box length fully retracted | | Weight | | Optional stationary rod | |
|---|---|---|---|---|---|---|---|---|
| | Inch | mm | Inch | mm | lbs. | kg. | Part No. | L'gth Inches |
| H-10300 1-1/4" upper section | 24 | 610 | 18.00 | 457.0 | 12.0 | 5.4 | 84774 | 12.75 |
| | 30 | 762 | 18.00 | 457.0 | 14.0 | 6.4 | 84346 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 15.0 | 6.8 | 84275 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 16.0 | 7.3 | 84233 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 17.0 | 7.7 | 84245 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 18.0 | 8.2 | 84247 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 19.0 | 8.6 | 84154 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 20.0 | 9.1 | 84261 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 22.0 | 10.0 | 84341 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 23.0 | 10.4 | 84297 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 24.0 | 10.9 | 84152 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 25.0 | 11.3 | 88703 | 75.0 |
| | 96 | 2438 | 84.00 | 2134.0 | 26.0 | 11.8 | 84274 | 81.0 |
| H-10302 1-1/2" upper section | 24 | 610 | 21.44 | 544.5 | 13.0 | 5.9 | - | - |
| | 30 | 762 | 21.44 | 544.5 | 15.0 | 6.8 | 84742 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 16.0 | 7.3 | 84256 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 17.0 | 7.7 | 84326 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 18.0 | 8.2 | 84305 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 20.0 | 9.1 | 84338 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 21.0 | 9.5 | 84353 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 22.0 | 10.0 | 88702 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 23.0 | 10.4 | 84255 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 25.0 | 11.3 | 85299 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 25.5 | 11.8 | 80643 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 26.3 | 12.2 | 84832 | 75.0 |
| | 96 | 2438 | 84.00 | 2134.0 | 27.0 | 12.7 | 88139 | 81.0 |
| H-10304 2" upper section | 24 | 610 | 21.44 | 544.5 | 21.0 | 9.5 | - | - |
| | 30 | 762 | 21.44 | 544.5 | 23.0 | 10.4 | 84146 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 25.0 | 11.3 | 84162 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 27.0 | 12.2 | 84147 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 28.0 | 12.7 | 84176 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 30.0 | 13.6 | 84139 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 32.0 | 14.5 | 84140 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 34.0 | 15.4 | 84128 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 35.0 | 15.9 | 84143 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 37.0 | 16.8 | 84222 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 39.0 | 17.7 | 84169 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 41.0 | 18.6 | - | - |
| | 96 | 2438 | 84.00 | 2134.0 | 43.0 | 19.5 | - | - |

### H-10312, H-10332, and H-10388 Curb

| Curb box catalog number | Box length extended | | Box length fully retracted | | Weight | | Optional stationary rod* | |
|---|---|---|---|---|---|---|---|---|
| | Inch | mm | Inch | mm | lbs. | kg. | Part Number | Length inches |
| H-10312** H-10332** 1" upper section | 24 | 610 | 18.00 | 320.0 | 9.5 | 4.3 | 84525 | 11.25 |
| | 30 | 762 | 18.00 | 457.0 | 10.0 | 4.5 | 82892 | 16.75 |
| | 36 | 914 | 24.00 | 610.0 | 11.0 | 5.0 | 82862 | 21.00 |
| | 42 | 1067 | 30.00 | 762.0 | 12.0 | 5.4 | 82863 | 27.00 |
| | 48 | 1219 | 36.00 | 914.0 | 14.0 | 6.4 | 82864 | 33.00 |
| | 54 | 1372 | 42.00 | 1067.0 | 15.0 | 6.8 | 82865 | 39.00 |
| | 60 | 1524 | 48.00 | 1219.0 | 16.0 | 7.3 | 82866 | 45.00 |
| | 66 | 1676 | 54.00 | 1372.0 | 17.0 | 7.7 | 82867 | 51.00 |
| | 72 | 1829 | 60.00 | 1524.0 | 18.0 | 8.2 | 82868 | 57.00 |
| | 78 | 1981 | 66.00 | 1676.0 | 19.0 | 8.6 | 82869 | 63.00 |
| | 84 | 2134 | 72.00 | 1829.0 | 20.0 | 9.1 | 82870 | 69.00 |
| | 90 | 2286 | 78.00 | 1981.0 | 21.0 | 9.5 | 82871 | 75.00 |
| | 96 | 2438 | 84.00 | 2134.0 | 22.0 | 10.0 | 82872 | 81.00 |
| H-10388 1-1/4" upper section | 24 | 610 | 18.00 | 305.0 | 9.5 | 4.3 | 84525 | 11.25 |
| | 30 | 762 | 18.00 | 457.0 | 10.0 | 4.5 | 82892 | 16.75 |
| | 36 | 914 | 26.50 | 673.1 | 14.5 | 6.6 | 84275 | 21.00 |
| | 42 | 1067 | 32.50 | 825.5 | 15.5 | 7.0 | 84233 | 27.00 |
| | 48 | 1219 | 38.50 | 977.9 | 16.5 | 7.5 | 84245 | 33.00 |
| | 54 | 1372 | 44.50 | 1130.3 | 17.5 | 7.9 | 84247 | 39.00 |
| | 60 | 1524 | 50.50 | 1282.7 | 18.5 | 8.4 | 84154 | 45.00 |
| | 66 | 1676 | 56.50 | 1435.1 | 19.5 | 8.8 | 84261 | 51.00 |
| | 72 | 1829 | 62.50 | 1587.5 | 21.5 | 9.8 | 84341 | 57.00 |
| | 78 | 1981 | 68.50 | 1739.9 | 22.5 | 10.2 | 84297 | 63.00 |
| | 84 | 2134 | 74.50 | 1892.3 | 23.5 | 10.7 | 84152 | 69.00 |
| | 90 | 2286 | 80.50 | 2044.7 | 24.5 | 11.1 | 88703 | 75.00 |

## Extra lids and plug



| Lid with Plug | Plug only | One piece lid |
|---|---|---|

| Curb box catalog number | One piece lid part number | Quantity per carton | Lid with plug part number | Quantity per carton | Plug part number only |
|---|---|---|---|---|---|
| H-10300 | - | - | 89375 | 10 | 58039 |
| H-10302 | - | - | 89980 | 10 | 58116 |
| H-10304 | - | - | 89981 | 10 | 59478 |
| H-10312 | 89982 | 10 | - | - | - |
| H-10332 | - | - | 89376 | 10 | 36571 |

*Stationary rods are supplied with H-10312 and H-10332 only. Stationary rods are optional with all other boxes within these pages and must be ordered separately.

** The H-10312 and H-10332 are the same except that the H-10312 has a one piece lid and the H-10332 has a combination lid and pentagon plug.

**TO ORDER BOXES SPECIFY EXTENDED LENGTH, SIZE OF MINNEAPOLIS THREAD AND CATALOG NUMBER**

## Optional reducing

| Bushing part number | Bushing size | Minneapolis thread size |
|---|---|---|
| H-10343 | 2"x1-1/2" | 2" |
| | 2-1/2"x1-1/2" | 2-1/2" |
| | 2-1/2"x2" | 2-1/2" |
| | 3-1/2"x3" | 3-1/2" |

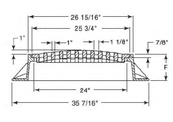
## R-2577 Series
### Inlet Frame, Convex Grate

**Heavy Duty**

| CATALOG NUMBER | GRATE TYPE | SQ. FT. OPEN | WEIR PERIMETER LINEAL FEET |
|---|---|---|---|
| R-2577-Series | S | 1.0 | 8.7 |
| R-2577-Series | C | 1.6 | 8.7 |

Alternate Grate(s):






*Illustrating R-2577-B with Type B Concave Grate*

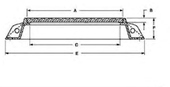
**TYPE B IN GRASS AREAS**

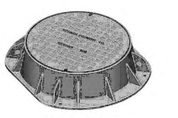
**TYPE C IN PAVEMENT AREAS**

| Catalog No. | F | Frame/Lid |
|---|---|---|
| R-2577 | 7 | R-1733 |
| R-2577-1 | 4 | R-1733-1 |
| R-2577-A | 8 | R-1733-A |
| R-2577-B | 9 | R-1733-B |
| R-2577-C | 10 | R-1733-C |

## R-1740 Series
### Manhole Frame, Solid Lid

**Heavy Duty**



*Illustrating R-1740-B*

Dimensions in inches

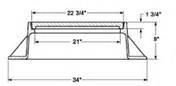
| Catalog No. | A | B | C | E | F | Anchor Bolt Circle * | Grate Alt. |
|---|---|---|---|---|---|---|---|
| R-1740-B | 32 | 1 1/2 | 30 | 46 | 7 | 43 | R-2580-A |
| R-1740-D | 38 | 1 1/2 | 36 | 49 | 10 | 46 | R-2580-C |

* Four 1" diameter anchor holes.

## R-1713
### Manhole Frame, Solid Lid

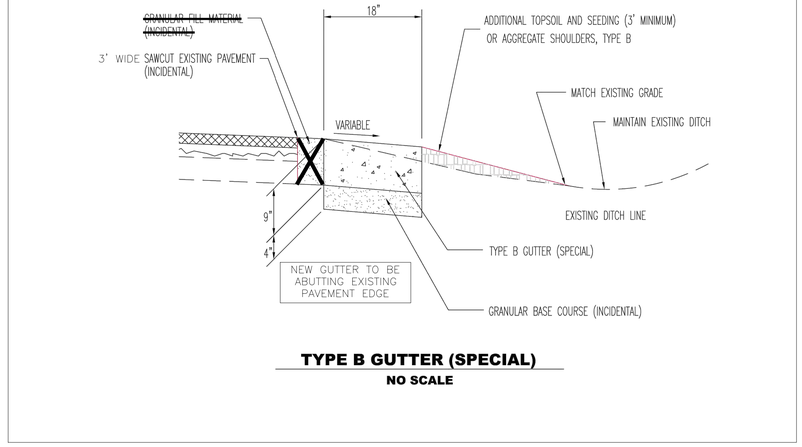
**Heavy Duty**






Available Grate: **R-2504**




**TYPE B GUTTER (SPECIAL)**

**NO SCALE**

| DATE | REVISIONS | ISSUE |
|---|---|---|
| 2-14-20 | PERMIT DRAWINGS | 1 |
| 10-4-20 | REVISED PER VILLAGE COMMENTS | 2 |
| 4-8-21 | REVISED PER VILLAGE COMMENTS | 3 |
| 6-1-22 | REVISED PER VILLAGE COMMENTS | 4 |

PROJECT STAFF

PROJECT MANAGER: B. BONO P.E.
ENGINEER: A. VEERA P.E.
ENGINEER: M. HOFBAUER
TECHNICIAN:

BCI
BONO CONSULTING, INC.
CIVIL ENGINEERS
1018 BUSSE HIGHWAY
PARK RIDGE, IL 60068
PH : (847) 823-3300
FAX: (847) 823-3303
bbono@bonoconsulting.com

# STANDARD DETAILS

## PROPOSED SUBDIVISION OF EXISTING LOTS 1025 & 1037 KENILWORTH AVE., PALATINE, ILLINOIS

NOT FOR CONSTRUCTION

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PROJECT NUMBER: 19459

START DATE: NOV. 22, 2019

GRAPHIC SCALE 0

SCALE: NTS

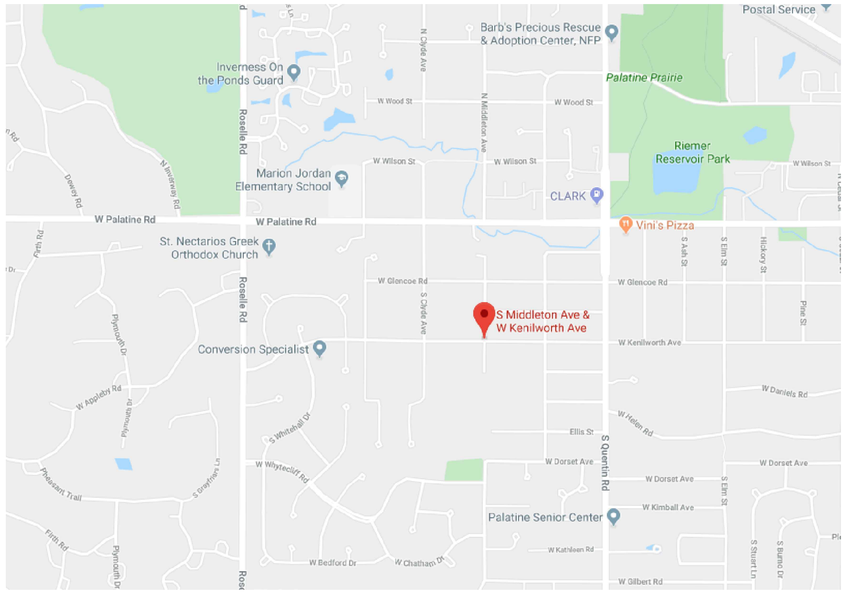
SHEET NUMBER 7 OF 7

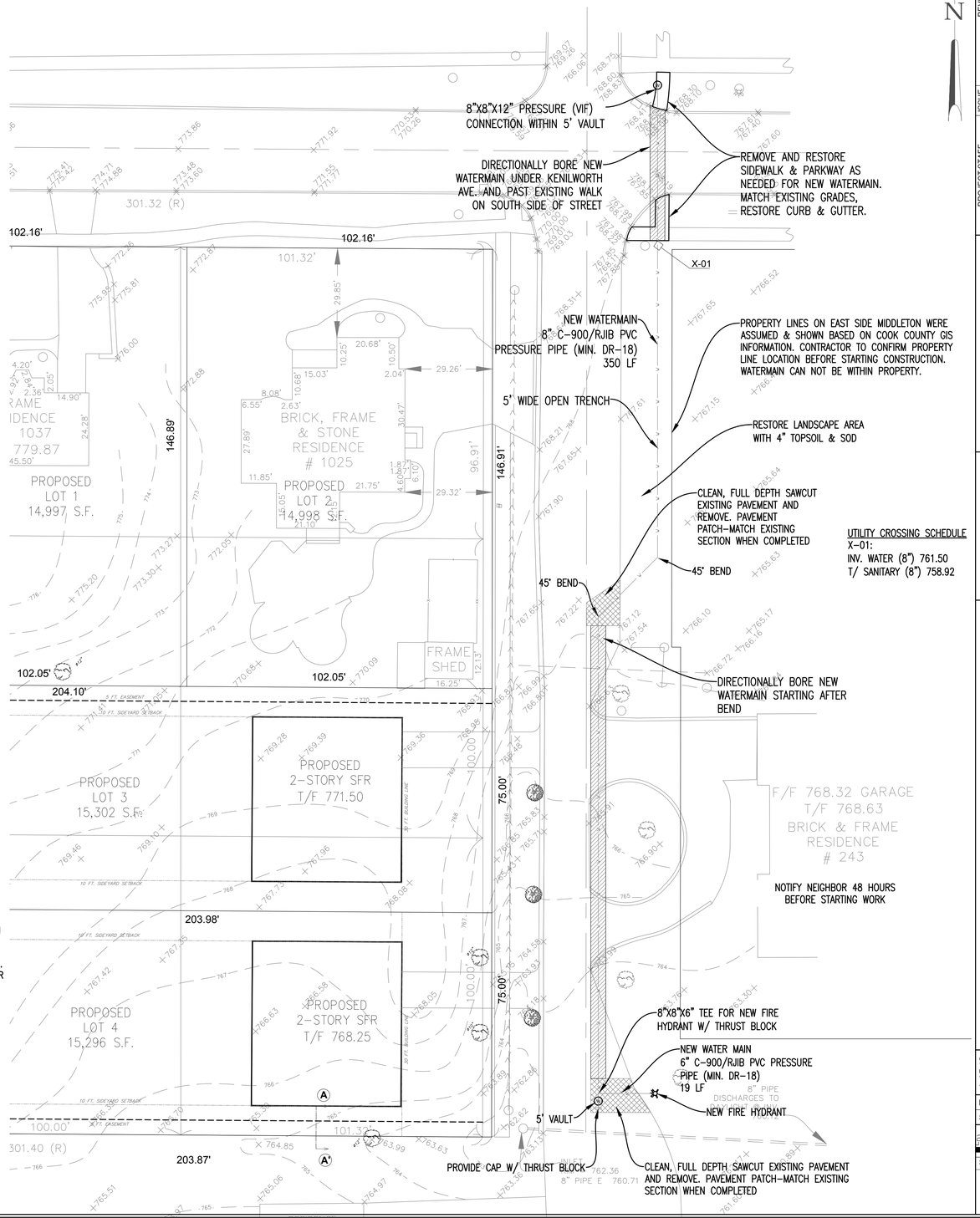
Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Ke

BENCHMARK INFO
JOB BENCH MARK: CROSS CUT AT NE MIDDLETON AVENUE & KENILWORTH AVENUE, ELEV= 768.35
TRANSFERRED FROM VALVE VAULT RIM BENCHMARK AT SE CROSS GLENCOE ROAD & MIDDLETON AVENUE, ELEV = 778.78. FROM SPACE CO JOB 7583

# NEW WATERMAIN EXTENSION PLAN KENILWORTH AVE. & MIDDLETON AVE., PALATINE, COOK COUNTY, IL

## SITE LOCATION MAP




## MURRY AND MOODY, LTD.
*Land Surveyors*

*Illinois Professional Land Surveying Firm Corporation License No. 184-002845*
*933 S. Plum Grove Road, Suite 101*
*Palatine, Illinois 60067*
*www.murrysurvey.com info@murrysurvey.com Phone: (847)358-5960*

## TOPOGRAPHICAL SURVEY
**OF**

PARCEL 1: LOTS 1, 2 AND 3 (EXCEPT THE WEST 200 FEET THEREOF) IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, TOGETHER WITH THE WEST 3 FEET OF MIDDLETON AVENUE, AS VACATED BY DOCUMENT 0733415030, IN COOK COUNTY, ILLINOIS.

PARCEL 2: THE EAST 100 FEET OF THE WEST 200 FEET OF LOTS 1, 2 AND 3 IN BLOCK 5 IN WILLIAM M. ANDERSON AND COMPANY'S PALATINE ACRES, BEING A SUBDIVISION OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 21, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, IN COOK COUNTY, ILLINOIS.

AREA = 29994.82± S.F. / 0.689 ACRES

NOTE

The location of existing underground utilities, such as water mains, sewers, gas lines, etc., as shown on the plans, has been determined from the best available information and is given for the convenience of the Contractor. However, the Owner and the Engineer do not assume responsibility in the event that during construction, utilities other than those shown may be encountered, and that the actual location of those which are shown may be different from the location as shown on the plans.

Bono Consulting, Inc. is not responsible for the safety of any party at or on the construction site. Safety is the sole responsibility of the contractor and any other person or entity performing work or services. Neither the owner nor engineer assumes any responsibility for the job site safety of persons engaged in the work or the means or methods of construction.

Current Standard Specifications of the Judicial Authority shall apply to the construction on this project.

*Note: The exact location of all utilities shall be verified by the contractor prior to construction activities. For utility locations call:*

NOTES TO CONTRACTOR
- ALL TRENCHES OR OTHER EXCAVATIONS IN ANY PARKWAY SHALL BE REFILLED AND THE SOD REMOVED IN MAKING SUCH TRENCHES AND EXCAVATIONS SHALL BE REPLACED OR, AFTER REFILLING THE SAME, THE SURFACE SHALL BE SOWED WITH GRASS SEED OR RE-SODDED AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS AND SHALL BE CARED FOR UNTIL THE SAME IS RESTORED TO AS GOOD CONDITION IN EVERY WAY AS BEFORE THE EXCAVATIONS WERE MADE
- IT SHALL BE THE DUTY OF EVERY PERSON ENGAGED IN DIGGING INTO ANY STREET, IN PAVING ANY STREET, BUILDING ANY SEWER OR DRAIN OR TRENCH FOR WATER PIPES IN ANY OF THE PUBLIC STREETS OR AVENUES UNDER CONTRACT WITH THE VILLAGE, OR BY VIRTUE OF ANY PERMISSION WHICH MAY HAVE BEEN GRANTED TO THEM BY THE BOARD OF TRUSTEES, OR ANY VILLAGE DEPARTMENT, WHERE SUCH WORK, IF LEFT EXPOSED, WOULD BE DANGEROUS, TO ERECT A FENCE, RAILING OR BARRICADE, AND TO PLACE A SUITABLE COVERING WHERE NECESSARY AS DETERMINED BY THE DIRECTOR OF PUBLIC WORKS, AROUND SUCH EXCAVATIONS OR WORK IN SUCH A MANNER AS TO PREVENT DANGER TO PERSONS WHO MAY BE TRAVELING SUCH STREETS, ROADS OR AVENUES AND TO CONTINUE AND UPHOLD SUCH FENCE, RAILING OR BARRICADE UNTIL THE WORK SHALL BE COMPLETED OR THE OBSTRUCTION OR DANGER REMOVED. IT SHALL ALSO BE THE DUTY OF SUCH PERSONS TO PLACE UPON SUCH FENCE, RAILING OR BARRICADE AT TWILIGHT IN THE EVENING SUITABLE AND SUFFICIENT WARNING LIGHTS AND KEEP THEM BURNING THROUGH THE NIGHT DURING THE PERFORMANCE OF SUCH WORK, UNDER THE PENALTY AS PROVIDED IN SECTION 1-1-5 OF THE CODE FOR EVERY NEGLECT. FLARES, LANTERNS, "BOMBS" OR OTHER DEVICES USING A FLAME SHALL NOT BE PERMITTED AS SUITABLE LIGHTS

NOTES ON LANE CLOSURE & WORK WITHIN RIGHT-OF-WAY
- ALL LANE CLOSURE AND WORK WITHIN KENILWORTH AVE. & MIDDLETON AVE. TO FOLLOW IDOT AND MUTCD TRAFFIC CONTROL REQUIREMENTS.
- CONSTRUCTION ACTIVITY TO BE BETWEEN 7 AM TO 6 PM.
- STREETS TO BE OPENED COMPLETELY TO TRAFFIC AFTER WORK HOURS. USE STEEL PLATES AND ASPHALT COLD PATCHING OVER TRENCHES FOR ANY WORK THAT NEEDS TO BE CONTINUED TO THE NEXT DAY.

LICENSED PROFESSIONAL ENGINEER
WILLIAM A. HEPBURN
062-073376
OF ILLINOIS

6-2-22 EXP. 11-30-23

| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | W. HEPBURN, P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | A. WEER P.E. | 2 | REVISED PER VILLAGE COMMENTS | 6-2-22 |
| ENGINEER: | | | | |
| TECHNICIAN: | | | | |

BCI
BONO CONSULTING, INC.
CIVIL ENGINEERS
1918 BUSSE HIGHWAY PH : (847) 823-3300
PARK RIDGE, IL 60068 FAX: (847) 823-3303
bbono@bonoconsulting.com

## PROPOSED WATERMAIN PLAN
NEW WATERMAIN EXTENSION
KENILWORTH AVE. & MIDDLETON AVE., PALATINE, ILLINOIS

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PROJECT NUMBER: 19459
START DATE: DEC. 16, 2019
GRAPHIC SCALE
20 0 20
SCALE: 1"=20'-0

SHEET NUMBER
1 OF 5

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

IEPA NOTES:
Sewers crossing water mains shall be laid to meet the following specifications:

1. Horizontal Separation:
   A. Whenever possible, a water main must be laid at least ten feet horizontally from any existing or proposed drain or sewer line.
   B. Should local conditions exist which would prevent a lateral separation of ten feet, a water main may be laid closer than ten feet to a storm or sanitary sewer provided that the water main invert is at least eighteen inches above the crown of the sewer, and is either in a separate trench or in the same trench on an undisturbed earth shelf located to one side of the sewer.
   C. If it is impossible to obtain proper horizontal and vertical separation as described in 1 and 2 above, both the water main and sewer must be constructed of pipe material which would conform to water main standards and be pressure tested to assure water tightness before backfilling.
2. Vertical Separation:

- Whenever water mains cross house sewers, storm drains or sanitary sewers, the water main shall be laid at such an elevation that the invert of the water main is eighteen inches above the crown of the drain or sewer. This vertical separation must be maintained for that portion of the water main located within ten feet horizontally of any sewer or drain crossed. This must be measured as the normal distance from the water main to the drain or sewer.
- Where conditions exist that the minimum vertical separation set forth in 1 above cannot be maintained, or it is necessary for the water main to pass under a sewer or drain, one of the following two measures must be taken:

•A. The water main shall be installed within a PVC carrier pipe and the carrier pipe shall extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten (10) feet.
•B. The involved sewer or drain shall be constructed of pipe material which would conform to water main standards until the normal distance from the water main to the sewer is at least ten (10) feet.

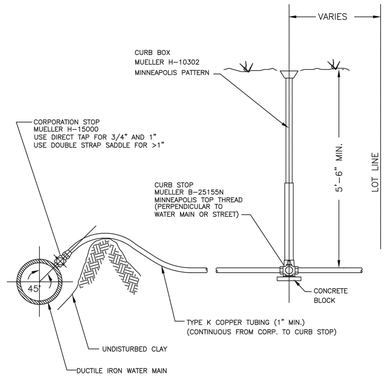
3. In making such crossings, center a length of water main pipe over the sewer to be crossed so that the joints will be equidistant from the sewer and as remote there from as possible. Where a water main must cross under a sewer, a vertical separation of eighteen inches between the invert of the sewer and the crown of the water main shall be maintained, along with means to support the larger sized sewer lines to prevent their settling and breaking the water main. The horizontal and vertical separation between water service lines and all sanitary sewers, storm sewers, or any drain should be the same as for water mains, as detailed above, except that when minimum horizontal and vertical separation cannot be maintained, water pipe as described under Vertical Separation above, may be used for sewer service lines.

DEMOLITION NOTES

1. Install temporary tree protection fencing prior to any demolition work.
2. Protect trenches during excavation or Install temporary 6' high chain link fence around the proposed work area as shown on the drawing.
3. Contractor to call JULIE at 1-800-892-0123. minimum of 48 hours prior to initiating any excavation or demolition.
4. Contractor shall verify the exact elevation and location of all existing utilities and appurtenances prior to construction, to avoid interferences.
5. Appropriate precautions shall be taken to avoid damage to and to protect existing utilities and appurtenances in the vicinity of work. Contractor shall be responsible for the protection of all underground or overhead utilities even though they may not be shown on the plans. any utility that is damaged during construction shall be repaired to the satisfaction of the Village and the owner, or replaced.
6. Any open excavations, or potentially dangerous areas shall be fenced or guarded in an acceptable manner at the end of each day for the protection of the contractor's employees and general public safety.
7. Bono Consulting Inc is not liable for any construction site safety. Contractor to take all OSHA regulated and applicable local safety precautions to safe guard all potentially hazard sites/work.
8. Contractor is responsible for keeping roads free of excessive debris at all times.
9. Any soil, mud or debris that is washed, tracked, or deposited onto the street shall be removed before the end of each day.
10. Topographic survey by Murry & Moody, Ltd.
11. All excavation shall be tapered, or, shored and maintained pumped dry.
12. Do not create dust or other nuisance to neighboring properties during construction
13. "No trespassing" signs shall be mounted on the fencing in conspicuous locations until construction is completed and approved

**WATER SYSTEM NOTES**

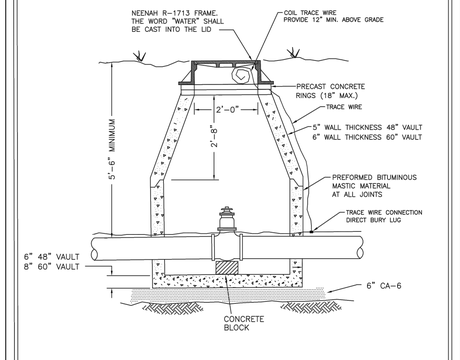
1. All watermains/services and water services shall have a minimum cover of 5 1/2 feet.
2. ~~Watermains shall be Ductile Iron Pipe, Class 52 conforming to ANSI A21.51 or AWWA C151. Gaskets and cast iron fittings shall conform to ANSI A21.11 or AWWA C-110 or C-111. Watermain shall be cement lined in accordance with ANSI A21.4 or AWWA C-104.~~
3. Water services 2 1/2 inch diameter or smaller shall be Type "K" copper. Compression fittings shall be used to connect new copper pipe to existing service pipe. ~~Water services 3 inch diameter or larger shall be Class 52, Ductile Iron Pipe.~~
4. All new watermain and services 3 inches or larger shall be pressure tested (2 hours - 150 psi) and chlorinated per Village and IEPA requirements. The installation, testing, chlorination and sterilization of all water mains and services shall be performed in accordance with the 'Standard Specifications for Water and Sewer Main Construction" and Village standards. **A Village inspector MUST be present for testing and chlorination**. AWWA Sections C-600-77 and C-601 shall apply.
5. All watermain shall be bedded with compacted granular CA-6 material with minimum thickness equal to 1/4 the outside diameter of the pipe, but not less than 4 inches.
6. **Existing water valves shall not be opened/closed without permission of the Village.**
7. Joints between precast elements, adjusting rings and frames shall be sealed with Butyl Rubber Joint Sealer.
8. Thrust blocking shall be installed on watermains at all bends, tees, elbows, offsets, etc.
9. The Village Water Department should be contacted for installation questions and/or final inspection of the watermain.
10. The contractor is responsible for verifying the location of all existing utilities prior to the start of work and will be responsible for any damage to same.
11. Damaged parkway or lawn areas shall be restored with 4 inches of topsoil and sod.
12. No "hot taping" is allowed to PVC water main.
13. All service taps are required to have a full stainless steel taping clamp (Ford Stainless Steel Saddles Style FS300 or an approved equal).
14. No plastic, PVC ABS bends, T's, crosses or valves are allowed in system.
15. 12 AWG Tracer Wire is required for watermain installation.




NOTES:
WATER SERVICE LINE SHALL BE IN A SEPARATE TRENCH 10 FT. FROM THE SANITARY SEWER SERVICE LINE OR IN THE SAME TRENCH BUT ON A SHELF 18" ABOVE THE SEWER LINE, IN WHICH CASE THE SEWER PIPE MATERIAL SHALL BE DUCTILE IRON OR SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS.

TAPS TO HDPE WATER MAIN REQUIRE ELECTROFUSION SADDLE
TAPS TO PVC WATER MAIN REQUIRE STAINLESS STEEL TAPPING SLEEVE

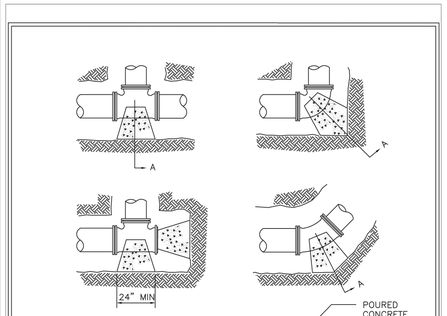
VILLAGE OF PALATINE PUBLIC WORKS
**WATER SERVICE** REV. 2-27-2020




INSIDE DIAMETER SHALL BE 48" FOR WATER MAIN 8" AND SMALLER
AND 60" FOR WATER MAIN 10" AND LARGER AND FOR PRESSURE CONNECTIONS

VALVES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING
TO AWWA C509 AND SHALL BE MUELLER OR EJ

VILLAGE OF PALATINE PUBLIC WORKS
**WATER VALVE VAULT** REV. 2-27-2020

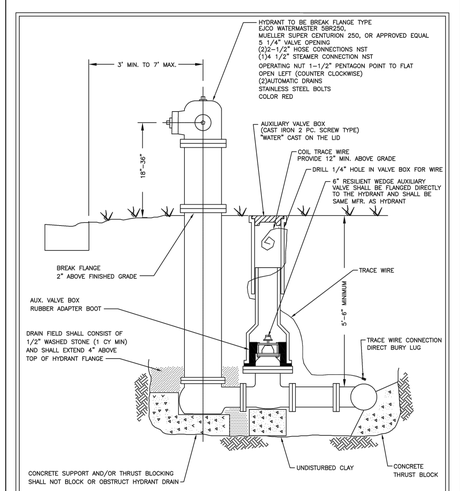



MINIMUM SQ. FT. AREA OF VERTICAL CROSS SECTION AGAINST 2000 PSF UNDISTURBED EARTH

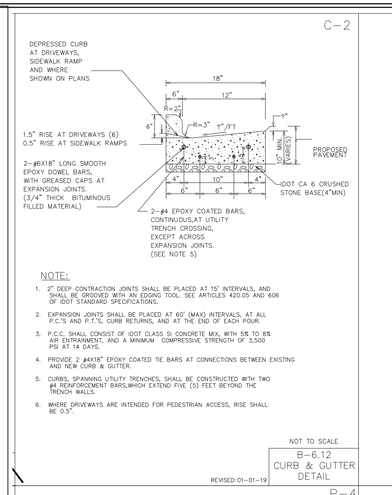
| | 6" | 8" | 10" | 12" |
|---|---|---|---|---|
| 90° BEND | 5.5 | 9.4 | 15.4 | 21.8 |
| 45° BEND | 3.0 | 5.1 | 8.4 | 11.9 |
| 22.5° BEND | 1.5 | 2.6 | 4.3 | 6.1 |
| 11.25° BEND | 1.5 | 2.6 | 4.3 | 6.1 |
| TEE | 3.9 | 6.7 | 10.9 | 15.5 |

THRUST BLOCKING TO PREVENT MOVEMENT OF LINES UNDER PRESSURE AT BENDS, TEES, CAPS, VALVES, HYDRANTS AND AT POINTS SPECIFIED BY THE ENGINEER SHALL BE CLASS "X" CONCRETE, A MINIMUM OF 12" THICK, PLACED BETWEEN SOLID GROUND AND FITTING, AND SHALL BE ANCHORED IN SUCH A MANNER THAT PIPE AND FITTING WILL BE ACCESSIBLE FOR REPAIRS. THRUST BLOCKS SHALL BE PLACED AT BENDS OF 11-1/4 DEGREES OR MORE. RETAINER GLANDS MAY BE USED IN PLACE OF THRUST BLOCKS. THE COST OF THRUST BLOCKS OR RETAINER GLANDS SHALL BE INCLUDED IN THE COST OF THE FITTING.

VILLAGE OF PALATINE PUBLIC WORKS
**THRUST BLOCK INSTALLATION** REV. 2-27-2020

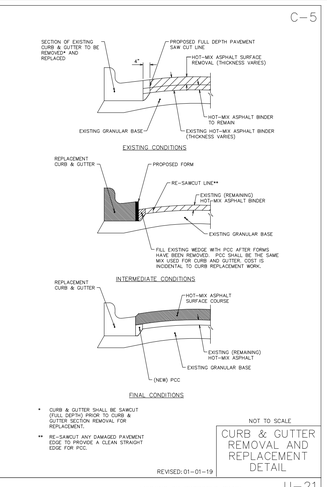



VILLAGE OF PALATINE PUBLIC WORKS
**FIRE HYDRANT** REV. 2-27-2020



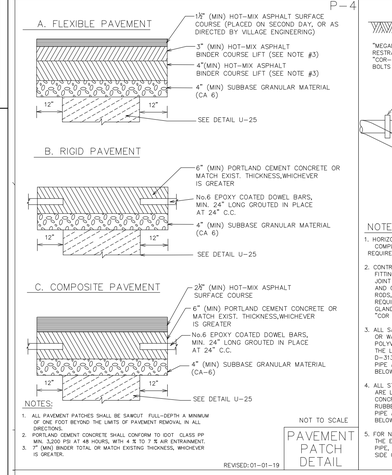

NOTE:
1. 2" DEEP CONTRACTION JOINTS SHALL BE PLACED AT 15' INTERVALS, AND SHALL BE GROOVED WITH AN EDGING TOOL. SEE ARTICLES 420.05 AND 606 OF IDOT STANDARD SPECIFICATIONS.
2. EXPANSION JOINTS SHALL BE PLACED AT 60' (MAX) INTERVALS, AT ALL P.C.'S AND P.T.'S, CURB RETURNS, AND AT THE END OF EACH POUR.
3. P.C.C. SHALL CONSIST OF IDOT CLASS 'S' CONCRETE MIX, WITH 5% TO 8% AIR ENTRAINMENT, AND A MINIMUM COMPRESSIVE STRENGTH OF 3,500 PSI AT 14 DAYS.
4. PROVIDE 2 #4X18" EPOXY COATED TIE BARS AT CONNECTIONS BETWEEN EXISTING AND NEW CURB & GUTTER.
5. CURBS, SPANNING UTILITY TRENCHES, SHALL BE CONSTRUCTED WITH TWO #4 REINFORCEMENT BARS,WHICH EXTEND FIVE (5) FEET BEYOND THE TRENCH WALLS.
6. WHERE DRIVEWAYS ARE INTENDED FOR PEDESTRIAN ACCESS, RISE SHALL BE 0.5"

NOT TO SCALE
B-6.12
CURB & GUTTER
DETAIL
REVISED: 01-01-19



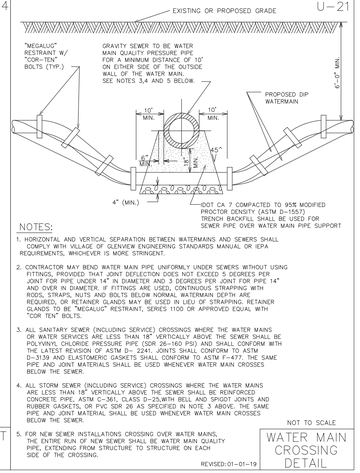

* CURB & GUTTER SHALL BE SAWCUT (FULL DEPTH) PRIOR TO CURB & GUTTER SECTION REMOVAL FOR REPLACEMENT.
** RE-SAWCUT ANY DAMAGED PAVEMENT EDGE TO PROVIDE A CLEAN STRAIGHT EDGE FOR PCC.

NOT TO SCALE
CURB & GUTTER
REMOVAL AND
REPLACEMENT
DETAIL
REVISED: 01-01-19




NOTES:
1. ALL PAVEMENT PATCHES SHALL BE SAWCUT FULL-DEPTH A MINIMUM OF ONE FOOT BEYOND THE LIMITS OF PAVEMENT REMOVAL IN ALL DIRECTIONS.
2. PORTLAND CEMENT CONCRETE SHALL CONFORM TO IDOT CLASS PP MIN. 3,200 PSI AT 48 HOURS, WITH 4 % TO 7 % AIR ENTRAINMENT.
3. 7" (MIN) BINDER TOTAL OR MATCH EXISTING THICKNESS, WHICHEVER IS GREATER.

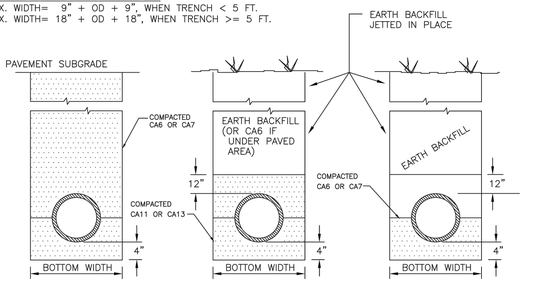
NOT TO SCALE
PAVEMENT
PATCH
DETAIL
REVISED: 01-01-19




NOTES:
1. HORIZONTAL AND VERTICAL SEPARATION BETWEEN WATERMAINS AND SEWERS SHALL COMPLY WITH VILLAGE OF GLENVIEW ENGINEERING STANDARDS MANUAL OR IEPA REQUIREMENTS, WHICHEVER IS MORE STRINGENT.
2. CONTRACTOR MAY BEND WATER MAIN PIPE UNIFORMLY UNDER SEWERS WITHOUT USING FITTINGS, PROVIDED THAT JOINT DEFLECTION DOES NOT EXCEED 5 DEGREES PER JOINT FOR PIPE UNDER 14" IN DIAMETER AND 3 DEGREES PER JOINT FOR PIPE 14" AND OVER IN DIAMETER. IF FITTINGS ARE USED, CONTINUOUS STRAPPING WITH RODS, STRAPS, NUTS AND BOLTS BELOW NORMAL WATERMAIN DEPTH ARE REQUIRED, OR RETAINER GLANDS MAY BE USED IN LIEU OF STRAPPING. RETAINER GLANDS TO BE "MEGALUG" RESTRAINT, SERIES 1100 OR APPROVED EQUAL WITH "COR TEN" BOLTS.
3. ALL SANITARY SEWER (INCLUDING SERVICE) CROSSINGS WHERE THE WATER MAINS OR WATER SERVICES ARE LESS THAN 18" VERTICALLY ABOVE THE SEWER SHALL BE POLYVINYL CHLORIDE PRESSURE PIPE (SDR 26-160 PSI) AND SHALL CONFORM WITH THE LATEST REVISION OF ASTM D- 2241. JOINTS SHALL CONFORM TO ASTM D-3139 AND ELASTOMERIC GASKETS SHALL CONFORM TO ASTM F-477. THE SAME PIPE AND JOINT MATERIALS SHALL BE USED WHENEVER WATER MAIN CROSSES BELOW THE SEWER.
4. ALL STORM SEWER (INCLUDING SERVICE) CROSSINGS WHERE THE WATER MAINS ARE LESS THAN 18" VERTICALLY ABOVE THE SEWER SHALL BE REINFORCED CONCRETE PIPE, ASTM C-361, CLASS D-25,WITH BELL AND SPIGOT JOINTS AND RUBBER GASKETS, OR PVC SDR 26 AS SPECIFIED IN NOTE 3 ABOVE. THE SAME PIPE AND JOINT MATERIAL SHALL BE USED WHENEVER WATER MAIN CROSSES BELOW THE SEWER.
5. FOR NEW SEWER INSTALLATIONS CROSSING OVER WATER MAINS, THE ENTIRE RUN OF NEW SEWER SHALL BE WATER MAIN QUALITY PIPE, EXTENDING FROM STRUCTURE TO STRUCTURE ON EACH SIDE OF THE CROSSING.

NOT TO SCALE
WATER MAIN
CROSSING
DETAIL
REVISED: 01-01-19

MAX. TRENCH WIDTH FOR PAYMENT:
MAX. WIDTH= 9" + OD + 9", WHEN TRENCH < 5 FT.
MAX. WIDTH= 18" + OD + 18", WHEN TRENCH >= 5 FT.




PAVED AREAS* WATER, STORM | SANITARY | UNPAVED AREAS WATER, STORM

*INCLUDING TRENCHES WITHIN 2' OF EOP, C&G, SIDEWALK

VILLAGE OF PALATINE PUBLIC WORKS
**TRENCH CROSS-SECTIONS** REV. 2-27-2020

| REVISIONS | ISSUE | DATE |
|---|---|---|
| PERMIT DRAWINGS | 1 | 2-14-20 |
| REVISED PER VILLAGE COMMENTS | 2 | 6-2-20 |

PROJECT STAFF
PROJECT MANAGER: W. HEFFERN P.E.
ENGINEER: A. VEER P.E.
ENGINEER:
TECHNICIAN:

BCI
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CIVIL ENGINEERS
1018 BUSSE HIGHWAY PH : (847) 823-3000
PARK RIDGE, IL 60068 FAX: (847) 823-3003
bono@bonoconsulting.com

# STANDARD NOTES & DETAILS

NEW WATERMAIN EXTENSION
KENILWORTH AVE. & MIDDLETON AVE., PALATINE, ILLINOIS

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PROJECT NUMBER: 19459
START DATE: DEC. 16, 2019
GRAPHIC SCALE
10 0 10
SCALE: 1"=10'-0

SHEET NUMBER
2 OF 5

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W

North American Pipe Corporation.

MUNICIPAL

PRODUCT SPECIFICATION

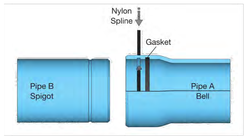
## C900/RJIB Certa-Lok® with Fluid-Tite® Gasket PVC Pressure Pipe
**RESTRAINED JOINT INTEGRAL BELL**

North American Pipe Corporation's C900/RJIB Certa-Lok® PVC Pressure Pipe is manufactured to meet the demands of today's municipal needs for water and wastewater pressure applications. This unique integral bell restrained joint pipe system is designed for trenchless applications with robust tensile strength for pulling multiple segments underground. The smooth curve at the bell specifically reduces friction and allows for quick and easy assembly without interrupting the pulling process.

A segmented PVC pipe solution, this product reduces the jobsite footprint and minimizes community disruption with a reduced need for jobsite staging area and traffic control. The Fluid-Tite® gasket offered in sizes 6" through 12" has a superior sealing surface for a leak-free joint and greater deflection capability.



**INSTALLATION METHODS**
- Horizontal directional drilling (HDD)
- Static pipe-bursting
- Open-cut
- Carrier pipe inside casing




| Applications | Potable Water | Waste-water | Reclaimed Water |
|---|---|---|---|
| **Color:** | Blue | Green | Purple |
| **Certifications**:** | NSF 14<br>NSF 61<br>FM 1612†<br>UL 1285 | None | None |

NSF *Only products bearing the NSF Mark are Certified* UL FM APPROVED

**Short Form Specification**

| | |
|---|---|
| **Pipe Standard:** | C900 |
| **Diameter Std.:** | Cast Iron Outside Diameter (CIOD) |
| **Nominal Sizes:** | 6", 8", 10", 12" |
| **Dimension Ratios & Pressure Ratings:** | DR 18 – 235 psi (185 psi)†<br>DR 14 – 305 psi (250 psi)† |
| **Standard Lay Length:** | 10'* & 20' |
| **Pipe Compound:** | ASTM D1784 Cell Class 12454 |
| **Pipe Joint Std.:** | ASTM D3139 |
| **Max. Angular Joint Deflection:‡** | 0.5° |
| **Gasket Standard:** | ASTM F477, UL 157 |
| **Gasket Material Offering:** | IR/SBR |
| **Installation Std.:** | AWWA C605 |

** 10' Lengths are not hydrotested.*
***See Certification Letter for full explanation and list of exceptions.*
*†FM 1612 calculates pressure ratings differently than AWWA with DR 18 as 185 psi and DR 14 as 250 psi.*
*‡See Installation Guide for more information.*

Certa-Lok

make the connection™

**NorthAmericanPipe.com**
**1.855.624.7473** MU-PS-008 0817
North American Pipe Corporation, a Westlake company
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North American Pipe Corporation.

MUNICIPAL

PRODUCT SPECIFICATION

## C900/RJIB Certa-Lok® with Fluid-Tite® Gasket PVC Pressure Pipe
**RESTRAINED JOINT INTEGRAL BELL**

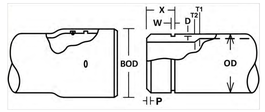
**C900/RJIB CERTA-LOK® PIPE DIMENSIONS**

| Nom. Size | Outside Diameter (OD) | DR | Pipe: Min. Wall Thickness (T1) | Pipe: Flow Internal Diameter (ID) | X | W | D | P | BOD | Weight (lb/ft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6" | 6.900 | 18 | 0.383 | 6.134 | 3.000 | 0.500 | 0.145 | 0.271 | 7.816 | 5.3 |
| | | 14 | 0.493 | 5.914 | | | | | 8.030 | 6.6 |
| 8" | 9.050 | 18 | 0.503 | 8.044 | 3.163 | 0.500 | 0.145 | 0.634 | 10.262 | 9.1 |
| | | 14 | 0.646 | 7.758 | | | | | 10.542 | 11.5 |
| 10" | 11.100 | 18 | 0.617 | 9.866 | 3.625 | 0.750 | 0.215 | 0.634 | 12.781 | 13.7 |
| | | 14 | 0.793 | 9.514 | | | | | 13.177 | 17.3 |
| 12" | 13.200 | 18 | 0.733 | 11.734 | 3.625 | 0.750 | 0.215 | 0.634 | 15.247 | 19.4 |
| | | 14 | 0.943 | 11.314 | | | | | 15.681 | 24.5 |

Notes:
1. These dimensions are for estimating purposes only. All dimensions are in inches unless otherwise specified.
2. DR = Dimension Ratio
3. AWWA Pressure Class @ 73°F and includes 2:1 safety factor.
4. Maximum Pull Force based on actual testing and includes 2:1 safety factor.
5. Internal diameter calculated using nominal outside diameter and minimum wall thickness.
6. Pipe spigot has thickened wall to provide additional joint strength. Ask us for assistance with mandrel sizing if needed.

**JOINT PERFORMANCE DATA**

| Nom. Size | DR | Pressure Class (psi) | Min. Bend Radius (ft) | Max. Pull Force (lbf) |
|---|---|---|---|---|
| 6" | 18 | 235 | 144 | 20,100 |
| | 14 | 305 | | 22,300 |
| 8" | 18 | 235 | 188 | 27,500 |
| | 14 | 305 | | 31,000 |
| 10" | 18 | 235 | 232 | 49,500 |
| | 14 | 305 | | 52,600 |
| 12" | 18 | 235 | 275 | 60,000 |
| | 14 | 305 | | 60,000 |




Certa-Lok

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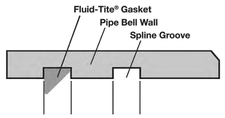
PRODUCT SPECIFICATION

## C900/RJIB Certa-Lok® with Fluid-Tite® Gasket PVC Pressure Pipe
**RESTRAINED JOINT INTEGRAL BELL**

**C900/RJIB CERTA-LOK® ACCESSORIES**

| Application | Nom. Size | Splines: Material | Splines: Size | Splines: Length | Splines: Part Number | Gaskets: Material | Gaskets: Shape | Gaskets: Size | Gaskets: Part Number |
|---|---|---|---|---|---|---|---|---|---|
| Standard | 6" | Nylon | 0.250x0.375 | 24 | S0624TN0 | IR/SBR | Profile | N/A | GSPR000600 |
| | 8" | Nylon | 0.250x0.375 | 32 | S0832TN0 | IR/SBR | Profile | N/A | GSPR000800 |
| | 10" | Nylon | 0.375x0.625 | 39 | S1039TN0 | IR/SBR | Profile | N/A | GSPR001000 |
| | 12" | Nylon | 0.375x0.625 | 46 | S1246TN0 | IR/SBR | Profile | N/A | GSPR001200 |

**6" THROUGH 12" C900/RJIB BELL DETAIL:**




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| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | W. HEFFERN, P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | | | | |
| ENGINEER: | A. VEER P.E. | 2 | REVISED PER VILLAGE COMMENTS | 6-2-22 |
| TECHNICIAN: | | | | |

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bono@bonoconsulting.com

# DETAILS

NEW WATERMAIN EXTENSION
KENILWORTH AVE. & MIDDLETON AVE., PALATINE, ILLINOIS

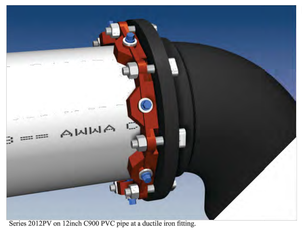
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PROJECT NUMBER: 19459
START DATE: DEC. 16, 2019
GRAPHIC SCALE 10 0 10
SCALE: 1"=10'-0"
SHEET NUMBER 3 OF 5

Attachment: 1025 & 1037 W Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

EBAA IRON INC

# Series 2000PV
Mechanical Joint Restraint for PVC Pipe



Series 2012PV on 12inch C900 PVC pipe at a ductile iron fitting.

**Features and Applications:**
- For restraining plain end PVC pipe at mechanical joint fittings and appurtenances
- Sizes 3 inch through 36 inch
  Sizes 42 inch through 54 inch
  accommodated by Series 2200
- MEGA-BOND® Restraint Coating System
  For more information on MEGA-BOND, refer to www.ebaa.com
- Constructed of ASTM A536 Ductile Iron
- The mechanical joint follower gland is incorporated into the restraint
- Accommodates full deflection of the mechanical joint on which it is used
- Heavy duty thick wall design
- Support Products Available:
  - Split mechanical Joint style available for 3 inch through 12 inch
    EBAA Series 2000SV
  - Solid restraint ring harness available for C900-16 PVC pipe bells
    EBAA Series 2800
  - Split restraint ring harness available for C900-16 PVC pipe bells and PVC fittings
    EBAA Series 1500, 1600 and 2500
- All 2000PV and related restraint products can be furnished as packaged accessories complete with appropriate restraint, gasket, lubrication and bolting hardware

| Nominal Pipe Size | Series Number | Shipping Weight |
|---|---|---|
| 3 | 2003PV | 7.0 |
| 4 | 2004PV | 8.8 |
| 6 | 2006PV | 12.1 |
| 8 | 2008PV | 16.3 |
| 10 | 2010PV | 26.0 |
| 12 | 2012PV | 31.4 |
| 14 | 2014PV | 47.6 |
| 16 | 2016PV | 52.8 |
| 18 | 2018PV | 61.8 |
| 20 | 2020PV | 70.9 |
| 24 | 2024PV | 92.9 |
| 30 | 2030PV | 128.5 |
| 36 | 2036PV | 161.3 |
| 42 | 2242* | 652.0 |
| 48 | 2248* | 711.1 |
| 54 | 2254* | 1,085.6 |

*Restraint for pipe size 42 inch and greater, please refer to Series 2200 Brochure found at www.ebaa.com.

U.S. Patent No.
4627775 4896903 5071175

For use on water or wastewater pipelines subject to hydrostatic pressure and tested in accordance with either AWWA C600 or ASTM D2774.

0218 - 2.5 - W

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## Mechanical Joint Restraint for AWWA PVC Pipe Sample Specification
(The text of the specification below can be downloaded as a Microsoft® Word Doc from our website www.ebaa.com)

Restraint devices for mechanical joint fittings and appurtenances conforming to either ANSI/AWWA C111/A21.11 or ANSI/AWWA C153/A2153, shall conform to the follow:

**Design**
Restraint devices for nominal pipe sizes 3 inch through 36 inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.
The devices shall have a working pressure rating equal to that found in the most current product brochure. Ratings are for water pressure and must include a minimum safety factor of 2:1 in all sizes.

**Material**
Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536. Gland body in sizes 30 inch anr larger shall be cast from grade 70-50-05.

Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) Specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis.

**Traceability**
An identification number consisting of year, day, plant and shift (YYDDD) (plant designation) (Shift number), shall be cast into each gland body.
All physical and chemical test results shall be recorded such that they can be accessed via the identification number on the casting. These Material Traceability Records (MTR's) are to be made available, in hard copy, to the purchaser that requests such documentation and submits his gland body identification number.
Production pieces that are too small to accommodate individual numbering, such as fasteners and wedges, shall be controlled in segregate inventory until such time as all quality control tests are passed. These component parts may then be released to a general inventory for final assembly and packaging.
All components shall be manufactured and assembled in the United States. The purchaser shall, with reasonable notice, have the right to plant visitation at his/her expense.

**Installation**
Mechanical joint restraint shall require conventional tools and installation procedures per AWWA C600, while retaining full mechanical joint deflection during assembly.
Proper actuation of the gripping wedges shall be ensured with torque limiting twist off nuts.

**Approvals**
Mechanical Joint Restraints shall be Listed by Underwriters Laboratories in the 4 inch through 12 inch sizes.
Mechanical Joint Restraints shall be Factory Mutual Approved in the 4 inch through 12 inch sizes.
Mechanical Joint Restraints, 4 inch through 24 inch, shall meet or exceed the requirements of ASTM F1674 of the latest revision.
Mechanical joint restraint shall be Series 2000PV produced by EBAA Iron Inc. or approved equal.

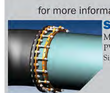
**MEGA-BOND®** Restraint Coating System
All wedge assemblies and related parts shall be processed through a phosphate wash, rinse and drying operation prior to coating application. The coating shall consist of a minimum of two coats of liquid thermoset epoxy coating with heat cure to follow each coat.

All casting bodies shall be surface pretreated with a phosphate wash, rinse and sealer before drying. The coating shall be electrostatically applied and heat cured. The coating shall be a polyester based powder to provide corrosion, impact and UV resistance.

The coating system shall be MEGA-BOND by EBAA Iron, Inc. or approved equal. Requests for approved equal must submit coating material and process details for review prior to bid.

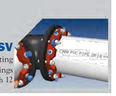
For more information regarding MEGA-BOND, refer to the MEGA-BOND brochure or visit www.ebaa.com.

**Support Products**
for more information concerning these products, please consult the catalog or www.ebaa.com

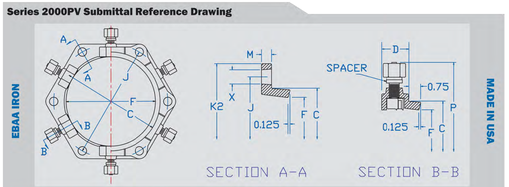

**Series 2200**
MEGALUG® Restraint for C900-16 PVC Pipe at Mechanical Joint Fittings
Sizes 30 and 48 inch


**Series 2500**
MEGALUG® Restraint for C900-16 PVC Pipe at PVC Fittings
Sizes 4 inch through 48


**Series 2800**
MEGALUG® Restraint Harness for C900-16 PVC Pipe
Sizes 14 inch through 48
Sizes 4 through 12 accommodated by either Series 1500 or 1600


**Series 2000SV**
Split MEGALUG® Restraint for existing C900 PVC Pipe at Ductile Iron Fittings
Sizes 4 inch through 12

**Series 2000PV Submittal Reference Drawing**




**Submittal Reference Drawing Dimensions (in.)**

| Nominal Pipe Size | Series Number | C | D | F | M | P | P1 | X | J | K2 | Wedge Qty | Bolt Qty | Weight (lbs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2003PV | 4.84 | 1.55 | 3.60 | 0.50 | 9.8 | 8.6 | ¾ | 6.19 | 7.69 | 4 | 4 | 7.0 |
| 4 | 2004PV | 5.92 | 1.68 | 4.90 | 0.50 | 10.5 | 9.5 | ⅞ | 7.50 | 9.13 | 4 | 4 | 8.8 |
| 6 | 2006PV | 8.02 | 1.68 | 7.00 | 0.50 | 13.0 | 12.1 | ⅞ | 9.50 | 11.13 | 6 | 6 | 12.1 |
| 8 | 2008PV | 10.17 | 1.68 | 9.15 | 0.62 | 14.5 | 13.6 | ⅞ | 11.75 | 13.38 | 6 | 6 | 16.3 |
| 10 | 2010PV | 12.22 | 2.10 | 11.20 | 0.62 | 17.0 | 16.0 | ⅞ | 14.00 | 15.63 | 8 | 8 | 26.0 |
| 12 | 2012PV | 14.32 | 2.10 | 13.30 | 0.75 | 19.0 | 18.1 | ⅞ | 16.25 | 17.88 | 8 | 8 | 31.4 |
| 14 | 2014PV | 16.40 | 2.25 | 15.49 | 0.88 | 21.7 | 20.9 | ⅞ | 18.75 | 20.38 | 10 | 10 | 47.6 |
| 16 | 2016PV | 18.50 | 2.25 | 17.58 | 0.88 | 23.8 | 23.0 | ⅞ | 21.00 | 22.63 | 12 | 12 | 52.8 |
| 18 | 2018PV | 20.60 | 2.25 | 19.68 | 1.13 | 25.9 | 25.1 | ⅞ | 23.25 | 24.88 | 12 | 12 | 61.8 |
| 20 | 2020PV | 22.70 | 2.25 | 21.79 | 1.25 | 28.0 | 27.2 | ⅞ | 25.50 | 27.13 | 14 | 14 | 70.9 |
| 24 | 2024PV | 26.90 | 2.75 | 25.99 | 1.42 | 32.3 | 31.5 | ⅞ | 30.00 | 31.63 | 16 | 16 | 92.9 |
| 30 | 2030PV | 33.29 | 2.70 | 32.22 | 1.50 | 38.5 | 37.7 | 1⅛ | 36.88 | 39.12 | 20 | 20 | 128.5 |
| 36 | 2036PV | 39.59 | 2.70 | 38.52 | 1.50 | 44.8 | 44.0 | 1⅛ | 43.75 | 46.00 | 24 | 24 | 161.3 |
| 42 | 2242 | Submittal information for pipe sizes 42 inch and greater can be found in the Series 2200 Brochure. | | | | | | | | | | | |
| 48 | 2248 | Submittal information for pipe sizes 42 inch and greater can be found in the Series 2200 Brochure. | | | | | | | | | | | |
| 54 | 2254 | Submittal information for pipe sizes 42 inch and greater can be found in the Series 2200 Brochure. | | | | | | | | | | | |

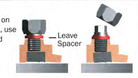
**Pressure Ratings (PSI)**
NOTE: Dimensions are in inches (±1⅛) and are subject to change without notice.
P1: Outside Diameter with "Twist-Off" nuts twisted off.

| Nominal Pipe Size | Series Number | Ratings for Ordinary Water Works w/ Transient surges only: DR14 | DR18 | DR21 | DR25 | DR32.5 | DR41 | DR51 | Ratings for Peak Pressures used in Sewage Force Mains and other installations designed for Cyclic Surges of 1,000 Cycles: SDR17 | SDR21 | SDR26 | DR14 | DR18 | DR25 | SDR17 | SDR21 | SDR26 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2003PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 4 | 2004PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 6 | 2006PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 8 | 2008PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 10 | 2010PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 12 | 2012PV | 305 | 235 | - | 165 | - | - | - | 250 | 200 | 160 | 244 | 188 | 132 | 200 | 160 | 120 |
| 14 | 2014PV | 305 | 235 | - | 165 | 125 | 100 | - | - | - | - | - | - | - | - | - | - |
| 16 | 2016PV | 235 | 235 | - | 165 | 125 | 100 | - | - | - | - | - | - | - | - | - | - |
| 18 | 2018PV | - | 200 | 165 | 165 | 125 | 100 | - | - | - | - | - | - | - | - | - | - |
| 20 | 2020PV | - | 200 | - | 165 | 125 | 100 | - | - | - | - | - | - | - | - | - | - |
| 24 | 2024PV | - | 235 | - | 165 | 125 | 100 | - | - | - | - | - | - | - | - | - | - |
| 30 | 2030PV | * | - | 165 | 165 | 125 | * | * | - | - | - | - | - | - | - | - | - |
| 36 | 2036PV | - | - | 125 | 125 | 125 | * | * | - | - | - | - | - | - | - | - | - |

* Refer to Series 2200 Product Brochure found either in our Catalog or at www.ebaa.com — For applications or pressures other than those shown, please contact EBAA for assistance.

**Spacer Instructions**

**Ductile Iron or C900 PVC Pipe Sizes**
For installation on **C900** PVC pipe, use as received and install per instructions.




**ASTM 2241 PVC Pipe Sizes (IPS O.D.)**
For installation on **ASTM 2241** sized pipe, remove spacers and replace screws. Install per instructions.






1. Identify the pipe. The 2000PV is for use with PVC and HDPE pipe. The 4 inch through 12 inch size may be used on C900, and IPS PVC pipe as well as C906 HDPE pipe. Check to see if the spacers under the screws are in place. If the pipe is C900 or is ductile iron O.D., proceed with spacers in place. If the pipe is IPS O.D., remove the spacers. Since 3 inch and 14 inch through 24 inch restraints are only used with one pipe diameter, no spacers are used.



2. * Clean the socket and the plain end. Lubrication and additional cleaning should be provided by brushing both the gasket and plain end with soapy water or an approved pipe lubricate meeting the requirements of ANSI/AWWA C111/A21.11 just prior to slipping the gasket onto the plain end for joint assembly. Place the gland on the plain end with the lip extension toward the plain end; follow by the gasket with the narrow edge of the gasket toward the plain end [The gasket provided may be the EBAA-Seal™ Improved Mechanical Joint Gasket for C900 PVC Pipe. This gasket is bi-directional having no front or back. For ASTM 2241 PVC Pipe Sizes (IPS O.D.) a Transition Gasket must be used. The use of a pipe wall stiffening insert is required on High Density Polyethylene pipe.].

NOTE: In cold weather it is preferable to warm the gasket to facilitate assembly of the joint.



3. * Insert the pipe into the socket and press the gasket firmly and evenly into the gasket recess. Keep the joint straight during assembly.
4. * Push the gland toward the socket and center it around the pipe with the gland lip against the gasket. Insert bolts and hand-tighten nuts. Make deflection after joint assembly but before tightening bolts.



5. * Tighten the bolts to the normal range of bolt torque [45-60 ft-lbs for 3 inch, 75-90 ft-lbs for 4 inch through 24 inch, 100-120 ft-lbs for 30 inch and 36 inch, and 120-150 ft-lbs for 42 inch and 48 inch.] while at all times maintaining approximately the same distance between the gland and the face of the flange at all points around the socket. This can be accomplished by partially tightening the bottom bolt first, then the top bolt, next the bolts at either side, finally the remaining bolts. Repeat the process until all bolts are within the appropriate range of torque. In large sizes (30-48 inch), five or more repetitions may be required. The use of a torque-indicating wrench will facilitate the procedure.



6. Tighten the torque limiting twist-off nuts in a clockwise direction (direction indicated by arrow on top of nut) until all wedges are in firm contact with the pipe surface. Continue tightening in an alternating manner until all of the nuts have been twisted off.

*These steps are requirements of AWWA C600.



7. If removal is necessary, utilize the ¾ inch hex heads provided. If reassembly is required, assemble the joint in the same manner as above; tighten the screws to 60 to 80 ft-lbs. If the Series 2000PV restraint is removed from the pipe, be sure that all of the screws, spacers (if required), and wedges are in place before the restraint is reassembled.



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# Ford Stainless Steel Saddles Style FS300

## For 1/2" through 2" Taps

Ford Stainless Steel Saddles are designed for use where corrosive conditions exist. Designed for all pipe types, the stainless steel construction allows the saddle to conform, reducing stress on the pipe.

## Specifications




For use on HDPE pipe, use prefixes FSP313, FSP323, FSP333 & FSP343.



# Ford Stainless Steel Saddles Style FS300

## For 1/2" through 2" Taps

| Nom. Pipe Size | O.D. Range | Catalog Number | Bolt Size | Bolt Qty. | Band Width 1/2" - 1" | Band Width 1-1/4" - 2" | No. Of Sections | Approx. Wt. Lbs. By Tap Size 1/2" - 1" | Approx. Wt. Lbs. By Tap Size 1-1/4" - 2" |
|---|---|---|---|---|---|---|---|---|---|
| **FS313 SINGLE BAND** | | | | | | | | | |
| 2" | 2.38<br>2.50-2.70 | FS313-238-Tap<br>FS313-270-Tap | 1/2" | 1 | 4" | - | 1 | 1.9 | - |
| 2-1/2" | 2.88<br>3.50 | FS313-288-Tap<br>FS313-350-Tap | 1/2" | 1 | 4" | - | 1 | 1.9 | - |
| 3" | 3.90-4.10 | FS313-410-Tap | 1/2" | 1 | 4" | - | 1 | 2.2 | - |
| 4" | 4.50-4.80<br>4.80-5.20 | FS313-480-Tap<br>FS313-520-Tap | 1/2" | 2 | 6" | 7-1/2" | 1 | 3.3 | 3.9 |
| 5" | 5.56 | FS313-556-Tap | 5/8" | 2 | 6" | 7-1/2" | 1 | 4.4 | 4.8 |
| 6" | 6.00-6.40<br>6.40-6.80<br>6.63-6.90<br>6.80-7.20 | FS313-640-Tap<br>FS313-680-Tap<br>FS313-690-Tap<br>FS313-720-Tap | 5/8" | 2 | 6" | 7-1/2" | 1 | 4.7 | 5.1 |
| 8" | 8.00-8.40<br>8.40-8.80<br>8.63-9.05<br>9.00-9.40 | FS313-840-Tap<br>FS313-880-Tap<br>FS313-905-Tap<br>FS313-940-Tap | 5/8" | 2 | 6" | 7-1/2" | 1 | 5.2 | 5.8 |
| 10" | 10.00-10.40<br>10.75-11.10 | FS313-1040-Tap<br>FS313-1110-Tap | 5/8" | 2 | 6" | 7-1/2" | 1 | 5.8 | 8.7 |
| 12" | 11.10-11.50<br>12.00-12.40<br>12.75-13.20<br>13.10-13.50 | FS313-1150-Tap<br>FS313-1240-Tap<br>FS313-1320-Tap<br>FS313-1350-Tap | 5/8" | 2 | 6" | 7-1/2" | 1 | 6.4 | 9.3 |
| **FS323 DOUBLE BAND** | | | | | | | | | |
| 4" | 4.74-5.54 | FS323-554-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 5.2 | 5.7 |
| 6" | 6.40-7.20 | FS323-720-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 5.1 | 5.8 |
| 8" | 8.40-9.20 | FS323-920-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 6.3 | 7.8 |
| 10" | 10.70-11.50 | FS323-1150-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 7.0 | 9.0 |
| 12" | 12.70-13.50 | FS323-1350-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 9.0 | 11.0 |
| 14" | 14.00-14.84<br>14.95-15.75 | FS323-1484-Tap<br>FS323-1575-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 10.0<br>10.0 | 12.0<br>12.0 |
| 16" | 15.60-16.60<br>15.75-16.55 | FS323-1640-Tap<br>FS323-1655-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 10.0<br>10.5 | 12.0<br>12.5 |
| 18" | 16.40-17.20<br>17.20-18.00<br>17.60-18.40<br>18.00-18.80<br>18.40-19.20<br>18.80-19.60<br>19.20-20.00 | FS323-1720-Tap<br>FS323-1800-Tap<br>FS323-1840-Tap<br>FS323-1880-Tap<br>FS323-1920-Tap<br>FS323-1960-Tap<br>FS323-2000-Tap | 5/8" | 4 | 6" | 7-1/2" | 2 | 10.5<br>10.5<br>10.5<br>10.5<br>10.5<br>10.5<br>10.5 | 12.5<br>12.5<br>12.5<br>12.5<br>12.5<br>12.5<br>12.5 |
| **FS333 TRIPLE BAND** | | | | | | | | | |
| 20" | 21.40-22.60<br>22.80-24.00<br>23.45-24.65<br>24.45-25.65 | FS333-2260-Tap<br>FS333-2400-Tap<br>FS333-2465-Tap<br>FS333-2565-Tap | 5/8" | 6 | 6" | 7-1/2" | 3 | 14.5<br>14.5<br>14.5<br>15.5 | 17.0<br>17.0<br>17.0<br>17.5 |
| 24" | 25.50-26.70<br>28.25-29.45<br>29.40-30.60 | FS333-2670-Tap<br>FS333-2945-Tap<br>FS333-3060-Tap | 5/8" | 6 | 6" | 7-1/2" | 3 | 15.5<br>15.5<br>17.0 | 17.5<br>17.5<br>19.5 |
| 30" | 29.85-31.05<br>30.85-32.05 | FS333-3105-Tap<br>FS333-3205-Tap | 5/8" | 6 | 6" | 7-1/2" | 3 | 17.0<br>17.0 | 19.5<br>19.5 |
| **FS343 QUAD BAND** | | | | | | | | | |
| 36" | 35.80-37.00<br>37.50-38.70 | FS343-3700-Tap<br>FS343-3870-Tap | 5/8" | 8 | 6" | 7-1/2" | 4 | 21.0 | 24.0 |
| | | | 5/8" | 8 | 6" | 7-1/2" | 4 | 21.0 | 24.0 |

Other sizes and ranges available. Contact factory for details.

### OUTLET THREAD TAP CODE

| CC (AWWA) Thread | | FIP Thread | |
|---|---|---|---|
| Thread | Code | Thread | Code |
| - | - | 1/2" IP | IP1 |
| 3/4" CC | CC3 | 3/4" IP | IP3 |
| 1" CC | CC4 | 1" IP | IP4 |
| 1-1/4" CC | *CC5 | 1-1/4" IP | *IP5 |
| 1-1/2" CC | CC6 | 1-1/2" IP | IP6 |
| 2" CC | CC7 | 2" IP | IP7 |

*Contact factory for availability

For use on HDPE pipe, use prefixes FSP313, FSP323, FSP333 & FSP343.



# 7.26 Mueller Co.

Rev. 8-04

# CURB BOXES - EXTENSION TYPE WITH MINNEAPOLIS PATTERN BASE



### Extension type curb box with Minneapolis pattern base - for 1/2" through 2" curb valves

The base is tapped to attach to the threaded top of the Minneapolis pattern curb valves. This arrangement helps to prevent frost heave from separating the box from the valve, and excludes dirt and debris. The box is cast iron and is furnished with a cast iron lid and brass pentagon plug (the H-10312 is furnished with a one piece lid that requires a spanner wrench to remove –wrench ordered separately). The upper part of the box is spring loaded and telescopes into the base to allow for grade adjustments within the range given in the dimension charts. Stationary rods, shut-off rods, and pentagon keys are optional and are ordered separately.

### Box Selection

| Curb Valve & Size | Box Catalog Number | Inside Diameter | Base Tapping |
|---|---|---|---|
| **300™ Ball** | | | |
| 3/4" | H-10300 | 1-1/4" | 1-1/2" |
| | H-10302 | 1-1/2" | 2-1/2" (1-1/2" bushing) |
| | H-10312** | 1" | 1-1/2" |
| | H-10332** | 1" | 1-1/2" |
| | H-10300-99008 | 1-1/4" | 2" (1-1/2" bushing) |
| | H-10302-99004 | 1-1/2" | 2" (1-1/2" bushing) |
| 1" | H-10300 | 1-1/4" | 1-1/2" |
| | H-10302 | 1-1/2" | 2-1/2" (1-1/2" bushing) |
| | H-10312** | 1" | 1-1/2" |
| | H-10332** | 1" | 1-1/2" |
| | H-10300-99008 | 1-1/4" | 2" (1-1/2" bushing) |
| | H-10302-99004 | 1-1/2" | 2" (1-1/2" bushing) |
| 1-1/2" | H-10300-99002 | 1-1/4" | 2" |
| | H-10302-99005 | 1-1/2" | 2" |
| | H-10302-99007 | 1-1/2" | 2-1/2 (2" bushing) |
| | H-10312-99000 | 1" | 2" |
| | H-10332-99000 | 1" | 2" |
| 2" | H-10300-99002 | 1-1/4" | 2" |
| | H-10302-99005 | 1-1/2" | 2" |
| | H-10302-99007 | 1-1/2" | 2-1/2 (2" bushing) |
| | H-10312-99000 | 1" | 2" |
| | H-10332-99000 | 1" | 2" |
| **MARK II®** | | | |
| 3/4" | H-10300 | 1-1/4" | 1-1/2" |
| | H-10302 | 1-1/2" | 2-1/2" (1-1/2" bushing) |
| | H-10312** | 1" | 1-1/2" |
| | H-10332** | 1" | 1-1/2" |
| | H-10300-99008 | 1-1/4" | 2" (1-1/2" bushing) |
| | H-10302-99004 | 1-1/2" | 2" (1-1/2" bushing) |
| 1" | H-10300-99002 | 1-1/4" | 2" |
| | H-10302-99005 | 1-1/2" | 2" |
| | H-10312-99000 | 1" | 2" |
| | H-10332-99000 | 1" | 2" |
| 1-1/4" | H-10302-99006 | 1-1/2" | 2-1/2" |
| | H-10304 | 2" | 2-1/2" |
| | H-10388 | 1-1/4" | 2-1/2" |
| 1-1/2" | H-10304-99000 | 2" | 3" |
| | H-10304-99007 | 2" | 3-1/2" (3" bushing) |
| 2" | H-10304-99002 | 2" | 3-1/2" |
| **ORISEAL®** | | | |
| 3/4" | H-10300-99002 | 1-1/4" | 2" |
| | H-10302-99005 | 1-1/2" | 2" |
| | H-10312-99000 | 1" | 2" |
| 1" | H-10332-99000 | 1" | 2" |
| | H-10302-99006 | 1-1/2" | 2-1/2" |
| | H-10304 | 2" | 2-1/2" |
| | H-10388 | 1-1/4" | 2-1/2" |

** The H-10312 and H-10332 are the same except that the H-10312 has a one piece lid and the H-10332 has a combination lid and pentagon plug.

**TO ORDER BOXES SPECIFY EXTENDED LENGTH, SIZE OF MINNEAPOLIS THREAD AND CATALOG NUMBER**

# CURB BOXES - EXTENSION TYPE WITH MINNEAPOLIS PATTERN BASE

# 7.27 Mueller Co.

Rev. 8-04

## Dimensions and Optional Stationary Rod

### H-10300, H-10302 and H-10304 Curb boxes

| Curb box catalog number | Box length extended inch | Box length extended mm | Box length fully retracted inch | Box length fully retracted mm | Weight lbs. | Weight kg. | Optional stationary rod* Part No. | Optional stationary rod* Length inches |
|---|---|---|---|---|---|---|---|---|
| **H-10300** | 24 | 610 | 18.00 | 457.0 | 12.0 | 5.4 | 84774 | 12.75 |
| 1-1/4" upper section | 30 | 762 | 18.00 | 457.0 | 14.0 | 6.4 | 84346 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 15.0 | 6.8 | 84275 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 16.0 | 7.3 | 84233 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 17.0 | 7.7 | 84245 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 18.0 | 8.2 | 84247 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 19.0 | 8.6 | 84154 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 20.0 | 9.1 | 84261 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 22.0 | 10.0 | 84341 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 23.0 | 10.4 | 84297 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 24.0 | 10.9 | 84152 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 25.0 | 11.3 | 88703 | 75.0 |
| | 96 | 2438 | 84.00 | 2134.0 | 26.0 | 11.8 | 84278 | 81.0 |
| **H-10302** | 24 | 610 | 21.44 | 544.5 | 13.0 | 5.9 | - | - |
| 1-1/2" upper section | 30 | 762 | 21.44 | 544.5 | 15.0 | 6.8 | 84742 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 16.0 | 7.3 | 84256 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 17.0 | 7.7 | 84326 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 18.0 | 8.2 | 84305 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 20.0 | 9.1 | 84338 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 21.0 | 9.5 | 84353 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 22.0 | 10.0 | 88702 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 23.0 | 10.4 | 84255 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 25.0 | 11.3 | 83299 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 25.5 | 11.8 | 80643 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 26.3 | 12.2 | 84832 | 75.0 |
| | 96 | 2438 | 84.00 | 2134.0 | 27.0 | 12.7 | 88139 | 81.0 |
| **H-10304** | 24 | 610 | 21.44 | 544.5 | 21.0 | 9.5 | - | - |
| 2" upper section | 30 | 762 | 21.44 | 544.5 | 23.0 | 10.4 | 84146 | 15.0 |
| | 36 | 914 | 24.00 | 610.0 | 25.0 | 11.3 | 84162 | 21.0 |
| | 42 | 1067 | 30.00 | 762.0 | 27.0 | 12.2 | 84147 | 27.0 |
| | 48 | 1219 | 36.00 | 914.0 | 28.0 | 12.7 | 84176 | 33.0 |
| | 54 | 1372 | 42.00 | 1067.0 | 30.0 | 13.6 | 84139 | 39.0 |
| | 60 | 1524 | 48.00 | 1219.0 | 32.0 | 14.5 | 84140 | 45.0 |
| | 66 | 1676 | 54.00 | 1372.0 | 34.0 | 15.4 | 84128 | 51.0 |
| | 72 | 1829 | 60.00 | 1524.0 | 35.0 | 15.9 | 84143 | 57.0 |
| | 78 | 1981 | 66.00 | 1676.0 | 37.0 | 16.8 | 84222 | 63.0 |
| | 84 | 2134 | 72.00 | 1829.0 | 39.0 | 17.7 | 84169 | 69.0 |
| | 90 | 2286 | 78.00 | 1981.0 | 41.0 | 18.6 | - | - |
| | 96 | 2438 | 84.00 | 2134.0 | 43.0 | 19.5 | - | - |

### H-10312, H-10332, and H-10388 Curb

| Curb box catalog number | Box length extended inch | Box length extended mm | Box length fully retracted inch | Box length fully retracted mm | Weight lbs. | Weight kg. | Optional stationary rod* Part Number | Optional stationary rod* Length inches |
|---|---|---|---|---|---|---|---|---|
| **H-10312**** **H-10332**** | 24 | 610 | 18.00 | 305.0 | 9.5 | 4.3 | 84525 | 11.25 |
| 1" upper section | 30 | 762 | 18.00 | 457.0 | 10.0 | 4.5 | 82892 | 16.75 |
| | 36 | 914 | 24.00 | 610.0 | 11.0 | 5.0 | 82862 | 21.00 |
| | 42 | 1067 | 30.00 | 762.0 | 12.0 | 5.4 | 82863 | 27.00 |
| | 48 | 1219 | 36.00 | 914.0 | 14.0 | 6.4 | 82864 | 33.00 |
| | 54 | 1372 | 42.00 | 1067.0 | 15.0 | 6.8 | 82865 | 39.00 |
| | 60 | 1524 | 48.00 | 1219.0 | 16.0 | 7.3 | 82866 | 45.00 |
| | 66 | 1676 | 54.00 | 1372.0 | 17.0 | 7.7 | 82867 | 51.00 |
| | 72 | 1829 | 60.00 | 1524.0 | 18.0 | 8.2 | 82868 | 57.00 |
| | 78 | 1981 | 66.00 | 1676.0 | 19.0 | 8.6 | 82869 | 63.00 |
| | 84 | 2134 | 72.00 | 1829.0 | 20.0 | 9.1 | 82870 | 69.00 |
| | 90 | 2286 | 78.00 | 1981.0 | 21.0 | 9.5 | 82871 | 75.00 |
| | 96 | 2438 | 84.00 | 2134.0 | 22.0 | 10.0 | 82872 | 81.00 |
| **H-10388** | 24 | 610 | 18.00 | 305.0 | 9.5 | 4.3 | 84525 | 11.25 |
| 1-1/4" upper section | 30 | 762 | 18.00 | 457.0 | 10.0 | 4.5 | 82892 | 16.75 |
| | 36 | 914 | 26.50 | 673.1 | 14.5 | 6.6 | 84275 | 21.00 |
| | 42 | 1067 | 32.50 | 825.5 | 15.5 | 7.0 | 84233 | 27.00 |
| | 48 | 1219 | 38.50 | 977.9 | 16.5 | 7.5 | 84245 | 33.00 |
| | 54 | 1372 | 44.50 | 1130.3 | 17.5 | 7.9 | 84247 | 39.00 |
| | 60 | 1524 | 50.50 | 1282.7 | 18.5 | 8.4 | 84154 | 45.00 |
| | 66 | 1676 | 56.50 | 1435.1 | 19.5 | 8.8 | 84261 | 51.00 |
| | 72 | 1829 | 62.50 | 1587.5 | 21.5 | 9.8 | 84341 | 57.00 |
| | 78 | 1981 | 68.50 | 1739.9 | 22.5 | 10.2 | 84297 | 63.00 |
| | 84 | 2134 | 74.50 | 1892.3 | 23.5 | 10.7 | 84152 | 69.00 |
| | 90 | 2286 | 80.50 | 2044.7 | 24.5 | 11.1 | 88703 | 75.00 |

### Extra lids and plug


Lid with Plug


Plug only


One piece lid

### Optional reducing

| Bushing part number | Bushing size | Minneapolis thread size |
|---|---|---|
| **H-10343** | 3"x1-1/2" | 2" |
| | 2-1/2"x1-1/2" | 2-1/2" |
| | 2-1/2"x2" | 2-1/2" |
| | 3-1/2"x3" | 3-1/2" |

| Curb box catalog number | One piece lid part number | Quantity per carton | Lid with plug part number | Quantity per carton | Plug part number only |
|---|---|---|---|---|---|
| H-10300 | - | - | 89375 | 10 | 58039 |
| H-10302 | - | - | 89980 | 10 | 58116 |
| H-10304 | - | - | 89981 | 10 | 59478 |
| H-10312 | 89982 | 10 | | | |
| H-10332 | - | - | 89376 | 10 | 36571 |

*Stationary rods are supplied with H-10312 and H-10332 only. Stationary rods are optional with all other boxes within these pages and must be ordered separately.

** The H-10312 and H-10332 are the same except that the H-10312 has a one piece lid and the H-10332 has a combination lid and pentagon plug.

**TO ORDER BOXES SPECIFY EXTENDED LENGTH, SIZE OF MINNEAPOLIS THREAD AND CATALOG NUMBER**

# 5.8 Mueller Co.

Rev. 4-01

# 1/2" - 1" GROUND KEY DESIGN CORPORATION VALVES


H-15008

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER® 110® Conductive Compression Connection for CTS O.D.* tubing

| 1/2" ‡ | 3/4" | 3/4"x1" | 1" |
|---|---|---|---|


H-15028

Ground Key Corporation Valve
**Inlet:** AWWA I.P. thread
**Outlet**: MUELLER 110 Conductive Compression Connection for CTS O.D.* tubing

| 1/2" | 3/4" | 1" |
|---|---|---|


H-15031

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER 110 Conductive Compression Connection for CTS O.D. tubing eighth bend connection

| 3/4" | 1" |
|---|---|


H-15030

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER 110 Conductive Compression Connection for CTS O.D. tubing quarter bend connection

| 3/4" | 1" |
|---|---|


H-15009

Ground Key Corporation Valve
**Inlet:** AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER 110 Compression Connection for IPS PE* pipe

| 3/4" | 1" |
|---|---|


H-15029

Ground Key Corporation Valve
**Inlet:** AWWA I.P. thread
**Outlet**: MUELLER 110 Compression Connection for IPS PE* pipe

| 3/4" | 1" |
|---|---|


P-15008

**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER® Pack Joint Connection for CTS O.D.* tubing

| 3/4" | 1" |
|---|---|


P-15028

Ground Key Corporation Valve
**Inlet:** AWWA I.P. thread
**Outlet:** MUELLER Pack Joint Connection for CTS O.D.* tubing

| 3/4" | 1" |
|---|---|

*See charts on pages 5.10-5.13 for tubing and pipe that may be used on these connections.
‡ Requires minimum ordering quantity. Contact MUELLER Customer Service Center for minimum order requirements and availability.
NOTE: Sizes shown above represent nominal size of inlet and outlet connections. When two sizes are given, the first is size of inlet and the second is size of outlet.
**MUELLER® Corporation Valves are manufactured and tested in accordance with ANSI/AWWA C800.**

# 1/2" - 2" GROUND KEY DESIGN CORPORATION VALVES

# 5.9 Mueller Co.

Rev. 4-01


H-15006

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet:** MUELLER® INSTA-TITE® Connection for CTS PE tubing*

| 3/4" | 3/4" x1" ‡ | 1" |
|---|---|---|


H-15024

Ground Key Corporation Valve
**Inlet**: AWWA I.P. thread
**Outlet**: MUELLER® INSTA-TITE ® Connection for CTS PE tubing*

| 3/4" | 1" |
|---|---|


H-15005

Ground Key Corporation Valve
**Inlet:** AWWA taper (MUELLER "CC") thread
**Outlet**: MUELLER INSTA-TITE Connection for IPS PE pipe*

| 3/4" | 1" |
|---|---|


H-15026

Ground Key Corporation Valve
**Inlet:** AWWA I.P. thread
**Outlet**: MUELLER INSTA-TITE Connection for IPS PE pipe*

| 3/4" | 1" |
|---|---|


H-15000

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: Copper flare straight connection

| 1/2"‡ | 1/2" x 3/4"‡ | 5/8" x 3/4" | 3/4" | 3/4" x 1" |
|---|---|---|---|---|
| 1" | 1" x 1-1/4"‡ | 1-1/4" | 1-1/2" | 2" |


H-15025

Ground Key Corporation Valve
**Inlet**: AWWA I.P. thread
**Outlet**: Copper flare straight connection

| 1/2" | 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|---|


H-15010

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: Copper flare eighth bend connection

| 3/4" | 1" | 1-1/2" | 2" |
|---|---|---|---|


H-15035

Ground Key Corporation Valve
**Inlet**: AWWA I.P. thread
**Outlet**: Copper flare eighth bend connection

| 3/4"‡ | 1"‡ | 1-1/2" | 2" |
|---|---|---|---|


H-15020

Ground Key Corporation Valve
**Inlet**: AWWA taper (MUELLER "CC") thread
**Outlet**: Copper flare quarter bend connection

| 5/8" x 3/4" | 3/4" | 1" | 1-1/2" | 2" |
|---|---|---|---|---|


H-15045

Ground Key Corporation Valve
**Inlet**: AWWA I.P. thread
**Outlet**: Copper flare quarter bend connection

| 3/4"‡ | 1" | 1-1/2" | 2" |
|---|---|---|---|

*See charts on pages 5.10-5.13 for tubing and pipe that may be used on these connections.
‡ Requires minimum ordering quantity. Contact MUELLER Customer Service Center for minimum order requirements and availability.
NOTE: Sizes shown above represent nominal size of inlet and outlet connections. When two sizes are given, the first is size of inlet and the second is size of outlet.

# MUELLER® MARK II ORISEAL® CURB VALVES WITH COPPER FLARE CONNECTION

# 7.11 Mueller Co.

Rev. 8-04


H-15204

MUELLER MARK II ORISEAL Curb Valve
Copper flare nut - **both ends**
Quarter turn check

| 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|

NOTE: 3/4" and 1" sizes are bi-directional and can be installed with flow from either direction. Sizes larger than 1" are one way flow and must be installed with flow as indicated by arrow and in/out lettering cast on valve body.


H-15214

MUELLER MARK II ORISEAL Curb Valve
Copper flare nut - **both ends**
Quarter turn check and drain

| 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|


H-15154

MUELLER MARK II ORISEAL Curb Valve Copper flare nut - **both ends**
Quarter turn check and Minneapolis thread top

| 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|

NOTE: 3/4" and 1" sizes are bi-directional and can be installed with flow from either direction. Sizes larger than 1" are one way flow and must be installed with flow as indicated by arrow and in/out lettering cast on valve body.


H-15164

MUELLER MARK II ORISEAL Curb Valve
Copper flare nut - **both ends**
Quarter turn check, Minneapolis thread top and drain

| 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|


H-15174

MUELLER MARK II ORISEAL Curb Valve
**Inlet:** Copper flare nut
**Outlet:** F.I.P. thread
Quarter turn check

| 3/4" | 1" | 1-1/4" | 1-1/2" | 2" |
|---|---|---|---|---|

NOTE: 3/4" and 1" sizes are bi-directional and can be installed with flow from either direction. Sizes larger than 1" are one way flow and must be installed with flow as indicated by arrow and in/out lettering cast on valve body.


H-15184

MUELLER MARK II ORISEAL Curb Valve
**Inlet:** Copper flare nut
**Outlet:** F.I.P. thread
Quarter turn check with drain

| 3/4" | 1" | 1-1/2" ‡ | 2" ‡ |
|---|---|---|---|


H-15124

MUELLER MARK II ORISEAL Curb Valve
**Inlet:** Copper flare nut
**Outlet**: F.I.P. thread
Quarter turn check and Minneapolis top thread

| 3/4" | 1" ‡ |
|---|---|

NOTE: Sizes shown above represent nominal size of valve.
‡Requires minimum ordering quantity. Contact MUELLER Customer Service Center for minimum ordering requirements and availability.
MUELLER Curb Valves are manufactured and tested in accordance with ANSI/AWWA C800.

N

REVISIONS

| ISSUE | DATE |
|---|---|
| 1 PERMIT DRAWINGS | 2-14-20 |
| 2 REVISED PER VILLAGE COMMENTS | 6-2-22 |

PROJECT STAFF

PROJECT MANAGER: W. HEFBURN, P.E.
ENGINEER: A. VEERP.E.
ENGINEER:
ENGINEER:
TECHNICIAN:

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DETAILS

NEW WATERMAIN EXTENSION
KENILWORTH AVE. & MIDDLETON AVE., PALATINE, ILLINOIS

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PROJECT NUMBER: 19459
START DATE: DEC. 16, 2019
GRAPHIC SCALE 10 0 10
SCALE: 1"=10'-0
SHEET NUMBER 4 OF 5

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 1.14.1 |
|---|---|---|
| Prepared by: Bill Travnicek | Installation of Trace Wire on Water Mains | Page: 1 of 5 |
| Approved by: Jeff Loll | | Supersedes: 1-22-08 |
| | | Effective: 10-19-11 |

## GENERAL

* This Construction Standard governs trace wire installation on water mains. A 14 gauge or larger trace wire shall be installed on all water mains. **Exception:** Water mains as part of a relocation project shall have trace wire installed:

- If the length of the relocated section is 600' or greater
- The length of the relocated section is between 200' and 600' and includes a valve (including hydrant branch valves)
- The main being relocated currently has trace wire on it
- All relocated PVC and HDPE water mains
- Where called for on project drawings

Typical hydrant branches, that are perpendicular to the water main, do not require trace wire. Trace wire shall be installed on non-typical hydrant branches (i.e. dog-legged hydrant branch).

* Take care to protect the wire insulation and repair it with electrical tape if the coating is damaged. Always attach the wire to the lead end of the pipe when boring or plowing and avoid kinking or tangling the wire during installation. Because of the tremendous strain on trace wire when using directional boring equipment, three 10 or 12 gauge wires should be pulled with the main in case one or two wires break.

* **APPROVED TRACE WIRE MATERIAL**

- Trace wire for direct bury installations shall be #14 AWG Copper Clad Steel wire as manufactured by Copperhead Industries, LLC #14 AWG solid Copper wire with 30 mil high molecular weight polyethylene insulation as manufactured by Agave Wire LTD, or approved equal.
- * Trace wire for water mains installed by directional boring shall be #12 or #10 AWG copper clad steel wire as manufactured by Copperhead Industries, or approved equal.
- Blue tri-view plastic markers by Rhino w/Test Screws
- 4 ft U-channel posts
- Valve Box Top Sections
- Direct Bury Wire Nuts (Dryconn Direct Bury Wire Nut (10444) manufactured by King Innovation, DBY-6 or DBR-6 as manufactured by 3M or approved equal).
- Direct Bury Lug (Dryconn Direct Bury Lug as manufactured by King Innovation or approved equal).

## TRACE WIRE CONNECTIONS

**Joining Ends of Trace Wire:** Connections into existing trace wire, connections into trace wire used during water main bores, connections between one spool of trace wire to another, and other similar connections shall be made using a direct bury wire nut.

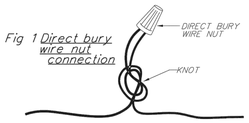


Fig 1 Direct bury wire nut connection

* Revised Text

| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 1.14.1 |
|---|---|---|
| Prepared by: Bill Travnicek | Installation of Trace Wire on Water Mains | Page: 2 of 5 |
| Approved by: Jeff Loll | | Supersedes: 1-22-08 |
| | | Effective: 10-19-11 |

When connecting trace wire ends together, strip 5/8" of insulation from the end of each wire. Insert the two ends firmly into the direct bury wire nut. Twist the wire nut clockwise while pushing the wires firmly into the nut. Do not over torque. Tie the wires in a knot as shown in Fig 1.

**Joining Trace Wire - Branch to Main:** Connections of trace wire at tees, crosses, and at locations where the trace wire will be brought to the surface shall be conducted using a direct bury lug. Refer to Fig 2 for this connection style.

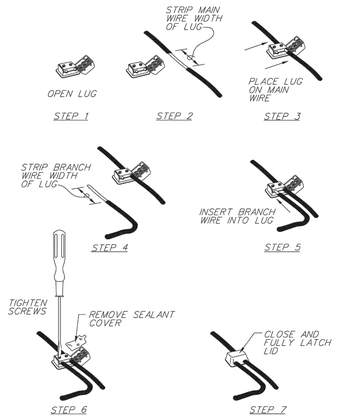


Fig 2 Direct bury lug connection

| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 1.14.1 |
|---|---|---|
| Prepared by: Bill Travnicek | Installation of Trace Wire on Water Mains | Page: 3 of 5 |
| Approved by: Jeff Loll | | Supersedes: 1-22-08 |
| | | Effective: 10-19-11 |

## INSTALLATION

Trace wire shall be installed in a continuous fashion. Install trace wire on top of water main and secure to main every five (5) feet with tape as shown in Fig 3.

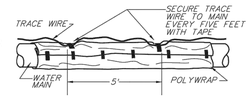


Fig 3 Trace wire installation

Bring trace wire to surface at every cc box, vault, blue plastic marker with trace wire connectors, dead end hydrants, and as called out in the drawings. Trace wire shall be brought to the surface at least every one thousand (1,000) feet. Take care not to damage the wire coating. Repair damaged coating with electrical tape.

**Trace Wire in a Vault**

Trace wire shall be brought up in all vaults. Trace wire shall be brought to the surface according to Fig 4. Do not wrap the trace wire around the steps or any other place where a person entering the vault could trip on the wire.

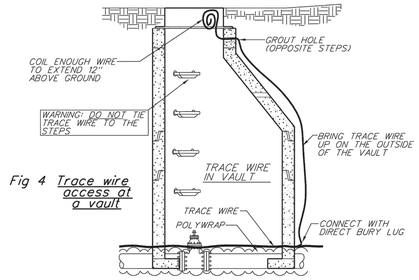


Fig 4 Trace wire access at a vault

| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 1.14.1 |
|---|---|---|
| Prepared by: Bill Travnicek | Installation of Trace Wire on Water Mains | Page: 4 of 5 |
| Approved by: Jeff Loll | | Supersedes: 1-22-08 |
| | | Effective: 10-19-11 |

**Trace Wire in Blue Plastic Pipe Line Marker**

When bringing the trace wire up in a blue plastic pipe line marker, install the trace wire according to Fig 5. Bury a four foot u-channel post two feet in the ground. Run the trace wire up through the marker and slide the blue plastic marker over the post. Bury the bottom six inches of the marker. Connect the trace wire to the brass connecting screws and label the screws with a permanent marker as shown in Fig 5. Note location of trace wire pipeline marker on as-built drawings.

***Note:*** *If a marker is used only to mark the main location and not bring up the trace wire, use the blue markers without the trace wire connectors.*

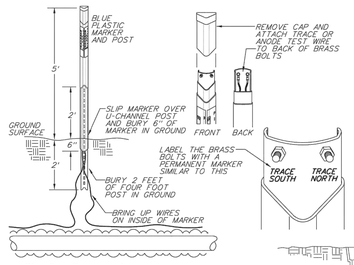


Fig 5 Trace wire access at a pipeline marker

**Trace Wire in a CC Valve Box**

Trace wire shall be brought up in all cc valve boxes. The trace wire shall be brought to the surface according to Fig 6.

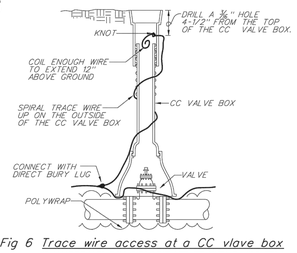


Fig 6 Trace wire access at a CC vlave box

| METROPOLITAN UTILITIES DISTRICT | Construction Standard | No: 1.14.1 |
|---|---|---|
| Prepared by: Bill Travnicek | Installation of Trace Wire on Water Mains | Page: 5 of 5 |
| Approved by: Jeff Loll | | Supersedes: 1-22-08 |
| | | Effective: 10-19-11 |

**Trace Wire in PVC Conduit at Hydrant**

Trace wire shall be brought up in a PVC conduit at all dead end/end of main fire hydrants without a valve and at hydrants of a non-typical hydrant branch (i.e. dog-legged hydrant branch). Trace wire shall be brought to the surface according to Fig 7. Note location of PVC conduit in relation to the hydrant (i.e. north, east, south or west) on as-built drawings.

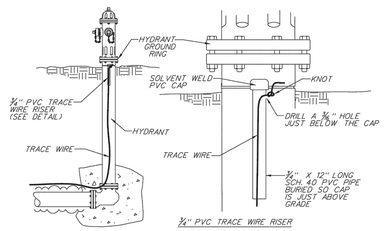


Fig 7 Trace wire access at a hydrant

N

| PROJECT STAFF | | ISSUE | REVISIONS | DATE |
|---|---|---|---|---|
| PROJECT MANAGER: | W. HEFFRUN, P.E. | 1 | PERMIT DRAWINGS | 2-14-20 |
| ENGINEER: | A. VEERP.E. | 2 | REVISED PER VILLAGE COMMENTS | 6-2-22 |
| ENGINEER: | | | | |
| TECHNICIAN: | | | | |

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DETAILS

NEW WATERMAIN EXTENSION
KENILWORTH AVE. & MIDDLETON AVE., PALATINE, ILLINOIS

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PROJECT NUMBER: 19459
START DATE: DEC. 16, 2019
GRAPHIC SCALE 10 0 10
SCALE: 1"=10'-0

SHEET NUMBER
5 OF 5

Attachment: 1025 & 1037 Kenilworth Engineering Plans (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

Kenilworth Ave Resident (next door to Petitioner)

***Edward & Terri DiPaolo, 1051 W Kenilworth Ave., Palatine, IL***

## Letter of Objection

To: Elected Palatine Committee/ Village Council, Zoning Board of Appeals, Planning Commission and Planning and Zoning Department.

Reference: **1025 & 1037 W Kenilworth Ave., File No 20-10**

**Preliminary and Final Plat of Subdivision to allow for a four-lot subdivision.**

**Preliminary and Final Planned Development for Single Family Residential Lots**

**Rezoning to Planned Development**

We all moved into this neighborhood with the understanding that we are moving into large lots with big open spaces. Some 18 years ago, we dragged sewer and water from the middle of Clyde Av., over 600 feet to 1051 W Kenilworth Ave. Once sewer and water were "on the street" all the one acre lots began to fall prey to subdivision of half acre. Now the Petitioner is requesting special zoning allowing for 2 lot sizes as narrow as 75 feet? Lots like mine and the Petitioners, once numerous, now account for a small percentage of the village lots. In hindsight, the village should have done more to protect these lots, moving forward the village should do more to protect the remaining property owners. I do not want 2 extra sets of next-door neighbors to my East.– Most neighbors feel the same and I pray that they are brave enough to face the Petitioner/Committee and voice their concerns.

While progress and development are inevitable, our second objection stems from the opportunity lost for the rest of the neighbors (myself) from developing our lots. Approving the proposal as filed causes all other developing opportunities from several lot owners to be lost. Costing each of us over $200,000 and causing us to simply hold to much land that can never be developed, leaving us stuck to pay property taxes on a half-acre that will forever remain dormant land. While the petitioner collected his. His development should only be approved if done in a manner that will allows us all to subdivide.

**I request that the petitioner be denied his proposal as filed.**

Middleton Ave. south of Kenilworth is an uncurbed, soft shouldered road that becomes further restricted to about 15 feet, 150 feet south of the Kenilworth. (in front of the petitioners "lots for sale")

Respectfully submitted,

Edward & Terri DiPaolo,

Attachment: Letter of Objection (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

**PUBLIC NOTICE**
A Public Hearing will be held before the Village of Palatine Plan Commission on Tuesday, June 21, 2022 at 7 PM, in the Village Council Chambers in Palatine Village Hall, 200 E. Wood Street, relative to a request for the following:
**1. Preliminary and Final Plat of Subdivision to allow for a four lot subdivision.**
**2. Preliminary and Final Planned Development.**
**3. Rezoning from R-1 single-family residential to Planned Development.**
The property is commonly known as 1025 & 1037 W. Kenilworth Avenue (PIN #: 02-21-213-014-0000 & 02-21-213-015-0000).
The Petitioner is requesting a Preliminary and Final Plat of Subdivision to subdivide the existing two lots into four lots and a Preliminary and Final Planned Development to allow for two additional single-family residential lots, fronting on Middleton Avenue. The property would also be Rezoned to Planned Development.
The above petition has been filed by George Borawski, property owner and is available for examination in the office of the Village Clerk, 200 E. Wood Street.
FILE #: 20-10
VILLAGE OF PALATINE
Dennis Dwyer, Chair
Palatine Plan Commission
DATED: This 6th day of June 2022
Published in Daily Herald
June 6, 2022 (4583652)

# CERTIFICATE OF PUBLICATION

**Paddock Publications, Inc.**

**Daily Herald**

Corporation organized and existing under and by virtue of the laws of the State of Illinois, DOES HEREBY CERTIFY that it is the publisher of the **DAILY HERALD**. That said **DAILY HERALD** is a secular newspaper and has been circulated daily in the Village(s) of Algonquin,Antioch,Arlington Heights,Aurora,North Aurora,Bannockburn, Barrington,Barrington Hills,Lake Barrington,North Barrington,South Barrington,Bartlett,Batavia,Buffalo Grove,Burlington,Campton Hills, Carpentersville,Cary,Crystal Lake,Deerfield,Deer Park,Des Plaines,Elburn, East Dundee,Elgin,South Elgin,Elk Grove Village,Fox Lake, Fox River Grove,Franklin Park,Geneva,Gilberts,Glenview,Grayslake, Green Oaks,Gurnee,Hainesville,Hampshire,Hanover Park,Hawthorn Woods, Highland Park,Highwood,Hoffman Estates,Huntley,Inverness,Island Lake, Kildeer,Lake Bluff,Lake Forest,Lake in the Hills,Lake Villa,Lake Zurich, Libertyville,Lincolnshire,Lindenhurst,Long Grove,Melrose Park,Montgomery Morton Grove,Mt.Prospect,Mundelein,Niles,Northbrook,Northfield,Northlak Palatine,Park Ridge,Prospect Heights,River Grove,Riverwoods, Rolling Meadows,Rosemont,Round Lake,Round Lake Beach, Round Lake Heights,Round Lake Park,Schaumburg,Schiller Park,Sleepy Hol St. Charles,Streamwood,Sugar Grove,Third Lake,Tower Lakes,Vernon Hills, Volo,Wadsworth,Wauconda,Waukegan,West Dundee,Wheeling,Wildwood, Wilmette
County(ies) of Cook, Kane, Lake, McHenry
and State of Illinois, continuously for more than one year prior to the date of the first publication of the notice hereinafter referred to and is of general circulation throughout said Village(s), County(ies) and State.

I further certify that the DAILY HERALD is a newspaper as defined in "an Act to revise the law in relation to notices" as amended in 1992 Illinois Compiled Statutes, Chapter 715, Act 5, Section 1 and 5. That a notice of which the annexed printed slip is a true copy, was published 06/06/2022 in said DAILY HERALD.

IN WITNESS WHEREOF, the undersigned, the said PADDOCK PUBLICATIONS, Inc., has caused this certificate to be signed by, this authorized agent, at Arlington Heights, Illinois.

PADDOCK PUBLICATIONS, INC.
DAILY HERALD NEWSPAPERS

BY Paula Raetz
Authorized Agent

Control # 4583652

Attachment: Public Notice (1025 and 1037 W Kenilworth Ave - 4 lot Su., PFPD, Rezoning)

VILLAGE OF PALATINE

**VILLAGE OF PALATINE**
**Plan Commission**

**SCHEDULED 06/21/22 07:00 PM**

**CASE STAFF STATEMENT (ID # 7665)**

# 2240-2296 N. Rand Road

CASE NUMBER: 22-24

PETITIONER: TMG Acquisition Disposition 1, LLC/The Missner Group (www.missnergroup.com)

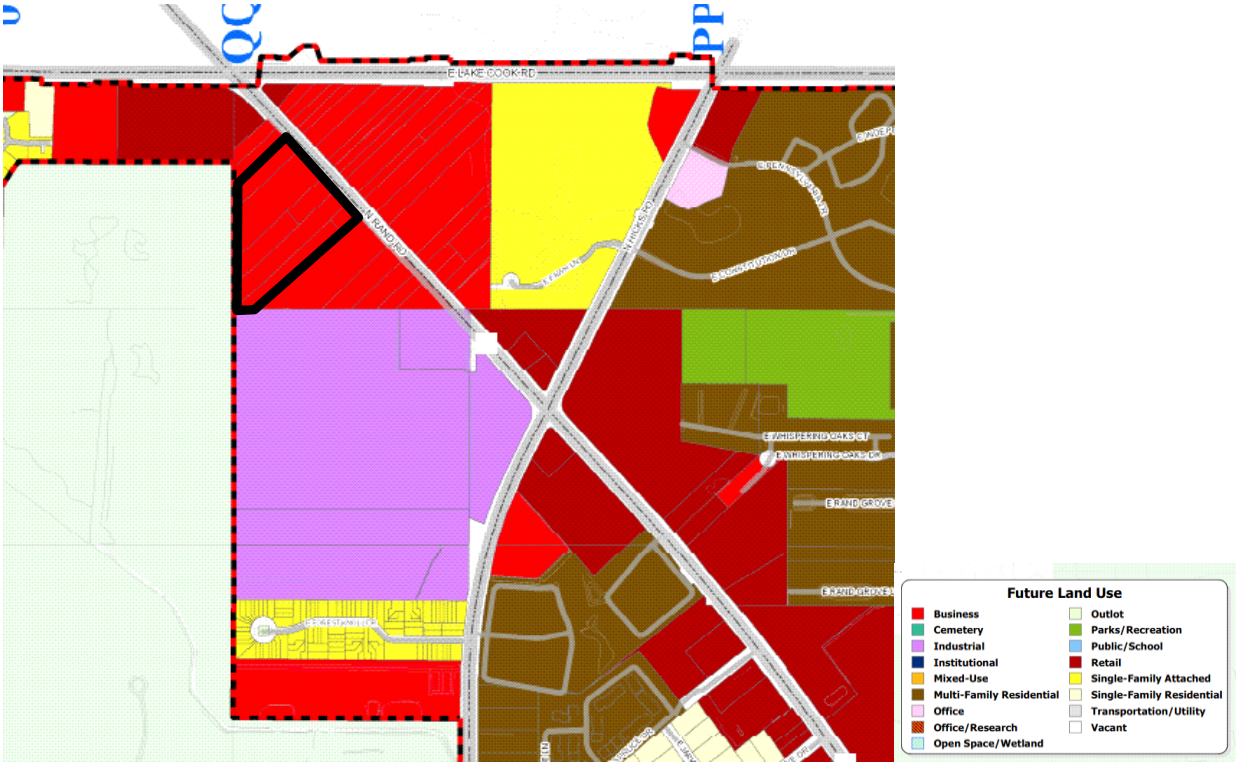
LOCATION: 2240 - 2296 N. Rand Road

PROPOSAL: The Missner Group intends to purchase and redevelop 7 parcels, totaling 8.86 acres. The property would be speculatively developed in an approximately 145,400 square foot warehouse, distribution, contractor distribution, or light manufacturing, with associated office uses.

ZONING AND LAND USE: B-5 District - used auto dealerships (Premier Auto and Auto Land) and construction materials (CMI, Inc.).
SURROUNDING CONDITIONS:

| | |
|---|---|
| North: | B-5 Highway (Route 12) Business District - Spring Align |
| South: | B-5 Highway (Route 12) Business District - Enterprise Rental & Car Sales |
| East: | B-5 Highway (U.S. Route 12) Business District; Planned Development (Hyundai); and R-1 single-family residential (non-conforming through annexation in 2007). |
| West: | Unincorporated Cook County - Deer Grove Forest Preserve |

COMPREHENSIVE PLAN:
The Comprehensive Plan indicates a continued business uses for the Subject Property.




BACKGROUND:

The Petitioner plans to consolidate the existing 7 parcels into one consolidated lot and develop a new warehouse/distribution or light manufacturing use, with associated office uses. Therefore, the Petitioner is requesting the following:

1. **Preliminary and Final Planned Development**
2. **Preliminary and Final Plat of Subdivision to permit a 4-lot single-family residential development**
3. **Rezoning from B-5 to Planned Development**

ANALYSIS:

The Petitioners are proposing to acquire the existing property in order to consolidate the existing 7 parcels into a cohesive 145,400 square foot building with warehouse, distribution, light manufacturing, and accessory office uses,The building will likely be multi-tenant and also provide 28 trailer parking spaces on the west side of the building,

adjacent to a portion of the Cook County Forest Preserve.

**Engineering:**

- All of the existing utilities are proximate and available to the Subject Property along Rand Road. The property grades northwest to southeast, with the proposed detention basin located in the southwest corner of the site. The watermain connection is made through the existing in the Rand Road right-of-way and looped throughout the site.
- The necessary sanitary connection and extension occurs through Rand Road to the east side of the street. The storm sewer is extended through the site with connections to the roof drains on the west side of the building and eventually reaching the detention basin.
- Pursuant to the Village Engineer's review, a new sidewalk would be required along Rand Road.

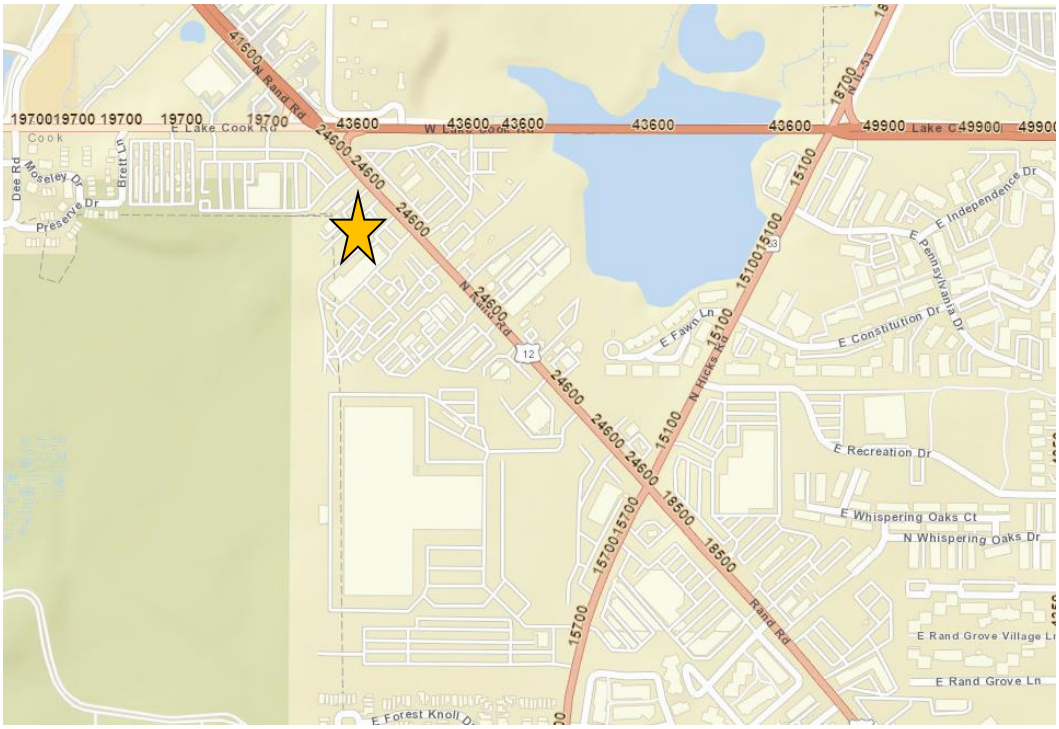
**Architecture:**

- The proposed 145,400 square foot building would be constructed of pre-cast concrete panels, with metal coping panels and a combination of vision, spandrel, and tempered glass. The architecture is similar to the other approved Class A industrial buildings in the Village (Midwest Industrial Funds (former Weber property) and the LPC development on Algonquin Road).
- The building height measures 42 feet to the top of the parapet wall and the proposed floorplan is open to allow for flexibility during the tenant development process. For planning purposes the building's initial design anticipates 10% of the building llotted to office uses, with the remaining 90% to be utilized for warehouse/distribution/light manufacturing purposes.
- The building is set back 100 feet from the Rand Road property line, with approximately 64-foot setbacks on the northern and southern side of the property. The rear yard setback ranges from 55 feet at the closed point to approximately 370 and 450 feet adjacent to the detention basin. The varying setbacks result from the angle of the west property line along the Deer Grove Forest preserve property.
- All of the setbacks comply with both the existing B-5 and Manufacturing District requirements. The building height also complies with both of these zoning district

limitations, which allow up to a 45-foot or 60-foot maximum building height.

**Traffic Analysis:**

- The Subject Property has direct access to Rand Road (U.S. Route 12-IDOT jurisdiction) and lies approximately 600 feet south of the intersection with Lake Cook Road. Per the submitted Traffic Impact Study (TIS), Rand Road is a Strategic Regional Arterial Route, with a posted speed limit of 35 miles per hour, providing two lanes in each direction, divided by a two-way left turn lane. The annual average daily traffic (AADT) is 49,700 vehicles, northwest of the Lake Cook Road intersection. Beginning at the intersection of Rand and Lake Cook Roads, for a distance of 700 feet, a barrier median divides Rand Road.




- Lake Cook Road is an east/west principal arterial roadway providing two-lanes in either direction. Lake Cook Road is under the jurisdiction of the Cook County Highway Department and has a posted speed limit of 45 miles per hour. The AADT is 19,700 vehicles west of Rand Road and 43,600 vehicles east of Rand Road. Lake Cook Road is also a SRA designated route. The Village Engineer

has reviewed and accepted the Traffic Study.

- The traffic study identifies 7:15 AM to 8:15 AM as the peak weekday morning traffic times, with 4:30 PM to 5:30 PM, as the peak evening times.
- The proposed development will have two access points into the site, replacing the existing six ingress/egress curb cuts onto Rand Road. The traffic study notes that the elimination of the existing access points will improve safety and traffic flow on Rand Road. The northern access point will be a right-in right-out, with the southerly access point being a full access point allowing one inbound lane and one outbound lane under stop sign control.
- The RI/RO will allow access to both the 30-foot truck access to the loading bays on the rear of the building and the employee parking lots within the site. The full access point provides truck/vehicle access leaving the site and heading north.
- The anticipated truck traffic directional distributions were based upon existing travel patterns determined from the traffic counts. The TIS notes all truck traffic will approach the site from the north on Rand Road and to the south on Rand Road, as Route 53 access will occur through the Dundee and Rand Road interchange south of the site.
- The TIS estimated the proposed development related traffic based upon the Institute of Transportation Engineer's Trip Generation Manual (11th edition), as follow:

ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

| ITE Land-Use Code | Type/Size | Weekday Morning Peak Hour In | Weekday Morning Peak Hour Out | Weekday Morning Peak Hour Total | Weekday Evening Peak Hour In | Weekday Evening Peak Hour Out | Weekday Evening Peak Hour Total | Daily Trips In | Daily Trips Out |
|---|---|---|---|---|---|---|---|---|---|
| **110** | **General Light Industrial (145,408 s.f.)[1]** | **90** | **13** | **103** | **13** | **81** | **94** | **299** | **299** |
| | Truck Trips[2] | 3 | 3 | 6 | 1 | 1 | 2 | 18 | 18 |
| | Passenger Vehicle Trips[3] | 87 | 10 | 97 | 12 | 80 | 92 | 281 | 281 |

1 - Based on the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition
2 – Daily rate based on ITE Manual.
3 – Equal to total trips less truck trips.

Table 4
ESTIMATED 24-HOUR TRUCK TRIP GENERATION

| Hour | Volume of Site Generated Truck Traffic General Light Industrial (ITE Land-Use Code 110) – 145,260 s.f. Weekday AM In | Weekday AM Out | Weekday AM Total | Weekday PM In | Weekday PM Out | Weekday PM Total |
|---|---|---|---|---|---|---|
| 12:00 | 0 | 0 | **0** | 1 | 1 | **2** |
| 1:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 2:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 3:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 4:00 | 0 | 0 | **0** | 1 | 1 | **2** |
| 5:00 | 0 | 0 | **0** | 0 | 0 | **0** |
| 6:00 | 0 | 0 | **0** | 0 | 0 | **0** |
| 7:00 | 2 | 1 | **3** | 0 | 0 | **0** |
| 8:00 | 2 | 2 | **4** | 0 | 0 | **0** |
| 9:00 | 3 | 3 | **6** | 0 | 0 | **0** |
| 10:00 | 2 | 3 | **5** | 0 | 0 | **0** |
| 11:00 | 1 | 1 | **2** | 0 | 0 | **0** |

Based on daily truck trips (Table A) and ITE's Hourly Distribution of Entering and Exiting Truck Trips tables.



- The use category analyzed was General Light Industrial, based upon the proposed building design and anticipated tenancy. The TIS concludes that there is sufficient reserve capacity within the existing roadway system to accommodate the projected traffic development. The proposed two access system is sufficient to accommodate the development related traffic.

**Parking:**

- The proposed site plan includes 156 parking spaces (including 16 future parking spaces on the north side of the building). The site plan anticipates 10% of the building could be occupied with office uses, with the remaining 90% utilized for warehouse/distribution. The following table summarizes the potentially required and provided parking for the site:

| | **Required parking** | **Provided parking** | **Additional parking provided, if required by the Village** |
|---|---|---|---|
| **Office – 10%**<br><br>**(14,540)** | **1/300 square feet**<br><br>**48 spaces** | | |
| **Warehouse- 90%**<br><br>**(130,867)** | **1/1,000 square feet**<br><br>**131 spaces** | | |
| **Total parking spaces** | **179 spaces** | **140 spaces, included; 16 future parking spaces on the north side of the building=156 parking spaces.** | **30 parking spaces, within the trailer parking stall area on the west side of the building = 186 parking spaces total.** |

- The Traffic Impact Study identifies a minimum of 120 parking spaces for a light industrial building of this size.
- In the justification for the parking provided, the developer notes the Traffic Impact Study, the proposed percentage of office uses for the building, which may end up being lower than the actual use of the property, and their experience with the parking needs for developments of this type.
- Through the Planned Development review, Staff directed the Petitioner to identify additional parking spaces to be added within the truck loading docks to confirm where additional parking could be added. While Staff is comfortable with the

provided parking plan, Staff is also recommending a condition to implement additional parking if the tenant composition or demand increases, at the direction of the Village.

RECOMMENDATION:

The Subject Property was annexed into the Village in 2007 from unincorporated Cook County. The proposed redevelopment will continue the redevelopment patterns along Rand Road and the contemplated warehouse/distribution/light industrial uses is not inconsistent with the surrounding developments. With the existing roadway systems along Rand and Lake Cook Roads, the proposed development has the necessary capacity to operate. Therefore, Staff recommends approval of the Preliminary and Final Planned Development, Preliminary and Final Plat of Subdivision, and Rezoning to Planned Development, subject to the following conditions:

Preliminary and Final Planned Development:

1. **The development shall substantially conform to the engineering plans by Spaceco., INC., dated March 22, 2022, as revised, the architectural plans by Ware Malcomb, date April 3, 2022, as revised, the KLOA Traffic Study, and the landscaping plans by Kathyrn Talty, dated January 28, 2022, except as such plans may be changed to conform to Village Codes and Ordinances.**

2. **Uses and signage shall be governed by the Manufacturing District use lists in the Village of Palatine Zoning Ordinance (note - this includes all of the required performance standards). Sign plans shall follow the Manufacturing district sign regulations.**

3. **As a component of the Final Planned Development, a Planned Development letter of credit shall be submitted in a manner acceptable to the Director of Planning and Zoning and Village Engineer.**
4. **The final engineering plans shall be revised in a manner acceptable to the Village Engineer.**

5. **The final landscape plans shall be subject to the review and approval of the Director of Planning and Zoning and shall include addition shrub plantings along the Rand Road frontage, adjacent to the parking lot.**

6. **The final photometric and lighting plan shall be revised in a manner acceptable to the Village Engineer. Light shields shall be required for any lights proximate to residential properties, at the determination of the Village Engineer. This may include a 25-foot mounting height for exterior**

**lights, in order to reduce the glare, at the direction of the Village Engineer.**

7. **The final traffic directional signage plan shall be submitted in a manner acceptable to the Village Engineer.**

8. **Cross access easements, declarations and a Reciprocal Easement Agreement for the entire property governing the maintenance of access points, stormwater areas and any other common areas shall be submitted in a manner acceptable to the Village Attorney and Village Engineer. This could include a cross access easement for the property directly north of the Subject Property, if that property were to redevelop in the future, if requested by the Village of Palatine.**

9. **The final dumpster locations and required screening materials shall be submitted in compliance with Village Code. The screening shall be constructed of durable materials similar to those of the building and shall have solid (opaque) walls and doors. The final locations could also require the submission of a revised auto-turn, in a manner acceptable to the Director of Fire Prevention.**

10. **As a condition of the Final Planned Development and pursuant to the project narrative, the Petitioner shall submit the proposed business and operations' plans (identified tenants) for Staff review for compliance with the manufacturing use list and standards.**

10. **If, at the determination of the Village, the proposed tenant composition (% of office uses) increases or the Village of Palatine determines that there is a significant parking demand deficiency, based upon the required parking needs, the trailer parking directly east of the detention basin shall be converted to auto parking stalls, or a portion thereof, as noted on Ware Malcomb Concept Site Plan ("Scheme 9"), depicting up to 30 additional parking spaces.**

Preliminary and Final Plat of Subdivision:

1. **The Final Engineering plans shall substantially conform to the engineering plans by Spaceco., INC., dated March 22, 2022, except as such plans shall be changed to conform with Village Codes and Ordinances and in a manner acceptable to the Village Engineer.**

2. **The Final Engineering Plans shall be revised in a manner acceptable to the**

**Village Engineer.**

3. **The Final Plat of Subdivision shall be revised in a manner acceptable to the Village Engineer and submitted on a Mylar, with all required signatures.**

4. **Recording fees in an amount of $600 shall be submitted.**

5. **The Final Plan Review fees in the amount of 1.5% of total project improvement costs shall be submitted in a manner acceptable to the Village Engineer.**

6. **A Public Improvement Letter of Credit shall be submitted to ensure the completion of all public improvements, as defined within the Village Code, for an amount of 115% of the approved EEOC, along with a cash bond of 10% for the required one-year maintenance period in a manner acceptable to the Village Engineer.**

6. **The EEOPC shall be revised in a manner acceptable to the Village Engineer.**

7. **The Petitioners shall submit a Subdivision Improvement Agreement in a manner acceptable to the Village Attorney.**

8. **The cross-access easement, declarations, and reciprocal easement agreement regarding the maintenance of the access points, storm water areas, or any other required common areas shall be submitted in a manner acceptable to the Village Attorney and Village Engineer.**

9. **All extra-agency permits (e.g. IDOT, MWRD, etc.) shall be submitted in a manner acceptable to the Village Engineer.**

**ATTACHMENTS:**

- Aerial Map
- Missner Group - ENG Plans
- Missner Group - ARCH Plans
- 0615222 - MIssner Group Palatine - PLAT of Subdivision
- Missner Group - 2240-2296 N. Rand Road - Landscaping Plan
- Site Plan
- ARCH site plan - additional parking exhibit
- KLOA Rand Rd. Traffic Study
- Photometric Lighting Plan

- PFPD application
- Rezoning application
- PF Subdivision application
- ALTA survey - 2234-2240 Rand Road
- 2296 N. Rand Road - ALTA survey
- Public Notice

# 2240-2296 N. Rand Road




Attachment: Aerial Map (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# FINAL SITE IMPROVEMENT PLANS
# for
# 2240-2296 RAND ROAD

## VILLAGE OF PALATINE
## COOK COUNTY, ILLINOIS
## PROJECT NO: 11624


**DEVELOPER**

2234-2296 RAND RD TMG, LLC
c/o THE MISSNER GROUP
1700 WEST HIGGINS ROAD, SUITE 400
DES PLAINES, IL 60018
PH: (847) 947-5333

**ARCHITECT**

WARE MALCOMB
1315 22nd STREET, SUITE #410
OAK BROOK, IL 60523
PH: (630) 218-0063


**CALL J.U.L.I.E. 1-800-892-0123**
**WITH THE FOLLOWING:**

COUNTY: COOK COUNTY
CITY, TOWNSHIP: VILLAGE OF PALATINE, PALATINE
SEC. & ¼ SEC. NO.: NW 1/4 S2, T42N, R10E

**48 HOURS BEFORE YOU DIG.**
**EXCLUDING SAT., SUN. & HOLIDAYS**

**BENCHMARK**

ELEVATION:

DESCRIPTION: SEE SHEET ET FOR BENCHMARK INFORMATION

**NOTE:**

SPACECO, INC. IS TO BE NOTIFIED AT LEAST THREE (3) DAYS PRIOR TO STARTING CONSTRUCTION AND SHALL BE INCLUDED IN THE PRECONSTRUCTION MEETINGS

## REVISIONS

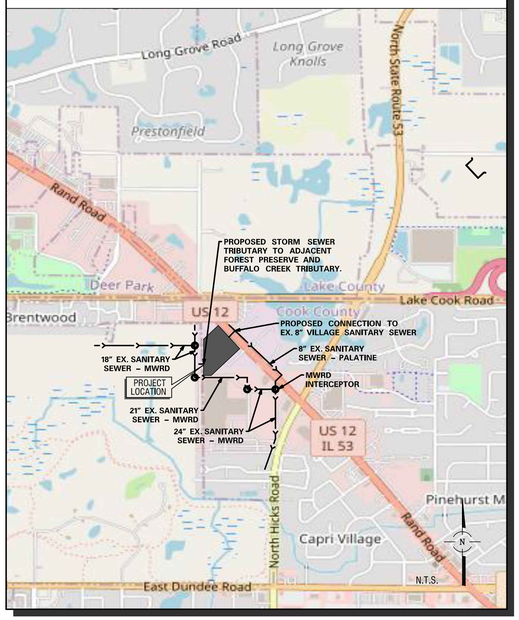
ORIGINAL PLAN DATE: MARCH 16, 2022

| # | SHEET # | REMARKS | DATE |
|---|---|---|---|
| 1 | ALL | REVISIONS PER ARCHITECT | 03/22/22 |
| 2 | ALL | REVISIONS PER ARCHITECT/OWNER | 04/11/22 |

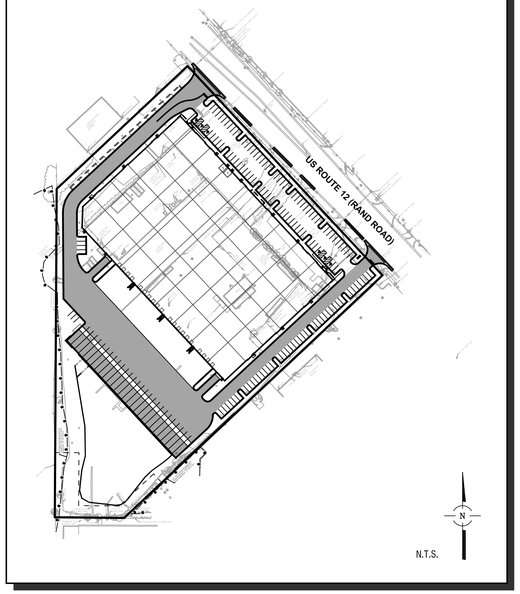
## INDEX


| SHEET # | SHEET I.D. | SHEET DESCRIPTION |
|---|---|---|
| 1 | C1 | COVER SHEET |
| 2 | GN | TYPICAL SECTIONS & GENERAL NOTES |
| 3 | ET | EXISTING CONDITIONS PLAN |
| 4 | DEMO | DEMOLITION PLAN |
| 5 | GM | GEOMETRIC PLAN |
| 6 | GR | GRADING PLAN |
| 7 | UT | UTILITY PLAN |
| 8 | PP01 | PLAN AND PROFILE - SANITARY SEWER SERVICE |
| 9-11 | SE1-SE3 | SOIL EROSION AND SEDIMENT CONTROL SPECIFICATIONS AND DETAILS |
| 12-13 | SP1-2 | SPECIFICATIONS |
| 14-17 | D1-D4 | DETAILS |
| 18 | EXH-R | MWRD EXHIBIT R |


## SANITARY SEWER ROUTING MAP




## KEY MAP




ENGINEER
BRETT M. DUFFY, P.E.

04/11/22
DATE

ILLINOIS REGISTRATION NO.: 062-053198
EXPIRATION DATE: 11/30/2023

PROFESSIONAL DESIGN FIRM NO.: 184-001157
EXPIRATION DATE: 04/30/2023

THESE PLANS OR ANY PART THEREOF SHALL BE CONSIDERED VOID WITHOUT THE SIGNATURE , SEAL, AND EXPIRATION DATE OF SEAL OF THE ENGINEER

LICENSED PROFESSIONAL ENGINEER — BRETT M. DUFFY — NO. 062-053198 — ILLINOIS

2240-2296 RAND ROAD
VILLAGE OF PALATINE
COOK COUNTY, ILLINOIS


9575 W. Higgins Road, Suite 700, Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065


CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS

SPACECO INC.

FILENAME: 11624TITLE
DATE: 03/16/2022
JOB NO. 11624
SHEET C1
1 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## GENERAL NOTES

1. REFERENCED CODES

A. ALL PAVEMENT AND STORM SEWER CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SSRBC), AND SUPPLEMENTAL SPECIFICATIONS AND RECURRING SPECIAL PROVISIONS; ADOPTED APRIL 1, 2016 BY ILLINOIS DEPARTMENT OF TRANSPORTATION AND ALL AMENDMENTS THERETO; AND IN ACCORDANCE WITH THE LATEST EDITION OF THE CODE OF THE MUNICIPALITY; EXCEPT AS MODIFIED HEREIN. IN CASE OF CONFLICT, MUNICIPAL CODE SHALL TAKE PRECEDENCE.

B. ALL SANITARY SEWER AND WATERMAIN CONSTRUCTION SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS. PUBLISHED JANUARY 2014, AND IN ACCORDANCE WITH THE CODE OF THE MUNICIPALITY; EXCEPT AS MODIFIED HEREIN OR BY ANY PUBLIC AGENCY PERMITS ISSUED FOR THIS WORK. IN CASE OF CONFLICT, THE MORE RESTRICTIVE PROVISIONS SHALL APPLY.

C. ALL SIDEWALK AND PUBLIC AREAS MUST BE CONSTRUCTED IN ACCORDANCE WITH CURRENT ADA, ILLINOIS HANDICAP ACCESSIBILITY AND ANY APPLICABLE LOCAL ORDINANCES. WHEN CONFLICTS EXIST BETWEEN THE GOVERNING AGENCIES, THE MORE STRINGENT SHALL GOVERN.

D. THE CITED STANDARD SPECIFICATIONS, CODES AND PERMITS, WITH THESE CONSTRUCTION PLANS AND DETAILS, ARE ALL TO BE CONSIDERED PART OF THE CONTRACT. INCIDENTAL ITEMS OR ACCESSORIES NECESSARY TO COMPLETE THIS WORK MAY NOT BE SPECIFICALLY NOTED BUT ARE CONSIDERED A PART OF THIS CONTRACT.

2. UTILITY LOCATIONS

A. THE UTILITY COMPANIES HAVE BEEN CONTACTED IN REFERENCE TO UTILITIES THEY OWN AND OPERATE WITHIN THE LIMITS FOR THIS PROJECT. DATA FROM THESE AGENCIES HAS BEEN INCORPORATED INTO THE PLANS, IT IS, HOWEVER, THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM OR ESTABLISH THE EXISTENCE OF ALL UTILITY FACILITIES AND THEIR EXACT LOCATIONS, AND TO SAFELY SCHEDULE ALL UTILITY RELOCATIONS. FOR ADDITIONAL INFORMATION, THE AGENCIES LISTED ON THIS SHEET MAY BE CONTACTED.

B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE UTILITY COMPANIES LOCATE THEIR FACILITIES IN THE FIELD PRIOR TO CONSTRUCTION AND SHALL ALSO BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. THE ENGINEER DOES NOT WARRANT THE LOCATION OF ANY EXISTING UTILITIES SHOWN ON THE PLAN. THE CONTRACTOR SHALL CALL J.U.L.I.E. AT 800-892-0123 AND THE MUNICIPALITY, FOR UTILITY LOCATIONS. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES AND THE MUNICIPALITY TWENTY-FOUR (24) HOURS PRIOR TO STARTING ANY CONSTRUCTION.

C. EASEMENTS FOR THE EXISTING UTILITIES, BOTH PUBLIC AND PRIVATE, AND UTILITIES WITHIN PUBLIC RIGHTS-OF-WAY ARE SHOWN ON THE PLANS ACCORDING TO AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION IN THE FIELD OF THESE UTILITY LINES AND THEIR PROTECTION FROM DAMAGE DUE TO CONSTRUCTION OPERATIONS. IF EXISTING UTILITY LINES OF ANY NATURE ARE ENCOUNTERED WHICH CONFLICT WITH LOCATIONS OF THE NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.

3. UTILITY COORDINATION

A. OWNER SHALL OBTAIN EASEMENTS AND PERMITS NECESSARY TO FACILITATE CONSTRUCTION OF THE PROPOSED UTILITIES. THE CONTRACTOR, HOWEVER, SHALL FURNISH ALL REQUIRED BONDS AND EVIDENCE OF INSURANCE NECESSARY TO SECURE THESE PERMITS.

B. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE NATURE AND STATUS OF ALL UTILITY RELOCATION WORK PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO ENSURE THAT CONSTRUCTION OPERATIONS DO NOT INTERFERE WITH UTILITY FACILITIES AND RELOCATION WORK. THE SCHEDULE SHOULD REFLECT CONSTRUCTION SEQUENCING WHICH COORDINATES WITH ALL UTILITY RELOCATION WORK. THE CONTRACTOR SHALL BE REQUIRED TO ADJUST THE ORDER OF ITS WORK FROM TIME TO TIME, TO COORDINATE SAME WITH UTILITY RELOCATION WORK, AND SHALL PREPARE REVISED SCHEDULE(S) IN COMPLIANCE THEREWITH AS DIRECTED BY THE OWNER.

C. THE OWNER AND THE ENGINEER SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY OPERATION REQUIRING COOPERATION WITH OTHERS. AT&T SHALL BE CONTACTED ONE MONTH PRIOR TO START OF CONSTRUCTION IN ITS UTILITY AREAS. ALL OTHER AGENCIES, UNLESS OTHERWISE NOTED, SHALL BE NOTIFIED IN WRITING BY THE CONTRACTOR TEN (10) DAYS PRIOR TO THE START OF ANY SUCH OPERATION.

4. NO PLAN SHALL BE USED FOR CONSTRUCTION UNLESS SPECIFICALLY MARKED "FOR CONSTRUCTION". PRIOR TO COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AFFECTING THE WORK WITH THE ACTUAL CONDITIONS AT THE JOB SITE. IN ADDITION, THE CONTRACTOR MUST VERIFY THE ENGINEER'S LINE AND GRADE STAKES. IF THERE ARE ANY DISCREPANCIES WITH WHAT IS SHOWN ON THE CONSTRUCTION PLANS, HE MUST IMMEDIATELY REPORT SAME TO ENGINEER BEFORE DOING ANY WORK, OTHERWISE THE CONTRACTOR ASSUMES FULL RESPONSIBILITY. IN THE EVENT OF DISAGREEMENT BETWEEN THE CONSTRUCTION PLANS, SPECIFICATIONS AND/OR SPECIAL DETAILS, THE CONTRACTOR SHALL SECURE WRITTEN INSTRUCTION FROM THE ENGINEER PRIOR TO PROCEEDING WITH ANY PART OF THE WORK AFFECTED BY OMISSIONS OR DISCREPANCIES. FAILING TO SECURE SUCH INSTRUCTION, THE CONTRACTOR WILL BE CONSIDERED TO HAVE PROCEEDED AT HIS OWN RISK AND EXPENSE. IN THE EVENT OF ANY DOUBT OR QUESTIONS ARISING WITH RESPECT TO THE TRUE MEANING OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE DECISION OF THE ENGINEER SHALL BE FINAL AND CONCLUSIVE.

5. ALL PROPOSED ELEVATIONS SHOWN ON THE PLANS ARE FINISHED SURFACE ELEVATIONS, UNLESS OTHERWISE SPECIFIED.

6. UPON AWARDING OF THE CONTRACT, AND WHEN REQUIRED BY THE MUNICIPALITY OR OWNER, THE CONTRACTOR SHALL FURNISH A LABOR, MATERIAL AND PERFORMANCE BOND IN THE AMOUNT REQUIRED GUARANTEEING COMPLETION OF THE WORK. THE UNDERWRITER SHALL BE ACCEPTABLE TO THE MUNICIPALITY OR OWNER, AS APPROPRIATE.

7. THE CONTRACTORS SHALL PLAN THEIR WORK BASED ON THEIR OWN BORINGS, EXPLORATIONS AND OBSERVATIONS TO DETERMINE SOIL CONDITIONS AT THE LOCATION OF THE PROPOSED WORK. HOWEVER, IF THE OWNER HAS A SOILS REPORT, THE RESULTS WILL BE AVAILABLE FROM THE OWNER UPON WRITTEN REQUEST.

8. CONTRACTOR SHALL VIDEO TAPE WORK AREA PRIOR TO CONSTRUCTION FOR THE PURPOSE OF DOCUMENTING EXISTING CONDITIONS.

9. COMMENCING CONSTRUCTION

A. THE CONTRACTOR SHALL NOTIFY THE OWNER AND/OR HIS REPRESENTATIVE AND THE AFFECTED GOVERNMENTAL AGENCIES IN WRITING AT LEAST THREE FULL WORKING DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL NOTIFY AS NECESSARY, ALL TESTING AGENCIES, EITHER MUNICIPALITY'S OR THE OWNER'S, SUFFICIENTLY IN ADVANCE OF CONSTRUCTION. ALL MATERIAL TESTING SHALL BE THE RESPONSIBILITY AND EXPENSE OF THE CONTRACTOR. THE TESTING AGENCY SHALL MEET THE APPROVAL OF THE OWNER.

B. FAILURE OF CONTRACTOR TO ALLOW PROPER NOTIFICATION TIME WHICH RESULTS IN TESTING COMPANIES TO BE UNABLE TO VISIT SITE AND PERFORM TESTING WILL CAUSE CONTRACTOR TO SUSPEND OPERATION (PERTAINING TO TESTING) UNTIL TESTING AGENCY CAN SCHEDULE TESTING OPERATIONS. COST OF SUSPENSION OF WORK TO BE BORNE BY CONTRACTOR.

10. ALL CONTRACTORS SHALL KEEP ACCESS AVAILABLE AT ALL TIMES FOR ALL TYPES OF TRAFFIC. AT NO TIME SHALL ACCESS BE DENIED TO ADJACENT PROPERTIES.

11. THE CONTRACTOR SHALL PRESERVE ALL CONSTRUCTION STAKES UNTIL THEY ARE NO LONGER NEEDED. ANY STAKES DESTROYED OR DISTURBED BY THE CONTRACTOR PRIOR TO THEIR USE SHALL BE RESET BY THE DEVELOPER'S ENGINEER AT CONTRACTOR'S COST.

12. ANY EXISTING SIGNS, LIGHT STANDARDS AND UTILITY POLES WHICH INTERFERE WITH CONSTRUCTION OPERATIONS AND NOT NOTED FOR DISPOSAL SHALL BE REMOVED AND RESET BY THE CONTRACTOR AT HIS OWN EXPENSE AS SHOWN ON THE ENGINEERING PLANS OR AS DIRECTED BY THE DEVELOPER. ANY DAMAGE TO THESE ITEMS SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE TO THE SATISFACTION OF THE OWNER. ANY SIGNS NOT REQUIRED TO BE RESET, SHALL BE DELIVERED TO THE RESPECTIVE OWNERS.

13. REMOVAL OF SPECIFIED ITEMS, INCLUDING BUT NOT LIMITED TO, PAVEMENT, SIDEWALK, CURB, CURB AND GUTTER, CULVERTS, ETC, SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT HIS OWN EXPENSE. HE IS RESPONSIBLE FOR ANY PERMIT REQUIRED FOR SUCH DISPOSAL.

14. ALL FIELD TILE ENCOUNTERED DURING CONSTRUCTION OPERATIONS SHALL BE CONNECTED TO THE PROPOSED STORM SEWER SYSTEM OR SHALL BE RESTORED TO PROPER OPERATING CONDITION. A RECORD OF THE LOCATION OF ALL FIELD TILE OR DRAIN PIPE ENCOUNTERED SHALL BE KEPT BY THE CONTRACTOR AND TURNED OVER TO THE ENGINEER, DEVELOPER OR MUNICIPAL ENGINEER UPON COMPLETION OF THE PROJECT. THE COST OF THIS WORK SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

15. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SAFETY ON THE JOB.

16. THE CONTRACTOR SHALL COLLECT AND REMOVE ALL CONSTRUCTION DEBRIS, EXCESS MATERIALS, TRASH, OIL AND GREASE RESIDUE, MACHINERY, TOOLS AND OTHER MISCELLANEOUS ITEMS WHICH WERE NOT PRESENT PRIOR TO PROJECT COMMENCEMENT AT NO ADDITIONAL EXPENSE TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY AND ALL PERMITS NECESSARY FOR THE HAULING AND DISPOSAL REQUIRED FOR CLEAN-UP AS DIRECTED BY THE ENGINEER OR OWNER. BURNING ON THE SITE IS NOT PERMITTED.

17. ALL EXISTING UTILITIES OR IMPROVEMENTS, INCLUDING WALKS, CURBS, PAVEMENT AND PARKWAYS DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE PROMPTLY RESTORED TO THEIR RESPECTIVE ORIGINAL CONDITION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT UNLESS SPECIFICALLY NOTED ON THE PLANS.

18. TREES NOT MARKED FOR REMOVAL SHALL BE CONSIDERED AS DESIGNATED TO BE SAVED AND SHALL BE PROTECTED UNDER THE PROVISIONS OF (SSRBC) ARTICLE 201.05.

19. LIMB PRUNING SHALL BE PERFORMED UNDER THE SUPERVISION OF THE LANDSCAPE ARCHITECT MEETING THE OWNER'S APPROVAL AND SHALL BE UNDERTAKEN IN A TIMELY FASHION SO AS NOT TO INTERFERE WITH CONSTRUCTION.

20. ALL LIMBS, BRANCHES, AND OTHER DEBRIS RESULTING FROM THIS WORK SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR AT HIS OWN EXPENSE OFF-SITE.

21. ALL CUTS OVER 1" IN DIAMETER SHALL BE MADE FLUSH WITH THE NEXT LARGE BRANCH. WOUNDS OVER 1" IN DIAMETER SHALL BE PAINTED WITH AN APPROVED TREE PAINT.

22. GENERAL EXCAVATION/UNDERGROUND NOTES

A. SLOPE SIDES OF EXCAVATIONS TO COMPLY WITH CODES AND ORDINANCES HAVING JURISDICTION. SHORE AND BRACE WHERE SLOPING IS NOT POSSIBLE EITHER BECAUSE OF SPACE RESTRICTIONS OR STABILITY OF MATERIAL EXCAVATED. MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN A SAFE CONDITION UNTIL COMPLETION OF BACKFILLING.

B. PROVIDE MATERIALS FOR SHORING AND BRACING, SUCH AS SHEET PILING, UPRIGHTS, STRINGERS AND CROSS BRACES, IN GOOD SERVICEABLE CONDITION. PROVIDE MINIMUM REQUIREMENTS FOR TRENCH SHORING AND BRACING TO COMPLY WITH CODES AND AUTHORITIES HAVING JURISDICTION. MAINTAIN SHORING AND BRACING IN EXCAVATIONS REGARDLESS OF TIME PERIOD EXCAVATIONS WILL BE OPEN. CARRY DOWN SHORING AND BRACING AS EXCAVATION PROGRESSES IN ACCORDANCE WITH OSHA AND GOVERNING AUTHORITY.

C. PREVENT SURFACE WATER AND SUBSURFACE OR GROUNDWATER FROM FLOWING INTO EXCAVATIONS. REMOVE WATER TO PREVENT SOFTENING OF FOUNDATION BOTTOMS, UNDERCUTTING FOOTINGS, AND SOIL CHANGES DETRIMENTAL TO STABILITY OF SUBGRADES AND FOUNDATIONS. PROVIDE AND MAINTAIN PUMPS, SUMPS, SUCTION AND DISCHARGE LINES AND OTHER DEWATERING SYSTEM COMPONENTS NECESSARY TO CONVEY WATER AWAY FROM EXCAVATIONS. CONVEY WATER REMOVED FROM EXCAVATIONS AND RAINWATER TO COLLECTING OR RUN-OFF AREAS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. PROVIDE AND MAINTAIN TEMPORARY DRAINAGE DITCHES AND OTHER DIVERSIONS OUTSIDE EXCAVATION LIMITS FOR EACH STRUCTURE. DO NOT USE TRENCH EXCAVATIONS AS TEMPORARY DRAINAGE DITCHES.

D. IMMEDIATELY REPORT CONDITIONS THAT MAY CAUSE UNSOUND BEARING TO THE OWNER/DEVELOPER BEFORE CONTINUING WORK.

23. FINAL ACCEPTANCE

A. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR AND HIS SURETY FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF FINAL ACCEPTANCE OF THE PROJECT AND THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL DEFECTS IN MATERIALS AND WORKMANSHIP OF WHATEVER NATURE DURING THAT PERIOD. THIS GUARANTEE SHALL BE PROVIDED IN THE FORM OF MAINTENANCE BOND IN THE AMOUNT OF 10% OF THE COST OF IMPROVEMENTS.

B. BEFORE ACCEPTANCE BY THE OWNER AND FINAL PAYMENT, ALL WORK SHALL BE INSPECTED BY THE OWNER OR HIS REPRESENTATIVE. FINAL PAYMENT WILL BE MADE AFTER ALL THE CONTRACTOR'S WORK HAS BEEN APPROVED AND ACCEPTED.

C. NO UNDERGROUND WORK SHALL BE COVERED UNTIL IT HAS BEEN APPROVED BY THE MUNICIPALITY. APPROVAL TO PROCEED MUST BE OBTAINED FROM THE MUNICIPALITY PRIOR TO INSTALLING PAVEMENT BASE, BINDER, SURFACE, AND PRIOR TO PLACING ANY CONCRETE AFTER FORMS HAVE BEEN SET.

D. AT THE CLOSE OF EACH WORKING DAY AND AT THE CONCLUSION OF CONSTRUCTION OPERATIONS, ALL DRAINAGE STRUCTURES AND FLOW LINES SHALL BE FREE FROM DIRT AND DEBRIS.

24. UNDERGROUND NOTES

A. UNDERGROUND WORK SHALL INCLUDE TRENCHING, INSTALLATION OF PIPE, CASTINGS, STRUCTURES, BACKFILLING OF TRENCHES AND COMPACTION AND TESTING AS SHOWN ON THE CONSTRUCTION PLANS. FITTINGS AND ACCESSORIES NECESSARY TO COMPLETE THE WORK MAY NOT BE SPECIFIED, BUT SHALL BE CONSIDERED AS INCIDENTAL TO THE COST OF THE CONTRACT.

B. WHERE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, EXISTING DRAINAGE STRUCTURES AND SYSTEMS SHALL BE CLEANED OF DEBRIS AND PATCHED AS NECESSARY TO ASSURE INTEGRITY OF THE STRUCTURE. THIS WORK SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR STRUCTURES AND CONTRACT UNIT PRICE PER LINEAL FOOT FOR SYSTEMS WHICH SHALL BE PAYMENT IN FULL FOR CLEANING, PATCHING, REMOVAL AND DISPOSAL OF DEBRIS AND DIRT. DRAINAGE STRUCTURES AND SYSTEMS CONSTRUCTED AS PART OF THIS PROJECT SHALL BE MAINTAINED BY THE CONTRACTOR AT HIS EXPENSE. NO PAYMENT WILL BE MADE FOR CLEANING STRUCTURES OR SYSTEMS CONSTRUCTED AS PART OF THIS PROJECT.

C. ANY DEWATERING OF SEWER AND WATER TRENCHES AS WELL AS TEMPORARY SHEETING OR BRACING THAT MAY BE REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL NOT BE CONSIDERED EXTRA WORK UNLESS THERE IS A SPECIFIC LINE ITEM FOR DEWATERING. IN THE EVENT THAT SOFT MATERIALS WITH UNCONFINED COMPRESSIVE STRENGTH LESS THAN 0.5 TSF ARE ENCOUNTERED IN SEWER CONSTRUCTION, THE CONTRACTOR SHALL (UPON APPROVAL OF THE OWNER AND/OR ENGINEER) OVER-EXCAVATE TO A DEPTH OF ONE (1) FOOT BELOW THE BOTTOM OF THE PIPE AND BACKFILL WITH COMPACTED CRUSHED STONE, PROPERLY FORMED TO FIT THE BOTTOM OF THE PIPE.

D. TRENCH BACKFILL WILL BE REQUIRED FOR THE FULL TRENCH DEPTH WITHIN TWO (2) FEET OF PROPOSED OR EXISTING PAVEMENTS, UTILITIES, DRIVEWAYS, AND SIDEWALKS AND EXTENDING A DISTANCE EQUAL TO A 1:1 SLOPE FROM SUBGRADE ELEVATION TO TOP OF PIPE. THE TRENCH BACKFILL SHALL CONSIST OF GRANULAR MATERIAL MEETING IDOT CA-6 GRADATION. THE TRENCH BACKFILL SHALL BE COMPACTED IN ACCORDANCE WITH (SSRBC) SPECIFICATIONS. JETTING WITH WATER SHALL NOT BE PERMITTED. THE COST OF SUCH CONSTRUCTION SHALL BE CONSIDERED INCIDENTAL TO THIS CONTRACT AND SHALL BE INCLUDED IN THE UNIT PRICE OF THE PIPE. NO SEPARATE PAYMENT SHALL BE MADE FOR THIS ITEM.

E. THE CONTRACTOR SHALL INSTALL A 4" X 4" X 8' (NOMINAL) POST AT THE TERMINUS OF THE SANITARY, WATER AND STORM SERVICE, SANITARY AND STORM MANHOLES, CATCH BASINS, INLETS AND WATER VAULTS. THE POST SHALL EXTEND 4' ABOVE THE GROUND. THE TOP 12" OF SAID POST SHALL BE PAINTED AS FOLLOWS: SANITARY - RED, WATERMAIN - BLUE, STORM - GREEN.

F. AFTER THE STORM SEWER SYSTEM HAS BEEN CONSTRUCTED, THE CONTRACTOR SHALL PLACE EROSION CONTROL AT REAR YARD INLET LOCATIONS, AND AT OTHER LOCATIONS SELECTED BY THE ENGINEER, TO MINIMIZE THE AMOUNT OF SILTATION WHICH NORMALLY WOULD ENTER THE STORM SEWER SYSTEM.

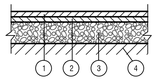
G. HYDRANTS SHALL NOT BE FLUSHED DIRECTLY ON THE ROAD SUBGRADES. WHENEVER POSSIBLE, HOSES SHALL BE USED TO DIRECT THE WATER INTO LOT AREAS OR THE STORM SEWER SYSTEM (IF AVAILABLE). DAMAGE TO THE ROAD SUBGRADE OR LOT GRADING DUE TO EXCESSIVE WATER SATURATION AND/OR EROSION FROM HYDRANT FLUSHING, OR FROM LEAKS IN THE WATER DISTRIBUTION SYSTEM, WILL BE REPAIRED BY THE CONTRACTOR AT HIS COST.

H. ALL TOP OF FRAMES FOR STORM AND SANITARY SEWERS AND VALVE VAULT COVERS ARE TO BE ADJUSTED TO MEET FINAL FINISH GRADE. THIS ADJUSTMENT IS TO BE MADE BY THE SEWER AND WATER CONTRACTOR AND THE COST IS TO BE CONSIDERED INCIDENTAL. THESE ADJUSTMENTS TO FINISHED GRADE WILL NOT ALLEVIATE THE CONTRACTOR FROM ANY ADDITIONAL ADJUSTMENTS AS REQUIRED BY THE MUNICIPALITY UPON FINAL INSPECTION OF THE PROJECT. (FINAL GRADES TO BE DETERMINED BY THE MUNICIPALITY AT THE TIME OF FINAL INSPECTION AND MAY VARY FROM PLAN GRADE.)

I. SLEEVES FOR UTILITY (COMED, TELEPHONE, ETC.) STREET CROSSING, SHALL BE INSTALLED WHERE DIRECTED BY THE OWNER. SLEEVES SHALL BE 6" PVC INSTALLED 36" BELOW THE TOP OF CURB AND EXTEND TWO FEET OUTSIDE THE CURB. TRENCH SHALL BE BACKFILLED WITH COMPACTED GRANULAR MATERIAL.

J. THE CONTRACTOR SHALL VERIFY THE SIZE AND INVERT ELEVATION OF ALL CONNECTIONS TO AVOID ANY CONFLICTS BEFORE STARTING WORK. NOTIFY OWNER OF ANY DISCREPANCIES.

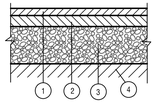
25. IT SHALL BE UNDERSTOOD THAT NEITHER THE MUNICIPALITY, ITS OFFICIALS, CONSULTANTS, NOR ITS EMPLOYEES ARE AGENTS OF OR REPRESENTATIVES OF THE OWNER. NONE-THE-LESS, THE MUNICIPALITY, ITS OFFICIALS AND EMPLOYEES ARE TO BE PROVIDED SAFE ACCESS TO ALL PHASES OF ALL WORK PERFORMED ON THE PROJECT SITE TO MONITOR THE QUALITY OF THE WORK AND ASSURE ITS CONFORMITY WITH THE PLANS AND SPECIFICATIONS. THERE SHALL BE NO PERSONAL LIABILITY UPON ANY OFFICIAL OR EMPLOYEE OF THE MUNICIPALITY ON ACCOUNT OF ACTIONS TAKEN OR NOT TAKEN IN THE COURSE OF THEIR WORK. THE CONTRACTOR MUST AT ALL TIMES MAINTAIN A SAFE ACCESS TO THE WORK FOR INSPECTORS, "SAFE": MEANING CONDITIONS COMPLYING WITH ALL PROVISIONS OF ALL APPLICABLE AND RECOGNIZED SAFETY STANDARDS, FEDERAL, STATE AND LOCAL. IF ACCESS IS NOT SAFE AND INSPECTIONS CANNOT BE MADE UNDER SAFE CONDITIONS, THE INSPECTOR CAN ORDER CESSATION OF THE WORK SO AFFECTED UNTIL SUCH TIME AS CONTRACTOR PROVIDES SAFE ACCESS.



TYPICAL ASPHALT PAVEMENT SECTION
(STANDARD DUTY - PASSENGER VEHICLE PARKING AREAS)
N.T.S.

1. 1.5" HMA SURFACE COURSE, MIX "C", N50
2. 2.25" HMA BINDER COURSE, IL 19.0, N50
3. 10" AGGREGATE BASE COURSE, TYPE B
4. COMPACTED AND STABLE SUBGRADE

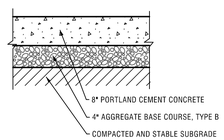
STRUCTURAL #:
1.5 X 0.40 = 0.60
2.25X 0.33 = 0.74
10.0 X 0.13 = 1.30
= 2.64



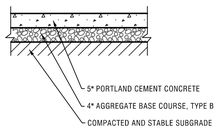
TYPICAL ASPHALT PAVEMENT SECTION
(HEAVY DUTY - TRUCK AREAS)
N.T.S.

1. 2.0" HMA SURFACE COURSE, MIX "C", N50
2. 4" HMA BINDER COURSE, IL 19.0, N50
3. 12" AGGREGATE BASE COURSE, TYPE B
4. COMPACTED AND STABLE SUBGRADE

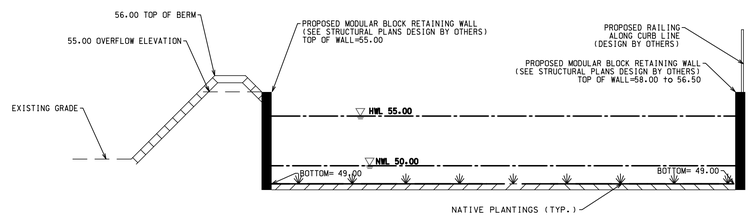
STRUCTURAL #:
2.0 X 0.40 = 0.80
4.0 X 0.33 = 1.32
12 X 0.13 = 1.56
= 3.68




TYPICAL CONCRETE PAVEMENT SECTION
LOADING DOCK
N.T.S.




TYPICAL SIDEWALK/PEDESTRIAN PATH SECTION
N.T.S.




**NATIVE PLANTED BASIN**
N.T.S.

## LEGEND

| EXISTING | DESCRIPTION | PROPOSED |
|---|---|---|
| | DRAIN TILE | |
| | STORM SEWER | |
| | SANITARY SEWER | |
| | SANITARY TRUNK SEWER | |
| W 8" | WATER MAIN (WITH SIZE) | 8" |
| | PIPE TRENCH BACKFILL | |
| G | GAS MAIN | G |
| T | TELEPHONE LINES | T |
| E | ELECTRIC LINE | E |
| X | FENCE | X |
| | RIGHT-OF-WAY | |
| | EASEMENT | |
| | PROPERTY LINE | |
| | SETBACK LINE | |
| | CENTERLINE | |
| 680 | CONTOUR | 680 |
| | SANITARY MANHOLE | |
| | STORM MANHOLE | |
| | CATCH BASIN | |
| | INLET | |
| | FIRE HYDRANT | |
| | PRESSURE CONNECTION | |
| | PIPE REDUCER | |
| | VALVE AND VAULT, VALVE | |
| | FLARED END SECTION | |
| | STREET LIGHT | |
| | UTILITY POLE | |
| | CONTROL POINT | |
| | SIGN | |
| XXX.XX | SPOT ELEVATION | XXX.XX |
| | SOIL BORING | |
| | OVERLAND FLOW ROUTE | |
| | DRAINAGE SLOPE | OR |
| | GUARDRAIL | |
| | WATER'S EDGE | |
| | CONCRETE | |
| | REVERSE PITCH CURB | |
| | TREE, FIR TREE, BUSH, & PROPOSED TREE TO REMOVE | |

### ABBREVIATIONS

| | | |
|---|---|---|
| M = STORM MANHOLE | I = INVERT OR INLET | T/P = TOP OF PIPE |
| S = SANITARY MANHOLE | TF = TOP OF FOUNDATION | B/P = BOTTOM OF PIPE |
| CB = CATCH BASIN | GF = GARAGE FLOOR | WM = WATERMAIN |
| LP = LIGHT POLE | TC = TOP OF CURB | SAN = SANITARY SEWER |
| VV = VALVE VAULT | TD = TOP OF DEPRESSED CURB | STM = STORM SEWER |
| E = END SECTION | TW = TOP OF RETAINING WALL | LO = LOOK OUT |
| FH = FIRE HYDRANT | BW = BOTTOM OF RETAINING WALL | PLO = PARTIAL LOOK OUT |
| GR = GRADE RING (HYDRANT) | OP = OUTLET OF PIPE | |

### PERMITS

| DESCRIPTION | LOG NO. | PERMIT NO. | DATE ISSUED |
|---|---|---|---|
| IDNR ECOCAT | 2202531 | 2202531 | 08/13/2021 |
| IDNR SHPO | 007030422 | | |
| IEPA NPDES | | | |
| USACE | | | |
| IDOT | | | |
| IEPA DWPC (SANITARY) | | | |
| IEPA DPWS (WATER) | | | |
| | | | |

### BENCHMARK

SEE SHEET ET FOR BENCHMARK INFORMATION.

### CONTACT INFORMATION

**VILLAGE OF PALATINE**
200 EAST WOOD STREET
PALATINE, IL 60067
(847) 358-7500

**AT&T**
688 INDUSTRIAL DRIVE
ELMHURST, IL 60126
(630) 600-6347

**COMMONWEALTH EDISON**
201 W. ARTHUR AVE.
MT. PROSPECT, IL 60056
(847) 870-2124

**NICOR GAS**
1011 WILEY ROAD
SCHAUMBURG, IL 60195
(847) 843-0627

| NO. | DATE | REMARKS |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

TYPICAL SECTIONS & GENERAL NOTES

2240-2296 RAND ROAD
PALATINE, ILLINOIS

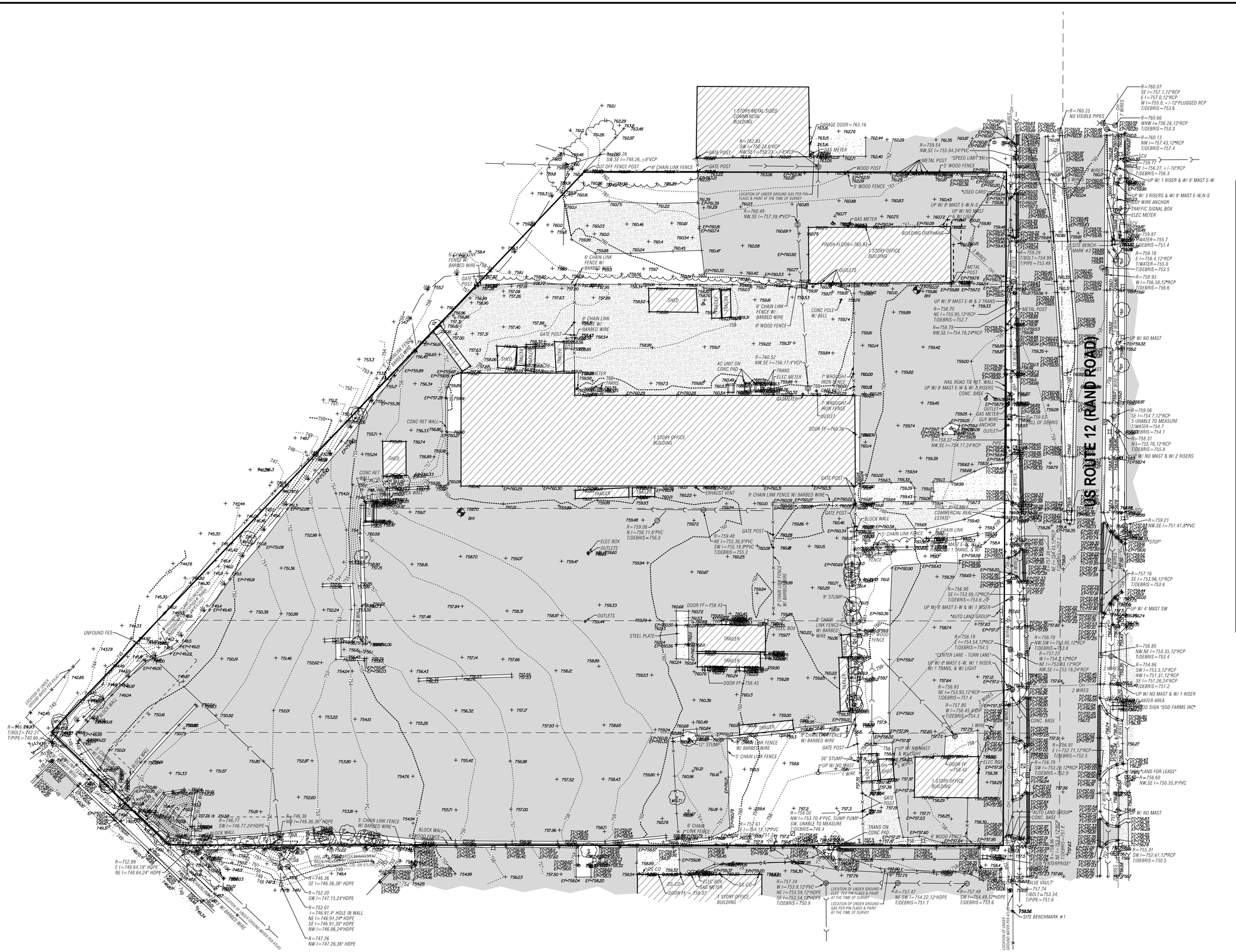
CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065

SPACECO INC.

FILENAME: 11624GN
DATE: 03/16/22
JOB NO. 11624
SHEET GN
2 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

N:\Projects\11624\ENG\11624GN.dgn Default User=wbrennan


1 STORY METAL SIDED COMMERCIAL BUILDING
GARAGE DOOR = 763.16
GAS METER
GATE POST
6' CHAIN LINK FENCE
WOOD POST
5' WOOD FENCE
LOCATION OF UNDER GROUND GAS PER PIN FLAGS & PAINT AT THE TIME OF SURVEY
R = 760.49
NW, SE I = 757.39, 4"VCP
GAS METER
BUILDING OVERHANG
FINISH FLOOR = 760.93
1 STORY OFFICE BUILDING
OUTLETS
6' CHAIN LINK FENCE W/ BARBED WIRE
6' WOOD FENCE
CONC POLE W/ BELL
R = 760.52
NW, SE I = 756.17, 4"VCP
TRANS
ELEC METER
AC UNIT ON CONC PAD
BASEMENT
7' WROUGHT IRON FENCE
DOOR FF = 760.36
1 STORY OFFICE BUILDING
8' WROUGHT IRON FENCE W/ BARBED WIRE
GATE POST
BLOCK WALL
6' CHAIN LINK FENCE
5' CHAIN LINK FENCE
8' CHAIN LINK FENCE W/ BARBED WIRE
R = 759.06
N I = 756.11, 6"PVC
T/DEBRIS = 756.0
R = 759.48
NE I = 755.38, 8"PVC
SW I = 755.18, 8"PVC
T/DEBRIS = 755.2
ELEC BOX
OUTLETS
STEEL PLATE
TRAILER
DOOR FF = 758.43
12" STUMP
36" STUMP
UP W/ NO MAST
UP W/ 8' MAST E-W & W/ 3 RISERS
CONC. BASE
R = 758.70
NE I = 755.95, 12"RCP
T/DEBRIS = 752.7
R = 758.73
NW, SE I = 754.78, 24"RCP
UP W/ NO MAST
R = 760.07
SE I = 757.1, 12"RCP
E I = 757.0, 12"RCP
W I = 755.0, +/-12"PLUGGED RCP
T/DEBRIS = 753.6
R = 760.66
W/W I = 756.26, 12"RCP
T/DEBRIS = 753.3
R = 760.13
NW I = 757.43, 12"RCP
T/DEBRIS = 757.4
R = 760.25
NO VISIBLE PIPES
SCV
I = 759.71
E I = 756.27, +/-10"RCP
T/DEBRIS = 756.3
UP W/ 1 RISER & W/ 8' MAST E-W
UP W/ 3 RISERS & W/ 8' MAST E-W, N-S
GUY WIRE ANCHOR
TRAFFIC SIGNAL BOX
ELEC METER
SITE BENCH MARK #2
R = 759.87
W I = 756.87
T/BOLT = 754.99
T/PIPE = 753.49
R = 759.18
E I = 756.4, 12"RCP
T/WATER = 755.8
T/DEBRIS = 753.5
R = 758.93
W I = 756.58, 12"RCP
T/DEBRIS = 756.6
UP W/ 8' MAST E-W & 2 TRANS
UP W/ NO MAST
R = 759.32
R = 759.06
SE I = 754.1, 12"RCP
T/WATER = 754.7
T/DEBRIS = 754.1
R = 758.31
N I = 755.76, 12"RCP
T/DEBRIS = 755.8
UP W/ NO MAST & W/ 2 RISERS
R = 759.21
NW, SE I = 751.41, 8"PVC
"STOP"
UP W/ 4' MAST SW
R = 757.16
SE I = 753.96, 12"RCP
T/DEBRIS = 753.6
R = 756.80
NW, NE I = 753.35, 12"RCP
T/DEBRIS = 753.4
R = 754.86
SW I = 753.3, 12"RCP
NW I = 751.31, 12"RCP
SE I = 751.26, 24"RCP
T/DEBRIS = 751.2
UP W/ NO MAST & W/ 1 RISER
PLANTER AREA
"LAND FOR LEASE"
R = 756.60
NW, SE I = 750.35, 8"PVC
R = 759.06
SE I = 754.1, 12"RCP
5' UNABLE TO MEASURE T/WATER = 754.7
T/DEBRIS = 754.1
R = 758.31
N I = 755.76, 12"RCP
T/DEBRIS = 755.8
UP W/ NO MAST & W/ 2 RISERS
R = 759.21
NW, SE I = 751.41, 8"PVC
"STOP"
UP W/ 4' MAST SW
R = 757.16
SE I = 753.96, 12"RCP
T/DEBRIS = 753.6
R = 756.80
NW, NE I = 753.35, 12"RCP
T/DEBRIS = 753.4
R = 754.86
SW I = 753.3, 12"RCP
NW I = 751.31, 12"RCP
SE I = 751.26, 24"RCP
T/DEBRIS = 751.2
UP W/ NO MAST & W/ 1 RISER
PLANTER AREA
"LAND FOR LEASE"
R = 756.60
NW, SE I = 750.35, 8"PVC
UP W/ NO MAST
R = 759.32
R = 759.06
SE I = 754.12"RCP
5' UNABLE TO MEASURE T/WATER = 754.7
T/DEBRIS = 754.1
R = 758.31
N I = 755.76, 12"RCP
T/DEBRIS = 755.8
UP W/ NO MAST & W/ 2 RISERS
R = 759.21
NW, SE I = 751.41, 8"PVC
"STOP"
UP W/ 4' MAST SW
R = 757.16
SE I = 753.96, 12"RCP
T/DEBRIS = 753.6
R = 756.80
NW, NE I = 753.35, 12"RCP
T/DEBRIS = 753.4
R = 754.86
SW I = 753.3, 12"RCP
NW I = 751.31, 12"RCP
SE I = 751.26, 24"RCP
T/DEBRIS = 751.2
UP W/ NO MAST & W/ 1 RISER
PLANTER AREA
"LAND FOR LEASE"
R = 756.60
NW, SE I = 750.35, 8"PVC

SCALE 1" = 40'

0 40 80

## LEGEND

- PAVEMENT SAWCUT (FULL DEPTH)
- CURB & GUTTER/CONCRETE WALL REMOVAL
- UNDERGROUND UTILITY/FENCE REMOVAL
- BUILDING/PAVEMENT REMOVAL
- SIGN/UTILITY STRUCTURE/TREE REMOVAL

## NOTES:

1. ON-SITE TREES IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE REMOVED.
2. ALL EXISTING WET UTILITIES ARE TO BE FIELD VERIFIED AND ASSESSED PRIOR TO DEMOLITION. ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES.
3. THE REMOVAL PLAN IS TO BE USED AS A GUIDE ONLY. CONTRACTOR SHALL LOCATE AND VERIFY ALL EXISTING DRY UTILITY SERVICES THAT NEED TO REMAIN ACTIVE PRIOR TO COMMENCING CONSTRUCTION. PRIOR TO DEMOLITION THE CONTRACTOR SHALL NOTIFY THE VILLAGE AND UTILITY COMPANIES IN ACCORDANCE WITH THEIR RESPECTIVE NOTIFICATION REQUIREMENTS
4. CONTRACTOR SHALL PROTECT ALL UTILITIES THAT ARE TO REMAIN BY COORDINATING WITH UTILITY PLAN
5. ALL EXISTING BUILDINGS AND ASSOCIATED STRUCTURES, UTILITIES, AND PAVEMENT IS TO BE DEMOLISHED
6. EXISTING RIGHT-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE RESTORED WITH A MINIMUM OF 4" OF TOPSOIL AND SOD.

REMOVE EXISTING CURB AND GUTTER

CONTRACTOR TO PROTECT EXISTING UTILITY POLE AND FIR HYDRANT DURING CONSTRUCTION.

REMOVE EXISTING CURB AND GUTTER

REMOVE EXISTING CURB AND GUTTER

REMOVE EXISTING CURB AND GUTTER

REMOVE EXISTING CURB AND GUTTER

REMOVE EXISTING CURB AND GUTTER

CONTRACTOR TO VERIFY LOCATION OF EXISTING 36" PIPE. NOTIFY ENGINEER OF ANY DISCREPANCIES.

OFF- SITE STORMWATER MANAGEMENT BASIN PROVIDED BY CHRISTOPHER B. BURKE ENGINEERING, LTD. ON 8/5/2021

US ROUTE 12 (RAND ROAD)

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

DEMOLITION PLAN

# 2240-2296 RAND ROAD
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS

9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 698-4060 Fax: (847) 698-4065

SPACECO INC.

FILENAME: 11624DEMO

DATE: 03/16/22

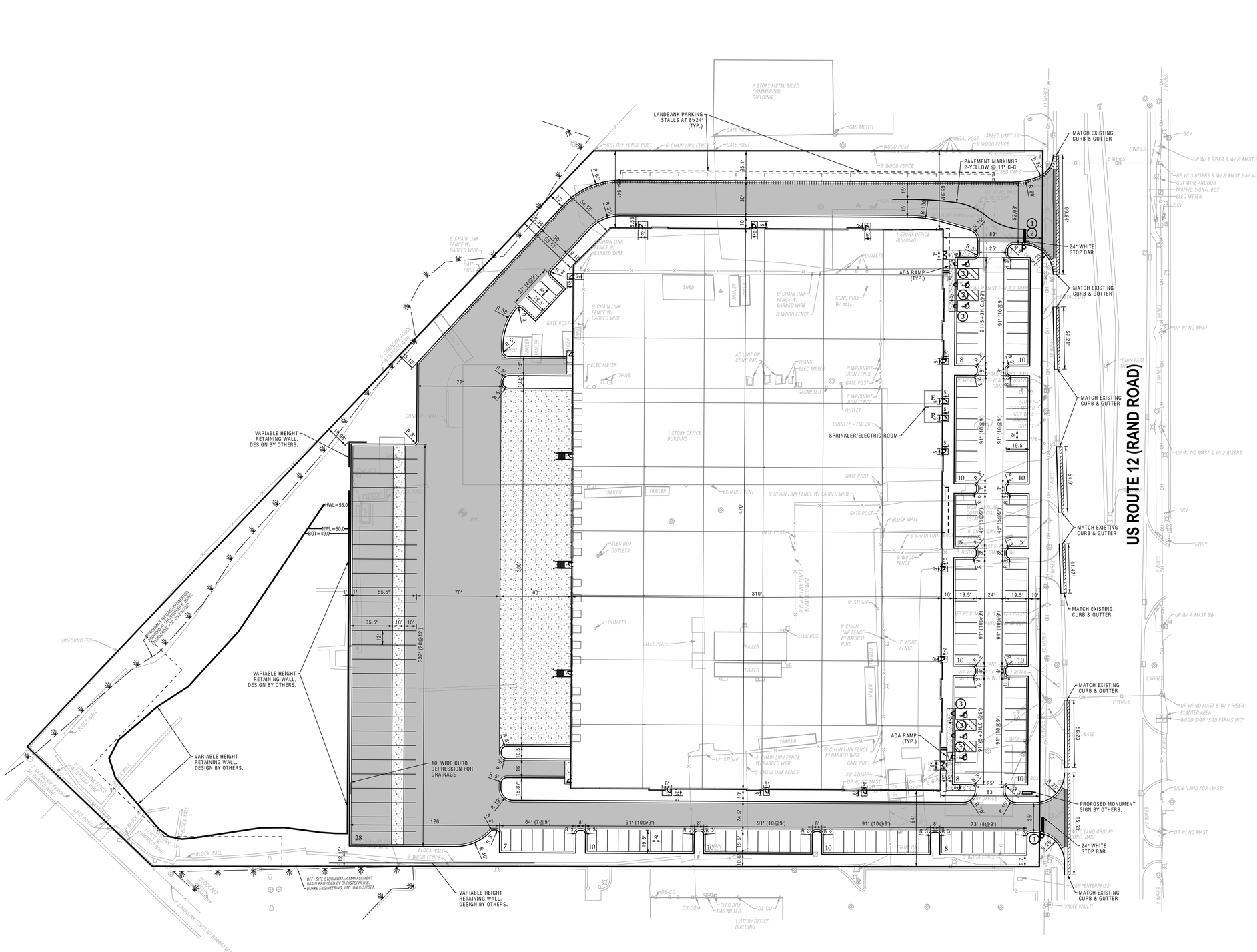
JOB NO. 11624

SHEET **DEMO**

4 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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SCALE 1" = 40'

0 40 80

## LEGEND

- STANDARD DUTY PAVEMENT
- HEAVY DUTY PAVEMENT
- CONCRETE PAVEMENT OR APRON
- CONCRETE SIDEWALK
- CONCRETE SIDEWALK HC RAMP (5' WIDE UNLESS NOTED)
- B-6.12 CURB & GUTTER (STANDARD PITCH)
- B-6.12 CURB & GUTTER (REVERSE PITCH)
- DEPRESSED CURB & GUTTER
- MEET EXISTING PAVEMENT ADN REPLACE ADJACENT SURFACE COURSE WITH LIKE MATERIALS (2' WIDE STRIP ADJACENT TO CURB & GUTTER REMOVAL)

## NOTES:

1. ALL DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL CURBS AND GUTTERS ARE REVERSED PITCH UNLESS OTHERWISE NOTED.
3. SEE SHEET GN1 FOR PAVEMENT SECTION DETAILS.
4. ALL PAVEMENT MARKINGS SHALL BE PAINT.
5. ALL ACCESSIBLE PARKING SPACE SIGNAGE SHALL CONFORM TO ILLINOIS ACCESSIBILITY CODE.
6. SEE ARCHITECTURAL DRAWINGS FOR DESIGN AND DETAILS OF THE BUILDINGS
7. BOLLARDS ARE TO BE PLACED AROUND FIRE HYDRANTS LOCATED IN TRUCK DOCKS

## SIGN LEGEND:

| ① | ② | ③ |
|---|---|---|
| STOP | ONLY | RESERVED PARKING $100 FINE VAN ACCESSIBLE |
| R1-1 30" x 30" | R3-5R 30" X 36" | R7-8 |

NOTE: ①②③ INDICATES SIGN ① MOUNTED ABOVE SIGN ②

## PARKING SUMMARY:

CAR PARKING STALLS (9' WIDE) = 135 + (6 ADA)
-FUTURE/LANDBANK PARKING STALLS = 13

TRAILER PARKING STALLS (12' WIDE) = 28

SHIPPING/RECEIVING TRUCK DOCKS = 20
DRIVE-IN DOORS = 2

| NO. | DATE | REMARKS |
|---|---|---|
| | | |

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

# GEOMETRIC PLAN

# 2240-2296 RAND ROAD
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 698-4060 Fax: (847) 698-4065
SPACECO INC.

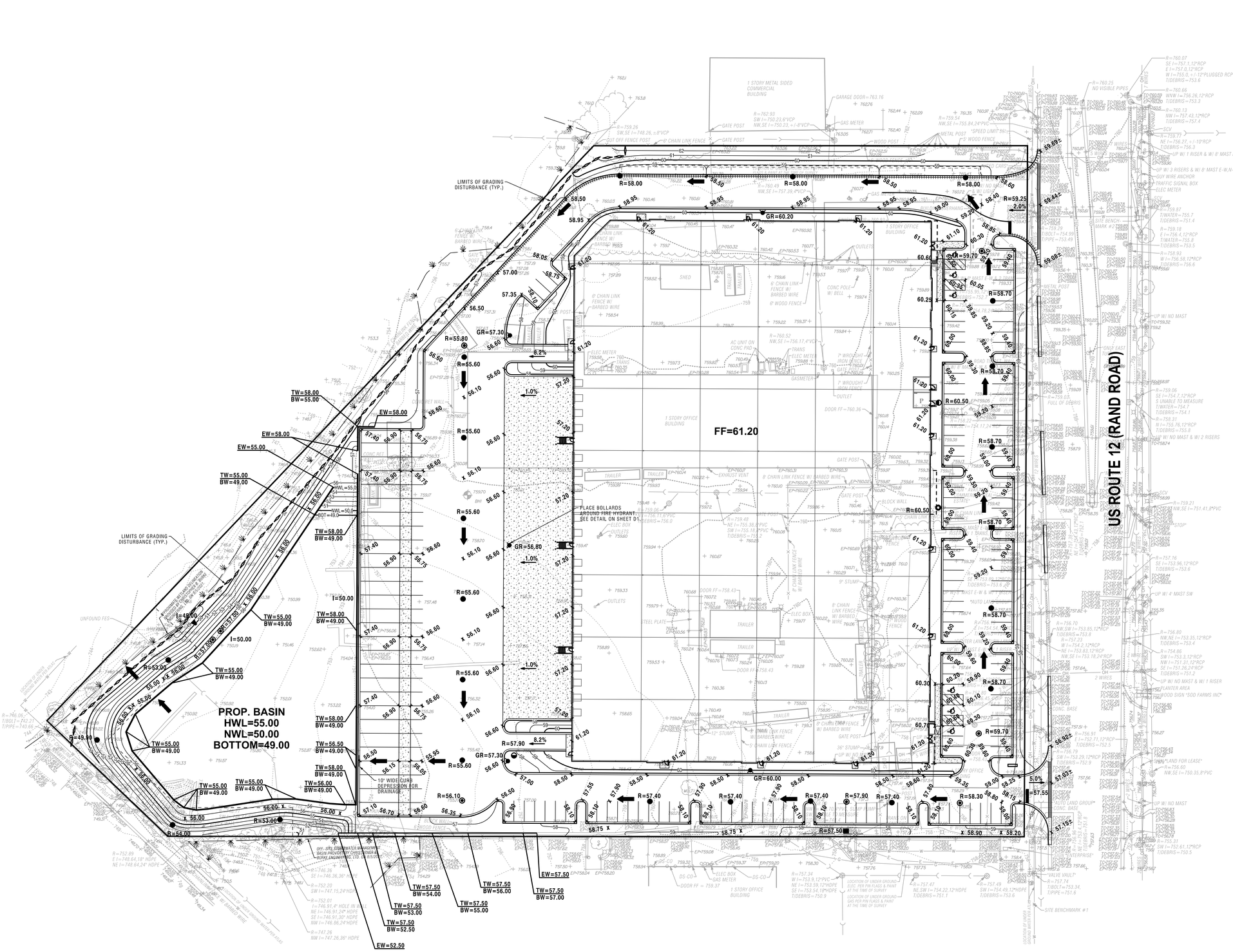
FILENAME: 11624GM

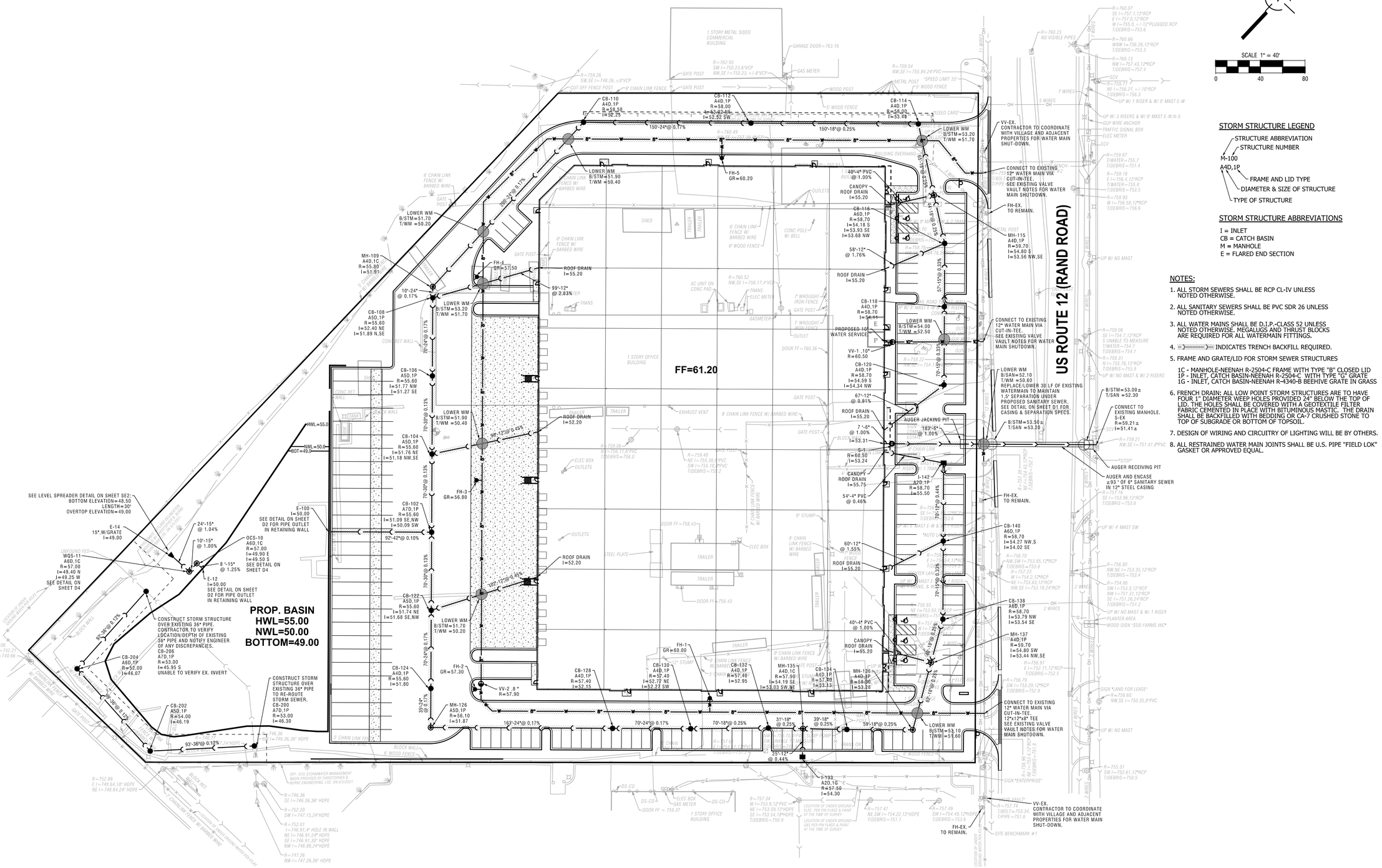
DATE: 03/16/22

JOB NO. 11624

SHEET GM
5 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)


SCALE 1" = 40'
0
40
80
LEGEND
FF FINISHED FLOOR
LOCAL DRAINAGE
100-YEAR OVERLAND FLOW ROUTE
XX.XX / XX.XX TOP OF WALL / FINISHED GRADE @ BOTTOM OF WALL
XX.XX± PROPOSED SPOT GRADE (MATCH EXISTING)
LIMITS OF GRADING DISTURBANCE
NOTES:
1. ADD 700 TO ELEVATIONS SHOWN AS XX.XX.
2. ALL CURB AND GUTTER IS STANDARD PITCH UNLESS NOTED OTHERWISE. SEE LEGEND ON GEOMETRIC SHEET.
3. ALL SPOT GRADES ALONG CURB LINE ARE EDGE OF PAVEMENT UNLESS NOTED OTHERWISE.
US ROUTE 12 (RAND ROAD)
FF=61.20
PROP. BASIN
HWL=55.00
NWL=50.00
BOTTOM=49.00
LIMITS OF GRADING DISTURBANCE (TYP.)
PLACE BOLLARDS AROUND FIRE HYDRANT. SEE DETAIL ON SHEET D1
10' WIDE CURB DEPRESSION FOR DRAINAGE
OFF-SITE STORMWATER MANAGEMENT BASIN PROVIDED BY OWNER PER KIMLEY-HORN ENGINEERING, LTD. 10-31-2019
1 STORY METAL SIDED COMMERICAL BUILDING
1 STORY OFFICE BUILDING
SHED
TRAILER
GARAGE DOOR=763.16
GAS METER
GATE POST
6' CHAIN LINK FENCE W/ BARBED WIRE
6' WOOD FENCE
8' CHAIN LINK FENCE W/ BARBED WIRE
7' WROUGHT IRON FENCE
OUTLETS
CONC POLE W/ BELL
AC UNIT ON CONC PAD
ELEC METER
TRANS
GAS METER
DOOR FF=760.36
DOOR FF=759.37
DOOR FF=758.43
DOOR FF=758.43
DOOR FF=758.43




## STORM STRUCTURE LEGEND

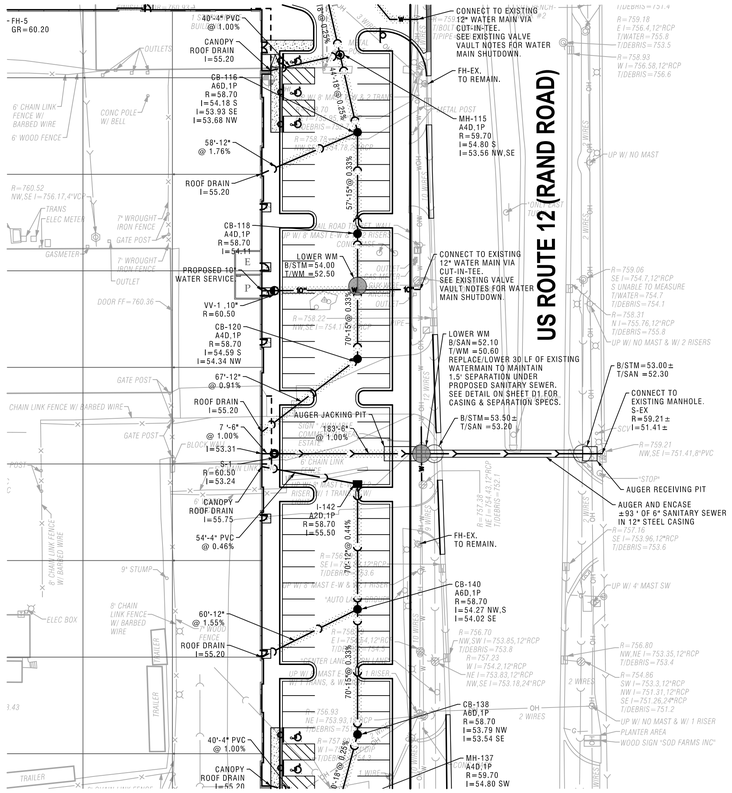
STRUCTURE ABBREVIATION
STRUCTURE NUMBER
M-100
A4D,1P
FRAME AND LID TYPE
DIAMETER & SIZE OF STRUCTURE
TYPE OF STRUCTURE

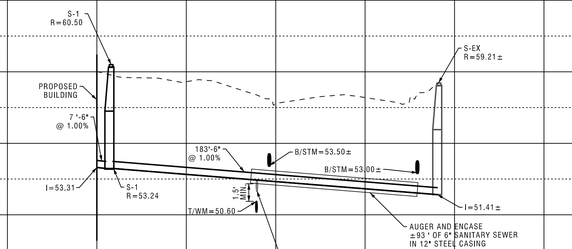
## STORM STRUCTURE ABBREVIATIONS

I = INLET
CB = CATCH BASIN
M = MANHOLE
E = FLARED END SECTION

## NOTES:

1. ALL STORM SEWERS SHALL BE RCP CL-IV UNLESS NOTED OTHERWISE.
2. ALL SANITARY SEWERS SHALL BE PVC SDR 26 UNLESS NOTED OTHERWISE.
3. ALL WATER MAINS SHALL BE D.I.P.-CLASS 52 UNLESS NOTED OTHERWISE. MEGALUGS AND THRUST BLOCKS ARE REQUIRED FOR ALL WATERMAIN FITTINGS.
4. ⟩⟩⟩




| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

**PLAN AND PROFILE - SANITARY SEWER SERVICE**

# 2240-2296 RAND ROAD
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065
SPACECO INC.

FILENAME: 11624PP01
DATE: 03/16/22
JOB NO. 11624
SHEET **PP01**
8 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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This Soil Erosion & Sediment Control (SESC) Plan has been prepared to fulfill one of the requirements of the National Pollutant Discharge Elimination System (NPDES) General Permit No. ILR10____. The SESC Plan should be maintained on site as an integral component of the Storm Water Pollution Prevention Plan (SWPPP). The SWPPP, including the SESC Plan, should be amended whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the Waters of the State and which has not otherwise been addressed in the SWPPP. The SWPPP, shall also be amanded if it proves to be ineffective in eliminating or significantly minimizing pollutants, or in otherwise achieving the general objectives of controlling pollutants in storm water discharges associated with construction site activity. In addition, the SWPPP shall be amended to identify any new contractor and/or subcontractor that will implement a measure of the SWPPP.

1. SITE DESCRIPTION

A. The following is a description of the nature of the construction activity: Demolition of 3 vacant buildings and the construction of an industrial building with associated grading, utilities, and paving improvements.

B. The following is a description of the intended sequence of construction activities which will disturb soils for major portions of the construction site:

Describe proposed construction sequence, sample follows:

1) Install perimeter sediment control measures
  a) Selective vegetation removal for silt fence installation
  b) Silt fence installation
  c) Construction fencing around areas not to be disturbed
  d) Stabilized construction entrance
2) Clear and grub (as necessary)
3) Construct sediment trapping devices (sediment traps, sediment basins, etc.)
4) Construct detention facilities and outlet control structure with restrictor & temporary perforated riser
5) Strip topsoil, stockpile topsoil and grade site
6) Temporarily stabilize topsoil stockpiles (seed and silt fence around toe of slope)
7) Install storm sewer, sanitary sewer, watermain and associated inlet & outlet protection
8) Permanently stabilize detention basins with seed and erosion control blanket
9)  Temporarily stabilize all areas including lots that have reached mass grade
10) Install roadways
11) Permanently stabilize all outlet areas
12) Install buildings and grade individual lots
13) Permanently stabilize lots
14) Remove all temporary soil erosion and sediment control measures after the site is stabilized with vegetation

C. The site has a total acreage of approximately 8.86 acres. Construction activity will disturb approximately 8.71 acres of the site.

D. 1) An estimated runoff coefficient of the site after construction activities are completed is 0.82.
  2) Existing data describing the soil or quality of any discharge from the site is included in the Geotechnical Investigation Report prepared by Pioneer Engineering & Environmental Services, LLC Project No. 21-0282-151 dated August 25, 2021.

E. Refer to Sheets GR & UT for a site plan indicating;
  1) drainage patterns;
  2) approximate slopes anticipated before and after major grading activities;
  3) locations where vehicles enter or exit the site and controls to minimize off-site sediment tracking;
  4) areas of soil disturbance;
  5) the location of major structural and nonstructural controls;
  6) the location of areas where stabilization practices are expected to occur;
  7) surface waters (including wetlands); and,
  8) locations where storm water is discharged to a surface water.

F. 1) The name of the receiving water(s) is(are): Buffalo Creek Tributary .
  2) The name of the ultimate receiving water is: Des Plaines River.
  3) The extent of wetland acreage at the site is 0.15 acres.

G. Potential sources of pollution associated with this construction activity may include:

- sediment from disturbed soils
- portable sanitary stations
- fuel tanks
- staging areas
- waste containers
- chemical storage areas
- oil or other petroleum products
- adhesives
- tar
- solvents
- detergents
- fertilizers
- raw materials (e.g., bagged portland cement)
- construction debris
- landscape waste
- concrete and concrete trucks
- litter

2. CONTROLS

This section of the SESC Plan addresses the various controls that should be Implemented for each of the major construction activities described in the *Site Description* section. For each measure identified in the SWPPP, the contractor(s) or subcontractor(s) that will implement the measure should be identified. All contractors and subcontractors that are identified should be required to sign a copy of the certification statement from Part IV.F. of the ILR10 Permit (in accordance with Part VI.G. - Signatory Requirements, of the ILR10 Permit), All signed certification statements should be maintained in the SWPPP.

A. Approved State or Local Plans

The management practices, controls and other provisions contained in the SWPPP should be at least as protective as the requirements contained in the Illinois Environmental Protection Agency's (IEPA) and the United States Department of Agriculture's Natural Resource Conservation Service Illinois Urban Manual, 2012. Requirements specified in sediment and erosion control site plans or site permits or storm water management site plans or site permits approved by local officials that are applicable to protecting surface water resources are, upon submittal of a Notice of Intent (NOI) to be authorized to discharge under the ILR10 permit, incorporated by reference and are enforceable under the ILR10 permit even if they are not specifically included in a SWPPP required under the ILR10 permit. This provision does not apply to provisions of master plans, comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit that is issued for the construction site.

The soil erosion and sediment control measures for this site should meet the requirements of the following agencies:

- Village of Palatine
- MWRD
- IEPA
- U.S. Army Corps of Engineers

B. Control Implementation Schedule

Best Management Practices will be implemented on an as-needed basis to protect water quality. Perimeter controls of the site should be installed prior to soil disturbance (excluding soil disturbance necessary to install the controls), including demolition activities. Perimeter controls, including the silt fence, should be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Stabilized construction entrance(s) and sediment traps should be installed as described in the intended sequence of construction activities. The contractor is responsible for the adequate protection (including sediment control) of existing sewers and sewer structures during construction operations. As necessary, the appropriate sediment control measure should be installed prior to land disturbing activities.

Stabilization measures should be initiated where construction activities have temporarily or permanently ceased, In accordance with Local and State requirements, as described below. Once construction activity in an area has permanently ceased, that area should be permanently stabilized. Temporary perimeter controls should be removed after final stabilization of those portions of the site upward of the perimeter control.

C. Erosion and Sediment Controls

The appropriate soil erosion and sediment controls should be implemented on site and should be modified to reflect the current phase of construction. All temporary sediment and erosion control measures should be repaired or replaced as soon as practicable to maintain NPDES compliance. Permittee or an authorized agent is responsible for inspecting all sediment and erosion control measures at a minimum of every 7 calendar days and within 24 hours, or one working day, of the end of a 0.5-inch (or greater) rain event.

Unless otherwise indicated, all vegetative and structural erosion and sediment control practices should be installed to the Standard Practice. The contractor is responsible for the installation of any additional erosion and sediment control measures necessary to minimize erosion and sedimentation as determined by the Engineer or Primary Contact.

1) Stabilization Practices - Areas that will not be paved or covered with non-erosive material should be stabilized using procedures in substantial conformance with the Illinois Urban Manual. This SESC Plan includes site-specific soil erosion and sediment control measures. Additional erosion controls should be implemented as necessary, as determined by the Engineer or Primary Contact.

The following temporary and permanent stabilization practices, at a minimum, are proposed:

- permanent seeding
- temporary seeding
- erosion control blanket
- other measures

Site-specific scheduling of the implementation of these practices is included in the Soil Protection Chart.
A record of the dates when major grading activities occur, when construction activities cease on a portion of the site, and when stabilization measures are initiated should be included in the SWPPP.

Stabilization of disturbed areas must be initiated within 1 working day of permanent or temporary cessation of earth activities and shall be completed as soon as possible but not later than 14 days from the initialization of stabilization work in an area. Exceptions to these time frames are specified below.

  a. Where the initiation of stabilization measures is precluded by snow cover, stabilization measures shall be initiated as soon as practicable.

  b. On areas where construction activity has temporarily ceased and will resume after 14 days, a temporary stabilization method can be used. Temporary stabilization techniques and materials shall conform to the SWPPP.

2) Structural Practices - Provided below is a description of structural practices that should be implemented, to the degree attainable to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices should be placed on upland soils to the degree practicable. The installation of the following devices may be subject to Section 404 of the Clean Water Act:

- stabilized construction entrance
- silt fence
- sediment traps (provide locations and dimensions in plan set)
- other measures

D. Storm Water Management

Provided below is a description of measures that will be installed during the construction process to control the pollutants in storm water discharges that will occur after the construction operations have been completed. The installation of these devices may be subject to Section 404 of the Clean Water Act.

1) The practices selected for implementation were determined on the basis of technical guidance contained in IEPA's Illinois Urban Manual, Federal, State, and/or Local Requirements. The storm water management measures include:

- detention basins (wet basins, dry basins, etc.)
- retention basins
- vegetated swales
- infiltration trenches
- other measures

2) Velocity dissipation devices, such as rip-rap aprons at flared end sections or level spreaders, shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a watercourse so that the natural, physical, and biological characteristics and functions are maintained and protected (e.g., maintenance of hydrologic conditions, such as the hydroperiod and hydrodynamics present prior to the initiation of construction activities).

E. Waste Management

Solid waste materials including trash, construction debris, excess construction materials, machinery, tools and other items will be collected and disposed of off site by the contractor. The contractor is responsible to acquire the permit required for such disposal. Burning on site will not be permitted. No solid materials, including building materials, shall be discharged to Waters of the State, except as authorized by a Section 404 permit. All waste materials should be collected and stored in approved receptacles. No wastes should be placed in any location other than in the approved containers appropriate for the materials being discarded. There should be no liquid wastes deposited into dumpsters or other containers which may leak. Receptacles with deficiencies should be replaced as soon as possible and the appropriate clean-up procedure should take place, if necessary. Construction waste material is not to be buried on site. Waste disposal should comply with all Local, State, and Federal regulations.

On-site hazardous material storage should be minimized and stored in labeled, separate receptacles from non-hazardous waste. All hazardous waste should be disposed of in the manner specified by Local or State regulation or by the manufacturer.

F. Concrete Waste Management

Concrete waste or washout should not be allowed in the street or allowed to reach a storm water drainage system or watercourse. When practicable, a slip should be posted at each location to identify the washout. To the extent practicable, concrete washout areas should be located a reasonable distance from a storm water drainage inlet or watercourse, and should be located at least 10 feet behind the curb, if the washout area is adjacent to a paved road. A stabilized entrance that meets Illinois Urban Manual standards should be installed at each washout area.

The containment facilities should be of sufficient volume to completely contain all liquid and concrete waste materials including enough capacity for anticipated levels of rainwater. The dried concrete waste material should be picked up and disposed of properly when 66% capacity is reached. Hardened concrete can be properly recycled and used again on site (as approved by the Engineer) or hauled off site to an appropriate landfill.

G. Concrete Cutting

Concrete waste management should be implemented to contain and dispose of saw-cutting slurries. Concrete cutting should not take place during or immediately after a rainfall event. Waste generated from

concrete cutting should be cleaned-up and disposed into the concrete washout facility as described above.

H. Vehicle Storage and Maintenance

When not in use, construction vehicles should be stored in a designated area(s) outside of the regulatory floodplain, away from any natural or created watercourse, pond, drainage-way or storm drain. Controls should be installed to minimize the potential of runoff from the storage area(s) from reaching storm drains or water courses. Vehicle maintenance (including both routine maintenance as well as on-site repairs) should be made within a designated area(s) to prevent the migration of mechanical fluids (oil, antifreeze, etc.) into watercourses, wetlands or storm drains. Drip pans or absorbent pads should be used for all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids. Construction vehicles should be inspected frequently to identify any leaks; leaks should be repaired immediately or the vehicle should be removed from site. Dispose of all used oil, antifreeze, solvents and other vehicle-related chemicals in accordance with United States Environmental Protection Agency (USEPA) and IEPA regulations and per Material Safety Data Sheet (MSDS) and/or manufacturer Instructions. Contractors should immediately report spills to the Primary Contact.

I. Material Storage and Good Housekeeping

Materials and/or contaminants should be stored in a manner that minimizes the potential to discharge into storm drains or watercourses. An on-site area should be designated for material delivery and storage. All materials kept on site should be stored in their original containers with legible labels, and if possible, under a roof or other enclosure. Labels should be replaced if damaged or difficult to read. Bermed-off storage areas are an acceptable control measure to prevent contamination of storm water. MSDS should be available for referencing clean-up procedures. Any release of chemicals/contaminants should be immediately cleaned up and disposed of properly. Contractors should immediately report all spills to the Primary Contact, who should notify the appropriate agencies, if needed.

To reduce the risks associated with hazardous materials on site, hazardous products should be kept in original containers unless they are not re-sealable. The original labels and MSDS should be retained on site at all times. Hazardous materials and all other material on site should be stored in accordance with manufacturer or MSDS specifications. When disposing of hazardous materials, follow manufacturer or Local and State recommended methods.

The following good housekeeping practices should be followed on site during the construction project:

- An effort should be made to store only enough product required to do the job.

- All materials stored on site should be stored in a neat, orderly manner in their appropriate containers and adequately protected from the environment.

- Products should be kept in their original containers with the original manufacturer's label.

- Substances should not be mixed with one another unless recommended by the manufacturer.

- Operations should be observed as necessary to ensure proper use and disposal of materials on site.

- Whenever possible, all of a product should be used up before disposing of the container.

- Manufacturer's recommendations for proper use and disposal should be followed.

J. Management of Portable Sanitary Stations

To the extent practicable, portable sanitary stations should be located in an area that does not drain to any protected natural areas, Waters of the State, or storm water structures and should be anchored to the ground to prevent from tipping over. Portable sanitary stations located on impervious surfaces should be placed on top of a secondary containment device, or be surrounded by a control device (e.g., gravel-bag berm). The contractor should not create or allow unsanitary conditions. Sanitary waste should be disposed of in accordance with applicable State and/or Local regulations.

K. Spill Prevention and Clean-Up Procedures

Manufacturer's recommended methods for spill clean-up should be available and site personnel should be made aware of the procedures and the location of the information and clean-up supplies. Materials and equipment necessary for spill clean-up should be kept in the material storage area on site. Equipment and materials should include, but are not limited to, brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic and/or metal trash containers specifically for this purpose. Discharges of a hazardous substance or oil caused by a spill (e.g., a spill of oil into a separate storm sewer or Waters of the State) are not authorized by the ILR10 permit. If a spill occurs, notify the Primary Contact immediately. The construction site should have the capacity to control, contain, and remove spills. If they occur. Spills should be cleaned up immediately (after discovery) in accordance with MSDS and should not be buried on site or washed into storm sewer drainage inlets, drainage-ways, or Waters of the State.

Spills in excess of Federal Reportable Quantities (as established under 40 CFR Parts 110, 117, or 302), should be reported to the National Response Center by calling (800) 424-8802. MSDS often include information on Federal Reportable Quantities for materials. Spills of toxic or hazardous materials should be reported to the appropriate State or Local government agency, as required. When cleaning up a spill, the area should be kept well ventilated and appropriate personal protective equipment should be used to minimize injury from contact with a hazardous substance.

In addition to the good housekeeping and other management practices discussed in the previous sections of these Notes, the following minimum practices should be followed to reduce the risk of spills:

- On-site vehicles should be monitored for leaks and should receive regular preventative maintenance to reduce the chance of leakage.

- Petroleum products should be stored in tightly sealed and clearly labeled containers.

- Contractors should follow the manufacturer's recommendations for proper use, storage, and disposal of materials. Excess materials should be disposed of according to the manufacturer's instructions or State and Local regulations, and should not be discharged to the storm sewer or waterbody.

L. De-Watering Operations

During de-watering/pumping operations, only uncontaminated water should be allowed to discharge to protected natural areas, Waters of the State, or to a storm sewer system (in accordance with Local permits). Inlet hoses should be placed in a stabilized sump pit or floated at the surface of the water in order to limit the amount of sediment intake. Pumping operations may be discharged to a stabilized area that consists of an energy dissipating device (e.g., stone), sediment filter bag, or both. Adequate erosion controls should be used during de-watering operations as necessary. Stabilized conveyance channels should be installed to direct water to the desired location as applicable. Additional control measures may be installed at the outlet area at the discretion of the Primary Contact or Engineer.

M. Off-Site Vehicle Tracking

The site should have one or more stabilized construction entrances in conformance with the Plan details. Stabilized construction entrance(s) should be installed to help reduce vehicle tracking of sediments. Streets should be swept as needed to reduce excess sediment, dirt, or stone tracked from the site. Maintenance may include top dressing the stabilized entrance with additional stone and removing top layers of stone and sediment, as needed. Vehicles hauling erodible material to and from the construction site should be covered with a tarp.

N. Topsoil Stockpile Management

If topsoil is to be stockpiled at the site, select a location so that it will not erode, block drainage, or interfere with work on site. Topsoil stockpiles should not be located in the 100-year floodplain or designated buffer protecting Waters of the State. During construction of the project, soil stockpiles should be stabilized or protected with sediment trapping measures. Perimeter controls, such as silt fence, should be placed around the stockpile immediately. Stabilization of the stockpile should be completed if the stockpile is to remain undisturbed for longer than fourteen days.

O. Dust Control

Dust control should be implemented on site as necessary. Repetitive treatment should be applied as needed to accomplish control when temporary dust control measures are used. A water truck should be present on site (or available) for sprinkling/irrigation to limit the amount of dust leaving the site. Watering should be applied daily (or more frequently) to be effective. Caution should be used not to overwater, as that may cause erosion.

If field observations indicate that additional protection from wind erosion (in addition to, or in place of watering) is necessary, alternative dust suppressant controls should be implemented at the discretion and approval of the Engineer and/or Primary Contact.

Street cleaning should also be used as necessary to control dust. Paved areas that have soil on them from the construction site should be cleaned as needed, utilizing a street sweeper or bucket-type endloader or scraper at the direction of the Engineer and/or Primary Contact.

3. MAINTENANCE

Maintenance of the controls Incorporated into this project should be performed as needed to assure their continued effectiveness. This includes prompt and effective repair and/or replacement of deficient control measures. The following is a description of procedures that should be used to maintain, In good and effective operating condition, erosion and sediment control measures and other protective measures identified in the SESC Plan and Standard Specifications.

Dust control: When temporary dust control measures are used, repetitive treatment should be applied as needed to accomplish control.

Sediment filter bags: Sediment filter bags should be installed on pump outlet hoses that discharge off site or to sensitive on-site areas, and should be placed in an area that allows for the bag to be removed without producing a sediment discharge. The bags should be inspected frequently and repaired or replaced as needed.

Silt fence: Silt fences should be inspected regularly for undercutting where the fence meets the ground, overtopping, and tears along the length of the fence. Deficiencies should be repaired immediately. Remove accumulated sediments from the fence base when the sediment reaches one-half the fence height. During final stabilization, properly dispose of any sediment that has accumulated on the silt fence. Alternative sediment control measures should be considered for areas where silt fence continually fails.

Stabilized construction entrance: The stabilized construction entrances should be maintained to prevent tracking of sediment onto public streets. Maintenance includes top dressing with additional stone and removing top layers of stone and sediment. The sediment tracked onto the public right-of-way should be removed immediately.

Temporary sediment traps: Temporary sediment traps should be inspected after each period of significant rainfall. Remove sediment and restore the trap to its original dimensions when the sediment has accumulated to one-half the design depth of the permanent pool. Place the sediment that is removed in a designated disposal area. Check the structure for damage from erosion or piping. After all sediment-producing areas have been permanently stabilized, remove the structure and all unstable sediment. Grade the area to blend with the adjoining areas and stabilize properly.

4. INSPECTIONS

The Permittee (or their authorized representative) will be responsible for conducting site inspections in compliance with the ILR10 NPDES Permit. After each inspection, a report should be prepared by the qualified personnel who performed the inspection. The inspection report should be maintained on site as part of the SWPPP.

Inspections should be conducted at least once every seven calendar days and within 24 hours or by the end of the following work day, of the end of a storm event that is 0.5 inches or greater, or equivalent snowfall.

Inspections may be reduced to once per month when construction activities have ceased due to frozen conditions. Weekly Inspections will recommence when construction activities are conducted, or if there is 0.5" or greater rain event, or a discharge due to snowmelt occurs.

Each inspection should include the following components:

A. Disturbed areas and areas used for the storage of materials that are exposed to precipitation should be inspected for evidence of, or the potential for, pollutants entering the drainage system. The erosion and sediment control measures identified in the SWPPP should be observed to ensure that they have been installed and are operating correctly. Where discharge points are accessible, they should be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to the receiving waters. Locations where vehicles enter or exit the site should be inspected for off-site sediment tracking. All pumping operations and other potential non-storm water discharge sources should also be inspected.

B. Based on the results of the Inspection, the description of potential pollutant sources Identified, and the pollution prevention measures described in the SWPPP should be revised, as appropriate, as soon as practicable after the inspection. The modifications, if any, shall provide for timely implementation of any changes to the SWPPP within 7 calendar days following the Inspection.

C. A report summarizing the scope of the Inspection, name(s) and qualifications of personnel making the Inspection, the date(s) of the Inspection, major observations relating to the implementation of the SWPPP, and actions taken in accordance with paragraph B, above should be made and retained as part of the SWPPP for at least three years from the date that permit coverage expires or is terminated. The report shall be signed in accordance with Part VI.G. (Signatory Requirements) of the ILR10 NPDES Permit.

D. The Permittee shall notify the appropriate agency field operations section office by e-mail at: epa.swnoncomp@illinois.gov , telephone or fax within 24 hours of any incidence of noncompliance for any violation of the storm water pollution prevention plan observed during any Inspection conducted or for violation of any condition of this permit. The Permittee should complete and submit within 5 days an "Incidence of Non-Compliance" (ION) report for any violation of the SWPPP observed during an inspection conducted, including those not required by the SWPPP. Submission should be on forms provided by IEPA and include specific Information on the cause of non-compliance, actions which were taken to prevent any further causes of non-compliance, and a statement detailing any environmental impact, which may have resulted from the non-compliance.

E. All reports of non-compliance shall be signed by a responsible authority as defined in Part VI.G. (Signatory Requirements) of the ILR10 NPDES Permit.

F. After the initial contact has been made within the appropriate agency field operations section office, all reports of non-compliance shall be mailed to IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
Compliance Assurance Section
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

5. NON-STORM WATER DISCHARGES

Except for flows from fire fighting activities, possible sources of non-storm water that may be combined with storm water discharges associated with the proposed activity, are described below:

- Fire fighting activities
- Fire hydrant flushings
- Water used to wash vehicles where detergents are not used
- Water used to control dust
- Potable water sources including uncontaminated waterline flushings
- Landscape irrigation drainages
- Routine external building washdown which does not use detergents
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless spilled materials have been removed) and where detergents have not been used.
- Uncontaminated air conditioning condensate
- Springs
- Irrigation ditches
- Uncontaminated ground water
- Foundation or footing drains where flows are not contaminated with process materials such as solvents

6. PROHIBITED NON-STORMWATER DISCHARGES

- Concrete and wastewater from washout of concrete (unless managed by an appropriate control)
- Drywall compound
- Wastewater from washout and cleanout of stucco, paint
- Form release oils
- Curing compounds and other construction materials
- Fuels, oils, or other pollutants used in vehicle or equipment operation and maintenance
- Soaps, solvents, or detergents
- Toxic or hazardous substances from a spill or other release
- Any other pollutant that could cause or tend to cause water pollution

Pollution prevention measures should be implemented for non-storm water components of the discharge.

| STABILIZATION TYPE | JAN. | FEB. | MAR. | APR. | MAY | JUNE | JULY | AUG. | SEPT. | OCT. | NOV. | DEC. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PERMANENT SEEDING | | | A | | | * | * | | | | | |
| DORMANT SEEDING | B | | | | | | | | | | B | |
| TEMPORARY SEEDING | | | C | | | | D | | | | | |
| SODDING | | | E** | | | | | | | | | |
| MULCHING | F | | | | | | | | | | | |

A KENTUCKY BLUEGRASS 90 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 30 LBS/ACRE.

B KENTUCKY BLUEGRASS 135 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 45 LBS/ACRE + STRAW MULCH 2 TONS/ACRE.

C SPRING OATS 100 LBS/ACRE

D WHEAT OR CEREAL RYE 150 LBS/ACRE.

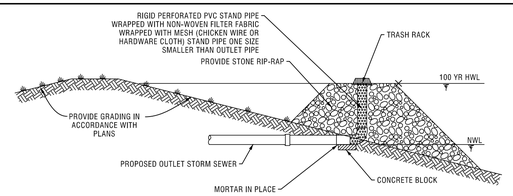
E SOD

F STRAW MULCH 2 TONS/ACRE.

* IRRIGATION NEEDED DURING JUNE AND JULY.

** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOD.

SOIL PROTECTION CHART




PLAN CODE: (PR)

**PERFORATED RISER DETAIL**
NOT TO SCALE

1. THE PERFORATED RISER SHALL BE PROVIDED AS PART OF THE SEDIMENT AND EROSION CONTROL MEASURES DURING CONSTRUCTION AND IN CONJUCTION WITH THE CONSTRUCTION OF THE DETENTION BASIN.
2. WHEN THE DETENTION BASIN AND UPSTREAM TRIBUTARY DRAINAGE AREAS ARE REVEGETATED, AND WHEN DIRECTED BY THE ENGINEER, THE PERFORATED RISER SHALL BE REMOVED AND THE BASIN OUTFALL STRUCTURES SHALL BE CONSTRUCTED AND THE GRADING RESTORED IN ACCORDANCE WITH THE PLANS.

CONTRACTOR CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (ILR10) THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

PROJECT:_____

PERMIT #: ILR10_____

_____ DATE

_____ CONTRACTOR SIGNATURE

_____ TELEPHONE NUMBER

_____ PRINTED NAME & TITLE

_____ NAME OF CONTRACTING FIRM

_____ STREET ADDRESS

_____ CITY, STATE, ZIP CODE

TRADE/ RESPONSIBILITIES:_____

NOTE:
ALL CONTRACTORS PERFORMING WORK ON THIS SITE ARE REQUIRED TO SIGN A CONTRACTOR CERTIFICATION STATEMENT AS ILLUSTRATED ABOVE. THE SIGNED STATEMENTS WILL BE MAINTAINED ON THE SITE WITH THE SWPPP.

OWNER SWPPP CERTIFICATION

PROJECT:_____

PERMIT #: ILR10_____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED, BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

_____ SIGNATURE OF OWNER

_____ DATE

_____ PRINTED NAME OF OWNER

NOTE:
THE CERTIFICATION ILLUSTRATED ABOVE SHALL BE SIGNED BY THE OWNER LISTED ON THE NOTICE OF INTENT IN ACCORDANCE WITH PART VI.G. OF THE ILR10 NPDES PERMIT. THE SIGNED STATEMENT SHALL BE MAINTAINED ON THE SITE WITH THE SWPPP.

| OUTFALL NAME OR NUMBER | INLET PIPE SIZE d (IN) | VELOCITY (F/S) | LENGTH OF APRON L (FT) | RIPRAP GRADATION | WIDTH OF APRON U/S FACE 3d (FT) | WIDTH OF APRON D/S FACE 3d+L (FT) | DEPTH OF RIPRAP Y (IN) |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

| NO. | DATE | REMARKS |
|---|---|---|
| | | |
| | | |

| NO. | DATE | REVISIONS PER ARCHITECT/OWNER |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT |
| 1 | 03/22/22 | REMARKS |

SOIL EROSION AND SEDIMENT CONTROL PLAN

**2240-2296 RAND ROAD**
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 698-4060 Fax: (847) 698-4065

SPACECO INC.

FILENAME:

DATE: 03/16/22

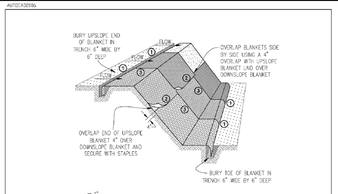
JOB NO. 11624

SHEET **SE1**
9 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

N:\Projects\11624\ENG\11624SE01.dgn Default User=wbrennan

## EROSION CONTROL BLANKET INSTALLATION DETAILS




DETAIL 1 | DETAIL 2 | DETAIL 3

NOTES:
1. Staples shall be placed in a diamond pattern at 2 per s.y. for stitched blankets. Non-stitched shall use 4 staples per s.y. of material. This equates to 200 staples with stitched blanket and 400 staples with non-stitched blanket per 100 s.y. of material.
2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
4. All anchor slots shall be stapled at approximately 12" intervals.

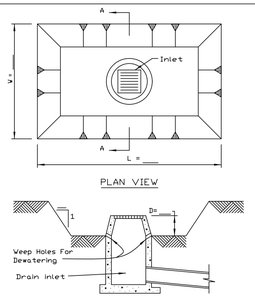
PLAN CODE: (EB)

| REVISIONS | | | |
|---|---|---|---|
| NO. | DATE | REMARKS | |
| | | | |

EROSION CONTROL BLANKET INSTALLATION DETAILS

Designed — Date —
Drawn S. JOHNSON — Date —
Checked — Date —
Approved — Date —

## INLET PROTECTION - EXCAVATED DRAIN PLAN



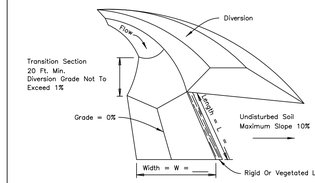

NOTES:
1. Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The sediment trap shall be removed and the area stabilized when the constructed drainage area has been properly stabilized.
3. All cut slopes shall be 2:1 or flatter.

PLAN CODE: (IP)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-555 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 3-11-93 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## LEVEL SPREADER



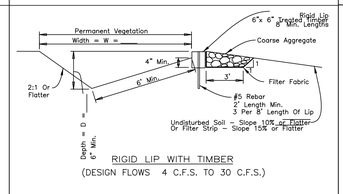

NOTES:
1. Edges of spreader shall be tied into higher ground to prevent flow around the level spreader.
2. See plans for L and W dimensions.

PLAN CODE: (LS)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-570 |
| Designed — Date — | SHEET 1 OF 2 |
| Checked — Date — | DATE 1-29-99 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## LEVEL SPREADER



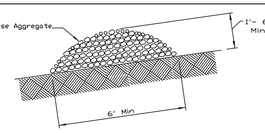

NOTES:
1. Coarse aggregate shall meet one of the following IDOT gradations: CA-1, or CA-3.
2. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, type fabric shall be class I.
3. See sheet entitled STABILIZATION CLASS IL-535 for filter strip requirements.
4. See sheet entitled EROSION BLANKET IL-530 for blanket material and installation requirements.
5. See plans for permanent seeding requirements.
6. See plans for D and W dimensions.

PLAN CODE: (LS)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-570 |
| Designed — Date — | SHEET 2 OF 2 |
| Checked — Date — | DATE 1-29-99 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## RIGHT OF WAY DIVERSION PLAN



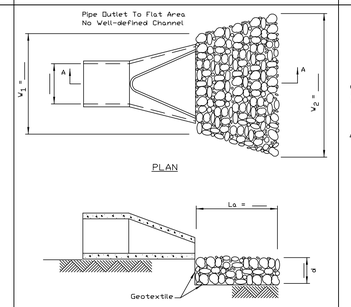

NOTES:
1. Install the diversion as soon as right-of-way has been cleared and graded.
2. Disc the base for the constructed ridge before placing fill.
3. Track the ridge to compact it to the design cross section.
4. Locate the outlet on an undisturbed area. Adjust field spacing of the diversion to use the most stable outlet areas. When natural areas are not deemed satisfactory, provide outlet protection.
5. Immediately seed and mulch the portions of the diversions not subject to construction traffic. Stabilize with gravel areas to be crossed by vehicles.
6. Coarse aggregate, if used, shall meet one of the following IDOT gradations: CA-1,CA-2 CA-3, OR CA-4.

PLAN CODE: (RD)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-600 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 3-3-95 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## PIPE OUTLET TO FLAT AREA



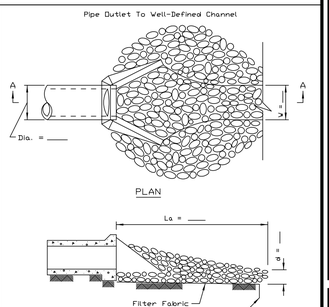

NOTES:
1. The filter fabric shall meet the requirements in material specifications 592 GEOTEXTILE Table 1 or 2, class I, II or III.
2. The rock riprap shall shall meet the IDOT requirements for the following gradation: RR _____, Quality _____.
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

PLAN CODE: (LA)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-610 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 9-15-93 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## PIPE OUTLET TO CHANNEL



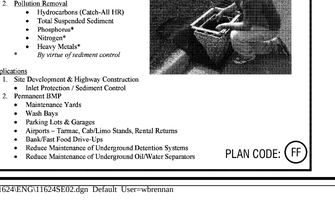

NOTES:
1. The filter fabric shall meet the requirements in material specification 592 GEOTEXTILE Table 1 or 2, Class I, II or III.
2. The rock riprap shall meet the IDOT requirements for the following gradation _____.
3. The riprap shall be placed according to construction specification 61 LOOSE ROCK RIPRAP. The rock may be equipment placed.

PLAN CODE: (LA)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-611 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 8-28-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## STABILIZED CONSTRUCTION ENTRANCE PLAN



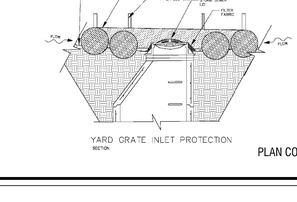

NOTES:
1. Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
2. Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 ROCKFILL using placement Method 1 and Class III compaction.
3. Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
4. If wash racks are used they shall be installed according to the manufacturer's specifications.

PLAN CODE: (SE)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-630 |
| Designed — Date — | SHEET 1 OF 2 |
| Checked — Date — | DATE 8-18-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## STABILIZED CONSTRUCTION ENTRANCE PLAN

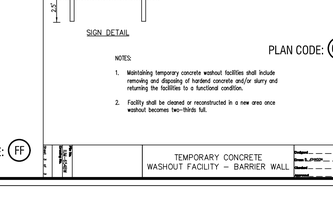



PLAN CODE: (SE)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-630 |
| Designed — Date — | SHEET 2 OF 2 |
| Checked — Date — | DATE 8-18-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## SUMP PIT PLAN



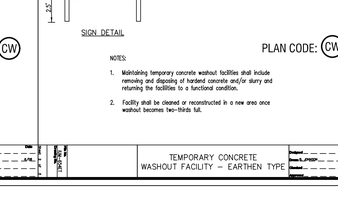

NOTES:
1. Pit dimensions are optional.
2. The standpipe will be constructed by perforating a 12"-24" diameter corrugated metal or PVC pipe.
3. A base of 2" aggregate will be placed in the pit to a minimum depth of 12". After installing the standpipe, the pit surrounding the standpipe will then be backfilled with 2" aggregate.
4. The standpipe will extend 12" to 18" above the lip of the pit.
5. If discharge will be routed directly to a storm drainage system, the standpipe will be wrapped with Filter Fabric before installation.
6. If desired, 1/4"-1/2" hardware cloth may be placed around the standpipe prior to attaching the Filter Fabric. This will increase the rate of water seepage into the pipe.

PLAN CODE: (SP)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-650 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 8-18-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## TEMPORARY SEDIMENT TRAP



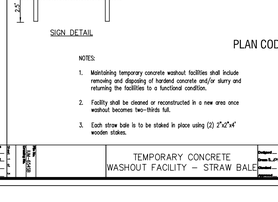

NOTES:
1. If the sediment pool is formed or enlarged the side slope will be 2:1 or flatter.
2. The fill shall be constructed using IDOT RR-4 stone size. A layer of IDOT CA-2 should be placed on the inside face to reduce the flow rate.
3. The rock will be placed according to construction specification 25 ROCKFILL. Placement will be by Method 1 and compaction will be class III.
4. The geotextile shall meet the requirements in material specification 592 GEOTEXTILE table 1 or 2, class I, II or IV.

PLAN CODE: (ST)

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-660 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 8-18-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

## SILT FENCE PLAN SPACECO, INC. PRIMARY DETAIL

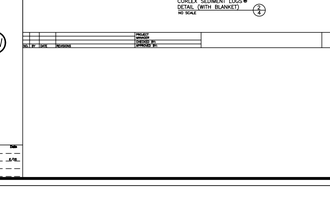



NOTES:
1. Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table I or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

PLAN CODE: ——XX——

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IUM-620A |
| Designed — Date — | SHEET 1 OF 2 |
| Checked — Date — | DATE 3-16-12 |
| Approved — Date — | |

## SILT FENCE WITH WIRE SUPPORT PLAN SPACECO, INC. ALTERNATE DETAIL

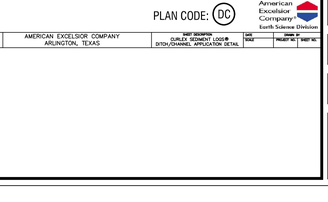



NOTES:
1. Silt Fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization. Silt Fence shall be placed on the flattest area available.
2. Filter fabric shall meet the requirements of material specification 592 Geotextile Table I or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
3. Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

PLAN CODE: ——XX——

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IUM-620A(W) |
| Designed — Date — | SHEET 1 OF 2 |
| Checked — Date — | DATE 3-16-2012 |
| Approved — Date — | |

## TREE PROTECTION - FENCING



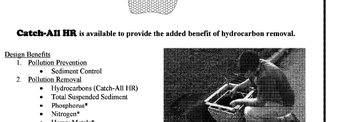

NOTES:
1. Tree fence shall be located a minimum of 1 Foot outside the drip line of the tree to be saved and in no case closer than 5 Feet to the trunk of any tree.
2. Fence posts shall be either standard steel posts or wood posts with a minimum cross sectional area of 3.0 sq. in.
3. The fence may be either 40" high snow fence, 42" plastic web fencing or any other material as approved by the engineer/inspector.

PLAN CODE: ——TP——

| REFERENCE | STANDARD SVG. NO. |
|---|---|
| Project | IL-690 |
| Designed — Date — | SHEET 1 OF 1 |
| Checked — Date — | DATE 4-7-94 |
| Approved — Date — | |

NRCS Natural Resources Conservation Service

**Catch-All** - is a manufactured inlet filtration device designed to significantly reduce the ingress of pollutants into stormwater systems, and therefore, improve water quality. Designs are available for a custom fit in virtually any drainage structure casting.



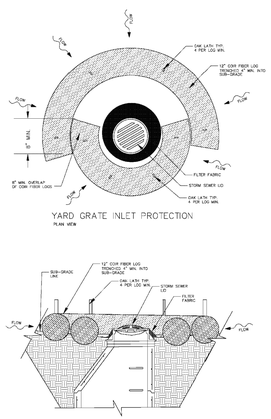

**Catch-All HR** is available to provide the added benefit of hydrocarbon removal.



Design Benefits
1. Pollution Prevention
   - Sediment Control
2. Pollution Removal
   - Hydrocarbons (Catch-All HR)
   - Total Suspended Sediment
   - Phosphorus*
   - Nitrogen*
   - Heavy Metals*
   - *By virtue of sediment control*

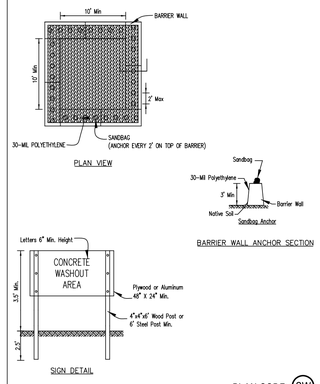
Applications
1. Site Development & Highway Construction
   - Inlet Protection / Sediment Control
2. Permanent BMP
   - Maintenance Yards
   - Wash Bays
   - Parking Lots & Garages
   - Airports – Tarmac, Cab/Limo Stands, Rental Returns
   - Bank/Fast Food Drive-Ups
   - Reduce Maintenance of Underground Detention Systems
   - Reduce Maintenance of Underground Oil/Water Separators

PLAN CODE: (FF)




PLAN CODE: (FF)

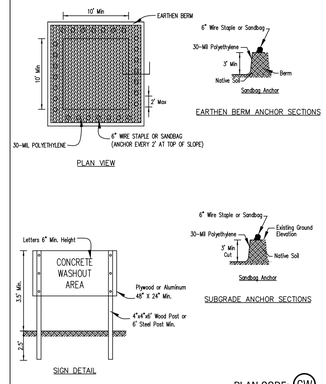
## TEMPORARY CONCRETE WASHOUT FACILITY – BARRIER WALL




NOTES:
1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

PLAN CODE: (CW)

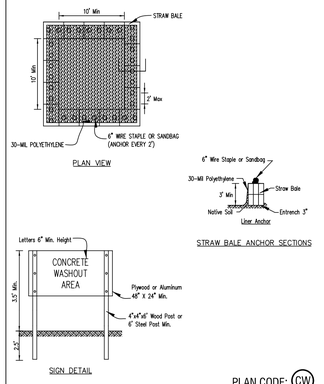
## TEMPORARY CONCRETE WASHOUT FACILITY – EARTHEN TYPE




NOTES:
1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

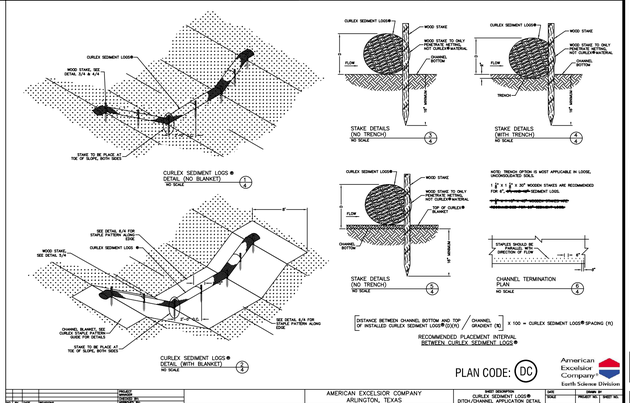
PLAN CODE: (CW)

## TEMPORARY CONCRETE WASHOUT FACILITY – STRAW BALE




NOTES:
1. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
2. Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.
3. Each straw bale is to be staked in place using (2) 2"x2"x4' wooden stakes.

PLAN CODE: (CW)




PLAN CODE: (DC)

American Excelsior Company
Earth Science Division

| REVISIONS | | | |
|---|---|---|---|
| NO. | DATE | REMARKS | |
| | | | |

AMERICAN EXCELSIOR COMPANY ARLINGTON, TEXAS

CURLEX SEDIMENT LOGS & DITCH/CHANNEL APPLICATION DETAIL

SCALE: NONE | PROJECT NO. | SHEET NO.

| REVISIONS | | | |
|---|---|---|---|
| NO. | DATE | REMARKS | |
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER | |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT | |

**SOIL EROSION AND SEDIMENT CONTROL PLAN**

**2240-2296 RAND ROAD**
**PALATINE, ILLINOIS**

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065

SPACECO INC.

FILENAME: 11624SE2
DATE: 03/16/22
JOB NO. 11624
SHEET SE2
10 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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## SYMBOL LEGEND

- SE — STABILIZED CONSTRUCTION ENTRANCE
- SILT FENCE
- FF — FABRIC FILTER
- P — PAVING
- PS — PERMANENT SEEDING
- LA — LINED APRON
- CP — CONCRETE PAVEMENT
- PR — PERFORATED RISER
- NORTH AMERICAN GREEN S-75 EROSION CONTROL BLANKET

| NO. | DATE | REMARKS |
|---|---|---|
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| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

# SOIL EROSION AND SEDIMENT CONTROL PLAN

# 2240-2296 RAND ROAD
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 698-4060 Fax: (847) 698-4065

SPACECO INC.

FILENAME: 11624SE3

DATE: 03/16/22

JOB NO. 11624

SHEET **SE3**
11 OF 18

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Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## EARTHWORK NOTES

1. GENERAL

   A. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE SOIL AND GROUNDWATER CONDITIONS AT THE SITE. THE CONTRACTOR SHALL OBTAIN AND READ THE GEOTECHNICAL REPORTS AVAILABLE FROM THE OWNER.

   B. ANY QUANTITIES IN THE BID PROPOSAL ARE INTENDED AS A GUIDE FOR THE CONTRACTOR'S USE IN DETERMINING THE SCOPE OF THE COMPLETED PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ALL MATERIAL QUANTITIES AND APPRAISE HIMSELF OF ALL SITE CONDITIONS. THE CONTRACT PRICE SUBMITTED BY THE CONTRACTOR SHALL BE CONSIDERED AS LUMP SUM FOR THE COMPLETE PROJECT. NO CLAIMS FOR EXTRA WORK WILL BE RECOGNIZED UNLESS ORDERED IN WRITING BY THE OWNER.

   C. THE CONTRACTOR WILL NOTE THAT THE ELEVATIONS SHOWN ON THE CONSTRUCTION PLANS ARE FINISHED GRADE ELEVATIONS AND THAT PAVEMENT THICKNESS, TOPSOIL, ETC. MUST BE SUBTRACTED TO DETERMINE SUBGRADE ELEVATIONS.

   D. THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE DURING CONSTRUCTION, AND PREVENT STORMWATER FROM RUNNING INTO OR STANDING IN EXCAVATED AREAS. THE FAILURE TO PROVIDE PROPER DRAINAGE WILL NEGATE ANY POSSIBLE ADDED COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT THEREOF. FINAL GRADES SHALL BE PROTECTED AGAINST DAMAGE FROM EROSION, SEDIMENTATION AND TRAFFIC.

   E. PLANS FOR THE SITE DEWATERING, IF EMPLOYED, SHALL BE SUBMITTED TO AND APPROVED BY THE OWNER PRIOR TO IMPLEMENTATION. NO ADDITIONAL COMPENSATION SHALL BE MADE FOR DEWATERING DURING CONSTRUCTION.

   F. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTATION OF THE "SOIL EROSION AND SEDIMENTATION CONTROL MEASURES". THE INITIAL ESTABLISHMENT OF EROSION CONTROL PROCEDURES AND THE PLACEMENT OF SILT AND FILTER FENCING, ETC. TO PROTECT ADJACENT PROPERTY, WETLANDS, ETC. SHALL OCCUR BEFORE GRADING BEGINS. A MUNICIPAL EROSION CONTROL INSPECTION MAY BE REQUIRED BEFORE ANY EARTHWORK IS PERFORMED.

   G. PRIOR TO COMMENCEMENT OF GRADING ACTIVITIES, THE CONTRACTOR SHALL ERECT A "SNOW FENCE" AROUND ANY TREE DESIGNATED TO BE PRESERVED. SAID FENCE SHALL BE PLACED IN A CIRCLE CENTERED AROUND THE TREE. THE DIAMETER OF WHICH SHALL BE SUCH THAT THE ENTIRE DRIP ZONE (EXTENT OF FURTHEST EXTENDING BRANCHES) SHALL BE WITHIN THE FENCE LIMITS. THE EXISTING GRADE WITHIN THE FENCED AREA SHALL NOT BE DISTURBED.

   H. EXCESS MATERIALS, IF NOT UTILIZED AS FILL, SHALL BE COMPLETELY REMOVED FROM THE CONSTRUCTION SITE AND DISPOSED OF OFF-SITE BY THE CONTRACTOR.

   I. ALL EARTHWORK SHALL BE DONE UNDER THE SUPERVISION OF AN ILLINOIS LICENSED ENGINEER WHO SPECIALIZES IN THE GEOTECHNICAL FIELD (SOILS ENGINEER). THIS ENGINEER WILL BE RESPONSIBLE FOR ENSURING THAT ALL UNSUITABLE MATERIALS ARE REMOVED, ALL STRUCTURAL FILL MATERIALS ARE PROPERLY PLACED AND COMPACTED, ALL PAVEMENT SUBGRADES ARE PROPERLY PREPARED, PROOF ROLLING SUBGRADES AND BASE COURSES, AND ENSURING THAT ALL WATER RETAINING EMBANKMENTS ARE PROPERLY CONSTRUCTED. THE DEVELOPER PAYS FOR ALL GEOTECHNICAL SERVICES.

2. TOPSOIL EXCAVATION INCLUDES:

   A. EXCAVATION OF TOPSOIL AND OTHER STRUCTURALLY UNSUITABLE MATERIALS WITHIN THOSE AREAS THAT WILL REQUIRE EARTH EXCAVATION OR COMPACTED EARTH FILL MATERIAL. EXISTING VEGETATION SHALL BE REMOVED PRIOR TO STRIPPING TOPSOIL OR FILLING AREAS.

   B. PLACEMENT OF THE EXCAVATED MATERIAL IN OWNER DESIGNATED AREAS FOR FUTURE USE WITHIN AREAS TO BE LANDSCAPED, AND THOSE AREAS NOT REQUIRING STRUCTURAL FILL MATERIAL. PROVIDE NECESSARY EROSION CONTROL MEASURES FOR STOCKPILE.

   C. TOPSOIL STOCKPILED FOR RESPREAD SHALL BE FREE OF CLAY AND SHALL NOT CONTAIN ANY OF THE TRANSITIONAL MATERIAL BETWEEN THE TOPSOIL AND CLAY. THE TRANSITIONAL MATERIAL SHALL BE USED IN NON-STRUCTURAL FILL AREAS OR DISPOSED OF OFF-SITE.

   D. TOPSOIL RESPREAD SHALL INCLUDE HAULING AND SPEADING 6" OF TOPSOIL OVER AREAS TO BE LANDSCAPED WHERE SHOWN ON THE PLANS OR DIRECTED BY THE OWNER.

   E. MODERATE COMPACTION IS REQUIRED IN NON-STRUCTURAL FILL AREAS.

3. EARTH EXCAVATION INCLUDES:

   A. EXCAVATION OF CLAY AND OTHER MATERIALS WHICH ARE SUITABLE FOR USE AS STRUCTURAL FILL. THE EXCAVATION SHALL BE TO WITHIN A TOLERANCE OF 0.1 FEET OF THE PLAN SUBGRADE ELEVATIONS WHILE MAINTAINING PROPER DRAINAGE. THE TOLERANCE WITHIN PAVEMENT AREAS SHALL BE SUCH THAT THE EARTH MATERIALS SHALL "BALANCE" DURING THE FINE GRADING OPERATION.

   B. PLACEMENT OF THE CLAY AND OTHER SUITABLE MATERIALS SHALL BE WITHIN THOSE AREAS REQUIRING STRUCTURAL FILL IN ORDER TO ACHIEVE THE PLAN SUBGRADE ELEVATIONS TO WITHIN A TOLERANCE OF 0.1 FEET. THE FILL MATERIAL SHALL BE PLACED IN LOOSE LIFTS THAT SHALL NOT EXCEED EIGHT (8) INCHES IN THICKNESS, AND THE WATER CONTENT SHALL BE ADJUSTED IN ORDER TO ACHIEVE REQUIRED COMPACTION.

      STRUCTURAL FILL MATERIAL MAY BE PLACED WITHIN THOSE PORTIONS OF THE SITE NOT REQUIRING STRUCTURAL FILL TO WITHIN SIX (6) INCHES OF THE PLAN FINISHED GRADE ELEVATION. IN AREAS REQUIRING STRUCTURAL FILL, HOWEVER, THIS MATERIAL SHALL NOT BE PLACED OVER TOPSOIL OR OTHER UNSUITABLE MATERIALS UNLESS SPECIFICALLY DIRECTED BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER.

   C. COMPACTION OF THE CLAY AND OTHER SUITABLE MATERIALS, SHALL BE TO AT LEAST 93% OF THE MODIFIED PROCTOR DRY DENSITY WITHIN PROPOSED PAVEMENT AREAS, SIDEWALK, ETC. COMPACTION SHALL BE AT LEAST 95% OF THE MODIFIED PROCTOR WITHIN PROPOSED BUILDING PAD AREAS.

   D. EXCAVATION: QUANTITIES OF EARTH EXCAVATION INDICATED ELSEWHERE IN THIS CONTRACT HAVE BEEN COMPUTED BY THE END AREA METHOD AS PROVIDED FOR IN SECTION 202 OF THE STANDARD SPECIFICATIONS. EXCAVATED MATERIALS NOT NEEDED FOR THIS JOB SITE SHALL BE LEGALLY DISPOSED OF. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER CUBIC YARD OF EARTH EXCAVATION.

4. UNSUITABLE MATERIAL

   UNSUITABLE MATERIAL SHALL BE CONSIDERED AS MATERIAL WHICH IS NOT SUITABLE FOR THE SUPPORT OF PAVEMENT AND BUILDING CONSTRUCTION, AND IS ENCOUNTERED BELOW NORMAL TOPSOIL DEPTHS AND THE PROPOSED SUBGRADE ELEVATION. THE DECISION TO REMOVE SAID MATERIAL, AND TO WHAT EXTENT, SHALL BE MADE BY A SOILS ENGINEER WITH THE CONCURRENCE OF THE OWNER.

5. MISCELLANEOUS THE CONTRACTOR SHALL:

   A. SPREAD AND COMPACT UNIFORMLY TO THE DEGREE SPECIFIED ALL EXCESS TRENCH SPOIL AFTER COMPLETION OF THE UNDERGROUND IMPROVEMENTS.

   B. SCARIFY, DISC, AERATE, AND COMPACT, TO THE DEGREE SPECIFIED, THE UPPER TWELVE (12) INCHES OF THE SUITABLE SUBGRADE MATERIAL, IN ALL AREAS THAT MAY BE SOFT DUE TO EXCESS MOISTURE CONTENT. THIS APPLIES TO CUT AREAS AS WELL AS FILL AREAS.

   C. PROVIDE WATER TO ADD TO DRY MATERIAL IN ORDER TO ADJUST THE MOISTURE CONTENT FOR THE PURPOSE OF ACHIEVING THE SPECIFIED COMPACTION.

   D. BACKFILL THE CURB AND GUTTER AFTER ITS CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE BASE COURSE MATERIAL. THE CURBS SHALL NOT BE BACKFILLED UNTIL THE CONCRETE HAS CURED FOR AT LEAST 7 DAYS.

   E. TRENCH COMPACTION: ALL TRENCHES SHALL BE COMPACTED BY MECHANICAL TECHNIQUES APPROVED BY THE SOILS ENGINEER UNTIL PROPER COMPACTION IS ACHIEVED. THE REQUIREMENT FOR MECHANICAL COMPACTION MAY BE WAIVED IF, IN THE OPINION OF THE SOILS ENGINEER AND THE MUNICIPAL ENGINEER, THE BACKFILLED TRENCHES MEET THE DENSITY REQUIREMENTS. JETTING OF TRENCHES FOR COMPACTION WILL NOT BE ALLOWED.

6. TESTING AND FINAL ACCEPTANCE

   A. THE CONTRACTOR SHALL PROVIDE AS A MINIMUM, A FULLY LOADED SIX-WHEEL TANDEM AXLE TRUCK FOR PROOF ROLLING THE PAVEMENT SUBGRADE PRIOR TO THE PLACEMENT OF THE CURB AND GUTTER AND THE BASE MATERIAL. THIS SHALL BE WITNESSED BY MUNICIPAL ENGINEER AND THE OWNER. SEE PAVING SPECIFICATION.

   B. ANY UNSUITABLE AREA ENCOUNTERED AS A RESULT OF PROOF ROLLING SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL, OR OTHERWISE CORRECTED, APPROVED BY THE SOILS CONSULTANT.

   C. ANY TESTING THAT IS REQUIRED OF THIS CONSTRUCTION IS CONSIDERED INCIDENTAL TO THE COST OF CONSTRUCTION. NO SEPARATE PAYMENT WILL BE MADE.

## SIGNING AND PAVEMENT MARKING

1. ALL SIGNING AND PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE ILLINOIS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (SSRBC), MUNICIPAL CODE AND THESE PLANS.

2. CONTRACTOR SHALL ESTABLISH LOCATION OF ALL SIGNS AND MARKINGS FOR APPROVAL BY THE OWNER PRIOR TO INSTALLATION.

3. SIGNS: SIGNS SHALL BE CONSTRUCTED OF 0.080 INCH THICK FLAT ALUMINUM PANELS WITH REFLECTORIZED LEGEND ON THE FACE IN ACCORDANCE WITH (SSRBC) SECTION 720. LEGEND SHALL BE IN ACCORDANCE WITH MUTCD AND AS SHOWN ON THE PLANS.

4. POSTS: SIGN POSTS SHALL BE A HEAVY DUTY STEEL "U" SHAPED CHANNEL WEIGHING 3.0 POUNDS/FOOT SUCH AS A TYPE B METAL POST PER (SSRBC) SECTION 729 [OR: 2" PERFORATED STEEL TUBE PER (SSRBC) SECTION 728].

5. SIGNS AND POSTS SHALL BE INSTALLED IN ACCORDANCE WITH THE ABOVE (SSRBC) SECTIONS AND IDOT STANDARD 729001 EXCEPT AS MODIFIED BY THE PLANS.

6. PAVEMENT MARKINGS: ALL PAVEMENT MARKINGS IN THE ROADWAY LIMITS, SUCH AS STOP LINES, CENTERLINES, CROSSWALKS AND DIRECTIONAL ARROWS SHALL BE REFLECTORIZED THERMOPLASTIC PER (SSRBC) SECTION 780, EXCEPT AS MODIFIED BY THE PLANS. [NOTE TO ENGINEER: IDOT PREFERS REFLECTORIZED PAINT ON CONCRETE PAVEMENT - CHECK WITH AGENCY WHO WILL MAINTAIN ROAD.]

7. PAVEMENT MARKINGS ON BIKE PATHS, PARKING LOT STALLS, AND SIMILAR "LOW WEAR" APPLICATION, SHALL BE PAINT IN ACCORDANCE TO (SSRBC) SECTION 780, EXCEPT AS MODIFIED BY THE PLANS. REFLECTIVE BEADS ARE NOT REQUIRED.

8. COLOR, WIDTH, STYLE, AND SIZE OF ALL MARKINGS SHALL BE IN ACCORDANCE WITH (MUTCD) EXCEPT AS MODIFIED BY THE PLANS.

9. THERMOPLASTIC MARKINGS SHALL BE INSTALLED WHEN THE PAVEMENT TEMPERATURE IS 55° F AND RISING. PAINT MARKINGS MAY BE INSTALLED WHEN THE AIR TEMPERATURE IS 50° F AND RISING.

## PAVING NOTES

1. GENERAL

   A. PAVING WORK INCLUDES FINAL SUBGRADE SHAPING, PREPARATION AND COMPACTION; PLACEMENT OF SUB-BASE OR BASE COURSE MATERIALS; BITUMINOUS BINDER AND/OR SURFACE COURSES; FORMING, FINISHING AND CURING CONCRETE PAVEMENT, CURBS AND WALKS; AND FINAL CLEAN-UP AND ALL RELATED WORK.

   B. COMPACTION REQUIREMENTS: [REFERENCE ASTM D-1557 (MODIFIED PROCTOR)] SUB-GRADE = 93%; SUB-BASE = 93%; AGGREGATE BASE COURSE = 95%; BITUMINOUS COURSES = REFER TO SSRBC ARTICLE 406.07. THE SOILS ENGINEER IS RESPONSIBLE FOR ENSURING THAT MATERIALS ARE PROPERLY PLACED AND COMPACTED.

   C. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO PROVIDE PROPER BARRICADING, WARNING DEVICES AND THE SAFE MANAGEMENT OF TRAFFIC WITHIN THE AREA OF CONSTRUCTION. ALL SUCH DEVICES AND THEIR INSTALLATION SHALL CONFORM TO THE ILLINOIS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION AND IN ACCORDANCE WITH THE MUNICIPAL CODE.

2. SUB-GRADE PREPARATION

   A. EARTHWORK FOR PROPOSED PAVEMENT SUBGRADE SHALL BE FINISHED TO WITHIN 0.1 FOOT, PLUS OR MINUS, OF PLAN ELEVATION. THE CONTRACTOR SHALL SATISFY HIMSELF THAT THE SUBGRADE HAS BEEN PROPERLY PREPARED AND THAT THE FINISH TOP SUBGRADE ELEVATION HAS BEEN GRADED WITHIN TOLERANCES ALLOWED IN THESE SPECIFICATIONS. UNLESS THE CONTRACTOR ADVISES THE OWNER AND ENGINEER IN WRITING PRIOR TO FINE GRADING FOR BASE COURSE CONSTRUCTION, IT IS UNDERSTOOD THAT HE HAS APPROVED AND ACCEPTS THE RESPONSIBILITY FOR THE SUBGRADE.

   B. PRIOR TO THE PLACEMENT OF THE BASE COURSE, THE SUBGRADE MUST BE PROOF ROLLED AND INSPECTED FOR UNSUITABLE MATERIALS AND/OR EXCESSIVE MOVEMENT. THE SOILS ENGINEER SHALL CONDUCT AND THE VILLAGE SHALL WITNESS ALL PROOF ROLLS. IF UNSUITABLE SUBGRADE IS ENCOUNTERED, IT SHALL BE CORRECTED IN A MANNER APPROVED BY THE OWNER OR HIS REPRESENTATIVE. THIS MAY INCLUDE ONE OR MORE OF THE FOLLOWING METHODS:
      1) SCARIFY DISC AND AERATE.
      2) REMOVE AND REPLACE WITH STRUCTURAL CLAY FILL.
      3) REMOVE AND REPLACE WITH GRANULAR MATERIAL.
      4) USE OF GEOTEXTILE FABRIC.

      MAXIMUM DEFLECTION ALLOWED IN ISOLATED AREAS MAY BE 1/4" TO 1/2" IF NO DEFLECTION OCCURS OVER THE MAJORITY OF THE AREA.

   C. PRIOR TO THE CONSTRUCTION OF THE CURB AND GUTTER AND THE PLACEMENT OF THE BASE MATERIAL, THE PAVEMENT AREA SHALL BE FINE GRADED TO WITHIN 0.04 FEET (1/2") OF FINAL SUBGRADE ELEVATION, TO A POINT TWO (2) FEET BEYOND THE BACK OF CURB, SO AS TO INSURE THE PROPER THICKNESS OF PAVEMENT COURSES. NO CLAIMS FOR EXCESS QUANTITY OF BASE MATERIALS DUE TO IMPROPER SUBGRADE PREPARATION WILL BE HONORED.

   D. PRIOR TO PLACEMENT OF THE BASE COURSE, ALL SUBGRADES MUST BE APPROVED BY THE MUNICIPAL ENGINEER, SOILS ENGINEER AND/OR OWNER.

3. CONCRETE WORK

   A. ALL EXTERIOR CONCRETE SHALL BE PORTLAND CEMENT CONCRETE CLASS SI OR PV PER (SSRBC) SECTION 1020.04 WITH AIR ENTRAINMENT OF NOT LESS THAN FIVE (5%) OR MORE THAN EIGHT (8%) PERCENT. CONCRETE SHALL BE A MINIMUM OF SIX (6) BAG MIX AND SHALL DEVELOP A MINIMUM OF 3,500 PSI COMPRESSIVE STRENGTH AT FOURTEEN (14) DAYS. ALL CONCRETE SHALL BE BROOM FINISHED PERPENDICULAR TO THE DIRECTION OF TRAVEL. THE ADDITION OF CALCIUM CHLORIDE AND THE SUBSTITUTION OF FLY ASH FOR PORTLAND CEMENT IS PROHIBITED. 1.50 lbs OF COLLATED, FILLIBRATED, POLYPROPYLENE OLEFIN FIBERS 0.50 TO 0.75 INCHES IN LENGTH SHALL BE ADDED TO EACH CUBIC YARD OF CONCRETE USED FOR SIDEWALKS. THE FIBERS SHALL BE AS MANUFACTURED UNDER THE NAME "FIBERMESH" OR EQUAL.

   B. CONCRETE CURB AND/OR COMBINATION CURB AND GUTTER SHALL BE OF THE TYPE SHOWN ON THE PLANS. THE CONTRACTOR IS CAUTIONED TO REFER TO THE CONSTRUCTION STANDARDS AND THE PAVEMENT CROSS-SECTION TO DETERMINE THE GUTTER FLAG THICKNESS AND THE AGGREGATE BASE COURSE THICKNESS BENEATH THE CURB AND GUTTER. PREMOLDED FIBER EXPANSION JOINTS, WITH TWO 3/4" X 16" EPOXY COATED STEEL DOWEL BARS, SHALL BE INSTALLED AT SIXTY (60) FOOT INTERVALS AND AT ALL PC'S, PT'S AND CURB RETURNS. ALTERNATE ENDS OF THE DOWEL BARS SHALL BE GREASED AND FITTED WITH METAL EXPANSION TUBES. SAWED OR FORMED CONTRACTION JOINTS SHALL BE PROVIDED AT NO GREATER THAN FIFTEEN (15) FOOT INTERVALS BETWEEN EXPANSION JOINTS. NO HONEY-COMBING OF THE CURB AND GUTTER WILL BE ACCEPTED.

   C. CURBS SHALL BE DEPRESSED AT LOCATIONS WHERE PUBLIC WALKS/PEDESTRIAN PATHS INTERSECT CURB LINES, AND OTHER LOCATIONS AS DIRECTED, FOR THE PURPOSE OF PROVIDING ACCESSIBILITY. (SEE CONSTRUCTION STANDARDS FOR DETAIL). BARRIER CURB SHALL ALSO BE DEPRESSED AT DRIVEWAY LOCATIONS.

   D. THE CURBS SHALL BE BACKFILLED AFTER THEIR CONSTRUCTION AND PRIOR TO THE PLACEMENT OF THE BASE COURSE. THE CONCRETE MUST CURE FOR AT LEAST SEVEN DAYS BEFORE THE CURBS ARE BACKFILLED.

   E. CONCRETE SIDEWALK SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE PLANS. PROVIDE SCORED JOINTS AT 5 FOOT INTERVALS AND 1/2 " PREMOLDED FIBER EXPANSION JOINTS AT 50 FOOT INTERVALS, AND ADJACENT TO CONCRETE CURBS, DRIVEWAYS, FOUNDATIONS, ETC.

   F. CONCRETE DRIVEWAY APRONS SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE PLANS, PROVIDE 6" X 6" NO. 6 WELDED WIRE MESH IN DRIVEWAYS, PROVIDE 1/2 " PREMOLDED FIBER EXPANSION JOINT ADJACENT TO CURBS AND CONCRETE SIDEWALKS. PROVIDE SAWED OR FORMED CONTRACTION JOINT AT MID-POINT AND 15 FOOT MAXIMUM.

   G. STANDARD REINFORCED CONCRETE PAVEMENT SHALL BE IN ACCORDANCE WITH THE ABOVE AND THE PLANS. SAWED OR FORMED CONTRACTION EXPANSION JOINTS SHALL BE AS SHOWN ON THE PLANS.

   H. CONCRETE CURING AND PROTECTION SHALL BE IN ACCORDANCE WITH (SSRBC) - METHOD I, II, OR III.

   I. THE COST OF AGGREGATE BASE OR SUB-BASE UNDER CONCRETE WORK SHALL BE INCLUDED IN THE COST OF THE RESPECTIVE CONCRETE ITEM.

4. FLEXIBLE PAVEMENT

   A. THE PAVEMENT MATERIALS FOR BITUMINOUS STREETS, PARKING LOTS, DRIVEWAYS, SIDEWALKS AND PATHS SHALL BE AS DETAILED ON THE PLANS. UNLESS OTHERWISE SHOWN ON THE PLANS, THE FLEXIBLE PAVEMENTS SHALL CONSIST OF AGGREGATE BASE COURSE, TYPE B; BITUMINOUS CONCRETE BINDER COURSE; AND BITUMINOUS CONCRETE SURFACE COURSE; OF THE THICKNESS AND MATERIALS SPECIFIED ON THE PLANS, THICKNESSES SPECIFIED SHALL BE CONSIDERED TO BE THE MINIMUM COMPACTED THICKNESS. THE PAVING IS TO BE DONE IN ACCORD WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS.

   B. ALL TRAFFIC SHALL BE KEPT OFF THE COMPLETED AGGREGATE BASE UNTIL THE BINDER COURSE IS LAID. THE AGGREGATE BASE SHALL BE UNIFORMLY PRIME COATED AT A RATE OF 0.4 TO 0.5 GALLONS PER SQUARE YARD PRIOR TO PLACING THE BINDER COURSE. PRIME COAT MATERIALS SHALL BE BITUMINOUS M.C. - 30.

   C. PRIOR TO PLACEMENT OF THE SURFACE COURSE, THE BINDER COURSE SHALL BE CLEANED, AND TACK COATED IF DUSTY OR DIRTY. ALL DAMAGED AREAS IN THE BINDER, BASE OR CURB SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER PRIOR TO LAYING THE SURFACE COURSE. THE CONTRACTOR SHALL PROVIDE WHATEVER EQUIPMENT AND MANPOWER NECESSARY, INCLUDING THE USE OF POWER BROOMS IF REQUIRED BY THE OWNER, TO PREPARE THE PAVEMENT FOR APPLICATION OF THE SURFACE COURSE. THE TACK COAT SHALL BE UNIFORMLY APPLIED TO THE BINDER COURSE AT A RATE OF 0.05 TO 0.10 GALLONS PER SQUARE YARD. TACK COAT SHALL BE AS SPECIFIED IN (SSRBC) SECTION 406.02.

   D. SEAMS IN BASE, BINDER AND SURFACE COURSE SHALL BE STAGGERED A MINIMUM OF 6".

   E. FOR NEW STREETS, THE CONTRACTOR SHALL PERMIT THE BITUMINOUS CONCRETE BINDER COURSE TO WEATHER ONE (1) WINTER SEASON PRIOR TO THE INSTALLATION OF THE BITUMINOUS CONCRETE SURFACE COURSE UNLESS OTHERWISE SPECIFIED BY THE MUNICIPAL ENGINEER OR OWNER.

5. TESTING AND FINAL ACCEPTANCE

   A. THE CONTRACTOR SHALL FOLLOW THE QUALITY CONTROL TESTING PROGRAM FOR CONCRETE AND PAVEMENT MATERIALS ESTABLISHED BY THE OWNER AND/OR MUNICIPALITY. TESTING SHALL BE DONE IN ACCORD WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION IN ILLINOIS AND THE TESTING REQUIREMENTS OF THE MUNICIPALITY.

   B. WHEN REQUESTED BY THE OWNER, TEST RESULTS AND DOCUMENTATION FOR THE CONCRETE, BASE COURSE, BITUMINOUS CONCRETE BINDER, AND/OR SURFACE COURSE, SHALL BE SUBMITTED FOR VERIFICATION.

   C. PRIOR TO PLACEMENT OF THE BITUMINOUS CONCRETE SURFACE COURSE, THE CONTRACTOR, WHEN REQUIRED BY THE OWNER OR MUNICIPALITY, SHALL OBTAIN SPECIMENS OF THE BINDER COURSE WITH A CORE DRILL WHERE DIRECTED, FOR THE PURPOSE OF THICKNESS VERIFICATION.

   D. WHEN REQUIRED BY THE OWNER OR MUNICIPALITY, THE CONTRACTOR SHALL OBTAIN SPECIMENS OF THE FULL DEPTH BITUMINOUS CONCRETE PAVEMENT STRUCTURE WITH A CORE DRILL WHERE DIRECTED, IN ORDER TO CONFIRM THE PLAN THICKNESS. DEFICIENCIES IN THICKNESS SHALL BE ADJUSTED FOR BY THE METHOD DESCRIBED IN (SSRBC), ART. 407.10.

   E. FINAL ACCEPTANCE OF THE TOTAL PAVEMENT INSTALLATION SHALL BE SUBJECT TO THE TESTING AND CHECKING REQUIREMENTS CITED ABOVE.

## SANITARY SEWER NOTES

1. GENERAL

   A. SANITARY SEWER PIPE SHALL BE PVC (POLYVINYL CHLORIDE) PLASTIC PIPE WITH A STANDARD DIMENSION RATIO (SDR) OF 26 CONFORMING TO ASTM D-3034 WITH PUSH-ON JOINTS CONFORMING TO ASTM D-3212 AND PVC (POLYVINYL CHLORIDE) PLASTIC PIPE WITH A STANDARD DIMENSION RATIO (SDR) OF 21 CONFORMING TO ASTM D-2241 WITH PUSH-ON JOINTS CONFORMING TO ASTM D-3139 AS SHOWN ON THE PLANS. PAYMENT SHALL BE MADE AT THE CONTRACT UNIT PRICE PER LINEAL FOOT OF SANITARY SEWER COMPLETE IN PLACE.

   B. SANITARY SEWER PIPE 18" AND LARGER, WHERE NOTED ON THE PLANS, OR WHERE THE IEPA MINIMUM SEPARATION CANNOT BE MAINTAINED, SHALL BE ONE OF THE FOLLOWING:

      PLAN CODE DESCRIPTION

      DIP: DUCTILE IRON WATERMAIN QUALITY PIPE, CLASS 52, (ANSI A-21.51) WITH MECHANICAL OR O-RING GASKETED JOINTS (ANSI A-21.11).

      PVC: PRESSURE RATED PVC PIPE MEETING ASTM D-2241 WITH ASTM D-3139 GASKETED JOINT, SDR 26

   C. "BAND-SEAL" OR SIMILAR FLEXIBLE TYPE COUPLINGS SHALL BE USED WHEN CONNECTING SEWER PIPES OF DISSIMILAR MATERIALS. "BAND-SEAL", "FERNCO", AND "MISSION" TYPE COUPLINGS SHALL NOT BE USED ON ANY SEWER MAIN.

   D. ALL SANITARY SEWERS ARE TO BE CONSTRUCTED USING A LASER INSTRUMENT TO MAINTAIN LINE AND GRADE.

   E. ALL FLOOR DRAINS SHALL CONNECT TO THE SANITARY SEWER.

   F. CONNECTIONS TO EXISTING SANITARY SEWER SYSTEM SHALL NOT BE DONE UNTIL AUTHORIZED BY THE MUNICIPALITY.

   G. WATERMAINS SHALL BE SEPARATED FROM SANITARY SEWERS AND STORM SEWERS IN ACCORDANCE WITH IEPA REQUIREMENTS AS SPECIFIED IN "WATER MAIN" SECTION.

   H. NO WATER LINE SHALL BE PLACED IN THE SAME TRENCH AS A SEWER LINE EXCEPT UNDER SPECIAL CIRCUMSTANCES AND THEN ONLY UNDER THE FOLLOWING RULES:

      a) PERMISSION SHALL BE OBTAINED FROM THE MUNICIPAL ENGINEERING DEPARTMENT IN WRITING PRIOR TO BEGINNING CONSTRUCTION.
      b) THE BOTTOM OF A WATER LINE SHALL BE INSTALLED ON A SHELF A MINIMUM OF 18" ABOVE THE TOP OF THE SEWER AND 18" HORIZONTALLY AWAY FROM THE EDGE OF THE SEWER.

2. BEDDING:

   A. BEDDING SHALL CONSIST OF A MINIMUM OF FOUR (4") INCHES OF COMPACTED CRUSHED GRAVEL OR STONE, 1/4 " -3/4 " IN SIZE. THE SEWER SHALL HAVE MECHANICALLY TAMPED CRUSHED GRAVEL OR STONE COVER ABOVE THE TOP OF THE PIPE TO A MINIMUM OF TWELVE (12") INCHES FOR PVC PIPE AND TO THE SPRING LINE FOR DIP. THE BEDDING AND COVER MATERIAL SHALL BE ASTM D-2321 CLASS II FOR PVC PIPE AND ASTM D-448 SIZE 67 FOR DIP PIPE. THE COST OF THE BEDDING AND COVER SHALL BE MERGED WITH THE UNIT PRICE BID FOR THE SEWER.

   B. ALL UNSUITABLE MATERIAL SHALL BE REMOVED BELOW THE PROPOSED SANITARY SEWER AND REPLACED WITH COMPACTED CA-6 CRUSHED GRAVEL OR STONE.

   C. ALL TRENCHES BENEATH PROPOSED OR EXISTING UTILITIES, PAVEMENTS, ROADWAYS, SIDEWALKS, AND FOR A DISTANCE OF FIVE (5') FEET ON EITHER SIDE OF SAME, AND/OR WHERE SHOWN ON THE PLANS, SHALL BE BACKFILLED WITH SELECT GRANULAR BACKFILL (CA-6) AND THOROUGHLY MECHANICALLY COMPACTED IN 9" THICK (LOOSE MEASUREMENT) LAYERS. JETTING WITH WATER IS NOT PERMITTED. REFER TO THE TRENCH BACKFILL LIMITS DETAIL.

3. MANHOLES:

   A. SANITARY SEWER MANHOLES SHALL BE 4'-0" I.D. PRECAST CONCRETE SECTIONS CONFORMING TO ASTM D-478 WITH PREFORMED BITUMINOUS OR "O" RING JOINTS, IN ACCORDANCE WITH MUNICIPAL REGULATIONS, AND HAVE AN ECCENTRIC CONE INSTALLED TO LINE UP WITH THE MANHOLE STEPS. ALL MANHOLE STEPS SHALL BE AT 16" O.C. SIMILAR TO NEENAH R-1980.

   B. ALL PIPE CONNECTION OPENINGS SHALL BE PRECAST WITH RESILIENT RUBBER WATER TIGHT SLEEVES. THE BOTTOM OF MANHOLE SHALL HAVE A CONCRETE BENCH POURED TO FACILITATE SMOOTH FLOWS.

4. FRAMES AND LIDS:

   A. ALL SANITARY SEWER MANHOLE FRAMES AND LIDS SHALL BE NEENAH R-1712 UNLESS OTHERWISE NOTED ON THE PLANS. THE LIDS SHALL HAVE RECESSED (CONCEALED) PICK HOLE AND BE SELF SEALING WITH AN "O" RING GASKET. THE LIDS SHALL HAVE THE WORDS "SANITARY" EMBOSSED ON THE SURFACE. THE JOINTS BETWEEN FRAME AND CONCRETE SECTION SHALL BE SEALED WITH A BUTYL ROPE.

   B. A MAXIMUM OF EIGHT (8) INCHES OF CONCRETE ADJUSTING RINGS SHALL BE USED TO ADJUST FRAME ELEVATIONS. RINGS SHALL BE SEALED TOGETHER WITH BUTYL ROPE.

5. DROP MANHOLE ASSEMBLIES:

   A. DROP MANHOLE ASSEMBLIES: DROP MANHOLE ASSEMBLIES SHALL BE PROVIDED AT THE JUNCTION OF SANITARY SEWERS WHERE THE DIFFERENCE IN INVERT GRADES EXCEEDS TWO FEET (2'), OR AS SHOWN ON THE PLANS. THE ENTIRE DROP ASSEMBLY SHALL BE CAST IN CONCRETE MONOLITHICALLY WITH THE MANHOLE BARREL SECTION.

6. CLEANING:

   A. ALL MANHOLES AND PIPES SHALL BE THOROUGHLY CLEANED OF DIRT AND DEBRIS, AND ALL VISIBLE LEAKAGE ELIMINATED, BEFORE FINAL INSPECTION AND ACCEPTANCE.

7. TESTING:

   A. DEFLECTION AND LEAKAGE TESTING WILL BE REQUIRED. THE PROCEDURE AND ALLOWABLE TESTING LIMITS SHALL BE AS SPECIFIED IN THE "STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS", OR MUNICIPAL CODES. IN THE EVENT OF A DISCREPANCY BETWEEN THE STANDARD SPECIFICATIONS AND THE MUNICIPAL CODE, THE MUNICIPAL CODE SHALL GOVERN. THE FULL LENGTH OF THE SANITARY SEWER IS REQUIRED TO BE BOTH AIR TESTED AND DEFLECTION TESTED.

   B. TESTING THE ALIGNMENT/STRAIGHTNESS SHALL BE IN ACCORDANCE WITH MUNICIPAL CODE.

   C. TESTING OF MANHOLES TO BE IN ACCORDANCE WITH ASTM C-969.

8. TELEVISING:

   A. ALL SANITARY SEWERS SHALL BE TELEVISED AND A COPY OF THE TAPE /DVD AND A WRITTEN REPORT SHALL BE SUBMITTED AND REVIEWED BY THE OWNER OR MUNICIPALITY BEFORE FINAL ACCEPTANCE. THE REPORT SHALL INCLUDE STUB LOCATION AS WELL AS A DESCRIPTION OF ALL DEFECTS, WATER LEVEL, LEAKS AND LENGTHS. IDENTIFY MANHOLE TO MANHOLE BOTH VERBALLY AND ON-SCREEN USING MANHOLE NUMBERS FROM APPROVED PLANS. ORDER OF WRITTEN REPORT SHALL BE THE SAME AS THE VIDEO TAPES/DVDS.

9. TEST RESULTS:

A. REFERENCED SPECIFICATIONS

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FOLLOWING, EXCEPT AS MODIFIED HEREIN OR ON THE PLANS:
   * STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION (IDOT SS) FOR ALL IMPROVEMENTS EXCEPT SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION (SSWS) FOR SANITARY SEWER AND WATER MAIN CONSTRUCTION;
   * VILLAGE OF _____ MUNICIPAL CODE;
   * THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO (MWRD) WATERSHED MANAGEMENT ORDINANCE AND TECHNICAL GUIDANCE MANUAL;
   * IN CASE OF CONFLICT BETWEEN THE APPLICABLE ORDINANCES NOTED, THE MORE STRINGENT SHALL TAKE PRECEDENCE AND SHALL CONTROL ALL CONSTRUCTION.

B. NOTIFICATIONS

1. THE MWRD LOCAL SEWER SYSTEMS SECTION FIELD OFFICE MUST BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK (CALL 708-588-4055).

2. THE VILLAGE OF _____ ENGINEERING DEPARTMENT AND PUBLIC MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO EACH PHASE OF WORK. CONTRACTOR SHALL DETERMINE ITEMS REQUIRING INSPECTION PRIOR TO START OF CONSTRUCTION OR EACH WORK PHASE.

3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION FOR THE EXACT LOCATIONS OF UTILITIES AND FOR THEIR PROTECTION DURING CONSTRUCTION. IF EXISTING UTILITIES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED. CALL J.U.L.I.E. AT 1-800-892-0123.

C. GENERAL NOTES

1. ALL ELEVATIONS SHOWN ON PLANS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). CONVERSION FACTOR IS _____ FT.

2. MWRD, THE MUNICIPALITY AND THE OWNER OR OWNER'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION IMPROVEMENTS.

3. THE CONTRACTOR(S) SHALL INDEMNIFY THE OWNER, ENGINEER, MUNICIPALITY, MWRD, AND THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, OR TESTING OF THIS WORK ON THE PROJECT.

4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY MWRD AND THE MUNICIPALITY UNLESS CHANGES ARE APPROVED BY MWRD, THE MUNICIPALITY, OR AUTHORIZED AGENT. THE CONSTRUCTION DETAILS, AS PRESENTED ON THE PLANS, MUST BE FOLLOWED. PROPER CONSTRUCTION TECHNIQUES MUST BE FOLLOWED ON THE IMPROVEMENTS INDICATED ON THE PLANS.

5. THE LOCATION OF VARIOUS UNDERGROUND UTILITIES WHICH ARE SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING THE CONSTRUCTION OPERATIONS.

6. ANY EXISTING PAVEMENT, SIDEWALK, DRIVEWAY, ETC., DAMAGED DURING CONSTRUCTION OPERATIONS AND NOT CALLED FOR TO BE REMOVED SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

7. MATERIAL AND COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE MUNICIPALITY, MWRD, AND OWNER.

8. THE UNDERGROUND CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS TO NOTIFY ALL INSPECTION AGENCIES.

9. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS DISTURBED DURING CONSTRUCTION SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL INSPECTION.

10. RECORD DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER AS SOON AS UNDERGROUND IMPROVEMENTS ARE COMPLETED. FINAL PAYMENTS TO THE CONTRACTOR SHALL BE HELD UNTIL THEY ARE RECEIVED. ANY CHANGES IN LENGTH, LOCATION OR ALIGNMENT SHALL BE SHOWN IN RED. ALL WYES OR BENDS SHALL BE LOCATED FROM THE DOWNSTREAM MANHOLE. ALL VALVES, B-BOXES, TEES OR BENDS SHALL BE TIED TO A FIRE HYDRANT.

D. SANITARY SEWER

1. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT ANY POLLUTED WATER, SUCH AS GROUND AND SURFACE WATER, FROM ENTERING THE EXISTING SANITARY SEWERS.

2. A WATER-TIGHT PLUG SHALL BE INSTALLED IN THE DOWNSTREAM SEWER PIPE AT THE POINT OF SEWER CONNECTION PRIOR TO COMMENCING ANY SEWER CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE MUNICIPALITY AND/OR MWRD AFTER THE SEWERS HAVE BEEN TESTED AND ACCEPTED.

3. DISCHARGING ANY UNPOLLUTED WATER INTO THE SANITARY SEWER SYSTEM FOR THE PURPOSE OF SEWER FLUSHING OF LINES FOR THE DEFLECTION TEST SHALL BE PROHIBITED WITHOUT PRIOR APPROVAL FROM THE MUNICIPALITY OR MWRD.

4. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS (LATEST EDITION).

5. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER SYSTEM.

6. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.

7. ALL SANITARY SEWER PIPE MATERIALS AND JOINTS (AND STORM SEWER PIPE MATERIALS AND JOINTS IN A COMBINED SEWER AREA) SHALL CONFORM TO THE FOLLOWING:

| PIPE MATERIAL | PIPE SPECIFICATIONS | JOINT SPECIFICATIONS |
|---|---|---|
| VITRIFIED CLAY PIPE | ASTM C-700 | ASTM C-425 |
| REINFORCED CONCRETE SEWER PIPE | ASTM C-76 | ASTM C-443 |
| CAST IRON SOIL PIPE | ASTM A-74 | ASTM C-564 |
| DUCTILE IRON PIPE | ANSI A21.51 | ANSI A21.11 |
| POLYVINYL CHLORIDE (PVC) PIPE | | |
| 6-INCH TO 15-INCH DIAMETER SDR 26 | ASTM D-3034 | ASTM D-3212 |
| 18-INCH TO 27-INCH DIAMETER F/DY=46 | ASTM F-679 | ASTM D-3212 |
| HIGH DENSITY POLYETHYLENE (HDPE) | ASTM D-3350<br>ASTM D-3035 | ASTM D-3261,F-2620 (HEAT FUSION)<br>ASTM D-3212,F-477 (GASKETED) |
| WATER MAIN QUALITY PVC | | |
| 4-INCH TO 36-INCH | ASTM D-2241 | ASTM D-3139 |
| 4-INCH TO 12-INCH | AWWA C900 | ASTM D-3139 |
| 14-INCH TO 48-INCH | AWWA C905 | ASTM D-3139 |

THE FOLLOWING MATERIALS ARE ALLOWED ON A QUALIFIED BASIS SUBJECT TO DISTRICT REVIEW AND APPROVAL PRIOR TO PERMIT ISSUANCE. A SPECIAL CONDITION WILL BE ADDED TO THE PERMIT WHEN THE PIPE MATERIAL BELOW IS USED FOR SEWER CONSTRUCTION OR A CONNECTION IS MADE.

| PIPE MATERIAL | PIPE SPECIFICATIONS | JOINT SPECIFICATIONS |
|---|---|---|
| POLYPROPYLENE (PP) PIPE | | |
| 12-INCH TO 24-INCH DOUBLE WALL | ASTM F-2736 | D-3212, F-477 |
| 30-INCH TO 60-INCH TRIPLE WALL | ASTM F-2764 | D3212, F-477 |

8. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE ¼ " TO 1" IN SIZE, WITH MINIMUM BEDDING THICKNESS EQUAL TO ¼ THE OUTSIDE DIAMETER OF THE SEWER PIPE, BUT NOT LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES. MATERIAL SHALL BE CA-7, CA-11 OR CA-13 AND SHALL BE EXTENDED AT LEAST 12" ABOVE THE TOP OF THE PIPE WHEN USING PVC.

9. NON-SHEAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED IN THE CONNECTION OF SEWER PIPES OF DISSIMILAR PIPE MATERIALS.

10. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS. SANITARY LIDS SHALL BE CONSTRUCTED WITH A CONCEALED PICKHOLE AND WATERTIGHT GASKET WITH THE WORD "SANITARY" CAST INTO THE LID.

11. WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR AN EXISTING MANHOLE, ONE OF THE FOLLOWING METHODS SHALL BE USED:
    a) A CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ("SHEWER-TAP" MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUBWYE SADDLE OR HUB-TEE SADDLE.
    b) REMOVE AN ENTIRE SECTION OF PIPE (BREAKING ONLY THE TOP OF ONE BELL) AND REPLACE WITH A WYE OR TEE BRANCH SECTION.
    c) WITH PIPE CUTTER, NEATLY AND ACCURATELY CUT OUT DESIRED LENGTH OF PIPE FOR INSERTION OF PROPER FITTING, USING "BAND SEAL" OR SIMILAR COUPLINGS TO HOLD IT FIRMLY IN PLACE.

12. WHENEVER A SANITARY/COMBINED SEWER CROSSES UNDER A WATERMAIN, THE MINIMUM VERTICAL DISTANCE FROM THE TOP OF THE SEWER TO THE BOTTOM OF THE WATERMAIN SHALL BE 18 INCHES. FURTHERMORE, A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN SANITARY/COMBINED SEWERS AND WATERMAINS SHALL BE MAINTAINED UNLESS: THE SEWER IS LAID IN A SEPARATE TRENCH, KEEPING A MINIMUM 18" VERTICAL SEPARATION; OR THE SEWER IS LAID IN THE SAME TRENCH WITH THE WATERMAIN LOCATED AT THE OPPOSITE SIDE ON A BENCH OF UNDISTURBED EARTH, KEEPING A MINIMUM 18" VERTICAL SEPARATION. IF EITHER THE VERTICAL OR HORIZONTAL DISTANCES DESCRIBED CANNOT BE MAINTAINED, OR THE SEWER CROSSES ABOVE THE WATER MAIN, THE SEWER SHALL BE CONSTRUCTED TO WATER MAIN STANDARDS OR IT SHALL BE ENCASED WITH A WATER MAIN QUALITY CARRIER PIPE WITH THE ENDS SEALED.

13. ALL EXISTING SEPTIC SYSTEMS SHALL BE ABANDONED. ABANDONED TANKS SHALL BE FILLED WITH GRANULAR MATERIAL OR REMOVED.

14. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES, AND SHALL BE CAST IN PLACE OR PRE-CAST REINFORCED CONCRETE.

15. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE PRECAST "RUBBER BOOTS" THAT CONFORM TO ASTM C-923 FOR ALL PIPE CONNECTIONS. PRECAST SECTIONS SHALL CONSIST OF MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS.

16. ALL ABANDONED SANITARY SEWERS SHALL BE PLUGGED AT BOTH ENDS WITH AT LEAST 2 FEET LONG NON-SHRINK CONCRETE OR MORTAR PLUG.

17. EXCEPT FOR FOUNDATION/FOOTING DRAINS PROVIDED TO PROTECT BUILDINGS, OR PERFORATED PIPES ASSOCIATED WITH VOLUME CONTROL FACILITIES, DRAIN TILES/FIELD TILES/UNDERDRAINS/PERFORATED PIPES ARE NOT ALLOWED TO BE CONNECTED TO OR TRIBUTARY TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS IN COMBINED SEWER AREAS. CONSTRUCTION OF NEW FACILITIES OF THIS TYPE IS PROHIBITED; AND ALL EXISTING DRAIN TILES AND PERFORATED PIPES ENCOUNTERED WITHIN THE PROJECT AREA SHALL BE PLUGGED OR REMOVED, AND SHALL NOT BE CONNECTED TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS.

18. A BACKFLOW PREVENTER IS REQUIRED FOR ALL DETENTION BASINS TRIBUTARY TO COMBINED SEWERS. REQUIRED BACKFLOW PREVENTERS SHALL BE INSPECTED AND EXERCISED ANNUALLY BY THE PROPERTY OWNER TO ENSURE PROPER OPERATION, AND ANY NECESSARY MAINTENANCES SHALL BE PERFORMED TO ENSURE FUNCTIONALITY. IN THE EVENT OF A SEWER SURCHARGE INTO AN OPEN DETENTION BASIN TRIBUTARY TO COMBINED SEWERS, THE PERMITTEE SHALL ENSURE THAT CLEAN UP AND WASH OUT OF SEWAGE TAKES PLACE WITHIN 48 HOURS OF THE STORM EVENT.

E. EROSION AND SEDIMENT CONTROL

1. THE CONTRACTOR SHALL INSTALL THE EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

2. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL PRIOR TO HYDROLOGIC DISTURBANCE OF THE SITE.

3. ALL DESIGN CRITERIA, SPECIFICATIONS, AND INSTALLATION OF EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL.

4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.

5. INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:
   a) UPON COMPLETION OF INITIAL EROSION AND SEDIMENT CONTROL MEASURES, PRIOR TO ANY SOIL DISTURBANCE.
   b) ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

6. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE CO-PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

7. A STABILIZED MAT OF CRUSHED STONE MEETING THE STANDARDS OF THE ILLINOIS URBAN MANUAL SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

8. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL AND SHALL BE INSTALLED PRIOR TO ANY ON SITE CONSTRUCTION ACTIVITIES INVOLVING CONCRETE.

9. MORTAR WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ADDITION TO CONCRETE WASHOUT FACILITIES FOR ANY BRICK AND MORTAR BUILDING ENVELOPE CONSTRUCTION ACTIVITIES.

10. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNOFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN. VOLUME CONTROL FACILITIES SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS.

12. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) DAYS.

13. ALL FLOOD PROTECTION AREAS AND VOLUME CONTROL FACILITIES SHALL, AT A MINIMUM, BE PROTECTED WITH A DOUBLE-ROW OF SILT FENCE (OR EQUIVALENT).

14. VOLUME CONTROL FACILITIES SHALL NOT BE CONSTRUCTED UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED.

15. SOIL STOCKPILES SHALL, AT A MINIMUM, BE PROTECTED WITH PERIMETER SEDIMENT CONTROLS. SOIL STOCKPILES SHALL NOT BE PLACED IN FLOOD PROTECTION AREAS OR THEIR BUFFERS.

16. EARTHEN EMBANKMENT SIDE SLOPES SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL BLANKET.

17. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY APPROPRIATE SEDIMENT CONTROL MEASURES.

18. THE CONTRACTOR SHALL EITHER REMOVE OR REPLACE ANY EXISTING DRAIN TILES AND INCORPORATE THEM INTO THE DRAINAGE PLAN FOR THE DEVELOPMENT. DRAIN TILES CANNOT BE TRIBUTARY TO A SANITARY OR COMBINED SEWER. DRAIN TILES ALLOWED IN COMBINED SEWER AREA FOR GREEN INFRASTRUCTURE PRACTICES.

19. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE SITE INSPECTOR MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

20. THE CONTRCTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING AND EXCAVATION FOR THE INSTALLATION OF SANITARY SEWERS, STORM SEWERS, WATERMAINS AS WELL AS THEIR SERVICES AND OTHER APPURTENANCES. ANY TRENCH DEWATERING, WHICH CONTAINS SEDIMENT SHALL PASS THROUGH A SEDIMENT SETTLING POND OR EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE. ALTERNATIVES MAY INCLUDE DEWATERING INTO A SUMP PIT, FILTER BAG OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATERS SHALL NOT BE DISCHARGE TO WATERWAYS, FLOOD PROTECTION AREAS OR THE COMBINED SEWER SYSTEM.

21. ALL PERMANENT EROSION CONTROL PRACTICES SHALL BE INITIATED WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OF SOIL DISTURBING ACTIVITIES.

22. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED ON A YEAR-ROUND BASIS DURING CONSTRUCTION AND ANY PERIODS OF CONSTRUCTION SHUTDOWN UNTIL PERMANENT STABILIZATION IS ACHIEVED.

23. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS AFTER PERMANENT SITE STABILIZATION.

24. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, SITE INSPECTOR, OR MWRD.

TECHNICAL GUIDANCE MANUAL

07/12/2016

MWRD GENERAL NOTES

STD. DWG. NO.18

PAGE NO. 19

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

SPECIFICATIONS - 2

2240-2296 RAND ROAD
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065

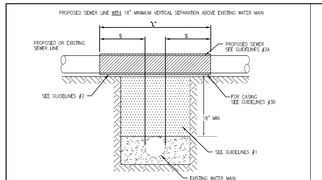
SPACECO INC.

FILENAME: 11624SPEC2
DATE: 03/16/22
JOB NO. 11624
SHEET SP2
13 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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PROPOSED SEWER LINE WITH 18" MINIMUM VERTICAL SEPARATION ABOVE EXISTING WATER MAIN




GUIDELINES

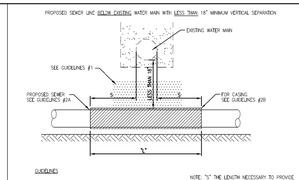
1. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF PROPOSED SEWER TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
2. OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF SEWER AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT THE LENGTH OF "L" FILET.
3. A) CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MATERIAL AND PRESSURE TEST, OR;

   B) USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED SEWER AND SEAL ENDS OF CASING.

NOTE: "L" THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING WATER MAIN

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

PROPOSED SEWER LINE BELOW EXISTING WATER MAIN WITH LESS THAN 18" MINIMUM VERTICAL SEPARATION




GUIDELINES

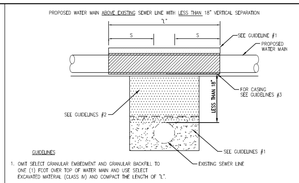
1. OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF SEWER AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT FOR ½" FEET ON EACH SIDE OF WATER MAIN.
2. A) CONSTRUCT "L" FEET OF PROPOSED SEWER OF WATER MAIN MATERIAL AND PRESSURE TEST, OR;

   B) USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED SEWER AND SEAL ENDS OF CASING.
3. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH

NOTE: "L" THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING WATER MAIN

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE WITH LESS THAN 18" VERTICAL SEPARATION



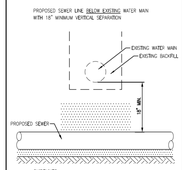

GUIDELINES

1. OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF WATER MAIN AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT THE LENGTH OF "L".
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
3. USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED WATER MAIN AND SEAL ENDS OF CASING.
4. POINT LOADS SHALL NOT BE ALLOWED BETWEEN WATER MAIN CASING AND SEWER

NOTE: "L" THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING SEWER LINE.

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

PROPOSED SEWER LINE BELOW EXISTING WATER MAIN WITH 18" MINIMUM VERTICAL SEPARATION

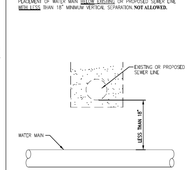



GUIDELINES

1. PROVIDE ADEQUATE SUPPORT FOR EXISTING WATER MAIN TO PREVENT DAMAGE DUE TO SETTLEMENT OF SEWER TRENCH.

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

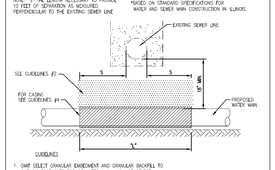
PLACEMENT OF WATER MAIN BELOW EXISTING OR PROPOSED SEWER LINE WITH LESS THAN 18" MINIMUM VERTICAL SEPARATION NOT ALLOWED.




NOT ALLOWED*
MUST MAINTAIN 18" VERTICAL SEPARATION

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

PROPOSED WATER MAIN BELOW EXISTING SEWER LINE WITH 18" MINIMUM VERTICAL SEPARATION



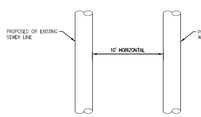

GUIDELINES

1. OMIT SELECT GRANULAR EMBEDMENT AND GRANULAR BACKFILL TO ONE (1) FOOT OVER TOP OF WATER MAIN AND USE SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT THE LENGTH OF "L".
2. IF SELECT GRANULAR BACKFILL EXISTS, REMOVE WITHIN WIDTH OF EXISTING SEWER LINE TRENCH AND REPLACE WITH SELECT EXCAVATED MATERIAL (CLASS IV) AND COMPACT.
3. PROVIDE ADEQUATE SUPPORT FOR EXISTING SEWER LINE TO PREVENT DAMAGE DUE TO SETTLEMENT.
4. USE "L" FEET OF WATER MAIN MATERIAL FOR CASING OF PROPOSED WATER MAIN AND SEAL ENDS OF CASING.

NOTE: "L" THE LENGTH NECESSARY TO PROVIDE 10 FEET OF SEPARATION AS MEASURED PERPENDICULAR TO THE EXISTING WATER MAIN

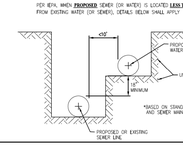
*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

PER IEPA, WHEN **PROPOSED** SEWER (OR WATER) IS LOCATED TO FEET OR MORE FROM EXISTING WATER (OR SEWER), NO SPECIAL CONSTRUCTION REQUIRED




PLAN VIEW

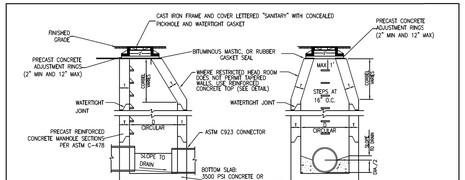
PER IEPA, WHEN **PROPOSED** SEWER (OR WATER) IS LOCATED **LESS THAN 9 FEET** FROM EXISTING WATER (OR SEWER), DETAILS BELOW SHALL APPLY



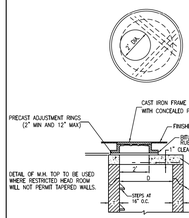

*BASED ON STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS.

NOT TO SCALE

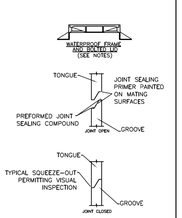
| TECHNICAL GUIDANCE MANUAL | 7/1/15 |
|---|---|
| WATER AND SEWER SEPARATION REQUIREMENTS (PER IEPA) | STD. DWG. NO. 41 |
| | PAGE NO. 42 |




REINFORCED CONCRETE TOP




| ALT MATERIALS FOR WALLS | D | T (MIN.) |
|---|---|---|
| PRECAST REINFORCED CONCRETE SECTION | 4' TO 5' DIA | 4 IN |
| | 5' TO 6' DIA | 5 IN |
| | 6' TO 8' DIA | 6 IN |
| CAST-IN-PLACE CONCRETE | 4' TO 5' DIA | 4 IN |
| | 5' TO 6' DIA | 5 IN |
| | 6' TO 8' DIA | 6 IN |

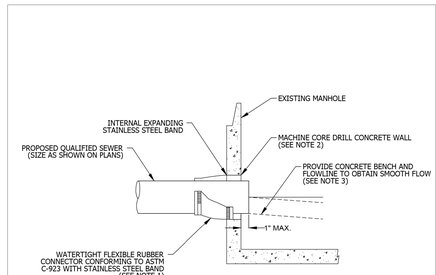



WATER TIGHT JOINT DETAIL

1. MANHOLES TO HAVE PRECAST "RUBBER BOOTS" CONFORMING TO ASTM C-923 AT ALL PIPE CONNECTIONS.
2. SANITARY MANHOLES SUBJECT TO SATURATION SOIL CONDITIONS OR SURFACE SUBMERGENCE SHALL BE EQUIPPED WITH CHAINEY SEALS AND WATER TIGHT BOLTED LOWN MANHOLE COVERS.
3. MASTIC SEALANT OR RUBBER GASKET SEAL MUST BE APPLIED BETWEEN CONCRETE & FLANGE OF FRAME BEFORE LID BOLTS ARE TIGHTENED.
4. SAFETY LANDINGS REQUIRED FOR MANHOLES GREATER THAN 28 FEET DEPTH (RIM TO INVERT). MAXIMUM VERTICAL SPACING OF SAFETY LANDING IS 20 FEET.
5. FOR DROP CONNECTIONS, USE DROP CONNECTION MANHOLE DETAIL.
6. FOR ONLINE CONNECTIONS GREATER THAN 15 INCHES, USE DOGHOUSE MANHOLE DETAIL.

NOT TO SCALE

| TECHNICAL GUIDANCE MANUAL | 7/1/15 |
|---|---|
| TYPICAL SANITARY MANHOLE 'A' AND 'B' DETAIL | STD. DWG. NO.39 |
| | PAGE NO. 40 |




SECTION

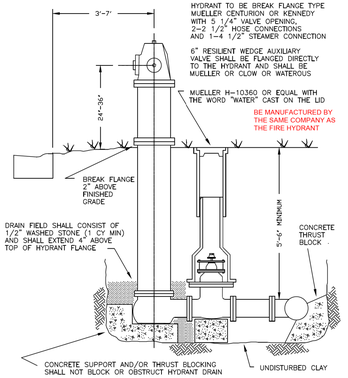
NOTES:
1. RESILIENT CONNECTOR COMPLYING WITH ASTM STANDARD C-923 (MOST RECENT EDITION) SHALL BE USED.
2. MACHINE CORE/DRILL CIRCULAR OPENING IN STRUCTURE WALL, OPENING DIAMETER TO FIT THE REQUIRED RESILIENT CONNECTOR PER MANUFACTURER'S RECOMMENDATION.
3. CUT, SHAPE, AND SLOPE NEW INVERT CHANNEL IN THE EXISTING CONCRETE BENCH FOR SMOOTH FLOW.
4. CLEAN EXISTING STRUCTURE AND SEWER PIPE OF ANY DIRT, CONCRETE, OR DEBRIS WHICH MAY ACCUMULATE DURING THE CONSTRUCTION PROCESS.
5. ANY DAMAGE TO THE EXISTING MANHOLE SHALL BE REPAIRED BY THE CONTRACTOR.
6. REINFORCED CONCRETE COLLAR MAY BE SUBSTITUTED FOR PIPE DIAMETERS LARGER THAN 36-INCHES.

NOT TO SCALE

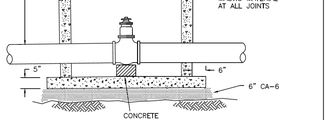
| TECHNICAL GUIDANCE MANUAL | 10/02/18 |
|---|---|
| PIPE TO EXISTING MANHOLE CONNECTION DETAIL | STD. DWG. NO. 42 |
| | PAGE NO. 43 |

# FIRE HYDRANT

EAST JORDAN 5BR250




# WATER VALVE VAULT




INSIDE DIAMETER SHALL BE 48" FOR WATER MAIN 6" THROUGH 10" AND 60" FOR WATER MAIN 12" AND OVER AND PRESSURE CONNECTIONS

VALVES SHALL BE RESILIENT WEDGE GATE VALVES CONFORMING TO AWWA C509 AND SHALL BE MUELLER OR WATEROUS




RIGID PIPE INSTALLATION DETAIL

FLEXIBLE PIPE INSTALLATION DETAIL

NOTES:
1. FOR QUALIFIED SEWER CONSTRUCTION ONLY.
2. SHORING, OR EQUIVALENT PROTECTIVE SYSTEM, REQUIRED FOR TRENCHES OF 5' DEPTH OR GREATER, OR AS REQUIRED BY MUNICIPALITY.

NOT TO SCALE

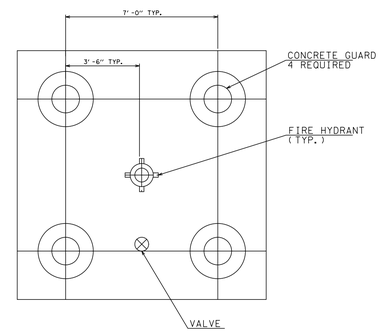
| TECHNICAL GUIDANCE MANUAL | 7/1/15 |
|---|---|
| RIGID AND FLEXIBLE PIPE INSTALLATION DETAIL | STD. DWG. NO. 34 |
| | PAGE NO. 35 |




NOTES:
1. THRUST BLOCKS BE CLASS "C" CONCRETE.
2. THRUST BLOCKS SHALL BE POURED AGAINST FIRM, UNDISTURBED SOIL.
3. THRUST BLOCKS SHALL BE USED AT ALL BENDS 1/16" (22 1/2°) OR GREATER.
4. ALL WATER MAIN FITTINGS TO HAVE MECHANICAL JOINTS WITH RETAINER GLANDS.

THRUST BLOCKS

NOT TO SCALE




FIRE HYDRANT LAYOUT IN PAVEMENT WITH GUARD POST

N.T.S.

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

DETAILS - 1

**2240-2296 RAND ROAD**
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065

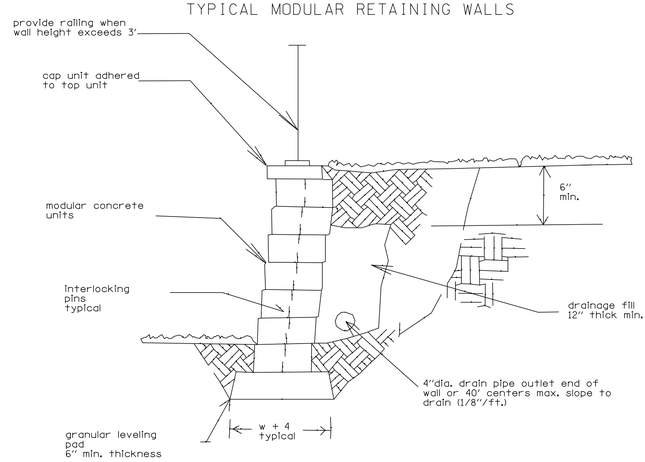
SPACECO INC.

FILENAME: 11624DET01
DATE: 03/16/22
JOB NO. 11624
SHEET D1
14 OF 18

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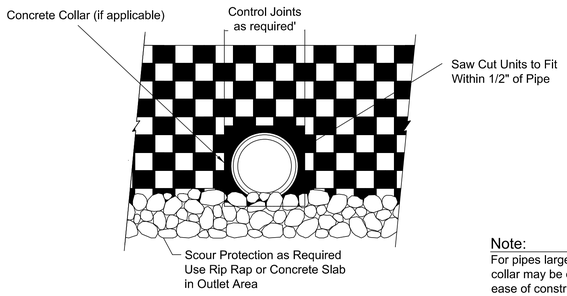
Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# TYPICAL MODULAR RETAINING WALLS



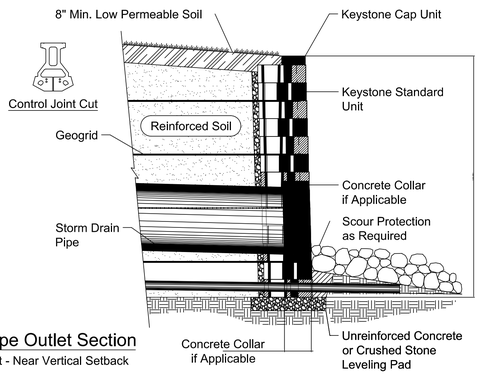

Notes:

1. All modular retaining walls are to be contructed per the manufacturers specifications.
2. The examples shown are to highlight typical components to be used in the design of walls. The contractor shall submit shop drawings of the proposed retaining walls for review and approval prior to installation.
3. Contractor shall submit structural calculations and plans prepared and sealed by a structural engineer for all retaining walls prior to construction.



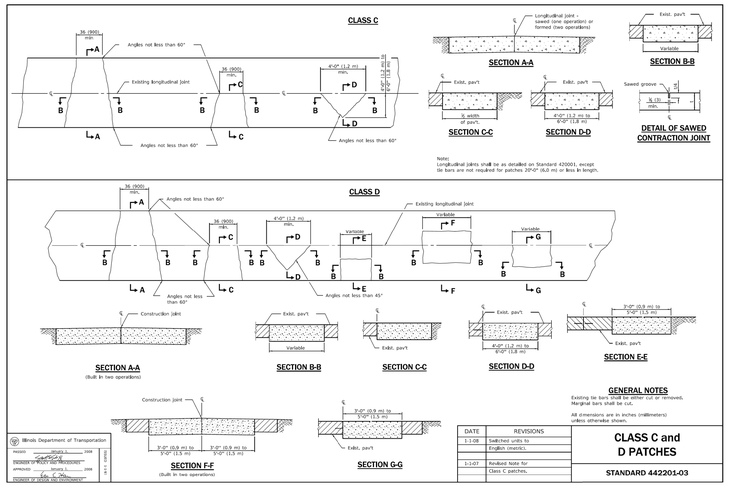

Note:
For pipes larger than 24", a concrete collar may be cast around pipe for ease of construction and appearance.

## Typical Pipe Outlet Detail




## Typical Pipe Outlet Section

Standard Unit - Near Vertical Setback




Note:
Longitudinal joints shall be as detailed on Standard 420001, except tie bars are not required for patches 20'-0" (6.0 m) or less in length.

**GENERAL NOTES**

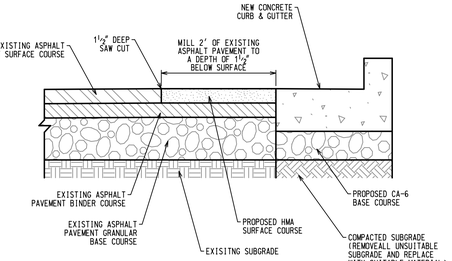
Existing tie bars shall be either cut or removed. Marginal bars shall be cut.

All dimensions are in inches (millimeters) unless otherwise shown.

| DATE | REVISIONS |
|---|---|
| 1-1-08 | Switched units to English (metric). |
| 1-1-07 | Revised Note for Class C patches. |

**CLASS C and D PATCHES**

**STANDARD 442201-03**



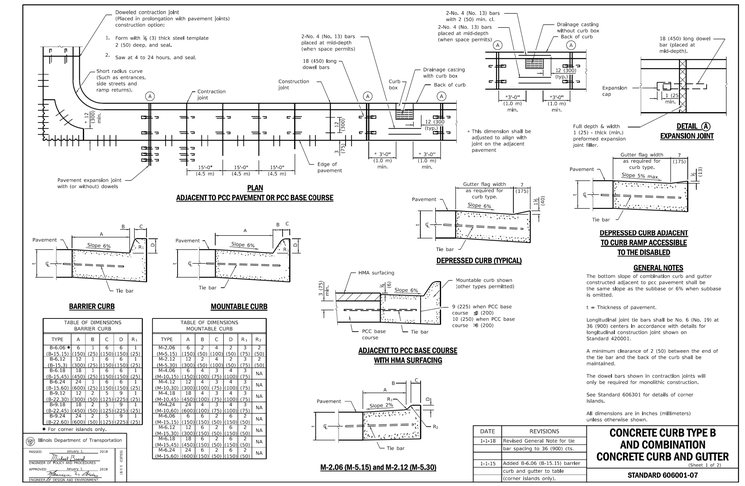

NOTES:

1. EXISTING PAVEMENT SECTION IS SHOWN FOR REFERENCE ONLY.
2. ALL ASPHALT PAVEMENT MILLINGS SHALL BE DISPOSED OF BY THE CONTRACTOR.
3. BITUMINOUS TACK COAT SHALL BE APPLIED AT A RATE OF 0.1 GALLONS PER SQUARE YARD TO BOTH EXISTING AND PROPOSED ASPHALT BINDER COURSE PRIOR TO NEW HMA SURFACE COURSE INSTALLATION.

## PAVEMENT PATCHING

**AT CURB & GUTTER REMOVAL**

NOT TO SCALE




Doweled contraction joint (Placed in prolongation with pavement joints) construction option:
1. Form with ⅝ (3) thick steel template 2 (50) deep, and seal.
2. Saw at 4 to 24 hours, and seal.

Short radius curve (Such as entrances, side streets and ramp returns).

* This dimension shall be adjusted to align with joint on the adjacent pavement

**GENERAL NOTES**

The bottom slope of combination curb and gutter constructed adjacent to pcc pavement shall be the same slope as the subbase or 6% when subbase is omitted.

t = Thickness of pavement.

Longitudinal joint tie bars shall be No. 6 (No. 19) at 36 (900) centers in accordance with details for longitudinal construction joint shown on Standard 420001.

A minimum clearance of 2 (50) between the end of the tie bar and the back of the curb shall be maintained.

The dowel bars shown in contraction joints will only be required for monolithic construction.

See Standard 606301 for details of corner islands.

All dimensions are in inches (millimeters) unless otherwise shown.

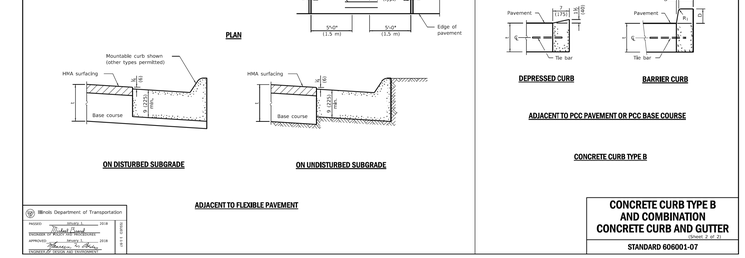
Illinois Department of Transportation
ENGINEER OF POLICY AND PROCEDURES — APPROVED 01/01/22
ENGINEER OF BUREAU OF TECHNOLOGY — APPROVED 01/01/22

| DATE | REVISIONS |
|---|---|
| 1-1-18 | Revised General Note for tie bar spacing to 36 (900) ctrs. |
| 1-1-15 | Added B-6.06 (B-15.15) barrier curb and gutter to table (corner islands only). |

**CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER**

Sheet 1 of 2

**STANDARD 606001-07**



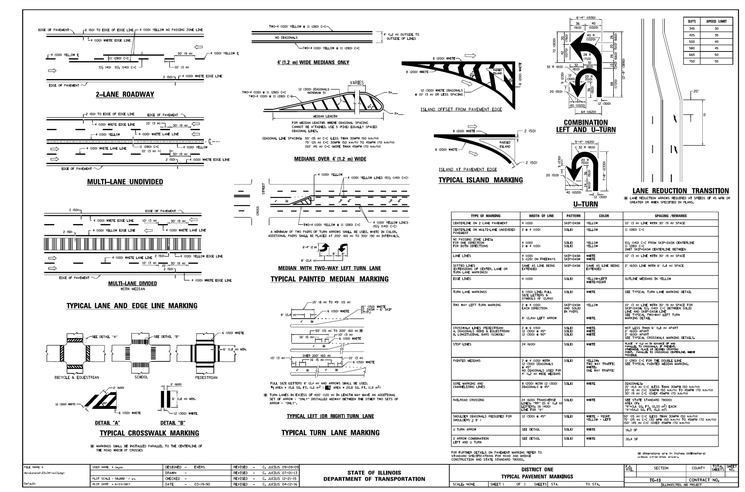

Undoweled contraction joint (typ.) construction options:
1. Form with ⅝ (3) thick steel template 2 (50) deep, and seal.
2. Saw 2 (50) deep at 4 to 24 hours, and seal.
3. Insert ⅝ (20) thick preformed joint filler full depth and width.

Illinois Department of Transportation
ENGINEER OF POLICY AND PROCEDURES — APPROVED 01/01/22
ENGINEER OF BUREAU OF TECHNOLOGY — APPROVED 01/01/22

**CONCRETE CURB TYPE B AND COMBINATION CONCRETE CURB AND GUTTER**

Sheet 2 of 2

**STANDARD 606001-07**




| TYPE OF MARKING | WIDTH OF LINE | PATTERN | COLOR | SPACING / REMARKS |
|---|---|---|---|---|
| CENTERLINE ON 2-LANE PAVEMENT | 6 (150) | SKIP-DASH | YELLOW | 10' (3 m) LINE WITH 30' (9 m) SPACE |
| CENTERLINE ON MULTI-LANE UNDIVIDED PAVEMENT | 6 (150) | SOLID | YELLOW | |
| NO PASSING ZONE (AREA WITH SIGHT DISTANCE LESS THAN 500' (150 m) FOR BOTH DIRECTIONS) | 6 (150) | SOLID | YELLOW | TO LEFT OF TRUE SKIP-DASH CENTERLINE |
| LANE LINES | 4 (100) | SKIP-DASH | WHITE | 10' (3 m) LINE WITH 30' (9 m) SPACE |
| EXTENSION LINE (EXTENDS LINE OF DIVIDING LANE OR EDGE LINE THROUGH INTERSECTION) | 4 (100) OR 6 (150) OR 8 (200) AS PREVIOUS | SKIP-DASH | WHITE | 10' (3 m) LINE WITH 5' (1.5 m) SPACE |
| EDGE LINE | 6 (150) | SOLID | WHITE | 2' (600) LINE WITH 5' (1.5 m) SPACE |
| EDGE LINE | 6 (150) | SOLID | YELLOW | OUTSIDE MEDIAN OR TURN LANE |
| TURN LANE MARKING | 6 (150) LINE FULL LANE WIDTH AT TURN AND EXTENDED BACK | SOLID | WHITE | SEE TYPICAL TURN LANE MARKING DETAIL |
| TWO WAY LEFT TURN MARKING | 6 & 4 (150 & 100) EACH DIRECTION | SKIP-DASH OR SOLID | YELLOW | 10' (3 m) LINE WITH 30' (9 m) SPACE FOR SKIP-DASH, SPACING CAN BE BETWEEN SOLID AND SKIP-DASH LINE FOR TURN |
| | 4 (100) LEFT ARROW | | WHITE | |
| CROSSWALK LINES (PEDESTRIAN & BICYCLE WAYS ACROSS ROADWAYS & CROSSWALKS AT SCHOOLS) | 6 & 24 (150 & 600) OR 12 (300) & 48 (1200) | SOLID | WHITE | 24" (600) WIDE @ 12" (300) SPACE OR 12" (300) WIDE @ 24" (600) SPACE SEE TYPICAL CROSSWALK MARKING DETAILS |
| STOP LINES | 24 (600) | SOLID | WHITE | SEE TYPICAL CROSSWALK MARKING DETAILS |
| PAINTED MEDIANS | 4 & 6 (100 AND 150) FOR MEDIANS 4' TO 8' (1.2 m TO 2.4 m) WIDE | SOLID | YELLOW TRIANGLE FILLED WITH WHITE STRIPES | SEE TYPICAL PAINTED MEDIAN MARKING DETAILS |
| LANE ARROWS AND CHANNELIZING LINES | 8 (200) WITH 12 (300) ARROWHEAD & 24" (600) WIDE | SOLID | WHITE | ARROWHEAD SHALL BE 12' (3 m) LONG FROM TIP TO BASE SEE TYPICAL CROSSWALK MARKING DETAILS |
| WALKING CROSSING | 24 (600) TRANSVERSE LINES, 96" (2.4 m) LONG SPACING AS REQD | SOLID | WHITE | 48" (1219) CROSSING WIDTH 24" (600) WIDE @ 48" (1219) SPACE |
| ONE-WAY ORIGINALLY PREPARED FOR SNOWPLOW'S P.I. | 12 (300) & 48" (1200) | SOLID | WHITE, YELLOW OR LEFT | 30' (9 m) C.C. LESS THAN 30MPH TO HAVE 10' (3 m) C.C. 30 MPH OR MORE TO HAVE 20' (6 m) C.C. |
| 2 TURN ARROW | SEE DETAIL | SOLID | WHITE | SEE 8" |
| 2 ARROW COMBINATION LEFT AND 2 THRU | SEE DETAIL | SOLID | WHITE | SEE 8" |

FOR FURTHER DETAILS ON PAVEMENT MARKING REFER TO STANDARD 780001 "TYPICAL PAVEMENT MARKINGS" AND THE CURRENT EDITION OF THE MUTCD.

All dimensions are in inches millimeters unless otherwise shown.

| DESIGNED - EVEN | REVISED - | STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION | DISTRICT ONE TYPICAL PAVEMENT MARKINGS | ILL. ROUTE | SECTION | COUNTY | SHEETS SHEET NO. |
|---|---|---|---|---|---|---|---|
| DRAWN - | REVISED - | | | | | | |
| CHECKED - | REVISED - | | | TOTAL SHEET | CONTRACT NO. | | |
| DATE - 03-24-90 | REVISED - | | | | | | |

| NO. | DATE | REMARKS |
|---|---|---|
| | | |
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| | | |

| NO. | DATE | REVISIONS PER ARCHITECT/OWNER |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT |
| 1 | 03/22/22 | REMARKS |

**DETAILS - 2**

**2240-2296 RAND ROAD**
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065
SPACECO INC.

FILENAME: 11624DET02

DATE: 03/16/22

JOB NO. 11624

SHEET **D2**
15 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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**SECTION PARALLEL TO PIPE**
(Without conical top riser)




**SECTION PERPENDICULAR TO PIPE**
(With conical top riser)

* As an alternate, the barrel wall reinforcement may be reduced to riser wall reinforcement with #3 (#10) bars placed around the pipe penetration holes as shown. This option may be utilized when the pipe penetration holes are formed as opposed to cored.




**BASE SLAB JOINT CONFIGURATIONS**

**GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES**

Note 1: A minimum of 9 (230) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 24 (600).

Note 2: A minimum 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).

Note 3: A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.

Note 4: Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.

Note 5: The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).

Note 6: Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.




**FLAT SLAB TOP JOINT CONFIGURATIONS**
(Shown at access hole)




**SHEAR KEY GEOMETRY**
(Reinforcement not shown for clarity)

**GENERAL NOTES**

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602701 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

| DATE | REVISIONS |
|---|---|
| 1-2-21 | Revised Note 1 and lifting hole general note. |
| 3-1-19 | Moved wall reinforcement from inside face to middle. |

**PRECAST MANHOLE TYPE A**
**4' (1.22 m) DIAMETER**
(Sheet 2 of 2)

**STANDARD 602401-07**




**ALTERNATE BOTTOM SLAB**




**ELEVATION**
(Standard Outlet)

**ELEVATION**
(Half Trap)

| ALTERNATE MATERIALS FOR WALLS | D | Cr | T (min.) |
|---|---|---|---|
| Precast Reinforced Concrete Section | 4'-0" (1.2 m) to 5'-0" (1.5 m) | 30 (750) to 36 (900) | 4 (100) to 5 (125) |
| Cast-in-place Concrete | 4'-0" (1.2 m) to 5'-0" (1.5 m) | 36 (900) to 42 (1050) | 5 (125) to 6 (150) |

* For precast reinforced concrete sections, dimension "C" may vary from the dimension given to plus 6 (150).

**GENERAL NOTES**

Bottom slabs shall be reinforced with a minimum of 0.05 sq. in./ft (420 sq. mm/m) in both directions with a maximum spacing of 12 (300).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

See Standard 602001 for optional precast reinforced concrete flat slab top.

See Standard 602701 for details of steps.

All dimensions are in inches (millimeters) unless otherwise shown.

| DATE | REVISIONS |
|---|---|
| 3-1-11 | Added "Outside" to half trap note, Detail redn. in slabs. |
| 1-1-09 | Revised general notes. |
| | Switched units to English (metric). |

**CATCH BASIN**
**TYPE A**

**STANDARD 602001-02**




| ALTERNATE MATERIALS FOR WALLS | T |
|---|---|
| BRICK MASONRY | 8 (200) |
| CAST-IN-PLACE CONCRETE | 6 (150) |
| CONCRETE MASONRY UNIT | 5 (125) |
| PRECAST REINFORCED CONCRETE SECTION | 3 (75) |




**ELEVATION**




**ALTERNATE METHODS**

**GENERAL NOTES**

Bottom slabs shall be reinforced with a minimum of 0.24 sq. in./ft. (510 sq. mm/m) in both directions with a maximum spacing of 10 (250).

Bottom slabs may be connected to the riser as determined by the fabricator; however, only a single row of reinforcement around the perimeter may be utilized.

All dimensions are in inches (millimeters) unless otherwise shown.

| DATE | REVISIONS |
|---|---|
| 1-1-14 | Increased height to 72 (1800) maximum. |
| 1-1-13 | Detailed rebars in slabs. Added max. limit to height. Added general notes. |

**INLET - TYPE A**

**STANDARD 602301-04**




**PLAN - FLAT SLAB TOP**
(Showing layout of reinforcement bars and c bars)

**JOINT SPLICE**




**PLAN - FLAT SLAB TOP**
(Showing layout of welded wire reinforcement and c bars)

**CONNECTION ANGLE**




**TIE PLATE**

| LOCATION | ORIENTATION | WWR or Rebar | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Riser | Circumferential | 0.12 sq. in./ft. (254 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95. sq. mm/m) | 8 (200) |
| Barrel | Circumferential | 0.12 sq. in./ft. (254 sq. mm/m) | 6 (150) |
| | Vertical | 0.16 sq. in./ft. (339 sq. mm/m) | 4 (100) |

**WALL REINFORCEMENT**

| LOCATION | WWR (each direction) | | Rebar (each direction except as noted) | | |
|---|---|---|---|---|---|
| | $A_s$ (min.) | Spacing (max.) | $A_s$ (min.) | Spacing (max.) | Bar Size |
| Top Mat | 0.12 sq. in./ft. (253 sq. mm/m) | 6 (150) | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) | #3 or #4 (#10) (#13) |
| Bottom Mat | ** 0.40 sq. in./ft. (847 sq. mm/m) | 6 (150) | See plan view for rebar orientation and spacing and this table for bar size | | #4 (#13) |

** Only one layer of WWR permitted to avoid congestion.

**FLAT SLAB TOP REINFORCEMENT**

| LOCATION | ORIENTATION | WWR or Rebar | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Riser | Circumferential | 0.15 sq. in./ft. (318 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95. sq. mm/m) | 8 (200) |
| Barrel | Circumferential | 0.18 sq. in./ft. (381 sq. mm/m) | 6 (150) |
| | Vertical | 0.16 sq. in./ft. (339 sq. mm/m) | 4 (100) |

**BASE SLAB REINFORCEMENT**

| LOCATION | TOTAL HEIGHT | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Top Mat | ≤ 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| | > 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**PRECAST MANHOLE TYPE A**
**5' (1.52 m) DIAMETER**
(Sheet 2 of 2)

**STANDARD 602402-03**




**SECTION PARALLEL TO PIPE**
(Without conical top riser)

**SECTION PERPENDICULAR TO PIPE**
(With conical top riser)

* As an alternate, the barrel wall reinforcement may be reduced to riser wall reinforcement with #3 (#10) bars placed around the pipe penetration holes as shown. This option may be utilized when the pipe penetration holes are formed as opposed to cored.




**FLAT SLAB TOP JOINT CONFIGURATIONS**
(Shown at access hole)




**SHEAR KEY GEOMETRY**
(Reinforcement not shown for clarity)

**GENERAL NOTES**

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602701 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

| DATE | REVISIONS |
|---|---|
| 1-1-21 | Revised Note 1, Note 2 and lifting hole general note. |
| 3-1-19 | Moved wall reinforcement from inside face to middle. |

**PRECAST MANHOLE TYPE A**
**5' (1.52 m) DIAMETER**
(Sheet 1 of 2)

**STANDARD 602402-03**




**PLAN - FLAT SLAB TOP**
(Showing layout of bottom reinforcement bars and c bars)

**JOINT SPLICE**




**PLAN - FLAT SLAB TOP**
(Showing layout of welded wire reinforcement and c bars)

**CONNECTION ANGLE**




**TIE PLATE**

| LOCATION | ORIENTATION | WWR or Rebar | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Riser | Circumferential | 0.15 sq. in./ft. (318 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95. sq. mm/m) | 8 (200) |
| Barrel | Circumferential | 0.18 sq. in./ft. (381 sq. mm/m) | 6 (150) |
| | Vertical | 0.16 sq. in./ft. (339 sq. mm/m) | 4 (100) |

**WALL REINFORCEMENT**

| LOCATION | WWR (each direction) | | Rebar (each direction except as noted) | | |
|---|---|---|---|---|---|
| | $A_s$ (min.) | Spacing (max.) | $A_s$ (min.) | Spacing (max.) | Bar Size |
| Top Mat | 0.12 sq. in./ft. (253 sq. mm/m) | 6 (150) | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) | #3 or #4 (#10) (#13) |
| Bottom Mat | ** 0.40 sq. in./ft. (847 sq. mm/m) | 6 (150) | See plan view for rebar orientation and spacing and this table for bar size | | #4 (#13) |

** Only one layer of WWR permitted to avoid congestion.

**FLAT SLAB TOP REINFORCEMENT**

**BASE SLAB REINFORCEMENT**

| LOCATION | TOTAL HEIGHT | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Top Mat | ≤ 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| | > 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**PRECAST MANHOLE TYPE A**
**4' (1.22 m) DIAMETER**
(Sheet 1 of 2)

**STANDARD 602401-07**




**PLAN - FLAT SLAB TOP**
(Showing layout of reinforcement bars and c bars)

**JOINT SPLICE**




**PLAN - FLAT SLAB TOP**
(Showing layout of welded wire reinforcement and c bars)

**CONNECTION ANGLE**




**TIE PLATE**

| LOCATION | ORIENTATION | WWR or Rebar | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Riser | Circumferential | 0.15 sq. in./ft. (318 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95. sq. mm/m) | 8 (200) |
| Barrel | Circumferential | 0.18 sq. in./ft. (381 sq. mm/m) | 6 (150) |
| | Vertical | 0.16 sq. in./ft. (339 sq. mm/m) | 4 (100) |

**WALL REINFORCEMENT**

| LOCATION | WWR (each direction) | | Rebar (each direction except as noted) | | |
|---|---|---|---|---|---|
| | $A_s$ (min.) | Spacing (max.) | $A_s$ (min.) | Spacing (max.) | Bar Size |
| Top Mat | 0.12 sq. in./ft. (253 sq. mm/m) | 6 (150) | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) | #3 or #4 (#10) (#13) |
| Bottom Mat | ** 0.40 sq. in./ft. (847 sq. mm/m) | 6 (150) | See plan view for rebar orientation and spacing and this table for bar size | | #4 (#13) |

** Only one layer of WWR permitted to avoid congestion.

**FLAT SLAB TOP REINFORCEMENT**

**BASE SLAB REINFORCEMENT**

| LOCATION | TOTAL HEIGHT | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Top Mat | ≤ 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| | > 20 ft. (6.10 m) | 0.24 sq. in./ft. (508 sq. mm/m) | 10 (250) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**PRECAST MANHOLE TYPE A**
**5' (1.52 m) DIAMETER**
(Sheet 1 of 2)

**STANDARD 602402-03**




**PLAN - FLAT SLAB TOP**
(Showing layout of bottom reinforcement bars and c bars)




**PLAN - FLAT SLAB TOP**
(Showing layout of welded wire reinforcement and c bars)

* #5 (#16) bars for risers ≤ 10 ft. (3.05 m) tall or #6 (#19) bars for risers > 10 ft. (3.05 m) tall bottom, Bundle first bar with closest WWR bar to the opening and place second bar ≥3 (75) away.

**PRECAST MANHOLE TYPE A**
**6' (1.83 m) DIAMETER**
(Sheet 2 of 3)

**STANDARD 602406-11**




**JOINT SPLICE**




**CONNECTION ANGLE**




**TIE PLATE**

| LOCATION | RISER HEIGHT (RH) TOTAL HEIGHT (TH) | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Top Mat | RH ≤ 10 ft. (3.05 m) & TH ≤ 20 ft. (6.10 m) | 0.30 sq. in./ft. (593 sq. mm/m) | 8 (150) |
| | RH > 10 ft. (3.05 m) or TH > 20 ft. (6.10 m) | 0.40 sq. in./ft. (847 sq. mm/m) | 6 (150) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**FLAT SLAB TOP REINFORCEMENT**

**WALL REINFORCEMENT**

| LOCATION | ORIENTATION | WWR or Rebar |
|---|---|---|
| | | $A_s$ (min.) Spacing (max.) |
| 4 ft. (1.22 m) Ø Riser | Circumferential | 0.12 sq. in./ft. (254 sq. mm/m) 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95. sq. mm/m) 8 (200) |
| 6 ft. (1.83 m) Ø Barrel | Circumferential | 0.18 sq. in./ft. (381 sq. mm/m) 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95 sq. mm/m) 4 (100) |

**BASE SLAB REINFORCEMENT**

| LOCATION | RISER HEIGHT (RH)/ TOTAL HEIGHT (TH) | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (min.) | Spacing (max.) |
| Top Mat | RH ≤ 10 ft. (3.05 m) & TH ≤ 20 ft. (6.10 m) | 0.30 sq. in./ft. (593 sq. mm/m) | 8 (150) |
| | RH > 10 ft. (3.05 m) or TH > 20 ft. (6.10 m) | 0.40 sq. in./ft. (847 sq. mm/m) | 6 (150) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**PRECAST MANHOLE TYPE A**
**6' (1.83 m) DIAMETER**
(Sheet 3 of 3)

**STANDARD 602406-11**

| NO. | DATE | REMARKS |
|---|---|---|
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| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |
| NO. | DATE | REMARKS |

**DETAILS - 3**

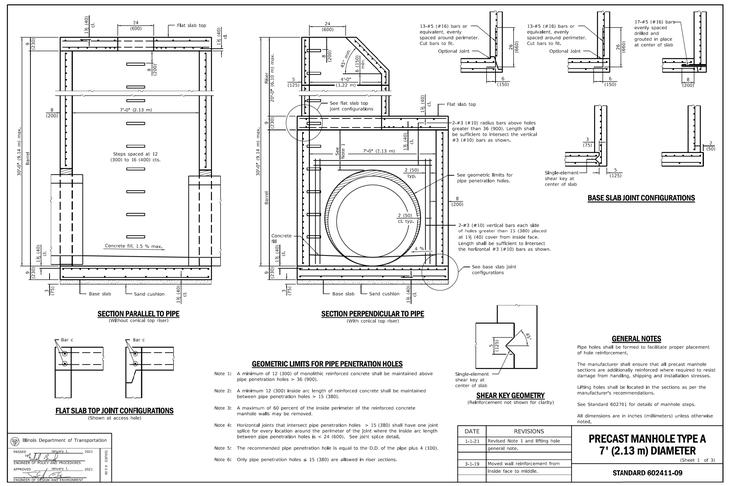
**2240-2296 RAND ROAD**
**PALATINE, ILLINOIS**

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065
SPACECO INC.

FILENAME: 11624DET03
DATE: 03/16/22
JOB NO. 11624
SHEET **D3**
16 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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**SECTION PARALLEL TO PIPE**
(Without conical top riser)

**SECTION PERPENDICULAR TO PIPE**
(With conical top riser)

**BASE SLAB JOINT CONFIGURATIONS**




**FLAT SLAB TOP JOINT CONFIGURATIONS**
(Shown at access hole)

**GEOMETRIC LIMITS FOR PIPE PENETRATION HOLES**

Note 1: A minimum of 12 (300) of monolithic reinforced concrete shall be maintained above pipe penetration holes > 36 (900).

Note 2: A minimum of 12 (300) inside arc length of reinforced concrete shall be maintained between pipe penetration holes > 15 (380).

Note 3: A maximum of 60 percent of the inside perimeter of the reinforced concrete manhole walls may be removed.

Note 4: Horizontal joints that intersect pipe penetration holes > 15 (380) shall have one joint splice for every location around the perimeter of the joint where the inside arc length between pipe penetration holes is < 24 (600). See joint splice detail.

Note 5: The recommended pipe penetration hole is equal to the O.D. of the pipe plus 4 (100).

Note 6: Only pipe penetration holes ≤ 15 (380) are allowed in riser sections.




**SHEAR KEY GEOMETRY**
(Reinforcement not shown for clarity)

| DATE | REVISIONS |
|---|---|
| 1-3-21 | Revised Note 1 and lifting hole general notes. |
| 3-1-19 | Moved wall reinforcement from inside face to middle. |

**GENERAL NOTES**

Pipe holes shall be formed to facilitate proper placement of hole reinforcement.

The manufacturer shall ensure that all precast manhole sections are additionally reinforced where required to resist damage from handling, shipping and installation stresses.

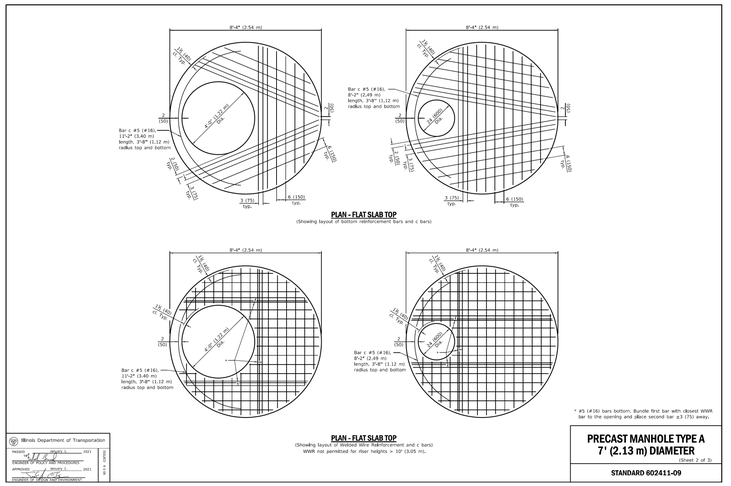
Lifting holes shall be located in the sections as per the manufacturer's recommendations.

See Standard 602791 for details of manhole steps.

All dimensions are in inches (millimeters) unless otherwise noted.

**PRECAST MANHOLE TYPE A**
**7' (2.13 m) DIAMETER**
(Sheet 1 of 3)
**STANDARD 602411-09**

Illinois Department of Transportation
APPROVED 1-1-2021
ENGINEER OF BUREAU OF TRAFFIC




**PLAN - FLAT SLAB TOP**
(Showing layout of bottom reinforcement bars and c bars)

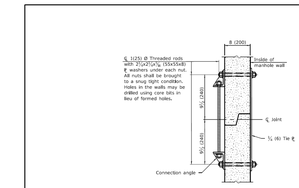



**PLAN - FLAT SLAB TOP**
(Showing layout of Welded Wire Reinforcement and c bars)
WWR not permitted for riser heights > 10' (3.05 m).

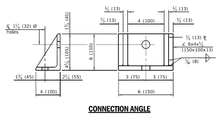
* #5 (#16) bars bottom. Bundle first bar with closest WWR bar to the opening and place second bar ±3 (75) away.

**PRECAST MANHOLE TYPE A**
**7' (2.13 m) DIAMETER**
(Sheet 2 of 3)
**STANDARD 602411-09**

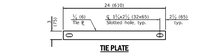
Illinois Department of Transportation
APPROVED 1-1-2021
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**JOINT SPLICE**




**CONNECTION ANGLE**




**TIE PLATE**

**FLAT SLAB TOP REINFORCEMENT**

| Location | Riser Height (ft=m) | WWR (each direction) | | Rebar (each direction except as noted) | | |
|---|---|---|---|---|---|---|
| | | $A_s$ (in²/ft) | Spacing (max) | $A_s$ (in²/ft) | Spacing (max) | Bar Size |
| Top Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) | #3 or #4 (#10 (#13)) |
| Bottom Mat | RH ≤ 10 ft. (3.05 m) | ** 0.62 sq. in./ft. (312 sq. mm/m) | 6 (150) | See plan view for rebar orientation and spacing and this table for bar size | | #5 (#16) |
| | RH > 10 ft. (3.05 m) | WWR not permitted | | | | #7 (#22) |

** Only one layer of WWR permitted to avoid congestion.

**WALL REINFORCEMENT**

| Location | Orientation | WWR or Rebar | |
|---|---|---|---|
| | | $A_s$ (in²) | Spacing (max.) |
| 4 ft. (1.22 m) Ø Riser | Circumferential | 0.12 sq. in./ft. (254 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95 sq. mm/m) | 9 (200) |
| 7 ft. (2.13 m) Ø Barrel | Circumferential | 0.71 sq. in./ft. (640 sq. mm/m) | 6 (150) |
| | Vertical | 0.045 sq. in./ft. (95 sq. mm/m) | 9 (200) |

**BASE SLAB REINFORCEMENT**

| Location | Riser Height (ft=m) Total Height (ft=) | WWR or Rebar (each direction) | |
|---|---|---|---|
| | | $A_s$ (in²/ft.) | Spacing (max.) |
| Top Mat | RH ≤ 10 ft. (3.05 m) & Th ≥ 20 in. (6.10 m) | 0.32 sq. in./ft. (677 sq. mm/m) | 6 (150) |
| | RH > 10 ft. (3.05 m) or Th < 20 in. (6.10 m) | 0.52 sq. in./ft. (1101 sq. mm/m) | 6 (150) |
| Bottom Mat | All | 0.11 sq. in./ft. (233 sq. mm/m) | 18 (450) |

**PRECAST MANHOLE TYPE A**
**7' (2.13 m) DIAMETER**
(Sheet 3 of 3)
**STANDARD 602411-09**

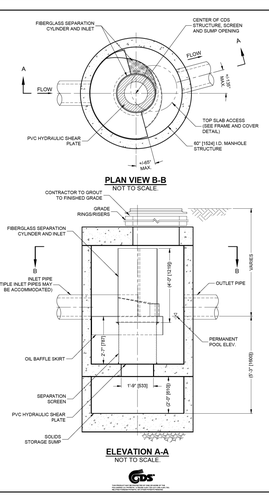
Illinois Department of Transportation
APPROVED 1-1-2021
ENGINEER OF BUREAU OF TRAFFIC

| NO. | DATE | REMARKS |
|---|---|---|
| | | |

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

**DETAILS - 4**

**2240-2296 RAND ROAD**
**PALATINE, ILLINOIS**




**PLAN VIEW B-B**
NOT TO SCALE




**ELEVATION A-A**
NOT TO SCALE




**FRAME AND COVER**
(DIAMETER VARIES)
NOT TO SCALE

CDS2020-5-C DESIGN NOTES

CDS2020-5-C STANDARD CONFIGURATION IS SHOWN.

**SITE SPECIFIC DATA REQUIREMENTS**

| | |
|---|---|
| STRUCTURE ID | * |
| WATER QUALITY FLOW RATE (CFS OR L/s) | * |
| PEAK FLOW RATE (CFS OR L/s) | * |
| RETURN PERIOD OF PEAK FLOW (YRS) | * |
| SCREEN APERTURE (3400 OR 4700) | * |

| PIPE DATA: | I.E. | MATERIAL | DIAMETER |
|---|---|---|---|
| INLET PIPE 1 | * | * | * |
| INLET PIPE 2 | * | * | * |
| OUTLET PIPE | * | * | * |
| RIM ELEVATION | | | * |

| | WIDTH | HEIGHT |
|---|---|---|
| ANTI-FLOTATION BALLAST | | |

NOTES/SPECIAL REQUIREMENTS:

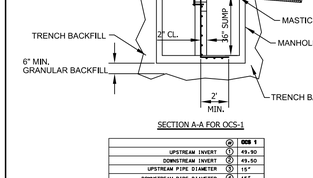
* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT, UNLESS OTHERWISE NOTED IN SITE SPECIFIC RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. IF REQUIRED, PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.
6. CDS STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE THE RESPONSIBILITY OF THE ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO ADJUST JOINTS BETWEEN PRECAST SECTIONS TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800.338.1122 513.645.7000 513.645.7993/FAX

CDS2020-5-C
ONLINE CDS
STANDARD DETAIL



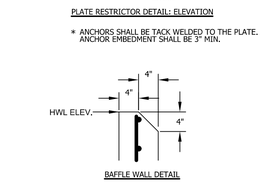




PLATE RESTRICTOR DETAIL: SECTION




SECTION A-A FOR OCS-1

| | | OCS 1 |
|---|---|---|
| UPSTREAM INVERT | ① | 49.90 |
| DOWNSTREAM INVERT | ② | 49.50 |
| UPSTREAM PIPE DIAMETER | ③ | 15" |
| DOWNSTREAM PIPE DIAMETER | ④ | 15" |
| ORIFICE INVERT | Ⓢ | 50.00 |




PLATE RESTRICTOR DETAIL: ELEVATION

* ANCHORS SHALL BE TACK WELDED TO THE PLATE. ANCHOR EMBEDMENT SHALL BE 3" MIN.




BAFFLE WALL DETAIL




SECTION B-B FOR OCS-1

NOTES:
1. WATERTIGHT CONNECTIONS REQUIRED BETWEEN STRUCTURE AND PIPES CONFORMING TO ASTM C-923
2. STRUCTURE AND BAFFLE WALL FABRICATED USING PORTLAND CEMENT CONCRETE.
3. RESTRICTORS LESS THAN 4" IN DIAMETER MUST USE CITY OF CHICAGO VORTEX RESTRICTOR (SEE DETAIL)
4. BAFFLE WALL PERMANENTLY INSTALLED AS PRECAST OR CAST IN PLACE, (STEEL PLATE ACCEPTABLE IF PERMANENT).
5. PIPE TO STRUCTURE CONNECTIONS SHALL BE ASTM C923 IN COMBINED SEWER AREAS.
6. THIS DETAIL WAS REVISED BY SPACECO
7. UNDERDRAINS SHALL CONNECT INTO OCS STRUCTURE UPSTREAM OF RESTRICTOR

NOT TO SCALE

| | | |
|---|---|---|
| | TECHNICAL GUIDANCE MANUAL | 7/1/15 |
| | TYPICAL OUTLET CONTROL STRUCTURE (WALL) DETAIL | STD. DWG. NO.25 |
| | | PAGE NO. 26 |

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 696-4060 Fax: (847) 696-4065
SPACECO INC.

FILENAME: 11624DET04
DATE: 03/16/22
JOB NO. 11624
SHEET **D4**
17 OF 18

Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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## MAINTENANCE & MONITORING REQUIREMENTS:

### TEMPORARY SOIL EROSION & SEDIMENT CONTROL

**1. SOIL EROSION AND SEDIMENT CONTROL**
THE CONTRACTOR WILL MAINTAIN ALL EROSION CONTROL MEASURES FOR THE DURATION OF THE CONSTRUCTION ACTIVITY. EROSION CONTROL MEASURES FOR THE PROPOSED DEVELOPMENT ARE INCLUDED IN THE PLAN SET. AT THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR WILL COORDINATE THE TRANSFER OF MAINTENANCE RESPONSIBILITIES. MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, 1987.

EXCEPT AS PREVENTED BY INCLEMENT WEATHER CONDITIONS, ALL DISTURBED AREAS TO REMAIN ACTIVE FOR MORE THAN 14 DAYS WILL BE STABILIZED BY SEEDING, SODDING, MULCHING, COVERING, OR BY OTHER EQUIVALENT EROSION CONTROL MEASURES WITHIN SEVEN DAYS. PERMANENT SOIL STABILIZATION SHALL BE PROVIDED WITHIN SEVEN DAYS AFTER FINAL GRADING IS COMPLETED.

ALL TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES WILL BE REMOVED AND DISPOSED OF WITHIN THIRTY DAYS AFTER FINAL STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY PRACTICES ARE NO LONGER NEEDED.

### PERMANENT

**1. GENERAL**
REGULAR INSPECTIONS AND ROUTINE MAINTENANCE OF GENERAL AREAS SHALL BE PERFORMED ON A MONTHLY OR AS-NEEDED BASIS. SPECIFIC ITEMS OF CONCERN INCLUDE:
____ LITTER AND DEBRIS SHALL BE CONTROLLED
____ LANDSCAPED AREAS SHALL BE MAINTAINED WITH REGULAR MOWING AND RESTORED WITH APPROPRIATE SEEDING/VEGETATION AS NECESSARY
____ ACCUMULATED SEDIMENT SHALL BE DISPOSED OF PROPERLY, ALONG WITH ANY WASTES GENERATED DURING MAINTENANCE OPERATIONS
____ RIPRAP AREAS SHALL BE REPAIRED WITH THE ADDITION OF NEW RIPRAP, AS NECESSARY, OF SIMILAR SIZE AND SHAPE
____ ROADS SHALL BE SWEPT, VACUUMED AND/OR WASHED ON A REGULAR BASIS

**2. STORMWATER MANAGEMENT FACILITIES**
ALL COMPONENT OF THE STORMWATER MANAGEMENT FACILITIES SHALL BE CHECKED MONTHLY BETWEEN MARCH AND NOVEMBER AND MAINTAINED AS NECESSARY TO ENSURE PROPER PERFORMANCE. IT IS CRITICAL THAT ALL INFLOWS AND OUTFLOW TO THE DETENTION FACILITY ARE CLEAN AND PERFORMING AS DESIGNED. IN ADDITION, THE DESIGN VOLUME OF THE DETENTION FACILITY SHALL ALSO BE MAINTAINED. INSPECTIONS FOR THE FOLLOWING SPECIFIC ITEMS SHOULD BE CONDUCTED MONTHLY BETWEEN MARCH AND NOVEMBER:

SIDE SLOPES/EMBANKMENT/EMERGENCY OVERFLOW STRUCTURE
____ INSPECT EMBANKMENT FOR SETTLEMENT AND EROSION
____ REMOVE WOODY GROWTH FROM THE EMBANKMENT
____ ANY BREAKS. HIRE REGISTERED PROFESSIONAL ENGINEER FOR DESIGN RESOLUTION
____ SEED AND SOD ANY ERODED AREAS
____ SIGNS OF PIPING (LEAKAGE). REPAIR
____ SIGNS OF SEEPAGE OR WET SPOTS ON THE DOWNSTREAM DACE OF A BERM, MAY REQUIRED TOE DRAINS OR CHIMNEY DRAINS TO SOLVE PROBLEMS
____ STABILIZE EMERGENCY OVERFLOW STRUCTURE IF EROSION OBSERVED
____ REMOVE OBSTRUCTION BLOCKING EMERGENCY OVERFLOW SPILLWAY

VEGETATED AREAS
____ REGULA MOWING TO CONTROL VEGETATION, NO CUTTING OF NATIVE VEGETATION
____ NEED FOR PLANTING, RESEEDING OR SODDING. SUPPLEMENT ALTERNATIVE NATIVE VEGETATION IF A SIGNIFICANT POTION HAS BOT ESTABLISHED (50% OF THE SURFACE AREA). RESEED WITH ALTERNATIVE GRASS SPECIES IF ORIGINAL GRASS COVER HAS NOT SUCCESFULLY ESTABLISHED.
____ EVIDENCE OF GRAZING, MOTORBIKES OR OTHER VEHICLES. REPAIR
____ CHECK FOR INVASIVE VEGETATION, REMOVE WHERE POSSIBLE
____ ALL VEGETATION MUST BE MAINTAINED PER THE APPROVED PLANTING PLAN

OUTLET CONTROL STRUCTURE
____ INSPECT RESTRICTOR AND REMOVE DEBRIS IF CLOGGED OR DISCHARGE REDUCED
____ REMOVE ACCUMULATED SEDIMENT AT OUTLET
____ SCOUR AND EROSION AT OUTLET, REPAIR AND RESEED
____ ANY ICE DAMAGE TO OUTLET OF PIPE. REPAIR IF NECESSARY
____ CONDITION OF TRASH TRACKS, REMOVE DEBRIS
____ OUTLET CHANNEL CONDITIONS DOWNSTREAM

ACCESS FOR MAINTENANCE EQUIPMENT
____ REMOVE ANY OBSTRUCTIONS PLACED IN MAINTENANCE EASEMENTS

SAFETY FEATURES
____ ACCESS CONTROLS TO HAZARDOUS AREAS
____ FENCES
____ LOOSE OR DAMAGED POSTS
____ LOOSE OR BROKEN WIRES
____ ACCUMULATED DEBRIS IN FENCES
____ CONDITIONS OF GATES
____ SIGNS

DETENTION VOLUME
____ INSPECT ALL STORMWATER DETENTION FACILITIES TO ENSURE THAT THE CONSTRUCTED VOLUME FOR DETENTION IS MAINTAINED. NO SEDIMENT, TOPSOIL OR OTHER DUMPING INTO THE FACILITY SHALL BE ALLOWED. SPECIFIC LOCATIONS IN THE STORMWATER MANAGEMENT SYSTEM, DESIGNED TO ACCUMULATE SEDIMENT, SHALL BE DREDGED AS NECESSARY TO PREVENT SEDIMENT FROM REACHING THE INVERT OFF ANY GRAVITY OUTLET PIPE.

**3. VOLUME CONTROL FACILITY**
ROTINE INSPECTIONS AND MAINTENANCE OF VOLUME CONTROL FACILITIES SHALL BE PERFORMED BY THE OWNER ON A YEARLY OR AS-NEEDED BASIS. SPECIFIC ITEMS OF CONCERN INCLUDE:

____FACILITY SHALL BE INSPECTED YEARLY USING THE MONITORING WELL TO VERIFY THE SYSTEM IS FUNCTIONING PROPERLY
____SURFACE OF PERMEABLE PAVEMENT SHALL BE CLEANED WITH A LOW-PRESSURE POWER WASHER
____ACCUMULATED SEDIMENT FROM SURFACE SHALL BE VACUMED OUT AND DISPOSED OF PROPERLY
____APPROPRIATE SIGNAGE SHALL BE REPAIRED IF DAMAGED OR ILLEGIBLE

**4. STORMWATER COLLECTION SYSTEM**
THE OWNER SHALL PERFORM MONTHLY INSPECTIONS OF ALL COMPONENTS OF THE STORMWATER COLLECTION SYSTEM. THE MONTHLY INSPECTIONS SHALL OCCUR BETWEEN MARCH AND NOVEMBER AND INCLUDE THE FOLLOWING SPECIFIC AREAS OF CONCERN:

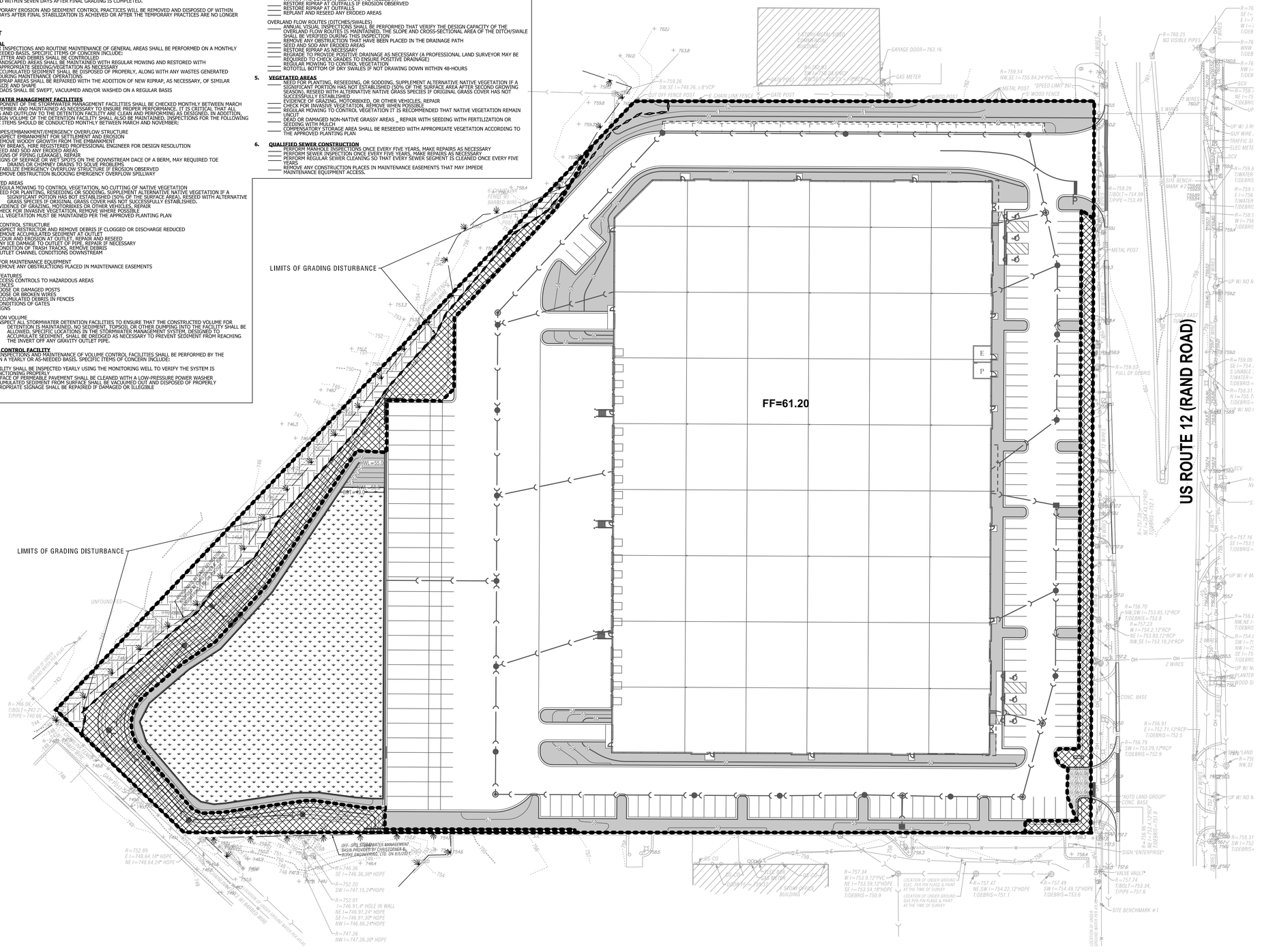
STORM INLETS/MANHOLES
____ REMOVE ACCUMULATED LEAVED AND OTHER DEBRIS FROM GRATES
____ RESET COVERS/LIDS ON AS-NEEDED BASIS
____ REMOVE ACCUMULATED SEDIMENT FROM BOTTOM OF MANHOLE WHEN 50% OF SUMP IS FILLED

STORM SEWERS/CULVERTS
____ VISUALLY INSPECT PIPES BY REMOVING MANHOLE LIDS, MAKE REPAIRS AS NECESSARY
____ STORM SEWERS AND CULVERS SHALL BE CHECKED FOR SILTATION DEPOSITS AT INLETS, OUTLETS, AND WITHIN PIPES AND CLEANED OUT AS NECESSARY
____ RESTORE RIPRAP AT OUTFALLS IF EROSION OBSERVED
____ RESTORE RIPRAP AT OUTFALLS
____ REPLANT AND RESEED ANY ERODED AREAS

OVERLAND FLOW ROUTES (DITCHES/SWALES)
____ ANNUAL VISUAL INSPECTIONS SHALL BE PERFORMED THAT VERIFY THE DESIGN CAPACITY OF THE OVERLAND FLOW ROUTES IS MAINTAINED. THE SLOPE AND CROSS-SECTIONAL AREA OF THE DITCH/SWALE SHALL BE VERIFIED DURING THIS INSPECTION
____ REMOVE ANY OBSTRUCTION THAT HAVE BEEN PLACED IN THE DRAINAGE PATH
____ SEED AND SOD ANY ERODED AREAS
____ RESTORE RIPRAP AS NECESSARY
____ REGRADE TO PROVIDE POSITIVE DRAINAGE AS NECESSARY (A PROFESSIONAL LAND SURVEYOR MAY BE REQUIRED TO CHECK GRADES TO ENSURE POSITIVE DRAINAGE)
____ REGULAR MOWING TO CONTROL VEGETATION
____ ROTOTILL BOTTOM OF DRY SWALES IF NOT DRAWING DOWN WITHIN 48-HOURS

**5. VEGETATED AREAS**
____ NEED FOR PLANTING, RESEEDING, OR SODDING. SUPPLEMENT ALTERNATIVE NATIVE VEGETATION IF A SIGNIFICANT PORTION HAS NOT ESTABLISHED (50% OF THE SURFACE AREA AFTER SECOND GROWING SEASON). RESEED WITH ALTERNATIVE NATIVE GRASS SPECIES IF ORIGINAL GRASS COVER HAS NOT SUCCESSFULLY ESTABLISHED
____ EVIDENCE OF GRAZING, MOTORBIKED, OR OTHER VEHICLES, REPAIR
____ CHECK FOR INVASIVE VEGETATION, REMOVE WHEN POSSIBLE
____ REGULAR MOWING TO CONTROL VEGETATION IT IS RECOMMENDED THAT NATIVE VEGETATION REMAIN UNCUT
____ DEAD OR DAMAGED NON-NATIVE GRASSY AREAS _ REPAIR WITH SEEDING WITH FERTILIZATION OR SEEDING WITH MULCH
____ COMPENSATORY STORAGE AREA SHALL BE RESEEDED WITH APPROPRIATE VEGETATION ACCORDING TO THE APPROVED PLANTING PLAN

**6. QUALIFIED SEWER CONSTRUCTION**
____ PERFORM MANHOLE INSPECTIONS ONCE EVERY FIVE YEARS, MAKE REPAIRS AS NECESSARY
____ PERFORM SEWER INSPECTION ONCE EVERY FIVE YEARS, MAKE REPAIRS AS NECESSARY
____ PERFORM REGULAR SEWER CLEANING SO THAT EVERY SEWER SEGMENT IS CLEANED ONCE EVERY FIVE YEARS
____ REMOVE ANY CONSTRUCTION PLACES IN MAINTENANCE EASEMENTS THAT MAY IMPEDE MAINTENANCE EQUIPMENT ACCESS.




### LOT SUMMARY:

PROPERTY ADDRESS: 2240-2296 Rand Road, Palatine, IL 60074

PROPERTY INDEX NUMBERS: 02-02-101-004-0000; 02-02-101-005-0000; 02-02-101-013-0000; 02-02-101-014-0000; 02-02-101-019-0000; 02-02-101-020-0000; 02-02-101-021-0000

TOTAL PROPERTY OWNERSHIP = 8.86 AC

TOTAL DEVELOPMENT AREA = 8.60 AC

ON-SITE AREA TRIBUTARY TO STORMWATER BASIN = 8.06 AC

UNRESTRICTED ON-SITE AREA = 0.80 AC
(100-YR 24-HR EVENT SUBTRACTED FROM ALLOW RELEASE)

### TIME OF CONCENTRATION CALCULATIONS:

USE 10-MIN FOR INDUSTRIAL

### DETENTION & RETENTION SUMMARY:

BOTTOM VC BELOW NWL = 749.00

SHGWTE = 13.5' BELOW EXISTING FINISHED GRADE
ELEV. = ±737.5 to 743.5 IN BASIN AREA

DETENTION VOLUME PROVIDED = 3.69 AC-FT

DETENTION VOLUME REQUIRED = 3.34 AC-FT

RETENTION VOLUME PROVIDED = 0.73 AC-FT

RETENTION VOLUME REQUIRED = 0.54 AC-FT

### CURVE NUMBER CALCULATIONS:

CN TRIBUTARY TO BASINS = 96.0

CN UNRESTRICTED = 71.0

CN ADJUSTED = 87.0

### SYMBOL LEGEND

- PERVIOUS AREA
- IMPERVIOUS AREA
- NATIVE PLANTINGS - VOLUME CONTROL AREA
- UNRESTRICTED NATIVE PLANTINGS AREA TO BE SEEDED PER LANDSCAPE PLAN
- UNRESTRICTED IMPERVIOUS AREA
- UNDISTURBED AREA
- LIMITS OF GRADING DISTURBANCE

### SUMMARY OF DEVELOPMENT AREA

| | |
|---|---|
| IMPERVIOUS | 6.50 AC |
| PERVIOUS | 0.83 AC |
| NATIVE PLANTINGS - VOLUME CONTROL | 0.73 AC |
| UNR. NATIVE PLANTINGS | 0.53 AC |
| UNR. IMPERVIOUS | 0.01 AC |
| UNDISTURBED AREA | 0.26 AC |
| TOTAL | 8.86 AC |

SCALE 1" = 40'
0 40 80

| NO. | DATE | REMARKS |
|---|---|---|
| 2 | 04/11/22 | REVISIONS PER ARCHITECT/OWNER |
| 1 | 03/22/22 | REVISIONS PER ARCHITECT |

MWRD EXHIBIT R

**2240-2296 RAND ROAD**
PALATINE, ILLINOIS

CONSULTING ENGINEERS
SITE DEVELOPMENT ENGINEERS
LAND SURVEYORS
9575 W. Higgins Road, Suite 700,
Rosemont, Illinois 60018
Phone: (847) 698-4060 Fax: (847) 698-4065

SPACECO INC.

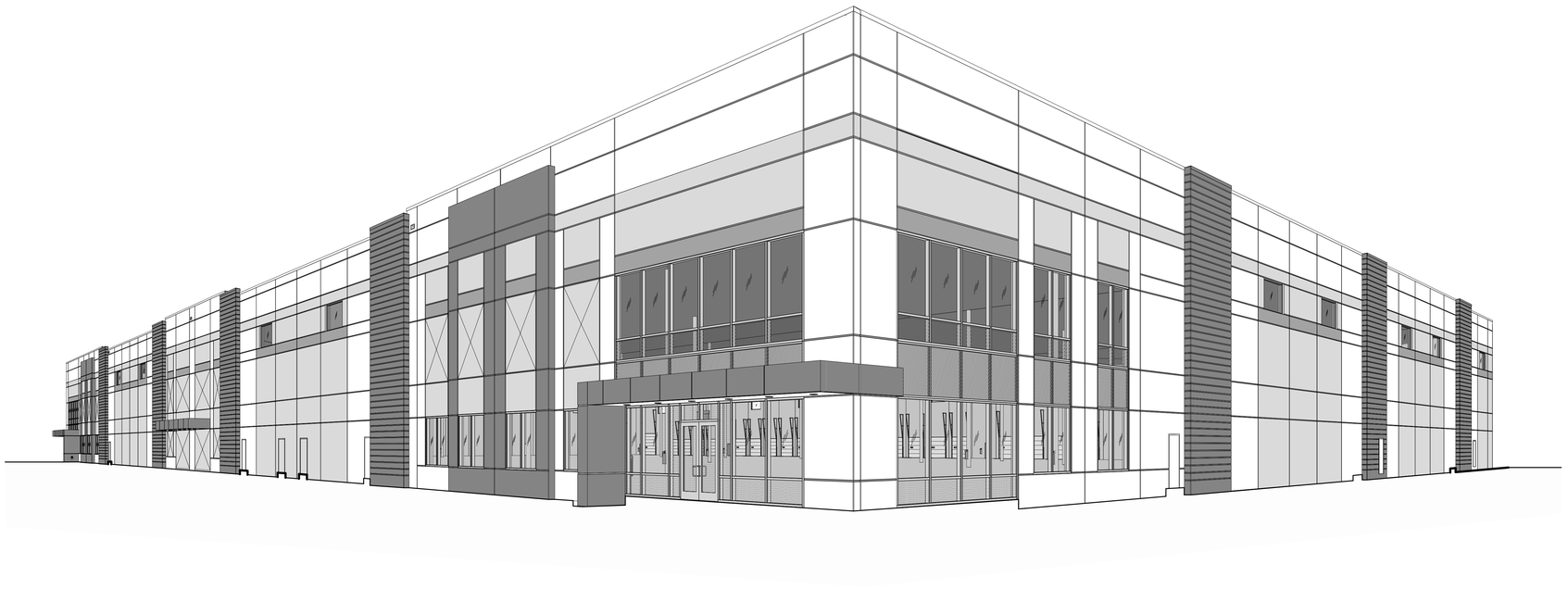
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DATE: 03/16/22
JOB NO. 11624
SHEET **EXH-R**
18 OF 18

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Attachment: Missner Group - ENG Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# MISSNER GROUP - PALATINE

## 2250 NORTH RAND ROAD
## PALATINE, ILLINOIS 60074



## SHEET INDEX

TOTAL SHEETS: 33

### ARCHITECTURAL


| | |
|---|---|
| A0.1 | TITLE SHEET |
| A0.1a | PROJECT DATA |
| A0.2 | GENERAL NOTES |
| A0.3 | ACCESSIBILITY DETAILS |
| A0.3a | ACCESSIBILITY DETAILS |
| A0.4a | SPECIFICATIONS |
| A0.4b | SPECIFICATIONS |
| A0.4c | SPECIFICATIONS |
| A0.4d | SPECIFICATIONS |
| A0.4e | SPECIFICATIONS |
| A0.4f | SPECIFICATIONS |
| A0.4g | SPECIFICATIONS |
| A0.4h | SPECIFICATIONS |
| A0.5 | OCCUPANCY AND EGRESS PLAN |
| A1.1 | SITE PLAN (FOR REFERENCE ONLY) |
| A2.0 | OVERALL FLOOR PLAN |
| A2.1 | PARTIAL FLOOR PLAN |
| A2.2 | PARTIAL FLOOR PLAN |
| A3.1 | ROOF PLAN |
| A4.1 | EXTERIOR ELEVATIONS |
| A4.2 | EXTERIOR ELEVATIONS |
| A5.0 | BUILDING SECTIONS |
| A5.1 | ENLARGED ELEVATION, PLAN AND WALL SECTIONS |
| A5.2 | ENLARGED ELEVATION, PLAN AND WALL SECTIONS |
| A5.3 | ENLARGED ELEVATION, PLAN AND WALL SECTIONS |
| A5.4 | ENLARGED ELEVATION, PLAN AND WALL SECTIONS |
| A5.5 | ENLARGED ELEVATION, PLAN AND WALL SECTIONS |
| A5.6 | WALL SECTIONS |
| A5.7 | WALL SECTIONS |
| A7.1 | DOOR SCHEDULE |
| A8.1 | DETAILS |
| A8.2 | DETAILS |
| A8.3 | DETAILS |

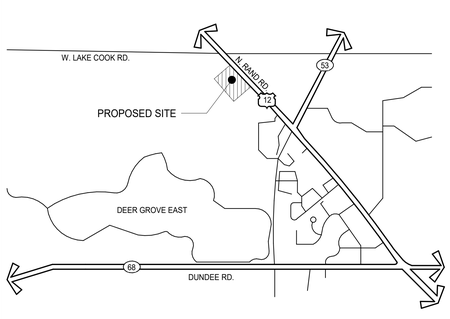

ARCHITECTURAL SHEET COUNT: 33

### STRUCTURAL


| | |
|---|---|
| S0.0 | GENERAL NOTES |
| S0.1 | SYMBOLS AND ABBREVIATIONS |
| S0.2 | LOAD PLANS |
| S2.1 | FOUNDATION PLAN |
| S2.2 | ROOF FRAMING PLAN |
| S5.0 | FOUNDATION DETAILS |
| S5.1 | FOUNDATION DETAILS |
| S6.0 | FRAMING DETAILS |
| S6.1 | FRAMING DETAILS |
| S7.0 | INTERIOR BUILDING ELEVATION AND JOIST DIAGRAMS |


STRUCTURAL SHEET COUNT: 10

## VICINITY MAP




## OWNER/ GENERAL CONTRACTOR

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## DEFERRED SUBMITTALS

DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND ENGINEERS OF RECORD WHO SHALL REVIEW AND PROVIDE NOTATION INDICATING DOCUMENTS HAVE BEEN REVIEWED AND FOUND TO BE IN GENERAL CONFORMANCE WITH THE BUILDING DESIGN. SUBMITTAL MATERIALS SHALL INCLUDE PLANS, DETAILS AND CALCULATIONS PREPARED AND SIGNED BY A STATE REGISTERED ENGINEER.
CONTRACTOR SHALL SUBMIT ARCHITECT AND ENGINEER REVIEWED SUBMITTAL MATERIALS TO THE BUILDING OFFICIAL FOR REVIEW AND PERMIT APPROVAL. DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED PRIOR TO OBTAINING THE BUILDING OFFICIAL'S APPROVAL OF THE SUBMITTAL.

1. MEP SYSTEMS
2. AUTOMATIC FIRE SPRINKLER SYSTEM.
3. FIRE ALARM SYSTEM.
4. STEEL JOISTS, TRUSSES AND GIRDERS CONFORMING TO SJI STANDARDS SPECIFICATIONS.
5. STEEL STAIRS, HANDRAILS AND GUARDS.
6. HIGH PILED STORAGE RACKING.
7. EXTERIOR BUILDING SIGNAGE AND SITE SIGNAGE.
8. ANCHORAGE DESIGN FOR ALL ELECTRICAL EQUIPMENT REQUIRED.
9. STOREFRONT AND CURTAIN WALL GLAZING SYSTEMS.
10. ROOF HATCH, RAILING AND GATE.
11. ROOF ACCESS LADDER/PLATFORM DESIGN AND SUPPORT.
12. LADDER SAFETY SYSTEM DESIGN AND SUPPORT.

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TITLE SHEET

| DATE | REMARKS |
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| 2022-03-04 | PROGRESS PACKAGE |
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| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

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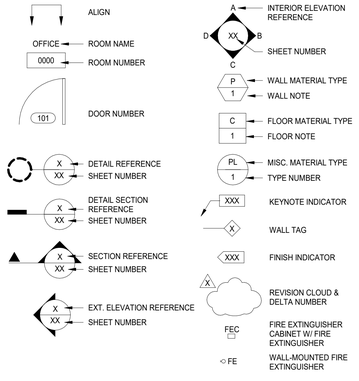
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# ABBREVIATIONS

| | | | | | |
|---|---|---|---|---|---|
| ∠ | ANGLE | | | | |
| ℄ | CENTERLINE | G.B. | GRAB BAR | R. | RISER |
| # | POUND or NUMBER | G.C. | GENERAL CONTRACTOR | R.B. | RUBBER / RESILIENT BASE |
| & | AND | G.F.I. | GROUND FAULT INTERRUPT | R.C.P. | REFLECTED CEILING PLAN |
| (E) | EXISTING | GA. | GAUGE | R.D. | ROOF DRAIN |
| @ | AT | GALV. | GALVANIZED | R.O. | ROUGH OPENING |
| ~ | DIAMETER or ROUND | GL. | GLASS | R.O.W. | RIGHT OF WAY |
| Ø | DIAMETER | GND. | GROUND | R.T.U. | ROOF TOP UNIT |
| | | GR. | GRADE | R.W.L. | RAIN WATER LEADER |
| A.D. | AREA DRAIN | GYP. | GYPSUM | RAD. | RADIUS |
| ACOUS. | ACOUSTICAL | | | REF. | REFERENCE |
| ADJ. | ADJUST, ADJUSTABLE or ADJACENT | H.B. | HOSE BIBB | REFR. | REFRIGERATOR |
| | | H.C. | HOLLOW CORE | REINF. | REINFORCE(D) |
| AGGR. | AGGREGATE | H.M. | HOLLOW METAL | REQ. | REQUIRED |
| AL. | ALUMINUM | H.P. | HIGH POINT | RESIL. | RESILIENT |
| APPROX. | APPROXIMATE(LY) | H.V. | HIGH VOLTAGE | RGTR. | REGISTER |
| ARCH. | ARCHITECTURAL | HDWD. | HARDWOOD | RM. | ROOM |
| ASB. | ASBESTOS | HDWE. | HARDWARE | RWD. | REDWOOD |
| ASPH. | ASPHALT | HORIZ. | HORIZONTAL | | |
| | | HR. | HOUR | S. | SOUTH |
| B.O.C. | BOTTOM OF CONCRETE | HT. | HEIGHT | S.A.F. | SELF-ADHERED FLASHING |
| B.O.M. | BOTTOM OF MULLION | | | S.C. | SOLID CORE |
| B.O.P. | BOTTOM OF PANEL | I.D. | INSIDE DIMENSION | S.C.D. | SEAT COVER DISPENSER |
| B.O.R. | BOTTOM OF REVEAL | I.H.P. | INTERMEDIATE HIGH POINT | S.D. | SOAP DISPENSER |
| BD. | BOARD | INSUL. | INSULATION or INSULATED | S.F. | SQUARE FOOT |
| BITUM. | BITUMINOUS | INT. | INTERIOR | S.I. | SQUARE INCH |
| BLDG. | BUILDING | | | S.N.D. | SANITARY NAPKIN DISPENSER |
| BLK. | BLOCK | J.B. | JUNCTION BOX | | |
| BLKG. | BLOCKING | JAN. | JANITOR | S.N.R. | SANITARY NAPKIN RECEPTACLE |
| BM. | BEAM | JST. | JOIST | | |
| BOT. | BOTTOM | JT. | JOINT | S.S. | STAINLESS STEEL |
| | | | | S.SK. | SERVICE SINK |
| C.B. | CATCH BASIN | K.O. | KNOCK-OUT | S.T.C. | SOUND TRANSMISSION COEFFICIENT |
| C.G. | CORNER GUARD | K.P. | KICK PLATE | | |
| C.I. | CAST IRON | K.W.H. | KILOWATT HOUR | SCHED. | SCHEDULE |
| C.O. | CASED OPENING | KIT. | KITCHEN | SCWD. | SOLID CORE WOOD |
| C.O.M. | CENTER OF MULLION | | | SECT. | SECTION |
| C.O.R. | CENTER OF REVEAL | L.P. | LOW POINT | SH. | SHELF |
| CAB. | CABINET | L.S. | LIMESTONE | SHR. | SHOWER |
| CEM. | CEMENT(ITIOUS) | L.V. | LOW VOLTAGE | SHT. | SHEET |
| CER. | CERAMIC | L.W.C. | LIGHT WEIGHT CONCRETE | SIM. | SIMILAR |
| CLG. | CEILING | LAB. | LABORATORY | SPEC. | SPECIFIED or SPECIFICATION |
| CLKG. | CAULKING | LAM. | LAMINATE(D) | | |
| CLO. | CLOSET | LAV. | LAVATORY | SQ. | SQUARE |
| CLR. | CLEAR | LIN. | LINEAR | STA. | STATION |
| CNTR. | COUNTER | LIQ. | LIQUID | STD. | STANDARD |
| COL. | COLUMN | LKR. | LOCKER | STL. | STEEL |
| CONC. | CONCRETE | LT. | LIGHT | STOR. | STORAGE |
| CONN. | CONNECTION | LTL. | LINTEL | STRL. | STRUCTURE or STRUCTURAL |
| CONSTR. | CONSTRUCTION | LVR. | LOUVER | | |
| CONT. | CONTINUOUS | | | SUPP. | SUPPLEMENT or SUPPLEMENTARY |
| CORR. | CORRIDOR | M.B. | MOP BASIN | SUSP. | SUSPENDED |
| CTR. | CENTER | M.C. | MEDICINE CABINET | SYMM. | SYMMETRICAL |
| CTSK. | COUNTER-SUNK | M.O. | MASONRY OPENING | | |
| | | MAINT. | MAINTENANCE | T&G | TONGUE AND GROOVE |
| D.F. | DRINKING FOUNTAIN | MAN. | MANUAL | T. | TREAD |
| D.O. | DOOR OPENING | MAS. | MASONRY | T.B. | TOWEL BAR |
| D.S. | DOWNSPOUT | MAX. | MAXIMUM | T.C. | TOP OF CURB |
| D.S.P. | DRY STANDPIPE | MECH. | MECHANICAL | T.D. | TRENCH DRAIN |
| DBL. | DOUBLE | MEMB. | MEMBRANE | T.O.C. | TOP OF CONCRETE |
| DEPT. | DEPARTMENT | MET. | METAL | T.O.M. | TOP OF MULLION |
| DET. | DETAIL | MEZZ. | MEZZANINE | T.O.P. | TOP OF PARAPET |
| DIA. | DIAMETER | MFR. | MANUFACTURER | T.O.R. | TOP OF REVEAL |
| DIM. | DIMENSION | MH. | MANHOLE | T.O.REC. | TOP OF DEEP RECESS |
| DISP. | DISPENSER | MIN. | MINIMUM | T.O.S. | TOP OF STEEL |
| DN. | DOWN | MIR. | MIRROR | T.O.W. | TOP OF WALL |
| DR. | DOOR | MISC. | MISCELLANEOUS | T.P. | TOP OF PAVEMENT |
| DWG. | DRAWING | MTD. | MOUNTED | T.P.D. | TOILET PAPER DISPENSER |
| DWR. | DRAWER | MUL. | MULLION | T.V. | TELEVISION |
| | | | | TEL. | TELEPHONE |
| E. | EAST | N. | NORTH | TER. | TERRAZZO |
| E.J. | EXPANSION JOINT | N.I.C. | NOT IN CONTRACT | THK. | THICK |
| E.P. | ELECTRIC PANELBOARD | N.R.C. | NOISE REDUCTION COEFFICIENT | TOL. | TOLERANCE |
| E.W.C. | ELECTRIC WATER COOLER | | | TYP. | TYPICAL |
| EA. | EACH | N.T.S. | NOT TO SCALE | | |
| EL. | ELEVATION | NO. | NUMBER | U.C. | UNDERCUT |
| ELEC. | ELECTRIC(AL) | NOM. | NOMINAL | U.H. | UNIT HEATER |
| ELEV. | ELEVATOR | | | U.L. | UNDERWRITERS' LABORATORIES |
| EMER. | EMERGENCY | O.A. | OVERALL | | |
| ENCL. | ENCLOSED or ENCLOSURE | O.C. | ON CENTER | U.O.N. | UNLESS OTHERWISE NOTED |
| EQ. | EQUAL | O.D. | OUTSIDE DIAMETER | UNF. | UNFINISHED |
| EQPT. | EQUIPMENT | O.F. | OUTSIDE FACE | UR. | URINAL |
| EXP. | EXPANSION | O.H. | OVERHEAD or OPPOSITE HAND | V.C.T. | VINYL COMPOSITE TILE |
| EXPO. | EXPOSED | OBS. | OBSCURE | V.I.F. | VERIFY IN FIELD |
| EXST. | EXISTING | OFF. | OFFICE | V.P. | VISION PANEL |
| EXT. | EXTERIOR | OPNG. | OPENING | V.R. | VAPOR RETARDER |
| | | OPP. | OPPOSITE | VAC. | VACUUM |
| F.A. | FIRE ALARM | | | VERT. | VERTICAL |
| F.A.R. | FLOOR AREA RATIO | P.C. | PRECAST | VEST. | VESTIBULE |
| F.B. | FLAT BAR | P.J. | PANEL JOINT | VIT. | VITREOUS |
| F.D. | FLOOR DRAIN | P.LAM. | PLASTIC LAMINATE | | |
| F.E. | FIRE EXTINGUISHER | P.S.F. | POUNDS PER SQUARE FOOT | W. | WEST |
| F.E.C. | FIRE EXTINGUISHER CABINET | | | W.C. | WATER CLOSET |
| | | P.T.D. | PAPER TOWEL DISPENSER | W.I. | WROUGHT IRON |
| F.H.C. | FIRE HOSE CABINET | P.T.R. | PAPER TOWER RECEPTACLE | W.P. | WORKING POINT |
| F.O.C. | FACE OF CONCRETE | | | W.S. | WEATHER STOP or STRIPPING |
| F.O.F. | FACE OF FINISH | PL. | PLATE | | |
| F.O.M. | FACE OF MULLION | PLAS. | PLASTER | W.W.F. | WELDED WIRE FABRIC |
| F.O.SH. | FACE OF SHEATHING | PLYWD. | PLYWOOD | W/ | WITH |
| F.P. | FIREPROOF | POL. | POLISH(ED) | W/O | WITHOUT |
| F.S. | FULL SIZE | PR. | PAIR | WD. | WOOD |
| FDN. | FOUNDATION | PT. | POINT | WPM | WATERPROOFING MEMBRANE |
| FIN. | FINISH(ED) | | | | |
| FL. | FLOOR | Q.T. | QUARRY TILE | WRB | WEATHER / WATER RESISTIVE BARRIER |
| FLASH. | FLASHING | QUAL. | QUALITY | | |
| FLUOR. | FLUORESCENT | QUAN. | QUANTITY | WSCT. | WAINSCOT |
| FT. | FOOT or FEET | | | WT. | WEIGHT |
| FTG. | FOOTING | | | | |
| FURR. | FURRING | | | | |
| FUT. | FUTURE | | | | |

# SYMBOLS




# PROJECT DATA

**APPLICABLE CODES**

| | |
|---|---|
| CITY OF: | VILLAGE OF PALATINE, ILLINOIS |
| BUILDING: | 2015 INTERNATIONAL BUILDING CODE W/ VILLAGE AMENDMENTS |
| STRUCTURE: | 2015 INTERNATIONAL BUILDING CODE W/ VILLAGE AMENDMENTS |
| MECHANICAL: | 2015 INTERNATIONAL MECHANICAL CODE |
| ELECTRICAL: | 2017 NATIONAL ELECTRIC CODE |
| PLUMBING: | 2014 ILLINOIS PLUMBING CODE |
| ENERGY: | 2018 INTERNATIONAL ENERGY CONSERVATION CODE W/ ILLINOIS AMENDMENTS |
| FIRE / LIFE SAFETY: | 2015 INTERNATIONAL FIRE CODE W/ VILLAGE AMENDMENTS<br>2000 LIFE SAFETY CODE, NFPA 101 |
| ACCESSIBILITY: | 2018 STATE OF ILLINOIS ACCESSIBILITY CODE |

## CHAPTER 3 - USE & OCCUPANCY CLASSIFICATION

| OCCUPANCY | SECTION | USE | PROPOSED AREA (SF) |
|---|---|---|---|
| **S-1 / STORAGE** | **(311)** | **WAREHOUSE** | SEE ALLOWABLE AREA BELOW |

## CHAPTER 5 - GENERAL BUILDING HEIGHTS AND AREAS

ALLOWABLE BUILDING HEIGHT:

| MAIN OCCUPANCY | SPRINKLER CONDITION | (TABLE 504.3) ALLOWABLE BUILDING HEIGHT IN FEET | (TABLE 504.4) ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE | PROPOSED BUILDING HEIGHT IN FEET | PROPOSED NUMBER OF STORIES ABOVE GRADE PLANE |
|---|---|---|---|---|---|
| **S-1** | **S** | **75'-0"** | **3 STORY** | **43'-0"** | **1 STORY** |

ALLOWABLE BUILDING AREA:

UNLIMITED AREA ALLOWED PER **507.4 & 507.2.1**

W/ AUTOMATIC SPRINKLER AND OPEN YARDS GREATER THAN 60 FEET ON ALL SIDES & 40 FEET W/ 3HR RATING

PROPOSED TOTAL BUILDING AREA ..... **145,408** S.F.

## CHAPTER 6 - TYPES OF CONSTRUCTION

TYPE OF CONSTRUCTION (602) ..... **TYPE:** II-B

| | |
|---|---|
| BUILDING ELEMENTS | **(TABLE 601)** |
| STRUCTURAL FRAME | **0** HR. |
| EXTERIOR BEARING WALLS | **0** HR. |
| INTERIOR BEARING WALLS | **0** HR. |
| EXTERIOR NON-BEARING WALLS | **SEE BELOW** |
| INTERIOR NON-BEARING WALLS | **0** HR. |
| FLOORS | **0** HR. |
| ROOF | **0** HR. |

| | |
|---|---|
| EXTERIOR WALLS BASED ON FIRE SEPARATION | **(TABLE 602)** |
| NORTH EXTERIOR WALL ( X > 30' ) | **0** HR. |
| EAST EXTERIOR WALL ( X > 30' ) | **0** HR. |
| SOUTH EXTERIOR WALL ( X > 30' ) | **0** HR. |
| WEST EXTERIOR WALL ( X > 30' ) | **0** HR. |

## CHAPTER 7 - FIRE AND SMOKE PROTECTION FEATURES

ALLOWABLE AREA OF OPENINGS (TABLE 705.8) (FULLY SPRINKLERED THROUGHOUT)

| EXTERIOR WALLS | | FIRE SEPARATION DISTANCE (FT) | ALLOWABLE AREA (%) | EXTERIOR WALL AREA (SF) | ACTUAL AREA OF PROTECTED OPENINGS (ap) | ALLWBL AREA OF PROTECTED OPENINGS (ap) | ACTUAL AREA OF UNPROTCTD OPENINGS (au) | ALLWBL AREA OF UNPROTCTD OPENINGS (au) | (Ap/ap)+(Au/au) |
|---|---|---|---|---|---|---|---|---|---|
| FLOOR 1 | NORTH | ≥ 30 | UNLIMITED UNPROTECTED OPENINGS ARE PERMITTED | | | | | | |
| | EAST | | | | | | | | |
| | SOUTH | | | | | | | | |
| | WEST | | | | | | | | |

## CHAPTER 9 - FIRE PROTECTION SYSTEMS

(903.3.1.1) AUTOMATIC SPRINKLER SYSTEM WILL BE PROVIDED AND INSTALLED WITH ACCORDANCE WITH NFPA 13.

(903.4) AUTOMATIC SPRINKLER SYSTEM MONITORING AND ALARMS WILL BE PROVIDED.

E.S.F.R. (EARLY SUPPRESSION FAST-RESPONSE) AUTOMATIC FIRE PREVENTION SPRINKLER SYSTEM PROVIDED THROUGHOUT. SPRINKLER DESIGN AND CALCULATIONS TO BE SUBMITTED UNDER SEPARATE PERMIT.

(910.2) EXCEPTION 2: SMOKE AND HEAT VENTS NOT REQUIRED WHERE E.S.F.R. SPRINKLER SYSTEM IS PROVIDED

## CHAPTER 10 - MEANS OF EGRESS (SEE OCCUPANCY AND EGRESS PLANS)

# PROJECT DESCRIPTION

THE SCOPE OF THIS PROJECT IS A 145,408 SF SHELL WAREHOUSE SPACE. THE BUILDING CONSTRUCTION SHALL CONSIST OF INSULATED PRECAST CONCRETE PANELS, TRENCH FOOTINGS AT THE PERIMETER, SLAB ON GRADE, AND STEEL STRUCTURAL COLUMNS AND ROOF COMPONENTS.

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EXP: 11 - 30 - 2022

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2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

PROJECT DATA

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# ENVELOPE ASSEMBLY NOTES

1. **ROOF ASSEMBLY:**

1.1 **MAIN ROOF CONSTRUCTION:**
- 45 MIL BALLASTED EPDM USING ASTM #4 STONE AT 10 LBS/SF IN THE FIELD, 12 LBS/SF IN THE PERIMETER, AND 15 LBS/SF IN THE CORNERS W/ FLASHING AT ALL ROOF OPENINGS (15 YEAR MANUFACTURER WARRANTY)
- (2) LAYERS OF RIGID INSULATION (R-25)
- METAL DECK (REFER TO STRUCT.). ROOF DECK WILL BE PAINTED WITH A BOTTOM SIDE FACTORY APPLIED "WHITE" PRIMER.
- GRAY TUBE STEEL COLUMNS AND GRAY JOISTS/ GIRDERS. BUILDING COLUMNS ONE COLUMN FROM DOCK WALLS SHALL BE PAINTED TO A HEIGHT OF 10'-0" AFF IN SAFETY YELLOW.
- TWO LAYERS OF POLYISOCYANURATE INSULATION WITH STAGGERED SEAMS, TAPED AND SEALED.
- STAGGER JOINTS IN SUCCESSIVE LAYERS OF INSULATION A MINIMUM OF 18" APART
- THE ROOF SYSTEM SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

1.2 **COVERED CANOPY ROOF CONSTRUCTION:**
- FULLY ADHERED 45 MIL REINFORCED EPDM ROOF MEMBRANE. INSTALL PER ROOFING MANUFACTURER'S SPECIFICATIONS
- TAPERED RIGID INSULATION
- 1 1/2" METAL DECK (REFER TO STRUCT).
- STRUCTURAL MEMBERS (REFER TO STRUCTURAL DRAWINGS FOR LAYOUT AND MEMBER SIZES)

2. **EXTERIOR WALL ASSEMBLIES:**

2.1 **PRE-CAST CONCRETE WALL PANELS**
- LOAD BEARING INSULATED PRE-CAST CONCRETE WALL PANELS - 10.5" THICK WITH REVEALS AND PAINTED FINISH, TYP. TOTAL R-VALUE OF PRECAST CONCRETE SANDWICH WALL ASSEMBLY PROVIDED SHALL BE NOT LESS THAN R-6. ALL PANELS' JOINTS WILL BE CAULKED ON BOTH THE INTERIOR AND EXTERIOR.
- STANDARD 14'-0" OR 13'-0" WIDE PANELS. PRE-CAST CONCRETE WALL PANELS SHALL RECEIVE A TINTED PRIMER COAT AND TWO (2) COATS OF TEXTURED PAINT.
- PAINT COLORS: (A) BASE COLOR: SW 7662 EVENING SHADOW; (B) SW 7656 PHINESTONE; (C) SW 6256 EVENING GRAY; (D) SW 6794 FLYAWAY.

2.2 PRE-FINISH ALUMINUM **METAL PANELS ASSEMBLY: CANOPY AND WALL DESIGN**
- METAL STUD FRAMING
- 1/2" PLYWOOD SHEATHING
- HIGH TEMPERATURE WEATHER RESISTANT BARRIER (WRB)
  PRE-FINISHED ALUMINUM METAL PANELS INSTALLED PER MANUFACTURER'S RECOMMENDATIONS

3. **EXTERIOR GLAZING ASSEMBLIES:**

3.1 **STOREFRONT/ WINDOWS/ CLERESTORY GLAZING SYSTEM:**
- 1" INSULATED GLAZING UNITS (THERMALLY BROKEN) HIGH PERFORMANCE GLASS
- STOREFRONT SYSTEM WINDOWS & CLERESTORY WINDOWS: CENTER GLAZED (IGU = 1/4" PPG SOLARGRAY EXTERIOR - BASE OF DESIGN))
- 1/2" AIR SPACE
- 1/4" SOLARBAN 100, CLEAR LOW-E (ON SURFACE 2) GLAZING UNIT
- CLEAR ANODIZED ALUMINUM FRAMES WITH A THERMO-BREAK DESIGN

ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
- SOLARBAN R100 (BASE OF DESIGN) OR APPROVED EQUAL
- PERFORMANCE CRITERIA:
  1. VLT (VISIBLE LIGHT TRANS.): 32%
  2. EXTERIOR REFLECTANCE: 15%
  3. U FACTOR (WINTER): 0.28
  4. U FACTOR (SUMMER): 0.26
  5. SHADING COEFICIENT: 0.27
  6. SHGC: 0.24
  7. RELATIVE HEAT GAIN: 58

GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

3.2 COLOR OF GLASS: (EXTERIOR GLAZING) — TINTED (COLOR TO BE SELECTED BY TENANT)

3.3 COLOR OF GLASS: (INTERIOR GLAZING) — CLEAR

3.4 SPANDREL GLASS: (IF ANY) — COLOR TO MATCH CLEAR ANODIZED STOREFRONT SYSTEM MULLIONS

3.4 CLEARSTORY WINDOWS: — FRAMING SHALL BE CLEAR ANODIZED ALUMINUM WITH TINTED GLASS (COLOR: GRAY)

4. **EXTERIOR SWINGING DOOR ASSEMBLIES:**

4.1 **SERVICE/ MAN DOORS:**
- 18GA GALVANIZED HOLLOW METAL FLUSH DOORS AND 16GA FULLY WELDED H.M. GALVANIZED DOOR FRAMES
- PAINTED, INSULATED HOLLOW METAL DOOR w/ COMMERCIAL GRADE HEAVY DUTY HARDWARE INCLUDING SCHLAGE MORTISE LOCKS, FALCON EXIT DEVICES AND LCN CLOSERS
- DOORS AND FRAMES ARE TO HAVE SHOP PRIMED PAINT APPLIED.
- COLOR: REFER TO BUILDING ELEVATIONS. COLOR TO MATCH COLOR OF ADJACENT EXTERIOR WALL
- UL RATED DOORS AS REQUIRED BY CODE (ALL DOORS REQUIRED BY CODE TO BE FIRE RATED SHALL HAVE LABELS DESIGNATING HOURLY RATINGS PER UNDERWRITER'S LABORATORY STANDARDS)

4.2 **STOREFRONT SYSTEM DOORS:**
- MEDIUM STILE ENTRY DOORS WITH 1" INSULATED W/ 1/4" GLAZING ASSEMBLY, CLOSERS, WEATHER-STRIPPING AND THRESHOLDS
- CLEAR ANODIZED ALUMINUM STOREFRONT DOOR w/ TEMPERED GLAZING

5. **EXTERIOR NON-SWINGING DOOR ASSEMBLIES:**

5.1 **SECTIONAL DOORS:**
- MANUALLY OPERATED SECTIONAL VERTICAL LIFT OVERHEAD DOCK DOORS WITH Z-GUARD TRACK PROTECTION
- STEEL SECTIONAL DOORS, INSULATED, MINIMUM U-VALUE OF 0.070 (R-14)
- ALL DOORS SHALL BE PROVIDED WITH ONE (1) VISION PANEL
- Z CHANNEL TRACK GUARDS TO BE INCLUDED FOR ALL OVERHEAD DOORS
- ALL DOORS TO HAVE SLIDE BOLT MECHANISMS AND HAVE A WHITE POLYESTER FINISH.
- OVERHEAD DOORS SHALL BE EQUIPPED WITH WEATHER STRIPPING, GALVANIZED FLUSH STEEL FACE, METAL TRACK AND HARDWARE

5.2 **DRIVE-IN-DOORS:**
- MOTOR (ELECTRIC) OPERATED SECTIONAL VERTICAL LIFT OVERHEAD D.I.D. DOORS
- STEEL SECTIONAL DOORS, INSULATED, MINIMUM U-VALUE OF 0.070 (R-14)
- ALL DOORS SHALL BE PROVIDED WITH ONE (1) VISION PANEL (1" INSULATED GLASS)
- Z CHANNEL TRACK GUARDS TO BE INCLUDED FOR ALL OVERHEAD DOORS
- ALL DOORS TO HAVE SLIDE BOLT MECHANISMS AND HAVE A WHITE POLYESTER FINISH.
- OVERHEAD DOORS SHALL BE EQUIPPED WITH WEATHER STRIPPING, VISION PANEL, GALVANIZED FLUSH STEEL FACE, METAL TRACK AND HARDWARE

6. **PERIMETER INSULATION:**
PROVIDE CONTINUOUS RIGID INSULATION AT PERIMETER OF FIRST STORY BUILDING SLAB. MINIMUM R-VALUE R=10. PROVIDE INSULATION TO A DEPTH OF 24" BELOW GRADE-LINE AT BUILDING FACE.

7. **FLOOR ASSEMBLY:**
**7.1 SLAB-ON-GRADE:**
- REFER TO STRUCTURAL FOR FLOOR ASSEMBLY
- 10 MIL VAPOR BARRIER INCLUDED AT FUTURE OFFICE AREAS
- WAREHOUSE FLOORS SHALL BE SEALED WITH 1 COAT OF ASHFORD SEALER OR EQUAL.

# DOOR NOTES

1. VERIFY THAT ALL DOORS AND DOOR HARDWARE MEET THE REQUIREMENTS OF ALL GOVERNING CODES & STANDARDS. NOTIFY THE ARCHITECT IMMEDIATELY IN CASE OF DISCREPANCY.
2. FIELD MEASURE AS REQUIRED ALL DOORS AND/OR DOOR OPENINGS PRIOR TO FABRICATION.
3. PROVIDE SIGN IN CONTRASTING LETTERS OF 1 INCH OR MORE AT MAIN ENTRY STATING "THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED" UNLESS LOCK UNLATCHES WITHOUT A KEY OR NEED OF SPECIAL KNOWLEDGE.
4. VERIFY THAT EXISTING DOORS (IF ANY) COMPLY WITH ACCESSIBILITY REQUIREMENTS.
5. FIRE RATED AND SMOKE AND DRAFT CONTROL DOORS SHALL COMPLY WITH REQUIREMENTS OF ALL GOVERNING CODES & STANDARDS AND SHALL BEAR A LABEL FROM A RECOGNIZED AGENCY SHOWING THE SPECIFIC RATINGS.
6. ALL SWINGING DOOR HANDLES TO BE LEVER-TYPE TO COMPLY WITH GOVERNING CODES & ACCESSIBILITY STANDARDS.
7. DOOR HANDLES OR PULLS AND ALL OTHER OPERABLE PARTS OF DOOR HARDWARE (SUCH AS DEADBOLTS, KEYHOLES... ETC.) ARE TO BE CENTERED BETWEEN 34" AND 44" ABOVE FINISH FLOOR. IF EXISTING BUILDING STANDARD EXISTS, MATCH BUILDING STANDARD AND CONFIRM COMPLIANCE WITH ACCESSIBILITY REQUIREMENTS.
8. SPECIAL LOCKING DEVICES SHALL BE OF AN APPROVED TYPE BY AUTHORITY HAVING JURISDICTION.
9. PROVIDE WEATHER SEALS ON ALL EXTERIOR DOORS TO RESTRICT INFILTRATION PER ANSI / IECC STANDARDS.
10. CONTRACTOR IS RESPONSIBLE TO COORDINATE & VERIFY ALL DOOR FRAME THROAT THICKNESSES FOR EACH LOCATION.
11. ALL DOOR FRAMES TO BE FACTORY FINISHED, U.O.N.
12. PROVIDE 6'x16 GA MIN FLAT METAL OR 2x6 BACKING (FRT AS REQUIRED) BEHIND ALL WALL MOUNTED DOOR STOPS. FLOOR MOUNTED DOOR STOP SHALL NOT BE PLACED IN A PATH OF EGRESS AS A TRIPPING HAZARD.
13. MAXIMUM UNDERCUT OF ALL NON-FIRE RATED DOORS SHALL NOT EXCEED 1/2" ABOVE FINISH FLOOR SURFACE.
14. CONTRACTOR SHALL REFINISH ANY BLEMISHED DOOR OR REPLACE SAID DOOR IF NOT ABLE TO REFINISH TO "AS NEW" CONDITION.
15. ALL DOORS TO BE OPERABLE FROM THE INSIDE WITHOUT A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT
16. ALL DOORS WITH ELECTRONIC SECURITY DOOR LOCKS MUST BE OPERABLE FOR EXITING PURPOSES UNDER ALL CONDITIONS. INCLUDING A POWER OUTAGE.
17. IF BUILDING STANDARDS ARE INCONSISTENT FOR DOORS, SIDELITES, HARDWARE, DOOR AND SIDELITE FRAMES OR OTHER STANDARD DETAILS, THEN CONTRACTOR MUST VERIFY WITH ARCHITECT AND OWNER PRIOR TO CONSTRUCTION.
18. WINDOWS AND DOORS SHALL MEET THE MAXIMUM AIR LEAKAGE REQUIREMENTS AS INDICATED IN IECC TABLE C402.5.2 (GC TO COORDINATE)
19. EXTERIOR WINDOWS AND DOORS SHALL BE LABELED AS CONFORMING TO AAMA/NWDA 101/I.S.2/NAFS. LABEL TO STATE NAME OF MANUFACTURER, THE APPROVED LABELING AGENCY AND THE PRODUCT DESIGNATION.

# ROOF NOTES

1. SEE MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR SCHEMATIC LAYOUT OF ROOF LEVEL HVAC, PLUMBING AND ELECTRICAL EQUIPMENT, PIPE, CONDUIT, PLATFORMS, HOUSEKEEPING PADS, BASES, SHAFT OPENINGS, DECK PENETRATIONS, ETC.
2. CONTRACTOR SHALL VERIFY SIZE, LOCATIONS, AND INSTALLATIONS REQUIREMENTS OF ALL HVAC, PLUMBING AND ELECTRICAL EQUIPMENT WITH EQUIPMENT MANUFACTURERS AND SUBMIT A FINAL LAYOUT OF ALL EQUIPMENT FOR ARCHITECT APPROVAL.
3. THE TOP OF MECHANICAL AND PLUMBING EQUIPMENT PLATFORMS AND CURBS SHALL MEASURE A MINIMUM OF 8" ABOVE THE HIGHEST ADJACENT TOP OF ROOFING ELEVATION.
4. VENT OPENINGS THROUGH THE ROOF SHALL BE INSTALLED 10'-0" MINIMUM AWAY FROM AND TERMINATED 3'-0" MINIMUM ABOVE ANY FRESH AIR INTAKE.
5. SEE PLUMBING DRAWINGS FOR ROOF DRAIN AND SECONDARY DRAIN SIZES.
6. CRICKETS SHALL BE INSTALLED ON THE HIGH SIDE OF ANY OBSTRUCTION MORE THAN 47" WIDE AND ORIENTED PERPENDICULAR TO THE FLOW OF WATER TO THE DRAIN. SUCH OBSTRUCTIONS INCLUDE BUT ARE NOT LIMITED TO EQUIPMENT PADS, CURBS AND WALLS.
7. ROOFING ASSEMBLIES SHALL BE SELECTED AND INSTALLED AS REQUIRED TO RESIST MAXIMUM WIND SPEEDS AND UPLIFT FORCES DEFINED BY CODE AND LOCAL OR STATE LAW AS APPLIED TO THE ROOF'S GEOGRAPHIC LOCATION, HEIGHT AND EXPOSURE CLASS.
8. OVERFLOW SCUPPERS AND SECONDARY ROOF DRAINS SHALL BE DESIGNED PER APPLICABLE CODES WITH INLETS LOCATED 3" ABOVE THE LOW POINT OF THE SURROUNDING FINISHED ROOF SURFACE. COORDINATE W/ STRUCTURAL.
9. ORIENT SKYLIGHT/SMOKE HATCH (IF ANY) HINGE SIDE TOWARD THE PREVAILING WIND.
10. ALL ROOF SURFACES SHALL SLOPE A MINIMUM OF 1 /4 INCH PER FOOT IN ALL DIRECTIONS.
11. SEE STRUCTURAL DRAWINGS FOR ROOF FRAMING.
12. ALL ROOF SURFACES SHALL STOP AT A MINIMUM OF 1/4 INCH PER FOOT IN ALL DIRECTIONS. CRICKETS SHALL BE USED ON THE HIGH SIDE OF ALL EQUIPMENT PLATFORMS.
13. REFER TO STRUCTURAL DRAWINGS ROOF ELEVATIONS (BOTTOM OF DECK) FROM FINISHED FLOOR, DATUM ELEVATION 0'-0".
14. T.O.P = TOP OF PARAPET / PANEL.
15. ROOFING MATERIALS AND ASSEMBLY SHALL BE RATED UL CLASS "A" FIRE RETARDANT
16. PROVIDE MULTI-COMPONENT EXPANDING POLYURETHANE FOAM SEALANT AT BUILDING PERIMETER & ROOF PENETRATIONS (TYP.)

# IL. ENERGY CONSERV. CODE

THE INTERNATIONAL ENERGY CONSERVATION CODE (IECC) HAS BEEN ADOPTED BY THE STATE OF ILLINOIS PER THE JOINT COMMITEE ON ADMINISTRATIVE RULES CODE: TITLE 71: CHAPTER 1: SUBCHAPTER d: PART 600.110 'ADOPTION AND MODIFICATION OFHE CODE', SUBSECTION 2) 'PRIVATELY FUNDED COMMERCIAL FACILITIES AND RESIDENTIAL BUILDINGS'

IN ACCORDANCE WITH IECC SECTION C401.2, 1. "APPLICATION", THE ENVELOPE OF THE SUBJECT
PROJECT SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/ ASHRAE / IESNA 90.1. THE COMPLIANCE PATH SHALL BE VIA APPLICATION OF THE ANSI / ASHRAE / IESNA 90.1 SECTION 5.2.1.b, "SUBSECTION 5.6, BUILDING ENVELOPE TRADE-OFF OPTION."

COMPLIANCE SHALL BE DEMONSTRATED BY SUBMITTAL OF "COMPLIANCE CERTIFICATES" GENERATED FOR THE SUBJECT PROJECT BY THE U.S. DEPARMENT OD ENERGY'S COMCHECK CODE COMPLIANCE TOOL. IN ACCORDANCE WITH THE STATE OF ILLINOIS JOINT COMMITTEE ON ADMINISTRATIVE RULES ADMINISTRATIVE CODE: TITLE 71: CHAPTER 1: SUBCHAPTER D: PART 600:

SECTION 600.330. 'COMPLIANCE'. SUBSECTION b) 2)

# FIRE AUTHORITY NOTES

1. FINAL INSPECTION BY FIRE DEPARTMENT IS REQUIRED - SCHEDULE 2 DAYS IN ADVANCE. THE LOCAL AUTHORITY HAVING JURISTICTION IS REQUIRED FOR FINAL INSPECTIONS.
2. THE PROJECT ADDRESS SHALL BE PROVIDED FOR ALL NEW AND EXISTING BUILDINGS IN A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD FRONTING THE PROPERTY PER LOCAL FIRE DEPARTMENT STANDARDS.
3. AN UNOBSTRUCTED ALL-WEATHER FIRE APPARATUS ACCESS ROAD SHALL BE IN PLACE PRIOR TO DELIVERY OF COMBUSTIBLE BUILDING MATERIALS TO THE SITE.
4. FIRE PREVENTION WATER SERVICE SHALL BE IN SERVICE PRIOR TO THE DELIVERY OF COMBUSTIBLE BUILDING MATERIALS TO THE SITE.
5. ACCESS GATES (IF ANY) SHALL BE APPROVED PRIOR TO INSTALLATION AND SHALL BE IN COMPLIANCE WITH LOCAL FIRE AUTHORITY.
6. PRIVATE FIRE HYDRANTS, SPRINKLER CONTROL AND POST INDICATOR VALVES , AND RISERS TO FIRE DEPARTMENT CONNECTIONS SHALL BE PAINTED "SAFETY RED" PER LOCAL FIRE AUTHORITY.
7. ALL FIRE HYDRANTS SHALL HAVE A "BLUE REFLECTIVE PAVEMENT MARKER" INDICATING ITS LOCATION ON THE STREET OR DRIVE PER LOCAL FIRE AUTHORITY STANDARDS. ON PRIVATE PROPERTY THESE MARKERS ARE TO BE MAINTAINED IN GOOD CONDITION BY THE PROPERTY OWNER. (REFER TO CIVIL)
8. PROVIDE OUTSIDE GAS SHUT-OFF VALVE. PROVIDE SIGN INDICATION MAIN GAS AND ELECTRICAL SHUT-OFF PER LOCAL FIRE DEPARTMENT.
9. FIRE SPRINKLER SYSTEM(S) SHALL MEET STATE & LOCAL FIRE CODES AND BE PROVIDED TO PROTECT ENTIRE BUILDING INCLUDING PROJECTIONS OVER 4'-0".
10. FIRE SPRINKLER SYSTEM(S) AND ALL CONTROL VALVES, INCLUDING EXTERIOR SHALL BE SUPERVISED BY A U.L LISTED CENTRAL ALARM STATION OR PER STATE & LOCAL FIRE CODES.
11. ALL VALVES CONTROLLING THE WATER SUPPLY FOR AUTOMATIC SPRINKLER SYSTEMS AND WATER-FLOW SWITCHES ON ALL SPRINKLER SYSTEMS SHALL BE ELECTRONICALLY MONITORED
12. WHERE THE NUMBER OF SPRINKLERS IS 100 OR MORE. ELECTRICAL SUBCONTRACTORS TO INSTALL WIRING FOR FIRE SPRINKLER, ALARM BELL AND TELEPHONE WARNING AS REQUIRED BY FIRE DEPARTMENT.
13. INSTALLATION OF FIRE ALARM SYSTEMS SHALL BE IN ACCORDANCE WITH STATE & LOCAL FIRE CODES.
14. COMPLETE PLANS AND SPECIFICATIONS FOR ALL FIXED FIRE PROTECTION EQUIPMENTS INCLUDING AUTOMATIC SPRINKLERS AND OTHER FIRE-PROTECTION SYSTEMS, SHALL BE SUBMITTED BY INSTALLING CONTRACTOR. SUCH PLANS SHALL BE APPROVED BY LOCAL FIRE AUTHORITY PRIOR TO INSTALLATION.
15. ALL REQUIRED FIRE DOORS SHALL BEAR A LABEL FROM A RECOGNIZED AGENCY SHOWING THE SPECIFIC RATING.
16. EXIT SIGNS AND ILLUMINATION SHALL CONFORM TO ALL APPLICABLE BUILDING AND FIRE CODES.
17. EXIT DOORS SHALL BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT.
18. PROVIDE OR MODIFY AS NEEDED SPRINKLER ALARM AND SMOKE DETECTION SYSTEM PER APPLICABLE CODES INCLUDING IF NECESSARY FIR HORNS, STROBE LIGHTS, CONTROL PANEL CONNECTIONS, SMOKE DETECTORS, AUDIO VISUAL ALARMS. SUBMIT SHOP DRAWINGS TO THE FIRE MARSHAL FOR APPROVAL
19. AT LEAST ONE (1) FIRE EXTINGUISHER WITH A MINIMUM RATING OF: 2-A:10B:C (FOR OFFICE); OR 10-A-80B:C (FOR WAREHOUSE); SHALL BE PROVIDED WITHIN 75'-0" MAXIMUM TRAVEL DISTANCE FOR EACH 3,000 SQUARE FEET OR PORTION THEREOF ON EACH FLOOR.
20. LOCATIONS AND CLASSIFICATIONS OF FIRE EXTINGUISHERS SHALL BE IN ACCORDANCE WITH STATE & LOCAL FIRE CODES AND PLACEMENT IS SUBJECT TO THE APPROVAL OF THE FIRE INSPECTOR. VERIFY QUANTITY & EXACT LOCATION FROM FIRE DEPARTMENT PRIOR TO ORDERING.
21. STORAGE, DISPENSING OR USE OF ANY FLAMMABLE AND COMBUSTIBLE LIQUIDS, FLAMMABLE AND COMPRESSED GASES, AND OTHER HAZARDOUS MATERIAL SHALL COMPLY WITH STATE & LOCAL FIRE CODES. THE STORAGE AND USE OF HAZARDOUS MATERIALS SHALL BE APPROVED BY THE FIRE AUTHORITY PRIOR TO ANY MATERIALS BEING STORED OR USED ON SITE. A SEPARATE PLAN SUBMITTAL IS REQUIRED PRIOR TO THE STORAGE AND USE OF HAZARDOUS MATERIALS.
22. BUILDING(S) NOT APPROVED FRO HIGH-PILED STOCK (MATERIALS IN CLOSELY PACKED PILES OR ON PALLETS, OR IN RACKS WHERE THE TOP OF STORAGE EXCEEDS 12'-0" IN HEIGHT, AND 6'-0" FOR GROUP "A" PLASTICS AND CERTAIN OTHER HIGH-HAZARD COMMODITIES). HIGH-PILED STORCK SHALL BE APPROVED BY THE FIRE AUTHORITY PRIOR TO MATERIALS BEING STORED ON SITE. A SEPARATE PLAN SUBMITTAL IS REQUIRED FOR HIGH-PILED STORAGE IN ACCORDANCE WITH STATE & LOCAL FIRE CODES.
23. A LETTER OF INTENDED USE MAY BE REQUIRED BY THE FIRE INSPECTOR.

# SITE NOTES

1. REFER TO LANDSCAPE DRAWINGS FOR CONCRETE WALKS, PAVING, BERMS, LANDSCAPING AND IRRIGATION.
2. REFER TO CIVIL DRAWINGS FOR SITE GRADING, DRAINAGE, CATCH BASINS, PAVING DETAILS, SITE UTILITIES, CURB AND GUTTER SWALES, FIRE HYDRANT LOCATIONS AND HORIZONTAL CONTROL DIMENSIONS.
3. REFER TO CIVIL DRAWINGS FOR POINT OF CONNECTIONS TO OFF-SITE UTILITIES. CONTRACTOR TO VERIFY ACTUAL UTILITY LOCATIONS.
4. ALL DIMENSION ON SITE PLAN ARE TO BE FACE OF CONCRETE WALL. FACE OF CONCRETE CURB, PROPERTY LINE OR CENTERLINE OF PARKING STALL, UNLESS OTHERWISE NOTED.
5. FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE LOCAL FIRE DEPARTMENT STANDARDS.
6. ALL PARKING STALL STRIPING SHALL BE PER LOCAL JURISDICTION STANDARDS.
7. CONCRETE WALK SHALL RECEIVE EXPANSION JOINTS AT 50'-0" O.C MAX, AND CONTROL JOINTS AT 5'-0" O.C MAX, BETWEEN EXPANSION JOINTS, UNLESS NOTED OTHERWISE.

# FLOOR PLAN NOTES

1. ALL EXITS SHALL HAVE EXIT SIGNS.
2. REFER TO PLUMBING, CIVIL AND SITE PLANS, FOR SIZE AND ROUTING OF ROOF DRAINAGE CONNECTION TO UNDERGROUND STORM DRAIN OR RUN TO DAYLIGHT AS SHOWN.
3. FLOORS SHALL BE SLOPED TO FLOOR DRAINS. COORDINATE WITH PLUMBING AND STRUCTURAL DRAWINGS. IN RATED FLOOR CONDITIONS, CONFIRM REMAINING FLOOR THICKNESS STILL CONFORMS TO MINIMUM RATING REQUIREMENT

# GLAZING NOTES

1. EACH LIGHT SHALL BEAR THE MANUFACTURER'S LABEL DESIGNATING THE TYPE AND THICKNESS OF THE GLASS.
2. GLASS SHALL BE FIRMLY SUPPORTED ON ALL FOUR EDGES, U.O.N.
3. FIELD MEASURE ALL OPENINGS PRIOR TO FABRICATION.
4. FIXED OR OPERABLE GLAZING IN HAZARDOUS LOCATIONS AS DEFINED IN THE BUILDING CODE SHALL BE TEMPERED GLASS (SAFETY GLASS).
5. GLAZING IN SWINGING, SLIDING AND BIFOLD DOORS SHALL BE TEMPERED.
6. ALL GLAZING WITHIN A 24" ARC OF EITHER EDGE OF A DOOR AND WITHIN 60" OF THE FLOOR SHALL BE TEMPERED.
7. GLAZING IN WINDOWS: ALL GLAZING THAT MEETS ALL OF THE FOLLOWING CONDITIONS SHALL BE TEMPERED:
   A. THE EXPOSED AREA OF AN INDIVIDUAL PANE IS GREATER THAN 9 SF.
   B. THE BOTTOM EDGE IS LESS THAN 18" ABOVE THE FLOOR.
   C. THE TOP EDGE IS GREATER THAN 36" ABOVE THE FLOOR.
   D. WALKING SURFACE IS WITHIN 36".
8. ALL GLASS SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE AND LOCAL CODES AND THE U.S. PRODUCT SAFETY COMMISSIONS: SAFETY STANDARDS FOR ARCHITECTURAL GLAZING MATERIALS.
9. WHERE JOINTS ARE REQUIRED IN MULTIPLE LITES, CLEAR SILICONE IS TO BE PROVIDED, U.O.N.
10. WINDOWS AND DOORS SHALL MEET THE MAXIMUM AIR LEAKAGE REQUIREMENTS AS INDICATED IN IECC TABLE C402.5.2 (GC TO COORDINATE)
11. EXTERIOR WINDOWS AND DOOR SHALL BE LABELED AS CONFORMING TO AAMA/NWDA 101/I.S.2 OR 101/I.S.2/NAFS. LABEL TO STATE NAME OF MANUFACTURER, THE APPROVED LABELING AGENCY AND THE PRODUCT DESIGNATION.

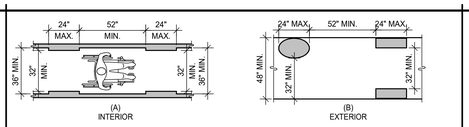
TABLE 2406.1
MINIMUM CATEGORY CLASSIFICATION OF GLAZING

| EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE | GLAZING IN FIXED AND COMBINATION DOORS (Category class) | GLAZING IN DOORS (Category class) | GLAZED PANELS REGULATED BY ITEM 1 OF SECTION 2406.3 (Category class) | GLAZED PANELS REGULATED BY ITEM 4 OF SECTION 2406.3 (Category class) | DOORS AND ENCLOSURES REGULATED BY ITEM 5 OF SECTION 2406.3 (Category class) | SLIDING GLASS DOORS FATIO TYPE (Category class) |
|---|---|---|---|---|---|---|
| 9 square feet or less | I | I | No requirement | I | II | II |
| More than 9 square feet | II | II | II | II | II | II |

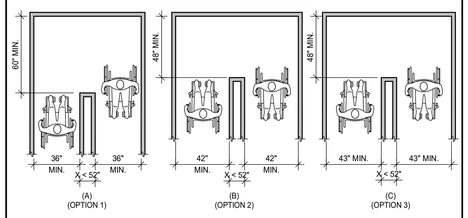
# GENERAL PROJECT NOTES

## GENERAL NOTES

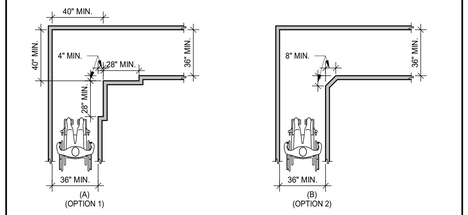
1. ALL WORK SHALL BE PERFORMED SO AS TO COMPLY WITH ALL LEGAL, INDUSTRY AND PROJECT-SPECIFIC REQUIREMENTS AND STANDARDS INCLUDING WITHOUT LIMITATION OF THE FOLLOWING:
   A. ALL APPLICABLE BUILDING CODES
   B. ALL APPLICABLE SPECIALTY CODES INCLUDING THE MOST CURRENT ISSUES AND SUPPLEMENTS
   C. THE PROJECT MANUAL AND ASSOCIATED SPECIFICATIONS WHEN PROVIDED
   D. THE MANUFACTURER'S REQUIREMENTS OR RECOMMENDATIONS
   E. ALL APPLICABLE LANDLORD BUILDING STANDARDS
2. IN USING THESE PLANS FOR BIDDING OR CONSTRUCTION PURPOSES, ALL CONTRACTORS ARE REQUIRED TO REVIEW AND TREAT THEM AS A WHOLE IN ORDER TO IDENTIFY ALL REQUIREMENTS THAT DIRECTLY OR INDIRECTLY AFFECT THEIR PORTION OF THE WORK, EVEN REQUIREMENTS LOCATED IN SECTIONS DESIGNATED AS APPLICABLE TO OTHER TRADES OR IN DOCUMENTS PROVIDED BY OTHER MEMBERS OF THE PROJECT DESIGN TEAM. UNLESS EXPRESSLY PROVIDED OTHERWISE, THE INTENT IS TO INCLUDE ALL LABOR, MATERIALS, PRODUCTS AND SERVICES NECESSARY OR APPROPRIATE FOR THE COMPLETED PROJECT AS CALLED FOR OR REASONABLY IMPLIED FROM THE PLANS AND SPECIFICATIONS PROVIDED BY THE PROJECT'S DESIGN TEAM. IN CASE OF CONFLICTS OR OMISSIONS, THE AFFECTED CONTRACTOR IS REQUIRED TO EITHER OBTAIN DIRECTION FROM AN APPROPRIATE REPRESENTATIVE OF THE OWNER, OR OTHERWISE TO APPLY THE MORE STRINGENT OR COSTLY STANDARD.
3. IN INTERPRETING THESE PLANS, THE FOLLOWING GENERAL RULES APPLY:
   A. WRITTEN DIMENSIONS SHALL GOVERN. DO NOT SCALE THE DRAWINGS. LARGE SCALE DRAWINGS AND DETAILS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS
   B. SPECIFIC NOTES AND DETAILS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS
   C. WHERE CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, THE DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK IN THE SAME BUILDING.
   D. WORK SHOWN AS "NIC" IS FOR REFERENCE ONLY AND THE RESPONSIBILITY OF THE CONTRACTOR ONLY TO THE EXTENT THAT THIS WORK MAY REQUIRE SOME REASONABLE PROTECTION OR COORDINATION EFFORTS.
4. THESE PLANS AND SPECIFICATIONS ARE INTENDED TO REPRESENT ONLY THE FINISHED CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION AND DEMOLITION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES INCLUDING ANY AND ALL SAFETY PRECAUTIONS AND PROGRAMS, AND SHALL INDEMNIFY TO THE FULLEST EXTENT ALLOWED BY LAW THE OWNER AND THE PROJECT DESIGN TEAM FROM AND AGAINST ANY AND ALL RELATED CLAIMS AND LIABILITY.
5. THESE PLANS AND SPECIFICATIONS ARE INTENDED TO SET FORTH THE REQUIREMENTS FOR CONSTRUCTION IN ONLY AN INDUSTRY-STANDARD LEVEL OF QUALITY AND DETAIL, AND THEY ARE INTENDED TO BE SUPPLEMENTED BY APPROPRIATE REQUESTS FOR INFORMATION (RFIs). ERRORS AND OMISSIONS ARE TO BE EXPECTED AND ANTICIPATED, AND ALL CONTRACTORS ARE REQUIRED TO CAREFULLY REVIEW THESE PLANS FOR ERRORS AND OMISSIONS AND TO BRING THESE ERRORS AND OMISSIONS TO THE ATTENTION OF AN APPROPRIATE OWNER REPRESENTATIVE IN A TIMELY MANNER; AND ANY CONTRACTOR WHO FAILS TO DO SO BEFORE BIDDING OR OTHERWISE PROCEEDING ASSUMES THE RISK OF ANY CONSEQUENCES.
6. DIMENSIONS SCALED FROM DRAWINGS SHALL BE CONSIDERED APPROXIMATE. CONTRACTORS THAT FAIL TO FIELD MEASURE AND VERIFY DISTANCES, CLEARANCE AND FIT ARE PROCEEDING AT THEIR OWN RISK.
7. EXCEPT WHERE DIMENSIONED, PLANS ARE TO BE CONSIDERED DIAGRAMMATIC IN NATURE AND INTENDED ONLY TO DEMONSTRATE THE RELATIONSHIP AMONG COMPONENT PARTS, AND NOT TO DEPICT SPECIFIC LOCATIONS.
8. DESIGN/BUILD CONTRACTOR SUBMITTALS WILL BE REVIEWED BY THE PROJECT DESIGN TEAM, IF AT ALL, ONLY FOR CONFORMANCE WITH THE AESTHETIC ASPECTS AND MAJOR SPACE LIMITATIONS OF THE PROJECT; AND EACH DESIGN/BUILD CONTRACTOR IS RESPONSIBLE FOR THE FOLLOWING:
   A. PREPARING ALL THE ENGINEERING AND OTHER DRAWINGS AND SPECIFICATIONS FOR THE COMPONENTS OF ITS DESIGN/BUILD UNDERTAKING.
   B. COMPLYING WITH THE PROJECT'S REQUIREMENTS AND SPACE LIMITATIONS.
   C. COORDINATION AND INTERFACING WITH OTHER TRADES AND CONSULTANTS.
   D. OBTAINING ANY REQUIRED OR APPROPRIATE APPROVALS FROM AUTHORITIES HAVING JURISDICTION OVER THE PROJECT.
   E. HAVING THEIR DESIGN CONSULTANTS SERVE AS THE PROFESSIONAL OF RECORD FOR THE PORTIONS OF WORK WHICH THEY DESIGN.
9. AS MAY BE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION. AT THE CONCLUSION OF CONSTRUCTION EACH PRIME CONTRACTOR SHALL PROVIDE WRITTEN CERTIFICATION THAT THEIR PORTION OF THE WORK HAS BEEN PERFORMED IN COMPLIANCE WITH THE BUILDING PERMIT APPROVED PLANS AND SPECIFICATIONS.
10. VERSIONS OF THESE PLANS PROVIDED IN ANY ELECTRONIC FORM ARE SUBJECT TO THE SAME PROVISIONS AND RESTRICTIONS AS PAPER PLANS PREPARED B



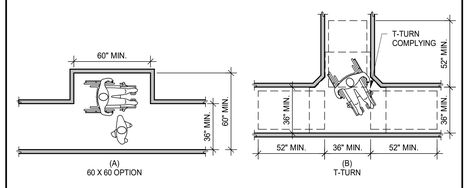

CLEAR WIDTH OF AN ACCESSIBLE ROUTE




CLEAR WIDTH AT 180-DEGREE TURN



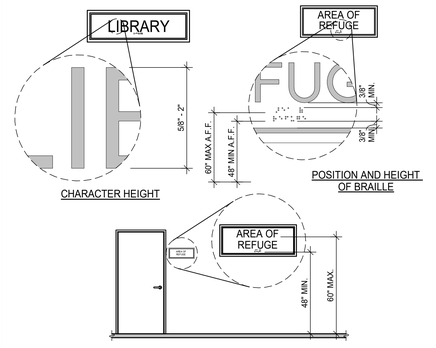

CLEAR WIDTH AT 90-DEGREE TURN

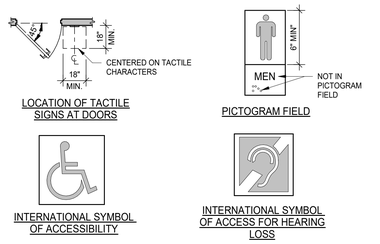



PASSING SPACE

## CLEAR WIDTH

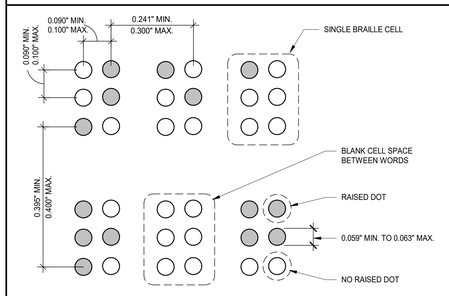
SCALE: 1/4" = 1'-0" 18




## SIGNS

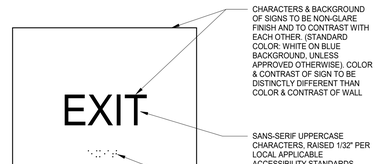
SCALE: 1/4" = 1'-0" 12




DOT HEIGHT 0.025" MIN. TO 0.037" MAX.
MEASURED CENTER TO CENTER.

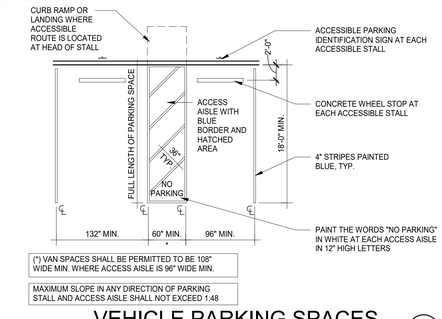
## BRAILLE MEASUREMENT

SCALE: 3/8" = 1'-0" 13




## TACTILE "EXIT" SIGN

SCALE: 3" = 1'-0" 14

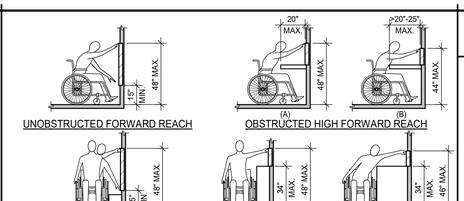



(*) VAN SPACES SHALL BE PERMITTED TO BE 108" WIDE MIN. WHERE ACCESS AISLE IS 96" WIDE MIN.

MAXIMUM SLOPE IN ANY DIRECTION OF PARKING STALL AND ACCESS AISLE SHALL NOT EXCEED 1:48

## VEHICLE PARKING SPACES

SCALE: 1/8" = 1'-0" 15



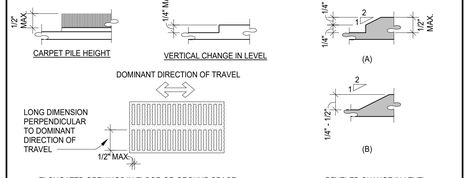

| MAXIMUM REACH DEPTH | 0.5" (13 mm) | 2" (51 mm) | 5" (125 mm) | 6" (150 mm) | 9 (230 mm) | 11" (280 mm) |
|---|---|---|---|---|---|---|
| MAXIMUM REACH HEIGHT | 48" (1220 mm) | 48" (1170 mm) | 42" (1065 mm) | 40" (1015 mm) | 36" (915 mm) | 34" (865 mm) |

## REACH RANGES

SCALE: 1/4" = 1'-0" 6

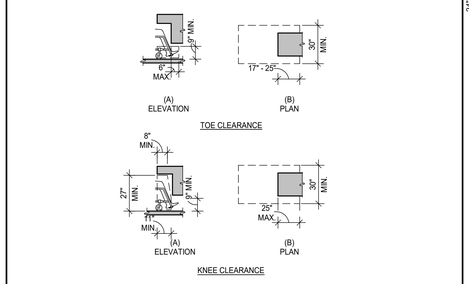
NOTES:

1. FLOOR AND GROUND SURFACES SHALL BE STABLE, FIRM AND SLIP RESISTANT.
2. CARPET OR CARPET TILE SHALL BE SECURELY ATTACHED AND SHALL HAVE A FIRM CUSHION, PAD OR BACKING OR NO CUSHION OR PAD. CARPET OR CARPET TILE SHALL HAVE A LEVEL LOOP, TEXTURED LOOP, LEVEL CUT PILE, LEVEL CUT/UNCUT PILE TEXTURE. PILE HEIGHT SHALL COMPLY WITH CARPET PILE HEIGHT FIGURE BELOW. EXPOSED EDGES OF CARPET SHALL BE FASTENED TO FLOOR SURFACES AND SHALL HAVE TRIM ON THE ENTIRE LENGTH OF THE EXPOSED EDGE. CARPET EDGE SHALL COMPLY WITH CHANGE IN LEVEL FIGURES BELOW.



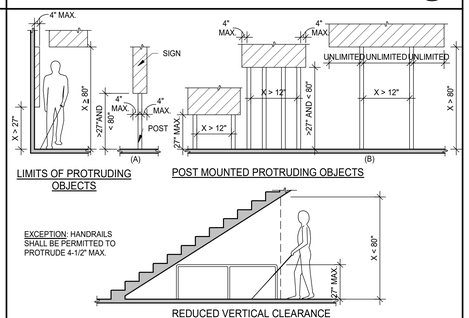

## FLOOR OR GROUND SURFACES & CHANGES IN LEVEL

SCALE: 1/2" = 1'-0" 7




## KNEE AND TOE CLEARANCE

SCALE: 1/4" = 1'-0" 8




## PROTRUDING OBJECTS

SCALE: 1/4" = 1'-0" 9

PARKING SPACES PER 2010 ADA

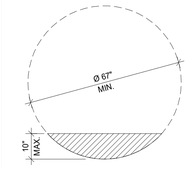
| TOTAL NUMBER OF PARKING SPACES PROVIDED IN PARKING FACILITY | MINIMUM NUMBER OF REQUIRED ACCESSIBLE PARKING SPACES |
|---|---|
| 1 TO 25 | 1 |
| 26 TO 50 | 2 |
| 51 TO 75 | 3 |
| 76 TO 100 | 4 |
| 101 TO 150 | 5 |
| 151 TO 200 | 6 |
| 201 TO 300 | 7 |
| 301 TO 400 | 8 |
| 401 TO 500 | 9 |
| 501 TO 1000 | 2 PERCENT OF TOTAL |
| 1001 AND OVER | 20, PLUS 1 FOR EACH 100, OR FRACTION THEREOF, OVER 1000 |

## PARKING SPACES

SCALE: 12" = 1'-0" 10

# ACCESSIBILITY NOTES

1. "THE ACCESSIBILITY GUIDELINES AND CODES" MENTIONED BELOW REFER TO ALL APPLICABLE LOCAL/STATE BUILDING CODES REFERENCED ON THE PROJECT DATA SHEET OF THIS SET IN ADDITION TO THE FEDERAL REQUIREMENTS OF THE ADA (THE AMERICANS WITH DISABILITIES ACT).
2. DETAILS ON THIS SHEET ARE FOR REFERENCE ONLY. REFER TO THE ACCESSIBILITY GUIDELINES AND CODES FOR ALL ACCESSIBILITY REQUIREMENTS.
3. THE GENERAL CONTRACTOR SHALL BECOME FAMILIAR WITH THE ACCESSIBILITY GUIDELINES AND CODES.
4. ANY DISCREPANCY CONTAINED HEREIN DOES NOT RELIEVE THE GENERAL CONTRACTOR OR OWNER FROM COMPLYING WITH THE ACCESSIBILITY GUIDELINES AND CODES.

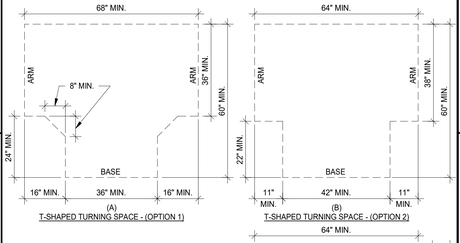


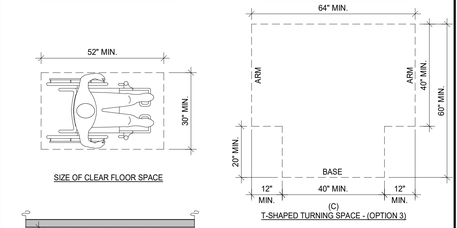

CIRCULAR TURNING SPACE SIZE AND OVERLAP

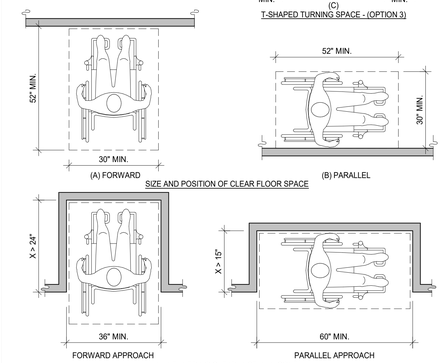
THE TURNING SPACE SHALL BE A CIRCULAR SPACE WITH 67-INCH MINIMUM DIAMETER.

OVERLAP
TURNING SPACES SHALL BE PERMITTED TO INCLUDE KNEE AND TOE CLEARANCE. WHERE THE TURNING SPACE INCLUDES KNEE AND TOE CLEARANCES UNDER AN OBSTRUCTION, THE OVERLAP SHALL COMPLY WITH ALL OF THE FOLLOWING:

1. THE DEPTH OF THE OVERLAP SHALL NOT BE MORE THAN 10 INCHES.
2. THE DEPTH SHALL NOT EXCEED THE DEPTH OF THE KNEE AND TOE CLEARANCES PROVIDED.
3. THE OVERLAP SHALL BE PERMITTED ONLY WITHIN THE TURNING CIRCLE ARE SHOWN SHADED IN FIGURE




## CLEAR FLOOR OR GROUND SPACE

SCALE: 1/2" = 1'-0" 4

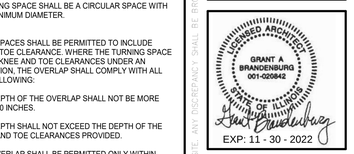
| HEIGHT TO FINISH FLOOR FROM BASELINE OF CHARACTER | HORIZONTAL VIEWING DISTANCE | MINIMUM CHARACTER HEIGHT |
|---|---|---|
| 40 INCHES TO LESS THAN OR EQUAL TO 70 INCHES | LESS THAN 72 INCHES | 5/8 INCH |
| | 72 INCHES AND GREATER | 5/8 INCH, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 72 INCHES |
| GREATER THAN 70 INCHES TO LESS THAN OR EQUAL TO 120 INCHES | LESS THAN 180 INCHES | 2 INCHES |
| | 180 INCHES AND GREATER | 2 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 180 INCHES |
| GREATER THAN 120 INCHES | LESS THAN 21 FEET | 3 INCHES |
| | 21 FEET AND GREATER | 3 INCHES, PLUS 1/8 INCH PER FOOT OF VIEWING DISTANCE ABOVE 21 FEET |

1. THE VERTICAL HEIGHT IS MEASURED FROM THE FLOOR OF THE VIEWING POSITION TO THE BASELINE OF THE HIGHEST LINE OF CHARACTERS.

## VISUAL CHARACTER HEIGHT

SCALE: 12" = 1'-0" 5

State of Illinois Design Firm Registration No. 184-004089
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THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ACCESSIBILITY DETAILS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

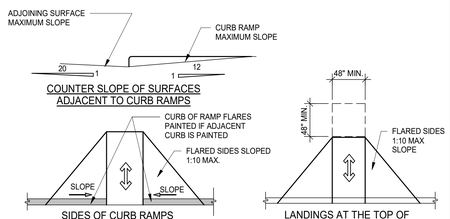
| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

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4/19/2022 8:50:14 AM 2022-04-08 PERMIT SET

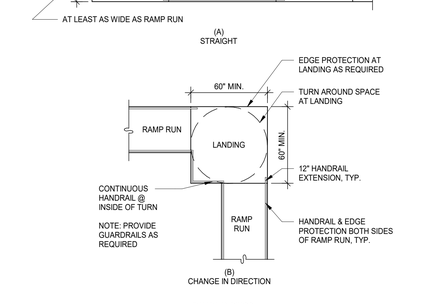
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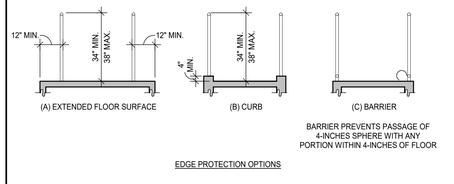
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




# CURB RAMPS 12

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




# RAMPS 14

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

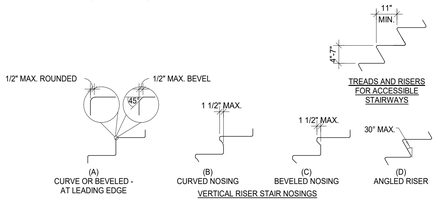
NOTES:
STAIRS
1. OPEN RISERS ARE NOT PERMITTED.
2. TREAD SURFACES SHALL COMPLY WITH (FLOOR OR GROUND SURFACES & CHANGES IN LEVEL) DETAIL, AND SHALL A SLOPE NOT STEEPER THAN 1:48.

HANDRAILS
3. HANDRAIL GRIPPING SURFACES SHALL BE CONTINUOUS ALONG THEIR LENGTH AND SHALL NOT BE OBSTRUCTED ALONG THEIR TOPS OR SIDES. THE BOTTOM OF THE HANDRAIL GRIPPING SURFACES SHALL NOT BE OBSTRUCTED FOR MORE THAN 20 PERCENT OF THEIR LENGTH. WHERE PROVIDED, HORIZONTAL PROJECTIONS SHALL OCCUR 1-1/2" MINIMUM BELOW THE BOTTOM OF THE HANDRAIL GRIPPING SURFACE.
4. HANDRAIL GRIPPING SURFACES WITH CIRCULAR CROSS SECTIONS SHALL HAVE AN OUTSIDE DIAMETER OF 1-1/4" (32 MM) MINIMUM AND 2" MAXIMUM.
5. HANDRAIL GRIPPING SURFACES AND ANY SURFACES ADJACENT TO THEM SHALL BE FREE OF SHARP OR ABRASIVE ELEMENTS AND SHALL HAVE ROUNDED EDGES.
6. HANDRAILS SHALL NOT ROTATE WITHIN THEIR FITTINGS.

NOSINGS
7. NOSING WITHIN A STAIRWAY SHALL BE UNIFORM.
8. IF ROUNDED, THE RADIUS OF CURVATURE AT THE LEADING EDGE OF THE TREAD SHALL BE 1/2 INCH (13mm) MAXIMUM.
9. IF BEVELED, THE BEVEL AT THE LEADING EDGE SHALL SLOPE AT 45-DEGREES TO THE PLANE OF THE TOP SURFACE OF THE TREAD AND LANDING AND EXTEND FOR A HORIZONTAL DISTANCE OF 1/2 INCH (13 MM) MAXIMUM.
10. NOSINGS THAT PROJECT BEYOND RISERS SHALL HAVE THE UNDERSIDE OF THE LEADING EDGE CURVED OR BEVELED.
11. RISERS SHALL BE PERMITTED TO SLOPE UNDER THE TREAD AT AN ANGLE OF 30-DEGREES MAXIMUM FROM VERTICAL.
12. THE PERMITTED PROJECTION OF THE NOSING SHALL BE 1 1/2 INCHES (38 MM) MAXIMUM OVER THE TREAD OR FLOOR BELOW.

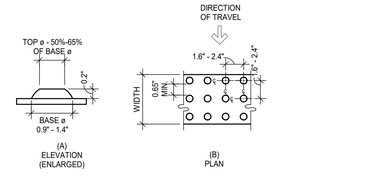
VISUAL CONTRAST
13. VISUAL CONTRAST SHALL COMPLY WITH EITHER 1 OR 2:
    1. THE LEADING 1 TO 2 INCHES (25 TO 51MM) OF EVERY TREAD AND LANDING, MEASURED HORIZONTALLY FROM THE LEADING EDGE OF THE NOSING, SHALL CONSIST OF A SOLID COLOR HAVING VISUAL CONTRAST OF DARK-ON-LIGHT OR LIGHT-ON-DARK FROM THE REMAINDER OF THE TREAD. THE CONTRASTING MARKING SHALL BE DURABLE AND SHALL EXTEND FROM ONE SIDE OF EACH TREAD TO THE OTHER SIDE OF EACH TREAD.
    2. DURABLE DISTINCTIVE WARNING MARKINGS REQUIRED BY THE ADOPTED BUILDING CODE OR ANSI SAFETY STANDARD.

TACTILE SIGNAGE AT EXITS
14. A SIGN STATING EXIT IN RAISED CHARACTERS AND BRAILLE SHALL BE PROVIDED ADJACENT TO EACH DOOR TO AND AREA OF REFUGE PROVIDING DIRECT ACCESS TO A STAIRWAY, AN EXTERIOR AREA FOR ASSISTED RESCUE, AN EXIT STAIRWAY, AN EXIT RAMP, AN EXIT PASSAGEWAY AND THE EXIT DISCHARGE.




# STAIRWAYS AND HANDRAILS 9

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



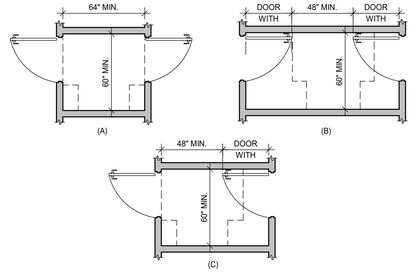

PROVIDE DETECTIBLE WARNING STRIP WIDTH MEASURED PERPENDICULAR TO PEDESRIAN FLOW FOR FULL WIDTH OF MARKED PATH. CURB RAMP OR CUT THROUGH AS FOLLOWS.

1. 24" WIDE AT MARKED CROSSINGS RAISED TO SAME LEVEL AS ADJACENT SIDEWALK
2. WHERE PROVIDED: 24" WIDE AT CURB RAMP 6" MIN - 8" MAX FROM CURB LINE
3. WHERE PROVIDED: 24" WIDE AT CUT THROUGH MEDIANS AND ISLANDS OR FULL LENGTH WHERE 48" OR LESS

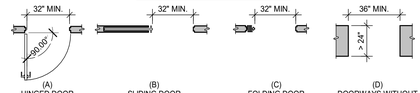
# DETECTABLE WARNINGS 10

SCALE: 3" = 1'-0"

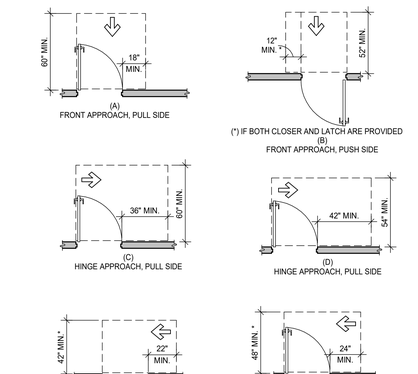
NOTES:
1. FLOOR OR GROUND SURFACE WITHIN REQUIRED MANEUVERING CLEARANCES AND LANDINGS ON BOTH SIDES OF DOORS SHALL COMPLY WITH [FLOOR OR GROUND SURFACES & CHANGES IN LEVEL] DETAIL AND SHALL HAVE A SLOPE NOT STEEPER THAN 1:48 IN ANY DIRECTION. VERTICAL CHANGES IN LEVEL ARE NOT PERMITTED.
2. THRESHOLDS, WHERE PROVIDED AT DOORWAYS, SHALL BE 1/2" MAX HIGH WITH A BEVELED PROFILE THAT COMPLIES WITH [FLOOR OR GROUND SURFACES & CHANGES IN LEVEL] DETAIL.
3. HANDLES, PULLS, LATCHES, LOCKS AND OTHER OPERABLE PARTS ON DOORS AND GATES SHALL HAVE A SHAPE THAT IS EASY TO GRASP WITH ONE HAND AND SHALL NOT REQUIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE.
4. HARDWARE OPERATION BY A FORWARD, PUSHING OR PULLING MOTION: 15 POUNDS (66.7N) MAXIMUM.
5. HARDWARE OPERATION BY A ROTATIONAL MOTION:28 INCH-POUNDS (315N-CM) MAXIMUM.
6. OPERABLE PARTS OF DOOR HARDWARE SHALL BE 34" MIN. AND 48" MAX. ABOVE THE FINISH FLOOR OR GROUND.
7. WHERE SLIDING DOORS ARE IN THE FULLY OPEN POSITION, OPERATING HARDWARE SHALL BE EXPOSED AND USABLE FROM BOTH SIDES.
8. DOOR AND GATE CLOSERS SHALL BE ADJUSTED SO THAT FROM AN OPEN POSITION OF 90-DEGREES THE TIME REQUIRED TO MOVE THE DOOR TO A POSITION OF 12-DEGREES FROM THE LATCH IS 5 SECONDS MIN.
9. DOOR AND GATE SPRING HINGES SHALL BE ADJUSTED SO THAT FROM THE OPEN POSITION OF 70-DEGREES THE DOOR OR GATE SHALL MOVE TO THE CLOSED POSITION IN 1.5 SECONDS MIN.
10. THE FORCE REQUIRED TO PUSH OR PULL A DOOR OR GATE OPEN SHALL BE AS FOLLOWS:
    - 10.1 INTERIOR HINGED DOORS AND GATES: 5 LBS (22.5 N) MAX.
    - 10.2 SLIDING OR FOLDING DOORS: 5 LBS (22.5 N) MAX.
      EXCEPTION: THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR OR GATE IN A CLOSED POSITION SHALL NOT APPLY TO PANIC HARDWARE, DELAYED EGRESS DEVICES OR FIRE-RATED HARDWARE.
    - 10.3 REQUIRED FIRE DOORS: THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 LBS (66.7N).
    - 10.4 EXTERIOR HINGED DOORS: 5 LBS (22.5 N) MAX.
11. SWINGING DOOR AND GATE SURFACES WITHIN 10" OF THE FINISH FLOOR OR GROUND MEASURED VERTICALLY SHALL HAVE A SMOOTH SURFACE ON THE PUSH SIDE EXTENDING THE FULL WIDTH OF THE DOOR OR GATE. PARTS CREATING HORIZONTAL OR VERTICAL JOINTS IN THESE SURFACE SHALL BE WITHIN 1/16" OF THE SAME PLANE AS THE OTHER AND BE FREE OF SHARP OR ABRASIVE EDGES. CAVITIES CREATED BY ADDED KICK PLATES SHALL BE CAPPED.
12. WHERE AUTOMATIC AND POWER-ASSISTED DOORS AND GATES WITHOUT STANDBY POWER ARE PART OF A MEANS OF EGRESS THE CLEAR WIDTH OF BREAK OUT OPENINGS AT SWINGING OR SLIDING DOORS AND GATES SHALL BE 32" MIN. WHEN OPERATED IN EMERGENCY MODE.



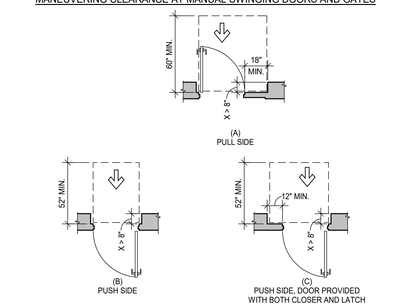

## DOORS OR GATES IN SERIES




CLEAR WIDTH OF DOORWAY




MANEUVERING CLEARANCE AT MANUAL SWINGING DOORS AND GATES




MANEUVERING CLEARANCE AT RECESSED DOORS AND GATES

# DOORS, DOORWAYS & GATES 5

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

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State of Illinois Design Firm Registration No. 184.004069

GRANT A BRANDENBURG
001-020842
LICENSED ARCHITECT
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ACCESSIBILITY DETAILS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

00 31 32 - GEOTECHNICAL DATA

1.1 INVESTIGATION

A. AN INVESTIGATION OF SUBSURFACE SOIL CONDITIONS AT THE BUILDING SITE WAS AUTHORIZED BY THE OWNER. A COPY IS ATTACHED AS AN APPENDIX TO THESE SPECIFICATIONS.
B. THE GEOTECHNICAL INVESTIGATION REPORT IS FOR INFORMATION ONLY, AND IS NOT A WARRANTY OF SUBSURFACE CONDITIONS.
C. THE REPORT IS MADE AVAILABLE FOR INFORMATION ONLY, AND IS NOT A CONTRACT DOCUMENT.
D. THE INFORMATION CONTAINED IN THE REPORT REPRESENTS SOIL CONDITIONS, RECOMMENDATIONS, AND GUIDELINES THAT WERE UTILIZED AS THE BASIS OF DESIGN FOR THE ENGINEERING OF THE EARTHWORK OPERATIONS, PAVING DESIGN, AND FOUNDATION DESIGN INDICATED IN THE CONTRACT DOCUMENTS. NO CHANGES IN THIS DESIGN CRITERIA WILL BE CONSIDERED OR PERMITTED.

1.2 RESPONSIBILITY

A. BIDDERS ARE EXPECTED TO EXAMINE THE SITE AND SUBSURFACE INVESTIGATION REPORTS AND THEN DECIDE FOR THEMSELVES THE CHARACTER OF THE MATERIALS TO BE ENCOUNTERED.
B. THE ARCHITECT AND OWNER ASSUME NO RESPONSIBILITY FOR VARIATIONS IN SUBSOIL CONDITIONS, QUALITY, OR STABILITY, OR FOR THE PRESENCE, LEVEL, AND EXTENT OF UNDERGROUND WATER.
C. THE ARCHITECT AND OWNER ASSUME NO RESPONSIBILITY FOR BIDDER'S INTERPRETATION OF DATA CONTAINED IN THE REPORT.

00 70 00 - GENERAL CONDITIONS

1.1 GENERAL CONDITIONS

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION", AIA DOCUMENT A201, SIXTEENTH EDITION, 2007, ARTICLES 1 THROUGH 15 INCLUSIVE, IS A PART OF THIS CONTRACT, AND IS AVAILABLE FOR REVIEW FROM THE ARCHITECT. THE GENERAL CONDITIONS AND MODIFICATIONS LISTED HEREINAFTER SHALL APPLY TO ALL VARIOUS SUBCONTRACTS AND SUB-SUBCONTRACTORS.
B. REFER TO DOCUMENT 008000 FOR SUPPLEMENTARY CONDITIONS.

01 31 00 - PROJECT MANAGEMENT AND COORDINATION

1.1 COORDINATION

A. COORDINATION: COORDINATE CONSTRUCTION OPERATIONS INCLUDED IN DIFFERENT SECTIONS OF THE SPECIFICATIONS TO ENSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATE CONSTRUCTION OPERATIONS, INCLUDED IN DIFFERENT SECTIONS, THAT DEPEND ON EACH OTHER FOR PROPER INSTALLATION, CONNECTION, AND OPERATION.
   1. SCHEDULE CONSTRUCTION OPERATIONS IN SEQUENCE REQUIRED TO OBTAIN THE BEST RESULTS WHERE INSTALLATION OF ONE PART OF THE WORK DEPENDS ON INSTALLATION OF OTHER COMPONENTS, BEFORE OR AFTER ITS OWN INSTALLATION.
   2. COORDINATE INSTALLATION OF DIFFERENT COMPONENTS TO ENSURE MAXIMUM PERFORMANCE AND ACCESSIBILITY FOR REQUIRED MAINTENANCE, SERVICE, AND REPAIR.
   3. MAKE ADEQUATE PROVISIONS TO ACCOMMODATE ITEMS SCHEDULED FOR LATER INSTALLATION.

1.2 REQUESTS FOR INTERPRETATION (RFI)

A. GENERAL: IMMEDIATELY ON DISCOVERY OF THE NEED FOR INTERPRETATION, CLARIFICATION, OR ADDITIONAL INFORMATION OF THE CONTRACT DOCUMENTS, CONTRACTOR SHALL PREPARE AND SUBMIT AN RFI. SEND RFIS DIRECTLY TO ARCHITECT VIA EMAIL OR POSTED TO PROJECT COLLABORATION SITE (IF ONE IS BEING UTILIZED). OWNER WILL TRANSMIT TO APPROPRIATE REVIEWER(S).
   1. ARCHITECT WILL RETURN RFIS SUBMITTED TO ARCHITECT BY OTHER ENTITIES CONTROLLED BY CONTRACTOR WITH NO RESPONSE.
   2. COORDINATE AND SUBMIT RFIS IN A PROMPT MANNER SO AS TO AVOID DELAYS IN CONTRACTOR'S WORK OR WORK OF INSTALLERS (I.E., SPECIALTY CONTRACTORS OR SUBCONTRACTORS).

1.3 PROJECT MEETINGS

A. GENERAL: SCHEDULE AND CONDUCT MEETINGS AND CONFERENCES AT PROJECT SITE, UNLESS OTHERWISE INDICATED.
   1. ATTENDEES: INFORM PARTICIPANTS AND OTHERS INVOLVED, AND INDIVIDUALS WHOSE PRESENCE IS REQUIRED, OF DATE AND TIME OF EACH MEETING. NOTIFY OWNER AND ARCHITECT OF SCHEDULED MEETING DATES AND TIMES.
   2. AGENDA: PREPARE THE MEETING AGENDA. DISTRIBUTE THE AGENDA TO ALL INVITED ATTENDEES.
   3. MINUTES: ENTITY RESPONSIBLE FOR CONDUCTING MEETING WILL RECORD SIGNIFICANT DISCUSSIONS AND AGREEMENTS ACHIEVED. DISTRIBUTE THE MEETING MINUTES TO EVERYONE CONCERNED, INCLUDING OWNER AND ARCHITECT, WITHIN THREE DAYS OF THE MEETING.
B. PRE-CONSTRUCTION CONFERENCE: SCHEDULE AND CONDUCT A PRE-CONSTRUCTION CONFERENCE BEFORE STARTING CONSTRUCTION, AT A TIME CONVENIENT TO OWNER AND ARCHITECT, BUT NO LATER THAN 15 DAYS AFTER EXECUTION OF THE AGREEMENT.
   1. CONDUCT THE CONFERENCE TO REVIEW RESPONSIBILITIES AND PERSONNEL ASSIGNMENTS.
   2. ATTENDEES: AUTHORIZED REPRESENTATIVES OF OWNER, OWNER'S COMMISSIONING AUTHORITY, CONSTRUCTION MANAGER, ARCHITECT, AND THEIR CONSULTANTS; CONTRACTOR AND SUPERINTENDENT; MAJOR SUBCONTRACTORS; SUPPLIERS; AND OTHER CONCERNED PARTIES SHALL ATTEND THE CONFERENCE. PARTICIPANTS AT THE CONFERENCE SHALL BE FAMILIAR WITH PROJECT AND AUTHORIZED TO CONCLUDE MATTERS RELATING TO THE WORK.
   3. MINUTES: ENTITY RESPONSIBLE FOR CONDUCTING MEETING WILL RECORD AND DISTRIBUTE MEETING MINUTES.
C. PRE-INSTALLATION CONFERENCES: CONDUCT A PRE-INSTALLATION CONFERENCE AT PROJECT SITE BEFORE EACH CONSTRUCTION ACTIVITY THAT REQUIRES COORDINATION WITH OTHER CONSTRUCTION.
   1. ATTENDEES: INSTALLER AND REPRESENTATIVES OF MANUFACTURERS AND FABRICATORS INVOLVED IN OR AFFECTED BY THE INSTALLATION AND ITS COORDINATION OR INTEGRATION WITH OTHER MATERIALS AND INSTALLATIONS THAT HAVE PRECEDED OR WILL FOLLOW, SHALL ATTEND THE MEETING. ADVISE ARCHITECT OF SCHEDULED MEETING DATES.
   2. RECORD SIGNIFICANT CONFERENCE DISCUSSIONS, AGREEMENTS, AND DISAGREEMENTS, INCLUDING REQUIRED CORRECTIVE MEASURES AND ACTIONS.
   3. REPORTING: DISTRIBUTE MINUTES OF THE MEETING TO EACH PARTY PRESENT AND TO OTHER PARTIES REQUIRING INFORMATION.
   4. DO NOT PROCEED WITH INSTALLATION IF THE CONFERENCE CANNOT BE SUCCESSFULLY CONCLUDED. INITIATE WHATEVER ACTIONS ARE NECESSARY TO RESOLVE IMPEDIMENTS TO PERFORMANCE OF THE WORK AND RECONVENE THE CONFERENCE AT EARLIEST FEASIBLE DATE.
D. PROGRESS MEETINGS: CONDUCT PROGRESS MEETINGS AT AGREED UPON INTERVALS.
   1. COORDINATE DATES OF MEETINGS WITH PREPARATION OF PAYMENT REQUESTS.
   2. ATTENDEES: IN ADDITION TO REPRESENTATIVES OF OWNER, OWNER'S COMMISSIONING AUTHORITY , CONSTRUCTION MANAGER, AND ARCHITECT, EACH CONTRACTOR, AND OTHER ENTITY CONCERNED WITH CURRENT PROGRESS OR INVOLVED IN PLANNING, COORDINATION, OR PERFORMANCE OF FUTURE ACTIVITIES SHALL BE REPRESENTED AT THESE MEETINGS. ALL PARTICIPANTS AT THE MEETING SHALL BE FAMILIAR WITH PROJECT AND AUTHORIZED TO CONCLUDE MATTERS RELATING TO THE WORK.
   3. MINUTES: ENTITY RESPONSIBLE FOR CONDUCTING THE MEETING WILL RECORD AND DISTRIBUTE THE MEETING MINUTES TO EACH PARTY PRESENT AND TO PARTIES REQUIRING INFORMATION.
      a. SCHEDULE UPDATING: REVISE CONTRACTOR'S CONSTRUCTION SCHEDULE AFTER EACH PROGRESS MEETING WHERE REVISIONS TO THE SCHEDULE HAVE BEEN MADE OR RECOGNIZED. ISSUE REVISED SCHEDULE CONCURRENTLY WITH THE REPORT OF EACH MEETING.
E. COORDINATION MEETINGS: CONDUCT PROJECT COORDINATION MEETINGS AT REGULAR INTERVALS. PROJECT COORDINATION MEETINGS ARE IN ADDITION TO SPECIFIC MEETINGS HELD FOR OTHER PURPOSES, SUCH AS PROGRESS MEETINGS AND PRE-INSTALLATION CONFERENCES.
   1. ATTENDEES: IN ADDITION TO REPRESENTATIVES OF OWNER AND ARCHITECT, EACH CONTRACTOR, SUBCONTRACTOR, SUPPLIER, AND OTHER ENTITY CONCERNED WITH CURRENT PROGRESS OR INVOLVED IN PLANNING, COORDINATION, OR PERFORMANCE OF FUTURE ACTIVITIES SHALL BE REPRESENTED AT THESE MEETINGS. ALL PARTICIPANTS AT THE MEETINGS SHALL BE FAMILIAR WITH PROJECT AND AUTHORIZED TO CONCLUDE MATTERS RELATING TO THE WORK.
   2. REPORTING: RECORD MEETING RESULTS AND DISTRIBUTE COPIES TO EVERYONE IN ATTENDANCE AND TO OTHERS AFFECTED BY DECISIONS OR ACTIONS RESULTING FROM EACH MEETING.

01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION

1.1 INFORMATIONAL SUBMITTALS

A. FORMAT FOR SUBMITTALS: ELECTRONICALLY SUBMIT REQUIRED SUBMITTAL DOCUMENTS IN PORTABLE DOCUMENT FORMAT (I.E., PDFS)
B. CONTRACTOR'S CONSTRUCTION SCHEDULE: INITIAL SCHEDULE, OF SIZE REQUIRED TO DISPLAY ENTIRE SCHEDULE FOR ENTIRE CONSTRUCTION PERIOD.

1.2 COORDINATION

A. COORDINATE PREPARATION AND PROCESSING OF SCHEDULES AND REPORTS WITH PERFORMANCE OF CONSTRUCTION ACTIVITIES AND WITH SCHEDULING AND REPORTING OF SEPARATE CONTRACTORS.

1.3 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. TIME FRAME: EXTEND SCHEDULE FROM DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK TO DATE OF SUBSTANTIAL COMPLETION.
   1. CONTRACT COMPLETION DATE SHALL NOT BE CHANGED BY SUBMISSION OF A SCHEDULE THAT SHOWS AN EARLY COMPLETION DATE, UNLESS SPECIFICALLY AUTHORIZED BY CHANGE ORDER.
B. ACTIVITIES: TREAT EACH STORY OR SEPARATE AREA AS A SEPARATE NUMBERED ACTIVITY FOR EACH PRINCIPAL ELEMENT OF THE WORK.
C. MILESTONES: INCLUDE MILESTONES INDICATED IN THE CONTRACT DOCUMENTS IN SCHEDULE, INCLUDING, BUT NOT LIMITED TO, THE NOTICE TO PROCEED, SUBSTANTIAL COMPLETION, AND FINAL COMPLETION.
D. COMPUTER SCHEDULING SOFTWARE: PREPARE SCHEDULES USING CURRENT VERSION OF A PROGRAM THAT HAS BEEN DEVELOPED SPECIFICALLY TO MANAGE CONSTRUCTION SCHEDULES.

1.4 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. A. FORMAT:
   1. SUBMIT A HORIZONTAL BAR CHART WITH SEPARATE LINE FOR EACH MAJOR SECTION OF WORK IDENTIFYING FIRST WORK DAY OF EACH WEEK.
   2. SEQUENCE OF LISTINGS: THE CHRONOLOGICAL ORDER OF THE START OF EACH ITEM OF WORK.
   3. SCALE AND SPACING: TO PROVIDE SPACE FOR NOTATIONS AND REVISIONS.
   4. SHEET SIZE: MINIMUM 11 BY 17 INCHES.
B. CONTENT:
   1. SHOW COMPLETE SEQUENCE OF CONSTRUCTION BY ACTIVITY, WITH DATES FOR BEGINNING AND COMPLETION OF EACH ELEMENT OF CONSTRUCTION.
   2. IDENTIFY EACH ITEM BY MAJOR SPECIFICATION SECTION NUMBER.
   3. INDICATE THE EARLY AND LATE START, EARLY AND LATE FINISH, FLOAT DATES, AND DURATION.
   4. IDENTIFY WORK OF SEPARATE STAGES OR SEPARATE FLOORS OR BUILDINGS, AND OTHER LOGICALLY GROUPED ACTIVITIES.
   5. PROVIDE SUB_ SCHEDULES TO DEFINE CRITICAL PORTIONS OF ENTIRE SCHEDULE.

01 32 00 - CONSTRUCTION PROGRESS DOCUMENTATION (CONT)

   6. SHOW ACCUMULATED PERCENTAGE OF COMPLETION OF EACH ITEM, AND TOTAL PERCENTAGE OF WORK COMPLETED, AS OF THE FIRST DAY OF EACH MONTH.
   7. INDICATE SUBMITTAL DATES REQUIRED FOR SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND PRODUCT DELIVERY DATES, INCLUDING THOSE FURNISHED BY OWNER.
   8. SHOW DELIVERY DATES FOR OWNER FURNISHED PRODUCTS.
   9. COORDINATE CONTENT SCHEDULE OF VALUES SPECIFIED IN SECTION 01290.
C. REVISIONS TO SCHEDULES:
   1. INDICATE PROGRESS OF EACH ACTIVITY TO DATE OF SUBMITTAL, AND PROJECTED COMPLETION DATE OF EACH ACTIVITY.
   2. IDENTIFY ACTIVITIES MODIFIED SINCE PREVIOUS SUBMITTAL, MAJOR CHANGES IN SCOPE, AND OTHER IDENTIFICATION OF CHANGES.
   3. PROVIDE NARRATIVE REPORT TO DEFINE PROBLEM AREAS, ANTICIPATED DELAYS, AND IMPACT ON SCHEDULE. REPORT CORRECTIVE ACTION TAKEN, OR PROPOSED, AND ITS EFFECT.
   4. UPDATE REGULARLY.

01 33 00 - SUBMITTAL PROCEDURES

1.1 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. COORDINATION: COORDINATE PREPARATION AND PROCESSING OF SUBMITTALS WITH PERFORMANCE OF CONSTRUCTION ACTIVITIES.
   1. COORDINATE SUBMITTAL WITH FABRICATION, PURCHASING, TESTING, DELIVERY, OTHER SUBMITTALS, AND RELATED ACTIVITIES THAT REQUIRE SEQUENTIAL ACTIVITY.
   2. SUBMIT ALL SUBMITTAL ITEMS REQUIRED FOR EACH SPECIFICATION SECTION CONCURRENTLY UNLESS PARTIAL SUBMITTALS FOR PORTIONS OF THE WORK ARE APPROVED BY ARCHITECT.
   3. COORDINATE TRANSMITTAL OF DIFFERENT TYPES OF SUBMITTALS FOR RELATED PARTS OF THE WORK SO PROCESSING WILL NOT BE DELAYED BECAUSE OF NEED TO REVIEW SUBMITTALS CONCURRENTLY FOR COORDINATION.
   4. ARCHITECT RESERVES THE RIGHT TO WITHHOLD ACTION ON A SUBMITTAL REQUIRING COORDINATION WITH OTHER SUBMITTALS UNTIL RELATED SUBMITTALS ARE RECEIVED.
B. IDENTIFICATION AND INFORMATION: IDENTIFY AND INCORPORATE INFORMATION IN EACH ELECTRONIC SUBMITTAL FILE AS FOLLOWS:
   1. ASSEMBLE COMPLETE SUBMITTAL PACKAGE INTO A SINGLE INDEXED FILE WITH LINKS ENABLING NAVIGATION TO EACH ITEM.
   2. NAME FILE WITH SUBMITTAL NUMBER OR OTHER UNIQUE IDENTIFIER, INCLUDING REVISION IDENTIFIER.
      a. FOR TYPICAL PROJECTS THAT DO NOT REQUIRE SEPARATE SUBMITTALS FOR DIFFERENT BUILDINGS OR SUB THE SUBMITTAL FILE NAME SHALL USE SPECIFICATION SECTION NUMBER FOLLOWED BY A DASH AND THEN A SEQUENTIAL NUMBER. RESUBMITTALS SHALL INCLUDE A NUMERICAL SUFFIX AFTER ANOTHER DASH. INCLUDE BRIEF DESCRIPTION OF SUBMITTAL AFTER SEQUENTIAL NUMBER OR RESUBMITTAL SUFFIX. (E.G., 061000-001-0 ROUGH CARPENTRY).
      b. FOR COMPLEX PROJECTS THAT REQUIRE PROJECT IDENTIFIER FOR SEPARATE BUILDINGS WITHIN A PROJECT OR REQUIRE INDIVIDUAL SUBMITTALS TO BE SUBMITTED BY MULTIPLE SUBCONTRACTORS, THE SUBMITTAL FILE NAME SHALL FOLLOW THE FOLLOWING SPECIFICATION SECTION NUMBER FOLLOWED BY A DECIMAL POINT AND THEN A SEQUENTIAL NUMBER. PROVIDE MEANS FOR INSERTION TO PERMANENTLY RECORD CONTRACTOR'S REVIEW AND APPROVAL MARKINGS AND ACTION TAKEN BY ARCHITECT.
C. OPTIONS: IDENTIFY OPTIONS REQUIRING SELECTION BY THE ARCHITECT.
D. DEVIATIONS: IDENTIFY DEVIATIONS FROM THE CONTRACT DOCUMENTS ON SUBMITTALS.
E. DISTRIBUTION: FURNISH COPIES OF FINAL SUBMITTALS TO MANUFACTURERS, SUBCONTRACTORS, SUPPLIERS, FABRICATORS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHERS AS NECESSARY FOR PERFORMANCE OF CONSTRUCTION ACTIVITIES. SHOW DISTRIBUTION ON TRANSMITTAL FORMS.
F. USE FOR CONSTRUCTION: USE ONLY FINAL SUBMITTALS THAT ARE MARKED WITH "REVIEWED", "FURNISH AS CORRECTED" NOTATION FROM ARCHITECT'S ACTION STAMP, OR WITH APPROVAL NOTATION FROM ALTERNATE REVIEWER.

1.2 SUBMITTAL PROCEDURES

A. GENERAL SUBMITTAL PROCEDURE REQUIREMENTS: PREPARE AND SUBMIT SUBMITTALS REQUIRED BY INDIVIDUAL SPECIFICATION SECTIONS. TYPES OF SUBMITTALS ARE INDICATED IN INDIVIDUAL SPECIFICATION SECTIONS.
   1. EMAIL OR UPLOAD ELECTRONIC SUBMITTALS AS PDF ELECTRONIC FILES DIRECTLY TO ARCHITECT.
      a. ARCHITECT WILL RETURN ANNOTATED FILE. ANNOTATE AND RETAIN ONE COPY OF FILE AS AN ELECTRONIC PROJECT RECORD DOCUMENT FILE.
   2. ACTION SUBMITTALS: FOR LARGE FORMAT DRAWINGS AND SUBMITTALS (LARGER THAN 11 X 17), SUBMIT PDF FILE PLUS 2 HARD COPIES. FOR SMALLER FORMAT DRAWINGS AND SUBMITTALS (11X17 OR LESS), PROVIDE ONLY PDF FILE. ARCHITECT WILL RETURN ONLY THE MARKED-UP PDF.
B. PRODUCT DATA: COLLECT INFORMATION INTO A SINGLE SUBMITTAL FOR EACH ELEMENT OF CONSTRUCTION AND TYPE OF PRODUCT OR EQUIPMENT.
   1. IF INFORMATION MUST BE SPECIALLY PREPARED FOR SUBMITTAL BECAUSE STANDARD PUBLISHED DATA ARE NOT SUITABLE FOR USE, SUBMIT AS SHOP DRAWINGS, NOT AS PRODUCT DATA.
   2. MARK EACH COPY OF EACH SUBMITTAL TO SHOW WHICH PRODUCTS AND OPTIONS ARE APPLICABLE.
   3. SUBMIT PRODUCT DATA IN THE FOLLOWING FORMAT:
      a. PDF ELECTRONIC FILE.
C. SHOP DRAWINGS: PREPARE PROJECT-SPECIFIC INFORMATION, DRAWN ACCURATELY TO SCALE. DO NOT BASE SHOP DRAWINGS ON REPRODUCTIONS OF THE CONTRACT DOCUMENTS OR STANDARD PRINTED DATA
   1. PREPARATION: FULLY ILLUSTRATE REQUIREMENTS IN THE CONTRACT DOCUMENTS.
   2. SHEET SIZE: FOR SMALL FORMAT DRAWINGS AND SUBMITTALS (LARGER THAN 11 X 17), SUBMIT SHOP DRAWINGS ON SHEETS AT LEAST 8-1/2 BY 11 INCHES BUT NO LARGER THAN 30 BY 42 INCHES SUBMIT SHOP DRAWINGS IN THE FOLLOWING FORMAT:
      a. FOR LARGE FORMAT DRAWINGS AND SUBMITTALS (LARGER THAN 11 X 17), SUBMIT PDF FILE PLUS 2 HARD COPIES. FOR SMALLER FORMAT DRAWINGS AND SUBMITTALS (11X17 OR LESS), PROVIDE ONLY PDF FILE. ARCHITECT WILL RETURN ONLY THE MARKED-UP PDF.
D. SAMPLES: SUBMIT SAMPLES FOR REVIEW OF KIND, COLOR, PATTERN, AND TEXTURE FOR A CHECK OF THESE CHARACTERISTICS WITH OTHER ELEMENTS AND FOR A COMPARISON OF THESE CHARACTERISTICS BETWEEN SUBMITTAL AND ACTUAL COMPONENT AS DELIVERED AND INSTALLED.
E. TRANSMIT SAMPLES THAT CONTAIN MULTIPLE, RELATED COMPONENTS SUCH AS ACCESSORIES TOGETHER IN ONE SUBMITTAL PACKAGE.
F. MANUFACTURER CERTIFICATES: SUBMIT WRITTEN STATEMENTS ON MANUFACTURER'S LETTERHEAD CERTIFYING THAT MANUFACTURER COMPLIES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS. INCLUDE EVIDENCE OF MANUFACTURING EXPERIENCE WHERE REQUIRED.
G. PRODUCT CERTIFICATES: SUBMIT WRITTEN STATEMENTS ON MANUFACTURER'S LETTERHEAD CERTIFYING THAT PRODUCT COMPLIES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS.
H. MATERIAL CERTIFICATES: SUBMIT WRITTEN STATEMENTS ON MANUFACTURER'S LETTERHEAD CERTIFYING THAT MATERIAL COMPLIES WITH REQUIREMENTS IN THE CONTRACT DOCUMENTS.

1.3 CONTRACTOR'S REVIEW

A. ACTION AND INFORMATIONAL SUBMITTALS: REVIEW EACH SUBMITTAL AND CHECK FOR COORDINATION WITH OTHER WORK OF THE CONTRACT AND FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS. NOTE CORRECTIONS AND FIELD DIMENSIONS. MARK WITH APPROVAL STAMP BEFORE SUBMITTING TO ARCHITECT.
B. PROJECT CLOSEOUT AND MAINTENANCE/MATERIAL SUBMITTALS: REFER TO REQUIREMENTS IN DIVISION 01 SECTION "CLOSEOUT PROCEDURES".
C. APPROVAL STAMP: STAMP EACH SUBMITTAL WITH A UNIFORM, APPROVAL STAMP. INCLUDE PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION TITLE AND NUMBER, NAME OF REVIEWER, DATE OF CONTRACTOR'S APPROVAL, AND STATEMENT CERTIFYING THAT SUBMITTAL HAS BEEN REVIEWED, CHECKED, AND APPROVED FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.

1.4 ARCHITECT'S ACTION

A. GENERAL: ARCHITECT WILL NOT REVIEW SUBMITTALS THAT DO NOT BEAR CONTRACTOR'S APPROVAL STAMP AND WILL RETURN THEM WITHOUT ACTION.
B. ACTION SUBMITTALS: ARCHITECT WILL REVIEW EACH SUBMITTAL, MAKE MARKS TO INDICATE CORRECTIONS OR MODIFICATIONS REQUIRED, AND RETURN IT. ARCHITECT WILL STAMP EACH SUBMITTAL WITH AN ACTION STAMP AND WILL MARK STAMP APPROPRIATELY TO INDICATE ACTION, AS FOLLOWS:
   1. NO EXCEPTIONS TAKEN
   2. MAKE CORRECTIONS NOTED
   3. FOR REVIEW ONLY
   4. REVISE AND RESUBMIT
   5. REJECTED
   6. SUBMIT SPECIFIED ITEM.
C. INFORMATIONAL SUBMITTALS: ARCHITECT WILL REVIEW EACH SUBMITTAL AND WILL NOT RETURN IT, OR WILL RETURN IT IF IT DOES NOT COMPLY WITH REQUIREMENTS. ARCHITECT WILL FORWARD EACH SUBMITTAL TO APPROPRIATE PARTY.
D. PARTIAL SUBMITTALS PREPARED FOR A PORTION OF THE WORK WILL BE REVIEWED WHEN USE OF PARTIAL SUBMITTALS HAS RECEIVED PRIOR APPROVAL FROM ARCHITECT.
E. INCOMPLETE SUBMITTALS ARE NOT ACCEPTABLE, WILL BE CONSIDERED NON-RESPONSIVE, AND WILL BE RETURNED WITHOUT REVIEW.
F. SUBMITTALS NOT REQUIRED BY THE CONTRACT DOCUMENTS MAY NOT BE REVIEWED AND MAY BE DISCARDED.

01 40 00 - QUALITY REQUIREMENTS

1.1 CONFLICTING REQUIREMENTS

A. REFERENCED STANDARDS: IF COMPLIANCE WITH TWO OR MORE STANDARDS IS SPECIFIED AND THE STANDARDS ESTABLISH DIFFERENT OR CONFLICTING REQUIREMENTS FOR MINIMUM QUANTITIES OR QUALITY LEVELS, COMPLY WITH THE MOST STRINGENT REQUIREMENT. REFER CONFLICTING REQUIREMENTS THAT ARE DIFFERENT, BUT APPARENTLY EQUAL, TO ARCHITECT FOR A DECISION BEFORE PROCEEDING.
B. MINIMUM QUANTITY OR QUALITY LEVELS: THE QUANTITY OR QUALITY LEVEL SHOWN OR SPECIFIED SHALL BE THE MINIMUM PROVIDED OR PERFORMED. THE ACTUAL INSTALLATION MAY COMPLY EXACTLY WITH THE MINIMUM QUANTITY OR QUALITY SPECIFIED, OR IT MAY EXCEED THE MINIMUM WITHIN REASONABLE LIMITS. TO COMPLY WITH THESE REQUIREMENTS, INDICATED NUMERIC VALUES ARE MINIMUM OR MAXIMUM, AS APPROPRIATE, FOR THE CONTEXT OF REQUIREMENTS. REFER UNCERTAINTIES TO ARCHITECT FOR A DECISION BEFORE PROCEEDING.

1.2 QUALITY ASSURANCE

A. GENERAL: QUALIFICATIONS PARAGRAPHS IN THIS ARTICLE ESTABLISH THE MINIMUM QUALIFICATION LEVELS REQUIRED; INDIVIDUAL SPECIFICATION SECTIONS SPECIFY ADDITIONAL REQUIREMENTS.
B. MANUFACTURER QUALIFICATIONS: A FIRM EXPERIENCED IN MANUFACTURING PRODUCTS OR SYSTEMS SIMILAR TO THOSE INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS.
C. FABRICATOR QUALIFICATIONS: A FIRM EXPERIENCED IN PRODUCING PRODUCTS SIMILAR TO THOSE INDICATED FOR THIS PROJECT AND WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE, AS WELL AS SUFFICIENT PRODUCTION CAPACITY TO PRODUCE REQUIRED UNITS.
D. INSTALLER QUALIFICATIONS: A FIRM OR INDIVIDUAL EXPERIENCED IN INSTALLING, ERECTING, OR ASSEMBLING WORK SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT, WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.
E. TESTING AGENCY QUALIFICATIONS: AN NRTL, AN NVLAP, OR AN INDEPENDENT AGENCY WITH THE EXPERIENCE AND CAPABILITY TO CONDUCT TESTING AND INSPECTING INDICATED, AS DOCUMENTED ACCORDING TO ASTM E 329; AND WITH ADDITIONAL QUALIFICATIONS SPECIFIED IN INDIVIDUAL SECTIONS; AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION, THAT IS ACCEPTABLE TO AUTHORITIES.

01 40 00 - QUALITY REQUIREMENTS (CONT)

F. MANUFACTURER'S TECHNICAL REPRESENTATIVE QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE OF MANUFACTURER WHO IS TRAINED AND APPROVED BY MANUFACTURER TO OBSERVE AND INSPECT INSTALLATION OF MANUFACTURER'S PRODUCTS THAT ARE SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THOSE INDICATED FOR THIS PROJECT.
G. FACTORY-AUTHORIZED SERVICE REPRESENTATIVE QUALIFICATIONS: AN AUTHORIZED REPRESENTATIVE OF MANUFACTURER WHO IS TRAINED AND APPROVED BY MANUFACTURER TO INSPECT INSTALLATION OF MANUFACTURER'S PRODUCTS THAT ARE SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THOSE INDICATED FOR THIS PROJECT.
H. MOCKUPS: BEFORE INSTALLING PORTIONS OF THE WORK REQUIRING MOCKUPS, BUILD MOCKUPS FOR EACH FORM OF CONSTRUCTION AND FINISH INDICATED IN THE TECHNICAL SPECIFICATIONS.
   1. BUILD MOCKUPS IN LOCATION AND OF SIZE INDICATED OR, IF NOT INDICATED, AS DIRECTED BY ARCHITECT.
   2. DEMONSTRATE THE PROPOSED RANGE OF AESTHETIC EFFECTS AND WORKMANSHIP.
   3. OBTAIN ARCHITECT'S APPROVAL OF MOCKUPS BEFORE STARTING WORK, FABRICATION, OR CONSTRUCTION.
   4. MAINTAIN MOCKUPS DURING CONSTRUCTION IN AN UNDISTURBED CONDITION AS A STANDARD FOR JUDGING THE COMPLETED WORK.
   5. DEMOLISH AND REMOVE MOCKUPS WHEN DIRECTED, UNLESS OTHERWISE INDICATED.

1.3 QUALITY CONTROL

A. CONTRACTOR RESPONSIBILITIES: TESTS AND INSPECTIONS NOT EXPLICITLY ASSIGNED TO OWNER ARE CONTRACTOR'S RESPONSIBILITY. PERFORM ADDITIONAL QUALITY-CONTROL ACTIVITIES REQUIRED TO VERIFY THAT THE WORK COMPLIES WITH REQUIREMENTS, WHETHER SPECIFIED OR NOT.
   1. UNLESS OTHERWISE INDICATED, PROVIDE QUALITY-CONTROL SERVICES SPECIFIED AND THOSE REQUIRED BY AUTHORITIES HAVING JURISDICTION. PERFORM QUALITY-CONTROL SERVICES REQUIRED OF CONTRACTOR BY AUTHORITIES HAVING JURISDICTION, WHETHER SPECIFIED OR NOT.
   2. WHERE SUBMITTALS ARE INDICATED AS CONTRACTOR'S RESPONSIBILITY, ENGAGE A QUALIFIED TESTING AGENCY TO PERFORM THESE QUALITY-CONTROL SERVICES.
      a. CONTRACTOR SHALL NOT EMPLOY SAME ENTITY ENGAGED BY OWNER, UNLESS AGREED TO IN WRITING BY OWNER.
   3. NOTIFY TESTING AGENCIES AT LEAST 24 HOURS IN ADVANCE OF TIME WHEN WORK THAT REQUIRES TESTING OR INSPECTING WILL BE PERFORMED.
   4. WHERE QUALITY-CONTROL SERVICES ARE INDICATED AS CONTRACTOR'S RESPONSIBILITY, SUBMIT A CERTIFIED WRITTEN REPORT, IN DUPLICATE, OF EACH QUALITY-CONTROL SERVICE.
   5. TESTING AND INSPECTING REQUESTED BY CONTRACTOR AND NOT REQUIRED BY THE CONTRACT DOCUMENTS ARE CONTRACTOR'S RESPONSIBILITY.
   6. SUBMIT ADDITIONAL COPIES OF EACH WRITTEN REPORT DIRECTLY TO AUTHORITIES HAVING JURISDICTION, WHEN THEY SO DIRECT.
B. MANUFACTURER'S FIELD SERVICES: WHERE INDICATED, ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT FIELD-ASSEMBLED COMPONENTS AND EQUIPMENT INSTALLATION, INCLUDING SERVICE CONNECTIONS. REPORT RESULTS IN WRITING AS SPECIFIED IN DIVISION 01 SECTION "SUBMITTAL PROCEDURES."
C. MANUFACTURER'S TECHNICAL SERVICES: WHERE INDICATED, ENGAGE A MANUFACTURER'S TECHNICAL REPRESENTATIVE TO OBSERVE AND INSPECT THE WORK. MANUFACTURER'S TECHNICAL REPRESENTATIVE'S SERVICES INCLUDE THE FOLLOWING: PRE-INSTALLATION CONFERENCES, EXAMINATION OF SUBSTRATES AND CONDITIONS, VERIFICATION OF MATERIALS, OBSERVATION OF INSTALLER ACTIVITIES, INSPECTION OF COMPLETED PORTIONS OF THE WORK, AND SUBMITTAL OF WRITTEN REPORTS.
D. TESTING AGENCY DUTIES: COOPERATE WITH ARCHITECT AND CONTRACTOR IN PERFORMANCE OF DUTIES. PROVIDE QUALIFIED PERSONNEL TO PERFORM REQUIRED TESTS AND INSPECTIONS.
   1. NOTIFY ARCHITECT AND CONTRACTOR PROMPTLY OF IRREGULARITIES OR DEFICIENCIES OBSERVED IN THE WORK DURING PERFORMANCE OF ITS SERVICES.
   2. DETERMINE THE LOCATION FROM WHICH TEST SAMPLES WILL BE TAKEN AND IN WHICH IN-SITU TESTS ARE CONDUCTED.
   3. CONDUCT AND INTERPRET TESTS AND INSPECTIONS AND STATE IN EACH REPORT WHETHER TESTED AND INSPECTED WOR

01 70 00 - EXECUTION AND CLOSEOUT REQUIREMENTS (CONT.)

1.13 FINAL CLEANING

A. EXECUTE FINAL CLEANING PRIOR TO FINAL PROJECT ASSESSMENT.
1. CLEAN AREAS TO BE OCCUPIED BY OWNER PRIOR TO FINAL COMPLETION BEFORE OWNER OCCUPANCY.
B. USE CLEANING MATERIALS THAT ARE NONHAZARDOUS.
C. CLEAN INTERIOR AND EXTERIOR GLASS, SURFACES EXPOSED TO VIEW; REMOVE TEMPORARY LABELS, STAINS AND FOREIGN SUBSTANCES, POLISH TRANSPARENT AND GLOSSY SURFACES, VACUUM CARPETED AND SOFT SURFACES.
D. REMOVE ALL LABELS THAT ARE NOT PERMANENT. DO NOT PAINT OR OTHERWISE COVER FIRE TEST LABELS OR NAMEPLATES ON MECHANICAL AND ELECTRICAL EQUIPMENT.
E. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED.
F. CLEAN FILTERS OF OPERATING EQUIPMENT.
G. CLEAN DEBRIS FROM ROOFS, GUTTERS, DOWNSPOUTS, AND DRAINAGE SYSTEMS.
H. CLEAN SITE; SWEEP PAVED AREAS, RAKE CLEAN LANDSCAPED SURFACES.
I. REMOVE WASTE, SURPLUS MATERIALS, TRASH/RUBBISH, AND CONSTRUCTION FACILITIES FROM THE SITE; DISPOSE OF IN LEGAL MANNER; DO NOT BURN OR BURY.

1.14 CLOSEOUT PROCEDURES

A. MAKE SUBMITTALS THAT ARE REQUIRED BY GOVERNING OR OTHER AUTHORITIES.
1. PROVIDE COPIES TO ARCHITECT.
B. ACCOMPANY PROJECT COORDINATOR ON PRELIMINARY INSPECTION TO DETERMINE ITEMS TO BE LISTED FOR COMPLETION OR CORRECTION IN CONTRACTOR'S NOTICE OF SUBSTANTIAL COMPLETION.
C. NOTIFY ARCHITECT WHEN WORK IS CONSIDERED READY FOR SUBSTANTIAL COMPLETION.
D. SUBMIT WRITTEN CERTIFICATION THAT CONTRACT DOCUMENTS HAVE BEEN REVIEWED, WORK HAS BEEN INSPECTED, AND THAT WORK IS COMPLETE IN ACCORDANCE WITH CONTRACT DOCUMENTS AND READY FOR ARCHITECT'S REVIEW.
E. CORRECT ITEMS OF WORK LISTED IN EXECUTED CERTIFICATES OF SUBSTANTIAL COMPLETION AND COMPLY WITH REQUIREMENTS FOR ACCESS TO OWNER-OCCUPIED AREAS.
F. NOTIFY ARCHITECT WHEN WORK IS CONSIDERED FINALLY COMPLETE.
G. COMPLETE ITEMS OF WORK DETERMINED BY ARCHITECT'S FINAL INSPECTION.

1.15 MAINTENANCE

A. PROVIDE SERVICE AND MAINTENANCE OF COMPONENTS INDICATED IN SPECIFICATION SECTIONS.
B. MAINTENANCE PERIOD: AS INDICATED IN SPECIFICATION SECTIONS OR, IF NOT INDICATED, NOT LESS THAN ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OR THE LENGTH OF THE SPECIFIED WARRANTY, WHICHEVER IS LONGEST.
C. EXAMINE SYSTEM COMPONENTS AT A FREQUENCY CONSISTENT WITH RELIABLE OPERATION. CLEAN, ADJUST, AND LUBRICATE AS REQUIRED.
D. INCLUDE SYSTEMATIC EXAMINATION, ADJUSTMENT, AND LUBRICATION OF COMPONENTS. REPAIR OR REPLACE PARTS WHENEVER REQUIRED. USE PARTS PRODUCED BY THE MANUFACTURER OF THE ORIGINAL COMPONENT.
E. MAINTENANCE SERVICE SHALL NOT BE ASSIGNED OR TRANSFERRED TO ANY AGENT OR SUBCONTRACTOR WITHOUT PRIOR WRITTEN CONSENT OF THE OWNER.

05 40 00 - COLD-FORMED METAL FRAMING

1.1 SUBMITTALS

A. PRODUCT DATA: PROVIDE DATA ON STANDARD FRAMING MEMBERS; DESCRIBE MATERIALS AND FINISH, PRODUCT CRITERIA, AND LIMITATIONS.
B. SHOP DRAWINGS: INDICATE COMPONENT DETAILS, FRAMED OPENINGS, BEARING, ANCHORAGE, LOADING, WELDS, AND TYPE AND LOCATION OF FASTENERS, AND ACCESSORIES OR ITEMS REQUIRED OF RELATED WORK.
1. INDICATE STUD AND CEILING JOIST LAYOUT.
2. DESCRIBE METHOD FOR SECURING STUDS TO TRACKS AND FOR BOLTED FRAMING CONNECTIONS.
3. PROVIDE DESIGN ENGINEER'S STAMP ON SHOP DRAWINGS.

1.2 QUALITY ASSURANCE

A. DESIGNER QUALIFICATIONS: DESIGN FRAMING SYSTEM UNDER DIRECT SUPERVISION OF A PROFESSIONAL STRUCTURAL ENGINEER EXPERIENCED IN DESIGN OF THIS WORK AND LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED.

1.3 MANUFACTURERS

A. METAL FRAMING, CONNECTORS, AND ACCESSORIES:
1. CLARKWESTERN DIETRICH BUILDING SYSTEMS LLC: WWW.CLARKDIETRICH.COM.
2. MARINO: WWW.MARINOWARE.COM.
3. HI STEEL NETWORK, INC: WWW.STEELNETWORK.COM.

1.4 FRAMING SYSTEM

A. PROVIDE PRIMARY AND SECONDARY FRAMING MEMBERS, BRIDGING, BRACING, PLATES, GUSSETS, CLIPS, FITTINGS, REINFORCEMENT, AND FASTENINGS AS REQUIRED TO PROVIDE A COMPLETE FRAMING SYSTEM.
B. DESIGN CRITERIA: PROVIDE COMPLETED FRAMING SYSTEM HAVING THE FOLLOWING CHARACTERISTICS:
1. DESIGN: CALCULATE STRUCTURAL CHARACTERISTICS OF COLD-FORMED STEEL FRAMING MEMBERS ACCORDING TO NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS.
2. STRUCTURAL PERFORMANCE: DESIGN, ENGINEER, FABRICATE, AND ERECT TO WITHSTAND SPECIFIED DESIGN LOADS FOR PROJECT CONDITIONS WITH REQUIRED CRITERIA.
3. DESIGN LOADS: IN ACCORDANCE WITH APPLICABLE CODES.
4. LIVE LOAD DEFLECTION MEETING THE FOLLOWING, UNLESS OTHERWISE INDICATED:
a. EXTERIOR WALLS: MAXIMUM HORIZONTAL DEFLECTION UNDER WIND LOAD OF L/600 OF SPAN FOR MASONRY, AND L/240 OF SPAN FOR METAL WALL PANELS AND EIFS.
5. ABLE TO TOLERATE MOVEMENT OF COMPONENTS WITHOUT DAMAGE, FAILURE OF JOINT SEALS, UNDUE STRESS ON FASTENERS, OR OTHER DETRIMENTAL EFFECTS WHEN SUBJECT TO SEASONAL OR CYCLIC DAY/NIGHT TEMPERATURE RANGES.
6. ABLE TO ACCOMMODATE CONSTRUCTION TOLERANCES, DEFLECTION OF BUILDING STRUCTURAL MEMBERS, AND CLEARANCES OF INTENDED OPENINGS.

1.5 FRAMING MATERIALS

A. STUDS AND TRACK: ASTM C955; STUDS FORMED TO CHANNEL "C", OR "SIGMA" SHAPE WITH PUNCHED WEB; U-SHAPED TRACK IN MATCHING NOMINAL WIDTH AND COMPATIBLE HEIGHT.
1. GAGE AND DEPTH: AS REQUIRED TO MEET SPECIFIED PERFORMANCE LEVELS, BUT NOT LESS THAN 16 GAGE AT 16 INCHES ON CENTER.
2. GALVANIZED IN ACCORDANCE WITH ASTM A653 G90 COATING.
3. PROVIDE COMPONENTS FABRICATED FROM ASTM A1008/A1008M, DESIGNATION SS STEEL.

B. CANOPY FRAMING
1. MANUFACTURER'S STANDARD C-SHAPED STEEL SECTIONS, OF WEB DEPTHS INDICATED, UNPUNCHED, WITH STIFFENED FLANGES, AND AS FOLLOWS:
a. MINIMUM BASE-METAL THICKNESS: AS REQUIRED BY DESIGN.
b. FLANGE WIDTH: 1-5/8 INCHES, MINIMUM.
c. SECTION PROPERTIES: AS REQUIRED BY DESIGN.
2. BUILT-UP MEMBERS: BUILT-UP MEMBERS OF MANUFACTURER'S STANDARD C-SHAPED STEEL SECTION, WITH STIFFENED FLANGES, NESTED INTO A U-SHAPED STEEL SECTION JOIST TRACK, WITH UNSTIFFENED FLANGES; UNPUNCHED; OF WEB DEPTHS INDICATED; AND AS FOLLOWS:
a. MINIMUM BASE-METAL THICKNESS: AS REQUIRED BY DESIGN.
b. FLANGE WIDTH: 1-5/8 INCHES, MINIMUM.

C. FRAMING CONNECTORS: FACTORY-MADE FORMED STEEL SHEET, ASTM A653 SS GRADE 50, WITH G60 HOT DIPPED GALVANIZED COATING AND FACTORY PUNCHED HOLES.
1. STRUCTURAL PERFORMANCE: MAINTAIN LOAD AND MOVEMENT CAPACITY REQUIRED BY APPLICABLE CODE, WHEN EVALUATED IN ACCORDANCE WITH AISI NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS; MINIMUM 16 GAGE, 0.06 INCH THICKNESS.
2. MOVEMENT CONNECTIONS: PROVIDE MECHANICAL ANCHORAGE DEVICES THAT ACCOMMODATE MOVEMENT USING SLOTTED HOLES, SCREWS AND ANTI-FRICTION BUSHINGS, WHILE MAINTAINING STRUCTURAL PERFORMANCE OF FRAMING. PROVIDE MOVEMENT CONNECTIONS WHERE INDICATED ON DRAWINGS.
a. WHERE CONTINUOUS STUDS BYPASS ELEVATED FLOOR SLAB, CONNECT STUD TO SLAB IN MANNER ALLOWING VERTICAL AND HORIZONTAL MOVEMENT OF SLAB WITHOUT AFFECTING STUDS; ALLOW FOR MINIMUM MOVEMENT OF 1/2 INCH.
b. WHERE TOP OF STUD WALL TERMINATES BELOW STRUCTURAL FLOOR OR ROOF, CONNECT STUDS TO STRUCTURE IN MANNER ALLOWING VERTICAL AND HORIZONTAL MOVEMENT OF SLAB WITHOUT AFFECTING STUDS; ALLOW FOR MINIMUM MOVEMENT OF 1/2 INCH.
c. PROVIDE TOP TRACK PREASSEMBLED WITH CONNECTION DEVICES SPACED TO FIT STUD SPACING INDICATED ON DRAWINGS; MINIMUM TRACK LENGTH OF 12 FEET.
3. PROVIDE NON-MOVEMENT CONNECTIONS FOR TIE-DOWN TO FOUNDATION, FLOOR-TO-FLOOR TIE-DOWN, ROOF-TO-WALL TIE-DOWN, JOIST HANGERS, GUSSET PLATES, AND STIFFENERS.

1.6 ACCESSORIES

A. BRACING, FURRING, BRIDGING: FORMED SHEET STEEL, THICKNESS DETERMINED FOR CONDITIONS ENCOUNTERED; FINISH TO MATCH FRAMING COMPONENTS.
B. SHOP AND TOUCH-UP PRIMER: SSPC-PAINT 15, COMPLYING WITH VOC LIMITATIONS OF AUTHORITIES HAVING JURISDICTION.
C. TOUCH-UP PRIMER FOR GALVANIZED SURFACES: SSPC-PAINT 20, TYPE I - INORGANIC, COMPLYING WITH VOC LIMITATIONS OF AUTHORITIES HAVING JURISDICTION.

1.7 FASTENERS

A. SELF-DRILLING, SELF-TAPPING SCREWS, BOLTS, NUTS AND WASHERS: HOT DIP GALVANIZED PER ASTM A153/A153M.
B. ANCHORAGE DEVICES: POWDER ACTUATED.
C. ANCHORAGE DEVICES: POWER ACTUATED.
D. WELDING: IN CONFORMANCE WITH AWS D1.1.

1.8 EXAMINATION

A. VERIFY THAT SUBSTRATE SURFACES ARE READY TO RECEIVE WORK.
B. VERIFY FIELD MEASUREMENTS AND ADJUST INSTALLATION AS REQUIRED.

05 40 00 - COLD-FORMED METAL FRAMING (CONT)

1.9 INSTALLATION OF STUDS

A. INSTALL COMPONENTS IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS AND ASTM C1007 REQUIREMENTS.
B. ALIGN FLOOR AND CEILING TRACKS; LOCATE TO WALL LAYOUT. SECURE IN PLACE WITH FASTENERS AT MAXIMUM 24 INCHES ON CENTER. COORDINATE INSTALLATION OF SEALANT WITH FLOOR AND CEILING TRACKS.
C. PLACE STUDS AT 16 INCHES ON CENTER; NOT MORE THAN 2 INCHES FROM ABUTTING WALLS AND AT EACH SIDE OF OPENINGS. CONNECT STUDS TO TRACKS USING CLIP AND TIE METHOD.
D. CONSTRUCT CORNERS USING MINIMUM OF THREE STUDS. INSTALL DOUBLE STUDS AT WALL OPENINGS, DOOR AND WINDOW JAMBS.
E. INSTALL LOAD BEARING STUDS FULL LENGTH IN ONE PIECE. SPLICING OF STUDS IS NOT PERMITTED.
F. INSTALL LOAD BEARING STUDS, BRACE, AND REINFORCE TO DEVELOP FULL STRENGTH AND ACHIEVE DESIGN REQUIREMENTS.
G. COORDINATE PLACEMENT OF INSULATION IN MULTIPLE STUD SPACES MADE INACCESSIBLE AFTER ERECTION.
H. INSTALL INTERMEDIATE STUDS ABOVE AND BELOW OPENINGS TO ALIGN WITH WALL STUD SPACING. PROVIDE DEFLECTION ALLOWANCE IN STUD TRACK, DIRECTLY BELOW HORIZONTAL BUILDING FRAMING AT NON-LOAD BEARING FRAMING.
I. ATTACH CROSS STUDS TO STUDS FOR ATTACHMENT OF FIXTURES ANCHORED TO WALLS.
K. INSTALL FRAMING BETWEEN STUDS FOR ATTACHMENT OF MECHANICAL AND ELECTRICAL ITEMS, AND TO PREVENT STUD ROTATION.
L. TOUCH-UP FIELD WELDS AND DAMAGED GALVANIZED SURFACES WITH PRIMER.

1.9 TOLERANCES

A. MAXIMUM VARIATION FROM TRUE POSITION: 1/4 INCH.
B. MAXIMUM VARIATION OF ANY MEMBER FROM PLANE: 1/4 INCH.

05 50 00 - METAL FABRICATIONS

1.1 SUBMITTALS

A. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION DETAILS FOR METAL FABRICATIONS.
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, AND DETAILS OF METAL FABRICATIONS AND THEIR CONNECTIONS. SHOW ANCHORAGE AND ACCESSORY ITEMS.

B. DELEGATED-DESIGN SUBMITTAL: PROVIDE DESIGN CALCULATIONS FOR LADDERS AND PLATFORMS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

1.2 PROJECT CONDITIONS

A. FIELD MEASUREMENTS: VERIFY ACTUAL LOCATIONS OF WALLS AND OTHER CONSTRUCTION CONTIGUOUS WITH METAL FABRICATIONS BY FIELD MEASUREMENTS BEFORE FABRICATION.

1.3 COORDINATION

A. COORDINATE SELECTION OF SHOP PRIMERS WITH TOPCOATS TO BE APPLIED OVER THEM. COMPLY WITH PAINT AND COATING MANUFACTURERS' WRITTEN RECOMMENDATIONS TO ENSURE THAT SHOP PRIMERS AND TOPCOATS ARE COMPATIBLE WITH ONE ANOTHER.
B. COORDINATE INSTALLATION OF ANCHORAGES. FURNISH SETTING DRAWINGS, TEMPLATES, AND DIRECTIONS FOR INSTALLING ANCHORAGES, INCLUDING SLEEVES, CONCRETE INSERTS, ANCHOR BOLTS, AND ITEMS WITH INTEGRAL ANCHORS, THAT ARE TO BE EMBEDDED IN CONCRETE OR MASONRY. DELIVER SUCH ITEMS TO PROJECT SITE IN TIME FOR INSTALLATION.

1.4 METALS, GENERAL

A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES UNLESS OTHERWISE INDICATED. FOR METAL FABRICATIONS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.

1.5 FERROUS METALS

A. STEEL PLATES, SHAPES, AND BARS: ASTM A 36.
B. STEEL PIPE: ASTM A 53/A 53M, STANDARD WEIGHT (SCHEDULE 40) UNLESS OTHERWISE INDICATED.

1.6 FASTENERS

A. GENERAL: UNLESS OTHERWISE INDICATED, PROVIDE TYPE 304 STAINLESS-STEEL FASTENERS FOR EXTERIOR USE AND ZINC-PLATED FASTENERS WITH COATING COMPLYING WITH ASTM B 633 OR ASTM F 1941 CLASS FE/ZN 5, AT EXTERIOR WALLS. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED.

1.7 MISCELLANEOUS MATERIALS

A. WELDING RODS AND BARE ELECTRODES: SELECT ACCORDING TO AWS SPECIFICATIONS FOR METAL ALLOY WELDED.
B. UNIVERSAL SHOP PRIMER: FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79 AND COMPATIBLE WITH TOPCOAT.

1.8 FABRICATION, GENERAL

A. SHOP ASSEMBLY: PREASSEMBLE ITEMS IN THE SHOP TO GREATEST EXTENT POSSIBLE. DISASSEMBLE UNITS ONLY AS NECESSARY FOR SHIPPING AND HANDLING LIMITATIONS. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES. CLEARLY MARK UNITS FOR REASSEMBLY AND COORDINATED INSTALLATION.
B. CUT, DRILL, AND PUNCH METALS CLEANLY AND ACCURATELY. REMOVE BURRS AND EASE EDGES TO A RADIUS OF APPROXIMATELY 1/32 INCH (1 MM) UNLESS OTHERWISE INDICATED. REMOVE SHARP OR ROUGH AREAS ON EXPOSED SURFACES.
C. FORM BENT-METAL CORNERS TO SMALLEST RADIUS POSSIBLE WITHOUT CAUSING GRAIN SEPARATION OR OTHERWISE IMPAIRING WORK.
D. FORM EXPOSED WORK WITH ACCURATE ANGLES AND SURFACES AND STRAIGHT EDGES.
E. WELD CORNERS AND SEAMS CONTINUOUSLY TO COMPLY WITH THE FOLLOWING:
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE WELDING FLUX IMMEDIATELY.
4. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF ADJACENT SURFACE.
F. FORM EXPOSED CONNECTIONS WITH HAIRLINE JOINTS, FLUSH AND SMOOTH, USING CONCEALED FASTENERS OR WELDS WHERE POSSIBLE. WHERE EXPOSED FASTENERS ARE REQUIRED, USE PHILLIPS FLAT-HEAD (COUNTERSUNK) FASTENERS UNLESS OTHERWISE INDICATED. LOCATE JOINTS WHERE LEAST CONSPICUOUS.
G. FABRICATE SEAMS AND OTHER CONNECTIONS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.
H. CUT, REINFORCE, DRILL, AND TAP METAL FABRICATIONS AS INDICATED TO RECEIVE FINISH HARDWARE, SCREWS, AND SIMILAR ITEMS.
I. PROVIDE FOR ANCHORAGE OF TYPE INDICATED; COORDINATE WITH SUPPORTING STRUCTURE. SPACE ANCHORING DEVICES TO SECURE METAL FABRICATIONS RIGIDLY IN PLACE AND TO SUPPORT INDICATED LOADS.
1. WHERE UNITS ARE INDICATED TO BE CAST INTO CONCRETE OR BUILT INTO MASONRY, EQUIP WITH INTEGRALLY WELDED STEEL STRAP ANCHORS, 1/8 BY 1-1/2 INCHES, WITH A MINIMUM 6-INCH EMBEDMENT AND 2-INCH HOOK, NOT LESS THAN 8 INCHES FROM ENDS AND CORNERS OF UNITS AND 24 INCHES O.C., UNLESS OTHERWISE INDICATED.

1.9 MISCELLANEOUS FRAMING AND SUPPORTS

A. GENERAL: PROVIDE STEEL FRAMING AND SUPPORTS NOT SPECIFIED IN OTHER SECTIONS AS NEEDED TO COMPLETE THE WORK.
B. FABRICATE UNITS FROM STEEL SHAPES, PLATES, AND BARS OF WELDED CONSTRUCTION UNLESS OTHERWISE INDICATED. FABRICATE TO SIZES, SHAPES, AND PROFILES INDICATED AND AS NECESSARY TO RECEIVE ADJACENT CONSTRUCTION.
1. FABRICATE UNITS FROM SLOTTED CHANNEL FRAMING WHERE INDICATED.
C. FABRICATE SUPPORTS FOR OPERABLE PARTITIONS FROM CONTINUOUS STEEL BEAMS OF SIZES [INDICATED] [RECOMMENDED BY PARTITION MANUFACTURER] WITH ATTACHED BEARING PLATES, ANCHORS, AND BRACES AS [INDICATED] [RECOMMENDED BY PARTITION MANUFACTURER]. DRILL OR PUNCH BOTTOM FLANGES OF BEAMS TO RECEIVE PARTITION TRACK HANGER RODS; LOCATE HOLES WHERE INDICATED ON OPERABLE PARTITION SHOP DRAWINGS.

1.10 STEEL AND IRON FINISHES

A. SHOP PRIME IRON AND STEEL ITEMS NOT INDICATED TO BE GALVANIZED UNLESS THEY ARE TO BE EMBEDDED IN CONCRETE, SPRAYED-ON FIREPROOFING, OR MASONRY, OR UNLESS OTHERWISE INDICATED.
1. SHOP PRIME WITH UNIVERSAL SHOP PRIMER UNLESS ZINC-RICH PRIMER IS INDICATED.

1.11 INSTALLATION, GENERAL

A. CUTTING, FITTING, AND PLACEMENT: PERFORM CUTTING, DRILLING, AND FITTING REQUIRED FOR INSTALLING METAL FABRICATIONS. SET METAL FABRICATIONS ACCURATELY IN LOCATION, ALIGNMENT, AND ELEVATION; WITH EDGES AND SURFACES LEVEL, PLUMB, TRUE, AND FREE OF RACK; AND MEASURED FROM ESTABLISHED LINES AND LEVELS.
B. FIT EXPOSED CONNECTIONS ACCURATELY TOGETHER TO FORM HAIRLINE JOINTS. WELD CONNECTIONS THAT ARE NOT TO BE LEFT AS EXPOSED JOINTS BUT CANNOT BE SHOP WELDED BECAUSE OF SHIPPING SIZE LIMITATIONS. DO NOT WELD, CUT, OR ABRADE SURFACES OF EXTERIOR UNITS THAT HAVE BEEN HOT-DIP GALVANIZED AFTER FABRICATION AND ARE FOR BOLTED OR SCREWED FIELD CONNECTIONS.
C. FIELD WELDING: COMPLY WITH THE FOLLOWING REQUIREMENTS:
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE WELDING FLUX IMMEDIATELY.
4. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THAT OF ADJACENT SURFACE.
D. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORAGE DEVICES AND FASTENERS WHERE METAL FABRICATIONS ARE REQUIRED TO BE FASTENED TO IN-PLACE CONSTRUCTION. PROVIDE THREADED FASTENERS FOR USE WITH CONCRETE AND MASONRY INSERTS, TOGGLE BOLTS, THROUGH BOLTS, LAG SCREWS, WOOD SCREWS, AND OTHER CONNECTORS.
E. PROVIDE TEMPORARY BRACING OR ANCHORS IN FORMWORK FOR ITEMS THAT ARE TO BE BUILT INTO CONCRETE, MASONRY, OR SIMILAR CONSTRUCTION.
F. CORROSION PROTECTION: COAT CONCEALED SURFACES OF ALUMINUM THAT WILL COME INTO CONTACT WITH GROUT, CONCRETE, MASONRY, WOOD, OR DISSIMILAR METALS WITH THE FOLLOWING:
1. CAST ALUMINUM: HEAVY COAT OF BITUMINOUS PAINT.
2. EXTRUDED ALUMINUM: TWO COATS OF CLEAR LACQUER.

05 50 00 - METAL FABRICATIONS (CONT)

1.12 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS

A. GENERAL: INSTALL FRAMING AND SUPPORTS TO COMPLY WITH REQUIREMENTS OF ITEMS BEING SUPPORTED, INCLUDING MANUFACTURERS' WRITTEN INSTRUCTIONS AND REQUIREMENTS INDICATED ON SHOP DRAWINGS.
B. ANCHOR SUPPORTS FOR OPERABLE PARTITIONS SECURELY TO AND RIGIDLY BRACE FROM BUILDING STRUCTURE.

1.13 ADJUSTING AND CLEANING

A. TOUCHUP PAINTING: IMMEDIATELY AFTER ERECTION, CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS. PAINT UNCOATED AND ABRADED AREAS WITH THE SAME MATERIAL AS USED FOR SHOP PAINTING TO COMPLY WITH SSPC-PA 1 FOR TOUCHING UP SHOP-PAINTED SURFACES.
1. APPLY BY BRUSH OR SPRAY TO PROVIDE A MINIMUM 2.0-MIL DRY FILM THICKNESS.
B. TOUCHUP PAINTING: CLEANING AND TOUCHUP PAINTING OF FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS OF SHOP PAINT ARE SPECIFIED IN DIVISION 09 PAINTING SECTIONS.
C. GALVANIZED SURFACES: CLEAN FIELD WELDS, BOLTED CONNECTIONS, AND ABRADED AREAS AND REPAIR GALVANIZING TO COMPLY WITH ASTM A 780.

05 51 16 - METAL FLOOR PLATE STAIRS

1.1 SUMMARY

A. SECTION INCLUDES INDUSTRIAL-TYPE, STRAIGHT-RUN STAIRS WITH STEEL FLOOR PLATE TREADS AND RAILINGS ATTACHED TO METAL FLOOR PLATE STAIRS.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR METAL FLOOR PLATE STAIRS.
B. SHOP DRAWINGS: INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK.
C. DELEGATED-DESIGN SUBMITTAL: PROVIDE DESIGN CALCULATIONS FOR STAIRS AND PLATFORMS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

1.3 PERFORMANCE REQUIREMENTS

A. DELEGATED DESIGN: ENGAGE A QUALIFIED PROFESSIONAL ENGINEER, REGISTERED BY THE STATE IN WHICH THE PROJECT IS BEING CONSTRUCTED TO DESIGN STAIRS.
B. STRUCTURAL PERFORMANCE OF STAIRS: METAL STAIRS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED:
1. UNIFORM LOAD: 100 LBF/SQ. FT.
2. CONCENTRATED LOAD: 300 LBF APPLIED ON AN AREA OF 4 SQ. IN.
3. UNIFORM AND CONCENTRATED LOADS NEED NOT BE ASSUMED TO ACT CONCURRENTLY.
4. STAIR FRAMING: CAPABLE OF WITHSTANDING STRESSES RESULTING FROM RAILING LOADS IN ADDITION TO LOADS SPECIFIED ABOVE.
C. SEISMIC PERFORMANCE OF STAIRS: METAL STAIRS SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7.
1. COMPONENT IMPORTANCE FACTOR: 1.5.

1.4 METALS

A. METAL SURFACES, GENERAL: PROVIDE MATERIALS WITH SMOOTH, FLAT SURFACES UNLESS OTHERWISE INDICATED. FOR COMPONENTS EXPOSED TO VIEW IN THE COMPLETED WORK, PROVIDE MATERIALS WITHOUT SEAM MARKS, ROLLER MARKS, ROLLED TRADE NAMES, OR BLEMISHES.
B. STEEL PLATES, SHAPES, AND BARS: ASTM A 36/A 36M.
C. ROLLED-STEEL FLOOR PLATE: ASTM A 786/A 786M, ROLLED FROM PLATE COMPLYING WITH ASTM A 36/A 36M OR ASTM A 283/A 283M, GRADE C OR D.

1.5 FASTENERS

A. PROVIDE ZINC-PLATED FASTENERS WITH COATING COMPLYING WITH ASTM B 633 OR ASTM F 1941, CLASS FE/ZN 12 FOR EXTERIOR USE, AND CLASS FE/ZN 5 WHERE BUILT INTO EXTERIOR WALLS. SELECT FASTENERS FOR TYPE, GRADE, AND CLASS REQUIRED.

1.6 MISCELLANEOUS MATERIALS

A. UNIVERSAL SHOP PRIMER: FAST-CURING, LEAD- AND CHROMATE-FREE, UNIVERSAL MODIFIED-ALKYD PRIMER COMPLYING WITH MPI#79 AND COMPATIBLE WITH TOPCOAT.
B. GALVANIZING REPAIR PAINT: HIGH-ZINC-DUST-CONTENT PAINT COMPLYING WITH SSPC-PAINT 20 AND COMPATIBLE WITH PAINTS SPECIFIED TO BE USED OVER IT.

1.7 FABRICATION, GENERAL

A. PROVIDE COMPLETE STAIR ASSEMBLIES, INCLUDING METAL FRAMING, HANGERS, CLIPS, BRACKETS, BEARING PLATES, AND OTHER COMPONENTS NECESSARY TO SUPPORT AND ANCHOR STAIRS AND PLATFORMS ON SUPPORTING STRUCTURE.
1. JOIN COMPONENTS BY WELDING UNLESS OTHERWISE INDICATED.
2. USE CONNECTIONS THAT MAINTAIN STRUCTURAL VALUE OF JOINED PIECES.
3. FABRICATE TREADS AND PLATFORMS OF EXTERIOR STAIRS SO FINISHED WALKING SURFACES SLOPE TO DRAIN.

B. WELD CONNECTIONS TO COMPLY WITH THE FOLLOWING:
1. USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
2. OBTAIN FUSION WITHOUT UNDERCUT OR OVERLAP.
3. REMOVE WELDING FLUX IMMEDIATELY.
4. WELD EXPOSED CORNERS AND SEAMS CONTINUOUSLY UNLESS OTHERWISE INDICATED.
5. AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS TO COMPLY WITH NOMMA'S "VOLUNTARY JOINT FINISH STANDARDS" FOR TYPE 4 WELDS: GOOD QUALITY, UNIFORM UNDRESSED WELD WITH MINIMAL SPLATTER.

C. FABRICATE JOINTS THAT WILL BE EXPOSED TO WEATHER IN A MANNER TO EXCLUDE WATER. PROVIDE WEEP HOLES WHERE WATER MAY ACCUMULATE.

1.8 STEEL-FRAMED STAIRS

A. NAAMM STAIR STANDARD: COMPLY WITH "RECOMMENDED VOLUNTARY MINIMUM STANDARDS FOR FIXED METAL STAIRS" IN NAAMM AMP 510, "METAL STAIRS MANUAL," INDUSTRIAL CLASS, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
B. STAIR FRAMING:
1. FABRICATE STRINGERS OF STEEL PLATES OR CHANNELS
a. PROVIDE CLOSURES FOR EXPOSED ENDS OF CHANNEL STRINGERS.
2. CONSTRUCT PLATFORMS OF STEEL PLATE OR CHANNEL HEADERS AND MISCELLANEOUS FRAMING MEMBERS AS NEEDED TO COMPLY WITH PERFORMANCE REQUIREMENTS.
3. WELD OR BOLT STRINGERS TO HEADERS; WELD OR BOLT FRAMING MEMBERS TO STRINGERS AND HEADERS.
C. METAL FLOOR PLATE STAIRS: FORM TREADS AND PLATFORMS TO CONFIGURATIONS SHOWN FROM ABRASIVE-SURFACE FLOOR PLATE OF THICKNESS NEEDED TO COMPLY WITH PERFORMANCE REQUIREMENTS, BUT NOT LESS THAN 1/4 INCH.

1.9 STAIR RAILINGS

A. COMPLY WITH APPLICABLE REQUIREMENTS IN SECTION 055213 "PIPE AND TUBE RAILINGS."
1. RAILS MAY BE BENT AT CORNERS, RAIL RETURNS, AND WALL RETURNS, INSTEAD OF USING PREFABRICATED FITTINGS.
2. CONNECT POSTS TO STAIR FRAMING BY DIRECT WELDING UNLESS OTHERWISE INDICATED.

1.10 FINISHES

A. FINISH METAL STAIRS AFTER ASSEMBLY.
B. GALVANIZING: HOT-DIP GALVANIZE ITEMS AS INDICATED TO COMPLY WITH ASTM A 153/A 153M FOR STEEL AND IRON HARDWARE AND WITH ASTM A 123/A 123M FOR OTHER STEEL AND IRON PRODUCTS.
C. PREPARATION FOR SHOP PRIMING: PREPARE UNCOATED FERROUS-METAL SURFACES TO COMPLY WITH SSPC-SP 6/NACE NO. 3, "COMMERCIAL BLAST CLEANING" AND SSPC-SP 3, "POWER TOOL CLEANING".
D. APPLY SHOP PRIMER TO UNCOATED SURFACES OF METAL STAIR COMPONENTS, EXCEPT THOSE WITH GALVANIZED FINISHES AND THOSE TO BE EMBEDDED IN CONCRETE OR MASONRY UNLESS OTHERWISE INDICATED. COMPLY WITH SSPC-PA 1, "PAINT APPLICATION SPECIFICATION NO. 1: SHOP, FIELD, AND MAINTENANCE PAINTING OF STEEL", FOR SHOP PAINTING.

05 51 19 - METAL STAIRS

1.1 SUMMARY

06 10 00 - ROUGH CARPENTRY - NON STRUCTURAL

1.1 GENERAL REQUIREMENTS

A. DIMENSION LUMBER: COMPLY WITH PS 20 AND REQUIREMENTS OF SPECIFIED GRADING AGENCIES.
1. IF NO SPECIES IS SPECIFIED, PROVIDE ANY SPECIES GRADED BY THE AGENCY SPECIFIED; IF NO GRADING AGENCY IS SPECIFIED, PROVIDE LUMBER GRADED BY ANY GRADING AGENCY MEETING THE SPECIFIED REQUIREMENTS.
2. GRADING AGENCY: ANY GRADING AGENCY WHOSE RULES ARE APPROVED BY THE BOARD OF REVIEW, AMERICAN LUMBER STANDARD COMMITTEE (WWW.ALSC.ORG) AND WHO PROVIDES GRADING SERVICE FOR THE SPECIES AND GRADE SPECIFIED; PROVIDE LUMBER STAMPED WITH GRADE MARK UNLESS OTHERWISE INDICATED.

1.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. SIZES: NOMINAL SIZES AS INDICATED ON DRAWINGS, S4S.
B. MOISTURE CONTENT: S-DRY OR MC19.
C. MISCELLANEOUS FRAMING, BLOCKING, NAILERS, GROUNDS, AND FURRING:
1. LUMBER: S4S, NO. 2 OR STANDARD GRADE.
2. BOARDS: STANDARD OR NO. 3.

1.3 CONSTRUCTION PANELS

A. COMMUNICATIONS AND ELECTRICAL ROOM MOUNTING BOARDS: PS 1 A-D-EXT PLYWOOD, 3/4 INCH THICK. PROVIDE FR (FIRE RETARDANT) TREATED MATERIAL WHERE REQUIRED BY CODE.

1.4 ACCESSORIES

A. A. FASTENERS AND ANCHORS:
1. METAL AND FINISH: HOT-DIPPED GALVANIZED STEEL PER ASTM A 153/A 153M FOR HIGH HUMIDITY AND PRESERVATIVE-TREATED WOOD LOCATIONS, UNFINISHED STEEL ELSEWHERE.
2. ANCHORS: TOGGLE BOLT TYPE FOR ANCHORAGE TO HOLLOW MASONRY.

1.5 FACTORY WOOD TREATMENT

A. TREATED LUMBER AND PLYWOOD: COMPLY WITH REQUIREMENTS OF AWPA U1 - USE CATEGORY SYSTEM FOR WOOD TREATMENTS DETERMINED BY USE CATEGORIES, EXPECTED SERVICE CONDITIONS, AND SPECIFIC APPLICATIONS.
1. FIRE-RETARDANT TREATED WOOD: MARK EACH PIECE OF WOOD WITH PRODUCER'S STAMP INDICATING COMPLIANCE WITH SPECIFIED REQUIREMENTS.
2. PRESERVATIVE-TREATED WOOD: PROVIDE LUMBER AND PLYWOOD MARKED OR STAMPED BY AN ALSC-ACCREDITED TESTING AGENCY, CERTIFYING LEVEL AND TYPE OF TREATMENT IN ACCORDANCE WITH AWPA STANDARDS.
B. PRESERVATIVE TREATMENT:
1. MANUFACTURERS:
a. ARCH WOOD PROTECTION, INC.: WWW.WOLMANIZEDWOOD.COM.
b. VIANCE, LLC: WWW.TREATEDWOOD.COM.
c. OSMOSE, INC.: WWW.OSMOSE.COM.
2. PRESERVATIVE PRESSURE TREATMENT OF LUMBER ABOVE GRADE: AWPA U1, USE CATEGORY UC3B, COMMODITY SPECIFICATION A USING WATERBORNE PRESERVATIVE TO 0.25 LB/CU FT RETENTION.
a. KILN DRY LUMBER AFTER TREATMENT TO MAXIMUM MOISTURE CONTENT OF 19 PERCENT.
b. TREAT LUMBER IN CONTACT WITH ROOFING, FLASHING, OR WATERPROOFING.
c. TREAT LUMBER IN CONTACT WITH MASONRY OR CONCRETE.
d. TREAT LUMBER IN OTHER LOCATIONS AS INDICATED.

1.6 PREPARATION

A. WHERE WOOD FRAMING BEARS ON CEMENTITIOUS FOUNDATIONS, INSTALL FULL WIDTH SILL FLASHING CONTINUOUS OVER TOP OF FOUNDATION, LAP ENDS OF FLASHING MINIMUM OF 4 INCHES AND SEAL.
B. COORDINATE INSTALLATION OF ROUGH CARPENTRY MEMBERS SPECIFIED IN OTHER SECTIONS.

1.7 INSTALLATION - GENERAL

A. SELECT MATERIAL SIZES TO MINIMIZE WASTE.
B. REUSE SCRAP TO THE GREATEST EXTENT POSSIBLE; CLEARLY SEPARATE SCRAP FOR USE ON SITE AS ACCESSORY COMPONENTS, INCLUDING: SHIMS, BRACING, AND BLOCKING.
C. WHERE TREATED WOOD IS USED ON INTERIOR, PROVIDE TEMPORARY VENTILATION DURING AND IMMEDIATELY AFTER INSTALLATION SUFFICIENT TO REMOVE INDOOR AIR CONTAMINANTS.

1.8 BLOCKING, NAILERS, AND SUPPORTS

A. PROVIDE FRAMING AND BLOCKING MEMBERS AS INDICATED OR AS REQUIRED TO SUPPORT FINISHES, FIXTURES, SPECIALTY ITEMS, AND TRIM.
B. IN METAL STUD WALLS, PROVIDE CONTINUOUS BLOCKING AROUND DOOR AND WINDOW OPENINGS FOR ANCHORAGE OF FRAMES, SECURELY ATTACHED TO STUD FRAMING.
C. IN WALLS, PROVIDE BLOCKING ATTACHED TO STUDS AS BACKING AND SUPPORT FOR WALL-MOUNTED ITEMS, UNLESS ITEM CAN BE SECURELY FASTENED TO TWO OR MORE STUDS OR OTHER METHOD OF SUPPORT IS EXPLICITLY INDICATED.
D. WHERE CEILING-MOUNTING IS INDICATED, PROVIDE BLOCKING AND SUPPLEMENTARY SUPPORTS ABOVE CEILING, UNLESS OTHER METHOD OF SUPPORT IS EXPLICITLY INDICATED.

1.9 INSTALLATION OF CONSTRUCTION PANELS

A. PLYWOOD WALL SHEATHING
1. INSTALL WITH LONG EDGE PERPENDICULAR TO FRAMING.
2. ALLOW 1/8 INCH OPEN SPACE BETWEEN PANEL ENDS AND EDGES FOR EXPANSION AND CONTRACTION.
3. PLACE ENDS OVER FRAMING MEMBERS. INSTALL OVER TWO OR MORE SPANS WITH END JOINTS STAGGERED AND FACE GRAIN PERPENDICULAR TO SUPPORTS.
4. SECURE WITH GALVANIZED NAILS TO EACH SUPPORT SPACING FASTENERS AT 12 INCH O.C. FOR INTERMEDIATE SUPPORTS AND 6 INCH O.C. FOR ENDS SUPPORTS (OR AT SPACING AS OTHERWISE INDICATED ON STRUCTURAL DRAWINGS), USING 8D RING SHANK NAILS. STAPLES WILL BE ALLOWED AS A SUBSTITUTION IF ALLOWED BY GOVERNING CODES, ARCHITECT, AND OWNER.
5. USE EDGE CLIPS AT ALL UNSUPPORTED EDGES AT ROOF SHEATHING, SPACED AT 12" MAXIMUM ON CENTER.
B. COMMUNICATIONS AND ELECTRICAL ROOM MOUNTING BOARDS: SECURE WITH SCREWS TO STUDS WITH EDGES OVER FIRM BEARING; SPACE FASTENERS AT MAXIMUM 24 INCHES ON CENTER ON ALL EDGES AND INTO STUDS IN FIELD OF BOARD.

1.10 TOLERANCES

A. FRAMING MEMBERS: 1/4 INCH FROM TRUE POSITION, MAXIMUM.
B. VARIATION FROM PLANE: 1/4 INCH IN 10 FEET MAXIMUM, AND 1/4 INCH IN 30 FEET MAXIMUM.

06 16 00 - SHEATHING

1.1 WALL SHEATHING

A. GLASS-MAT GYPSUM WALL SHEATHING: ASTM C 1177.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. CERTAINTEED CORPORATION; GLASROC.
b. G-P GYPSUM CORPORATION; DENS-GLASS GOLD.
c. EMPLE-INLAND INC.; GREENGLASS
d. UNITED STATES GYPSUM CO.; SECUROCK.
2. TYPE AND THICKNESS: TYPE X, 5/8 INCH THICK.
3. SIZE: 48 BY 108 INCHES.

1.2 GYPSUM SHEATHING INSTALLATION

A. A. COMPLY WITH GA-253 AND WITH MANUFACTURER'S WRITTEN INSTRUCTIONS.
1. FASTEN GYPSUM SHEATHING TO COLD-FORMED METAL FRAMING WITH SCREWS.
2. INSTALL BOARDS WITH A 3/8-INCH GAP WHERE NON-LOAD-BEARING CONSTRUCTION ABUTS STRUCTURAL ELEMENTS.
3. INSTALL BOARDS WITH A 1/4-INCH GAP WHERE THEY ABUT MASONRY OR SIMILAR MATERIALS THAT MIGHT RETAIN MOISTURE, TO PREVENT WICKING.
B. APPLY FASTENERS SO HEADS BEAR TIGHTLY AGAINST FACE OF SHEATHING, BUT DO NOT CUT INTO FACING.
C. VERTICAL INSTALLATION: INSTALL BOARD VERTICAL EDGES CENTERED OVER STUDS. ABUT ENDS AND EDGES OF EACH BOARD WITH THOSE OF ADJACENT BOARDS. ATTACH BOARDS AT PERIMETER AND WITHIN FIELD OF BOARD TO EACH STUD.
D. SPACE FASTENERS APPROXIMATELY 8 INCHES O.C. AND SET BACK A MINIMUM OF 3/8 INCH (FROM EDGES AND ENDS OF BOARDS.

07 21 00 - INSULATION

1.1 GENERAL

A. SUBSTITUTIONS: SEE SECTION 016000 - PRODUCT REQUIREMENTS.

1.2 APPLICATIONS

A. INSULATION OVER METAL STUD FRAMED WALLS, CONTINUOUS: POLYISOCYANURATE BOARD.
B. INSULATION IN METAL STUD FRAMED WALLS: BATT INSULATION SEPARATING CONDITIONED FROM NON-CONDITIONED AREAS AND FOR ACOUSTICAL PURPOSES AROUND RESTROOMS.
C. AIR BARRIER JOINT FILLER: SINGLE- AND MULTI-COMPONENT EXPANDING POLYURETHANE FOAM SEALANT
D. SLAB-EDGE PERIMETER INSULATION: EXTRUDED POLYSTYRENE BOARD INSULATION

1.3 POLYISOCYANURATE BOARD

A. POLYISOCYANURATE BOARD INSULATION: RIGID CELLULAR FOAM, COMPLYING WITH ASTM C1289, TYPE II, CLASS 1, FOIL-FACED AS INDICATED ON PROJECT DRAWINGS; GRADE 1.

1.4 FIBERGLASS BATT INSULATION

A. GLASS FIBER BATT INSULATION: FLEXIBLE PREFORMED BATT OR BLANKET, COMPLYING WITH ASTM C665; FRICTION FIT.
1. FLAME SPREAD INDEX: 25 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.
2. SMOKE DEVELOPED INDEX: 450 OR LESS, WHEN TESTED IN ACCORDANCE WITH ASTM E84.
3. COMBUSTIBILITY: NON-COMBUSTIBLE, WHEN TESTED IN ACCORDANCE WITH ASTM E13 , EXCEPT FOR FACING, IF ANY.
4. FORMALDEHYDE CONTENT: ZERO.
5. THERMAL RESISTANCE: AS INDICATED ON DRAWINGS.
6. FACING: UNFACED (TYPICAL
7. MANUFACTURERS:
a. CERTAINTEED CORPORATION: WWW.CERTAINTEED.COM.
b. JOHNS MANVILLE CORPORATION: WWW.JM.COM.
c. KNAUF INSULATION GMBH: WWW.KNAUFINSULATION.US
d. OWENS CORNING CORP: WWW.OWENSCORNING.COM.

1.5 EXPANDING POLYURETHANE FOAM SEALANT

A. EXPANDING SINGLE-COMPONENT OR MULTI-COMPONENT MOISTURE-CURED POLYURETHANE FOAM WITH A (H) CFC-FREE PROPELLANT.
1. EXPANDS TO THREE TIMES VOLUME (MIN) AT POINT OF APPLICATION
2. THERMAL INSULATION: R-5 (MIN), AT 2" THICKNESS
3. MANUFACTURER: SUBJECT TO COMPLIANCE WITH PROJECT REQUIREMENTS,
a. GEOCEL
b. DOW CHEMICAL 157860 TRIPLE EXPANDING FOAM
c. HANDI-FOAM MULTIPURPOSE INSULATING SPRAY FOAM SEALANT
d. OR EQUAL

07 21 00 - INSULATION (CONT)

1.6 EXTRUDED POLYSTYRENE BOARD

A. EXTRUDED-POLYSTYRENE BOARD INSULATION: ASTM C 578, OF TYPE AND MINIMUM COMPRESSIVE STRENGTH INDICATED BELOW, WITH MAXIMUM FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF 75 AND 450, RESPECTIVELY, PER ASTM E 84.
1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
a. DIVERSIFOAM PRODUCTS.
b. DOW CHEMICAL COMPANY.
c. OWENS CORNING
d. PACTIV BUILDING PRODUCTS
2. TYPE VI, 40 PSI. (BENEATH SLAB ON GRADE AND BACK SIDE OF FOUNDATION WALLS)
B. ADHESIVE FOR BONDING INSULATION: PRODUCT WITH DEMONSTRATED CAPABILITY TO BOND INSULATION SECURELY TO SUBSTRATES WITHOUT DAMAGING INSULATION AND SUBSTRATES.

1.7 EXAMINATION

A. VERIFY THAT SUBSTRATE, ADJACENT MATERIALS, AND INSULATION MATERIALS ARE DRY AND THAT SUBSTRATES ARE READY TO RECEIVE INSULATION AND ADHESIVE.
B. VERIFY SUBSTRATE SURFACES ARE FLAT, FREE OF HONEYCOMB, FINS, IRREGULARITIES, OR MATERIALS OR SUBSTANCES THAT MAY IMPEDE ADHESIVE BOND.

1.8 BATT INSTALLATION

A. INSTALL INSULATION AND VAPOR RETARDER IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS
B. INSTALL IN EXTERIOR WALL, FLOOR AND ROOF SPACES WITHOUT GAPS OR VOIDS. DO NOT COMPRESS INSULATION.
C. TRIM INSULATION NEATLY TO FIT SPACES. INSULATE MISCELLANEOUS GAPS AND VOIDS.
D. FIT INSULATION TIGHTLY IN CAVITIES AND TIGHTLY TO EXTERIOR SIDE OF MECHANICAL AND ELECTRICAL SERVICES WITHIN THE PLANE OF THE INSULATION.
E. PLACE INSULATION AGAINST BAFFLES. DO NOT IMPEDE NATURAL ATTIC VENTILATION TO SOFFIT.
F. COORDINATE WORK OF THIS SECTION WITH CONSTRUCTION OF AIR BARRIER SEAL SPECIFIED IN SECTION 072500.

1.9 PROTECTION

A. DO NOT PERMIT INSTALLED INSULATION TO BE WET OR DAMAGED PRIOR TO ITS CONCEALMENT.

07 25 00 - WEATHER BARRIERS - SHEET

1.1 SUBMITTALS

A. PRODUCT DATA: PROVIDE DATA ON MATERIAL CHARACTERISTICS.
B. MANUFACTURER'S INSTALLATION INSTRUCTIONS: INDICATE PREPARATION.

1.2 FIELD CONDITIONS

A. MAINTAIN TEMPERATURE AND HUMIDITY RECOMMENDED BY THE MATERIALS MANUFACTURERS BEFORE, DURING AND AFTER INSTALLATION.

1.3 WARRANTY

A. PROVIDE MANUFACTURER'S STANDARD 10 YEAR WATER-TIGHTNESS WARRANTY COVERING MATERIAL AND INSTALLATION.

1.4 WATER RESISTIVE BARRIER

A. A. AIR BARRIER SHEET, MECHANICALLY FASTENED:
1. AIR PENETRATION: 0.001 CFM/FT2 AT 75 PA, WHEN TESTED IN ACCORDANCE WITH ASTM E2178. TYPE I PER ASTM E1677. ≤0.04 CFM/FT2 AT 75 PA, WHEN TESTED IN ACCORDANCE WITH ASTM E2357.
2. WATER VAPOR TRANSMISSION: 28 PERMS, WHEN TESTED IN ACCORDANCE WITH ASTM E96, METHOD B.
3. WATER PENETRATION RESISTANCE: MINIMUM 280 CM WHEN TESTED IN ACCORDANCE WITH AATCC TEST METHOD 127.
4. BASIS WEIGHT: MINIMUM 2.7 OZ/YD2, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T-410.
B. AIR RESISTANCE: AIR INFILTRATION AT >1500 SECONDS, WHEN TESTED IN ACCORDANCE WITH TAPPI TEST METHOD T-460.
1. TENSILE STRENGTH: MINIMUM 38/35 LBS/IN., WHEN TESTED IN ACCORDANCE WITH ASTM D882, METHOD A.
2. TEAR RESISTANCE: 12/10 LBS., WHEN TESTED IN ACCORDANCE WITH ASTM D1117.
3. SURFACE BURNING CHARACTERISTICS: CLASS A, WHEN TESTED IN ACCORDANCE WITH ASTM E84. FLAME SPREAD: 10, SMOKE DEVELOPED: 10.
4. MANUFACTURERS:
a. DUPONT TYVEK; WWW.DUPONT.COM.
b. PACTIV CORPORATION; GREENGUARD.PACTIV.COM.
c. VAPROSHIELD, LLC; WWW.VAPROSHIELD.COM.
5. ACCEPTABLE PRODUCTS:
a. BEHIND MASONRY VENEER:
1. TYVEK COMMERICAL WRAP, BY E.I. DUPONT.
b. SELF-ADHERING FLEXIBLE FLASHING TAPE, DUPONT™ FLEXWRAP™. AND SELF ADHERING STRAIGHT FLASHING TAPE, DUPONT™ STRAIGHTFLASH ™.

1.5 SEALANTS

A. SILICONE SEALANT: TYPE S-GP AS SPECIFIED IN SECTION 079005.

1.6 ACCESSORIES

A. SELF-ADHESIVE SHEET FLASHING: ASTM D 1970.
B. THINNERS AND CLEANERS: AS RECOMMENDED BY MATERIAL MANUFACTURER.
C. ATTACHMENT DEVICES: GALVANIZED STEEL NAILS WITH WEATHER RESISTANT PLASTIC CAPS.

1.7 EXAMINATION

A. VERIFY THAT SURFACES AND CONDITIONS ARE READY TO ACCEPT THE WORK OF THIS SECTION.

1.8 PREPARATION

A. REMOVE PROJECTIONS, PROTRUDING FASTENERS, AND LOOSE OR FOREIGN MATTER THAT MIGHT INTERFERE WITH PROPER INSTALLATION.

1.9 INSTALLATION

A. INSTALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. WATER-RESISTIVE/AIR BARRIERS: INSTALL CONTINUOUS BARRIER OVER SURFACES INDICATED, WITH SHEETS LAPPED TO SHED WATER BUT WITH SEAMS NOT SEALED.
C. MECHANICALLY FASTENED SHEETS - ON EXTERIOR:
1. INSTALL SHEETS SHINGLE-FASHION TO SHED WATER, WITH SEAMS GENERALLY HORIZONTAL.
2. OVERLAP SEAMS AS RECOMMENDED BY MANUFACTURER BUT AT LEAST 6 INCHES.
3. OVERLAP AT OUTSIDE AND INSIDE CORNERS AS RECOMMENDED BY MANUFACTURER BUT AT LEAST 12 INCHES.
4. ATTACH TO FRAMED CONSTRUCTION WITH FASTENERS EXTENDING THROUGH SHEATHING INTO FRAMING. SPACE FASTENERS AT 12 TO 18 INCHES ON CENTER ALONG EACH FRAMING MEMBER SUPPORTING SHEATHING.
5. FOR APPLICATIONS SPECIFIED TO BE AIR-TIGHT, SEAL SEAMS, LAPS, PENETRATIONS, TEARS, AND CUTS WITH SELF-ADHESIVE TAPE; USE ONLY LARGE-HEADED, GASKETED FASTENERS RECOMMENDED BY THE MANUFACTURER.
6. INSTALL AIR BARRIER UNDER JAMB FLASHINGS.
7. INSTALL HEAD FLASHINGS UNDER WEATHER BARRIER.
8. AT OPENINGS TO BE FILLED WITH FRAMES HAVING NAILING FLANGES, WRAP EXCESS SHEET INTO OPENING; AT HEAD, SEAL SHEET OVER FLANGE AND FLASHING.
D. OPENINGS AND PENETRATIONS IN EXTERIOR WEATHER BARRIERS:
1. INSTALL SELF-ADHESIVE FLASHING OVER SILLS, COVERING ENTIRE SILL FRAME MEMBER, EXTENDING AT LEAST 5 INCHES ONTO WEATHER BARRIER AND AT LEAST 6 INCHES UP JAMBS; MECHANICALLY FASTEN STRETCHED EDGES.
2. AT OPENINGS TO BE FILLED WITH FRAMES HAVING NAILING FLANGES, SEAL HEAD AND JAMB FLANGES USING A CONTINUOUS BEAD OF SEALANT COMPRESSED BY FLANGE AND COVER FLANGES WITH SELF-ADHESIVE FLASHING AT LEAST 4 INCHES WIDE; DO NOT SEAL SILL FLANGE.
3. AT OPENINGS TO BE FILLED WITH NON-FLANGED FRAMES, SEAL WEATHER BARRIER TO ALL SIDES OF OPENING FRAMING, USING SELF-ADHESIVE FLASHING AT LEAST 9 INCHES WIDE, COVERING ENTIRE DEPTH OF FRAMING.
4. AT HEAD OF OPENINGS, INSTALL SELF-ADHESIVE FLASHING UNDER WEATHER BARRIER EXTENDING AT LEAST 2 INCHES BEYOND FACE OF JAMBS; SEAL WEATHER BARRIER TO FLASHING.
5. AT INTERIOR FACE OF OPENINGS, SEAL GAP BETWEEN WINDOW/DOOR FRAME AND ROUGH FRAMING, USING JOINT SEALANT OVER BACKER ROD.
6. SERVICE AND OTHER PENETRATIONS: FORM SELF-ADHESIVE FLASHING AROUND PENETRATING ITEM AND SEAL TO WEATHER BARRIER SURFACE.

1.10 FIELD QUALITY CONTROL

A. DO NOT COVER INSTALLED WEATHER BARRIERS UNTIL REQUIRED INSPECTIONS HAVE BEEN COMPLETED.
B. OBTAIN APPROVAL OF INSTALLATION PROCEDURES BY THE WEATHER BARRIER MANUFACTURER BASED ON A MOCK-UP INSTALLED IN PLACE, PRIOR TO PROCEEDING WITH REMAINDER OF INSTALLATION.
C. PROVIDE INSPECTIONS AS REQUIRED BY WEATHER BARRIER MANUFACTURER AS REQUIRED TO SECURE WARRANTY INDICATED.

1.11 PROTECTION

A. DO NOT LEAVE MATERIALS EXPOSED TO WEATHER LONGER THAN RECOMMENDED BY MANUFACTURER.

07 26 00 - UNDER SLAB VAPOR BARRIER

1.1 PROJECT CONDITIONS

A. CLOSE AREAS TO TRAFFIC DURING APPLICATION AND FOR TIME PERIOD AFTER APPLICATION RECOMMENDED IN WRITING BY MANUFACTURER.

1.2 COORDINATION

A. COORDINATE PLACEMENT OF SHEET VAPOR BARRIER WITH DIVISION 03 SECTIONS.

1.3 MATERIALS

A. SHEET VAPOR BARRIER:
1. TYPE: 15 MIL POLYOLEFIN FILM MEETING REQUIREMENTS OF ASTM E 1745, CLASS A.
2. WATER VAPOR TRANSMITTANCE (AFTER MANDATORY CONDITION PER ASTM E154 SECTIONS 8,11,12,13): MAXIMUM PERM RATING OF 0.01 AS TESTED IN ACCORDANCE WITH ASTM E 1745 SECTION 7.
3. STRENGTH: ASTM E 1745: CLASS A.

07 26 00 - UNDER SLAB VAPOR BARRIER (CONT)

B. ACCEPTABLE PRODUCTS:
1. 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. STEGO WRAP VAPOR BARRIER BY STEGO INDUSTRIES, LLC, 15 MILS.
b. ZERO-PERM VAPOR BARRIER BY ALUMISEAL.
c. PERMINATOR, BY W.R. MEADOWS.
d. XTREME BY TEX-TRUDE
C. ACCESSORIES:
1. BONDING AGENT: MANUFACTURER'S APPROVED OR RECOMMENDED VAPOR BARRIER BONDING AGENT.
2. SEALING AND SEAMING TAPE: HIGH DENSITY POLYETHYLENE TAPE A MINIMUM OF 4 INCHES IN WIDTH, COMPATIBLE WITH VAPOR BARRIER MEMBRANE, AND MANUFACTURED BY OR RECOMMENDED BY VAPOR BARRIER MEMBRANE MANUFACTURER. TAPE FOR JOINTS SHALL HAVE AT LEAST THE SAME PERMEABILITY RATING AS THE VAPOR BARRIER SPECIFIED.
3. VAPOR PROOFING MASTIC: MANUFACTURER'S APPROVED OR RECOMMENDED VAPOR PROOFING MASTIC WITH THE SAME PERMEABILITY RATING AS THE VAPOR BARRIER SPECIFIED.
4. PIPE BOOT: CONSTRUCT PIPE BOOTS FROM VAPOR BARRIER MATERIAL AND PRESSURE SENSITIVE TAPE IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

1.4 INSTALLATION

A. A. VAPOR BARRIER;
1. PLACE, PROTECT, AND REPAIR VAPOR BARRIER SHEETS ACCORDING TO ASTM E 1643 AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
2. UNROLL VAPOR BARRIER WITH THE LONGEST DIMENSION PARALLEL WITH THE DIRECTION OF THE CONCRETE POUR.
3. INSTALL VAPOR BARRIER WITHOUT TEARS, VOIDS, AND HOLES. LAP ENDS AND EDGES AS RECOMMENDED BY MANUFACTURER, BUT NOT LESS THAN 6 INCHES OVER ADJACENT SHEETS. SEAL LAPS WITH TAPE.
4. TURN UP SHEETS AT PERIMETER, AT FOOTINGS AND VERTICAL WALLS, AND AGAINST PENETRATIONS, AND SEAL JOINTS WITH TAPE.
5. SEAL JOINTS, TEARS, HOLES, PERIMETER, AND PENETRATIONS THROUGH VAPOR WITH TAPE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. POINT EXPOSED EDGES WITH POINTING MASTIC TO PREVENT WATER FROM TRAVELING UNDER MEMBRANE.
7. ADHERE MEMBRANE TO VERTICAL SURFACES WITH ADHESIVE.

07 42 13 - METAL COMPOSITE MATERIAL WALL PANELS

1.1 SUMMARY

A. SECTION INCLUDES METAL COMPOSITE MATERIAL WALL PANELS.

1.2 PREINSTALLATION MEETINGS

A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: INCLUDE FABRICATION AND INSTALLATION LAYOUTS OF METAL COMPOSITE MATERIAL PANELS; DETAILS OF EDGE CONDITIONS, JOINTS, PANEL PROFILES, CORNERS, ANCHORAGES, ATTACHMENT ASSEMBLY, TRIM, FLASHINGS, CLOSURES, AND ACCESSORIES; AND SPECIAL DETAILS.
C. SAMPLES: FOR EACH TYPE OF METAL COMPOSITE MATERIAL PANEL INDICATED.

1.4 INFORMATIONAL SUBMITTALS

A. PRODUCT TEST REPORTS.
B. WARRANTIES: SAMPLES OF SPECIAL WARRANTIES.

1.5 CLOSEOUT SUBMITTALS

A. MAINTENANCE DATA.

1.6 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: AN ENTITY THAT EMPLOYS INSTALLERS AND SUPERVISORS WHO ARE TRAINED AND APPROVED BY MANUFACTURER.

1.7 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR OR REPLACE COMPONENTS OF METAL COMPOSITE MATERIAL PANEL SYSTEMS THAT FAIL IN MATERIALS OR WORKMANSHIP WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: TWO YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
B. SPECIAL WARRANTY ON PANEL FINISHES: MANUFACTURER'S STANDARD FORM IN WHICH MANUFACTURER AGREES TO REPAIR FINISH OR REPLACE METAL COMPOSITE MATERIAL PANELS THAT SHOW EVIDENCE OF DETERIORATION OF FACTORY-APPLIED FINISHES WITHIN SPECIFIED WARRANTY PERIOD.
1. FINISH WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.8 PERFORMANCE REQUIREMENTS

A. STRUCTURAL PERFORMANCE: PROVIDE METAL COMPOSITE MATERIAL PANEL SYSTEMS CAPABLE OF WITHSTANDING THE EFFECTS OF THE FOLLOWING LOADS, BASED ON TESTING ACCORDING TO ASTM E 330:
1. WIND LOADS: AS INDICATED ON DRAWINGS.
2. OTHER DESIGN LOADS: AS INDICATED ON DRAWINGS.
3. DEFLECTION LIMITS: FOR WIND LOADS, NO GREATER THAN 1/240 OF THE SPAN.
B. AIR INFILTRATION: AIR LEAKAGE OF NOT MORE THAN 0.06 CFM/SQ. FT. WHEN TESTED ACCORDING TO ASTM E 283 AT THE FOLLOWING TEST-PRESSURE DIFFERENCE:
1. TEST-PRESSURE DIFFERENCE: 6.24 LBF/SQ. FT.
C. WATER PENETRATION UNDER STATIC PRESSURE: NO WATER PENETRATION WHEN TESTED ACCORDING TO ASTM E 331 AT THE FOLLOWING TEST-PRESSURE DIFFERENCE:
1. TEST-PRESSURE DIFFERENCE: 6.24 LBF/SQ. FT.
D. THERMAL MOVEMENTS: ALLOW FOR THERMAL MOVEMENTS FROM AMBIENT AND SURFACE TEMPERATURE CHANGES BY PREVENTING BUCKLING, OPENING OF JOINTS, OVERSTRESSING OF COMPONENTS, FAILURE OF JOINT SEALANTS, FAILURE OF CONNECTIONS, AND OTHER DETRIMENTAL EFFECTS. BASE CALCULATIONS ON SURFACE TEMPERATURES OF MATERIALS DUE TO BOTH SOLAR HEAT GAIN AND NIGHTTIME-SKY HEAT LOSS.
1. TEMPERATURE CHANGE (RANGE): 120 DEG F, AMBIENT; 180 DEG F, MATERIAL SURFACES.
E. FIRE-RESISTANCE RATINGS: COMPLY WITH ASTM E 119; TESTING BY A QUALIFIED TESTING AGENCY. IDENTIFY PRODUCTS WITH APPROPRIATE MARKINGS OF APPLICABLE TESTING AGENCY.
1. INDICATE DESIGN DESIGNATIONS FROM UL'S "FIRE RESISTANCE DIRECTORY" OR FROM THE LISTINGS OF ANOTHER QUALIFIED TESTING AGENCY.
F. FIRE PROPAGATION CHARACTERISTICS: METAL COMPOSITE MATERIAL WALL PANEL SYSTEM PASSES NFPA 285 TESTING.

1.9 METAL COMPOSITE MATERIAL WALL PANELS

A. METAL COMPOSITE MATERIAL WALL PANEL SYSTEMS: PROVIDE FACTORY-FORMED AND -ASSEMBLED, METAL COMPOSITE MATERIAL WALL PANELS FABRICATED FROM TWO METAL FACINGS THAT ARE BONDED TO A SOLID, EXTRUDED THERMOPLASTIC CORE; FORMED INTO PROFILE FOR INSTALLATION METHOD INDICATED. INCLUDE ATTACHMENT ASSEMBLIES COMPONENTS, PANEL STIFFENERS, AND ACCESSORIES REQUIRED FOR WEATHERTIGHT SYSTEM.
B. ALUMINUM-FACED COMPOSITE WALL PANELS: FORMED WITH 0.020-INCH- THICK, COIL-COATED ALUMINUM SHEET FACINGS.
1. PANEL THICKNESS: 4mm (NOMINAL), OR AS REQUIRED BY DESIGN CRITERIA OR AS INDICATED ON DRAWINGS.
2. CORE: STANDARD, EXCEPT WHERE FIRE-RETARDANT IS INDICATED ON DRAWINGS OR REQUIRED BY BUILDING CODE.
3. EXTERIOR FINISH: THREE-COAT FLUOROPOLYMER.
a. COLOR: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.
C. ATTACHMENT ASSEMBLY COMPONENTS: FORMED FROM EXTRUDED ALUMINUM.
D. ATTACHMENT ASSEMBLY: MANUFACTURER'S STANDARD.

1.10 MISCELLANEOUS MATERIALS

A. MISCELLANEOUS METAL SUBFRAMING AND FURRING: ASTM C 645, COLD-FORMED, METALLIC-COATED STEEL SHEET ASTM A 653/A 653M, G90 COATING DESIGNATION OR ASTM A 792/A 792M, CLASS AZ50 ALUMINUM-ZINC-ALLOY COATING DESIGNATION UNLESS OTHERWISE INDICATED. PROVIDE MANUFACTURER'S STANDARD SECTIONS AS REQUIRED FOR SUPPORT AND ALIGNMENT OF METAL COMPOSITE MATERIAL PANEL SYSTEM.
B. PANEL ACCESSORIES: PROVIDE COMPONENTS REQUIRED FOR A COMPLETE, WEATHERTIGHT PANEL SYSTEM INCLUDING TRIM, COPINGS, FASCIAE, MULLIONS, SILLS, CORNER UNITS, CLIPS, FLASHINGS, SEALANTS, GASKETS, FILLERS, CLOSURE STRIPS, AND SIMILAR ITEMS. MATCH MATERIAL AND FINISH OF METAL COMPOSITE MATERIAL PANELS UNLESS OTHERWISE INDICATED.
C. FLASHING AND TRIM: PROVIDE FLASHING AND TRIM FORMED FROM SAME MATERIAL AS METAL COMPOSITE MATERIAL PANELS AS REQUIRED TO SEAL AGAINST WEATHER AND TO PROVIDE FINISHED APPEARANCE. LOCATIONS INCLUDE, BUT ARE NOT LIMITED TO, BASES, DRIPS, SILLS, JAMBS, CORNERS, ENDWALLS, FRAMED OPENINGS, RAKES, FASCIAE, PARAPET CAPS, SOFFITS, REVEALS, AND FILLERS. FINISH FLASHING AND TRIM WITH SAME FINISH SYSTEM AS ADJACENT METAL COMPOSITE MATERIAL PANELS.
D. PANEL FASTENERS: SELF-TAPPING SCREWS DESIGNED TO WITHSTAND DESIGN LOADS. PROVIDE EXPOSED FASTENERS WITH HEADS MATCHING COLOR OF METAL COMPOSITE MATERIAL PANELS BY MEANS OF PLASTIC CAPS OR FACTORY-APPLIED COATING. PROVIDE EPDM OR PVC SEALING WASHERS FOR EXPOSED FASTENERS.
E. PANEL SEALANTS: ASTM C 920; AS RECOMMENDED IN WRITING BY METAL COMPOSITE MATERIAL PANEL MANUFACTURER. PROVIDE SEALANT TYPES RECOMMENDED BY MANUFACTURER THAT ARE COMPATIBLE WITH PANEL MATERIALS, ARE NONSTAINING, AND DO NOT DAMAGE PANEL FINISH.

1.11 FABRICATION

A. GENERAL: FABRICATE AND FINISH METAL COMPOSITE MATERIAL PANELS AND ACCESSORIES AT THE FACTORY, BY MANUFACTURER'S STANDARD PROCEDURES AND PROCESSES, AS NECESSARY TO FULFILL INDICATED PERFORMANCE REQUIREMENTS DEMONST

07 42 13 - METAL COMPOSITE MATERIAL WALL PANELS (CONT)

1.14 METAL COMPOSITE MATERIAL PANEL INSTALLATION

A. ATTACHMENT ASSEMBLY, GENERAL: INSTALL ATTACHMENT ASSEMBLY REQUIRED TO SUPPORT METAL COMPOSITE MATERIAL WALL PANELS AND TO PROVIDE A COMPLETE WEATHERTIGHT WALL SYSTEM, INCLUDING SUBGIRTS, PERIMETER EXTRUSIONS, TRACKS, DRAINAGE CHANNELS, PANEL CLIPS, AND ANCHOR CHANNELS.
   1. INCLUDE ATTACHMENT TO SUPPORTS, PANEL-TO-PANEL JOINERY, PANEL-TO-DISSIMILAR-MATERIAL JOINERY, AND PANEL-SYSTEM JOINT SEALS.
B. INSTALLATION: ATTACH METAL COMPOSITE MATERIAL WALL PANELS TO SUPPORTS AT LOCATIONS, SPACINGS, AND WITH FASTENERS RECOMMENDED BY MANUFACTURER TO ACHIEVE PERFORMANCE REQUIREMENTS SPECIFIED.
   1. WET SEAL SYSTEMS: SEAL HORIZONTAL AND VERTICAL JOINTS BETWEEN ADJACENT METAL COMPOSITE MATERIAL WALL PANELS WITH SEALANT BACKING AND SEALANT. INSTALL SEALANT BACKING AND SEALANT.
   2. DRY SEAL SYSTEMS: SEAL HORIZONTAL AND VERTICAL JOINTS BETWEEN ADJACENT METAL COMPOSITE MATERIALWALL PANELS WITH MANUFACTURER'S STANDARD GASKET SYSTEM.
   3. RAINSCREEN SYSTEMS: DO NOT APPLY SEALANTS TO JOINTS UNLESS OTHERWISE INDICATED.
C. ACCESSORY INSTALLATION: INSTALL ACCESSORIES WITH POSITIVE ANCHORAGE TO BUILDING AND WEATHERTIGHT MOUNTING, AND PROVIDE FOR THERMAL EXPANSION. COORDINATE INSTALLATION WITH FLASHINGS AND OTHER COMPONENTS.
D. FLASHING AND TRIM: COMPLY WITH PERFORMANCE REQUIREMENTS, MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, AND SMACNA'S "ARCHITECTURAL SHEET METAL MANUAL." PROVIDE CONCEALED FASTENERS WHERE POSSIBLE, AND SET UNITS TRUE TO LINE AND LEVEL AS INDICATED. INSTALL WORK WITH LAPS, JOINTS, AND SEAMS THAT ARE PERMANENTLY WATERTIGHT.

1.15 CLEANING

A. REMOVE TEMPORARY PROTECTIVE COVERINGS AND STRIPPABLE FILMS, IF ANY, AS METAL COMPOSITE MATERIAL PANELS ARE INSTALLED, UNLESS OTHERWISE INDICATED IN MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. ON COMPLETION OF METAL COMPOSITE MATERIAL PANEL INSTALLATION, CLEAN FINISHED SURFACES AS RECOMMENDED BY METAL COMPOSITE MATERIAL PANEL MANUFACTURER. MAINTAIN IN A CLEAN CONDITION DURING CONSTRUCTION.

07 53 00 - SINGLE-PLY MEMBRANE ROOFING

1.1 SUBMITTALS

A. PRODUCT DATA: PROVIDE DATA INDICATING MEMBRANE MATERIALS, FLASHING MATERIALS, INSULATION, SURFACING, AND FASTENERS.
B. SPECIME WARRANTY: FOR APPROVAL.
C. SHOP DRAWINGS: INDICATE JOINT OR TERMINATION DETAIL CONDITIONS, CONDITIONS OF INTERFACE WITH OTHER MATERIALS, AND PAVER LAYOUT.
D. MANUFACTURER'S FIELD REPORTS: INDICATE PROCEDURES FOLLOWED, AMBIENT TEMPERATURES, HUMIDITY, WIND VELOCITY DURING APPLICATION, AND SUPPLEMENTARY INSTRUCTIONS GIVEN.
E. WARRANTY: SUBMIT MANUFACTURER WARRANTY AND ENSURE FORMS HAVE BEEN COMPLETED IN OWNER'S NAME AND REGISTERED WITH MANUFACTURER.

1.2 WARRANTY

A. MATERIAL WARRANTY: PROVIDE MEMBRANE MANUFACTURER'S WARRANTY AGREEING TO REPLACE MATERIAL THAT SHOWS MANUFACTURING DEFECTS WITHIN 5 YEARS AFTER INSTALLATION.
B. SYSTEM WARRANTY: PROVIDE MANUFACTURER'S SYSTEM WARRANTY AGREEING TO REPAIR OR REPLACE ROOFING THAT LEAKS OR IS DAMAGED DUE TO WIND OR OTHER NATURAL CAUSES.
   1. WARRANTY TERM: 15 YEARS.
   2. FOR REPAIR AND REPLACEMENT INCLUDE COSTS OF BOTH MATERIAL AND LABOR IN WARRANTY.

1.3 ROOFING MEMBRANE AND ASSOCIATED MATERIALS

A. MEMBRANE:
   1. MATERIAL AS INDICATED:
      a. ETHYLENE PROPYLENE DIENE TERPOLYMER (EPDM)
   2. THICKNESS: 60 MIL NOMINAL, UNLESS OTHERWISE NOTED
   3. REINFORCING: INTERNAL FABRIC AS INDICATED.
   4. SHEET WIDTH: FACTORY FABRICATED INTO LO-SLOPE SHEETS POSSIBLE.
B. SEAMING MATERIALS: AS RECOMMENDED BY MEMBRANE MANUFACTURER.
C. FLEXIBLE FLASHING MATERIAL: SAME MATERIAL AS MEMBRANE.

1.4 MANUFACTURERS

A. ETHYLENE PROPYLENE DIENE TERPOLYMER (EPDM):
   1. CARLISLE SYNTEC INCORPORATED
   2. FIRESTONE BUILDING PRODUCTS CO
   3. GAF MATERIALS CORPORATION
   4. GENFLEX ROOFING SYSTEMS
   5. JOHNS MANVILLE
B. INSULATION:
   1. ATLAS ROOFING CORPORATION
   2. CARLISLE SYNTEC INCORPORATED
   3. GAF MATERIALS CORPORATION
   4. OWENS CORNING CORP
   5. SUBSTITUTIONS: SEE SECTION 016000 - PRODUCT REQUIREMENTS.

1.5 ROOF ASSEMBLY

A. ETHYLENE PROPYLENE DIENE TERPOLYMER (EPDM): ONE PLY MEMBRANE, BALLASTED, OVER INSULATION
   1. ROOFING ASSEMBLY REQUIREMENTS
      a. COMPLYING WITH ASTM D 4637, TYPE II
      b. EXPOSED FACE COLOR: BLACK, UNLESS OTHERWISE NOTED
      c. INSULATION THERMAL VALUE (R), MINIMUM: REFER TO DRAWINGS.
B. INSULATION
   1. ACCEPTABLE INSULATION TYPES - CONSTANT THICKNESS APPLICATION:
      a. POLYISOCYANURATE BOARD.
   2. ACCEPTABLE INSULATION TYPES - TAPERED APPLICATION:
      a. TAPERED POLYISOCYANURATE BOARD.

1.6 INSULATION

A. POLYISOCYANURATE BOARD INSULATION: RIGID CELLULAR FOAM, COMPLYING WITH ASTM C1289, TYPE II, CLASS 1, CELLULOSE FELT OR GLASS FIBER MAT BOTH FACES; GRADE 1 AND WITH THE FOLLOWING CHARACTERISTICS:
   1. COMPRESSIVE STRENGTH: 16 PSI
   2. BOARD SIZE: 48 X 96 INCH.
   3. BOARD THICKNESS: TOTAL IN TWO LAYERS AS REQUIRED TO ACHIEVE INDICATED R-VALUE..
   4. TAPERED BOARD: SLOPE AS INDICATED; FABRICATE OF FEWEST LAYERS POSSIBLE.

1.7 ACCESSORIES

A. INSULATION COVER BOARD: ASTM C 1177/C 1177M, GLASS-MAT, WATER-RESISTANT GYPSUM SUBSTRATE, 1/2 INCH THICK, FACTORY PRIMED.
   1. PRODUCTS:
      a. GEORGIA-PACIFIC DENSDECK PRIME; WWW.GP.COM/BUILD.
B. STACK BOOTS: PREFABRICATED FLEXIBLE BOOT AND COLLAR FOR PIPE STACKS THROUGH MEMBRANE; SAME MATERIAL AS MEMBRANE.
C. SHEATHING ADHESIVE: NON-COMBUSTIBLE TYPE, FOR ADHERING GYPSUM SHEATHING TO METAL DECK.
D. SHEATHING JOINT TAPE: MANUFACTURER'S STANDARD WIDTH, SELF ADHERING.
E. INSULATION JOINT TAPE: GLASS FIBER REINFORCED TYPE AS RECOMMENDED BY INSULATION MANUFACTURER, COMPATIBLE WITH ROOFING MATERIALS; 6 INCHES WIDE; SELF ADHERING.
F. INSULATION FASTENERS: APPROPRIATE FOR PURPOSE INTENDED AND APPROVED BY ROOFING MANUFACTURER.
G. MEMBRANE ADHESIVE: AS RECOMMENDED BY MEMBRANE MANUFACTURER.
H. INSULATION ADHESIVE: AS RECOMMENDED BY INSULATION MANUFACTURER
I. STRIP REGLET DEVICES: GALVANIZED STEEL, MAXIMUM POSSIBLE LENGTHS PER LOCATION, WITH ATTACHMENT FLANGES.
J. SEALANTS: AS RECOMMENDED BY MEMBRANE MANUFACTURER.
K. WALKWAY PADS: SUITABLE FOR MAINTENANCE TRAFFIC, CONTRASTING COLOR OR OTHERWISE VISUALLY DISTINCTIVE FROM ROOF MEMBRANE.
   1. COMPOSITION: TYPE AS RECOMMENDED BY MEMBRANE MANUFACTURER; SIZE AS INDICATED.
   2. SURFACE COLOR: WHITE OR YELLOW.

1.8 INSTALLATION - GENERAL

A. PERFORM WORK IN ACCORDANCE WITH NRCA ROOFING AND WATERPROOFING MANUAL AND MANUFACTURER'S INSTRUCTIONS
B. DO NOT APPLY ROOFING MEMBRANE DURING UNSUITABLE WEATHER.
C. DO NOT APPLY ROOFING MEMBRANE WHEN AMBIENT TEMPERATURE IS OUTSIDE THE TEMPERATURE RANGE RECOMMENDED BY MANUFACTURER.
D. DO NOT APPLY ROOFING MEMBRANE TO DAMP OR FROZEN DECK SURFACE OR WHEN PRECIPITATION IS EXPECTED OR OCCURRING.
E. DO NOT EXPOSE MATERIALS VULNERABLE TO WATER OR SUN DAMAGE IN QUANTITIES GREATER THAN CAN BE WEATHERPROOFED THE SAME DAY.
F. COORDINATE THE WORK WITH INSTALLATION OF ASSOCIATED COUNTERFLASHINGS INSTALLED BY OTHER SECTIONS AS THE WORK OF THIS SECTION PROCEEDS.

1.9 EXAMINATION

A. VERIFY THAT SURFACES AND SITE CONDITIONS ARE READY TO RECEIVE WORK.
B. VERIFY DECK IS SUPPORTED AND SECURE.
C. VERIFY DECK IS CLEAN AND SMOOTH, FLAT, FREE OF DEPRESSIONS, WAVES, OR PROJECTIONS, PROPERLY SLOPED AND SUITABLE FOR INSTALLATION OF ROOF SYSTEM.
D. VERIFY DECK SURFACES ARE DRY AND FREE OF SNOW OR ICE.

1.10 METAL DECK PREPARATION

A. INSTALL DECK SHEATHING ON METAL DECK:
   1. LAY WITH LONG SIDE AT RIGHT ANGLE TO FLUTES; STAGGER END JOINTS; PROVIDE SUPPORT AT ENDS.
   2. CUT SHEATHING CLEANLY AND ACCURATELY AT ROOF BREAKS AND PROTRUSIONS TO PROVIDE SMOOTH SURFACE.
   3. TAPE JOINTS.

07 53 00 - SINGLE-PLY MEMBRANE ROOFING (CONT.)

1.11 INSULATION - UNDER MEMBRANE

A. AT MECHANICALLY FASTENED AND ADHERED INSULATION: INSTALL EACH LAYER OF INSULATION TO DECK USING MECHANICAL FASTENERS OR ADHESIVE SPECIFICALLY DESIGNED, SIZED, AND FORMULATED FOR FASTENING SPECIFIED BOARD-TYPE ROOF INSULATION TO DECK TYPE.
   1. FASTEN FIRST LAYER OF INSULATION ACCORDING TO REQUIREMENTS IN FM GLOBAL'S "ROOFNAV" FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION.
   2. SET EACH SUBSEQUENT LAYER OF INSULATION IN RIBBONS OF BEAD-APPLIED INSULATION ADHESIVE, FIRMLY PRESSING AND MAINTAINING INSULATION IN PLACE.
B. WHEN ROOF ASSEMBLY INCLUDES COVER BOARDS, INSTALL COVER BOARDS OVER INSULATION WITH LONG JOINTS IN CONTINUOUS STRAIGHT LINES WITH END JOINTS STAGGERED BETWEEN ROWS. OFFSET JOINTS OF INSULATION BELOW A MINIMUM OF 6 INCHES IN EACH DIRECTION. LOOSELY BUTT COVER BOARDS TOGETHER AND FASTEN TO ROOF DECK.
   1. FASTEN COVER BOARDS ACCORDING TO REQUIREMENTS IN FM GLOBAL'S "ROOFNAV" FOR SPECIFIED WINDSTORM RESISTANCE CLASSIFICATION.
C. LAY SUBSEQUENT LAYERS OF INSULATION WITH JOINTS STAGGERED AS INDICATED FROM JOINTS OF PRECEDING LAYER.
D. PLACE TAPERED INSULATION TO THE REQUIRED SLOPE PATTERN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
E. ON METAL DECK, PLACE BOARDS PARALLEL TO FLUTES WITH INSULATION BOARD EDGES BEARING ON DECK FLUTES.
F. LAY BOARDS WITH EDGES IN MODERATE CONTACT WITHOUT FORCING. CUT INSULATION TO FIT NEATLY TO PERIMETER BLOCKING AND AROUND PENETRATIONS THROUGH ROOF.
G. TAPE JOINTS OF INSULATION IN ACCORDANCE WITH ROOFING AND INSULATION MANUFACTURERS' INSTRUCTIONS.
H. AT ROOF DRAINS, USE FACTORY-TAPERED BOARDS TO SLOPE DOWN TO ROOF DRAINS OVER A DISTANCE OF 18 INCHES.
I. DO NOT APPLY MORE INSULATION THAN CAN BE COVERED WITH MEMBRANE IN SAME DAY.

1.12 MEMBRANE ROOFING INSTALLATION

A. MECHANICALLY FASTEN OR APPLY MEMBRANE ROOFING IN ACCORDANCE WITH CONTRACT DOCUMENT " ROOF ASSEMBLY" DESCRIPTION OVER AREA TO RECEIVE ROOFING AND INSTALL ACCORDING TO ROOFING SYSTEM MANUFACTURER'S WRITTEN INSTRUCTIONS.
   1. FOR IN-SEAM ATTACHMENT, INSTALL MEMBRANES ROOFING WITH LONG DIMENSION PERPENDICULAR TO STEEL ROOF DECK FLUTES.
B. START INSTALLATION OF MEMBRANE ROOFING IN PRESENCE OF ROOFING SYSTEM MANUFACTURER'S TECHNICAL PERSONNEL.
C. ACCURATELY ALIGN MEMBRANE ROOFING AND MAINTAIN UNIFORM SIDE AND END LAPS OF MINIMUM DIMENSIONS REQUIRED BY MANUFACTURER. STAGGER END LAPS.
D. MECHANICALLY FASTEN OR ADHERE MEMBRANE ROOFING SECURELY AT TERMINATIONS AND PENETRATIONS.
E. APPLY MEMBRANE ROOFING WITH SIDE LAPS SHINGLED WITH SLOPE OF ROOF DECK WHERE POSSIBLE.
F. IN-SEAM ATTACHMENT AT TPO MEMBRANES: SECURE ONE EDGE OF TPO SHEET USING FASTENING PLATES OR METAL BATTENS CENTERED WITHIN SEAM, AND MECHANICALLY FASTEN TPO SHEET TO ROOF DECK.
G. SEAMS: CLEAN SEAM AREAS, OVERLAP MEMBRANE ROOFING, AND HOT-AIR WELD SIDE AND END LAPS OF MEMBRANE ROOFING AND SHEET FLASHINGS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS TO ENSURE A WATERTIGHT SEAM INSTALLATION.
   1. TEST LAP EDGES WITH PROBE TO VERIFY SEAM WELD CONTINUITY. APPLY LAP SEALANT TO SEAL CUT EDGES OF SHEET MEMBRANE.
   2. VERIFY FIELD STRENGTH OF SEAMS A MINIMUM OF TWICE DAILY AND REPAIR SEAM SAMPLE AREAS.
   3. REPAIR TEARS, VOIDS, AND LAPPED SEAMS IN ROOFING THAT DOES NOT COMPLY WITH REQUIREMENTS.
H. SPREAD SEALANT BED OVER DECK DRAIN FLANGE AT ROOF DRAINS AND SECURELY SEAL MEMBRANE ROOFING IN PLACE WITH CLAMPING RING.
I. INSTALL MEMBRANE ROOFING AND AUXILIARY MATERIALS TO TIE IN TO EXISTING ROOFING TO MAINTAIN WEATHERTIGHTNESS OF TRANSITION.
J. SPREAD SEALANT BED OVER DECK-DRAIN FLANGE AT ROOF DRAINS, AND SECURELY SEAL ROOFING IN PLACE WITH CLAMPING RING.
K. MECHANICALLY FASTEN OR ADHERE PERIMETER OF ROOFING ACCORDING TO REQUIREMENTS IN SPRI RP-4.
L. INSTALL WALKWAY PADS. SPACE PAD JOINTS TO PERMIT DRAINAGE.

1.13 BALLASTING

A. WHERE CONTRACT DOCUMENT "ROOF ASSEMBLY" DESCRIPTION INCLUDES ROCK OR STONE BALLAST, CONTRACTOR SHALL TAKE CARE TO PREVENT MEMBRANE DAMAGE, CRUSHING OF INSULATION, AND OVERLOADING OF THE BUILDING STRUCTURE DURING THE BALLASTING OPERATION.
B. ROOFING TO BE SPOT BALLASTED AT THE END OF EACH WORKING DAY.
C. SEAMS ARE NOT TO BE COVERED DURING SPOT BALLASTING
D. AFTER EACH AREA OF WORK IS COMPLETED AND ALL SEAMS ARE CHECKED, CONTACT OWNER'S REPRESENTATIVE AND MEMBRANE MANUFACTURER FOR INSPECTION.
E. WHEN THE MEMBRANE IS APPROVED IN WRITING BY THE OWNER'S REPRESENTATIVE, MEMBRANE MANUFACTURER, AND CONTRACTOR, AND FOLLOWING COMPLETION OF ANY REQUIRED CORRECTIVE WORK, PROMPTLY APPLY A UNIFORM LAYER OF STONE BALLAST. BALLAST RATE SHALL BE AS INDICATED IN THE STRUCTURAL CONTRACT DOCUMENTS, OR AS REQUIRED FOR SPECIFIED ROOF FM GLOBAL RATING.
F. CONTRACTOR SHALL SUPPLY ADDITIONAL BALLAST AS REQUIRED TO MEET SPECIFIED BALLAST RATES.
G. BALLAST SHALL BE UNIFORMLY INSTALLED UP AGAINST ALL PENETRATIONS AND WALKWAY PAVER, IF USED.
H. CONTRACTOR SHALL PREVENT BALLAST FROM ENTERING DRAIN LINES.

1.14 FIELD QUALITY CONTROL

A. REQUIRE SITE ATTENDANCE OF ROOFING AND INSULATION MATERIAL MANUFACTURERS DAILY DURING INSTALLATION OF THE WORK.

1.15 CLEANING

A. REMOVE ADHESIVE MARKINGS FROM FINISHED SURFACES.
B. IN AREAS WHERE FINISHED SURFACES ARE SOILED BY WORK OF THIS SECTION, CONSULT MANUFACTURER OF SURFACES FOR CLEANING ADVICE AND CONFORM TO THEIR DOCUMENTED INSTRUCTIONS.
C. REPAIR OR REPLACE DEFACED OR DAMAGED FINISHES CAUSED BY WORK OF THIS SECTION.

1.15 PROTECTION

A. PROTECT INSTALLED ROOFING AND FLASHINGS FROM CONSTRUCTION OPERATIONS.
B. WHERE TRAFFIC MUST CONTINUE OVER FINISHED ROOF MEMBRANE, PROTECT SURFACES USING DURABLE MATERIALS.

07 62 00 - SHEET METAL FLASHING AND TRIM

1.1 SUBMITTALS

A. SHOP DRAWINGS: INDICATE MATERIAL PROFILE, JOINTING PATTERN, JOINTING DETAILS, FASTENING METHODS, FLASHINGS, TERMINATIONS, AND INSTALLATION DETAILS.
B. CERTIFICATES: PROVIDE ES-1 CERTIFICATION DOCUMENTATION FROM ANSI/SPRI FOR ALL ROOF EDGE PRODUCTS PROVIDED.

1.2 QUALITY ASSURANCE

A. PERFORM WORK IN ACCORDANCE WITH SMACNA ARCHITECTURAL SHEET METAL MANUAL REQUIREMENTS AND STANDARD DETAILS, EXCEPT AS OTHERWISE INDICATED.
B. FABRICATOR AND INSTALLER QUALIFICATIONS: COMPANY SPECIALIZING IN SHEET METAL WORK WITH THREE YEARS OF DOCUMENTED EXPERIENCE.
C. PROVIDE PRODUCTS THAT HAVE BEEN TESTED TO RESIST WIND UPLIFT AS REQUIRED BY ANSI/SPRI ES-1.

1.3 DELIVERY, STORAGE, AND HANDLING

A. TACK MATERIAL TO PREVENT TWISTING, BENDING, AND ABRASION, AND TO PROVIDE VENTILATION. SLOPE METAL SHEETS TO ENSURE DRAINAGE.
B. PREVENT CONTACT WITH MATERIALS THAT COULD CAUSE DISCOLORATION OR STAINING.

1.4 WARRANTY

A. PROVIDE TWO YEAR WATER TIGHTNESS WARRANTY AGAINST LEAKS THROUGH SHEET METAL FLASHING AND AT TERMINATIONS.

1.5 SHEET MATERIALS

A. PRE-FINISHED GALVANIZED STEEL: ASTM A653/A653M, WITH G90/Z275 ZINC COATING; MINIMUM 0.02 INCH THICK BASE METAL, SHOP PRE-COATED WITH PVDF COATING.
B. PRE-FINISHED ALUMINUM SHEET; MINIMUM 0.040 INCH THICK BASE METAL, SHOP PRE-COATED WITH PVDF COATING.
C. PVDF (POLYVINYLIDENE FLUORIDE) COATING: SUPERIOR PERFORMANCE ORGANIC FINISH, AAMA 2605; MULTIPLE COAT, THERMALLY CURED FLUOROPOLYMER FINISH SYSTEM.

1.6 ACCESSORIES

A. FASTENERS: GALVANIZED STEEL, WITH SOFT NEOPRENE WASHERS. NO EXPOSED FASTENERS SHALL BE PERMITTED.
B. UNDERLAYMENT: ASTM D226, ORGANIC ROOFING FELT, TYPE I ("NO. 15").
C. PRIMER: ZINC CHROMATE TYPE.
D. PROTECTIVE BACKING PAINT: ZINC MOLYBDATE ALKYD.
E. SEALANT: TYPE S-GP SPECIFIED IN SECTION 079005.
F. PLASTIC CEMENT: ASTM D4586, TYPE I.
G. REGLETS: SURFACE MOUNTED TYPE, GALVANIZED STEEL.

1.7 FABRICATION

A. FORM SECTIONS TRUE TO SHAPE, ACCURATE IN SIZE, SQUARE, AND FREE FROM DISTORTION OR DEFECTS.
B. FORM PIECES IN LONGEST POSSIBLE LENGTHS.
C. HEM EXPOSED EDGES ON UNDERSIDE 1/2 INCH MITER AND SEAM CORNERS.
D. FORM MATERIAL WITH FLAT LOCK SEAMS, EXCEPT WHERE OTHERWISE INDICATED. AT MOVING JOINTS, USE SEALED LAPPED, BAYONET-TYPE OR INTERLOCKING HOOKED SEAMS.
E. FABRICATE CORNERS FROM ONE PIECE WITH MINIMUM 18 INCH LONG LEGS; SEAM FOR RIGIDITY, SEAL WITH SEALANT.
F. FABRICATE VERTICAL FACES WITH BOTTOM EDGE FORMED OUTWARD 1/4 INCH AND HEMMED TO FORM DRIP.
G. FABRICATE FLASHINGS TO ALLOW TOE TO EXTEND 2 INCHES OVER ROOFING GRAVEL. RETURN AND BRAKE EDGES.

1.8 EXAMINATION

A. VERIFY ROOF OPENINGS, CURBS, PIPES, SLEEVES, DUCTS, AND VENTS THROUGH ROOF ARE SOLIDLY SET, REGLETS IN PLACE, AND NAILING STRIPS LOCATED.
B. VERIFY ROOFING TERMINATION AND BASE FLASHINGS ARE IN PLACE, SEALED, AND SECURE.

07 62 00 - SHEET METAL FLASHING AND TRIM (CONT)

1.9 PREPARATION

A. INSTALL STARTER AND EDGE STRIPS, AND CLEATS BEFORE STARTING INSTALLATION.
B. INSTALL SURFACE MOUNTED REGLETS TRUE TO LINES AND LEVELS. SEAL TOP OF REGLETS WITH SEALANT
C. BACK PAINT CONCEALED METAL SURFACES WITH PROTECTIVE BACKING PAINT TO A MINIMUM DRY FILM THICKNESS OF 15 MIL.

1.10 INSTALLATION

A. CONFORM TO DRAWING DETAILS.
B. SECURE FLASHINGS IN PLACE USING CONCEALED FASTENERS. USE EXPOSED FASTENERS ONLY WHERE PERMITTED.
C. APPLY PLASTIC CEMENT COMPOUND BETWEEN METAL FLASHINGS AND FELT FLASHINGS.
D. FIT FLASHINGS TIGHT IN PLACE. MAKE CORNERS SQUARE. SURFACES TRUE AND STRAIGHT IN PLANES, AND LINES ACCURATE TO PROFILES.
E. SEAL METAL JOINTS WATERTIGHT.

1.11 FIELD QUALITY CONTROL

A. SEE SECTION 014000 - QUALITY REQUIREMENTS, FOR FIELD INSPECTION REQUIREMENTS.
B. INSPECTION WILL INVOLVE SURVEILLANCE OF WORK DURING INSTALLATION TO ASCERTAIN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

1.12 SCHEDULE OF PRODUCTS USED

A. FLASHING AND COUNTER FLASHING: FABRICATE AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH SMACNA ARCHITECTURAL SHEET METAL MANUAL, CHAPTER 4.
B. COPING: AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH SMACNA FIGURE 3-4A.
C. THROUGH WALL SCUPPER: AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH SMACNA 1-26.
D. CONDUCTOR HEAD: AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH SMACNA 1_25F.
E. DOWNSPOUTS: AS INDICATED ON DRAWINGS AND IN ACCORDANCE WITH SMACNA FIGURE 1-32B.
   1. HANGERS: SMACNA FIGURE 1-35B.
F. SPLASH PAN: SMACNA FIGURE 1-36 WITH CORRUGATIONS TO BREAK WATER FLOW.

07 62 10 - FLEXIBLE FLASHING

1.1 SUMMARY

A. A. SECTION INCLUDES:
   1. FORMED PRODUCTS: CONCEALED FLASHING WITHIN WALL ASSEMBLIES WHERE INDICATED OR OTHERWISE WHERE REQUIRED TO PROTECT AND SHED INCIDENTAL WATER TO THE EXTERIOR.

1.2 PERFORMANCE REQUIREMENTS

A. GENERAL: FLASHING AND TRIM ASSEMBLIES AS INDICATED SHALL WITHSTAND STRUCTURAL MOVEMENT, THERMALLY INDUCED MOVEMENT, AND EXPOSURE TO WEATHER WITHOUT FAILURE DUE TO DEFECTIVE MANUFACTURE, FABRICATION, INSTALLATION, OR OTHER DEFECTS IN CONSTRUCTION. COMPLETED SHEET METAL FLASHING AND TRIM SHALL NOT RATTLE, LEAK, OR LOOSEN, AND SHALL REMAIN WATERTIGHT.
B. THERMAL MOVEMENTS: PROVIDE SHEET METAL FLASHING AND TRIM THAT ALLOWS FOR THERMAL MOVEMENTS FROM AMBIENT AND SURFACE TEMPERATURE CHANGES.
   1. TEMPERATURE CHANGE (RANGE): 120 DEG F, AMBIENT; 180 DEG F, MATERIAL SURFACES.

1.3 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED. INCLUDE CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES, AND FINISHES FOR EACH MANUFACTURED PRODUCT AND ACCESSORY.
B. SHOP DRAWINGS: SHOW FABRICATION AND INSTALLATION LAYOUTS OF SHEET METAL FLASHING AND TRIM, INCLUDING PLANS, ELEVATIONS, EXPANSION-JOINT LOCATIONS, AND KEYED DETAILS. DISTINGUISH BETWEEN SHOP- AND FIELD-ASSEMBLED WORK.

1.4 DELIVERY, STORAGE, AND HANDLING

A. DO NOT STORE FLASHING MATERIALS IN CONTACT WITH OTHER MATERIALS THAT MIGHT CAUSE STAINING, DENTING, OR OTHER SURFACE DAMAGE. STORE FLASHING MATERIALS AWAY FROM UNCURED CONCRETE AND MASONRY.
B. PROTECT STRIPPABLE PROTECTIVE COVERING ON SHEET METAL FLASHING AND TRIM FROM EXPOSURE TO SUNLIGHT AND HIGH HUMIDITY, EXCEPT TO THE EXTENT NECESSARY FOR THE PERIOD OF SHEET METAL FLASHING AND TRIM INSTALLATION.

1.5 FLEXIBLE FLASHING

A. SELF-ADHESIVE FLEXIBLE FLASHING PRODUCT CONSISTING OF A PLIABLE, ADHESIVE RUBBERIZED-ASPHALT COMPOUND, BONDED TO A HIGH-DENSITY, CROSS-LAMINATED POLYETHYLENE FILM TO PRODUCE AN OVERALL THICKNESS OF NOT LESS THAN 40 MILS.
   1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
      a. ADVANCED BUILDING PRODUCTS INC.; STRIP-N-FLASH
      b. CARLISLE COATINGS & WATERPROOFING; CCW-705 AIR & VAPOR BARRIER STRIPS.
      c. GRACE CONSTRUCTION PRODUCTS; PERM-A-BARRIER DETAIL MEMBRANE.
      d. HENRY; BLUESKIN SA

1.6 HIGH TEMPERATURE FLASHING

A. SELF-ADHERING, HIGH-TEMPERATURE SHEET: MINIMUM 30 TO 40 MILS THICK, CONSISTING OF SLIP-RESISTING POLYETHYLENE-FILM TOP SURFACE LAMINATED TO LAYER OF BUTYL OR SBS-MODIFIED ASPHALT ADHESIVE, WITH RELEASE-PAPER BACKING; COLD APPLIED. PROVIDE PRIMER WHEN RECOMMENDED BY MANUFACTURER.
   1. THERMAL STABILITY: ASTM D 1970; STABLE AFTER TESTING AT 240 DEG F.
   2. LOW-TEMPERATURE FLEXIBILITY: ASTM D 1970; PASSES AFTER TESTING AT MINUS 20 DEG F.
   3. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
      a. CARLISLE COATINGS & WATERPROOFING INC.; CCW WIP 300HT.
      b. GRACE CONSTRUCTION PRODUCTS, A UNIT OF W. R. GRACE & CO.; ULTRA.
      c. HENRY COMPANY; BLUESKIN PE200 HT.
      d. OWENS CORNING; WEATHERLOCK METAL HIGH TEMPERATURE UNDERLAYMENT.

1.7 MISCELLANEOUS MATERIALS

A. GENERAL: PROVIDE MATERIALS AND TYPES OF FASTENERS, SEPARATORS, SEALANTS, AND OTHER MISCELLANEOUS ITEMS AS REQUIRED FOR COMPLETE METAL FLASHING INSTALLATION AND RECOMMENDED BY MANUFACTURER OF PRIMARY SHEET METAL OR MANUFACTURED ITEM UNLESS OTHERWISE INDICATED.
B. ELASTOMERIC SEALANT: ASTM C 920, ELASTOMERIC SILICONE POLYMER SEALANT; LOW MODULUS; OF TYPE, GRADE, CLASS, AND USE CLASSIFICATIONS REQUIRED TO SEAL JOINTS IN SHEET METAL FLASHING AND TRIM AND REMAIN WATERTIGHT.

1.8 EXAMINATION

A. A. EXAMINE SUBSTRATES, AREAS, AND CONDITIONS, WITH INSTALLER PRESENT, TO VERIFY ACTUAL LOCATIONS, DIMENSIONS AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
   1. VERIFY COMPLIANCE WITH REQUIREMENTS FOR INSTALLATION TOLERANCES OF SUBSTRATES.
   2. VERIFY THAT SUBSTRATE IS SOUND, DRY, SMOOTH, CLEAN, SLOPED FOR DRAINAGE, AND SECURELY ANCHORED.
B. FOR THE RECORD, PREPARE WRITTEN REPORT, ENDORSED BY INSTALLER, LISTING CONDITIONS DETRIMENTAL TO PERFORMANCE OF THE WORK.
C. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

1.9 FLASHING INSTALLATION

A. GENERAL: INSTALL AS INDICATED ON DRAWINGS AND PER MANUFACTURER'S RECOMMENDATIONS.
B. SELF-ADHERING SHEET FLASHING: INSTALL SELF-ADHERING SHEET FLASHING, WRINKLE FREE. APPLY PRIMER IF REQUIRED BY FLASHING MANUFACTURER. COMPLY WITH TEMPERATURE RESTRICTIONS OF FLASHING MANUFACTURER FOR INSTALLATION. APPLY IN SHINGLE FASHION TO SHED WATER, WITH END LAPS OF NOT LESS THAN 6 INCHES STAGGERED 24 INCHES BETWEEN COURSES. OVERLAP SIDE EDGES NOT LESS THAN 3-1/2 INCHES. ROLL LAPS WITH ROLLER. COVER FLASHING WITH SUBSEQUENT CONSTRUCTION WITHIN 14 DAYS.
C. C. LOCATION:
   1. FLEXIBLE FLASHING: AS INDICATED ON DRAWINGS, OR AT ALL EXTERIOR WINDOWS, DOORS OR OTHER PENETRATIONS WHERE HIGH TEMPERATURE FLASHING IS NOT REQUIRED.
   2. HIGH TEMPERATURE FLASHING: AS INDICATED ON DRAWINGS, OR AT ALL LOCATIONS WHERE FLASHING WILL BE IN CONTACT WITH METAL COPING OR METAL PANELS WHERE HIGH TEMPERATURES EXIST.

07 71 29 - MANUFACTURED ROOF EXPANSION JOINTS

1.1 SUMMARY

A. SECTION INCLUDES:
   1. FLANGED BELLOWS-TYPE ROOF EXPANSION JOINTS.
   2. ALUMINUM ROOF EXPANSION JOINTS.

1.2 PREINSTALLATION MEETINGS

A. PREINSTALLATION CONFERENCE: CONDUCT CONFERENCE AT PROJECT SITE.

1.3 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: FOR ROOF EXPANSION JOINTS.
C. SAMPLES: FOR EACH EXPOSED PRODUCT AND FOR EACH COLOR SPECIFIED.

1.4 INFORMATIONAL SUBMITTALS

A. QUALIFICATION DATA.
B. PRODUCT TEST REPORTS.
C. SAMPLE WARRANTY.

1.5 QUALITY ASSURANCE

A. INSTALLER QUALIFICATIONS: INSTALLER OF ROOFING MEMBRANE.

1.6 WARRANTY

A. SPECIAL WARRANTY: MANUFACTURER AND INSTALLER AGREE TO REPAIR OR REPLACE ROOF EXPANSION JOINTS AND COMPONENTS THAT LEAK, DETERIORATE BEYOND NORMAL WEATHERING, OR OTHERWISE FAIL IN MAT

07 84 13 - PENETRATION FIRESTOPPING (CONT)

1.3 MANUFACTURERS

A. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
1. GRACE CONSTRUCTION PRODUCTS.
2. HILTI, INC.
3. NELSON FIRESTOP PRODUCTS.
4. RECTORSEAL CORPORATION.
5. SPECIFIED TECHNOLOGIES INC.
6. 3M FIRE PROTECTION PRODUCTS.

1.4 PENETRATION FIRESTOPPING

A. PROVIDE PENETRATION FIRESTOPPING THAT IS PRODUCED AND INSTALLED TO RESIST SPREAD OF FIRE ACCORDING TO REQUIREMENTS INDICATED, RESIST PASSAGE OF SMOKE AND OTHER GASES, AND MAINTAIN ORIGINAL FIRE-RESISTANCE RATING OF CONSTRUCTION PENETRATED. PENETRATION FIRESTOPPING SYSTEMS SHALL BE COMPATIBLE WITH ONE ANOTHER, WITH THE SUBSTRATES FORMING OPENINGS, AND WITH PENETRATING ITEMS IF ANY.
B. PENETRATIONS IN FIRE-RESISTANCE-RATED WALLS: PROVIDE PENETRATION FIRESTOPPING WITH RATINGS DETERMINED PER ASTM E 814 OR UL 1479, BASED ON TESTING AT A POSITIVE PRESSURE DIFFERENTIAL OF 0.01-INCH WG.
1. FIRE-RESISTANCE-RATED WALLS INCLUDE FIRE WALLS SMOKE-BARRIER WALLS AND FIRE PARTITIONS.
2. F-RATING: NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED.
C. PENETRATIONS IN HORIZONTAL ASSEMBLIES: PROVIDE PENETRATION FIRESTOPPING WITH RATINGS DETERMINED PER ASTM E 814 OR UL 1479, BASED ON TESTING AT A POSITIVE PRESSURE DIFFERENTIAL OF 0.01-INCH WG.
1. HORIZONTAL ASSEMBLIES INCLUDE FLOORS FLOOR/CEILING ASSEMBLIES AND CEILING MEMBRANES OF ROOF/CEILING ASSEMBLIES.
2. F-RATING: AT LEAST 1 HOUR, BUT NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED.
3. T-RATING: AT LEAST 1 HOUR, BUT NOT LESS THAN THE FIRE-RESISTANCE RATING OF CONSTRUCTIONS PENETRATED EXCEPT FOR FLOOR PENETRATIONS WITHIN THE CAVITY OF A WALL.
D. PENETRATIONS IN SMOKE BARRIERS: PROVIDE PENETRATION FIRESTOPPING WITH RATINGS DETERMINED PER UL 1479.
1. L-RATING: NOT EXCEEDING 5.0 CFM/SQ. FT. OF PENETRATION OPENING AT 0.30-INCH WG AT BOTH AMBIENT AND ELEVATED TEMPERATURES.
E. EXPOSED PENETRATION FIRESTOPPING: PROVIDE PRODUCTS WITH FLAME-SPREAD AND SMOKE-DEVELOPED INDEXES OF LESS THAN 25 AND 450, RESPECTIVELY, AS DETERMINED PER ASTM E 84.
F. VOC CONTENT: PROVIDE PENETRATION FIRESTOPPING THAT COMPLIES WITH THE FOLLOWING LIMITS FOR VOC CONTENT WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D (EPA METHOD 24):
1. ARCHITECTURAL SEALANTS: 250 G/L.
2. SEALANT PRIMERS FOR NONPOROUS SUBSTRATES: 250 G/L.
3. SEALANT PRIMERS FOR POROUS SUBSTRATES: 775 G/L.
G. ACCESSORIES: PROVIDE COMPONENTS FOR EACH PENETRATION FIRESTOPPING SYSTEM THAT ARE NEEDED TO INSTALL FILL MATERIALS AND TO MAINTAIN RATINGS REQUIRED. USE ONLY THOSE COMPONENTS SPECIFIED BY PENETRATION FIRESTOPPING MANUFACTURER AND APPROVED BY QUALIFIED TESTING AND INSPECTING AGENCY FOR FIRESTOPPING INDICATED.

1.5 MIXING

A. FOR THOSE PRODUCTS REQUIRING MIXING BEFORE APPLICATION, COMPLY WITH PENETRATION FIRESTOPPING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR ACCURATE PROPORTIONING OF MATERIALS, WATER (IF REQUIRED), TYPE OF MIXING EQUIPMENT, SELECTION OF MIXER SPEEDS,

1.6 EXAMINATION

A. EXAMINE SUBSTRATES AND CONDITIONS, WITH INSTALLER PRESENT, FOR COMPLIANCE WITH REQUIREMENTS FOR OPENING CONFIGURATIONS, PENETRATING ITEMS, SUBSTRATES, AND OTHER CONDITIONS AFFECTING PERFORMANCE OF THE WORK.
B. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

1.7 PREPARATION

A. SURFACE CLEANING: CLEAN OUT OPENINGS IMMEDIATELY BEFORE INSTALLING PENETRATION FIRESTOPPING TO COMPLY WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND WITH THE FOLLOWING REQUIREMENTS:
1. REMOVE FROM SURFACES OF OPENING SUBSTRATES AND FROM PENETRATING ITEMS FOREIGN MATERIALS THAT COULD INTERFERE WITH ADHESION OF PENETRATION FIRESTOPPING.
2. CLEAN OPENING SUBSTRATES AND PENETRATING ITEMS TO PRODUCE CLEAN, SOUND SURFACES CAPABLE OF DEVELOPING OPTIMUM BOND WITH PENETRATION FIRESTOPPING. REMOVE LOOSE PARTICLES REMAINING FROM CLEANING OPERATION.
B. PRIMING: PRIME SUBSTRATES WHERE RECOMMENDED IN WRITING BY MANUFACTURER USING THAT MANUFACTURER'S RECOMMENDED PRODUCTS AND METHODS. CONFINE PRIMERS TO AREAS OF BOND; DO NOT ALLOW SPILLAGE AND MIGRATION ONTO EXPOSED SURFACES.

1.8 INSTALLATION

A. GENERAL: INSTALL PENETRATION FIRESTOPPING TO COMPLY WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS AND PUBLISHED DRAWINGS FOR PRODUCTS AND APPLICATIONS INDICATED.
B. INSTALL FORMING MATERIALS AND OTHER ACCESSORIES OF TYPES REQUIRED TO SUPPORT FILL MATERIALS DURING THEIR APPLICATION AND IN THE POSITION NEEDED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS REQUIRED TO ACHIEVE FIRE RATINGS INDICATED.
1. AFTER INSTALLING FILL MATERIALS AND ALLOWING THEM TO FULLY CURE, REMOVE COMBUSTIBLE FORMING MATERIALS AND OTHER ACCESSORIES NOT INDICATED AS PERMANENT COMPONENTS OF FIRESTOPPING.

1.9 PENETRATION FIRESTOPPING SCHEDULE

A. WHERE UL-CLASSIFIED SYSTEMS ARE INDICATED, THEY REFER TO SYSTEM NUMBERS IN UL'S "FIRE RESISTANCE DIRECTORY" UNDER PRODUCT CATEGORY XHEZ.
B. WHERE INTERTEK ETL SEMKO-LISTED SYSTEMS ARE INDICATED, THEY REFER TO DESIGN NUMBERS IN INTERTEK ETL SEMKO'S "DIRECTORY OF LISTED BUILDING PRODUCTS" UNDER "FIRESTOP SYSTEMS."
C. WHERE FM GLOBAL-APPROVED SYSTEMS ARE INDICATED, THEY REFER TO DESIGN NUMBERS LISTED IN FM GLOBAL'S "BUILDING MATERIALS APPROVAL GUIDE" UNDER "WALL AND FLOOR PENETRATION FIRE STOPS."
D. FIRESTOP SYSTEMS WITH NO PENETRATING ITEMS (FS-1): COMPLY WITH THE FOLLOWING:
1. PIPES, PLASTIC OR METAL, CONDUIT IN VERTICAL RUNS, INSTALLED THROUGH CAST-IN-PLACE FIRESTOP DEVICES.
a. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH FA 1000 SERIES SYSTEMS EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING:
b. FA1016, FA1017, FA2053, FA2054 BY HILTI.
c. CP 680 CAST-IN FIRESTOP DEVICE BY HILTI.
d. CP653 SPEED SLEEVE BY HILTI.
E. FIRESTOP SYSTEMS WITH NO PENETRATING ITEMS (FS-2): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ 0000 SERIES SYSTEMS EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ0055, CAJ0070 BY HILTI OR CAJ0012, CAJ0102 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. LATEX SEALANT.
b. SILICONE SEALANT.
c. ACRYLIC SEALANT.
d. INTUMESCENT PUTTY.
e. MORTAR.
f. PREFORMED INTUMESCENT BLOCKS.
g. PILLOWS/BAGS
F. FIRESTOP SYSTEMS FOR METALLIC PIPES, CONDUIT, OR TUBING (FS-3): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ, WL, OR FC 1000 SERIES SYSTEMS, EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ1184, CAJ1291, CAJ1277, CAJ1382, CAJ1388, WL1054, WL1249, FC1009 BY HILTI OR CAJ1403, CAJ1235, CAJ1406, WL1152, WL1207, FC1020 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. LATEX SEALANT.
b. SILICONE SEALANT.
c. ACRYLIC SEALANT.
d. INTUMESCENT PUTTY.
e. MORTAR.
f. POLYURETHANE FIRESTOP FOAM.
G. FIRESTOP SYSTEMS FOR NONMETALLIC PIPE, CONDUIT, OR TUBING (FS-4): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ, FA, OR WL 2000 SERIES SYSTEMS, EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ2109, FA2053, WL2078, WL2128 BY HILTI OR CAJ2212, CAJ2171, CAJ2210, WL2167, WL2185, WL2170, WL2259 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. INTUMESCENT PUTTY.
c. INTUMESCENT WRAP STRIPS.
d. FIRESTOP DEVICE.
e. FIRESTOP SLEEVE DEVICE.
f. LATEX SEALANT.
H. FIRESTOP SYSTEMS FOR ELECTRICAL CABLES (FS-5): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ, FC, OR WL 3000 SERIES SYSTEMS: EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ3099, FC3012, WL3065, WL3112 BY HILTI OR CAJ3185, CAJ3199, CAJ3234, FC3018, FC3060, WL3179 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. LATEX SEALANT
c. PILLOWS/BAGS
d. INTUMESCENT PUTTY.
e. SILICONE FOAM.
I. FIRESTOP SYSTEMS FOR CABLE TRAYS (FS-6): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ OR WL 4000 SERIES SYSTEMS EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ4035, CAJ4054, WL4011, WL4034 BY HILTI OR CAJ4035, CBJ4023, WL4025, WL4039 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. INTUMESCENT PUTTY.
c. SILICONE FOAM.
d. PILLOWS/BAGS.
e. OAM BLOCKS.
f. FIRESTOP MORTAR.
g. POLYURETHANE FIRESTOP FOAM.

07 84 13 - PENETRATION FIRESTOPPING (CONT)

J. FIRESTOP SYSTEMS FOR INSULATED PIPES (FS-7): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ OR WL 5000 SERIES SYSTEMS, EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ5091, WL5029 BY HILTI OR CAJ5222, WL5171 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. SILICONE FOAM.
c. INTUMESCENT WRAP STRIPS.
d. PRE-FORMED INTUMESCENT BLOCKS.
e. LATEX SEALANT.
K. FIRESTOP SYSTEMS FOR MISCELLANEOUS ELECTRICAL PENETRANTS (FS-8): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ 6000 SERIES SYSTEMS EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ6006, CAJ 6017 BY HILTI OR CAJ6012, CAJ6013, CAJ6027 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. LATEX SEALANT.
c. INTUMESCENT PUTTY.
d. MORTAR.
L. FIRESTOP SYSTEMS FOR MISCELLANEOUS MECHANICAL PENETRATIONS (FS-9): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ 7000 SERIES SYSTEMS EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ7046, CAJ7051, CAJ7040, CAJ7021 BY HILTI OR CAJ7067, CAJ7075, CAJ7082 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR BOTH OF THE FOLLOWING:
a. INTUMESCENT SEALANT.
b. LATEX SEALANT.
c. MORTAR.
d. ACRYLIC SEALANT.
e. SILICONE SEALANT.
M. FIRESTOP SYSTEMS FOR GROUPINGS OF PENETRATIONS (FS-10): COMPLY WITH THE FOLLOWING:
1. ACCEPTABLE UL-CLASSIFIED SYSTEMS WITH CAJ OR WL 8000 SERIES SYSTEMS, EQUIVALENT TO, BUT NOT LIMITED TO, THE FOLLOWING: CAJ8056, CAJ8096, WJ8007, WL8014, WL8019 BY HILTI OR CAJ8042, CAJ8101, CAJ8133, WL8007 BY GRACE.
2. TYPE OF FILL MATERIALS: ONE OR MORE OF THE FOLLOWING:
a. LATEX SEALANT.
b. MORTAR.
c. INTUMESCENT WRAP STRIPS.
d. FIRESTOP DEVICES.
e. INTUMESCENT COMPOSITE SHEET.
f. PRE-FORMED INTUMESCENT BLOCKS.

07 92 00 - JOINT SEALANTS

1.1 WARRANTY

A. SPECIAL MANUFACTURER'S WARRANTY: MANUFACTURER'S STANDARD FORM IN WHICH JOINT-SEALANT MANUFACTURER AGREES TO FURNISH JOINT SEALANTS TO REPAIR OR REPLACE THOSE THAT DO NOT COMPLY WITH PERFORMANCE AND OTHER REQUIREMENTS SPECIFIED IN THIS SECTION WITHIN SPECIFIED WARRANTY PERIOD.
1. WARRANTY PERIOD: 20 YEARS FROM DATE OF SUBSTANTIAL COMPLETION FOR SILICONE SEALANTS.

1.2 MATERIALS, GENERAL

A. COMPATIBILITY: PROVIDE JOINT SEALANTS, BACKINGS, AND OTHER RELATED MATERIALS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH JOINT SUBSTRATES UNDER CONDITIONS OF SERVICE AND APPLICATION, AS DEMONSTRATED BY JOINT-SEALANT MANUFACTURER, BASED ON TESTING AND FIELD EXPERIENCE.
B. LIQUID-APPLIED JOINT SEALANTS: COMPLY WITH ASTM C 920 AND OTHER REQUIREMENTS INDICATED FOR EACH LIQUID-APPLIED JOINT SEALANT SPECIFIED, INCLUDING THOSE REFERENCING ASTM C 920 CLASSIFICATIONS FOR TYPE, GRADE, CLASS, AND USES RELATED TO EXPOSURE AND JOINT SUBSTRATES.
1. SUITABILITY FOR IMMERSION IN LIQUIDS. WHERE SEALANTS ARE INDICATED FOR USE I FOR JOINTS THAT WILL BE CONTINUOUSLY IMMERSED IN LIQUIDS, PROVIDE PRODUCTS THAT HAVE UNDERGONE TESTING ACCORDING TO ASTM C 1247. LIQUID USED FOR TESTING SEALANTS IS DEIONIZED WATER, UNLESS OTHERWISE INDICATED.
C. COLORS OF EXPOSED JOINT SEALANTS: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL RANGE.

1.3 SILICONE JOINT SEALANTS

A. MILDEW-RESISTANT, SINGLE-COMPONENT, ACID-CURING SILICONE JOINT SEALANT (S-S-): ASTM C 920, TYPE S, GRADE NS, CLASS 25, FOR USE NT.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. BASF BUILDING SYSTEMS; OMNIPLUS.
b. DOW CORNING CORPORATION; 786 MILDEW RESISTANT.
c. GE ADVANCED MATERIALS - SILICONES; SANITARY SCS1700.
d. TREMCO INCORPORATED; TREMSIL 200 SANITARY.

1.4 URETHANE JOINT SEALANTS

A. MULTICOMPONENT, SELF-LEVELLING, TRAFFIC-GRADE, URETHANE JOINT SEALANT (U-TB): ASTM C 920, TYPE M, GRADE SL, CLASS 50, FOR USE T.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. POLYMERIC SYSTEMS, INC.; PSI-270.
b. TREMCO INCORPORATED; DYMERIC 240 FC.
c. PECORA; DYNATREAD.
d. BASF BUILDING SYSTEMS; MASTERSEAL SL-2

1.5 LATEX JOINT SEALANTS

A. LATEX JOINT SEALANT (AL): ACRYLIC LATEX OR SILICONIZED ACRYLIC LATEX, ASTM C 834, TYPE OP, GRADE NF.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. BASF BUILDING SYSTEMS; SONOLASTIC.
b. BOSTIK, INC.; CHEM-CALK 600.
c. MAY NATIONAL ASSOCIATES, INC.
d. PECORA CORPORATION; AC-20+.
e. TREMCO INCORPORATED; TREMFLEX 834.

1.6 ACOUSTICAL JOINT SEALANTS (AC)

A. ACOUSTICAL JOINT SEALANT: MANUFACTURER'S STANDARD NON-SAG, PAINTABLE, NON-STAINING LATEX SEALANT COMPLYING WITH ASTM C 834. PRODUCT EFFECTIVELY REDUCES AIRBORNE SOUND TRANSMISSION THROUGH PERIMETER JOINTS AND OPENINGS IN BUILDING CONSTRUCTION AS DEMONSTRATED BY TESTING REPRESENTATIVE ASSEMBLIES ACCORDING TO ASTM E 90.
1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
a. PECORA CORPORATION; AC-20 FTR
b. USG CORPORATION; SHEETROCK ACOUSTICAL SEALANT.

1.7 MISCELLANEOUS MATERIALS

A. PRIMER: MATERIAL RECOMMENDED BY JOINT-SEALANT MANUFACTURER WHERE REQUIRED FOR ADHESION OF SEALANT TO JOINT SUBSTRATES INDICATED, AS DETERMINED FROM PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS AND FIELD TESTS.
B. CLEANERS FOR NONPOROUS SURFACES: CHEMICAL CLEANERS ACCEPTABLE TO MANUFACTURERS OF SEALANTS AND SEALANT BACKING MATERIALS, FREE OF OILY RESIDUES OR OTHER SUBSTANCES CAPABLE OF STAINING OR HARMING JOINT SUBSTRATES AND ADJACENT NONPOROUS SURFACES IN ANY WAY, AND FORMULATED TO PROMOTE OPTIMUM ADHESION OF SEALANTS TO JOINT SUBSTRATES.
C. MASKING TAPE: NONSTAINING, NONABSORBENT MATERIAL COMPATIBLE WITH JOINT SEALANTS AND SURFACES ADJACENT TO JOINTS.

1.8 PREPARATION

A. SURFACE CLEANING OF JOINTS: CLEAN OUT JOINTS IMMEDIATELY BEFORE INSTALLING JOINT SEALANTS TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS AND THE FOLLOWING REQUIREMENTS:
1. REMOVE ALL FOREIGN MATERIAL FROM JOINT SUBSTRATES THAT COULD INTERFERE WITH ADHESION OF JOINT SEALANT, INCLUDING DUST, PAINTS (EXCEPT FOR PERMANENT, PROTECTIVE COATINGS TESTED AND APPROVED FOR SEALANT ADHESION AND COMPATIBILITY BY SEALANT MANUFACTURER), OLD JOINT SEALANTS, AND SURFACE DIRT.
2. CLEAN NONPOROUS JOINT SUBSTRATE SURFACES WITH CHEMICAL CLEANERS OR OTHER MEANS THAT DO NOT STAIN, HARM SUBSTRATES, OR LEAVE RESIDUES CAPABLE OF INTERFERING WITH ADHESION OF JOINT SEALANTS. NONPOROUS JOINT SUBSTRATES INCLUDE THE FOLLOWING:
a. METAL.
b. GLASS.
c. PORCELAIN ENAMEL.
d. GLAZED SURFACES OF CERAMIC TILE.
B. JOINT PRIMING: PRIME JOINT SUBSTRATES WHERE RECOMMENDED BY JOINT-SEALANT MANUFACTURER OR AS INDICATED BY PRECONSTRUCTION JOINT-SEALANT-SUBSTRATE TESTS OR PRIOR EXPERIENCE. APPLY PRIMER TO COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTRUCTIONS. CONFINE PRIMERS TO AREAS OF JOINT-SEALANT BOND; DO NOT ALLOW SPILLAGE OR MIGRATION ONTO ADJOINING SURFACES.
C. MASKING TAPE: USE MASKING TAPE WHERE REQUIRED TO PREVENT CONTACT OF SEALANT OR PRIMER WITH ADJOINING SURFACES THAT OTHERWISE WOULD BE PERMANENTLY STAINED OR DAMAGED BY SUCH CONTACT OR BY CLEANING METHODS REQUIRED TO REMOVE SEALANT SMEARS. REMOVE TAPE IMMEDIATELY AFTER TOOLING WITHOUT DISTURBING JOINT SEAL.

1.9 INSTALLATION OF JOINT SEALANTS

A. GENERAL: COMPLY WITH JOINT-SEALANT MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS FOR PRODUCTS AND APPLICATIONS INDICATED, UNLESS MORE STRINGENT REQUIREMENTS APPLY.
B. SEALANT INSTALLATION STANDARD: COMPLY WITH RECOMMENDATIONS IN ASTM C 1193 FOR USE OF JOINT SEALANTS AS APPLICABLE TO MATERIALS, APPLICATIONS, AND CONDITIONS INDICATED.
C. INSTALL SEALANT BACKINGS OF KIND INDICATED TO SUPPORT SEALANTS DURING APPLICATION AND AT POSITION REQUIRED TO PRODUCE CROSS-SECTIONAL SHAPES AND DEPTHS OF INSTALLED SEALANTS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
1. DO NOT LEAVE GAPS BETWEEN ENDS OF SEALANT BACKINGS.
2. DO NOT STRETCH, TWIST, PUNCTURE, OR TEAR SEALANT BACKINGS.
3. REMOVE ABSORBENT SEALANT BACKINGS THAT HAVE BECOME WET BEFORE SEALANT APPLICATION AND REPLACE THEM WITH DRY MATERIALS.
D. INSTALL SEALANTS USING PROVEN TECHNIQUES THAT COMPLY WITH THE FOLLOWING AND AT THE SAME TIME BACKINGS ARE INSTALLED:
1. PLACE SEALANTS SO THEY DIRECTLY CONTACT AND FULLY WET JOINT SUBSTRATES.
2. PRODUCE UNIFORM, CROSS-SECTIONAL SHAPES AND DEPTHS RELATIVE TO JOINT WIDTHS THAT ALLOW OPTIMUM SEALANT MOVEMENT CAPABILITY.
E. TOOLING OF NONSAG SEALANTS: IMMEDIATELY AFTER SEALANT APPLICATION AND BEFORE SKINNING OR CURING BEGINS, TOOL SEALANTS ACCORDING TO REQUIREMENTS SPECIFIED IN SUBPARAGRAPHS BELOW TO FORM SMOOTH, UNIFORM BEADS OF CONFIGURATION INDICATED; TO ELIMINATE AIR POCKETS; AND TO ENSURE CONTACT AND ADHESION OF SEALANT WITH SIDES OF JOINT.
1. REMOVE EXCESS SEALANT FROM SURFACES ADJACENT TO JOINTS.
2. USE TOOLING AGENTS THAT ARE APPROVED IN WRITING BY SEALANT MANUFACTURER AND THAT DO NOT DISCOLOR SEALANTS OR ADJACENT SURFACES.
3. PROVIDE CONCAVE JOINT PROFILE PER FIGURE 8A IN ASTM C 1193, UNLESS OTHERWISE INDICATED.
4. PROVIDE FLUSH JOINT PROFILE WHERE INDICATED PER FIGURE 8B IN ASTM C 1193.

07 92 00 - JOINT SEALANTS (CONT)

F. ACOUSTICAL SEALANT INSTALLATION: AT SOUND-RATED ASSEMBLIES AND ELSEWHERE AS INDICATED, SEAL CONSTRUCTION AT PERIMETERS, BEHIND CONTROL JOINTS, AND AT OPENINGS AND PENETRATIONS WITH A CONTINUOUS BEAD OF ACOUSTICAL SEALANT. INSTALL ACOUSTICAL SEALANT AT BOTH FACES OF PARTITIONS AT PERIMETERS AND THROUGH PENETRATIONS. COMPLY WITH ASTM C 919 AND WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS.

1.10 JOINT-SEALANT SCHEDULE

A. SEALANT SCHEDULE (SEE SEALANT ABBREVIATIONS ABOVE FOR CORRESPONDING PRODUCT):
1. INTERIOR JOINTS:
a. WALL AND CEILING JOINTS SUBJECT TO MOVEMENT; DESIGNATION U-MC.
b. WALL AND CEILING JOINTS NOT SUBJECT TO MOVEMENT: DESIGNATION AL.
c. INTERIOR SIDE OF EXTERIOR OPENINGS: U-MC.
d. FLOOR JOINTS: DESIGNATION U-TB.
e. WALL AND CEILING JOINTS BETWEEN FRAMES AND THEIR ROUGH OPENING: DESIGNATION AL.
f. WALL AND CEILING JOINTS BETWEEN FRAMES AND ADJOINING SURFACES: DESIGNATION AL.
g. INTERIOR SANITARY JOINTS: JOINTS BETWEEN PLUMBING FIXTURES AND ADJOINING FLOOR, WALL, AND CEILING SURFACES; JOINTS BETWEEN SHOWER DOOR ENCLOSURE COMPONENTS AND ADJACENT FINISH SURFACES; JOINTS IN DIETARY AND FOOD PREPARATION AREAS, KITCHENS, FOOD STORAGE AREAS, AND AREAS SUBJECT TO FREQUENT WET CLEANING, INCLUDING JOINTS BETWEEN WALLS AND FLOORS, JOINTS BETWEEN BACK SPLASHES AND WALL SUBSTRATES: DESIGNATION S-S.
2. EXTERIOR LOCATIONS:
a. WALL JOINTS:
3. BORDERED ON BOTH SIDES BY POROUS BUILDING MATERIAL (CONCRETE, STONE, MASONRY, CEMENT PLASTER): DESIGNATION S-GP.
4. BORDERED ON BOTH SIDES BY NON-POROUS BUILDING MATERIAL (COATED AND UNCOATED METALS, ANODIZED ALUMINUM, PORCELAIN TILE, AND GLASS): DESIGNATION S-GP.
5. BORDERED ON ONE SIDE BY POROUS BUILDING MATERIAL (CONCRETE, STONE, MASONRY) AND OTHER SIDE BY NON-POROUS BUILDING MATERIAL (COATED AND UNCOATED METALS, ANODIZED ALUMINUM, PORCELAIN TILE, AND GLASS): DESIGNATION S-GP.
a. PERIMETER OF PENETRATIONS THROUGH WALLS: DESIGNATION S-GP
b. EXPANSION JOINTS IN CEILINGS, SOFFITS, AND OVERHEAD SURFACES: DESIGNATION S-GP
c. CONTROL JOINTS AND PERIMETER OF PENETRATIONS IN CEILINGS, SOFFITS, AND OVERHEAD SURFACES: DESIGNATION S-GP
d. WALL AND CEILING JOINTS BETWEEN FRAMES AND THEIR ROUGH OPENING: DESIGNATION S-GP.
e. WALL AND CEILING JOINTS BETWEEN FRAMES AND ADJOINING SURFACES: DESIGNATION S-GP.
f. JOINTS AND PERIMETER OF PENETRATIONS IN HORIZONTAL PEDESTRIAN AND VEHICLE TRAFFIC SURFACES: DESIGNATION U-TB.

07 95 13.13 - INTERIOR EXPANSION JOINT COVER ASSEMBLIES

1.1 SUMMARY

A. SECTION INCLUDES INTERIOR EXPANSION JOINT COVER ASSEMBLIES.

1.2 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
B. SHOP DRAWINGS: FOR EACH EXPANSION JOINT COVER ASSEMBLY.
1. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, SPLICES, BLOCK-OUT REQUIREMENT, ATTACHMENTS TO OTHER WORK, AND LINE DIAGRAMS AND A TABULAR SCHEDULE OF EXPANSION JOINT COVER ASSEMBLIES.
C. SAMPLES: FOR EACH EXPANSION JOINT COVER ASSEMBLY AND FOR EACH COLOR AND TEXTURE SPECIFIED.

1.3 ASSEMBLY DESCRIPTION

A. FURNISH UNITS IN LONGEST PRACTICABLE LENGTHS TO MINIMIZE FIELD SPLICING.
B. INCLUDE FACTORY-FABRICATED CLOSURE MATERIALS AND TRANSITION PIECES, T-JOINTS, CORNERS, CURBS, CROSS-CONNECTIONS, AND OTHER ACCESSORIES AS REQUIRED TO PROVIDE CONTINUOUS EXPANSION JOINT COVER ASSEMBLIES.

1.4 PERFORMANCE REQUIREMENTS

A. SEISMIC PERFORMANCE: EXPANSION JOINT COVER ASSEMBLIES SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TO ASCE/SEI 7.
B. FIRE-RESISTANCE RATINGS: PROVIDE EXPANSION JOINT COVER ASSEMBLIES WITH FIRE BARRIERS IDENTICAL TO THOSE OF SYSTEMS TESTED FOR FIRE RESISTANCE ACCORDING TO UL 2079 OR ASTM E 1966 BY A QUALIFIED TESTING AGENCY.
1. HOSE STREAM TEST: WALL-TO-WALL AND WALL-TO-CEILING ASSEMBLIES SHALL BE SUBJECTED TO HOSE STREAM TESTING.
C. EXPANSION JOINT DESIGN CRITERIA:
1. TYPE OF MOVEMENT: THERMAL.
a. NOMINAL JOINT WIDTH: AS INDICATED IN DRAWINGS.
b. MINIMUM JOINT WIDTH: AS INDICATED IN DRAWINGS.
c. MAXIMUM JOINT WIDTH: AS INDICATED IN DRAWINGS.
2. TYPE OF MOVEMENT: SEISMIC.
a. JOINT MOVEMENT: AS INDICATED IN DRAWINGS.

1.5 FLOOR EXPANSION JOINT COVERS

A. METAL-PLATE FLOOR JOINT COVER: METAL COVER PLATE FIXED ON ONE SIDE OF JOINT GAP AND FREE TO SLIDE ON OTHER.
1. APPLICATION: FLOOR-TO-FLOOR AND FLOOR-TO-WALL AS INDICATED IN DRAWINGS.
2. INSTALLATION: SURFACE MOUNTED.
3. LOAD CAPACITY:
a. UNIFORM LOAD: 50 LB/SQ. FT. INSERT LOAD.
b. CONCENTRATED LOAD: 300 LB INSERT LOAD.
c. MAXIMUM DEFLECTION: 0.0625 INCH.
4. FIRE-RESISTANCE RATING: NOT LESS THAN THAT INDICATED IN DRAWINGS.
5. COVER-PLATE DESIGN: PLAIN.
6. EXPOSED METAL:
a. ALUMINUM: CLEAR ANODIC, CLASS I
B. CENTER-PLATE FLOOR JOINT COVER: ASSEMBLY CONSISTING OF CENTER PLATE THAT SLIDES OVER METAL FRAMES FIXED TO SIDES OF JOINT GAPS.
1. APPLICATION: FLOOR TO FLOOR AND FLOOR TO WALL.
2. INSTALLATION: SURFACE MOUNTED, RECESSED, AND NO BUMP AS INDICATED IN DRAWINGS.
3. LOAD CAPACITY:
a. UNIFORM LOAD: 50 LB/SQ. FT.
b. CONCENTRATED LOAD: 300 LB.
c. MAXIMUM DEFLECTION: 0.0625 INCH.
4. FIRE-RESISTANCE RATING: NOT LESS THAN THAT INDICATED ON DRAWINGS.
5. COVER-PLATE DESIGN: PLAIN.
6. EXPOSED METAL:
a. ALUMINUM: CLEAR ANODIC, CLASS I
C. GLIDE-PLATE FLOOR JOINT COVER: ASSEMBLY CONSISTING OF CENTER PLATE THAT SLIDES IN AND OUT OF SLOTS IN METAL FRAMES FIXED TO SIDES OF JOINT GAP.
1. APPLICATION: FLOOR TO FLOOR AND FLOOR TO WALL AS INDICATED IN DRAWINGS.
2. INSTALLATION: RECESSED.
3. LOAD CAPACITY:
a. UNIFORM LOAD: 50 LB/SQ. FT.
b. CONCENTRATED LOAD: 300 LB.
c. MAXIMUM DEFLECTION: 0.0625 INCH.
4. FIRE-RESISTANCE RATING: NOT LESS THAN THAT INDICATED ON DRAWINGS.
5. EXPOSED METAL:
a. ALUMINUM: CLEAR ANODIC, CLASS I.
D. ELASTOMERIC-SEAL FLOOR JOINT COVER: ASSEMBLY CONSISTING OF ELASTOMERIC SEAL ANCHORED TO FRAMES FIXED TO SIDES OF JOINT GAP.
1. APPLICATION: FLOOR TO FLOOR AND FLOOR TO WALL AS INDICATED IN DRAWINGS.
2. INSTALLATION: SURFACE MOUNTED AND RECESSED AS INDICATED IN DRAWINGS.
3. LOAD

08 11 13 - HOLLOW METAL DOORS AND FRAMES (CONT)

1.8 INSTALLATION

A. INSTALL IN ACCORDANCE WITH THE REQUIREMENTS OF THE SPECIFIED DOOR GRADE STANDARD AND NAAMM HMMA 840.
B. IN ADDITION, INSTALL FIRE RATED UNITS IN ACCORDANCE WITH NFPA 80.
C. COORDINATE FRAME ANCHOR PLACEMENT WITH WALL CONSTRUCTION.
D. COORDINATE INSTALLATION OF HARDWARE.
E. COORDINATE INSTALLATION OF GLAZING.
F. COORDINATE INSTALLATION OF ELECTRICAL CONNECTIONS TO ELECTRICAL HARDWARE ITEMS.

1.9 TOLERANCES

A. CLEARANCES BETWEEN DOOR AND FRAME: AS SPECIFIED IN ANSI A250.8.
B. MAXIMUM DIAGONAL DISTORTION: 1/16 IN MEASURED WITH STRAIGHT EDGE, CORNER TO CORNER.

1.10 ADJUSTING

A. ADJUST FOR SMOOTH AND BALANCED DOOR MOVEMENT.

08 36 11 - SECTIONAL DOORS

1.1 PERFORMANCE REQUIREMENTS

A. GENERAL PERFORMANCE: SECTIONAL DOORS SHALL MEET PERFORMANCE REQUIREMENTS SPECIFIED WITHOUT FAILURE DUE TO DEFECTIVE MANUFACTURE, FABRICATION, INSTALLATION, OR OTHER DEFECTS IN CONSTRUCTION AND WITHOUT REQUIRING TEMPORARY INSTALLATION OF REINFORCING COMPONENTS.
B. STRUCTURAL PERFORMANCE: EXTERIOR SECTIONAL DOORS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS, AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
   1. DESIGN WIND LOADS: AS INDICATED ON STRUCTURAL DRAWINGS OR AS OTHERWISE DETERMINED USING DESIGN WIND LOADS APPLICABLE TO PROJECT FROM BASIC WIND SPEED INDICATED IN MILES PER HOUR, ACCORDING TO ASCE 7, SECTION 6.5, "METHOD 2-ANALYTICAL PROCEDURE".
   2. DEFLECTION LIMITS: DESIGN SECTIONAL DOORS TO WITHSTAND DESIGN WIND LOADS WITHOUT EVIDENCING PERMANENT DEFORMATION OR DISENGAGEMENT OF DOOR COMPONENTS. DEFLECTION OF DOOR IN HORIZONTAL POSITION (OPEN) SHALL NOT EXCEED 1/120 OF THE DOOR WIDTH.

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE AND SIZE OF SECTIONAL DOOR AND ACCESSORY. INCLUDE THE FOLLOWING:
B. CONSTRUCTION DETAILS, MATERIAL DESCRIPTIONS, DIMENSIONS OF INDIVIDUAL COMPONENTS, PROFILE DOOR SECTIONS, AND FINISHES.
C. RATED CAPACITIES, OPERATING CHARACTERISTICS, ELECTRICAL CHARACTERISTICS, AND FURNISHED ACCESSORIES.

1.3 DOOR SECTIONS

A. EXTERIOR SECTION FACES AND FRAMES: FABRICATE FROM ZINC-COATED (GALVANIZED), COLD-ROLLED, COMMERCIAL STEEL (CS) SHEET, COMPLYING WITH ASTM A 653, WITH INDICATED ZINC COATING AND THICKNESS.
B. SECTION ENDS AND INTERMEDIATE STILES: ENCLOSE OPEN ENDS OF SECTIONS WITH CHANNEL END STILES FORMED FROM GALVANIZED-STEEL SHEET NOT LESS THAN 0.064-INCH- (1.63-MM-) NOMINAL COATED THICKNESS AND WELDED TO DOOR SECTION. PROVIDE INTERMEDIATE STILES FORMED FROM NOT LESS THAN 0.064-INCH- (1.63-MM-) THICK GALVANIZED-STEEL SHEET, CUT TO DOOR SECTION PROFILE, AND WELDED IN PLACE. SPACE STILES NOT MORE THAN 48 INCHES (1219 MM) APART.
C. REINFORCE BOTTOM SECTION WITH A CONTINUOUS CHANNEL OR ANGLE CONFORMING TO BOTTOM-SECTION PROFILE[ AND ALLOWING INSTALLATION OF ASTRAGAL].
D. REINFORCE SECTIONS WITH CONTINUOUS HORIZONTAL AND DIAGONAL REINFORCEMENT, AS REQUIRED TO STIFFEN DOOR AND FOR WIND LOADING. PROVIDE GALVANIZED-STEEL BARS, STRUTS, TRUSSES, OR STRIP STEEL, FORMED TO DEPTH AND BOLTED OR WELDED IN PLACE. ENSURE THAT REINFORCEMENT DOES NOT OBSTRUCT VISION LITES.
E. PROVIDE REINFORCEMENT FOR HARDWARE ATTACHMENT.

1.4 TRACKS, SUPPORTS, AND ACCESSORIES

A. TRACKS: MANUFACTURER'S STANDARD, GALVANIZED-STEEL TRACK SYSTEM OF CONFIGURATION INDICATED, SIZED FOR DOOR SIZE AND WEIGHT, DESIGNED FOR LIFT TYPE INDICATED AND CLEARANCES SHOWN ON DRAWINGS, AND COMPLYING WITH ASTM A 653 FOR MINIMUM G60 (Z180) ZINC COATING. PROVIDE COMPLETE TRACK ASSEMBLY INCLUDING BRACKETS, BRACING, AND REINFORCEMENT FOR RIGID SUPPORT OF BALL-BEARING ROLLER GUIDES FOR REQUIRED DOOR TYPE AND SIZE. SLOT VERTICAL SECTIONS OF TRACK SPACED 2 INCHES (51 MM) APART FOR DOOR-DROP SAFETY DEVICE. SLOPE TRACKS AT PROPER ANGLE FROM VERTICAL OR DESIGN TRACKS TO ENSURE TIGHT CLOSURE AT JAMBS WHEN DOOR UNIT IS CLOSED.
B. TRACK REINFORCEMENT AND SUPPORTS: GALVANIZED-STEEL TRACK REINFORCEMENT AND SUPPORT MEMBERS, COMPLYING WITH ASTM A 36 AND ASTM A 123. SECURE, REINFORCE, AND SUPPORT TRACKS AS REQUIRED FOR DOOR SIZE AND WEIGHT TO PROVIDE STRENGTH AND RIGIDITY WITHOUT SAG, SWAY, AND VIBRATION DURING OPENING AND CLOSING OF DOORS.
C. HORIZONTAL TRACK ASSEMBLY: TRACK WITH CONTINUOUS REINFORCING ANGLE ATTACHED TO TRACK AND SUPPORTED AT POINTS FROM CURVE IN TRACK TO END OF TRACK BY LATERALLY BRACED ATTACHMENTS TO OVERHEAD STRUCTURAL MEMBERS.
D. WEATHERSEALS: REPLACEABLE, ADJUSTABLE, CONTINUOUS, COMPRESSIBLE WEATHER-STRIPPING GASKETS OF FLEXIBLE VINYL, RUBBER, OR NEOPRENE FITTED TO BOTTOM AND TOP OF SECTIONAL DOOR UNLESS OTHERWISE INDICATED.
E. WINDOWS: MANUFACTURER'S STANDARD INSULATED UNITS OF TYPE AND SIZE INDICATED AND IN ARRANGEMENT SHOWN. SET GLAZING IN VINYL, RUBBER, OR NEOPRENE GLAZING CHANNEL FOR METAL-FRAMED DOORS AND ELASTIC GLAZING COMPOUND FOR WOOD DOORS, AS REQUIRED. PROVIDE REMOVABLE STOPS OF SAME MATERIAL AS DOOR-SECTION FRAMES.

08 36 11 - SECTIONAL DOORS (CONT)

1.5 HARDWARE

A. GENERAL: PROVIDE HEAVY-DUTY, CORROSION-RESISTANT HARDWARE, WITH HOT-DIP GALVANIZED, STAINLESS-STEEL, OR OTHER CORROSION-RESISTANT FASTENERS, TO SUIT DOOR TYPE.
B. HINGES: HEAVY-DUTY, GALVANIZED-STEEL HINGES OF NOT LESS THAN 0.079-INCH- (2.01-MM-) NOMINAL COATED THICKNESS AT EACH END STILE AND AT EACH INTERMEDIATE STILE, ACCORDING TO MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR DOOR SIZE. ATTACH HINGES TO DOOR SECTIONS THROUGH STILES AND RAILS WITH BOLTS AND LOCK NUTS OR LOCK WASHERS AND NUTS. USE RIVETS OR SELF-TAPPING FASTENERS WHERE ACCESS TO NUTS IS NOT POSSIBLE. PROVIDE DOUBLE-END HINGES WHERE REQUIRED, FOR DOORS OVER 16 FEET (4.88 M) WIDE UNLESS OTHERWISE RECOMMENDED BY DOOR MANUFACTURER.
C. ROLLERS: HEAVY-DUTY ROLLERS WITH STEEL BALL-BEARINGS IN CASE-HARDENED STEEL RACES, MOUNTED WITH VARYING PROJECTIONS TO SUIT SLOPE OF TRACK. EXTEND ROLLER SHAFT THROUGH BOTH HINGES WHERE DOUBLE HINGES ARE REQUIRED. PROVIDE 3-INCH- (76-MM-) DIAMETER ROLLER TIRES FOR 3-INCH- (76-MM-) WIDE TRACK AND 2-INCH- (51-MM-) DIAMETER ROLLER TIRES FOR 2-INCH- (51-MM-) WIDE TRACK.
D. PUSH/PULL HANDLES: FOR PUSH-UP OR EMERGENCY-OPERATED DOORS, PROVIDE GALVANIZED-STEEL LIFTING HANDLES ON EACH SIDE OF DOOR.

1.6 LOCKING DEVICES

A. SLIDE BOLT: FABRICATE WITH SIDE-LOCKING BOLTS TO ENGAGE THROUGH SLOTS IN TRACKS FOR LOCKING BY PADLOCK, LOCATED ON SINGLE-JAMB SIDE, OPERABLE FROM INSIDE ONLY.
B. SAFETY INTERLOCK SWITCH: EQUIP POWER-OPERATED DOORS WITH SAFETY INTERLOCK SWITCH TO DISENGAGE POWER SUPPLY WHEN DOOR IS LOCKED.

1.7 COUNTERBALANCE MECHANISM

A. TORSION SPRING: COUNTERBALANCE MECHANISM CONSISTING OF ADJUSTABLE-TENSION TORSION SPRINGS FABRICATED FROM STEEL-SPRING WIRE COMPLYING WITH ASTM A 229, MOUNTED ON TORSION SHAFT MADE OF STEEL TUBE OR SOLID STEEL. PROVIDE SPRINGS DESIGNED FOR NUMBER OF OPERATION CYCLES INDICATED.
B. CABLE DRUMS AND SHAFT FOR DOORS: CAST-ALUMINUM OR GRAY-IRON CASTING CABLE DRUMS MOUNTED ON TORSION SHAFT AND GROOVED TO RECEIVE DOOR-LIFTING CABLES AS DOOR IS RAISED. MOUNT COUNTERBALANCE MECHANISM WITH MANUFACTURER'S STANDARD BALL-BEARING BRACKETS AT EACH END OF TORSION SHAFT. PROVIDE ONE ADDITIONAL MIDPOINT BRACKET FOR SHAFTS UP TO 16 FEET LONG AND TWO ADDITIONAL BRACKETS AT ONE-THIRD POINTS TO SUPPORT SHAFTS MORE THAN 16 FEET LONG UNLESS CLOSER SPACING IS RECOMMENDED BY DOOR MANUFACTURER.
C. CABLES: GALVANIZED-STEEL LIFTING CABLES WITH CABLE SAFETY FACTOR OF AT LEAST 5 TO 1.
D. BRACKET: PROVIDE ANCHOR SUPPORT BRACKET AS REQUIRED TO CONNECT STATIONARY END OF SPRING TO THE WALL AND TO LEVEL THE SHAFT AND PREVENT SAG.
E. PROVIDE A SPRING BUMPER AT EACH HORIZONTAL TRACK TO CUSHION DOOR AT END OF OPENING OPERATION.

1.8 DOOR ASSEMBLY

A. SECTIONAL DOOR: SECTIONAL DOOR FORMED WITH HINGED SECTIONS.
   1. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
      a. CLOPAY BUILDING PRODUCTS; A GRIFFON COMPANY.
      b. OVERHEAD DOOR CORPORATION.
      c. REPUBLIC DOORS.
      d. HAAS.
      e. RAYNOR.
B. OPERATION CYCLES: NOT LESS THAN 20,000.
C. TRACK CONFIGURATION: HIGH LIFT.
D. WEATHERSEALS: FITTED TO BOTTOM AND TOP AND AROUND ENTIRE PERIMETER OF DOOR.
E. ROLLER-TIRE MATERIAL: MANUFACTURER'S STANDARD.
F. LOCKING DEVICE ASSEMBLY: SINGLE-JAMB SIDE LOCKING BARS, OPERABLE FROM INSIDE WITH THUMBTURN.
G. COUNTERBALANCE TYPE: TORSION SPRING.
H. DOOR FINISH: AS SELECTED BY ARCHITECT.
I. PROVIDE DOORS WITH EXHAUST PORT HOLES WHERE REQUIRED FOR EXHAUSTING VEHICLES.

1.9 GENERAL FINISH REQUIREMENTS

A. DOOR FRAME FINISH: AS SELECTED BY ARCHITECT FROM MANUFACTURER'S FULL AVAILABLE RANGE.

1.10 INSTALLATION

A. INSTALL SECTIONAL DOORS AND OPERATING EQUIPMENT COMPLETE WITH NECESSARY HARDWARE, ANCHORS, INSERTS, HANGERS, AND EQUIPMENT SUPPORTS; ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND AS SPECIFIED.
B. TRACKS:
   1. FASTEN VERTICAL TRACK ASSEMBLY TO OPENING JAMBS AND FRAMING, SPACED NOT MORE THAN 24 INCHES APART.
   2. HANG HORIZONTAL TRACK ASSEMBLY FROM STRUCTURAL OVERHEAD FRAMING WITH ANGLES OR CHANNEL HANGERS ATTACHED TO FRAMING BY WELDING OR BOLTING, OR BOTH. PROVIDE SWAY BRACING, DIAGONAL BRACING, AND REINFORCEMENT AS REQUIRED FOR RIGID INSTALLATION OF TRACK AND DOOR-OPERATING EQUIPMENT.
   3. REPAIR GALVANIZED COATING ON TRACKS ACCORDING TO ASTM A 780.
C. ACCESSIBILITY: INSTALL SECTIONAL DOORS, SWITCHES, AND CONTROLS ALONG ACCESSIBLE ROUTES IN COMPLIANCE WITH REGULATORY REQUIREMENTS FOR ACCESSIBILITY.

1.11 ADJUSTING

A. ADJUST HARDWARE AND MOVING PARTS TO FUNCTION SMOOTHLY SO THAT DOORS OPERATE EASILY, FREE OF WARP, TWIST, OR DISTORTION.
B. LUBRICATE BEARINGS AND SLIDING PARTS AS RECOMMENDED BY MANUFACTURER.
C. ADJUST DOORS AND SEALS TO PROVIDE WEATHERTIGHT FIT AROUND ENTIRE PERIMETER.
D. ALIGN AND ADJUST MOTORS, PULLEYS, BELTS, SPROCKETS, CHAINS, AND CONTROLS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.

08 43 13 - ALUMINUM-FRAMED STOREFRONTS

1.1 SUBMITTALS

A. PRODUCT DATA: PROVIDE COMPONENT DIMENSIONS, DESCRIBE COMPONENTS WITHIN ASSEMBLY, ANCHORAGE AND FASTENERS, GLASS AND INFILL, DOOR HARDWARE, INTERNAL DRAINAGE DETAILS.
B. SHOP DRAWINGS: PROVIDE ENGINEERED, SEALED SHOP DRAWINGS INDICATING SYSTEM DIMENSIONS, FRAMED OPENING REQUIREMENTS AND TOLERANCES, AFFECTED RELATED WORK, EXPANSION AND CONTRACTION JOINT LOCATION AND DETAILS, AND FIELD WELDING REQUIRED.

1.2 MANUFACTURERS

A. A. ACCEPTABLE MANUFACTURERS:
   1. YKK AP AMERICA INC : WWW.YKKAP.COM.
   2. KAWNEER NORTH AMERICA : WWW.KAWNEER.COM.
   3. UNITED STATES ALUMINUM CORP : WWW.USALUM.COM.
   4. OLDCASTLE BUILDING ENVELOPE PRODUCTS : WWW.OLDCASTLEBE.COM
   5. ARCADI: WWW.ARCADIA.COM
   6. OTHERS APPROVED AS EQUAL

1.3 STOREFRONT

A. ALUMINUM-FRAMED STOREFRONT: FACTORY FABRICATED, FACTORY FINISHED ALUMINUM FRAMING MEMBERS WITH INFILL, AND RELATED FLASHINGS, ANCHORAGE AND ATTACHMENT DEVICES.
   1. GLAZING RABBET: FOR 1 INCH INSULATING GLAZING.
   2. GLAZING POSITION: CENTER-SET.
   3. VERTICAL MULLION DIMENSIONS: 2 INCHES WIDE BY 4-1/2 INCHES DEEP.
   4. WATER LEAKAGE TEST PRESSURE DIFFERENTIAL: 2.86 LBF/SQ FT.
   5. AIR INFILTRATION TEST PRESSURE DIFFERENTIAL: 1.57 PSF.
   6. CONDENSATION RESISTANCE FACTOR: 40 MINIMUM.
B. PERFORMANCE REQUIREMENTS:
   1. DESIGN AND SIZE COMPONENTS TO WITHSTAND THE SPECIFIED LOAD REQUIREMENTS WITHOUT DAMAGE OR PERMANENT SET, WHEN TESTED IN ACCORDANCE WITH ASTM E330, USING LOADS 1.5 TIMES THE DESIGN WIND LOADS AND 10 SECOND DURATION OF MAXIMUM LOAD.
      a. MEMBER DEFLECTION: LIMIT MEMBER DEFLECTION TO FLEXURE LIMIT OF GLASS IN ANY DIRECTION, WITH FULL RECOVERY OF GLAZING MATERIALS.
   2. MOVEMENT: ACCOMMODATE MOVEMENT BETWEEN STOREFRONT AND PERIMETER FRAMING AND DEFLECTION OF LINTEL, WITHOUT DAMAGE TO COMPONENTS OR DETERIORATION OF SEALS.
   3. SYSTEM INTERNAL DRAINAGE: DRAIN TO THE EXTERIOR BY MEANS OF A WEEP DRAINAGE NETWORK ANY WATER ENTERING JOINTS, CONDENSATION OCCURRING IN GLAZING CHANNEL, AND MIGRATING MOISTURE OCCURRING WITHIN SYSTEM.
   4. EXPANSION/CONTRACTION: PROVIDE FOR EXPANSION AND CONTRACTION WITHIN SYSTEM COMPONENTS CAUSED BY CYCLING TEMPERATURE RANGE OF 170 DEGREES F OVER A 12 HOUR PERIOD WITHOUT CAUSING DETRIMENTAL EFFECT TO SYSTEM COMPONENTS, ANCHORAGES, AND OTHER BUILDING ELEMENTS.

08 43 13 - ALUMINUM-FRAMED STOREFRONTS (CONT.)

1.4 COMPONENTS

A. ALUMINUM FRAMING MEMBERS: TUBULAR ALUMINUM SECTIONS, THERMALLY BROKEN WITH INTERIOR SECTION INSULATED FROM EXTERIOR, DRAINAGE HOLES AND INTERNAL WEEP DRAINAGE SYSTEM.
   1. GLAZING STOPS: FLUSH.
   2. STRUCTURALLY REINFORCED MEMBERS: EXTRUDED ALUMINUM WITH INTERNAL REINFORCEMENT OF STRUCTURAL STEEL MEMBER.
   3. SUBSILLS: PROVIDE MANUFACTURER'S STANDARD SUBSILLS FOR ALL STOREFRONT FRAMING.
B. DOORS: GLAZED ALUMINUM, HEAVY DUTY (1/8 INCH WALL THICKNESS; WITH FULLY WELDED INTERNAL JOINTS).
   1. THICKNESS: 1-3/4 INCHES.
   2. TOP RAIL: 4 INCHES WIDE.
   3. VERTICAL STILES: 4-1/2 INCHES WIDE.
   4. BOTTOM RAIL: 10 INCHES WIDE.
   5. GLAZING STOPS: SQUARE.
   6. FINISH: SAME AS STOREFRONT.

1.5 MATERIALS

A. EXTRUDED ALUMINUM: ASTM B221 (ASTM B221M).
B. FASTENERS: STAINLESS STEEL.
C. CONCEALED FLASHINGS: 0.018 INCH THICK GALVANIZED STEEL.
D. PERIMETER SEALANT: TYPE S-GP SPECIFIED IN SECTION 07 9005.
E. GLASS: AS SPECIFIED IN SECTION 088000.
F. GLAZING GASKETS: TYPE TO SUIT APPLICATION TO ACHIEVE WEATHER, MOISTURE, AND AIR INFILTRATION REQUIREMENTS.
G. GLAZING ACCESSORIES: AS SPECIFIED IN SECTION 088000.

1.6 FINISHES

A. REFER TO FINISH LEGEND IN DRAWINGS.

1.7 HARDWARE

A. DOOR HARDWARE: REFER TO DRAWINGS.
B. WEATHERSTRIPPING: WOOL PILE, CONTINUOUS AND REPLACEABLE; PROVIDE ON ALL DOORS.
C. SILL SWEEP STRIPS: RESILIENT SEAL TYPE, RETRACTING, OR NEOPRENE; PROVIDE ON ALL DOORS.

1.8 FABRICATION

A. FABRICATE COMPONENTS WITH MINIMUM CLEARANCES AND SHIM SPACING AROUND PERIMETER OF ASSEMBLY, YET ENABLING INSTALLATION AND DYNAMIC MOVEMENT OF PERIMETER SEAL.
B. ACCURATELY FIT AND SECURE JOINTS AND CORNERS. MAKE JOINTS FLUSH, HAIRLINE, AND WEATHERPROOF.
C. PREPARE COMPONENTS TO RECEIVE ANCHOR DEVICES. FABRICATE ANCHORS.
D. COAT CONCEALED METAL SURFACES THAT WILL BE IN CONTACT WITH CEMENTITIOUS MATERIALS OR DISSIMILAR METALS WITH BITUMINOUS PAINT.
E. ARRANGE FASTENERS AND ATTACHMENTS TO CONCEAL FROM VIEW.
F. REINFORCE COMPONENTS INTERNALLY FOR DOOR HARDWARE.
G. REINFORCE FRAMING MEMBERS FOR IMPOSED LOADS.
H. FINISHING: APPLY FACTORY FINISH TO ALL SURFACES THAT WILL BE EXPOSED IN COMPLETED ASSEMBLIES.
   1. TOUCH-UP SURFACES CUT DURING FABRICATION SO THAT NO NATURAL ALUMINUM IS VISIBLE IN COMPLETED ASSEMBLIES, INCLUDING JOINT EDGES.

1.9 INSTALLATION

A. INSTALL WALL SYSTEM IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. ATTACH TO STRUCTURE TO PERMIT SUFFICIENT ADJUSTMENT TO ACCOMMODATE CONSTRUCTION TOLERANCES AND OTHER IRREGULARITIES.
C. PROVIDE ALIGNMENT ATTACHMENTS AND SHIMS TO PERMANENTLY FASTEN SYSTEM TO BUILDING STRUCTURE.
D. ALIGN ASSEMBLY PLUMB AND LEVEL, FREE OF WARP OR TWIST. MAINTAIN ASSEMBLY DIMENSIONAL TOLERANCES, ALIGNING WITH ADJACENT WORK.
E. PROVIDE THERMAL ISOLATION WHERE COMPONENTS PENETRATE OR DISRUPT BUILDING INSULATION.
F. INSTALL SILL FLASHINGS. TURN UP ENDS AND EDGES; SEAL TO ADJACENT WORK TO FORM WATERTIGHT DAM.
G. WHERE FASTENERS PENETRATE SILL FLASHINGS, MAKE WATERTIGHT BY SEATING AND SEALING FASTENER HEADS TO SILL FLASHING.
H. COORDINATE ATTACHMENT AND SEAL OF PERIMETER AIR AND VAPOR BARRIER MATERIALS.
I. FILL SHIM SPACES WITH LOW RISE URETHANE FOAM SEALANT AT PERIMETER OF ASSEMBLY TO MAINTAIN CONTINUITY OF THERMAL BARRIER.
J. SET THRESHOLDS IN BED OF MASTIC AND SECURE.
K. INSTALL HARDWARE USING TEMPLATES PROVIDED.
L. INSTALL GLASS AND INFILL PANELS IN ACCORDANCE WITH SECTION 088000, USING GLAZING METHOD REQUIRED TO ACHIEVE PERFORMANCE CRITERIA.
M. TOUCH-UP MINOR DAMAGE TO FACTORY APPLIED FINISH; REPLACE COMPONENTS THAT CANNOT BE SATISFACTORILY REPAIRED.

1.10 TOLERANCES

A. MAXIMUM VARIATION FROM PLUMB: 0.06 INCHES EVERY 3 FT NON-CUMULATIVE OR 1/16 INCHES PER 10 FT, WHICHEVER IS LESS.
B. MAXIMUM MISALIGNMENT OF TWO ADJOINING MEMBERS ABUTTING IN PLANE: 1/32 INCH.

1.11 ADJUSTING

A. ADJUST OPERATING HARDWARE AND SASH FOR SMOOTH OPERATION.

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EXP: 11 - 30 - 2022

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SPECIFICATIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

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| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

08 71 00 - DOOR HARDWARE

1.1 QUALITY ASSURANCE

A. DOOR HARDWARE INSTALLER QUALIFICATIONS: AN EXPERIENCED AND FACTORY TRAINED INSTALLER WHO HAS COMPLETED BOTH STANDARD AND ELECTRIFIED BUILDERS HARDWARE AND INTEGRATED ACCESS CONTROL INSTALLATIONS SIMILAR IN MATERIAL, DESIGN, AND EXTENT TO THAT INDICATED FOR THIS PROJECT AND WHOSE WORK HAS RESULTED IN CONSTRUCTION WITH A RECORD OF SUCCESSFUL IN-SERVICE PERFORMANCE.
B. DOOR HARDWARE SUPPLIER QUALIFICATIONS: DOOR HARDWARE SUPPLIER WITH WAREHOUSING FACILITIES IN PROJECT'S VICINITY WHICH IS NOT MORE THEN A HALF DAY OF TRAVEL FROM THE JOBSITE AND WHO EMPLOYS A QUALIFIED ARCHITECTURAL HARDWARE CONSULTANT OR EQUIVALENT EXPERIENCE AVAILABLE DURING THE COURSE OF THE WORK TO CONSULT WITH CONTRACTOR, ARCHITECT, AND OWNER ABOUT DOOR HARDWARE AND KEYING. SUPPLIER RECOGNIZED BY MANUFACTURERS TO BE A DIRECT FACTORY-AUTHORIZED DISTRIBUTOR OF THE SPECIFIED HARDWARE PRODUCTS. SUPPLIER IS REQUIRED TO BE AVAILABLE FOR ONSITE MEETINGS WITH TWO DAYS NOTICE REGARDING ISSUES THAT ARISE WITH OPENING FUNCTIONS, INSTALLATION, KEYING, ON-SITE WAREHOUSING, TROUBLE SHOOTING OF PRODUCTS, AND FINAL PUNCH OUT RELATED ISSUES.
C. REGULATORY REQUIREMENTS: COMPLY WITH PROVISIONS OF THE FOLLOWING:
   1. WHERE INDICATED TO COMPLY WITH ACCESSIBILITY REQUIREMENTS, COMPLY WITH "AMERICANS WITH DISABILITIES ACT (ADA)," ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES (ADAAG)," ANSI A117.1.
   2. NFPA 101: COMPLY WITH THE FOLLOWING FOR MEANS OF EGRESS DOOR.
   3. APPLICABLE BUILDING CODE, AS INDICATED ON DRAWINGS.
D. FIRE-RATED DOOR ASSEMBLIES: FURNISH DOOR HARDWARE FOR ASSEMBLIES COMPLYING WITH NFPA 80 THAT ARE LISTED AND LABELED BY A TESTING AND INSPECTING AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION, FOR FIRE RATINGS INDICATED, BASED ON TESTING ACCORDING TO NFPA 252 (NEUTRAL PRESSURE AT 40" ABOVE SILL) OR UL-10C.
   1. TEST PRESSURE: POSITIVE PRESSURE LABELING.

1.2 DELIVERY, STORAGE, AND HANDLING

A. TAG EACH ITEM OR PACKAGE SEPARATELY WITH IDENTIFICATION RELATED TO THE FINAL DOOR HARDWARE SCHEDULE, AND INCLUDE KEYING INSTALLATION INSTRUCTIONS WITH EACH ITEM OR PACKAGE.
B. DELIVER PERMANENT KEYS, CYLINDERS, CORES, ACCESS CONTROL CREDENTIALS, ELECTRONIC KEY SOFTWARE WITH LOADED BITTING AND KEY RECORDS PER CYLINDER, AND RELATED ACCESSORIES DIRECTLY TO OWNER VIA REGISTERED MAIL OR OVERNIGHT PACKAGE SERVICE. INSTRUCT OWNER'S PERSONNEL TO THE OWNER SHALL BE ESTABLISHED AT THE "KEYING CONFERENCE". HARDWARE SUPPLIER MUST BE A REGIONAL SUPPLIER TO ADDRESS OWNER QUESTIONS AND CONCERNS RELATING TO KEYING ISSUES THAT ARISE AS PROJECT CLOSE-OUT.

1.3 COORDINATION

A. TEMPLATES: DOOR HARDWARE SUPPLIER TO FURNISH AND DISTRIBUTE TO THE PARTIES INVOLVED FOR TEMPLATING FOR DOORS, FRAMES, AND OTHER WORK SPECIFIED TO BE FACTORY PREPARED FOR INSTALLING STANDARD, ELECTRIFIED AND ACCESS CONTROL DOOR HARDWARE. CHECK SHOP DRAWINGS OF OTHER WORK TO CONFIRM THAT ADEQUATE PROVISIONS ARE MADE FOR LOCATING AND INSTALLING HARDWARE TO COMPLY WITH INDICATED REQUIREMENTS.

1.4 SCHEDULED DOOR HARDWARE

A. GENERAL: FURNISH DOOR HARDWARE FOR EACH DOOR TO COMPLY WITH REQUIREMENTS IN THIS SECTION AND THE DOOR HARDWARE SCHEDULE ON THE DRAWINGS.
   1. DOOR HARDWARE SETS: FURNISH QUANTITY, ITEM, SIZE, FINISH OR COLOR INDICATED FOR NAMED PRODUCTS LISTED IN HARDWARE SETS.
   2. SEQUENCE OF OPERATION: FURNISH ELECTRIFIED AND ACCESS CONTROL HARDWARE FUNCTION, SEQUENCE OF OPERATION, AND INTERFACE WITH OTHER BUILDING CONTROL SYSTEMS INDICATED.
B. DESIGNATIONS: REQUIREMENTS FOR DESIGN, GRADE, FUNCTION, FINISH, SIZE, AND OTHER DISTINCTIVE QUALITIES OF EACH TYPE OF DOOR HARDWARE ARE INDICATED IN THE DOOR HARDWARE SCHEDULE ON DRAWINGS

08 80 00 - GLAZING

1.1 PERFORMANCE REQUIREMENTS

A. GENERAL: INSTALLED GLAZING SYSTEMS SHALL WITHSTAND NORMAL THERMAL MOVEMENT AND WIND LOADS WITHOUT FAILURE, INCLUDING LOSS OR GLASS BREAKAGE ATTRIBUTABLE TO THE FOLLOWING: DEFECTIVE MANUFACTURE, FABRICATION, OR INSTALLATION; FAILURE OF SEALANTS OR GASKETS TO REMAIN WATERTIGHT AND AIRTIGHT; DETERIORATION OF GLAZING MATERIALS; OR OTHER DEFECTS IN CONSTRUCTION.

1.2 SUBMITTALS

A. PRODUCT DATA: FOR EACH GLASS PRODUCT AND GLAZING MATERIAL INDICATED.

1.3 QUALITY ASSURANCE

A. MANUFACTURER QUALIFICATIONS FOR INSULATING-GLASS UNITS WITH SPUTTER-COATED, LOW-E COATINGS: A QUALIFIED INSULATING-GLASS MANUFACTURER WHO IS APPROVED AND CERTIFIED BY COATED-GLASS MANUFACTURER.
B. SAFETY GLAZING LABELING: WHERE SAFETY GLAZING LABELING IS INDICATED, PERMANENTLY MARK GLAZING WITH CERTIFICATION LABEL OF THE SGCC OR ANOTHER CERTIFICATION AGENCY ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. LABEL SHALL INDICATE MANUFACTURER'S NAME, TYPE OF GLASS, THICKNESS, AND SAFETY GLAZING STANDARD WITH WHICH GLASS COMPLIES.

1.4 DELIVERY, STORAGE, AND HANDLING

A. PROTECT GLAZING MATERIALS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS. PREVENT DAMAGE TO GLASS AND GLAZING MATERIALS FROM CONDENSATION, TEMPERATURE CHANGES, DIRECT EXPOSURE TO SUN, OR OTHER CAUSES.
B. COMPLY WITH INSULATING-GLASS MANUFACTURER'S WRITTEN RECOMMENDATIONS FOR VENTING AND SEALING UNITS TO AVOID HERMETIC SEAL RUPTURES DUE TO ALTITUDE CHANGE.

1.5 WARRANTY

A. MANUFACTURER'S SPECIAL WARRANTY FOR COATED-GLASS PRODUCTS: MANUFACTURER'S STANDARD FORM IN WHICH COATED-GLASS MANUFACTURER AGREES TO REPLACE COATED-GLASS UNITS THAT DETERIORATE WITHIN SPECIFIED WARRANTY PERIOD. DETERIORATION OF COATED GLASS IS DEFINED AS DEFECTS DEVELOPED FROM NORMAL USE THAT ARE NOT ATTRIBUTED TO GLASS BREAKAGE OR TO MAINTAINING AND CLEANING COATED GLASS CONTRARY TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DEFECTS INCLUDE PEELING, CRACKING, AND OTHER INDICATIONS OF DETERIORATION IN COATING.

08 80 00 - GLAZING (CONT)

   1. WARRANTY PERIOD: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.
B. MANUFACTURER'S SPECIAL WARRANTY ON LAMINATED GLASS: MANUFACTURER'S STANDARD FORM IN WHICH LAMINATED-GLASS MANUFACTURER AGREES TO REPLACE LAMINATED-GLASS UNITS THAT DETERIORATE WITHIN SPECIFIED WARRANTY PERIOD. DETERIORATION OF LAMINATED GLASS IS DEFINED AS DEFECTS DEVELOPED FROM NORMAL USE THAT ARE NOT ATTRIBUTED TO GLASS BREAKAGE OR TO MAINTAINING AND CLEANING LAMINATED GLASS CONTRARY TO MANUFACTURER'S WRITTEN INSTRUCTIONS. DEFECTS INCLUDE EDGE SEPARATION, DELAMINATION MATERIALLY OBSTRUCTING VISION THROUGH GLASS, AND BLEMISHES EXCEEDING THOSE ALLOWED BY REFERENCED LAMINATED-GLASS STANDARD.
   1. WARRANTY PERIOD: 10 YEARS FROM DATE OF SUBSTANTIAL COMPLETION.

1.6 GLASS PRODUCTS, GENERAL

A. THICKNESS: WHERE GLASS THICKNESS IS INDICATED, IT IS A MINIMUM. PROVIDE GLASS LITES IN THICKNESSES AS NEEDED TO COMPLY WITH REQUIREMENTS INDICATED.
   1. MINIMUM GLASS THICKNESS FOR EXTERIOR LITES: NOT LESS THAN 6.0 MM.
B. STRENGTH: WHERE FLOAT GLASS IS INDICATED, PROVIDE ANNEALED FLOAT GLASS, KIND HS HEAT-TREATED FLOAT GLASS, OR KIND FT HEAT-TREATED FLOAT GLASS AS NEEDED TO COMPLY WITH "PERFORMANCE REQUIREMENTS" ARTICLE. WHERE HEAT-STRENGTHENED GLASS IS INDICATED, PROVIDE KIND HS HEAT-TREATED FLOAT GLASS OR KIND FT HEAT-TREATED FLOAT GLASS AS NEEDED TO COMPLY WITH "PERFORMANCE REQUIREMENTS" ARTICLE. WHERE FULLY TEMPERED GLASS IS INDICATED, PROVIDE KIND FT HEAT-TREATED FLOAT GLASS.

1.7 GLASS PRODUCTS

A. FLOAT GLASS: ASTM C 1036, TYPE I, QUALITY-Q3, CLASS I (CLEAR) UNLESS OTHERWISE INDICATED.
B. HEAT-TREATED FLOAT GLASS: ASTM C 1048; TYPE I; QUALITY-Q3; CLASS I (CLEAR) UNLESS OTHERWISE INDICATED; OF KIND AND CONDITION INDICATED.
   1. FABRICATION PROCESS: BY HORIZONTAL (ROLLER-HEARTH) PROCESS WITH ROLL-WAVE DISTORTION PARALLEL TO BOTTOM EDGE OF GLASS AS INSTALLED UNLESS OTHERWISE INDICATED.
   2. FOR UNCOATED GLASS, COMPLY WITH REQUIREMENTS FOR CONDITION A.
   3. FOR COATED VISION GLASS, COMPLY WITH REQUIREMENTS FOR CONDITION C (OTHER COATED GLASS).

1.8 GLAZING GASKETS

A. DENSE COMPRESSION GASKETS: MOLDED OR EXTRUDED GASKETS OF PROFILE AND HARDNESS REQUIRED TO MAINTAIN WATERTIGHT SEAL, MADE FROM ONE OF THE FOLLOWING:
   1. NEOPRENE COMPLYING WITH ASTM C 864.
   2. EPDM COMPLYING WITH ASTM C 864.
   3. SILICONE COMPLYING WITH ASTM C 1115.
   4. THERMOPLASTIC POLYOLEFIN RUBBER COMPLYING WITH ASTM C 1115.

1.9 GLAZING SEALANTS

A. A. GENERAL:
   1. COMPATIBILITY: PROVIDE GLAZING SEALANTS THAT ARE COMPATIBLE WITH ONE ANOTHER AND WITH OTHER MATERIALS THEY WILL CONTACT, INCLUDING GLASS PRODUCTS, SEALS OF INSULATING-GLASS UNITS, AND GLAZING CHANNEL SUBSTRATES, UNDER CONDITIONS OF EXPOSURE AND APPLICATION, AS DEMONSTRATED BY SEALANT MANUFACTURER BASED ON TESTING AND FIELD EXPERIENCE.
   2. SUITABILITY: COMPLY WITH SEALANT AND GLASS MANUFACTURERS' WRITTEN INSTRUCTIONS FOR SELECTING GLAZING SEALANTS SUITABLE FOR APPLICATIONS INDICATED AND FOR CONDITIONS EXISTING AT TIME OF INSTALLATION.
   3. VOC CONTENT: FOR SEALANTS USED INSIDE OF THE WEATHERPROOFING SYSTEM, NOT MORE THAN 250 G/L WHEN CALCULATED ACCORDING TO 40 CFR 59, SUBPART D.
B. GLAZING SEALANT: NEUTRAL-CURING SILICONE GLAZING SEALANT COMPLYING WITH ASTM C 920, TYPE S, GRADE NS, CLASS 50, USE NT.
   1. PRODUCTS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE ONE OF THE FOLLOWING:
      a. DOW CORNING CORPORATION; 795.
      b. GE ADVANCED MATERIALS - SILICONES; SILGLAZE II SCS2800.
      c. PECORA CORPORATION; 864.
      d. TREMCO INCORPORATED; SPECTREM 2.

1.10 GLAZING TAPES

A. BACK-BEDDING MASTIC GLAZING TAPES: PREFORMED, BUTYL-BASED, 100 PERCENT SOLIDS ELASTOMERIC TAPE; NON-STAINING AND NON-MIGRATING IN CONTACT WITH NONPOROUS SURFACES; WITH OR WITHOUT SPACER ROD AS RECOMMENDED IN WRITING BY TAPE AND GLASS MANUFACTURERS FOR APPLICATION INDICATED; AND COMPLYING WITH ASTM C 1281 AND AAMA 800 FOR PRODUCTS INDICATED BELOW:
   1. AAMA 804.3 TAPE, WHERE INDICATED.
   2. AAMA 806.3 TAPE, FOR GLAZING APPLICATIONS IN WHICH TAPE IS SUBJECT TO CONTINUOUS PRESSURE.
   3. AAMA 807.3 TAPE, FOR GLAZING APPLICATIONS IN WHICH TAPE IS NOT SUBJECT TO CONTINUOUS PRESSURE.

1.11 MISCELLANEOUS GLAZING MATERIALS

A. GENERAL: PROVIDE PRODUCTS OF MATERIAL, SIZE, AND SHAPE COMPLYING WITH REFERENCED GLAZING STANDARD, REQUIREMENTS OF MANUFACTURERS OF GLASS AND OTHER GLAZING MATERIALS FOR APPLICATION INDICATED, AND WITH A PROVEN RECORD OF COMPATIBILITY WITH SURFACES CONTACTED IN INSTALLATION.
B. CLEANERS, PRIMERS, AND SEALERS: TYPES RECOMMENDED BY SEALANT OR GASKET MANUFACTURER.
C. SETTING BLOCKS: ELASTOMERIC MATERIAL WITH A SHORE, TYPE A DUROMETER HARDNESS OF 85, PLUS OR MINUS 5.
D. SPACERS: ELASTOMERIC BLOCKS OR CONTINUOUS EXTRUSIONS OF HARDNESS REQUIRED BY GLASS MANUFACTURER TO MAINTAIN GLASS LITES IN PLACE FOR INSTALLATION INDICATED.
E. EDGE BLOCKS: ELASTOMERIC MATERIAL OF HARDNESS NEEDED TO LIMIT GLASS LATERAL MOVEMENT (SIDE WALKING).
F. CYLINDRICAL GLAZING SEALANT BACKING: ASTM C 1330, TYPE O (OPEN-CELL MATERIAL), OF SIZE AND DENSITY TO CONTROL GLAZING SEALANT DEPTH AND OTHERWISE PRODUCE OPTIMUM GLAZING SEALANT PERFORMANCE.
G. PERIMETER INSULATION FOR FIRE-RESISTIVE GLAZING: PRODUCT THAT IS APPROVED BY TESTING AGENCY THAT LISTED AND LABELED FIRE-RESISTANT GLAZING PRODUCT WITH WHICH IT IS USED FOR APPLICATION AND FIRE-PROTECTION RATING INDICATED.

1.12 FABRICATION OF GLAZING UNITS

A. FABRICATE GLAZING UNITS IN SIZES REQUIRED TO FIT OPENINGS INDICATED FOR PROJECT, WITH EDGE AND FACE CLEARANCES, EDGE AND SURFACE CONDITIONS, AND BITE COMPLYING WITH WRITTEN INSTRUCTIONS OF PRODUCT MANUFACTURER AND REFERENCED GLAZING PUBLICATIONS, TO COMPLY WITH SYSTEM PERFORMANCE REQUIREMENTS.
B. CLEAN-CUT OR FLAT-GRIND VERTICAL EDGES OF BUTT-GLAZED MONOLITHIC LITES TO PRODUCE SQUARE EDGES WITH SLIGHT CHAMFERS AT JUNCTIONS OF EDGES AND FACES.
C. GRIND SMOOTH AND POLISH EXPOSED GLASS EDGES AND CORNERS.

1.13 GLASS SCHEDULE

A. REFER TO ENVELOPE ASSEMBLY INFORMATION ON DRAWINGS FOR GLAZING TYPES
B. PROVIDE SAFETY GLAZING LABELING WHERE APPROPRIATE.

1.14 GLAZING, GENERAL

A. COMPLY WITH COMBINED WRITTEN INSTRUCTIONS OF MANUFACTURERS OF GLASS, SEALANTS, GASKETS, AND OTHER GLAZING MATERIALS, UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED, INCLUDING THOSE IN REFERENCED GLAZING PUBLICATIONS.
B. ADJUST GLAZING CHANNEL DIMENSIONS AS REQUIRED BY PROJECT CONDITIONS DURING INSTALLATION TO PROVIDE NECESSARY BITE ON GLASS, MINIMUM EDGE AND FACE CLEARANCES, AND ADEQUATE SEALANT THICKNESSES, WITH REASONABLE TOLERANCES.
C. PROTECT GLASS EDGES FROM DAMAGE DURING HANDLING AND INSTALLATION. REMOVE DAMAGED GLASS FROM PROJECT SITE AND LEGALLY DISPOSE OF OFF PROJECT SITE. DAMAGED GLASS IS GLASS WITH EDGE DAMAGE OR OTHER IMPERFECTIONS THAT, WHEN INSTALLED, COULD WEAKEN GLASS AND IMPAIR PERFORMANCE AND APPEARANCE.
D. APPLY PRIMERS TO JOINT SURFACES WHERE REQUIRED FOR ADHESION OF SEALANTS, AS DETERMINED BY PRECONSTRUCTION TESTING.
E. INSTALL SETTING BLOCKS IN SILL RABBETS, SIZED AND LOCATED TO COMPLY WITH REFERENCED GLAZING PUBLICATIONS, UNLESS OTHERWISE REQUIRED BY GLASS MANUFACTURER. SET BLOCKS IN THIN COURSE OF COMPATIBLE SEALANT SUITABLE FOR HEEL BEAD.
F. DO NOT EXCEED EDGE PRESSURES STIPULATED BY GLASS MANUFACTURERS FOR INSTALLING GLASS LITES.
G. PROVIDE SPACERS FOR GLASS LITES WHERE LENGTH PLUS WIDTH IS LARGER THAN 50 INCHES (1270 MM).
   1. LOCATE SPACERS DIRECTLY OPPOSITE EACH OTHER ON BOTH INSIDE AND OUTSIDE FACES OF GLASS. INSTALL CORRECT SIZE AND SPACING TO PRESERVE REQUIRED FACE CLEARANCES, UNLESS GASKETS AND GLAZING TAPES ARE USED THAT HAVE DEMONSTRATED ABILITY TO MAINTAIN REQUIRED FACE CLEARANCES AND TO COMPLY WITH SYSTEM PERFORMANCE REQUIREMENTS.
   2. PROVIDE 1/8-INCH MINIMUM BITE OF SPACERS ON GLASS AND USE THICKNESS EQUAL TO SEALANT WIDTH. WITH GLAZING TAPE, USE THICKNESS SLIGHTLY LESS THAN FINAL COMPRESSED THICKNESS OF TAPE.
H. PROVIDE EDGE BLOCKING WHERE INDICATED OR NEEDED TO PREVENT GLASS LITES FROM MOVING SIDEWAYS IN GLAZING CHANNEL, AS RECOMMENDED IN WRITING BY GLASS MANUFACTURER AND ACCORDING TO REQUIREMENTS IN REFERENCED GLAZING PUBLICATIONS.
I. SET GLASS LITES IN EACH SERIES WITH UNIFORM PATTERN, DRAW, BOW, AND SIMILAR CHARACTERISTICS.
J. SET GLASS LITES WITH PROPER ORIENTATION SO THAT COATINGS FACE EXTERIOR OR INTERIOR AS SPECIFIED.
K. WHERE WEDGE-SHAPED GASKETS ARE DRIVEN INTO ONE SIDE OF CHANNEL TO PRESSURIZE SEALANT OR GASKET ON OPPOSITE SIDE, PROVIDE ADEQUATE ANCHORAGE SO GASKET CANNOT WALK OUT WHEN INSTALLATION IS SUBJECTED TO MOVEMENT.

08 80 00 - GLAZING (CONT)

L. SQUARE CUT WEDGE-SHAPED GASKETS AT CORNERS AND INSTALL GASKETS IN A MANNER RECOMMENDED BY GASKET MANUFACTURER TO PREVENT CORNERS FROM PULLING AWAY; SEAL CORNER JOINTS AND BUTT JOINTS WITH SEALANT RECOMMENDED BY GASKET MANUFACTURER.

1.15 TAPE GLAZING

A. POSITION TAPES ON FIXED STOPS SO THAT, WHEN COMPRESSED BY GLASS, THEIR EXPOSED EDGES ARE FLUSH WITH OR RECESSED SLIGHTLY BELOW SIGHTLINE OF STOPS.
B. INSTALL TAPES CONTINUOUSLY, BUT NOT NECESSARILY IN ONE CONTINUOUS LENGTH. DO NOT STRETCH TAPES TO MAKE THEM FIT OPENING.
C. COVER VERTICAL GLAZING JOINTS BY APPLYING TAPES TO HEADS AND SILLS FIRST AND THEN TO JAMBS. COVER HORIZONTAL FRAMING JOINTS BY APPLYING TAPES TO JAMBS AND THEN TO HEADS AND SILLS.
D. PLACE JOINTS IN TAPES AT CORNERS OF OPENING WITH ADJOINING LENGTHS BUTTED TOGETHER, NOT LAPPED. SEAL JOINTS IN TAPES WITH COMPATIBLE SEALANT APPROVED BY TAPE MANUFACTURER.
E. DO NOT REMOVE RELEASE PAPER FROM TAPE UNTIL RIGHT BEFORE EACH GLAZING UNIT IS INSTALLED.
F. APPLY HEEL BEAD OF ELASTOMERIC SEALANT.
G. CENTER GLASS LITES IN OPENING ON SETTING BLOCKS AND PRESS FIRMLY AGAINST TAPE BY INSERTING DENSE COMPRESSION GASKETS FORMED AND INSTALLED TO LOCK IN PLACE AGAINST FACES OF REMOVABLE STOPS. START GASKET APPLICATIONS AT CORNERS AND WORK TOWARD CENTERS OF OPENINGS.
H. APPLY CAP BEAD OF ELASTOMERIC SEALANT OVER EXPOSED EDGE OF TAPE.

1.16 GASKET GLAZING (DRY)

A. CUT COMPRESSION GASKETS TO LENGTHS RECOMMENDED BY GASKET MANUFACTURER TO FIT OPENINGS EXACTLY, WITH ALLOWANCE FOR STRETCH DURING INSTALLATION.
B. INSERT SOFT COMPRESSION GASKET BETWEEN GLASS AND FRAME OR FIXED STOP SO IT IS SECURELY IN PLACE WITH JOINTS MITER CUT AND BONDED TOGETHER AT CORNERS.
C. INSTALLATION WITH DRIVE-IN WEDGE GASKETS: CENTER GLASS LITES IN OPENINGS ON SETTING BLOCKS AND PRESS FIRMLY AGAINST SOFT COMPRESSION GASKET BY INSERTING DENSE COMPRESSION GASKETS FORMED AND INSTALLED TO LOCK IN PLACE AGAINST FACES OF REMOVABLE STOPS. START GASKET APPLICATIONS AT CORNERS AND WORK TOWARD CENTERS OF OPENINGS. COMPRESS GASKETS TO PRODUCE A WEATHERTIGHT SEAL WITHOUT DEVELOPING BENDING STRESSES IN GLASS. SEAL GASKET JOINTS WITH SEALANT RECOMMENDED BY GASKET MANUFACTURER.
D. INSTALLATION WITH PRESSURE-GLAZING STOPS: CENTER GLASS LITES IN OPENINGS ON SETTING BLOCKS AND PRESS FIRMLY AGAINST SOFT COMPRESSION GASKET. INSTALL DENSE COMPRESSION GASKETS AND PRESSURE-GLAZING STOPS, APPLYING PRESSURE UNIFORMLY TO COMPRESSION GASKETS. COMPRESS GASKETS TO PRODUCE A WEATHERTIGHT SEAL WITHOUT DEVELOPING BENDING STRESSES IN GLASS. SEAL GASKET JOINTS WITH SEALANT RECOMMENDED BY GASKET MANUFACTURER.
E. INSTALL GASKETS SO THEY PROTRUDE PAST FACE OF GLAZING STOPS.

08 91 19 - FIXED LOUVERS

1.1 ACTION SUBMITTALS

A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT.
   1. LOUVERS SHALL BEAR AMCA SEAL, INCLUDE PRINTED CATALOG PAGES SHOWING SPECIFIED MODELS WITH APPROPRIATE AMCA CERTIFIED RATINGS SEALS.
B. SHOP DRAWINGS: FOR LOUVERS AND ACCESSORIES. INCLUDE PLANS, ELEVATIONS, SECTIONS, DETAILS, AND ATTACHMENTS TO OTHER WORK. SHOW FRAME PROFILES AND BLADE PROFILES, ANGLES, AND SPACING.
C. SAMPLES: FOR EACH TYPE OF METAL FINISH REQUIRED.
D. DELEGATED-DESIGN SUBMITTAL: FOR LOUVERS INDICATED TO COMPLY WITH STRUCTURAL AND SEISMIC PERFORMANCE REQUIREMENTS, INCLUDING ANALYSIS DATA SIGNED AND SEALED BY THE QUALIFIED PROFESSIONAL ENGINEER RESPONSIBLE FOR THEIR PREPARATION.

1.2 INFORMATIONAL SUBMITTALS

A. PRODUCT TEST REPORTS: BASED ON TESTS PERFORMED ACCORDING TO AMCA 500-L.
B. WINDBORNE-DEBRIS-IMPACT-RESISTANCE TEST REPORTS.

1.3 PERFORMANCE REQUIREMENTS

A. DELEGATED DESIGN: DESIGN LOUVERS, INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING STRUCTURAL AND SEISMIC PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
B. STRUCTURAL PERFORMANCE: LOUVERS SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND THE FOLLOWING LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED WITHOUT PERMANENT DEFORMATION OF LOUVER COMPONENTS, NOISE OR METAL FATIGUE CAUSED BY LOUVER-BLADE RATTLE OR FLUTTER, OR PERMANENT DAMAGE TO FASTENERS AND ANCHORS. WIND PRESSURES SHALL BE CONSIDERED TO ACT NORMAL TO THE FACE OF THE BUILDING.
   1. WIND LOADS: DETERMINE LOADS BASED ON PRESSURES AS INDICATED ON DRAWINGS.
   2. WIND LOADS: DETERMINE LOADS BASED ON A UNIFORM PRESSURE OF 20 LBF/SQ. FT., ACTING INWARD OR OUTWARD.
C. WINDBORNE-DEBRIS-IMPACT RESISTANCE: LOUVERS LOCATED WITHIN 30 FEET OF GRADE SHALL PASS BASIC-PROTECTION, LARGE-MISSILE TESTING REQUIREMENTS IN ASTM E 1996 FOR WIND ZONE 3 WHEN TESTED ACCORDING TO ASTM E 1886. TEST SPECIMENS SHALL BE NO SMALLER IN WIDTH AND LENGTH THAN LOUVERS INSTALLED FOR PROJECT.
D. SEISMIC PERFORMANCE: LOUVERS, INCLUDING ATTACHMENTS TO OTHER CONSTRUCTION, SHALL WITHSTAND THE EFFECTS OF EARTHQUAKE MOTIONS DETERMINED ACCORDING TOASCE/SEI 7.
   1. DESIGN EARTHQUAKE SPECTRAL RESPONSE ACCELERATION, SHORT PERIOD (SDS) FOR PROJECT IS INDICATED IN DRAWINGS.
   2. COMPONENT IMPORTANCE FACTOR: AS INDICATED IN DRAWINGS].
E. LOUVER PERFORMANCE RATINGS: PROVIDE LOUVERS COMPLYING WITH REQUIREMENTS SPECIFIED, AS DEMONSTRATED BY TESTING MANUFACTURER'S STOCK UNITS IDENTICAL TO THOSE PROVIDED, EXCEPT FOR LENGTH AND WIDTH ACCORDING TO AMCA 500-L.

1.4 FIXED, EXTRUDED-ALUMINUM LOUVERS

A. A. HORIZONTAL, NONDRAINABLE-BLADE LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. BLADE PROFILE: PLAIN BLADE WITHOUT CENTER BAFFLE.
   3. FRAME AND BLADE NOMINAL THICKNESS: NOT LESS THAN 0.060 INCH FOR BLADES AND 0.080 INCH FOR FRAMES.
   4. MULLION TYPE: EXPOSED.
   5. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 7.5 SQ. FT.FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. POINT OF BEGINNING WATER PENETRATION: NOT LESS THAN 700 FPM.
      c. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 650-FPM FREE-AREA INTAKEVELOCITY.
B. B. HORIZONTAL, DRAINABLE-BLADE LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. FRAME AND BLADE NOMINAL THICKNESS: NOT LESS THAN 0.060 INCH FOR BLADES AND 0.080 INCH FOR FRAMES.
   3. MULLION TYPE: EXPOSED.
   4. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 7.0 SQ. FT. FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. POINT OF BEGINNING WATER PENETRATION: NOT LESS THAN 900 FPM.
      c. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 700-FPM FREE-AREA INTAKE VELOCITY.
   5. AMCA SEAL: MARK UNITS WITH AMCA CERTIFIED RATINGS SEAL.
C. HORIZONTAL, WIND-DRIVEN-RAIN-RESISTANT LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. FRAME AND BLADE NOMINAL THICKNESS: NOT LESS THAN 0.060 INCH FOR BLADES AND 0.080 INCH FOR FRAMES.
   3. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 5.0 SQ. FT. FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 600-FPM FREE-AREA INTAKE VELOCITY.
      c. WIND-DRIVEN RAIN PERFORMANCE: NOT LESS THAN 80 PERCENT EFFECTIVENESS WHEN SUBJECTED TO A RAINFALL RATE OF 3 INCHES PER HOUR AND A WIND SPEED OF 29 MPH PER HOUR AND A WIND SPEED OF 50 MPH] AT A CORE-AREA INTAKE VELOCITY OF 300 FPM.
   4. AMCA SEAL: MARK UNITS WITH AMCA CERTIFIED RATINGS SEAL.
D. VERTICAL, WIND-DRIVEN-RAIN-RESISTANT LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. FRAME AND BLADE NOMINAL THICKNESS: NOT LESS THAN 0.060 INCH FOR BLADES AND 0.080 INCH FOR FRAMES.
   3. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 5.0 SQ. FT. FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 600-FPM FREE-AREA INTAKE VELOCITY.
      c. WIND-DRIVEN RAIN PERFORMANCE: NOT LESS THAN 99 PERCENT EFFECTIVENESS WHEN SUBJECTED TO A RAINFALL RATE OF 3 INCHES PER HOUR AND A WIND SPEED OF 29 MPH AT A CORE-AREA INTAKE VELOCITY OF 300 FPM.
   4. AMCA SEAL: MARK UNITS WITH AMCA CERTIFIED RATINGS SEAL.

1.5 FIXED, FORMED-METAL LOUVERS

A. HORIZONTAL, NONDRAINABLE-BLADE LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. BLADE PROFILE: PLAIN BLADE WITHOUT CENTER BAFFLE.
   3. FRAME AND BLADE MATERIAL AND NOMINAL THICKNESS: GALVANIZED-STEEL SHEET, NOT LESS THAN 0.052 INCH FOR FRAMES AND 0.040 INCH FOR BLADES.
   4. MULLION TYPE: EXPOSED.
   5. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 6.5 SQ. FT. FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. POINT OF BEGINNING WATER PENETRATION: NOT LESS THAN 550 FPM.
      c. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 550-FPM FREE-AREA INTAKE VELOCITY.
B. B. HORIZONTAL, DRAINABLE-BLADE LOUVER:
   1. LOUVER DEPTH: AS INDICATED IN DRAWINGS.
   2. FRAME AND BLADE MATERIAL AND NOMINAL THICKNESS: GALVANIZED-STEEL SHEET, NOT LESS THAN 0.052 INCH FOR FRAMES AND 0.040 INCH FOR BLADES.
   3. MULLION TYPE: EXPOSED.

08 91 19 - FIXED LOUVERS (CONT.)

   4. LOUVER PERFORMANCE RATINGS:
      a. FREE AREA: NOT LESS THAN 7.0 SQ. FT. FOR 48-INCH- WIDE BY 48-INCH- HIGH LOUVER.
      b. POINT OF BEGINNING WATER PENETRATION: NOT LESS THAN 800 FPM.
      c. AIR PERFORMANCE: NOT MORE THAN 0.10-INCH WG STATIC PRESSURE DROP AT 700-FPM FREE-AREA INTAKE VELOCITY.
   5. AMCA SEAL: MARK UNITS WITH AMCA CERTIFIED RATINGS SEAL.

1.6 LOUVER SCREENS

A. GENERAL: PROVIDE SCREEN AT EACH EXTERIOR LOUVER.
   1. SCREEN LOCATION FOR FIXED LOUVERS: INTERIOR FACE.
   2. SCREENING TYPE: BIRD SCREENING.
B. LOUVER SCREEN FRAMES: SAME TYPE AND FORM OF METAL AS INDICATED FOR LOUVER TO WHICH SCREENS ARE ATTACHED.
C. LOUVER SCREENING FOR GALVANIZED-STEE

09 29 00 - GYPSUM BOARD (CONT)

1.10 APPLYING AND FINISHING PANELS, GENERAL

A. COMPLY WITH ASTM C840, GA-216-2007
B. INSTALL CEILING PANELS ACROSS FRAMING TO MINIMIZE THE NUMBER OF ABUTTING END JOINTS AND TO AVOID ABUTTING END JOINTS IN CENTRAL AREA OF EACH CEILING. STAGGER ABUTTING END JOINTS OF ADJACENT PANELS NOT LESS THAN ONE FRAMING MEMBER.
C. INSTALL PANELS WITH FACE SIDE OUT. BUTT PANELS TOGETHER FOR A LIGHT CONTACT AT EDGES AND ENDS WITH NOT MORE THAN 1/16 INCH (1.5 MM) OF OPEN SPACE BETWEEN PANELS. DO NOT FORCE INTO PLACE.
D. LOCATE EDGE AND END JOINTS OVER SUPPORTS, EXCEPT IN CEILING APPLICATIONS WHERE INTERMEDIATE SUPPORTS OR GYPSUM BOARD BACK-BLOCKING IS PROVIDED BEHIND END JOINTS. DO NOT PLACE TAPERED EDGES AGAINST CUT EDGES OR ENDS. STAGGER VERTICAL JOINTS ON OPPOSITE SIDES OF PARTITIONS. DO NOT MAKE JOINTS OTHER THAN CONTROL JOINTS AT CORNERS OF FRAMED OPENINGS.
E. FORM CONTROL AND EXPANSION JOINTS WITH SPACE BETWEEN EDGES OF ADJOINING GYPSUM PANELS.
F. COVER BOTH FACES OF SUPPORT FRAMING WITH GYPSUM PANELS IN CONCEALED SPACES (ABOVE CEILINGS, ETC., EXCEPT IN CHASES BRACED INTERNALLY.
   1. FIT GYPSUM PANELS AROUND DUCTS, PIPES, AND CONDUITS.
   2. WHERE PARTITIONS INTERSECT STRUCTURAL MEMBERS PROJECTING BELOW UNDERSIDE OF FLOOR/ROOF SLABS AND DECKS, CUT GYPSUM PANELS TO FIT PROFILE FORMED BY STRUCTURAL MEMBERS; ALLOW 1/4- TO 3/8-INCH-WIDE JOINTS TO INSTALL SEALANT.
G. ISOLATE PERIMETER OF GYPSUM BOARD APPLIED TO NON-LOAD-BEARING PARTITIONS AT STRUCTURAL ABUTMENTS, EXCEPT FLOORS. PROVIDE 1/4 TO 1/2-INCH- WIDE SPACES AT THESE LOCATIONS AND TRIM EDGES WITH EDGE TRIM WHERE EDGES OF PANELS ARE EXPOSED. SEAL JOINTS BETWEEN EDGES AND ABUTTING STRUCTURAL SURFACES WITH ACOUSTICAL SEALANT.
H. INSTALL SOUND ATTENUATION BLANKETS BEFORE INSTALLING GYPSUM PANELS UNLESS BLANKETS ARE READILY INSTALLED AFTER PANELS HAVE BEEN INSTALLED ON ONE SIDE.
I. CEILING WITH PERIMETER RELIEF: CONTROL JOINTS IN INTERIOR CEILINGS WITH PERIMETER RELIEF SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS DO NOT EXCEED 50 FT OR 2500 SQ. FT
J. CEILING, WITHOUT PERIMETER RELIEF: CONTROL JOINTS IN INTERIOR CEILINGS WITHOUT PERIMETER RELIEF SHALL BE INSTALLED SO THAT LINEAR DIMENSIONS BETWEEN CONTROL JOINTS DO NOT EXCEED 30 FT
K. AT ACOUSTICAL OR FIR RATED WALLS: WHERE A CONTROL JOINT OCCURS IN AN ACOUSTICAL OR FIRE RATED SYSTEM, BLOCKING SHALL BE PROVIDED BEHIND THE CONTROL JOINT BY USING A BACKING MATERIAL SUCH AS 5/8 IN. TYPE X GYPSUM PANEL PRODUCTS, MINERAL FIBER, OR OTHER TESTED EQUIVALENT
L. INTERIOR TRIM: INSTALL IN THE FOLLOWING LOCATIONS:
   1. CORNERBEAD: USE AT OUTSIDE CORNERS.
   2. LC-BEAD: USE AT EXPOSED PANEL EDGES.
   3. L-BEAD: USE WHERE INDICATED.

1.14 FINISHING GYPSUM BOARD

A. PREFILL OPEN JOINTS, ROUNDED OR BEVELED EDGES, AND DAMAGED SURFACE AREAS.
B. APPLY JOINT TAPE OVER GYPSUM BOARD JOINTS, EXCEPT FOR TRIM PRODUCTS SPECIFICALLY INDICATED AS NOT INTENDED TO RECEIVE TAPE.
C. GYPSUM BOARD FINISH LEVELS: FINISH PANELS TO LEVELS INDICATED BELOW AND ACCORDING TO ASTM C 840:
   1. LEVEL 1: CEILING PLENUM AREAS, CONCEALED AREAS, AND WHERE INDICATED.
   2. LEVEL 2: WAREHOUSE STORAGE AREAS.
   3. LEVEL 3: BENEATH WALL COVERING.
   4. LEVEL 4: AT PANEL SURFACES THAT WILL BE EXPOSED TO VIEW UNLESS OTHERWISE INDICATED.

1.11 APPLYING INTERIOR GYPSUM BOARD

A. INSTALL INTERIOR GYPSUM BOARD IN THE FOLLOWING LOCATIONS (UNLESS NOTED OTHERWISE):
   1. TYPE X: VERTICAL SURFACES UNLESS OTHERWISE INDICATED.
   2. MOISTURE- AND MOLD-RESISTANT TYPE: AT DAMP LOCATIONS WHERE TILE BACKER BOARD IS NOT USED.
B. SINGLE-LAYER APPLICATION:
   1. ON CEILINGS, APPLY GYPSUM PANELS BEFORE WALL/PARTITION BOARD APPLICATION TO GREATEST EXTENT POSSIBLE AND AT RIGHT ANGLES TO FRAMING UNLESS OTHERWISE INDICATED.
   2. ON PARTITIONS/WALLS, APPLY GYPSUM PANELS VERTICALLY (PARALLEL TO FRAMING) UNLESS OTHERWISE INDICATED OR REQUIRED BY FIRE-RESISTANCE-RATED ASSEMBLY, AND MINIMIZE END JOINTS.
      a. STAGGER ABUTTING END JOINTS NOT LESS THAN ONE FRAMING MEMBER IN ALTERNATE COURSES OF PANELS.
   3. ON Z-FURRING MEMBERS, APPLY GYPSUM PANELS VERTICALLY (PARALLEL TO FRAMING) WITH NO END JOINTS. LOCATE EDGE JOINTS OVER FURRING MEMBERS.
   4. FASTENING METHODS: APPLY GYPSUM PANELS TO SUPPORTS WITH STEEL DRILL SCREWS.
C. MULTILAYER APPLICATION:
   1. ON CEILINGS, APPLY GYPSUM BOARD INDICATED FOR BASE LAYERS BEFORE APPLYING BASE LAYERS ON WALLS/PARTITIONS; APPLY FACE LAYERS IN SAME SEQUENCE. APPLY BASE LAYERS AT RIGHT ANGLES TO FRAMING MEMBERS AND OFFSET FACE-LAYER JOINTS ONE FRAMING MEMBER, 16 INCHES MINIMUM, FROM PARALLEL BASE-LAYER JOINTS, UNLESS OTHERWISE INDICATED OR REQUIRED BY FIRE-RESISTANCE-RATED ASSEMBLY.
   2. ON PARTITIONS/WALLS, APPLY GYPSUM BOARD INDICATED FOR BASE LAYERS AND FACE LAYERS VERTICALLY (PARALLEL TO FRAMING) WITH JOINTS OF BASE LAYERS LOCATED OVER STUD OR FURRING MEMBER AND FACE-LAYER JOINTS OFFSET AT LEAST ONE STUD OR FURRING MEMBER WITH BASE-LAYER JOINTS, UNLESS OTHERWISE INDICATED OR REQUIRED BY FIRE-RESISTANCE-RATED ASSEMBLY. STAGGER JOINTS ON OPPOSITE SIDES OF PARTITIONS.
   3. ON Z-FURRING MEMBERS, APPLY BASE LAYER VERTICALLY (PARALLEL TO FRAMING) AND FACE LAYER EITHER VERTICALLY (PARALLEL TO FRAMING) OR HORIZONTALLY (PERPENDICULAR TO FRAMING) WITH VERTICAL JOINTS OFFSET AT LEAST ONE FURRING MEMBER. LOCATE EDGE JOINTS OF BASE LAYER OVER FURRING MEMBERS.
   4. FASTENING METHODS: FASTEN BASE LAYERS AND FACE LAYERS SEPARATELY TO SUPPORTS WITH SCREWS.

1.12 INSTALLING TRIM ACCESSORIES

A. CONTROL JOINTS: INSTALL CONTROL JOINTS AT LOCATIONS INDICATED ON DRAWINGS, AND ACCORDING TO ASTM C 840 AND IN SPECIFIC LOCATIONS APPROVED BY ARCHITECT FOR VISUAL EFFECT, AND AS FOLLOWS:
B. WALL: CONTROL JOINTS SHALL BE INSTALLED WHERE A WALL OR PARTITION RUNS IN AN UNINTERRUPTED STRAIGHT PLANE EXCEEDING 30 LINEAR FEET, OR 900 FT2

09 61 16 - CONCRETE FLOOR SEALING

1.1 SUBMITTALS

A. PRODUCT DATA: SUBMIT MANUFACTURER'S TECHNICAL LITERATURE, INCLUDING CHEMICAL PROPERTIES AND PERCENTAGE OF SOLIDS, FOR EACH PRODUCT.

1.2 ENVIRONMENTAL REQUIREMENTS

A. DO NOT APPLY MATERIALS WHEN AMBIENT OR SUBSTRATE SURFACE TEMPERATURES ARE BELOW 40 DEGREES F OR HIGHER THAN 100 DEGREES F.
B. DO NOT APPLY DURING INCLEMENT WEATHER OR WHEN FORECASTED CONDITIONS WILL NOT PERMIT COMPLIANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
C. PROVIDE MECHANICAL VENTILATION DURING AND AFTER APPLICATION TO DISSIPATE FUMES IF NATURAL VENTILATION IS INSUFFICIENT.

1.3 MATERIALS

A. LIQUID MEMBRANE-FORMING SEALER (FOR USE ON CONCRETE FLOOR SLABS INTENDED TO BE LEFT EXPOSED):
   1. ACCEPTABLE PRODUCTS:
      a. DAYTON SUPERIOR CORPORATION; ULTRA SEAL EF.

1.4 PREPARATION

A. REMOVE LOOSE PARTICLES, FOREIGN MATTER, AND OIL BY METHOD WHICH WILL NOT AFFECT SEALER APPLICATION.
B. PREPARE SURFACES IN ACCORDANCE WITH MANUFACTURER'S DIRECTIONS.
C. PROVIDE PROTECTION AS NECESSARY TO PROTECT ADJACENT MATERIALS AND SURFACES FROM DIRT, DUST, SPILLAGE, OVERSPRAY AND OTHER SURFACE OR PHYSICAL DAMAGE.

1.5 APPLICATION

A. GENERAL:
   1. PROVIDE FINISHES TO MATCH APPROVED SAMPLES AT LOCATIONS INDICATED.
   2. APPLY MATERIALS IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
B. LIQUID MEMBRANE-FORMING SEALER:
   1. APPLY SEALER USING LOW PRESSURE AIRLESS SPRAYER IN SINGLE COAT AT 250 FT/GAL (6.0-7.0 WFT) COVERAGE UNLESS GREATER AMOUNT IS RECOMMENDED BY MANUFACTURER TO OBTAIN PENETRATION AND FULL COVERAGE.
   2. DO NOT ALLOW FLOODING OR PUDDLING OF MATERIAL ON SURFACE.
   3. DO NOT DILUTE OR ALTER MATERIAL AS PACKAGED.
   4. LOCATIONS: AS INDICATED ON PLANS AND ON ALL EXPOSED CONCRETE FLOORING INSIDE OF BUILDING.

09 91 00 - PAINTING

1.1 QUALITY ASSURANCE

A. PRODUCT MANUFACTURER: COMPANY SPECIALIZING IN MANUFACTURING QUALITY PAINT AND FINISH PRODUCTS WITH 3 YEARS EXPERIENCE.
B. APPLICATOR: COMPANY SPECIALIZING IN COMMERCIAL PAINTING AND FINISHING WITH 2 YEARS EXPERIENCE.
C. PRODUCT LABELS: INCLUDE MANUFACTURER'S NAME, TYPE OF PAINT, STOCK NUMBER, COLOR AND LABEL ANALYSIS ON LABEL OF CONTAINERS.

1.2 SUBMITTALS

A. PROVIDE PRODUCT DATA DESCRIBING PHYSICAL PERFORMANCE CRITERIA AND COMPOSITION ON ALL FINISHING PRODUCTS.
B. SUBMIT 2 SAMPLES, 12 BY 12 INCHES IN SIZE ILLUSTRATING RANGE OF COLORS AND TEXTURES SELECTED FOR EACH SURFACE FINISHING PRODUCT SCHEDULED.

09 91 00 - PAINTING (CONT)

1.3 FIELD SAMPLES

A. PROVIDE FIELD SAMPLE PANEL, 96 INCHES LONG BY 96 INCHES WIDE, ILLUSTRATING EACH COATING COLOR, TEXTURE, AND FINISH INTENDED FOR USE.
B. LOCATE WHERE DIRECTED.
C. ACCEPTED SAMPLE MAY REMAIN AS PART OF THE WORK.

1.4 DELIVERY, STORAGE, AND HANDLING

A. DELIVER PRODUCTS TO SITE IN SEALED AND LABELED CONTAINERS; INSPECT TO VERIFY ACCEPTANCE.
B. CONTAINER LABELING TO INCLUDE MANUFACTURER'S NAME, TYPE OF PAINT, BRAND NAME, BRAND CODE, COVERAGE, SURFACE PREPARATION, DRYING TIME, CLEANUP, COLOR DESIGNATION, AND INSTRUCTIONS FOR MIXING AND REDUCING.
C. STORE PAINT MATERIALS AT MINIMUM AMBIENT TEMPERATURE OF 45 DEGREES F AND A MAXIMUM OF 90 DEGREES F, IN WELL VENTILATED AREA, UNLESS REQUIRED OTHERWISE BY MANUFACTURER'S INSTRUCTIONS.
D. TAKE PRECAUTIONARY MEASURES TO PREVENT FIRE HAZARDS AND SPONTANEOUS COMBUSTION.

1.5 ENVIRONMENTAL REQUIREMENTS

A. DO NOT APPLY MATERIALS WHEN SURFACE AND AMBIENT TEMPERATURES ARE OUTSIDE THE RANGES REQUIRED BY PAINT MANUFACTURER.
B. PROVIDE CONTINUOUS VENTILATION AND HEATING FACILITIES TO MAINTAIN SURFACE AND AMBIENT TEMPERATURES ABOVE 45 DEGREES F FOR 24 HOURS BEFORE, DURING, AND 48 HOURS AFTER APPLICATION OF FINISHES, UNLESS REQUIRED OTHERWISE BY MANUFACTURER'S INSTRUCTIONS.
C. DO NOT APPLY EXTERIOR COATINGS DURING RAIN OR SNOW, OR WHEN RELATIVE HUMIDITY IS ABOVE 75 PERCENT, UNLESS REQUIRED OTHERWISE BY MANUFACTURER'S INSTRUCTIONS.
D. MINIMUM APPLICATION TEMPERATURES FOR LATEX PAINTS: 45 DEGREES F FOR INTERIORS; 50 DEGREES F FOR EXTERIOR; UNLESS REQUIRED OTHERWISE BY MANUFACTURER'S INSTRUCTIONS.
E. PROVIDE LIGHTING LEVEL OF 80 FT CANDLES MEASURED MID_ HEIGHT AT SUBSTRATE SURFACE.

1.6 EXTRA STOCK

A. PROVIDE A 1 GALLON CONTAINER OF EACH COLOR TO OWNER.
B. LABEL EACH CONTAINER WITH COLOR, COLOR NUMBER, TEXTURE, AND ROOM LOCATIONS, IN ADDITION TO THE MANUFACTURER'S LABEL.

1.7 SCAFFOLDS AND PROTECTION

A. PROVIDE ADEQUATE SAFE LADDERS, SCAFFOLDS, AND STAGES NECESSARY TO COMPLETE WORK.
B. PROTECT COMPLETED FINISH AND PAINT WORK, AND PROTECT ADJACENT FINISH SURFACES FROM PAINT SPLATTER, SPILLS AND STAINS. USE ADEQUATE DROP CLOTHS AND MASKING PROCEDURES DURING PROGRESS OF WORK.

1.8 PRECAUTIONS

A. DO NOT STORE PAINTS, OILS, THINNERS AND OTHER FLAMMABLE ITEMS INSIDE THE BUILDING AND SHALL BE STORED IN APPROVED CONTAINERS WHEN NOT IN ACTUAL USE DURING THE PAINTING JOB. THE FIRE HAZARD SHALL BE KEPT AT A MINIMUM.
B. PRECAUTION SHALL BE TAKEN TO PROTECT THE PUBLIC AND CONSTRUCTION WORKERS DURING THE PROGRESS OF THE WORK.
C. FURNISH A TEMPORARY FIRE EXTINGUISHER OF SUITABLE CHEMICALS AND CAPACITY, LOCATED NEAR FLAMMABLE MATERIALS.

1.9 MANUFACTURERS

A. ACCEPTABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS INDICATED, PROVIDE PRODUCTS OF ONE OF THE FOLLOWING:
   1. SHERWIN_WILLIAMS.
   2. P.P.G. INDUSTRIES.
   3. BENJAMIN MOORE.
   4. KELLEY MOORE.
   5. GLIDDEN PROFESSIONAL.
B. MATERIALS SELECTED FOR COATING SYSTEMS FOR EACH TYPE SURFACE SHALL BE PRODUCT OF A SINGLE MANUFACTURER UNLESS OTHERWISE SPECIFIED. SECONDARY PRODUCTS SUCH AS LINSEED OIL, TURPENTINE AND SHELLACS SHALL BE FIRST QUALITY PRODUCTS OF A REPUTABLE MANUFACTURER.
C. PRODUCTS SPECIFIED IN SCHEDULE ARE THOSE OF GLIDDEN PROFESSIONAL AS A STANDARD OF QUALITY UNLESS OTHERWISE NOTED.

1.10 MATERIALS

A. COATINGS: READY MIXED. PROCESS PIGMENTS TO A SOFT PASTE CONSISTENCY, CAPABLE OF BEING READILY AND UNIFORMLY DISPERSED TO A HOMOGENEOUS COATING WITH GOOD FLOW AND BRUSHING PROPERTIES; CAPABLE OF DRYING OR CURING FREE OF STREAKS OR SAGS.
B. ACCESSORY MATERIALS: LINSEED OIL, SHELLAC, TURPENTINE, PAINT THINNERS AND OTHER MATERIALS NOT SPECIFICALLY INDICATED BUT REQUIRED TO ACHIEVE THE FINISHES SPECIFIED, OF COMMERCIAL QUALITY.
C. PATCHING MATERIALS: LATEX FILLER.

1.11 FINISHES

A. COLOR AND SHEEN: REFER TO FINISH LEGEND ON DRAWINGS.

1.12 INTERIOR PAINT SCHEDULE

A. DRYWALL (GYPSUM):
   1. ACRYLIC LATEX: GLIDDEN: 1 COAT GLIDDEN PROFESSIONAL PVA WALL 1030 PRIMER, 2 COATS GLIDDEN PROFESSIONAL ULTRA-HIDE 250
B. GALVANIZED METAL:
   1. ACRYLIC LATEX: GLIDDEN: 1 COAT DEVOE COATINGS DEVFLEX DIRECT-TO-METAL 4020 PRIMER; SEMI-GLOSS: 2 COATS GLIDDEN PROFESSIONAL ULTRA-HIDE 250 1406 TOPCOAT.
C. SHOP PRIMED FERROUS METAL:
   1. ACRYLIC LATEX: GLIDDEN: 1 COAT DEVOE COATINGS DEVFLEX DIRECT-TO-METAL 4020 PRIMER, 2 COATS GLIDDEN PROFESSIONAL ULTRA-HIDE 250.

1.13 EXTERIOR PAINT SCHEDULE

A. SHOP PRIMED METAL DOORS, TRIM, PANELS AND MISCELLANEOUS SURFACES:
   1. HIGH PERFORMANCE COATING, WATER-BASED ACRYLIC:
      a. GLIDDEN: SEMI-GLOSS: 2 TOPCOATS DEVOE COATINGS DEVFLEX HIGH PERFORMANCE WB ACRYLIC 4216 OVER PREPARED SUBSTRATE.

1.14 EXAMINATION

A. VERIFY THAT SURFACES AND SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK AS INSTRUCTED BY THE PRODUCT MANUFACTURER.
B. EXAMINE SURFACES SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT TO ARCHITECT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
C. MEASURE MOISTURE CONTENT OF SURFACES USING AN ELECTRONIC MOISTURE METER. DO NOT APPLY FINISHES UNLESS MOISTURE CONTENT OF SURFACES ARE BELOW THE FOLLOWING MAXIMUMS
   1. GYPSUM WALLBOARD: 12 PERCENT.
D. TEST SHOP APPLIED PRIMERS FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
E. BEGINNING OF INSTALLATION MEANS ACCEPTANCE OF EXISTING SURFACES AND SUBSTRATE.

1.15 PREPARATION

A. REMOVE ELECTRICAL PLATES, HARDWARE, LIGHT FIXTURE TRIM, AND FITTINGS PRIOR TO PREPARING SURFACES OR FINISHING.
B. CORRECT MINOR DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS WHICH EXHIBIT LOOSE SURFACE DEFECTS.
C. IMPERVIOUS SURFACES: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI_SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
D. GYPSUM BOARD SURFACES: LATEX FILL MINOR DEFECTS. SPOT PRIME DEFECTS AFTER REPAIR.
E. GALVANIZED SURFACES: REMOVE SURFACE CONTAMINATION AND OILS AND WASH WITH SOLVENT. APPLY COAT OF ETCHING PRIMER.
F. UNCOATED STEEL AND IRON SURFACES: REMOVE GREASE, SCALE, DIRT, AND RUST.
G. WHERE HEAVY COATINGS OF SCALE ARE EVIDENT, REMOVE BY WIRE BRUSHING OR SANDBLASTING; CLEAN BY WASHING WITH SOLVENT. APPLY A TREATMENT OF PHOSPHORIC ACID SOLUTION, ENSURING WELD JOINTS, BOLTS, AND NUTS ARE SIMILARLY CLEANED. SPOT PRIME PAINT AFTER REPAIRS.
H. SHOP PRIMED STEEL SURFACES: SAND AND SCRAPE TO REMOVE LOOSE PRIMER AND RUST. FEATHER EDGES TO MAKE TOUCH_UP PATCHES INCONSPICUOUS. CLEAN SURFACES WITH SOLVENT. PRIME BARE STEEL SURFACES.
I. SHOP FINISHED ITEMS: FINISH IN ACCORDANCE WITH AWI STANDARDS AND GUIDE LINES.
J. WOOD AND METAL DOORS SCHEDULED FOR PAINTING: SEAL TOP AND BOTTOM EDGES WITH PRIMER.

1.16 SURFACE PREPARATION OF PREVIOUSLY COATED SURFACES

A. GENERAL:
   1. REMOVE CRACKED AND DETERIORATED SEALANTS AND CALKING.
   2. REMOVE CHALK DEPOSITS AND LOOSE, BLISTERED, PEELING, SCALING, OR CRAZED FINISH TO BARE BASE MATERIAL OR SOUND SUBSTRATE BY SCRAPING AND SANDING.
   3. WASH SURFACES WITH SOLUTION OF TSP TO REMOVE WAX, OIL, GREASE, AND OTHER FOREIGN MATERIAL; RINSE, AND ALLOW TO DRY. EXERCISE CAUTION THAT TSP SOLUTION DOES NOT SOFTEN EXISTING COATING.
   4. ABRADE GLOSSY SURFACES BY SANDING OR WIPING WITH LIQUID DE-GLOSSER.
   5. REMOVE MILDEW AS SPECIFIED ABOVE.
   6. TEST COMPATIBILITY OF EXISTING COATINGS BY APPLYING NEW COATING TO SMALL, INCONSPICUOUS AREA. IF NEW COATINGS LIFT OR BLISTER EXISTING COATINGS, REQUEST RECOMMENDATION FROM ARCHITECT.
   7. APPLY SPECIFIED PRIMER TO SURFACES SCHEDULED TO RECEIVE COATINGS.
B. GYPSUM WALLBOARD:
   1. FILL CRACKS AND VOIDS WITH SPACKLING COMPOUND.
   2. APPLY PRIMER OVER BARE SURFACES AND NEWLY APPLIED TEXTURE COATINGS.
C. METAL:
   1. REMOVE RUST FROM SURFACES TO BARE METAL IN ACCORDANCE WITH SP3 "POWER TOOL CLEANING".
   2. EXERCISE CARE NOT TO REMOVE GALVANIZING.
   3. COMPLETE PREPARATION AS SPECIFIED FOR NEW WORK.

1.17 PROTECTION

A. PROTECT ELEMENTS SURROUNDING THE WORK OF THIS SECTION FROM DAMAGE OR DISFIGURATION.
B. REPAIR DAMAGE TO OTHER SURFACES CAUSED BY WORK OF THIS SECTION.
C. FURNISH DROP CLOTHS, SHIELDS, AND PROTECTIVE METHODS TO PREVENT SPRAY OR DROPPINGS FROM DISFIGURING OTHER SURFACES.
D. REMOVE EMPTY PAINT CONTAINERS FROM SITE.

09 91 00 - PAINTING (CONT.)

1.18 APPLICATION

A. THE INTENT OF THESE SPECIFICATIONS IS TO PRODUCE THE HIGHEST QUALITY APPEARANCE OF PAINT AND FINISH SURFACES. EMPLOY SKILLED MECHANICS ONLY. THE PROPER PREPARATION OF ALL SURFACES WILL BE STRICTLY ENFORCED AND WHEREVER FINISHED SURFACES SHOW ANY DEFECTS DUE TO IMPROPER PREPARATION, WORKMANSHIP, ETC., THE DEFECTS SHALL BE REMOVED AND THE WORK REFINISHED AT THE EXPENSE OF THE CONTRACTOR.
B. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. FINAL FINISH COATS SHALL HAVE VISUAL EVIDENCE OF SOLID HIDING AND UNIFORM APPEARANCE, AND SHALL BE FREE AND SMOOTH OF BRUSH MARKS, STREAKS, SAGS, RUNS, LAPS, OR SKIPPED AREAS.
C. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
D. APPLY EACH COAT TO UNIFORM FINISH AND THICKNESS.
E. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
F. SAND LIGHTLY BETWEEN COATS ON WOOD AND METAL ITEMS TO ACHIEVE REQUIRED FINISH.
G. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.
H. EDGES OF PAINT ADJOINING OTHER MATERIALS OR COLORS SHALL BE SHARP AND CLEAN WITH NO OVERLAPPING.

1.19 CLEANING/TOUCH_UP

A. AS WORK PROCEEDS, PROMPTLY REMOVE PAINT WHERE SPILLED, SPLASHED, OR SPATTERED.
B. DURING PROGRESS OF WORK MAINTAIN PREMISES FREE OF UNNECESSARY ACCUMULATION OF TOOLS, EQUIPMENT, SURPLUS MATERIALS, AND DEBRIS.
C. COLLECT COTTON WASTE, CLOTHS, AND MATERIAL WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.
D. SPOT PAINTING WILL BE ALLOWED TO CORRECT SOILED OR DAMAGED PAINT SURFACES ONLY WHEN TOUCH_UP SPOT WILL BLEND INTO SURROUNDING FINISH AND IS INVISIBLE TO NORMAL VIEWING (AS DETERMINED BY THE ARCHITECT). OTHERWISE, RE_COAT ENTIRE SECTION TO CORNERS OR VISIBLE STOPPING POINT.
E. PRODUCTS LISTED IN FOLLOWING SCHEDULE AND/OR SUBSTITUTES PROPOSED FOR USE BY CONTRACTOR MUST BE FORMULATED TO MEET ALL APPLICABLE ORDINANCES AND REGULATIONS REGARDING MAXIMUM V.O.C. CONTENT. UTILIZE PRODUCTS WHICH HAVE BEEN SPECIALLY FORMULATED TO NEED SUCH REQUIREMENTS.

09-900 - PAINTING: NEED A PERFORMANCE SPEC

PRECAST: (2 COAT) ACRYLIC, (1 COAT) PRIMER, (1 COAT) TOP APPROPRIATE FOR PRECAST

BC STEEL: INDUSTRIAL ENAMEL. MISC METALS, FERROUS METAL PRODUCTS

**09 96 63 - TEXTURED PLASTIC/ ACRYLIC COATING**

**1.1 SECTION INCLUDES**

**A. ACRYLIC BASED TEXTURED COATING ON ALL EXPOSED PORTIONS OF EXTERIOR EXPOSED CONCRETE WALL PANELS.**

**2.1 ACCEPTABLE MANUFACTURERS**

**A. ULTRACRETE BY SHERWIN WILLIAMS**
**B. SUBSTITUTIONS: SUBMIT IN ACCORDANCE WITH SECTION 012500**

**2.2 PRODUCTS**

**A. COMPOSITION AND MATERIALS: DECORATIVE, ACRYLIC BASED COATING, PRE-MIXED**
**B. THICKNESS: APPLY AT THE RATE AND IN THE NUMBER OF COATS AS RECOMMENDED BY MANUFACTURER FOR FULL AND COMPLETE COVERAGE, BUT NOT LESS THAN 15 MIL DFT**
**C. FINISH TEXTURE: MEDIUM TEXTURE, OR AS OTHERWISE SELECTED BY ARCHITECT**
**D. COLOR: REFER TO FINISH LEGEND**
**E. PRIMER: TYPE AS RECOMMENDED BY MANUFACTURER FOR SUBSTRATE ENCOUNTERED.**

10 44 00 - FIRE PROTECTION SPECIALTIES

1.1 SUBMITTALS

A. PRODUCT DATA: PROVIDE EXTINGUISHER OPERATIONAL FEATURES AND ANCHORAGE DETAILS.

1.2 MANUFACTURERS

A. FIRE EXTINGUISHERS:
   1. ANSUL, INC.: WWW.ANSUL.COM.
   2. JL INDUSTRIES, INC: WWW.JLINDUSTRIES.COM.
   3. PYRO-CHEM: WWW.PYROCHEM.COM.
B. FIRE EXTINGUISHER CABINETS AND ACCESSORIES:
   1. JL INDUSTRIES, INC.: WWW.JLINDUSTRIES.COM.
   2. LARSEN'S MANUFACTURING CO.: WWW.LARSENSMFG.COM.
   3. POTTER-ROEMER: WWW.POTTERROEMER.COM.

1.3 FIRE EXTINGUISHERS

A. FIRE EXTINGUISHERS - GENERAL: COMPLY WITH PRODUCT REQUIREMENTS OF NFPA 10 AND APPLICABLE CODES, WHICHEVER IS MORE STRINGENT.
   1. PROVIDE EXTINGUISHERS LABELED BY UL FOR THE PURPOSE SPECIFIED AND INDICATED.
   2. PROVIDE UNIT TYPES AS INDICATED.

1.4 FIRE EXTINGUISHER CABINETS

A. METAL: FORMED PREFINISHED SHEET STEEL, 0.036 INCH THICK.
B. CABINET CONFIGURATION: SEMI-RECESSED TYPE.
   1. SIZED TO ACCOMMODATE ACCESSORIES.
   2. TRIM: RETURNED TO WALL SURFACE, WITH 2-1/2 INCH PROJECTION.
C. DOOR: 0.036 INCH THICK, REINFORCED FOR FLATNESS AND RIGIDITY; LATCH. HINGE DOORS FOR 180 DEGREE OPENING WITH TWO BUTT HINGE. PROVIDE NYLON CATCH.
D. DOOR GLAZING: GLASS, CLEAR, 1/8 INCH THICK FLOAT. SET IN RESILIENT CHANNEL GASKET GLAZING.
E. CABINET MOUNTING HARDWARE: APPROPRIATE TO CABINET. PRE-DRILL FOR ANCHORS.
F. WELD, FILL, AND GRIND COMPONENTS SMOOTH.
G. FINISH OF CABINET EXTERIOR TRIM AND DOOR: BAKED ENAMEL, COLOR AS SELECTED.
H. FINISH OF CABINET INTERIOR: WHITE ENAMEL.

1.5 INSTALLATION

A. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
B. INSTALL CABINETS PLUMB AND LEVEL IN WALL OPENINGS, FROM FINISHED FLOOR TO HEIGHT AS NEEDED TO MEET ACCESSIBILITY REQUIREMENTS.
C. SECURE RIGIDLY IN PLACE.
D. PLACE EXTINGUISHERS AND ACCESSORIES IN CABINETS.

10 99 00 - MISCELLANEOUS SPECIALTIES

1.1 SUBMITTALS

A. PRODUCT DATA: INCLUDING ALL PERTINENT PERFORMANCE CHARACTERISTICS AND CRITERIA.

1.2 PRODUCTS

A. FIRE CONTROL KEY BOX: PROVIDE RECESSED FIRE DEPARTMENT KEY CONTROL BOX, EQUAL TO MODEL 3200 BY KNOX BOX.
   1. PROVIDE KNOX LOCKS AS REQUIRED BY LOCAL FIRE DEPARTMENT.

11 13 00 - LOADING DOCK EQUIPMENT

1.1 THIS SECTION INCLUDES THE FOLLOWING: DOCK BUMPERS; DOCK LEVELERS; DOCK SEALS

1.2 SUBMITTALS

A. PRODUCT DATA: INCLUDE CONSTRUCTION DETAILS, RATED CAPACITIES, OPERATING CHARACTERISTICS, DIMENSIONS OF INDIVIDUAL COMPONENTS AND PROFILES AND FINISHES.
B. MAINTENANCE DATA

1.2 PRODUCTS

A. DOCK BUMPERS

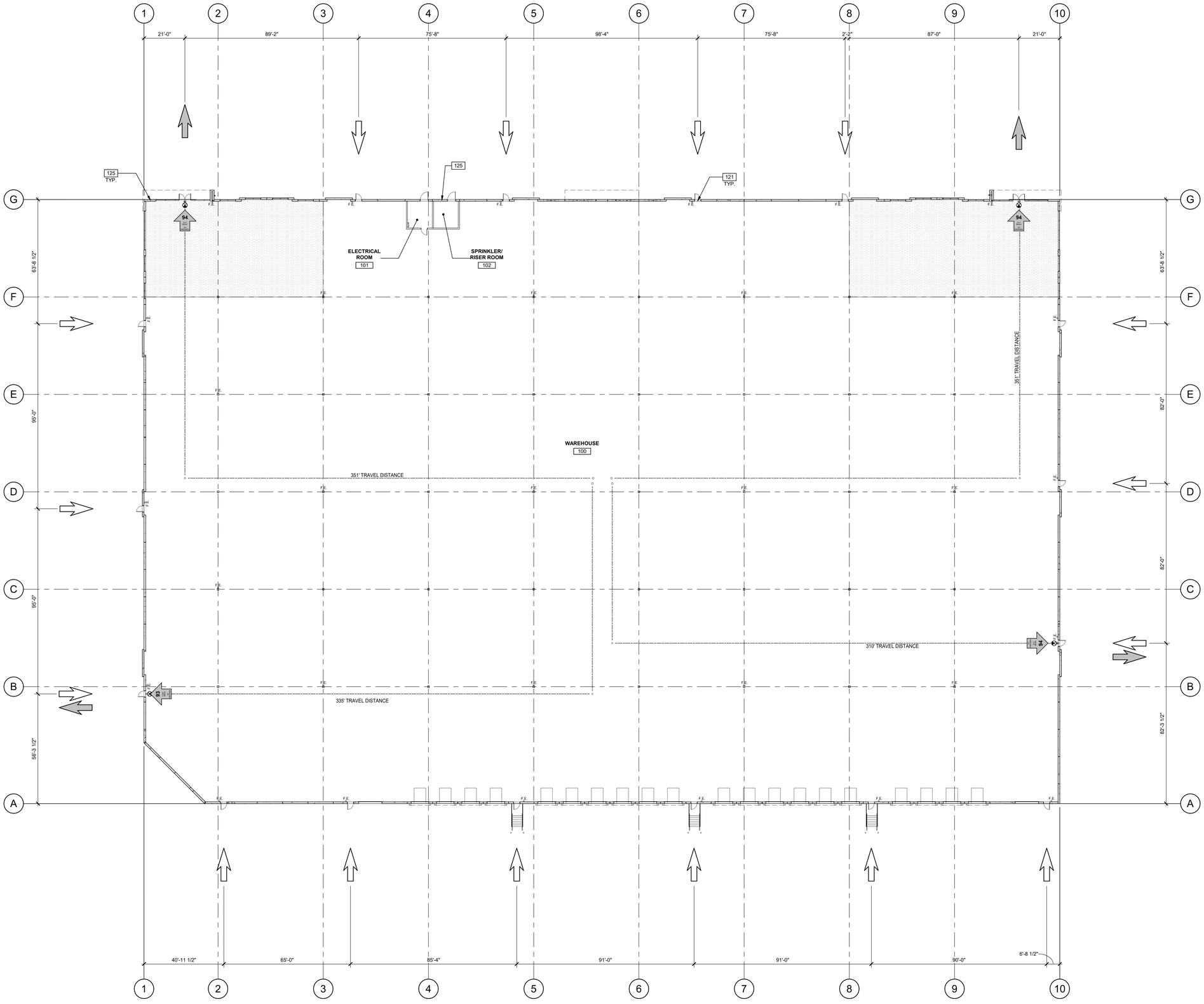
1. MANUFACTURERS
   - DURABLE CORPORATION
   - KELLEY COMPANY
   - PAWLING CORPORATION
   - PIONEER LOADING DOCK EQUIPMENT
   - RITE-HITE CORPORATION
   - SERCO
2. LAMINATED TREAD BUMPERS: FABRICATED FROM MULTIPLE, UNIFORMLY THICK PLIES CUT FROM FABRIC-REINFORCED RUBBER TIRES. LAMINATE PLIES UNDER PRESSURE ON NOT LESS THAN 2 3/4-INCH DIAMETER, STEEL SUPPORTING RODS THAT ARE WELDED AT ONE END TO 1/4-INCH THICK, STRUCTURAL STEEL END ANGLE AND SECURED WITH A NUT AND ANGLE AT THE OTHER END. FABRICATE ANGLES WITH PRE-DRILLED ANCHOR HOLES AND SIZED TO PROVIDE NOT LESS THAN 1 INCH OF TREAD PILES EXTENDING BEYOND THE FACE OF CLOSURE ANGLES

B. RECESSED DOCK LEVELERS

1. RECESSED, HINGED-LIP-TYPE DOCK LEVELERS DESIGNED FOR PERMANENT INSTALLATION IN CONCRETE PITS PREFORMED IN THE EDGE OF LOADING PLATFORM; OF TYPE, FUNCTION, OPERATION, CAPACITY, SIZE AND CONSTRUCTION INDICATED; AND COMPLETE WITH CONTROLS, SAFETY DEVICES, AND ACCESSORIES REQUIRED.
2. MANUFACTURERS
   - BLUE GIANT EQUIPMENT CORPORATION
   - KELLEY COMPANY
   - MCQGUIRE W. B. CO.
   - PIONEER LOADKING DOCK EQUIPMENT
   - RITE HITE CORPORATION
   - SERCO
3. QUALITY STANDARD: MH-30.1, "SAFETY, PERFORMANCE AND TESTING OF DOCK LEVELING DEVICES"
4. RATED CAPACITY: CAPABLE OF SUPPORTING TOTAL GROSS LOAD OF 35,000 LB AND RATED CAPACITY OR DYNAMIC RATING (REFER TO DRAWINGS FOR LOCATIONS) WITHOUT PERMANENT DEFLECTION OR DISTORTION, AS DETERMINED BY ACTUAL TESTS ACCORDING TO MH-30.1.

C. FOAM-PAD DOCK SEALS

1. DOCK SEALS CONSISTING OF FABRIC-COVERED FOAM PADS DESIGNED TO COMPRESS TO




1"=20'
0 10' 20' 40' 100'

## OCCUPANCY AND EGRESS PLAN

SCALE: 1" = 20'-0"

## GENERAL NOTES

SEE SHEET A0.2 FOR ADDITIONAL GENERAL NOTES

1. SEE SHEETS A0.1 AND/OR A0.2 FOR ADDITIONAL GENERAL NOTES.
2. POSTED SIGNS IN AN ASSEMBLY OCCUPANCY SHALL BE OF AN APPROVED LEGIBLE PERMANENT DESIGN AND SHALL BE MAINTAINED BY THE OWNER OR AUTHORIZED AGENCY.
3. ILLUMINATION SHALL BE PROVIDED BY THE MEANS OF EGRESS IN ACCORDANCE WITH SECTION 1008.2 UNDER EMERGENCY POWER, MEANS OF EGRESS ILLMINATION SHALL COMPLY WITH SECTION 1008.3.
4. PROVIDE BATTERY BACKUP ILLUMINATED EXTERIOR AREA OF ASSISTED RESCUE SIGN AND TACTILE SIGN IN COMPLIANCE WITH ICC A117.1 AT ALL EXIT DOORS WITH ASSOCIATED EXTERIOR AREA FOR ASSISTED RESCUE.
5. PROVIDE ONE FIRE EXTINGUISHER (WITH MINIMUM RATING OF 10A:80B:C FOR EVERY 3,000 SQ. FT.) AND LOCATE SO NO TRAVEL DISTANCE TO A FIRE EXTINGUISHER EXCEEDS 75 FEET. MOUNT TOP OF THE FIRE EXTINGUISHER NOT TO EXCEED 48" AFF.
6. COLUMN MOUNTED FIRE EXTINGUISHER (CLASS A), 10-A-80B:C, NOMINTAL CAPACITY WITH BRACKET.
7. PROVIDE WALL-HUNG FIRE EXTINGUISHERS (UL-RATED 10-A-80B:C, 10LB.) IN THE WAREHOUSE AS REQUIRED BY CODE AND PER FIRE MARSHALL FINAL INSPECTION. 75'-0" MAXIMUM DISTANCE PER 906.3.
8. AREA OF RESCUE ASSISTANCE AT DEDICATED EGRESS DOORS; TYP.
9. PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT FACE ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J.

## KEYNOTES: -

SEE SHEET A0.2 FOR GENERAL NOTES

ALL REQUIRED EXITS TO RECEIVE WALL-MOUNTED TACTILE EXIT SIGN WITH THE WORD "EXIT" — 14 / A0.3

ALL EXTERIOR WALLS SEPARATING THE EXTERIOR AREA OF ASSISTED RESCUE FROM INTERIOR ARE TO HAVE A MIN. FIRE-RESISTANCE RATING OF 1 HOUR — 14 / A0.3

121 COORDINTAE WITH ELEC. DRAWINGS FOR PLACEMENT OF EXIT SIGNS. PROVIDE WALL-MOUNTED TACTILE SIGN WITH THE WORDS "AREA OF REFUGE" IN FRONT OF EXITS WITH AN AREA OF REFUGE.

125 PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT FACP ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J.

## LEGEND

- PROPOSED FUTURE OFFICE AREA (N.I.C.)
- REQUIRED EXIT AND FIRE DEPARTMENT ACCESS.
- FIRE DEPARTMENT ACCESS.
- MAXIMUM TRAVEL DISTANCE.
- F.E. — FIRE EXTINGUISHER
- WALL-MOUNTED ILLUMINATED EMERGENCY EXIT SIGN ABOVE DOOR WITH BATTERY POWERED BACK-UP. SHADED QUADRANT INDICATES FACE OF LETTERING.

  ADDITIONAL DIRECTIONAL EXIT SIGNS MAY BE REQUIRED PRIOR TO FINAL INSPECTION AND SUBJECT TO BUILDING INSPECTOR.

## EGRESS ANALYSIS

| FUNCTION SPACE AND OCCUPANCY | (N) GROSS AREA (SF) | (F) AREA PER OCC. FACTOR 1004.1 | (OL) = N/F OCCUPANT LOAD | NUMBER OF EXITS REQUIRED | DOOR (AND OTHER EGRESS COMPONENTS) WIDTH REQ'D 1005.3.2 | NUMBER OF 32" CLR. EXITS PROVIDED (PER PLAN) | NUMBER OF 44" CLR. EXITS PROVIDED (PER PLAN) | NUMBER OF 64" CLR. EXITS PROVIDED (PER PLAN) | TOTAL DOOR WIDTH PROVIDED |
|---|---|---|---|---|---|---|---|---|---|
| WAREHOUSE S-1 | 145,408 | 500 | 291 | 2 | 291".15 / 43.65" | 2 | - | 2 | 192" |

## MAX. TRAVEL DISTANCE TO EXITS

MAXIMUM TRAVEL DISTANCE TO EXITS (1017.2 SPRINKLERED BUILDING)

S-1/STORAGE (MODERATE-HAZARD WAREHOUSE)..... 400 FEET MAX.

3206.6.1.1 NUMBER OF DOORS REQUIRED NOT LESS THAN ONE ACCESS DOOR SHALL BE PROVIDED IN EACH 100 LINEAR FEET (30 480 MM), OR FRACTION THEREOF, OF THE EXTERIOR WALLS THAT FACE REQUIRED FIRE APPARATUS ACCESS ROADS. THE REQUIRED ACCESS DOORS SHALL BE DISTRIBUTED SUCH THAT THE LINEAL DISTANCE BETWEEN ADJACENT ACCESS DOORS DOES NOT EXCEED 100 FEET (30 480 MM).

1009.7.2 SEPARATION
EXTERIOR WALLS SEPARATING THE EXTERIOR AREA OF ASSISTED RESCUE FROM THE INTERIOR OF THE BUILDING SHALL HAVE A MINIMUM FIRE-RESISTANCE RATING OF 1 HOUR, RATED FOR EXPOSURE TO FIRE FROM THE INSIDE. THE FIRE-RESISTANCE-RATED EXTERIOR WALL CONSTRUCTION SHALL EXTEND HORIZONTALLY NOT LESS THAN 10 FEET (3048 MM) BEYOND THE LANDING ON EITHER SIDE OF THE LANDING OR EQUIVALENT FIRE-RESISTANCE-RATED CONSTRUCTION IS PERMITTED TO EXTEND OUT PERPENDICULAR TO THE EXTERIOR WALL NOT LESS THAN 4 FEET (1220 MM) ON THE SIDE OF THE LANDING. THE FIRE-RESISTANCE-RATED CONSTRUCTION SHALL EXTEND VERTICALLY FROM THE GROUND TO A POINT NOT LESS THAN 10 FEET (3048 MM) ABOVE THE FLOOR LEVEL OF THE AREA FOR ASSISTED RESCUE OR TO THE ROOF LINE, WHICHEVER IS LOWER. OPENINGS WITHIN SUCH FIRE-RESISTANCE-RATED EXTERIOR WALLS SHALL BE PROTECTED IN ACCORDANCE WITH SECTION 716.

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GRANT A BRANDENBURG
LICENSED ARCHITECT
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

OCCUPANCY AND EGRESS PLAN

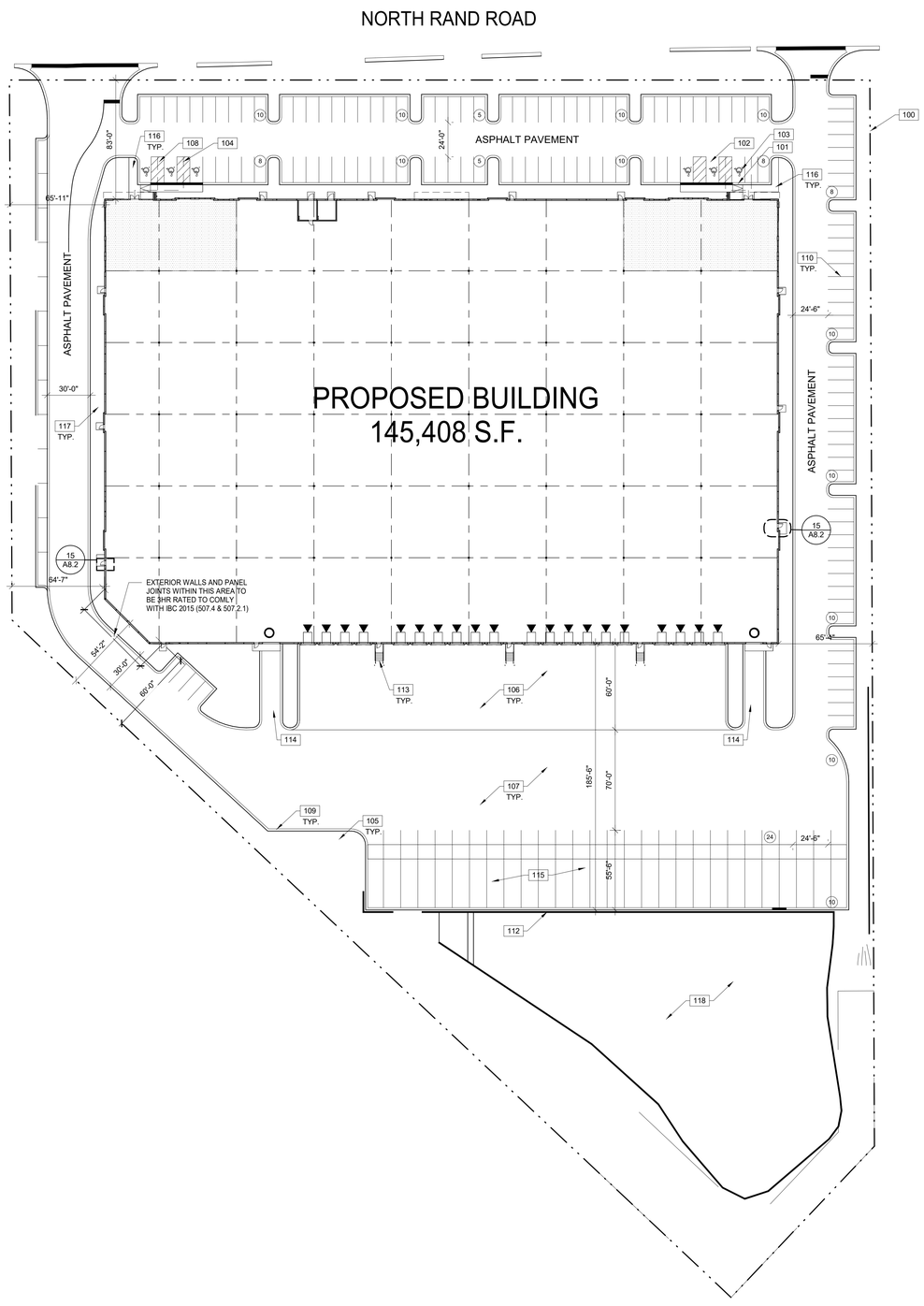
| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A0.5

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## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

100. PROPERTY LINE.
101. ACCESSIBLE ENTRY SIGNAGE.
102. ACCESSIBLE PARKING STALL WITH SIGNAGE.
103. VAN ACCESSIBLE PARKING STALL WITH SIGNAGE.
104. ACCESSIBLE PATH OF TRAVEL, 1:20 MAX. SLOPE, 2% MAX. CROSS S
105. LANDSCAPE AND IRRIGATION AREA. REFER TO CIVIL/ LANDSCAPE D
106. CONCRETE PAVEMENT.
107. ASPHALT PAVEMENT.
108. ACCESSIBLE LOADING ZONE.
109. 6" CONCRETE CURB.
110. PAINTED PARKING STRIPING PER CITY STANDARDS.
111. ACCESS RAMP FOR D.I.D. DOOR
112. CONCRETE RETAINING WALL.

## LEGEND

- ACCESSIBLE PATH OF TRAVEL, 1:20 MAX. SLOPE, 2% MAX. CROSS SLOPE.
- PROPERTY LINE.
- T — TRANSFORMER WITH CONCRETE PAD. (PROVIDE PROTECTION BOLLARDS PER LOCAL UTILITY OR PUBLIC WORK STANDARDS) (REFER TO ELEC FOR TRANSFORMER LOCATION)
- (1) — PARKING STALL COUNT TOTAL
- DOCK HIGH TRUCK DOOR
- GRADE LEVEL TRUCK DOOR

1"=40'
0 20' 40' 80' 200'

SITE PLAN (FOR REFERENCE ONLY)
SCALE: 1" = 40'-0"

PROJECT NORTH / TRUE NORTH

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State of Illinois Design Firm Registration No. 184-004069




THE MISSNER GROUP

MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

SITE PLAN (FOR REFERENCE ONLY)

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

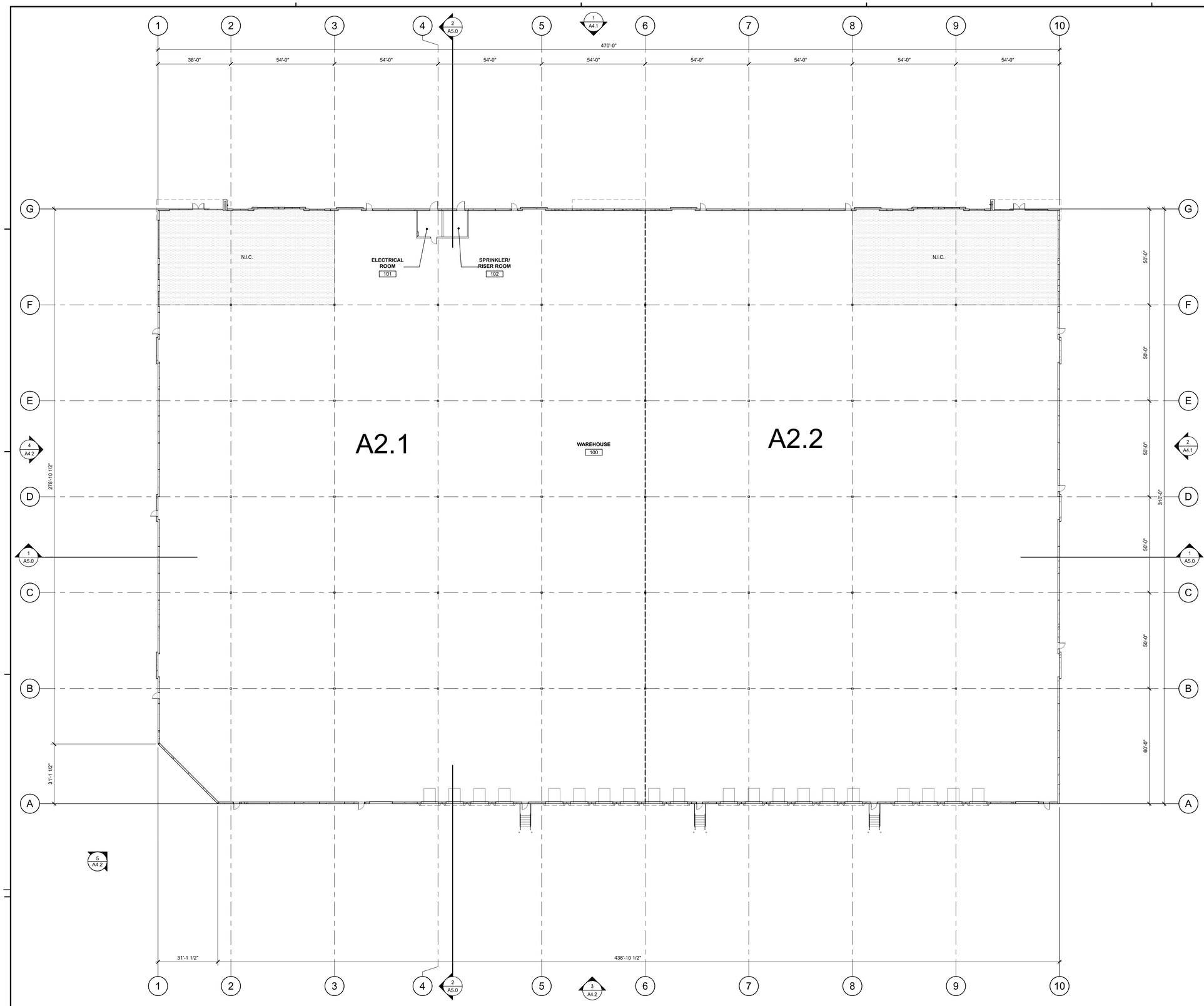
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A1.1

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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




## LEGEND

PROPOSED FUTURE OFFICE AREA (N.I.C.)

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

1"=20'

0 10' 20' 40' 100'

OVERALL FLOOR PLAN

SCALE: 1" = 20'-0"

WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT
1315 22nd St #410
Oak Brook, IL 60523
P 630.218.0063

State of Illinois Design Firm Registration No. 184-004069

GRANT A BRANDENBURG 001-020842 LICENSED ARCHITECT STATE OF ILLINOIS

EXP: 11 - 30 - 2022

THE MISSNER GROUP since 1948

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

OVERALL FLOOR PLAN

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

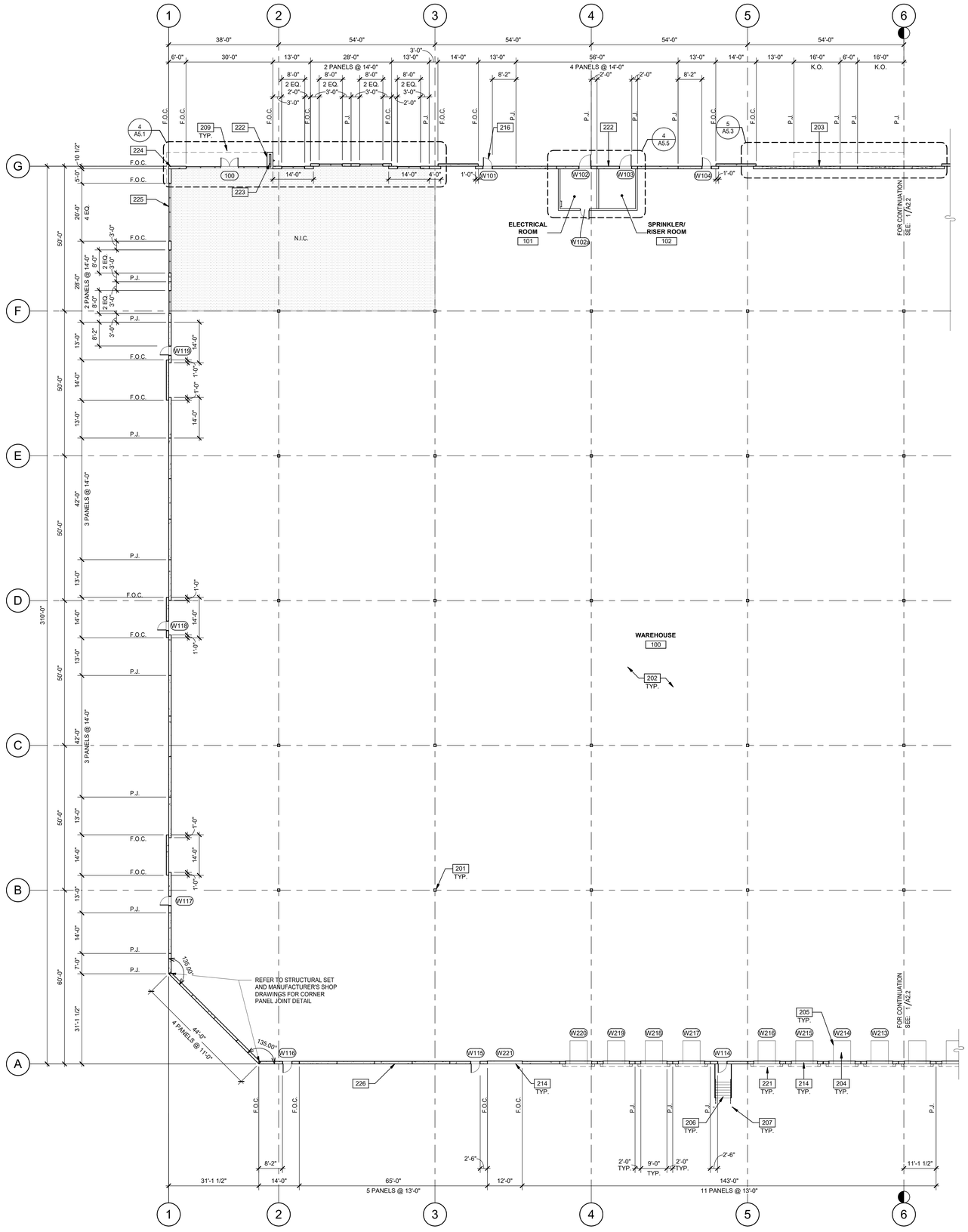
SHEET

A2.0

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4/19/2022 8:50:38 AM 2022-04-08 PERMIT SET

Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




1/16"=1'-0"

0 8' 16' 32' 64'

## PARTIAL FLOOR PLAN

SCALE: 1/16" = 1'-0"

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

201 STRUCTURAL STEEL COLUMN. REFER TO STUCTURAL.

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.

203 KNOCK-OUT PANEL FOR FUTURE WINDOWS OR DOORS.

204 6'X 8' MECHANICAL DOCK LEVELER. 35,000 LBS DYNAMIC CAPACITY, MANUALLY OPERATED (SPRING ASSISTED), REFER TO A0.2 ENVELOPE ASSEMBLY NOTES.

205 DOCK PIT, DOCK SEAL, LEVELER AND DOCK BUMPERS, TYP. U.N.O. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

206 EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED.

207 STEEL BOLLARD, CONCRETE-FILLED PAINTED SAFETY YELLOW.

209 OUTLINE OF CANOPY ABOVE.

214 HIGH LIFT OVERHEAD SECTIONAL DOOR. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

216 SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR.

221 DOCK SEAL

222 PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT THE FACP ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J.

223 ENTRY PORTAL - PRE-FINISH ACM PANEL RAINSCREEN SYSTEM. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

224 WRAP REVEALS AT EXPOSED PANEL ENDS - TYP.

225 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLASS. REFER TO A0.2, ENVELOPE. ASSEMBLY NOTES FOR GLAZOMG SPECIFICATION.

226 PRECAST CONCRETE WALLS, PAINTED.

## LEGEND

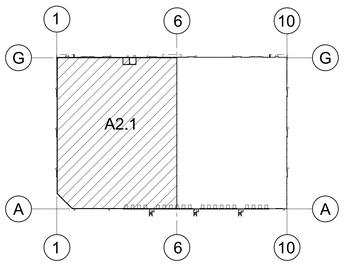
PROPOSED FUTURE OFFICE AREA (N.I.C.)

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## KEY PLAN




N

NOT TO SCALE

WARE MALCOMB
ARCHITECTURE PLANNING INTERIORS
CIVIL ENGINEERING BRANDING BUILDING MEASUREMENT
1315 22nd St #410
Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004069

LICENSED ARCHITECT
GRANT A SPANGENBURG
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

PARTIAL FLOOR PLAN

| REMARKS | DATE |
|---|---|
| PERMIT SET | 2022-04-08 |

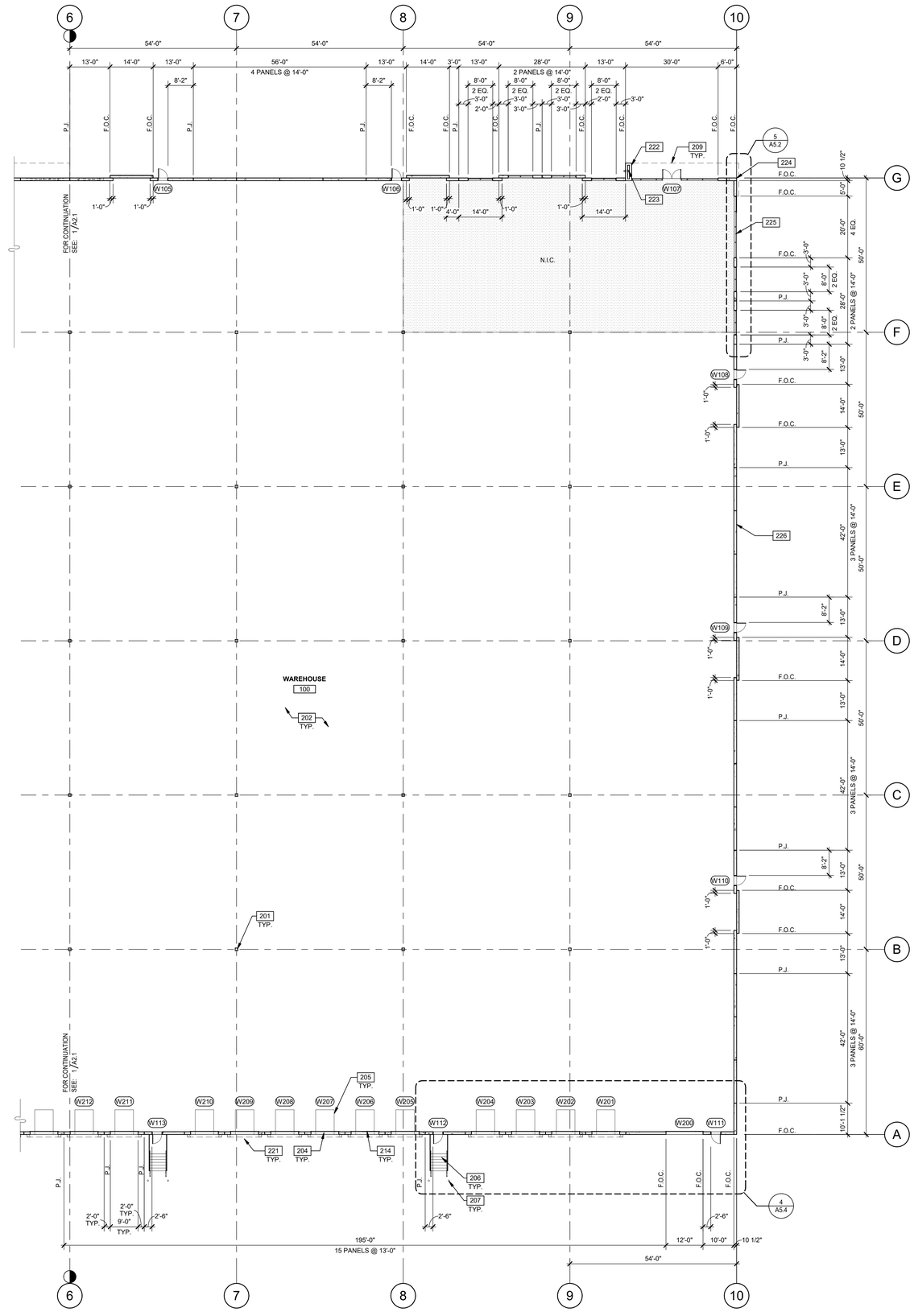
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A2.1

4/19/2022 8:50:41 AM 2022-04-08 PERMIT SET

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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFS




1/16"=1'-0"

0 8' 16' 32' 64'

## PARTIAL FLOOR PLAN

SCALE: 1/16" = 1'-0"

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

201 STRUCTURAL STEEL COLUMN. REFER TO STUCTURAL.
202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.
204 6'X 8' MECHANICAL DOCK LEVELER. 35,000 LBS DYNAMIC CAPACITY, MANUALLY OPERATED (SPRING ASSISTED), REFER TO A0.2 ENVELOPE ASSEMBLY NOTES.
205 DOCK PIT, DOCK SEAL, LEVELER AND DOCK BUMPERS, TYP. U.N.O. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
206 EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED.
207 STEEL BOLLARD, CONCRETE-FILLED PAINTED SAFETY YELLOW.
209 OUTLINE OF CANOPY ABOVE.
214 HIGH LIFT OVERHEAD SECTIONAL DOOR, REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
221 DOCK SEAL
222 PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT THE FACP ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J.
223 ENTRY PORTAL - PRE-FINISH ACM PANEL RAINSCREEN SYSTEM. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
224 WRAP REVEALS AT EXPOSED PANEL ENDS - TYP.
225 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLASS. REFER TO A0.2, ENVELOPE. ASSEMBLY NOTES FOR GLAZOMG SPECIFICATION.
226 PRECAST CONCRETE WALLS, PAINTED.

## LEGEND

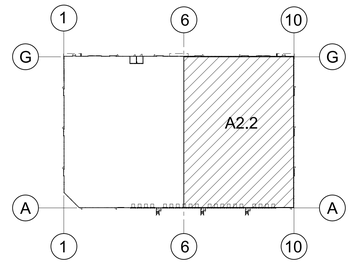
PROPOSED FUTURE OFFICE AREA (N.I.C.)

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## KEY PLAN




NOT TO SCALE

WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT
1315 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004069

LICENSED ARCHITECT
GRANT A BRANDENBURG
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

PARTIAL FLOOR PLAN

| DATE | REMARKS |
|---|---|
| 2022-04-08 | PERMIT SET |

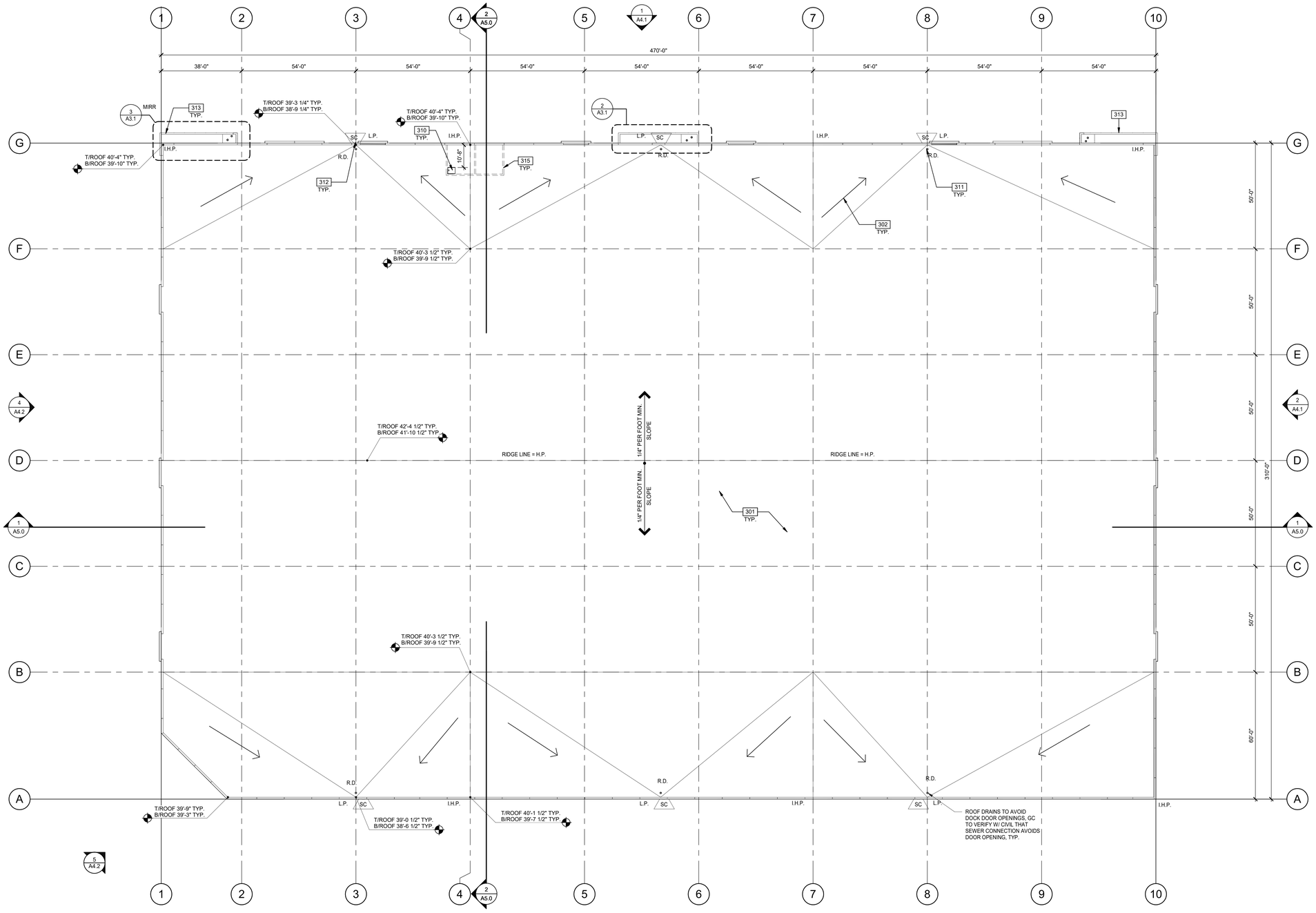
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A2.2

4/19/2022 8:50:43 AM 2022-04-08 PERMIT SET

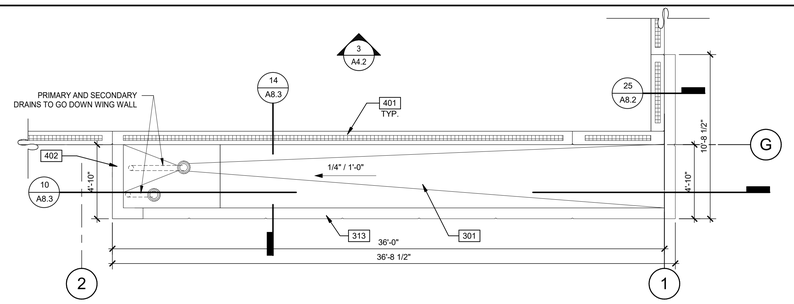
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



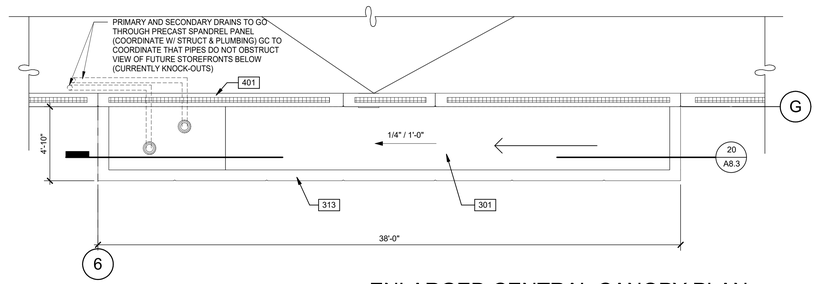

# ROOF PLAN

SCALE: 1" = 20'-0"




# ENLARGED CANOPY PLAN, MIR.

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




# ENLARGED CENTRAL CANOPY PLAN

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

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

| | |
|---|---|
| 301 | ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 302 | FLOW LINE TO DRAIN. |
| 310 | 2'-6" x 3'-0" ROOF HATCH. VERIFY ROOF JOIST LOCATIONS WITH STRUCTURAL DRAWINGS. HATCH TO BE MINIMUM OF 10' FROM ROOF EDGE. |
| 311 | PRIMARY DRAIN TIED TO STORM DRAIN WITH OVERFLOW SCUPPERS |
| 312 | PRIMARY AND SECONDARY INTERNAL ROOF DRAIN AND OVERFLOW SCUPPERS TO BE SIZED PER APPLICABLE PLUMBING CODE. |
| 313 | PRE-FINISHED METAL CANOPY. |
| 315 | LINE OF WALL BELOW. |
| 401 | PRECAST CONCRETE WALL, PAINTED. |
| 402 | PRE-FINISHED ALUMINUM COMPOSITE METAL PANEL OVER METAL STUD FRAMING REFER A0.2, ENVELOPE ASSEMBLY NOTES. COLOR TO MATCH SW 6256 EVENING GRAY. |

## ABBREVIATIONS

| | | |
|---|---|---|
| H.P. | = | TOP OF ROOFING - HIGH POINT |
| I.H.P. | = | TOP OF ROOFING - INTERMEDIATE HIGH POINT |
| L.P. | = | TOP OF ROOFING - LOW POINT |
| R.D. | = | ROOF DRAIN |
| SC | = | SCUPPER |

*ALL SPOT ELEVATIONS ARE TO TOP OF ROOF MEMBRANE, REFER TO THE STRUCTURAL PLAN FOR B.O.D. (BOTTOM OF DECK) ELEVATIONS.
ASSUMED ROOF THICKNESS = +/-5.5" (1 1/2" METAL DECK + 4" RIGID INSULATION (R-25))

1. REFER TO DETAILS ON SHEET A8.3 FOR TYPICAL ROOF PENETRATION FLASHING DETAILS
2. REFER TO DETAILS ON SHEET A8.3 ROOF, MECHANICAL EQUIPMENT CURB AND CRICKET DETAILS.

PER PALATINE CODE OF ORDINANCES SEC. 6-42.2 Screening:

ROOF-TOP EQUIPMENT SCREENING TO BE PROVIDED FOR VISIBLE ROOF-TOP EQUIPMENT PENDING SUBMISSION OF MEP EQUIPMENT LOCATION

*NEW CONSTRUCTION. ALL MECHANICAL EQUIPMENT AND OTHER SIMILAR DEVICES LOCATED ON ANY ROOF SHALL BE VISUALLY AND ACOUSTICALLY SCREENED ON ALL SIDES. DESIGN AND DETAIL OF SUCH SCREENING ON ALL ELEVATIONS SHALL BE COORDINATED WITH REGARD TO COLOR, TYPES OF MATERIALS, NUMBER OF MATERIALS, ARCHITECTURAL FORM, AND DETAILING TO ACHIEVE HARMONY AND CONTINUITY OF DESIGN WITH THE MAJOR PORTIONS OF THE BUILDING.*

State of Illinois Design Firm Registration No. 184-004089
WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING INTERIORS BUILDING MEASUREMENT
1315 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063

GRANT A BRANDENBURG
LICENSED ARCHITECT
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ROOF PLAN

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-06 | PERMIT SET |

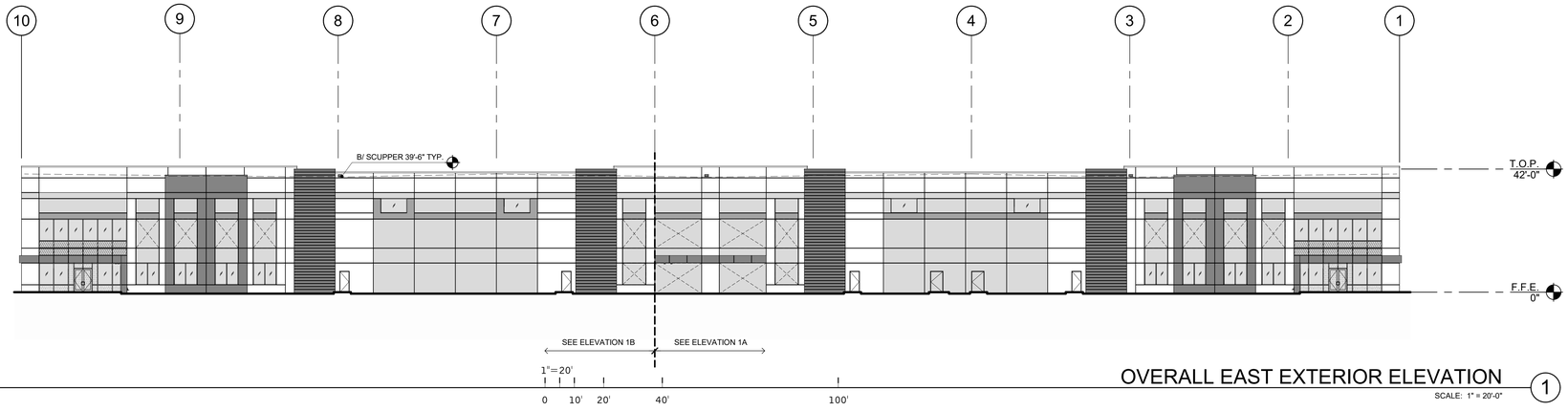
| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A3.1

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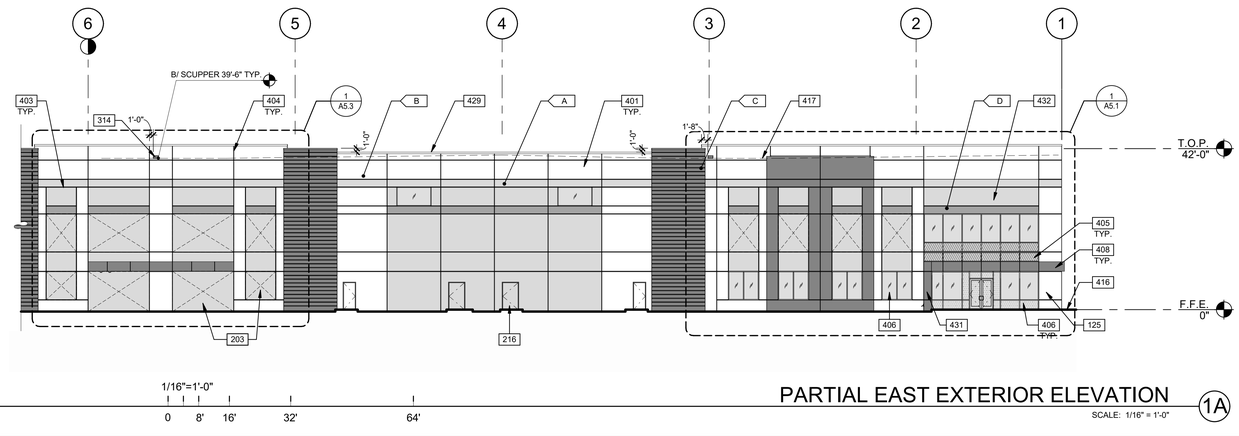
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

4/19/2022 8:30:47 AM 2022-04-06 PERMIT SET




## OVERALL EAST EXTERIOR ELEVATION 1

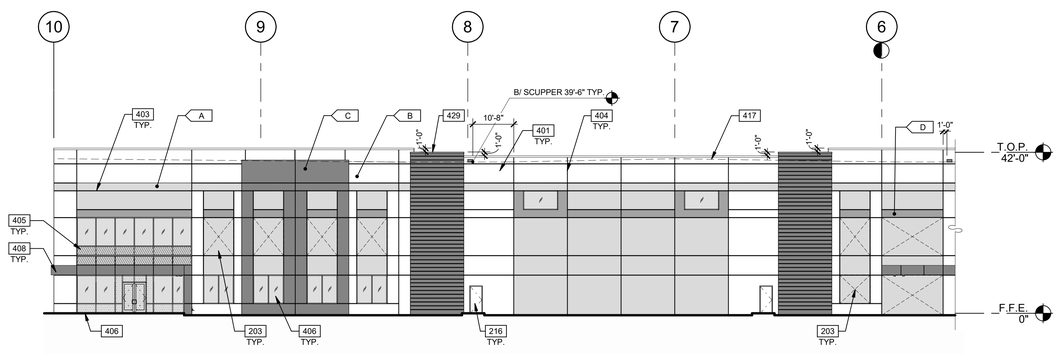
SCALE: 1" = 20'-0"




## PARTIAL EAST EXTERIOR ELEVATION 1A

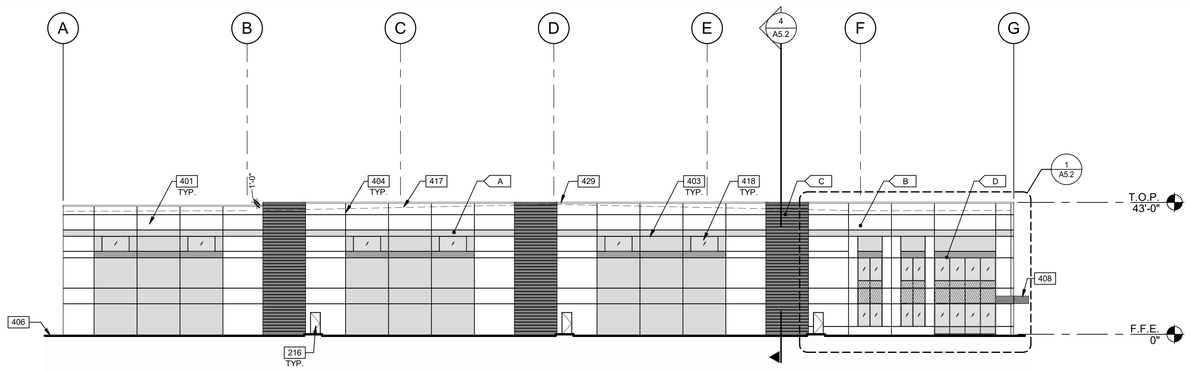
1/16"=1'-0"

SCALE: 1/16" = 1'-0"




## PARTIAL EAST EXTERIOR ELEVATION 1B

SCALE: 1/16" = 1'-0"




## SOUTH EXTERIOR ELEVATION 2

SCALE: 1" = 20'-0"

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

| | |
|---|---|
| 125 | PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT FACP ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J. |
| 203 | KNOCK-OUT PANEL FOR FUTURE WINDOWS OR DOORS. |
| 216 | SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR. |
| 314 | OVERFLOW SCUPPER TO BE SIZED PER APPLICABLE PLUMBING CODE. REFER TO PLUMBING DRAWINGS. |
| 401 | PRECAST CONCRETE WALL, PAINTED. |
| 403 | 2" REVEAL. |
| 404 | CONCRETE WALL JOINT. |
| 405 | ALUMINUM STOREFRONT SYSTEM - SPANDREL PANEL. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION. |
| 406 | ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 408 | METAL CANOPY, PAINTED REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 416 | FINISH GRADE VARIES, REFER TO CIVIL. |
| 417 | LINE OF ROOF BEYOND. |
| 418 | CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION. |
| 429 | CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL. |
| 431 | PROVIDE INSULATION IN THE ENTRY PORTAL - PRE-FINISH ACM PANEL RAINSCREEN SYSTEM WALL FRAMING AND AROUND THE CANOPY STORM SEWER DRAIN/ VERTICAL/ HORIZONTAL LEADER. |
| 432 | CONCRETE SPANDREL PANEL. |

## LEGEND

**GLASS:**

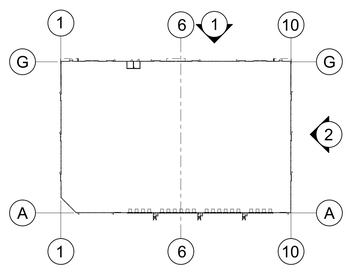
- VISION GLASS
- SPANDREL GLASS
- TEMPERED GLASS

**COLORS:**

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

- A — BASE COLOR: SHERWIN-WILLIAMS "SW 7662 - EVENING SHADOW"
- B — SHERWIN-WILLIAMS "7656 - PHINESTONE"
- C — SHERWIN-WILLIAMS " 6256 - EVENING GRAY"
- D — SHERWIN-WILLIAMS "6794 - FLYWAY"

## KEY PLAN




WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING LANDSCAPE
INTERIORS BUILDING MEASUREMENT
1315 22nd St #410
Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184.004069

REGISTERED ARCHITECT
GRANT A BRANDENBURG
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

EXTERIOR ELEVATIONS

| DATE | REMARKS |
|---|---|
| 2022-04-08 | PERMIT SET |

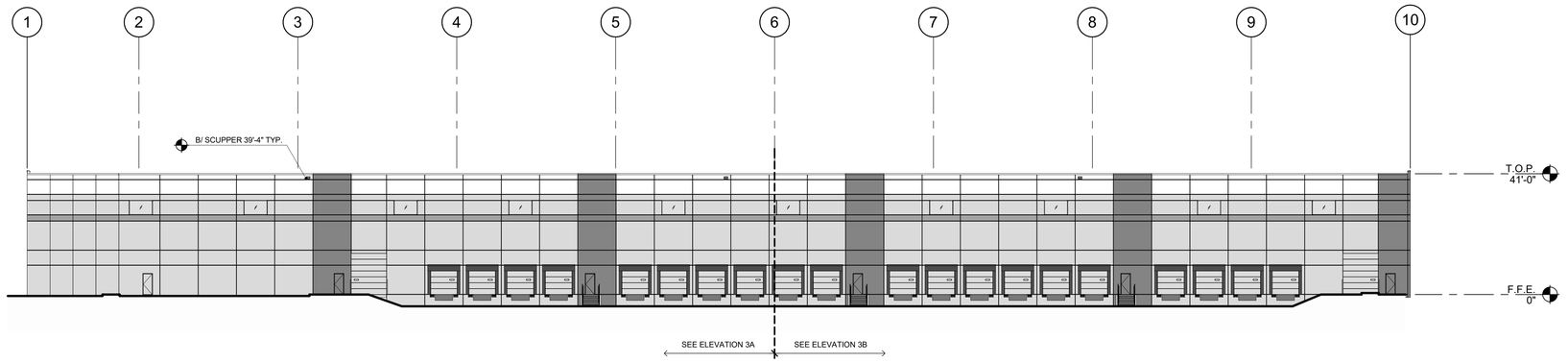
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A4.1

4/19/2022 8:50:51 AM 2022-04-08 PERMIT SET

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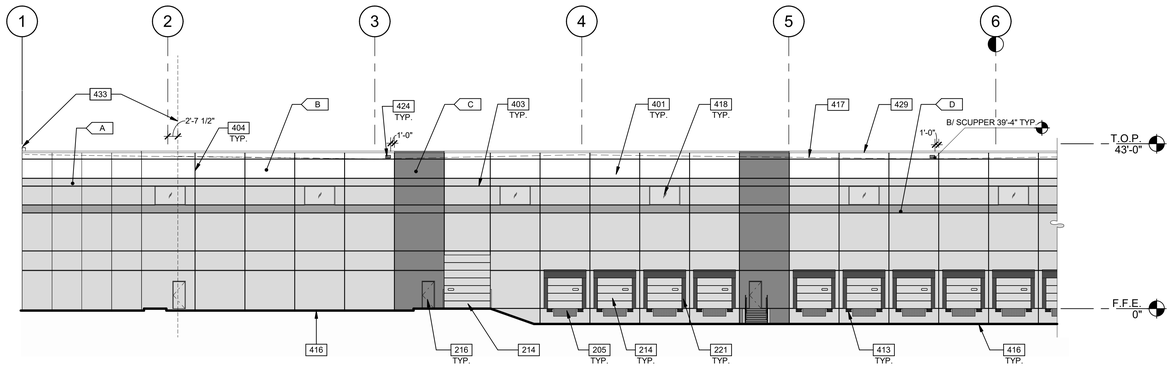
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




1"=20'
0 10' 20' 40' 100'

## OVERALL WEST EXTERIOR ELEVATION 3

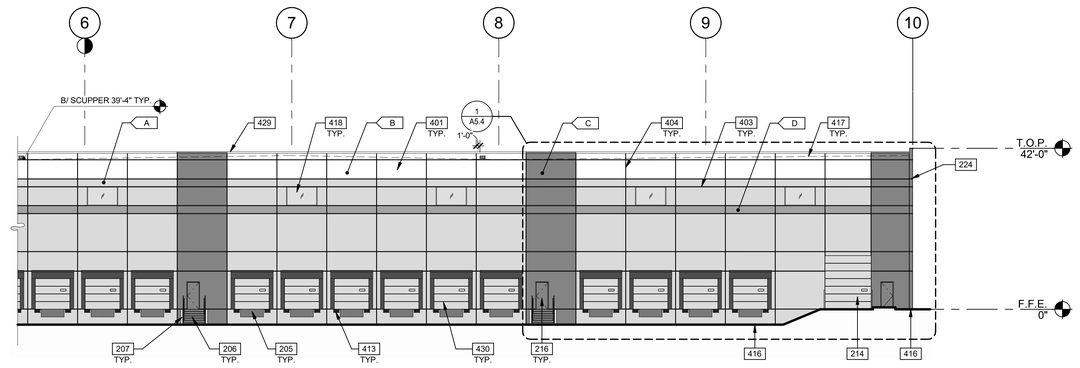
SCALE: 1" = 20'-0"




1/16"=1'-0"
0 8' 16' 32' 64'

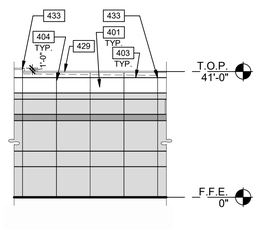
## PARTIAL WEST EXTERIOR ELEVATION 3A

SCALE: 1/16" = 1'-0"



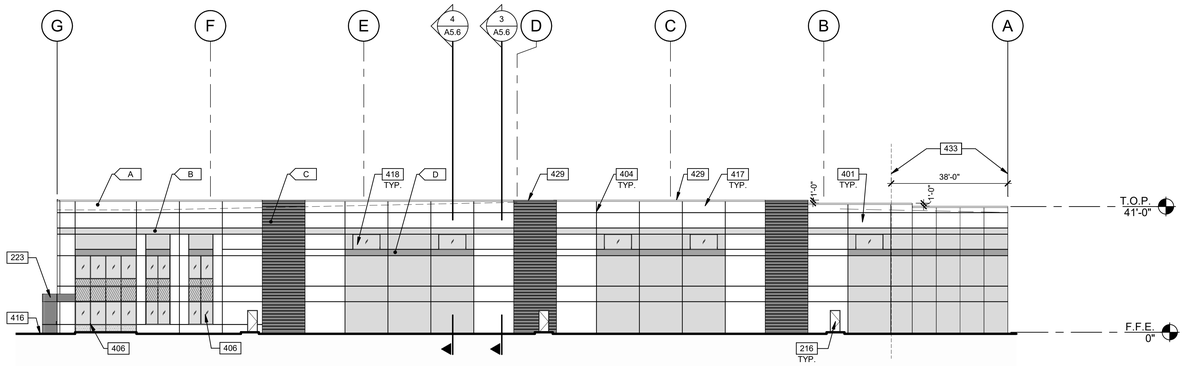

## PARTIAL WEST EXTERIOR ELEVATION 3B

SCALE: 1/16" = 1'-0"




## SOUTHWEST EXTERIOR ELEVATION 5

SCALE: 1" = 20'-0"




## NORTH EXTERIOR ELEVATION 4

SCALE: 1" = 20'-0"

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

| | |
|---|---|
| 205 | DOCK PIT, DOCK SEAL, LEVELER AND DOCK BUMPERS, TYP. U.N.O. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 206 | EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED. |
| 207 | STEEL BOLLARD, CONCRETE-FILLED PAINTED SAFETY YELLOW. |
| 214 | HIGH LIFT OVERHEAD SECTIONAL DOOR, REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 216 | SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR. |
| 221 | DOCK SEAL |
| 223 | ENTRY PORTAL - PRE-FINISH ACM PANEL RAINSCREEN SYSTEM. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 224 | WRAP REVEALS AT EXPOSED PANEL ENDS - TYP. |
| 401 | PRECAST CONCRETE WALL, PAINTED. |
| 403 | 2" REVEAL. |
| 404 | CONCRETE WALL JOINT. |
| 406 | ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 413 | DOCK BUMPER. |
| 416 | FINISH GRADE VARIES, REFER TO CIVIL. |
| 417 | LINE OF ROOF BEYOND. |
| 418 | CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION. |
| 424 | OVERFLOW SCUPPER OPENING TO BE SIZED PER APPLICABLE PLUMBING CODE.REFER TO PUMBING DRAWINGS. |
| 429 | CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL. |
| 430 | OVERHEAD DOOR |
| 433 | EXTERIOR WALLS AND PANEL JOINTS WITHIN THIS AREA TO BE 3HR RATED TO COMPLY WITH IBC 2015 (507.4 & 507.2.1) |

## LEGEND

**GLASS:**

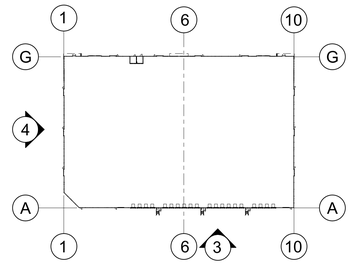
- VISION GLASS
- SPANDREL GLASS
- TEMPERED GLASS

**COLORS:**

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

- A — BASE COLOR: SHERWIN-WILLIAMS "SW 7662 - EVENING SHADOW"
- B — SHERWIN-WILLIAMS "7656 - PHINESTONE"
- C — SHERWIN-WILLIAMS " 6256 - EVENING GRAY"
- D — SHERWIN-WILLIAMS "6794 - FLYWAY"

## KEY PLAN




N
NOT TO SCALE

WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING INTERIORS BUILDING MEASUREMENT
1315 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004069

GRANT A BRANDENBURG
001-020842
STATE OF ILLINOIS
REGISTERED ARCHITECT
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

EXTERIOR ELEVATIONS

| DATE | REMARKS |
|---|---|
| 2022-04-08 | PERMIT SET |

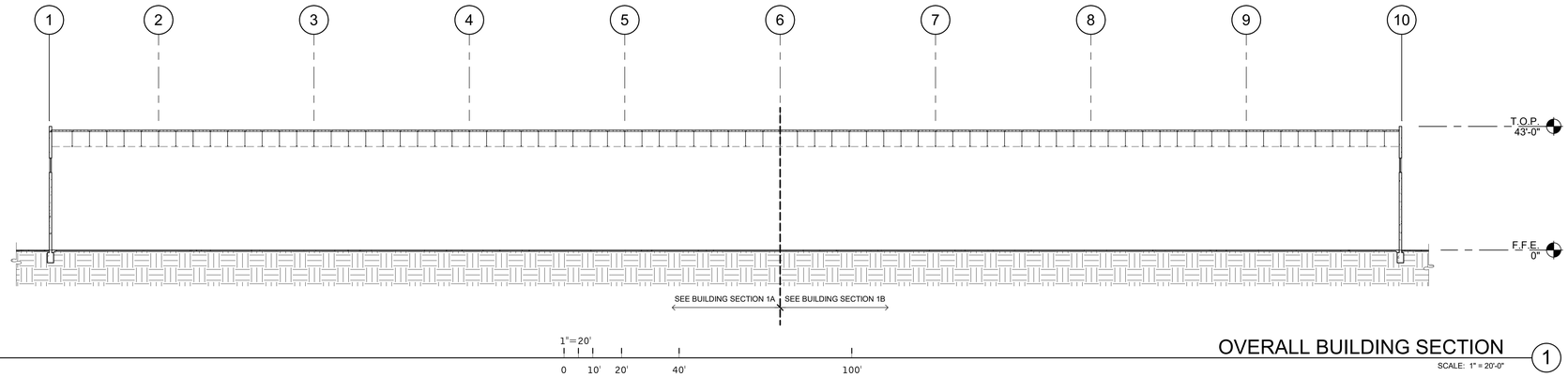
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A4.2

4/19/2022 8:50:58 AM 2022-04-08 PERMIT SET

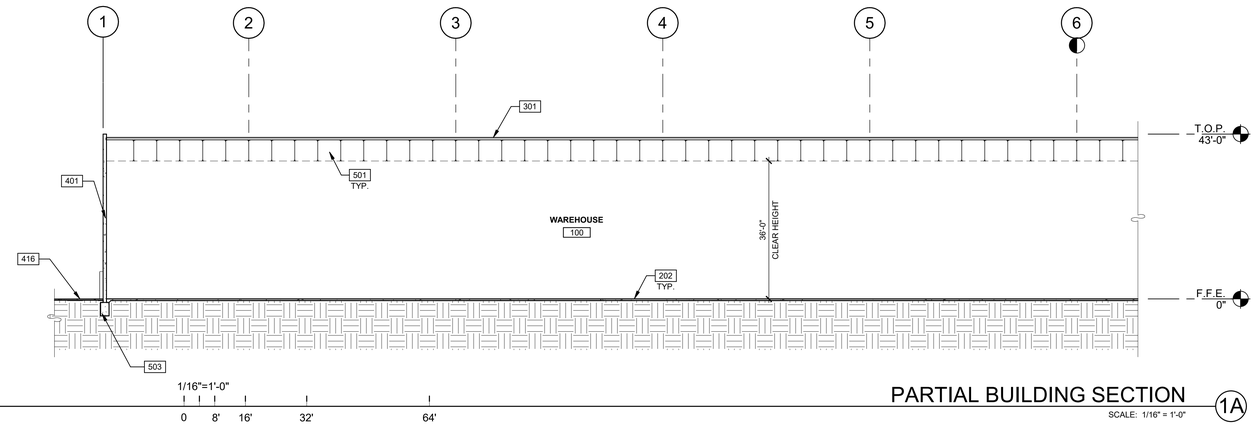
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



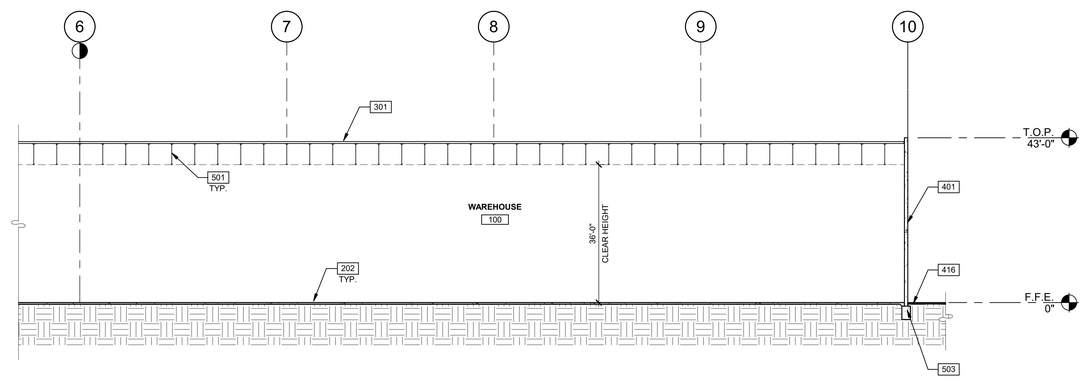

## OVERALL BUILDING SECTION 1

SCALE: 1" = 20'-0"



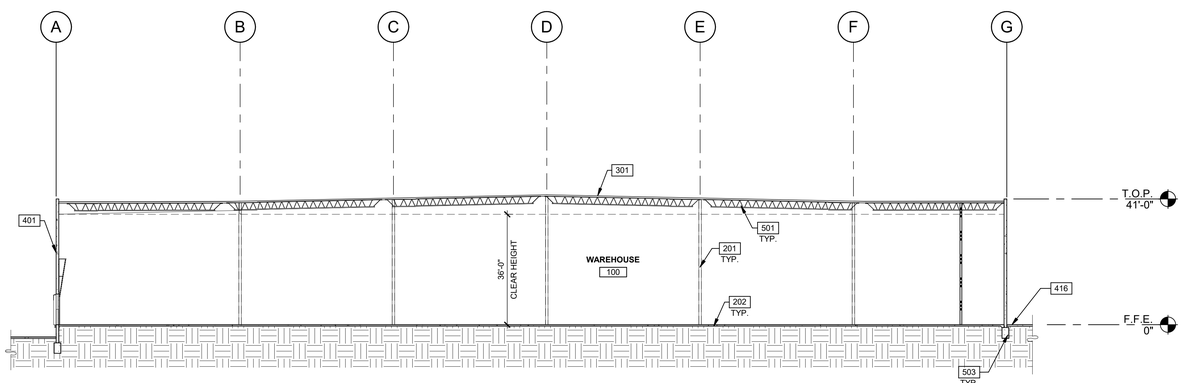

## PARTIAL BUILDING SECTION 1A

SCALE: 1/16" = 1'-0"




## PARTIAL BUILDING SECTION 1B

SCALE: 1/16" = 1'-0"




## BUILDING SECTION 2

SCALE: 1" = 20'-0"

## KEYNOTES:

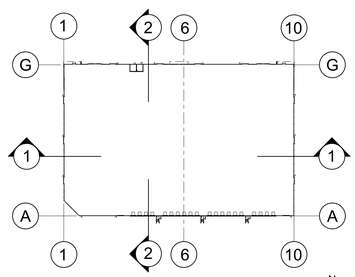
SEE SHEET A0.2 FOR GENERAL NOTES

| | |
|---|---|
| 201 | STRUCTURAL STEEL COLUMN. REFER TO STUCTURAL. |
| 202 | CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS. |
| 301 | ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES. |
| 401 | PRECAST CONCRETE WALL, PAINTED. |
| 416 | FINISH GRADE VARIES, REFER TO CIVIL. |
| 501 | STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL. |
| 503 | CONCRETE FOOTING, REFER TO STRUCTURAL. |

## WALL LEGEND

- CONCRETE WALL
- COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## KEY PLAN




WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT
1315 22nd St #410
Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004069

GRANT A BRANDENBURG
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STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

BUILDING SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

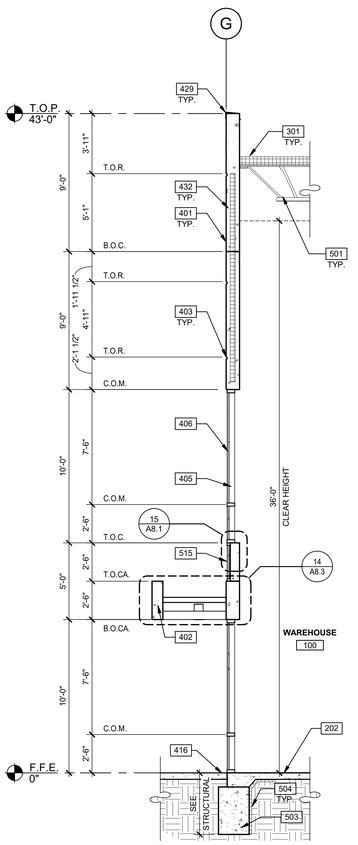
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.0

2022-04-08 PERMIT SET
4/19/2022 8:51:00 AM

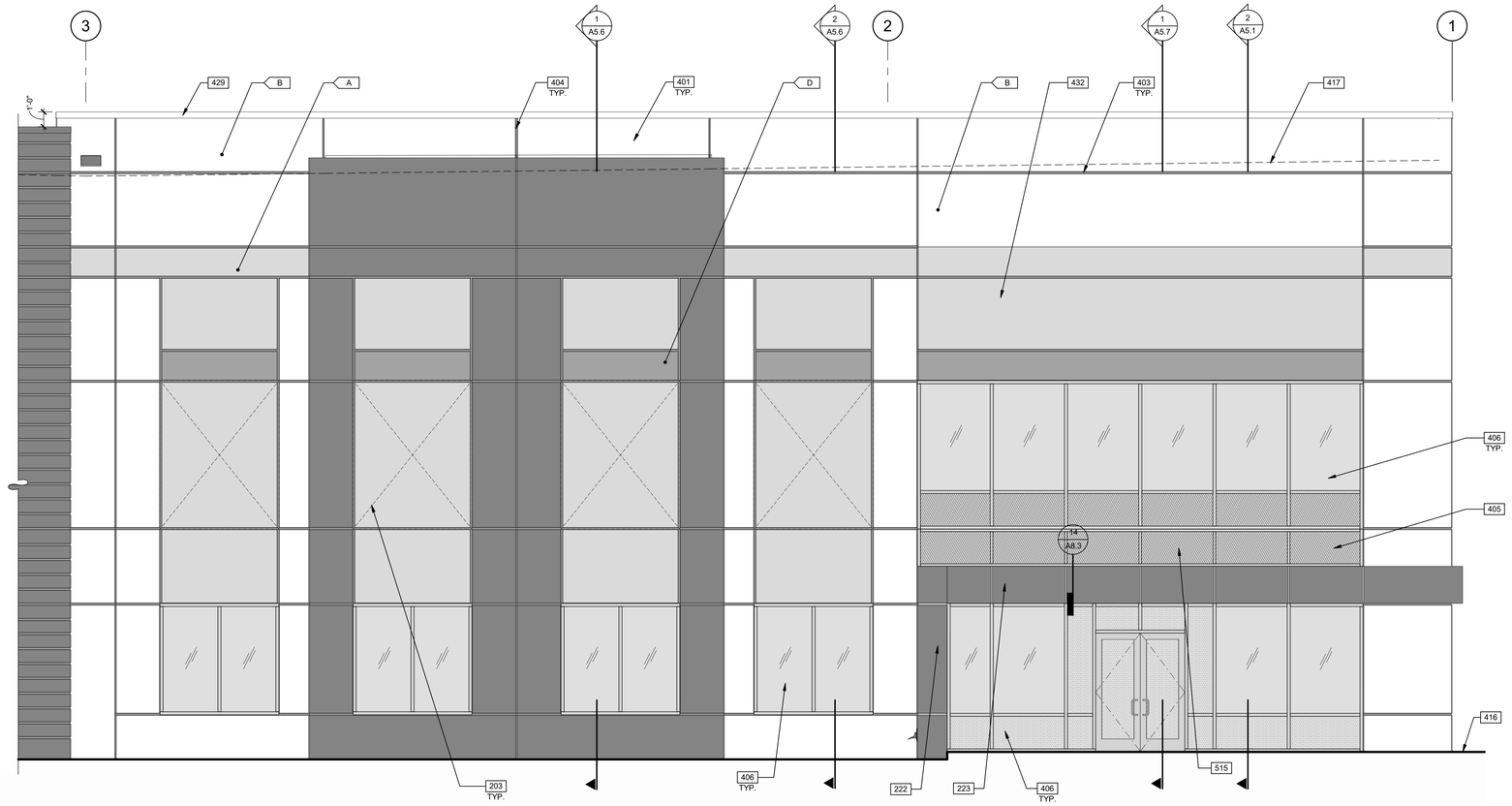
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



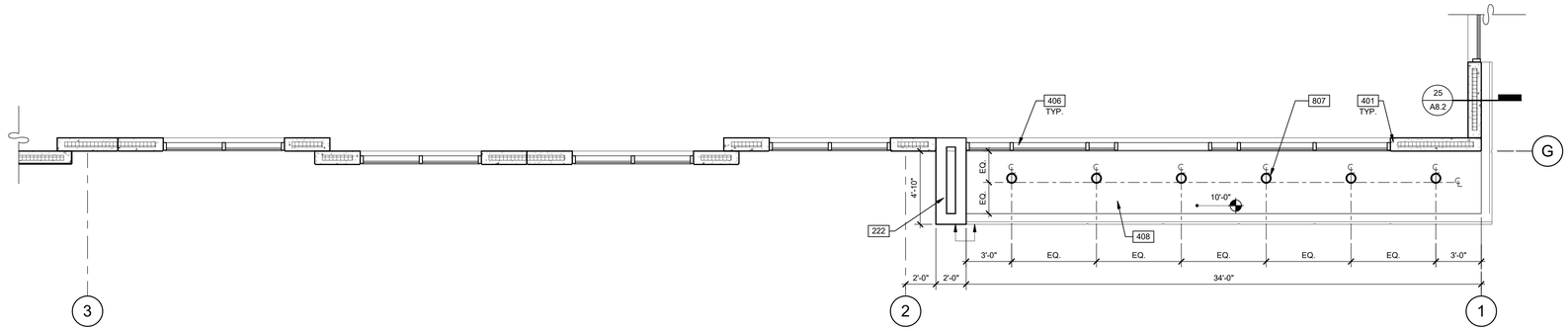

WALL SECTION 2

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



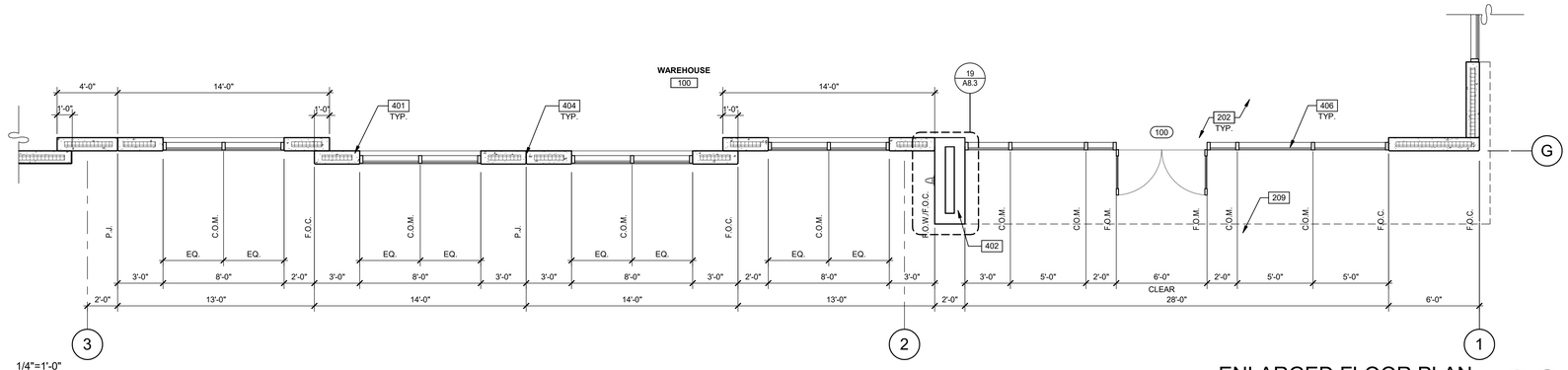

ENLARGED EXTERIOR ELEVATION 1

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




ENLARGED ENTRY SOFFIT PLAN 3

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




1/4"=1'-0"

0 2' 4' 8' 16'

ENLARGED FLOOR PLAN 4

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

N

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.
203 KNOCK-OUT PANEL FOR FUTURE WINDOWS OR DOORS.
209 OUTLINE OF CANOPY ABOVE.
222 PROVIDE KNOX BOX AT FRONT ENTRANCE AND AT THE FACP ROOM DOOR. LOCATION TO BE VERIFIED WITH A.H.J.
223 ENTRY PORTAL - PRE-FINISH ACM PANEL RAINSCREEN SYSTEM. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
301 ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
401 PRECAST CONCRETE WALL, PAINTED.
402 PRE-FINISHED ALUMINUM COMPOSITE METAL PANEL OVER METAL STUD FRAMING REFER A0.2, ENVELOPE ASSEMBLY NOTES. COLOR TO MATCH SW 6256 EVENING GRAY.
403 2" REVEAL.
404 CONCRETE WALL JOINT.
405 ALUMINUM STOREFRONT SYSTEM - SPANDREL PANEL. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.
406 ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
408 METAL CANOPY, PAINTED REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
416 FINISH GRADE VARIES, REFER TO CIVIL.
417 LINE OF ROOF BEYOND.
429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.
432 CONCRETE SPANDREL PANEL.
501 STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL.
503 CONCRETE FOOTING, REFER TO STRUCTURAL.
504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.
515 2 1/2" WIDE STOREFRONT SYSTEM INSTALLED IN FRONT OF THE CONCERETE SPANDREL PANEL.
807 CAN LIGHTS

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## LEGEND

**GLASS:**

VISION GLASS

SPANDREL GLASS

TEMPERED GLASS

**CEILING:**

RECESSED 6" OR 8" LED DOWNLIGHT.

**COLORS:**

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

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State of Illinois Design Firm Registration No. 184-004069

GRANT A BRANDENBURG 001-020842 LICENSED ARCHITECT STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ENLARGED ELEVATION, PLAN AND WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

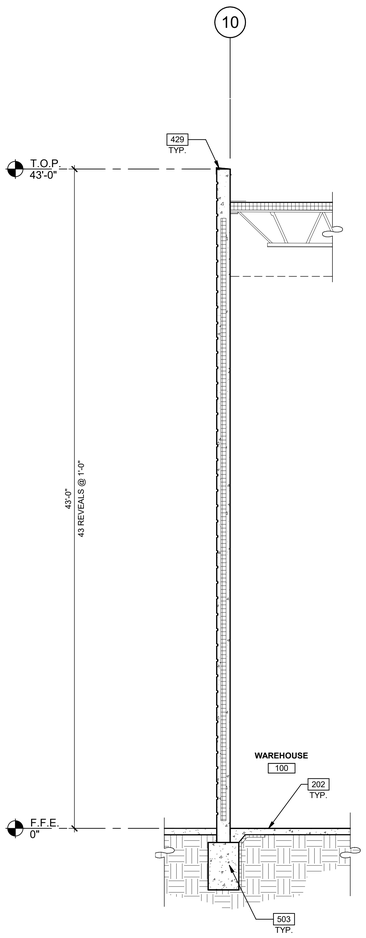
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.1

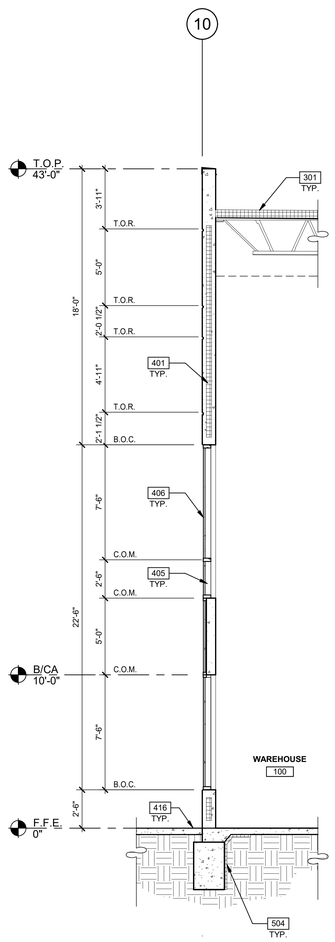
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

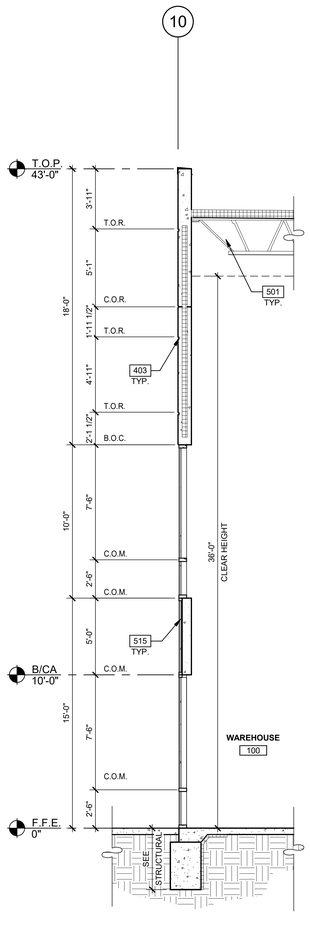
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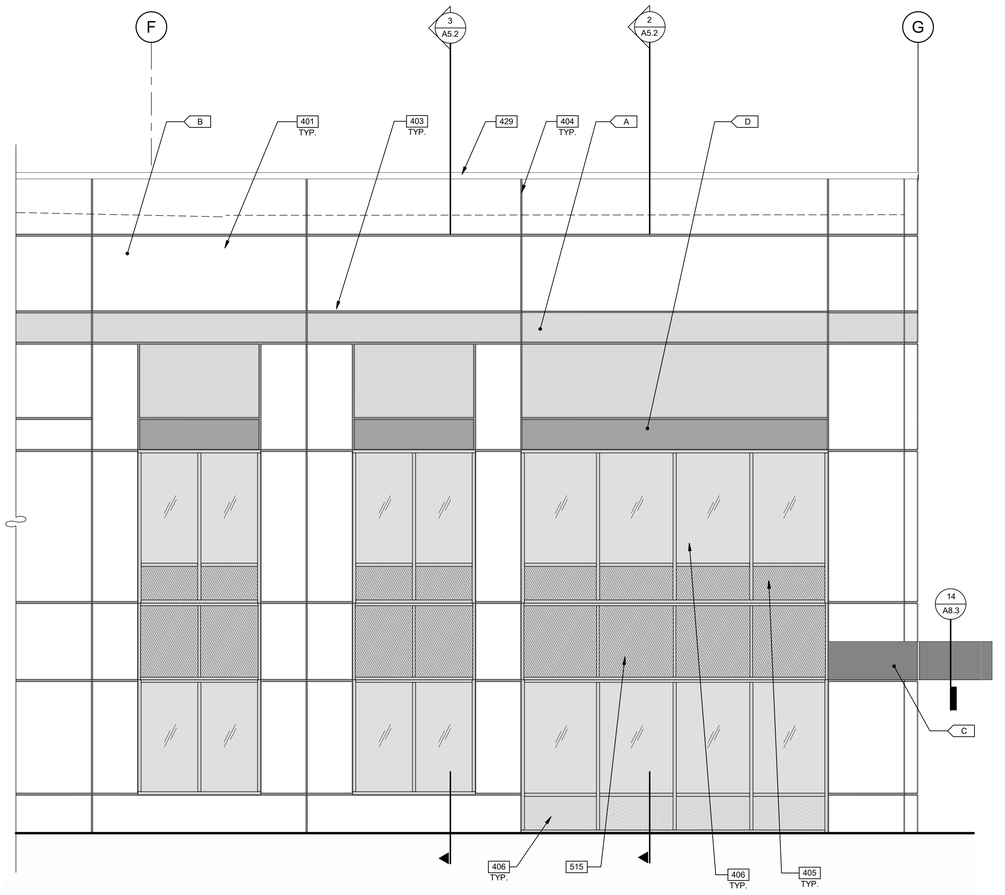

WALL SECTION 4
SCALE: 1/4" = 1'-0"




WALL SECTION 3
SCALE: 1/4" = 1'-0"




WALL SECTION 2
SCALE: 1/4" = 1'-0"




ENLARGED EXTERIOR ELEVATION 1
SCALE: 1/4" = 1'-0"

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

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403 2" REVEAL.
404 CONCRETE WALL JOINT.
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406 ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
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429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.
501 STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL.
503 CONCRETE FOOTING, REFER TO STRUCTURAL.
504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.
515 2 1/2" WIDE STOREFRONT SYSTEM INSTALLED IN FRONT OF THE CONCRETE SPANDREL PANEL.

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## LEGEND

**GLASS:**

VISION GLASS

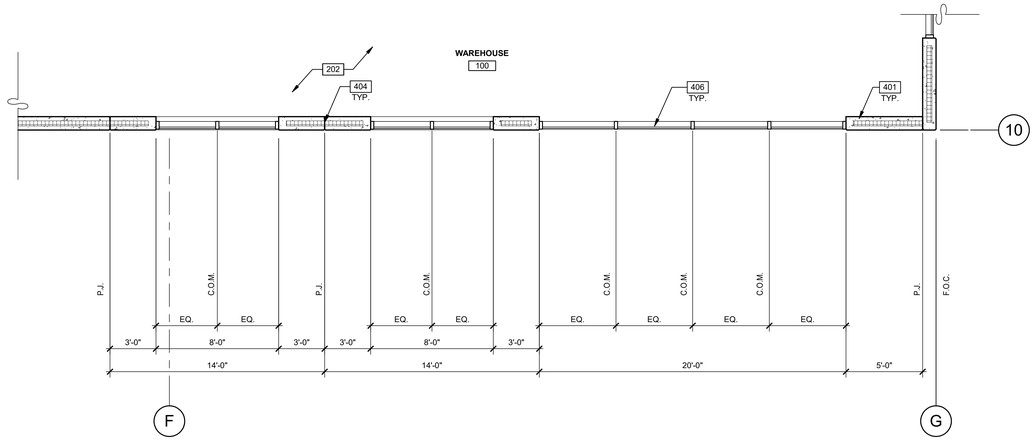
SPANDREL GLASS

TEMPERED GLASS

**COLORS:**

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

A BASE COLOR: SHERWIN-WILLIAMS "SW 7662 - EVENING SHADOW"
B SHERWIN-WILLIAMS "7656 - PHINESTONE"
C SHERWIN-WILLIAMS " 6256 - EVENING GRAY"
D SHERWIN-WILLIAMS "6794 - FLYWAY"




1/4"=1'-0"
0 2' 4' 8' 16'

ENLARGED FLOOR PLAN 5
SCALE: 1/4" = 1'-0"

N

State of Illinois Design Firm Registration No. 184-004069
WARE MALCOMB
ARCHITECTURE CIVIL ENGINEERING
PLANNING INTERIORS BRANDING BUILDING MEASUREMENT
1515 22nd St. #410
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GRANT A BRANDENBURG
LICENSED ARCHITECT
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

MISSNER GROUP -
PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ENLARGED ELEVATION, PLAN AND WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-04-08 | PERMIT SET |

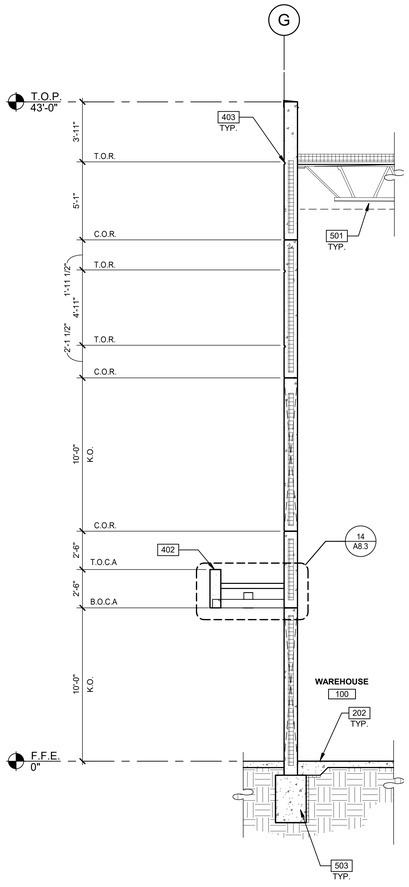
| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
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SHEET
A5.2

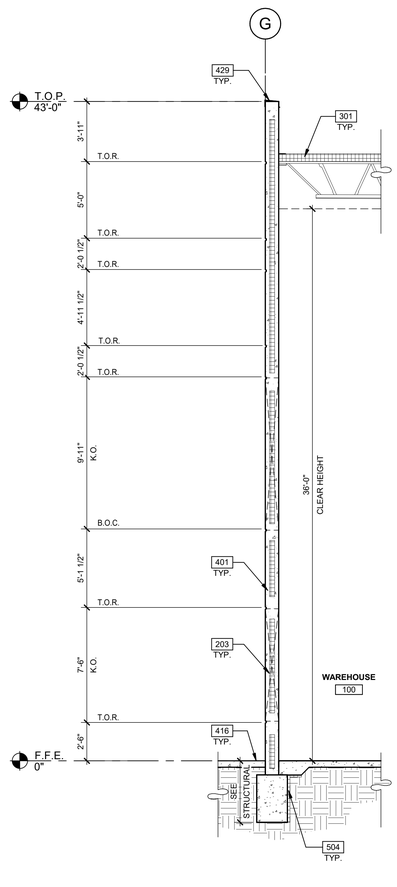
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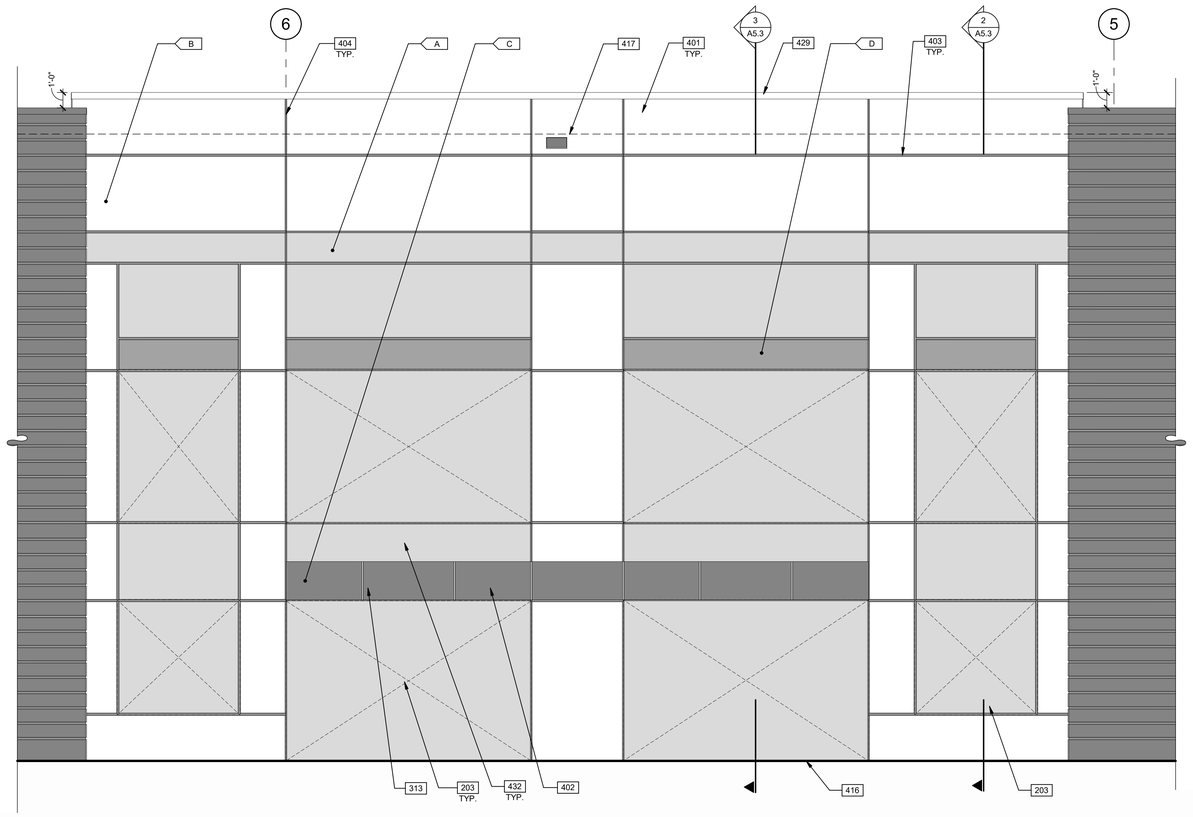
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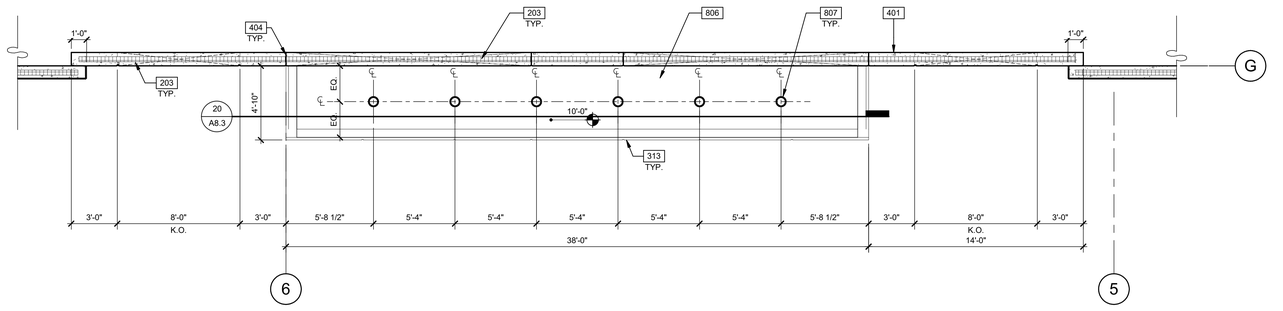

WALL SECTION 3
SCALE: 1/4" = 1'-0"



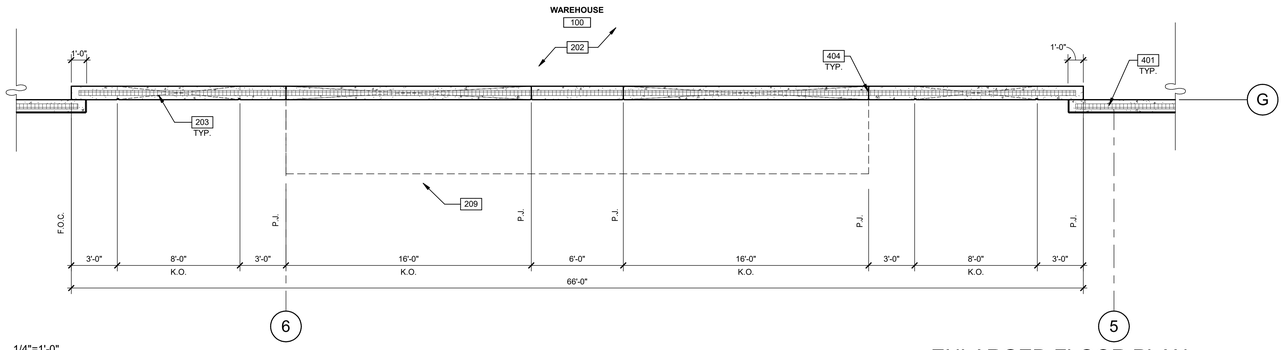

WALL SECTION 2
SCALE: 1/4" = 1'-0"




ENLARGED EXTERIOR ELEVATION 1
SCALE: 1/4" = 1'-0"




ENLARGED ENTRY SOFFIT PLAN 4
SCALE: 1/4" = 1'-0"




ENLARGED FLOOR PLAN 5
SCALE: 1/4" = 1'-0"

1/4"=1'-0"
0 2' 4' 8' 16'

N

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

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806 CEILING
807 CAN LIGHTS

## LEGEND

**COLORS:**

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B SHERWIN-WILLIAMS "7656 - PHINESTONE"
C SHERWIN-WILLIAMS " 6256 - EVENING GRAY"
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## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## LEGEND

**GLASS:**

VISION GLASS
SPANDREL GLASS
TEMPERED GLASS

**CEILING:**

RECESSED 6" OR 8" LED DOWNLIGHT.

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# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ENLARGED ELEVATION, PLAN AND WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

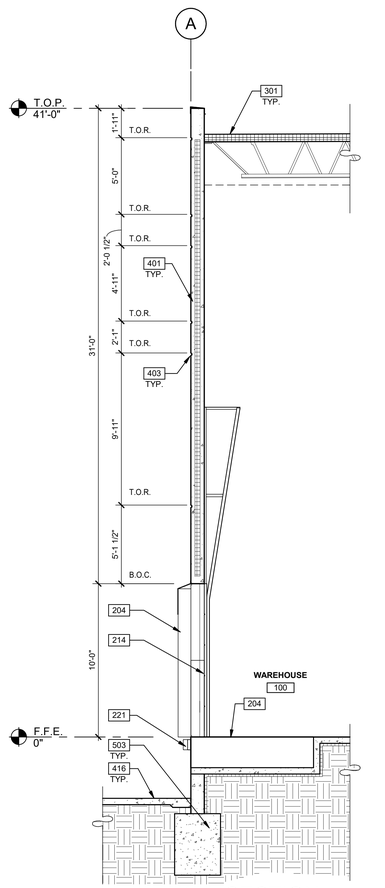
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.3

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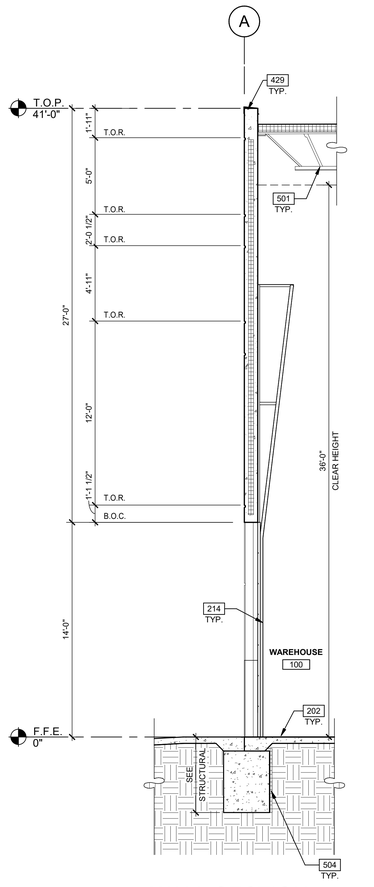
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



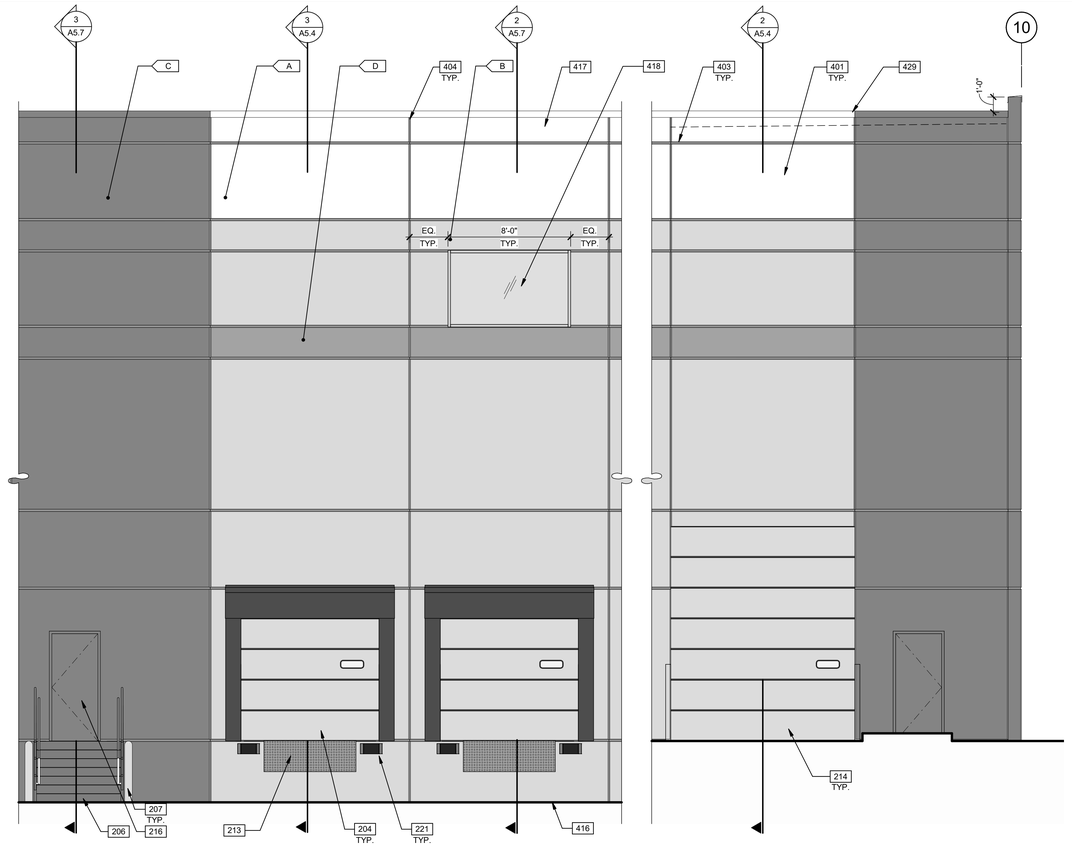

WALL SECTION 3

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




WALL SECTION 2

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




ENLARGED EXTERIOR ELEVATION 1

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

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.

204 6'X 8' MECHANICAL DOCK LEVELER. 35,000 LBS DYNAMIC CAPACITY, MANUALLY OPERATED (SPRING ASSISTED), REFER TO A0.2 ENVELOPE ASSEMBLY NOTES.

205 DOCK PIT, DOCK SEAL, LEVELER AND DOCK BUMPERS, TYP. U.N.O. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

206 EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED.

207 STEEL BOLLARD, CONCRETE-FILLED PAINTED SAFETY YELLOW.

213 42"H. CONTINUOUS METAL GUARDRAIL, PAINTED.

214 HIGH LIFT OVERHEAD SECTIONAL DOOR, REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

216 SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR.

221 DOCK SEAL

301 ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.

401 PRECAST CONCRETE WALL, PAINTED.

403 2" REVEAL.

404 CONCRETE WALL JOINT.

416 FINISH GRADE VARIES, REFER TO CIVIL.

417 LINE OF ROOF BEYOND.

418 CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.

429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.

501 STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL.

503 CONCRETE FOOTING, REFER TO STRUCTURAL.

504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## LEGEND

**GLASS:**

VISION GLASS

**COLORS:**

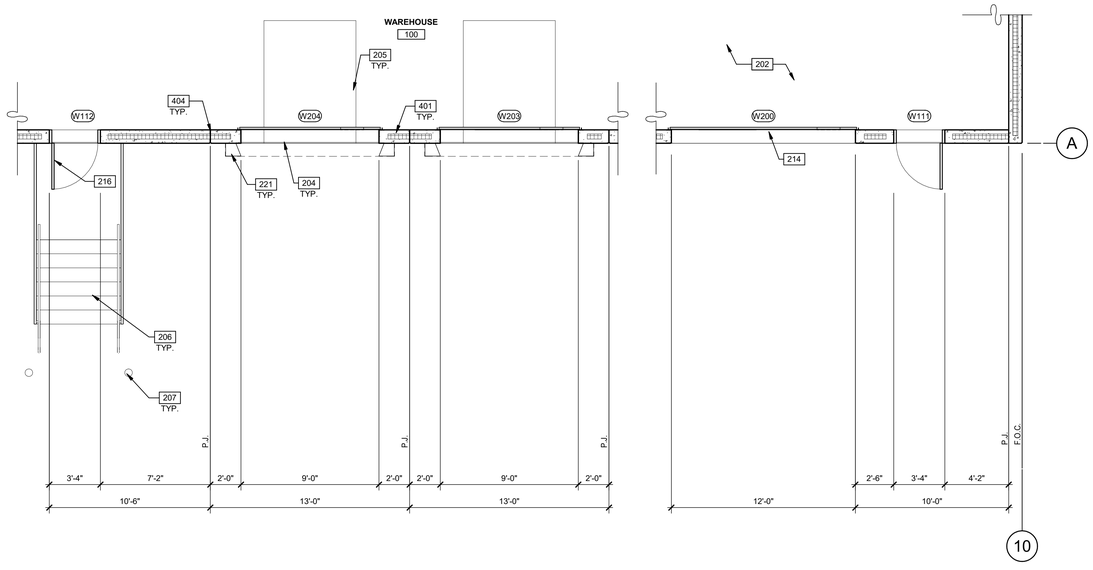
PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

A BASE COLOR: SHERWIN-WILLIAMS "SW 7662 - EVENING SHADOW"

B SHERWIN-WILLIAMS "7656 - PHINESTONE"

C SHERWIN-WILLIAMS " 6256 - EVENING GRAY"

D SHERWIN-WILLIAMS "6794 - FLYWAY"




1/4"=1'-0"

0 2' 4' 8' 16'

ENLARGED FLOOR PLAN 4

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

N

State of Illinois Design Firm Registration No. 184-004069

WARE MALCOMB

ARCHITECTURE CIVIL ENGINEERING
PLANNING BRANDING
INTERIORS BUILDING MEASUREMENT

1315 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063

GRANT A BRANDENBURG
LICENSED ARCHITECT
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

MISSNER GROUP -
PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ENLARGED ELEVATION, PLAN AND WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

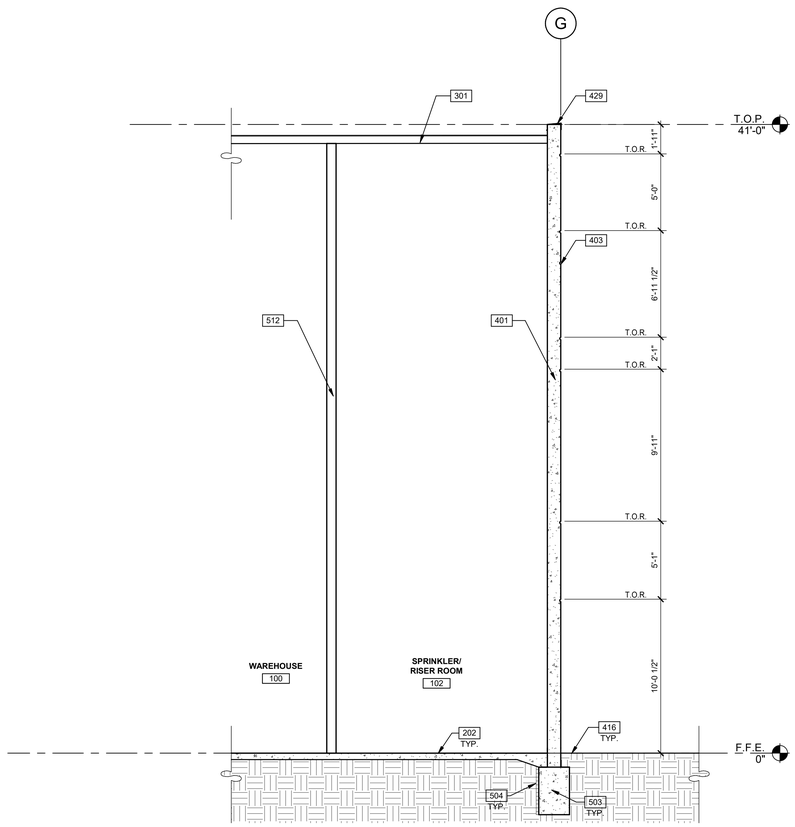
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|---|---|
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| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.4

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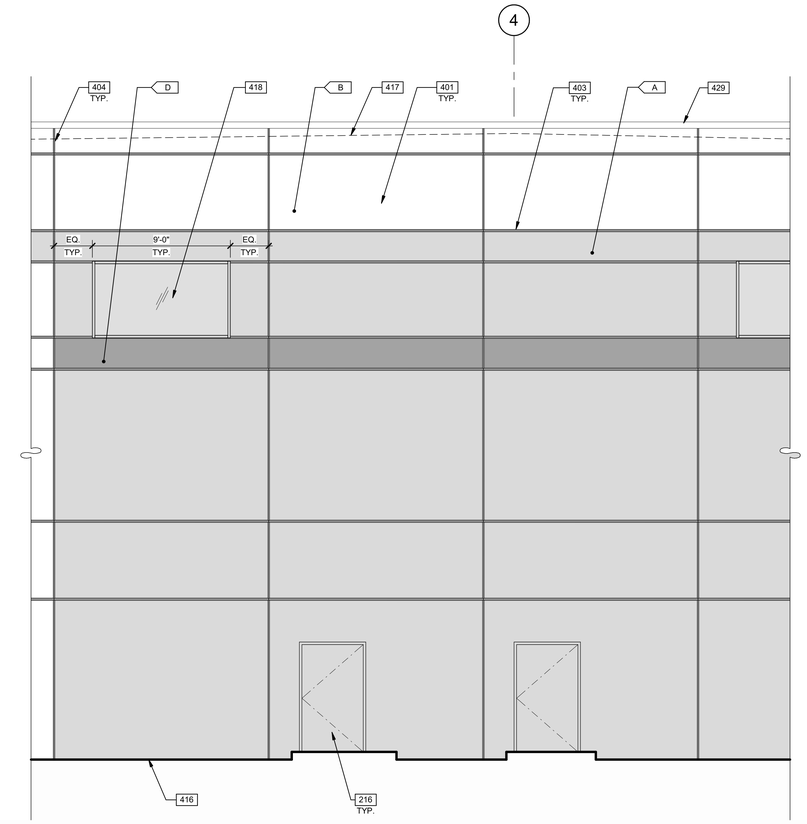
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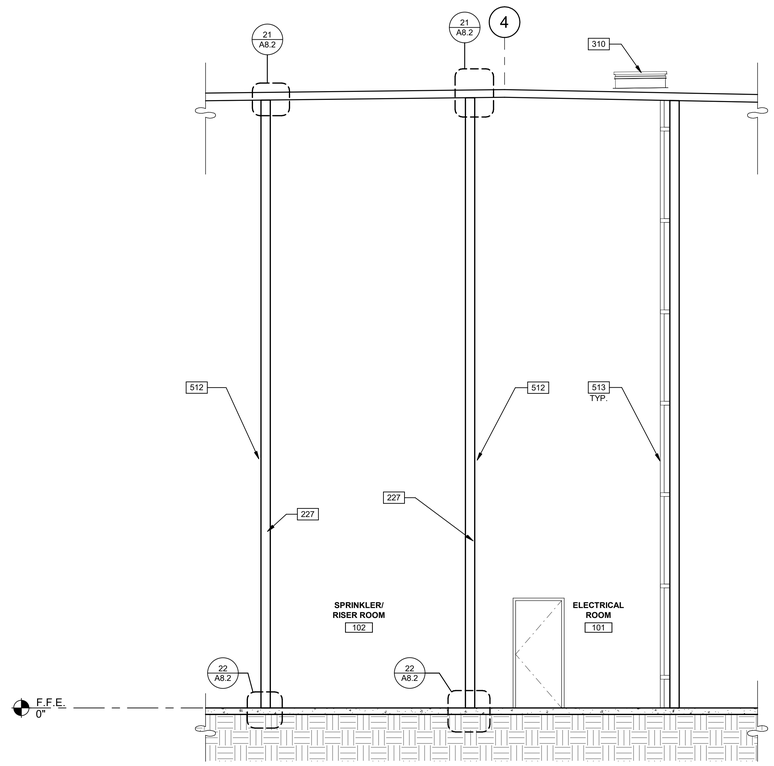

## ENLARGED BUILDING SECTION 2

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



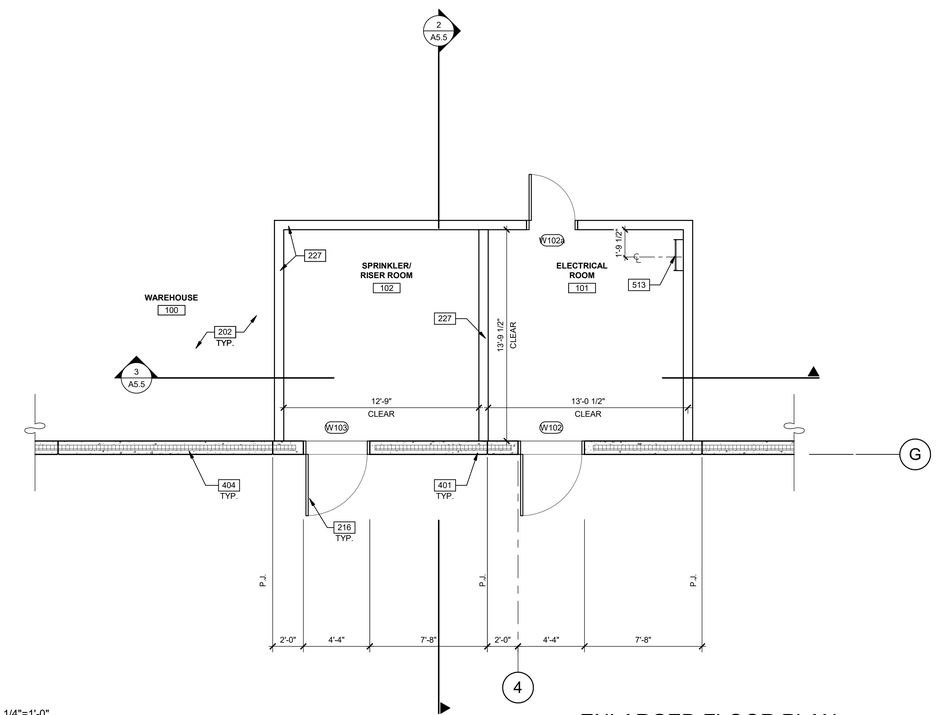

## ENLARGED EXTERIOR ELEVATION 1

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




## ENLARGED BUILDING SECTION 3

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




## ENLARGED FLOOR PLAN 4

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

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.
216 SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR.
227 SPRINKLER ROOM INTERIOR WALL TO BE 1HR RATED.
301 ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
310 2'-6" x 3'-0" ROOF HATCH. VERIFY ROOF JOIST LOCATIONS WITH STRUCTURAL DRAWINGS. HATCH TO BE MINIMUM OF 10' FROM ROOF EDGE.
401 PRECAST CONCRETE WALL, PAINTED.
403 2" REVEAL.
404 CONCRETE WALL JOINT.
416 FINISH GRADE VARIES, REFER TO CIVIL.
417 LINE OF ROOF BEYOND.
418 CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.
429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.
503 CONCRETE FOOTING, REFER TO STRUCTURAL.
504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.
512 INTERIOR RATED WALL PARTITION.
513 ROOF ACCESS LADDER . COORDINATE LOCATION WITH STRUCTURAL ROOF FRAME DRAWINGS.

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## LEGEND

**GLASS:**

VISION GLASS

**COLORS:**

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW. GC TO PROVIDE ARCHITECT DRAW DOWNS OF EACH PAINT COLOR.

A BASE COLOR: SHERWIN-WILLIAMS "SW 7662 - EVENING SHADOW"
B SHERWIN-WILLIAMS "7656 - PHINESTONE"
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State of Illinois Design Firm Registration No. 184-004089

GRANT A BRANDENBURG 001-020842 LICENSED ARCHITECT STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP EST 1948

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

ENLARGED ELEVATION, PLAN AND WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

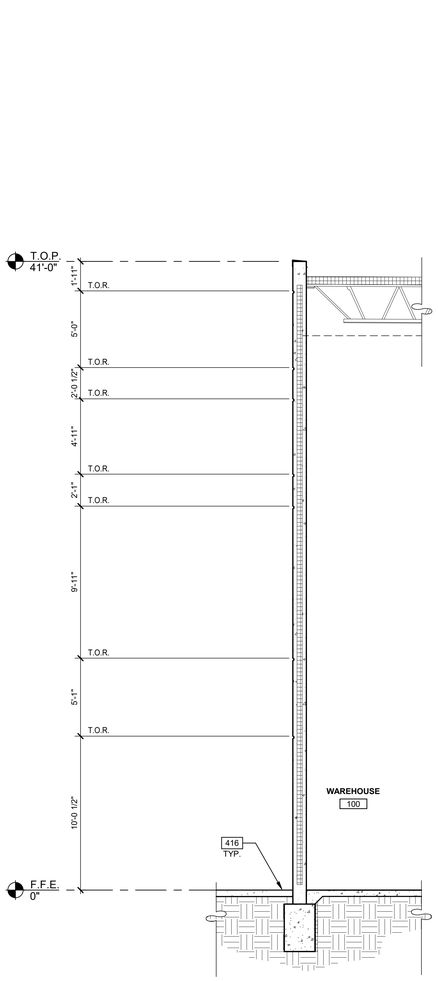
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|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.5

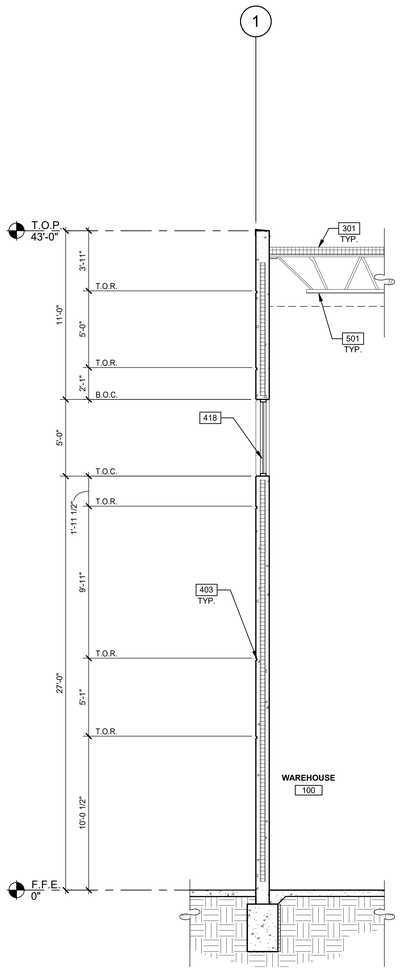
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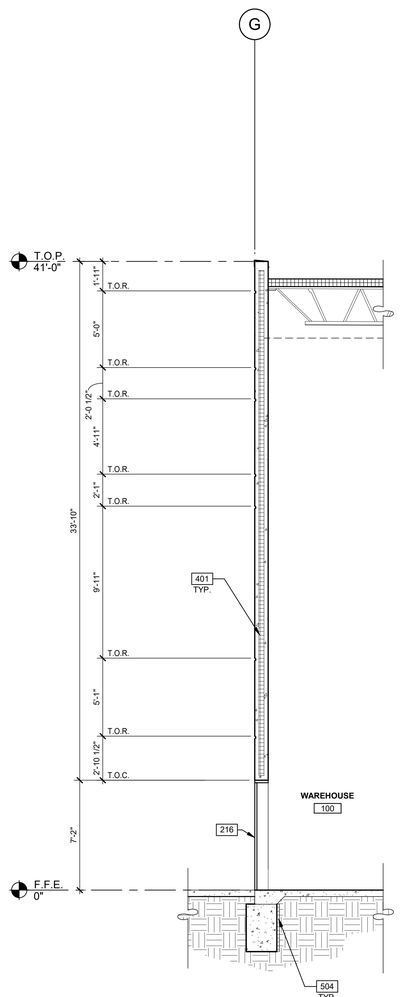
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



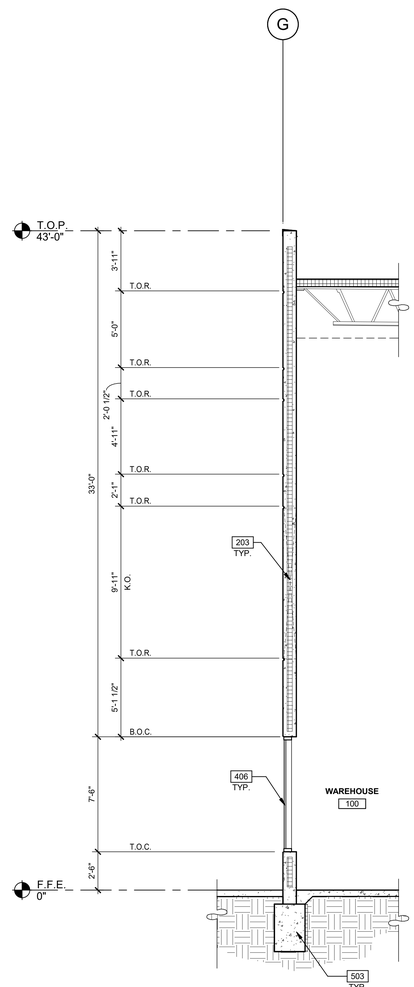

WALL SECTION 5
SCALE: 1/4" = 1'-0"



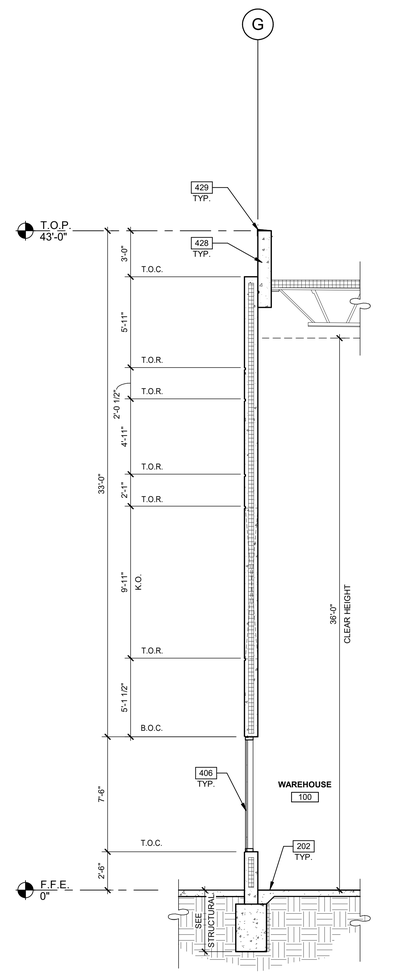

WALL SECTION 4
SCALE: 1/4" = 1'-0"




WALL SECTION 3
SCALE: 1/4" = 1'-0"




WALL SECTION 2
SCALE: 1/4" = 1'-0"




WALL SECTION 1
1/4"=1'-0"
0 2' 4' 8' 16'
SCALE: 1/4" = 1'-0"

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION.
SEE NOTES ON PLAN FOR FIRE RATING

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.
203 KNOCK-OUT PANEL FOR FUTURE WINDOWS OR DOORS.
216 SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR.
301 ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
401 PRECAST CONCRETE WALL, PAINTED.
403 2" REVEAL.
406 ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
416 FINISH GRADE VARIES, REFER TO CIVIL.
418 CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.
428 PRECAST CONRETE SPANDREL PANEL, PAINTED
429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.
501 STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL.
503 CONCRETE FOOTING, REFER TO STRUCTURAL.
504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.

State of Illinois Design Firm Registration No. 184-004069
WARE MALCOMB
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INTERIORS BUILDING MEASUREMENT
1515 22nd St. #410
Oak Brook, IL 60523
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LICENSED ARCHITECT
GRANT A BRANDSBURG
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

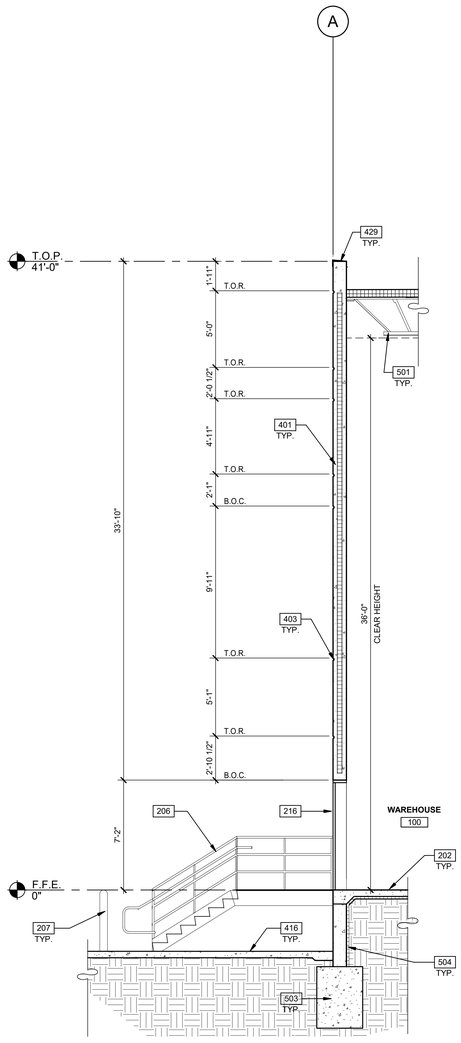
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| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.6

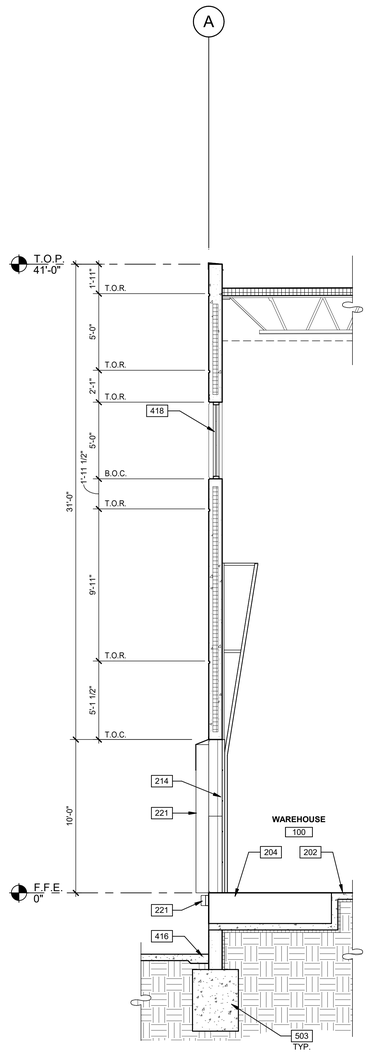
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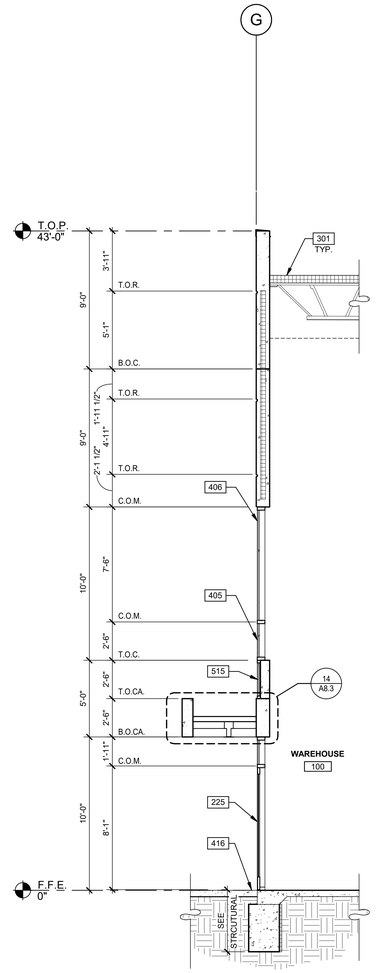
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




WALL SECTION 3
SCALE: 1/4" = 1'-0"




WALL SECTION 2
SCALE: 1/4" = 1'-0"




WALL SECTION 1
1/4"=1'-0"
0 2' 4' 8' 16'
SCALE: 1/4" = 1'-0"

## WALL LEGEND

CONCRETE WALL

COLD FORMED STUD FRAMING WALL CONSTRUCTION. SEE NOTES ON PLAN FOR FIRE RATING

## KEYNOTES:

SEE SHEET A0.2 FOR GENERAL NOTES

202 CONCRETE SLAB. PROVIDE VAPOR RETARDER AT OFFICE AREA PER SOILS REPORT. PROVIDE SEALER FOR CONCRETE FLOOR AREA IN WAREHOUSE. REFER TO STRUCTURAL DRAWINGS.
204 6'X 8' MECHANICAL DOCK LEVELER. 35,000 LBS DYNAMIC CAPACITY, MANUALLY OPERATED (SPRING ASSISTED), REFER TO A0.2 ENVELOPE ASSEMBLY NOTES.
206 EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED.
207 STEEL BOLLARD, CONCRETE-FILLED PAINTED SAFETY YELLOW.
214 HIGH LIFT OVERHEAD SECTIONAL DOOR, REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
216 SERVICE/MAN DOORS, COLOR: TO MATCH ADJACENT CONCRETE PANEL COLOR.
221 DOCK SEAL
225 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLASS. REFER TO A0.2, ENVELOPE. ASSEMBLY NOTES FOR GLAZOMG SPECIFICATION.
301 ROOF ASSEMBLY. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
401 PRECAST CONCRETE WALL, PAINTED.
403 2" REVEAL.
405 ALUMINUM STOREFRONT SYSTEM - SPANDREL PANEL. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.
406 ALUMINUM WINDOW SYSTEM WITH 1" INSULATED GLASS REFER TO A0.2, ENVELOPE ASSEMBLY NOTES.
416 FINISH GRADE VARIES, REFER TO CIVIL.
418 CLERESTORY WINDOW 1" INSULATED GLAZING. REFER TO A0.2, ENVELOPE ASSEMBLY NOTES FOR GLAZING SPECIFICATION.
429 CONTINUOUS PRE-FINISH METAL COPING TO BE PROVIDED AT TOP OF ALL PANELS. COPING COLOR TO MATCH PAINT COLOR AT TOP OF EACH CONCRETE PANEL.
501 STRUCTURAL STEEL JOIST, REFER TO STRUCTURAL.
503 CONCRETE FOOTING, REFER TO STRUCTURAL.
504 PROVIDE RIGID INSULATION AT FOOTINGS AND WALL PANELS BELOW SLAB.
515 2 1/2" WIDE STOREFRONT SYSTEM INSTALLED IN FRONT OF THE CONCERETE SPANDREL PANEL.

WARE MALCOMB
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GRANT A BRANDENBURG
LICENSED ARCHITECT
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STATE OF ILLINOIS
EXP: 11 - 30 - 2022

THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

WALL SECTIONS

| DATE | REMARKS |
|---|---|
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | Approver |
| DRAWN BY.: | Author |
| JOB NO.: | CHI21-0193-00 |

SHEET
A5.7

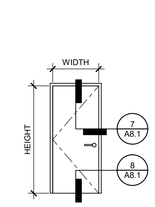
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4/19/2022 8:51:26 AM 2022-04-08 PERMIT SET

# DOOR SCHEDULE

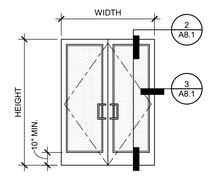
| DOOR NO. | ROOM NAME | DOOR TYPE | DOOR WIDTH | DOOR HEIGHT | DOOR THICK | DOOR MATERIAL | DOOR FINISH | FRAME MATERIAL | FRAME FINISH | FIRE RATING | HDWARE NO. | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | WAREHOUSE | SF2 | 6'-0" | 8'-0" | 1 3/4" | ALUMINUM STOREFRONT | CLEAR ANODIZED | ALUMINUM STOREFRONT | CLEAR ANODIZED | | 2.1 | |
| W101 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W102 | ELECTRICAL ROOM | F1 | 4'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1B | |
| W102a | ELECTRICAL ROOM | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 3.1 | |
| W103 | SPRINKLER/ RISER ROOM | F1 | 4'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W104 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W105 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W106 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W107 | WAREHOUSE | SF2 | 6'-0" | 8'-0" | 1 3/4" | ALUMINUM STOREFRONT | CLEAR ANODIZED | ALUMINUM STOREFRONT | CLEAR ANODIZED | | 2.1 | |
| W108 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W109 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W110 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | 45min | 1.1 | |
| W111 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W112 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W113 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W114 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W115 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W116 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | 90min | 1.1 | |
| W117 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | 45min | 1.1 | |
| W118 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W119 | WAREHOUSE | F1 | 3'-0" | 7'-0" | 1 3/4" | HOLLOW METAL | PAINTED | HOLLOW METAL | PAINTED | | 1.1 | |
| W200 | WAREHOUSE | SD2 | 12'-0" | 14'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W201 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W202 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W203 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W204 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W205 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W206 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W207 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W208 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W209 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W210 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W211 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W212 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W213 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W214 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W215 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W216 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W217 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W218 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W219 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W220 | WAREHOUSE | SD1 | 9'-0" | 10'-0" | 2" | STEEL | PAINT | | | | 4.1 | |
| W221 | WAREHOUSE | SD2 | 12'-0" | 14'-0" | 2" | STEEL | PAINT | | | | 4.1 | |

# DOOR TYPES



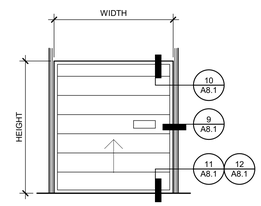

F1

SOLID FLUSH




SF2

DOUBLE STOREFRONT




SD

SECTIONAL DOOR

# DOOR HARDWARE

**SINGLE EXTERIOR DOOR**
1.1

3EA HINGES (4EA IF DOOR IS 4X7)
1EA CYLINDRICAL LEVER LOCK (GC TO VERIFY LOCK FUNCTION W/ OWNER
1EA FSIC INTERCHANGEABLE CORE
1EA DOOR CLOSER
1EA INTERIOR KICK PLATE
1EA THRESHOLD
1EA WEATHERSTRIP
1EA DOOR SWEEP
1EA RAIN GUARD

SEE DOOR SCHEDULE FOR REQUIRED FIRE RATING

**SINGLE EXTERIOR DOOR - ELECTRICAL ROOM**
1.1B

4EA HINGE
1EA EXIT DEVICE
1EA EXTERIOR TRIM WITH LEVER
1EA FSIC INTERCHANGEABLE CORE
1EA RIM CYLINDER
1EA DOOR CLOSER
1EA INTERIOR KICK PLATE
1EA THRESHOLD
1EA WEATHERSTRIP
1EA DOOR SWEEP
1EA RAIN GUARD

**STOREFRONT DOUBLE DOORS**
2.1

2EA PIVOT SET
4EA PIVOT
1EA 2PT DEADLOCK
1EA INDICATOR LEVER SET
1EA RIM CYLINDER
1EA FSIC INTERCHANGEABLE CORE
1EA DOOR CLOSER
1EA PUSH / PULL BAR
1EA THRESHOLD
1EA DOOR SWEEP

**SINGLE INTERIOR DOOR - ELECTRICAL ROOM**
3.1

3EA HINGE
1EA EXIT DEVICE
1EA EXTERIOR TRIM WITH LEVER
1EA FSIC INTERCHANGEABLE CORE
1EA RIM CYLINDER
1EA DOOR CLOSER
2EA KICK PLATE
1EA HEAVY DUTY DOORSTOP

**SECTIONAL OVERHEAD DOOR**
4.1

1 SLIDE BOLT - - -
1 PAD LOCK - - -

GC TO VERIFY ALL NECESSARY HARDWARE WITH OVERHEAD DOOR MANUFACTURER

# GENERAL NOTES

SEE SHEET A0.2 FOR GENERAL DOOR NOTES

1. REFER TO THE PARTITION PLAN AND SPECIFICATIONS (IF PROVIDED) FOR ADDITIONAL DOOR INFORMATION.
2. HOLLOW METAL DOORS TO BE PAINTED SAME COLOR AS THE ADJACENT WALL; FINISH TO BE SEMI-GLOSS. SEE FINISH SCHEDULE FOR ADDITIONAL INFORMATION.
3. PROVIDE RATED WIRE GLASS IN RATED ASSEMBLIES, U.O.N.
4. FIELD VERIFY OPENING WIDTH AND HEIGHT FOR ALL NEW DOORS IN EXISTING OPENINGS.
5. ALL HOLLOW METAL FRAMES TO BE WELDED TYPE, U.O.N.
6. RATED DOORS SHALL HAVE AUTOMATIC CLOSERS AND COMPLY WITH REQUIREMENTS OF ALL GOVERNING CODES & STANDARDS.

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Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004089




THE MISSNER GROUP

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

DOOR SCHEDULE

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

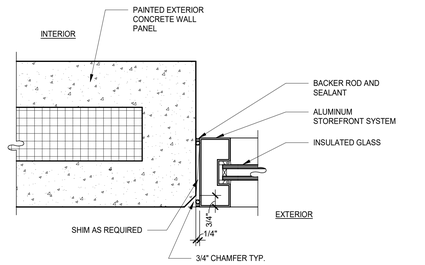
| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A7.1

4/19/2022 8:51:29 AM 2022-04-08 PERMIT SET

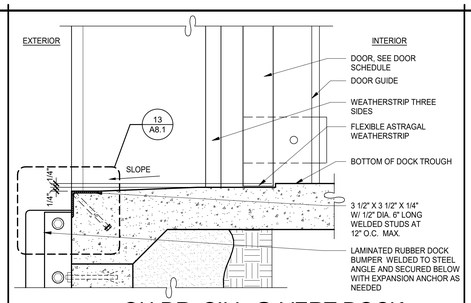
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



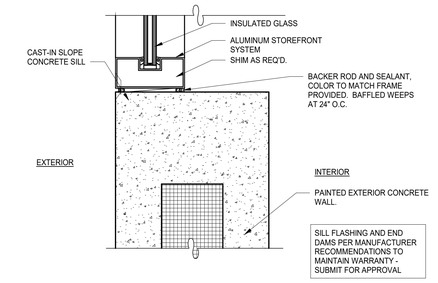

## WINDOWS JAMB @ CON. WALL 16

SCALE: 3" = 1'-0"



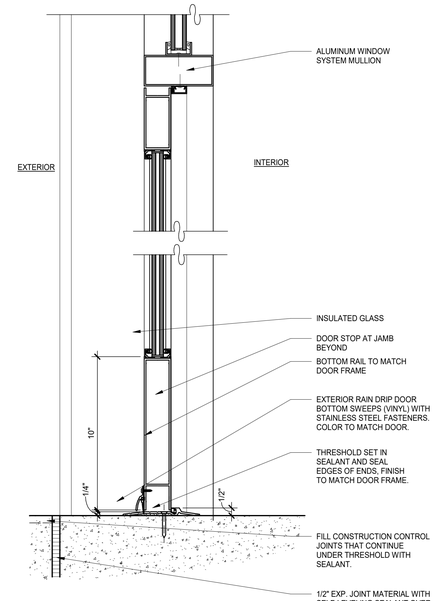

## OH DR. SILL @ VERT DOCK TROUGH 11

SCALE: 3" = 1'-0"



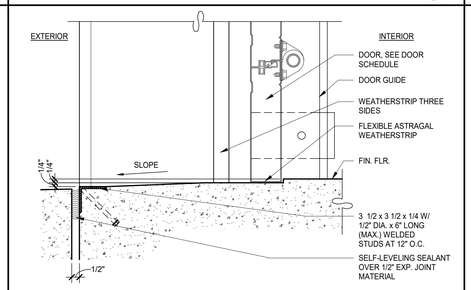

## WINDOW SILL 6

SCALE: 3" = 1'-0"



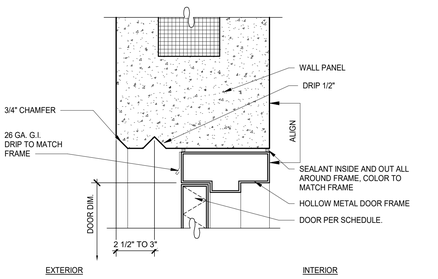

## STOREFRONT DOOR 2

SCALE: 3" = 1'-0"



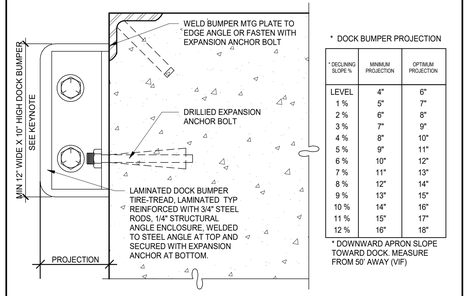

## OH DOOR SILL AT GRADE 12

SCALE: 3" = 1'-0"




## HOLLOW METAL DOOR HEAD 7

SCALE: 3" = 1'-0"



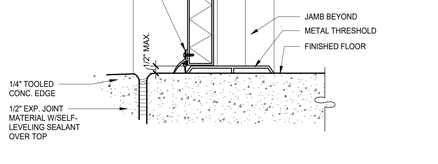

* DOCK BUMPER PROJECTION

| * DECLINING SLOPE % | MINIMUM PROJECTION | OPTIMUM PROJECTION |
|---|---|---|
| LEVEL | 4" | 6" |
| 1 % | 5" | 7" |
| 2 % | 6" | 8" |
| 3 % | 7" | 9" |
| 4 % | 8" | 10" |
| 5 % | 9" | 11" |
| 6 % | 10" | 12" |
| 7 % | 11" | 13" |
| 8 % | 12" | 14" |
| 9 % | 13" | 15" |
| 10 % | 14" | 16" |
| 11 % | 15" | 17" |
| 12 % | 16" | 18" |

* DOWNWARD APRON SLOPE TOWARD DOCK. MEASURE FROM 50' AWAY (VIF)

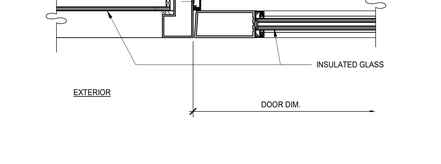
## DOCK BUMPER 13

SCALE: 3" = 1'-0"



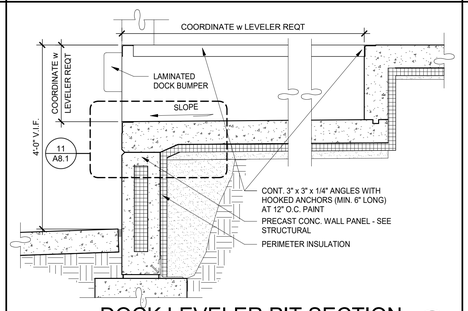

## HOLLOW METAL DOOR SILL 8

SCALE: 3" = 1'-0"



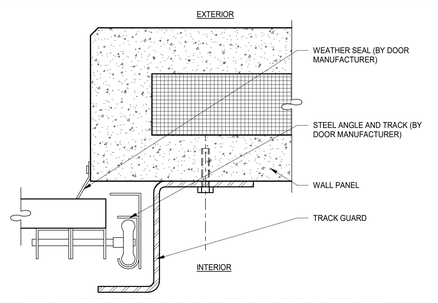

## STOREFRONT JAMB 3

SCALE: 3" = 1'-0"



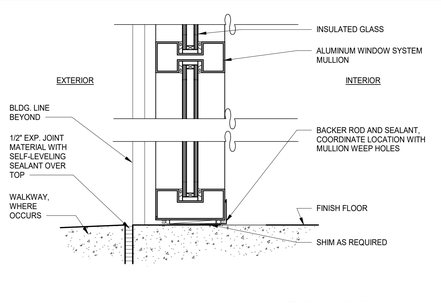

## DOCK LEVELER PIT SECTION 14

SCALE: 3/4" = 1'-0"



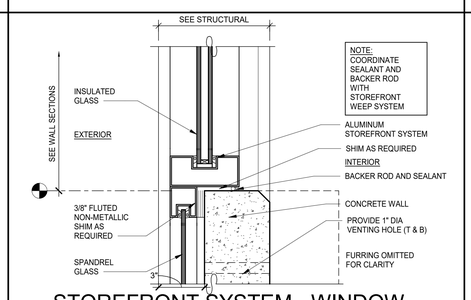

## SECTIONAL DOOR JAMB W/ GUARD 9

SCALE: 3" = 1'-0"



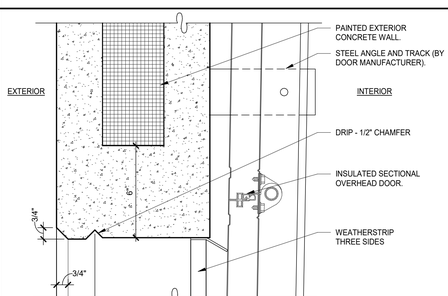

## WINDOW SILL 4

SCALE: 3" = 1'-0"



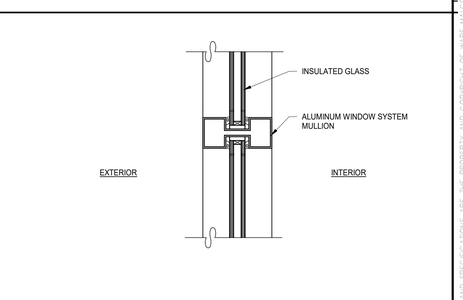

## STOREFRONT SYSTEM - WINDOW SILL 15

SCALE: 3" = 1'-0"




## SECTIONAL DOOR HEAD 10

SCALE: 3" = 1'-0"




## TYP. VERT./HORIZ. MULLION 5

SCALE: 3" = 1'-0"

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Oak Brook, IL 60523
P 630.218.0063
State of Illinois Design Firm Registration No. 184-004069

GRANT A BRANDENBURG 001-020842 LICENSED ARCHITECT STATE OF ILLINOIS

EXP: 11 - 30 - 2022

THE MISSNER GROUP

DETAILS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

# MISSNER GROUP - PALATINE

2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

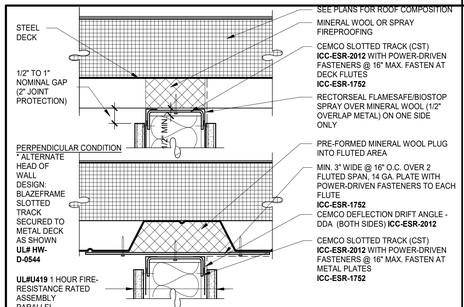
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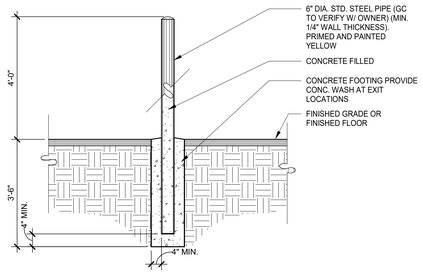
Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

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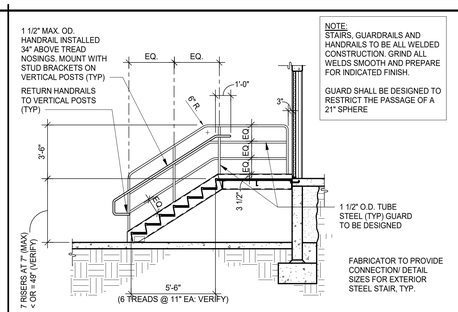

## UL U419 1-HOUR WALL

SCALE: 3" = 1'-0" — 21



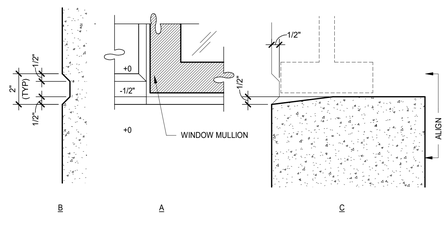

## BOLLARD

SCALE: 1/2" = 1'-0" — 16



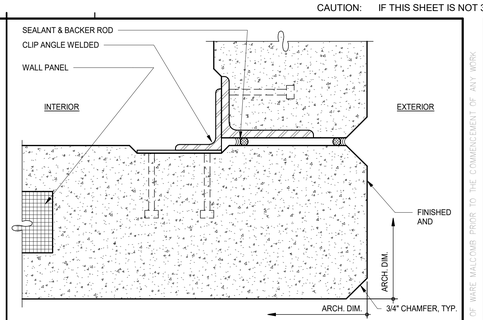

## STEEL STAIR SECTION

SCALE: 1/4" = 1'-0" — 11



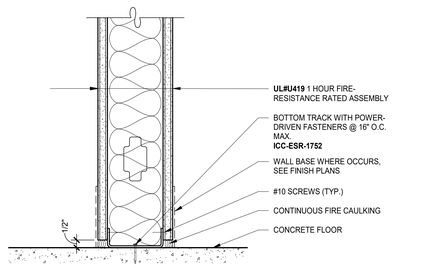

## REVEAL AT WINDOW MULLION

SCALE: 3" = 1'-0" — 6




## CORNER JOINT

SCALE: 3" = 1'-0" — 1




## UL #BW-S-0001
## 1 HOUR WALL BASE

1 HOUR FIRE-RESISTANCE RATED WALL — SCALE: 3" = 1'-0" — 22

MEMBER DEPTH:
(EXAMPLE: 6" = 600 X 1/100 INCHES)
ALL MEMEBER DEPTHS ARE TAKEN IN 1/100 INCHES. FOR ALL "T" SECTIONS MEMBER DEPTH IS THE INSIDE DIMENSION.

600 S 162 54

FLANGE WIDTH:
(EXAMPLE: 1 5/8" = 1.625" ~ 162 X 1/100 INCHES)
ALL FLANGE WIDTHS ARE TAKEN IN 1/100 INCHES.

STYLE:
(EXAMPLE: STUD OR JOIST SECTION = S)
THE FOUR ALPHA CHARACTERS UTILIZED BY THE DESIGNATOR SYSTEM ARE:
S = STUD OR JOIST, T = TRACK, U = CHANNEL, F = FURRING

MATERIAL THICKNESS:
(EXAMPLE: 0.054 IN. = 54 MILS; 1 MIL =1/1000 IN.)
MATERIAL THICKNESS IN MILS. MINIMUM BASE METAL THICKNESS REPRESENTS 95% OF THE DESIGN THICKNESS.

INTERIOR NON-STRUCTURAL NON-COMPOSITE:

USE FOR FURRING PURPOSES ONLY, U.O.N.

| (S) STUD MEMBER | SPACING (IN.) O.C. | 5 PSF L/240 |
|---|---|---|
| 250S125-18 | 12" | 10'-6" |
| 250S125-18 | 16" | 9'-7" |
| 250S125-18 | 24" | 8'-3" |
| 250S125-33 | 12" | 13'-2" |
| 250S125-33 | 16" | 12'-0" |
| 250S125-33 | 24" | 10'-6" |
| 250S125-43 | 12" | 14'-4" |
| 250S125-43 | 16" | 13'-0" |
| 250S125-43 | 24" | 11'-5" |
| 362S125-18 | 12" | 14'-0" |
| 362S125-18 | 16" | 12'-2" |
| 362S125-18 | 24" | 9'-11" ● |
| 362S125-33 | 12" | 17'-7" |
| 362S125-33 | 16" | 16'-0" |
| 362S125-33 | 24" | 14'-0" |
| 362S125-43 | 12" | 19'-2" |
| 362S125-43 | 16" | 17'-5" |
| 362S125-43 | 24" | 15'-3" |
| 362S125-54 (50 KSI) | 12" | 20'-6" |
| 362S125-54 (50 KSI) | 16" | 18'-7" |
| 362S125-54 (50 KSI) | 24" | 16'-3" |
| 362S125-68 (50 KSI) | 12" | 21'-11" |
| 362S125-68 (50 KSI) | 16" | 19'-11" |
| 362S125-68 (50 KSI) | 24" | 17'-5" |
| 400S125-18 X | 12" | 14'-9" ● |
| 400S125-18 X | 16" | 12'-10" ● |
| 400S125-18 X | 24" | 10'-5" ● |
| 400S125-33 | 12" | 19'-0" |
| 400S125-33 | 16" | 17'-3" |
| 400S125-33 | 24" | 15'-1" |

| (S) STUD MEMBER | SPACING (IN.) O.C. | 5 PSF L/240 |
|---|---|---|
| 400S125-43 | 12" | 20'-9" |
| 400S125-43 | 16" | 18'-10" |
| 400S125-43 | 24" | 16'-5" |
| 400S125-54 (50 KSI) | 12" | 22'-2" |
| 400S125-54 (50 KSI) | 16" | 20'-2" |
| 400S125-54 (50 KSI) | 24" | 17'-7" |
| 400S125-68 (50 KSI) | 12" | 23'-8" |
| 400S125-68 (50 KSI) | 16" | 21'-6" |
| 400S125-68 (50 KSI) | 24" | 18'-10" |
| 600S125-27 X | 12" | 24'-4" ● |
| 600S125-27 X | 16" | 21'-6" ● |
| 600S125-27 X | 24" | 17'-7" ● |
| 600S125-33 | 12" | 26'-2" |
| 600S125-33 | 16" | 23'-9" |
| 600S125-33 | 24" | 20'-6" |
| 600S125-43 | 12" | 28'-9" |
| 600S125-43 | 16" | 26'-1" |
| 600S125-43 | 24" | 22'-10" |
| 600S125-54 (50 KSI) | 12" | 30'-9" |
| 600S125-54 (50 KSI) | 16" | 27'-11" |
| 600S125-54 (50 KSI) | 24" | 24'-5" |
| 600S125-68 (50 KSI) | 12" | 33'-0" |
| 600S125-68 (50 KSI) | 16" | 30'-0" |
| 600S125-68 (50 KSI) | 24" | 26'-2" |
| 800S125-43 | 12" | 36'-1" |
| 800S125-43 | 16" | 32'-9" |
| 800S125-43 | 24" | 28'-8" |
| 800S125-54 (50 KSI) | 12" | 38'-9" |
| 800S125-54 (50 KSI) | 16" | 35'-2" |
| 800S125-54 (50 KSI) | 24" | 30'-9" |
| 800S125-68 (50 KSI) | 12" | 41'-11" |
| 800S125-68 (50 KSI) | 16" | 38'-1" |
| 800S125-68 (50 KSI) | 24" | 33'-4" |

● INDICATES THAT WEB STIFFENERS ARE REQUIRED AT ENDS

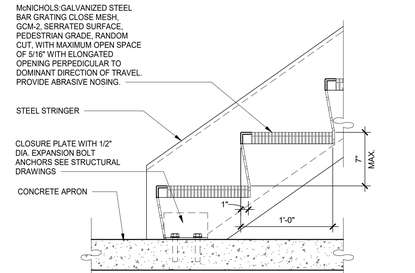
● INDICATES THAT WEB STIFFENERS ARE REQUIRED AT ALL SUPPORT POINTS AND CONCENTRATED LOADS

X INDICATES THAT 1 WEB STIFFENER IS REQUIRED AT CONCENTRATED LOADS

NOTE: ALL STUD INFORMATION IS BASED ON: STEEL STUD MANUFACTURERS ASSOCIATION (SSMA)
ICC ESR-3064P

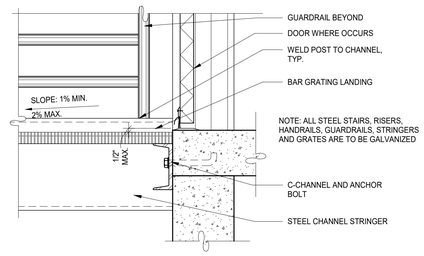
## LIMITING WALL HEIGHT TABLE-L/240

SCALE: 1/2" = 1'-0" — 18



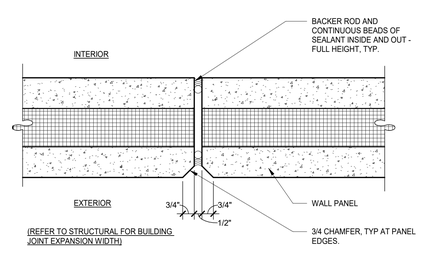

## STEEL STAIR @ BOTTOM

SCALE: 1 1/2" = 1'-0" — 12



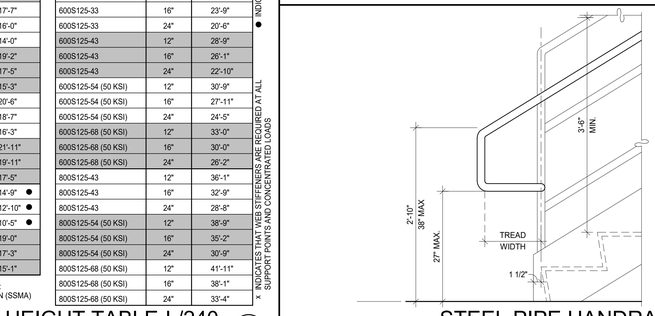

## STEEL STAIR LANDING

SCALE: 1 1/2" = 1'-0" — 7



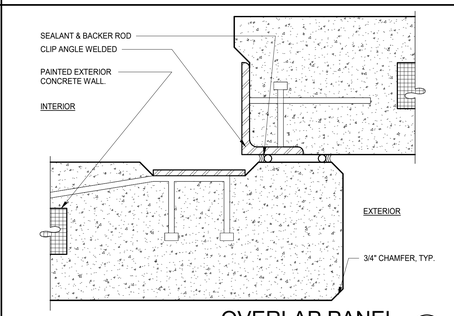

## PANEL JOINT (TYP.)

SCALE: 3" = 1'-0" — 2



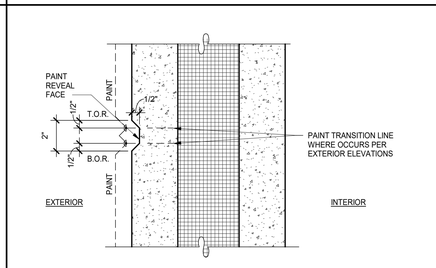

## STEEL PIPE HANDRAIL

SCALE: 1" = 1'-0" — 13



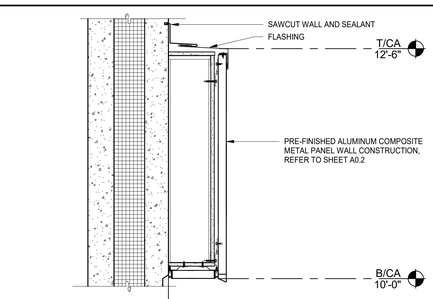

## OVERLAP PANEL

SCALE: 3" = 1'-0" — 8




## PANEL SECTION AT REVEAL

SCALE: 3" = 1'-0" — 3




## CANOPY WALL SECTION, MIR.

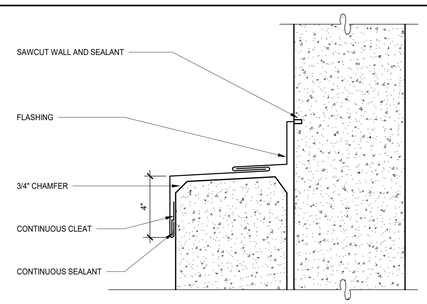
SCALE: 1 1/2" = 1'-0" — 25

**WALL TYPE NOTES:**

1. INTERIOR GYP. BD. WALLS SHALL CONFORM TO **ICC-ESR-1338**
2. SEE LIMITING WALL HEIGHT TABLE FOR METAL STUD GAUGE AND SPACING BASED ON WALL HEIGHTS AND STUD SIZES AS NOTED ON EACH WALL TYPE.
3. MAX. STUD SPACING SHALL BE 24".
4. MINIMUM FASTENER SIZE SHALL BE #6 - 1-1/4" SCREWS.
5. MAXIMUM FASTENER SPACING SHALL BE 12" FIELD AND 8" AT EDGES.
6. ALL WALL STUDS TO BE 3-5/8", U.O.N.
7. ALL RESTROOM WALL STUDS TO BE 6" AND FULLY INSULATED, U.O.N.

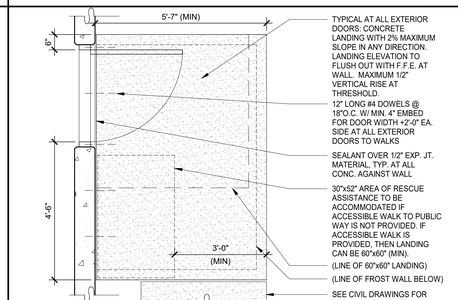
## WALL TYPE NOTES

SCALE: 1/2" = 1'-0" — 19



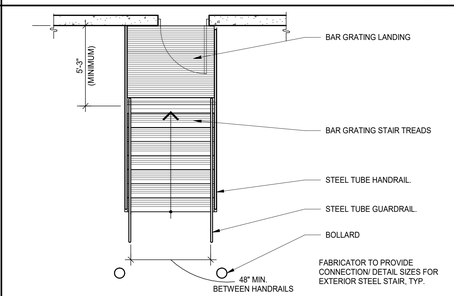

## WALL FLASHING

SCALE: 3" = 1'-0" — 20



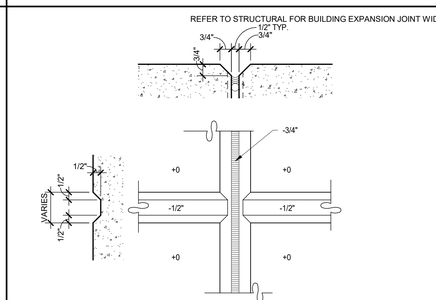

## CONCRETE LANDING

SCALE: 1/2" = 1'-0" — 15



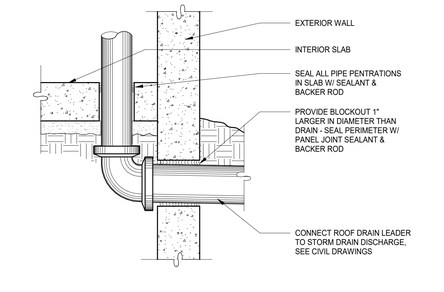

## EXTERIOR STEEL STAIR PLAN

SCALE: 1/4" = 1'-0" — 10




## REVEAL AT PANEL JOINT

SCALE: 3" = 1'-0" — 5



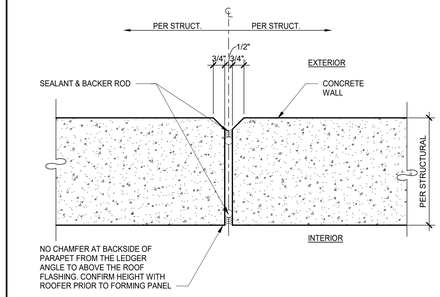

## STEEL STAIR TREADS

SCALE: 1 1/2" = 1'-0" — 14




## ROOF DRAIN EXITING

SCALE: 1 1/2" = 1'-0" — 9




## PANEL JOINT ABOVE ROOF LINE

SCALE: 3" = 1'-0" — 4

THE MISSNER GROUP EST. 1948

# MISSNER GROUP - PALATINE
2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

DETAILS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A8.2

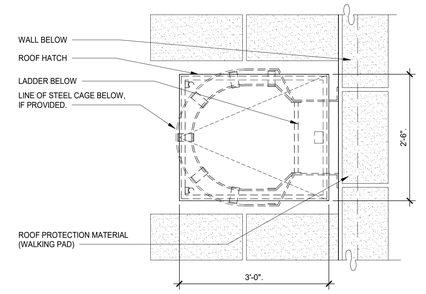
2022-04-08 PERMIT SET
4/19/2022 8:51:37 AM

State of Illinois Design Firm Registration No. 184-004089
WARE MALCOMB
1315 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063
ARCHITECTURE CIVIL ENGINEERING
PLANNING LANDSCAPE
INTERIORS BUILDING MEASUREMENT

LICENSED ARCHITECT
GRANT A BRANDENBURG
001-020842
STATE OF ILLINOIS
EXP: 11 - 30 - 2022

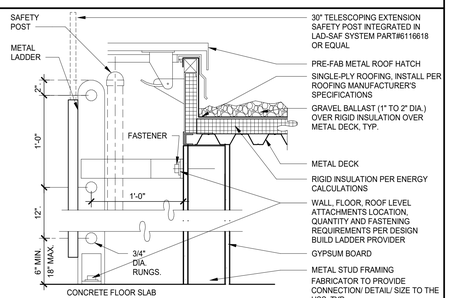
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



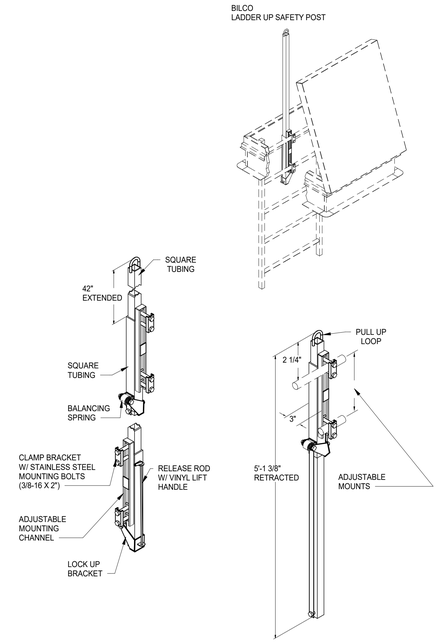

## ROOF HATCH PLAN 21

SCALE: 3/4" = 1'-0"



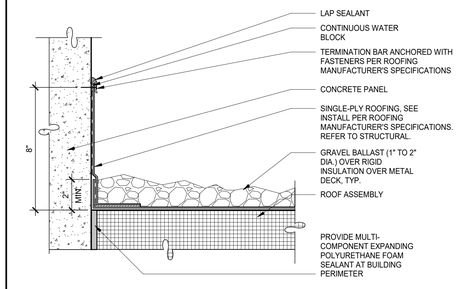

## ROOF HATCH & LADDER 22

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



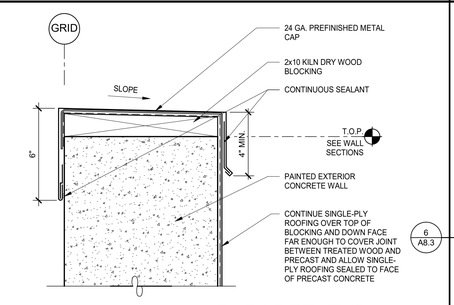

## SAFETY POST 17

SCALE: 1" = 1'-0"



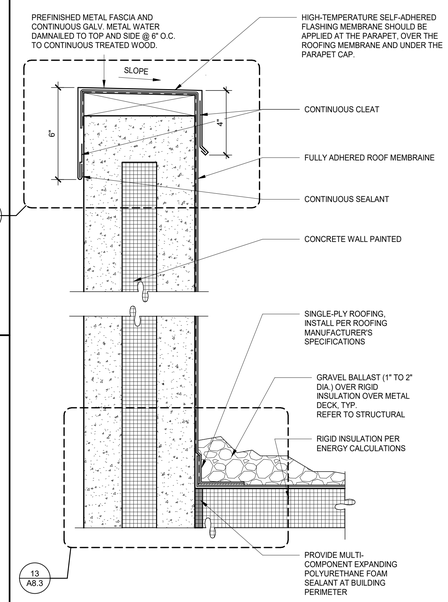

## ROOF FLASHING 11

SCALE: 3" = 1'-0"



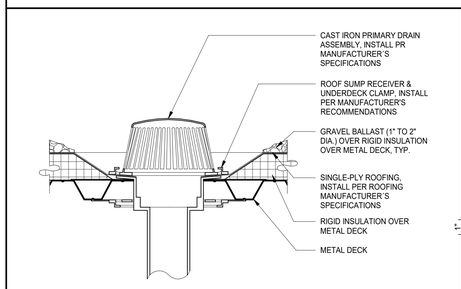

## PARAPET, TYP. 6

SCALE: 3" = 1'-0"



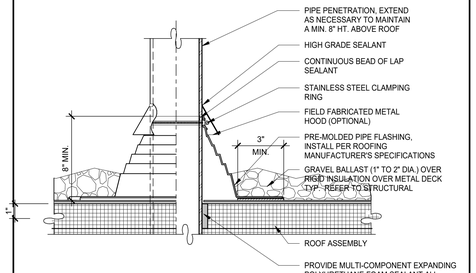

## SINGLE-PLY ROOFING @ PARAPET 2

SCALE: 3" = 1'-0"



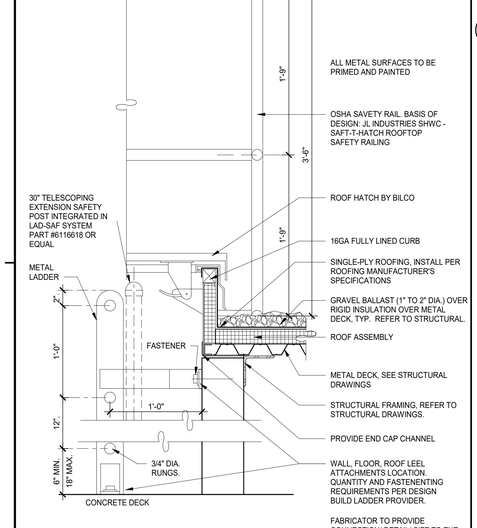

## DRAIN 12

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



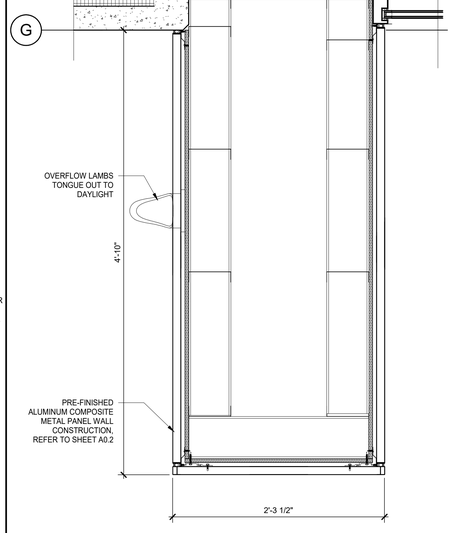

## ROOF PENETRATION FLASHING 7

SCALE: 3" = 1'-0"



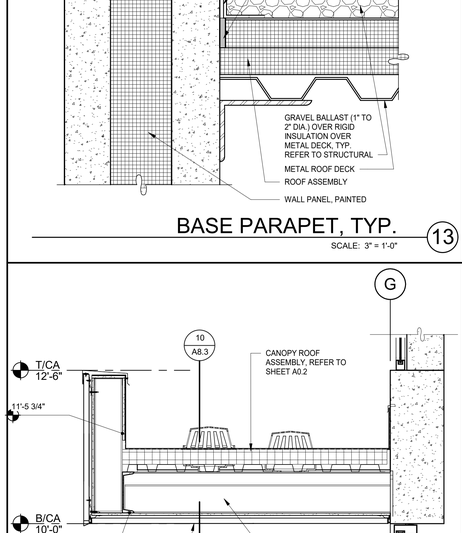

## ROOF HATCH & LADDER 24

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



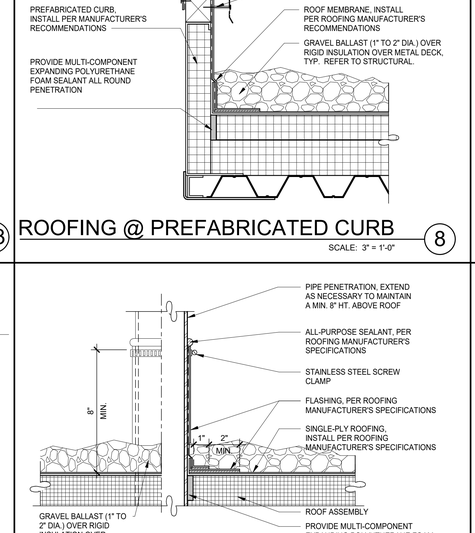

## WING WALL PLAN SECTION, SIM. 19

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



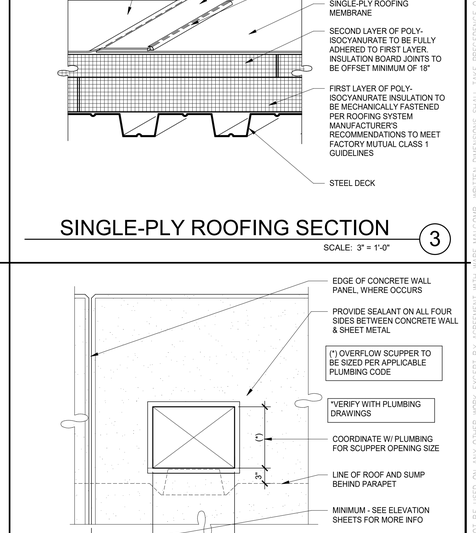

## BASE PARAPET, TYP. 13

SCALE: 3" = 1'-0"




## ROOFING @ PREFABRICATED CURB 8

SCALE: 3" = 1'-0"




## SINGLE-PLY ROOFING SECTION 3

SCALE: 3" = 1'-0"




## CANOPY SECTION 14

SCALE: 1" = 1'-0"



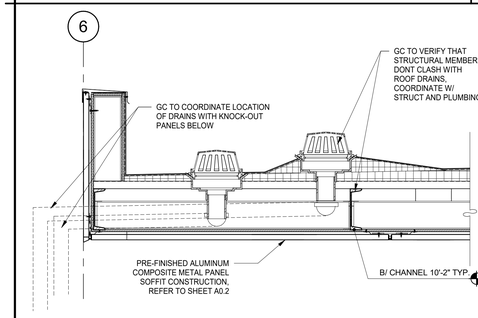

## ROOF PENETRATION FLASHING 9

SCALE: 3" = 1'-0"



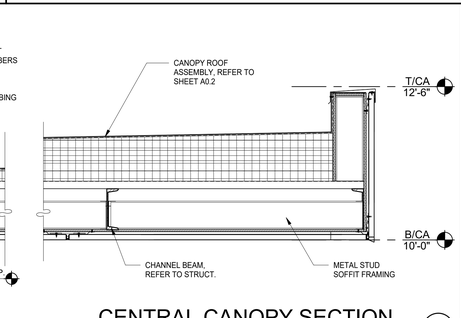

## OVERFLOW SCUPPER - ELEVATION 4

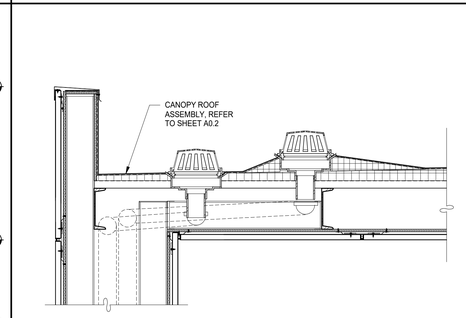
SCALE: 1" = 1'-0"




## CENTRAL CANOPY SECTION 20

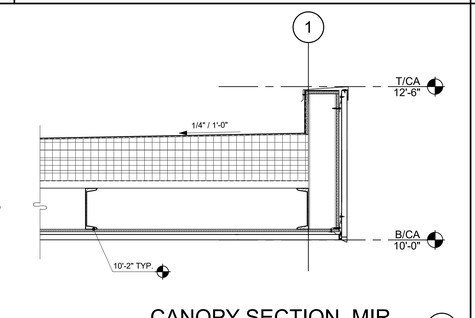
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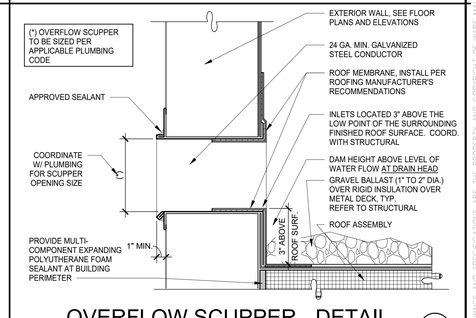



## CANOPY SECTION, MIR. 10

SCALE: 1" = 1'-0"




## OVERFLOW SCUPPER - DETAIL 5

SCALE: 3" = 1'-0"

WARE MALCOMB
1515 22nd St. #410
Oak Brook, IL 60523
P 630.218.0063
ARCHITECTURE CIVIL ENGINEERING
PLANNING LANDSCAPE
INTERIORS BUILDING MEASUREMENT
State of Illinois Design Firm Registration No. 184-004089




THE MISSNER GROUP

# MISSNER GROUP - PALATINE

2250 NORTH RAND ROAD
PALATINE, ILLINOIS 60074

DETAILS

| DATE | REMARKS |
|---|---|
| 2022-03-04 | PROGRESS PACKAGE |
| 2022-04-08 | PERMIT SET |

| | |
|---|---|
| PA/PM: | M. PULA |
| DRAWN BY.: | S.R. |
| JOB NO.: | CHI21-0193-00 |

SHEET
A8.3

4/19/2022 8:51:42 AM 2022-04-08 PERMIT SET

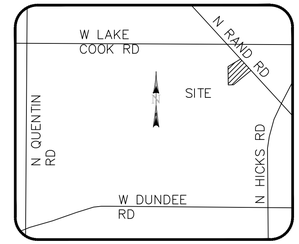
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Attachment: Missner Group - ARCH Plans (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# MISSNER - PALATINE CONSOLIDATION

PART OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS

## VICINITY MAP




## OWNER'S CERTIFICATE

STATE OF }
COUNTY OF } S.S.

THIS IS TO CERTIFY THAT _____ ARE THE PROPERTY OWNERS OF THE PROPERTY DESCRIBED HEREON AND THAT THEY HAVE CAUSED THE SAID PROPERTY TO BE SURVEYED AND CONSOLIDATED AS SHOWN HEREON, FOR THE USES AND PURPOSES THEREIN SET FORTH, AND DO HEREBY ACKNOWLEDGE AND ADOPT THE SAME UNDER THE TITLE HEREON INDICATED.
DATED THIS _____ DAY OF _____, A.D., 2_____

_____
OWNER

_____
TITLE

## NOTARY'S CERTIFICATE

STATE OF }
COUNTY OF } S.S.

I, _____ A NOTARY PUBLIC IN AND FOR SAID COUNTY IN THE STATE AFORESAID, DO HEREBY CERTIFY THAT _____ ARE PERSONALLY KNOWN TO ME TO BE THE SAME PERSONS WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AS SUCH OWNERS, APPEARED BEFORE ME THIS DAY IN PERSON AND ACKNOWLEDGED THAT THEY SIGNED AND DELIVERED SAID INSTRUMENT OF THEIR OWN FREE AND VOLUNTARY ACT AND AS THE FREE AND VOLUNTARY ACT FOR THE USES AND PURPOSES THEREIN SET FORTH.
GIVEN UNDER MY HAND AND NOTARIAL SEAL THIS _____ DAY OF _____ A.D., 2_____.

_____
NOTARY PUBLIC

_____
MY COMMISSION EXPIRES

## PLAN COMMISSION

APPROVED BY THE PLAN COMMISSION OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS, THISDAY OF _____, 2_____.

SIGNED: _____
CHAIRMAN

ATTEST: _____
SECRETARY

## VILLAGE COUNCIL

Approved by the Village Council of the Village of Palatine, Cook County, Illinois, this _____ day of _____, 2_____.

Signed: _____
Mayor

Attest: _____
Village Clerk

## I.D.O.T. CERTIFICATE

THIS PLAT HAS BEEN APPROVED BY THE ILLINOIS DEPARTMENT OF TRANSPORTATION WITH RESPECT TO THE ROADWAY ACCESS PURSUANT TO SECTION 2 OF "AN ACT TO REVISE THE LAW IN RELATION TO PLATS" AS AMENDED. A PLAN THAT MEETS THE REQUIREMENTS CONTAINED IN DEPARTMENT'S "POLICY ON PERMITS FOR ACCESS DRIVEWAYS TO STATE HIGHWAYS" WILL BE REQUIRED BY THE DEPARTMENT.

_____
DISTRICT ENGINEER

## SURVEYORS NOTES

1. NO NEW EASEMENTS OR SET BACKS ARE TO BE CRATED OR GRANTED WITHIN THIS DOCUMENT.

## VILLAGE ENGINEER

STATE OF }
COUNTY OF } S.S.

THIS PLAT HAS BEEN CHECKED FOR CONFORMANCE TO THE VILLAGE OF PALATINE STANDARDS AND
REQUIREMENTS, AND WORKING DRAWINGS AND SPECIFICATIONS FOR IMPROVEMENTS HAVE BEEN PREPARED IN CONFORMANCE WITH THE VILLAGE STANDARDS AND REQUIREMENTS, AND ENGINEERING FEES DUE TO THE VILLAGE OF PALATINE HAS BEEN PAID.

DATED THIS _____ DAY OF _____, A.D., 2_____.

SIGNED: _____
VILLAGE ENGINEER

## VILLAGE COLLECTOR

I DO HEREBY CERTIFY THAT THERE ARE NO DEFERRED SPECIAL ASSESSMENTS OR UNPAID CURRENT
ASSESSMENTS DUE AGAINST THE LAND INCLUDED IN THE ABOVE PLAT.

DATED THIS _____ DAY OF _____, A.D., 2_____.

BY: _____

## SURFACE WATER DRAINAGE CERTIFICATE

STATE OF }
COUNTY OF } S.S.

WE HEREBY CERTIFY TO THE BEST OF OUR KNOWLEDGE AND BELIEF THAT ADEQUATE PROVISIONS HAVE BEEN MADE FOR THE DIVERSION AND DETENTION OF SURFACE WATERS INTO PUBLIC AREAS OR DRAINS WITHIN THE RIGHTS OF THE SUBDIVIDER AND THAT SUCH SURFACE WATERS WILL NOT BE DEPOSITED ON ADJACENT LAND OWNERS PROPERTY IN SUCH CONCENTRATION AS MAY CAUSE DAMAGE BY EROSION OR SEDIMENTATION TO SUCH PROPERTY BECAUSE OF CONSTRUCTION OF THE SUBDIVISION.

BY: _____ DATED: _____
OWNER

BY: _____ DATED: _____
ILLINOIS PROFESSIONAL ENGINEER

## VILLAGE ATTORNEY

APPROVED BY THE VILLAGE ATTORNEY OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS.

Dated this _____ day of _____, A.D., 2_____.

By: _____
VILLAGE ATTORNEY

## VILLAGE BLOCK

APPROVED BY THE VILLAGE PRESIDENT AND THE VILLAGE CLERK OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS AT A MEETING HELD this _____ day of _____, A.D., 2_____.

By: _____
VILLAGE PRESIDENT

By: _____
VILLAGE CLERK

## BUILDING INSPECTOR

APPROVED BY THE BUILDING INSPECTOR OF THE VILLAGE OF PALATINE, COOK COUNTY, ILLINOIS AT A MEETING HELD this _____ day of _____, A.D., 2_____.

By: _____
BUILDING INSPECTOR

## COUNTY CLERKS CERTIFICATE

STATE OF ILLINIOS }
COUNTY OF COOK } S.S.

I,_____ COUNTY CLERK OF COOK COUNT, ILLINOIS, DO HEREBY CERTIFY THAT THERE ARE NO DELINQUENT GENERAL TAXES, NO UNPAID FORFEITED TAXES, AND NO REDEEMABLE TAX SALES AGAINST ANY OF THE LAND INCLUDED IN THE PLAT. I FURTHER CERTIFY THAT I HAVE RECEIVED ALL STATUTORY FEESIN CONNECTIONWITH THE PLAT.

GIVEN UDER MY HAND AND SEAL OF THE COUNTY DATED THIS _____ DAY OF _____, A.D., 2_____.

_____
COUNTY CLERK

## COUNTY RECORDER CERTIFICATE

STATE OF ILLINIOS }
COUNTY OF COOK } S.S.

THIS PLAT WAS FILED FOR RECORD IN THE RECORDER'S OFFICE OF COOK COUNTY, ILLINOIS, ON THIS _____ DAY OF _____, A.D., 2_____ AT _____ O'CLOCK. AS DOCUMENT NUMBER _____.

_____
COUNTY RECORDER

## LEGAL DESCRIPTION

THAT PART OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER;
THENCE ALONG THE WEST LINE OF SAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER, N00°20'12"E, A DISTANCE OF 688.67 FEET;
THENCE DEPARTING SAID WEST LINE, N46°46'44"E, A DISTANCE OF 376.51 FEET TO THE SOUTHWESTERLY RIGHT OF WAY OF NORTH RAND ROAD;
THENCE ALONG SAID SOUTHWESTERLY RIGHT OF WAY, S42°50'27"E, A DISTANCE OF 599.98 FEET;
THENCE DEPARTING SAID RIGHT OF WAY, S46°46'45"W, A DISTANCE OF 743.21 FEET TO THE SOUTH LINE OF THE AFORESAID NORTHEAST QUARTER OF THE NORTHWEST QUARTER;
THENCE ALONG SAID SOUTH LINE N89°28'05"W, A DISTANCE OF 145.26 FEET TO THE POINT OF BEGINNING.
CONTAINING 385,827 SQUARE FEET, OR 8.86 ACRES OF LAND, MORE OR LESS.

## BASIS OF BEARINGS

BEING THE WEST LINE OF NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN ON AN ASSUMED BEARING N00°20'12"E.

## SURVEYOR CERTIFICATION

I, JAMES A. FATANINI, AN ILLINOIS PROFESSIONAL LAND SURVEYOR, CERTIFY THAT THE INFORMATION SHOWN HEREON WAS COMPILED USING DATA FROM AN ACTUAL FIELD SURVEY MADE UNDER MY DIRECT SUPERVISION AND THAT THE FIELD SURVEY AND THE COMPILATION OF INFORMATION SHOWN HEREIN WERE CONDUCTED IN ACCORDANCE WITH THE ILLINOIS MINIMUM STANDARDS OF PRACTICE.

I. FURTHER CERTIFY THAT THIS LAND IS WITHIN THE CORPORATE LIMITS OF A MUNICIPALITY WHICH HAS AUTHORIZED A COMPREHENSIVE PLAN AND IS EXERCISING THE SPECIAL POWERS AUTHORIZED BY DIVISION 12 OF ARTICLE 11 OF THE ILLINOIS MUNICIPAL CODE, AS NOW OR HEREAFTER AMENDED.

I, FURTHER CERTIFY THAT THE ANNEXED PLAT IS A CORRECT REPRESENTATION OF SAID SURVEY AND SUBDIVISION. ALL DISTANCES ARE SHOWN IN FEET AND DECIMALS THEREOF. 5/8" REBAR AND YELLOW PLASTIC CAPS STAMPED "XCEL" WILL BE SET AT EACH OF THE CORNERS.

I, FURTHER CERTIFY THAT THE ABOVE DESCRIBED AREA FALLS WITHIN FLOOD ZONE X, AREA OF MINIMAL FLOODING, PER FLOOD INSURANCE RATE MAP COMMUNITY AND PANEL NUMBER 17031C0043J, WITH AN EFFECTIVE DATE OF AUGUST 19, 2008.

PRELIMINARY

JAMES A. FAETANINI
LICENSE NUMBER 035-003494
MY LICENSE RENEWAL DATE IS NOVEMBER 30, 2022
SHEETS COVERED BY THIS SEAL B-1

MISSNER - PALATINE CONSOLIDATION

| REVISIONS | | |
|---|---|---|
| REV. | DATE | DESCRIPTION |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSTULTANTSINC.COM

XCEL Consultants

PREPARED FOR:
MISSNER REALITY
1700 W HIGGINS RD, SUITE 400
DES PLAINES, IL 60018

SITE ADDRESS:
2296 N RAND RD &
2234-2240 N RAND RD,
PALATINE, IL 60074

| CHK BY: | APV BY: |
|---|---|
| BCH | JAF |

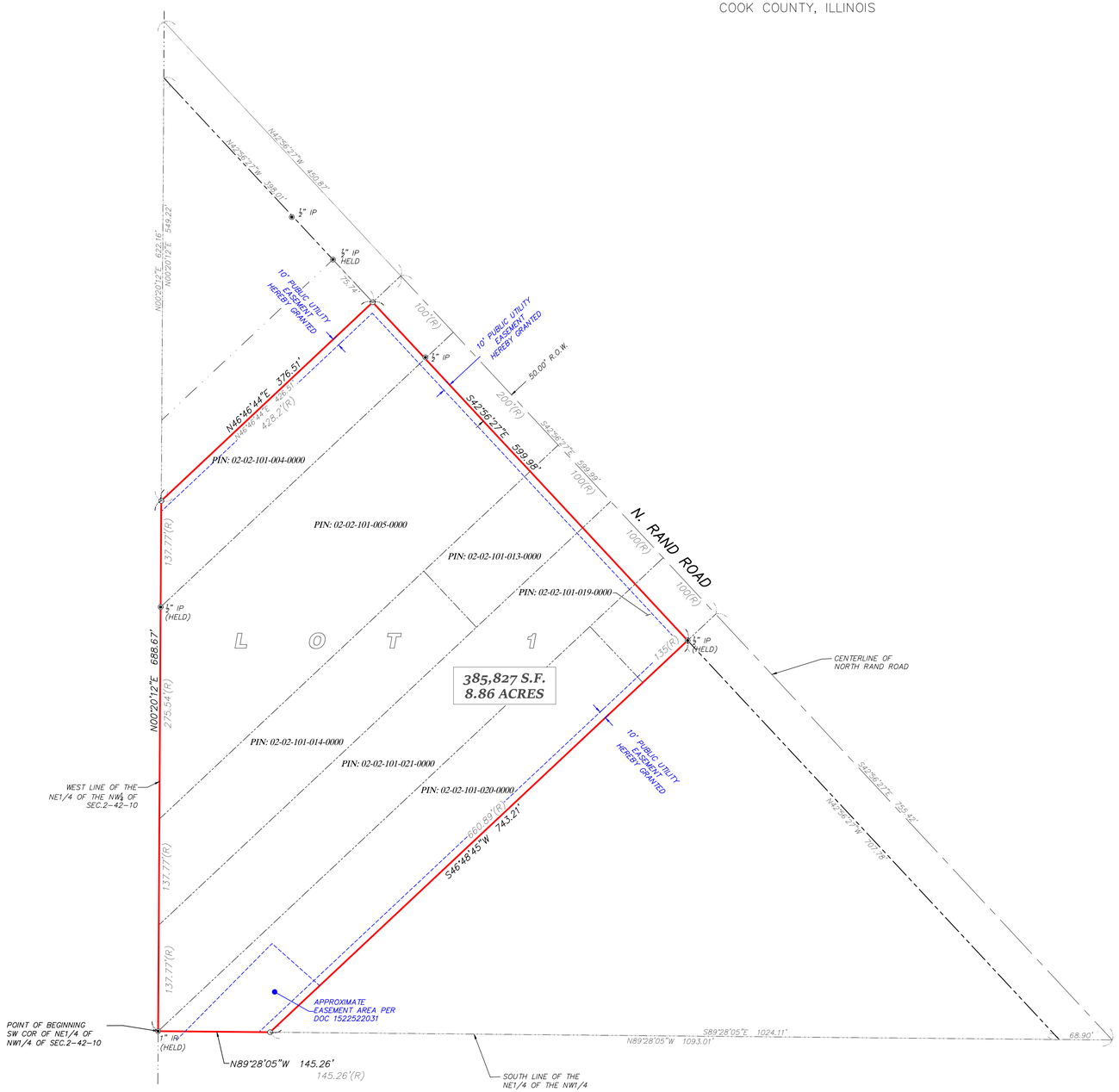
XCEL JOB NUMBER:
213402

DRAWING NUMBER:
1 OF 2

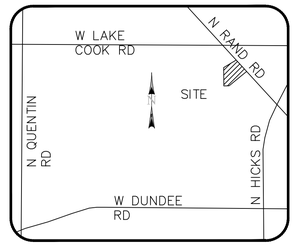
Attachment: 0615222 - Missner Group Palatine - PLAT of Subdivision (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# MISSNER - PALATINE CONSOLIDATION

PART OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS




## VICINITY MAP







## LEGEND

| | |
|---|---|
| | CENTERLINE |
| | PROPERTY LINE |
| | ADJACENT PROPERTY LINE |
| | INTERNAL PROPERTY LINE |
| | RIGHT OF WAY LINE |
| | SURVEY TIE LINE |
| ◉ | FOUND MONUMENT (AS NOTED) |
| ○ | SET 5/8" XCEL CAPPED IR |
| IR | IRON ROD |
| IP | IRON PIPE |
| POB | POINT OF BEGINNING |
| POC | POINT OF COMMENCEMENT |
| (M&R) | RECORD & MEASURED |
| S.F. | SQUARE FEET |
| BC | BACK OF CURB |

## EASEMENT PROVISIONS

WHENEVER THE WORDS "PUBLIC UTILITIES" OR PUBLIC UTILITY EASEMENT"SHALL APPEAR ON THIS PLAT, THE VILLAGE OF PALATINE, A MUNICIPAL CORPORATION, COOK COUNTY, ILLINOIS, AND ITS SUCCESSORS OR ASSIGNS, JOINTLY AND SEVERALLY SHALL HOLD A PERPETUAL EASEMENT UNDER, OVER AND ACROSS THE SURFACE OF THE PROPERTY SHOWN WITHIN THE LINES ON THE PLAT MARKED AS SUCH FOR INSTALLATION , CONSTRUCTION, USE, REPAIR AND MAINTENANCE OF ALL PUBLIC UTILITY EQUIPMENT, INCLUDING BUT NOT LIMITED TO, FACILITIES USED IN CONNECTION WITH THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY AND SOUNDS AND SIGNALS, WATER AND SEWAGE MAINS AND PIPING, THE RIGHT TO CUT, TRIM OR REMOVE TREES, BUSHES AND ROOTS, AS MAY BE REASONABLY REQUIRED INCIDENT TO THE RIGHTS HEREIN GIVEN, AND THE RIGHT TO ENTER UPON THE SUBDIVIDED PROPERTY FOR ALL SUCH PURPOSES. OBSTRUCTIONS SHALL NOT BE PLACED OVER GRANTEES FACILITIES OR IN, UPON OR OVER THE PROPERTY WITHIN THE LINES MARKED "EASEMENT" WITHOUT THE PRIOR WRITTEN CONSENT OF GRANTEES. AFTER INSTALLATION OF ANY SUCH FACILITIES, THE GRADE OF THE SUBDIVIDED PROPERTY SHALL NOT BE ALTERED IN A MANNER SO AS TO UNREASONABLY INTERFERE WITH THE PROPER OPERATION AND MAINTENANCE THERE OF.

THE VILLAGE OF PALATINE SHALL BE GIVEN THE RIGHT TO REPAIR/ MAINTAIN ON SITE UTILITIES, BUT NOT THE OBLIGATION TO. IF THE VILLAGE NEEDS TO PERFORM MAINTENANCE OR REPAIRS THE VILLAGE SHALL HAVE THE ABILITY TO RECOVER THE COST OF REPAIRS FROM THE PROPERTY OWNER.

MISSNER - PALATINE CONSOLIDATION

REVISIONS

| REV. | DATE | DESCRIPTION |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

8300 42ND STREET WEST
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SITE ADDRESS:

2296 N RAND RD &
2234-2240 N RAND RD,
PALATINE, IL 60074

| CHK BY: | APV BY: |
|---|---|
| BCH | JAF |

XCEL JOB NUMBER:

213402

DRAWING NUMBER:

2 OF 2

Attachment: 0615222 - Missner Group Palatine - PLAT of Subdivision (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

PLANT KEY

SHADE TREE

ORNAMENTAL TREE

EVERGREEN TREE

**SEED MIX & GROUND TREATMENT KEY**

**BASE OF DETENTION AREAS BELOW THE NWL**

Areas below NWL to be planted with emergent plugs. See sheet L2.1 for schedule.

**DETENTION AREAS BETWEEN THE NWL & HWL**

Area of detention between the NWL & HWL to be seeded with "Swale Seed Mix" as supplied by Cardno Native Plant Nursery. See sheet L2.1 for preferred installation method.

**OPEN AREAS - NO MOW**

All open areas, not including detention, to be planted with low profile prairie grass mix as specified on planting schedule. See sheet L2.1 for preferred installation method.

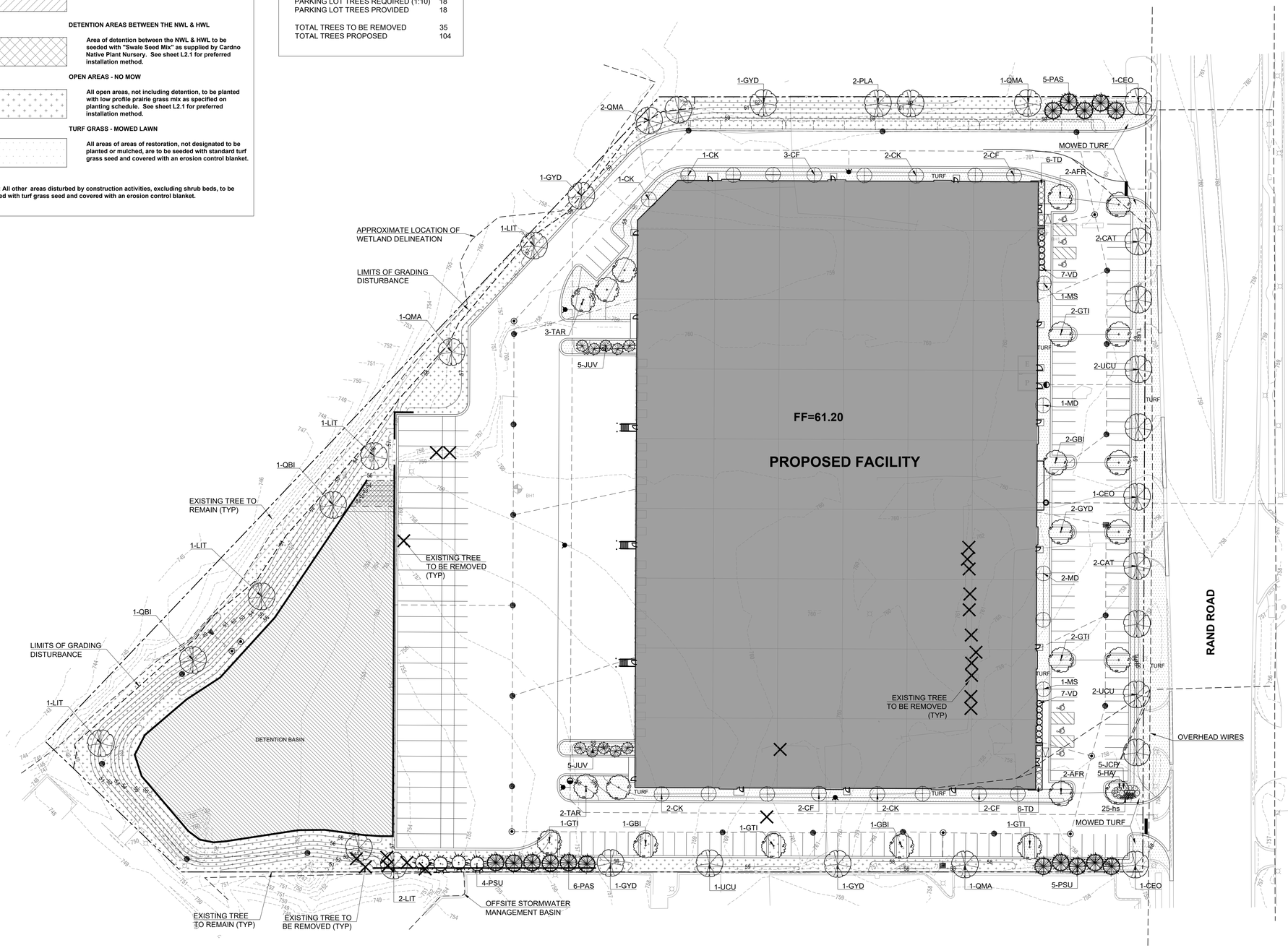
**TURF GRASS - MOWED LAWN**

All areas of areas of restoration, not designated to be planted or mulched, are to be seeded with standard turf grass seed and covered with an erosion control blanket.

**NOTE: All other areas disturbed by construction activities, excluding shrub beds, to be restored with turf grass seed and covered with an erosion control blanket.**

**LANDSCAPE REQUIREMENT SUMMARY**

| | |
|---|---|
| PARKING SUMMARY | |
| PASSENGER PARKING | 148 |
| TRAILER STALLS | 24 |
| TOTAL PARKING SPACES | 172 |
| PARKING LOT TREES REQUIRED (1:10) | 18 |
| PARKING LOT TREES PROVIDED | 18 |
| TOTAL TREES TO BE REMOVED | 35 |
| TOTAL TREES PROPOSED | 104 |




OVERALL LANDSCAPE PLAN

SCALE: 1" = 40'-0"

0 20' 40' 80'

Kathryn Talty
landscape architecture
Winnetka, Illinois 60093
847.612.5154
www.kmtaltydesign.com

REGISTERED LANDSCAPE ARCHITECT 1534 KATHRYN MAXWELL TALTY 157-001196 STATE OF ILLINOIS

| no. | revision description | initial | date |
|---|---|---|---|
| | ISSUED FOR REVIEW | KMT | 03-29-22 |
| | PER SITE PLAN ADJUSTMENTS | KMT | 04-12-22 |

PROPOSED DEVELOPMENT
2234-2240 RAND ROAD
PALATINE, IL

LANDSCAPE PLAN
LANDSCAPE REQUIREMENTS

date 01-28-22 | drawn DW | checked KMT

job no. 22030

sheet no. L 1.1

Attachment: Missner Group - 2240-2296 N. Rand Road - Landscaping Plan (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## Master Plant List

| Symbol | Quantity | Botanical Name | Common Name | Size | Origin | Notes |
|---|---|---|---|---|---|---|
| | | **Shade Trees** | | | | |
| AFR | 4 | ACER X FREEMANII 'AUTUMN BLAZE' | AUTUMN BLAZE FREEMAN MAPLE | 3" BB | | MOIST |
| CAT | 4 | CATALPA SPECIOSA | NORTHERN CATALPA | 3" BB | NATIVE | |
| CEO | 3 | CELTUS OCCIDENTALIS | HACKBERRY | 3" BB | | URBAN, MOIST |
| GBI | 4 | GINKGO BILOBA | GINKGO | 3" BB | | URBAN, MALE SPEC. O |
| GTI | 7 | GLEDITSIA TRIACANTHOS F. INERMIS | THORNLESS HONEYLOCUST | 3" BB | | URBAN, MOIST |
| GYD | 6 | GYMNOCLADUS DIOICUS | KENTUCKY COFFEETREE | 3" BB | NATIVE | MOIST |
| LIT | 5 | LIRODENDRON TULIPIFERA | TULIP TREE | 3" BB | NATIVE | MOIST |
| PLA | 2 | PLATANUS x ACERIFOLIA 'MORTON CIRCLE' | EXCLAMATION LONDON PLANETREE | 3" BB | | URBAN, MOIST |
| QBI | 3 | QUERCUS BICOLOR | SWAMP WHITE OAK | 3" BB | NATIVE | |
| QMA | 5 | QUERCUS MACROCARPA | BUR OAK | 3" BB | NATIVE | URBAN |
| TAR | 5 | TILIA AMERICANA 'REDMOND' | REDMOND AMERICAN LINDEN | 3" BB | NATIVE | URBAN, MOIST |
| UCU | 5 | ULMUS CULTIVAR 'ACCOLADE' 'TRIUMPH' | ACCOLADE ELM | 3" BB | | URBAN |
| | | **Evergreen Trees** | | | | |
| JUV | 10 | JUNIPERUS VIRGINIANA | EASTERN RED CEDAR | 8' BB | NATIVE | |
| PAS | 11 | PICEA AIBES | NORWAY SPRUCE | 8' BB | | |
| PSU | 9 | PSEUDOSTUGA MENZIESII | DOUGLAS FIR | 8' BB | | |
| | | **Ornamental Trees** | | | | |
| CF | 9 | CORNUS FLORIDA | FLOWERING DOGWOOD | 6' BB | | |
| CK | 8 | CORNUS KOUSA | KOUSA DOGWOOD | 6' BB | | |
| MD | 3 | MALUS 'DONALD WYMAN' | CRABAPPLE | 6' BB | | 25', GREEN, LT PINK |
| MS | 2 | MALUS SARGENT | SARGENT CRABAPPLE | 6' BB | | 8', GREEN, PINK |
| | | **Evergreen Shrubs** | | | | |
| JCP | 5 | JUNIPERUS CHINENSIS 'PFITZER COMPACT' | COMPACT PFITZER JUNIPER | 5 GAL | | |
| TD | 12 | TAXUS x MEDIA 'DENSII' | DENSE YEW | 24" BB | | |
| | | **Deciduous Shrubs** | | | | |
| HA | 5 | HYDRANGEA ARBORESCENS | ANNABELLE HYDRANGEA | 5 GAL | NATIVE | |
| VD | 14 | VIBURNUM DENTATUM 'CHICAGO LUSTRE' | CHICAGO LUSTRE ARROWWOOD VIBURNUM | 48" BB | NATIVE | |
| | | **Perennials** | | | | |
| hs | 25 | HEMEROCALLIS 'STELLA D'ORO' | SELLA D'ORO DAYLILY | 1 GAL | | 18" YELLOW |

## GENERAL CONSTRUCTION NOTES

1. REQUIRED LANDSCAPE MATERIAL SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND BE STAKED, WRAPPED, WATERED AND MULCHED PER ORDINANCE.
2. BEFORE ANY EXCAVATION ON THE SITE, CALL TO LOCATE ANY EXISTING UTILITIES ON THE SITE. THE CONTRACTOR SHALL FAMILIARIZE HIM/HERSELF WITH THE LOCATIONS OF ALL BURIED UTILITIES IN THE AREAS OF WORK BEFORE STARTING OPERATIONS. THE CONTRACTOR SHALL BE LIABLE FOR THE COST OF REPAIRING OR REPLACING ANY BURIED CONDUITS, CABLES OR PIPING DAMAGED DURING THE INSTALLATION OF THIS WORK.
3. FOUR FOOT HIGH FENCING OR OTHER RIGID MATERIAL IS TO BE ERECTED AROUND THE DRIP-LINE OF ALL TREES TO BE SAVED.
4. PLANT QUANTITIES ON PLANT LIST INTENDED TO BE A GUIDE. ALL QUANTITIES SHALL BE CHECKED AND VERIFIED ON PLANTING PLAN. ANY DISCREPANCIES SHALL BE DISCUSSED WITH THE LANDSCAPE ARCHITECT.
5. ANY DEVIATIONS FROM OR MODIFICATIONS TO THIS PLAN SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
6. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT UPON DELIVERY OF PLANT MATERIAL TO THE SITE. LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL THAT DOESN'T MEET STANDARDS OR SPECIFICATIONS OF THE PROJECT.
7. ALL PLANT MATERIAL TO BE INSTALLED PER THE PLANTING DETAILS PROVIDED ON THIS PLAN SET.
8. ALL BED EDGES TO BE WELL SHAPED, SPADE CUT, WITH LINES AND CURVES AS SHOWN ON THIS PLAN SET.
9. ALL PLANTING BEDS TO BE PREPARED WITH PLANTING MIX: 50% TOPSOIL, 50% SOIL AMENDMENTS (3 PARTS PEATMOSS, 1 PART COMPOST, 1 PART SAND)
10. ALL PARKING LOT ISLANDS SHALL BE BACKFILLED WITH THE FOLLOWING: 2' OF BLENDED GARDEN SOIL MIX (60% TOPSOIL, 30% COMPOST, 10% SAND) OR 6" OF *ONE STEP* BY MIDWEST TRADING, TOP DRESSED AND TILLED INTO 18" OF TOPSOIL.
11. ALL SPECIFIED LANDSCAPE MATERIAL INDICATED ON THE CONSTRUCTION DOCUMENTS WILL BE REQUIRED TO BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT AND MUST BE REPLACED SHOULD IT DIE OR BECOME DAMAGED.
12. ALL PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE FROM SUBSTANTIAL COMPLETION AS DETERMINED BY THE LANDSCAPE ARCHITECT, AND SHALL BE REPLACED SHOULD IT DIE WITHIN THAT PERIOD.
13. PROTECT STRUCTURES, SIDEWALKS, PAVEMENTS AND UTILITIES TO REMAIN FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUTS AND OTHER HAZARDS CAUSED BY SITE IMPROVEMENT OPERATIONS.
14. ALL LAWN AREAS TO BE SEEDED WITH STANDARD TURF GRASS SEED AND COVERED WITH EROSION CONTROL BLANKET. UNLESS OTHERWISE SPECIFIED ON THE PLAN.
15. CAREFULLY MAINTAIN PRESENT GRADE AT BASE OF ALL EXISTING TREES TO REMAIN. PREVENT ANY DISTURBANCE OF EXISTING TREES INCLUDING ROOT ZONES. USE TREE PROTECTION BARRICADES WHERE INDICATED. PROTECT EXISTING TREES TO REMAIN AGAINST UNNECESSARY CUTTING, BREAKING OR SKINNING OF ROOTS, BRUISING OF BARK OR SMOTHERING OF TREES. DRIVING, PARKING, DUMPING, STOCKPILING AND/OR STORAGE OF VEHICLES, EQUIPMENT, SUPPLIES, MATERIALS OR DEBRIS ON TOP THE ROOT ZONES AND/OR WITHIN THE DRIPLINE OF EXISTING TREES OR OTHER PLANT MATERIAL TO REMAIN IS STRICTLY PROHIBITED.
16. THE CONTRACTOR AT ALL TIMES SHALL KEEP THE PREMISES ON WHICH WORK IS BEING DONE, CLEAR OF RUBBISH AND DEBRIS. ALL PAVEMENT AND DEBRIS REMOVED FROM THE SITE SHALL BE DISPOSED OF LEGALLY.
17. ALL WORK AND OPERATIONS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.

**Low-Profile Prairie Seed Mix**

| Botanical Name | Common Name | PLS Ounces/Acre |
|---|---|---|
| **Permanent Grasses:** | | |
| *Bouteloua curtipendula* | Side-Oats Grama | 16.00 |
| *Carex spp* | Prairie Sedge Species | 4.00 |
| *Elymus canadensis* | Canada Wild Rye | 32.00 |
| *Koeleria macrantha* | June Grass | 1.00 |
| *Panicum virgatum* | Switch Grass | 1.00 |
| *Schizachyrium scoparium* | Little Bluestem | 36.00 |
| | **Total** | **90.00** |
| **Temporary Cover:** | | |
| *Avena sativa* | Common Oat | 512.00 |
| | **Total** | **512.00** |
| **Forbs:** | | |
| *Amorpha canescens* | Lead Plant | 0.50 |
| *Asclepias syriaca* | Common Milkweed | 2.00 |
| *Asclepias tuberosa* | Butterfly Weed | 2.00 |
| *Baptisia alba* | White Wild Indigo | 2.00 |
| *Chamaecrista fasciculata* | Partridge Pea | 10.00 |
| *Coreopsis lanceolata* | Sand Coreopsis | 5.00 |
| *Coreopsis palmata* | Prairie Coreopsis | 1.00 |
| *Dalea candida* | White Prairie Clover | 1.50 |
| *Dalea purpurea* | Purple Prairie Clover | 1.50 |
| *Desmanthus illinoensis* | Illinois Sensitive Plant | 3.00 |
| *Echinacea purpurea* | Broad-Leaved Purple Coneflower | 8.00 |
| *Eryngium yuccifolium* | Rattlesnake Master | 2.00 |
| *Lespedeza capitata* | Round-Headed Bush Clover | 2.00 |
| *Liatris aspera* | Rough Blazing Star | 0.50 |
| *Lupinus perennis v. occidentalis* | Wild Lupine | 4.00 |
| *Monarda fistulosa* | Wild Bergamot | 0.50 |
| *Oligoneuron rigidum* | Stiff Goldenrod | 1.00 |
| *Parthenium integrifolium* | Wild Quinine | 1.00 |
| *Penstemon digitalis* | Foxglove Beard Tongue | 0.50 |
| *Penstemon hirsutus* | Hairy Beard Tongue | 1.00 |
| *Ratibida pinnata* | Yellow Coneflower | 4.00 |
| *Rudbeckia hirta* | Black-Eyed Susan | 5.00 |
| *Rudbeckia subtomentosa* | Sweet Black-Eyed Susan | 1.00 |
| *Silphium terebinthinaceum* | Prairie Dock | 1.00 |
| *Solidago speciosa* | Showy Goldenrod | 0.50 |
| *Symphyotrichum ericoides* | Heath Aster | 0.25 |
| *Symphyotrichum laeve* | Smooth Blue Aster | 1.00 |
| *Symphyotrichum novae-angliae* | New England Aster | 0.50 |
| *Tradescantia ohiensis* | Common Spiderwort | 1.00 |
| *Verbena stricta* | Hoary Vervain | 1.00 |
| *Vernonia gigantea* | Smooth Tall Ironweed | 1.50 |
| *Veronicastrum virginicum* | Culver's Root | 0.25 |
| | **Total** | **66.00** |

Mix Statistics

| Native Component | PLS lbs./Acre | PLS Seeds/Acre | PLS Seeds/Sq. Ft. | % of Native Mix |
|---|---|---|---|---|
| Forbs | 4.13 | 1,731,814 | 39.76 | 66.02% |
| Grasses | 5.63 | 891,416 | 20.46 | 33.98% |
| Total Natives | 9.75 | 2,623,230 | 60.22 | 100.00% |
| Cover | 32.00 | 576,000 | 13.22 | |
| Totals | 41.75 | 3,199,230 | 73.44 | |

**Swale Seed Mix**

| Botanical Name | Common Name | PLS Ounces/Acre |
|---|---|---|
| **Permanent Grasses/Sedges:** | | |
| *Andropogon gerardii* | Big Bluestem | 4.00 |
| *Carex cristatella* | Crested Oval Sedge | 0.50 |
| *Carex lurida* | Bottlebrush Sedge | 3.00 |
| *Carex spp.* | Prairie Sedge Species | 8.00 |
| *Carex. vulpinoidea* | Brown Fox Sedge | 3.00 |
| *Elymus canadensis* | Canada Wild Rye | 16.00 |
| *Elymus virginicus* | Virginia Wild Rye | 16.00 |
| *Juncus canadensis* | Canadian Rush | 1.00 |
| *Panicum virgatum* | Switch Grass | 3.00 |
| *Scirpus atrovirens* | Dark Green Rush | 2.00 |
| *Scirpus cyperinus* | Wool Grass | 0.50 |
| *Spartina pectinata* | Prairie Cord Grass | 3.00 |
| | **Total** | **60.00** |
| **Temporary Cover:** | | |
| *Avena sativa* | Common Oat | 512.00 |
| | **Total** | **512.00** |
| **Forbs:** | | |
| *Alisma subcordatum* | Common Water Plantain | 1.00 |
| *Asclepias incarnata* | Swamp Milkweed | 2.00 |
| *Coreopsis tripteris* | Tall Coreopsis | 1.00 |
| *Euthamia graminifolia* | Common Grass-Leaved Goldenrod | 0.50 |
| *Eutrochium maculatum* | Spotted Joe-Pye Weed | 1.00 |
| *Iris virginica v. shrevei* | Blue Flag | 4.00 |
| *Liatris spicata* | Marsh Blazing Star | 1.00 |
| *Lycopus americanus* | Common Water Horehound | 0.50 |
| *Mimulus ringens* | Monkey Flower | 0.50 |
| *Penthorum sedoides* | Ditch Stonecrop | 1.00 |
| *Pycnanthemum virginianum* | Common Mountain Mint | 0.50 |
| *Rudbeckia triloba* | Brown-Eyed Susan | 1.00 |
| *Senna hebecarpa* | Wild Senna | 1.00 |
| *Silphium terebinthinaceum* | Prairie Dock | 1.00 |
| *Symphyotrichum novae-angliae* | New England Aster | 0.50 |
| *Verbena hastata* | Blue Vervain | 1.50 |
| *Zizia aurea* | Golden Alexanders | 2.00 |
| | **Total** | **20.00** |

Mix Statistics

| Native Component | PLS lbs./Acre | PLS Seeds/Acre | PLS Seeds/Sq. Ft. | % of Native Mix |
|---|---|---|---|---|
| Forbs | 1.25 | 1,181,855 | 27.13 | 31.09% |
| Grasses | 3.75 | 2,619,949 | 60.15 | 68.91% |
| Total Natives | 5.00 | 3,801,804 | 87.28 | 100.00% |
| Cover | 32.00 | 576,000 | 13.22 | |
| Totals | 37.00 | 4,377,804 | 100.50 | |

**Emergent Plugs**

| Symbol | Quantity | Botanical Name | Common Name | Size | Mean height | Notes |
|---|---|---|---|---|---|---|
| | 8 | ASCLEPIAS INCARNATA | SWAMP MILKWEED | 3" PLUG | 4' | 36" O.C. - FORB |
| | 8 | BOLTONIA ASTEROIDES | FALSE ASTER | 3" PLUG | 3' | 36" O.C. - FORB |
| | 8 | CAREX STRICTA | COMMON TUSSOCK SEDGE | 3" PLUG | 3' | 36" O.C. - GSR |
| | 8 | CAREX VULPINOIDEA | FOX SEDGE | 3" PLUG | 3' | 36" O.C. - GSR |
| | 4 | CHELONE GLABRA | WHITE TURTLEHEAD | 3" PLUG | 5' | 48" O.C. - FORB |
| | 4 | HIBISCUS LAEVIS | ROSEMALLOW | 3" PLUG | 5' | 48" O.C. - FORB |
| | 4 | IRIS VERSICOLOR | BLUE FLAG IRIS | 3" PLUG | 3' | 48" O.C. - FORB |
| | 8 | LIATRIS PYCNOSTACHYA | PRAIRIE BLAZING STAR | 3" PLUG | 4' | 36" O.C. - FORB |
| | 8 | LOBELIA CARDINALIS | CARDINAL FLOWER | 3" PLUG | 4' | 36" O.C. - FORB |
| | 4 | SCHOENOPLECTUS ACUTUS | HARD-STEMMED BULRUSH | 3" PLUG | 6' | 48" O.C. - GSR |
| | 8 | SOLIDAGO OHIOENSIS | OHIO GOLDENROD | 3" PLUG | 3' | 36" O.C. - FORB |
| | 8 | SPARGANIUM EURYCARPUM | GREAT BUR REED | 3" PLUG | 4' | 36" O.C. - FORB |
| | 4 | SPARTINA PECTINATA | PRAIRIE CORDGRASS | 3" PLUG | 7' | 48" O.C. - GSR |
| | 4 | VERBENA HASTATA | BLUE VERVAIN | 3" PLUG | 5' | 48" O.C. - FORB |
| | | | | | | |
| Notes: | | Plant quantities are estimated based on spacing recommended. Quantity reflects 1,000 SF | | | | |
| | | Plugs to be planted in groupings of "like species" | | | | |
| | | Final layout to be approved by Landscape Architect | | | | |

**PLANTING NOTES FOR DETENTION AREAS**

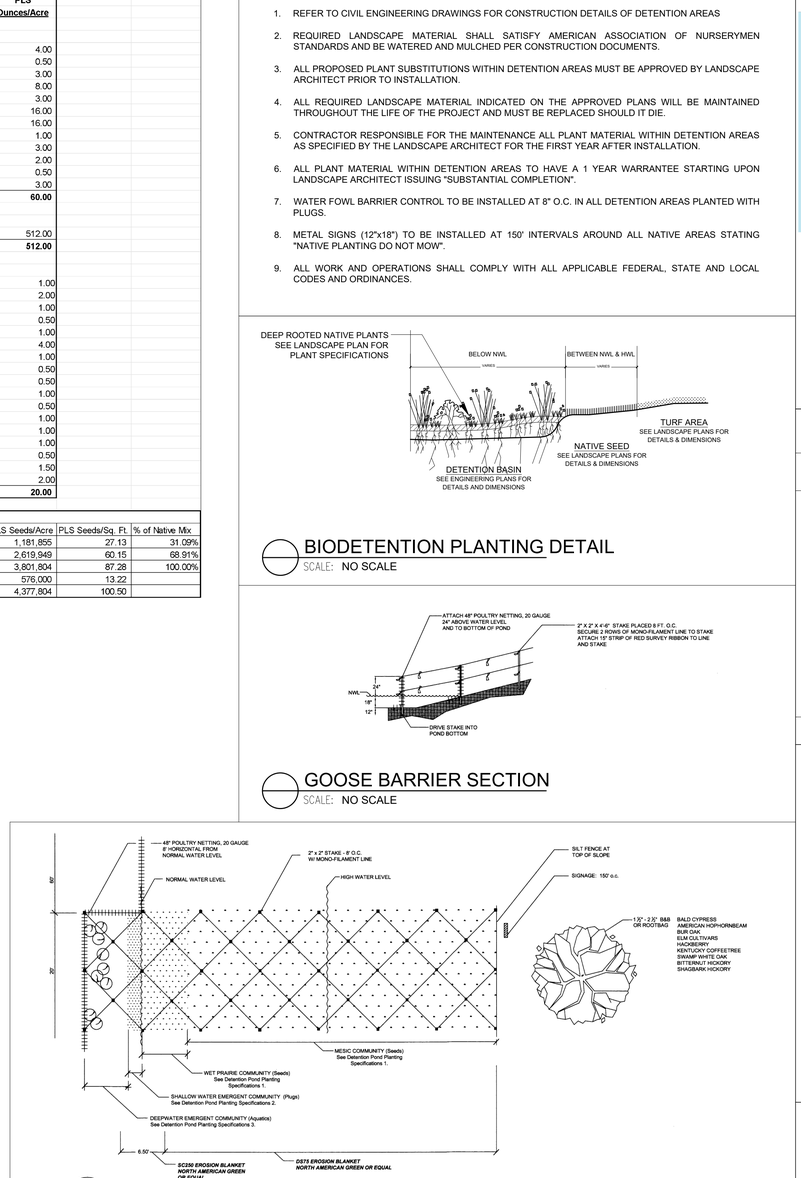
1. REFER TO CIVIL ENGINEERING DRAWINGS FOR CONSTRUCTION DETAILS OF DETENTION AREAS
2. REQUIRED LANDSCAPE MATERIAL SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARDS AND BE WATERED AND MULCHED PER CONSTRUCTION DOCUMENTS.
3. ALL PROPOSED PLANT SUBSTITUTIONS WITHIN DETENTION AREAS MUST BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
4. ALL REQUIRED LANDSCAPE MATERIAL INDICATED ON THE APPROVED PLANS WILL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT AND MUST BE REPLACED SHOULD IT DIE.
5. CONTRACTOR RESPONSIBLE FOR THE MAINTENANCE ALL PLANT MATERIAL WITHIN DETENTION AREAS AS SPECIFIED BY THE LANDSCAPE ARCHITECT FOR THE FIRST YEAR AFTER INSTALLATION.
6. ALL PLANT MATERIAL WITHIN DETENTION AREAS TO HAVE A 1 YEAR WARRANTEE STARTING UPON LANDSCAPE ARCHITECT ISSUING "SUBSTANTIAL COMPLETION".
7. WATER FOWL BARRIER CONTROL TO BE INSTALLED AT 8" O.C. IN ALL DETENTION AREAS PLANTED WITH PLUGS.
8. METAL SIGNS (12"x18") TO BE INSTALLED AT 150' INTERVALS AROUND ALL NATIVE AREAS STATING "NATIVE PLANTING DO NOT MOW".
9. ALL WORK AND OPERATIONS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES.



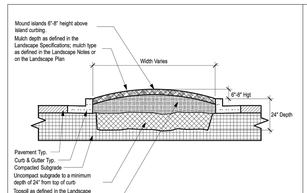

BIODETENTION PLANTING DETAIL
SCALE: NO SCALE



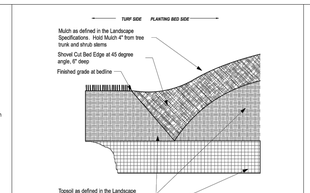

GOOSE BARRIER SECTION
SCALE: NO SCALE



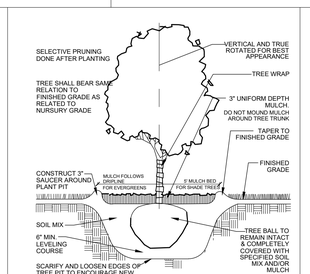

GOOSE BARRIER PLAN
SCALE: NO SCALE



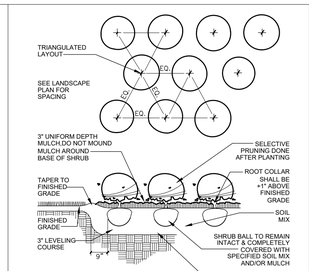

PARKING LOT ISLAND
SCALE:



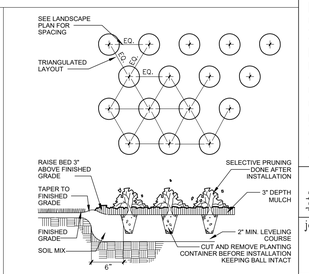

SPADED PLANTING BED EDGE
SCALE:




1 L1 TREE PLANTING DETAIL
SCALE:




2 L1 SHRUB PLANTING DETAIL
SCALE:




3 L1 GROUNDCOVER DETAIL
SCALE:

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| no. | revision description | initial | date |
|---|---|---|---|
| 1 | ISSUED FOR REVIEW | KMT | 03-29-22 |
| 2 | PER SITE PLAN ADJUSTMENTS | KMT | 04-12-22 |

PROPOSED DEVELOPMENT
2234-2240 RAND ROAD
PALATINE, IL

LANDSCAPE NOTES
MASTER PLANT LIST
PLANTING SPECIFICATIONS
DETAILS

date 01.28.22 | drawn KMT | checked KMT

job no. 22030

sheet no. L 2.1

Attachment: Missner Group - 2240-2296 N. Rand Road - Landscaping Plan (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## NATIVE PLANT & SEED INSTALLATION MANAGEMENT AND MONITORING PLAN

All native planting and seeding installation, management and monitoring to be conducted by a qualified, experienced contractor specializing in restoring and managing natural landscapes in the Midwest.

**PLANT MATERIAL INSTALLATION – NATIVE SEEDING**

Prepare area for seeding - prepare the soil and create optimal plant conditions, before disturbing any ground:

- Check for any buried utilities
- Clear area of debris that would interfere with planting
- Mow any excess existing vegetation growth
- Apply broad-spectrum or targeted herbicide, depending on species present
- De-compact any areas of special concern
  - Lightly de-compact tilled or loose soil with a roller, cultipacker, or similar equipment. If using a no-till seed drill, tilling can usually be omitted.
  - If ground is wet, tilling should not occur until the soil dries enough to break apart when tilled.

Follow the appropriate timing:

- The optimal time to install seed is from the fall (November 1) to late spring (June 15).
- Wetlands should be seeded in the winter while the site is frozen and equipment can more easily access the site.

Method for seeding and erosion control:

- Broadcasting:
  - For small (typically two acres or less) or irregularly shaped areas, seed can be planted by hand broadcasting. To aid seed distribution, combine the seed mix with filler materials, such as dry sawdust, sand, or vermiculite.
  - Using a hand-crank or tow-behind broadcaster, start with half of the seed and try to cover the entire area with that amount of seed. Take the remaining half of the seed, go to the opposite end of the site and cover it again. After broadcasting is complete, it is important to use a cultipacker or roller over the area to make good seed-to-soil contact. Do not cover seed more than 1/4-inch deep.
- No-Till Drill:
  - For larger areas and sites with existing vegetation, use a no-till seed drill, which does not require the soil to be tilled before planting, resulting in minimal soil disturbance. No-till drills plant seed in rows by opening slits in the soil, into which seed is deposited. If using a no-till drill, follow the specific manufacturer's recommendations. Because the diversity of seed sizes makes drill calibration a challenge, perform a few test areas first to help prevent running out of seed.
- Erosion control method:
  - Install biodegradable erosion control blanket (NAG S75 or equal) until seed has germinated.

**PLANT MATERIAL MANAGEMENT – NATIVE SEEDING**

To help ensure success, projects need a maintenance and monitoring plan that is flexible and supports site development goals. While native plants tend to germinate and develop at a slower rate than ornamental perennials or turf grass, regular maintenance during the establishment period greatly improves project success. Regular maintenance and monitoring controls invasive species, ensures optimal moisture levels are present, and identifies other necessary management actions.

- Native areas need between 3 to 5 years to establish.
- Preferred planting late fall (any time after November 1; if the soil surface is dry and cold enough to prevent germination and seed can be worked into soil.
- Let seed germinate and grow for one full season. **Do not** apply herbicides for weed control within the first growing season. If large weeds are unsightly, clip off; **do not pull** weeds to keep growth down. **Do not** allow seed heads to form.
- Mow first time when established in first season to 4"- 6" high, to scatter seed heads. If clumping occurs lightly rake to disburse seed.
- Mow 2-3 additional times to maintain 6-8 inches in height.
- Some perennial seeds may not germinate until the following year.
- If fall planting is not possible, spring seeding can be done (weather permitting) as early as January - preferably before April 15.
- Second season mow 3-4 times to maintain 8-10 inches in height.
- At the end of the third season a controlled burn program to be performed.
- 4 (four) annual weed control events (selective herbicide and mechanical) to be performed starting in the second season.

**MINIMUM PERFORMANCE STANDARDS AND MONITORING ACTIVITIES**

Performance standards are established for all proposed projects involving naturalized areas so that the relative success of creation and enhancement efforts may be evaluated. If the performance standards are not achieved by the end of the three-year management and monitoring program, the owner is responsible for correction of any deficiencies through further management activities, which may include replanting or reseeding.

- Native areas are to be monitored for a minimum of 3 (three) years from date of installation.
- Within 3 months of seed installation, at least 90% of the seeded areas (mesic prairie and broad-spectrum seed mix), as measured by aerial coverage, shall be vegetated. A minimum 90% vegetative coverage shall be maintained throughout, and at the end of, the three-year period for these areas.
  - This standard does not apply to the emergent zones.
- The naturalized areas shall not contain any rills greater than 4 inches wide and 4 inches deep throughout, and at the end, of the three-year period.
- At the end of the second growing season, 30% seed mix presence for the mesic and broad-spectrum seed mixes shall be achieved. At the end of the third growing season, 50% seed mix presence for the mesic and broad-spectrum seed mixes shall be achieved.
  - Seed mix presence shall be evaluated separately for these two mixes.
- No area over the entire native planted site greater than 1 square meter will be devoid of vegetation (as measured by aerial coverage/ocular estimation), unless specified on approved plans.
  - This annual performance standard does not apply to emergent and aquatic communities.
- The native planted areas will meet the following annual standards for the presence of native, non-invasive perennial species (as measured by aerial coverage/ocular estimation): Year 1 – 15%, Year 2 – 50%, Year 3 – 75%
  - This standard to be measured separately for each seed mix zone.
- At the end of the third growing season, none of the three most dominant species within the planted areas will be invasive or non-native species as inspected annually. The project manager will determine the appropriate target invasive or non-native species. They will typically include, but are not limited to, the following: Ragweed (Ambrosia spp.), Cattail (Typha spp.), Reed Canary Grass (Phalaris arundinacea), Purple Loosestrife (Lythrum salicaria), Common Reed (Phragmites australis), Canadian Thistle (Cirsium arvense), Sandbar Willow (Salix interior), Kentucky Blue Grass (Poa pratensis), Yellow Sweet-Clover (Melilotus officinalis), Teasel (Dipsacus spp.), Japanese-Knotweed (Reynoutria japonica), and Asian Bittersweet (Celastrus orbiculatus), Buckthorn (Rhamnus spp.).
  - This standard to be measured separately for each seed mix zone.
- Emergents: At the end of the third growing season, 50% vegetative coverage shall be achieved (as measured by aerial coverage/ocular estimation).
- Emergents: Relative coverage of cattails (as measured by aerial coverage/ocular estimation) shall be less than 5% throughout, and at the end of, the three year monitoring period.
- Plugs: 90% of the plants will be alive, in healthy condition, and representative of the individual species at the end of each growing season. Replanting will take place until this standard is achieved.
- Woody plants: 90% of the planted trees and shrubs will be alive, in healthy condition, and representative of the individual species at the end of each growing season.
- Relative coverage (determined by ocular estimation) of invasive species (i.e., common reed, reed canary grass, purple loosestrife, etc.) in aggregate shall be less than 5% throughout, and at the end of, the three-year period.
  - This standard shall be evaluated separately for each seed and plant mix zone (i.e., mesic prairie, broad spectrum seed mix, emergent).
- Native Mean C value > 3.0 and Native FQI value > 20.0 for all native plant communities.
  - This standard shall be evaluated separately for each seed and plant mix zone (i.e., mesic prairie, broad spectrum seed mix, emergent).
- Soil erosion and sediment control measures shall be regularly maintained.

## LANDSCAPE MAINTENANCE SPECIFICATIONS

**STANDARDS**
All landscape maintenance services shall be performed by trained personnel using current, acceptable horticultural practices.

All work shall be performed in a manner that maintains the original intent of the landscape design.

All chemical applications shall be performed in accordance with current county, state and federal laws, using EPA registered materials and methods of application. These applications shall be performed under the supervision of a Licensed Certified applicator.

**APPROVALS**
Any work performed in addition to that which is outlined in the contract shall only be done upon written approval by the Owner's Representative.

All seasonal color selections shall be approved by the Owner's Representative prior to ordering and installation.

**SOIL TESTING**
The maintenance contractor shall perform soil tests as needed to identify imbalances or deficiencies causing plant material decline. The owner shall be notified of the recommendation for approval, and the necessary corrections made at an additional cost to the owner.

Acceptable Soil Test Results:

| | Landscape Trees & Shrubs | Turf |
|---|---|---|
| **pH Range** | 5.0-7.0 | 6.0-7.0 |
| **Organic Matter** | >1.5% | >2.5% |
| **Magnesium (Mg)** | 100+lbs./acre | 100+lbs./acre |
| **Phosphorus (P2O5)** | 150+lbs./acre | 150+lbs./acre |
| **Potassium (K2O)** | 120+lbs./acre | 120+lbs./acre |
| **Soluble salts** | Not to exceed 900ppm/1.9 mmhos/cm in soil; not to exceed 1400 ppm/2.5 mmhos/cm in high organic mix | Not to exceed 750ppm/0.75 mmhos/cm in soil; not to exceed 2000 ppm/2.0 mmhos/cm in high organic mix |

For unusual soil conditions, the following optional tests are recommended with levels not to exceed:

| | |
|---|---|
| Boron | 3 pounds per acre |
| Manganese | 50 pounds per acre |
| Potassium (K2O) | 450 pounds per acre |
| Sodium | 20 pounds per acre |

**WORKMANSHIP**
During landscape maintenance operations, all areas shall be kept neat and clean. Precautions shall be taken to avoid damage to existing structures. All work shall be performed in a safe manner to the operators, the occupants and any pedestrians.

Upon completion of maintenance operations, all debris and waste material shall be cleaned up and removed from the site, unless provisions have been granted by the owner to use on-site trash receptacles.

Any damage to the landscape, the structure, or the irrigation system caused by the maintenance contractor, shall be repaired by the maintenance contractor without charge to the owner.

### TURF

**GENERAL CLEAN UP**
Prior to mowing, all trash, sticks, and other unwanted debris shall be removed from lawns, plant beds, and paved areas.

**MOWING**
Turf grasses, including blue grass, tall fescue, perennial ryegrass, etc., shall be maintained at a height of 2" to 3" in spring and fall. From June through September, mowing height shall be maintained at no less than 3".

The mowing operation includes trimming around all obstacles, raking excessive grass clippings and removing debris from walks, curbs, and parking areas. Caution: Mechanical weeders should NOT be used around trees because of potential damage to the bark.

**EDGING**
Edging of all sidewalks, curbs and other paved areas shall be performed once every other mowing. Debris from the edging operations shall be removed and the areas swept clean. Caution shall be used to avoid flying debris.

**FERTILIZING**
Seasonally stepped fertilizer shall be applied in areas based on the existing turf species.

**LAWN WEED CONTROL: HERBICIDES**
Selection and proper use of herbicides shall be the landscape contractor's responsibility. All chemical applications shall be performed under the supervision of a Licensed Certified Applicator. **Read the label prior to applying any chemical.**

**INSECT & DISEASE CONTROL FOR TURF**
The contractor shall be responsible for monitoring the site conditions on each visit to determine if any insect pest or disease problems exist. The contractor shall identify the insect pest or disease, as well as the host plant, and then consult the most current edition of the Cooperative Extension Service's "Commercial Insecticide Recommendation for Turf" for control. The licensed applicator shall be familiar with the label provided for the selected product prior to application.

Inspection and treatment to control insect pests shall be included in the contract price.

### TREES, SHRUBS, & GROUND COVER

**PRUNING**
All ornamental trees, shrubs and ground cover shall be pruned when appropriate to remove dead or damaged branches, develop the natural shapes. Do not shear trees or shrubs. If previous maintenance practice has been to shear and ball, then a natural shape will be restored gradually.

**Pruning Guidelines:**

1. Prune plants that flower before the end of June (spring blooming) immediately after flowering. Flower buds develop during the previous growing season. Fall, winter or spring pruning would reduce the spring flowering display.
2. Prune plants that flower in July – September (summer or autumn blooming) in winter or spring before new growth begins, since these plants develop flowers on new growth.
3. Delay pruning plants grown for ornamental fruits, such as Cotoneasters and Viburnums.
4. Hollies and other evergreens may be pruned during winter in order to use their branches for seasonal decoration. However, severe pruning of evergreens should be done in early spring only.
5. Broadleaf evergreen shrubs shall be hand-pruned to maintain their natural appearance after the new growth hardens off.
6. Hedges or shrubs that require shearing to maintain a formal appearance shall be pruned as required. Dead wood shall be removed from sheared plants before the first shearing of the season.
7. Conifers shall be pruned, if required, according to their genus.
   A. Yews, Junipers, Hemlocks and Arborvitae may be pruned after new growth has hardened off in late summer. If severe pruning is necessary, it must be done in early spring.
   B. Firs and spruces may be lightly pruned in late summer, fall, or winter after completing growth. Leave side buds. Never cut central leader.
   C. Pines may be lightly pruned in early June by reducing candles.
8. Groundcover shall be edged and pruned as needed to contain it within its borders.
9. Thinning: Remove branches and water sprouts by cutting them back to their point of origin on parent stems. This method results in a more open plant, without stimulating excessive growth. Thinning is used on Crab Apples, Lilacs, Viburnums, etc.
10. Renewal pruning: Remove oldest branches of shrub at ground, leaving the younger, more vigorous branches. Also remove weak stems. On overgrown plants, this method may be best done over a three-year period. Renewal pruning may be used on Forsythia, Hydrangea, Spiraea, etc.

Plants overhanging passageways and parking areas and damaged plants shall be pruned as needed.

Shade trees that cannot be adequately pruned from the ground shall not be included in the Maintenance Contract. A certified arborist under a separate contract shall perform this type of work.

**SPRING CLEANUP**
Plant beds shall receive a general cleanup before fertilizing and mulching. Cleanup includes removing debris and trash from beds and cutting back herbaceous perennials left standing through winter, e.g. ornamental grasses, Sedum Autumn Joy.

**FERTILIZING**
For trees, the rate of fertilization depends on the tree species, tree vigor, area available for fertilization, and growth stage of the tree. Mature specimens benefit from fertilization every 3 to 4 years; younger trees shall be fertilized more often during rapid growth stages.

The current recommendation is based on the rate of 1000 square feet of area under the tree to be fertilized. For deciduous trees, 2 to 6 pounds of Nitrogen per 1000 square feet; for narrow-leaf evergreens, 1 to 4 pounds of Nitrogen per 1000 square feet; for broadleaf evergreens, 1 to 3 pounds of Nitrogen per 1000 square feet.

Shrubs and groundcover shall be top-dressed with compost 1" deep or fertilized once in March with 10-6-4 analysis fertilizer at the rate of 3 pounds per 100 square feet of bed area.
Ericaceous material shall be fertilized with an ericaceous fertilizer at the manufacturer's recommendation rate. If plants are growing poorly, a soil sample should be taken.

**MULCHING**
Annually, all tree and shrub beds will be prepared and mulched, to a minimum depth of 3" with quality mulch to match existing. Bed preparation shall include removing all weeds, cleaning up said bed, edging and cultivating decayed mulch into the soil. Debris from edging is to be removed from beds where applicable. If deemed necessary, a pre-emergent herbicide may be applied to the soil to inhibit the growth of future weeds.

Organically maintained gardens shall not receive any pre-emergent herbicides. Mulch in excess of 4" will be removed from the bed areas. SPECIAL CARE shall be taken in the mulching operation not to over-mulch or cover the base of trees and shrubs. This can be detrimental to the health of the plants.

**WEEDING**
All beds shall be weeded on a continuous basis throughout the growing season to maintain a neat appearance at all times.

Pre-emergent (soil-applied) and post-emergent (foliar-applied) herbicides shall be used where and when applicable and in accordance with the product's label.

**INSECT & DISEASE CONTROL: TREES, SHRUBS & GROUNDCOVER**

The maintenance contractor shall be responsible for monitoring the landscape site on a regular basis. The monitoring frequency shall be monthly except for growing season, which will be every other week. Trained personnel shall monitor for plant damaging insect activity, plant pathogenic diseases and potential cultural problems in the landscape. The pest or cultural problem will be identified under the supervision of the contractor.

For plant damaging insects and mites identified in the landscape, the contractor shall consult and follow the recommendations of the most current edition of the state Cooperative Service publication on insect control on landscape plant material.

Plant pathogenic disease problems identified by the contractor that can be resolved by pruning or physical removal of damaged plant parts will be performed as part of the contract. For an additional charge, plant pathogenic diseases that can be resolved through properly timed applications of fungicides shall be made when the owner authorizes it.

If the contractor notes an especially insect-or disease-prone plant species in the landscape, he/she will suggest replacement with a more pest-resistant cultivar or species that is consistent with the intent of the landscape design.

NOTE: For identification of plant-damaging insects and mites, a reference textbook that can be used is *Insects that feed on Trees and Shrubs* by Johnson and Lyon, Comstock Publishing Associates. For plan pathogenic diseases, two references are suggested: *Scouting and Controlling Woody Ornamental Diseases in Landscapes and Nurseries*, authorized by Gary Moorman, published by Penn State College of Agricultural Sciences, and *Diseases of Trees and Shrubs* by Sinclair and Lyon, published by Comstock Publishing Press.

**TRASH REMOVAL**
The maintenance contractor shall remove trash from all shrub and groundcover beds with each visit.

**LEAF REMOVAL**
All fallen leaves shall be removed from the site in November and once in December. If requested by the owner, the maintenance contractor, at an additional cost to the owner shall perform supplemental leaf removals.

**WINTER CLEAN-UP**
The project shall receive a general clean-up once during each of the winter months, i.e., January, February, and March.

Clean-up includes:

- Cleaning curbs and parking areas
- Removing all trash and unwanted debris
- Turning mulch where necessary
- Inspection of grounds

### SEASONAL COLOR: PERENNIALS, ANNUALS, AND BULBS

The installation of perennials, annuals, and bulbs, unless specified herein, shall be reviewed with the owner, and, if accepted, installed and billed to the owner.

**SEASONAL COLOR MAINTENANCE**

**Perennialization of Bulbs:**

1. After flowering, cut off spent flower heads.
2. Allow leaves of daffodils and hyacinths to remain for six weeks after flowers have faded. Cut off at base.
3. Allow leaves of other bulbs to yellow naturally and then cut off at base.
4. Apply fertilizer after flowering in spring, possibly again in fall. Apply 10-10-10 at the rate of 2 pounds per 1000 square feet or top-dress with compost 1" deep. Fall fertilization with a bulb fertilizer or mulching with 1" of compost is optional.

**Flower Rotation:**

1. Bulbs: Remove the entire plant and bulb after flowers have faded or at the direction of the owner and install new plants if included in contract.
2. Summer Annuals or Fall Plants:
   a. Dead heading: Pinch and remove dead flowers on annuals as necessary.
   b. Fertilizing Summer Annuals: Fertilize using one or two methods: Apply a slow-release fertilizer in May following manufacturer's recommendations. A booster such as 10-10-10 may be necessary in late summer. Or, apply liquid fertilizations of 20-20-20 water-soluble fertilizers, not to exceed 2 pounds of 20-20-20 per 100 gallons of water, monthly; or mulch with compost 1" deep.
   c. Removal: If fall plants are to be installed, summer annuals shall be left in the ground until the first killing frost and then removed, unless otherwise directed by the owner.

**Perennials:**

1. After initial installation, if a time-released fertilizer has been incorporated during plant installation, no more fertilizer need be applied the first growing season.
2. The following year:
   a. Fertilize perennials with a slow-release fertilizer or any 50% organic fertilizer, or mulch perennials with compost 1" deep.
   b. Cut all deciduous perennials flush to the ground by March 1, if this was not done the previous fall, to allow new growth to develop freely.
   c. Mulch the perennial bed once in early spring at 1"-2" depth. If soil is bared in late fall, re-mulch lightly after ground is frozen to protect perennials.
   d. Inspect for insect or disease problems on perennials. Monitor and control slugs on hostas and ligularias. Powdery mildew on phlox, monardas, and asters can be prevented with properly timed fungicides or use of disease-resistant varieties.
   e. Weed perennial bed as specified in "WEEDING" above.
   f. Prune branching species to increase density. Cut only the flowering stems after blooming. Do not remove the foliage.
3. The following fall cut back deteriorating plant parts unless instructed to retain for winter interest, e.g. Sedum Autumn Joy and ornamental grasses.
4. Long-term Care:
   a. Divide plants that overcrowd the space provided. Divide according to the species. Some need frequent dividing, e.g. asters and yarrow every two years; other rarely, if ever, e.g. peonies, hostas, and astilbe.
   b. For detailed information regarding the care of specific perennials, refer to *All About Perennials* by Ortho; *Perennials: How to Select, Grow and Enjoy* by Pamela Harper and Frederick McGouty, Hp Books Publisher; *Herbaceous Perennial Plants: A Treatise on their Identification, Culture and Garden Attributes* by Allan Armitage, Stipes Pub LLC.

### SUMMARY OF MAINTENANCE

**LAWN MAINTENANCE**

1. Soil analysis performed annually to determine pH. If pH does not fall within specified range, adjust according to soil test recommendations.
2. Maintain proper fertility and pH levels of the soil to provide an environment conducive to turf vitality for turf grasses.
3. Mow turf on a regular basis and as season and weather dictates. Remove no more than the top 1/3 of leaf blade. Clippings on paved and bed areas will be removed.
4. Aerate warm season turf areas to maintain high standards of turf appearance.
5. Apply pre-emergent to turf in two applications in early February and early April to extend barrier.
6. Apply post emergent as needed to control weeds.
7. Mechanically edge curbs and walks.
8. Apply non-selective herbicide, to mulched bed areas and pavement and remove excess runners to maintain clean defined beds.

**TREE, GROUNDCOVER AND SHRUB BED MAINTENANCE**

1. Prune shrubs, trees and groundcover to encourage healthy growth and create a natural appearance.
2. Mulch to be applied in February/March with a half rate in late summer to top dress.
3. Apply pre-emergent herbicides in February and April.
4. Manual weed control to maintain clean bed appearance.
5. Apply fungicides and insecticides as needed to control insects and disease.
6. Ornamental shrubs, trees and groundcovers to be fertilized three (3) times per year with a balanced material (January/February, April/May, and October/November)
7. Edge all mulched beds.
8. Remove all litter and debris.

**GENERAL MAINTENANCE**

1. Remove all man-made debris, blow edges.
2. Inspect grounds on a monthly basis and schedule inspection with Unit Operator.

Kathryn Talty
landscape architecture
Winnetka, Illinois 60093
847.612.5154
www.kmtaltydesign.com

| no. | revision description | initial | date |
|---|---|---|---|
| 1 | ISSUED FOR REVIEW | KMT | 03-29-22 |
| 2 | PER SITE PLAN ADJUSTMENTS | KMT | 04-12-22 |

PROPOSED DEVELOPMENT
2234-2240 RAND ROAD
PALATINE, IL

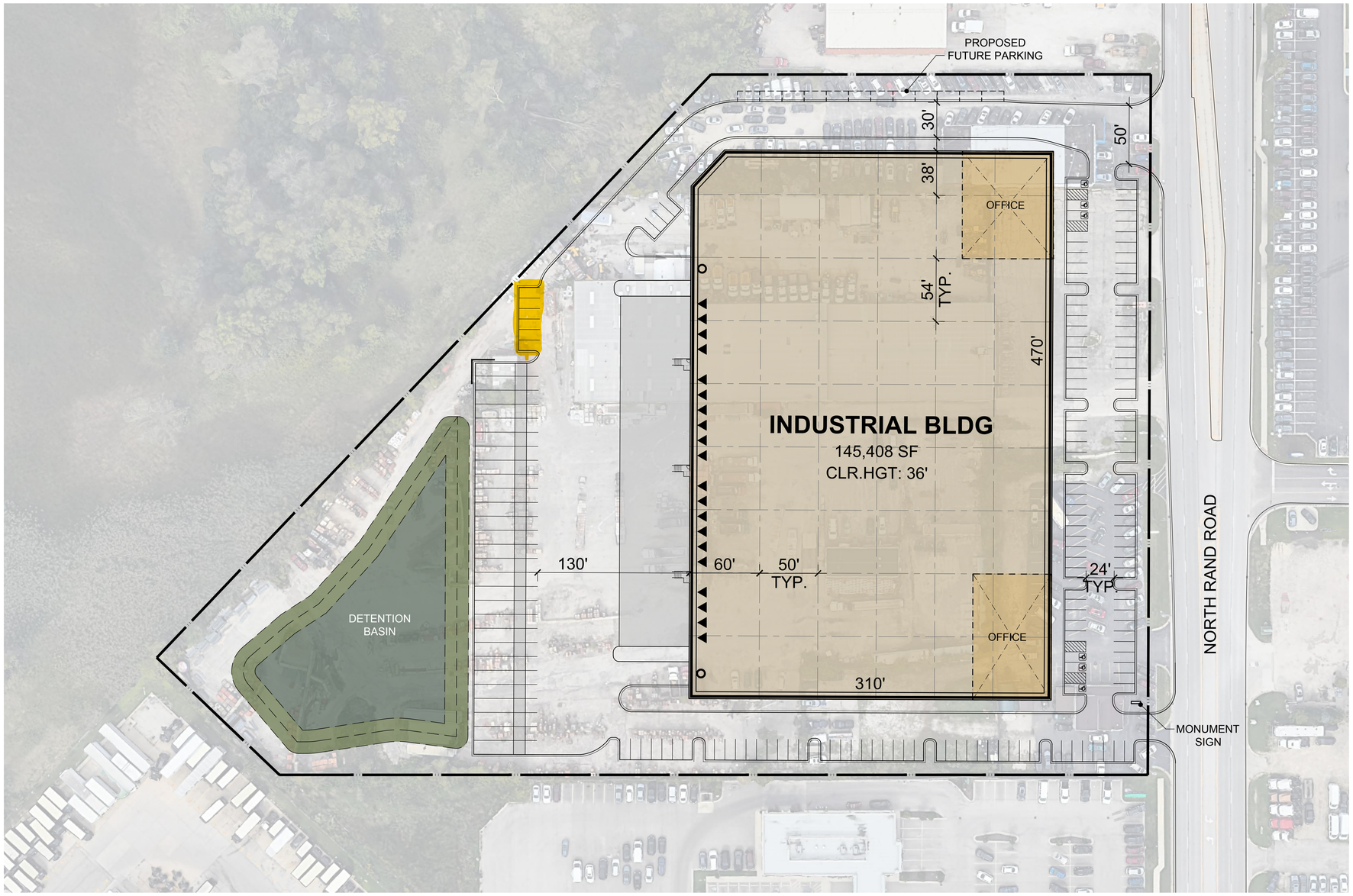
LANDSCAPE INSTALLATION AND MONITORING SPECIFICATIONS

date 01.28.22
drawn DJW
checked

job no. 22030

sheet no. L 2.2

Attachment: Missner Group - 2240-2296 N. Rand Road - Landscaping Plan (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




**PROJECT DATA:**

| | | |
|---|---|---|
| SITE AREA: | | |
| GROSS: | | 8.86 AC |
| | | 385,828 SF |
| DETENTION: | @ 9% | 34,746 SF |
| NET: | | 8.06 AC |
| | | 351,082 SF |
| BUILDING FOOTPRINT: | | 145,408 SF |
| BUILDING USE: | | |
| WAREHOUSE | | 130,867 SF |
| OFFICE | @ 10% | 14,541 SF |
| COVERAGE: | | |
| GROSS: | | 38% |
| NET: | | 41% |
| PARKING REQUIRED: | | |
| WAREHOUSE | 1/1000 SF | 131 STALLS |
| OFFICE | 1/300 SF | 48 STALLS |
| TOTAL | | 179 STALLS |
| PARKING PROVIDED: | | |
| AUTO: | | 141 STALLS |
| | | @0.97/1000 SF |
| *REQ. ACCESSIBLE* | | *5 STALLS* |
| TRAILER: | | 28 STALLS |
| FUTURE PARKING PROPOSED: | | |
| AUTO: | | 13 STALLS |
| TRUCK DOCKS: | | |
| ▲ DOCK-HIGH DOORS | | 20 |

**DEVELOPMENT STANDARDS:**

| | |
|---|---|
| ZONING: | M |
| MAX. F.A.R.: | 0.70 |
| MAX. COVERAGE: | TBD [1] |
| MAX. HEIGHT: | 60 FT |
| BUILDING SETBACKS: | |
| FRONT: | 30 FT |
| SIDE: | 15 FT |
| REAR: | 15 FT |
| LANDSCAPE SETBACKS: | |
| FRONT: | 5 FT |
| SIDE: | 2 FT |
| REAR: | 2 FT |
| LANDSCAPE REQ.: | [2] |
| OFF-STREET PARKING: | |
| STANDARD: | 9X19 |
| COMPACT: | 8X16 |
| DRIVE AISLE: | 25 FT |
| FIRE LANE: | TBD [1] |
| REQ. PARKING RATIO BY USE: | |
| WAREHOUSE: | 1/1000 SF |
| OFFICE: | 1/300 SF |

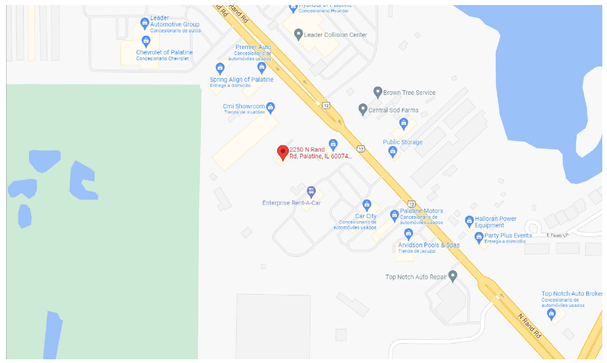
NOTES:
1 To be confirmed by city.
2 1 tree for every 10 parking stalls.

A PORTION OF THE ZONING INFORMATION IS UNKNOWN AT THIS TIME AND REQUIREMENTS MAY DIFFER THAN WHAT IS SHOWN IN THE SITE PLAN.

This conceptual design is based upon a preliminary review of entitlement requirements and on unverified and possibly incomplete site and/or building information, and is intended merely to assist in exploring how the project might be developed.

Stormwater Management Design:
AVERAGE REGIONAL REQUIRED
PROVIDED

Boundary Source:
CIVIL CAD FILE




1" = 40'
0 20 40 80 200
NORTH

THE MISSNER GROUP
EST. 1945

scheme: 08

Conceptual Site Plan

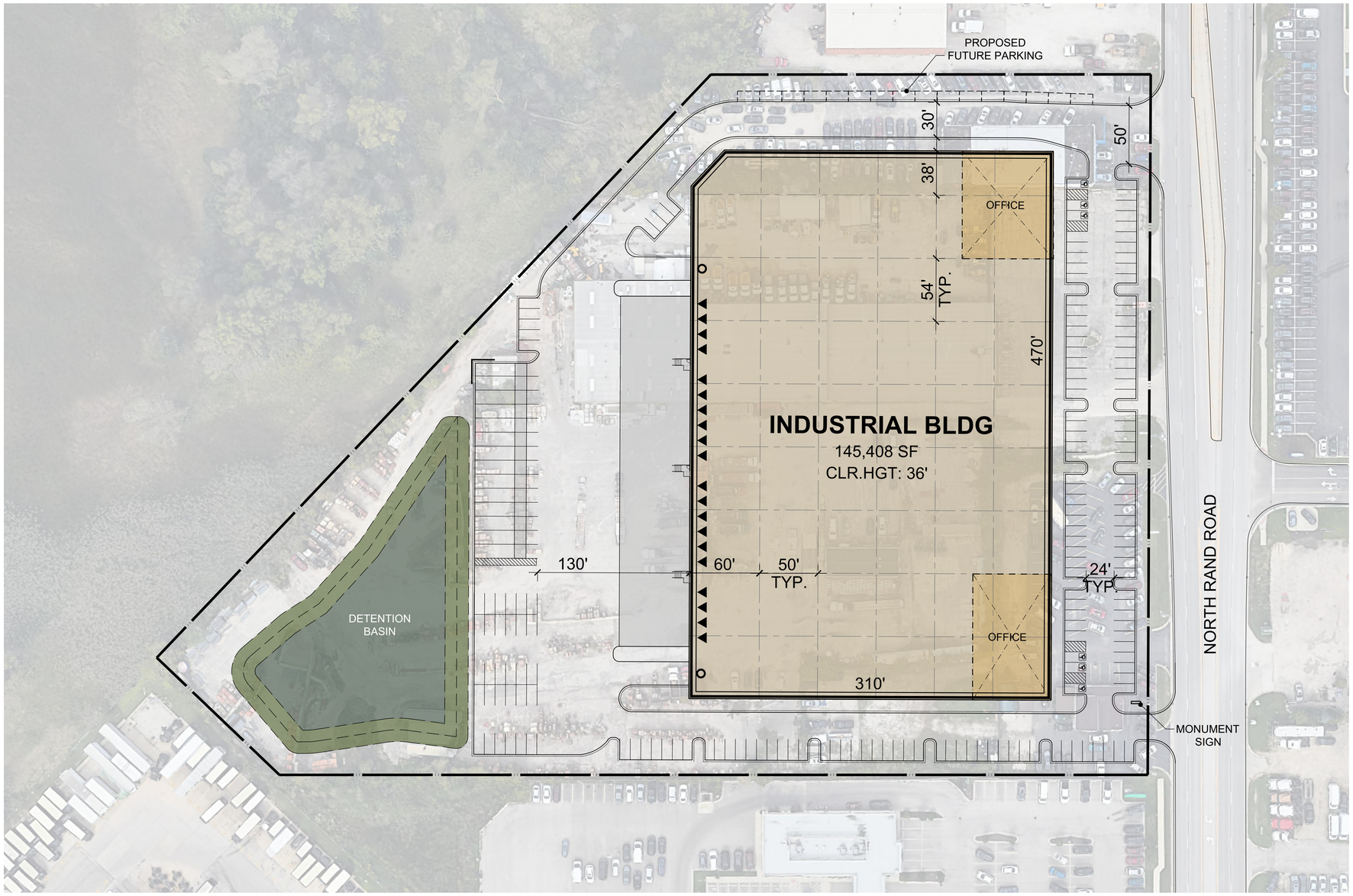
2250 North Rand Road
Palatine, IL 60074

WARE MALCOMB

CHI21-0193-00
06.01.2022

SHEET
1

Attachment: Site Plan (2240-2296 N Rand Rd - PFSUB, PPPD, Rezone)




| PROJECT DATA: | | |
|---|---|---|
| SITE AREA: | | |
| GROSS: | | 8.86 AC |
| | | 385,828 SF |
| DETENTION: | @ 9% | 34,746 SF |
| NET: | | 8.06 AC |
| | | 351,082 SF |
| BUILDING FOOTPRINT: | | 145,408 SF |
| BUILDING USE: | | |
| WAREHOUSE | | 130,867 SF |
| OFFICE | @ 10% | 14,541 SF |
| COVERAGE: | | |
| GROSS: | | 38% |
| NET: | | 41% |
| PARKING REQUIRED: | | |
| WAREHOUSE | 1/1000 SF | 131 STALLS |
| OFFICE | 1/300 SF | 48 STALLS |
| TOTAL | | 179 STALLS |
| PARKING PROVIDED: | | |
| AUTO: | | 169 STALLS |
| | | @1.16/1000 SF |
| *REQ. ACCESSIBLE* | | *6 STALLS* |
| TRAILER: | | 14 STALLS |
| FUTURE PARKING PROPOSED: | | |
| AUTO: | | 16 STALLS |
| TRUCK DOCKS: | | |
| ▲ DOCK-HIGH DOORS | | 20 |

| DEVELOPMENT STANDARDS: | | |
|---|---|---|
| ZONING: | | M |
| MAX. F.A.R.: | | 0.70 |
| MAX. COVERAGE: | | TBD [1] |
| MAX. HEIGHT: | | 60 FT |
| BUILDING SETBACKS: | | |
| FRONT: | | 30 FT |
| SIDE: | | 15 FT |
| REAR: | | 15 FT |
| LANDSCAPE SETBACKS: | | |
| FRONT: | | 5 FT |
| SIDE: | | 2 FT |
| REAR: | | 2 FT |
| LANDSCAPE REQ.: | | [2] |
| OFF-STREET PARKING: | | |
| STANDARD: | | 9X19 |
| COMPACT: | | 8X16 |
| DRIVE AISLE: | | 25 FT |
| FIRE LANE: | | TBD [1] |
| REQ. PARKING RATIO BY USE: | | |
| WAREHOUSE: | | 1/1000 SF |
| OFFICE: | | 1/300 SF |

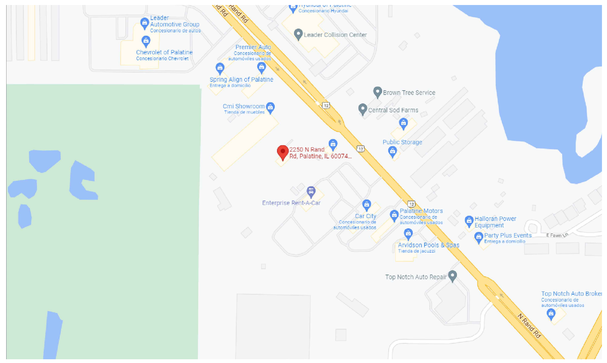
NOTES:
1 To be confirmed by city.
2 1 tree for every 10 parking stalls.

A PORTION OF THE ZONING INFORMATION IS UNKNOWN AT THIS TIME AND REQUIREMENTS MAY DIFFER THAN WHAT IS SHOWN IN THE SITE PLAN.

This conceptual design is based upon a preliminary review of entitlement requirements and on unverified and possibly incomplete site and/or building information, and is intended merely to assist in exploring how the project might be developed.

Stormwater Management Design:
AVERAGE REGIONAL REQUIRED PROVIDED

Boundary Source:
CIVIL CAD FILE




1" = 40'
0 20 40 80 200
NORTH

THE MISSNER GROUP
EST. 1945

scheme: 09

Conceptual Site Plan

2250 North Rand Road
Palatine, IL 60074

WARE MALCOMB

CHI21-0193-00
06.02.2022

SHEET
1

Attachment: ARCH site plan - additional parking exhibit (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Traffic Impact Study
## Proposed Industrial Development
Palatine, Illinois




Prepared For:

THE MISSNER GROUP
EST. 1945

KLOA
Kenig, Lindgren, O'Hara, Aboona, Inc.

April 7, 2022

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 1. Introduction

This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O'Hara, Aboona, Inc. (KLOA, Inc.) for a proposed industrial development to be located in Palatine, Illinois. The site, which currently contains Premier Auto, Contractors Material, Inc., and Auto Land Group is located on the west side of Rand Road (U.S. Route 12) approximately 600 feet south of its intersection with Lake Cook Road. As proposed, the site will be developed with an approximately 145,408 square-foot light industrial building with 148 parking spaces. Access to the development will be provided via a full movement access drive and a right-in/right-out access drive on Rand Road.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed development will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate traffic generated by the proposed development.

**Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site.

The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed development
- Directional distribution of the development traffic
- Vehicle trip generation for the development
- Future traffic conditions including access to the development
- Traffic analyses for the weekday morning and weekday evening peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the proposed parking supply

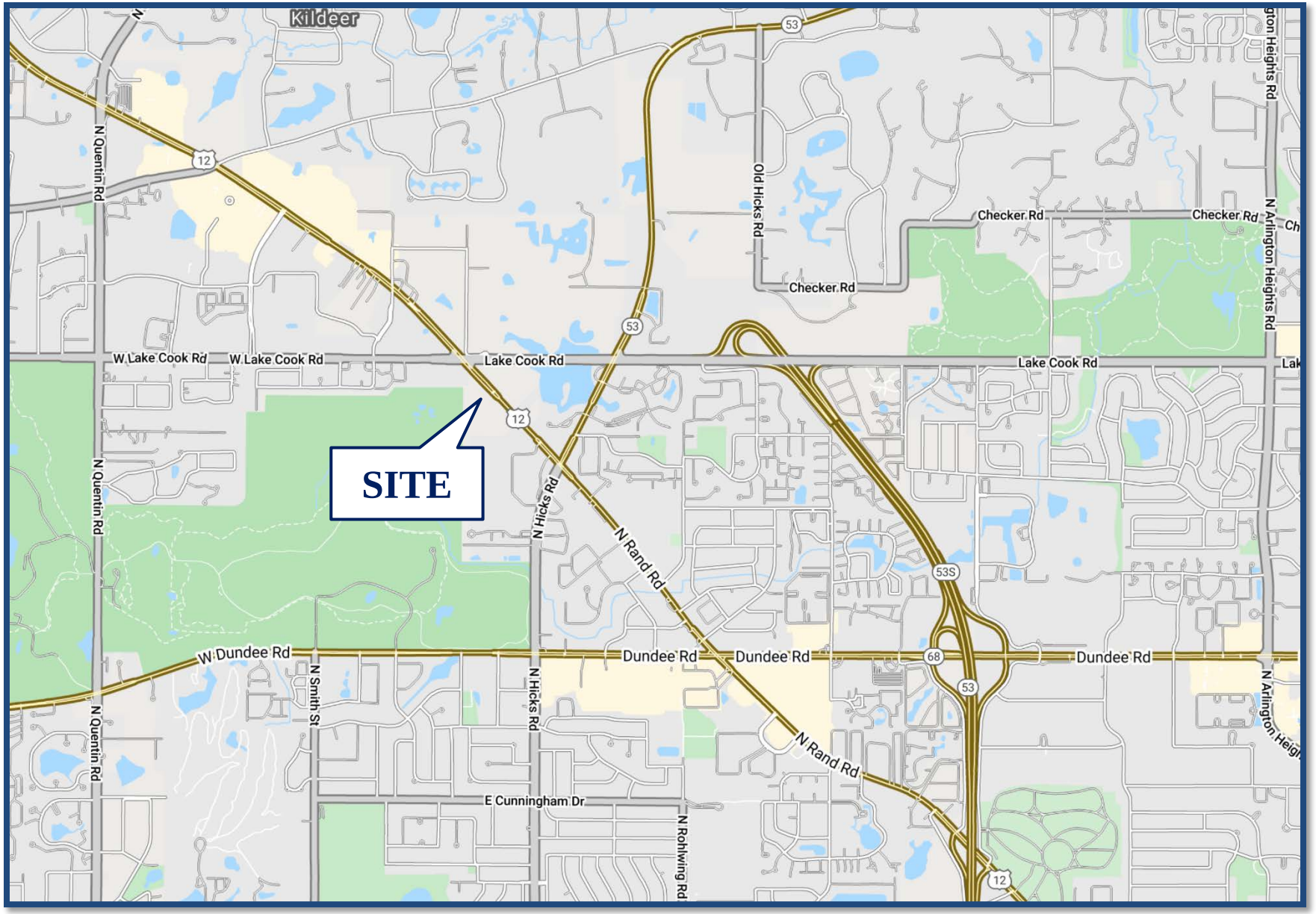
Traffic capacity analyses were conducted for the weekday morning and evening peak hours for the following conditions:

1. Existing Conditions – Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes in the surrounding area.

2. No-Build Conditions – Analyzes the capacity of the existing roadway system using existing peak hour traffic volumes increased by an ambient area growth factor not attributable to any particular development.

3. Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the existing traffic volumes, ambient area growth not attributable to any particular development, and the increase in traffic estimated to be generated by the proposed development.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




**Site Location**
*Proposed Industrial Development*
*Palatine, Illinois*

**Figure 1**



KLOA



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




**Aerial View of Site**
*Proposed Industrial Development*
*Palatine, Illinois*

**Figure 2**



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on field visits conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

## Site Location

The site, which currently contains Premier Auto, Contractors Material, Inc., and Auto Land Group, is bounded by Spring Align to the northwest, Rand Road to the northeast, Enterprise to the southeast, Deer Grove Forest Preserve to the west, and UPS to the south. Land uses in the site are a mixture of commercial, residential, and industrial and include Chevrolet of Palatine and Avers Auto Sales to the north, Car City and Palatine Motors to the south, and Hyundai of Palatine, Central Sod Farms, International Auto Brokers, and Public Storage on the northeast side of Rand Road.

## Existing Roadway System Characteristics

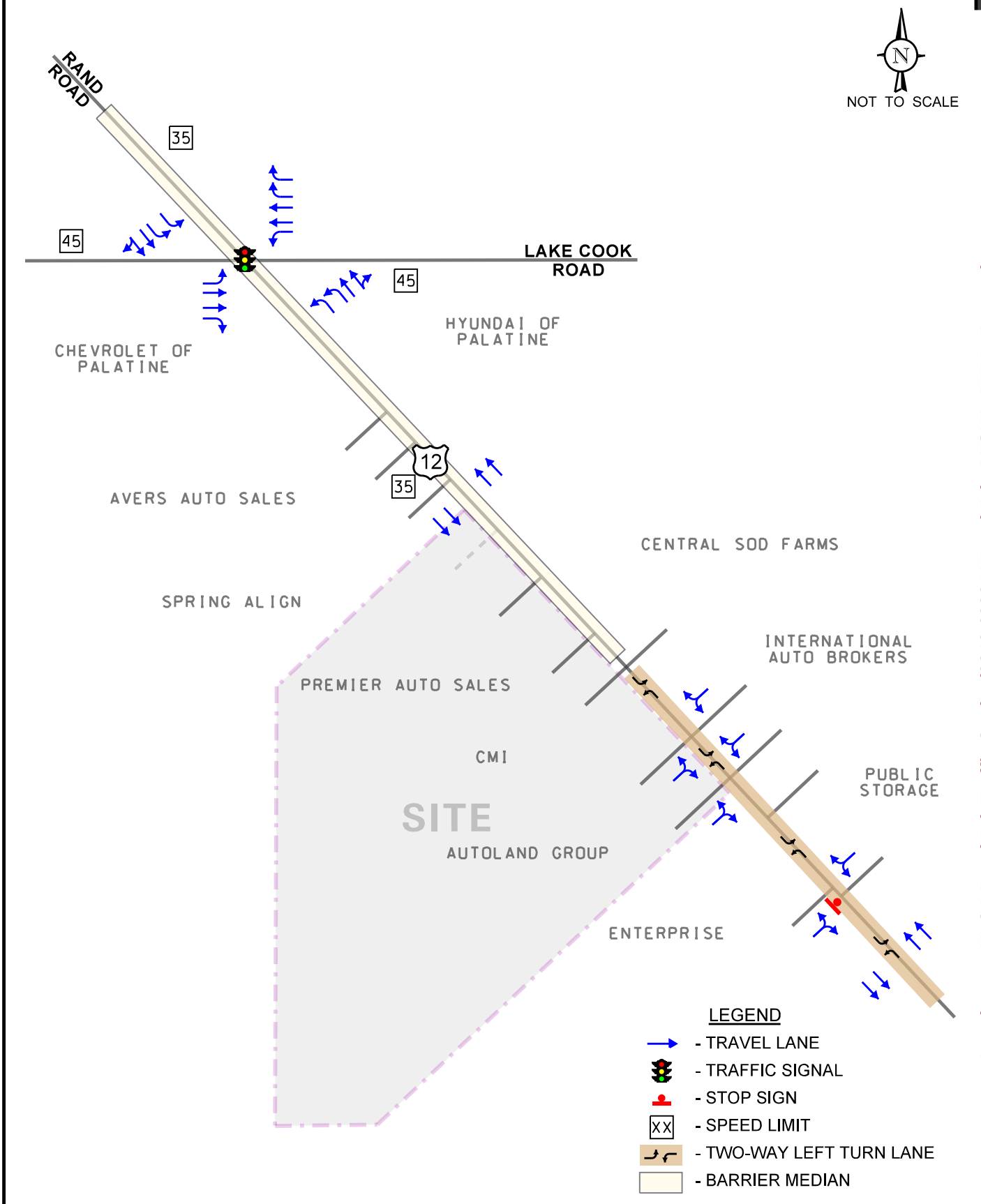
The characteristics of the existing roadways near the development are described below and illustrated in **Figure 3**.

*Rand Road (U.S. Route 12)* is a northwest-southeast, principal arterial roadway that provides two lanes in each direction generally divided by a two-way left-turn lane. At its signalized intersection with Lake Cook Road, Rand Road provides dual left-turn lanes, a through lane, and a shared through/right-turn lane on both approaches. At its unsignalized intersections with the access drives south of Lake Cook Road Rand Road provides two lanes in each direction. For approximately 700 feet south of Lake Cook Road, Rand Road is divided by a barrier median. South of the barrier median, Rand Road is divided by a two-way left-turn lane. This turn lane serves numerous access drives including the Auto Land Group, Central Sod Farm, International Auto Brokers, Enterprise, and Public Storage access drives that are analyzed in this study. Rand Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), is designated as a Strategic Regional Arterial (SRA) route, has a posted speed limit of 35 miles per hour, and carries an annual average daily traffic (AADT) volume of 49,700 vehicles northwest of Lake Cook Road and 14,900 vehicles southeast of Lake Cook Road (IDOT 2019).

*Lake Cook Road* is an east-west, principal arterial roadway that provides two lanes in each direction. At its signalized intersection with Rand Road, Lake Cook Road provides an exclusive left-turn lane, two through lanes, and an exclusive right-turn lane on the eastbound approach and an exclusive left-turn lane, two through lanes, and dual right-turn lanes on the westbound approach. Lake Cook Road is under the jurisdiction of the Cook County Division of Highways and Transportation (CCDTH), has a posted speed limit of 45 miles per hour, and carries AADT volume of 19,700 vehicles west of Rand Road and 43,600 vehicles east of Rand Road (IDOT 2018). East of Rand Road, Lake Cook Road is designated as an SRA route.



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




Industrial Development
Palatine, Illinois

Existing Roadway Characteristics

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 3

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## Existing Traffic Volumes

In order to determine current traffic conditions within the study area, KLOA, Inc. conducted peak period traffic counts utilizing Miovision Scout Collection Units at the following intersections:

- Rand Road with Lake Cook Road
- Rand Road with the north Auto Land Group access drive and the Central Sod Farms access drive
- Rand Road with the south Auto Land Group Access Drive and the north International Auto Brokers access drive
- Rand Road with the Enterprise access drive and the Public Storage access drive

The traffic counts were conducted on Wednesday, September 22, 2021 during the weekday morning (6:30 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:30 P.M.) peak periods. The results of the traffic counts show that the peak hours of traffic generally occur between 7:15 A.M. and 8:15 A.M. during the weekday morning peak period and between 4:30 P.M. and 5:30 P.M. during the weekday evening peak period. Copies of the traffic count summary sheets are included in the Appendix. The existing traffic volumes, inclusive of heavy vehicles, are illustrated in **Figure 4**. The existing heavy vehicle traffic volumes are illustrated in **Figure 5.**

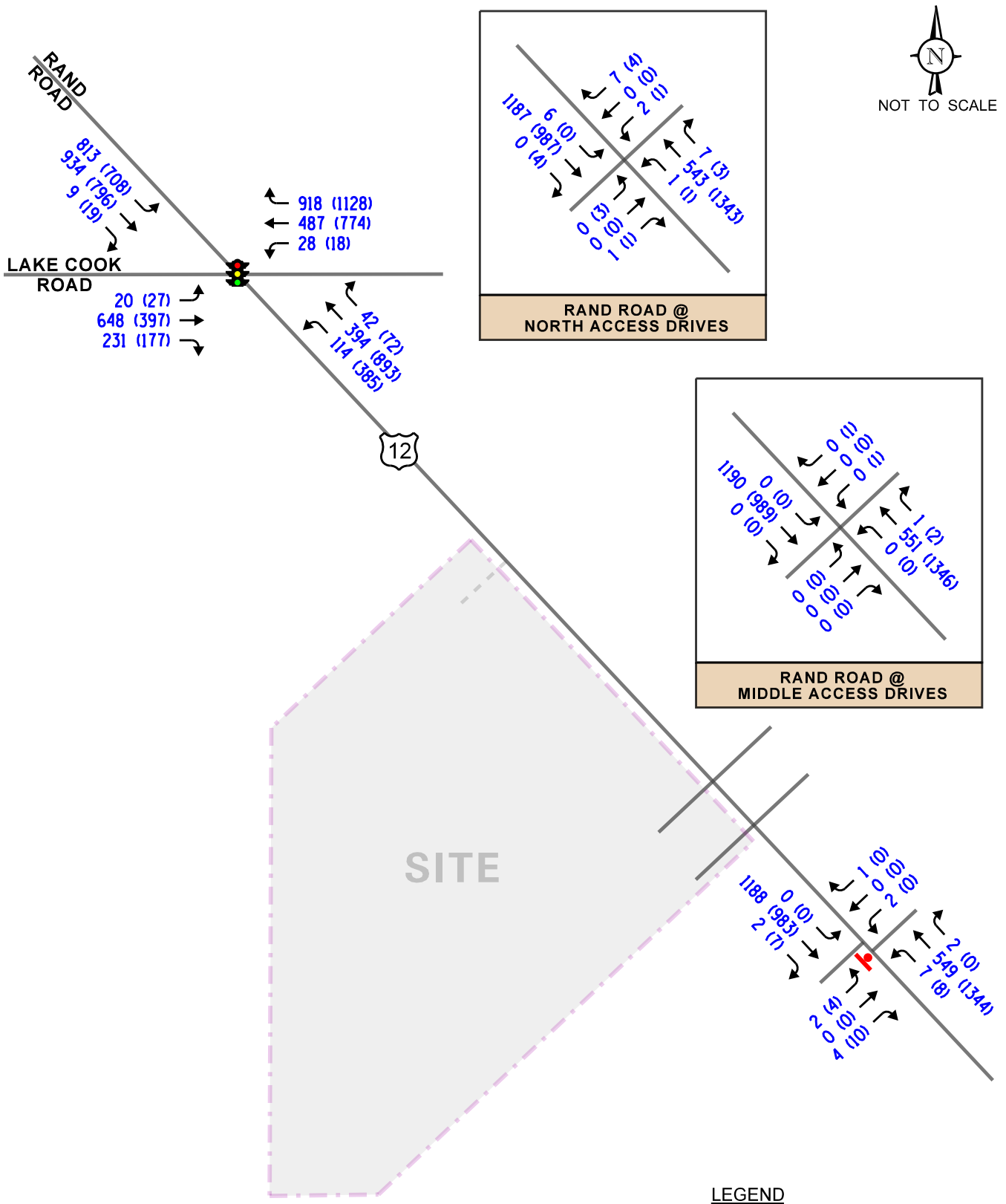
## Crash Analysis

KLOA, Inc. obtained crash data for the most recent available past five years (2016 to 2020) at the intersections of Rand Road with Lake Cook Road and along Rand Road at its intersections with the access drives analyzed in the study. A review of the crash data revealed no fatalities were reported at any of the study area intersections during the review period. A summary of the crash data for the intersections is shown in **Tables 1** and **2.** [1]

[1] IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in previous years since data prior to 2015 was physically located by bureau personnel.



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



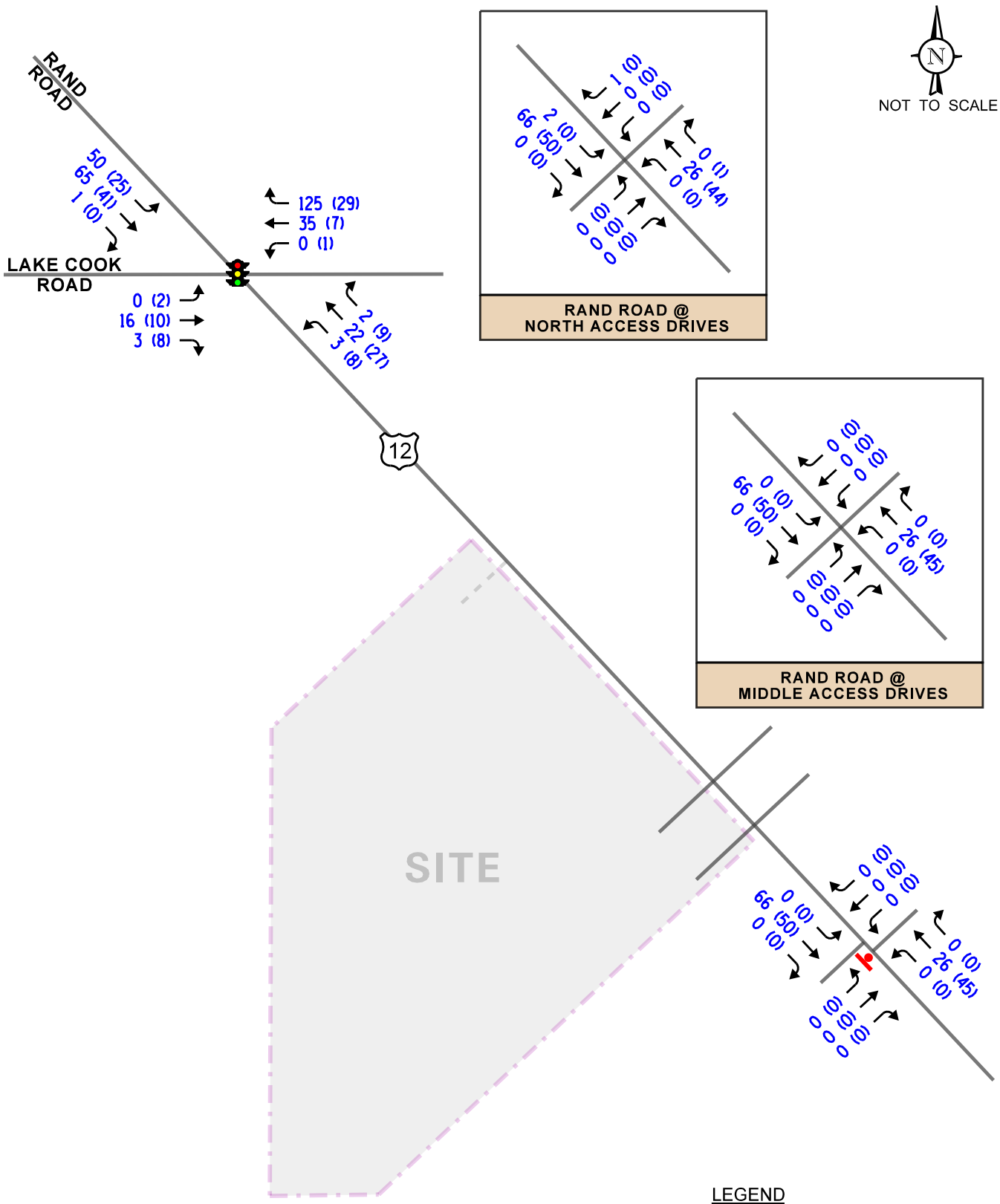

Industrial Development
Palatine, Illinois

Existing Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 4

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




LEGEND

00 - AM PEAK HOUR (7:15-8:15 AM)

(00) - PM PEAK HOUR (4:30-5:30 PM)

Industrial Development
Palatine, Illinois

Existing Truck Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 5

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Table 1
RAND ROAD WITH LAKE COOK ROAD - CRASH SUMMARY

| | Type of Accident Frequency | | | | | | |
|---|---|---|---|---|---|---|---|
| **Year** | **Angle** | **Object** | **Rear End** | **Sideswipe** | **Turning** | **Other** | **Total** |
| 2016 | 3 | 0 | 33 | 3 | 8 | 2 | 49 |
| 2017 | 1 | 0 | 24 | 4 | 8 | 0 | 37 |
| 2018 | 1 | 1 | 21 | 4 | 8 | 0 | 35 |
| 2019 | 1 | 0 | 27 | 8 | 11 | 1 | 48 |
| 2020 | 1 | 1 | 18 | 1 | 8 | 0 | 29 |
| **Total** | **7** | **2** | **123** | **20** | **43** | **3** | **198** |
| **Average/Year** | **1.4** | **<1.0** | **24.6** | **4.0** | **8.6** | **<2.0** | **39.6** |

Table 2
RAND ROAD WITH ACCESS DRIVES - CRASH SUMMARY

| | Type of Accident Frequency | | | | | | |
|---|---|---|---|---|---|---|---|
| **Year** | **Angle** | **Object** | **Rear End** | **Sideswipe** | **Turning** | **Other** | **Total** |
| 2016 | 0 | 0 | 2 | 0 | 1 | 0 | 3 |
| 2017 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total** | **0** | **0** | **2** | **1** | **2** | **0** | **5** |
| **Average/Year** | **--** | **--** | **<1.0** | **<1.0** | **<1.0** | **0** | **1.0** |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 3. Traffic Characteristics of the Proposed Development

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

## Proposed Site and Development Plan

As proposed, the site will be developed with an approximately 145,408 square-foot industrial building. The development will provide 45 parking spaces for employees on the southeast side of the site, 86 spaces on the northeast side of the building, and 17 spaces on the northwest side of the building for a total of 148 employee parking spaces. 28 trailer storage spaces will be provided on the southwest side of the site. Access to the development is proposed to be provided as follows:

- A full movement access drive on the southwest side of Rand Road located approximately 1,045 feet southeast of Lake Cook Road that will serve the employee parking lots. This access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. This access drive will replace an existing access drive at this location. Inbound left-turn movements at this access drive can be accommodated within the existing two-way left-turn lane on Rand Road.

- A right-in/right-out access drive on the southwest side of Rand Road located approximately 515 feet south of Lake Cook Road that will serve the employee parking lots and truck loading bays. This access drive will provide one inbound lane and one outbound lane restricted to right-turn movements only via the barrier median on Rand Road. Outbound movements will be under stop sign control. This access drive will replace an existing access drive at this location.

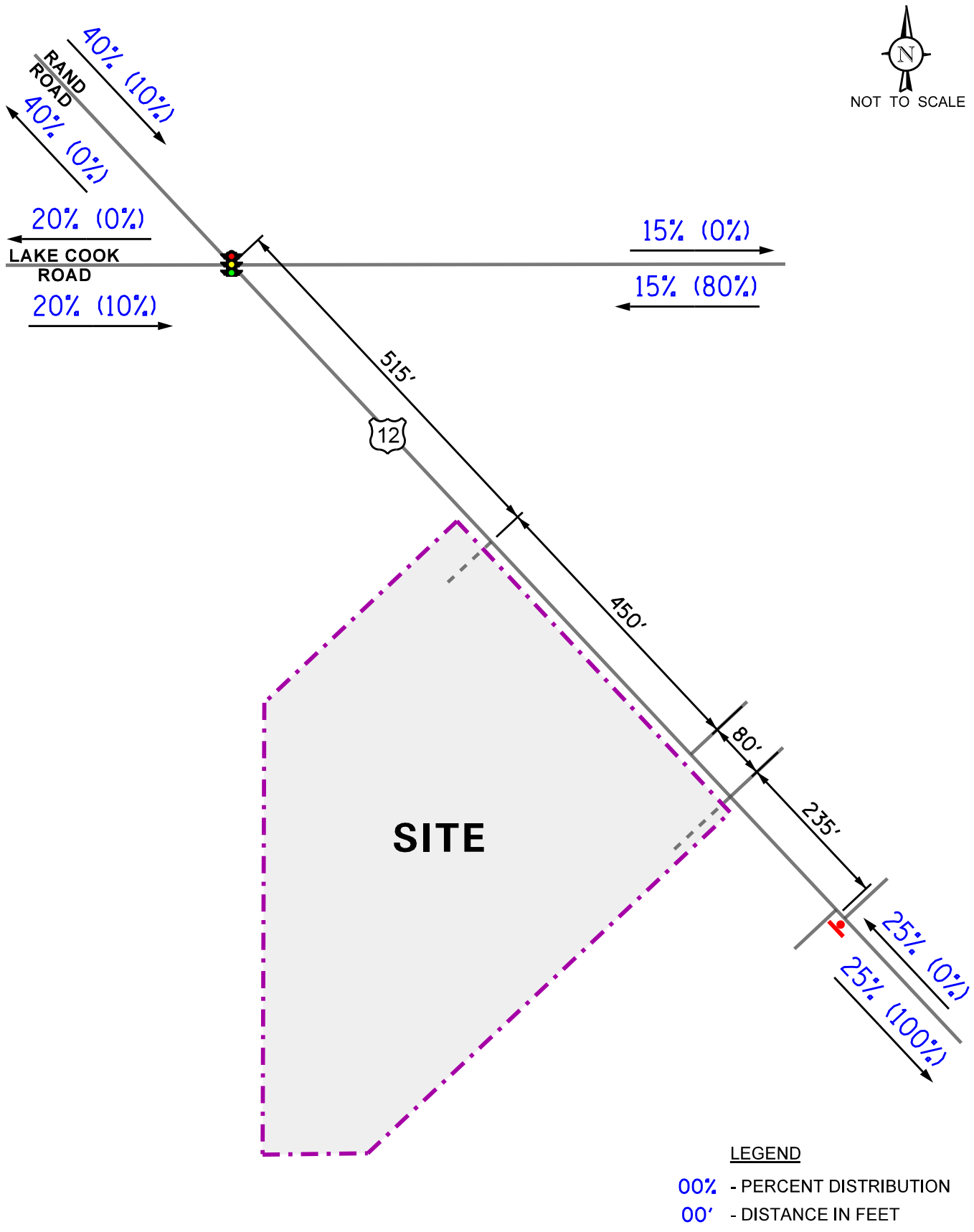
It should be noted that the proposed development will replace six existing access drives along the site frontage of which two are full movement access drives. This reduction in conflict points will improve safety and traffic flow on Rand Road. This is especially true given the proximity of the development to the signalized intersection of Rand Road with Lake Cook Road and the proximity of the other numerous existing access drives on Rand Road. A copy of the preliminary site plan is included in the appendix.

## Directional Distribution

The directions from which employees and truck traffic will approach and depart the site were estimated based on existing travel patterns, as determined from the traffic counts. It is important to note that access to Illinois Route 53 will primarily be provided via the Dundee Road and Rand Road interchanges south of the site. Given the restricted nature of the access drive serving the truck loading bays, all truck traffic will approach the site from the north on Rand Road and exit the site to the south on Rand Road. **Figure 6** illustrates the directional distribution of the site-generated traffic. Figure 6 also shows the distance, in feet, between the existing and proposed access intersections.



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




Industrial Development
Palatine, Illinois

Estimated Directional Distribution

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.
Job No: 21-242 Figure: 6

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## Development-Generated Traffic Volumes

The number of trips estimated to be generated by the proposed development was based on trip generation rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 11th Edition. The "General Light Industrial" (Land-Use Code 110) rate was used for the development. **Table 3** summarizes the trips projected to be generated by the development during the peak hours and on a daily basis. **Tables 4** summarizes the truck trips projected to be generated by the development throughout the day. Copies of the ITE trip generation sheets are included in the Appendix.

Table 3
ESTIMATED PEAK HOUR AND DAILY TRIP GENERATION

| ITE Land-Use Code | Type/Size | Weekday Morning Peak Hour | | | Weekday Evening Peak Hour | | | Daily Trips | |
|---|---|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total | In | Out |
| **110** | **General Light Industrial (145,408 s.f.)[1]** | **90** | **13** | **103** | **13** | **81** | **94** | **299** | **299** |
| | Truck Trips[2] | 3 | 3 | 6 | 1 | 1 | 2 | 18 | 18 |
| | Passenger Vehicle Trips[3] | 87 | 10 | 97 | 12 | 80 | 92 | 281 | 281 |

1 - Based on the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 11th Edition
2 – Daily rate based on ITE Manual.
3 – Equal to total trips less truck trips.

Table 4
ESTIMATED 24-HOUR TRUCK TRIP GENERATION

| Hour | Volume of Site Generated Truck Traffic General Light Industrial (ITE Land-Use Code 110) – 145,260 s.f. | | | | | |
|---|---|---|---|---|---|---|
| | Weekday AM | | | Weekday PM | | |
| | In | Out | Total | In | Out | Total |
| 12:00 | 0 | 0 | **0** | 1 | 1 | **2** |
| 1:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 2:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 3:00 | 0 | 0 | **0** | 2 | 2 | **4** |
| 4:00 | 0 | 0 | **0** | 1 | 1 | **2** |
| 5:00 | 0 | 0 | **0** | 0 | 0 | **0** |
| 6:00 | 0 | 0 | **0** | 0 | 0 | **0** |
| 7:00 | 2 | 1 | **3** | 0 | 0 | **0** |
| 8:00 | 2 | 2 | **4** | 0 | 0 | **0** |
| 9:00 | 3 | 3 | **6** | 0 | 0 | **0** |
| 10:00 | 2 | 3 | **5** | 0 | 0 | **0** |
| 11:00 | 1 | 1 | **2** | 0 | 0 | **0** |

Based on daily truck trips (Table A) and ITE's Hourly Distribution of Entering and Exiting Truck Trips tables.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 4. Projected Traffic Conditions

The total projected traffic volumes include the existing traffic volumes, increase in background traffic due to ambient growth, and the traffic estimated to be generated by the proposed subject development.

## Development Traffic Assignment

The estimated weekday morning and evening traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 6). The new passenger traffic assignment for the development is illustrated in **Figure 7** and the new truck traffic assignment is illustrated in **Figure 8.**

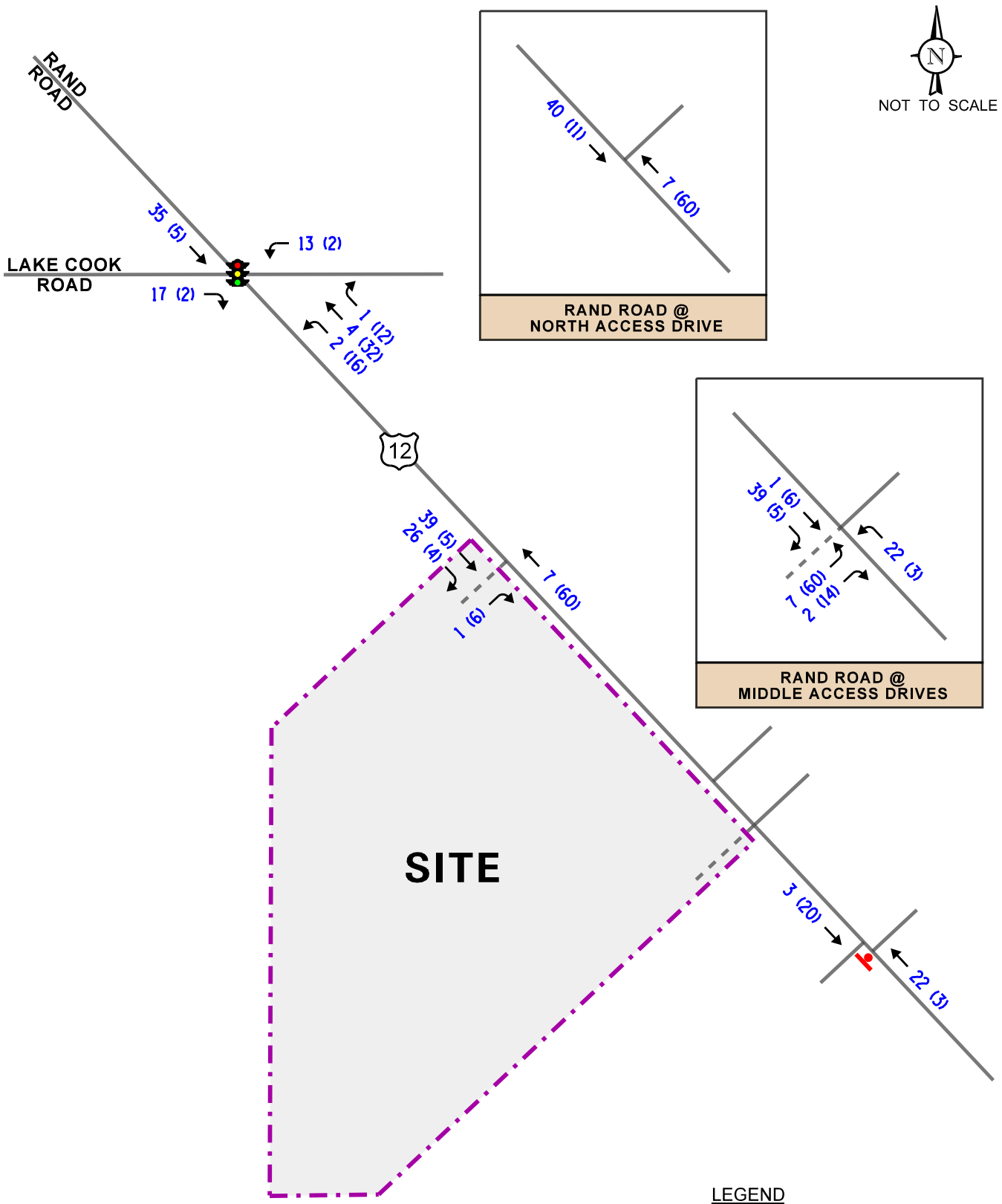
## Background (No-Build) Traffic Conditions

The existing traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any planned development). Based on AADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes were increased by an annually compounded growth rate of 0.4 percent per year for seven years (buildout year plus five years) for a total of 2.8 percent. The projected Year 2028 no-build traffic volumes, which include the projected existing traffic volumes increased by the regional growth factor, are illustrated in **Figure 9**.

## Total Projected Traffic Volumes

The development-generated traffic (Figures 7 and 8) was added to the Year 2028 no-build traffic volumes to determine the projected Year 2028 total projected traffic volumes, as shown in **Figure 10**.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



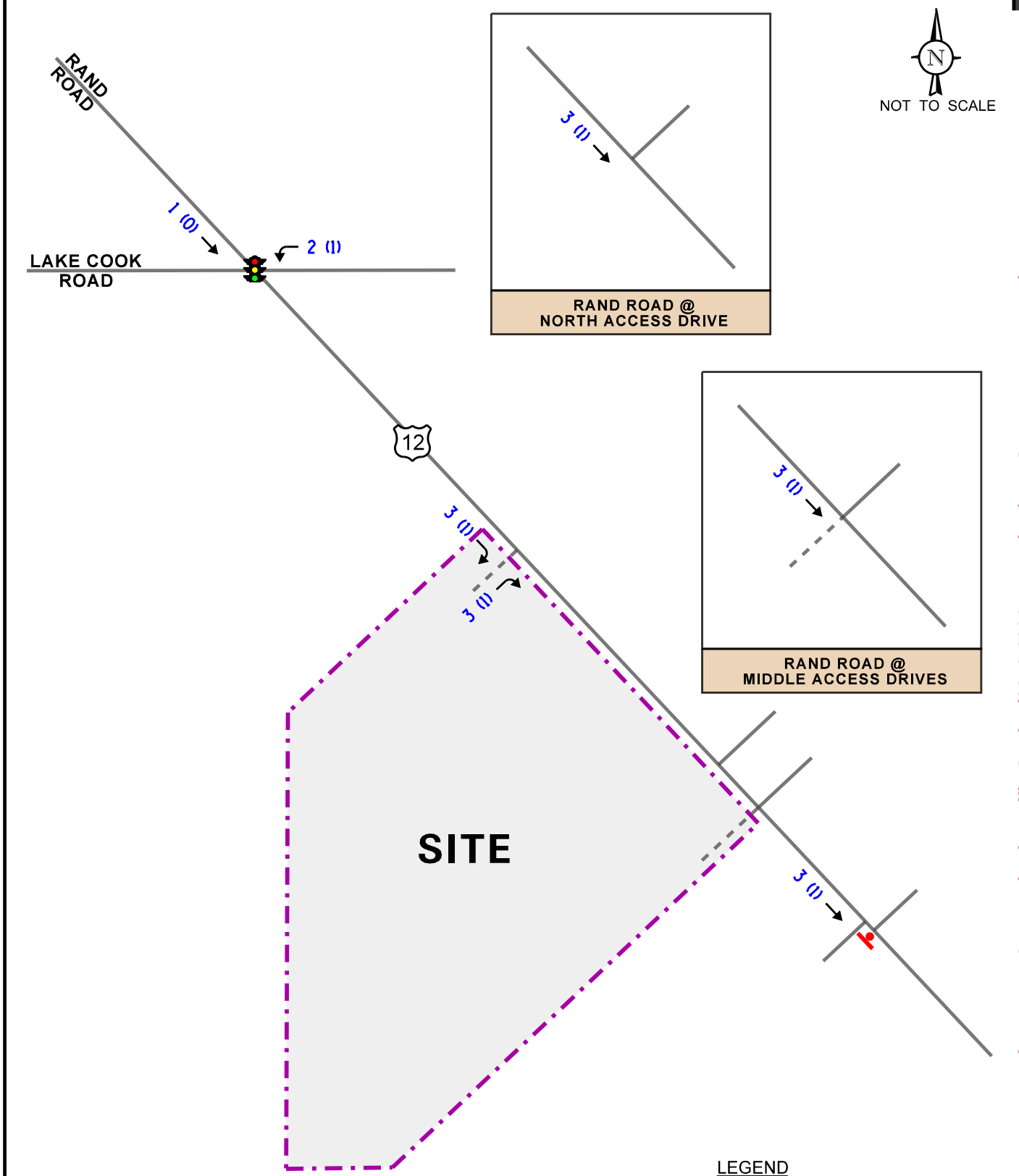

Industrial Development
Palatine, Illinois

Estimated Site-Generated
Passenger Vehicle Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 7

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



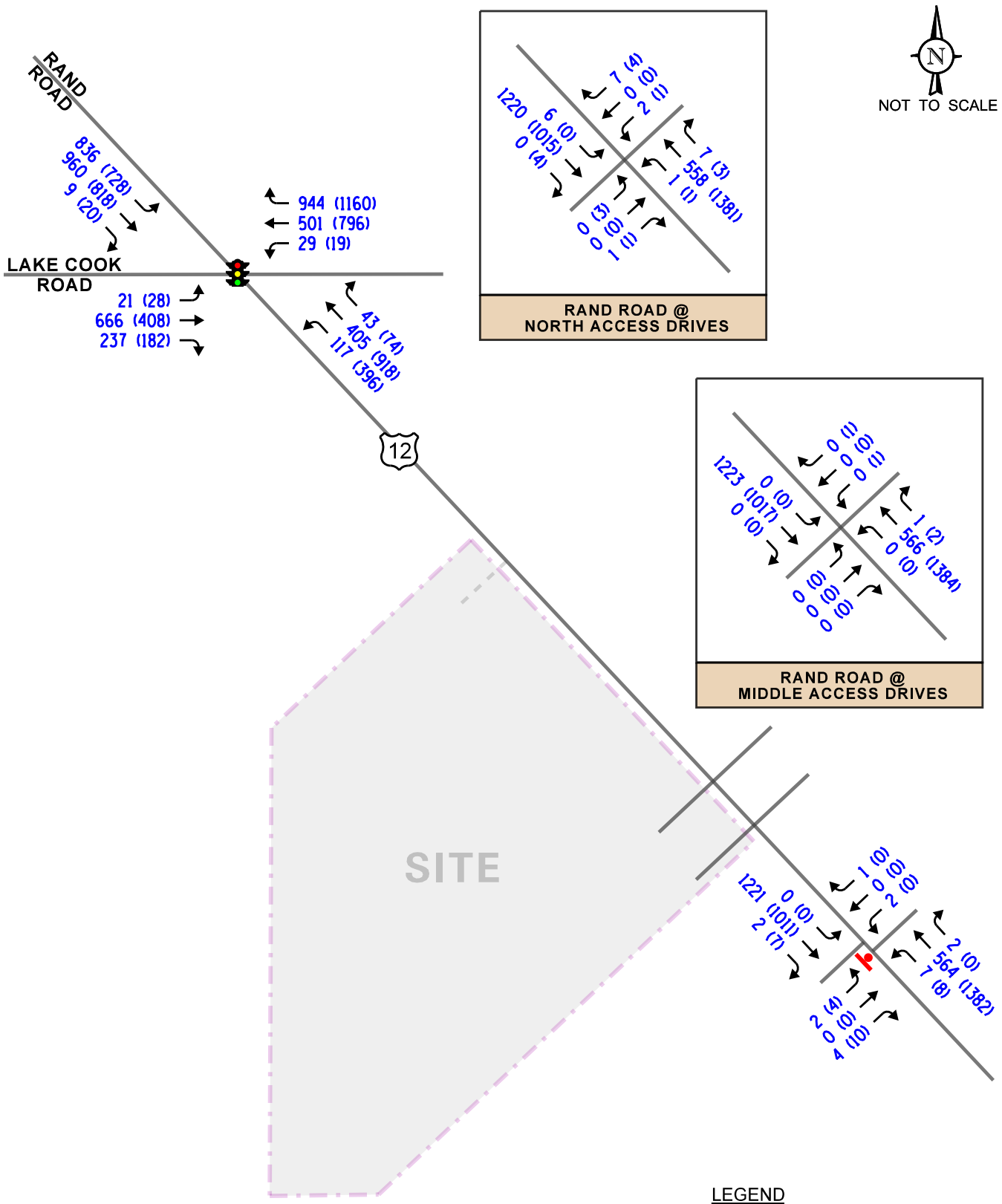

Industrial Development
Palatine, Illinois

Estimated Site-Generated
Truck Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 8

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)



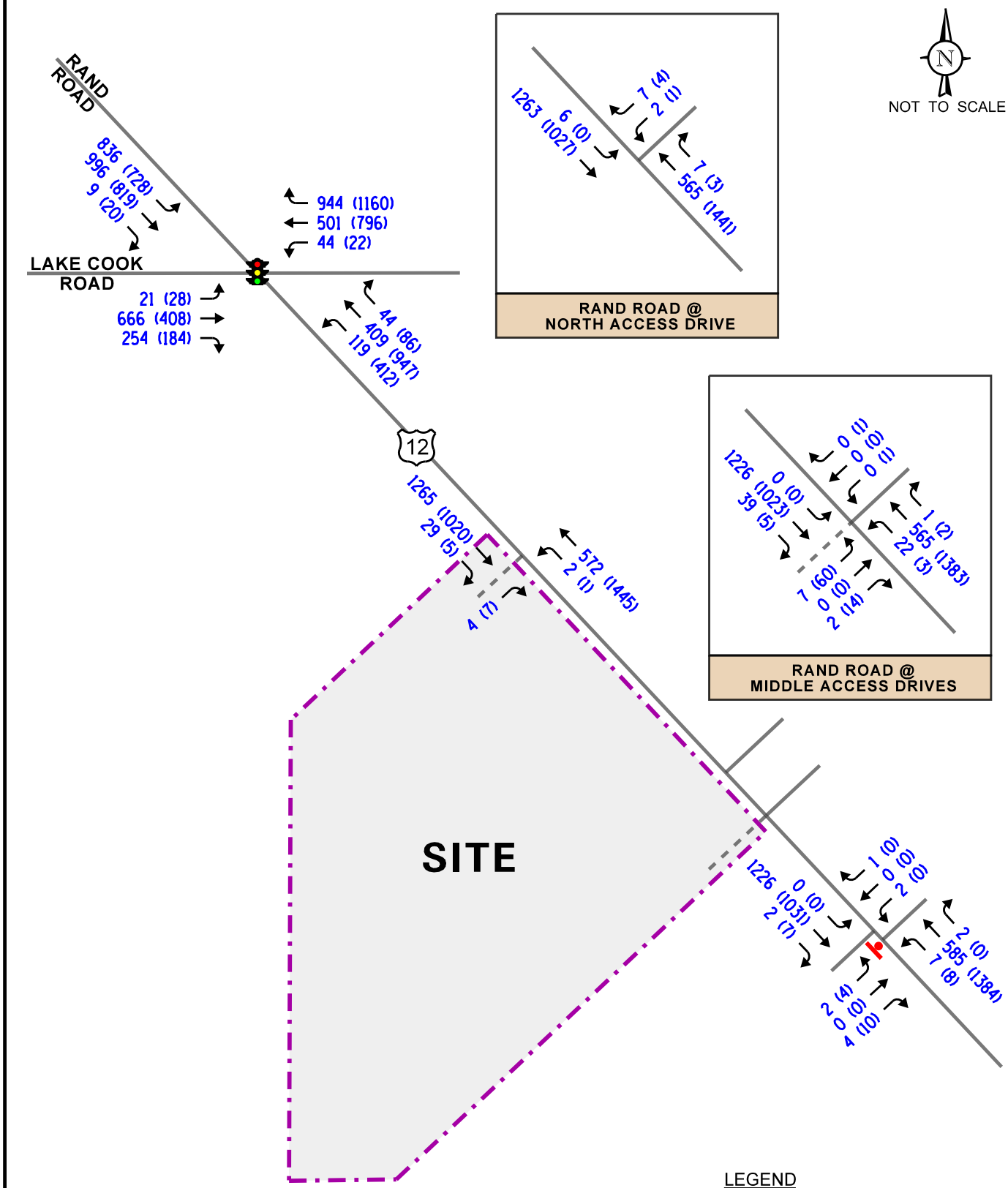

Industrial Development
Palatine, Illinois

Year 2027 No-Build Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 9

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




Industrial Development
Palatine, Illinois

Year 2027 Total Projected Traffic Volumes

KLOA
Kenig,Lindgren,O'Hara,Aboona,Inc.

Job No: 21-242 Figure: 10

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning and evening peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

## Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning and evening peak hours for the existing, Year 2028 no-build, and Year 2028 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the traffic-signal controlled intersections were accomplished using actual cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the existing, Year 2028 no-build, and Year 2028 total projected conditions are presented in **Tables 5** through **8**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Table 5
CAPACITY ANALYSIS RESULTS – SIGNALIZED - RAND ROAD WITH LAKE COOK ROAD

| | Peak Hour | Eastbound (Lake Cook Road) | | | Westbound (Lake Cook Road) | | | Northwest-bound (Rand Road) | | | Southeast-bound (Rand Road) | | | Overall |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | L | T | R | L | T | R | L | T | R | L | T | R | |
| Existing Conditions | Weekday Morning Peak Hour | C 30.5 | D 51.7 | D 36.5 | C 32.0 | D 47.7 | B 17.8 | E 79.6 | D 53.3 | | D 52.7 | C 27.9 | | D 39.8 |
| | | D – 47.3 | | | C – 28.2 | | | E – 58.8 | | | D – 39.4 | | | |
| | Weekday Evening Peak Hour | D 37.5 | D 47.5 | C 29.9 | C 34.2 | E 59.0 | C 33.3 | F 95.0 | D 51.7 | | E 74.6 | C 30.9 | | D 50.7 |
| | | D – 41.8 | | | D – 43.7 | | | E – 64.1 | | | D – 51.2 | | | |
| Year 2028 No-Build Conditions | Weekday Morning Peak Hour | C 30.4 | D 51.4 | D 36.4 | C 32.0 | D 47.4 | B 17.2 | F 81.1 | D 55.1 | | D 52.4 | C 28.6 | | D 39.9 |
| | | D – 47.1 | | | C – 27.8 | | | E – 60.5 | | | D – 39.7 | | | |
| | Weekday Evening Peak Hour | D 37.9 | D 47.3 | C 29.7 | C 34.2 | E 59.5 | C 33.8 | F 95.9 | D 54.7 | | E 76.8 | C 31.7 | | D 51.8 |
| | | D – 41.7 | | | D – 44.1 | | | E – 66.4 | | | D – 52.7 | | | |
| Year 2028 Total Projected Conditions | Weekday Morning Peak Hour | C 29.7 | D 52.2 | D 37.8 | C 31.9 | D 45.6 | B 15.9 | F 81.9 | E 57.5 | | D 52.4 | C 30.7 | | D 40.2 |
| | | D – 47.8 | | | C – 26.4 | | | E – 62.6 | | | D – 40.6 | | | |
| | Weekday Evening Peak Hour | D 37.8 | D 47.5 | C 29.8 | C 34.5 | E 59.5 | C 34.0 | F 103.1 | E 57.8 | | E 75.3 | C 31.7 | | D 53.0 |
| | | D – 41.8 | | | D – 44.3 | | | E – 70.7 | | | D – 52.0 | | | |

Letter denotes Level of Service L – Left-Turns R – Right-Turns
Delay is measured in seconds. T – Through

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Table 6
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS
EXISTING TRAFFIC CONDITIONS

| Intersection | Weekday Morning Peak Hour | | Weekday Evening Peak Hour | |
|---|---|---|---|---|
| | LOS | Delay | LOS | Delay |
| **Rand Road with the North Auto Land Group Access Drive and the Central Sod Farms Access Drive** | | | | |
| • Northeast-bound Approach (ALG) | B | 13.4 | C | 23.2 |
| • Southwest-bound Approach (CSF) | B | 12.3 | C | 18.6 |
| • Northwest-bound Left Turn (Rand Road) | B | 11.5 | B | 10.2 |
| • Southeast-bound left Turn (Rand Road) | A | 9.5 | -- | -- |
| **Rand Road with the South Auto Land Group Access Drive and the North International Auto Brokers Access Drive** | | | | |
| • Northeast-bound Approach (ALG) | -- | -- | -- | -- |
| • Southwest-bound Approach (IAB) | -- | -- | C | 24.7 |
| • Northwest-bound Left Turn (Rand Road) | -- | -- | -- | -- |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |
| **Rand Road with the Enterprise Access Drive and the Public Storage Access Drive** | | | | |
| • Northeast-bound Approach (Enterprise) | C | 18.9 | C | 16.5 |
| • Southwest-bound Approach (PS) | C | 15.9 | -- | -- |
| • Northwest-bound Left Turn (Rand Road) | B | 11.6 | B | 10.2 |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |

LOS = Level of Service
Delay is measured in seconds.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Table 7
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS
YEAR 2028 NO-BUILD TRAFFIC CONDITIONS

| Intersection | Weekday Morning Peak Hour | | Weekday Evening Peak Hour | |
|---|---|---|---|---|
| | LOS | Delay | LOS | Delay |
| **Rand Road with the North Auto Land Group Access Drive and the Central Sod Farms Access Drive** | | | | |
| • Northeast-bound Approach (ALG) | B | 13.7 | C | 24.0 |
| • Southwest-bound Approach (CSF) | B | 12.5 | C | 19.2 |
| • Northwest-bound Left Turn (Rand Road) | B | 11.7 | B | 10.4 |
| • Southeast-bound left Turn (Rand Road) | A | 9.6 | -- | -- |
| **Rand Road with the South Auto Land Group Access Drive and the North International Auto Brokers Access Drive** | | | | |
| • Northeast-bound Approach (ALG) | -- | -- | -- | -- |
| • Southwest-bound Approach (IAB) | -- | -- | D | 25.8 |
| • Northwest-bound Left Turn (Rand Road) | -- | -- | -- | -- |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |
| **Rand Road with the Enterprise Access Drive and the Public Storage Access Drive** | | | | |
| • Northeast-bound Approach (Enterprise) | C | 19.5 | C | 17.0 |
| • Southwest-bound Approach (PS) | C | 16.2 | -- | -- |
| • Northwest-bound Left Turn (Rand Road) | B | 11.8 | B | 10.4 |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |

LOS = Level of Service
Delay is measured in seconds.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Table 8
CAPACITY ANALYSIS RESULTS – UNSIGNALIZED INTERSECTIONS
YEAR 2028 TOTAL PROJECTED TRAFFIC CONDITIONS

| Intersection | Weekday Morning Peak Hour | | Weekday Evening Peak Hour | |
|---|---|---|---|---|
| | LOS | Delay | LOS | Delay |
| **Rand Road with the Central Sod Farms Access Drive** | | | | |
| • Southwest-bound Approach (CSF) | B | 12.1 | C | 18.4 |
| • Southeast-bound left Turn (Rand Road) | A | 9.6 | -- | -- |
| **Rand Road with the Proposed South Access Drive and the North International Auto Brokers Access Drive** | | | | |
| • Northeast-bound Approach (Site) | D | 28.8 | E | 38.1 |
| • Southwest-bound Approach (IAB) | -- | -- | D | 26.1 |
| • Northwest-bound Left Turn (Rand Road) | B | 12.3 | B | 10.4 |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |
| **Rand Road with the Enterprise Access Drive and the Public Storage Access Drive** | | | | |
| • Northeast-bound Approach (Enterprise) | C | 19.5 | C | 17.2 |
| • Southwest-bound Approach (PS) | C | 16.5 | -- | -- |
| • Northwest-bound Left Turn (Rand Road) | B | 11.8 | B | 10.5 |
| • Southeast-bound left Turn (Rand Road) | -- | -- | -- | -- |
| **Rand Road with the Proposed North Site Access Drive** | | | | |
| • Northeast-bound Approach (Site) | C | 19.1 | B | 13.0 |

LOS = Level of Service
Delay is measured in seconds.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the development-generated traffic.

### *Rand Road with Lake Cook Road*

The results of the capacity analysis indicate that overall, this intersection currently operates at Level of Service (LOS) D during the weekday morning and weekday evening peak hours. Further, all approaches operate at LOS E or better during both peak hours. Under Year 2028 no-build traffic conditions, this intersection is projected to continue to operate at LOS D during the weekday morning and weekday evening peak hours with increases in delay of approximately one second or less.

Under Year 2028 total projected traffic conditions, this intersection is projected to continue to operate at LOS D during the weekday morning peak and weekday evening peak hours with increases in delay of less than one second over no-build conditions. Further, all approaches are projected to continue to operate at the same LOS during both peak hours. Overall, the proposed development will increase the volume of traffic at this intersection by less than two percent and the traffic estimated to be generated by the proposed development will have a limited impact on the operations of this intersection.

### *Rand Road with the North Auto Land Group Access Drive and the Central Sod Farms Access Drive*

The results of the capacity analyses indicate that the critical movements at this intersection currently operate at LOS B or better during the weekday morning peak hour and LOS C or better during the weekday evening peak hour. Assuming the projected Year 2028 no-build traffic volumes, the critical movements are projected to continue to operate at same LOS during both peak hours.

Under Year 2028 total projected conditions, the North Auto Land Group access drive will be removed. The remaining critical movements are projected to continue to operate at the same LOS during both peak hours. As such the intersection has sufficient reserve capacity to accommodate the development-generated traffic.

### *Rand Road with the South Auto Land Group Access Drive/Proposed Site Access Drive and the North International Auto Brokers Access Drive*

The results of the capacity analyses indicate that the critical movements at this intersection currently operate at LOS C or better during the weekday morning and weekday evening peak hours Assuming the projected Year 2028 no-build traffic volumes, the critical movements are projected to operate at LOS D or better.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

As proposed, the south Auto Land Group access drive will be replaced with the proposed South Site Access Drive. The proposed access drive will provide one inbound lane and one outbound lane with outbound movements under stop sign control. Left-turn movements from Rand Road will continue to be accommodated by the existing two-way left-turn lane on Rand Road.

Under Year 2028 total projected traffic conditions, outbound movements from the site access drive are projected to operate at LOS D during the weekday morning peak hour and LOS E during the weekday evening peak hour with a volume-to-capacity ratio of less than one and 95$^{th}$ percentile queues of one to two vehicles. Further, northwest-bound left-turn movements into the site are projected to operate at LOS B during the weekday morning and weekday evening peak hour with 95$^{th}$ percentile queues of one to two vehicles, which can be accommodated within the existing two-way left-turn lane. Turing movements in and out of the existing International Auto Brokers access drive are projected to continue to operate at the same LOS during both peak hours.

When the projected traffic volumes are compared to the turn lane warrant guidelines published in Chapter 36 of the IDOT *Bureau of Design and Environment* (BDE) Manual, an exclusive right-turn lane serving the proposed access drive will not be warranted during either peak hour. As such, this access drive will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

*Rand Road with the Enterprise Access Drive and the Public Storage Access Drive*

The results of the capacity analyses show that the critical movements at this intersection currently operate at LOS C or better during the weekday morning and weekday evening peak hours. Assuming the projected Year 2028 no-build and total projected conditions, all critical movements are projected to continue to operate at the same LOS during both peak hours. As such the intersection has sufficient reserve capacity to accommodate the development-generated traffic.

*Rand Road with the West Site Access Drive*

As proposed, a right-in/right-out access drive will be provided on the southwest side of Rand Road located approximately 515 feet south of Lake Cook Road. This access drive will provide one inbound lane and one outbound lane restricted to right-turn movements only via the barrier median on Rand Road. Outbound movements will be under stop sign control. This access drive will replace an existing access drive at this location.

Under Year 2028 total projected traffic conditions, outbound right-turn movements are projected to operate at LOS C during the weekday morning peak hour and LOS B during the weekday evening peak hour with a volume-to-capacity ratio of less than one and 95$^{th}$ percentile queues of one to two vehicles. When the projected traffic volumes are compared to the turn lane warrant guidelines published in Chapter 36 of the IDOT *Bureau of Design and Environment* (BDE) Manual, an exclusive right-turn lane serving the proposed access drive will not be warranted during either peak hour. As such, this access drive will be adequate in accommodating the traffic estimated to be generated by the proposed development and will ensure efficient and flexible access is provided.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

## Parking Evaluation

As previously mentioned, the proposed development will provide 148 parking spaces.

### *Village of Palatine Requirements*

The Village of Palatine Code of Ordinances requires a parking ratio of one space per 1,000 square feet of gross floor area in manufacturing and warehousing uses plus one space per 300 square feet of gross floor area in office uses. Based on the village ordinance the development should provide parking as follows:

- 131 parking spaces for 130,867 square feet of Light Industrial Space
- 48 parking spaces for 14,541 square feet of Office Space

Based on the above, the proposed development should provide 179 parking spaces resulting in a deficit of 31 spaces.

### *ITE Parking Generation Manual*

In reviewing the survey data published in the Institute of Transportation Engineers' (ITE) 5th Edition of the *Parking Generation Manual*, the following average peak parking demand was determined based on Land Use Code 110 (General Light Industrial):

- 95 parking spaces for 145,408 square feet of Light Industrial Space (ratio of 0.65 spaces per 1,000 square feet)

Based on the above, the proposed development should provide a total of 95 parking spaces to accommodate the peak parking demand, which results in a surplus of 53 parking spaces. To provide a conservative analysis, the development was also evaluated accounting for the office space independently. The following average peak park demand was determined based on Land Use Codes 110 (General Light Industrial) and 710 (General Office Building):

- 85 parking spaces for 130,867 square feet of Light Industrial Space (ratio of 0.65 spaces per 1,000 square feet)
- 35 parking spaces for 14,541 square feet of Office Space (ratio of 2.39 spaces per 1,000 square feet)

Based on the above, the proposed development should provide a total of 120 parking spaces to accommodate the peak parking demand, which results in a surplus of 28 parking spaces. It should be noted that Land-Use Code 110 (General Light Industrial) has a higher average peak parking demand than Land-Use Code 150 (Warehouse)

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# 6. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The roadway system has sufficient reserve capacity to accommodate the traffic projected to be generated by the proposed development.
- With the proposed redevelopment of the site, the number of access points along the site frontage will be reduced from six to two.
- The proposed access system on Rand Road will be adequate in accommodating the development-generated traffic and will ensure that efficient and flexible access is provided.
- Northwest-bound traffic on Rand Road entering the proposed development will be accommodated by the existing two-way left-turn lane.
- A southeast-bound right-turn lane will not be warranted on Rand Road at either of the site access drives.
- The proposed parking supply of 148 parking spaces will be adequate in accommodating the projected peak parking demand of the proposed development.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Appendix

Traffic Count Summary Sheets
Preliminary Site Plan
ITE Trip Generation Worksheets
CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
Turn Lane Warrants

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Traffic Count Summary Sheets

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with Lake Cook Road
Site Code:
Start Date: 09/22/2021
Page No: 1

# Turning Movement Data

| Start Time | Lake Cook Road Eastbound | | | | | | Lake Cook Road Westbound | | | | | | Rand Road Northbound | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 6:30 AM | 0 | 3 | 148 | 36 | 0 | 187 | 0 | 5 | 81 | 198 | 0 | 284 | 0 | 18 | 80 | 0 | 98 | 0 | 313 | 210 | 1 | 0 | 524 | 1093 |
| 6:45 AM | 0 | 6 | 136 | 46 | 0 | 188 | 0 | 9 | 98 | 242 | 0 | 349 | 0 | 11 | 99 | 0 | 110 | 0 | 264 | 219 | 2 | 0 | 485 | 1132 |
| Hourly Total | 0 | 9 | 284 | 82 | 0 | 375 | 0 | 14 | 179 | 440 | 0 | 633 | 0 | 29 | 179 | 0 | 208 | 0 | 577 | 429 | 3 | 0 | 1009 | 2225 |
| 7:00 AM | 0 | 8 | 157 | 50 | 0 | 215 | 0 | 7 | 73 | 211 | 0 | 291 | 0 | 28 | 95 | 0 | 123 | 0 | 263 | 228 | 3 | 0 | 494 | 1123 |
| 7:15 AM | 0 | 9 | 179 | 53 | 0 | 241 | 0 | 4 | 127 | 226 | 0 | 357 | 0 | 19 | 86 | 0 | 105 | 0 | 218 | 236 | 1 | 0 | 455 | 1158 |
| 7:30 AM | 0 | 5 | 169 | 55 | 0 | 229 | 0 | 7 | 112 | 228 | 0 | 347 | 0 | 32 | 96 | 0 | 128 | 0 | 215 | 249 | 1 | 0 | 465 | 1169 |
| 7:45 AM | 0 | 3 | 157 | 50 | 0 | 210 | 2 | 6 | 122 | 230 | 0 | 360 | 0 | 33 | 89 | 0 | 122 | 0 | 199 | 219 | 2 | 0 | 420 | 1112 |
| Hourly Total | 0 | 25 | 662 | 208 | 0 | 895 | 2 | 24 | 434 | 895 | 0 | 1355 | 0 | 112 | 366 | 0 | 478 | 0 | 895 | 932 | 7 | 0 | 1834 | 4562 |
| 8:00 AM | 0 | 3 | 143 | 73 | 0 | 219 | 0 | 9 | 126 | 234 | 0 | 369 | 0 | 30 | 123 | 0 | 153 | 0 | 181 | 202 | 5 | 0 | 388 | 1129 |
| 8:15 AM | 0 | 2 | 116 | 55 | 0 | 173 | 0 | 10 | 118 | 222 | 0 | 350 | 0 | 33 | 82 | 0 | 115 | 0 | 173 | 169 | 5 | 0 | 347 | 985 |
| 8:30 AM | 0 | 2 | 106 | 44 | 0 | 152 | 0 | 7 | 144 | 201 | 0 | 352 | 0 | 29 | 89 | 0 | 118 | 0 | 172 | 187 | 5 | 0 | 364 | 986 |
| 8:45 AM | 0 | 4 | 116 | 52 | 0 | 172 | 0 | 7 | 105 | 228 | 0 | 340 | 1 | 49 | 141 | 0 | 191 | 0 | 211 | 188 | 5 | 0 | 404 | 1107 |
| Hourly Total | 0 | 11 | 481 | 224 | 0 | 716 | 0 | 33 | 493 | 885 | 0 | 1411 | 1 | 141 | 435 | 0 | 577 | 0 | 737 | 746 | 20 | 0 | 1503 | 4207 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 8 | 111 | 58 | 0 | 177 | 0 | 3 | 176 | 305 | 0 | 484 | 0 | 58 | 193 | 0 | 251 | 0 | 193 | 222 | 6 | 0 | 421 | 1333 |
| 4:15 PM | 0 | 7 | 98 | 46 | 0 | 151 | 0 | 12 | 182 | 292 | 0 | 486 | 0 | 62 | 189 | 0 | 251 | 0 | 166 | 196 | 5 | 1 | 367 | 1255 |
| 4:30 PM | 0 | 7 | 102 | 49 | 0 | 158 | 0 | 5 | 189 | 274 | 0 | 468 | 0 | 90 | 235 | 0 | 325 | 0 | 172 | 204 | 7 | 0 | 383 | 1334 |
| 4:45 PM | 0 | 7 | 72 | 48 | 0 | 127 | 0 | 3 | 210 | 293 | 0 | 506 | 0 | 105 | 207 | 0 | 312 | 0 | 176 | 186 | 5 | 0 | 367 | 1312 |
| Hourly Total | 0 | 29 | 383 | 201 | 0 | 613 | 0 | 23 | 757 | 1164 | 0 | 1944 | 0 | 315 | 824 | 0 | 1139 | 0 | 707 | 808 | 23 | 1 | 1538 | 5234 |
| 5:00 PM | 0 | 6 | 104 | 38 | 1 | 148 | 0 | 6 | 209 | 275 | 3 | 490 | 0 | 101 | 219 | 0 | 320 | 0 | 189 | 210 | 2 | 1 | 401 | 1359 |
| 5:15 PM | 0 | 7 | 119 | 42 | 0 | 168 | 0 | 4 | 166 | 286 | 0 | 456 | 0 | 89 | 232 | 0 | 321 | 0 | 171 | 182 | 5 | 0 | 358 | 1303 |
| 5:30 PM | 0 | 13 | 91 | 40 | 0 | 144 | 0 | 3 | 188 | 278 | 0 | 469 | 1 | 87 | 209 | 0 | 297 | 0 | 182 | 172 | 6 | 0 | 360 | 1270 |
| 5:45 PM | 1 | 4 | 86 | 53 | 0 | 144 | 0 | 6 | 194 | 300 | 1 | 500 | 0 | 46 | 244 | 0 | 290 | 0 | 168 | 174 | 5 | 0 | 347 | 1281 |
| Hourly Total | 1 | 30 | 400 | 173 | 1 | 604 | 0 | 19 | 757 | 1139 | 4 | 1915 | 1 | 323 | 904 | 0 | 1228 | 0 | 710 | 738 | 18 | 1 | 1466 | 5213 |
| 6:00 PM | 0 | 5 | 89 | 45 | 0 | 139 | 0 | 6 | 171 | 298 | 0 | 475 | 2 | 48 | 164 | 0 | 214 | 0 | 165 | 168 | 12 | 0 | 345 | 1173 |
| 6:15 PM | 0 | 7 | 72 | 39 | 0 | 118 | 0 | 10 | 127 | 284 | 0 | 421 | 0 | 32 | 167 | 0 | 199 | 0 | 172 | 169 | 4 | 0 | 345 | 1083 |
| Grand Total | 1 | 116 | 2371 | 972 | 1 | 3460 | 2 | 129 | 2918 | 5105 | 4 | 8154 | 4 | 1000 | 3039 | 0 | 4043 | 0 | 3963 | 3990 | 87 | 2 | 8040 | 23697 |
| Approach % | 0.0 | 3.4 | 68.5 | 28.1 | - | - | 0.0 | 1.6 | 35.8 | 62.6 | - | - | 0.1 | 24.7 | 75.2 | - | - | 0.0 | 49.3 | 49.6 | 1.1 | - | - | - |
| Total % | 0.0 | 0.5 | 10.0 | 4.1 | - | 14.6 | 0.0 | 0.5 | 12.3 | 21.5 | - | 34.4 | 0.0 | 4.2 | 12.8 | - | 17.1 | 0.0 | 16.7 | 16.8 | 0.4 | - | 33.9 | - |
| Lights | 1 | 112 | 2320 | 923 | - | 3356 | 2 | 123 | 2836 | 4749 | - | 7710 | 4 | 960 | 2904 | - | 3868 | 0 | 3752 | 3748 | 77 | - | 7577 | 22511 |
| % Lights | 100.0 | 96.6 | 97.8 | 95.0 | - | 97.0 | 100.0 | 95.3 | 97.2 | 93.0 | - | 94.6 | 100.0 | 96.0 | 95.6 | - | 95.7 | - | 94.7 | 93.9 | 88.5 | - | 94.2 | 95.0 |
| Buses | 0 | 0 | 4 | 5 | - | 9 | 0 | 0 | 9 | 7 | - | 16 | 0 | 5 | 1 | - | 6 | 0 | 8 | 2 | 0 | - | 10 | 41 |
| % Buses | 0.0 | 0.0 | 0.2 | 0.5 | - | 0.3 | 0.0 | 0.0 | 0.3 | 0.1 | - | 0.2 | 0.0 | 0.5 | 0.0 | - | 0.1 | - | 0.2 | 0.1 | 0.0 | - | 0.1 | 0.2 |
| Single-Unit Trucks | 0 | 3 | 28 | 38 | - | 69 | 0 | 3 | 47 | 147 | - | 197 | 0 | 32 | 86 | - | 118 | 0 | 80 | 137 | 5 | - | 222 | 606 |
| % Single-Unit Trucks | 0.0 | 2.6 | 1.2 | 3.9 | - | 2.0 | 0.0 | 2.3 | 1.6 | 2.9 | - | 2.4 | 0.0 | 3.2 | 2.8 | - | 2.9 | - | 2.0 | 3.4 | 5.7 | - | 2.8 | 2.6 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Articulated Trucks | 0 | 1 | 19 | 6 | - | 26 | 0 | 3 | 26 | 201 | - | 230 | 0 | 3 | 48 | - | 51 | 0 | 123 | 103 | 5 | - | 231 | 538 |
| % Articulated Trucks | 0.0 | 0.9 | 0.8 | 0.6 | - | 0.8 | 0.0 | 2.3 | 0.9 | 3.9 | - | 2.8 | 0.0 | 0.3 | 1.6 | - | 1.3 | - | 3.1 | 2.6 | 5.7 | - | 2.9 | 2.3 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Bicycles on Road | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 1 | - | - | - | - | - | 4 | - | - | - | - | 0 | - | - | - | - | - | 2 | - | - |
| % Pedestrians | - | - | - | - | 100.0 | - | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with Lake Cook Road
Site Code:
Start Date: 09/22/2021


# Turning Movement Peak Hour Data (7:15 AM)

| Start Time | Lake Cook Road Eastbound | | | | | | Lake Cook Road Westbound | | | | | | Rand Road Northbound | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 7:15 AM | 0 | 9 | 179 | 53 | 0 | 241 | 0 | 4 | 127 | 226 | 0 | 357 | 0 | 19 | 86 | 0 | 105 | 0 | 218 | 236 | 1 | 0 | 455 | 1158 |
| 7:30 AM | 0 | 5 | 169 | 55 | 0 | 229 | 0 | 7 | 112 | 228 | 0 | 347 | 0 | 32 | 96 | 0 | 128 | 0 | 215 | 249 | 1 | 0 | 465 | 1169 |
| 7:45 AM | 0 | 3 | 157 | 50 | 0 | 210 | 2 | 6 | 122 | 230 | 0 | 360 | 0 | 33 | 89 | 0 | 122 | 0 | 199 | 219 | 2 | 0 | 420 | 1112 |
| 8:00 AM | 0 | 3 | 143 | 73 | 0 | 219 | 0 | 9 | 126 | 234 | 0 | 369 | 0 | 30 | 123 | 0 | 153 | 0 | 181 | 202 | 5 | 0 | 388 | 1129 |
| Total | 0 | 20 | 648 | 231 | 0 | 899 | 2 | 26 | 487 | 918 | 0 | 1433 | 0 | 114 | 394 | 0 | 508 | 0 | 813 | 906 | 9 | 0 | 1728 | 4568 |
| Approach % | 0.0 | 2.2 | 72.1 | 25.7 | - | - | 0.1 | 1.8 | 34.0 | 64.1 | - | - | 0.0 | 22.4 | 77.6 | - | - | 0.0 | 47.0 | 52.4 | 0.5 | - | - | - |
| Total % | 0.0 | 0.4 | 14.2 | 5.1 | - | 19.7 | 0.0 | 0.6 | 10.7 | 20.1 | - | 31.4 | 0.0 | 2.5 | 8.6 | - | 11.1 | 0.0 | 17.8 | 19.8 | 0.2 | - | 37.8 | - |
| PHF | 0.000 | 0.556 | 0.905 | 0.791 | - | 0.933 | 0.250 | 0.722 | 0.959 | 0.981 | - | 0.971 | 0.000 | 0.864 | 0.801 | - | 0.830 | 0.000 | 0.932 | 0.910 | 0.450 | - | 0.929 | 0.977 |
| Lights | 0 | 20 | 632 | 228 | - | 880 | 2 | 26 | 452 | 793 | - | 1273 | 0 | 111 | 372 | - | 483 | 0 | 763 | 841 | 8 | - | 1612 | 4248 |
| % Lights | - | 100.0 | 97.5 | 98.7 | - | 97.9 | 100.0 | 100.0 | 92.8 | 86.4 | - | 88.8 | - | 97.4 | 94.4 | - | 95.1 | - | 93.8 | 92.8 | 88.9 | - | 93.3 | 93.0 |
| Buses | 0 | 0 | 3 | 1 | - | 4 | 0 | 0 | 3 | 0 | - | 3 | 0 | 1 | 0 | - | 1 | 0 | 4 | 0 | 0 | - | 4 | 12 |
| % Buses | - | 0.0 | 0.5 | 0.4 | - | 0.4 | 0.0 | 0.0 | 0.6 | 0.0 | - | 0.2 | - | 0.9 | 0.0 | - | 0.2 | - | 0.5 | 0.0 | 0.0 | - | 0.2 | 0.3 |
| Single-Unit Trucks | 0 | 0 | 5 | 2 | - | 7 | 0 | 0 | 19 | 55 | - | 74 | 0 | 2 | 14 | - | 16 | 0 | 17 | 33 | 1 | - | 51 | 148 |
| % Single-Unit Trucks | - | 0.0 | 0.8 | 0.9 | - | 0.8 | 0.0 | 0.0 | 3.9 | 6.0 | - | 5.2 | - | 1.8 | 3.6 | - | 3.1 | - | 2.1 | 3.6 | 11.1 | - | 3.0 | 3.2 |
| Articulated Trucks | 0 | 0 | 8 | 0 | - | 8 | 0 | 0 | 13 | 70 | - | 83 | 0 | 0 | 8 | - | 8 | 0 | 29 | 32 | 0 | - | 61 | 160 |
| % Articulated Trucks | - | 0.0 | 1.2 | 0.0 | - | 0.9 | 0.0 | 0.0 | 2.7 | 7.6 | - | 5.8 | - | 0.0 | 2.0 | - | 1.6 | - | 3.6 | 3.5 | 0.0 | - | 3.5 | 3.5 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with Lake Cook Road
Site Code:
Start Date: 09/22/2021


# Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Lake Cook Road Eastbound | | | | | | Lake Cook Road Westbound | | | | | | Rand Road Northbound | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 4:30 PM | 0 | 7 | 102 | 49 | 0 | 158 | 0 | 5 | 189 | 274 | 0 | 468 | 0 | 90 | 235 | 0 | 325 | 0 | 172 | 204 | 7 | 0 | 383 | 1334 |
| 4:45 PM | 0 | 7 | 72 | 48 | 0 | 127 | 0 | 3 | 210 | 293 | 0 | 506 | 0 | 105 | 207 | 0 | 312 | 0 | 176 | 186 | 5 | 0 | 367 | 1312 |
| 5:00 PM | 0 | 6 | 104 | 38 | 1 | 148 | 0 | 6 | 209 | 275 | 3 | 490 | 0 | 101 | 219 | 0 | 320 | 0 | 189 | 210 | 2 | 1 | 401 | 1359 |
| 5:15 PM | 0 | 7 | 119 | 42 | 0 | 168 | 0 | 4 | 166 | 286 | 0 | 456 | 0 | 89 | 232 | 0 | 321 | 0 | 171 | 182 | 5 | 0 | 358 | 1303 |
| Total | 0 | 27 | 397 | 177 | 1 | 601 | 0 | 18 | 774 | 1128 | 3 | 1920 | 0 | 385 | 893 | 0 | 1278 | 0 | 708 | 782 | 19 | 1 | 1509 | 5308 |
| Approach % | 0.0 | 4.5 | 66.1 | 29.5 | - | - | 0.0 | 0.9 | 40.3 | 58.8 | - | - | 0.0 | 30.1 | 69.9 | - | - | 0.0 | 46.9 | 51.8 | 1.3 | - | - | - |
| Total % | 0.0 | 0.5 | 7.5 | 3.3 | - | 11.3 | 0.0 | 0.3 | 14.6 | 21.3 | - | 36.2 | 0.0 | 7.3 | 16.8 | - | 24.1 | 0.0 | 13.3 | 14.7 | 0.4 | - | 28.4 | - |
| PHF | 0.000 | 0.964 | 0.834 | 0.903 | - | 0.894 | 0.000 | 0.750 | 0.921 | 0.962 | - | 0.949 | 0.000 | 0.917 | 0.950 | - | 0.983 | 0.000 | 0.937 | 0.931 | 0.679 | - | 0.941 | 0.976 |
| Lights | 0 | 25 | 387 | 169 | - | 581 | 0 | 17 | 767 | 1099 | - | 1883 | 0 | 377 | 866 | - | 1243 | 0 | 683 | 741 | 19 | - | 1443 | 5150 |
| % Lights | - | 92.6 | 97.5 | 95.5 | - | 96.7 | - | 94.4 | 99.1 | 97.4 | - | 98.1 | - | 97.9 | 97.0 | - | 97.3 | - | 96.5 | 94.8 | 100.0 | - | 95.6 | 97.0 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 2 | - | 2 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 3 |
| % Buses | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.2 | - | 0.1 | - | 0.3 | 0.0 | - | 0.1 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.1 |
| Single-Unit Trucks | 0 | 1 | 6 | 7 | - | 14 | 0 | 1 | 6 | 11 | - | 18 | 0 | 6 | 12 | - | 18 | 0 | 10 | 31 | 0 | - | 41 | 91 |
| % Single-Unit Trucks | - | 3.7 | 1.5 | 4.0 | - | 2.3 | - | 5.6 | 0.8 | 1.0 | - | 0.9 | - | 1.6 | 1.3 | - | 1.4 | - | 1.4 | 4.0 | 0.0 | - | 2.7 | 1.7 |
| Articulated Trucks | 0 | 1 | 4 | 1 | - | 6 | 0 | 0 | 1 | 16 | - | 17 | 0 | 1 | 15 | - | 16 | 0 | 15 | 10 | 0 | - | 25 | 64 |
| % Articulated Trucks | - | 3.7 | 1.0 | 0.6 | - | 1.0 | - | 0.0 | 0.1 | 1.4 | - | 0.9 | - | 0.3 | 1.7 | - | 1.3 | - | 2.1 | 1.3 | 0.0 | - | 1.7 | 1.2 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 1 | - | - | - | - | - | 3 | - | - | - | - | 0 | - | - | - | - | - | 1 | - | - |
| % Pedestrians | - | - | - | - | 100.0 | - | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | 100.0 | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with South Access Drives
Site Code:
Start Date: 09/22/2021
Page No: 1

# Turning Movement Data

| Start Time | Enterprise Access Drive Eastbound | | | | | | Public Storage Access Westbound | | | | | | Rand Road Northbound | | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 6:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 101 | 0 | 0 | 101 | 0 | 0 | 231 | 0 | 0 | 231 | 332 |
| 6:45 AM | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 118 | 2 | 0 | 121 | 0 | 0 | 277 | 0 | 0 | 277 | 399 |
| Hourly Total | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 219 | 2 | 0 | 222 | 0 | 0 | 508 | 0 | 0 | 508 | 731 |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 116 | 0 | 0 | 116 | 0 | 0 | 279 | 3 | 0 | 282 | 399 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 118 | 1 | 0 | 119 | 0 | 0 | 281 | 1 | 0 | 282 | 403 |
| 7:30 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 0 | 133 | 0 | 0 | 330 | 0 | 0 | 330 | 465 |
| 7:45 AM | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 146 | 0 | 0 | 152 | 0 | 0 | 283 | 0 | 0 | 283 | 437 |
| Hourly Total | 0 | 1 | 0 | 3 | 0 | 4 | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 6 | 513 | 1 | 0 | 520 | 0 | 0 | 1173 | 4 | 0 | 1177 | 1704 |
| 8:00 AM | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 152 | 1 | 0 | 154 | 0 | 0 | 291 | 1 | 0 | 292 | 449 |
| 8:15 AM | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 128 | 1 | 0 | 129 | 0 | 0 | 250 | 2 | 0 | 252 | 383 |
| 8:30 AM | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 130 | 1 | 0 | 132 | 0 | 0 | 233 | 1 | 0 | 234 | 369 |
| 8:45 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 201 | 0 | 0 | 204 | 0 | 1 | 243 | 1 | 0 | 245 | 450 |
| Hourly Total | 0 | 4 | 0 | 3 | 1 | 7 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 611 | 3 | 0 | 619 | 0 | 1 | 1017 | 5 | 0 | 1023 | 1651 |
| *** BREAK *** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 263 | 1 | 0 | 264 | 0 | 1 | 252 | 1 | 0 | 254 | 519 |
| 4:15 PM | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 260 | 0 | 0 | 262 | 0 | 0 | 293 | 1 | 0 | 294 | 559 |
| 4:30 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 323 | 0 | 0 | 325 | 0 | 0 | 264 | 2 | 0 | 266 | 594 |
| 4:45 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 343 | 0 | 0 | 346 | 0 | 0 | 238 | 2 | 0 | 240 | 589 |
| Hourly Total | 0 | 4 | 0 | 4 | 0 | 8 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 7 | 1189 | 1 | 0 | 1197 | 0 | 1 | 1047 | 6 | 0 | 1054 | 2261 |
| 5:00 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 345 | 0 | 0 | 346 | 0 | 0 | 249 | 2 | 0 | 251 | 600 |
| 5:15 PM | 0 | 1 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 333 | 0 | 0 | 335 | 0 | 0 | 232 | 1 | 0 | 233 | 573 |
| 5:30 PM | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 303 | 1 | 0 | 305 | 0 | 0 | 234 | 1 | 0 | 235 | 543 |
| 5:45 PM | 0 | 2 | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 303 | 1 | 0 | 304 | 0 | 0 | 217 | 1 | 0 | 218 | 527 |
| Hourly Total | 0 | 4 | 0 | 11 | 1 | 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 4 | 1284 | 2 | 0 | 1290 | 0 | 0 | 932 | 5 | 0 | 937 | 2243 |
| 6:00 PM | 0 | 2 | 0 | 2 | 1 | 4 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 223 | 1 | 0 | 225 | 0 | 2 | 222 | 2 | 0 | 226 | 457 |
| 6:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 1 | 213 | 1 | 0 | 215 | 0 | 0 | 244 | 0 | 0 | 244 | 461 |
| Grand Total | 0 | 15 | 0 | 24 | 4 | 39 | 0 | 6 | 0 | 6 | 0 | 12 | 0 | 25 | 4252 | 11 | 0 | 4288 | 0 | 4 | 5143 | 22 | 0 | 5169 | 9508 |
| Approach % | 0.0 | 38.5 | 0.0 | 61.5 | - | - | 0.0 | 50.0 | 0.0 | 50.0 | - | - | 0.0 | 0.6 | 99.2 | 0.3 | - | - | 0.0 | 0.1 | 99.5 | 0.4 | - | - | - |
| Total % | 0.0 | 0.2 | 0.0 | 0.3 | - | 0.4 | 0.0 | 0.1 | 0.0 | 0.1 | - | 0.1 | 0.0 | 0.3 | 44.7 | 0.1 | - | 45.1 | 0.0 | 0.0 | 54.1 | 0.2 | - | 54.4 | - |
| Lights | 0 | 15 | 0 | 23 | - | 38 | 0 | 6 | 0 | 6 | - | 12 | 0 | 25 | 4061 | 10 | - | 4096 | 0 | 4 | 4844 | 22 | - | 4870 | 9016 |
| % Lights | - | 100.0 | - | 95.8 | - | 97.4 | - | 100.0 | - | 100.0 | - | 100.0 | - | 100.0 | 95.5 | 90.9 | - | 95.5 | - | 100.0 | 94.2 | 100.0 | - | 94.2 | 94.8 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 4 | 0 | - | 4 | 0 | 0 | 7 | 0 | - | 7 | 11 |
| % Buses | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 0.1 | 0.0 | - | 0.1 | - | 0.0 | 0.1 | 0.0 | - | 0.1 | 0.1 |
| Single-Unit Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 123 | 1 | - | 124 | 0 | 0 | 203 | 0 | - | 203 | 327 |
| % Single-Unit Trucks | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 2.9 | 9.1 | - | 2.9 | - | 0.0 | 3.9 | 0.0 | - | 3.9 | 3.4 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Articulated Trucks | 0 | 0 | 0 | 1 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 63 | 0 | - | 63 | 0 | 0 | 88 | 0 | - | 88 | 152 |
| % Articulated Trucks | - | 0.0 | - | 4.2 | - | 2.6 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 1.5 | 0.0 | - | 1.5 | - | 0.0 | 1.7 | 0.0 | - | 1.7 | 1.6 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 1 | 0 | - | 1 | 2 |
| % Bicycles on Road | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 4 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with South Access Drives
Site Code:
Start Date: 09/22/2021


# Turning Movement Peak Hour Data (7:15 AM)

| Start Time | Enterprise Access Drive Eastbound | | | | | | Public Storage Access Westbound | | | | | | Rand Road Northbound | | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 118 | 1 | 0 | 119 | 0 | 0 | 281 | 1 | 0 | 282 | 403 |
| 7:30 AM | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 0 | 133 | 0 | 0 | 330 | 0 | 0 | 330 | 465 |
| 7:45 AM | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 146 | 0 | 0 | 152 | 0 | 0 | 283 | 0 | 0 | 283 | 437 |
| 8:00 AM | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 152 | 1 | 0 | 154 | 0 | 0 | 291 | 1 | 0 | 292 | 449 |
| Total | 0 | 2 | 0 | 4 | 0 | 6 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 7 | 549 | 2 | 0 | 558 | 0 | 0 | 1185 | 2 | 0 | 1187 | 1754 |
| Approach % | 0.0 | 33.3 | 0.0 | 66.7 | - | - | 0.0 | 66.7 | 0.0 | 33.3 | - | - | 0.0 | 1.3 | 98.4 | 0.4 | - | - | 0.0 | 0.0 | 99.8 | 0.2 | - | - | - |
| Total % | 0.0 | 0.1 | 0.0 | 0.2 | - | 0.3 | 0.0 | 0.1 | 0.0 | 0.1 | - | 0.2 | 0.0 | 0.4 | 31.3 | 0.1 | - | 31.8 | 0.0 | 0.0 | 67.6 | 0.1 | - | 67.7 | - |
| PHF | 0.000 | 0.500 | 0.000 | 0.500 | - | 0.750 | 0.000 | 0.500 | 0.000 | 0.250 | - | 0.375 | 0.000 | 0.292 | 0.903 | 0.500 | - | 0.906 | 0.000 | 0.000 | 0.898 | 0.500 | - | 0.899 | 0.943 |
| Lights | 0 | 2 | 0 | 4 | - | 6 | 0 | 2 | 0 | 1 | - | 3 | 0 | 7 | 524 | 2 | - | 533 | 0 | 0 | 1134 | 2 | - | 1136 | 1678 |
| % Lights | - | 100.0 | - | 100.0 | - | 100.0 | - | 100.0 | - | 100.0 | - | 100.0 | - | 100.0 | 95.4 | 100.0 | - | 95.5 | - | - | 95.7 | 100.0 | - | 95.7 | 95.7 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 1 | 0 | - | 1 | 2 |
| % Buses | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 0.2 | 0.0 | - | 0.2 | - | - | 0.1 | 0.0 | - | 0.1 | 0.1 |
| Single-Unit Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 14 | 0 | - | 14 | 0 | 0 | 25 | 0 | - | 25 | 39 |
| % Single-Unit Trucks | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 2.6 | 0.0 | - | 2.5 | - | - | 2.1 | 0.0 | - | 2.1 | 2.2 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 10 | 0 | - | 10 | 0 | 0 | 25 | 0 | - | 25 | 35 |
| % Articulated Trucks | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 1.8 | 0.0 | - | 1.8 | - | - | 2.1 | 0.0 | - | 2.1 | 2.0 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 |
| % Bicycles on Road | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | - | 0.0 | 0.0 | 0.0 | - | 0.0 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Pedestrians | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990

Count Name: Rand Road with South Access Drives
Site Code:
Start Date: 09/22/2021


# Turning Movement Peak Hour Data (4:30 PM)

| Start Time | Enterprise Access Drive Eastbound | | | | | | Public Storage Access Westbound | | | | | | Rand Road Northbound | | | | | | Rand Road Southbound | | | | | | Int. Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | U-Turn | Left | Thru | Right | Peds | App. Total | |
| 4:30 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 323 | 0 | 0 | 325 | 0 | 0 | 264 | 2 | 0 | 266 | 594 |
| 4:45 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 343 | 0 | 0 | 346 | 0 | 0 | 238 | 2 | 0 | 240 | 589 |
| 5:00 PM | 0 | 1 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 345 | 0 | 0 | 346 | 0 | 0 | 249 | 2 | 0 | 251 | 600 |
| 5:15 PM | 0 | 1 | 0 | 4 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 333 | 0 | 0 | 335 | 0 | 0 | 232 | 1 | 0 | 233 | 573 |
| Total | 0 | 4 | 0 | 10 | 1 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 1344 | 0 | 0 | 1352 | 0 | 0 | 983 | 7 | 0 | 990 | 2356 |
| Approach % | 0.0 | 28.6 | 0.0 | 71.4 | - | - | 0.0 | 0.0 | 0.0 | 0.0 | - | - | 0.0 | 0.6 | 99.4 | 0.0 | - | - | 0.0 | 0.0 | 99.3 | 0.7 | - | - | - |
| Total % | 0.0 | 0.2 | 0.0 | 0.4 | - | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.3 | 57.0 | 0.0 | - | 57.4 | 0.0 | 0.0 | 41.7 | 0.3 | - | 42.0 | - |
| PHF | 0.000 | 1.000 | 0.000 | 0.625 | - | 0.700 | 0.000 | 0.000 | 0.000 | 0.000 | - | 0.000 | 0.000 | 0.667 | 0.974 | 0.000 | - | 0.977 | 0.000 | 0.000 | 0.931 | 0.875 | - | 0.930 | 0.982 |
| Lights | 0 | 4 | 0 | 10 | - | 14 | 0 | 0 | 0 | 0 | - | 0 | 0 | 8 | 1299 | 0 | - | 1307 | 0 | 0 | 938 | 7 | - | 945 | 2266 |
| % Lights | - | 100.0 | - | 100.0 | - | 100.0 | - | - | - | - | - | - | - | 100.0 | 96.7 | - | - | 96.7 | - | - | 95.4 | 100.0 | - | 95.5 | 96.2 |
| Buses | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 0 | 0 | 0 | 0 | - | 0 | 1 |
| % Buses | - | 0.0 | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | 0.0 | 0.1 | - | - | 0.1 | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 |
| Single-Unit Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 21 | 0 | - | 21 | 0 | 0 | 34 | 0 | - | 34 | 55 |
| % Single-Unit Trucks | - | 0.0 | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | 0.0 | 1.6 | - | - | 1.6 | - | - | 3.5 | 0.0 | - | 3.4 | 2.3 |
| Articulated Trucks | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 23 | 0 | - | 23 | 0 | 0 | 10 | 0 | - | 10 | 33 |
| % Articulated Trucks | - | 0.0 | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | 0.0 | 1.7 | - | - | 1.7 | - | - | 1.0 | 0.0 | - | 1.0 | 1.4 |
| Bicycles on Road | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | 0 | 1 | 0 | - | 1 | 1 |
| % Bicycles on Road | - | 0.0 | - | 0.0 | - | 0.0 | - | - | - | - | - | - | - | 0.0 | 0.0 | - | - | 0.0 | - | - | 0.1 | 0.0 | - | 0.1 | 0.0 |
| Pedestrians | - | - | - | - | 1 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - | - | - | - | 0 | - | - |
| % Pedestrians | - | - | - | - | 100.0 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

**Study Name** Rand Road with North Access Drives
**Start Date** Wednesday, September 22, 2021 6:30 AM
**End Date** Wednesday, September 22, 2021 6:30 PM
**Site Code**

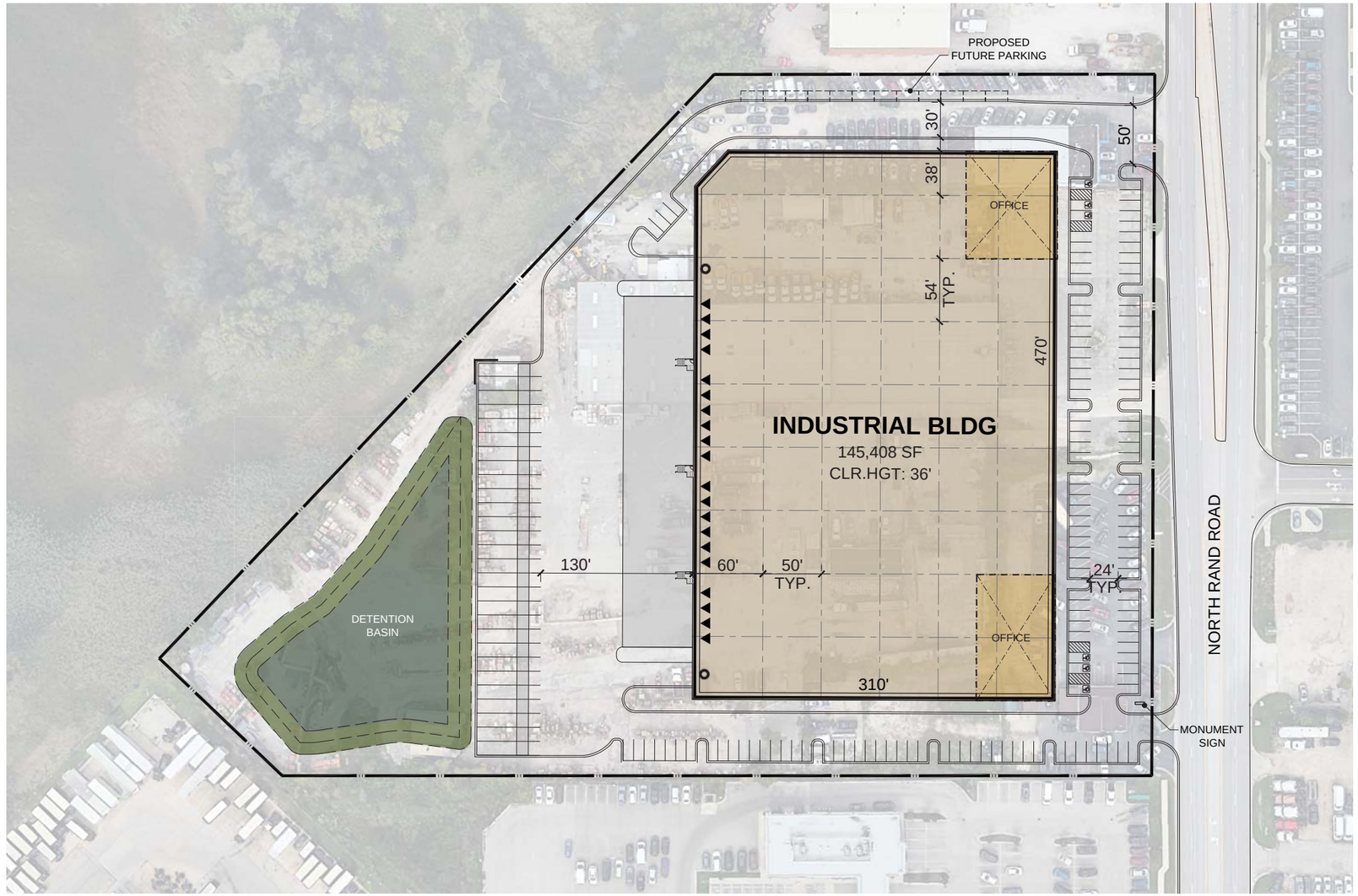
## Report Summary

| | | Westbound | | | | | | | | Northbound | | | | | | | | Southbound | | | | | | | | Southeastbound | | | | | | | | Northeastbound | | | | | | | | Southwestbound | | | | | | | | Crosswalk | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Time Period | Class. | U | L | BL | BR | R | HR | I | O | U | HL | BL | T | BR | R | I | O | U | HL | L | T | BR | HR | I | O | U | HL | L | BL | BR | R | I | O | U | L | BL | T | BR | HR | I | O | U | HL | BL | T | R | HR | I | O | Total | | destria | Total |
| **Peak 1** | Lights | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 516 | 7 | 1 | 525 | 1130 | 0 | 4 | 0 | 1127 | 0 | 0 | 1131 | 522 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 6 | 8 | 11 | 1665 | E | 0 | 0 |
| Specified Period | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 100% | 95% | 100% | 100% | 95% | 95% | 0% | 67% | 0% | 95% | 0% | 0% | 95% | 95% | 0% | 0% | 0% | 0% | 100% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 86% | 89% | 85% | 95% | | 0% | |
| 7:15 AM - 8:15 AM | Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | S | 0 | 0 |
| One Hour Peak | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | 0% | |
| 7:15 AM - 8:15 AM | ngle-Unit Truc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 15 | 26 | 0 | 2 | 0 | 26 | 0 | 0 | 28 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 44 | N | 0 | 0 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 3% | 0% | 0% | 3% | 2% | 0% | 33% | 0% | 2% | 0% | 0% | 2% | 3% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 14% | 11% | 15% | 3% | | 0% | |
| | ticulated Truc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 10 | 26 | 0 | 0 | 0 | 26 | 0 | 0 | 26 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | NW | 0 | 0 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 2% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | | 0% | |
| | icycles on Roa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | SW | 0 | 0 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | 0% | |
| | **Total** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **1** | **542** | **7** | **1** | **551** | **1184** | **0** | **6** | **0** | **1181** | **0** | **0** | **1187** | **549** | **0** | **0** | **0** | **0** | **1** | **0** | **1** | **1** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **2** | **0** | **0** | **7** | **9** | **13** | **1748** | NE | 0 | 0 |
| | PHF | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | 0.25 | 0.92 | 0.58 | 0.25 | 0.91 | 0.91 | 0 | 0.75 | 0 | 0.91 | 0 | 0 | 0.91 | 0.92 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0.25 | 0.25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | 0.88 | 0.75 | 0.65 | 0.94 | | 0% | |
| | Approach % | | | | | | | 0% | 0% | | | | | | | 32% | 68% | | | | | | | 68% | 31% | | | | | | | 0% | 0% | | | | | | | 0% | 0% | | | | | | | 1% | 1% | | | **0** | **0** |
| **Peak 2** | Lights | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 0 | 1 | 1302 | 2 | 2 | 1307 | 936 | 0 | 0 | 0 | 933 | 0 | 4 | 937 | 1310 | 0 | 3 | 0 | 0 | 1 | 0 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 5 | 2 | 2255 | E | 0 | 0 |
| Specified Period | % | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 100% | 0% | 0% | 100% | 97% | 67% | 100% | 97% | 95% | 0% | 0% | 0% | 95% | 0% | 100% | 95% | 97% | 0% | 100% | 0% | 0% | 100% | 0% | 100% | 100% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 100% | 0% | 0% | 100% | 100% | 67% | 96% | | 0% | |
| 4:30 PM - 5:30 PM | Buses | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | S | 0 | 0 |
| One Hour Peak | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | 0% | |
| 4:30 PM - 5:30 PM | ngle-Unit Truc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 1 | 0 | 15 | 33 | 0 | 0 | 0 | 33 | 0 | 0 | 33 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 48 | N | 0 | 0 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | 33% | 0% | 1% | 3% | 0% | 0% | 0% | 3% | 0% | 0% | 3% | 1% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 33% | 2% | | 0% | |
| | ticulated Truc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 24 | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 11 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | NW | 12 | 12 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 2% | 0% | 0% | 2% | 1% | 0% | 0% | 0% | 1% | 0% | 0% | 1% | 2% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 1% | | 100% | |
| | icycles on Roa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | SW | 0 | 0 |
| | % | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | | 0% | |
| | **Total** | **0** | **1** | **0** | **0** | **1** | **0** | **2** | **2** | **0** | **0** | **1** | **1341** | **3** | **2** | **1347** | **981** | **0** | **0** | **0** | **978** | **0** | **4** | **982** | **1349** | **0** | **3** | **0** | **0** | **1** | **0** | **4** | **5** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **0** | **1** | **0** | **0** | **4** | **5** | **3** | **2340** | NE | 0 | 0 |
| | PHF | 0 | 0.25 | 0 | 0 | 0.25 | 0 | 0.5 | 0.5 | 0 | 0 | 0.25 | 0.97 | 0.38 | 0.5 | 0.98 | 0.95 | 0 | 0 | 0 | 0.94 | 0 | 0.5 | 0.94 | 0.96 | 0 | 0.38 | 0 | 0 | 0.25 | 0 | 0.33 | 0.62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.25 | 0 | 0 | 0.25 | 0.25 | 0.38 | 0.97 | | 0% | |
| | Approach % | | | | | | | 0% | 0% | | | | | | | 58% | 42% | | | | | | | 42% | 58% | | | | | | | 0% | 0% | | | | | | | 0% | 0% | | | | | | | 0% | 0% | | | **12** | **12** |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Preliminary Site Plan

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




**PROJECT DATA:**

| | | |
|---|---|---|
| SITE AREA: | | |
| GROSS: | | 8.86 AC |
| | | 385,828 SF |
| DETENTION: | @ 9% | 34,746 SF |
| NET: | | 8.06 AC |
| | | 351,082 SF |
| BUILDING FOOTPRINT: | | 145,408 SF |
| BUILDING USE: | | |
| WAREHOUSE | | 130,867 SF |
| OFFICE | @ 10% | 14,541 SF |
| COVERAGE: | | |
| GROSS: | | 38% |
| NET: | | 41% |
| PARKING REQUIRED: | | |
| WAREHOUSE | 1/1000 SF | 131 STALLS |
| OFFICE | 1/300 SF | 48 STALLS |
| TOTAL | | 179 STALLS |
| PARKING PROVIDED: | | |
| AUTO: | | 135 STALLS |
| | | @0.93/1000 SF |
| *REQ. ACCESSIBLE* | | *5 STALLS* |
| TRAILER: | | 28 STALLS |
| FUTURE PARKING PROPOSED: | | |
| AUTO: | | 13 STALLS |
| TRUCK DOCKS: | | |
| ▲ DOCK-HIGH DOORS | | 20 |

**DEVELOPMENT STANDARDS:**

| | |
|---|---|
| ZONING: | M |
| MAX. F.A.R.: | 0.70 |
| MAX. COVERAGE: | TBD [1] |
| MAX. HEIGHT: | 60 FT |
| BUILDING SETBACKS: | |
| FRONT: | 30 FT |
| SIDE: | 15 FT |
| REAR: | 15 FT |
| LANDSCAPE SETBACKS: | |
| FRONT: | 5 FT |
| SIDE: | 2 FT |
| REAR: | 2 FT |
| LANDSCAPE REQ.: | [2] |
| OFF-STREET PARKING: | |
| STANDARD: | 9X19 |
| COMPACT: | 8X16 |
| DRIVE AISLE: | 25 FT |
| FIRE LANE: | TBD [1] |
| REQ. PARKING RATIO BY USE: | |
| WAREHOUSE: | 1/1000 SF |
| OFFICE: | 1/300 SF |

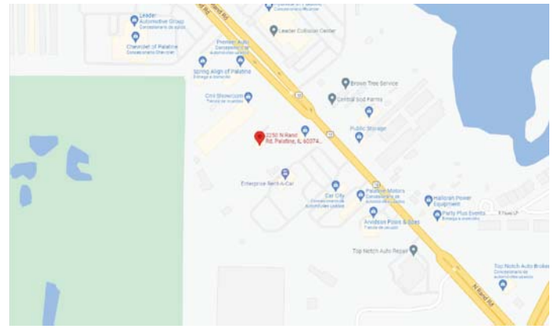
NOTES:
1. To be confirmed by city.
2. 1 tree for every 10 parking stalls.

A PORTION OF THE ZONING INFORMATION IS UNKNOWN AT THIS TIME AND REQUIREMENTS MAY DIFFER THAN WHAT IS SHOWN IN THE SITE PLAN.

This conceptual design is based upon a preliminary review of entitlement requirements and on unverified and possibly incomplete site and/or building information, and is intended merely to assist in exploring how the project might be developed.

Stormwater Management Design:
AVERAGE REGIONAL REQUIRED PROVIDED

Boundary Source:
CIVIL CAD FILE




THE MISSNER GROUP EST. 1945

scheme: 05

Conceptual Site Plan

2250 North Rand Road
Palatine, IL 60074

WARE MALCOMB

CHI21-0193-00
04.04.2022

SHEET
1

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# ITE Trip Generation Worksheets

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# General Light Industrial
(110)

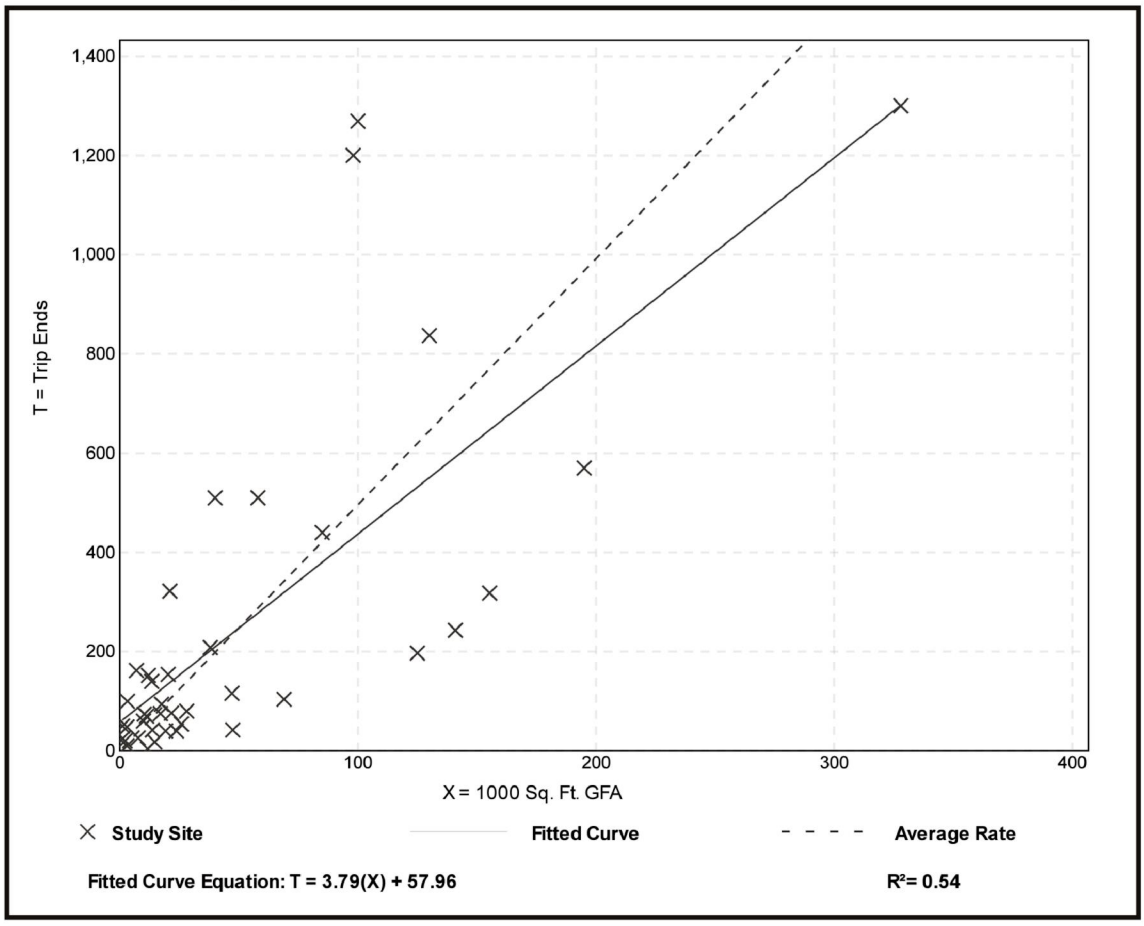
**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday**

**Setting/Location:** **General Urban/Suburban**
Number of Studies: 40
1000 Sq. Ft. GFA: 49
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 4.96 | 0.34 - 43.86 | 4.20 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

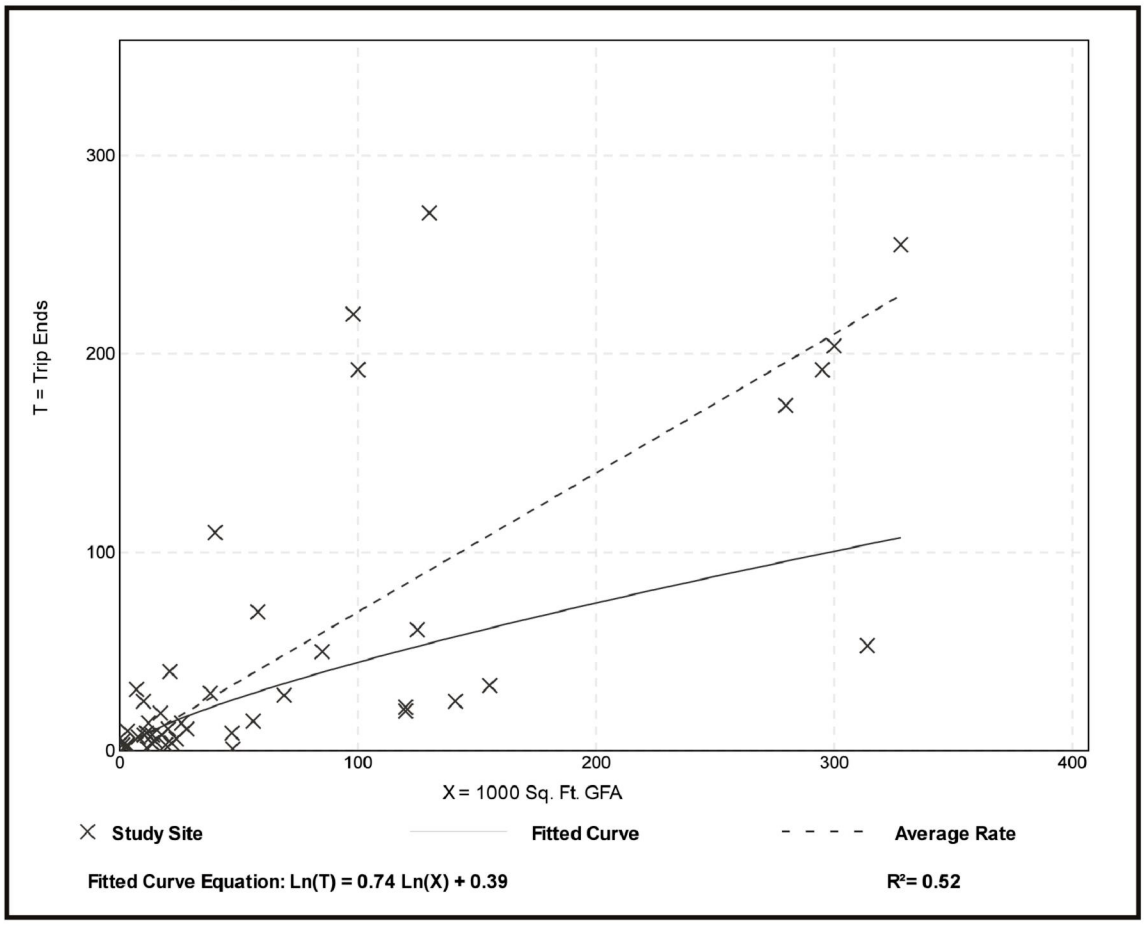
# General Light Industrial
(110)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 7 and 9 a.m.**
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 45
1000 Sq. Ft. GFA: 73
Directional Distribution: 88% entering, 12% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.70 | 0.02 - 4.46 | 0.65 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

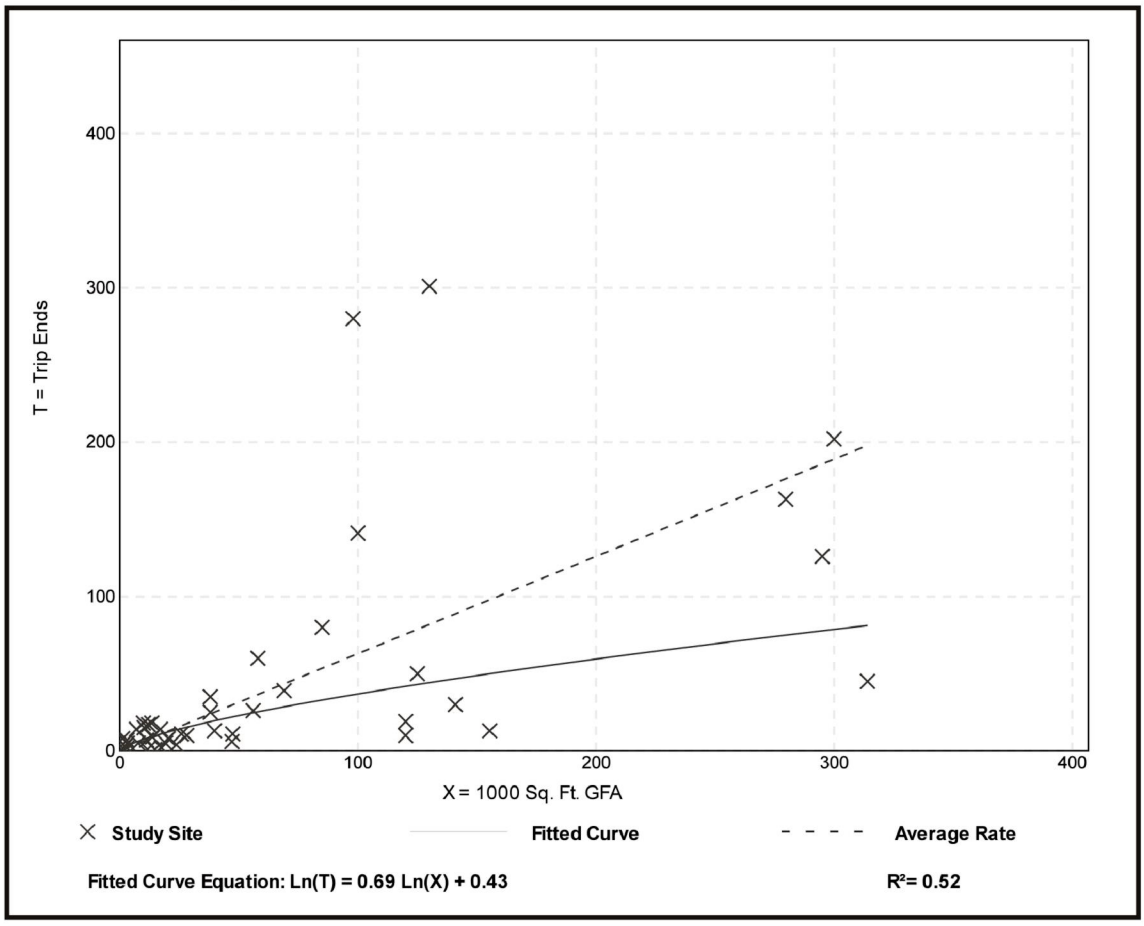
# General Light Industrial
(110)

**Vehicle Trip Ends vs:** **1000 Sq. Ft. GFA**
**On a:** **Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location:** **General Urban/Suburban**
Number of Studies: 44
1000 Sq. Ft. GFA: 67
Directional Distribution: 13% entering, 87% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.63 | 0.07 - 7.02 | 0.68 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# General Light Industrial
# (110)

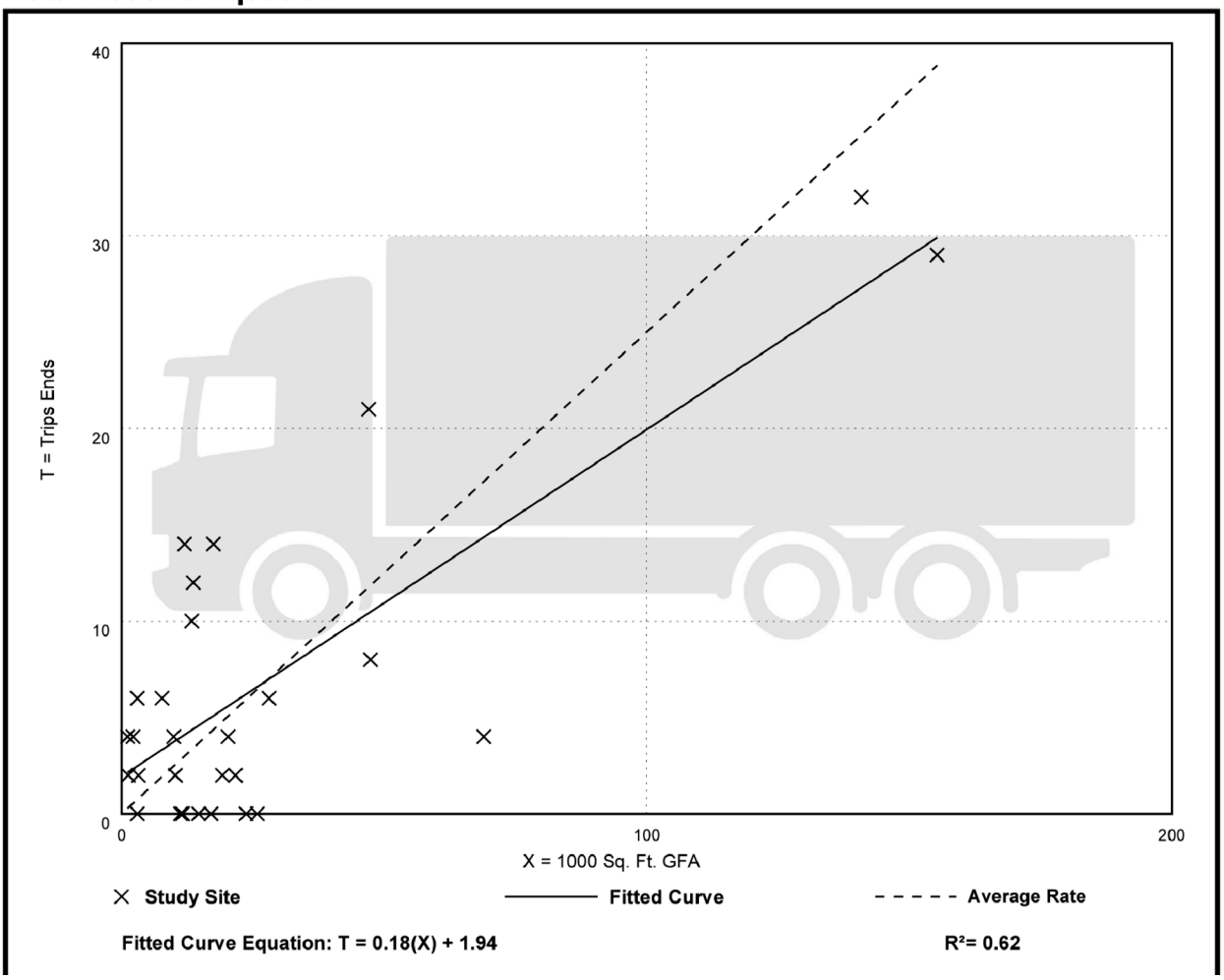
**Truck Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday**

**Setting/Location: General Urban/Suburban**
Number of Studies: 28
Avg. 1000 Sq. Ft. GFA: 27
Directional Distribution: 50% entering, 50% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.25 | 0.00 - 3.51 | 0.31 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

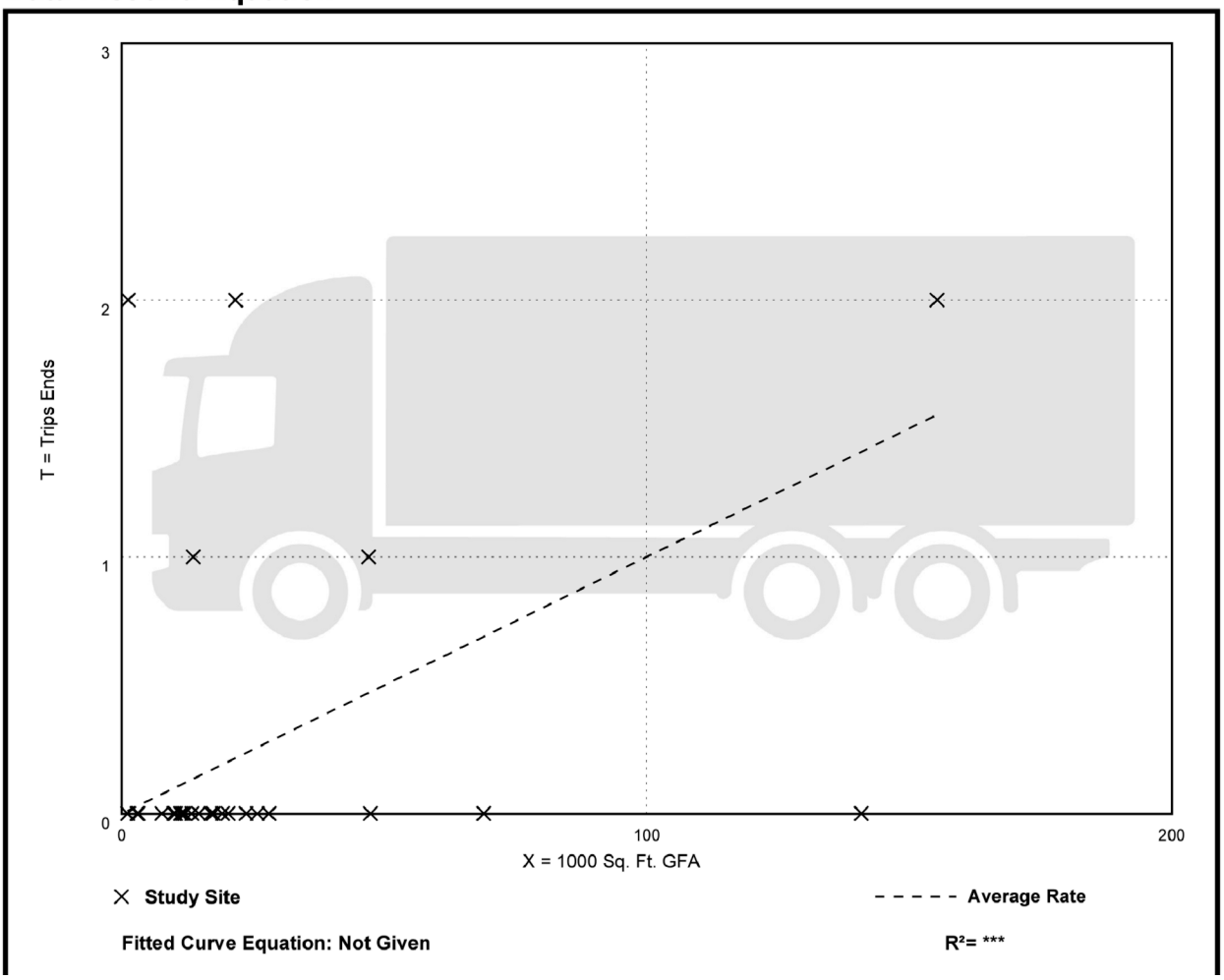
# General Light Industrial
# (110)

**Truck Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 7 and 9 a.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 27
Avg. 1000 Sq. Ft. GFA: 28
Directional Distribution: 63% entering, 37% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.01 | 0.00 - 1.59 | 0.07 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

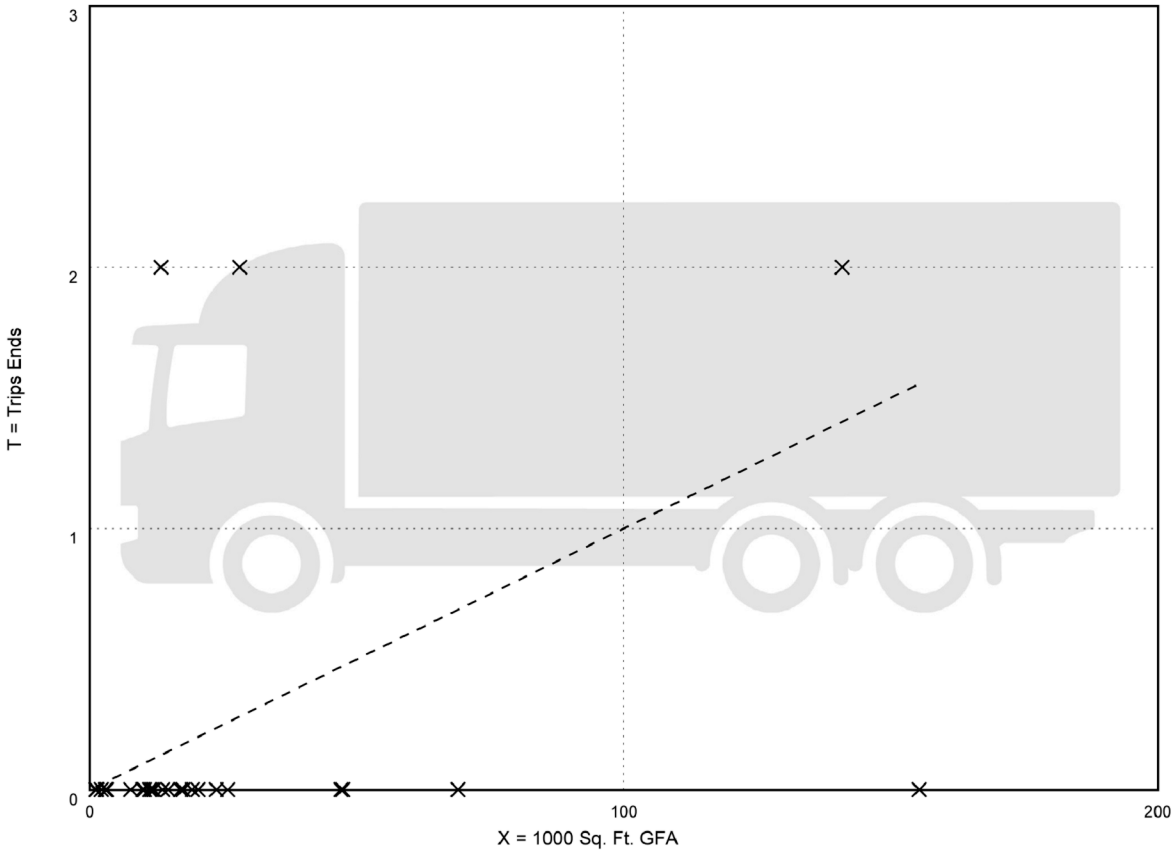
# General Light Industrial
# (110)

**Truck Trip Ends vs: 1000 Sq. Ft. GFA**
**On a: Weekday,**
**Peak Hour of Adjacent Street Traffic,**
**One Hour Between 4 and 6 p.m.**
**Setting/Location: General Urban/Suburban**
Number of Studies: 27
Avg. 1000 Sq. Ft. GFA: 27
Directional Distribution: 50% entering, 50% exiting

## Truck Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|---|---|---|
| 0.01 | 0.00 - 0.15 | 0.02 |

## Data Plot and Equation




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# CMAP 2050 Projections Letter

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Chicago Metropolitan Agency for Planning

433 West Van Buren Street
Suite 450
Chicago, IL 60607

312-454-0400
cmap.illinois.gov

September 29, 2021

Andrew Bowen
Traffic Engineer
Kenig, Lindgren, O'Hara and Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

***Subject:*** ***Rand Road (US 12) @ Lake Cook Road***
IDOT

Dear Mr. Bowen:

In response to a request made on your behalf and dated September 28, 2021, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

| ROAD SEGMENT | Current ADT | Year 2050 ADT |
|---|---|---|
| Rand Rd north of Lake Cook Rd | 49,600 | 50,400 |
| Rand Rd south of Lake Cook Rd | 14,900 | 17,700 |
| Lake Cook Rd west of Rand Rd | 19,700 | 25,400 |
| Lake Cook Rd east of Rand Rd | 43,600 | 46,300 |

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2021 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806.

Sincerely,

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Rios (IDOT)
2021_CY_TrafficForecast\Palatine\ck-119-21\ck-119-21.docx

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Level of Service Criteria

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

LEVEL OF SERVICE CRITERIA

| Signalized Intersections | | |
|---|---|---|
| Level of Service | Interpretation | Average Control Delay (seconds per vehicle) |
| A | Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping. | ≤10 |
| B | Good progression, with more vehicles stopping than for Level of Service A. | >10 - 20 |
| C | Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping. | >20 - 35 |
| D | The volume-to-capacity ratio is high and either progression is ineffective or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable. | >35 - 55 |
| E | Progression is unfavorable. The volume-to-capacity ratio is high and the cycle length is long. Individual cycle failures are frequent. | >55 - 80 |
| F | The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue. | >80.0 |

| Unsignalized Intersections | |
|---|---|
| Level of Service | Average Total Delay (SEC/VEH) |
| A | 0 - 10 |
| B | > 10 - 15 |
| C | > 15 - 25 |
| D | > 25 - 35 |
| E | > 35 - 50 |
| F | > 50 |

Source: *Highway Capacity Manual*, 2010.

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## Existing Weekday Morning Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

10/07/2021

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 648 | 231 | 28 | 487 | 918 | 813 | 934 | 9 | 114 | 394 | 42 |
| Future Volume (vph) | 20 | 648 | 231 | 28 | 487 | 918 | 813 | 934 | 9 | 114 | 394 | 42 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.999 | | | 0.986 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 3725 | 1599 | 1805 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3361 | 0 |
| Flt Permitted | 0.330 | | | 0.199 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 627 | 3725 | 1599 | 378 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3361 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 763 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 14.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 2% | 1% | 0% | 7% | 14% | 6% | 7% | 11% | 3% | 6% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 20 | 661 | 236 | 29 | 497 | 937 | 830 | 962 | 0 | 116 | 445 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 48.0 | 13.5 | 13.5 | 48.0 | 58.5 | 58.5 | 75.0 | | 13.5 | 30.0 | |
| Total Split (%) | 9.0% | 32.0% | 9.0% | 9.0% | 32.0% | 39.0% | 39.0% | 50.0% | | 9.0% | 20.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 47.4 | 40.6 | 55.6 | 48.1 | 40.9 | 94.4 | 47.5 | 77.1 | | 9.1 | 38.7 | |
| Actuated g/C Ratio | 0.32 | 0.27 | 0.37 | 0.32 | 0.27 | 0.63 | 0.32 | 0.51 | | 0.06 | 0.26 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

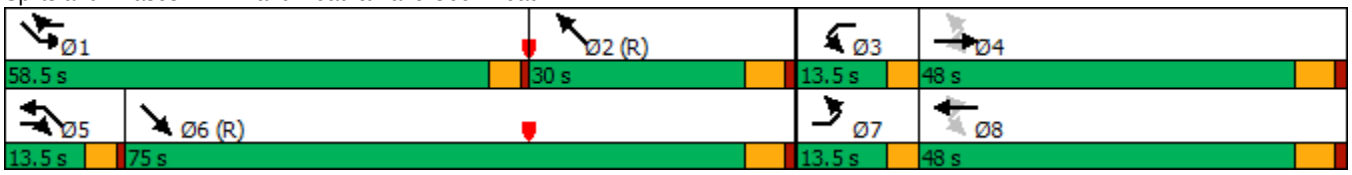
10/07/2021

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.08 | 0.66 | 0.40 | 0.15 | 0.51 | 0.60 | 0.79 | 0.56 | | 0.57 | 0.51 | |
| Control Delay | 30.5 | 51.7 | 36.5 | 32.0 | 47.7 | 17.8 | 52.7 | 27.9 | | 79.6 | 53.3 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 30.5 | 51.7 | 36.5 | 32.0 | 47.7 | 17.8 | 52.7 | 27.9 | | 79.6 | 53.3 | |
| LOS | C | D | D | C | D | B | D | C | | E | D | |
| Approach Delay | | 47.3 | | | 28.2 | | | 39.4 | | | 58.8 | |
| Approach LOS | | D | | | C | | | D | | | E | |
| Queue Length 50th (ft) | 12 | 296 | 162 | 18 | 212 | 273 | 379 | 366 | | 57 | 210 | |
| Queue Length 95th (ft) | 31 | 364 | 242 | 40 | 268 | 294 | 433 | 442 | | 93 | #304 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 683 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 283 | 1065 | 596 | 219 | 1024 | 1677 | 1189 | 1731 | | 212 | 866 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.07 | 0.62 | 0.40 | 0.13 | 0.49 | 0.56 | 0.70 | 0.56 | | 0.55 | 0.51 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 145.5 (97%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 39.8 Intersection LOS: D
Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: North ALG Access Drive/Central Sod Farms Access Drive & Rand Road

10/07/2021

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 6 | 1187 | 0 | 1 | 543 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |
| Future Vol, veh/h | 6 | 1187 | 0 | 1 | 543 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 33 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Mvmt Flow | 6 | 1263 | 0 | 1 | 578 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 585 | 0 | 0 | 1263 | 0 | 0 | 1566 | 1862 | 632 | 1228 | 1859 | 293 |
| Stage 1 | - | - | - | - | - | - | 1275 | 1275 | - | 584 | 584 | - |
| Stage 2 | - | - | - | - | - | - | 291 | 587 | - | 644 | 1275 | - |
| Critical Hdwy | 4.76 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.18 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.53 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.44 |
| Pot Cap-1 Maneuver | 801 | - | - | 557 | - | - | 77 | 74 | 428 | 136 | 74 | 669 |
| Stage 1 | - | - | - | - | - | - | 180 | 240 | - | 470 | 501 | - |
| Stage 2 | - | - | - | - | - | - | 698 | 500 | - | 433 | 240 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 801 | - | - | 557 | - | - | 76 | 73 | 428 | 135 | 73 | 669 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 150 | 175 | - | 265 | 175 | - |
| Stage 1 | - | - | - | - | - | - | 179 | 238 | - | 467 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 689 | 499 | - | 429 | 238 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13.4 | 12.3 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 428 | 557 | - | - | 801 | - | - | 500 |
| HCM Lane V/C Ratio | 0.002 | 0.002 | - | - | 0.008 | - | - | 0.019 |
| HCM Control Delay (s) | 13.4 | 11.5 | - | - | 9.5 | - | - | 12.3 |
| HCM Lane LOS | B | B | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South ALG Access Drive/North IAB Access Drive & Rand Road 10/07/2021

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1190 | 0 | 0 | 551 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 1190 | 0 | 0 | 551 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1266 | 0 | 0 | 586 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 587 | 0 | 0 | 1266 | 0 | 0 | 1559 | 1853 | 633 | 1220 | 1853 | 294 |
| Stage 1 | - | - | - | - | - | - | 1266 | 1266 | - | 587 | 587 | - |
| Stage 2 | - | - | - | - | - | - | 293 | 587 | - | 633 | 1266 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 998 | - | - | 556 | - | - | 78 | 75 | 427 | 138 | 75 | 708 |
| Stage 1 | - | - | - | - | - | - | 182 | 242 | - | 468 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 696 | 500 | - | 439 | 242 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 998 | - | - | 556 | - | - | 78 | 75 | 427 | 138 | 75 | 708 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 152 | 178 | - | 270 | 178 | - |
| Stage 1 | - | - | - | - | - | - | 182 | 242 | - | 468 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 696 | 500 | - | 439 | 242 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 0 |
| HCM LOS | | | A | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 556 | - | - | 998 | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - | - | - | - | - |
| HCM Control Delay (s) | 0 | 0 | - | - | 0 | - | - | 0 |
| HCM Lane LOS | A | A | - | - | A | - | - | A |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 4: Enterprise Access Drive/Public Storage Access Drive & Rand Road

10/07/2021

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1188 | 2 | 7 | 549 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Future Vol, veh/h | 0 | 1188 | 2 | 7 | 549 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1264 | 2 | 7 | 584 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 586 | 0 | 0 | 1266 | 0 | 0 | 1571 | 1865 | 633 | 1231 | 1865 | 293 |
| Stage 1 | - | - | - | - | - | - | 1265 | 1265 | - | 599 | 599 | - |
| Stage 2 | - | - | - | - | - | - | 306 | 600 | - | 632 | 1266 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 999 | - | - | 556 | - | - | 76 | 74 | 427 | 136 | 74 | 709 |
| Stage 1 | - | - | - | - | - | - | 182 | 243 | - | 460 | 494 | - |
| Stage 2 | - | - | - | - | - | - | 684 | 493 | - | 440 | 242 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 999 | - | - | 556 | - | - | 75 | 73 | 427 | 133 | 73 | 709 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 151 | 177 | - | 263 | 173 | - |
| Stage 1 | - | - | - | - | - | - | 182 | 243 | - | 460 | 488 | - |
| Stage 2 | - | - | - | - | - | - | 674 | 487 | - | 436 | 242 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 18.9 | 15.9 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 265 | 556 | - | - | 999 | - | - | 333 |
| HCM Lane V/C Ratio | 0.024 | 0.013 | - | - | - | - | - | 0.01 |
| HCM Control Delay (s) | 18.9 | 11.6 | - | - | 0 | - | - | 15.9 |
| HCM Lane LOS | C | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## Existing Weekday Evening Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

10/07/2021

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 27 | 397 | 177 | 18 | 774 | 1128 | 708 | 796 | 19 | 385 | 893 | 72 |
| Future Volume (vph) | 27 | 397 | 177 | 18 | 774 | 1128 | 708 | 796 | 19 | 385 | 893 | 72 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.997 | | | 0.989 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1687 | 3689 | 1538 | 1703 | 3762 | 2760 | 3367 | 3432 | 0 | 3433 | 3442 | 0 |
| Flt Permitted | 0.109 | | | 0.406 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 194 | 3689 | 1538 | 728 | 3762 | 2760 | 3367 | 3432 | 0 | 3433 | 3442 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 763 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 14.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 7% | 3% | 5% | 6% | 1% | 3% | 4% | 5% | 0% | 2% | 3% | 13% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 28 | 405 | 181 | 18 | 790 | 1151 | 722 | 831 | 0 | 393 | 984 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 40.5 | 22.5 | 13.5 | 40.5 | 39.0 | 39.0 | 73.5 | | 22.5 | 57.0 | |
| Total Split (%) | 9.0% | 27.0% | 15.0% | 9.0% | 27.0% | 26.0% | 26.0% | 49.0% | | 15.0% | 38.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 47.4 | 40.0 | 64.3 | 46.3 | 39.4 | 80.2 | 34.8 | 68.7 | | 18.4 | 52.3 | |
| Actuated g/C Ratio | 0.32 | 0.27 | 0.43 | 0.31 | 0.26 | 0.53 | 0.23 | 0.46 | | 0.12 | 0.35 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

10/07/2021

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.21 | 0.41 | 0.27 | 0.07 | 0.80 | 0.78 | 0.92 | 0.53 | | 0.94 | 0.82 | |
| Control Delay | 37.5 | 47.5 | 29.9 | 34.2 | 59.0 | 33.3 | 74.6 | 30.9 | | 95.0 | 51.7 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 37.5 | 47.5 | 29.9 | 34.2 | 59.0 | 33.3 | 74.6 | 30.9 | | 95.0 | 51.7 | |
| LOS | D | D | C | C | E | C | E | C | | F | D | |
| Approach Delay | | 41.8 | | | 43.7 | | | 51.2 | | | 64.1 | |
| Approach LOS | | D | | | D | | | D | | | E | |
| Queue Length 50th (ft) | 19 | 176 | 117 | 12 | 390 | 517 | 360 | 306 | | 200 | 468 | |
| Queue Length 95th (ft) | 43 | 233 | 182 | 31 | #504 | 644 | #478 | 371 | | #305 | 559 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 683 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 162 | 982 | 659 | 297 | 988 | 1475 | 781 | 1571 | | 420 | 1199 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.17 | 0.41 | 0.27 | 0.06 | 0.80 | 0.78 | 0.92 | 0.53 | | 0.94 | 0.82 | |

### Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 79.5 (53%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 50.7 Intersection LOS: D
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: North ALG Access Drive/Central Sod Farms Access Drive & Rand Road

10/07/2021

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 987 | 4 | 1 | 1343 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |
| Future Vol, veh/h | 0 | 987 | 4 | 1 | 1343 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1018 | 4 | 1 | 1385 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1388 | 0 | 0 | 1022 | 0 | 0 | 1715 | 2410 | 511 | 1898 | 2411 | 694 |
| Stage 1 | - | - | - | - | - | - | 1020 | 1020 | - | 1389 | 1389 | - |
| Stage 2 | - | - | - | - | - | - | 695 | 1390 | - | 509 | 1022 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 500 | - | - | 687 | - | - | 59 | 33 | 513 | 43 | 33 | 390 |
| Stage 1 | - | - | - | - | - | - | 257 | 317 | - | 153 | 212 | - |
| Stage 2 | - | - | - | - | - | - | 403 | 211 | - | 520 | 316 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 500 | - | - | 687 | - | - | 58 | 33 | 513 | 43 | 33 | 390 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 168 | 130 | - | 121 | 130 | - |
| Stage 1 | - | - | - | - | - | - | 257 | 317 | - | 153 | 212 | - |
| Stage 2 | - | - | - | - | - | - | 398 | 211 | - | 519 | 316 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 23.2 | 18.6 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 202 | 687 | - | - | 500 | - | - | 270 |
| HCM Lane V/C Ratio | 0.02 | 0.002 | - | - | - | - | - | 0.019 |
| HCM Control Delay (s) | 23.2 | 10.2 | - | - | 0 | - | - | 18.6 |
| HCM Lane LOS | C | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South ALG Access Drive/North IAB Access Drive & Rand Road 10/07/2021

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 989 | 0 | 0 | 1346 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Future Vol, veh/h | 0 | 989 | 0 | 0 | 1346 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1020 | 0 | 0 | 1388 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1390 | 0 | 0 | 1020 | 0 | 0 | 1714 | 2410 | 510 | 1899 | 2409 | 695 |
| Stage 1 | - | - | - | - | - | - | 1020 | 1020 | - | 1389 | 1389 | - |
| Stage 2 | - | - | - | - | - | - | 694 | 1390 | - | 510 | 1020 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 499 | - | - | 688 | - | - | 59 | 33 | 514 | 43 | 33 | 389 |
| Stage 1 | - | - | - | - | - | - | 257 | 317 | - | 153 | 212 | - |
| Stage 2 | - | - | - | - | - | - | 404 | 211 | - | 519 | 317 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 499 | - | - | 688 | - | - | 59 | 33 | 514 | 43 | 33 | 389 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 169 | 130 | - | 121 | 130 | - |
| Stage 1 | - | - | - | - | - | - | 257 | 317 | - | 153 | 212 | - |
| Stage 2 | - | - | - | - | - | - | 403 | 211 | - | 519 | 317 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 24.7 |
| HCM LOS | | | A | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 688 | - | - | 499 | - | - | 185 |
| HCM Lane V/C Ratio | - | - | - | - | - | - | - | 0.011 |
| HCM Control Delay (s) | 0 | 0 | - | - | 0 | - | - | 24.7 |
| HCM Lane LOS | A | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | 0 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 983 | 7 | 8 | 1344 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 983 | 7 | 8 | 1344 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1003 | 7 | 8 | 1371 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1371 | 0 | 0 | 1010 | 0 | 0 | 1709 | 2394 | 505 | 1889 | 2397 | 686 |
| Stage 1 | - | - | - | - | - | - | 1007 | 1007 | - | 1387 | 1387 | - |
| Stage 2 | - | - | - | - | - | - | 702 | 1387 | - | 502 | 1010 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 507 | - | - | 694 | - | - | 60 | 34 | 518 | 44 | 34 | 395 |
| Stage 1 | - | - | - | - | - | - | 262 | 321 | - | 153 | 212 | - |
| Stage 2 | - | - | - | - | - | - | 400 | 212 | - | 525 | 320 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 507 | - | - | 694 | - | - | 59 | 34 | 518 | 43 | 34 | 395 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 169 | 130 | - | 120 | 129 | - |
| Stage 1 | - | - | - | - | - | - | 262 | 321 | - | 153 | 209 | - |
| Stage 2 | - | - | - | - | - | - | 395 | 209 | - | 515 | 320 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 16.5 | 0 |
| HCM LOS | | | C | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 326 | 694 | - | - | 507 | - | - | - |
| HCM Lane V/C Ratio | 0.044 | 0.012 | - | - | - | - | - | - |
| HCM Control Delay (s) | 16.5 | 10.2 | - | - | 0 | - | - | 0 |
| HCM Lane LOS | C | B | - | - | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## 2027 No Build Weekday Morning Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 666 | 237 | 29 | 501 | 944 | 836 | 960 | 9 | 117 | 405 | 43 |
| Future Volume (vph) | 21 | 666 | 237 | 29 | 501 | 944 | 836 | 960 | 9 | 117 | 405 | 43 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.999 | | | 0.986 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 3725 | 1599 | 1805 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3361 | 0 |
| Flt Permitted | 0.321 | | | 0.192 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 610 | 3725 | 1599 | 365 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3361 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 763 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 14.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 2% | 1% | 0% | 7% | 14% | 6% | 7% | 11% | 3% | 6% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 21 | 680 | 242 | 30 | 511 | 963 | 853 | 989 | 0 | 119 | 457 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 48.0 | 13.5 | 13.5 | 48.0 | 58.5 | 58.5 | 75.0 | | 13.5 | 30.0 | |
| Total Split (%) | 9.0% | 32.0% | 9.0% | 9.0% | 32.0% | 39.0% | 39.0% | 50.0% | | 9.0% | 20.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 48.1 | 41.3 | 56.2 | 48.8 | 41.6 | 96.0 | 48.4 | 76.5 | | 8.9 | 37.1 | |
| Actuated g/C Ratio | 0.32 | 0.28 | 0.37 | 0.33 | 0.28 | 0.64 | 0.32 | 0.51 | | 0.06 | 0.25 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

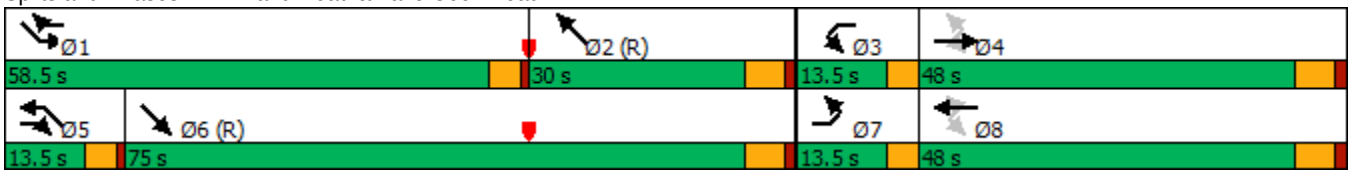
03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.08 | 0.66 | 0.40 | 0.16 | 0.52 | 0.60 | 0.80 | 0.58 | | 0.59 | 0.55 | |
| Control Delay | 30.4 | 51.4 | 36.4 | 32.0 | 47.4 | 17.2 | 52.4 | 28.6 | | 81.1 | 55.1 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 30.4 | 51.4 | 36.4 | 32.0 | 47.4 | 17.2 | 52.4 | 28.6 | | 81.1 | 55.1 | |
| LOS | C | D | D | C | D | B | D | C | | F | E | |
| Approach Delay | | 47.1 | | | 27.7 | | | 39.7 | | | 60.5 | |
| Approach LOS | | D | | | C | | | D | | | E | |
| Queue Length 50th (ft) | 13 | 302 | 166 | 18 | 215 | 270 | 389 | 383 | | 59 | 222 | |
| Queue Length 95th (ft) | 32 | 376 | 248 | 42 | 276 | 307 | 448 | 458 | | 95 | #317 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 683 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 282 | 1073 | 601 | 217 | 1030 | 1688 | 1189 | 1718 | | 208 | 830 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.07 | 0.63 | 0.40 | 0.14 | 0.50 | 0.57 | 0.72 | 0.58 | | 0.57 | 0.55 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 145.5 (97%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 39.9 Intersection LOS: D
Intersection Capacity Utilization 74.3% ICU Level of Service D
Analysis Period (min) 15
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: North ALG Access Drive/Central Sod Farms Access Drive & Rand Road

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 6 | 1220 | 0 | 1 | 558 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |
| Future Vol, veh/h | 6 | 1220 | 0 | 1 | 558 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 33 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 14 |
| Mvmt Flow | 6 | 1298 | 0 | 1 | 594 | 7 | 0 | 0 | 1 | 2 | 0 | 7 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 601 | 0 | 0 | 1298 | 0 | 0 | 1609 | 1913 | 649 | 1261 | 1910 | 301 |
| Stage 1 | - | - | - | - | - | - | 1310 | 1310 | - | 600 | 600 | - |
| Stage 2 | - | - | - | - | - | - | 299 | 603 | - | 661 | 1310 | - |
| Critical Hdwy | 4.76 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 7.18 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.53 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.44 |
| Pot Cap-1 Maneuver | 788 | - | - | 540 | - | - | 71 | 69 | 417 | 129 | 69 | 661 |
| Stage 1 | - | - | - | - | - | - | 171 | 231 | - | 459 | 493 | - |
| Stage 2 | - | - | - | - | - | - | 691 | 492 | - | 423 | 231 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 788 | - | - | 540 | - | - | 70 | 68 | 417 | 128 | 68 | 661 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 142 | 168 | - | 257 | 168 | - |
| Stage 1 | - | - | - | - | - | - | 170 | 229 | - | 455 | 492 | - |
| Stage 2 | - | - | - | - | - | - | 682 | 491 | - | 419 | 229 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13.7 | 12.5 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 417 | 540 | - | - | 788 | - | - | 490 |
| HCM Lane V/C Ratio | 0.003 | 0.002 | - | - | 0.008 | - | - | 0.02 |
| HCM Control Delay (s) | 13.7 | 11.7 | - | - | 9.6 | - | - | 12.5 |
| HCM Lane LOS | B | B | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | 0 | - | - | 0 | - | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South ALG Access Drive/North IAB Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1223 | 0 | 0 | 566 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 1223 | 0 | 0 | 566 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1301 | 0 | 0 | 602 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 603 | 0 | 0 | 1301 | 0 | 0 | 1602 | 1904 | 651 | 1254 | 1904 | 302 |
| Stage 1 | - | - | - | - | - | - | 1301 | 1301 | - | 603 | 603 | - |
| Stage 2 | - | - | - | - | - | - | 301 | 603 | - | 651 | 1301 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 984 | - | - | 539 | - | - | 72 | 70 | 416 | 131 | 70 | 700 |
| Stage 1 | - | - | - | - | - | - | 173 | 233 | - | 458 | 492 | - |
| Stage 2 | - | - | - | - | - | - | 689 | 492 | - | 429 | 233 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 984 | - | - | 539 | - | - | 72 | 70 | 416 | 131 | 70 | 700 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 145 | 171 | - | 262 | 171 | - |
| Stage 1 | - | - | - | - | - | - | 173 | 233 | - | 458 | 492 | - |
| Stage 2 | - | - | - | - | - | - | 689 | 492 | - | 429 | 233 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 0 |
| HCM LOS | | | A | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SERSWLn1 |
|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 539 | - | - | 984 | - | - - |
| HCM Lane V/C Ratio | - | - | - | - | - | - | - - |
| HCM Control Delay (s) | 0 | 0 | - | - | 0 | - | - 0 |
| HCM Lane LOS | A | A | - | - | A | - | - A |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1221 | 2 | 7 | 564 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Future Vol, veh/h | 0 | 1221 | 2 | 7 | 564 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1299 | 2 | 7 | 600 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 602 | 0 | 0 | 1301 | 0 | 0 | 1614 | 1916 | 651 | 1265 | 1916 | 301 |
| Stage 1 | - | - | - | - | - | - | 1300 | 1300 | - | 615 | 615 | - |
| Stage 2 | - | - | - | - | - | - | 314 | 616 | - | 650 | 1301 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 985 | - | - | 539 | - | - | 71 | 68 | 416 | 128 | 68 | 701 |
| Stage 1 | - | - | - | - | - | - | 173 | 233 | - | 450 | 485 | - |
| Stage 2 | - | - | - | - | - | - | 677 | 485 | - | 429 | 233 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 985 | - | - | 539 | - | - | 70 | 67 | 416 | 125 | 67 | 701 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 144 | 169 | - | 255 | 166 | - |
| Stage 1 | - | - | - | - | - | - | 173 | 233 | - | 450 | 479 | - |
| Stage 2 | - | - | - | - | - | - | 667 | 479 | - | 425 | 233 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 19.5 | 16.2 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 255 | 539 | - | - | 985 | - | - | 324 |
| HCM Lane V/C Ratio | 0.025 | 0.014 | - | - | - | - | - | 0.01 |
| HCM Control Delay (s) | 19.5 | 11.8 | - | - | 0 | - | - | 16.2 |
| HCM Lane LOS | C | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## 2027 No Build Weekday Evening Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 408 | 182 | 19 | 796 | 1160 | 728 | 818 | 20 | 396 | 918 | 74 |
| Future Volume (vph) | 28 | 408 | 182 | 19 | 796 | 1160 | 728 | 818 | 20 | 396 | 918 | 74 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.996 | | | 0.989 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1687 | 3725 | 1553 | 1703 | 3762 | 2760 | 3367 | 3428 | 0 | 3433 | 3441 | 0 |
| Flt Permitted | 0.099 | | | 0.399 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 176 | 3725 | 1553 | 715 | 3762 | 2760 | 3367 | 3428 | 0 | 3433 | 3441 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 763 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 14.9 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 7% | 2% | 4% | 6% | 1% | 3% | 4% | 5% | 0% | 2% | 3% | 13% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 29 | 416 | 186 | 19 | 812 | 1184 | 743 | 855 | 0 | 404 | 1013 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 40.5 | 22.5 | 13.5 | 40.5 | 39.0 | 39.0 | 73.5 | | 22.5 | 57.0 | |
| Total Split (%) | 9.0% | 27.0% | 15.0% | 9.0% | 27.0% | 26.0% | 26.0% | 49.0% | | 15.0% | 38.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 47.9 | 40.4 | 65.2 | 46.7 | 39.8 | 81.0 | 35.2 | 67.8 | | 18.7 | 51.4 | |
| Actuated g/C Ratio | 0.32 | 0.27 | 0.43 | 0.31 | 0.27 | 0.54 | 0.23 | 0.45 | | 0.12 | 0.34 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.22 | 0.41 | 0.28 | 0.07 | 0.81 | 0.79 | 0.94 | 0.55 | | 0.94 | 0.86 | |
| Control Delay | 37.9 | 47.3 | 29.7 | 34.2 | 59.5 | 33.8 | 76.8 | 31.7 | | 95.9 | 54.7 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 37.9 | 47.3 | 29.7 | 34.2 | 59.5 | 33.8 | 76.8 | 31.7 | | 95.9 | 54.7 | |
| LOS | D | D | C | C | E | C | E | C | | F | D | |
| Approach Delay | | 41.7 | | | 44.1 | | | 52.7 | | | 66.4 | |
| Approach LOS | | D | | | D | | | D | | | E | |
| Queue Length 50th (ft) | 19 | 181 | 120 | 12 | 404 | 543 | 373 | 318 | | 206 | 488 | |
| Queue Length 95th (ft) | 44 | 238 | 187 | 33 | #530 | 677 | #501 | 384 | | #317 | 581 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 683 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 157 | 1003 | 674 | 296 | 999 | 1490 | 789 | 1550 | | 428 | 1178 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.18 | 0.41 | 0.28 | 0.06 | 0.81 | 0.79 | 0.94 | 0.55 | | 0.94 | 0.86 | |

### Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 79.5 (53%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 51.8 Intersection LOS: D
Intersection Capacity Utilization 85.5% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: North ALG Access Drive/Central Sod Farms Access Drive & Rand Road

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1015 | 4 | 1 | 1381 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |
| Future Vol, veh/h | 0 | 1015 | 4 | 1 | 1381 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 33 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1046 | 4 | 1 | 1424 | 3 | 3 | 0 | 1 | 1 | 0 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1427 | 0 | 0 | 1050 | 0 | 0 | 1762 | 2477 | 525 | 1951 | 2478 | 714 |
| Stage 1 | - | - | - | - | - | - | 1048 | 1048 | - | 1428 | 1428 | - |
| Stage 2 | - | - | - | - | - | - | 714 | 1429 | - | 523 | 1050 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 483 | - | - | 671 | - | - | 55 | 30 | 502 | 39 | 30 | 378 |
| Stage 1 | - | - | - | - | - | - | 247 | 307 | - | 144 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 393 | 202 | - | 510 | 307 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 483 | - | - | 671 | - | - | 54 | 30 | 502 | 39 | 30 | 378 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 161 | 124 | - | 114 | 124 | - |
| Stage 1 | - | - | - | - | - | - | 247 | 307 | - | 144 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 388 | 202 | - | 509 | 307 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 24 | 19.2 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 194 | 671 | - | - | 483 | - | - | 258 |
| HCM Lane V/C Ratio | 0.021 | 0.002 | - | - | - | - | - | 0.02 |
| HCM Control Delay (s) | 24 | 10.4 | - | - | 0 | - | - | 19.2 |
| HCM Lane LOS | C | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South ALG Access Drive/North IAB Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1017 | 0 | 0 | 1384 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Future Vol, veh/h | 0 | 1017 | 0 | 0 | 1384 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1048 | 0 | 0 | 1427 | 2 | 0 | 0 | 0 | 1 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1429 | 0 | 0 | 1048 | 0 | 0 | 1762 | 2477 | 524 | 1952 | 2476 | 715 |
| Stage 1 | - | - | - | - | - | - | 1048 | 1048 | - | 1428 | 1428 | - |
| Stage 2 | - | - | - | - | - | - | 714 | 1429 | - | 524 | 1048 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 482 | - | - | 672 | - | - | 55 | 30 | 503 | 39 | 30 | 378 |
| Stage 1 | - | - | - | - | - | - | 247 | 307 | - | 144 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 393 | 202 | - | 510 | 307 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 482 | - | - | 672 | - | - | 55 | 30 | 503 | 39 | 30 | 378 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 162 | 124 | - | 114 | 125 | - |
| Stage 1 | - | - | - | - | - | - | 247 | 307 | - | 144 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 392 | 202 | - | 510 | 307 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 25.8 |
| HCM LOS | | | A | D |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | 672 | - | - | 482 | - | - | 175 |
| HCM Lane V/C Ratio | - | - | - | - | - | - | - | 0.012 |
| HCM Control Delay (s) | 0 | 0 | - | - | 0 | - | - | 25.8 |
| HCM Lane LOS | A | A | - | - | A | - | - | D |
| HCM 95th %tile Q(veh) | - | 0 | - | - | 0 | - | - | 0 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
4: Enterprise Access Drive/Public Storage Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1011 | 7 | 8 | 1382 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 1011 | 7 | 8 | 1382 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1032 | 7 | 8 | 1410 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1410 | 0 | 0 | 1039 | 0 | 0 | 1757 | 2462 | 520 | 1942 | 2465 | 705 |
| Stage 1 | - | - | - | - | - | - | 1036 | 1036 | - | 1426 | 1426 | - |
| Stage 2 | - | - | - | - | - | - | 721 | 1426 | - | 516 | 1039 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 490 | - | - | 677 | - | - | 55 | 31 | 506 | 40 | 31 | 383 |
| Stage 1 | - | - | - | - | - | - | 251 | 311 | - | 145 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 389 | 203 | - | 515 | 310 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 490 | - | - | 677 | - | - | 55 | 31 | 506 | 39 | 31 | 383 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 162 | 125 | - | 114 | 124 | - |
| Stage 1 | - | - | - | - | - | - | 251 | 311 | - | 145 | 201 | - |
| Stage 2 | - | - | - | - | - | - | 384 | 201 | - | 505 | 310 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 17 | 0 |
| HCM LOS | | | C | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 315 | 677 | - | - | 490 | - | - | - |
| HCM Lane V/C Ratio | 0.045 | 0.012 | - | - | - | - | - | - |
| HCM Control Delay (s) | 17 | 10.4 | - | - | 0 | - | - | 0 |
| HCM Lane LOS | C | B | - | - | A | - | - | A |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## 2027 Projected Weekday Morning Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 21 | 666 | 254 | 44 | 501 | 944 | 836 | 996 | 9 | 119 | 409 | 44 |
| Future Volume (vph) | 21 | 666 | 254 | 44 | 501 | 944 | 836 | 996 | 9 | 119 | 409 | 44 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.999 | | | 0.985 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1805 | 3725 | 1599 | 1719 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3358 | 0 |
| Flt Permitted | 0.349 | | | 0.184 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 663 | 3725 | 1599 | 333 | 3551 | 2493 | 3303 | 3369 | 0 | 3400 | 3358 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 531 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 10.3 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 0% | 2% | 1% | 5% | 7% | 14% | 6% | 7% | 11% | 3% | 6% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 21 | 680 | 259 | 45 | 511 | 963 | 853 | 1025 | 0 | 121 | 462 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 48.0 | 13.5 | 13.5 | 48.0 | 58.5 | 58.5 | 75.0 | | 13.5 | 30.0 | |
| Total Split (%) | 9.0% | 32.0% | 9.0% | 9.0% | 32.0% | 39.0% | 39.0% | 50.0% | | 9.0% | 20.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 48.8 | 40.7 | 55.6 | 51.7 | 43.8 | 98.2 | 48.4 | 74.4 | | 8.8 | 34.8 | |
| Actuated g/C Ratio | 0.33 | 0.27 | 0.37 | 0.34 | 0.29 | 0.65 | 0.32 | 0.50 | | 0.06 | 0.23 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

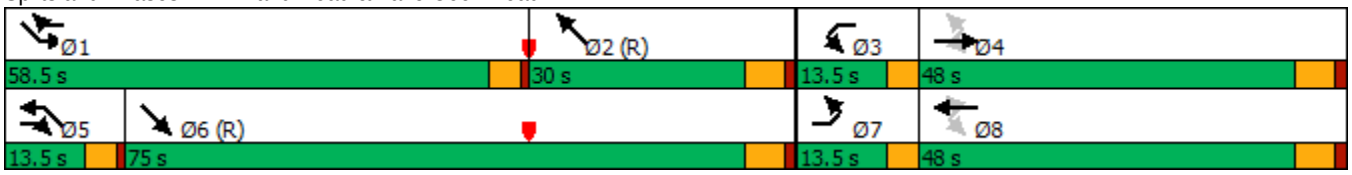
03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.08 | 0.67 | 0.44 | 0.24 | 0.49 | 0.59 | 0.80 | 0.61 | | 0.60 | 0.59 | |
| Control Delay | 29.7 | 52.2 | 37.8 | 32.9 | 45.6 | 15.9 | 52.4 | 30.7 | | 81.9 | 57.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 29.7 | 52.2 | 37.8 | 32.9 | 45.6 | 15.9 | 52.4 | 30.7 | | 81.9 | 57.5 | |
| LOS | C | D | D | C | D | B | D | C | | F | E | |
| Approach Delay | | 47.8 | | | 26.4 | | | 40.6 | | | 62.6 | |
| Approach LOS | | D | | | C | | | D | | | E | |
| Queue Length 50th (ft) | 13 | 303 | 182 | 28 | 214 | 267 | 389 | 404 | | 60 | 225 | |
| Queue Length 95th (ft) | 32 | 380 | 271 | 56 | 276 | 307 | 448 | 482 | | 96 | #323 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 451 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 302 | 1059 | 595 | 208 | 1073 | 1725 | 1189 | 1670 | | 206 | 779 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.07 | 0.64 | 0.44 | 0.22 | 0.48 | 0.56 | 0.72 | 0.61 | | 0.59 | 0.59 | |

### Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 145.5 (97%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 40.2 Intersection LOS: D
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: Rand Road & Central Sod Farms Access Drive

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 6 | 1263 | 565 | 7 | 2 | 7 |
| Future Vol, veh/h | 6 | 1263 | 565 | 7 | 2 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 25 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 1 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 33 | 6 | 5 | 0 | 0 | 14 |
| Mvmt Flow | 6 | 1344 | 601 | 7 | 2 | 7 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 608 | 0 | - | 0 | 1289 | 304 |
| Stage 1 | - | - | - | - | 605 | - |
| Stage 2 | - | - | - | - | 684 | - |
| Critical Hdwy | 4.76 | - | - | - | 6.8 | 7.18 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.8 | - |
| Follow-up Hdwy | 2.53 | - | - | - | 3.5 | 3.44 |
| Pot Cap-1 Maneuver | 783 | - | - | - | 158 | 658 |
| Stage 1 | - | - | - | - | 513 | - |
| Stage 2 | - | - | - | - | 468 | - |
| Platoon blocked, % | | - | - | - | | |
| Mov Cap-1 Maneuver | 783 | - | - | - | 157 | 658 |
| Mov Cap-2 Maneuver | - | - | - | - | 294 | - |
| Stage 1 | - | - | - | - | 509 | - |
| Stage 2 | - | - | - | - | 468 | - |

| Approach | SE | NW | SW |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 12.1 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NWT | NWR | SEL | SET | SWLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 783 | - | 516 |
| HCM Lane V/C Ratio | - | - | 0.008 | - | 0.019 |
| HCM Control Delay (s) | - | - | 9.6 | - | 12.1 |
| HCM Lane LOS | - | - | A | - | B |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South Site Access Drive/North IAB Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1226 | 39 | 22 | 565 | 1 | 7 | 0 | 2 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 1226 | 39 | 22 | 565 | 1 | 7 | 0 | 2 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1304 | 41 | 23 | 601 | 1 | 7 | 0 | 2 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 602 | 0 | 0 | 1345 | 0 | 0 | 1672 | 1973 | 673 | 1300 | 1993 | 301 |
| Stage 1 | - | - | - | - | - | - | 1325 | 1325 | - | 648 | 648 | - |
| Stage 2 | - | - | - | - | - | - | 347 | 648 | - | 652 | 1345 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 985 | - | - | 519 | - | - | 64 | 63 | 402 | 121 | 61 | 701 |
| Stage 1 | - | - | - | - | - | - | 167 | 227 | - | 430 | 469 | - |
| Stage 2 | - | - | - | - | - | - | 648 | 469 | - | 428 | 222 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 985 | - | - | 519 | - | - | 62 | 60 | 402 | 116 | 58 | 701 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 137 | 161 | - | 243 | 147 | - |
| Stage 1 | - | - | - | - | - | - | 167 | 227 | - | 430 | 448 | - |
| Stage 2 | - | - | - | - | - | - | 619 | 448 | - | 426 | 222 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.5 | 28.8 | 0 |
| HCM LOS | | | D | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SERSWLn1 |
|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 161 | 519 | - | - | 985 | - | - - |
| HCM Lane V/C Ratio | 0.059 | 0.045 | - | - | - | - | - - |
| HCM Control Delay (s) | 28.8 | 12.3 | - | - | 0 | - | - 0 |
| HCM Lane LOS | D | B | - | - | A | - | - A |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 4: Enterprise Access Drive/Public Storage Access Drive & Rand Road

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1226 | 2 | 7 | 585 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Future Vol, veh/h | 0 | 1226 | 2 | 7 | 585 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 0 | 6 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1304 | 2 | 7 | 622 | 2 | 2 | 0 | 4 | 2 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 624 | 0 | 0 | 1306 | 0 | 0 | 1630 | 1943 | 653 | 1289 | 1943 | 312 |
| Stage 1 | - | - | - | - | - | - | 1305 | 1305 | - | 637 | 637 | - |
| Stage 2 | - | - | - | - | - | - | 325 | 638 | - | 652 | 1306 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 967 | - | - | 537 | - | - | 69 | 66 | 415 | 123 | 66 | 690 |
| Stage 1 | - | - | - | - | - | - | 172 | 232 | - | 437 | 475 | - |
| Stage 2 | - | - | - | - | - | - | 667 | 474 | - | 428 | 232 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 967 | - | - | 537 | - | - | 68 | 65 | 415 | 121 | 65 | 690 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 143 | 167 | - | 250 | 164 | - |
| Stage 1 | - | - | - | - | - | - | 172 | 232 | - | 437 | 469 | - |
| Stage 2 | - | - | - | - | - | - | 657 | 468 | - | 424 | 232 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 19.5 | 16.5 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 254 | 537 | - | - | 967 | - | - | 317 |
| HCM Lane V/C Ratio | 0.025 | 0.014 | - | - | - | - | - | 0.01 |
| HCM Control Delay (s) | 19.5 | 11.8 | - | - | 0 | - | - | 16.5 |
| HCM Lane LOS | C | B | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
5: North Site Access Drive & Rand Road

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SET | SER | NWL | NWT | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1265 | 29 | 0 | 572 | 0 | 4 |
| Future Vol, veh/h | 1265 | 29 | 0 | 572 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 6 | 10 | 0 | 5 | 0 | 75 |
| Mvmt Flow | 1332 | 31 | 0 | 602 | 0 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 682 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 8.4 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 4.05 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 259 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 259 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | SE | NW | NE |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 19.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NELn1 | NWT | SET | SER |
|---|---|---|---|---|
| Capacity (veh/h) | 259 | - | - | - |
| HCM Lane V/C Ratio | 0.016 | - | - | - |
| HCM Control Delay (s) | 19.1 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Capacity Analysis Summary Sheets

## 2027 Projected Weekday Evening Peak Hour Conditions

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 408 | 184 | 22 | 796 | 1160 | 728 | 819 | 20 | 412 | 947 | 86 |
| Future Volume (vph) | 28 | 408 | 184 | 22 | 796 | 1160 | 728 | 819 | 20 | 412 | 947 | 86 |
| Ideal Flow (vphpl) | 1900 | 2000 | 1900 | 1900 | 2000 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | 0 | 215 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 2 | 2 | | 0 | 2 | | 0 |
| Taper Length (ft) | 140 | | | 90 | | | 290 | | | 300 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.88 | 0.97 | 0.95 | 0.95 | 0.97 | 0.95 | 0.95 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | 0.850 | | | 0.850 | | 0.996 | | | 0.987 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1687 | 3725 | 1553 | 1656 | 3762 | 2760 | 3433 | 3485 | 0 | 3367 | 3407 | 0 |
| Flt Permitted | 0.100 | | | 0.396 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 178 | 3725 | 1553 | 690 | 3762 | 2760 | 3433 | 3485 | 0 | 3367 | 3407 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 35 | | | 35 | |
| Link Distance (ft) | | 2957 | | | 2627 | | | 1774 | | | 531 | |
| Travel Time (s) | | 44.8 | | | 39.8 | | | 34.6 | | | 10.3 | |
| Confl. Peds. (#/hr) | | | | | | | | | | | | |
| Confl. Bikes (#/hr) | | | | | | | | | | | | |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Growth Factor | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% | 100% |
| Heavy Vehicles (%) | 7% | 2% | 4% | 9% | 1% | 3% | 2% | 3% | 10% | 4% | 5% | 0% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Parking (#/hr) | | | | | | | | | | | | |
| Mid-Block Traffic (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 29 | 416 | 188 | 22 | 812 | 1184 | 743 | 856 | 0 | 420 | 1054 | 0 |
| Turn Type | pm+pt | NA | pm+ov | pm+pt | NA | pm+ov | Prot | NA | | Prot | NA | |
| Protected Phases | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | | | | |
| Detector Phase | 7 | 4 | 5 | 3 | 8 | 1 | 1 | 6 | | 5 | 2 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | 3.0 | 3.0 | 15.0 | | 3.0 | 15.0 | |
| Minimum Split (s) | 6.5 | 21.0 | 7.5 | 6.5 | 21.0 | 7.5 | 7.5 | 21.0 | | 7.5 | 21.0 | |
| Total Split (s) | 13.5 | 40.5 | 22.5 | 13.5 | 40.5 | 39.0 | 39.0 | 73.5 | | 22.5 | 57.0 | |
| Total Split (%) | 9.0% | 27.0% | 15.0% | 9.0% | 27.0% | 26.0% | 26.0% | 49.0% | | 15.0% | 38.0% | |
| Yellow Time (s) | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | 3.5 | 3.5 | 4.5 | | 3.5 | 4.5 | |
| All-Red Time (s) | 0.0 | 1.5 | 1.0 | 0.0 | 1.5 | 1.0 | 1.0 | 1.5 | | 1.0 | 1.5 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 3.5 | 6.0 | 4.5 | 3.5 | 6.0 | 4.5 | 4.5 | 6.0 | | 4.5 | 6.0 | |
| Lead/Lag | Lead | Lag | Lead | Lead | Lag | Lead | Lead | Lag | | Lead | Lag | |
| Lead-Lag Optimize? | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | | Yes | Yes | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 47.7 | 40.2 | 65.3 | 46.9 | 39.8 | 80.7 | 34.9 | 67.5 | | 19.1 | 51.7 | |
| Actuated g/C Ratio | 0.32 | 0.27 | 0.44 | 0.31 | 0.27 | 0.54 | 0.23 | 0.45 | | 0.13 | 0.34 | |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Lanes, Volumes, Timings
## 1: Rand Road & Lake Cook Road

03/15/2022

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | SEL | SET | SER | NWL | NWT | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| v/c Ratio | 0.22 | 0.42 | 0.28 | 0.08 | 0.81 | 0.80 | 0.93 | 0.55 | | 0.98 | 0.90 | |
| Control Delay | 37.8 | 47.5 | 29.8 | 34.5 | 59.5 | 34.0 | 75.3 | 31.7 | | 103.1 | 57.8 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 37.8 | 47.5 | 29.8 | 34.5 | 59.5 | 34.0 | 75.3 | 31.7 | | 103.1 | 57.8 | |
| LOS | D | D | C | C | E | C | E | C | | F | E | |
| Approach Delay | | 41.8 | | | 44.3 | | | 52.0 | | | 70.7 | |
| Approach LOS | | D | | | D | | | D | | | E | |
| Queue Length 50th (ft) | 19 | 182 | 122 | 14 | 404 | 543 | 372 | 317 | | ~227 | 518 | |
| Queue Length 95th (ft) | 44 | 240 | 189 | 36 | #530 | 677 | #493 | 382 | | #339 | #645 | |
| Internal Link Dist (ft) | | 2877 | | | 2547 | | | 1694 | | | 451 | |
| Turn Bay Length (ft) | 190 | | 505 | 140 | | 505 | 670 | | | 215 | | |
| Base Capacity (vph) | 158 | 999 | 676 | 286 | 999 | 1484 | 797 | 1568 | | 428 | 1174 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.18 | 0.42 | 0.28 | 0.08 | 0.81 | 0.80 | 0.93 | 0.55 | | 0.98 | 0.90 | |

### Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 79.5 (53%), Referenced to phase 2:NWT and 6:SET, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 53.0 Intersection LOS: D
Intersection Capacity Utilization 86.7% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Rand Road & Lake Cook Road




Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# HCM 6th TWSC
## 2: Rand Road & Central Sod Farms Access Drive

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SEL | SET | NWT | NWR | SWL | SWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 1027 | 1441 | 3 | 1 | 4 |
| Future Vol, veh/h | 0 | 1027 | 1441 | 3 | 1 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 25 | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | 0 | - | 1 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 3 | 33 | 0 | 0 |
| Mvmt Flow | 0 | 1059 | 1486 | 3 | 1 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1489 | 0 | - | 0 | 2018 | 745 |
| Stage 1 | - | - | - | - | 1488 | - |
| Stage 2 | - | - | - | - | 530 | - |
| Critical Hdwy | 4.1 | - | - | - | 6.8 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.8 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.8 | - |
| Follow-up Hdwy | 2.2 | - | - | - | 3.5 | 3.3 |
| Pot Cap-1 Maneuver | 457 | - | - | - | 52 | 361 |
| Stage 1 | - | - | - | - | 177 | - |
| Stage 2 | - | - | - | - | 560 | - |
| Platoon blocked, % | | | - | - | - | |
| Mov Cap-1 Maneuver | 457 | - | - | - | 52 | 361 |
| Mov Cap-2 Maneuver | - | - | - | - | 139 | - |
| Stage 1 | - | - | - | - | 177 | - |
| Stage 2 | - | - | - | - | 560 | - |

| Approach | SE | NW | SW |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 18.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NWT | NWR | SEL | SET | SWLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 457 | - | 274 |
| HCM Lane V/C Ratio | - | - | - | - | 0.019 |
| HCM Control Delay (s) | - | - | 0 | - | 18.4 |
| HCM Lane LOS | - | - | A | - | C |
| HCM 95th %tile Q(veh) | - | - | 0 | - | 0.1 |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
3: South Site Access Drive/North IAB Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1023 | 5 | 3 | 1383 | 2 | 60 | 0 | 14 | 1 | 0 | 1 |
| Future Vol, veh/h | 0 | 1023 | 5 | 3 | 1383 | 2 | 60 | 0 | 14 | 1 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1055 | 5 | 3 | 1426 | 2 | 62 | 0 | 14 | 1 | 0 | 1 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1428 | 0 | 0 | 1060 | 0 | 0 | 1777 | 2492 | 530 | 1961 | 2493 | 714 |
| Stage 1 | - | - | - | - | - | - | 1058 | 1058 | - | 1433 | 1433 | - |
| Stage 2 | - | - | - | - | - | - | 719 | 1434 | - | 528 | 1060 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 482 | - | - | 665 | - | - | ~ 53 | 30 | 499 | 39 | 30 | 378 |
| Stage 1 | - | - | - | - | - | - | 244 | 304 | - | 143 | 201 | - |
| Stage 2 | - | - | - | - | - | - | 390 | 201 | - | 507 | 303 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 482 | - | - | 665 | - | - | ~ 53 | 30 | 499 | 38 | 30 | 378 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 159 | 123 | - | 112 | 123 | - |
| Stage 1 | - | - | - | - | - | - | 244 | 304 | - | 143 | 200 | - |
| Stage 2 | - | - | - | - | - | - | 387 | 200 | - | 492 | 303 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 38.1 | 26.1 |
| HCM LOS | | | E | D |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SER | SWLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 183 | 665 | - | - | 482 | - | - | 173 |
| HCM Lane V/C Ratio | 0.417 | 0.005 | - | - | - | - | - | 0.012 |
| HCM Control Delay (s) | 38.1 | 10.4 | - | - | 0 | - | - | 26.1 |
| HCM Lane LOS | E | B | - | - | A | - | - | D |
| HCM 95th %tile Q(veh) | 1.9 | 0 | - | - | 0 | - | - | 0 |

| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
4: Enterprise Access Drive/Public Storage Access Drive & Rand Road 03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | SEL | SET | SER | NWL | NWT | NWR | NEL | NET | NER | SWL | SWT | SWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 1031 | 7 | 8 | 1384 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Future Vol, veh/h | 0 | 1031 | 7 | 8 | 1384 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 25 | - | - | 25 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 1 | - | - | 1 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 | 98 |
| Heavy Vehicles, % | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mvmt Flow | 0 | 1052 | 7 | 8 | 1412 | 0 | 4 | 0 | 10 | 0 | 0 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1412 | 0 | 0 | 1059 | 0 | 0 | 1778 | 2484 | 530 | 1954 | 2487 | 706 |
| Stage 1 | - | - | - | - | - | - | 1056 | 1056 | - | 1428 | 1428 | - |
| Stage 2 | - | - | - | - | - | - | 722 | 1428 | - | 526 | 1059 | - |
| Critical Hdwy | 4.1 | - | - | 4.1 | - | - | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.5 | 5.5 | - | 6.5 | 5.5 | - |
| Follow-up Hdwy | 2.2 | - | - | 2.2 | - | - | 3.5 | 4 | 3.3 | 3.5 | 4 | 3.3 |
| Pot Cap-1 Maneuver | 489 | - | - | 665 | - | - | 53 | 30 | 499 | 39 | 30 | 383 |
| Stage 1 | - | - | - | - | - | - | 244 | 305 | - | 144 | 203 | - |
| Stage 2 | - | - | - | - | - | - | 389 | 203 | - | 508 | 304 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 489 | - | - | 665 | - | - | 53 | 30 | 499 | 38 | 30 | 383 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 159 | 124 | - | 113 | 122 | - |
| Stage 1 | - | - | - | - | - | - | 244 | 305 | - | 144 | 201 | - |
| Stage 2 | - | - | - | - | - | - | 384 | 201 | - | 498 | 304 | - |

| Approach | SE | NW | NE | SW |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 17.2 | 0 |
| HCM LOS | | | C | A |

| Minor Lane/Major Mvmt | NELn1 | NWL | NWT | NWR | SEL | SET | SERSWLn1 |
|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 310 | 665 | - | - | 489 | - | - - |
| HCM Lane V/C Ratio | 0.046 | 0.012 | - | - | - | - | - - |
| HCM Control Delay (s) | 17.2 | 10.5 | - | - | 0 | - | - 0 |
| HCM Lane LOS | C | B | - | - | A | - | - A |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - - |

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

HCM 6th TWSC
5: North Site Access Drive & Rand Road

03/15/2022

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | SET | SER | NWL | NWT | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1020 | 5 | 0 | 1445 | 0 | 7 |
| Future Vol, veh/h | 1020 | 5 | 0 | 1445 | 0 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 5 | 20 | 0 | 3 | 0 | 14 |
| Mvmt Flow | 1074 | 5 | 0 | 1521 | 0 | 7 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 540 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.18 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.44 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 456 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 456 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | SE | NW | NE |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 13 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NELn1 | NWT | SET | SER |
|---|---|---|---|---|
| Capacity (veh/h) | 456 | - | - | - |
| HCM Lane V/C Ratio | 0.016 | - | - | - |
| HCM Control Delay (s) | 13 | - | - | - |
| HCM Lane LOS | B | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

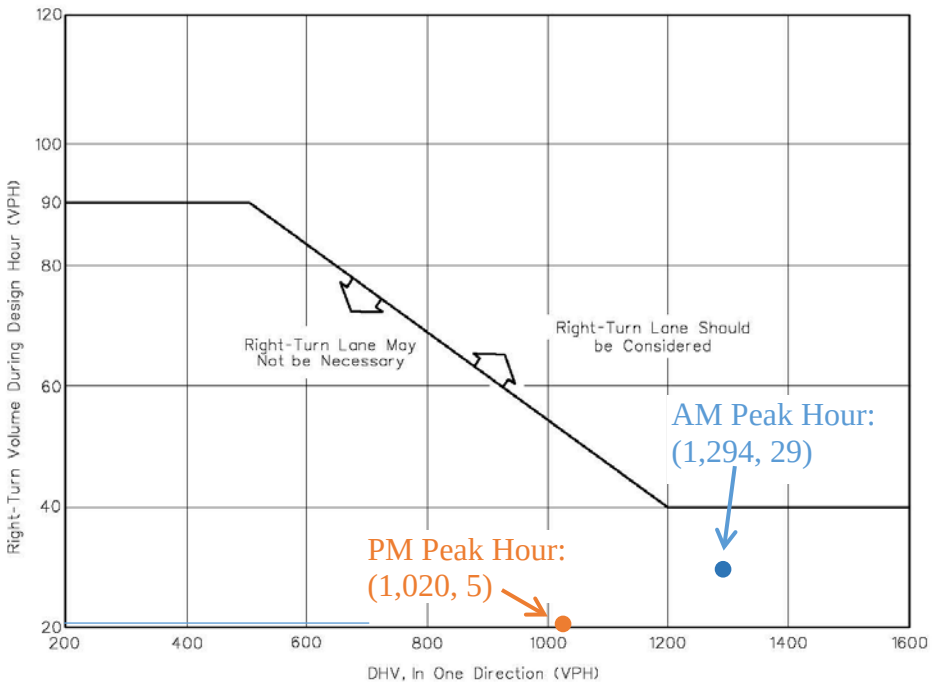
Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Turn Lane Warrants

Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Rand Road with the Proposed North Access Drive Right Turn Lane Guidelines






*Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).*

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION ON FOUR-LANE HIGHWAYS (Design Speed of 50 mph (80 km/hr) or Greater)**

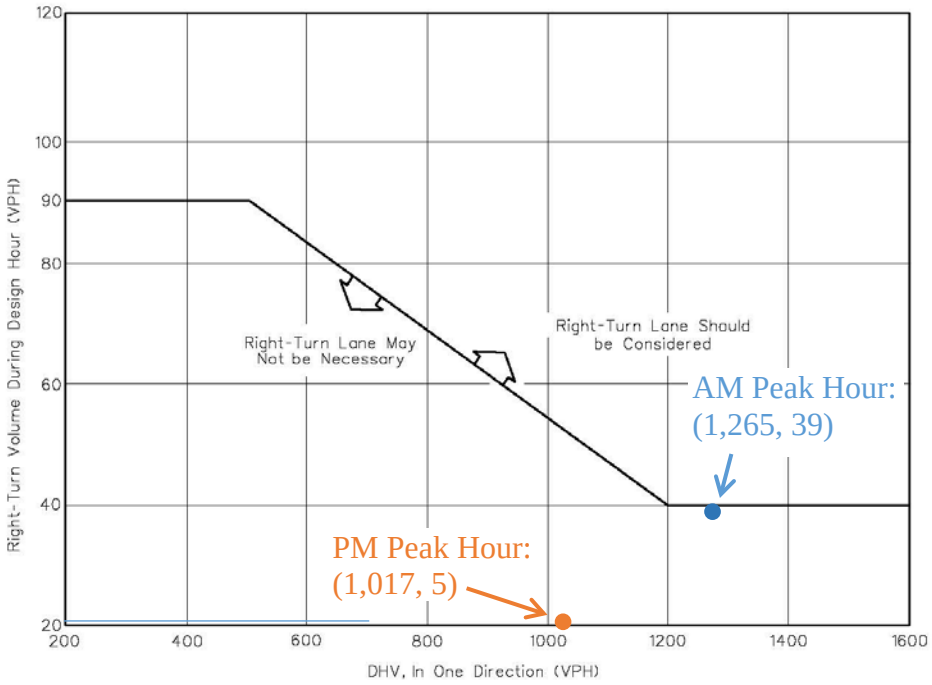
**Figure 36-3.B**



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# Rand Road with the Proposed South Access Drive Right Turn Lane Guidelines






*Note: For speeds less than 50 mph (80 km/hr), see Section 36-3.01(a).*

**GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTION ON FOUR-LANE HIGHWAYS (Design Speed of 50 mph (80 km/hr) or Greater)**

**Figure 36-3.B**



Attachment: KLOA Rand Rd. Traffic Study (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)




| Luminaire Schedule | | | | |
|---|---|---|---|---|
| Symbol | Qty | LLF | Description | Type |
| | 2 | 0.950 | DSX0 LED P3 40K T3S MVOLT | P1 |
| | 6 | 0.950 | WDGE4 LED P3 70CRI R3 40K | W1 |
| | 10 | 0.950 | WDGE4 LED P3 70CRI RFT 40K | W2 |

| Calculation Summary | | | | | | | |
|---|---|---|---|---|---|---|---|
| Label | CalcType | Units | Avg | Max | Min | Avg/Min | Max/Min |
| Site | Illuminance | Fc | 0.97 | 8.0 | 0.0 | N.A. | N.A. |

**This document contains confidential and proprietary information of KSA Lighting & Controls. This document may only be used by or for the benefit of KSA Lighting & Controls representatives and customers. This lighting layout is not a professional engineering drawing and is provided for informational purposes only, without warranty as to accuracy, completeness, reliability or otherwise. KSA Lighting & Controls is not responsible for specifying the light fixtures or illumination requirements for any specific project, nor is it responsible for meeting municipal or building code requirements. It is the obligation of the end-user to consult with a professional engineering advisor to determine whether this lighting layout meets the applicable project requirements for lighting system performance, safety, suitability and effectiveness for use in a particular application. Field verification is recommended when calculations are based on end-user or customer-provided information. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual field performance to differ from the calculated photometric performance represented in this lighting layout. In no event will KSA Lighting & Controls be responsible for any loss resulting from any use of this drawing.

Notes :
1. Calculation Work Plane : Ground Level
2. Fixture Mounting Height : 25'
3. Calculation Point Spacing : 10' x10'

LIGHTING & CONTROLS

KSA

# 2234 Rand Rd

Drawn By: Scott Shellberg
Date:3/1/2022
Notes :



Attachment: Photometric Lighting Plan (2240-2256 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

**PRELIMINARY & FINAL PLANNED DEVELOPMENT**

**Department of Planning & Zoning**
200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

# CONTACT INFORMATION WORKSHEET

| **Petitioner(s)** | | **Business Name (if applicable)** |
|---|---|---|
| TMG Acquisition Disposition 1, LLC | | |
| Address | | City/State/Zip Code |
| 1700 W. Higgins Rd Suite 400 Des Plaines, IL 60018 | | |
| Telephone<br>847-675-8877 | Fax | Email<br>bmissner@missnergroup.com |
| Subject Property Address | | |
| 2240-2296 N Rand Road Palatine, IL 60074 | | |
| **Authorized Agent (if applicable)** | | **Business Name (if applicable)** |
| Lawrence Freedman | | |
| Address | | City/State/Zip Code |
| 10 North Dearborn, Suite 300 Chicago, IL 60602 | | |
| Telephone<br>312-346-1390 | Fax | Email<br>LMFreedman@aflaw.com |

I swear that the information contained herein and in any accompanying documents is accurate to the best of my knowledge.

Signature

6/14/22
Date

Attachment: PFPD application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

# PRELIMINARY & FINAL PLANNED DEVELOPMENT

## Department of Planning & Zoning

200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | | |
|---|---|---|
| | Project Planner | Zoning Case # |
| | Filing Fee | Notification Deadline |
| | PC Public Hearing Date | Village Council Date |

*date received*

PLEASE TYPE OR PRINT IN INK:

1. Name of Petitioner(s): TMG Acquisition Disposition 1, LLC

2. Authorized Agent of Petitioner (if different):

   Name: Lawrence Freedman

   Address: 95 Revere Drive, Unit G Northbrook, IL 60062

   Telephone No. 312-346-1390 Business No. _____

   Email: LMFreedman@aflaw.com

   Relationship to Petitioner: Attorney

3. Property Interest of Petitioner(s): Contract Purchaser
   Owner, Lessee, Contract Purchaser, etc.

4. Address of the property for which this application is being filed:

   2240-2296 N Rand Road, Palatine, IL 60074

5. All existing land use(s) on the property are: Used Car lot, and construction materials company.

6. Current zoning of property: B-5 Size of the property: 8.88 acres

7. Briefly describe the proposed Planned Development with regards to types of uses proposed, number and types of units, development mix, amenities to be provided, etc.:

The proposed Planned Development is to build a multi-tenant 145,408 Sq. Class A industrial building. The proposed development will have 20 exterior docks, room for 140 car parking spots, and an additional 28 trailer positions. The types of uses we could see at this building are warehousing, utilities and services, light industrial and light manufacturing, etc.

Attachment: PFPD application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

8. Describe any Variations from the Village Ordinances which would be required if the proposed Planned Development ere to be developed as a traditionally zoned project (if any):

Depending on the ultimate mix of office and warehouse. A parking variation of up too 36 spaces will be required.

9. The attached Checklist of Documents outlines all required submittals before a project may be scheduled for the required public hearing before the Plan Commission. All required documents must be submitted with this Petition.

Attachment: PFPD application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

10. The petitioner's signature below indicates that the information contained in this application and on any accompanying documents is true and correct to the best of his/her knowledge.

Signature: _____ Date: 6/14/22

State of Illinois

County of Cook

This instrument was acknowledged before me on June 14, 2022 by Barry Missner

(Seal)

CODY BALOGH
Official Seal
Notary Public - State of Illinois
My Commission Expires Jun 21, 2022

_____
Notary Public

Attachment: PFPD application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

# Real Estate Interest Disclosure Form

**Name of Disclosing Party (individual, business, etc.)**
TMG Acquisition Disposition 1, LLC

Relationship to Petitioner (check one)

■ Petitioner □ Legal Entity holding an Interest (i.e. realtor, attorney, etc.)

□ Legal Entity Holding a Right of Control (i.e. landlord, etc.)

| Address of Disclosing Party | City/State/Zip Code |
|---|---|
| 1700 W. Higgins Road Suite 400, Des Plaines, IL 60018 | |

| Telephone | Fax | Email |
|---|---|---|
| 847-675-8877 | | bmissner@missnergroup.com |

| **Address of Subject Property** | **City/State/Zip Code** |
|---|---|
| 2240-2296 N Rand Road, Palatine, IL 60074 | |

Legal Description of Subject Property (see plat of survey or title)

**List All Persons Deriving an Interest in Subject Property (i.e. owner, lessee, etc.)**

| Name | Address | Legal Interest |
|---|---|---|
| TMG Acquisition Disposition 1, LLC | 1700 W. Higgins Rd Suite 400, Des Plaines, IL 60018 | Contract Purchaser |

I affirm that there are no other persons deriving any interest from or through me or from or through any other person or entities above set forth in the property which is the subject of the contract or application for which I am filing this disclosure notice whom I have not disclosed.

I understand that if there are any changes in the interest disclosed in this disclosure notice during the terms of the subject contract or before the Village has taken final action on the matter for which this disclosure notice is filed, I shall file a subsequent disclosure notice disclosing such changes.

Signature _____ Date

SUBSCRIBED AND SWORN TO before me this 14 day of June 2022.

Notary Public Signature

| Project Planner | Zoning Case # |
|---|---|
| | |

Attachment: PFPD application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

# REZONING

**Department of Planning & Zoning**
200 E. Wood Street • Palatine, IL • 60067-5339
Telephone: (847) 359-9047 • Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | | |
|---|---|---|
| | Project Planner | Zoning Case # |
| | Filing Fee | Notification Deadline |

Date received

**PLEASE TYPE OR PRINT IN INK:**

1. Name of Petitioner(s): TMG Acquisition Disposition I, LLC

2. Authorized Agent of Petitioner (if different):
   Name: Lawrence Freedman
   Address: 95 Revere Drive, Unit G Northbrook, IL 60062
   Telephone No. 312-346-1390 Business No. _____
   Relationship to Petitioner: Attorney

3. Property Interest of Petitioner(s): Contract Purchaser
   Owner, Lessee, Contract Purchaser, etc.

4. Address of the property for which this application is being filed:
   2240-2296 N Rand Road, Palatine, IL 60074

5. This petition is for: (check one)
   X Rezoning of currently incorporated property (within Village limits)
   _____ Rezoning of currently unincorporated property, in conjunction with annexation

6. All existing land use(s) on the property are: Used car lot, and construction materials company

7. The proposed use(s) on the property, if this petition is approved is (are):

8. Current zoning of property: B-5 Size of the Property: 8.88 acres

9. Proposed new zoning classification: PUD



Attachment: Rezoning application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

PETITIONER JUSTIFICATION:

The Petitioner is required to present specific evidence, not opinions, to justify the proposed rezoning. Please respond to the following questions, attaching a separate sheet if necessary:

10. Describe why the subject property cannot be reasonably developed in accordance with the existing zoning classification.

The existing zoning classification of B-5 restricts the ability to construct an office/industrial building. Whereas the PUD would allow us to develop the desired office/industrial building.

11. Is the proposed zoning classification similar to or harmonious with the existing zoning of surrounding properties? Explain.

Currently the surrounding properties zoning classifications are also B-5 with various uses such as Auto Dealership, an Enterprise Rent-A-Car, and a self-storage facility. Our request for the zoning classification be changed to PUD would be similar to the existing uses of the surrounding properties since we are proposing to development a state-of-the-art Industrial Building.

12. Does the proposed zoning classification conflict with the Village's Comprehensive Plan? Explain.

It does not conflict with the Village's Comprehensive Plan because figure 4.21 of the Future Land Use Map lays out our site as well as the surrounding properties as Commercial & Manufacturing. This rezone to a PUD for an office/industrial building would fit within the Village's Comprehensive Plan for that area.

13. Will any of the uses permitted under the proposed zoning classification have an injurious effect on the value and/or the use and enjoyment of surrounding properties?

None of the permitted uses will have an injurious effect on the value of the surrounding properties. Currently on the site is a used car dealership & a construction materials company. Our project would be an added benefit to the surrounding properties because as mentioned it will be a state-of-the-art building while also beautifying the street scape along Rand Road.



Attachment: Rezoning application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

14. The petitioner's signature below indicates that the information contained in this application and on any accompanying documents is true and correct to the best of his/her knowledge.

Signature: _____ Date: 6/14/22

Attachment: Rezoning application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

Attachment: Rezoning application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

**PRELIMINARY & FINAL PLAT OF SUBDIVISION**

**Department of Planning & Zoning**
200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

# CONTACT INFORMATION WORKSHEET

| | |
|---|---|
| **PETITIONER(S)** | **Business Name (If applicable)** |
| TMG Acquisition Disposition 1, LLC | |
| Address | City/State/Zip Code |
| 1700 W Higgins Road Suite 400 Des Plaines, IL 60018 | |
| Telephone | Fax |
| 847-675-8877 | |
| Email | |
| bmissner@missnergroup.com | |
| Subject Property Address | |
| 2240-2296 N Rand Road Palatine, IL 60074 | |
| **AUTHORIZED AGENT (if applicable)** | **Business Name (if applicable)** |
| Lawrence Freedman | |
| Address | City/State/Zip Code |
| 95 Revere Drive, Unit G Northbrook, IL 60062 | |
| Telephone | Fax |
| 312-346-1390 | |
| Email | |
| LMFreedman@aflaw.com | |

I swear that the information contained herein and in any accompanying documents is accurate to the best of my knowledge.

Signature Date

Attachment: PF Subdivision application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

# PRELIMINARY & FINAL PLAT OF SUBDIVISION

**Department of Planning & Zoning**
200 E. Wood Street · Palatine, IL · 60067-5339
Telephone: (847) 359-9047 · Fax (847) 963-6247
www.palatine.il.us

| Office Use Only | | |
|---|---|---|
| | Project Planner | Zoning Case # |
| | Filing Fee | Notification Deadline |
| | PC Public Hearing Date | Village Council Date |

*date received*

PLEASE TYPE OR PRINT IN INK:

1. Name of Petitioner(s): TMG Acquisition Disposition 1, LLC
2. Authorized Agent of Petitioner (if different):
   Name: Lawrence Freedman
   Address: 95 Revere Drive, Unit G Northbrook, IL 60062
   Telephone No. 312-346-1390 Business No. _____
   Email: LMFreedman@aflaw.com
   Relationship to Petitioner: Attorney
3. Property Interest of Petitioner(s): Contract Purchaser
   Owner, Lessee, Contract Purchaser, etc.
4. Address of the property for which this application is being filed:
   2240-2296 N Rand Road Palatine, IL 60074
5. All existing land use(s) on the property are: Used car lot & construction materials company.
6. The proposed use(s) on the property, if this petition is approved is (are): TBD - We plan to construct a speculative office/industrial building
7. Current zoning of property: B-5 Size of the property: 8.88 acres
8. State the specific action requested: Preliminary/Final Approval for a one lot subdvision.



Attachment: PF Subdivision application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

9. The petitioner's signature below indicates that the information contained in this application and on any accompanying documents is true and correct to the best of his/her knowledge.

Signature: _____ Date: _____

State of Illinois

County of Cook

This instrument was acknowledged before me on June 14, 2022 by

Barry Missner

CODY BALOGH
Official Seal
Notary Public - State of Illinois
My Commission Expires Jun 21, 2022

_____
Notary Public

(Seal)

Attachment: PF Subdivision application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

VILLAGE OF PALATINE

# Real Estate Interest Disclosure Form

**Name of Disclosing Party (individual, business, etc.)**
TMG Acquisition Disposition 1, LLC

Relationship to Petitioner (check one)

■ Petitioner □ Legal Entity holding an Interest (i.e. realtor, attorney, etc.)

□ Legal Entity Holding a Right of Control (i.e. landlord, etc.)

| Address of Disclosing Party | City/State/Zip Code |
|---|---|
| 1700 W. Higgins Road Suite 400, Des Plaines, IL 60018 | |

| Telephone | Fax | Email |
|---|---|---|
| 847-675-8877 | | bmissner@missnergroup.com |

| **Address of Subject Property** | **City/State/Zip Code** |
|---|---|
| 2240-2296 N Rand Road Palatine, IL 60074 | |

Legal Description of Subject Property (see plat of survey or title)

**List All Persons Deriving an Interest in Subject Property (i.e. owner, lessee, etc.)**

| Name | Address | Legal Interest |
|---|---|---|
| TMG Acquisition Disposition 1, LLC | 1700 W. Higgins Rd Suite 400, Des Plaines, IL 60018 | Contract Purchaser |

I affirm that there are no other persons deriving any interest from or through me or from or through any other person or entities above set forth in the property which is the subject of the contract or application for which I am filing this disclosure notice whom I have not disclosed.

I understand that if there are any changes in the interest disclosed in this disclosure notice during the terms of the subject contract or before the Village has taken final action on the matter for which this disclosure notice is filed, I shall file a subsequent disclosure notice disclosing such changes.

Signature _____ Date _____

SUBSCRIBED AND SWORN TO before me this 14 day of June 2022

Notary Public Signature

| Project Planner | Zoning Case # |
|---|---|
| | |

Attachment: PF Subdivision application (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# ALTA/NSPS LAND TITLE SURVEY

## LEGAL DESCRIPTION

PARCEL 1: (PERMANENT INDEX NUMBER 02-02-101-005-0000)
THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, SAID POINT OF INTERSECTION BEING 16.12 FEET SOUTH OF THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTHEAST ALONG THE CENTER LINE OF SAID RAND ROAD, 551.08 FEET TO THE POINT OF BEGINNING; THENCE SOUTHEAST ALONG THE CENTER LINE OF SAID RAND ROAD, 200.00 FEET; THENCE SOUTHWEST IN A STRAIGHT LINE 711.71 FEET TO A POINT ON THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, BEING 1,034.76 FEET SOUTH OF THE ABOVE DESCRIBED POINT OF INTERSECTION OF THE CENTER OF RAND ROAD AND THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, AFORESAID, 275.54 FEET; THENCE NORTHEAST IN A STRAIGHT LINE, 522.14 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

PARCEL 2: (PERMANENT INDEX NUMBERS 02-02-101-013-0000; 02-02-101-014-0000) THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, SAID POINT OF INTERSECTION BEING 16.12 FEET SOUTH OF THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF SAID SECTION 2; THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF SAID RAND ROAD, 751.08 FEET TO A POINT OF BEGINNING; THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF RAND ROAD, 100.00 FEET; THENCE SOUTHWESTERLY ON A STRAIGHT LINE, 806.47 FEET TO A POINT IN THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2 THAT IS 1,172.53 FEET SOUTH OF THE ABOVE-DESCRIBED POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2; THENCE NORTH ALONG THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, 137.77 FEET; THENCE NORTHEASTERLY IN A STRAIGHT LINE, 711.71 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

PARCEL 3: (PERMANENT INDEX NUMBER 02-02-101-021-0000)
THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:
COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, SAID POINT OF INTERSECTION BEING 16.12 FEET SOUTH OF THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF SAID RAND ROAD, 851.08 FEET TO A POINT OF BEGINNING; THENCE SOUTHWESTERLY IN A STRAIGHT LINE, 806.47 FEET TO A POINT IN THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, AFORESAID, SAID POINT BEING 1,172.53 FEET SOUTH OF THE ABOVE-DESCRIBED POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTH ALONG THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, 137.77 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE NORTHEAST 902.21 FEET TO A POINT IN THE CENTER LINE OF RAND ROAD THAT IS 100.00 FEET SOUTHEAST OF THE POINT OF BEGINNING; THENCE NORTHWESTERLY ALONG THE CENTER LINE OF RAND ROAD, 100.00 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

PARCEL 4: (PERMANENT INDEX NUMBER 02-02-101-019-0000)
THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:
COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, SAID POINT OF INTERSECTION BEING 16.12 FEET SOUTH OF THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF SAID RAND ROAD, 951.08 FEET TO A POINT OF BEGINNING; THENCE SOUTHWESTERLY ALONG A LINE EXTENDED TO THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, A DISTANCE OF 135.00 FEET; THENCE SOUTHEASTERLY PARALLEL TO THE CENTER LINE OF RAND ROAD, 100.00 FEET; THENCE NORTHEASTERLY 135.00 FEET TO THE CENTER LINE OF RAND ROAD, SAID POINT BEING 100.00 FEET SOUTHEASTERLY OF THE POINT OF BEGINNING; THENCE NORTHWESTERLY 100.00 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

PARCEL 5: (PERMANENT INDEX NUMBER 02-02-101-020-0000)
THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10 EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, SAID POINT OF INTERSECTION BEING 16.12 FEET SOUTH OF THE NORTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF SAID RAND ROAD, 951.08 FEET TO A POINT OF BEGINNING; THENCE SOUTHWESTERLY IN A STRAIGHT LINE 902.21 FEET TO THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE EAST ALONG THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, AFORESAID, 145.26 FEET TO A POINT THAT IS 1,097.34 FEET WEST OF THE INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE NORTHEASTERLY IN A STRAIGHT LINE, 795.89 FEET TO A POINT IN THE CENTER LINE OF RAND ROAD THAT IS 755.42 FEET NORTHWESTERLY OF THE LAST ABOVE-DESCRIBED INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2; THENCE NORTHWESTERLY ALONG THE CENTER LINE OF RAND ROAD, 100.00 FEET TO THE POINT OF BEGINNING; (EXCEPT THEREFROM THAT PART DESCRIBED AS PARCEL 4 ABOVE), IN COOK COUNTY, ILLINOIS.

THE TITLE DOCUMENT REFERENCED HEREON IS PER CHICAGO TITLE INSURANCE COMPANY, TITLE NUMBER 21GNW158194LZ, DATED APRIL 1, 2021.

## ENCROACHMENTS

NO SIGNIFICANT OBSERVATIONS WERE NOTED AT THE TIME OF SURVEY

## LAND AREA

1,135,600 S.F.
26.07 ACRES

## FLOOD INFORMATION

BY GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY LIES WITHIN FLOOD ZONE X, AREA OF MINIMAL FLOODING, PER FLOOD INSURANCE RATE MAP COMMUNITY AND PANEL NUMBER 17031C0043J, WITH AN EFFECTIVE DATE OF AUGUST 19, 2008. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

## PARKING SPACES

214 REGULAR SPACES
1 HANDICAP SPACE

215 MARKED PARKING SPACES

## BASIS OF BEARINGS

WEST LINE OF NW 1/4 SECTION 34, TOWNSHIP 35 NORTH, RANGE 8 WEST – N00°02'56"W

## SURVEYOR CERTIFICATION

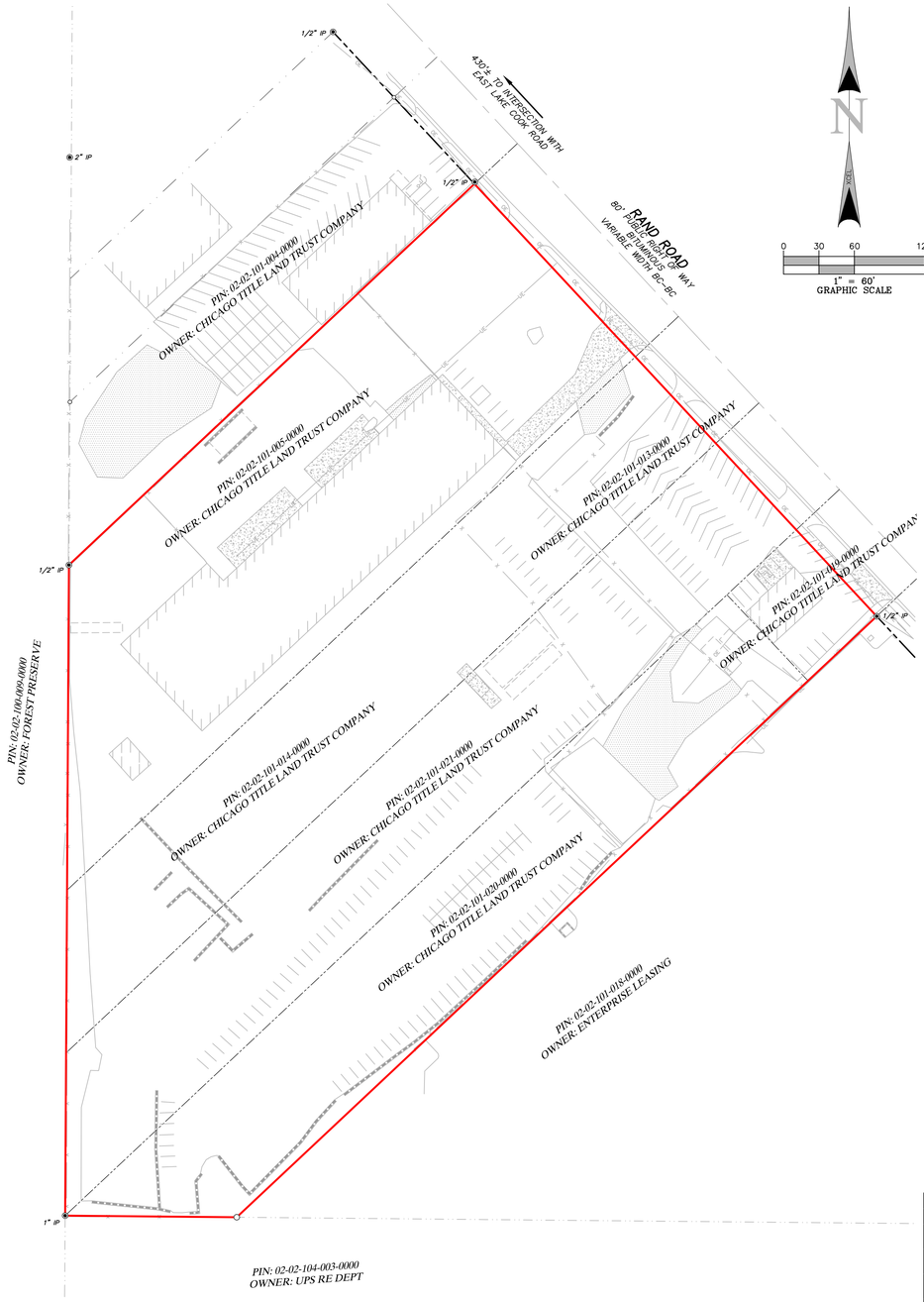
TO: MARIO PRSPERI TRUST DATED JANUARY 12, 1993

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6, 7A, 7B, 8, 9, 11(A) (811 DESIGN LOCATE), 13, 14, 17, 18, 19, AND 20 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON JULY 2, 2021.

PRELIMINARY

JAMES A. FAETANINI, PROFESSIONAL LAND SURVEYOR — DATE
ILLINOIS LAND SURVEYOR NUMBER 035-003494
EXPIRES: NOVEMBER 30, 2022
8301 42ND STREET WEST
ROCK ISLAND, IL 61201
TELEPHONE: 309-787-9988
xcel@xcelconsultantsinc.com



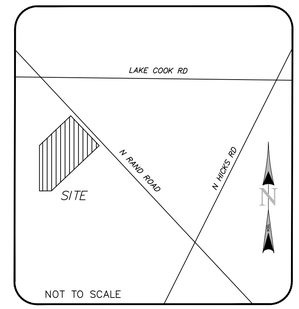




## SITE INFORMATION

PREPARED FOR:
MARIO PROSPERI AS TRUSTEE OF THE MARIO PROSPERI TRUST DATED JANUARY 12, 1993
916 LONGMEADOW COURT
LAKE BARRINGTON, IL 60010

SITE ADDRESS:
2240, 2242, 2250, 2260, AND 2266 N RAND ROAD
PALATINE, IL




VICINITY MAP

## TITLE INFORMATION-SCHEDULE 'B' ITEMS

AFFECTS – AS SHOWN

(15) RIGHTS OF WAY FOR DRAINAGE TILES, DITCHES, FEEDERS, LATERALS AND UNDERGROUND PIPES, IF ANY. (AFFECTS ALL)

(16) RIGHTS OF THE PUBLIC, THE STATE OF ILLINOIS AND THE MUNICIPALITY IN AND TO THAT PART OF THE LAND, IF ANY, TAKEN OR USED FOR ROAD AND HIGHWAY PURPOSES. NOTE: A PLAT OF SURVEY SHOWING RAND ROAD WAS DEDICATED FOR HIGHWAY PURPOSES BY PLAT WAS RECORDED DECEMBER 10, 1940, AS DOCUMENT 12592034. (AFFECTS ALL)

(17) RIGHTS OF THE ADJOINING AND CONTIGUOUS OWNERS TO HAVE MAINTAINED THE UNINTERRUPTED FLOW OF THE WATERS OF ANY STREAM WHICH MAY FLOW ON OR THROUGH THE LAND. (AFFECTS PARCEL 1)

(18) GRANT OF EASEMENT RECORDED AUGUST 28, 1946 AS DOCUMENT 13879675 MADE BY BEATRICE AND FELIX J. BONK TO PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS, GRANTING THE RIGHT TO LAY, MAINTAIN AND OPERATE AN 18-INCH GAS MAIN OVER, UPON, ALONG AND UNDER THE SOUTHWEST SIDE OF THE PUBLIC HIGHWAY KNOWN AS RAND ROAD, WHICH EXTENDS ALONG THE NORTHEAST SIDE OF THE LAND. (AFFECTS PARCEL 1)

(19) GRANT OF EASEMENT DATED JUNE 28, 1946 AND RECORDED JULY 17, 1946 AS DOCUMENT 13846670 MADE BY FRANK C. GREENWOOD AND ELNORA GREENWOOD, HIS WIFE, TO PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS, A CORPORATION OF ILLINOIS GRANTING THE RIGHT TO LAY, MAINTAIN AND OPERATE AN 18-INCH GAS MAIN AND NECESSARY APPURTENANCES IN, UPON, UNDER AND ALONG THE SOUTHWEST SIDE OF THE PUBLIC HIGHWAY KNOWN AS RAND ROAD WHICH EXTENDS ALONG THE NORTHEAST SIDE OF THE LAND. (AFFECTS PARCEL 2)

(20) GRANT OF EASEMENT JULY 19, 1946, AS DOCUMENT 13848909 MADE BY WILLIAM H. WENDLAND AND ANNA WENDLAND, HIS WIFE, TO PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS, A CORPORATION OF ILLINOIS GRANTING THE RIGHT TO LAY, MAINTAIN AND OPERATE AN 18-INCH GAS MAIN AND NECESSARY APPURTENANCES IN, UPON, UNDER AND ALONG THE SOUTHWEST SIDE OF THE PUBLIC HIGHWAY KNOWN AS RAND ROAD WHICH EXTENDS ALONG THE NORTHEAST SIDE OF THE LAND. (AFFECTS PARCELS 4 AND 5)

(21) RIGHTS OF THE PUBLIC IN AND TO THAT PART OF THE LAND FALLING IN RAND ROAD AND IN THAT PART OF THE WEST 33 FEET OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2, FALLING IN THE LAND. SAID TRACTS TO BE LEFT OPEN FOR PUBLIC ROADS, AS DISCLOSED BY DEED FROM CHICAGO TITLE & TRUST COMPANY AS TRUSTEE UNDER TRUST NUMBER 19745 TO PETER J. LIND AND THYRA L. LIND, HIS WIFE, DATED NOVEMBER 14, 1933 AND RECORDED APRIL 13, 1934 AS DOCUMENT 11385459 AND IN SUBSEQUENT DEEDS IN THE CHAIN OF TITLE. (AFFECTS PARCELS 1 AND 2)

(22) RIGHTS OF THE PUBLIC, THE STATE OF ILLINOIS AND THE MUNICIPLITY IN AND TO THAT PART OF THE LAND FALLING IN THE WEST 33 FEET AND IN THE SOUTH 33 FEET OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2 AFORESAID, TO BE LEFT OPEN FOR USE AS A PUBLIC ROAD; WHICH RIGHTS WERE SET FORTH IN THE TRUSTEE'S DEED FROM CHICAGO TITLE AND TRUST COMPANY, AS TRUSTEE UNDER TRUST NO. 19745, TO MARION BAIR, RECORDED APRIL 3, 1931, AS DOCUMENT 10874958, AND IN SUBSEQUENT DEEDS IN THE CHAIN OF TITLE. (AFFECTS PARCELS 3 AND 5)

(23) THE INTEREST OF THE PARTY OR PARTIES WHO MAINTAIN THE "HELGENSEN BROTHERS" SIGN ON THE LAND SHOULD BE DISCLOSED, AND THIS COMMITMENT IS SUBJECT TO SUCH FURTHER EXCEPTIONS AS MAY BE DEEMED NECESSARY. (AFFECTS PARCELS 3, 4 AND 5)

(24) NOTE: IF AND WHEN THERE IS A SEVERANCE OF TITLE BETWEEN PARCELS 4 AND 5 AND ALSO BETWEEN PARCELS 3 AND 5, PARCEL 5 WILL NOT HAVE A MEANS OF ACCESS OF RECORD, ABSENT CREATION OF AN EASEMENT FOR INGRESS AND EGRESS. (AFFECTS PARCELS 3, 4 AND 5)

(25) TERMS AND PROVISIONS OF ORDINANCE NO. O-64-07 RECORDED JULY 13, 2007 AS DOCUMENT NO. 0719415050, ANNEXING CERTAIN PROPERTY TO THE VILLAGE OF PALATINE GENERALLY LOCATED ALONG THE EAST AND WEST SIDES OF RAND ROAD BETWEEN LAKE COOK ROAD AND HICKS ROAD.

(26) TERMS AND PROVISIONS OF ORDINANCE NO. O-35-07 RECORDED JULY 13, 2007 AS DOCUMENT NO. 0719415047, AUTHORIZING THE EXECUTION OF ANNEXATION AGREEMENTS FOR 2240-2260, 2296, 2313, 2319, 2273, 2275 AND 2239 RAND ROAD.

(27) EASEMENT(S) FOR THE PURPOSE(S) AND RIGHTS INCIDENTAL THERETO AS RESERVED IN A DOCUMENT; RESERVED BY EASEMENT AGREEMENT, FOR PURPOSE OF UTILIZING FOR DRAINAGE PURPOSES, OPERATING, MAINTAINING AND REPAIRING THE DRAINAGE PIPE, RECORDED ON AUGUST 13, 2015 AS DOCUMENT NO. 1522522031, AFFECTS PARCEL 5.

## SURVEYOR'S NOTES

1. THE PROPERTY HAS DIRECT VEHICULAR ACCESS TO RAND ROAD.
2. THE PHYSICAL SITE ADDRESS WAS NOT OBSERVED ON SITE. COOK COUNTY GIS AND ASSESSOR RECORDS VERIFY THE ADDRESSES AS:
   PARCEL 02-02-101-005-0000 IS 2266 RAND ROAD
   PARCEL 02-02-101-013-0000 IS 2260 RAND ROAD
   PARCEL 02-02-101-014-0000 IS 2260 RAND ROAD
   PARCEL 02-02-101-020-0000 IS 2240 RAND ROAD
   PARCEL 02-02-101-021-0000 IS 2250 RAND ROAD
   PARCEL 02-02-101-019-0000 IS 2242 RAND ROAD
   ALL IN PALATINE, ILLINOIS.
3. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE PREMISES; THERE ARE NOT VISIBLE ENCROACHMENTS ON THE SUBJECT PROPERTY OR UPON ADJACENT LAND ABUTTING SAID PROPERTY EXCEPT AS SHOWN HEREON AND WAS MADE IN ACCORDANCE WITH LAWS AND/OR MINIMUM STANDARDS OF THE STATE OF ILLINOIS.
4. THE PREMISES IS MADE UP OF SIX TAX PARCEL NUMBERS THAT COVER THE PREMISES IN ITS ENTIRETY AND DOES NOT INCLUDED ANY OTHER LAND.
5. NO OBSERVABLE EVIDENCE OF CHANGES IN STREET RIGHT OF WAY LINES COMPLETED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION AND NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
6. NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
7. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY.
8. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, PARKING, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
9. THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER ILLINOIS DESIGN REQUEST TICKET #A1892625. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY AT&T DISTRIBUTION, COMED, COMCAST, MCI/VERIZON, METROPOLITAN WATER RECLAMATION DISTRICT, NICOR GAS, AND VILLAGE OF PALATINE. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL J.U.L.I.E. AT 811.
10. AT THE TIME OF THIS SURVEY AND TITLE REVIEW, THERE WERE NEITHER OBSERVABLE EASEMENTS NOR SERVITUDES THAT BENEFIT THIS PROPERTY.

| REVISIONS | |
|---|---|
| DATE | DESCRIPTION |
| | |
| | |
| | |
| | |
| | |
| | |

XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

| CHK BY: | APV BY: |
|---|---|
| BCH | JAF |

XCEL JOB NUMBER: 213436

DRAWING NUMBER: 1 OF 2

Attachment: ALTA survey - 2234-2240 Rand Rd (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# ALTA/NSPS LAND TITLE SURVEY

## UTILITY INVERT DATA

CB#2
LID=758.776
INV(12"CONC)NE=756.376
WELL=752.876

CB#3
LID=757.435
WELL=752.035
(3' DARK WATER–UNABLE TO SEE INVERT PIPES)

CB#4
LID=756.324
INV(12"CONC)NE=754.824
WELL=754.824

CB#5
LID=756.706
INV(118"CONC)E=753.706
INV(12"CONC)W=753.806
WELL=753.706

CB#6
LID=757.144
INV(12"CONC)NW=753.544
INV(12"CONC)E=753.744
INV(24"CONC)S=753.344
WELL=753.344

CB#7
LID=757.003
INV(12"CONC)E=754.303
WELL=751.703
(2' DARK WATER–UNABLE TO SEE INVERT PIPES)

CB#8
LID=757.667
WELL=754.567
(FULL OF DARK WATER–UNABLE TO SEE INVERT PIPES)

CB#9
LID=757.215
(FILLED WITH DEBRIS–UNABLE TO LOCATE INVERTS)

CB#10
LID=757.546
(UNABLE TO OPEN)

CB#11
LID=759.378
WELL=754.978

CB#12
LID=758.917
INV(6"METAL)NW=756.017
WELL=755.717

DRAINAGE INLET

DI#1 GRATE=759.321
WELL=755.521

DI#2 GRATE=758.617
INV(18"CONC)NW=755.617
WELL=755.517

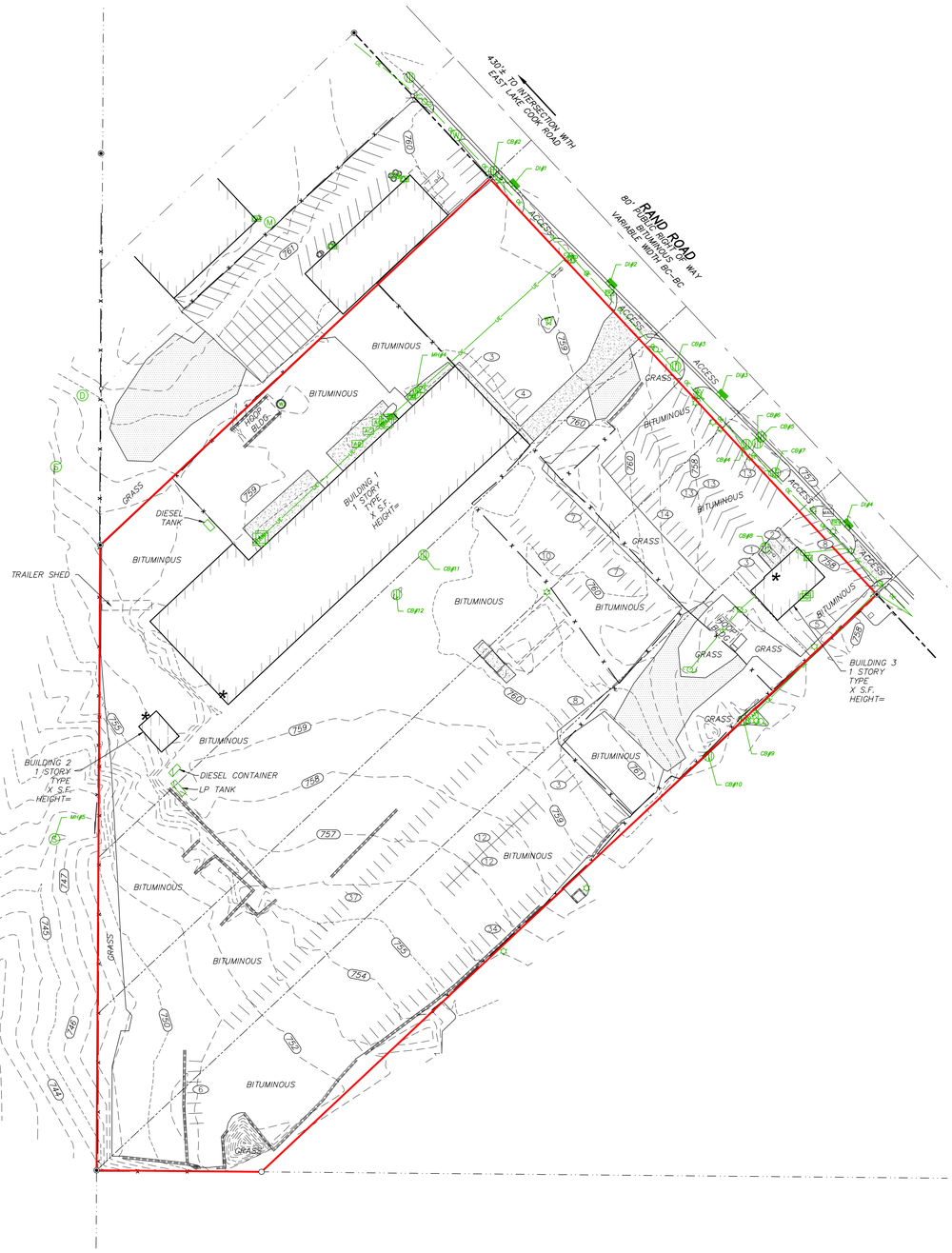
DI#3
GRATE=757.474
INV(18"CONC)SE=754.474
WELL=754.074

DI#4
GRATE=757.276
INV(12"CONC)NW=753.576
INV(12"CONC)SE=753.576
WELL=753.576

MANHOLE

MH#4
LID=760.405
(RUSTED SHUT)

MH#5
LID=745.777
INV(8"CONC)S=741.477
INV(8"CONC)E=741.577
WELL=741.477




0 30 60 120
1" = 60'
GRAPHIC SCALE

## SITE INFORMATION

PREPARED FOR:
MARIO PROSPERI AS TRUSTEE OF THE MARIO PROSPERI TRUST DATED JANUARY 12, 1993
916 LONGMEADOW COURT
LAKE BARRINGTON, IL 60010

SITE ADDRESS:
2240, 2242, 2250, 2260, AND 2266 N RAND ROAD
PALATINE, IL

## LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- INTERNAL PROPERTY LINE
- BUILDING SETBACK LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- SURVEY TIE LINE
- BUILDING FEATURE
- BUILDING
- CHAINLINK FENCE
- WALL
- CURB LINE
- CENTERLINE
- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- FOUND MONUMENT (AS NOTED)
- SET 5/8" XCEL CAPPED IR
- TITLE EXCEPTION NUMBER
- SIGNIFICANT OBSERVATION LETTER
- PARKING COUNT
- MANHOLE (WATER, MISC)
- FIRE HYDRANT
- WATER VALVE
- HANDICAP PARKING
- DRAINAGE INLETS
- AREA LIGHT
- METER (ELECTRIC, GAS)
- TRAFFIC VAULT
- UTILITY POLE
- GUY WIRE
- TRAFFIC SIGN
- MONITOR WELL
- CONCRETE BOLLARD
- TRANSFORMER
- AIR CONDITIONER
- MAIL BOX
- IR — IRON ROD
- IP — IRON PIPE
- POB — POINT OF BEGINNING
- POC — POINT OF COMMENCEMENT
- BUILDING HEIGHT LOCATION
- (M&R) — RECORD & MEASURED
- S.F. — SQUARE FEET
- BC — BACK OF CURB
- CONCRETE SURFACE
- GRAVEL SURFACE

| REVISIONS | |
|---|---|
| DATE | DESCRIPTION |
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| | |

XCEL Consultants
8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309–787–9988
(F) 309–756–5540
(E) XCEL@XCELCONSULTANTSINC.COM

| CHK BY: | APV BY: |
|---|---|
| BCH | JAF |

XCEL JOB NUMBER: 213436

DRAWING NUMBER: 2 OF 2

Attachment: ALTA survey - 2234-2240 Rand Road (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)

# ALTA/NSPS LAND TITLE SURVEY

## LEGAL DESCRIPTION

THAT PART OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2, TOWNSHIP 42 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, DESCRIBED AS FOLLOWS:

COMMENCING AT THE POINT OF INTERSECTION OF THE CENTER LINE OF RAND ROAD WITH THE NORTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 2, AND RUNNING THENCE SOUTHEASTERLY ALONG THE CENTER LINE OF SAID RAND ROAD 453.69 FEET TO THE PLACE OF BEGINNING; THENCE CONTINUING SOUTHEASTERLY ALONG SAID CENTER LINE 100 FEET; THENCE SOUTHWESTERLY, 522.95 FEET TO A POINT ON THE WEST LINE OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION, SAID POINT BEING 773.79 FEET SOUTH OF THE NORTH LINE OF SAID 1/4 SECTION; THENCE NORTH ALONG THE WEST LINE OF THE NORTHEAST 1/4 OF SAID 1/4 SECTION, 137.77 FEET; THENCE NORTHEASTERLY 428.2 FEET TO THE PLACE OF BEGINNING, EXCEPT THAT PART DEDICATED FOR HIGHWAY PURPOSES, ALL IN COOK COUNTY, ILLINOIS

THE TITLE DESCRIPTION AND SCHEDULE B ITEMS HEREON ARE FROM CHICAGO TITLE INSURANCE COMPANY, COMMITMENT #21GSC278017LP, DATED JULY 7, 2021.

## TITLE INFORMATION-SCHEDULE 'B' ITEMS

AFFECTS – AS SHOWN

(13) TERMS AND PROVISIONS OF AN ANNEXATION AGREEMENT AS DISCLOSED BY INSTRUMENT RECORDED JULY 13, 2007 AS DOCUMENT NO. 0719415047.

(14) EASEMENT IN FAVOR OF PUBLIC SERVICE COMPANY OF NORTHERN ILLINOIS, AND ITS/THEIR RESPECTIVE SUCCESSORS AND ASSIGNS, TO INSTALL, OPERATE AND MAINTAIN ALL EQUIPMENT NECESSARY FOR THE PURPOSE OF SERVING THE LAND AND OTHER PROPERTY, TOGETHER WITH THE RIGHT OF ACCESS TO SAID EQUIPMENT, AND THE PROVISIONS RELATING THERETO CONTAINED IN THE GRANT RECORDED/FILED AS DOCUMENT NO. 13866556.

(15) RIGHTS OF THE PUBLIC, THE STATE OF ILLINOIS AND THE MUNICIPALITY IN AND TO THAT PART OF THE LAND, IF ANY, TAKEN OR USED FOR ROAD, HIGHWAY AND WATERWAY PURPOSES.

(16) RIGHTS OF THE PUBLIC, THE STATE OF ILLINOIS AND ADJOINING OWNERS IN RAND ROAD AND THAT PART OF THE WEST 33 FEET OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 2 THAT FALLS WITHIN THE ABOVE DESCRIBED TRACT OF LAND TO BE LEFT OPEN FOR A PUBLIC ROAD TOGETHER WITH THE RIGHT TO USE THE WEST 33 FEET OF THE NORTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 2 FOR A ROAD AS RESERVED IN THE DEED RECORDED AS DOCUMENT NO. 1202638.

(17) SANITARY SEWER ALONG THE WESTERLY PORTION OF THE PREMISES AS DISCLOSED BY SURVEY MADE BY BARRINGTON ENGINEERING DATED APRIL 6, 1998. WATER MAIN GOING ACROSS AND THRU THE PREMISES AS DISCLOSED BY THE ABOVE NOTED SURVEY.

## UTILITY INVERT DATA

CATCH BASIN
CB#1
LID=759.526
WELL=755.926

CB#2
LID=758.776
INV(12"CONC)NE=756.376
WELL=752.876

DRAINAGE INLET
DI#1
GRATE=759.321
WELL=755.521

MANHOLE
MH#1
LID=762.894
INV(8"METAL)NE=750.194
INV(8"METAL)NW=749.894
INV(8"METAL)SW=750.694
WELL=749.894

MH#2
LID=759.457
INV(8"METAL)N=748.657
INV(8"METAL)S=748.457

MH#3
LID=758.527
(COULD NOT OPEN)

## SURVEYOR CERTIFICATION

TO: CHICAGO TITLE INSURANCE COMPANY

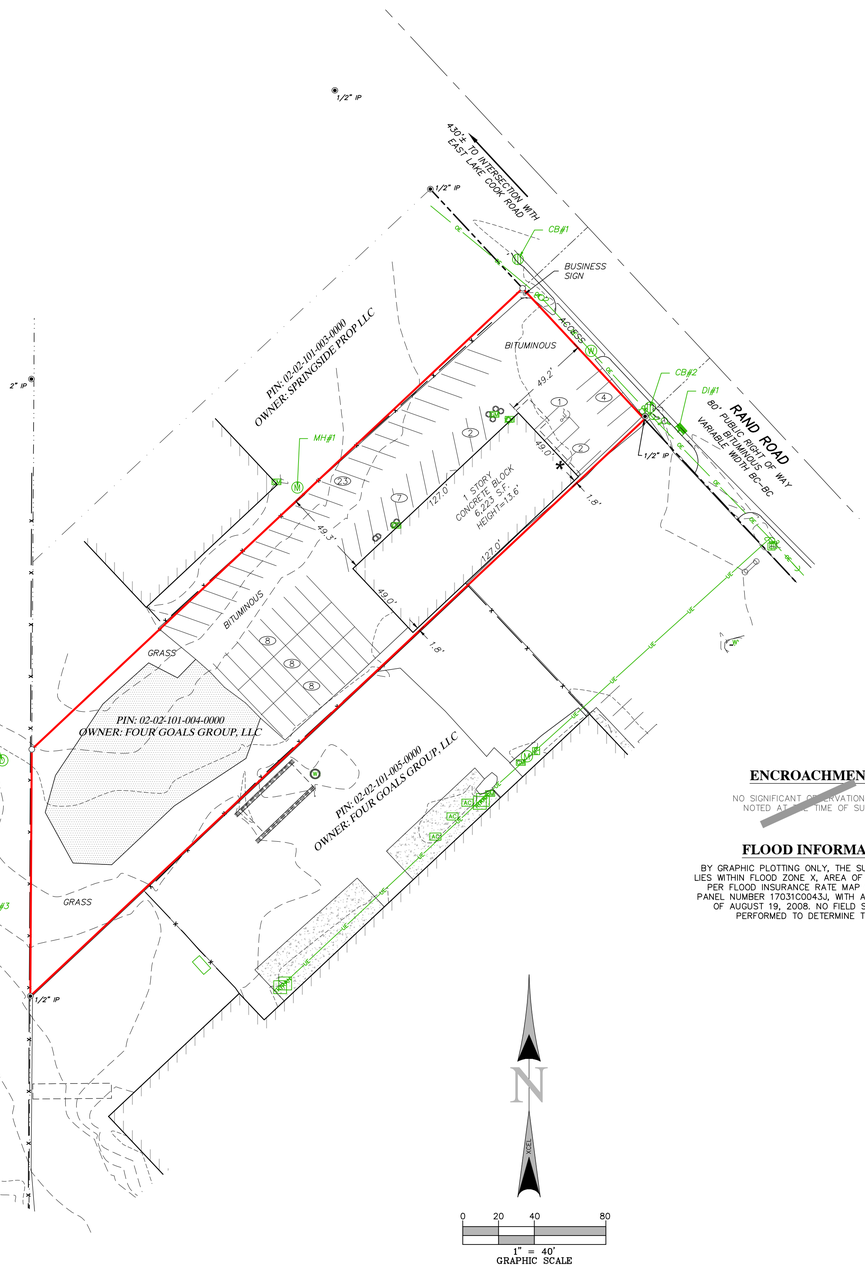
THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6, 7A, 7B, 8, 9, 11(A) (811 DESIGN LOCATE), 13, 14, 17, 18, 19, AND 20 OF TABLE A THEREOF.

THE FIELD WORK WAS COMPLETED ON JULY 2, 2021.

PRELIMINARY

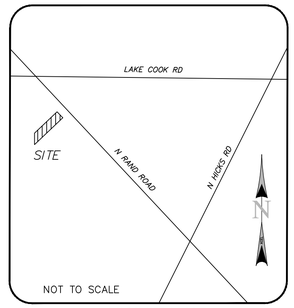
JAMES A. FAETANINI, PROFESSIONAL LAND SURVEYOR
ILLINOIS LAND SURVEYOR NUMBER 035-003494
EXPIRES: NOVEMBER 30, 2022
8301 42ND STREET WEST
ROCK ISLAND, IL 61201
TELEPHONE: 309-787-9988
xcel@xcelconsultantsinc.com

DATE




## LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- INTERNAL PROPERTY LINE
- BUILDING SETBACK LINE
- EASEMENT LINE
- RIGHT OF WAY LINE
- SURVEY TIE LINE
- BUILDING FEATURE
- BUILDING
- CHAINLINK FENCE
- CONCRETE BLOCK WALL
- CURB LINE
- CENTERLINE
- OVERHEAD ELECTRIC LINE
- FOUND MONUMENT (AS NOTED)
- SET 5/8" XCEL CAPPED IR
- TITLE EXCEPTION NUMBER
- SIGNIFICANT OBSERVATION LETTER
- PARKING COUNT
- MANHOLE (WATER, MISC)
- FIRE HYDRANT
- HANDICAP PARKING
- DRAINAGE INLETS
- AREA LIGHT
- METER (ELECTRIC, GAS)
- TRAFFIC VAULT
- UTILITY POLE
- GUY WIRE
- TRAFFIC SIGN
- CONCRETE BOLLARD
- TRANSFORMER
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- IR — IRON ROD
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- POB — POINT OF BEGINNING
- POC — POINT OF COMMENCEMENT
- BUILDING HEIGHT LOCATION
- (M&R) — RECORD & MEASURED
- S.F. — SQUARE FEET
- BC — BACK OF CURB
- GRAVEL SURFACE




VICINITY MAP

## SITE INFORMATION

PREPARED FOR:
THE MISSNER REALTY
1700 W HIGGINS ROAD, SUITE 400
DES PLAINES, IL 60018

SITE ADDRESS:
2296 RAND ROAD
PALATINE, ILLINOIS 60074

## LAND AREA

1,135,606 S.F.
26.07 ACRES

## PARKING SPACES

62 REGULAR SPACES
1 HANDICAP SPACES
63 TOTAL MARKED SPACES

## BASIS OF BEARINGS

WEST LINE OF NW1/4 SECTION 34, TOWNSHIP 35 NORTH, RANGE 10 WEST – N00°02'56"W

## ENCROACHMENTS

NO SIGNIFICANT OBSERVATIONS WERE NOTED AT THE TIME OF SURVEY

## FLOOD INFORMATION

BY GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY LIES WITHIN FLOOD ZONE X, AREA OF MINIMAL FLOODING, PER FLOOD INSURANCE RATE MAP COMMUNITY AND PANEL NUMBER 17031C0043J, WITH AN EFFECTIVE DATE OF AUGUST 19, 2008. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE.

## SURVEYOR'S NOTES

1. THE PROPERTY HAS DIRECT VEHICULAR ACCESS TO RAND ROAD, A DEDICATED PUBLIC RIGHT OF WAY.
2. THE PHYSICAL SITE ADDRESS WAS NOT OBSERVED ON SITE. COOK COUNTY GIS AND ASSESSOR RECORDS VERIFY THE ADDRESS AS 2296 RAND ROAD, PALATINE, ILLINOIS.
3. THE ACCOMPANYING SURVEY WAS MADE ON THE GROUND AND CORRECTLY SHOWS THE LOCATION OF ALL BUILDINGS, STRUCTURES AND OTHER IMPROVEMENTS SITUATED ON THE ABOVE PREMISES; THERE ARE NOT VISIBLE ENCROACHMENTS ON THE SUBJECT PROPERTY OR UPON ADJACENT LAND ABUTTING SAID PROPERTY EXCEPT AS SHOWN HEREON AND WAS MADE IN ACCORDANCE WITH LAWS AND/OR MINIMUM STANDARDS OF THE STATE OF ILLINOIS.
4. THE PREMISES IS MADE UP OF A SINGLE TAX PARCEL NUMBER THAT COVER THE PREMISES IN ITS ENTIRETY AND DOES NOT INCLUDED ANY OTHER LAND.
5. NO OBSERVABLE EVIDENCE OF CHANGES IN STREET RIGHT OF WAY LINES COMPLETED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION AND NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
6. NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
7. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES ON THE SUBJECT PROPERTY AT THE TIME OF SURVEY.
8. ALL STATEMENTS WITHIN THE CERTIFICATION, AND OTHER REFERENCES LOCATED ELSEWHERE HEREON, RELATED TO: UTILITIES, IMPROVEMENTS, STRUCTURES, BUILDINGS, PARTY WALLS, PARKING, EASEMENTS, SERVITUDES, AND ENCROACHMENTS; ARE BASED SOLELY ON ABOVE GROUND, VISIBLE EVIDENCE, UNLESS ANOTHER SOURCE OF INFORMATION IS SPECIFICALLY REFERENCED HEREON.
9. THE LOCATION OF THE UTILITIES SHOWN HEREON ARE FROM OBSERVED EVIDENCE OF ABOVE GROUND APPURTENANCES AND PER ILLINOIS DESIGN REQUEST TICKET #A1882625. UTILITY SERVICE FOR THIS PROPERTY ARE PROVIDED BY AT&T DISTRIBUTION, COMED, COMCAST, MCI/VERIZON, METROPOLITAN WATER RECLAMATION DISTRICT, NICOR GAS, AND VILLAGE OF PALATINE. ONLY UTILITY MAPS PROVIDED BY SAID COMPANIES ARE SHOWN HEREON. BEFORE DIGGING IN THIS AREA CALL J.U.L.I.E. AT 811.
10. AT THE TIME OF THIS SURVEY AND TITLE REVIEW, THERE WERE [illegible] EASEMENTS NOR SERVITUDES THAT BENEFIT THIS PROPERTY [illegible]

| REVISIONS | |
|---|---|
| DATE | DESCRIPTION |
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8300 42ND STREET WEST
ROCK ISLAND, IL 61201
(O) 309-787-9988
(F) 309-756-5540
(E) XCEL@XCELCONSULTANTSINC.COM

XCEL Consultants

| CHK BY: | APV BY: |
|---|---|
| BCH | JAF |

XCEL JOB NUMBER: 213402

DRAWING NUMBER: 1 OF 1

Attachment: 2296 N. Rand Road - ALTA survey (2240:2296 N Rand Rd - PFSUB, PFPD, Rezone)

**PUBLIC NOTICE**

A Public Hearing will be held before the Village of Palatine Plan Commission on Tuesday, June 21, 2022 at 7 PM, in the Village Council Chambers in the Palatine Village Hall, 200 E. Wood Street, relative to a request for the following:

**1. Preliminary and Final Plat of Subdivision to allow for the consolidation of 7 existing lots into one consolidated lot;**

**2. Preliminary and Final Planned Development to permit a warehousing, light industrial or manufacturing building, with accessory office or accessory retail uses; and**

**3. Rezoning from B-5 to Planned Development**

The properties are commonly known as 2240, 2242, 2250, 2260, 2266, and 2296 N. Rand Road.{PIN #s: (02-02-101-004-0000, 02-02-101-005-0000, 02-02-101-013-0000, 02-02-101-014-0000, 02-02-101-021-0000, 02-02-101-020-0000, and 02-02-101-019-0000)}

The Petitioners propose to consolidate the existing lots (currently containing multiple commercial buildings/parking lots) through a Preliminary and Final Plat of Subdivision to create a single lot and a Preliminary and Final Planned Development to allow a new warehouse/distribution or light assembly/light manufacturing or utilities and services building (approximately 145,000 square feet), with associated truck docks, vehicle and trailer parking areas, and accessory office uses.

The above petition has been filed by TMG Acquisition Disposition 1, LLC (Missner Group), with Lawrence Freedman, as the authorized agent, and is available for examination in the office of the Village Clerk, 200 E. Wood Street.

FILE #: 22-24

VILLAGE OF PALATINE

Dennis Dwyer, Chair

Palatine Plan Commission

DATED: This 6th day of June 2022

Published in Daily Herald June 6, 2022 (4583653)

# CERTIFICATE OF PUBLICATION

**Paddock Publications, Inc.**

# Daily Herald

Corporation organized and existing under and by virtue of the laws of the State of Illinois, DOES HEREBY CERTIFY that it is the publisher of the **DAILY HERALD**. That said **DAILY HERALD** is a secular newspaper and has been circulated daily in the Village(s) of Algonquin,Antioch,Arlington Heights,Aurora,North Aurora,Bannockburn, Barrington,Barrington Hills,Lake Barrington,North Barrington,South Barrington,Bartlett,Batavia,Buffalo Grove,Burlington,Campton Hills, Carpentersville,Cary,Crystal Lake,Deerfield,Deer Park,Des Plaines,Elburn, East Dundee,Elgin,South Elgin,Elk Grove Village,Fox Lake, Fox River Grove,Franklin Park,Geneva,Gilberts,Glenview,Grayslake, Green Oaks,Gurnee,Hainesville,Hampshire,Hanover Park,Hawthorn Woods, Highland Park,Highwood,Hoffman Estates,Huntley,Inverness,Island Lake, Kildeer,Lake Bluff,Lake Forest,Lake in the Hills,Lake Villa,Lake Zurich, Libertyville,Lincolnshire,Lindenhurst,Long Grove,Melrose Park,Montgomer Morton Grove,Mt.Prospect,Mundelein,Niles,Northbrook,Northfield,Northlak Palatine,Park Ridge,Prospect Heights,River Grove,Riverwoods, Rolling Meadows,Rosemont,Round Lake,Round Lake Beach, Round Lake Heights,Round Lake Park,Schaumburg,Schiller Park,Sleepy Hol St. Charles,Streamwood,Sugar Grove,Third Lake,Tower Lakes,Vernon Hills, Volo,Wadsworth,Wauconda,Waukegan,West Dundee,Wheeling,Wildwood, Wilmette

County(ies) of Cook, Kane, Lake, McHenry

and State of Illinois, continuously for more than one year prior to the date of the first publication of the notice hereinafter referred to and is of general circulation throughout said Village(s), County(ies) and State.

I further certify that the DAILY HERALD is a newspaper as defined in "an Act to revise the law in relation to notices" as amended in 1992 Illinois Compiled Statutes, Chapter 715, Act 5, Section 1 and 5. That a notice of which the annexed printed slip is a true copy, was published 06/06/2022 in said DAILY HERALD.

IN WITNESS WHEREOF, the undersigned, the said PADDOCK PUBLICATIONS, Inc., has caused this certificate to be signed by, this authorized agent, at Arlington Heights, Illinois.

PADDOCK PUBLICATIONS, INC.
DAILY HERALD NEWSPAPERS

BY _____
Authorized Agent

Control # 4583653

Attachment: Public Notice (2240-2296 N Rand Rd - PFSUB, PFPD, Rezone)