APPENDIX A

PROJECT PLANS

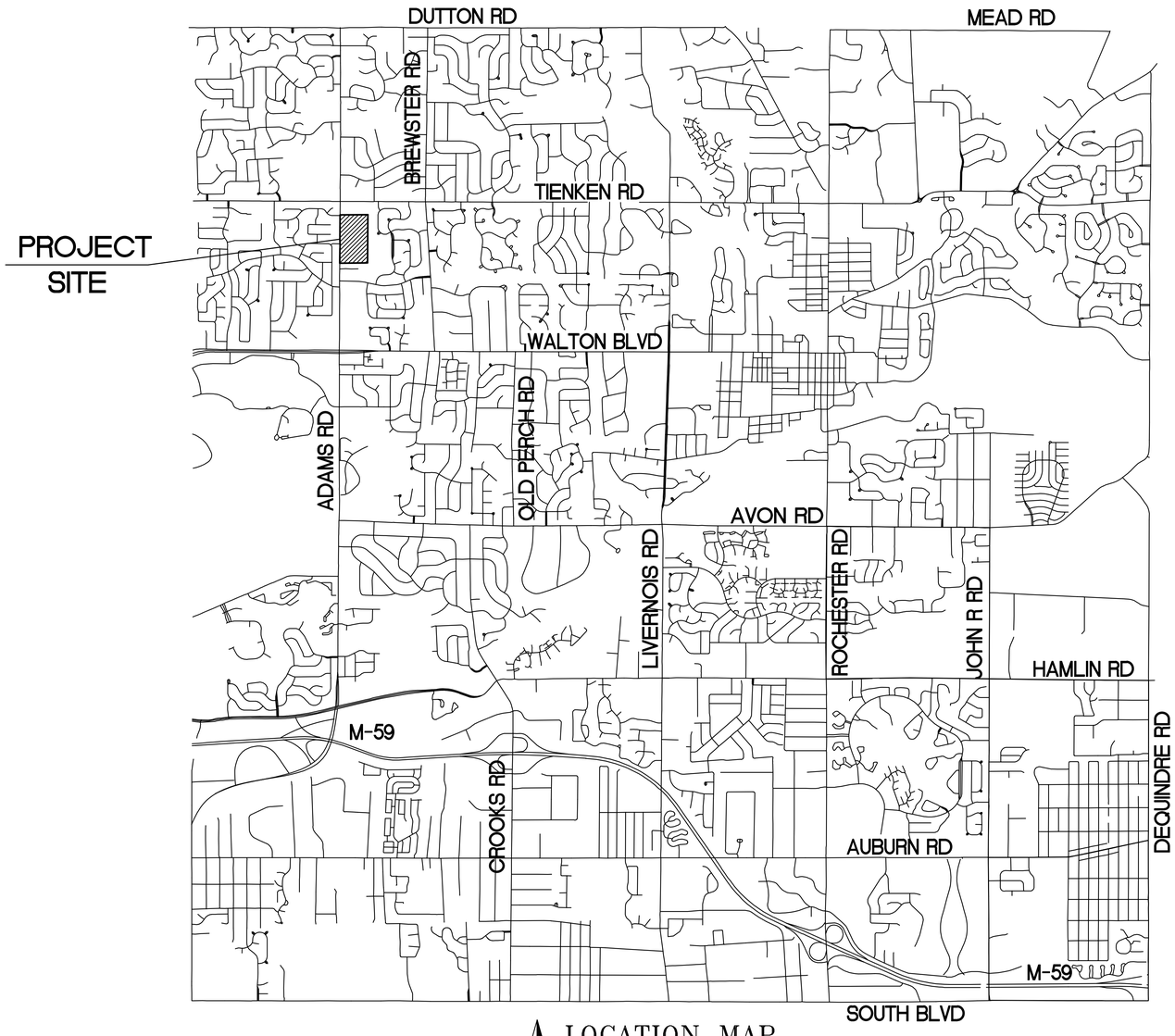
CITY OF ROCHESTER HILLS
PARKS AND NATURAL RESOURCES

OAKLAND COUNTY, MICHIGAN

670 N. Adams Road

Eugene S. Nowicki Park

BID DOCUMENTS
FEBRUARY 4, 2026



LOCATION MAP
CITY OF ROCHESTER HILLS
OAKLAND COUNTY, MICHIGAN

Landscape Architect

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
Contact: Trevor J. Bosworth, PLA, ASLA
Phone: (616) 375-0945
E-mail: trevor@virg.com

Nowak and Fraus Engineers
46777 Woodward Avenue
Pontiac, MI 48342
Contact: George A. Ostrowski, PLA, LEED AP
Phone: (248) 332-7931
E-mail: gostrowski@nfe-engr.com

Architect

A3C Collaborative Architecture
115 1/2 East Liberty
Ann Arbor, MI 48104
Contact: F. Edward Alonso
Phone: (734) 663-1910 Ext. 111
E-mail: ealonso@a3c.com

Traffic Engineer

Clark Dietz, Inc.
33533 W 12 Mile Rd #250
Farmington Hills, MI 48331
Contact: Ronald Pretty, PE, PTOE
Phone: 517-481-4574
E-mail: Ronald.Pretty@ClarkDietz.com

Electrical Engineer

Matrix Consulting Engineers, Inc.
1601 E. Grand River Ave.
Lansing, MI 48906
Contact: Joseph F. Sovis, P.E.
Phone: 517-487-2511
Fax: 517-487-2544
E-mail: jsovis@matrixceinc.com

Civil Engineer

Nowak and Fraus Engineers
46777 Woodward Avenue
Pontiac, MI 48342
Contact: Steven Sutton, P.E.
Phone: (248) 635-6571 (cell)
E-mail: swsutton@nfe-engr.com

GENERAL PROVISIONS

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE PROPOSAL AND ACCOMPANYING SPECIFICATIONS FOR THIS PROJECT INCLUDING THE 2020 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

PLACING OF TRAFFIC CONTROL SIGNS SHALL BE DONE IN ACCORDANCE WITH THE CURRENT VERSION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. THIS WORK WILL BE DONE PRIOR TO THE FINAL ACCEPTANCE OF THIS PROJECT.

THE LOCATION OF ALL PUBLIC UTILITIES SHOWN ON THESE PLANS IS TAKEN FROM THE BEST AVAILABLE DATA. THE CITY OF ROCHESTER HILLS WILL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATIONS FROM THE LOCATIONS SHOWN. PURSUANT TO ACT 174 OF THE PA OF 2013 AS A CONDITION OF THIS CONTRACT, NOTICE SHALL BE GIVEN TO MISS DIG PRIOR TO UNDERGROUND WORK TO BE PERFORMED IN ACCORDANCE WITH THIS CONTRACT.
PHONE (800) 482-7171 OR (248) 647-7344 OR 811.

SHEET INDEX

TITLE SHEET	T1.0
NOTES	T1.1
BOUNDARY, TOPOGRAPHIC & TREE SURVEY	C1.0 – C1.12
SITE PLAN	C2.0 – C2.18
SITE DETAILS	C3.0 – C3.1
TREE PRESERVATION PLAN	L101 – L107
LANDSCAPE PLANS	L201 – L400
PLAYGROUND PLANS	L501 – L509
IRRIGATION PLANS	I101 – I106
BUILDING PLANS	A2.00–A9.12
ELECTRICAL PLANS	SE1.00 – SE8.09
HAWK SIGNAL PLANS	001 – SIG–400–A

LEGAL DESCRIPTION

PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 8; THENCE SOUTH 01 DEGREES 58 MINUTES 24 SECONDS WEST ALONG THE WEST LINE OF SAID SECTION 8, 638.24 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 88 DEGREES 32 MINUTES 32 SECONDS EAST, 1087.72 FEET TO A POINT ON THE WEST LINE OF "SHADOW WOODS SUB. NO. 2", AS RECORDED IN LIBER 163 OF PLATS, ON PAGE 13, OAKLAND COUNTY RECORDS; THENCE SOUTH 01 DEGREES 59 MINUTES 09 SECONDS WEST ALONG THE WEST LINE OF SAID "SHADOW WOODS SUB. NO. 2" AND ALSO ALONG THE WEST LINE OF "SHADOW WOODS SUB. NO. 1", AS RECORDED IN LIBER 160 OF PLATS, ON PAGE 30, OAKLAND COUNTY RECORDS, 1402.59 FEET; THENCE NORTH 88 DEGREES 28 MINUTES 36 SECONDS WEST, 1087.41 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 8; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST ALONG SAID WEST SECTION LINE, 380.78 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 32 SECONDS EAST, 43.00 FEET; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST BEING 43 FEET EAST OF AND PARALLEL TO THE WEST LINE OF SAID SECTION 8, 420.00 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 32 SECONDS WEST, 43.00 FEET TO A POINT ON SAID WEST SECTION LINE; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST ALONG SAID WEST SECTION LINE, 600.56 FEET TO THE POINT OF BEGINNING.

CITY OF ROCHESTER HILLLS
1000 ROCHESTER HILLS DRIVE,
ROCHESTER HILLS, MI 48309
(248) 656–4673
PARKS@ROCHESTERHILLS.ORG

ROCHESTER HILLS MICHIGAN

NF ENGINEERS
Civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NFE-ENGR.COM

ENGINEER'S SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. E-21050492
LICENSED PROFESSIONAL ENGINEER

SHEET NO. T1.0

CITY FILE #E24–008 SECTION #8

SHEET INDEX

CIVIL PLANS
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T1.1 - Notes
C1.0 - Overall Topographical Survey
C1.1 - Boundary, Topographic & Tree Survey - Part A
C1.2 - Boundary, Topographic & Tree Survey - Part B
C1.3 - Boundary, Topographic & Tree Survey - Part C
C1.4 - Boundary, Topographic & Tree Survey - Part D
C1.5 - Boundary, Topographic & Tree Survey - Part E
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C1.9 - Tree List
C1.10 - Tree List
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C4.0 - Utility Plan - Part B
C4.1 - Utility Plan - Part C
C4.2 - Utility Plan - Part D
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C4.5 - Utility Profiles
C5.0 - Adams Road - Demolition & SESC Plan
C5.1 - Adams Road - Demolition & SESC Plan
C5.2 - Adams Road - Paving & Grading Plan
C5.3 - Adams Road - Profiles
C5.4 - Adams Road - Details
C5.5 - Adams Road - Details
C5.6 - Traffic Control Plan - Phase I
C5.7 - Traffic Control Plan - Phase 2
C5.8 - Traffic Control Plan Details
C6.0 - Details
C6.1 - Details

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2/2 - SANITARY SEWER STANDARD DETAILS
1/2 - WATER MAIN STANDARD DETAILS
2/2 - WATER MAIN STANDARD DETAILS
1/1 - STORM SYSTEM STANDARD DETAILS

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1/1 - WRC SOIL EROSION & SEDIMENTATION CONTROL DETAILS

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L105 - TREE PRESERVATION D
L106 - TREE PRESERVATION E
L107 - TREE PRESERVATION F

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L205 - PLANTING PLAN D
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L208 - SEEDING PLAN
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L210 - BIOSWALE PLAN B
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L212 - DOG PARK ENTRY PLANTING PLAN
L213 - COMMUNITY BUILDING /PARK ENTRY
L214 - CONSTRUCTED POND PLANTING PLAN
L215 - WATER FEATURE/DRY CREEK PLANTING PLAN
L216 - PLAYGROUND PLANTING PLAN
L217 - PLANTING DETAILS
L218 - PLANTING SCHEDULE

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L401 - DETAIL REFERENCE KEY
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L405 - BOARDWALK DETAILS
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L407 - SPIRAL MOUND DETAILS
L408 - WATER FEATURE/DRY CREEK DETAILS
L409 - WATERFALL LAYOUT/DRY CREEK LAYOUT/PLAYGROUND ENTRY

L500 PLAYGROUND LAYOUT
L501 - PLAYGROUND LAYOUT
L502 - POURED IN PLACE LAYOUT
L503 - PLAY EQUIPMENT LAYOUT
L510 - PLAYGROUND GRADING AND UTILITY PLAN
L520 - PLAYGROUND SECTIONS
L590 - DETAILS
L591 - DETAILS
L592 - DETAILS
L593 - DETAILS

I100 IRRIGATION
I101 - OVERALL IRRIGATION PLAN
I102 - ENLARGED IRRIGATION
I103 - ENLARGED IRRIGATION
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I105 - ENLARGED IRRIGATION
I106 - ENLARGED IRRIGATION

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S002 - STRUCTURAL NOTES
S003 - SPECIAL INSPECTIONS
S004 - TYPICAL DETAILS
S005 - TYPICAL DETAILS
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S101 - FAMILY BATHROOM AND MAINTENANCE BUILDING PLANS AND SECTIONS
S102 - COMMUNITY BUILDING FOUNDATION PLAN
S103 - COMMUNITY BUILDING ROOF FRAMING PLAN
S104 - COMMUNITY BUILDING SECTIONS
S105 - COMMUNITY BUILDING SECTIONS
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A2.11 - FLOOR PLAN, LEGEND & NOTES COMMUNITY BUILDING
A2.12 - FLOOR & CEILING PLAN, ELEVATIONS, LEGEND & NOTES MAINTENANCE BUILDING
A2.13 - FLOOR & CEILING PLAN, LEGEND & NOTES FAMILY BATHROOMS BUILDING
A2.14 - FLOOR PLAN PAVILION
A2.15 - COMMUNITY BUILDING, MAINTENANCE BUILDING & FAMILY BATHROOMS ROOF PLANS
A2.16 - ROOF PLAN PAVILION
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A2.24 - DOOR & WINDOW DETAILS
A2.41 - INTERIOR FINISH SCHEDULE & KEY
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A3.21 - BUILDING SECTIONS COMMUNITY BUILDING
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A8.11 - CABINET / COUNTERTOP DETAILS

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P4.00 - COMMUNITY BUILDING BELOW FLOOR PLAN PLUMBING NDEW
P4.01 - COMMUNITY BUILDING FLOOR PLAN PLUMBING NEW
P4.02 - MAINTENANCE BUILDING BELOW FLOOR PLUMBING NEW
P4.03 - MAINTENANCE BUILDING FLOOR PLAN PLUMBING NEW
P4.04 - FAMILY BATHROOMS BUILDING BELOW FLOOR PLAN PLUMBING NEW
P4.05 - FAMILY BATHROOMS BUILDING PLAN PLUMBING NEW
P9.00 - PLUMBING SHEDULES

23 - MECHANICAL
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M4.01 - MAINTENANCE BUILDING FLOOR PLAN MECHANICAL NEW
M4.02 - FAMILY BATHROOMS BUILDING FLOOR PLAN MECHANICAL NEW
M6.00 - COMMUNITY BUILDING FLOOR PLAN MECHANICAL PIPING NEW
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E4.00 - COMMUNITY BUILDING FLOOR PLAN LIGHTING NEW
E4.01 - MAINTENANCE BUILDING FLOOR PLAN LIGHTING NEW
E4.02 - FAMILY BATHROOMS BUILDNG FLOOR PLAN NEW LIGHTING
E5.00 - COMMUNITY BUILDING FLOOR PLAN POWER NEW
E5.01 - MAINTENANCE BUILDING FLOOR PLAN POWER NEW
E5.02 - FAMILY BATHROOMS BUILDING FLOOR PLAN POWER NEW
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E9.00 - ELECTRICAL SCHEDULES

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SE2.01 - SITE PLAN - PHOTOMETRICS
SE2.02 - SITE PLAN - POWER
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SE8.02 - ELETRICAL FIXTURE CUT SHEETS
SE8.03 - ELETRICAL FIXTURE CUT SHEETS
SE8.04 - ELETRICAL FIXTURE CUT SHEETS
SE8.05 - ELETRICAL FIXTURE CUT SHEETS
SE8.06 - ELETRICAL FIXTURE CUT SHEETS
SE8.07 - ELETRICAL FIXTURE CUT SHEETS
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TRAFFIC PLANS
001 - TRAFFIC SIGNAL INSTALL
002 - TRAFFIC SIGNAL WIRING INSTALL

STANDARD DETAILS
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OC-050-C - TYPICAL CABLE POLES
SIG-010-A - SPAN WIRE CASING DETAILS (4 SHEETS)
SIG-011-A - INSTALLATION OF INTEGRAL MESSENGER CABLE (2 SHEETS)
SIG-020-B - TRAFFIC SIGNAL STRAIN POLE LOADING TABLE AND DESIGN CRITERIA
SIG-021-B - 6 ANCHOR BOLT TRAFFIC SIGNAL STRAIN POLE AND COUPLING DETAILS, FOUNDATION REQUIREMENTS, CONDUIT AND OTHER DETAILS (4 SHEETS)
SIG-070-B - PEDESTAL FOUNDATION (2 SHEETS)
SIG-110-A - BASE MOUNTED T.S. CONTROLLER CABINET/FOUNDATIONS (4 SHEETS)
SIG-210-B - UNDERGROUND SERVICE METERED AND UNMETERED (2 SHEETS)
SIG-250-A - CONDUIT (DIRECT BURIAL/ENCASE)
SIG-300-A - SPAN WIRE MOUNTED T.S. BRACKET ASSEMBLY (2 SHEETS)
SIG-303-A - BRACKETING FOR HAWK SIGNAL DISPLAY
SIG-304-A - TRAFFIC SIGNAL BACKPLATES
SIG-305-E - SPAN WIRE TOP TETHER DETAILS AND CONNECTIONS (3 SHEETS)
SIG-330-A - PEDESTAL MOUNTED SIGNAL DISPLAYS
SIG-331-A - PEDESTAL MOUNTING FOR SIGNALS
SIG-342-A - BACK BRACKET SIGNAL DISPLAYS
SIG-400-A - PEDESTRIAN PUSH BUTTON DETAILS (2 SHEETS)

PERMIT SCHEDULE

PERMIT TYPE:	AGENCY RESPONSIBLE	SUBMISSION DATE
SITE PLAN REVIEW	CITY OF ROCHESTER HILLS	09/12/2025
ENGINEERING PLAN REVIEW	CITY OF ROCHESTER HILLS	NOT YET SUBMITTED
WATER MAIN PERMIT	CITY OF ROCHESTER HILLS	NOT YET SUBMITTED
SANITARY SEWER PERMIT	CITY OF ROCHESTER HILLS	NOT YET SUBMITTED
RIGHT-OF-WAY PERMIT	ROAD COMMISSION OF OAKLAND COUNTY	NOT YET SUBMITTED
S.E.S.C PERMIT	OAKLAND COUNTY DRAIN COMMISSIONER	NOT YET SUBMITTED
SANITARY SEWER PERMIT	OAKLAND COUNTY DRAIN COMMISSIONER	NOT YET SUBMITTED
ACT 399 WATER SUPPLY PERMIT	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY	NOT YET SUBMITTED
NOTICE OF COVERAGE	MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY	NOT YET SUBMITTED

ROCHESTER HILLS MICHIGAN

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PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER NO. 6201050442
PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Notes

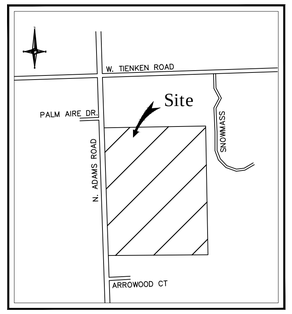
811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557
sheet no. T1.1

CITY FILE #E24-008 SECTION #8



Location Map
N.T.S.

BENCHMARKS

BM #1
BENCHMARK TAG IN UTILITY POLE
ELEVATION: 981.76
NAVD 88 DATUM

BM #2
PK NAIL IN POLE
ELEVATION 986.02
NAVD 88 DATUM

LEGAL DESCRIPTION

PART OF THE NORTHWEST 1/4 OF SECTION 8, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 8; THENCE SOUTH 01 DEGREES 58 MINUTES 24 SECONDS WEST ALONG THE WEST LINE OF SAID SECTION 8, 638.24 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 88 DEGREES 32 MINUTES 32 SECONDS EAST, 1087.72 FEET TO A POINT ON THE WEST LINE OF 'SHADOW WOODS SUB. NO. 2', AS RECORDED IN LIBER 163 OF PLATS, ON PAGE 13, OAKLAND COUNTY RECORDS; THENCE SOUTH 01 DEGREES 59 MINUTES 09 SECONDS WEST ALONG THE WEST LINE OF SAID 'SHADOW WOODS SUB. NO. 2' AND ALSO ALONG THE WEST LINE OF 'SHADOW WOODS SUB. NO. 1', AS RECORDED IN LIBER 160 OF PLATS, ON PAGE 30, OAKLAND COUNTY RECORDS, 1402.59 FEET; THENCE NORTH 88 DEGREES 28 MINUTES 36 SECONDS WEST, 1087.41 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 8; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST ALONG SAID WEST SECTION LINE, 380.78 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 32 SECONDS EAST, 43.00 FEET; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST BEING 43 FEET EAST OF AND PARALLEL TO THE WEST LINE OF SAID SECTION 8, 420.00 FEET; THENCE NORTH 88 DEGREES 32 MINUTES 32 SECONDS WEST, 43.00 FEET TO A POINT ON SAID WEST SECTION LINE; THENCE NORTH 01 DEGREES 58 MINUTES 24 SECONDS EAST ALONG SAID WEST SECTION LINE, 600.56 FEET TO THE POINT OF BEGINNING.

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
BROOKSTON AND COLWOOD LOAMS (12), 6.4%
FOX SANDY LOAM (18B), TILL PLAIN, 2 TO 6 PERCENT SLOPES, 7.9%

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, OAKLAND COUNTY, MICHIGAN (MI125), SURVEY AREA: VERSION 23, AUG 27, 2024, TABULAR: VERSION 23, AUG 27, 2024, SPATIAL: VERSION 14, AUG 29, 2022.

SOIL TYPE LEGEND

	SOIL TYPE LIMIT LINE
MARLETTE LOAM	SOIL TYPE LABEL
TB-01	TEST SOIL BORING LOCATION

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- MANHOLE — EXISTING SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

ROCHESTER HILLS MICHIGAN

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SEAL

STEVEN W. CHRISTOPHER NAVAROLI ENGINEER License No. 6201052963 PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Overall Topographical Survey

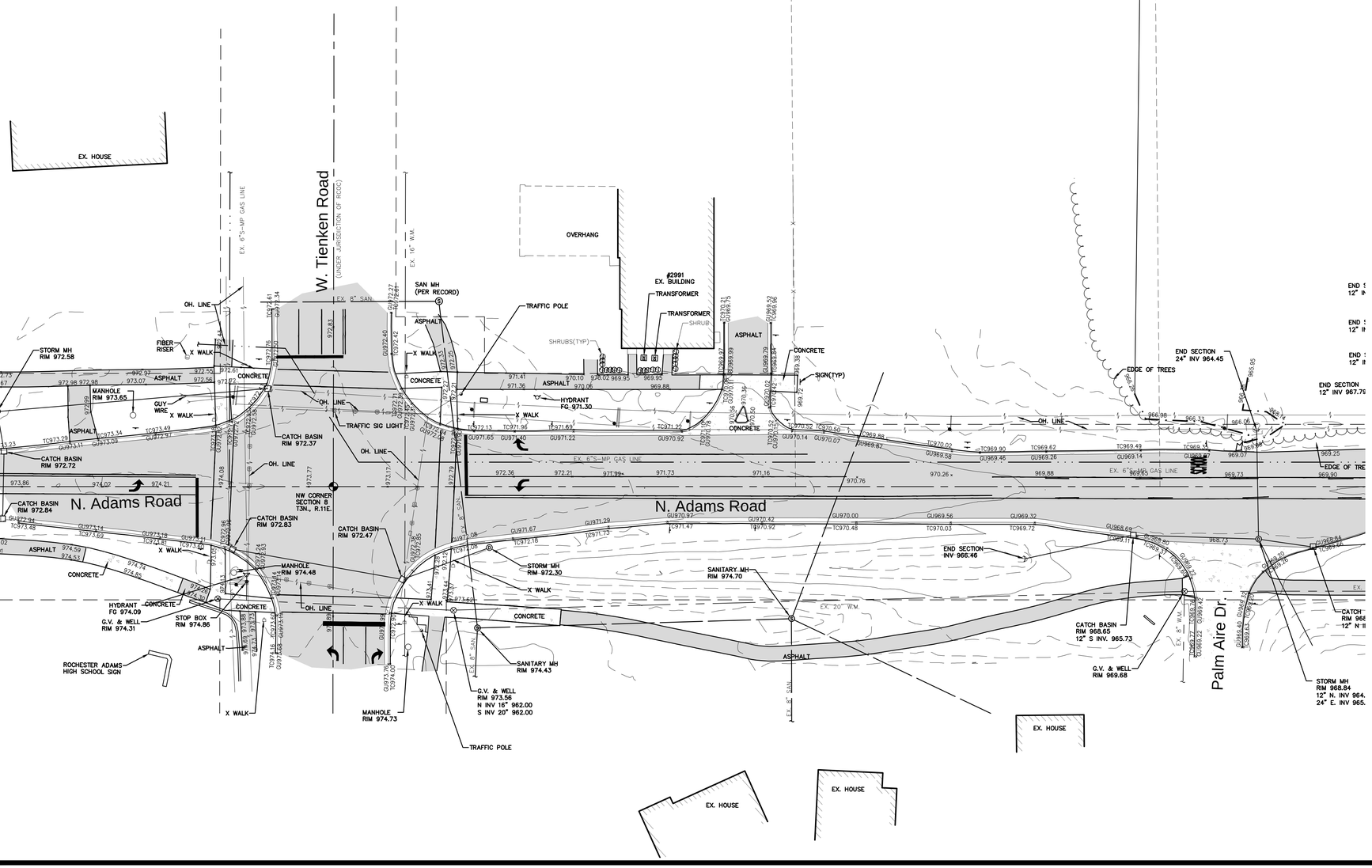
811 Know what's below Call before you dig.

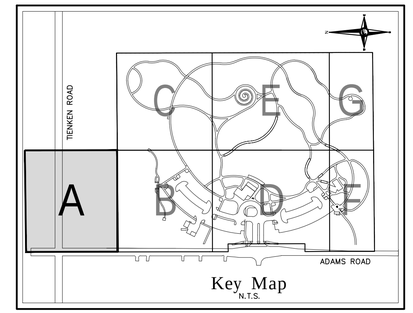
DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 100'
100 50 0 50 100 150

NFE JOB NO. O557
sheet no. C1.0

CITY FILE #E24-008 SECTION #8





SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
BROOKSTON AND COLWOOD LOAMS (12), 6.4%
FOX SANDY LOAM (18B), TILL PLAIN, 2 TO 6 PERCENT SLOPES, 7.9%

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, OAKLAND COUNTY, MICHIGAN (MI125), SURVEY AREA: VERSION 23, AUG 27, 2024, TABULAR: VERSION 23, AUG 27, 2024, SPATIAL: VERSION 14, AUG 29, 2022.

SNOW NOTE

SURVEY COMPLETED UNDER SNOWY CONDITIONS, AND EXACT LOCATION OF PAVEMENT, CURBS AND SURFACE STRUCTURES CANNOT BE GUARANTEED.

DTE DISCLAIMER NOTE

PLEASE NOTE THAT DTE HAS NEW REGULATIONS THAT MAY IMPACT DEVELOPMENT OUTSIDE THEIR EASEMENT OR THE PUBLIC RIGHT OF WAY. CLIENT SHALL CONTACT DTE TO DETERMINE THE "NEW STRUCTURES AND POWER LINE" REQUIREMENTS AS THEY MAY APPLY TO ANY FUTURE BUILDING OR RENOVATION OF A STRUCTURE. DTE ENERGY CAN BE CONTACTED AT 800-477-4747

BASIS OF BEARING NOTE

THE BASIS OF BEARING FOR THIS SURVEY WAS ESTABLISHED BY THE RECORD DESCRIPTION AS SHOWN IN THE PLAT REFERENCED HEREON.

FLOOD HAZARD NOTE

THIS PROPERTY IS NOT LOCATED WITHIN THE FLOOD HAZARD AREA INDICATED BY FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 26125C0379F DATED: 09-29-2006

MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER 2024120502221, PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY. DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

TOPOGRAPHIC SURVEY NOTES

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SOIL TYPE LEGEND

	SOIL TYPE LIMIT LINE
MARLETTE LOAM	SOIL TYPE LABEL
TB-01	TEST SOIL BORING LOCATION

LEGEND

MANHOLE	EXISTING SANITARY SEWER
HYDRANT / GATE VALVE	EXISTING SAN. CLEAN OUT
MANHOLE / CATCH BASIN	EXISTING WATER MAIN
	EXISTING STORM SEWER
	EX. R.Y. CATCH BASIN
UTILITY POLE / GUY POLE / GUY WIRE	EXISTING BURIED CABLES
	OVERHEAD LINES
	LIGHT POLE
	SIGN
	EXISTING GAS MAIN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

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FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STEVEN W. CHRISTOPHER NAVAROLI ENGINEER License No. 4300 052943

PROJECT
Nowicki Park
Site Improvements

CLIENT
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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic & Tree Survey - Part A

Know what's below Call before you dig.

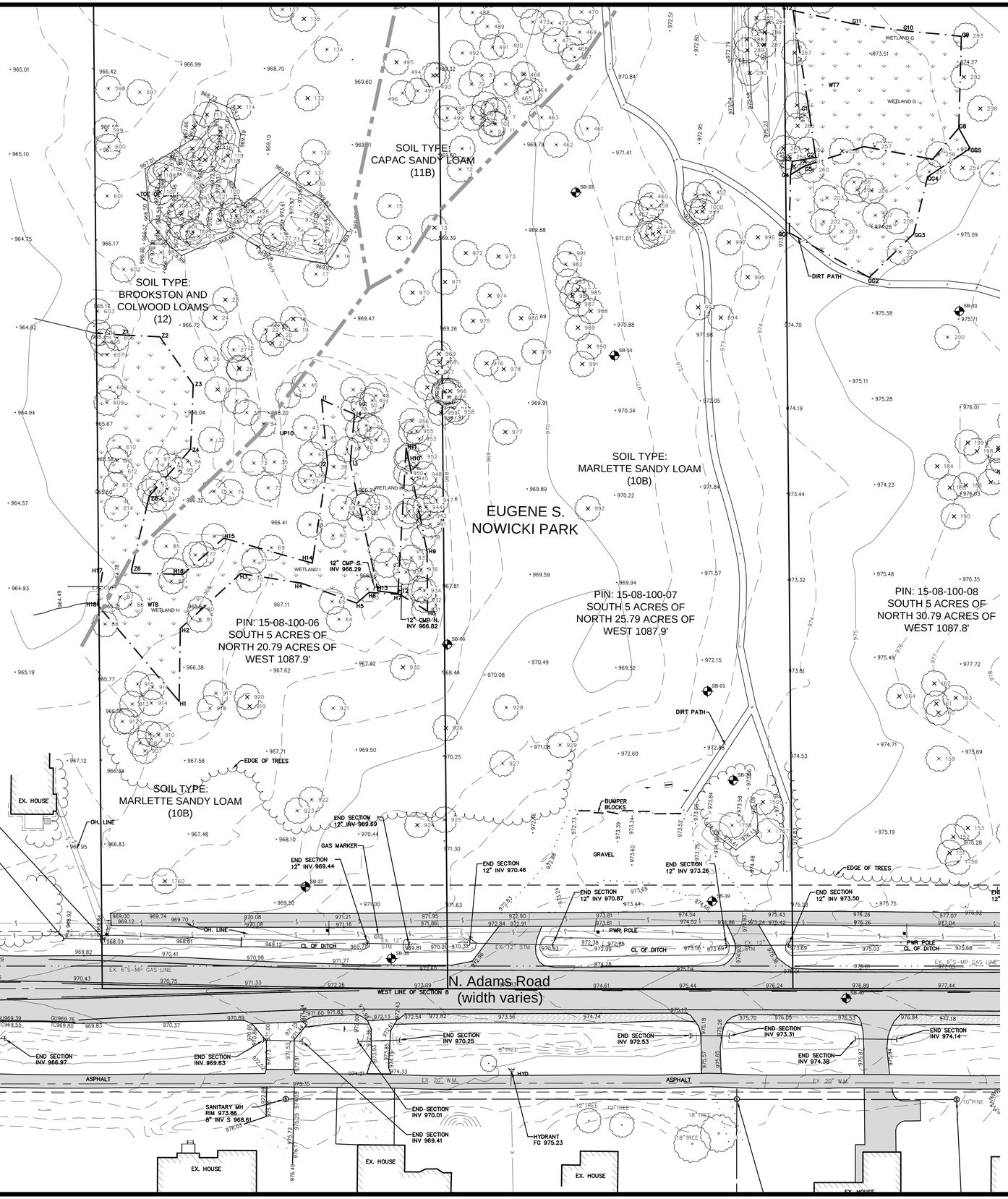
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.1

CITY FILE #E24-008 SECTION #8



SOIL DATA

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SOIL TYPE LEGEND

- SOIL TYPE LIMIT LINE
- MARLETTE LOAM — SOIL TYPE LABEL
- TB-01 — TEST SOIL BORING LOCATION

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- EXISTING SAN. CLEAN OUT
- HYDRANT / GATE VALVE — EXISTING WATER MAIN
- MANHOLE / CATCH BASIN — EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE / GUY POLE / GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

ROCHESTER HILLS MICHIGAN

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SEAL

STEVEN W. CHRISTOPHER ENGINEER LICENSE NO. 47800 STATE OF MICHIGAN PROFESSIONAL ENGINEER

PROJECT
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CONTACT
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Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic &
Tree Survey - Part B

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2026-02-04	BID DOCUMENTS

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DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.2

CITY FILE #E24-008 SECTION #8

SOIL TYPE:
CAPAC SANDY LOAM
(11B)

EUGENE S.
NOWICKI PARK

PIN: 15-08-100-08
SOUTH 5 ACRES OF
NORTH 30.79 ACRES OF
WEST 1087.8'

PIN: 15-08-100-06
SOUTH 5 ACRES OF
NORTH 20.79 ACRES OF
WEST 1087.9'

SOIL TYPE:
CAPAC SANDY LOAM
(11B)

PIN: 15-08-100-07
SOUTH 5 ACRES OF
NORTH 25.79 ACRES OF
WEST 1087.9'

SOIL TYPE:
BROOKSTON AND
COLWOOD LOAMS
(12)

EX. HOUSE
DECK
CABLE PHONE TRANSFORMER
CABLE RISER
ELEC. RISER
CABLE PHONE
ELEC. RISER
CABLE RISER
WALL
IRON FENCE
FND. IRON
DIRT PATH
FLAG POLE
TOE OF BANK
TOP OF BANK
WETLAND F
WETLAND G
UP7
UP8
UP9
INF-1
SB-22
SB-31
SB-26
EGLE 2
EGLE 3
OC3
OC4
OC5
F1
F2
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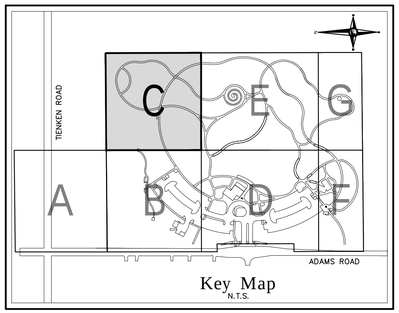
G11
G12
WT7
WT8



Key Map
N.T.S.

SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
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FOX SANDY LOAM (18B), TILL PLAIN, 2 TO 6 PERCENT SLOPES, 7.9%

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SOIL TYPE LEGEND

	SOIL TYPE LIMIT LINE
MARLETTE LOAM	SOIL TYPE LABEL
TB-01	TEST SOIL BORING LOCATION

LEGEND

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	EXISTING SAN. CLEAN OUT
HYDRANT / GATE VALVE	EXISTING WATER MAIN
MANHOLE / CATCH BASIN	EXISTING STORM SEWER
	EX. R.Y. CATCH BASIN
	EXISTING BURIED CABLES
UTILITY POLE / GUY POLE / GUY WIRE	OVERHEAD LINES
	LIGHT POLE
	SIGN
	EXISTING GAS MAIN

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SEAL

STEVEN W. CHRISTOFORO ENGINEER LICENSE NO. 6201039463 PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic &
Tree Survey - Part C

Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY:
D. McConkey
DESIGNED BY:
APPROVED BY:
K. Navaroli
DATE:
2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.3

CITY FILE #E24-008 SECTION #8

EUGENE S.
NOWICKI PARK

PIN: 15-08-151-01
SOUTH 15 ACRES OF
NORTH 45.79 ACRES OF
WEST 1087.6'
EXCEPT N. 420' OF W. 43'

SOIL TYPE:
CAPAC SANDY LOAM
(11B)

SOIL TYPE:
MARLETTE SANDY LOAM
(10B)

8-100-08
ACRES OF
ACRES OF
1087.8'

N. Adams Road

Baypoint Dr.

DIRT PATH

OLD WIRE FENCE

EDGE OF TREES

WETLAND B

WETLAND D

WETLAND E

SIGN

ASPHALT

PWR POLE

OH. LINE

CL OF DITCH

EX. 6"S-MP GAS LINE

EX. 12" STM

EX. 20" W.M.

EX. 8" W.M.

18" STM

12" STM

WEST LINE OF SECTION 8

END SECTION
12" INV 976.33

END SECTION
12" INV 975.85

END SECTION
INV 975.67

END SECTION
INV 976.27

END SECTION
INV 976.60

END SECTION
INV 977.51

G.V. & WELL
RIM 980.35
N-S INV 973.1

G.V. & WELL
RIM 979.64
N-S INV 973.14

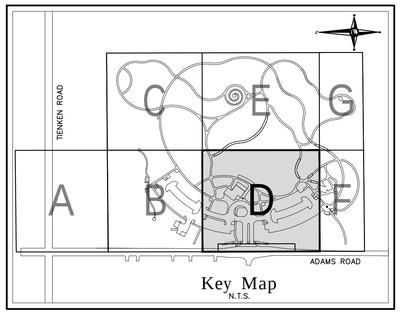
G.V. & WELL
RIM 984.90
N-S INV 976.07

SB-01 SB-02 SB-03 SB-04 SB-05 SB-06 SB-07 SB-08 SB-09 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-24 SB-25 SB-26 SB-27 SB-28 SB-29 SB-30 SB-31 SB-32 SB-33 SB-34 SB-35 SB-36 SB-37 SB-38 SB-39 SB-40 SB-41 SB-42

BENCHMARKS

BM #1
BENCHMARK TAG IN UTILITY POLE
ELEVATION: 981.76
NAVD 88 DATUM

BM #1
BENCHMARK TAG IN UP
ELEVATION 981.76
NAVD 88 DATUM



Key Map
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SOIL DATA

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- SOIL TYPE LIMIT LINE
- MARLETTE LOAM — SOIL TYPE LABEL
- TB-01 — TEST SOIL BORING LOCATION

LEGEND

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SEAL

STEVEN W. SUDFORK ENGINEER LICENSE NO. 6201052963

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PROJECT LOCATION
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Section 8
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic & Tree Survey - Part D

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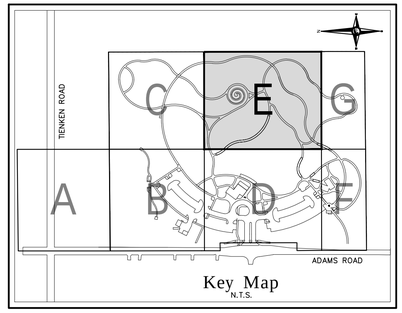
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.4

CITY FILE #E24-008 SECTION #8



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- EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- UTILITY POLE, GUY POLE, GUY WIRE — EXISTING BURIED CABLES
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SHEET
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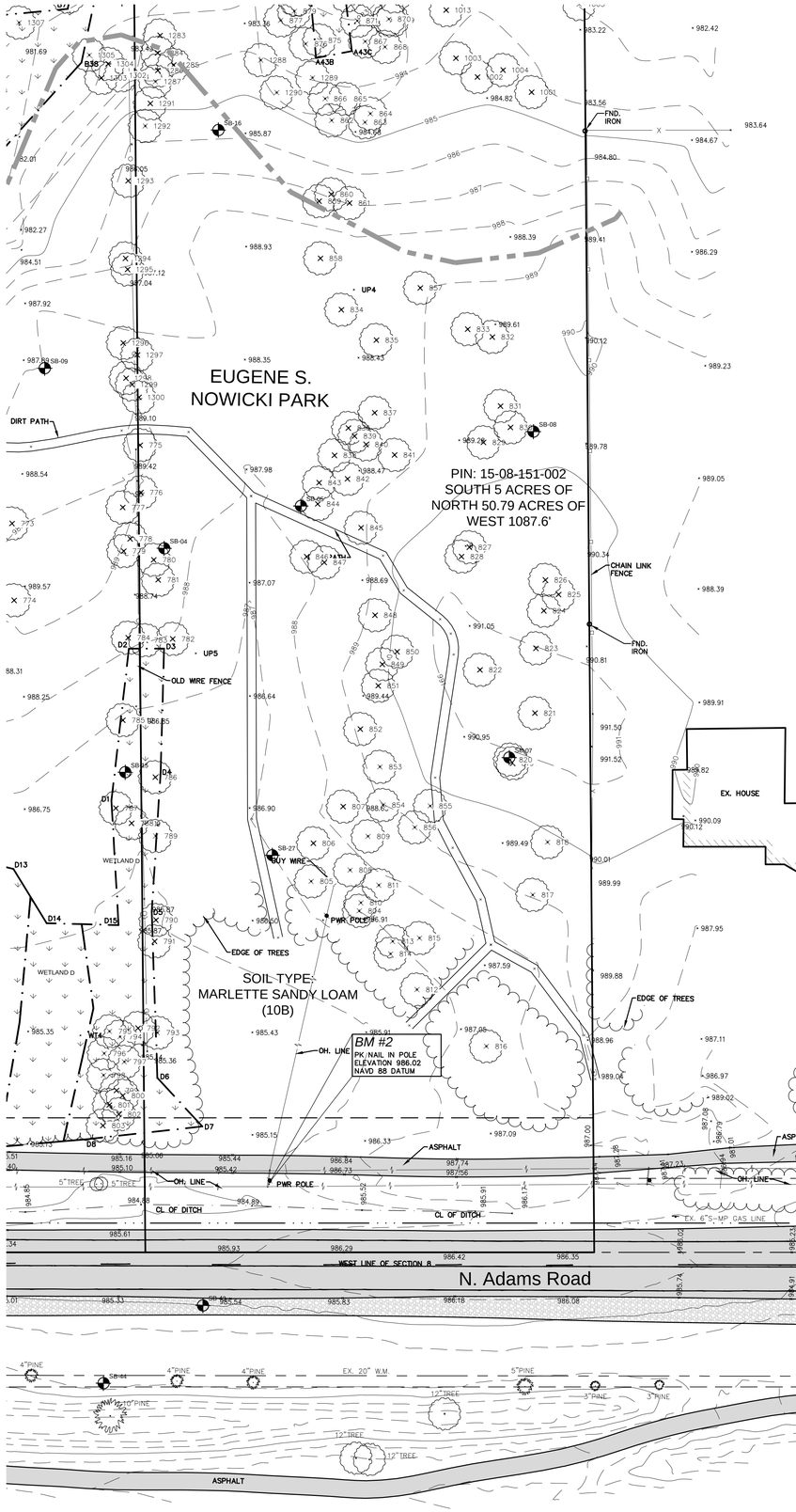
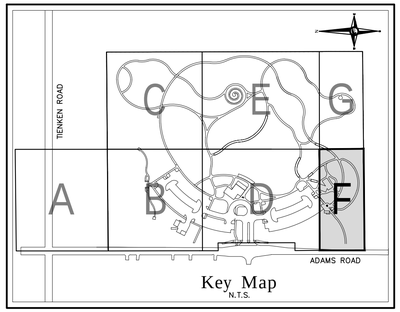
sheet no. C1.5

CITY FILE #E24-008 SECTION #8





BENCHMARKS

BM #2
PK NAIL IN POLE
ELEVATION 986.02
NAVD 88 DATUM

SOIL DATA

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NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STEVEN W. SUTTON ENGINEER License No. 47800 Date 2026-02-04

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic & Tree Survey - Part F

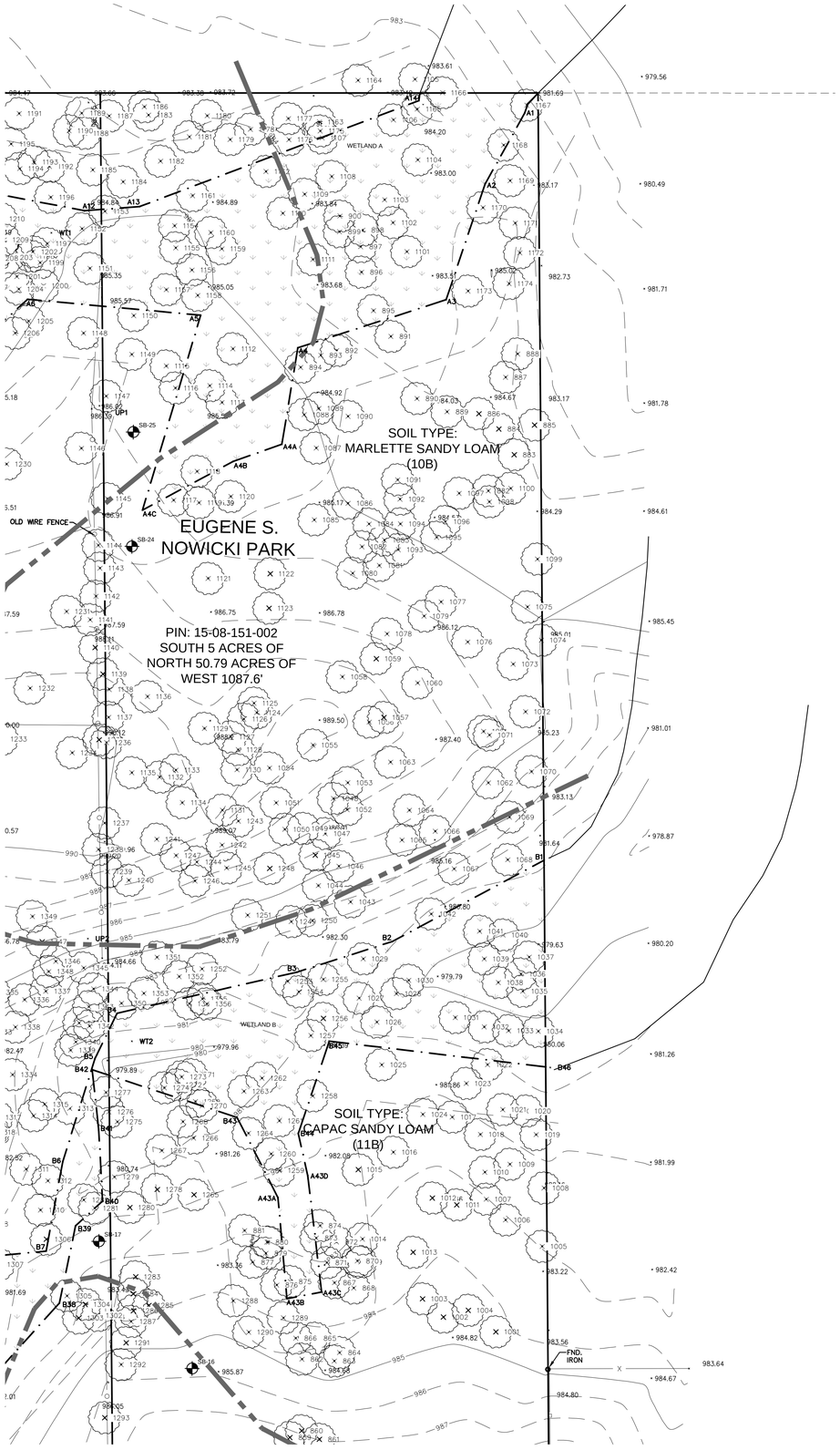
811 Know what's below Call before you dig.

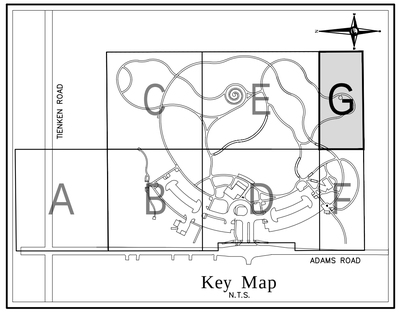
DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.6

CITY FILE #E24-008 SECTION #8





SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
BROOKSTON AND COLWOOD LOAMS (12), 6.4%
FOX SANDY LOAM (18B), TILL PLAIN, 2 TO 6 PERCENT SLOPES, 7.9%

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, OAKLAND COUNTY, MICHIGAN (MI125), SURVEY AREA: VERSION 23, AUG 27, 2024, TABULAR: VERSION 23, AUG 27, 2024, SPATIAL: VERSION 14, AUG 29, 2022.

TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

SOIL TYPE LEGEND

- SOIL TYPE LIMIT LINE
- MARLETTE LOAM — SOIL TYPE LABEL
- TB-01 — TEST SOIL BORING LOCATION

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- HYDRANT, GATE VALVE — EXISTING SAN. CLEAN OUT
- MANHOLE, CATCH BASIN — EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R.Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN

ROCHESTER HILLS MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

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PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STEVEN W. CHRISTOPHER SUTPHIN ENGINEER License No. 6201052963

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Rochester Hills, MI 48309

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elwertk@rochesterhill.org

PROJECT LOCATION
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Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boundary, Topographic & Tree Survey - Part G

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

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APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C1.7

CITY FILE #E24-008 SECTION #8

Tag #	Specimen	Exempt	Nuisance	Remove/Save	Dia. (in)	Other Dia.	Botanical Name	Common Name	Condition	Comment 1	Comment 2
1				save	13.1		Populus deltoides	eastern cottonwood	good		
2				remove	10.5		Populus deltoides	eastern cottonwood	good		
3				save	7.3		Acer negundo	boxelder	good	heavy vine	
4				save	6.5		Acer negundo	boxelder	good		
5				save	8.9		Populus deltoides	eastern cottonwood	good	crowded	
6				save	8.6		Populus deltoides	eastern cottonwood	good	crowded	
7				save	7.9		Populus deltoides	eastern cottonwood	good	crowded	
8				save	7.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
9				save	7.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
10				save	9.2		Populus deltoides	eastern cottonwood	good	crowded	
11				save	7.0		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
12				save	10.1		Populus deltoides	eastern cottonwood	good		
13				remove	10.8	10.2	Acer negundo	boxelder	fair	co-dominant trunks	twist or bent trunks
14				remove	10.9	7. 7	Acer negundo	boxelder	poor	split at union, downed trunks	suckers
15	yes			save	27.0		Acer negundo	boxelder	fair	several broken or dead limbs	
16		yes		save	7.2		Fraxinus americana	white ash	good		
17				save	16.7		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
18				remove	11.2	6.2, 6	Acer saccharinum	silver maple	poor	asymmetric crown	smaller trunks choked by vine
19				save	13.6	12.9, 12	Acer saccharinum	silver maple	fair	co-dominant trunks	
20				remove	6.5		Acer negundo	boxelder	poor	80 percent bark peeling	
21				remove	8.0		Acer negundo	boxelder	poor	80 percent bark peeling	
22				save	15.6	11.2	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
23				save	10.2		Juglans nigra	black walnut	good	light vine	
24				remove	12.6		Juglans nigra	black walnut	good	light vine	
25				remove	7.1		Acer negundo	boxelder	poor	60 percent bark peel	heavy vine choking tree
26				remove	10.0	8.2	Acer negundo	boxelder	poor	smaller trunk dead	heavy vine choking tree
27				save	12.7	11.7, 8.5	Acer saccharinum	silver maple	fair	co-dominant trunks	several broken or dead limbs
28				remove	7.0		Acer saccharinum	silver maple	poor	50 percent bark peel	several dead trunks
29				remove	13.2		Acer saccharinum	silver maple	fair	twisted or bent trunk	
30		yes		remove	7.5	7.2	Fraxinus pennsylvanica	green ash	poor	80 percent bark peeling	heavy vine choking tree
31				save	7.1		Juglans nigra	black walnut	fair	asymmetric crown	45 degree bend
32				save	15.6		Juglans nigra	black walnut	good		
33				save	7.8		Ulmus americana	American elm	good		
34		yes		save	7.1		Fraxinus pennsylvanica	green ash	good	heavy vine	
35				save	7.8		Juglans nigra	black walnut	good		
36				save	8.6		Acer saccharinum	silver maple	good		
37				save	10.7		Acer saccharinum	silver maple	fair	twisted or bent trunk	
38				save	13.3		Acer saccharinum	silver maple	good		
39				save	10.8		Ulmus americana	American elm	good		
40				save	8.0		Ulmus americana	American elm	poor	80 percent bark peel	
41				save	9.3		Populus deltoides	eastern cottonwood	fair	asymmetric crown	suckers
42				save	7.0		Acer saccharinum	silver maple	fair	asymmetric crown	40 degree lean
43				save	10.0	9.6	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
44				save	8.2	6	Malus sp.	crabapple sp.	good		
45				remove	6.5	6.1	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
46				save	20.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
47	yes			save	29.4		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
48	yes			save	27.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
49				save	20.6		Populus deltoides	eastern cottonwood	good		
50				save	19.8		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
51				save	7.0		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
52				save	10.6		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
53	yes			save	25.7		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
54				save	13.9		Acer saccharinum	silver maple	poor	dead crown	only suckers living
55				save	6.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	
56				save	12.2		Acer saccharinum	silver maple	fair	asymmetric crown	twisted or bent trunk
57				save	9.7		Acer saccharinum	silver maple	good	crowded	
58				save	10.6		Acer saccharinum	silver maple	good	crowded	
59				save	12.2		Acer saccharinum	silver maple	good		
60				save	16.3		Acer saccharinum	silver maple	fair	co-dominant trunks	one partially broken corwn
61				save	12.0		Acer saccharinum	silver maple	fair	partially broken crown	
62				save	7.0		Acer saccharinum	silver maple	fair	partially broken crown	
63				save	12.0		Acer saccharinum	silver maple	good		
64				remove	9.5		Juglans nigra	black walnut	good	heavy vine	
65				save	10.3		Juglans nigra	black walnut	good	windfall leaning on trunk	
66				save	10.7	7	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
67				save	8.8		Acer saccharinum	silver maple	poor	50 percent bark peel	fungal infection at base
68	yes			save	20.0	10.3	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
69				save	12.5	9.8	Acer saccharinum	silver maple	fair	co-dominant trunks	several broken or dead limbs
70				save	7.1	5	Acer negundo	boxelder	fair	smaller trunk dead	
71				save	12.4		Acer saccharinum	silver maple	good		
72				save	13.6	7.3	Acer saccharinum	silver maple	poor	larger trunk dead	suckers
73				save	7.6		Acer saccharinum	silver maple	poor	80 percent bark peel	heavy vine
74				save	8.2		Acer saccharinum	silver maple	poor	80 percent bark peel	heavy vine
75				save	10.5		Acer negundo	boxelder	poor	vine torn down crown	heavy vine
76				save	8.5		Juglans nigra	black walnut	good		
77				save	12.8	12.7	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
78				save	6.5		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
79		yes		save	6.1		Fraxinus pennsylvanica	green ash	good		
80				save	12.2		Ulmus americana	American elm	fair	asymmetric crown	crowded
81	yes			save	20.2		Juglans nigra	black walnut	good	crowded	
82				save	14.5		Acer negundo	boxelder	good		
83				save	7.2		Acer saccharinum	silver maple	fair	twisted or bent trunk	crowded
84				save	17.2		Acer negundo	boxelder	good		
85		yes		save	11.8		Fraxinus pennsylvanica	green ash	poor	main trunk dead	suckers
86		yes		save	6.1		Fraxinus pennsylvanica	green ash	good		
87				save	6.3		Acer saccharinum	silver maple	good		
88	yes			save	31.9		Populus deltoides	eastern cottonwood	fair	several broken or dead limbs	
89				save	9.7		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	crowded
90				save	8.0		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	crowded
91				save	10.3		Populus deltoides	eastern cottonwood	good	crowded	
92				save	10.4		Populus deltoides	eastern cottonwood	good	crowded	
93				save	8.3		Juglans nigra	black walnut	fair	asymmetric crown	crowded
94				save	11.2		Juglans nigra	black walnut	good		
95				save	7.7	6.0	Acer negundo	boxelder	poor	smaller trunk dead	suckers
96				save	9.0		Populus deltoides	eastern cottonwood	good	crowded	
97				save	7.9		Populus deltoides	eastern cottonwood	good	crowded	
98				save	7.2		Acer negundo	boxelder	fair	several broken or dead limbs	
99		yes		save	7.6		Fraxinus americana	white ash	good		
100				save	14.6		Populus deltoides	eastern cottonwood	good		
101				save	6.9		Acer negundo	boxelder	fair	asymmetric crown	crowded
102				save	7.0		Acer negundo	boxelder	fair	asymmetric crown	crowded
103				save	8.0		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
104				save	6.5		Acer negundo	boxelder	good		
105				save	6.0		Acer negundo	boxelder	good		
106		yes		save	9.3		Fraxinus americana	white ash	good		
107		yes		save	8.2		Fraxinus americana	white ash	good		
108		yes		save	7.0		Fraxinus americana	white ash	good		
109		yes		save	6.1		Fraxinus americana	white ash	good		
110				remove	8.0	7.5	Ailanthus altissima	tree of heaven	good	co-dominant trunks	
111				remove	8.0		Juglans nigra	black walnut	fair	asymmetric crown	twisted or bent trunk
112				remove	9.3	8.7	Juglans nigra	black walnut	good	co-dominant trunks	
113				remove	7.4		Juglans nigra	black walnut	good	heavy vine	
114				remove	14.2		Juglans nigra	black walnut	good		
115				remove	9.0		Juglans nigra	black walnut	good		
116				remove	6.0		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
117				remove	6.8		Acer negundo	boxelder	fair	several broken or dead limbs	
118				save	7.9		Acer negundo	boxelder	good		
119				remove	8.2		Acer negundo	boxelder	fair	45 degree lean	
120				save	6.8	6.0	Acer negundo	boxelder	good	co-dominant trunks	
121				save	6.1		Acer negundo	boxelder	good	crowded	
122				remove	11.4		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
123		yes		remove	6.0		Fraxinus americana	white ash	fair	asymmetric crown	twisted or bent trunk
124				save	8.2		Acer negundo	boxelder	fair	several broken or dead limbs	
125				remove	9.7		Juglans nigra	black walnut	good		
126				save	6.5		Acer negundo	boxelder	good		
127				save	6.3		Acer negundo	boxelder	good		
128				remove	6.6	6.0	Acer negundo	boxelder	poor	smaller trunk dead	suckers
129				save	6.5		Acer negundo	boxelder	fair	40 degree lean	
130				remove	13.1	10.8	Acer negundo	boxelder	poor	choked out by heavy vine	several broken or dead limbs
131				save	16.3	13.8	Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
132				save	13.7		Prunus serotina	black cherry	fair	several broken or dead limbs	heavy vine
133			yes	save	17	16.5	Pyrus sp.	pear sp.	good	co-dominant trunks	
134	yes			save	26		Acer negundo	boxelder	good		
135			yes	save	16.5		Pyrus sp.	pear sp.	good		
136				save	6.7		Acer negundo	boxelder	good		
137		yes		save	6.1		Fraxinus americana	white ash	good		
138	yes			save	22		Acer negundo	boxelder	good		
139	yes			save	19		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
140				save	13.8		Prunus avium	sweet cherry	fair	40 percent bark peel	
141				save	16.2		Acer negundo	boxelder	good		
142	yes			save	23		Prunus avium	sweet cherry	good		
143				save	7.7		Acer negundo	boxelder	good		
144				remove	8.3		Juglans nigra	black walnut	good		
145				save	10		Crataegus monogyna	cockspur hawthorn	fair	asymmetric crown	crowded
146				save	15		Prunus avium	sweet cherry	fair	trunk wound	crowded
147			yes	save	25	12.4	Morus alba	white mulberry	fair	several broken or dead limbs	
148				save	10.3		Acer negundo	boxelder	fair	70 degree lean	
149				save	7.6		Acer negundo	boxelder	fair	asymmetric crown	
150				remove	15.2		Pinus strobus	white pine	good		
151		yes		remove	6.3		Fraxinus pennsylvanica	green ash	fair	co-dominant trunks	twisted or bent trunk
152				save	7.4		Quercus macrocarpa	bur oak	fair	twisted or bent trunk	
153		yes		remove	7.5		Fraxinus pennsylvanica	green ash	fair	twisted or bent trunk	
154			yes	save	9.3		Pyrus sp.	pear sp.	fair	asymmetric crown	
155			yes	save	10.2		Ulmus pumila	Siberian elm	fair	asymmetric crown	
156			yes	save	11.2		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
157			yes	remove	12.6		Ulmus pumila	Siberian elm	fair	asymmetric crown	
158	yes			remove	22.7	19.6	Carya glabra	pignut hickory	fair	co-dominant trunks	heavy vine
159				save	11	10.9	Acer rubrum	red maple	good	heavy vine	
160				remove	9.7		Juglans nigra	black walnut	good		
161				remove	10.8	10	Acer negundo	boxelder	fair	co-dominant trunks	
162		yes		remove	7		Fraxinus pennsylvanica	green ash	fair	40 percent bark peel	
163				remove	8.9		Juglans nigra	black walnut	good		
164	yes			remove	12.5		Malus sp.	crabapple sp.	poor	several broken or dead limbs	crown partially dead
165			yes	remove	14.9		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
166			yes	remove	11.5		Ulmus pumila	Siberian elm	fair	asymmetric crown	
167				remove	11.1		Juniperus virginiana	eastern red cedar	fair	several broken or dead limbs	
168			yes	remove	23.1		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
169		yes	yes	remove			Ulmus pumila	Siberian elm	poor	dead crown	
170			yes	remove	14.5		Ulmus pumila	Siberian elm	fair	asymmetric crown	light vine
171				remove	16.6	11.7	Salix alba	white willow	fair	several broken or dead limbs	light vine
172				remove	22.3	10.5	Salix alba	white willow	fair	twisted or bent trunk	
173				remove	7.9		Juglans nigra	black walnut	good		
174	yes			remove	20.4		Juglans nigra	black walnut	good		
175	yes			remove	31.9		Acer negundo	boxelder	poor	prostrate trunks	suckers
176				remove	13.4		Prunus avium	sweet cherry	poor	crown dead	
177			yes	remove	7.3		Ulmus pumila	Siberian elm	fair	asymmetric crown	heavy vine
178			yes	remove	11		Ulmus pumila	Siberian elm	good		
179				remove	13.8		Juglans nigra	black walnut	good		
180	yes			save	28.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	heavy vine
181	yes			remove	42.4		Acer saccharinum	silver maple	good		
182	yes			remove	14.6		Malus sp.	crabapple sp.	fair	several broken or dead limbs	
183	yes			save	43.6		Populus deltoides	eastern cottonwood	good		
184				remove	15.8		Populus deltoides	eastern cottonwood	good		
185				remove	6.8		Populus deltoides	eastern cottonwood	good		
186				remove	9.4		Populus deltoides	eastern cottonwood	good		
187				remove	7.5	6.7	Populus deltoides	eastern cottonwood	fair	co-dominant trunks	
188				remove	9.1		Populus deltoides	eastern cottonwood	good		
189				remove	9.4		Populus deltoides	eastern cottonwood	good		
190			yes	remove	7.4		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
191				save	7.4		Populus deltoides	eastern cottonwood	good		
192				save	9.7		Populus deltoides	eastern cottonwood	good		
193				save	6.4		Populus deltoides	eastern cottonwood	good		
194				save	12.1	9.0	Populus deltoides	eastern cottonwood	good	co-dominant trunks	
195				save	7.2		Populus deltoides	eastern cottonwood	good		
196				remove	6.6		Populus deltoides	eastern cottonwood	good		
197				remove	6.7		Populus deltoides	eastern cottonwood	good		
198				remove	6.6		Populus deltoides	eastern cottonwood	good		
199				remove	9.3		Populus deltoides	eastern cottonwood	good		
200	yes			save	32.0		Populus deltoides	eastern cottonwood	good		
201				save	6.2		Populus deltoides	eastern cottonwood	good		
202				save	7.8		Populus deltoides	eastern cottonwood	good		
203				save	6.2		Populus deltoides	eastern cottonwood	good		
204				save	8.1		Populus deltoides	eastern cottonwood	good		
205				save	7.2		Populus deltoides	eastern cottonwood	good		
206				save	7.4		Populus deltoides	eastern cottonwood	fair	several broken or dead limbs	
207				save	6.9		Populus deltoides	eastern cottonwood	good		
208				save	6.2		Populus deltoides	eastern cottonwood	good		
209				save	6.2		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
210				save	13.0	11.0	Populus deltoides	eastern cottonwood	good		
211				save	8.5		Populus deltoides	eastern cottonwood	good		
212				save	11.9		Populus deltoides	eastern cottonwood	good		
213				save	7.4		Populus deltoides	eastern cottonwood	good		
214				save	6.4		Populus deltoides	eastern cottonwood	good		
215				remove	17.1	12.0	Acer negundo	boxelder	fair	co-dominant trunks	several broken or dead limbs
216			yes	remove	10.5	10.1	Morus alba	white mulberry	fair	fissure at union	
217		yes		remove	14.6		Fraxinus americana	white ash	good		
218		yes		remove	10.1		Fraxinus americana	white ash	poor	dead crown	
219				save	16.5		Populus deltoides	eastern cottonwood	good		
220				save	13.2		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
221				save	15.1		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
222				save	12.0		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
223				save	17.2		Populus deltoides	eastern cottonwood	good		
224				save	7.3		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
225				save	7.4		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
226				save	17.7		Populus deltoides	eastern cottonwood	good		
227				save	13.9		Populus deltoides	eastern cottonwood	fair	several broken or dead limbs	
228				save	10.0		Acer negundo	boxelder	fair		
229				save	6.2		Populus deltoides	eastern cottonwood	poor	twisted or bent trunk	
230				save	9.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
231				save	9.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
232				save	7.4		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
233				save	11.0		Populus deltoides	eastern cottonwood	good		
234				save	12.2		Populus deltoides	eastern cottonwood	good		
235				save	18.2	17.2	Populus deltoides	eastern cottonwood	good		
236				save	19.8	17.6	Populus deltoides	eastern cottonwood	fair	asymmetric crown	
237				save	11.6		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
238				save	13.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
239				save	9.1		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
240				save	13.5		Populus deltoides	eastern cottonwood	good		
241				remove	9.8	9.5	Juglans nigra	black walnut	good		
242				save	11.3	10.5	Juglans nigra	black walnut	good		
243				remove	10.4		Juglans nigra	black walnut	good		
244				remove	8.5	7.3	Acer negundo	boxelder	fair	asymmetric crown	heavy vine
245			yes	save	10.8		Ulmus pumila	Siberian elm	good	heavy vines	
246		yes		save	6.9		Fraxinus americana	white ash	good		
247			yes	save	7.8		Ulmus pumila	Siberian elm	fair	asymmetric crown	several broken or dead limbs
248			yes	save	10.6		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
249				save	10.4	10.2	Acer saccharinum	silver maple	fair	co-dominant trunks	
250				save	13.5		Prunus sp.	cherry sp.	fair	shear crack in trunk	
251				save	7.4		Acer negundo	boxelder	good		
252				save	7.4		Acer negundo	boxelder	fair	asymmetric crown	
253				save	6.2		Acer negundo	boxelder	good		
254			yes	save	7.3		Ulmus pumila	Siberian elm	good		
255				save	8.4		Salix alba	white willow	fair	twisted or bent trunk	
256				save	18.1	9.8, 8.8	Salix alba	white willow	fair	twisted or bent trunk	several broken or dead limbs
257				save	10.7		Populus deltoides	eastern cottonwood	good		
258				save	9.1		Populus deltoides	eastern cottonwood	fair	crowded	
259				save	9.8		Populus deltoides	eastern cottonwood	fair	crowded	
260				save	7.9		Populus deltoides	eastern cottonwood	fair	crowded	
261				save	9.1		Populus deltoides	eastern cottonwood	fair	crowded	
262				save	6.5		Populus deltoides	eastern cottonwood	fair	crowded	
263				save	9.4		Populus deltoides	eastern cottonwood	fair	crowded	
264				save	9.9		Populus deltoides	eastern cottonwood	fair	crowded	
265				remove	6.7	6.6	Acer negundo	boxelder	good		
266				remove	10.5		Acer negundo	boxelder	good		
267				remove	7.3		Acer negundo	boxelder	fair	asymmetric crown	
268				remove	6.0		Acer negundo	boxelder	fair	asymmetric crown	
269				remove	9.7	8.3	Acer negundo	boxelder	good		
270				remove	14.0		Populus deltoides	eastern cottonwood	good		
271		yes		remove	6.3		Fraxinus pennsylvanica	green ash	good		
272				remove	11.9		Acer negundo	boxelder	good		
273				remove	7.2		Acer negundo	boxelder	good		
274				remove	7.2		Acer negundo	boxelder	good		
275				remove	11.6		Populus deltoides	eastern cottonwood	good		
276				remove	7.5		Populus deltoides	eastern cottonwood	good		
277				remove	7.0		Acer negundo	boxelder	good	planted along old drive	
278				remove	9.0		Acer negundo	boxelder	good	planted along old drive	
279				remove	10.9		Acer negundo	boxelder	good	planted along old drive	
280				remove	7.5		Acer negundo	boxelder	good	planted along old drive	
281				remove	9.0	6.0	Acer negundo	boxelder	good	planted along old drive	
282				remove	6.7		Acer negundo	boxelder	good	planted along old drive	
283				remove	9.5		Acer negundo	boxelder	good	planted along old drive	
284				remove	7.3		Acer negundo	boxelder	good	planted along old drive	
285				remove	6.6	6.2	Acer negundo	boxelder	good	planted along old drive	
286				remove	6.0		Acer negundo	boxelder	good	planted along old drive	
287				remove	6.7		Acer negundo	boxelder	good	planted along old drive	
288				remove	6.9	6.6	Acer negundo	boxelder	good	planted along old drive	
289				remove	7.6		Acer negundo	boxelder	good	planted along old drive	
290				remove	8.6		Acer negundo	boxelder	good	planted along old drive	
291				remove	9.3	7.2	Populus deltoides	eastern cottonwood	good	co-dominant trunks	
292		yes		save	6.4		Fraxinus americana	white ash	fair	wound on trunk	peeling bark
293		yes		save	14.0		Fraxinus americana	white ash	fair	peeling bark	heavy vine
294				remove	6.3	6.0	Malus sp.	crabapple sp.	good	old orchard	
295		yes		remove	7.0		Fraxinus americana	white ash	good		
296		yes		remove	6.5	5.0	Fraxinus americana	white ash	fair	several broken or dead limbs	
297		yes		remove	6.0		Fraxinus pennsylvanica	green ash	good		
298				save	6.5	6.3, 6	Malus sp.	crabapple sp.	good	old orchard	
299				save	6.5		Malus sp.	crabapple sp.	good	old orchard	
300		yes		remove	11.7		Fraxinus americana	white ash	fair	bark peeling	
301				remove	8.5	8.3	Malus sp.	crabapple sp.	good	old orchard	
302				remove	6.1	6.0	Malus sp.	crabapple sp.	good	old orchard	
303				save	7.0	6.8	Malus sp.	crabapple sp.	good	old orchard	
304				save	6.0	5.0	Malus sp.	crabapple sp.	good	old orchard	
305				save	6.0	5.5	Malus sp.	crabapple sp.	good	old orchard	
306				save	8.6	7.0	Malus sp.	crabapple sp.	good	old orchard	
307		yes		remove	9.5		Fraxinus pennsylvanica	green ash	fair	50 percent bark peeling	
308		yes		save	11.9		Fraxinus americana	white ash	good		
309				save	6.2		Malus sp.	crabapple sp.	good	old orchard	
310				save	6.7		Malus sp.	crabapple sp.	good	old orchard	
311			yes	remove	6.4		Ulmus pumila	Siberian elm	fair	heavy vine choking tree	
312		yes		save	11.0		Fraxinus americana	white ash	good	old orchard	
313				save	7.5	7.1	Malus sp.	crabapple sp.	good	old orchard	
314				save	6.3	6.1	Malus sp.	crabapple sp.	good	old orchard	
315				save	6.2		Malus sp.	crabapple sp.	good	old orchard	
316				save	10.4	6.0	Malus sp.	crabapple sp.	good	old orchard	
317			yes	save	10.3		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	peeling bark
318				save	12.1		Prunus avium	sweet cherry	good		
319				save	6.4		Prunus avium	sweet cherry	good		
320				save	6.8		Prunus avium	sweet cherry	good		
321				save	9.5		Prunus serotina	black cherry	good		
322				save	9.4		Prunus serotina	black cherry	fair	twisted or bent trunk	
323				save	8.5		Prunus serotina	black cherry	good		
324			yes	save	8.7		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
325				save	8.5		Prunus avium	sweet cherry	good		
326				remove	8.7		Prunus avium	sweet cherry	fair	heavy vine choking tree	
327				save	10.8		Pinus sylvestris	Scots pine	good		
328		yes		save	13.4		Fraxinus americana	white ash	good		
329				save	6.0	5.0	Malus sp.	crabapple sp.	good	old orchard	
330				save	6.0	5.0	Malus sp.	crabapple sp.	good	old orchard	
331				remove	7.2	7.1	Malus sp.	crabapple sp.	good	old orchard	
332				save	9.9		Malus sp.	crabapple sp.	good	old orchard	
333				save	6.0		Malus sp.	crabapple sp.	good	old orchard	
334		yes		save	7.8		Fraxinus americana	white ash	good		
335				save	6.7	5.0	Malus sp.	crabapple sp.	good	old orchard	
336		yes		remove	7.5		Fraxinus americana	white ash	good		
337		yes		remove	9.3		Fraxinus americana	white ash	good		
338				save	8.2		Ulmus americana	American elm	good		
339				save	6.1	6.0	Malus sp.	crabapple sp.	good	old orchard	
340		yes		remove	7.2		Fraxinus americana	white ash	good		
341				save	6.3	6.0	Malus sp.	crabapple sp.	good	old orchard	
342				save	7.0		Acer negundo	boxelder	good		
343				save	6.2	6.1	Malus sp.	crabapple sp.	good	old orchard	
344				save	6.3		Malus sp.	crabapple sp.	good	old orchard	
345				save	6.2		Malus sp.	crabapple sp.	good	old orchard	
346				save	7.4		Pinus resinosa	red pine	good		
347				save	6.3		Pinus resinosa	red pine	fair	several broken or dead limbs	
348		yes		remove	6.5		Fraxinus americana	white ash	good		
349				save	6.0		Malus sp.	crabapple sp.	good	old orchard	
350				save	14.3	12.5, 11.8	Pinus resinosa	red pine	fair	co-dominant trunks	
351				save	8.0	7.3, 6	Malus sp.	crabapple sp.	good	old orchard	
352		yes		remove	6.5		Fraxinus americana	white ash	good		
353				save	6.0		Malus sp.	crabapple sp.	good	old orchard	
354				save	9.7		Pinus strobus	white pine	good		
355		yes		remove	8.0		Fraxinus americana	white ash	good		
356		yes		remove	6.3		Fraxinus americana	white ash	good	heavy vine	
357		yes		remove	6.1		Fraxinus americana	white ash	good	heavy vine	
358		yes		remove	12.1	9.1	Fraxinus americana	white ash	fair	co-dominant trunks	several broken or dead limbs
359				remove	7.9		Pinus resinosa	red pine	good	heavy vine	
360		yes		save	10.1		Fraxinus americana	white ash	good		
361		yes		save	14.1		Fraxinus americana	white ash	good		
362		yes		remove	9.2		Fraxinus americana	white ash	good		
363		yes		remove	6.9		Fraxinus americana	white ash	good		
364				save	6.8		Malus sp.	crabapple sp.	good	old orchard	
365				save	6.8		Malus sp.	crabapple sp.	good	old orchard	
366	yes			save	22.1		Acer saccharinum	silver maple	good		
367				save	14.3	7.4	Acer saccharinum	silver maple	good		
368		yes		remove	6.4		Fraxinus americana	white ash	good		
369		yes		remove	11.5		Fraxinus americana	white ash	poor	80 percent bark peel	heavy vine
370		yes		remove	10.6		Fraxinus americana	white ash	poor	80 percent bark peel	heavy vine
371			yes	remove	6.7		Ulmus pumila	Siberian elm	fair	bark peeling	heavy vine
372			yes	save	6.4		Ulmus pumila	Siberian elm	good		
373			yes	save	13.9		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
374				save	16.2		Prunus avium	sweet cherry	fair	large trunk wound	heavy vine
375			yes	save	7.5		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	heavy vine
376				remove	9.3		Acer negundo	boxelder	poor	split at weak union	
377				remove	7.4		Prunus serotina	black cherry	good		
378		yes		remove	7.7		Fraxinus americana	white ash	good	light vine	
379		yes	yes	remove	8.5		Ulmus pumila	Siberian elm	poor	crown broke off	
380				save	14.5		Acer saccharinum	silver maple	good		
381				save	11.9		Acer saccharinum	silver maple	good		
382				save	9.5		Acer saccharinum	silver maple	fair	asymmetric crown	
383				save	11.7		Acer saccharinum	silver maple	fair	several broken or dead limbs	heavy vine
384				save	10.6	10.5	Acer saccharinum	silver maple	good		
385	yes			save	34.0		Populus deltoides	eastern cottonwood	good		
386				save	11.0	11.0, 11.0	Acer saccharinum	silver maple	fair	co-dominant trunks	several broken or dead limbs
387				save	6.7	5.8	Malus sp.	crabapple sp.	fair	heavy vine choking tree	old orchard
388		yes		save	10.1		Fraxinus americana	white ash	good		
389				save	7.2		Malus sp.	crabapple sp.	fair	old orchard	heavy vine
390		yes		save	7.6		Fraxinus americana	white ash	good	light vine	

ROCHESTER HILLS
MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
KEVIN CHRISTOPHER NAVAROLI
ENGINEER
No. 6201050492
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree List

811
Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557
sheet no. C1.8

391		yes		remove	6.0		Fraxinus americana	white ash	good		
392		yes		remove	7.9		Fraxinus americana	white ash	good		
393				save	8.9		Populus deltoides	eastern cottonwood	good		
394		yes		remove	6.3		Fraxinus americana	white ash	fair	asymmetric crown	twisted or bent trunk
395				save	12.9		Quercus macrocarpa	bur oak	good		
396				save	7.6		Populus deltoides	eastern cottonwood	good		
397				save	6.3		Populus deltoides	eastern cottonwood	good		
398				save	8.8		Populus deltoides	eastern cottonwood	good		
399				save	6.4		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
400				save	7.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
401				save	18.0	17, 12, 10	Juglans nigra	black walnut	good	co-dominant trunks	
402				remove	13.7	10.7	Salix sp.	willow sp.	fair	weak union	heavy vine
403		yes		remove	6.4		Fraxinus americana	white ash	good		
404				remove	7.5		Acer negundo	boxelder	good		
405				save	9.5	8.7	Acer negundo	boxelder	good	co-dominant trunks	
406				save	7.0	6.1	Malus sp.	crabapple sp.	fair	several broken or dead limbs	heavy vine
407		yes		remove	6.5		Fraxinus americana	white ash	poor	several broken or dead limbs	choked by heavy vine
408		yes		save	8.0		Fraxinus americana	white ash	good		
409		yes		remove	6.3		Fraxinus americana	white ash	good	heavy vine	
410		yes		remove	6.0		Fraxinus americana	white ash	good		
411		yes		remove	7.0		Fraxinus americana	white ash	poor	rotting trunk	
412		yes		remove	8.5		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine choking tree
413		yes		save	6.4		Fraxinus americana	white ash	good		
414				save	6.0	5.0	Malus sp.	crabapple sp.	fair	co-dominant trunks	heavy vine
415				save	12.3		Acer negundo	boxelder	good		
416				save	10.4		Ulmus americana	American elm	fair	twisted or bent trunk	
417				save	8.7		Ulmus americana	American elm	fair	twisted or bent trunk	
418				save	10.3		Prunus avium	sweet cherry	fair	bark peeling	heavy vine
419		yes		save	6.8		Fraxinus americana	white ash	fair	asymmetric crown	
420				save	13.9		Ulmus americana	American elm	fair	asymmetric crown	
421				save	6.3		Quercus macrocarpa	bur oak	good	crowded	
422				save	14.9		Juglans nigra	black walnut	good		
423		yes		save	6.8		Fraxinus americana	white ash	good		
424				save	6.3		Quercus macrocarpa	bur oak	good		
425				save	7.0		Juglans nigra	black walnut	good		
426		yes		save	8.2		Fraxinus americana	white ash	fair	several trunk wounds	bark peel
427		yes		save	6.1		Fraxinus americana	white ash	fair	several trunk wounds	bark peel
428		yes		save	6.5		Fraxinus americana	white ash	good		
429		yes		save	7.0		Fraxinus americana	white ash	good		
430				save	7.7		Ulmus americana	American elm	good		
431		yes		save	6.0		Fraxinus americana	white ash	fair	twisted or bent trunk	exposed root cap
432		yes		save	6.8		Fraxinus americana	white ash	good		
433		yes		save	6.4		Fraxinus americana	white ash	good		
434		yes		remove	6.0		Fraxinus americana	white ash	good	light vine	
435		yes		save	7.5		Fraxinus americana	white ash	good	light vine	
436		yes		save	6.0		Fraxinus americana	white ash	good		
437		yes		remove	6.6		Fraxinus americana	white ash	poor	rotting trunk	
438		yes		save	7.9		Fraxinus americana	white ash	fair	asymmetric crown	
439		yes		save	6.0		Fraxinus americana	white ash	good	heavy vine	
440		yes		save	7.8		Fraxinus americana	white ash	good	heavy vine	
441		yes		save	12.6		Fraxinus americana	white ash	good		
442		yes		save	8.4		Fraxinus americana	white ash	good		
443				save	16.6	12.1	Acer saccharinum	silver maple	good	co-dominant trunks	
444				save	14.8	8.0	Acer saccharinum	silver maple	good	co-dominant trunks	
445				save	8.4	7.6	Prunus avium	sweet cherry	fair	asymmetric crown	twisted or bent trunk
446				save	10.1		Prunus avium	sweet cherry	good		
447				save	15.3		Prunus serotina	black cherry	good		
448				save	7.8		Quercus alba	white oak	fair	asymmetric crown	
449				save	6.4		Prunus avium	sweet cherry	fair	asymmetric crown	
450				save	11.5	10.8, 6.5	Acer saccharum	sugar maple	fair	weak union	
451				save	9.5		Populus deltoides	eastern cottonwood	good		
452				save	11.1		Populus deltoides	eastern cottonwood	good		
453				remove	10.1		Populus deltoides	eastern cottonwood	good	crowded	
454				remove	8.5		Populus deltoides	eastern cottonwood	good	crowded	
455				remove	9.5		Populus deltoides	eastern cottonwood	good	crowded	
456				remove	6.3		Populus deltoides	eastern cottonwood	good	crowded	
457				save	10.0		Populus deltoides	eastern cottonwood	good	crowded	
458				save	7.5		Populus deltoides	eastern cottonwood	good	crowded	
459				save	10.5		Populus deltoides	eastern cottonwood	good	crowded	
460				save	11.0		Populus deltoides	eastern cottonwood	good	crowded	
461				save	14.9		Acer negundo	boxelder	good		
462				save	8.7		Populus deltoides	eastern cottonwood	good		
463				save	6.5		Acer negundo	boxelder	good	heavy vine	
464				save	11.1		Populus deltoides	eastern cottonwood	good		
465				save	15.2		Populus deltoides	eastern cottonwood	good		
466				save	6.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
467				save	6.9		Populus deltoides	eastern cottonwood	good		
468				save	6.5	4	Populus deltoides	eastern cottonwood	good		
469				save	6.9		Populus deltoides	eastern cottonwood	good		
470				save	9.4		Populus deltoides	eastern cottonwood	good		
471				save	10.2		Populus deltoides	eastern cottonwood	good		
472				save	6.3		Acer negundo	boxelder	good		
473				save	6.6		Acer negundo	boxelder	good		
474				save	7.2	5.7	Acer negundo	boxelder	good		
475				save	8.6		Acer negundo	boxelder	good	light vine	
476	yes			save	17.0		Malus sp.	crabapple sp.	good		
477				save	10.0		Acer negundo	boxelder	good		
478				remove	9.8		Juglans nigra	black walnut	good		
479	yes			save	19.4	18.5	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
480				save	16.1	15.5	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
481				save	6.5		Prunus avium	sweet cherry	fair	twist or bent trunk	crowded
482				save	6.1		Acer negundo	boxelder	fair	30 degree lean	
483				save	7.3		Acer negundo	boxelder	fair	30 degree lean	
484				save	6.7		Acer negundo	boxelder	fair	30 degree lean	light vine
485				save	7.0		Acer negundo	boxelder	fair	30 degree lean	light vine
486				remove	13.0		Prunus avium	sweet cherry	poor	40 percent bark missing	choked out by heavy vine
487				save	14.3		Prunus avium	sweet cherry	good		
488				save	6.7		Acer negundo	boxelder	good		
489				save	13.5		Acer negundo	boxelder	good		
490				save	6.1		Acer negundo	boxelder	good	light vine	
491				save	6.0		Acer negundo	boxelder	good		
492				save	8.6		Acer negundo	boxelder	good		
493				remove	16.0		Prunus avium	sweet cherry	fair	large trunk wound	heavy vine
494				remove	13.7		Acer negundo	boxelder	poor	90 degree bend, twisted	several broken or dead limbs
495				remove	14.6		Acer negundo	boxelder	fair	asymmetric crown	heavy vine
496				save	17.1		Acer negundo	boxelder	fair	co-dominant trunks	twist or bent trunks
497				save	16.1		Prunus avium	sweet cherry	fair	several broken or dead limbs	heavy vine
498		yes		save	7.0		Fraxinus pennsylvanica	green ash	good		
499				save	16.3		Populus deltoides	eastern cottonwood	good		
500				save	7.0		Prunus avium	sweet cherry	good	heavy vine	
501				save	13.6		Prunus avium	sweet cherry	good	heavy vine	
502				save	8.3		Prunus avium	sweet cherry	fair	asymmetric crown	
503				save	11.5		Populus deltoides	eastern cottonwood	good		
504				save	9.8		Populus deltoides	eastern cottonwood	good		
505				save	8.7	7.3, 6.6	Acer rubrum	red maple	good	co-dominant trunks	heavy vine
506		yes		save	8.0		Fraxinus americana	white ash	fair	asymmetric crown	
507				remove	8.0		Prunus avium	sweet cherry	poor	several broken or dead limbs	vine killing tree
508		yes		remove	6.3		Fraxinus americana	white ash	fair	heavy vine	
509				save	12.3	6.8	Quercus bicolor	swamp white oak	good		
510		yes		save	7.2		Fraxinus americana	white ash	fair	twisted or bent trunk	
511	yes			save	24.0		Juglans nigra	black walnut	good	in fenced yard	not tagged
512				save	10.0		Carya cordiformis	bitternut hickory	good	in fenced yard	not tagged
513				save	8.2		Juglans nigra	black walnut	fair	asymmetric crown	
514		yes		save	6.0		Fraxinus americana	white ash	good		
515	yes			save	24.3		Juglans nigra	black walnut	good		
516	yes			save	24.0		Juglans nigra	black walnut	good		
517				save	15.8		Juglans nigra	black walnut	good		
518	yes			save	13.7		Crataegus sp.	hawthorn sp.	good		
519				save	15.1		Acer negundo	boxelder	good	shear crack	
520				save	19.2		Juglans nigra	black walnut	good		
520				save	19.2		Juglans nigra	black walnut	good		
521		yes		save	8.1		Fraxinus americana	white ash	fair	twisted or bent trunk	
522		yes		save	7.2		Fraxinus americana	white ash	good		
523				remove	11.1	9.0	Malus sp.	crabapple sp.	poor	heavy vine	crown dying
524				remove	12.0		Prunus avium	sweet cherry	poor	trunk rot	vine killing tree
525				remove	8.2	6.2	Malus sp.	crabapple sp.	poor	splitting at union	
526				remove	8.9	7.1	Prunus serotina	black cherry	poor	crown dead	
527				remove	12.0		Prunus avium	sweet cherry	poor	crown dead	
528				remove	10.5	9.5, 8.0	Prunus avium	sweet cherry	poor	several broken or dead limbs	vine killing tree
529				save	7.8		Acer negundo	boxelder	fair	asymmetric crown	crowded
530				save	7.3		Acer negundo	boxelder	fair	twisted or bent trunk	crowded
531				save	10.8		Robinia pseudoacacia	black locust	fair	asymmetric crown	crowded
532				save	13.8		Robinia pseudoacacia	black locust	good		crowded
533				save	13.6		Robinia pseudoacacia	black locust	good		crowded
534				save	15.0		Prunus avium	sweet cherry	fair	asymmetric crown	crowded
535				save	12.8		Prunus avium	sweet cherry	fair	asymmetric crown	crowded
536				save	12.2	11.6	Robinia pseudoacacia	black locust	fair	co-dominant trunks	crowded
537		yes		save	6.0		Fraxinus americana	white ash	fair	twisted or bent trunk	crowded
538				save	12.5		Robinia pseudoacacia	black locust	fair	asymmetric crown	crowded
539				save	8.5		Prunus avium	sweet cherry	fair	base wound	
540	yes			save	22.5		Robinia pseudoacacia	black locust	fair	weak union at 6 ft	
541	yes			save	13.8	10.5	Malus sp.	crabapple sp.	good		
542	yes			save	15.4	12.2	Malus sp.	crabapple sp.	fair	several broken or dead limbs	
543				save	12.7		Prunus sp.	cherry sp.	good		
544				save	13.0		Picea pungens	Colorado blue spruce	good		
545	yes			remove	13.1		Malus sp.	crabapple sp.	poor	second trunk downed	
546				remove	7.6		Acer negundo	boxelder	good		
547	yes			save	23.0		Quercus macrocarpa	bur oak	good		
548				save	12.5		Juglans nigra	black walnut	good		
549	yes			save	29.0		Juglans nigra	black walnut	good		
550				save	12.3		Juglans nigra	black walnut	good		
551				save	14.5		Juglans nigra	black walnut	good		
552				save	12.4		Juglans nigra	black walnut	good		
553				save	16.6		Juglans nigra	black walnut	good		
554				save	12.5		Juglans nigra	black walnut	good		
555				save	15.4		Juglans nigra	black walnut	good		
556				save	8.1		Juglans nigra	black walnut	good		
557				save	16.5		Ulmus americana	American elm	good		
558				save	15.0		Juglans nigra	black walnut	good		
559	yes			save	23.4		Juglans nigra	black walnut	good		
560	yes			save	33.1		Quercus alba	white oak	good		
561	yes			save	24.0		Juglans nigra	black walnut	good		
562	yes			save	20.0		Acer negundo	boxelder	fair	several broken or dead limbs	
563				save	12.7		Juglans nigra	black walnut	good		
564				save	7.0		Acer negundo	boxelder	fair	asymmetric crown	
565				save	9.2		Juglans nigra	black walnut	good		
566				save	7.4	4.5	Acer negundo	boxelder	fair	asymmetric crown	heavy vine
567				save	6.5		Acer negundo	boxelder	good		
568	yes			save	18.0	13.9	Acer negundo	boxelder	fair	heavy vine	
569				save	13.0		Populus deltoides	eastern cottonwood	good	crowded	
570				save	11.0		Populus deltoides	eastern cottonwood	good	crowded	
571				save	8.4		Populus deltoides	eastern cottonwood	good	crowded	
572				save	9.7		Populus deltoides	eastern cottonwood	good	crowded	
573				save	6.2		Populus deltoides	eastern cottonwood	good	crowded	
574				save	8.0		Populus deltoides	eastern cottonwood	good	crowded	
575				save	8.8		Populus deltoides	eastern cottonwood	good	crowded	
576				save	8.8		Populus deltoides	eastern cottonwood	good	crowded	
577				save	6.1		Populus deltoides	eastern cottonwood	good	crowded	
578				save	9.0		Populus deltoides	eastern cottonwood	good	crowded	
579		yes		save	8.3		Fraxinus pennsylvanica	green ash	good		
580				save	14.5	10.8	Acer negundo	boxelder	good		
581				save	10.8	6.0	Acer negundo	boxelder	fair	smaller trunk dead	
582	yes			save	31.2	14.0, 12.3	Acer saccharinum	silver maple	good	co-dominant trunks	
583	yes			save	19.5	17.2, 14.5	Acer saccharinum	silver maple	good	co-dominant trunks	
584	yes			save	19.8		Acer saccharinum	silver maple	fair	asymmetric crown	
585				save	17.6	15.0, 12.5	Acer saccharinum	silver maple	good		
586				save	7.3		Ulmus americana	American elm	fair	asymmetric crown	
587				save	6.8		Prunus avium	sweet cherry	fair	twisted or bent trunk	
588		yes		save	8.7		Fraxinus americana	white ash	fair	twisted or bent trunk	
589				save	6.5	5.1	Prunus avium	sweet cherry	fair	large trunk wound	
590				save	15.1	14.8, 13.0	Acer negundo	boxelder	fair	co-dominant trunks	several broken or dead limbs
591				save	6.9		Acer negundo	boxelder	good		
592				save	6.7	4.1	Acer negundo	boxelder	good		
593				save	6.3		Acer negundo	boxelder	good		
594				remove	8.2		Acer negundo	boxelder	good		
595				save	9.6		Juglans nigra	black walnut	good	heavy vine	
596	yes			save	18.4		Quercus rubra	northern red oak	good	heavy vine	
597	yes			save	18.8		Quercus bicolor	swamp white oak	good	heavy vine	
598		yes		save	6.9		Fraxinus americana	white ash	fair	asymmetric crown	heavy vine
599				save	14.2		Juglans nigra	black walnut	good	heavy vine	
600				save	13.3		Juglans nigra	black walnut	good	heavy vine	
601	yes			save	25.3		Juglans nigra	black walnut	good	heavy vine	
602				save	16.1		Quercus alba	white oak	good	heavy vine	
603				save	7.4		Juglans nigra	black walnut	good		
604				save	6.7		Acer negundo	boxelder	fair	90 degree bend	
605		yes		save	7.3		Fraxinus americana	white ash	good		
606				save	7.9		Acer negundo	boxelder	fair	large trunk wound	
607				save	7.5		Crataegus sp.	hawthorn sp.	fair	large trunk wound	
608		yes		save	9.6		Fraxinus americana	white ash	poor	vine killing tree	
609				save	10.8		Juglans nigra	black walnut	good		
610				save	8.8		Populus deltoides	eastern cottonwood	good	heavy vine	crowded
611				save	6.8		Populus deltoides	eastern cottonwood	good	heavy vine	crowded
612				save	10.7		Populus deltoides	eastern cottonwood	good	heavy vine	crowded
613				save	17.4	12.3, 10.4	Acer saccharinum	silver maple	good	co-dominant trunks	
614				save	6.4		Crataegus sp.	hawthorn sp.	fair	asymmetric crown	
615				save	7.3		Pyrus calleryana	Bradford pear	good	heavy vine	
616			yes	remove	6.6		Ulmus pumila	Siberian elm	good	heavy vine	
617			yes	remove	7.7		Ulmus pumila	Siberian elm	good	heavy vine	
618				remove	9.3	6.1	Morus alba	white mulberry	good	heavy vine	
619			yes	remove	11.4		Ulmus pumila	Siberian elm	good	heavy vine	
620				remove	8.5		Populus deltoides	eastern cottonwood	good	heavy vine	
621				remove	15.8		Populus deltoides	eastern cottonwood	good		
622				remove	8.7		Populus deltoides	eastern cottonwood	good		
623				remove	6.3		Populus deltoides	eastern cottonwood	good		
624				remove	13.4		Populus deltoides	eastern cottonwood	good		
625				remove	6.7		Acer negundo	boxelder	good		
626				remove	8.7		Populus deltoides	eastern cottonwood	good		
627				remove	23.2	12.6	Populus deltoides	eastern cottonwood	fair	asymmetric crown	
628	yes			remove	28.7	22.3, 18.7	Populus deltoides	eastern cottonwood	good		
629				remove	8.0		Acer negundo	boxelder	good		
630				remove	10.7	7.4	Acer negundo	boxelder	good		
631				remove	8.1		Acer negundo	boxelder	good		
632			yes	remove	8.2	7.1, 6.3	Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
633				remove	10.1		Acer negundo	boxelder	fair	30 degree lean	
634				remove	6.4		Acer negundo	boxelder	good		
635				remove	6.1		Acer negundo	boxelder	fair	30 degree lean	
636				remove	9.2		Acer negundo	boxelder	fair	30 degree lean	
637				remove	9.8		Populus deltoides	eastern cottonwood	good		
638				remove	14.5		Populus deltoides	eastern cottonwood	good		
639				remove	6.7		Acer negundo	boxelder	fair	45 degree lean	
640				remove	6.1		Acer negundo	boxelder	fair	asymmetric crown	
641				remove	14.9		Populus deltoides	eastern cottonwood	good		
642				remove	7.7		Acer negundo	boxelder	good		
643				remove	7.4	5.8	Acer negundo	boxelder	fair	45 degree lean	
644				remove	7.6		Acer negundo	boxelder	good		
645				remove	9.7		Acer negundo	boxelder	good		
646				remove	7.1		Acer negundo	boxelder	good		
647				remove	6.4		Acer negundo	boxelder	fair	twisted or bent trunk	
648				remove	7.9		Acer negundo	boxelder	fair	45 degree lean	
649				remove	8.7		Acer negundo	boxelder	good		
650			yes	remove	6.2		Ulmus pumila	Siberian elm	good		
651				remove	8.7		Acer negundo	boxelder	fair	asymmetric crown	
652				remove	22.1		Populus deltoides	eastern cottonwood	good		
653			yes	remove	6.5		Ulmus pumila	Siberian elm	good		
654				remove	9.4		Acer negundo	boxelder	good		
655				remove	7.2		Acer negundo	boxelder	good		
656				remove	8.5		Acer negundo	boxelder	good		
657				remove	10.3		Acer negundo	boxelder	good		
658				remove	8.1		Acer negundo	boxelder	good		
659				remove	15.6	12.1, 8.8	Acer negundo	boxelder	fair	45 degree lean	
660			yes	remove	8.2		Morus alba	white mulberry	fair	asymmetric crown	
661	yes			remove	26.3		Acer saccharinum	silver maple	good		
662				save	8.8	7.6	Ulmus americana	American elm	fair	co-dominant trunks	asymmetric crowns
663				remove	12.1	11.0, 10.9	Ulmus americana	American elm	fair	asymmetric crown	
664				remove	13.6	13.1	Acer saccharinum	silver maple	fair	co-dominant trunks	
665			yes	remove	17.2		Ulmus pumila	Siberian elm	good	twisted or bent trunk	
666			yes	remove	20.4		Ulmus pumila	Siberian elm	poor	several broken or dead limbs	
667				remove	6.5		Prunus avium	sweet cherry	good		
668			yes	remove	22.5		Ulmus pumila	Siberian elm	poor	dead crown	several broken or dead limbs
669			yes	remove	22.3		Ulmus pumila	Siberian elm	poor	dead crown	several broken or dead limbs
670			yes	remove	13.0		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
671			yes	remove	13.8		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
672			yes	remove	9.8	9.5	Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
673			yes	remove	20.0		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
674			yes	remove	11.5		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
675			yes	remove	14.6		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
676			yes	remove	9.5		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
677			yes	remove	19.2		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
678			yes	remove	19.4		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
679			yes	remove	10.6		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
680			yes	remove	11.8		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
681				save	11.1		Acer platanoides	Norway maple	good		
682				remove	10.4		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
683			yes	remove	20.2		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
684	yes			remove	33.4		Acer saccharinum	silver maple	good		
685	yes			remove	24.7		Acer saccharinum	silver maple	good		
686				remove	9.4		Acer negundo	boxelder	fair	45 degree lean	
687			yes	remove	15.4		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
688			yes	remove	10.8		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
689				remove	6.9	6.8	Acer platanoides	Norway maple	fair	weak union	
690				remove	9.8		Acer platanoides	Norway maple	fair	several broken or dead limbs	heavy vine
691			yes	remove	9.6	7.9	Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
692			yes	remove	11.0		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
693			yes	remove	14.0		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
694			yes	remove	15.5		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
695			yes	remove	21.8		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
696		yes		remove	7.0	6.1, 6.0, 5.8	Fraxinus americana	white ash	fair	co-dominant trunks	bird damage
697				remove	14.2		Acer saccharum	sugar maple	fair	several broken or dead limbs	
698				remove	16.0	10.8	Acer saccharum	sugar maple	fair	several broken or dead limbs	
699			yes	remove	24.0		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
700	yes			remove	18.5		Acer platanoides	Norway maple	good		
701				remove	8.4	6.0, 5.5	Acer negundo	boxelder	fair	60 degree lean	
702				remove	8.0		Juglans nigra	black walnut	good		
703				remove	8.2		Thuja occidentalis	northern white cedar	good		
704				remove	9.1		Thuja occidentalis	northern white cedar	good		
705				remove	8.8		Acer platanoides	Norway maple	fair	twisted or bent trunk	
706				remove	13.9		Picea pungens	Colorado blue spruce	good		
707				remove	6.5		Acer platanoides	Norway maple	fair	twisted or bent trunk	
708				remove	16.1		Acer saccharum	sugar maple	good		
709				remove	17.8		Acer saccharum	sugar maple	good		
710	yes			remove	19.3		Acer saccharum	sugar maple	good		
711				save	8.1		Malus sp.	crabapple sp.	good		
712				save	6.1		Tsuga canadensis	eastern hemlock	good		
713				save	15.5		Acer saccharum	sugar maple	good		
714				save	10.0		Celtis occidentalis	northern hackberry	fair	twisted or bent trunk	crowded
715				save	8.0		Tsuga canadensis	eastern hemlock	fair	twisted or bent trunk	crowded
716				save	15.1		Juglans nigra	black walnut	good		
717				save	17.3		Picea pungens	Colorado blue spruce	good		
718				save	16.0		Platanus occidentalis	American sycamore	good		
719				save	9.5		Celtis occidentalis	northern hackberry	good		
720				save	10.0		Juglans nigra	black walnut	good		
721				save	6.2		Celtis occidentalis	northern hackberry	fair	60 degree lean	
722				save	14.8		Picea abies	Norway spruce	fair	needle drop	
723	yes			save	22.3		Acer platanoides	Norway maple	good		
724				save	6.6		Malus sp.	crabapple sp.	fair	several broken or dead limbs	
725				save	6.4		Celtis occidentalis	northern hackberry	fair	twisted or bent trunk	heavy vine
726				remove	6.3		Celtis occidentalis	northern hackberry	fair	twisted or bent trunk	heavy vine
727				remove	16.9		Picea abies	Norway spruce	fair	needle drop	heavy vine
728				remove	16.1		Acer negundo	boxelder	good	heavy vine	
729				remove	13.2		Juglans nigra	black walnut	good		
730				remove	8.5		Acer negundo	boxelder	fair	30 percent bark loss	heavy vine
731				remove	11.8		Acer negundo	boxelder	fair	45 degree lean	
732			yes	remove	6.5		Ulmus pumila	Siberian elm	good		
733				remove	9.4		Juglans nigra	black walnut	good		
734			yes	remove	9.4		Ulmus pumila	Siberian elm	good		
735			yes	remove	6.8	4.5	Pyrus calleryana	Bradford pear	good	crowded	
736			yes	remove	6.7	4.5	Ulmus pumila	Siberian elm	good	crowded	
737				remove	9.7		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
738				remove	13.6		Pinus sylvestris	Scots pine	poor	crown broke off	several broken or dead limbs
739			yes	remove	6.3		Morus alba	white mulberry	good		
740				save	8.0		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
741			yes	save	11.9	10.9, 9.1	Ulmus pumila	Siberian elm	fair	asymmetric crown	
742				save	7.9		Acer platanoides	Norway maple	fair	asymmetric crown	
743				remove	6.5	4.1	Celtis occidentalis	northern hackberry	fair	asymmetric crown	
744			yes	remove	28.2		Ulmus pumila	Siberian elm	good		
745		yes		remove	6.0		Fraxinus pennsylvanica	green ash	good	asymmetric crown	
746				remove	10.8		Celtis occidentalis	northern hackberry	fair	asymmetric crown	
747				save	18.5		Celtis occidentalis	northern hackberry	fair	twisted or bent trunk	
748				remove	7.3	5.6	Celtis occidentalis	northern hackberry	fair	asymmetric crown	
749			yes	remove	7.9		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	
750	yes			save	24.1		Celtis occidentalis	northern hackberry	good		
751			yes	remove	20.0	13.2	Ulmus pumila	Siberian elm	good		
752				remove	6.4		Acer negundo	boxelder	fair	twisted or bent trunk	
753				remove	8.2		Juglans nigra	black walnut	good	heavy vine	
754				remove	12.3		Celtis occidentalis	northern hackberry	good	heavy vine	
755	yes			remove	21.0		Juglans nigra	black walnut	good		
756				remove	7.2	4.1	Acer negundo	boxelder	good	heavy vine	
757				remove	14.0		Juglans nigra	black walnut	good		
758		yes		remove	7.3		Fraxinus americana	white ash	poor	80 percent bark peel	
759				remove	9.7	9.5	Acer negundo	boxelder	fair	several broken or dead limbs	
760				remove	6.3	4.0	Acer negundo	boxelder	fair	several broken or dead limbs	
761				remove	6.7	4.0	Acer negundo	boxelder	good		
762				remove	6.8		Acer negundo	boxelder	good		
763				remove	7.5		Acer negundo	boxelder	good		
764				remove	7.9		Acer negundo	boxelder	good		
765				remove	7.5		Acer negundo	boxelder	good		
766				remove	6.6		Acer negundo	boxelder	good		
767				remove	9.5	8.5	Acer negundo	boxelder	poor	main trunk broke off	
768				remove	6.1		Acer negundo	boxelder	fair	45 degree lean	heavy vine
769				remove	8.8		Acer negundo	boxelder	good		
770			yes	remove	14.8		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
771				remove	8.0		Acer negundo	boxelder	fair	several broken or dead limbs	
772		yes		remove	6.1	6.0	Fraxinus americana	white ash	good		
773				remove	8.6	6.4	Acer negundo	boxelder	good		
774				remove	7.2		Acer negundo	boxelder	good		
775		yes		remove	14.3		Fraxinus americana	white ash	good		
776			yes	remove	16.5		Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
777				remove	7.3		Prunus avium	sweet cherry	good	heavy vine	
778		yes		remove	7.2		Fraxinus americana	white ash	good		
779		yes		remove	7.6		Fraxinus americana	white ash	good		
780		yes		remove	7.8		Fraxinus americana	white ash	good		

ROCHESTER HILLS
MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
KEVIN NAVAROLI
ENGINEER
No.
6201050492
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree List

811
Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557
sheet no. C1.9

781		yes		remove	6.0		Fraxinus americana	white ash	good		
782		yes		remove	7.0		Fraxinus americana	white ash	good		
783				remove	16.3		Ulmus americana	American elm	good		
784				remove	10.4		Acer negundo	boxelder	good		
785				remove	6.6		Malus sp.	crabapple sp.	fair	heavy vine	
786		yes		remove	7.4		Fraxinus pennsylvanica	green ash	good	heavy vine	
787		yes		remove	6.2		Fraxinus pennsylvanica	green ash	good	heavy vine	
788		yes		remove	6.0		Fraxinus pennsylvanica	green ash	good		
789				save	9.8		Juglans nigra	black walnut	good		
790				remove	6.2	6.0	Acer negundo	boxelder	poor	smaller trunk dead	60 degree lean
791			yes	remove	6.2		Rhamnus cathartica	common buckthorn	good		
792			yes	save	6.2		Rhamnus cathartica	common buckthorn	good		
793		yes		save	6.1		Fraxinus pennsylvanica	green ash	good		
794		yes		save	6.0		Fraxinus pennsylvanica	green ash	good		
795		yes		save	6.5		Fraxinus pennsylvanica	green ash	good		
796				save	10.5		Populus deltoides	eastern cottonwood	good		
797				save	15.1		Populus deltoides	eastern cottonwood	good		
798				save	8.0		Ulmus americana	American elm	fair	40 degree lean	
799				remove	14.3		Populus deltoides	eastern cottonwood	good		
800				remove	8.1		Populus deltoides	eastern cottonwood	good		
801				remove	14.4	12.7, 11.5, 10.	Populus deltoides	eastern cottonwood	poor		
802				remove	10.5		Populus deltoides	eastern cottonwood	good		
803				remove	14.7		Populus deltoides	eastern cottonwood	good		
804				save	6.0		Populus deltoides	eastern cottonwood	good		
805				save	12.3		Acer negundo	boxelder	good	heavy vine	
806			yes	save	8.1		Pyrus calleryana	Bradford pear	good	heavy vine	
807			yes	save	7.6	6.0	Pyrus calleryana	Bradford pear	good	heavy vine	
808				save	7.4		Malus sp.	crabapple sp.	fair	heavy vine	
809				save	12.9		Juglans nigra	black walnut	good		
810				save	6.2	5.0	Malus sp.	crabapple sp.	good	heavy vine	
811		yes		save	7.2		Fraxinus pennsylvanica	green ash	good	heavy vine	
812	yes			save	13.7		Malus sp.	crabapple sp.	good	heavy vine	
813				save	7.9		Acer negundo	boxelder	fair	heavy vine	
814				save	6.1	5.5	Acer negundo	boxelder	fair	heavy vine	
815				save	10.1	9.2, 6.5, 6.5	Malus sp.	crabapple sp.	fair	several broken or dead limbs	heavy vine
816	yes			save	30.0	25.0, 20.0	Salix amygdaloides	peachleaf willow	fair	several broken or dead limbs	heavy vine
817				save	10.2	5.0, 5.0	Malus sp.	crabapple sp.	good		
818	yes			save	22.7	20.1, 18.5, 16.	Acer saccharinum	silver maple	good		
819			yes	remove	6.6		Rhamnus cathartica	common buckthorn	good		
820	yes			save	33.0	20.0, 18.0, 16.	Acer negundo	boxelder	fair	several broken or dead limbs	
821				remove	8.7		Juglans nigra	black walnut	good		
822			yes	remove	8.6	7.8	Ailanthus altissima	tree of heaven	good	co-dominant trunks	
823				remove	11.2		Juglans nigra	black walnut	good		
824			yes	remove	7.2	6.0, 5.5	Rhamnus cathartica	common buckthorn	good	heavy vine	
825				remove	6.4		Prunus avium	sweet cherry	good	heavy vine	
826				remove	6.7		Quercus alba	white oak	good	heavy vine	
827				remove	8.0		Prunus serotina	black cherry	good	heavy vine	
828				remove	6.0	5.0, 5.0	Acer negundo	boxelder	fair	heavy vine	
829				remove	13.2	9.0	Acer negundo	boxelder	good	heavy vine	
830				remove	12.0	9.0	Prunus avium	sweet cherry	fair	60 degree lean	
831				remove	9.1	8.0	Acer negundo	boxelder	fair	80 degree lean	
832				remove	14.5		Prunus avium	sweet cherry	fair	twisted or bent trunk	
833	yes			remove	30.0	28.0, 20.0, 18.	Acer negundo	boxelder	fair	several broken or dead limbs	
834				remove	10.0		Acer negundo	boxelder	good		
835				remove	10.0		Acer negundo	boxelder	fair	60 degree lean	
836				remove	9.8		Acer negundo	boxelder	good		
837				remove	10.1		Acer negundo	boxelder	good		
838				remove	7.1		Acer negundo	boxelder	good		
839				remove	7.5		Acer negundo	boxelder	good		
840				remove	9.2		Acer negundo	boxelder	good		
841				remove	8.9		Acer negundo	boxelder	good		
842				remove	6.5		Acer negundo	boxelder	good		
843				remove	7.6		Acer negundo	boxelder	good		
844				remove	8.0		Acer negundo	boxelder	good		
845				remove	12.1		Juglans nigra	black walnut	good		
846				remove	7.2		Quercus macrocarpa	bur oak	good		
847				remove	10.9		Juglans nigra	black walnut	good	heavy vine	
848				remove	9.2	8.1, 6.0	Acer negundo	boxelder	fair	60 degree lean	heavy vine
849				remove	8.3		Prunus serotina	black cherry	fair	twisted or bent trunk	heavy vine
850				remove	13.8		Acer platanoides	Norway maple	good	heavy vine	
851	yes			remove	25.0		Acer negundo	boxelder	fair	partially broken crown	heavy vine
852				remove	13.8		Juglans nigra	black walnut	good	heavy vine	
853				save	8.6		Prunus avium	sweet cherry	good	heavy vine	
854				save	10.1		Prunus serotina	black cherry	good	heavy vine	
855				save	7.4		Acer negundo	boxelder	good	heavy vine	
856		yes		save	10.2		Fraxinus americana	white ash	good	heavy vine	
857				remove	9.0		Acer negundo	boxelder	fair	70 degree lean	heavy vine
858				remove	7.9		Acer negundo	boxelder	good	heavy vine	
859				remove	11.8		Acer negundo	boxelder	fair	prostrate trunk	heavy vine
860				remove	12.6	10.0, 9.5	Acer saccharinum	silver maple	fair	co-dominant trunks	heavy vine
861				remove	10.4		Acer negundo	boxelder	fair	80 degree lean	heavy vine
862				save	8.3		Acer negundo	boxelder	good		
863				save	12.4		Acer negundo	boxelder	good		
864				save	11.5	10.0, 9.5	Acer negundo	boxelder	good		
865				save	11.3	10.0	Acer negundo	boxelder	fair	asymmetric crown	
866				save	14.8	13.0	Acer negundo	boxelder	fair	asymmetric crown	
867				save	17.3		Acer saccharinum	silver maple	good		
868				save	8.6		Acer saccharinum	silver maple	good		
869				save	15.7		Acer saccharinum	silver maple	good		
870				save	14.0		Acer saccharinum	silver maple	good		
871				save	11.4		Acer saccharinum	silver maple	good		
872				save	6.5		Acer saccharinum	silver maple	good		
873				save	10.1		Acer saccharinum	silver maple	good		
874				save	17.6		Acer saccharinum	silver maple	good		
875				save	15.0		Acer saccharinum	silver maple	good		
876				save	17.5		Acer saccharinum	silver maple	good		
877				save	16.8		Acer saccharinum	silver maple	good		
878				save	14.8		Acer saccharinum	silver maple	good		
879				save	12.8		Acer saccharinum	silver maple	good		
880				save	13.5		Acer saccharinum	silver maple	good		
881				save	15.8		Acer saccharinum	silver maple	good		
882				save	8.1		Prunus serotina	black cherry	poor	dead crown	
883			yes	save	12.2		Ulmus pumila	Siberian elm	good		
884			yes	save	12.9		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	
885			yes	save	10.3		Ulmus pumila	Siberian elm	poor	twisted or bent trunk	
886			yes	save	11.1		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	
887				save	8.3		Prunus serotina	black cherry	fair	twisted or bent trunk	
888	yes			save	29.3		Quercus rubra	northern red oak	good		
889				save	14.2		Acer saccharinum	silver maple	good		
890				save	8.3		Acer saccharinum	silver maple	good		
891				save	17.8		Acer saccharinum	silver maple	good	heavy vine	
892				save	9.5	9.4	Acer rubrum	red maple	fair	co-dominant trunks	several broken or dead limbs
893	yes			save	22.5		Acer saccharinum	silver maple	good	heavy vine	
894				save	12.6		Fraxinus americana	white ash	good		
895				save	15.1		Acer saccharinum	silver maple	good	large trunk wound	
896				save	15.0	13.5, 12.8, 6.8	Acer saccharinum	silver maple	good	co-dominant trunks	
897				save	14.3		Acer saccharinum	silver maple	good		
898				save	7.8		Acer saccharinum	silver maple	good		
899				save	10.0	9.6	Acer saccharinum	silver maple	good		
907				save	9.0		Ulmus americana	American elm	fair	asymmetric crown	
908				save	9.8		Ulmus americana	American elm	fair	30 degree bend	heavy vine
909				save	10.9		Ulmus americana	American elm	fair	asymmetric crown	light vine
910				save	9.2		Ulmus americana	American elm	good	light vine	

911				save	15.1		Ulmus americana	American elm	good	heavy vine	
912				save	7.6		Acer negundo	boxelder	poor	crown broke off	vine kiling tree
913				save	6.3		Juglans nigra	black walnut	fair	twisted or bent trunk	crowded
914				save	12.1		Acer rubrum	red maple	poor	asymmetric crown	20 percent bark loss
915				save	10.5		Acer rubrum	red maple	fair	30 degree lean	
916				save	14.7	12.3	Acer rubrum	red maple	fair	co-dominant trunks	asymmetric crowns
917				save	6.1		Juglans nigra	black walnut	good	light vine	
918				save	9.7		Ulmus americana	American elm	good	animal damage	
919				save	9.8		Juglans nigra	black walnut	good	light vine	
920				remove	9.0		Acer negundo	boxelder	poor	several broken or dead limbs	suckers
921	yes			save	31.3		Acer saccharinum	silver maple	fair	co-dominant trunks at 6 ft up	several broken or dead limbs
922	yes			save	29.2		Acer negundo	boxelder	fair	co-dominant trunks at 6 ft up	several broken or dead limbs
923				save	7.3		Malus sp.	crabapple sp.	good		
924	yes			save	36.9		Acer saccharinum	silver maple	fair	co-dominant at 8 ft up	several broken or dead limbs
925				save	12.5		Pinus sylvestris	Scots pine	fair	asymmetric crown	
926				save	19.0		Juglans nigra	black walnut	good		
927				save	12.0	9.8, 9	Tilia cordata	little-leaf linden	good	multi-stemmed	
928				save	9.6		Malus sp.	crabapple sp.	good	suckers	
929				save	7.3	6.9	Malus sp.	crabapple sp.	good	suckers	
930	yes			remove	35.0		Juglans nigra	black walnut	poor	70 percent bark peeling off	several broken or dead limbs
931	yes			save	26.8	19	Populus deltoides	eastern cottonwood	fair	co-dominant trunks	asymmetric crowns
932	yes			save	24.1		Populus deltoides	eastern cottonwood	good	crowded	
933				save	14.0		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
934				save	17.3		Populus deltoides	eastern cottonwood	good		
935				save	9.1		Acer saccharinum	silver maple	fair	crown broke off	
936	yes			save	25.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	twisted or bent trunk
937				save	22.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
938				save	7.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	
939				save	8.1		Acer saccharinum	silver maple	good		
940				save	6.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	
941	yes			save	25.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
942				save	23.0		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
943				save	23.0		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
944				save	16.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
945				save	13.6		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	crowded
946				save	6.5		Acer saccharinum	silver maple	fair	twisted or bent trunk	crowded
947				save	7.6	7.2, 7.1, 6	Ulmus americana	American elm	fair	multi-stemmed	asymmetric crowns
948				save	9.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
949				save	6.0		Acer saccharinum	silver maple	poor	crown broke off	
950				save	6.7		Acer saccharinum	silver maple	fair	twisted or bent trunk	30 degree lean
951				save	9.6	7.2	Acer saccharinum	silver maple	fair	asymmetric crown	60 degree bend
952				save	12.7		Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
953				save	20.3		Populus deltoides	eastern cottonwood	good		
954				save	7.2		Acer saccharinum	silver maple	fair	asymmetric crown	twisted or bent trunk
955				save	8.7		Acer saccharinum	silver maple	fair	asymmetric crown	twisted or bent trunk
956				save	7.5		Acer saccharinum	silver maple	fair	asymmetric crown	twisted or bent trunk
957				remove	11.3		Acer saccharinum	silver maple	fair	asymmetric crown	
958				remove	8.8		Acer saccharinum	silver maple	fair	asymmetric crown	
959				remove	10.8	8.9	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
960				save	6.1		Acer saccharinum	silver maple	fair	twisted or bent trunk	
961			yes	remove	8.1		Acer saccharinum	silver maple	fair	30 degree bend	
962			yes	remove	6.0		Acer saccharinum	silver maple	fair	30 percent bark peel	
963				remove	6.1		Acer saccharinum	silver maple	poor	crown broke off	
964				save	10.8		Ulmus americana	American elm	good		
965				save	10.2	8	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
966			yes	remove	10.6		Acer saccharinum	silver maple	fair	asymmetric crown	30 degree lean
967			yes	remove	9.7		Acer saccharinum	silver maple	fair	asymmetric crown	30 degree lean
968			yes	remove	17.0	9.2	Acer saccharinum	silver maple	fair	asymmetric crown	30 degree lean
969			yes	remove	7.0		Acer platanoides	Norway maple	good		
970		yes		remove	7.0		Fraxinus pennsylvanica	green ash	good		
971	yes			remove	19.8	8.5	Acer negundo	boxelder	fair	several broken or dead limbs	fungal infection
972				remove	10.2		Populus deltoides	eastern cottonwood	good	light vine	
973				remove	12.5	12.3	Populus deltoides	eastern cottonwood	fair	co-dominant trunks	asymmetric crowns
974		yes		remove	6.0		Fraxinus pennsylvanica	green ash	fair	heavy vine	
975				remove	8.8		Populus deltoides	eastern cottonwood	good		
976				remove	6.8		Acer negundo	boxelder	fair	asymmetric crown	partially dead crown
977				remove	7.3		Juglans nigra	black walnut	good		
978				remove	6.6	6	Crataegus monogyna	cockspur hawthorn	good		
979				remove	12.3		Populus deltoides	eastern cottonwood	good		
980				remove	6.0		Acer negundo	boxelder	good		
981				save	7.5		Populus deltoides	eastern cottonwood	good		
982				save	10.7	8.9	Populus deltoides	eastern cottonwood	fair	co-dominant trunks	
983				save	6.7		Populus deltoides	eastern cottonwood	good	crowded	
984				remove	10.5		Populus deltoides	eastern cottonwood	good	crowded	
985				remove	6.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
986				remove	6.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
987				remove	9.7		Populus deltoides	eastern cottonwood	good	crowded	
988				remove	7.3		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
989				remove	6.2		Populus deltoides	eastern cottonwood	good		
990				remove	6.5		Populus deltoides	eastern cottonwood	good		
991				remove	15.8	14, 9	Populus deltoides	eastern cottonwood	good		
992	yes			remove	42.3		Populus deltoides	eastern cottonwood	good		
993				remove	8.0		Populus deltoides	eastern cottonwood	good		
994				remove	10.2		Populus deltoides	eastern cottonwood	good		
995				remove	8.9		Populus deltoides	eastern cottonwood	good		
996				remove	10.6		Populus deltoides	eastern cottonwood	good		
997				remove	10.3		Populus deltoides	eastern cottonwood	good		
998				remove	7.9		Populus deltoides	eastern cottonwood	good	crowded	
999				remove	7.9		Populus deltoides	eastern cottonwood	good	crowded	
1000				remove	9.0		Populus deltoides	eastern cottonwood	good	crowded	
1001				remove	8.5		Ulmus americana	American elm	fair	several broken or dead limbs	
1002				remove	6.0		Acer negundo	boxelder	p	several broken or dead limbs	dead crown
1003		yes		remove	6.0		Fraxinus pennsylvanica	green ash	fair	twisted or bent trunk	
1004			yes	remove	9.0		Ulmus pumila	Siberian elm	fair	heavy vine	
1005	yes			save	19.0		Quercus alba	white oak	fair	asymmetric crown	
1006	yes			save	21.4		Quercus alba	white oak	good		
1007				save	6.1		Quercus alba	white oak	fair	asymmetric crown	
1008				save	15.2		Quercus alba	white oak	good		
1009				save	16.9		Ulmus americana	American elm	good		
1010				save	8.5		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1011				remove	10.1		Acer saccharinum	silver maple	good		
1012				remove	11.9		Acer negundo	boxelder	good		
1013				remove	11.7		Acer saccharinum	silver maple	fair	several broken or dead limbs	heavy vine
1014				save	8.5		Prunus avium	sweet cherry	fair	heavy vine	
1015				remove	10.5		Acer saccharinum	silver maple	poor	dead crown	
1016				save	13.2		Ulmus americana	American elm	good		
1017				save	6.6		Quercus alba	white oak	fair	twisted or bent trunk	
1018				save	17.5		Quercus alba	white oak	fair	several broken or dead limbs	
1019	yes			save	20.0		Quercus rubra	northern red oak	good		
1020	yes			save	21.0		Quercus rubra	northern red oak	good		
1021				save	13.8		Quercus alba	white oak	good		
1022				save	7.7		Acer saccharinum	silver maple	fair		
1023	yes			save	29.3		Quercus alba	white oak	good		
1024	yes			save	27.0	10.0	Quercus alba	white oak	fair	smaller trunk dead	
1025	yes			save	28.6		Acer saccharinum	silver maple	good		
1026	yes			save	26.0		Acer saccharinum	silver maple	good		
1027				save	13.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	crowded
1028				save	8.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	crowded
1029				save	13.3		Ulmus americana	American elm	fair	twisted or bent trunk	crowded
1030				save	15.7	13.8, 4.5	Acer saccharinum	silver maple	good		
1031				save	7.1		Acer saccharinum	silver maple	good		
1032				save	6.6		Ulmus americana	American elm	fair	twisted or bent trunk	
1033	yes			save	19.2		Acer saccharinum	silver maple	good		
1034	yes			save	21.0		Acer saccharinum	silver maple	fair	asymmetric crown	
1035				save	15.9		Acer saccharinum	silver maple	poor	dead crown	
1036				save	7.3		Acer saccharinum	silver maple	fair	asymmetric crown	
1037				save	9.1		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1038				save	8.2		Acer saccharinum	silver maple	fair	asymmetric crown	
1039				save	8.7		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1040	yes			save	23.5	11.8	Acer saccharinum	silver maple	fair	twisted or bent trunk	

1041	yes			save	23.7	12.7	Acer saccharinum	silver maple	good		
1042				save	10.5		Acer saccharinum	silver maple	fair	windfall leaning on trunk	
1043				save	9.7		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1044				save	16.2		Acer saccharinum	silver maple	fair	asymmetric crown	
1045				remove	10.7		Acer saccharinum	silver maple	fair	asymmetric crown	
1046				save	10.5		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1047				save	10.8		Acer saccharinum	silver maple	good		
1048				save	17.4		Populus deltoides	eastern cottonwood	good		
1049				remove	6.5		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1050				save	12.3	12.0, 7.5	Acer saccharinum	silver maple	fair	several broken or dead limbs	heavy vine
1051				save	14.5		Prunus serotina	black cherry	fair	windfall leaning on trunk	
1052				save	14.7		Acer saccharinum	silver maple	good		
1053				save	12.0		Acer saccharinum	silver maple	good		
1054				save	16.9		Betula alleghaniensis	yellow birch	good	heavy vine	
1055				save	15.3		Acer rubrum	red maple	good	windfall leaning on trunk	
1056				save	17.1		Acer rubrum	red maple	good		
1057				remove	7.0		Acer rubrum	red maple	good		
1058	yes			save	18.5		Acer rubrum	red maple	fair	several broken or dead limbs	
1059				remove	7.9		Acer rubrum	red maple	fair	twisted or bent trunk	
1060	yes			save	20.3		Acer rubrum	red maple	good		
1061				save	6.7		Ulmus americana	American elm	good		
1062				save	6.4		Acer rubrum	red maple	fair	twisted or bent trunk	
1063				save	15.3		Acer rubrum	red maple	good	heay	
1064				save	9.1		Acer rubrum	red maple	good		
1065				save	8.6		Acer rubrum	red maple	good		
1066				save	7.4		Ulmus americana	American elm	fair	twisted or bent trunk	
1067	yes			save	29.6	25.5	Acer saccharinum	silver maple	good	cp	
1068				save	11.0		Acer saccharinum	silver maple	good		
1069				save	6.3		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1070	yes			save	35.0		Quercus rubra	northern red oak	good		
1071				save	9.2		Acer rubrum	red maple	fair	twisted or bent trunk	
1072				save	6.5		Ulmus americana	American elm	fair	twisted or bent trunk	
1073				save	6.1		Acer rubrum	red maple	fair	twisted or bent trunk	
1074	yes			save	26.0	24.5	Quercus rubra	northern red oak	fair	co-dominant trunks	several broken or dead limbs
1075				save	7.0		Acer rubrum	red maple	good		
1076				save	9.5		Acer rubrum	red maple	good		
1077				save	12.5	12.0	Acer rubrum	red maple	fair	twisted or bent trunk	
1078	yes			save	28.4		Acer saccharinum	silver maple	good		
1079	yes			save	19.6		Acer saccharinum	silver maple	good		
1080				save	16.2		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1081				save	6.3	5.0	Acer saccharinum	silver maple	fair	co-dominant trunks	
1082				save	8.0		Acer rubrum	red maple	good	crowded	
1083				save	14.1		Acer rubrum	red maple	good	crowded	
1084				save	14.3		Acer rubrum	red maple	fair	asymmetric crown	crowded
1085				save	13.8		Acer rubrum	red maple	good	crowded	
1086				save	8.7		Acer rubrum	red maple	good		
1087				save	15.8	13.3, 12.8	Acer saccharinum	silver maple	good	co-dominant trunks	
1088				save	7.0		Acer rubrum	red maple	fair	asymmetric crown	crowded
1089				save	6.6		Acer rubrum	red maple	fair	asymmetric crown	crowded
1090				save	6.3		Acer rubrum	red maple	fair	asymmetric crown	crowded
1091				save	17.0		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1092				save	12.4		Acer rubrum	red maple	fair	asymmetric crown	crowded
1093				save	13.5		Acer saccharinum	silver maple	good		
1094				save	8.4		Acer rubrum	red maple	fair	twisted or bent trunk	
1095				save	16.3	13.5, 12	Acer saccharinum	silver maple	fair	several broken or dead limbs	
1096				save	6.2		Acer saccharinum	silver maple	fair	several broken or dead limbs	
1097				save	11.8	11.5	Acer saccharinum	silver maple	fair	asymmetric crown	
1098				save	6.4		Acer rubrum	red maple	fair	asymmetric crown	
1099	yes			save	32.5		Quercus rubra	northern red oak	good		
1100				save	13.9		Carya cordiformis	bitternut hickory	fair	twisted or bent trunk	
1101				save	16.1	14.0, 10.0	Acer saccharinum	silver maple	fair	co-dominant trunks	
1102				save	7.5	7.4	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
1103				save	16.7		Acer saccharinum	silver maple	good		
1104				save	10.6		Acer rubrum	red maple	poor	dead crown	
1105	yes			save	22.8		Quercus alba	white oak	poor	off-site tree, downed trunk	still living
1106				save	7.2		Ulmus americana	American elm	good		
1107				save	9.6		Prunus avium	sweet cherry	fair	asymmetric crown	45 degree lean
1108				save	9.9		Ulmus americana	American elm	good		
1109				save	16.2		Prunus avium	sweet cherry	poor	dead crown	
1110				save	10.5		Ulmus americana	American elm	good		
1111		yes		save	9.8		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	
1112		yes		save	14.0		Fraxinus pennsylvanica	green ash	good	heavy vine	
1113		yes		save	7.8		Fraxinus pennsylvanica	green ash	fair	30 percent bark loss	
1114		yes		save	8.9		Fraxinus pennsylvanica	green ash	fair	20 percent bark loss	
1115	yes			save	24.6		Acer saccharinum	silver maple	good		
1116		yes		save	6.6		Fraxinus pennsylvanica	green ash	fair	20 percent bark loss	heavy vine
1117				save	12.7		Acer saccharinum	silver maple	good		
1118	yes			save	18.7	16.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1119		yes		save	9.5		Fraxinus pennsylvanica	green ash	fair	dying crown	crowded
1120		yes		save	9.2		Fraxinus pennsylvanica	green ash	fair	dying crown	crowded
1121	yes			save	19.3		Acer negundo	boxelder	fair	several broken or dead limbs	
1122				remove	6.0		Acer negundo	boxelder	poor	prostrate trunk	suckers
1123		yes		remove	7.0		Fraxinus americana	white ash	poor	dead crown	heavy vine
1124				save	11.5		Acer rubrum	red maple	good		
1125				save	14.6	8.8	Acer rubrum	red maple	good	co-dominant trunks	heavy vine
1126				save	15.2		Acer rubrum	red maple	fair	asymmetric crown	
1127				save	8.7		Acer rubrum	red maple	fair	asymmetric crown	
1128				save	17.9	16.5	Acer saccharinum	silver maple	good	co-dominant trunks	
1129				save	12.4	6.0	Acer saccharinum	silver maple	good		
1130	yes			save	18.8		Acer saccharinum	silver maple	good		
1131	yes			save	26.0		Acer saccharinum	silver maple	good		
1132				save	13.3		Acer negundo	boxelder	poor	downed trunk	
1133				save	11.3		Acer rubrum	red maple	fair	asymmetric crown	
1134	yes			save	18.4		Acer saccharinum	silver maple	fair	several broken or dead limbs	
1135				save	6.5		Acer negundo	boxelder	fair	60 degree bend	
1136	yes			save	22.0		Quercus rubra	northern red oak	good		
1137				save	18.8		Juglans nigra	black walnut	good	heavy vine	
1138				save	6.9		Prunus serotina	black cherry	fair	several broken or dead limbs	
1139				save	7.5		Juglans nigra	black walnut	fair	asymmetric crown	
1140				save	11.1		Acer saccharinum	silver maple	fair	asymmetric crown	
1141				save	8.0		Acer saccharinum	silver maple	good		
1142	yes			save	21.5	6.0	Acer saccharinum	silver maple	good		
1143				save	7.1		Betula alleghaniensis	yellow birch	good		
1144				save	13.9	11.3	Acer saccharinum	silver maple	good	co-dominant trunks	
1145	yes			save	22.0		Acer saccharinum	silver maple	good		
1146		yes		save	8.7		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1147				save	13.3		Pinus sylvestris	Scots pine	good		
1148				save	16.0	14.2, 12.7	Acer saccharinum	silver maple	good	co-dominant trunks	
1149				save	15.2	6.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1150				save	8.9	7.3, 6.1	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
1151				save	11.5		Acer saccharinum	silver maple	good		
1152				save	11.1		Acer saccharinum	silver maple	good		
1153				save	7.8	4.2	Acer saccharinum	silver maple	good		
1154				save	14.3	6.0	Acer saccharinum	silver maple	good		
1155				save	14.4		Acer saccharinum	silver maple	good		
1156				save	15.6		Acer saccharinum	silver maple	good		
1157				save	6.0		Acer saccharinum	silver maple	good		
1158		yes		save	8.9		Fraxinus pennsylvanica	green ash	good		
1159		yes		save	8.1		Fraxinus pennsylvanica	green ash	poor	dying crown	50 percent bark peel
1160		yes		save	10.1		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1161	yes			save	19.1		Acer saccharinum	silver maple	good		
1162				save	7.3		Juglans nigra	black walnut	good		
1163				save	10.5		Betula alleghaniensis	yellow birch	fair	twisted or bent trunk	
1164				save	6.2		Acer rubrum	red maple	good	off-site tree	
1165				save	6.7		Prunus serotina	black cherry	fair	twisted or bent trunk	
1166				save	8.1		Betula alleghaniensis	yellow birch	fair	twisted or bent trunk	
1167	yes			save	24.7		Quercus rubra	northern red oak	good		
1168				save	11.0		Ulmus americana	American elm	fair	asymmetric crown	
1169	yes			save	22.5	13.0, 7.2	Tilia americana	basswood	good	co-dominant trunks	
1170				save	9.6		Quercus rubra	northern red oak	fair	asymmetric crown	

ROCHESTER HILLS
MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree List

811
Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557
sheet no. C1.10

1171				save	6.4		Tilia americana	basswood	fair	twisted or bent trunk	
1172				save	8.5		Tilia americana	basswood	fair	twisted or bent trunk	
1173	yes			save	30.7		Quercus alba	white oak	good		
1174				save	9.4		Ulmus americana	American elm	good		
1175				save	6.5		Ulmus americana	American elm	good		
1176				save	6.0		Ulmus americana	American elm	fair	asymmetric crown	
1177				save	7.0		Ulmus americana	American elm	good		
1178	yes			save	23.1		Quercus rubra	northern red oak	fair	asymmetric crown	
1179				save	11.7		Quercus alba	white oak	fair	asymmetric crown	
1180				save	8.6		Acer platanoides	Norway maple	fair	twisted or bent trunk	
1181				save	6.2		Betula alleghaniensis	yellow birch	good		
1182				save	7.3		Ulmus americana	American elm	good		
1183	yes			save	23.8		Quercus rubra	northern red oak	good		
1184				save	14.3		Acer saccharinum	silver maple	good		
1185				save	12.0		Ulmus americana	American elm	good		
1186				save	6.1		Quercus rubra	northern red oak	good		
1187				save	6.3		Quercus rubra	northern red oak	good		
1188				save	12.2		Quercus rubra	northern red oak	good		
1189				save	9.0		Quercus rubra	northern red oak	fair	twisted or bent trunk	
1190	yes			save	20.9		Quercus rubra	northern red oak	good		
1191				save	9.8		Quercus macrocarpa	bur oak	fair	twisted or bent trunk	
1192				save	8.5		Pinus resinosa	red pine	poor	dying crown	
1193				save	8.3		Pinus resinosa	red pine	good		
1194				save	8.9		Pinus resinosa	red pine	good		
1195				save	9.6		Pinus resinosa	red pine	good		
1196		yes		save	6.0		Fraxinus pennsylvanica	green ash	poor	dead crown	
1197				save	6.0		Acer saccharinum	silver maple	fair	asymmetric crown	
1198				save	6.5		Acer saccharinum	silver maple	fair	asymmetric crown	
1199				save	8.4		Acer saccharinum	silver maple	good		
1200				save	17.4		Populus deltoides	eastern cottonwood	good		
1201				save	6.0		Acer saccharinum	silver maple	fair	asymmetric crown	
1202				save	6.5		Acer saccharinum	silver maple	fair	asymmetric crown	
1203				save	7.4	7.2, 7.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1204				save	12.7		Acer saccharinum	silver maple	good		
1205				save	12.8		Acer saccharinum	silver maple	good		
1206				save	11.8		Acer saccharinum	silver maple	good		
1207				save	9.3		Acer saccharinum	silver maple	good		
1208				save	6.3		Acer saccharinum	silver maple	fair	asymmetric crown	
1209				save	9.0		Acer saccharinum	silver maple	good		
1210				save	13.3	8.0	Acer saccharinum	silver maple	good		
1211				save	18.6		Populus deltoides	eastern cottonwood	good		
1212				save	6.0		Acer saccharinum	silver maple	good		
1213				save	11.0		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1214				save	8.8	7.5	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
1215				save	7.8		Acer saccharinum	silver maple	good		
1216				save	8.0		Acer saccharinum	silver maple	good		
1217				save	7.2		Acer saccharinum	silver maple	good		
1218				save	10.0		Acer saccharinum	silver maple	good		
1219				save	8.4		Acer saccharinum	silver maple	good		
1220				save	6.1		Acer saccharinum	silver maple	good		
1221				save	8.7		Acer saccharinum	silver maple	good		
1222				save	9.0		Acer saccharinum	silver maple	good		
1223				save	6.0		Acer saccharinum	silver maple	good		
1224				save	11.8	10.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1225				save	14.0		Acer saccharinum	silver maple	good		
1226				save	8.7		Acer saccharinum	silver maple	good		
1227				save	14.0		Acer saccharinum	silver maple	good		
1228				save	11.5	8.5, 7.2	Acer saccharinum	silver maple	good		
1229				save	13.1		Acer saccharinum	silver maple	good		
1230	yes			save	18.0		Pinus sylvestris	Scots pine	fair	twisted or bent trunk	
1231				save	6.4		Juglans nigra	black walnut	fair	heavy vine	
1232		yes		save	8.4		Fraxinus americana	white ash	fair	heavy vine	
1233			yes	save	10.2		Morus alba	white mulberry	fair	heavy vine	
1234				save	12.0		Juglans nigra	black walnut	fair	heavy vine	
1235				remove	6.8		Juglans nigra	black walnut	poor	crown broke off	
1236				save	12.9		Juglans nigra	black walnut	fair	windfall leaning on trunk	
1237				save	7.3		Acer rubrum	red maple	fair	twisted or bent trunk	heavy vine
1238				save	8.7		Acer rubrum	red maple	fair	twisted or bent trunk	heavy vine
1239				save	7.7		Acer rubrum	red maple	fair	several broken or dead limbs	heavy vine
1240	yes			save	21.3		Acer saccharinum	silver maple	good	heavy vine	
1241				save	6.5		Acer rubrum	red maple	good	heavy vine	
1242				save	11.0		Acer saccharinum	silver maple	fair	asymmetric crown	several broken or dead limbs
1243				save	9.5		Acer negundo	boxelder	poor	several broken or dead limbs	large trunk wound
1244				save	17.1		Acer saccharinum	silver maple	good		
1245				save	10.5		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1246				save	10.3		Acer saccharinum	silver maple	fair	windfall leaning on trunk	heavy vine
1247	yes			save	23.1		Acer saccharinum	silver maple	good	windfall leaning on trunk	
1248				remove	11.4		Prunus avium	sweet cherry	good		
1249				save	11.0		Ulmus americana	American elm	good		
1250	yes			save	24.2		Quercus rubra	northern red oak	good		
1251		yes		save	23.5		Fraxinus americana	white ash	good		
1252				save	12.4		Carya cordiformis	bitternut hickory	fair	twisted or bent trunk	
1253	yes			save	18.7		Acer saccharinum	silver maple	good		
1254	yes			save	20.4		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1255				save	14.3		Ulmus americana	American elm	good		
1256			yes	save	19.1		Ulmus pumila	Siberian elm	good		
1257				save	9.5		Acer saccharinum	silver maple	fair	asymmetric crown	
1258				save	10.8		Acer saccharinum	silver maple	fair	asymmetric crown	
1259				save	7.2		Acer saccharinum	silver maple	fair	asymmetric crown	
1260				save	12.9		Quercus bicolor	swamp white oak	good		
1261	yes			save	21.4		Quercus bicolor	swamp white oak	good		
1262				save	17.5	11.2	Acer saccharinum	silver maple	fair	co-dominant trunks	twisted or bent trunk
1263	yes			save	39.8		Acer saccharinum	silver maple	good		
1264				save	6.3		Ulmus americana	American elm	fair	asymmetric crown	
1265	yes			remove	18.8		Acer saccharinum	silver maple	poor	dying crown	hollowed trunk
1266	yes			save	19.7		Acer saccharinum	silver maple	good		
1267				save	6.3		Acer rubrum	red maple	fair	twisted or bent trunk	
1268				save	10.2		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1269				save	12.2		Acer saccharinum	silver maple	fair	twisted or bent trunk	
1270				save	8.0		Acer saccharinum	silver maple	good	in pond	
1271				save	12.0		Acer saccharinum	silver maple	good	in pond	
1272				save	8.5		Acer saccharinum	silver maple	good	in pond	
1273				save	7.5		Acer saccharinum	silver maple	good	in pond	
1274				save	14.2		Acer saccharinum	silver maple	good	in pond	
1275	yes			save	18.7		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1276	yes			save	31.6		Acer saccharinum	silver maple	good		
1277	yes			save	20.7		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1278				remove	8.3		Acer negundo	boxelder	fair	45 degree lean	
1279				save	7.2		Acer negundo	boxelder	fair	twisted or bent trunk	
1280				remove	6.0		Acer negundo	boxelder	poor	crown broke off	
1281	yes			save	19.8		Acer saccharinum	silver maple	fair	twisted or bent trunk	crowded
1282				save	17.0		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1283				remove	6.0		Acer negundo	boxelder	fair	45 degree lean	
1284				remove	7.0		Acer negundo	boxelder	fair	45 degree lean	
1285				remove	6.0		Acer negundo	boxelder	poor	crown broke off	
1286				remove	6.2		Acer negundo	boxelder	fair	45 degree lean	
1287				remove	13.0		Quercus rubra	northern red oak	good		
1288				save	16.8		Ulmus americana	American elm	fair	asymmetric crown	heavy vine
1289				save	11.5		Ulmus americana	American elm	good		
1290				save	12.1		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
1291		yes		save	10.6		Fraxinus pennsylvanica	green ash	good		
1292				save	16.2	9.5	Prunus avium	sweet cherry	good		
1293				remove	9.7		Prunus avium	sweet cherry	fair	twisted or bent trunk	
1294		yes		remove	11.3		Fraxinus pennsylvanica	green ash	good		
1295				remove	11.3		Prunus avium	sweet cherry	fair	asymmetric crown	
1296		yes		remove	7.5		Fraxinus pennsylvanica	green ash	good		
1297				remove	6.0		Prunus serotina	black cherry	fair	twisted or bent trunk	asymmetric crowns
1298				remove	11.4		Prunus avium	sweet cherry	good	heavy vine	
1299		yes		remove	7.4		Fraxinus pennsylvanica	green ash	good	heavy vine	
1300				remove	8.5		Prunus serotina	black cherry	good	heavy vine	

1301				save	16.7		Fraxinus pennsylvanica	green ash	good		
1302		yes		remove	10.2		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	heavy vine
1303		yes		remove	6.0		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1304		yes		remove	6.3		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	heavy vine
1305		yes		save	9.5		Fraxinus pennsylvanica	green ash	good		
1306	yes			remove	21.1		Quercus bicolor	swamp white oak	good		
1307				save	10.9		Carya cordiformis	bitternut hickory	good		
1308				remove	10.5		Carya cordiformis	bitternut hickory	good		
1309				save	10.5		Acer rubrum	red maple	good	heavy vine	
1310				save	6.7		Prunus avium	sweet cherry	fair	twisted or bent trunk	crowded
1311				save	6.7		Prunus avium	sweet cherry	fair	twisted or bent trunk	crowded
1312	yes			save	31.0		Quercus bicolor	swamp white oak	good		
1313				save	6.6		Prunus avium	sweet cherry	good		
1314				save	6.8		Ulmus americana	American elm	fair	asymmetric crown	crowded
1315	yes			save	19.8		Quercus bicolor	swamp white oak	fair	asymmetric crown	
1316		yes		save	7.5		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1317		yes		save	6.8		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1318		yes		save	6.4		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1319				save	9.7		Carya cordiformis	bitternut hickory	good		
1320				save	7.5	4.0	Carya cordiformis	bitternut hickory	good		
1321				save	12.9	10.8, 8.0, 7.6	Acer saccharinum	silver maple	good		
1322		yes		remove	8.7		Fraxinus pennsylvanica	green ash	poor	crown broke off	rotting trunk
1323		yes		save	11.6	9.5	Fraxinus pennsylvanica	green ash	fair	co-dominant trunks	
1324				save	13.0		Acer rubrum	red maple	good	heavy vine	
1325				save	12.8		Acer saccharinum	silver maple	good		
1326				save	8.7		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1327	yes			remove	19.0		Acer saccharinum	silver maple	good		
1328				save	6.3		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1329				remove	9.2		Acer saccharinum	silver maple	good		
1330				save	11.2	8.8, 6.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1331				save	8.8		Acer saccharinum	silver maple	good		
1332				save	11.2	9.8	Acer saccharinum	silver maple	good	co-dominant trunks	
1333				save	9.6		Carya cordiformis	bitternut hickory	good		
1334				save	6.7		Prunus avium	sweet cherry	fair	twisted or bent trunk	
1335				save	10.6		Prunus avium	sweet cherry	good	heavy vine	
1336				save	12.8		Prunus serotina	black cherry	good		
1337				save	9.0		Carya cordiformis	bitternut hickory	good		
1338				save	13.0		Quercus rubra	northern red oak	fair	twisted or bent trunk	windfall leaning on trunk
1339	yes			save	20.9		Acer saccharinum	silver maple	good		
1340				save	6.7		Ulmus americana	American elm	fair	asymmetric crown	crowded
1341				save	8.5		Ulmus americana	American elm	fair	asymmetric crown	crowded
1342	yes			save	25.5		Acer saccharinum	silver maple	good		
1343				save	7.3		Acer saccharinum	silver maple	good		
1344				save	6.7		Ulmus americana	American elm	fair	twisted or bent trunk	
1345				save	6.2		Ulmus americana	American elm	fair	dying crown	
1346				save	12.6		Acer saccharinum	silver maple	good		
1347				remove	12.6		Carya cordiformis	bitternut hickory	good	heavy vine	
1348				save	7.8		Quercus rubra	northern red oak	fair	twisted or bent trunk	
1349				save	14.3		Juglans nigra	black walnut	good	heavy vine	
1350				save	12.6		Acer saccharinum	silver maple	good		
1351				save	7.6		Tsuga canadensis	eastern hemlock	fair	asymmetric crown	
1352				save	7.2		Acer saccharinum	silver maple	good		
1353				save	8.3		Acer saccharinum	silver maple	good	in pond	
1354	yes			save	22.0		Acer saccharinum	silver maple	good	in pond	
1355	yes			save	22.5		Acer saccharinum	silver maple	good	in pond	
1356				save	12.3		Acer saccharinum	silver maple	good	in pond	
1357				save	6.0		Juglans nigra	black walnut	good	heavy vine	
1358				save	15.2		Juglans nigra	black walnut	good	heavy vine	
1359				save	8.5		Juglans nigra	black walnut	good	heavy vine	
1360				save	13.0		Juglans nigra	black walnut	good		
1361				save	18.5		Juglans nigra	black walnut	good		
1362				save	13.3		Juglans nigra	black walnut	fair	heavy vine	
1363		yes		save	7.6		Fraxinus americana	white ash	fair	heavy vine	
1364				remove	12.0	6.0	Acer negundo	boxelder	poor	downed trunk	suckers
1365			yes	save	8.5	8.3	Ulmus pumila	Siberian elm	fair	co-dominant trunks	weeping
1366			yes	save	8.6		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
1367			yes	save	6.3		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
1368				save	14.0		Juglans nigra	black walnut	good		
1369				remove	13.5		Juglans nigra	black walnut	good		
1370				remove	7.5		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
1371				remove	10.6		Juglans nigra	black walnut	good	heavy vine	
1372				save	11.5		Juglans nigra	black walnut	good		
1373				save	7.5		Juglans nigra	black walnut	fair	asymmetric crown	heavy vine
1374				save	16.8		Juglans nigra	black walnut	good		
1375				save	13.0		Juglans nigra	black walnut	good		
1376				save	16.9		Juglans nigra	black walnut	good		
1377				save	10.2		Juglans nigra	black walnut	fair	asymmetric crown	heavy vine
1378				save	12.9		Juglans nigra	black walnut	good		
1379				save	14.9		Juglans nigra	black walnut	good		
1380				save	10.2		Acer rubrum	red maple	good	heavy vine	
1381		yes		save	6.1		Fraxinus americana	white ash	fair	heavy vine	
1382	yes			save	20.5		Quercus alba	white oak	fair	asymmetric crown	
1383	yes			save	22.4		Ulmus americana	American elm	good		
1384	yes			save	20.5		Quercus alba	white oak	fair	asymmetric crown	
1385	yes			save	22.8	19.5, 18.9	Quercus rubra	northern red oak	fair	co-dominant trunks	asymmetric crowns
1386				save	11.3		Prunus serotina	black cherry	good		
1387				save	10.8		Quercus rubra	northern red oak	fair	asymmetric crown	
1388				save	7.4		Quercus rubra	northern red oak	fair	twisted or bent trunk	
1389				remove	7.6		Juglans nigra	black walnut	fair	asymmetric crown	
1390				save	7.8		Juglans nigra	black walnut	fair	asymmetric crown	
1391	yes			save	22.0	21.0	Ulmus americana	American elm	good	co-dominant trunks	
1392				save	7.3		Pinus resinosa	red pine	poor	needle drop	
1393				save	8.6		Pinus resinosa	red pine	good	planted in stand	
1394				save	10.8		Pinus resinosa	red pine	good	planted in stand	
1395				remove	11.2		Pinus resinosa	red pine	good	planted in stand	
1396				save	11.4		Pinus resinosa	red pine	good	planted in stand	
1397				save	13.3		Pinus resinosa	red pine	good	planted in stand	
1398				save	6.0		Pinus resinosa	red pine	good	planted in stand	
1399				save	9.0		Quercus rubra	northern red oak	good		
1400				save	13.8		Pinus resinosa	red pine	good	planted in stand	
1401				save	7.4		Pinus resinosa	red pine	good	planted in stand	
1402				save	9.5		Pinus resinosa	red pine	good	planted in stand	
1403				save	10.3		Pinus resinosa	red pine	good	planted in stand	
1404				save	10.7		Pinus resinosa	red pine	good	planted in stand	
1405				save	9.3		Pinus resinosa	red pine	good	planted in stand	
1406				save	6.0		Pinus resinosa	red pine	good	planted in stand	
1407				save	8.9		Pinus resinosa	red pine	good	planted in stand	
1408				save	11.3		Pinus resinosa	red pine	fair	planted in stand	oozing sap
1409				remove	6.5		Pinus resinosa	red pine	poor	planted in stand	dying crown
1410				save	6.1		Pinus resinosa	red pine	good	planted in stand	
1411				save	10.0		Pinus resinosa	red pine	good	planted in stand	
1412				save	12.9		Pinus resinosa	red pine	good	planted in stand	
1413				remove	9.3		Pinus resinosa	red pine	good	planted in stand	
1414				save	10.3		Pinus resinosa	red pine	good	planted in stand	
1415				save	9.0		Pinus resinosa	red pine	good	planted in stand	
1416				remove	10.4		Pinus resinosa	red pine	good	planted in stand	
1417				remove	8.6		Pinus resinosa	red pine	good	planted in stand	
1418				remove	8.1		Pinus resinosa	red pine	good	planted in stand	
1419				save	12.5	7.0	Quercus rubra	northern red oak	good		
1420				save	15.0		Quercus rubra	northern red oak	good		
1421				save	10.8		Picea abies	Norway spruce	good		
1422				save	8.8	6.5	Prunus serotina	black cherry	good		
1423				save	9.4		Picea abies	Norway spruce	good		
1424				save	6.7		Picea abies	Norway spruce	good		
1425				save	13.8		Picea abies	Norway spruce	good		
1426				save	11.8		Picea abies	Norway spruce	good		
1427				save	9.0		Quercus rubra	northern red oak	good		
1428				save	11.7		Carya glabra	pignut hickory	good		
1429				save	6.0	4.0	Quercus rubra	northern red oak	fair	asymmetric crown	smaller trunk dead
1430				save	10.3		Quercus rubra	northern red oak	fair	asymmetric crown	

1431				remove	19.7		Juglans nigra	black walnut	good		
1432				remove	10.7		Carya glabra	pignut hickory	fair	twisted or bent trunk	
1433				save	9.3		Carya glabra	pignut hickory	good		
1434				remove	11.6		Pinus resinosa	red pine	good		
1435				remove	7.9		Pinus resinosa	red pine	poor	needle drop	
1436				remove	6.5		Quercus rubra	northern red oak	poor	50 percent bark lost	
1437				save	8.7		Quercus rubra	northern red oak	fair	asymmetric crown	
1438				save	6.8		Ulmus americana	American elm	fair	asymmetric crown	twisted or bent trunk
1439	yes			save	28.3		Juglans nigra	black walnut	good		
1440	yes			save	22.5		Juglans nigra	black walnut	good		
1441				save	12.0		Populus deltoides	eastern cottonwood	good		
1442		yes		save	7.0		Fraxinus americana	white ash	fair	twisted or bent trunk	several broken or dead limbs
1443		yes		save	7.0		Fraxinus americana	white ash	good		
1444				save	6.8		Quercus alba	white oak	fair	asymmetric crown	
1445		yes		remove	7.9		Fraxinus americana	white ash	poor	crown broke off	heavy vine
1446		yes		save	6.1		Fraxinus americana	white ash	fair	asymmetric crown	heavy vine
1447				save	16.7		Juglans nigra	black walnut	good		
1448				save	7.6		Quercus alba	white oak	fair	asymmetric crown	heavy vine
1449		yes		save	7.5		Fraxinus pennsylvanica	green ash	good		
1450				save	18.8		Juglans nigra	black walnut	good		
1451		yes		save	6.1		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1452		yes		save	6.3		Fraxinus americana	white ash	good		
1453				save	12.5		Quercus rubra	northern red oak	fair	twisted or bent trunk	
1454				save	12.0		Ulmus americana	American elm	fair	twisted or bent trunk	
1455				save	13.6		Juglans nigra	black walnut	good		
1456				save	15.5		Juglans nigra	black walnut	good		
1457				save	16.3		Juglans nigra	black walnut	good		
1458				save	15.8		Pinus resinosa	red pine	good		
1459				save	10.5		Quercus rubra	northern red oak	good		
1460				save	14.5		Pinus resinosa	red pine	fair	crown dieback	
1461				save	17.0		Pinus resinosa	red pine	good		
1462				remove	7.2		Pinus resinosa	red pine	poor	needle drop	dying crown
1463				save	12.3		Pinus resinosa	red pine	fair	asymmetric crown	heavy vine
1464				save	13.8		Acer rubrum	red maple	fair	several broken or dead limbs	
1465				save	6.3		Quercus rubra	northern red oak	fair	asymmetric crown	heavy vine
1466				save	18.7		Quercus rubra	northern red oak	good		
1467				save	11.5		Prunus serotina	black cherry	fair	60 degree bend	
1468				save	11.1		Quercus alba	white oak	fair	asymmetric crown	
1469				save	8.8		Acer rubrum	red maple	good		
1470				remove	11.2		Acer platanoides	Norway maple	fair	twisted or bent trunk	
1471				remove	12.0		Pinus resinosa	red pine	poor	needle drop	dying crown
1472				remove	13.2		Pinus resinosa	red pine	poor	needle drop	dying crown
1473				remove	12.0		Pinus resinosa	red pine	poor	needle drop	dying crown
1474				remove	12.0		Pinus resinosa	red pine	poor	needle drop	dying crown
1475				remove	10.0		Pinus resinosa	red pine	poor	needle drop	dying crown
1476				save	11.6		Juglans nigra	black walnut	fair	twisted or bent trunk	
1477				save	8.7		Quercus rubra	northern red oak	good		
1478				save	7.8		Quercus rubra	northern red oak	good	heavy vine	
1479		yes		save	6.7		Fraxinus americana	white ash	good	heavy vine	
1480				save	6.3		Quercus rubra	northern red oak	fair	twisted or bent trunk	heavy vine
1481				save	15.6		Juglans nigra	black walnut	good		
1482	yes			save	21.7		Juglans nigra	black walnut	good		
1483				save	13.7		Ulmus americana	American elm	fair	asymmetric crown	
1484				save	7.7		Quercus rubra	northern red oak	fair	asymmetric crown	
1485		yes		save	7.1		Fraxinus americana	white ash	fair	several broken or dead limbs	trunk wound
1486				save	12.5		Quercus rubra	northern red oak	good		
1487				remove	11.5		Ulmus americana	American elm	good		
1488				remove	9.7		Prunus avium	sweet cherry	poor	dying crown	major bark peel
1489		yes		save	10.1		Fraxinus americana	white ash	fair	50 percent bark loss	
1490				remove	11.9		Juglans nigra	black walnut	good		
1491				save	11.3		Prunus serotina	black cherry	good		
1492		yes		save	6.8		Fraxinus americana	white ash	fair	asymmetric crown	several broken or dead limbs
1493	yes			save	18.4		Prunus serotina	black cherry	good		
1494		yes		save	6.4		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1495	yes			save	22.3		Acer rubrum	red maple	good		
1496				save	7.1		Prunus avium	sweet cherry	fair	partially broken crown	heavy vine
1497				save	9.0		Prunus avium	sweet cherry	good		
1498				save	9.9		Acer rubrum	red maple	fair	several broken or dead limbs	
1499				save	14.6		Prunus serotina	black cherry	good		
1500				save	9.4		Malus sp.	crabapple sp.	fair	several broken or dead limbs	heavy vine
1501				save	13.3		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1502				save	8.8	8.5	Acer negundo	boxelder	fair	smaller trunk dead	heavy vine
1503				save	10.8		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1504				save	8.8		Prunus avium	sweet cherry	good	heavy vine	
1505		yes		save	8.1		Fraxinus americana	white ash	good		
1506		yes		save	7.5		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1507				save	9.6		Prunus serotina	black cherry	good		
1508				save	11.2		Prunus serotina	black cherry	good		
1509		yes		save	8.3		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1510		yes		save	8.4		Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1511				save	15.3		Acer platanoides	Norway maple	good		
1512				save	10.7		Acer rubrum	red maple	good	heavy vine	
1513				remove	7.3		Malus sp.	crabapple sp.	fair	60 degree bend	heavy vine
1514				remove	6.4		Acer rubrum	red maple	fair	twisted or bent trunk	heavy vine
1515				remove	10.5		Prunus serotina	black cherry	good	heavy vine	
1516		yes		save	8.8		Fraxinus pennsylvanica	green ash	fair	twisted or bent trunk	heavy vine
1517		yes		save	10.0		Fraxinus pennsylvanica	green ash	good		
1518				save	8.8		Acer negundo	boxelder	fair	45 degree lean	heavy vine
1519				save	9.3		Pinus resinosa	red pine	fair	twisted or bent trunk	pruned
1520				save	12.4		Prunus serotina	black cherry	fair	twisted or bent trunk	
1521				save	10.4		Pinus resinosa	red pine	good	planted in stand	
1522				save	10.3		Pinus resinosa	red pine	good	planted in stand	
1523				save	9.9		Pinus resinosa	red pine	good	planted in stand	
1524				save	9.9		Pinus resinosa	red pine	good	planted in stand	
1525				save	10.8		Pinus resinosa	red pine	good	planted in stand	
1526				remove	6.0		Prunus avium	sweet cherry	fair	asymmetric crown	
1527				remove	7.5		Prunus avium	sweet cherry	fair	asymmetric crown	
1528				save	11.8		Pinus resinosa	red pine	good	planted in stand	
1529				save	10.1		Pinus resinosa	red pine	good	planted in stand	
1530				save	7.5		Pinus resinosa	red pine	good	planted in stand	
1531				save	6.2		Pinus resinosa	red pine	good	planted in stand	
1532				save	7.0		Pinus resinosa	red pine	good	planted in stand	
1533				save	6.8	4.0	Pinus resinosa	red pine	fair	smaller trunk dead	
1534				save	11.7		Pinus resinosa	red pine	good	in stand	
1535				save	12.9		Prunus avium	sweet cherry	good		
1536				remove	9.3		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1537				save	11.1		Pinus resinosa	red pine	good	planted in stand	
1538				save	12.0		Pinus resinosa	red pine	good	planted in stand	
1539				save	6.8		Pinus resinosa	red pine	good	planted in stand	
1540				save	9.7		Pinus resinosa	red pine	good	planted in stand	
1541				save	6.9		Pinus resinosa	red pine	good	planted in stand	
1542				save	10.4		Pinus resinosa	red pine	good	planted in stand	
1543				save	10.3		Pinus resinosa	red pine	good	planted in stand	
1544				remove	8.4		Pinus resinosa	red pine	good	planted in stand	some vine
1545				save	9.9		Pinus resinosa	red pine	good	planted in stand	some vine
1546				remove	9.7		Pinus resinosa	red pine	good	planted in stand	
1547				remove	7.3		Prunus avium	sweet cherry	fair	asymmetric crown	
1548				remove	10.1		Prunus avium	sweet cherry	fair	asymmetric crown	
1549				remove	7.2		Pinus resinosa	red pine	good	planted in stand	
1550				remove	7.0		Pinus resinosa	red pine	good	planted in stand	
1551				remove	7.7		Pinus resinosa	red pine	good	planted in stand	
1552				remove	12.2		Pinus resinosa	red pine	good	planted in stand	
1553				remove	6.2		Pinus resinosa	red pine	good	planted in stand	
1554				remove	10.0		Pinus resinosa	red pine	good	planted in stand	
1555				remove	10.6		Pinus resinosa	red pine	fair	planted in stand	twisted or bent trunk
1556				remove	9.3		Prunus avium	sweet cherry	fair	asymmetric crown	
1557				remove	9.2		Acer saccharinum	silver maple	fair	asymmetric crown	
1558				save	10.2		Pinus resinosa	red pine	good	planted in stand	
1559				save	10.5		Pinus resinosa	red pine	good	planted in stand	
1560				save	11.1		Pinus resinosa	red pine	good	planted in stand	

ROCHESTER HILLS MICHIGAN

NF ENGINEERS

civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN — KEVIN CHRISTOPHER NAVAROLI — ENGINEER — No. 6201050497 — LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree List

811
Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey

DESIGNED BY:

APPROVED BY: K. Navaroli

DATE: 2025-05-01

SCALE: N.T.S.

NFE JOB NO. O557

sheet no. C1.11

CITY FILE #E24-008 SECTION #8

1561			save	13.0	Pinus resinosa	red pine	good	planted in stand		
1562			save	7.2	Pinus resinosa	red pine	good	planted in stand		
1563			save	10.3	Pinus resinosa	red pine	good	planted in stand		
1564			save	6.8	Pinus resinosa	red pine	good	planted in stand		
1565			save	9.9	Pinus resinosa	red pine	good	planted in stand		
1566			save	7.7	Pinus resinosa	red pine	good	planted in stand		
1567			save	6.2	Pinus resinosa	red pine	good	planted in stand		
1568			save	8.1	Pinus resinosa	red pine	good	planted in stand		
1569			save	9.3	Pinus resinosa	red pine	good	planted in stand		
1570			save	9.5	Pinus resinosa	red pine	good	planted in stand		
1571			save	7.8	Pinus resinosa	red pine	good	planted in stand		
1572			save	7.5	Prunus avium	sweet cherry	fair	asymmetric crown		
1573			save	6.4	Prunus avium	sweet cherry	fair	asymmetric crown		
1574			save	10.5	Prunus avium	sweet cherry	fair	asymmetric crown		
1575			save	6.5	Prunus avium	sweet cherry	fair	asymmetric crown		
1576			save	8.2	Prunus avium	sweet cherry	fair	asymmetric crown		
1577			save	9.0	Prunus avium	sweet cherry	fair	asymmetric crown		
1578			save	7.1	Prunus avium	sweet cherry	fair	twisted or bent trunk		
1579			save	11.6	Pinus resinosa	red pine	good	planted in stand		
1580			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1581			save	8.2	Pinus resinosa	red pine	good	planted in stand		
1582			save	7.5	Pinus resinosa	red pine	good	planted in stand		
1583			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1584			save	8.4	Pinus resinosa	red pine	good	planted in stand		
1585			save	9.2	Pinus resinosa	red pine	good	planted in stand		
1586			save	9.8	Pinus resinosa	red pine	good	planted in stand		
1587			save	11.4	Pinus resinosa	red pine	good	planted in stand		
1588			save	6.0	Pinus resinosa	red pine	good	planted in stand		
1589			save	9.8	Pinus resinosa	red pine	good	planted in stand		
1590			save	7.4	Pinus resinosa	red pine	good	planted in stand		
1591			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1592			save	8.8	Prunus avium	sweet cherry	good			
1593			save	8.9	Pinus resinosa	red pine	good	planted in stand		
1594			save	7.5	Pinus resinosa	red pine	good	planted in stand		
1595			save	6.9	Pinus resinosa	red pine	good	planted in stand		
1596			save	12.0	Pinus resinosa	red pine	good	planted in stand		
1597			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1598			save	10.2	Pinus resinosa	red pine	good	planted in stand		
1599			save	11.6	Pinus resinosa	red pine	good	planted in stand		
1600			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1601			save	8.0	Pinus resinosa	red pine	good	planted in stand		
1602			save	9.2	Pinus resinosa	red pine	good	planted in stand		
1603			save	10.8	Pinus resinosa	red pine	good	planted in stand		
1604			save	8.7	Pinus resinosa	red pine	good	planted in stand		
1605			save	9.2	Pinus resinosa	red pine	good	planted in stand		
1606			save	8.0	Pinus resinosa	red pine	good	planted in stand		
1607			save	10.8	Pinus resinosa	red pine	good	planted in stand		
1608			save	8.5	Pinus resinosa	red pine	poor	crown is dead		
1609			save	6.0	Prunus avium	sweet cherry	fair	twisted or bent trunk		
1610			save	6.9	Prunus avium	sweet cherry	fair	asymmetric crown		twisted or bent trunk
1611			save	10.2	Populus tremuloides	trembling Aspen	fair	several broken or dead limbs		
1612			save	8.3	Populus tremuloides	trembling Aspen	fair	several broken or dead limbs		
1613			save	6.0	Prunus avium	sweet cherry	fair	twisted or bent trunk		
1614			save	6.4	Pinus resinosa	red pine	good	planted in stand		
1615			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1616			save	7.9	Pinus resinosa	red pine	good	planted in stand		
1617			save	8.8	Pinus resinosa	red pine	good	planted in stand		
1618			save	9.4	Pinus resinosa	red pine	good	planted in stand		
1619			save	11.0	Pinus resinosa	red pine	good	planted in stand		
1620			save	10.7	Pinus resinosa	red pine	good	planted in stand		
1621			save	8.5	Pinus resinosa	red pine	good	planted in stand		
1622			save	9.5	Pinus resinosa	red pine	good	planted in stand		
1623			save	8.2	Pinus resinosa	red pine	good	planted in stand		
1624			save	10.0	Pinus resinosa	red pine	good	planted in stand		
1625			save	8.3	Juglans nigra	black walnut	good	heavy vine		
1626			save	7.4	Prunus avium	sweet cherry	fair	asymmetric crown		
1627			save	12.5	Prunus avium	sweet cherry	fair	asymmetric crown		
1628			save	17.9	Ulmus americana	American elm	good			
1629			save	12.2	Pinus resinosa	red pine	good	planted in stand		
1630			save	8.0	Pinus resinosa	red pine	good	planted in stand		
1631			save	12.3	Pinus resinosa	red pine	good	planted in stand		
1632			remove	8.7	Pinus resinosa	red pine	poor	planted in stand		dying crown
1633			remove	7.5	Pinus resinosa	red pine	poor	planted in stand		dying crown
1634			save	9.9	Pinus resinosa	red pine	good	planted in stand		
1635			save	16.9	Ulmus americana	American elm	good			
1636			save	10.2	Pinus resinosa	red pine	good	planted in stand		
1637			save	11.4	Pinus resinosa	red pine	good	planted in stand		
1638			save	10.8	Pinus resinosa	red pine	good	planted in stand		
1639			save	7.7	Prunus avium	sweet cherry	fair	asymmetric crown		
1640			save	13.5	Populus tremuloides	trembling Aspen	good			
1641			remove	7.8	Quercus rubra	northern red oak	good			
1642			save	9.0	Pinus resinosa	red pine	fair	asymmetric crown		
1643			remove	11.7	Prunus avium	sweet cherry	good			
1644			save	10.9	Prunus avium	sweet cherry	fair	twisted or bent trunk		
1645			remove	11.0	Pinus resinosa	red pine	good			
1646			remove	8.7	Pinus resinosa	red pine	good			
1647			remove	9.3	Pinus resinosa	red pine	good			
1648			remove	10.7	Pinus resinosa	red pine	good			
1649			remove	7.8	Pinus resinosa	red pine	poor	planted in stand		dying crown
1650			remove	8.8	Pinus resinosa	red pine	poor	planted in stand		dying crown
1651			remove	7.9	Pinus resinosa	red pine	poor	planted in stand		dying crown
1652			save	8.2	Pinus resinosa	red pine	good			
1653			save	6.9	Quercus rubra	northern red oak	good			
1654			save	10.5	Pinus resinosa	red pine	good			
1655			save	10.2	Pinus resinosa	red pine	good			
1656			save	10.0	Pinus resinosa	red pine	good			
1657			save	10.6	Populus deltoides	eastern cottonwood	fair	asymmetric crown		
1658			save	10.0	Acer rubrum	red maple	fair	twisted or bent trunk		
1659			save	9.8	Carya glabra	pignut hickory	fair	asymmetric crown		
1660			save	9.4	Pinus resinosa	red pine	good	planted in stand		
1661			save	11.0	Pinus resinosa	red pine	good	planted in stand		
1662			save	12.5	Pinus resinosa	red pine	good	planted in stand		
1663			save	9.3	Pinus resinosa	red pine	good	planted in stand		
1664			save	8.8	Pinus resinosa	red pine	good	planted in stand		
1665			save	6.5	Ulmus americana	American elm	fair	asymmetric crown		
1666			save	11.3	Carya glabra	pignut hickory	good			
1667			save	7.5	Quercus rubra	northern red oak	good			
1668			save	9.7	Acer saccharum	sugar maple	good			
1669			save	8.5	Quercus rubra	northern red oak	good			
1670			save	16.1	Juglans nigra	black walnut	good			
1671			save	8.3	Quercus macrocarpa	bur oak	fair	asymmetric crown		
1672			save	7.2	Acer saccharum	sugar maple	good			
1673			save	7.0	Prunus avium	sweet cherry	fair	asymmetric crown		twisted or bent trunk
1674			save	8.7	Carya glabra	pignut hickory	good			
1675			save	6.6	Ulmus americana	American elm	fair	asymmetric crown		crowded
1676			save	7.5	Quercus rubra	northern red oak	fair	asymmetric crown		
1677			save	13.2	Populus deltoides	eastern cottonwood	good			
1678			save	12.9	Populus deltoides	eastern cottonwood	good			
1679			save	7.8	Quercus rubra	northern red oak	fair	asymmetric crown		
1680			save	12.7	Quercus rubra	northern red oak	good			
1681			save	17.0	Populus deltoides	eastern cottonwood	good			
1682			save	10.4	Carya glabra	pignut hickory	fair	twisted or bent trunk		
1683			save	12.2	Carya glabra	pignut hickory	good			
1684	yes		save	30.2	Quercus rubra	northern red oak	good			
1685			save	15.3	Quercus alba	white oak	fair	asymmetric crown		
1686			save	17.6	Quercus alba	white oak	fair	asymmetric crown		
1687	yes		save	23.2	Quercus alba	white oak	good			
1688			save	15.3	Populus deltoides	eastern cottonwood	good			
1689			save	18.6	Populus deltoides	eastern cottonwood	good			
1690			save	9.8	Populus deltoides	eastern cottonwood	good			
1691			save	12.8		Populus deltoides	eastern cottonwood	good		
1692			save	11.3		Populus deltoides	eastern cottonwood	good		
1693			save	7.2		Acer saccharinum	silver maple	fair	asymmetric crown	
1694			save	9.5		Acer saccharinum	silver maple	good		
1695			save	12.7		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
1696			save	10.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
1697			save	6.5		Acer saccharinum	silver maple	fair	asymmetric crown	
1698			save	7.7		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1699			save	14.7		Populus deltoides	eastern cottonwood	good	crowded	
1700			save	6.0		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1701			save	10.9		Populus deltoides	eastern cottonwood	good		
1702			save	17.9	8.6	Populus deltoides	eastern cottonwood	good		
1703			save	12.6		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1704			save	10.4		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1705			save	7.9		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1706			save	15.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1707			save	10.0		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1708			save	6.5		Ulmus americana	American elm	good		
1709			save	9.3	8.1, 7.0	Acer saccharinum	silver maple	good		
1710			save	7.5	7.3, 6.0	Acer saccharinum	silver maple	good		
1711			save	7.0	6.1, 5.5	Acer saccharinum	silver maple	good		
1712			save	6.0	5.3	Acer saccharinum	silver maple	good		
1713			save	9.3	5.5	Acer saccharinum	silver maple	good		
1714			save	9.1	4.9	Acer saccharinum	silver maple	good		
1715			save	11.2		Populus deltoides	eastern cottonwood	good		
1716			save	6.1		Acer saccharinum	silver maple	fair	asymmetric crown	
1717			save	8.3	7.5	Acer saccharinum	silver maple	good		
1718			save	10.2		Acer saccharinum	silver maple	good		
1719			save	7.0		Acer saccharinum	silver maple	good		
1720			save	8.8		Ulmus americana	American elm	good		
1721		yes	save	8.1	8.0, 8.0, 7.9	Fraxinus pennsylvanica	green ash	good		
1721			save	15.1	13.8, 8.3	Populus deltoides	eastern cottonwood	good		
1722			save	8.2	6.8	Quercus rubra	northern red oak	fair	asymmetric crown	
1723			save	17.9	7.4	Quercus rubra	northern red oak	good		
1724			save	17.5		Acer saccharinum	silver maple	fair	asymmetric crown	
1726			save	12.0	10.6	Acer saccharinum	silver maple	good	co-dominant trunks	
1727			save	11.9		Acer saccharinum	silver maple	good		
1728			save	6.1		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1729			save	9.7		Acer saccharinum	silver maple	good		crowded
1730			save	6.6		Populus deltoides	eastern cottonwood	poor	twisted or bent trunk	hollowed trunk
1731			save	6.3		Acer saccharinum	silver maple	fair	asymmetric crown	
1732			save	11.1		Acer saccharinum	silver maple	fair	asymmetric crown	
1733			remove	11.0		Juniperus virginiana	eastern red cedar	fair	topped for overhead lines	
1734			save	6.8	6.5	Acer saccharinum	silver maple	fair	co-dominant trunks	crowded
1735			save	20.5	20.0	Populus deltoides	eastern cottonwood	good		
1736			remove	7.0		Juniperus virginiana	eastern red cedar	good		
1737			save	6.8		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
1738			save	8.2		Juniperus virginiana	eastern red cedar	fair	over-pruned	
1739			save	6.7		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1740			save	8.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1741			remove	7.4		Juniperus virginiana	eastern red cedar	good		
1742		yes	remove	9.5	8.9	Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
1743		yes	remove	7.9	7.2	Ulmus pumila	Siberian elm	poor	old, dead crown	several broken or dead limbs
1744		yes	remove	11.7		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	heavy vine
1745			remove	8.7		Juniperus virginiana	eastern red cedar	fair	over-pruned	heavy vine
1746			remove	8.7		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1747			remove	8.0		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1748			remove	7.8		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1749			remove	8.5		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1750			remove	8.5		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1751			remove	12.1		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1752			remove	10.2		Populus deltoides	eastern cottonwood	poor	topped for overhead lines	
1753			remove	14.6		Quercus macrocarpa	bur oak	fair	topped	
1754			save	8.8		Ulmus americana	American elm	good		
1755			remove	10.8	8.8	Salix sp.	willow sp.	fair	smaller trunk broken	several broken or dead limbs
1756			remove	13.7	7.8	Quercus macrocarpa	bur oak	good		
1757			save	14		Pinus strobus	white pine	good		
1758	yes		save	26.2		Tilia americana	basswood	good		
1759			save	7.0		Acer saccharinum	silver maple	fair	asymmetric crown	
1760			remove	18.1		Acer negundo	boxelder	fair	several broken or dead limbs	suckers
1761			save	15.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	
1762			save	6.0	6.0, 5.0	Acer saccharinum	silver maple	fair	asymmetric crown	
1763			save	12.5	12.2, 6.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1764			remove	8.6		Juglans nigra	black walnut	good	heavy vine	
1765			save	14.2		Quercus rubra	northern red oak	fair	asymmetric crown	
1766			save	6.2		Carya glabra	pignut hickory	good	heavy vine	
1767		yes	save	23.5		Quercus alba	white oak	fair	several broken or dead limbs	
1768			save	12.2	6.0	Ulmus americana	American elm	fair	asymmetric crown	twisted or bent trunk
1769			save	16.8		Quercus alba	white oak	good		
1770			save	14.3		Quercus rubra	northern red oak	good		
1771		yes	save	26.9		Populus deltoides	eastern cottonwood	good		
1772		yes	save	27.0		Populus deltoides	eastern cottonwood	good		
1773			save	9.3	5.0	Acer negundo	boxelder	good		
1774			save	6.3		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1775			save	18.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1776			save	8.9		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1777			save	7.2	6.0	Acer saccharinum	silver maple	fair	asymmetric crown	twisted or bent trunk
1778			save	22.7		Populus deltoides	eastern cottonwood	good		
1779			save	6.6		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1780			save	7.2		Acer saccharinum	silver maple	fair	asymmetric crown	crowded
1781			save	21.1		Populus deltoides	eastern cottonwood	good		
1782			save	22.6		Populus deltoides	eastern cottonwood	good		
1783			save	6.8	6.6	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
1784		yes	save	7.0		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	heavy vine
1785			save	22.3	16.0	Populus deltoides	eastern cottonwood	good	co-dominant trunks	
1786			save	21.6		Populus deltoides	eastern cottonwood	good		
1787			save	11.7		Populus deltoides	eastern cottonwood	fair	asymmetric crown	twisted or bent trunk
1788		yes	save	33.5	20., 18.8	Salix fragilis	crack willow	fair	several broken or dead limbs	
1789			save	18.0		Populus deltoides	eastern cottonwood	good		
1790			save	10.8	5.0	Acer saccharinum	silver maple	good		
1791			save	9.2	6.0	Acer saccharinum	silver maple	good		
1792			save	23.7		Populus deltoides	eastern cottonwood	good		
1793			save	10.0	9.8	Acer saccharinum	silver maple	fair	asymmetric crown	
1794		yes	save	6.2		Fraxinus pennsylvanica	green ash	fair	asymmetric crown	
1795			save	9.0	9.0	Acer saccharinum	silver maple	fair	asymmetric crown	
1796		yes	save	23.9		Acer saccharum	sugar maple	good		
1796			save	17.2		Populus deltoides	eastern cottonwood	good		
1797			save	12.8		Acer saccharinum	silver maple	fair	asymmetric crown	
1798			save	11.1		Ulmus americana	American elm	fair	asymmetric crown	
1799		yes	save	6.5		Fraxinus pennsylvanica	green ash	good	heavy vine	
1800	yes		save	26.0		Populus deltoides	eastern cottonwood	good		
1801		yes	save	9.5	9.0	Fraxinus americana	white ash	fair	co-dominant trunks	heavy vine
1802		yes	save	9.9		Fraxinus americana	white ash	good	heavy vine	
1803		yes	save	7.3	4.0	Fraxinus americana	white ash	fair	several broken or dead limbs	heavy vine
1804		yes	remove	6.4	3.0	Fraxinus americana	white ash	poor	dead crown	heavy vine
1805		yes	save	6.7		Fraxinus americana	white ash	good	heavy vine	
1806			save	12.4		Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1807			save	20.6		Populus deltoides	eastern cottonwood	good	co-dominant trunks	crowded
1808			save	16.1	15.2	Populus deltoides	eastern cottonwood	fair	asymmetric crown	crowded
1809			save	21.2		Populus deltoides	eastern cottonwood	good		
1810			save	18.2		Populus deltoides	eastern cottonwood	good		
1811	yes		save	26.7		Populus deltoides	eastern cottonwood	good		
1812	yes		save	24.1		Populus deltoides	eastern cottonwood	good		
1813			save	11.3	11.1	Acer saccharinum	silver maple	fair	co-dominant trunks	asymmetric crowns
1814			remove	8.7		Acer negundo	boxelder	good		
1815			remove	15.5		Acer negundo	boxelder	good		
1817			remove	15.8		Acer negundo	boxelder	poor	main trunk dead	suckers
1818		yes	remove	8.5		Fraxinus pennsylvanica	green ash	good		
1819	yes		save	32.2		Acer saccharinum	silver maple	fair	several broken or dead limbs	heavy vine
1820		yes	remove	12.0		Rhamnus cathartica	common buckthorn	good	heavy vine	
1821			save	8.5		Prunus avium	sweet cherry	good	heavy vine	
1822			save	8.2		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1823			save	8.6		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1824			save	8.3		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1825			save	8.5		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1826			save	10.1		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1827			save	11.0		Acer negundo	boxelder	fair	twisted or bent trunk	heavy vine
1828			save	10.8	8.0	Prunus avium	sweet cherry	fair	several broken or dead limbs	heavy vine
1829			save	8.0		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
1830	yes		save	26.7		Acer rubrum	red maple	fair	several broken or dead limbs	
1831			remove	9.8	6.0	Acer negundo	boxelder	good	co-dominant trunks	
1832			remove	13.9		Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
1833			remove	9.8	9.8	Acer negundo	boxelder	fair	smaller trunk dead	heavy vine
1834	yes		save	27.0		Picea abies	Norway spruce	good		
1835		yes	remove	17.5		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	heavy vine
1836			remove	10.6		Acer platanoides	Norway maple	fair	asymmetric crown	twisted or bent trunk
1837			remove	8.0		Acer negundo	boxelder	fair	asymmetric crown	twisted or bent trunk
1838		yes	remove	12.5		Ulmus pumila	Siberian elm	fair	twisted or bent trunk	trunk wound
1839		yes	save	12.4	11.2	Ulmus pumila	Siberian elm	fair	smaller trunk dead	
1840			save	6.3		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
1841			save	11.2		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
1842			save	12.8		Acer platanoides	Norway maple	fair	asymmetric crown	crowded
1843		yes	save	29.5		Ulmus pumila	Siberian elm	fair	asymmetric crown	several broken or dead limbs
1844			remove	11.4		Acer negundo	boxelder	good	heavy vine	
1845			remove	11	8.1	Prunus avium	sweet cherry	fair	several broken or dead limbs	heavy vine
1846			remove	7.8		Acer negundo	boxelder	fair	several broken or dead limbs	
1847		yes	save	20.7		Ulmus pumila	Siberian elm	fair	several broken or dead limbs	
1848			save	11.6		Acer platanoides	Norway maple	fair	asymmetric crown	twisted or bent trunk
1849	yes		remove	7.7		Fraxinus pennsylvanica	green ash	good	heavy vine	
1850	yes		remove	16.2		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	heavy vine
1851			save	7.0		Acer negundo	boxelder	good		
1852	yes		save	25.0		Acer saccharinum	silver maple	good	in pond	
1853	yes		save	20.0	18.0	Acer saccharinum	silver maple	good	in pond	
1854			save	12.2	12.0	Acer saccharinum	silver maple	good	co-dominant trunks	
1855	yes		save	20.5	12.0, 10.5	Acer saccharinum	silver maple	good	co-dominant trunks	
1856			remove	19.6	12.5, 6.2	Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	
1857		yes	save	6.0		Fraxinus pennsylvanica	green ash	fair	50 percent bark loss	
1858		yes	save	8.8		Fraxinus pennsylvanica	green ash	fair	twisted or bent trunk	heavy vine
1859		yes	save	6.0		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	heavy vine
1860			save	8.5	7.0	Acer negundo	boxelder	fair	smaller trunk dead	heavy vine
1861		yes	save	6.4		Fraxinus pennsylvanica	green ash	fair	several broken or dead limbs	heavy vine
1862			save	6.8	6.0	Acer negundo	boxelder	fair	several broken or dead limbs	heavy vine
1863		yes	save	7.8		Fraxinus pennsylvanica	green ash	good	heavy vine	
1864		yes	save	7.0		Fraxinus pennsylvanica	green ash	fair	twisted or bent trunk	heavy vine
1865			save	15.6		Populus deltoides	eastern cottonwood	good		
1866			save	18.9		Populus deltoides	eastern cottonwood	good		
1867			save	15.1		Populus deltoides	eastern cottonwood	good		
1868			save	16.5		Populus deltoides	eastern cottonwood	good		
1869			save	6.5		Pinus sylvestris	Scots pine	fair	twisted or bent trunk	
1870			save	10.2		Pinus resinosa	red pine	good		
1871			save	11.5		Pinus resinosa	red pine	good		
1872			save	8.1		Prunus avium	sweet cherry	fair	asymmetric crown	
1873			save	7.8		Prunus avium	sweet cherry	fair	asymmetric crown	
1874			save	12.1		Pinus resinosa	red pine	good		
1875			save	11.5		Pinus resinosa	red pine	good		
1876			save	10.5	7.8	Acer saccharinum	silver maple	good	Tag #1722	
1877			save	10.8		Acer saccharinum	silver maple	good	Tag #1723	
1878			save	10.8		Quercus rubra	northern red oak	good	Tag #1725	
1879			save	13.2		Populus deltoides	eastern cottonwood	fair	asymmetric crown	Tag #1733
1880			save	8.5		Acer saccharinum	silver maple	fair	asymmetric crown	Tag #1736
1881			save	13.0		Populus deltoides	eastern cottonwood	good		Tag #1738
1882			save	9.7		Populus deltoides	eastern cottonwood	good		Tag #1741
1883			save	14.7		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	Tag #1742
1884			save	14.1		Populus deltoides	eastern cottonwood	good		Tag #1743
1885			save	6.6		Acer saccharinum	silver maple	fair	asymmetric crown	Tag #1744
1886			save	8.5		Populus deltoides	eastern cottonwood	fair	asymmetric crown	Tag #1745
1887			save	10.1	4.0	Acer saccharinum	silver maple	good		Tag #1746
1888			save	16.0		Populus deltoides	eastern cottonwood	good		Tag #1747
1889			save	6.4		Acer saccharinum	silver maple	fair	twisted or bent trunk	Tag #1748
1890			save	14.9		Populus deltoides	eastern cottonwood	good		Tag #1749
1891			save	12.8		Populus deltoides	eastern cottonwood	good		Tag #1750
1892			save	6.4		Acer saccharinum	silver maple	fair	twisted or bent trunk	Tag #1751
1893			save	13.8		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	Tag #1752
1894			save	9.0	5.0	Acer saccharinum	silver maple	good		Tag #1753
1895			save	20.1		Populus deltoides	eastern cottonwood	good		Tag #1754
1896			save	17.8		Populus deltoides	eastern cottonwood	fair	twisted or bent trunk	Tag #1755
1897			save	7.8	7.3, 5.0	Acer saccharinum	silver maple	fair	asymmetric crown	Tag #1756
1898			save	6.7	5.0	Acer saccharinum	silver maple	fair	asymmetric crown	Tag #1757
1899			save	8.7		Populus deltoides	eastern cottonwood	fair	asymmetric crown	Tag #1758
1900			save	7.3		Acer saccharinum	silver maple	fair	asymmetric crown	Tag #1760

Job Number: O557
Job Location: Eugene S. Nowicki Park
Date: 3/20/2025
Performed By: A. Simon

Condition Description Notes:
"Good" - no observed structural defects*
"Fair" - minor structural defects, marginal form, some insect activity noted*
"Poor" - major structural defects, poor form, insect infested*

**Structural defects may include decayed wood, cracks, root problems, weak branch unions cankers, poor tree architecture, dead/failed branches due to various causes.*

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SEAL

KEVIN M. REYNOLDS AVERY ENGINEER No. 6201050492 PROFESSIONAL ENGINEER STATE OF MICHIGAN

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City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree List

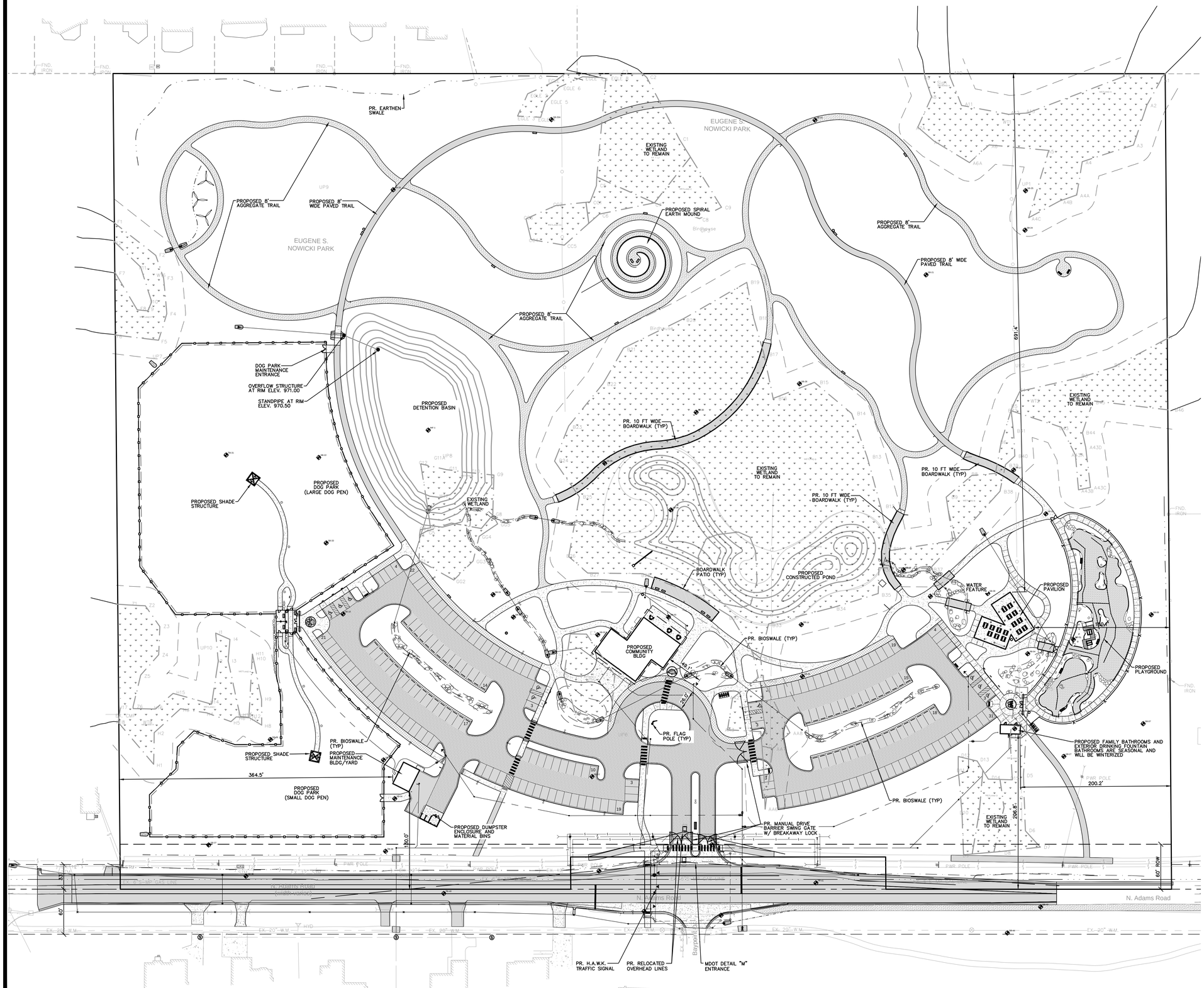
811 Know what's below Call before you dig.

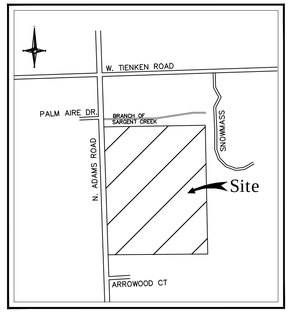
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: D. McConkey
DESIGNED BY:
APPROVED BY: K. Navaroli
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557
sheet no. C1.12

CITY FILE #E24-008 SECTION #8





Location Map
N.T.S.

SITE INFORMATION

EXISTING ZONING	R-1 (ONE FAMILY RESIDENTIAL DISTRICT)
PARCEL AREA	1,506,615 SQUARE FEET OR 34.58 ACRES
	33.07 ACRES (LESS ROAD RIGHT-OF-WAY)
PARCEL ID:	15-08-100-006, 15-08-100-007, 15-08-100-008
	15-08-151-001, 15-08-151-002
SITE ADDRESS:	670 N ADAMS ROAD
OWNER NAME:	CITY OF ROCHESTER HILLS

MIN. YARD SETBACKS	BUILDING	PARKING
FRONT	40 FT	10 FT
SIDE	15 FT	10 FT
REAR	35 FT	10 FT
MAX. BLDG. HEIGHT	35 FT OR 2 STORIES	
MIN. LOT WIDTH	100 FT	
MIN. LOT AREA	20,000 SQ. FT	
MAX. BUILDING LOT COVERAGE:	25 %	

THE ABOVE SETBACK & HEIGHT REQUIREMENTS WERE OBTAINED FROM THE CITY OF ROCHESTER HILLS ZONING ORDINANCE ADOPTED ON JULY 25, 2001, AS AMENDED.

ADJACENT LAND ZONING AND USE

ADJACENT LAND	ZONING	USE
FROM NORTH	R-1	RESIDENTIAL
FROM WEST	R-3	RESIDENTIAL
FROM SOUTH	R-1	RESIDENTIAL
FROM EAST	R-2	RESIDENTIAL

BUILDING DATA

SQUARE FOOTAGE OF BLDG. ENVELOPE	GROSS
COMMUNITY CENTER	3,991 SF
MAINTENANCE GARAGE	681 SF
PLAY GROUND RESTROOM	321 SF
TOTAL PROPOSED BUILDING ENVELOPE AREA	4,993 SF

LOT COVERAGE CALCULATIONS

TOTAL PARCEL AREA	1,506,615 SF	(34.58 AC)
TOTAL PROPOSED BUILDING AREA	4,993 SF	(0.11 AC)
LOT COVERAGE ALL BUILDINGS	4,993/1,506,615 x 100% = 0.033% (< 25%)	

SITE USE NOTE

EXISTING USE:	VACANT/CITY PARK WOODED AREA
PROPOSED USE:	COMMUNITY CENTER, PLAYGROUND, & DOG PARK
NUMBER OF EMPLOYEES:	TBD
HOURS OF OPERATION:	TBD

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SEAL

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PROFESSIONAL ENGINEER

PROJECT
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PROJECT LOCATION
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Oakland County, Michigan

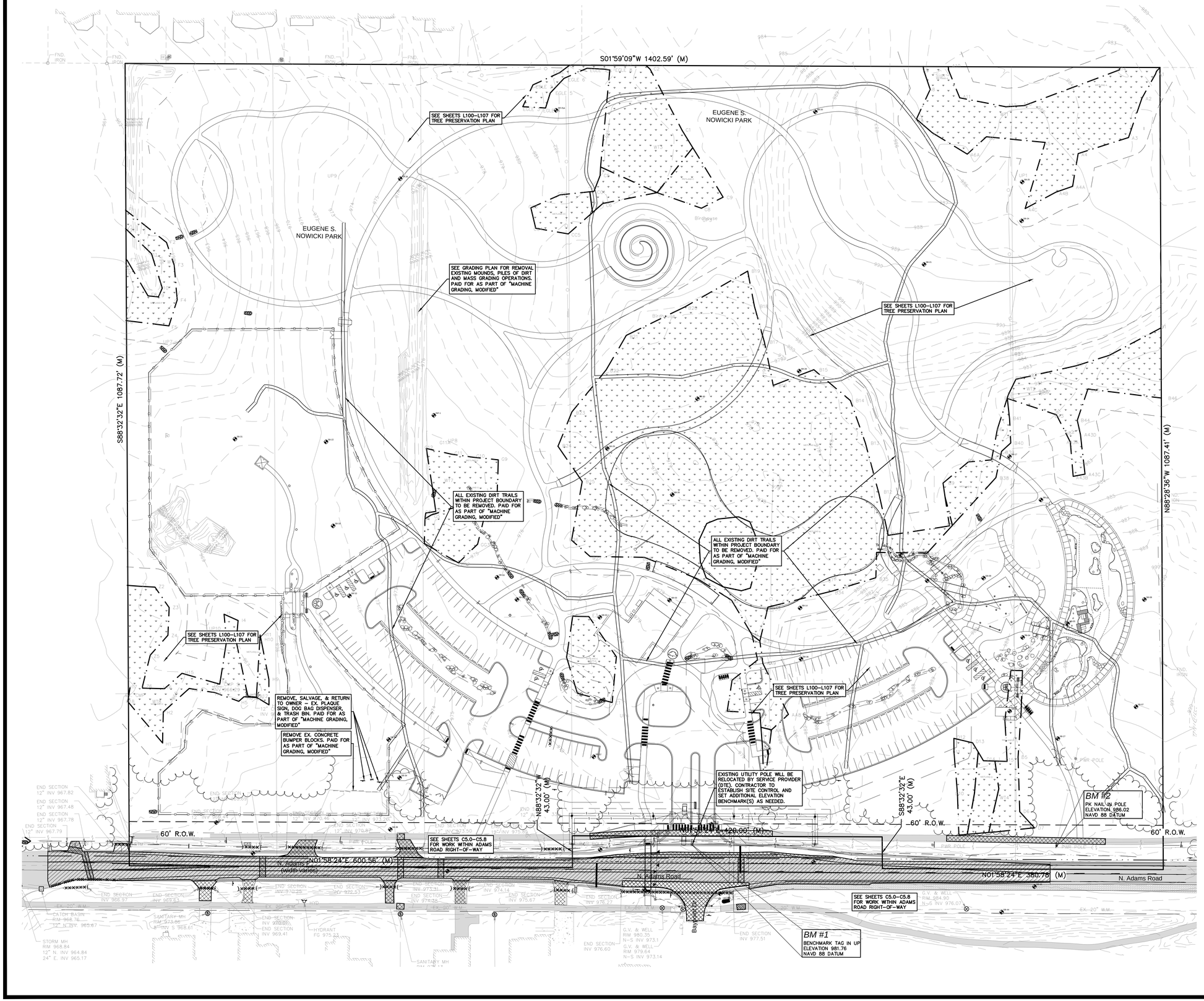
SHEET
Overall Site Plan

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 60'
60 30 0 30 60 90

NFE JOB NO. O557
sheet no. C2.0



SIGN REMOVAL

ALL EXISTING ROADWAY SIGNS NOTED FOR REMOVAL SHALL BE PAID FOR AS A PART OF "STATION GRADING, MOD"

DRIVEWAY CULVERT REMOVAL

ALL CULVERTS NOTED FOR REMOVAL SHALL BE PAID FOR AS, "SEWER, REM, LESS THAN 24 INCH"

MAILBOX RELOCATION

ANY MAILBOXES WITHIN THE LIMITS OF THE PROJECT THAT CONFLICT WITH REQUIRED WORK, SHALL BE REMOVED BY THE CONTRACTOR, TEMPORAILY SET IN A LOCATION AGREEABLE TO THE US POST OFFICE, AND THEN SET IN A NEW LOCATION, WITH NEW WOODEN POSTS.
ALL WORK ASSOCIATED WITH THIS WILL BE INCLUDED IN "STATION GRADING, MOD"

TREE REMOVALS

ALL TREES AND SHRUBS SHALL BE REMOVED AS NOTED ON THE PLANS, AND PAID FOR AS "TREE, REM, MOD". SEE SHEETS L100–L107 FOR TREE PRESERVATION PLAN.

DRIVE ACCESS

RESIDENTS SHALL HAVE ACCESS TO DRIVES DURING ALL PHASES OF THE CONSTRUCTION, UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PLACE, MAINTAIN AND REMOVE TEMPORARY GRAVEL, AS NEEDED, PAID FOR AS "MAINTENANCE GRAVEL, LM"

ROADSIDE CLEARING

ANY MISCELLANEOUS CLEARING OF VEGETATION REQUIRED TO INSTALL THE PROPOSED ROADWAY CROSS SECTION WILL NOT BE PAID FOR SEPARETLY, BUT SHALL BE INCLUDED IN "STATION GRADING, MOD".

REFERENCE NOTE

FOR DETAILS & NOTES SEE OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARD DETAIL SHEET.

THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENT CONTROL ACT

REMOVAL LEGEND

- INDICATES AREAS OF EX. PAVEMENT TO BE REMOVED
- INDICATES AREAS OF EX. PAVEMENT TO BE MILLED

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- EXISTING SANITARY SEWER
- EXISTING SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- EXISTING UTILITY TO BE REMOVED
- EXISTING UTILITY TO BE ABANDONED
- CONSTRUCTION FENCING

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SEAL

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PROJECT
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PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Overall Site Demolition Plan

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'
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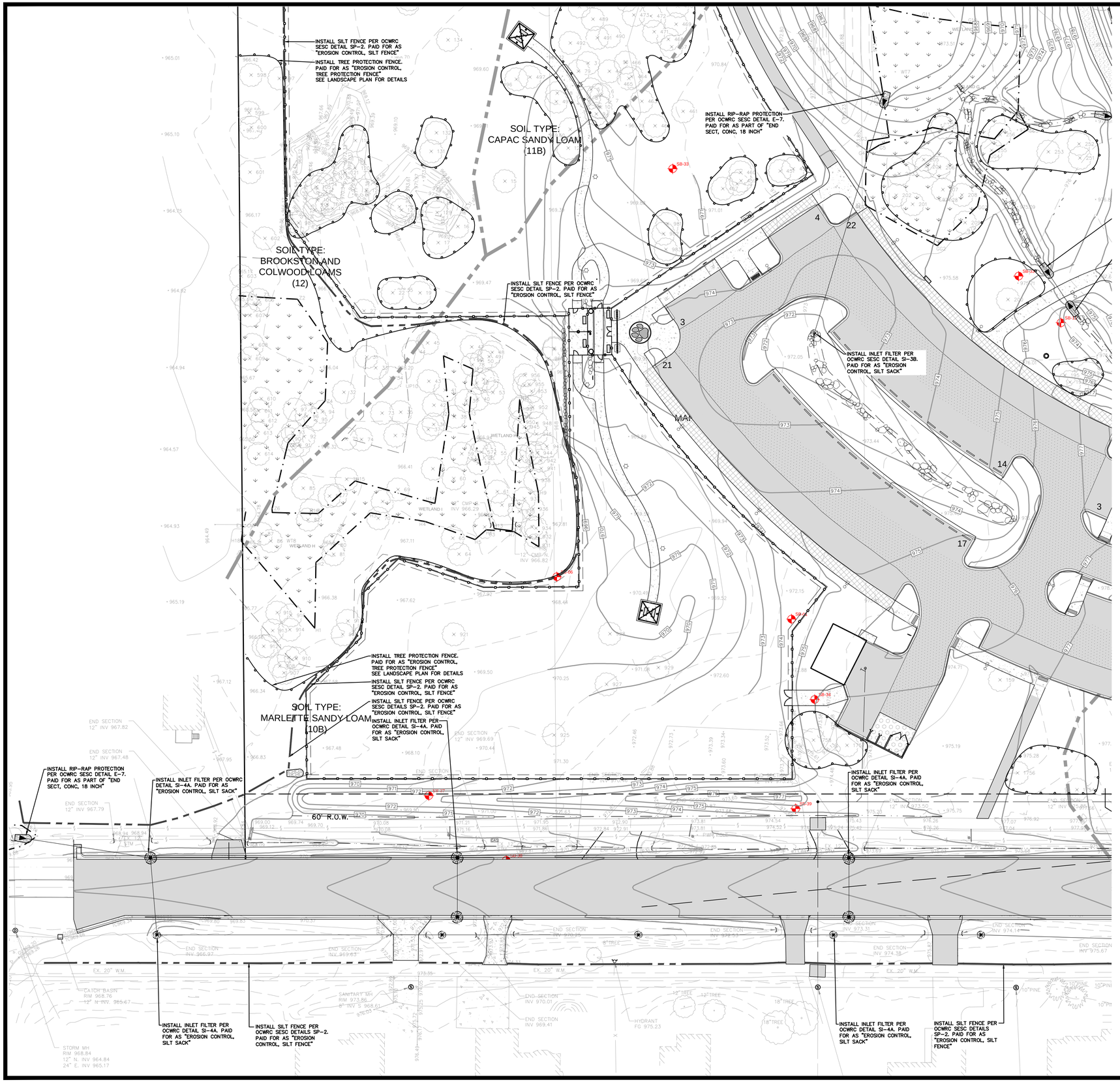
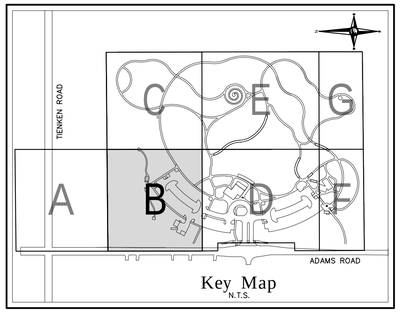
NFE JOB NO. O557
sheet no. C2.1





Key Map
N.T.S.

NOTES

A DISTANCE OF APPROXIMATELY 250 FT TO THE NEAREST BODY OF WATER: BRANCH OF SARGENT CREEK.

THE TOTAL AREA OF EARTH DISRUPTION IS ±34.58 ACRES.

THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR.

A SOIL EROSION PERMIT IS REQUIRED FROM THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER.

SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
BROOKSTON AND COLWOOD LOAMS (12), 6.4%
FOX SANDY LOAM (18B), TILL PLAIN, 2 TO 6 PERCENT SLOPES, 7.9%

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, OAKLAND COUNTY, MICHIGAN (MI125), SURVEY AREA: VERSION 23, AUG 27, 2024, TABULAR: VERSION 23, AUG 27, 2024, SPATIAL: VERSION 14, AUG 29, 2022.

REFERENCE NOTE

FOR DETAILS & NOTES SEE OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARD DETAIL SHEET.

THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENT CONTROL ACT

LEGEND

- INDICATES LIMITS OF SILT FABRIC FENCE
- INDICATES LIMITS OF DRAINAGE DISTRICT AREA
- INDICATES LIMITS OF SOIL DISRUPTION
- INDICATES LOW POINT INLET FILTER ON PROPOSED DRAINAGE STRUCTURE
- INDICATES SILT SACK ON EXISTING DRAINAGE STRUCTURE
- AREA A 0.00 ACRE C=0.95 — INDICATES DRAINAGE DISTRICT AREA

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SHEET
Soil Erosion &
Sedimentation Control
Plan - Part B

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DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'

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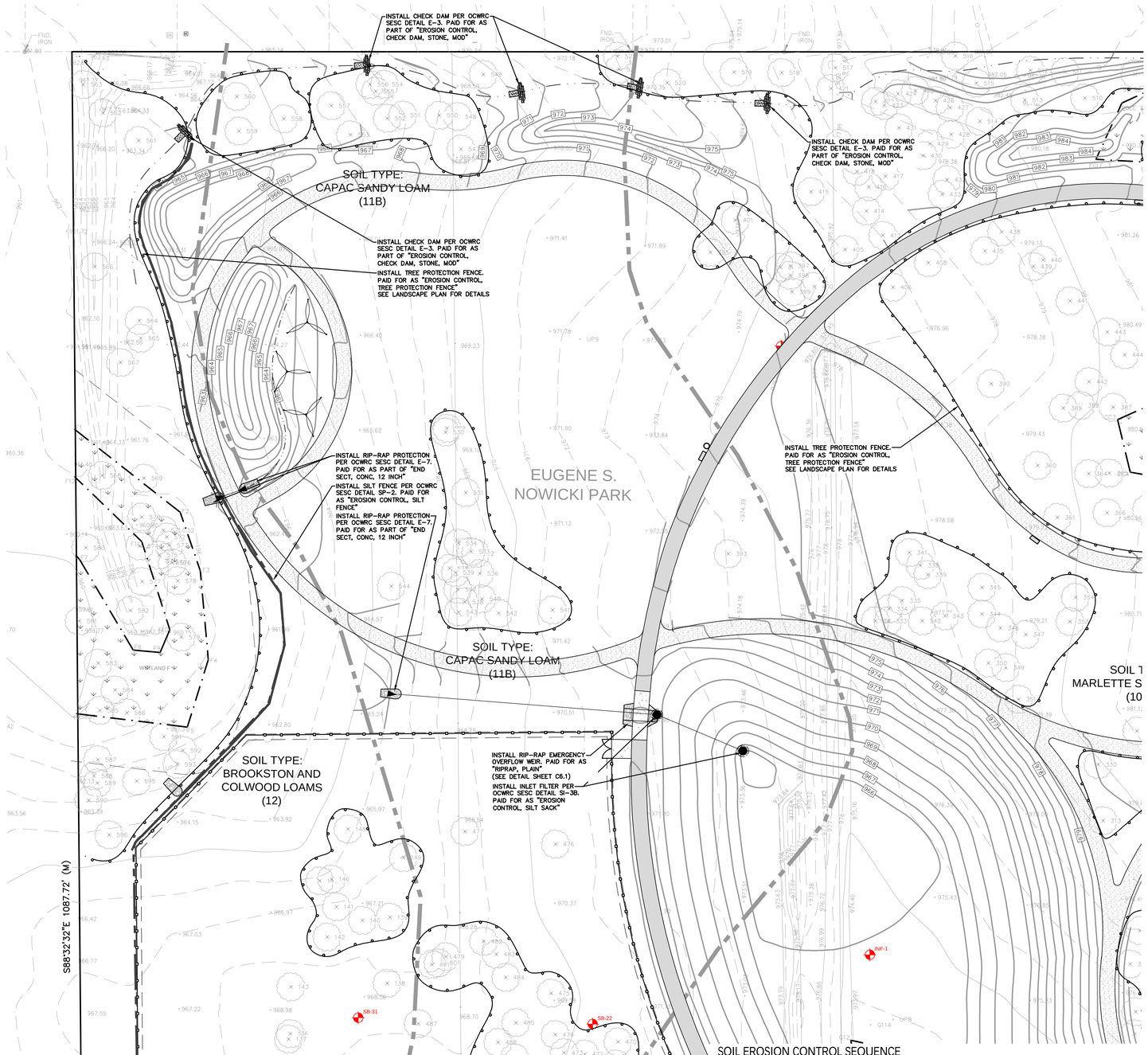
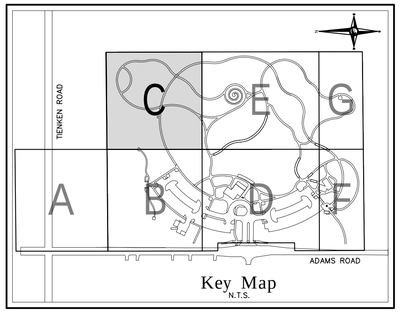
NFE JOB NO. O557
sheet no. C2.2





SOIL EROSION CONTROL SEQUENCE

CONSTRUCTION EVENTS	2026 APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	2027 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1. INSTALL SILT FABRIC FENCING AND TEMP. CONSTRUCTION ACCESS PER PLAN.																		
2. CONDUCT DEMOLITION AND SITE CLEARING AS REQUIRED PER PLAN.																		
3. STRIP AND STOCK PILE OR REMOVE TOPSOIL PER PLAN																		
4. COMMENCE MASS GRADING OF SITE.																		
5. INSTALL DETENTION & SEDIMENTATION BASINS IF REQUIRED PER PLAN AND SOD.																		
6. COMMENCE UNDERGROUND UTILITIY INSTALLATIONS.																		
7. INSTALL INLET FILTERS ON PROPOSED DRAINAGE INLET STRUCTURES PER PLAN.																		
8. FILL IN TEMPORARY SEDIMENTATION TRAPS AND PAVE SITE (LEVELING COURSE).																		
9. COMPLETE ALL BUILDING CONSTRUCTION.																		
10. COMPLETE ALL PAVING (WEARING COURSE)																		
11. COMPLETE ALL LANDSCAPE ACTIVITY AND SITE RESTORATION.																		
12. JET VAC NEW STORM SEWER SYSTEM AS REQUIRED.																		
13. REMOVE ALL TEMPORARY SOIL EROSION MEASURES.																		

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SHEET
Soil Erosion & Sedimentation Control Plan - Part C

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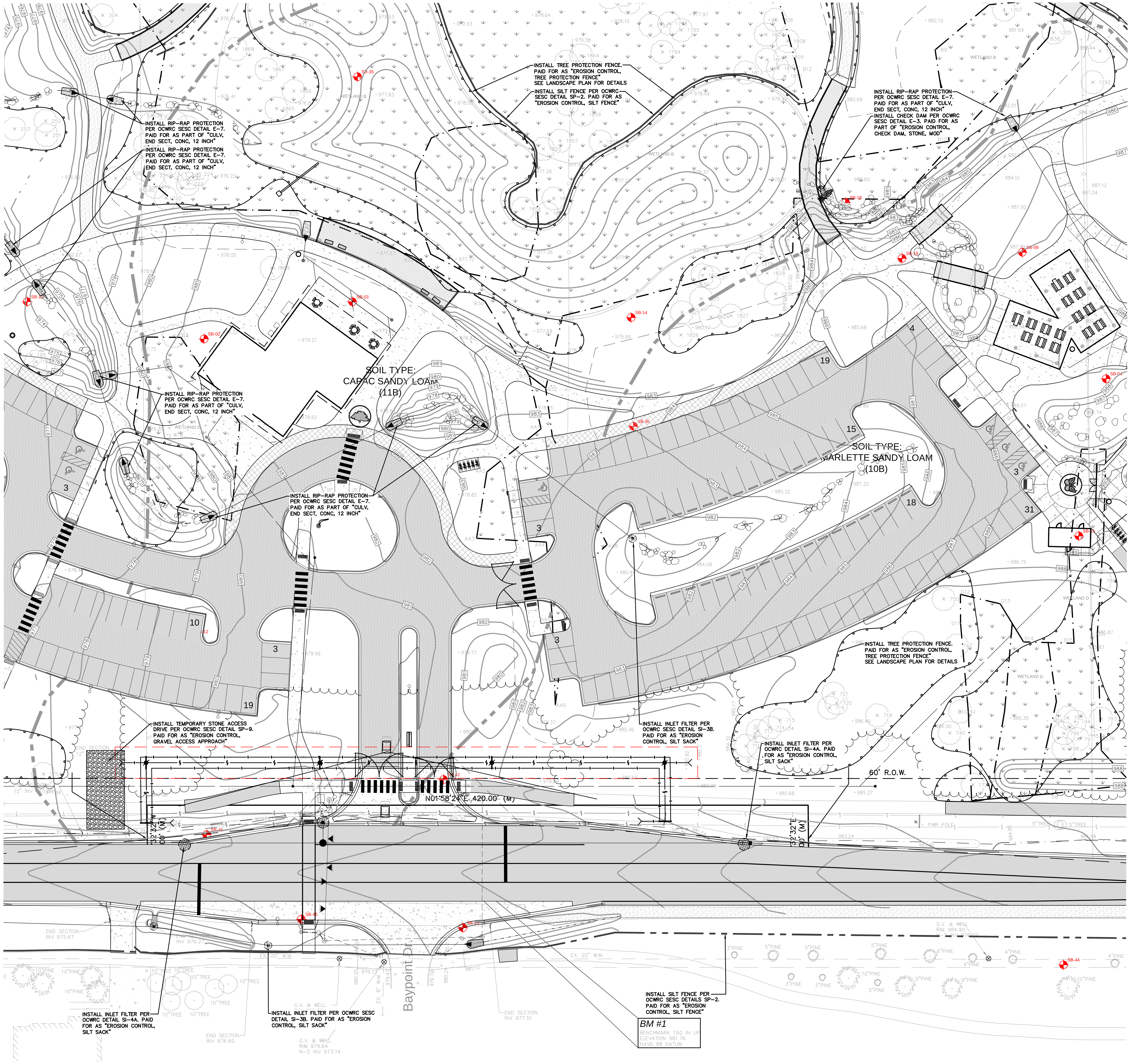
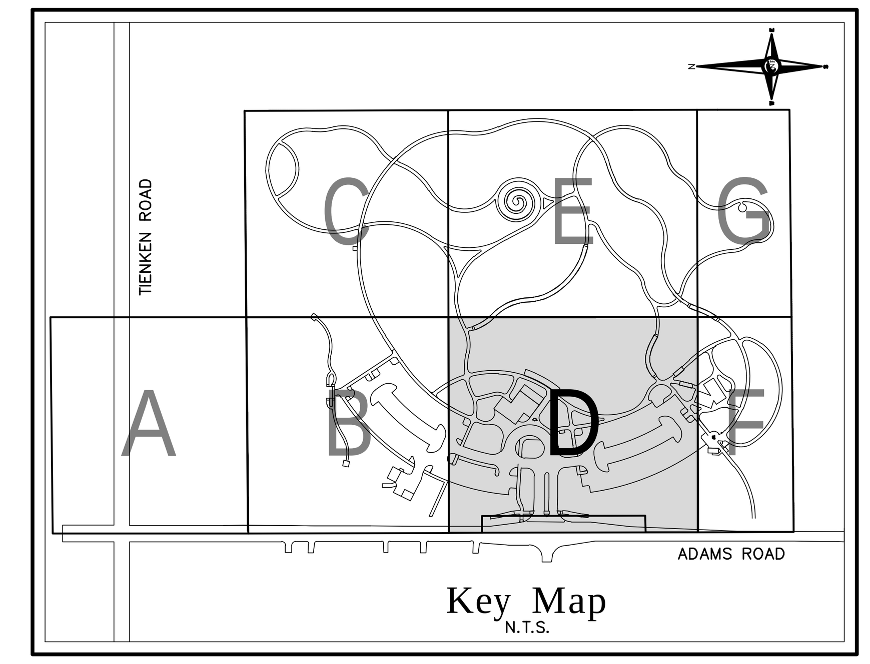
sheet no. C2.3





NOTES

A DISTANCE OF APPROXIMATELY 250 FT TO THE NEAREST BODY OF WATER: BRANCH OF SARGENT CREEK.

THE TOTAL AREA OF EARTH DISRUPTION IS ±34.58 ACRES.

THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR.

A SOIL EROSION PERMIT IS REQUIRED FROM THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER.

SOIL DATA

MARLETTE SANDY LOAM (10B), 1 TO 6 PERCENT SLOPES, 54.3%
CAPAC SANDY LOAM (11B), 0 TO 4 PERCENT SLOPES, 31.4%
BROOKSTON AND COLWOOD LOAMS (12), 6.4%
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BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE, OAKLAND COUNTY, MICHIGAN (MI125), SURVEY AREA: VERSION 23, AUG 27, 2024, TABULAR: VERSION 23, AUG 27, 2024, SPATIAL: VERSION 14, AUG 29, 2022.

REFERENCE NOTE

FOR DETAILS & NOTES SEE OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARD DETAIL SHEET.

THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENT CONTROL ACT

LEGEND

INDICATES LIMITS OF SILT FABRIC FENCE
INDICATES LIMITS OF DRAINAGE DISTRICT AREA
INDICATES LIMITS OF SOIL DISRUPTION
INDICATES LOW POINT INLET FILTER ON PROPOSED DRAINAGE STRUCTURE
INDICATES SILT SACK ON EXISTING DRAINAGE STRUCTURE
AREA A 0.00 ACRE C=0.95 — INDICATES DRAINAGE DISTRICT AREA

ROCHESTER HILLS MICHIGAN

NF ENGINEERS
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Land Planners

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46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
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WWW.NOWAKFRAUS.COM

SEAL
STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER NO. 6201050492
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

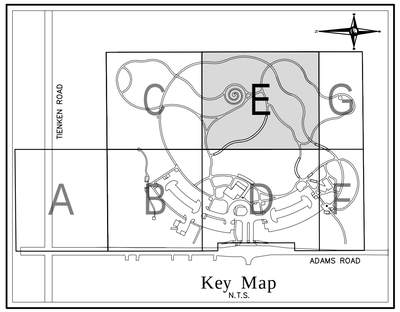
SHEET
Soil Erosion &
Sedimentation Control
Plan - Part D

811
Know what's below
Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C2.4



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SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
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Site Improvements

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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
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Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Soil Erosion & Sedimentation Control Plan - Part E

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'
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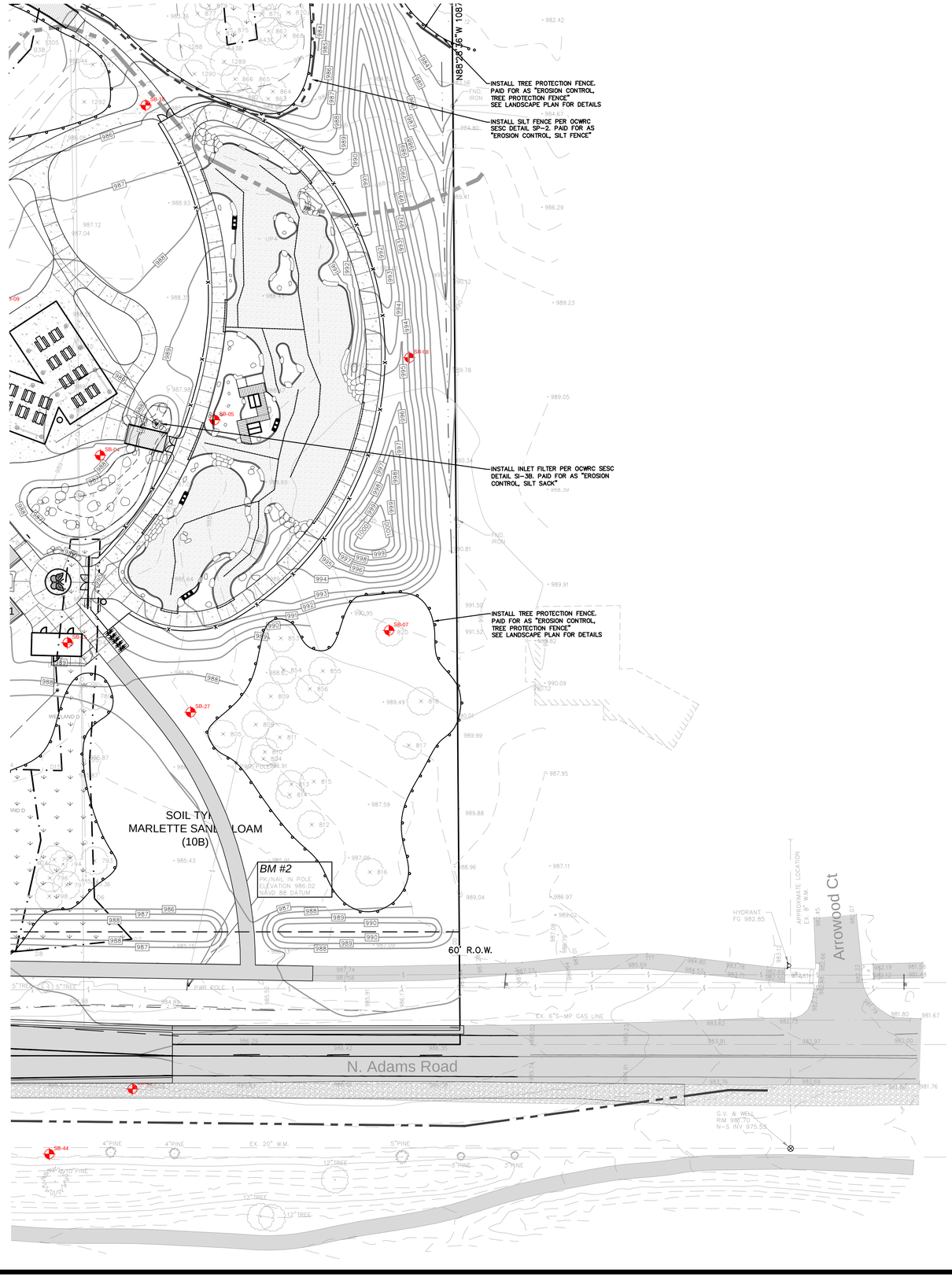
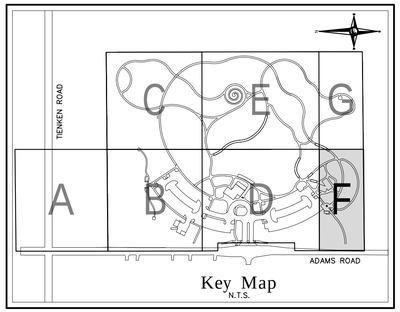
NFE JOB NO. O557
sheet no. C2.5





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CONTACT
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Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Soil Erosion & Sedimentation Control Plan - Part F

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'
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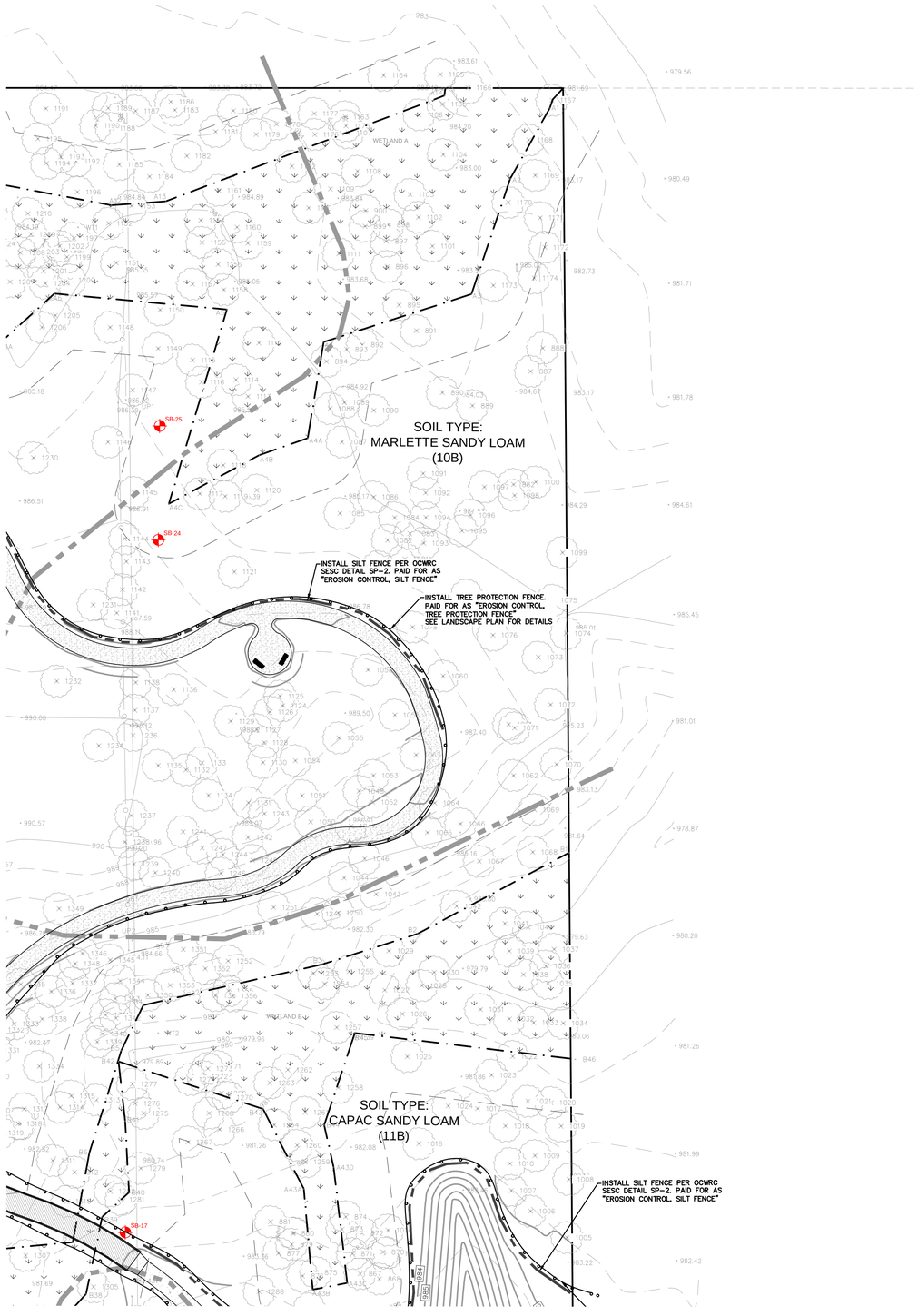
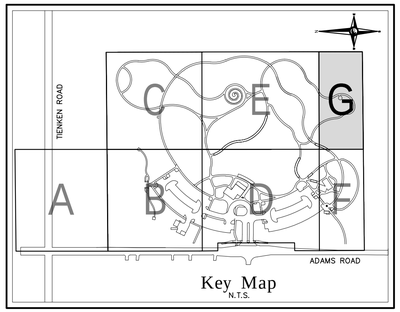
NFE JOB NO. O557
sheet no. C2.6





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SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
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PROJECT
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Parks & Natural Resources
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Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Soil Erosion &
Sedimentation Control
Plan - Part G

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: P. Kotrba
APPROVED BY: S. Sutton
DATE: 2025-05-01
SCALE: 1" = 30'

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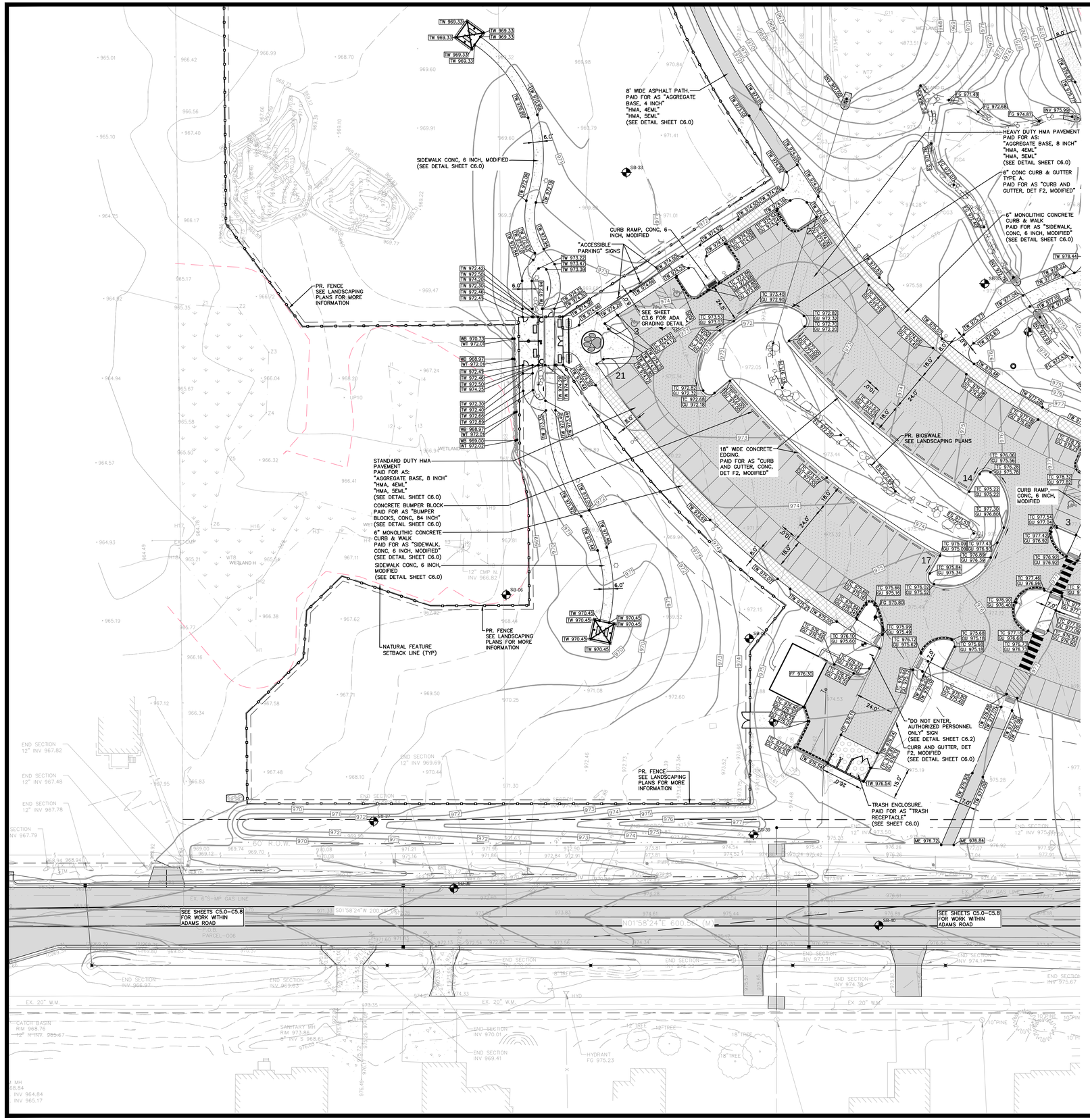
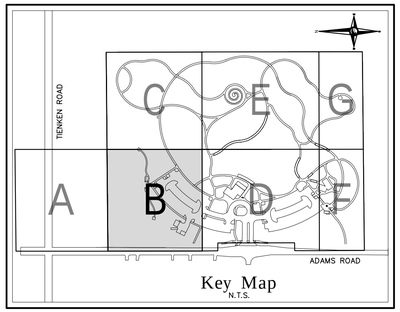
NFE JOB NO. O557
sheet no. C2.7





NOTES

1. ALL SIGNAGE AND PAVEMENT MARKINGS WITHIN THE PARK BOUNDARIES TO BE INCLUDED IN "PAVEMENT MARKING / SIGNAGE – PARK" PAY ITEM.

CURB & GUTTER LEGEND

- PROPOSED CURB TYPE "B"

PAVING LEGEND

- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 6" MONOLITHIC CONCRETE CURB & PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- PROPOSED 4" HMA PAVEMENT (PATHWAY)
- PROPOSED STANDARD DUTY HMA PAVEMENT (PARKING)
- PROPOSED HEAVY DUTY HMA PAVEMENT (MAIN DRIVES)
- PROPOSED AGGREGATE PATHWAY

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O.
- INLET
- C.B.
- TC 600.00 — PR. TOP OF CURB ELEVATION
- GU 600.00 — PR. GUTTER ELEVATION
- TW 600.00 — PR. TOP OF WALK ELEVATION
- TP 600.00 — PR. TOP OF PVMT. ELEVATION
- FG 600.00 — FINISH GRADE ELEVATION
- WT 600.00 / WB 600.00 — WALL TOP/BOTTOM ELEVATION
- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATERMAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE

ALL PUBLIC CONCRETE AND ASPHALT PATHWAYS SHALL NOT EXCEED 5% SLOPE AND 2% CROSS SLOPE PER A117.1–2017, SECTION 403.3

ROCHESTER HILLS
MICHIGAN

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Parks & Natural Resources
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Rochester Hills, MI 48309

CONTACT
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elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Paving & Grading Plan - Part B

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
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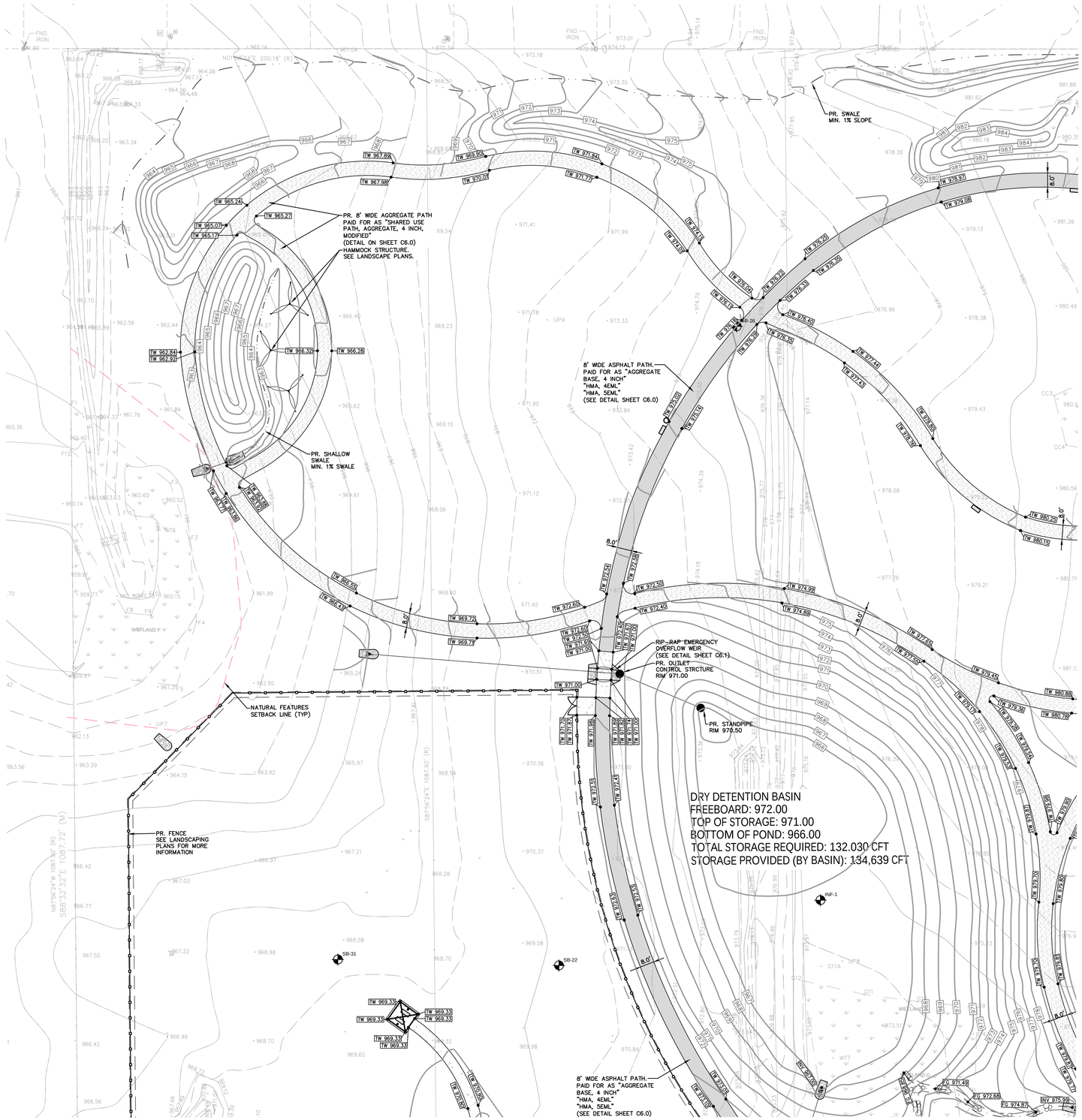
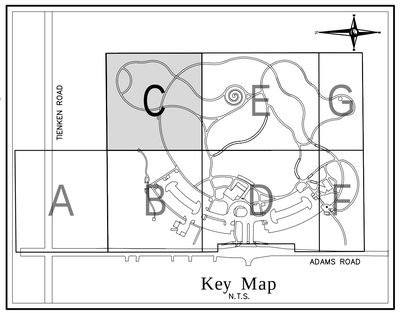
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C3.0





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LEGEND

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- MANHOLE CATCH BASIN
- UTILITY POLE
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- GUY WIRE
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PROJECT LOCATION
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City of Rochester Hills,
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SHEET
Paving & Grading Plan - Part C

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DATE	ISSUED / REVISED
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DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C3.1

PROPOSED CONSTRUCTED POND
FREEBOARD ELEV. 978.90
TOP STORAGE ELEV. 977.00
BOTTOM ELEV. 973.00

HEAVY DUTY HMA PAVEMENT PAID FOR AS: "AGGREGATE BASE, 8 INCH" "HMA, 4EML" "HMA, 5EML" (SEE DETAIL SHEET C6.0)

6" CONC CURB & GUTTER TYPE A. PAID FOR AS "CURB AND GUTTER, DET F2, MODIFIED"

6" MONOLITHIC CONCRETE CURB & WALK PAID FOR AS "SIDEWALK, CONC, 6 INCH, MODIFIED" (SEE DETAIL SHEET C6.0)

SIDEWALK CONC, 6 INCH, MODIFIED (SEE DETAIL SHEET C6.0)

PRESSURE TREATED WOOD BOARDWALK & RAILING, 16 FOOT WIDE. SEE LANDSCAPING PLANS

PR. SERVICE BUILDING FF 981.85

CURB RAMP, CONC, 6 INCH, MODIFIED

PR. BIOSWALE SEE LANDSCAPING PLANS

CURB RAMP, CONC, 6 INCH, MODIFIED

"ACCESSIBLE PARKING" SIGNS

DRAINAGE SWALE

CITY OF ROCHESTER HILLS FIRE LANE SIGNS (BOTH SIDE OF FIRE LANE)

6" MONOLITHIC CONCRETE CURB & WALK PAID FOR AS "SIDEWALK, CONC, 6 INCH, MODIFIED" (SEE DETAIL SHEET C6.0)

CURB AND GUTTER, DET F2, MODIFIED

6" CONC CURB & GUTTER TYPE A. PAID FOR AS "CURB AND GUTTER, DET F2, MODIFIED"

6" CONC CURB & GUTTER TYPE B. PAID FOR AS "CURB AND GUTTER, DET F2, MODIFIED"

SIDEWALK CONC, 6 INCH, MODIFIED (SEE DETAIL SHEET C6.0)

PRESSURE TREATED WOOD BOARDWALK & RAILING, 10 FOOT WIDE (SEE LANDSCAPING PLANS)

PROPAVILION

"ACCESSIBLE PARKING" SIGNS

SEE SHEET C3.6 FOR ADA GRADING DETAIL

CURB RAMP, CONC, 6 INCH, MODIFIED

PR. BATHROOM BUILDING (SEE ARCHITECTURAL)

PR. BIOSWALE SEE LANDSCAPING PLANS

STANDARD DUTY HMA PAVEMENT PAID FOR AS: "AGGREGATE BASE, 8 INCH" "HMA, 4EML" "HMA, 5EML" (SEE DETAIL SHEET C6.0)

HEAVY DUTY HMA PAVEMENT PAID FOR AS: "AGGREGATE BASE, 8 INCH" "HMA, 4EML" "HMA, 5EML" (SEE DETAIL SHEET C6.0)

6" CONC CURB & GUTTER TYPE A. PAID FOR AS "CURB AND GUTTER, DET F2, MODIFIED"

"CONCRETE BUMPER BLOCK PAID FOR AS "BUMPER BLOCKS, CONC, 84 INCH" (SEE DETAIL SHEET C6.0)

CONTRACTOR TO EVALUATE CONDITION OF SOILS WITHIN WETLAND AND DETERMINE IF SOIL ARE SUITABLE TO SUPPORT PR. SANITARY SERVICE. CONTRACTOR TO NOTIFY ENGINEER IF UNSUITABLE SOILS ARE ENCOUNTERED.

18" WIDE CONCRETE EDGING. PAID FOR AS "CURB AND GUTTER, CONC, DET F2, MODIFIED"

6" CONC CURB & GUTTER TYPE A. PAID FOR AS "CURB AND GUTTER, DET F2, MODIFIED"

8' WIDE ASPHALT PATH. PAID FOR AS "AGGREGATE BASE, 4 INCH" "HMA, 4EML" "HMA, 5EML" (SEE DETAIL SHEET C6.0)

CITY OF ROCHESTER HILLS FIRE LANE SIGNS (BOTH SIDE OF FIRE LANE)

SEE SHEETS C5.0–C5.8 FOR WORK WITHIN ADAMS ROAD

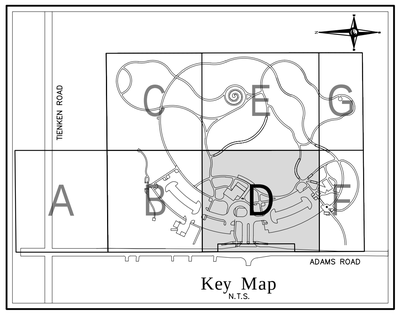
SEE SHEETS C5.0–C5.8 FOR WORK WITHIN ADAMS ROAD

SIDEWALK R.O.W. 10'

ADAMS ROAD R.O.W.

EX. 20" W.M.

EX. 8" W.M.



Key Map
N.T.S.

NOTES

1. ALL SIGNAGE AND PAVEMENT MARKINGS WITHIN THE PARK BOUNDARIES TO BE INCLUDED IN "PAVEMENT MARKING / SIGNAGE – PARK" PAY ITEM.

CURB & GUTTER LEGEND

PROPOSED CURB TYPE "B"

PAVING LEGEND

- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 6" MONOLITHIC CONCRETE CURB & PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- PROPOSED 4" HMA PAVEMENT (PATHWAY)
- PROPOSED STANDARD DUTY HMA PAVEMENT (PARKING)
- PROPOSED HEAVY DUTY HMA PAVEMENT (MAIN DRIVES)
- PROPOSED AGGREGATE PATHWAY

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O. MANHOLE
- INLET
- C.B. MANHOLE
- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATERMAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE
- TC 600.00 — PR. TOP OF CURB ELEVATION
- GU 600.00 — PR. GUTTER ELEVATION
- TW 600.00 — PR. TOP OF WALK ELEVATION
- TP 600.00 — PR. TOP OF PVMT. ELEVATION
- FG 600.00 — FINISH GRADE ELEVATION
- WT 600.00 / WB 600.00 — WALL TOP/BOTTOM ELEVATION

ALL PUBLIC CONCRETE AND ASPHALT PATHWAYS SHALL NOT EXCEED 5% SLOPE AND 2% CROSS SLOPE PER A117.1–2017, SECTION 403.3

ROCHESTER HILLS
MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

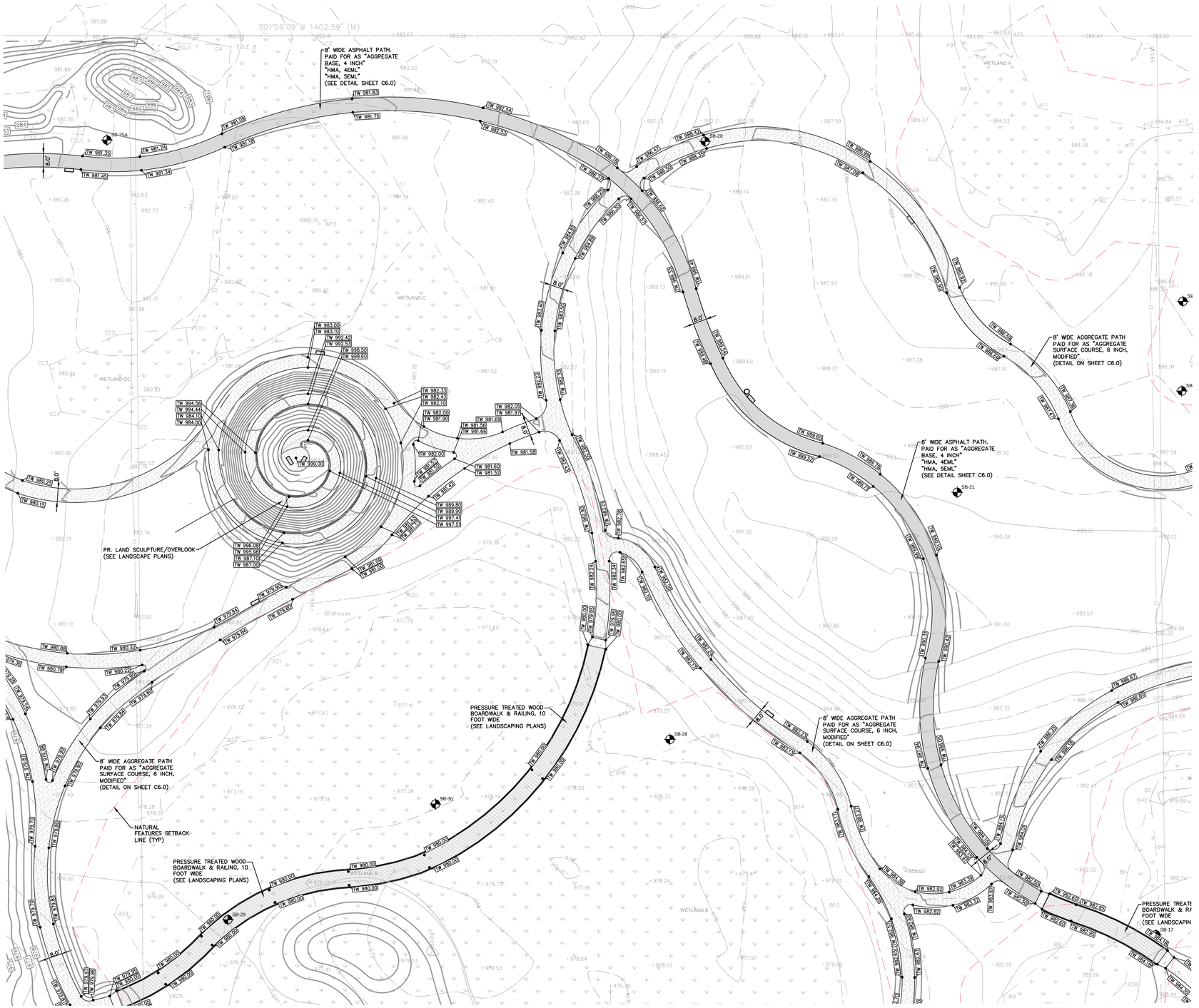
SHEET
Paving & Grading Plan - Part D

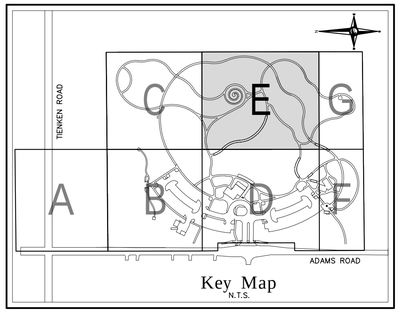
Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C3.2





Key Map
N.T.S.

NOTES

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CURB & GUTTER LEGEND

PROPOSED CURB TYPE "B"

PAVING LEGEND

- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 6" MONOLITHIC CONCRETE CURB & PAVEMENT
- PROPOSED 8" CONCRETE PAVEMENT
- PROPOSED 4" HMA PAVEMENT (PATHWAY)
- PROPOSED STANDARD DUTY HMA PAVEMENT (PARKING)
- PROPOSED HEAVY DUTY HMA PAVEMENT (MAIN DRIVES)
- PROPOSED AGGREGATE PATHWAY

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE
- CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O.
- MANHOLE
- HYDRANT
- GATE VALVE
- INLET
- C.B.
- MANHOLE
- TC 600.00
- GU 600.00
- TW 600.00
- TP 600.00
- FG 600.00
- WT 600.00
- WB 600.00

EXISTING SANITARY SEWER
SAN. CLEAN OUT
EXISTING WATERMAIN
EXISTING STORM SEWER
EX. R. Y. CATCH BASIN
EXISTING BURIED CABLES
OVERHEAD LINES
LIGHT POLE
SIGN
EXISTING GAS MAIN
PR. SANITARY SEWER
PR. WATER MAIN
PR. STORM SEWER
PR. R. Y. CATCH BASIN
PROPOSED LIGHT POLE
PR. TOP OF CURB ELEVATION
PR. GUTTER ELEVATION
PR. TOP OF WALK ELEVATION
PR. TOP OF PVMT. ELEVATION
FINISH GRADE ELEVATION
WALL TOP/BOTTOM ELEVATION

ALL PUBLIC CONCRETE AND ASPHALT PATHWAYS SHALL NOT EXCEED 5% SLOPE AND 2% CROSS SLOPE PER A117.1–2017, SECTION 403.3

ROCHESTER HILLS
MICHIGAN

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PONTIAC, MI 48342-5032
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SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Paving & Grading Plan - Part E

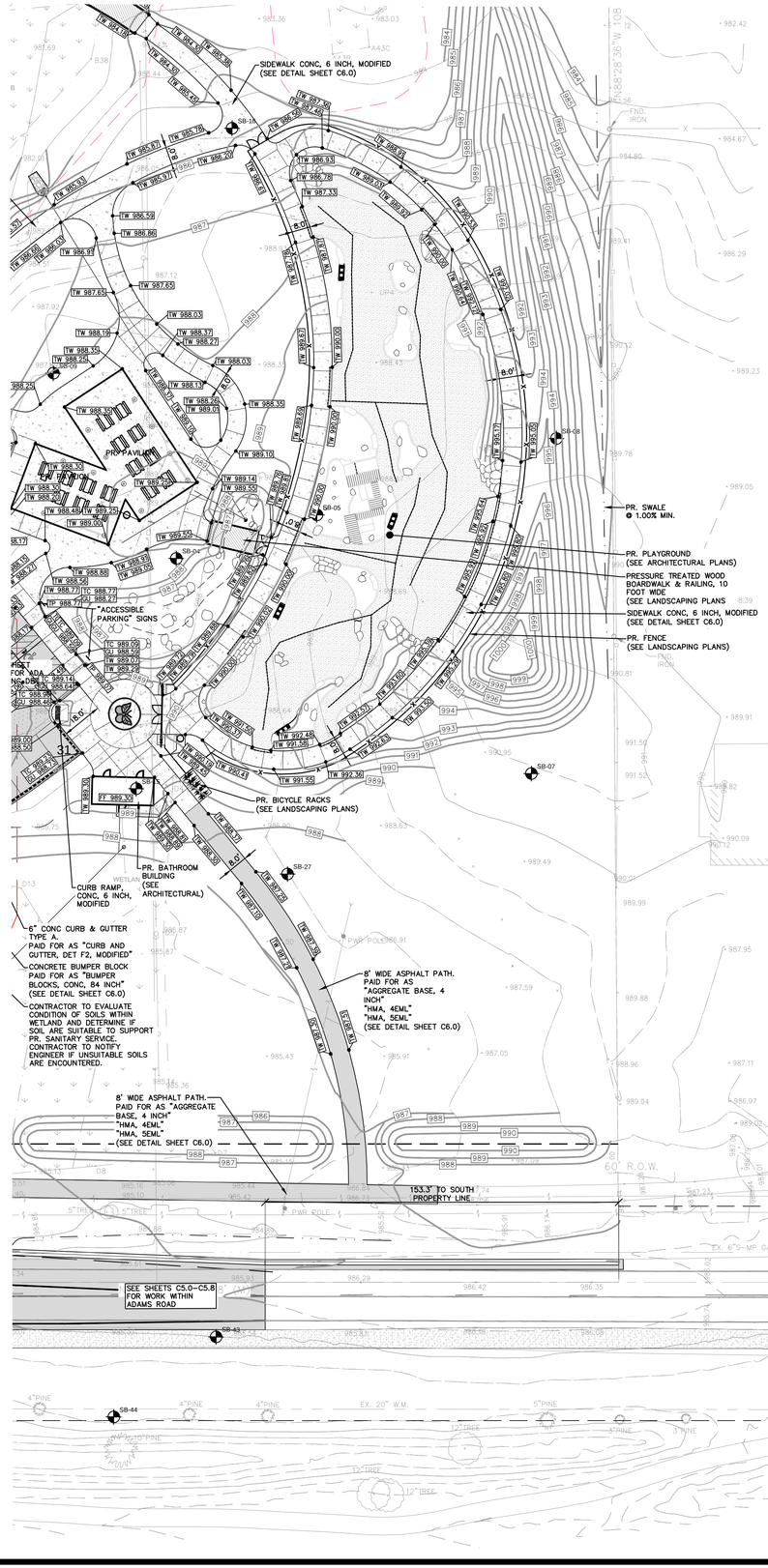
811
Know what's below
Call before you dig.

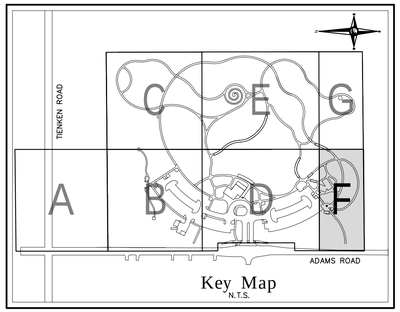
DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C3.3





Key Map
N.T.S.

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- PROPOSED HEAVY DUTY HMA PAVEMENT (MAIN DRIVES)
- PROPOSED AGGREGATE PATHWAY

LEGEND

- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATERMAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
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ROCHESTER HILLS
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FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Paving & Grading Plan - Part F

811
Know what's below
Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY:
E. Oshaben

DESIGNED BY:
E. Oshaben

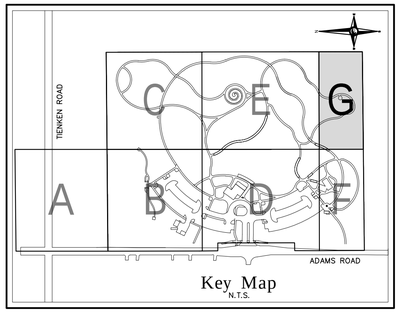
APPROVED BY:
P. Kotrba

DATE:
2025-05-01

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO.
O557

sheet no.
C3.4



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- PROPOSED AGGREGATE PATHWAY

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O.
- INLET
- C.B.
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- SAN. CLEAN OUT
- EXISTING WATERMAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE

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ROCHESTER HILLS MICHIGAN

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PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
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SEAL

STATE OF MICHIGAN — STEVEN W. SUTTON — ENGINEER NO. 6201050492 — PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Paving & Grading Plan - Part G

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'

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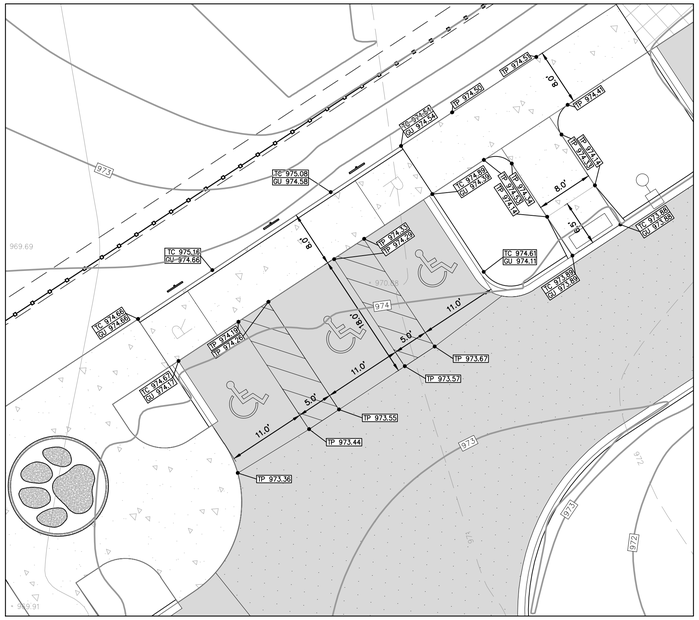
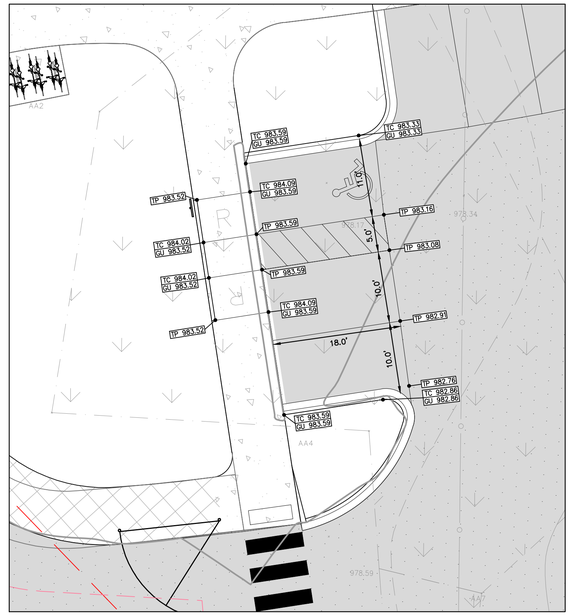
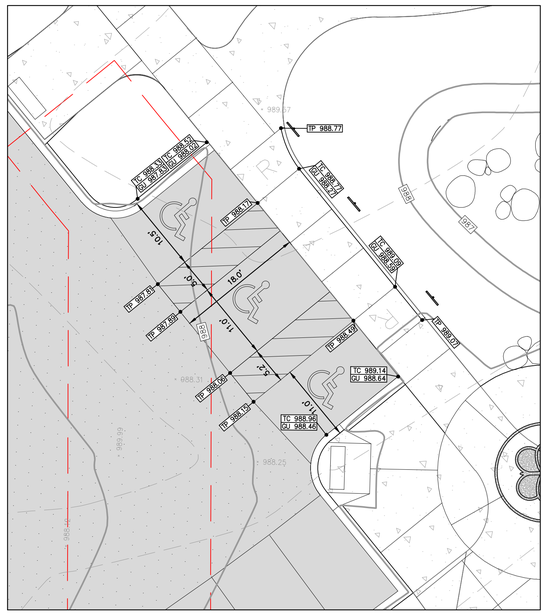
NFE JOB NO. O557
sheet no. C3.5







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SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
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City of Rochester Hills
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Rochester Hills, MI 48309

CONTACT
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PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Grading Detail

811
Know what's below
Call before you dig.

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2026-02-04	BID DOCUMENTS

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E. Oshaben

DESIGNED BY:
E. Oshaben

APPROVED BY:
P. Kotrba

DATE:
2025-05-01

SCALE: 1" = 10'

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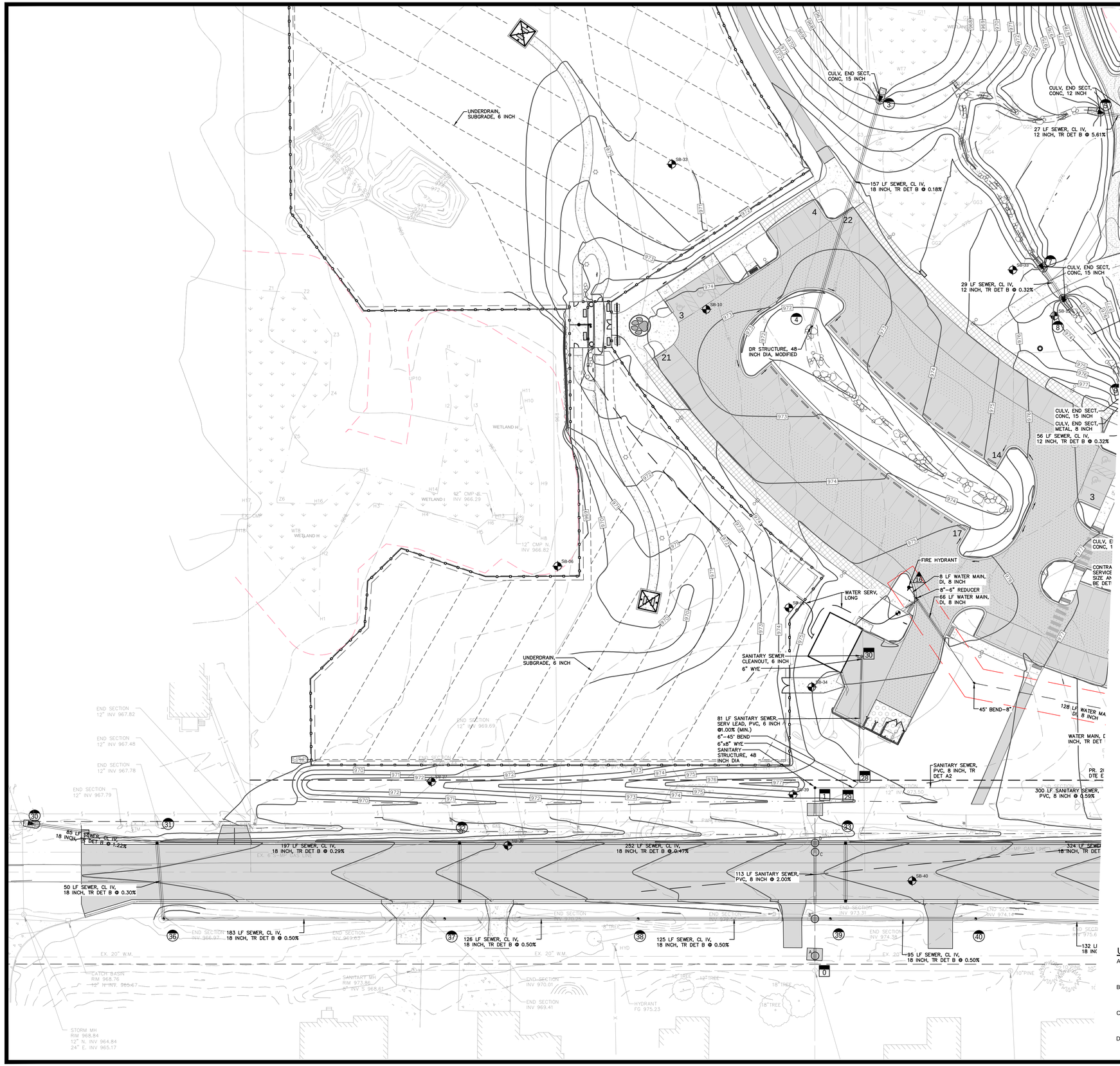
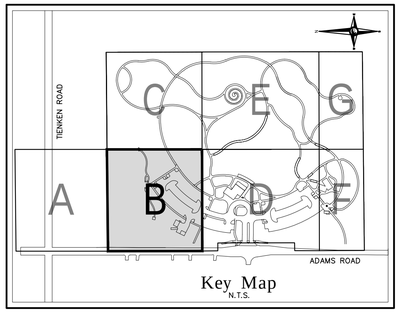
NFE JOB NO.
O557

sheet no.
C3.6





Water Main Hydrant Schedule	
Structure Name	Structure Details
#16 FIRE HYDRANT	FG 969.83

Sanitary Structure Schedule	
Structure Name	Structure Details
#1 4' DIA. MH EJ 1040 FRAME TYPE "A" SOLID COVER	PR. RIM 975.69 PR. 8" S. INV. 969.92 PR. 8" W. INV. 969.82
#30 6" CLEANOUT	PR. RIM 973.29 PR. 6" W. INV. 972.74

Storm Drainage Structure Schedule	
Structure Name	Structure Details
#3 END SECTION W/ RIPRAP PROTECTION	PR. 18" W. INV. 967.00
#5 END SECTION W/ RIPRAP PROTECTION	PR. 12" S. INV. 976.00
#7 END SECTION W/ RIPRAP PROTECTION	PR. 12" SW. INV. 972.76
#8 END SECTION W/ RIPRAP PROTECTION	PR. 12" NE. INV. 972.85
#30 END SECTION W/ RIPRAP PROTECTION	PR. 18" S. INV. 963.75

Storm Drainage Structure Schedule	
Structure Name	Structure Details
#4 4' DIA. LOWHEAD R.Y.C.B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 971.25 PR. 18" E. INV. 967.28
#31 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 969.33 PR. 18" S. INV. 964.79 PR. 18" W. INV. 964.79 PR. 18" N. INV. 964.79
#32 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 971.77 PR. 18" S. INV. 965.36 PR. 18" W. INV. 965.36 PR. 18" N. INV. 965.36
#32A 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 971.63 PR. 18" E. INV. 965.49
#33 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 975.50 PR. 18" S. INV. 966.54 PR. 18" W. INV. 966.54 PR. 18" N. INV. 966.54
#33A 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 975.46 PR. 18" E. INV. 966.68
#36 4' DIA. LOWHEAD R.Y.C.B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 968.21 PR. 18" S. INV. 964.94 PR. 18" E. INV. 964.94
#37 4' DIA. LOWHEAD R.Y.C.B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 969.96 PR. 18" S. INV. 965.85 PR. 18" N. INV. 965.85
#39 4' DIA. LOWHEAD R.Y.C.B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 972.49 PR. 18" S. INV. 967.11 PR. 18" N. INV. 967.11
#40 4' DIA. LOWHEAD R.Y.C.B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 973.40 PR. 18" S. INV. 967.59 PR. 18" N. INV. 967.59

UTILITY CROSSING SCHEDULE

A — PR. 8" SAN B/P 967.56
EX. 20" WM T/P V.I.F.
VERTICAL CLEARANCE:

B — PR. 12" STM B/P 970.24
PR. 8" SAN T/P 968.83
VERTICAL CLEARANCE: 1.51

C — EX. 6" GAS LINE B/P V.I.F.
PR. 8" SAN T/P 969.73
VERTICAL CLEARANCE:

D — PR. 8" SAN B/P 969.10
PR. 12" STM T/P 967.60
VERTICAL CLEARANCE: 1.50'

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O. MANHOLE
- HYDRANT
- GATE VALVE
- INLET
- C.B. MANHOLE
- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- EXISTING WATER MAIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- PR. SANITARY SEWER
- PR. WATER MAIN
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

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MICHIGAN

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PROJECT LOCATION
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Section 8
T-3-N , R-11-E
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Oakland County, Michigan

SHEET
Utility Plan - Part B

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DESIGNED BY:
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APPROVED BY:
P. Kotrba

DATE:
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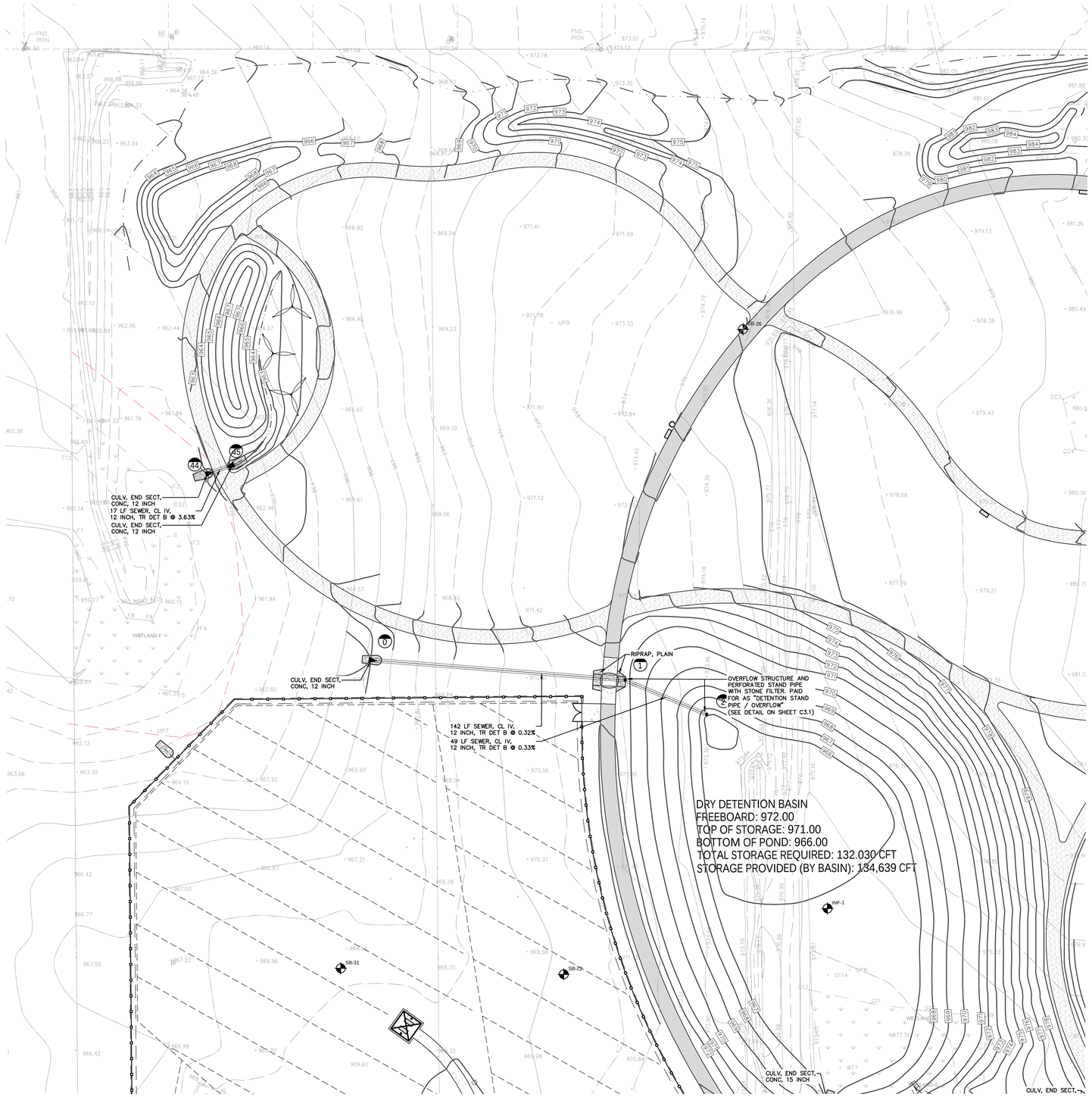
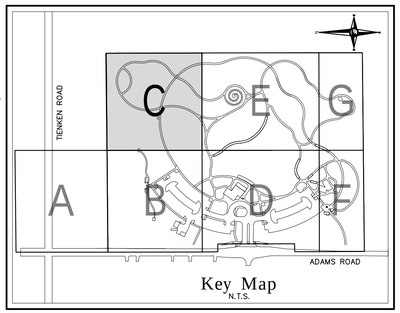
NFE JOB NO. O557
sheet no. C4.0





Storm Drainage Structure Schedule

Structure Name	Structure Details
#0 END SECTION W/ RIPRAP PROTECTION	PR. 12" S. INV. 965.00
#44 END SECTION W/ RIPRAP PROTECTION	PR. 12" S. INV. 961.00
#45 END SECTION W/ RIPRAP PROTECTION	PR. 12" N. INV. 961.60

Storm Drainage Structure Schedule

Structure Name	Structure Details
#1 OVERFLOW STRUCTURE	PR. RIM 971.00 PR. 12" S. INV. 965.55 PR. 12" N. INV. 965.45
#2 OUTLET CONTROL STRUCTURE	PR. RIM 970.50 PR. 12" N. INV. 965.71

LEGEND

- MANHOLE — EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
- MANHOLE, CATCH BASIN — EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE, GUY POLE, GUY WIRE — OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O., MANHOLE — PR. SANITARY SEWER
- HYDRANT, GATE VALVE — PR. WATER MAIN
- INLET, C.B., MANHOLE — PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE

ROCHESTER HILLS MICHIGAN

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civil Engineers
Land Surveyors
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PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN — STEVEN W. SUTTON — ENGINEER NO. 6201050492 — PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Utility Plan - Part C

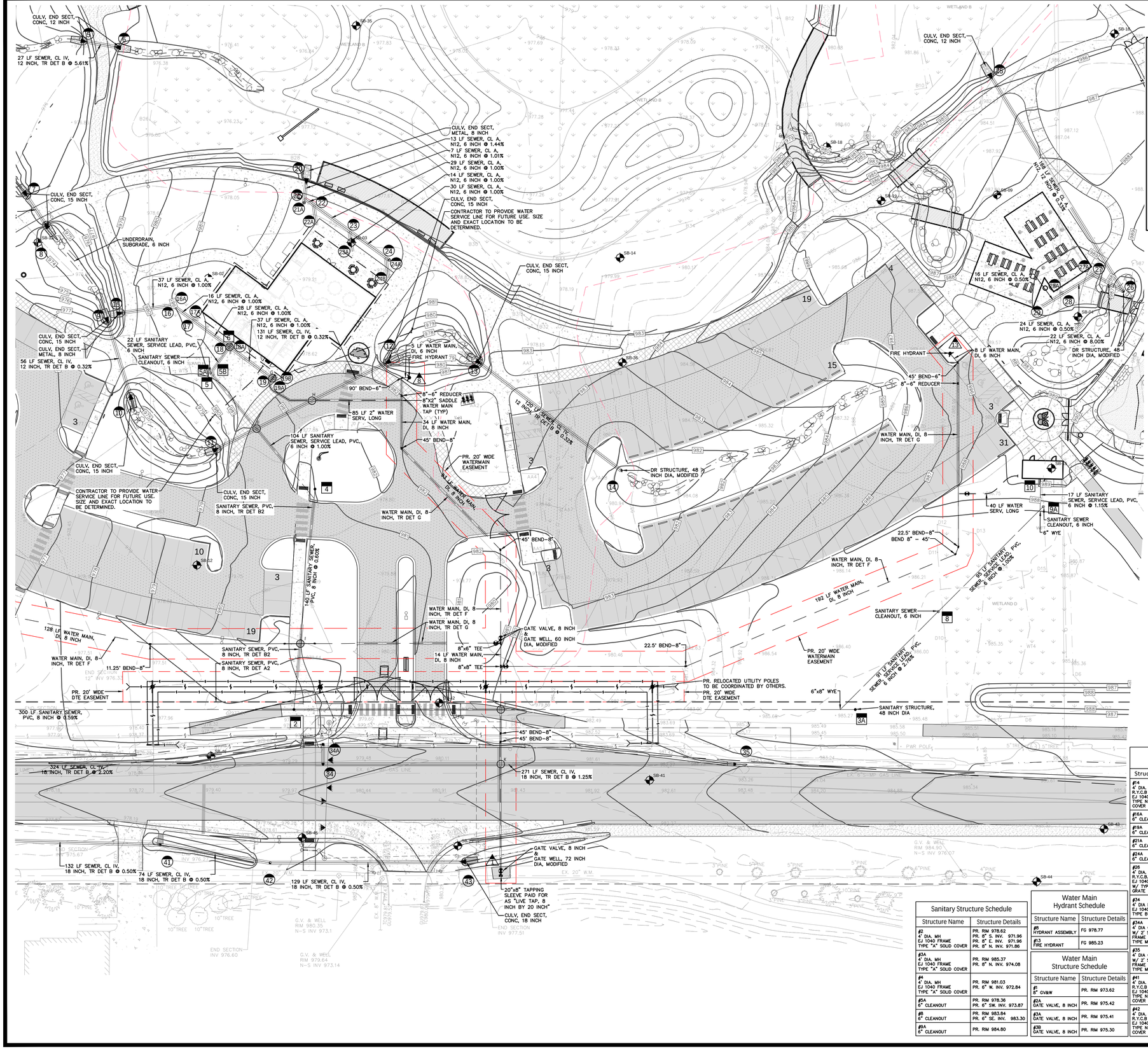
811 Know what's below Call before you dig.

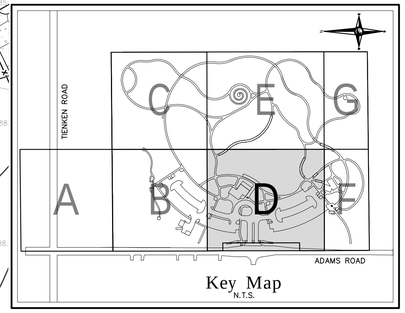
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C4.1





UTILITY CROSSING SCHEDULE

E	PR. 12" STM T/P 975.54 PR. 8" SAN T/P 973.89 VERTICAL CLEARANCE: 1.65'	I	PR. 8" WM B/P 974.47 PR. 8" SAN T/P 972.97 VERTICAL CLEARANCE: 1.50'
F	PR. 6" STM B/P 977.90 PR. 8" SAN T/P 976.40 VERTICAL CLEARANCE: 1.50'	J	PR. 8" WM B/P 975.42 PR. 8" SAN T/P 973.32 VERTICAL CLEARANCE: 2.10'
G	PR. 6" STM LINE B/P 978.22 PR. 2" WATER T/P 976.72 VERTICAL CLEARANCE: 1.50'	K	PR. 8" WM B/P 974.95 PR. 12" STM T/P 972.88 VERTICAL CLEARANCE: 2.07'
H	PR. 12" STM B/P 975.79 PR. 2" WATER T/P 974.29 VERTICAL CLEARANCE: 1.50'		

Storm Drainage Structure Schedule

Structure Name	Structure Details
#5 END SECTION W/ RIPRAP PROTECTION	PR. 12" S. INV. 976.00
#6 END SECTION W/ RIPRAP PROTECTION	PR. 12" N. INV. 977.50
#7 END SECTION W/ RIPRAP PROTECTION	PR. 12" SW. INV. 972.76
#8 END SECTION W/ RIPRAP PROTECTION	PR. 12" NE. INV. 972.85
#9 END SECTION W/ RIPRAP PROTECTION	PR. 12" W. INV. 973.61
#10 END SECTION W/ RIPRAP PROTECTION	PR. 12" E. INV. 973.79
#11 END SECTION W/ RIPRAP PROTECTION	PR. 12" SE. INV. 975.33
#12 END SECTION W/ RIPRAP PROTECTION	PR. 12" NW. INV. 975.75
#13 END SECTION W/ RIPRAP PROTECTION	PR. 12" SW. INV. 977.32
#15 END SECTION W/ RIPRAP PROTECTION	PR. 6" S. INV. 977.03
#16 6" WYE	PR. 6" SW. INV. 977.40 PR. 6" S. INV. 977.40 PR. 6" N. INV. 977.40
#17 6" WYE	PR. 6" SW. INV. 977.56 PR. 6" S. INV. 977.56 PR. 6" NE. INV. 977.56
#17A DOWNSPOUT CONNECT	PR. 6" N. INV. 977.60
#18 6" WYE	PR. 6" SW. INV. 977.84 PR. 6" S. INV. 977.84 PR. 6" NE. INV. 977.84
#18A DOWNSPOUT CONNECT	PR. 6" N. INV. 977.88
#19 6" WYE	PR. 6" SW. INV. 978.21 PR. 6" S. INV. 978.21 PR. 6" NE. INV. 978.21
#19B DOWNSPOUT CONNECT	PR. 6" N. INV. 978.25
#20 END SECTION W/ RIPRAP PROTECTION	PR. 6" W. INV. 977.87

Storm Drainage Structure Schedule

Structure Name	Structure Details
#21 6" WYE	PR. 6" SW. INV. 978.06 PR. 6" W. INV. 978.06 PR. 6" E. INV. 978.06
#22 6" WYE	PR. 6" SW. INV. 978.13 PR. 6" W. INV. 978.13 PR. 6" NE. INV. 978.13
#22A DOWNSPOUT CONNECT	PR. 6" E. INV. 978.26
#23 6" WYE	PR. 6" SW. INV. 978.42 PR. 6" W. INV. 978.42 PR. 6" NE. INV. 978.42
#23A DOWNSPOUT CONNECT	PR. 6" E. INV. 978.56
#24 6" WYE	PR. 6" SW. INV. 978.71 PR. 6" W. INV. 978.71 PR. 6" NE. INV. 978.71
#24B DOWNSPOUT CONNECT	PR. 6" E. INV. 978.85
#25 END SECTION W/ RIPRAP PROTECTION	PR. 12" SW. INV. 982.80
#27 6" WYE	PR. 6" NW. INV. 984.33 PR. 6" NE. INV. 984.74 PR. 6" SW. INV. 983.67
#27A DOWNSPOUT CONNECT	PR. 6" SW. INV. 984.76
#28 6" WYE	PR. 6" NW. INV. 984.45 PR. 6" N. INV. 984.73 PR. 6" SE. INV. 984.45
#28A DOWNSPOUT CONNECT	PR. 6" S. INV. 984.74
#29 DOWNSPOUT CONNECT	PR. 6" SE. INV. 984.53
#43 END SECTION W/ RIPRAP PROTECTION	PR. 18" N. INV. 970.26

Sanitary Structure Schedule

Structure Name	Structure Details
#2 4' DIA. MH EJ 1040 FRAME TYPE "A" SOLID COVER	PR. RIM 978.62 PR. 8" S. INV. 971.96 PR. 8" E. INV. 971.96 PR. 8" N. INV. 971.86
#3A 4' DIA. MH EJ 1040 FRAME TYPE "A" SOLID COVER	PR. RIM 985.37 PR. 8" N. INV. 974.08
#4 4' DIA. MH EJ 1040 FRAME TYPE "A" SOLID COVER	PR. RIM 981.03 PR. 6" W. INV. 972.84
#5A 6" CLEANOUT	PR. RIM 978.36 PR. 6" SW. INV. 973.87
#8 6" CLEANOUT	PR. RIM 983.84 PR. 6" SE. INV. 983.30
#9A 6" CLEANOUT	PR. RIM 984.80

Water Main Hydrant Schedule

Structure Name	Structure Details
#9 HYDRANT ASSEMBLY	FG 978.77
#13 FIRE HYDRANT	FG 985.23

Water Main Structure Schedule

Structure Name	Structure Details
#1 8" GV&W	PR. RIM 973.62
#2A GATE VALVE, 8 INCH	PR. RIM 975.42
#3A GATE VALVE, 8 INCH	PR. RIM 975.41
#3B GATE VALVE, 8 INCH	PR. RIM 975.30

Storm Drainage Structure Schedule

Structure Name	Structure Details
#14 4' DIA. LOWHEAD R,Y,C,B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 981.41 PR. 12" NE. INV. 977.70
#16A 6" CLEANOUT	PR. RIM 977.13 PR. 6" N. INV. 977.43
#19A 6" CLEANOUT	PR. RIM 978.78 PR. 6" NE. INV. 978.24
#21A 6" CLEANOUT	PR. RIM 974.71 PR. 6" E. INV. 978.09
#24A 6" CLEANOUT	PR. RIM 975.41 PR. 6" NE. INV. 978.74
#26 4' DIA. LOWHEAD R,Y,C,B, EJ 1040 FRAME W/ TYPE N OVAL GRATE	PR. RIM 986.49 PR. 6" NE. INV. 981.90 PR. 12" NE. INV. 983.36
#34 4' DIA MANHOLE EJ 1040 FRAME & TYPE B VENTED COVER	PR. RIM 979.41 PR. 18" S. INV. 973.68 PR. 18" E. INV. 973.68 PR. 18" N. INV. 973.68
#34A 4' DIA CATCH BASIN W/ 2' SUMP EJ 5105 FRAME & TYPE M1 GRATE COVER	PR. RIM 979.82 PR. 18" W. INV. 973.72
#35 4' DIA CATCH BASIN W/ 2' SUMP EJ 7085 FRAME & TYPE M1 GRATE COVER	PR. RIM 982.93 PR. 18" N. INV. 977.07
#41 4' DIA. LOWHEAD R,Y,C,B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 974.74 PR. 18" S. INV. 968.25 PR. 18" N. INV. 968.25
#42 4' DIA. LOWHEAD R,Y,C,B EJ 1040 FRAME & TYPE N OVAL GRATE COVER	PR. RIM 975.45 PR. 18" S. INV. 969.61 PR. 18" N. INV. 968.61

LEGEND

- MANHOLE
- HYDRANT
- GATE VALVE
- MANHOLE CATCH BASIN
- UTILITY POLE
- GUY POLE
- GUY WIRE
- C.O.
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SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
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PROJECT
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Site Improvements

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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Utility Plan - Part D

811
Know what's below
Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY:
E. Oshaben

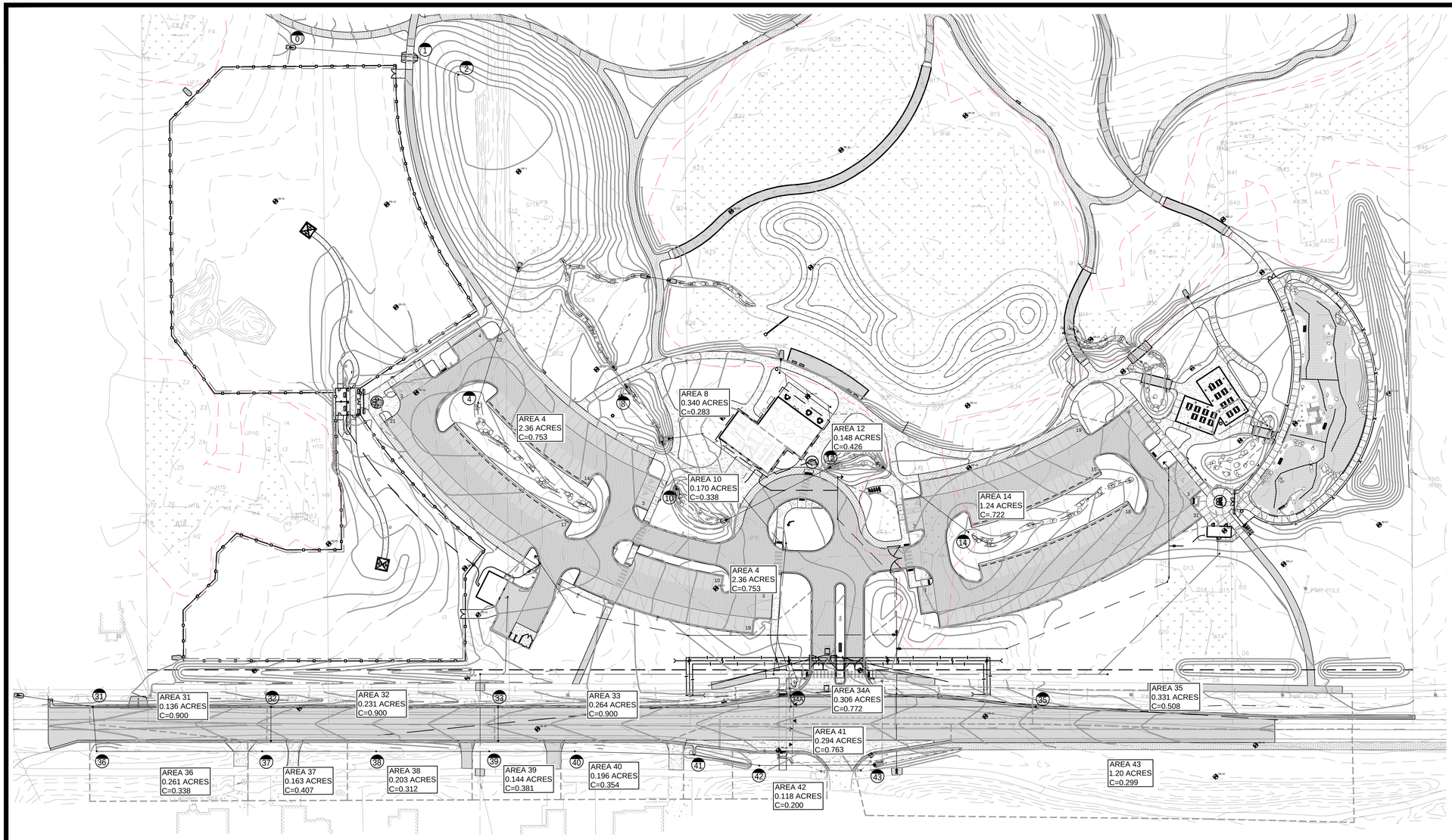
DESIGNED BY:
E. Oshaben

APPROVED BY:
P. Kotrba

DATE:
2025-05-01

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C4.2



County = Oakland County (10 Yr)
Intensity (I) = B / (T + D) ^ E
B = 119
D = 15
E = 1
Industrial Developments "Tc" = 15 min
Concrete Pipe "n" Value = 0.013

Project No: O557
Project Name: Nowicki Park
Location: Rochester Hills, MI
Dated: 02/03/26

Drainage Area	From Manhole Number	To Manhole Number	Drainage Area (Acres)	Runoff Coeff. (C)	Equiv. Area (CxA)	Total Area (Sum CxA)	Total Area (Acres)	Time of Concn. Tc (min.)	Rainfall Intensity I (in/hr)	Actual Discharge Q (cfs)	Pipe Size (inch)	Pipe Slope (% Slope)	Pipe Length (feet)	Flow Full Velocity (ft/sec)	Time of Flow (Minutes)	Full Pipe Capacity (cfs)	Minimum HGL per Flow	HGL Elev. Upper End	HGL Elev. Lower End	Rim Elevation Upper End	Rim Elevation Lower End	Invert Elevation Upper End	Invert Elevation Lower End
33	33A	33	0.00	0.00	0.00	0.00	0.00	15.00	3.97	0.00	18	0.35	38	3.5	0.2	6.21	0.00%	968.37	968.23	975.48	975.50	967.17	967.03
32	32A	32	0.00	0.00	0.00	0.00	0.00	15.00	3.97	0.00	18	0.35	38	3.5	0.2	6.21	0.00%	967.11	966.98	971.63	971.77	965.91	965.78
34	34A	34	0.00	0.00	0.00	0.00	0.00	15.00	3.97	0.00	18	0.35	13	3.5	0.1	6.21	0.00%	971.90	971.85	979.82	979.41	970.70	970.65
43	43	42	1.21	0.30	0.36	0.36	1.21	15.00	3.97	1.43	18	0.50	129	4.2	0.5	7.43	0.02%	971.46	970.81	978.75	975.45	970.26	969.61
42	42	41	0.12	0.20	0.02	0.38	1.32	15.50	3.90	1.50	18	0.50	74	4.2	0.3	7.43	0.02%	969.81	969.45	975.45	974.74	968.61	968.25
41	41	40	0.29	0.76	0.22	0.61	1.62	15.80	3.86	2.35	18	0.50	132	4.2	0.5	7.43	0.05%	969.45	968.79	974.74	973.40	968.25	967.59
40	40	39	0.20	0.35	0.07	0.68	1.81	16.30	3.80	2.58	18	0.50	95	4.2	0.4	7.43	0.06%	968.79	968.31	973.40	972.49	967.59	967.11
39	39	38	0.14	0.38	0.05	0.73	1.96	16.70	3.75	2.75	18	0.50	125	4.2	0.5	7.43	0.07%	968.31	967.69	972.49	971.18	967.11	966.49
38	38	37	0.20	0.31	0.06	0.80	2.16	17.20	3.70	2.94	18	0.50	126	4.2	0.5	7.43	0.08%	967.69	967.05	971.18	969.96	966.49	965.85
37	37	36	0.16	0.41	0.07	0.86	2.32	17.70	3.64	3.14	18	0.50	183	4.2	0.7	7.43	0.09%	967.05	966.14	969.96	968.21	965.85	964.94
36	36	31	0.26	0.34	0.09	0.95	2.58	18.40	3.56	3.39	18	0.30	50	3.3	0.3	5.75	0.10%	966.14	965.99	968.21	969.33	964.94	964.79
35	35	34	0.33	0.51	0.17	0.17	0.33	15.00	3.97	0.67	18	0.50	271	4.2	1.1	7.43	0.00%	975.21	973.85	982.93	979.41	974.01	972.65
34	34	33	0.31	0.77	0.24	0.40	0.64	16.10	3.83	1.55	18	0.50	324	4.2	1.3	7.43	0.02%	971.85	970.23	979.41	975.50	970.65	969.03
33	33	32	0.26	0.90	0.24	0.64	0.90	17.40	3.67	2.36	18	0.50	252	4.2	1.0	7.43	0.05%	968.23	966.98	975.50	971.77	967.03	965.78
32	32	31	0.23	0.90	0.21	0.85	1.13	18.40	3.56	3.03	18	0.50	197	4.2	0.8	7.43	0.08%	966.98	965.99	971.77	969.33	965.78	964.79
31	31	30	0.14	0.90	0.12	1.92	3.85	19.20	3.48	6.69	18	1.22	85	6.6	0.2	11.60	0.41%	965.99	964.95	969.33	966.79	964.79	963.75
4	4	3	2.36	0.75	1.78	1.78	2.36	15.00	3.97	7.05	18	0.18	157	2.5	1.0	4.46	0.45%	968.91	968.20	971.25	969.25	967.28	967.00
8	8	7	0.34	0.28	0.10	0.10	0.34	15.00	3.97	0.38	12	0.32	29	2.6	0.2	2.02	0.01%	973.65	973.56	971.49	971.40	972.85	972.76
10	10	9	0.17	0.34	0.06	0.06	0.17	15.00	3.97	0.23	12	0.32	56	2.6	0.4	2.02	0.00%	974.59	974.41	973.64	973.46	973.79	973.61
12	12	11	0.15	0.43	0.06	0.06	0.15	15.00	3.97	0.25	12	0.32	131	2.6	0.8	2.02	0.00%	976.55	976.13	975.24	974.83	975.75	975.33
14	14	13	0.00	0.00	0.00	0.00	0.00	15.00	3.97	0.00	12	0.32	120	2.6	0.8	2.02	0.00%	978.50	978.12	981.41	977.08	977.70	977.32
26	26	25	0.00	0.00	0.00	0.00	0.00	15.00	3.97	0.00	12	0.32	174	2.6	1.1	2.02	0.00%	984.16	983.60	986.49	983.93	983.36	982.80

LEGEND

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- SAN. CLEAN OUT
- HYDRANT, GATE VALVE — EXISTING WATER MAIN
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- PR. R. Y. CATCH BASIN
- SAND BACKFILL (95 % DENSITY)
- PROPOSED LIGHT POLE
- DRAINAGE AREA LIMITS

ROCHESTER HILLS MICHIGAN

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SEAL

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STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
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Site Improvements

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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

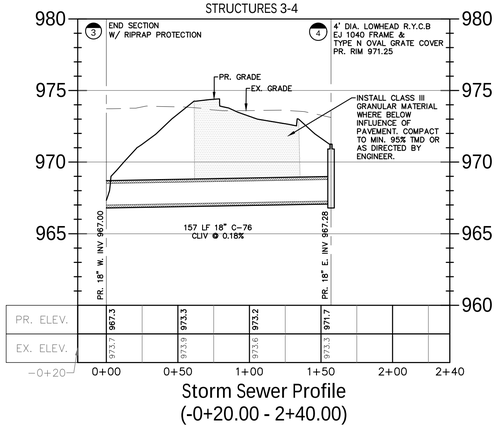
SHEET
DRAINAGE AREA MAP

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C4.3



Storm Sewer Profile
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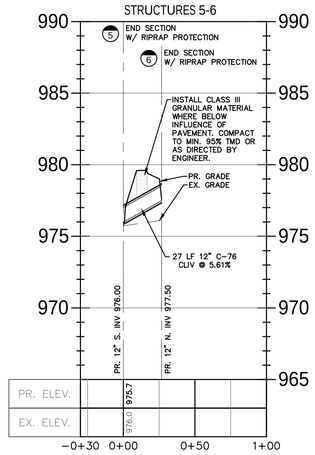
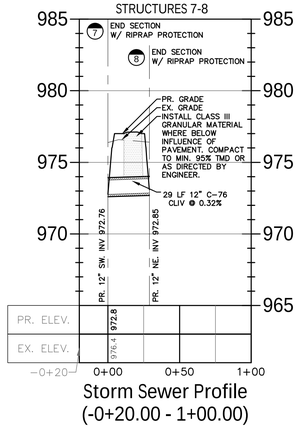
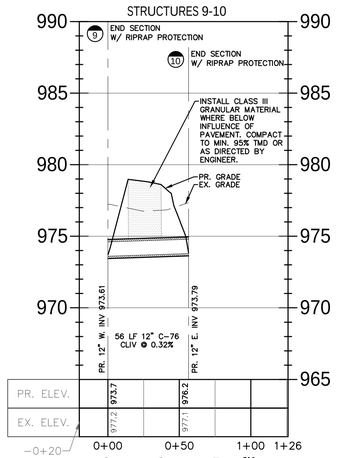


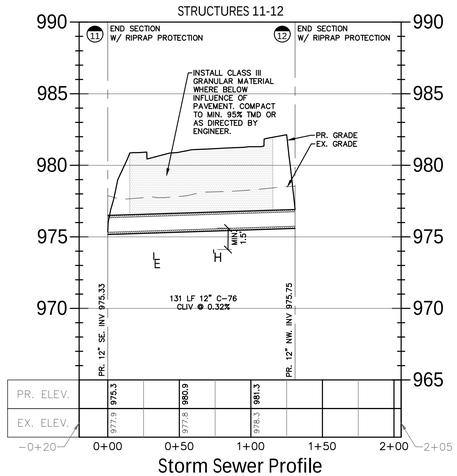
Storm Sewer Profile
(-0+30.00 - 1+00.00)



Storm Sewer Profile
(-0+20.00 - 1+00.00)



Storm Sewer Profile
(-0+20.00 - 1+26.00)



Storm Sewer Profile
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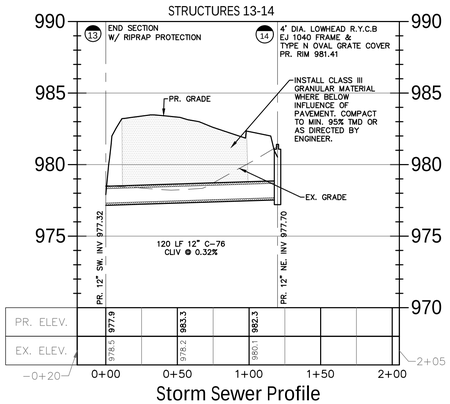
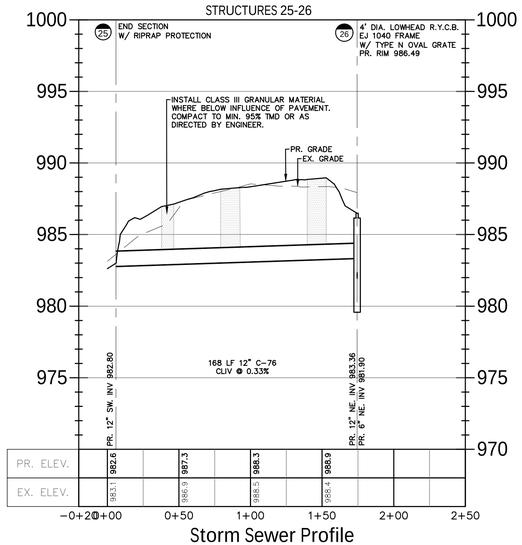


Storm Sewer Profile
(-0+20.00 - 2+05.00)



Storm Sewer Profile
(-0+20.00 - 2+50.00)

UTILITY CROSSING SCHEDULE

E PR. 12" STM T/P 975.54
PR. 8" SAN T/P 973.89
VERTICAL CLEARANCE: 1.65'

H PR. 12" STM B/P 975.79
PR. 2" WATER T/P 974.29
VERTICAL CLEARANCE: 1.50'

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MICHIGAN

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WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN
STEVEN W. SUTTON
ENGINEER
NO. 6201050492
PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Storm Profiles

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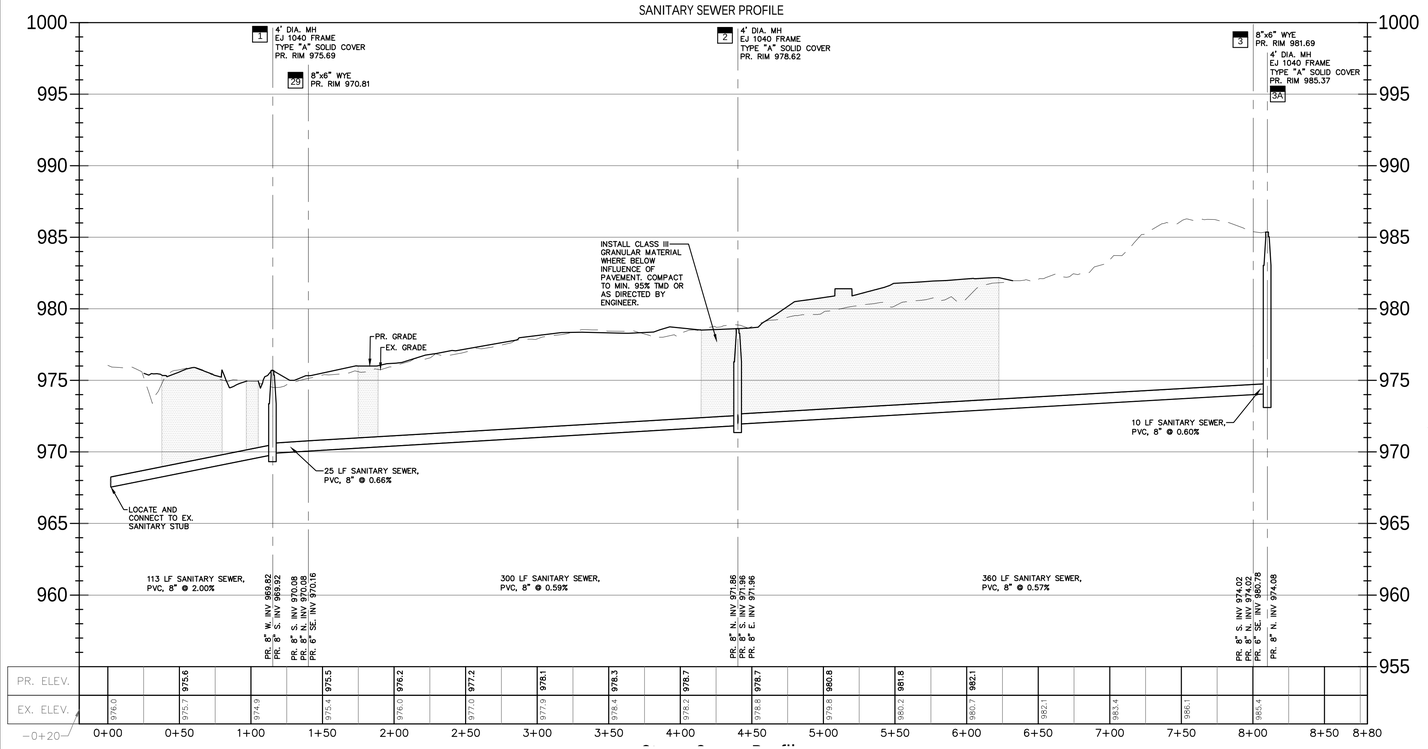
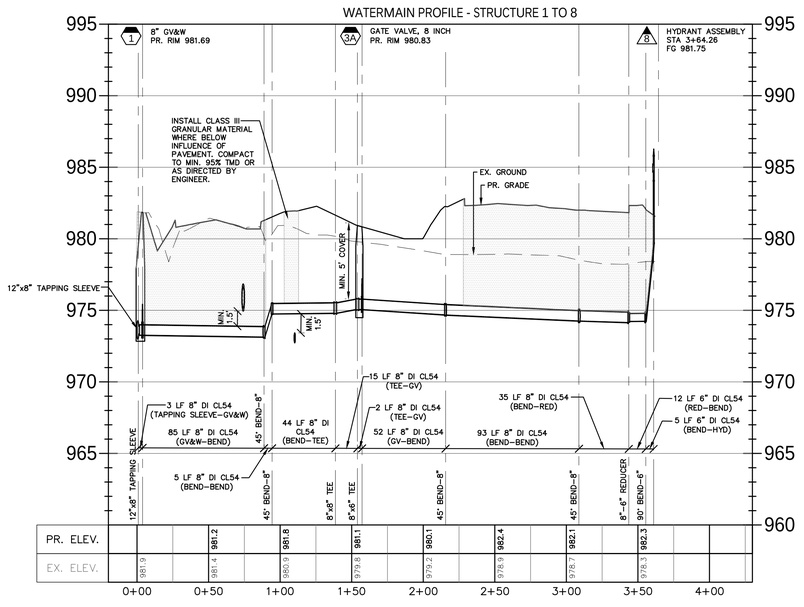
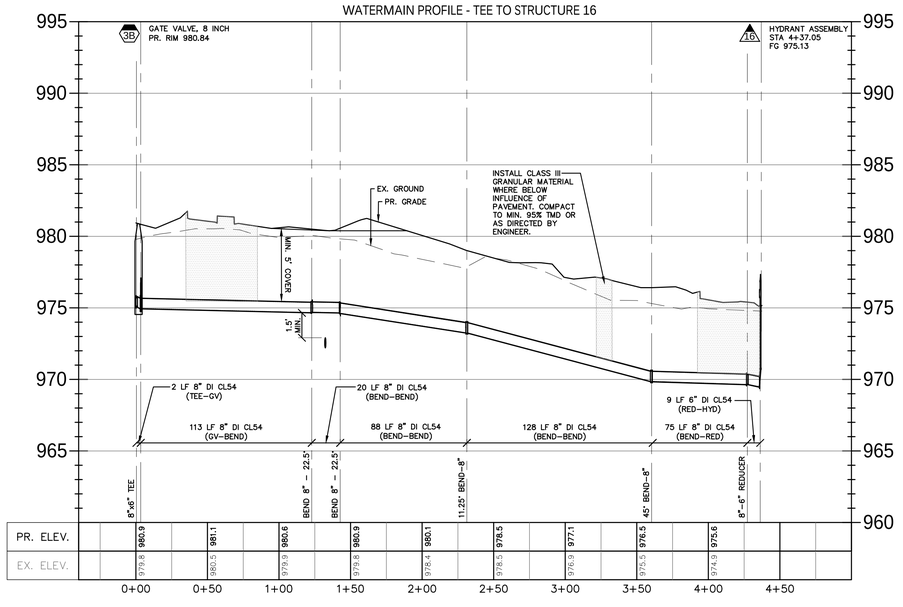
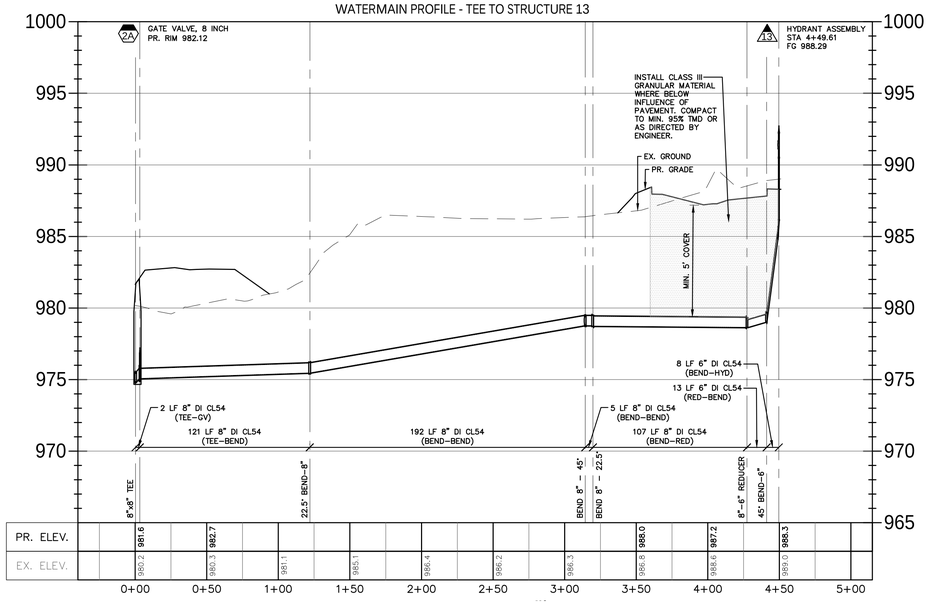
DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 50' / 1"=5'
50 25 0 25 50 75

NFE JOB NO. O557
sheet no. C4.4









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PROJECT LOCATION
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SHEET
Utility Profiles

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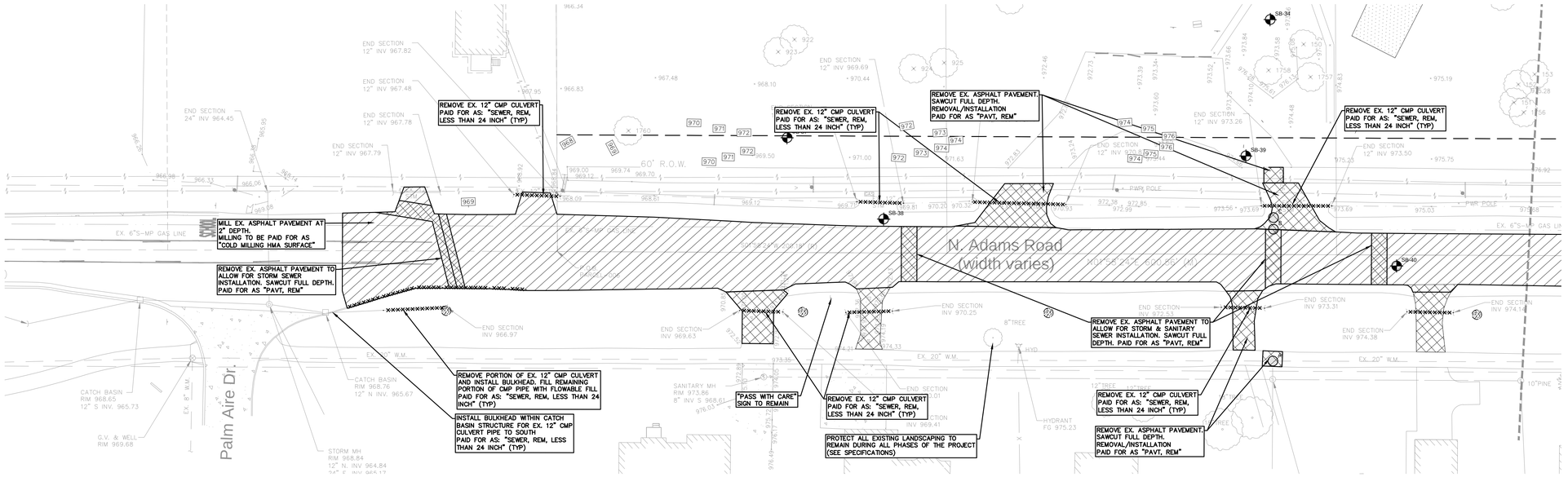
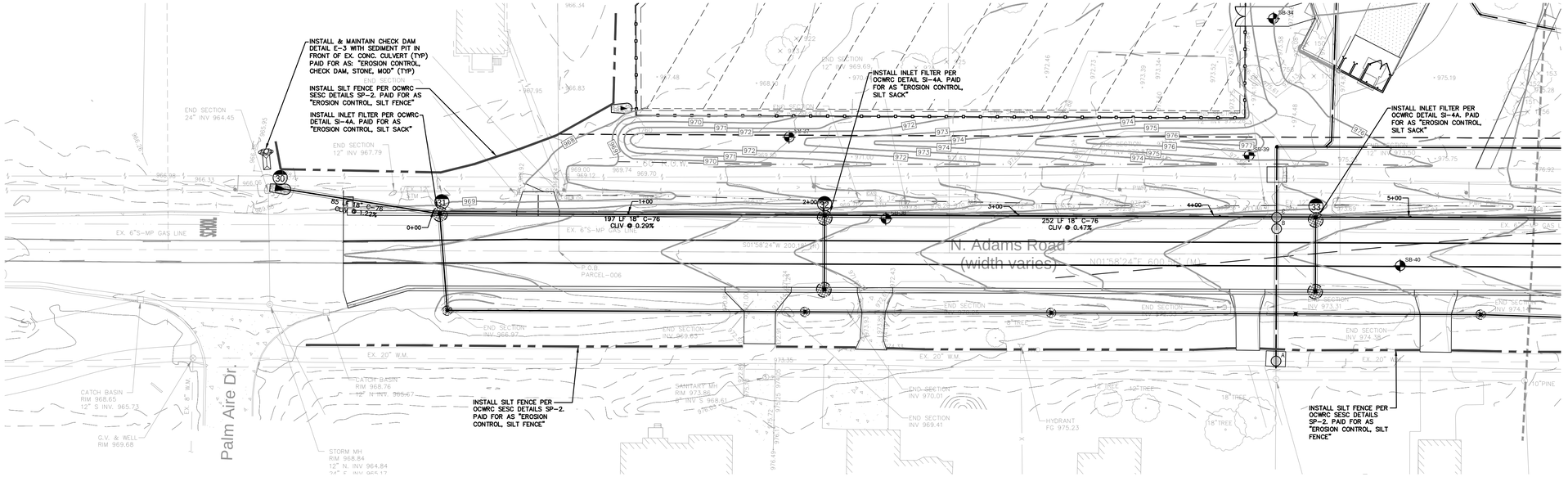
NFE JOB NO. O557
sheet no. C4.5



DEMOLITION PLAN

SCALE: 1" = 30'



SOIL EROSION PLAN

SCALE: 1" = 30'

REFERENCE NOTE

FOR DETAILS & NOTES SEE OAKLAND COUNTY SOIL EROSION AND SEDIMENTATION CONTROL STANDARD DETAIL SHEET.

THIS PROJECT SHALL BE CONSTRUCTED IN COMPLIANCE WITH PART 91 OF ACT 451 OF 1994, AS AMENDED, THE SOIL EROSION AND SEDIMENT CONTROL ACT

SIGN REMOVAL

ALL EXISTING ROADWAY SIGNS AND POSTS SHALL BE REMOVED. PAID FOR AS A PART OF "MACHINE GRADING, MOD"

DRIVEWAY CULVERT REMOVAL

ALL CULVERTS REMOVED ON THE PROJECT SHALL BE PAID FOR AS, "SEWER, REM, LESS THAN 24 INCH"

MAILBOX RELOCATION

ANY MAILBOXES WITHIN THE LIMITS OF THE PROJECT THAT CONFLICT WITH REQUIRED WORK, SHALL BE REMOVED BY THE CONTRACTOR, TEMPORARILY SET IN A LOCATION AGREEABLE TO THE US POST OFFICE, AND THEN SET IN A NEW LOCATION, WITH NEW WOODEN POSTS.
ALL WORK ASSOCIATED WITH THIS WILL BE INCLUDED IN "MACHINE GRADING, MOD"

TREE REMOVALS

ALL TREES AND SHRUBS SHALL BE REMOVED AS NOTED ON THE PLANS, AND PAID FOR AS "TREE, REM, MOD".

DRIVE ACCESS

RESIDENTS SHALL HAVE ACCESS TO DRIVES DURING ALL PHASES OF THE CONSTRUCTION, UNLESS OTHERWISE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PLACE, MAINTAIN AND REMOVE TEMPORARY GRAVEL, AS NEEDED, PAID FOR AS "MAINTENANCE GRAVEL"

ROADSIDE CLEARING

ANY MISCELLANEOUS CLEARING OF VEGETATION REQUIRED TO INSTALL THE PROPOSED ROADWAY CROSS SECTION WILL NOT BE PAID FOR SEPARETLY, BUT SHALL BE INCLUDED IN "MACHINE GRADING, MOD".

LEGEND - REMOVAL

- EX. PAVEMENT TO BE REMOVED
- EX. PAVEMENT TO BE MILLED 2"
- PROPOSED REMOVAL
- PROPOSED SAWCUT LINE

LEGEND

- PROPOSED SILT FENCE
- LIMITS OF SOIL DISRUPTION
- PROPOSED LOW POINT INLET FILTER
- PROPOSED SILT SACK INLET FILTER
- PROPOSED REAR YARD INLET FILTER

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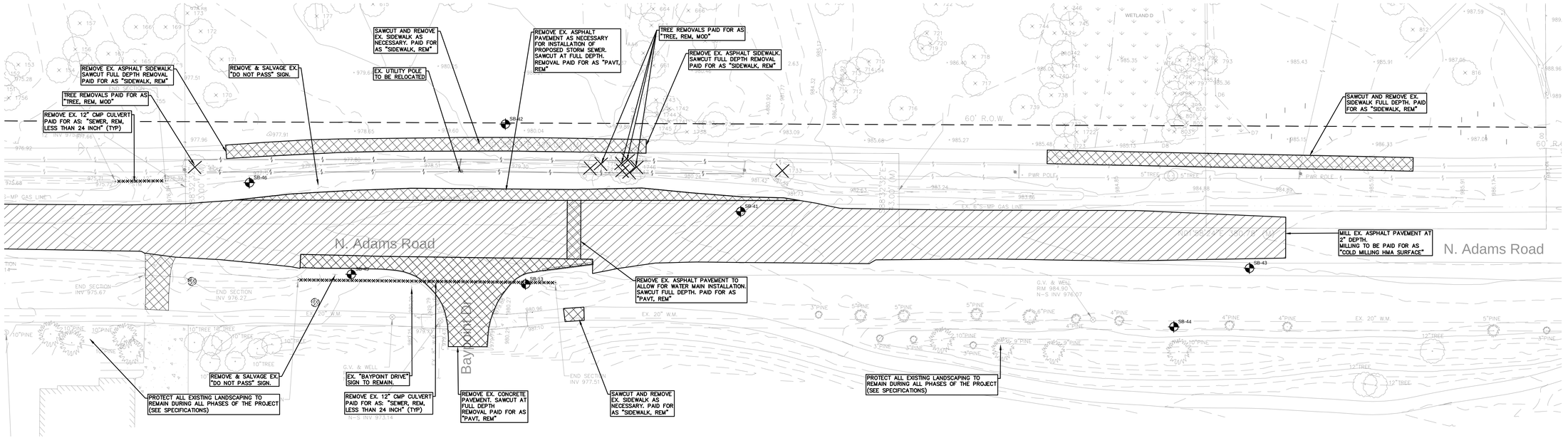
NFE JOB NO. O557
sheet no. C5.0



DEMOLITION PLAN

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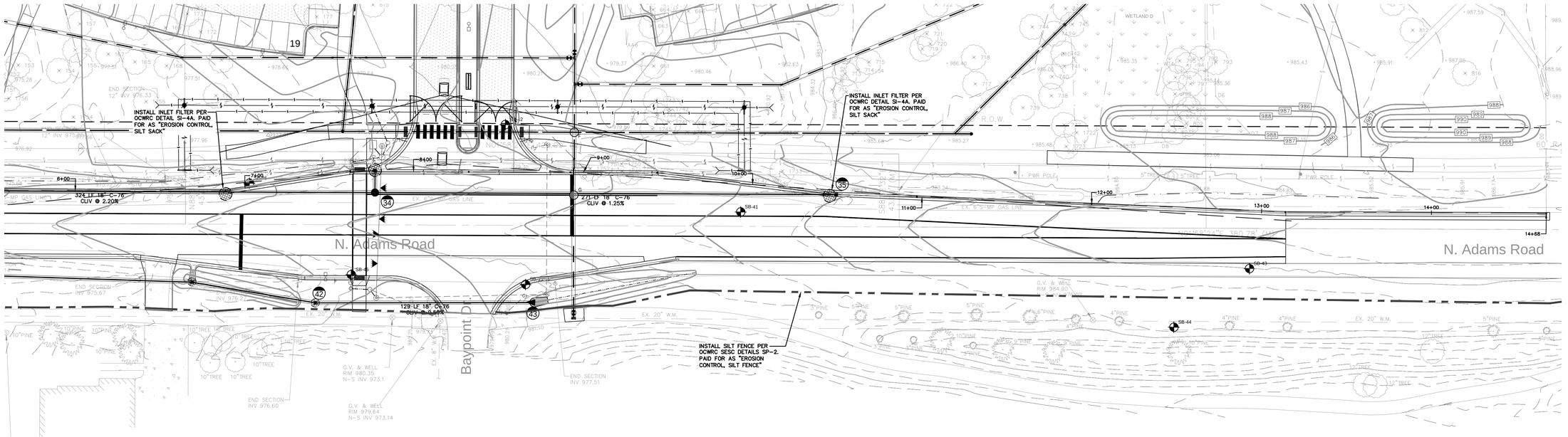

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- EX. PAVEMENT TO BE MILLED 2"
- PROPOSED REMOVAL
- PROPOSED SAWCUT LINE

LEGEND

- PROPOSED SILT FENCE
- LIMITS OF SOIL DISRUPTION
- PROPOSED LOW POINT INLET FILTER
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Adams Road - Demolition & SESC Plan

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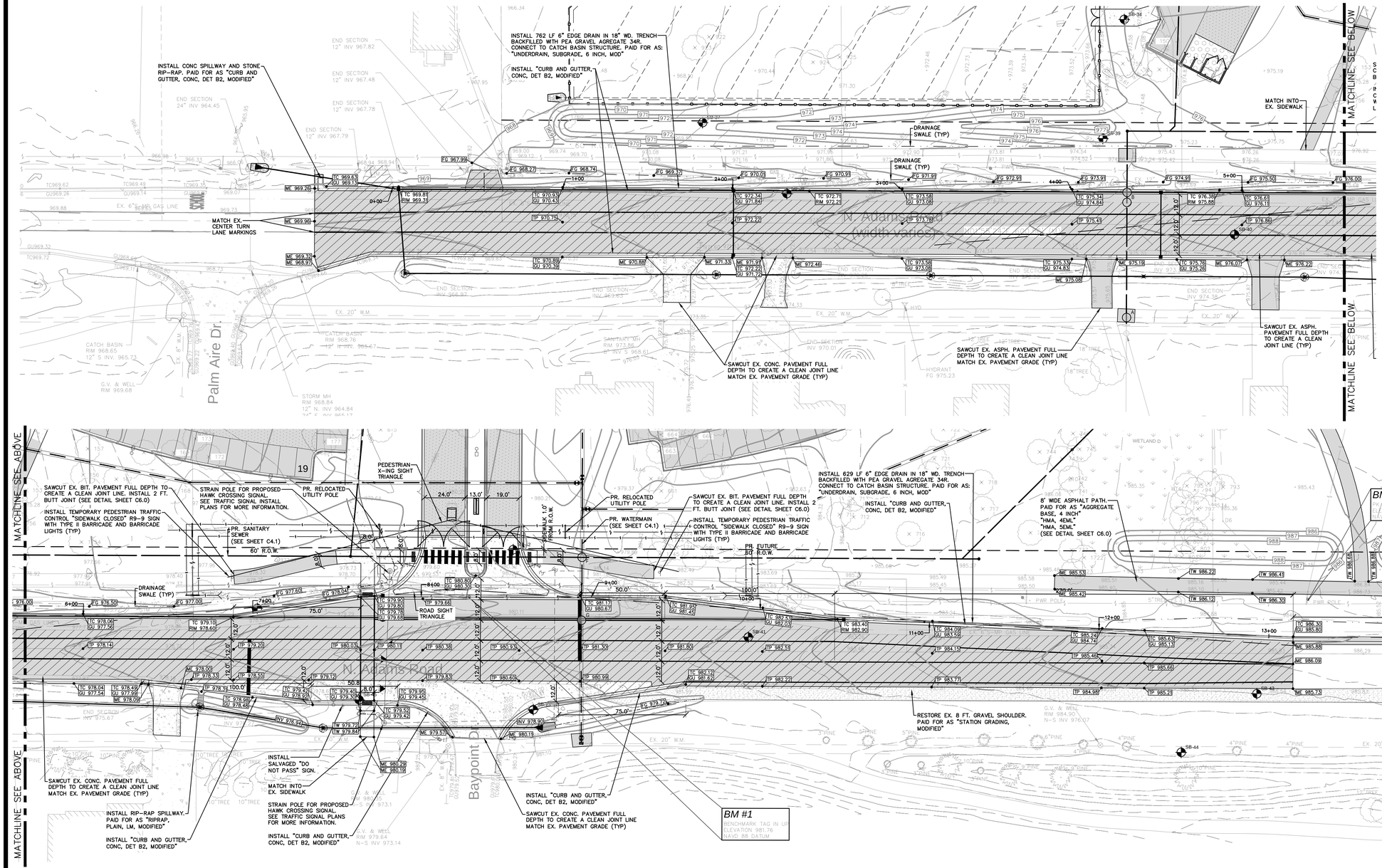
NFE JOB NO. O557
sheet no. C5.1



PAVING LEGEND

- PROPOSED 6" CONCRETE PAVEMENT
- PROPOSED 9" HMA PAVEMENT
- PROPOSED ASPHALT PAVEMENT ON 2" MILLED SURFACE
- PROPOSED AGGREGATE SHOULDER

LEGEND

- MANHOLE
- EXISTING SANITARY SEWER
- SAN. CLEAN OUT
- HYDRANT
- GATE VALVE
- EXISTING WATERMAIN
- MANHOLE CATCH BASIN
- EXISTING STORM SEWER
- EX. R. Y. CATCH BASIN
- EXISTING BURIED CABLES
- UTILITY POLE
- GUY POLE
- GUY WIRE
- OVERHEAD LINES
- LIGHT POLE
- SIGN
- EXISTING GAS MAIN
- C.O.
- MANHOLE
- PR. SANITARY SEWER
- HYDRANT
- GATE VALVE
- PR. WATER MAIN
- INLET
- C.B.
- MANHOLE
- PR. STORM SEWER
- PR. R. Y. CATCH BASIN
- PROPOSED LIGHT POLE

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SHEET
Adams Road Paving & Grading Plan

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SCALE: 1" = 30'

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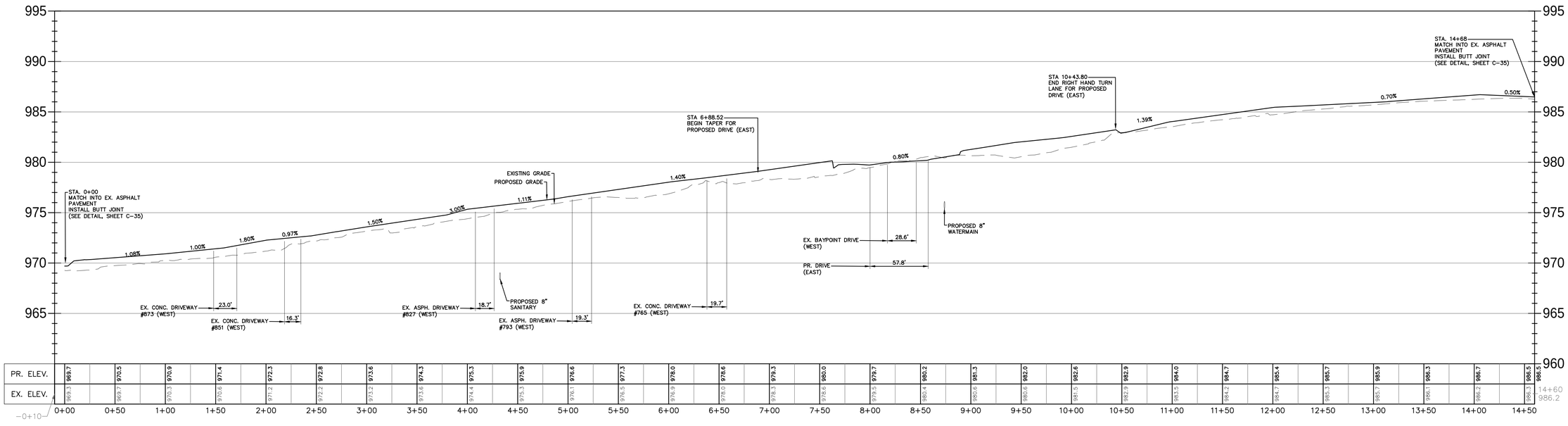
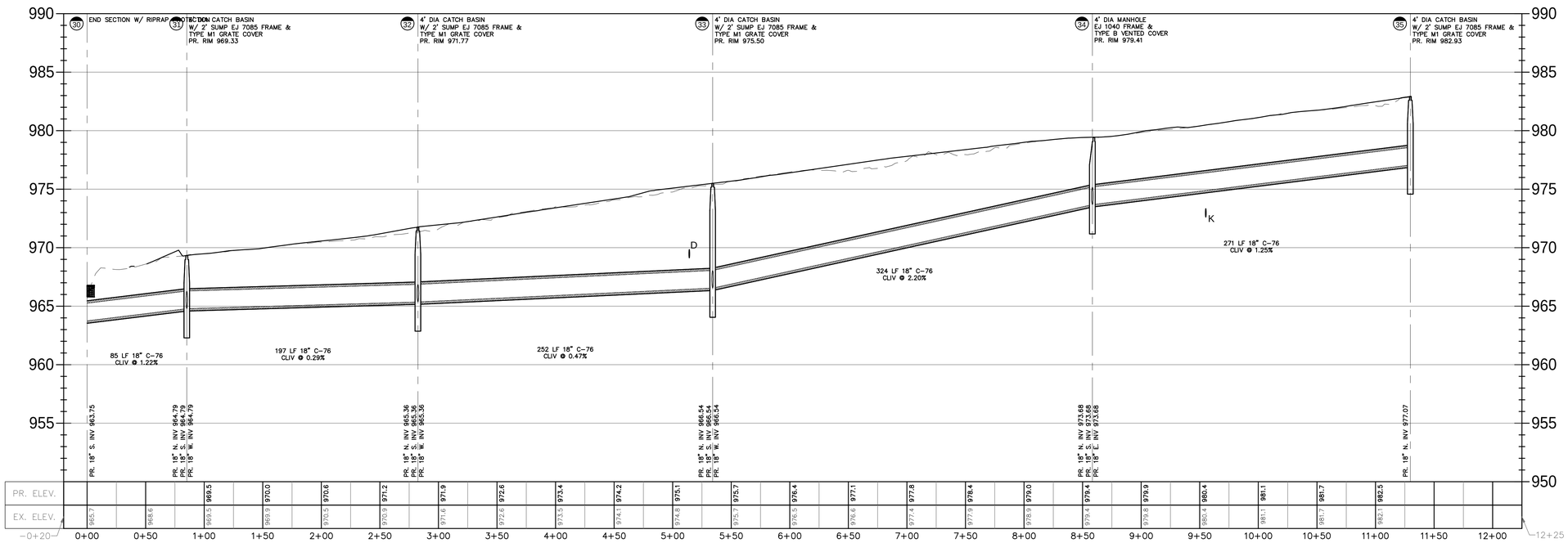
NFE JOB NO. O557
sheet no. C5.2



EASTERN CURBLINE PROFILE OF ADAMS ROAD



STORM SEWER PROFILE

UTILITY CROSSING SCHEDULE

D PR. 8" SAN B/P 969.10
PR. 12" STM T/P 967.60
VERTICAL CLEARANCE: 1.50'

K PR. 8" WM B/P 974.95
PR. 12" STM T/P 972.88
VERTICAL CLEARANCE: 2.07'

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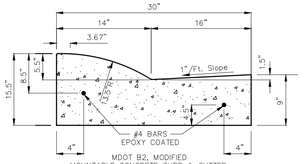
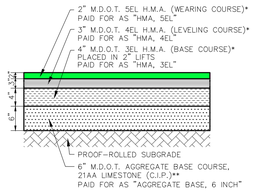


MDOT B2, MODIFIED
MOUNTABLE CONCRETE CURB & GUTTER.
REQUIRES E.J.I.W. 7085 OR NEENAH R-3038-A CASTING

CONCRETE CURB & GUTTER DETAIL B-2

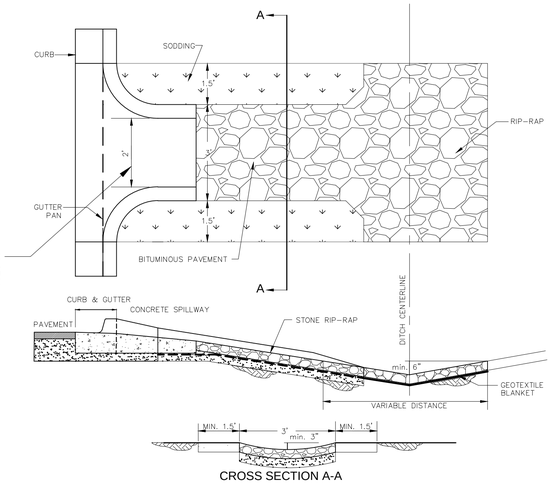
PAID FOR AS "CURB AND GUTTER, CONC, DET B2, MODIFIED"
N.T.S.



NOTES: *APPLY BOND COAT SS-1H @ 0.05 GAL/SYD BETWEEN EACH LIFT
*HMA SHOULD BE PLACED IN 3 LIFTS
**SUITABLE BASE TO BE DETERMINED BY R.C.O.C. INSPECTOR IN FIELD

9" DEEP STRENGTH ASPHALT PAVEMENT

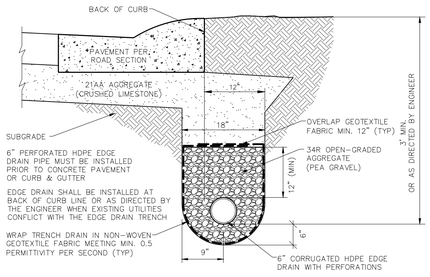
N.T.S.



CROSS SECTION A-A

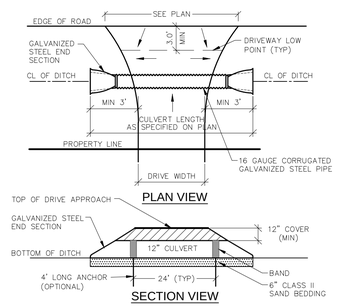
CONCRETE SPILLWAY AND RIP-RAP

N.T.S.



EDGE DRAIN DETAIL

N.T.S.



TYPICAL DRIVEWAY APPROACH ASPHALT ROADWAY AND OPEN DITCH

N.T.S.

DRIVE CULVERTS AND DRAINAGE DITCHES

1. DRIVE CULVERTS SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. MINIMUM OF TWELVE INCHES (12") IN DIAMETER.
   b. MATERIAL SHALL BE SIXTEEN (16) GAUGE GALVANIZED CORRUGATED METAL PIPE (CMP).
   c. A MINIMUM OF ONE FOOT (1') OF COVER MUST BE PROVIDED BETWEEN TOP OF CULVERT PIPE AND TOP OF DRIVEWAY PAVEMENT.
   d. THE CULVERT SHALL EXTEND A MINIMUM OF THREE FEET (3') BEYOND DRIVEWAY WIDTH AND SHALL MEET THE MINIMUM SIDE SLOPES OF 1 ON 2 FOR LOCAL STREETS, AND 1 ON 3 FOR MAJOR ROADS.
2. DITCHES SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. THE MAXIMUM DITCH DEPTH SHALL BE TWO FEET (2') FROM BOTTOM OF CENTERLINE OF DITCH TO TOP OF ROAD PAVEMENT.
   b. THE MAXIMUM ROADSIDE DITCH SLOPE SHALL BE 1 ON 4.
   c. THE MAXIMUM PROPERTY SIDE DITCH SLOPE SHALL BE 1 ON 3.
3. DITCH-ENCLOSURES SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. THE MINIMUM DEPTH REQUIRED FOR ENCLOSURE IS TWO AND A HALF FEET (2.5') FROM THE TOP OF ROAD PAVEMENT TO BOTTOM OF DITCH CENTERLINE.
4. ALL CMP CULVERTS, END SECTIONS, BANDING, 4' ANCHORS AND SAND BEDDING SHALL BE PAID FOR AS "CULV, CL A, 12 INCH, MOD"

PAVEMENT RESTORATION

FINAL PAVEMENT RESTORATION SHALL INCLUDE WEDGING AS NECESSARY WITH SUITABLE ASPHALT TO ESTABLISH OR REASONABLY RESTORE PAVEMENT CROSS-SLOPE, SUPER-ELEVATION, OR TRANSITIONS, INCLUDING ADJUSTMENTS TO DRIVEWAYS, SIDE STREETS, AND PAVED SHOULDERS. THE PERMIT HOLDER IS RESPONSIBLE FOR ADJUSTMENT TO SHOULDERS, INCLUDING THE ADDING OF MATERIAL TO ACHIEVE A SMOOTH CROSS-SLOPE. SPECIAL CARE SHALL BE TAKEN TO MAINTAIN POSITIVE DRAINAGE AT ALL LOCATIONS INCLUDING DRIVEWAY APRONS.

PAVEMENT CAP AFTER COLD MILL

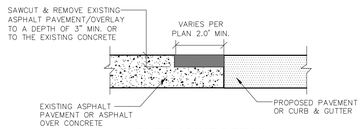
PAVEMENT CAP DETAIL AFTER COLD MILL:
THE CONTRACOR SHALL REPAIR ANY DAMAGED PAVEMENT, INCLUDING SUBGRADE REPAIR, PRIOR TO PLACEMENT OF THE WEARING COURSE OF ASPHALT SURFACING.
THE FULL CAP SHALL CONSIST OF AN ASPHALT OVERLAY, OF A MINIMUM THICKNESS OF 2 INCHES OF M.D.O.T. 5E, OR BETTER, H.M.A. PAVEMENT, PLACED OVER THE ENTIRE ROAD (OR SECTION THEREOF), AFTER REPLACING THE DAMAGED PAVEMENT OR REMOVED ASPHALT IN ACCORDANCE WITH THESE RULES. AN APPROPRIATE R.C.O.C APPROVED BOND COAT SHALL BE APPLIED PRIOR TO THE PLACEMENT OF THE H.M.A. CAP. THE R.C.O.C. MAY REQUIRE A THICKER H.M.A. CAP IN HIGH TRAFFIC AREAS.

BUTT JOINT

BUTT JOINTS SHALL BE PROVIDED AT INTERSECTIONS, DRIVEWAYS, AT THE END OF AN OVERLAY, AND OTHER LOCATIONS, SAID JOINTS SHALL BE CLEAN, STRAIGHT, AND PERPENDICULAR OR PARALLEL TO THE ROADWAY.

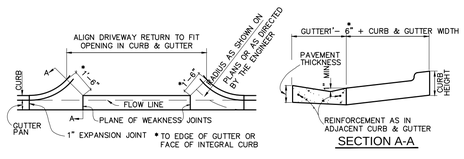
RESTORATION

THE SURFACE AREA OF THE RIGHT-OF-WAY SHALL BE RESTORED TO ITS PREVIOUS CONDITION.



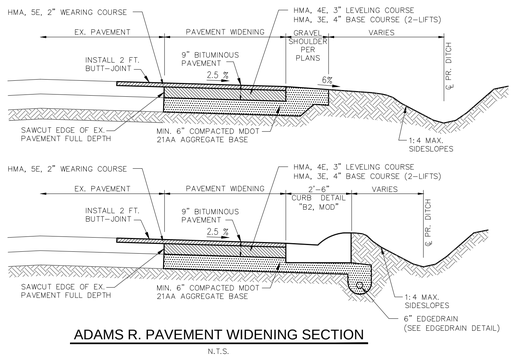
BUTT JOINT DETAIL

N.T.S.



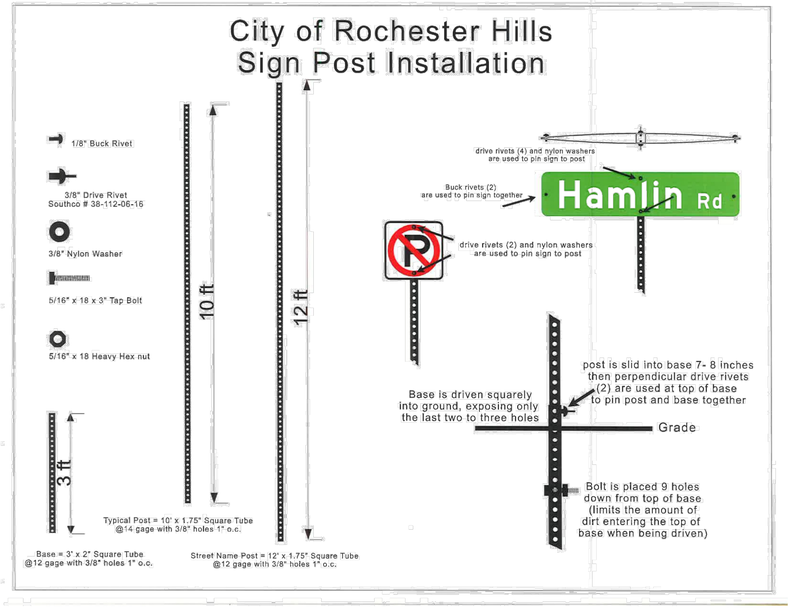
MDOT DRIVEWAY OPENING DETAIL 'M'

N.T.S.



ADAMS R. PAVEMENT WIDENING SECTION

N.T.S.



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E. Oshaben

DESIGNED BY:
E. Oshaben

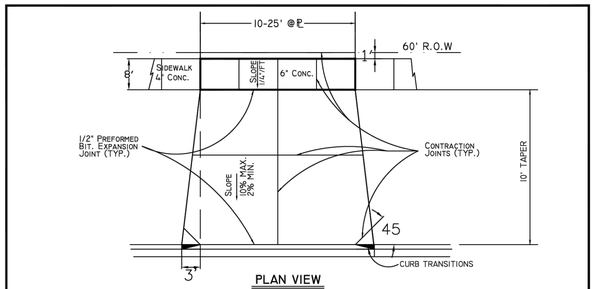
APPROVED BY:
P. Kotrba

DATE:
2025-05-01

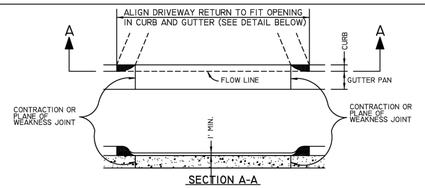
SCALE: N.T.S.

NFE JOB NO.
O557

sheet no.
C5.4

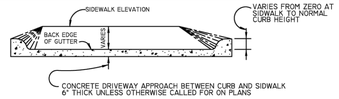


PLAN VIEW



SECTION A-A

CONCRETE DRIVEWAY OPENING - DETAIL



FRONT VIEW - DRIVEWAY

NOTES:

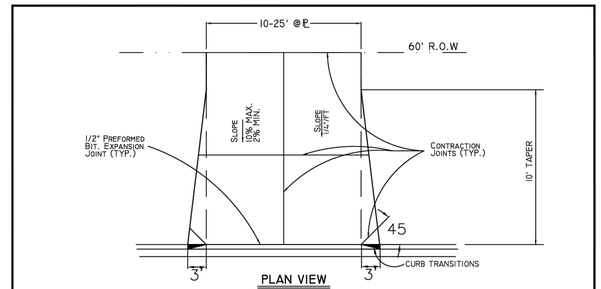
REINFORCEMENT IS NOT REQUIRED UNLESS SPECIFIED ON THE PLANS.
WHEN AREA BETWEEN CURB AND GUTTER AND PROPERTY LINE IS MORE THAN 300 SQ. FT., CAST DRIVEWAY APPROACH IN TWO OR MORE POURS.

I:\ENG\TRAF\DWG\DETAILS\ROADS\Drv Approch Res-With sdwlk.dwg

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:
Residential Sidewalk/Driveway Opening & Approach

Drawn By:	File Name:	Plan Date:	Rev.
M. Radulski	DrvApRch	1/15/99	4/12/2012

Approved By: Paul Shumejko, City Traffic Engineer — NOT TO SCALE — Sheet 1 of 1



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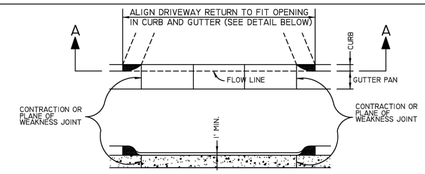

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Drawn By:	File Name:	Plan Date:	Rev.
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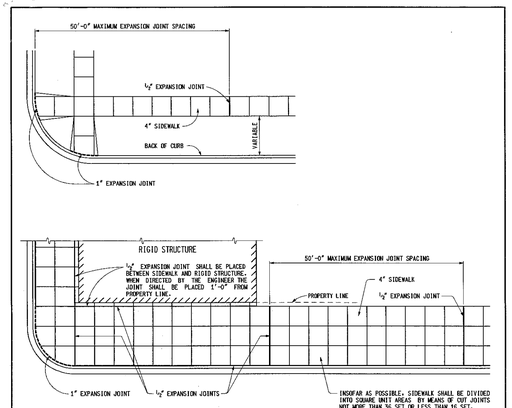
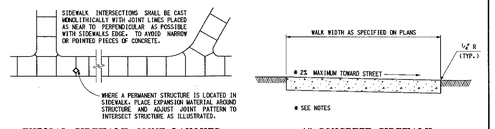
Approved By: Paul Shumejko, P.E., PTOE, City Traffic Engineer — NOT TO SCALE — Sheet 1 of 1



LOCATION OF JOINTS IN CONCRETE SIDEWALK



TYPICAL SIDEWALK JOINT LAYOUTS — 4" CONCRETE SIDEWALK

MDOT — Michigan Department of Transportation

Department Director for T. Bowdle

Prepared by Design Division — Drawn By: R.S.T. — Checked By: W.K.F.

Approved By: John C Kraai, Engineer of Delivery

Approved By: Engineer of Development

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

4-26-2007 F.H.W.A. APPROVAL	2-28-2007 PLAN DATE	R-29-E	SHEET 1 OF 4

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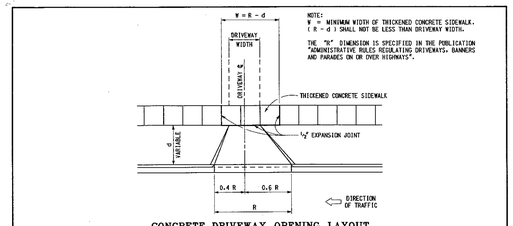
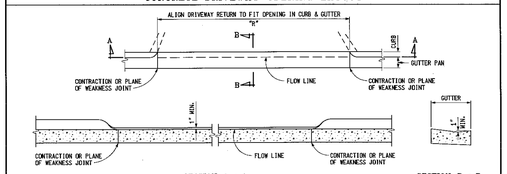
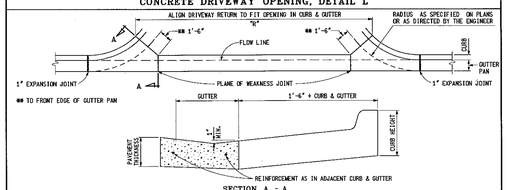


CONCRETE DRIVEWAY OPENING LAYOUT



SECTION A - A — SECTION B - B

CONCRETE DRIVEWAY OPENING, DETAIL L



SECTION A - A

CONCRETE DRIVEWAY OPENING, DETAIL M

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK

4-26-2007 F.H.W.A. APPROVAL	2-28-2007 PLAN DATE	R-29-E	SHEET 2 OF 4

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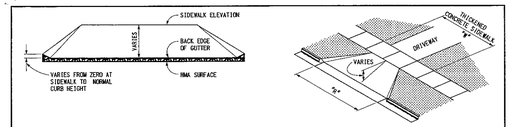
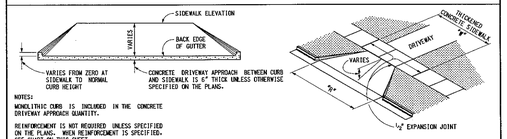


HMA DRIVEWAY APPROACH
(TO BE USED WITH DETAIL L)



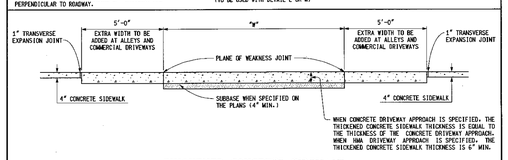
NOTES:

MONOLITHIC CURB IS INCLUDED IN THE CONCRETE DRIVEWAY APPROACH QUANTITY.

REINFORCEMENT IS NOT REQUIRED UNLESS SPECIFIED ON THE PLANS. WHEN REINFORCEMENT IS SPECIFIED, SEE CHART ON THIS SHEET.

WHEN AREA BETWEEN CURB & GUTTER AND SIDEWALK IS MORE THAN 300 SFT. PLACE A CONTRACTION JOINT IN LINE WITH CENTERLINE OF DRIVEWAY AND PERPENDICULAR TO ROADWAY.

CONCRETE DRIVEWAY APPROACH
(TO BE USED WITH DETAIL L OR W)



THICKENED CONCRETE SIDEWALK

REINFORCEMENT FOR CONCRETE DRIVEWAYS		
CONCRETE DRIVEWAY THICKNESS	WIRE SIZE (6" x 6" MESH)	AVERAGE WEIGHT (LBS/SFT)
LESS THAN 8"	W1.4	21
	W2.9	42
8" OR GREATER	USE WIRE FABRIC REINFORCEMENT SPECIFIED ON STANDARD PLAN R-45-SERIES	

MICHIGAN DEPARTMENT OF TRANSPORTATION
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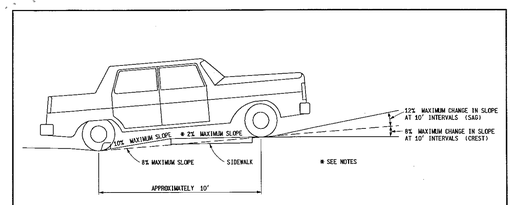
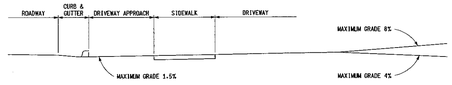


LOW VOLUME COMMERCIAL OR RESIDENTIAL DRIVEWAY SLOPES



COMMERCIAL DRIVEWAY PROFILE FOR MAJOR TRAFFIC GENERATORS

NOTES:

FOR DRIVEWAY DESIGN REFER ALSO TO "ADMINISTRATIVE RULES REGULATING DRIVEWAYS, BANNERS, AND PARADES ON OR OVER HIGHWAYS" AND GEOMETRIC DESIGN G-680-SERIES. COMMERCIAL DRIVEWAYS.

FOR CURB AND GUTTER DETAILS, SEE STANDARD PLAN R-30-SERIES.

TRANSVERSE SIDEWALK SLOPES ARE TYPICALLY 1.5% OR 2% MAXIMUM. IN ORDER TO MEET SITE CONDITIONS. IF THE TRANSVERSE SLOPE IS REQUIRED TO BE LESS THAN 1.5%. LONGITUDINAL DRAINAGE MUST BE PROVIDED.

WHEN SETTING GRADES FOR COMMERCIAL DRIVES. THE TYPES OF VEHICLES USING THE DRIVE SHOULD BE CONSIDERED.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
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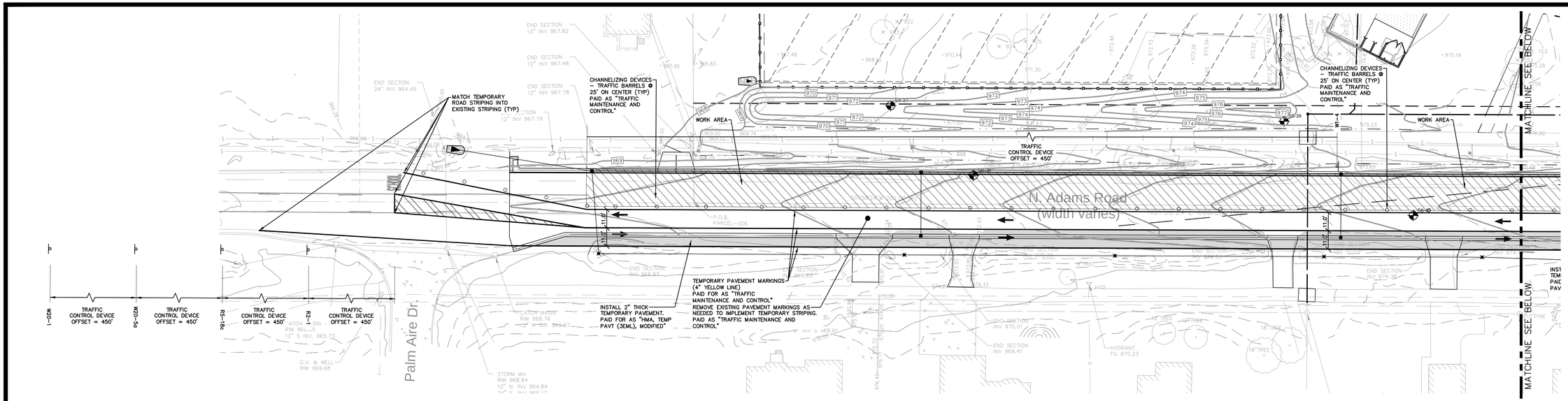
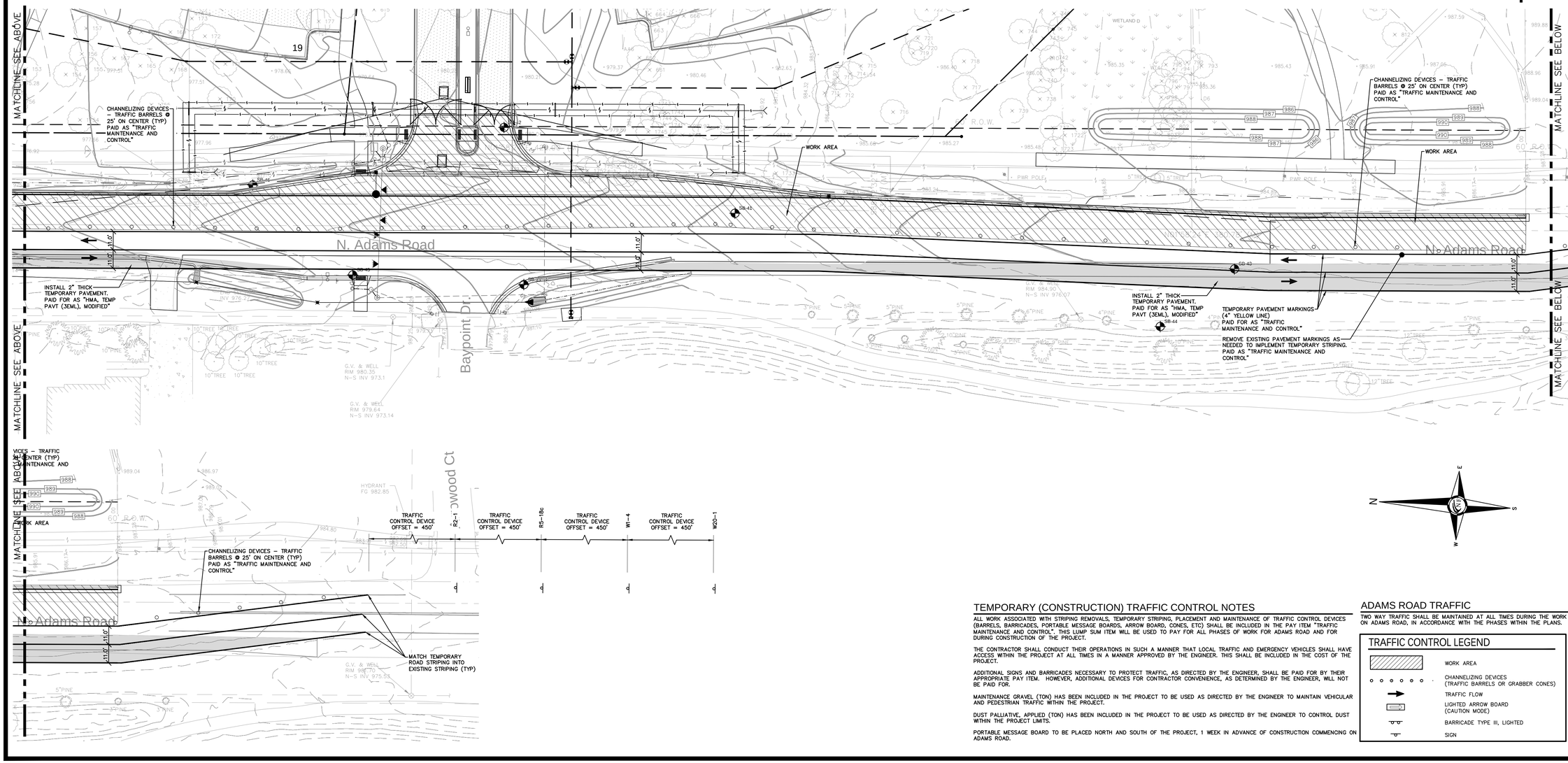
DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: N.T.S.

NFE JOB NO. O557 — sheet no. C5.5





TEMPORARY (CONSTRUCTION) TRAFFIC CONTROL NOTES

ALL WORK ASSOCIATED WITH STRIPING REMOVALS, TEMPORARY STRIPING, PLACEMENT AND MAINTENANCE OF TRAFFIC CONTROL DEVICES (BARRELS, BARRICADES, PORTABLE MESSAGE BOARDS, ARROW BOARD, CONES, ETC) SHALL BE INCLUDED IN THE PAY ITEM "TRAFFIC MAINTENANCE AND CONTROL". THIS LUMP SUM ITEM WILL BE USED TO PAY FOR ALL PHASES OF WORK FOR ADAMS ROAD AND FOR DURING CONSTRUCTION OF THE PROJECT.

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ADAMS ROAD TRAFFIC

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TRAFFIC CONTROL LEGEND

- WORK AREA
- CHANNELIZING DEVICES (TRAFFIC BARRELS OR GRABBER CONES)
- TRAFFIC FLOW
- LIGHTED ARROW BOARD (CAUTION MODE)
- BARRICADE TYPE III, LIGHTED
- SIGN

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Adams Road Phase 1
Maintenance of Traffic
Plan

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DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
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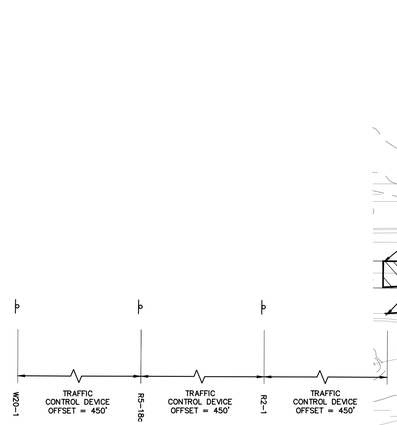
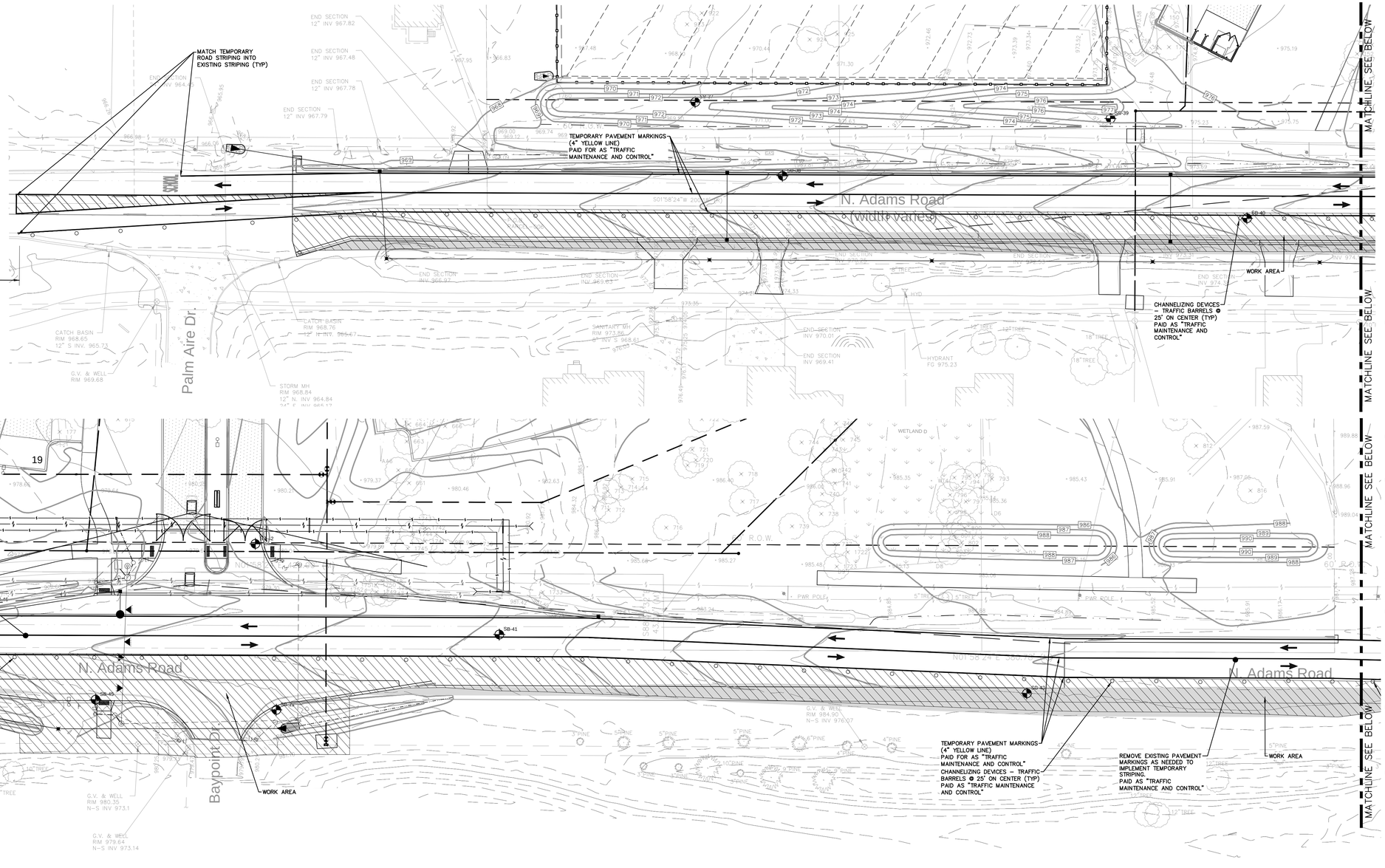
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C5.6





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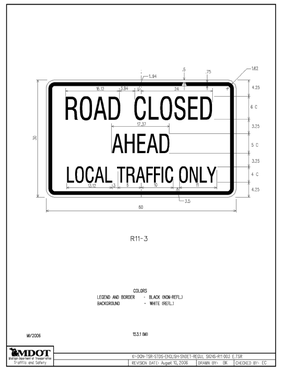
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C5.7



CONSTRUCTION SIGNING NOTES

1. ALL TRAFFIC CONTROL DEVICES INCLUDING SIGNS, BARRICADES, VERTICAL PANELS, DRUMS, WARNING LIGHTS, ARROW BOARDS, AND CHANGEABLE MESSAGE SIGNS SHALL MEET THE "ACCEPTABLE" REQUIREMENTS OF AMERICAN ALL TRAFFIC CONTROL DEVICES INCLUDING SIGNS, BARRICADES, VERTICAL PANELS, DRUMS, WARNING LIGHTS, ARROW BOARDS, AND CHANGEABLE MESSAGE SIGNS SHALL MEET THE "ACCEPTABLE" REQUIREMENTS OF AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA), "QUALITY STANDARD FOR WORK ZONE TRAFFIC CONTROL DEVICES – CURRENT EDITION". COPIES OF THIS PUBLICATION ARE AVAILABLE DIRECTLY FROM ATSSA. ALL TRAFFIC CONTROL DEVICES SHALL BE IN LIKE-NEW CONDITION.

2. SIGN LOCATIONS AND DISTANCES BETWEEN SIGNS WILL BE FIELD REVIEWED BY THE ENGINEER BEFORE INSTALLATION TO ASSURE APPROPRIATE PLACEMENT. THE LOCATION OF THE CONSTRUCTION SIGNING SHALL BE CLEARLY SIGN LOCATIONS AND DISTANCES BETWEEN SIGNS WILL BE FIELD REVIEWED BY THE ENGINEER BEFORE INSTALLATION TO ASSURE APPROPRIATE PLACEMENT. THE LOCATION OF THE CONSTRUCTION SIGNING SHALL BE CLEARLY MARKED IN THE FIELD BY THE CONTRACTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF ONE WEEK IN ADVANCE OF THE NEED FOR REVIEW. THIS WORK WILL NOT BE PAID SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE PROJECT.

3. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE 2025 MMUTCD. ALL CONSTRUCTION SIGNING SHALL BE BLACK LETTERS ON FLORESCENT ORANGE BACKGROUND UNLESS SPECIFIED OTHERWISE. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE 2025 MMUTCD. ALL CONSTRUCTION SIGNING SHALL BE BLACK LETTERS ON FLORESCENT ORANGE BACKGROUND UNLESS SPECIFIED OTHERWISE.

4. ALL TRAFFIC SIGNS WITHIN THE PROJECT WILL BE RELOCATED BY THE CONTRACTOR FOR EACH STAGE OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ALL TRAFFIC CONTROL DEVICES WITHIN THE PROJECT LIMITS. ANY TRAFFIC CONTROL DEVICES DAMAGED DUE TO THE CONTRACTOR'S OPERATION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE. THE CONTRACTOR WILL BE CHARGED FOR ANY DAMAGED TRAFFIC CONTROL DEVISES DUE TO THE CONTRACTOR'S OPERATION, WHICH ARE REPAIRED OR REPLACED BY THE CITY OF ROCHESTER HILLS.

5. SPECIAL SIGNS INDICATING THE START DATE OF THE CONSTRUCTION PROJECT AND/OR THE START DATE OF A ROAD CLOSURE SHALL BE POSTED BY THE CONTRACTOR AT LEAST TWO WEEK IN ADVANCE.

6. AS DIRECTED BY THE TRAFFIC OPERATION ENGINEER, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ANY ADDITIONAL SIGNS, BARRICADES AND LIGHTS WITHIN THE PROJECT TO PROTECT THE TRAFFIC AND WORK AREA.

7. THE CONTRACTOR SHALL PLACE A MINIMUM OF EIGHT SANDBAGS ON CONTRACTOR FURNISHED TYPE III BARRICADES TO PREVENT MOVEMENT. ALL TYPE III BARRICADES SHALL BE DOUBLE SIDED.

8. CONSTRUCTION SIGNING MOUNTED ON PORTABLE SUPPORTS SHOULD NOT BE USED FOR A DURATION OF MORE THAN FOURTEEN (14) DAYS. OTHERWISE, SIGNS SHALL BE GROUND MOUNTED ON 3 LB U-CHANNEL POSTS WHEN POSSIBLE. THE FOLLOWING SIGNS MAY BE PLACED ON TEMPORARY SUPPORTS: SIGNS PLACED IN CONJUNCTION WITH THE TYPE III BARRICADES, SIGNS PLACED FOR SIDEWALK CLOSURE, AND SIGNS WITHIN THE CLOSED PORTION OF ROADWAY ITSELF. THE CONTRACTOR SHALL INSTALL ONE FLASHER ON ANY CONSTRUCTION SIGN THAT IS INSTALLED ON TEMPORARY SUPPORTS.

9. ALL SIGNS PLACED IN CONJUNCTION WITH A TYPE III BARRICADE SHALL BE PLACED ON SEPARATE SUPPORTS IMMEDIATELY BEHIND AND ABOVE THE TYPE III BARRICADE. THESE SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS. THE CONTRACTOR SHALL PLACE A MINIMUM OF EIGHT SANDBAGS ON THESE SIGNS TO PREVENT MOVEMENT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COVERING AND UNCOVERING ALL CONSTRUCTION SIGNS AS NEEDED AND REQUESTED FOR THE PROPER MAINTENANCE OF TRAFFIC THROUGHOUT THE CONSTRUCTION AREA.

11. TRAFFIC CONTROL SIGNS AND STREET NAME SIGNS SHALL BE REMOVED, SALVAGED, RELOCATED AND MAINTAINED BY THE CONTRACTOR AS INDICATED ON THE PLANS. THIS WORK MAY BE REQUIRED MULTIPLE TIMES DURING THE PROJECT TO ACCOMMODATE CONSTRUCTION OPERATIONS. THIS WORK SHALL BE PERFORMED ON THE SAME DAY OF A CHANGE IN OPERATIONS REQUIRING THE SIGN WORK AS DETERMINED AND/OR APPROVED BY THE PROJECT ENGINEER. UPON COMPLETION OF THE PROJECT, PERMANENT TRAFFIC CONTROL SIGNS WILL BE RELOCATED OR REPLACED IN THEIR PROPER POSITION BY THE CITY OR THE CONTRACTOR AS INDICATED ON THE PLANS. THE SIGN REMOVAL, SALVAGING, RELOCATING, INSTALLATION, AND RELATED WORK WILL BE PAID FOR WITH THE APPROPRIATE PAY ITEM, AT THE CONTRACT UNIT PRICES EACH TIME THE WORK IS DETERMINED TO BE NECESSARY BY THE PROJECT ENGINEER TO ACCOMMODATE CONSTRUCTION OPERATIONS.

12. ANY OTHER SIGNS WHICH THE CONTRACTOR MAY BE REQUIRED TO FURNISH SHALL CONFORM TO THE 2025 MMUTCD. THE CONTRACTOR SHALL NOT BEGIN ANY OPERATIONS ON THE PROJECT UNTIL ALL OF THE STOP SIGNS AND STREET NAME SIGNS HAVE BEEN RELOCATED AND FLASHER LIGHTS ARE ATTACHED TO ALL REQUIRED SIGNS AND BARRICADES.

13. TRAFFIC CHANNELING DEVICES (PLASTIC BARRELS) FURNISHED BY THE CONTRACTOR FOR WORK PROTECTION SHALL BE COATED WITH REFLECTORIZED MATERIAL AND AT SPACING BASED ON POSTED SPEED LIMIT AND PER THE 2025 MMUTCD.

MINIMUM MERGING TAPER LENGTH "L" (FEET)

OFFSET FEET	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)										
	25	30	35	40	45	50	55	60	65	70	
1	10	15	20	27	45	50	55	60	65	70	TAPER LENGTH "L" IN FEET
2	21	30	41	53	90	100	110	120	130	140	
3	31	45	61	80	135	150	165	180	195	210	
4	42	60	82	107	180	200	220	240	260	280	
5	52	75	102	133	225	250	275	300	325	350	
6	63	90	123	160	270	300	330	360	390	420	
7	73	105	143	187	315	350	385	420	455	490	
8	83	120	163	213	360	400	440	480	520	560	
9	94	135	184	240	405	450	495	540	585	630	
10	104	150	204	267	450	500	550	600	650	700	
11	115	165	225	293	495	550	605	660	715	770	
12	125	180	245	320	540	600	660	720	780	840	
13	135	195	266	347	585	650	715	780	845	910	
14	146	210	286	374	630	700	770	840	910	980	
15	157	225	307	400	675	750	825	900	975	1050	

THE FORMULAS FOR THE MINIMUM LENGTH OF A MERGING TAPER IN DERIVING THE "L" VALUES SHOWN IN THE ABOVE TABLES ARE AS FOLLOWS:

$L = \frac{W \times S^2}{60}$ WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 40 MPH OR LESS

"L" = S x W WHERE POSTED SPEED PRIOR TO THE WORK AREA IS 45 MPH OR GREATER

L = MINIMUM LENGTH OF MERGING TAPER
S = POSTED SPEED LIMIT IN MPH PRIOR TO WORK AREA
W = WIDTH OF OFFSET

TYPES OF TAPERS

UPSTREAM TAPERS
MERGING TAPER
SHIFTING TAPER
SHOULDER TAPER
TWO-WAY TRAFFIC TAPER

DOWNSTREAM TAPERS
(USE IS OPTIONAL)

TAPER LENGTH

L – MINIMUM
1/2 L – MINIMUM
1/3 L – MINIMUM
100 ' – MAXIMUM
100 ' – MINIMUM (PER LANE)

MDOT Michigan Department of Transportation — TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL

TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CDN/AEJ/GF	JUNE 2006	M0020a	SHEET 1 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: K:\SDO\TSR\STOS\ENG\TSW\MNTRF\M0020a.dgn	REV. 08/21/2006		

DISTANCE BETWEEN TRAFFIC CONTROL DEVICES "D" AND LENGTH OF LONGITUDINAL BUFFER SPACE ON "WHERE WORKERS PRESENT" SEQUENCES

"D" DISTANCES	POSTED SPEED LIMIT, MPH (PRIOR TO WORK AREA)									
D (FEET)	25	30	35	40	45	50	55	60	65	70
	250	300	350	400	450	500	550	600	650	700

GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE "B"

SPEED* MPH	LENGTH FEET
20	33
25	50
30	83
35	132
40	181
45	230
50	279
55	329
60	411
65	476
70	542

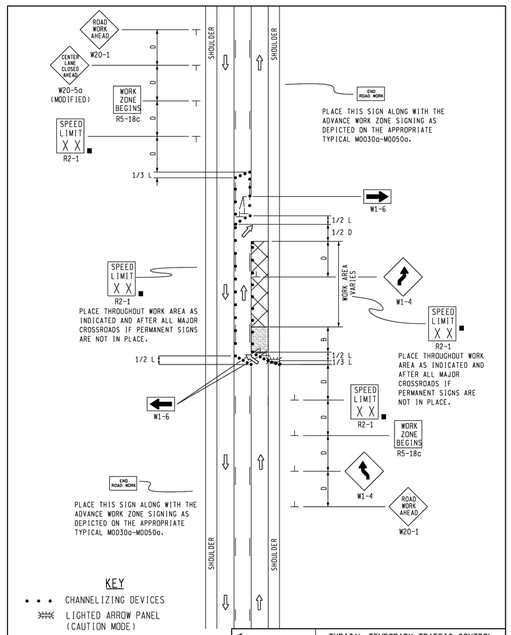
* POSTED SPEED, OFF PEAK 85TH PERCENTILE SPEED PRIOR TO WORK STARTING, OR THE ANTICIPATED OPERATING SPEED

1 BASED UPON AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) BRAKING DISTANCE PORTION OF STOPPING SIGHT DISTANCE FOR WET AND LEVEL PAVEMENTS (A POLICY ON GEOMETRIC DESIGN OF HIGHWAY AND STREETS), AASHTO. THIS AASHTO DOCUMENT ALSO RECOMMENDS ADJUSTMENTS FOR THE EFFECT OF GRADE ON STOPPING AND VARIATION FOR TRUCKS.

MDOT Michigan Department of Transportation — TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL

TABLES FOR "L", "D" AND "B" VALUES

DRAWN BY: CDN/AEJ/GF	JUNE 2006	M0020a	SHEET 2 OF 2
CHECKED BY: BMM	PLAN DATE:		
FILE: K:\SDO\TSR\STOS\ENG\TSW\MNTRF\M0020a.dgn	REV. 08/21/2006		



NOT TO SCALE

MDOT Michigan Department of Transportation — TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFLTO AND SHIFTING ONE THROUGH LANE INTO THE CLFLTO NO SPEED REDUCTION

DRAWN BY: CDN/AEJ/DJF	OCTOBER 2011	M0231a	SHEET 1 OF 2
CHECKED BY: BMM/CRB	PLAN DATE:		
FILE: P:\RD\T&S\Typicals\Signs\MT\MT nonFwy\M0231a REV. 10/18/2011			

NOTES

1F. D = DISTANCE BETWEEN TRAFFIC CONTROL DEVICES
1/2 L AND 1/3 L = MINIMUM LENGTH OF TAPER
B = LENGTH OF LONGITUDINAL BUFFER
SEE M0020a FOR "D," "L," AND "B" VALUES

2. ALL NON-APPLICABLE SIGNING WITHIN THE CIA SHALL BE MODIFIED TO FIT CONDITIONS, COVERED OR REMOVED.

3. DISTANCES BETWEEN SIGNS, THE VALUES FOR WHICH ARE SHOWN IN TABLE D. ARE APPROXIMATE AND MAY NEED ADJUSTING AS DIRECTED BY THE ENGINEER.

3A. THE "WORK ZONE BEGINS" (R5-18c) SIGN SHALL BE USED ONLY IN THE INITIAL SIGNING SEQUENCE IN THE WORK ZONE. SUBSEQUENT SEQUENCES IN THE SAME WORK ZONE SHALL OMIT THIS SIGN AND THE QUANTITIES SHALL BE ADJUSTED APPROPRIATELY.

4E. THE MAXIMUM RECOMMENDED DISTANCE(S) BETWEEN CHANNELIZING DEVICES SHOULD BE EQUAL IN FEET TO THE POSTED SPEED IN MILES PER HOUR ON TAPER(S) AND TWICE THE POSTED SPEED IN THE PARALLEL AREA(S).

5. FOR OVERNIGHT CLOSURES, TYPE III BARRICADES SHALL BE LIGHTED.

6. THE TYPE A WARNING FLASHER SHOWN ON THE WARNING SIGNS SHALL BE POSITIONED ON THE SIDE OF THE SIGN NEAREST THE ROADWAY.

7. ALL TEMPORARY SIGNS, TYPE III BARRICADES, THEIR SUPPORT SYSTEMS AND LIGHTING REQUIREMENTS SHALL MEET NCHRP 350 CRASHWORTHLY REQUIREMENTS STIPULATED IN THE CURRENT EDITION OF THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, THE CURRENT EDITION OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION, THE STANDARD PLANS AND APPLICABLE SPECIAL PROVISIONS. ONLY DESIGNS AND MATERIALS APPROVED BY MDOT WILL BE ALLOWED.

8. WHEN BUFFER AREAS ARE ESTABLISHED, THERE SHALL BE NO EQUIPMENT OR MATERIALS STORED OR WORK CONDUCTED IN THE BUFFER AREA.

21. ALL EXISTING PAVEMENT MARKINGS WHICH ARE IN CONFLICT WITH EITHER PROPOSED CHANGES IN TRAFFIC PATTERNS OR PROPOSED TEMPORARY TRAFFIC MARKINGS, SHALL BE REMOVED BEFORE ANY CHANGE IS MADE IN THE TRAFFIC PATTERN. EXCEPTION WILL BE MADE FOR DAYTIME-ONLY TRAFFIC PATTERNS THAT ARE ADEQUATELY DELINEATED BY OTHER TRAFFIC CONTROL DEVICES.

SIGN SIZES

DIAMOND WARNING	– 48" x 48"
W1-6 WARNING	– 48" x 24"
R2-1 REGULATORY	– 48" x 60"
R5-18c REGULATORY	– 48" x 48"

NOT TO SCALE

MDOT Michigan Department of Transportation — TRAFFIC AND SAFETY — MAINTAINING TRAFFIC TYPICAL

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFLTO AND SHIFTING ONE THROUGH LANE INTO THE CLFLTO NO SPEED REDUCTION

DRAWN BY: CDN/AEJ/DJF	OCTOBER 2011	M0231a	SHEET 2 OF 2
CHECKED BY: BMM/CRB	PLAN DATE:		
FILE: P:\RD\T&S\Typicals\Signs\MT\MT nonFwy\M0231a REV. 10/18/2011			

ROCHESTER HILLS MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN — STEVEN W. SUTTON — ENGINEER NO. 6201050492 — PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Adams Road
Details

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY:
E. Oshaben

DESIGNED BY:
E. Oshaben

APPROVED BY:
P. Kotrba

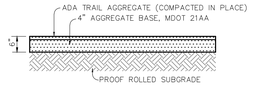
DATE:
2025-05-01

SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557

sheet no. C5.8

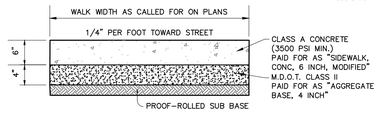


AGGREGATE PATHWAY SECTION
PAID FOR AS "AGGREGATE SURFACE COURSE, 6 INCH, MODIFIED"
N.T.S.

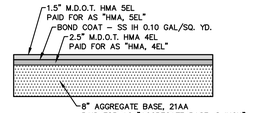
NOTES:
ADA TRAIL AGGREGATE SURFACE
THE 2" LAYER OF AGGREGATE TOP COURSE FOR PATHWAYS SHALL MEET THE FOLLOWING REQUIREMENTS:

PROVIDE LIMESTONE, OR NATIVE LOCAL ROCK, CRUSHED-COMMONLY KNOWN AS LIMESTONE SCREENINGS, SHALL BE FREE OF ALL DIRT, CLAY, AND FOREIGN MATERIAL. AGGREGATE SHALL MEET THE FOLLOWING GRADATION REQUIREMENTS:

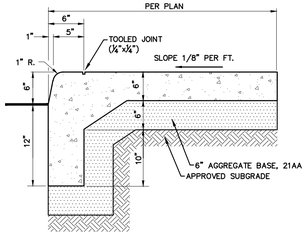
1"	95-100
#4	65-95
#8	40-75
#16	30-55
#30	25-45
#50	20-40
#100	15-35
#200	6-26



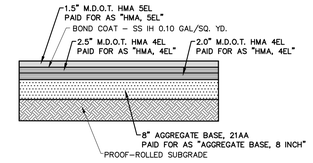
CONCRETE SIDEWALK SECTION
N.T.S.



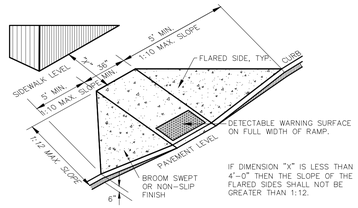
STANDARD DUTY HMA PAVEMENT
N.T.S.



6" MONOLITHIC CURB AND WALK
PAID FOR AS SIDEWALK, CONC, 6 INCH, MODIFIED"
N.T.S.

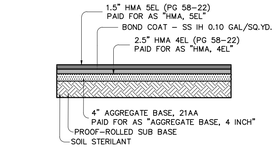


HEAVY DUTY 6" HMA PAVEMENT SECTION
N.T.S.

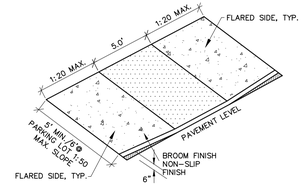


IF DIMENSION "X" IS LESS THAN 4'-0" THEN THE SLOPE OF THE FLARED SIDES SHALL NOT BE GREATER THAN 1:12.

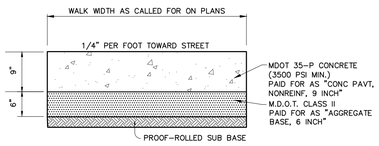
CURB & WALK RAMP DETAIL
PAID FOR AS "CURB RAMP, CONC, 6 INCH, MODIFIED"
N.T.S.



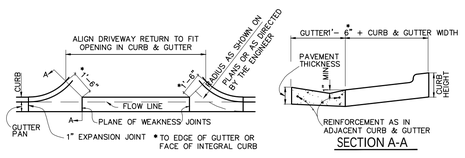
4" ASPHALT PATHWAY SECTION
PER C.O.R.H. ENGINEERING DESIGN STANDARDS
WIDTH PER PLAN



BARRIER FREE RAMP DETAIL
PAID FOR AS "CURB RAMP, CONC, 6 INCH, MODIFIED"
N.T.S.

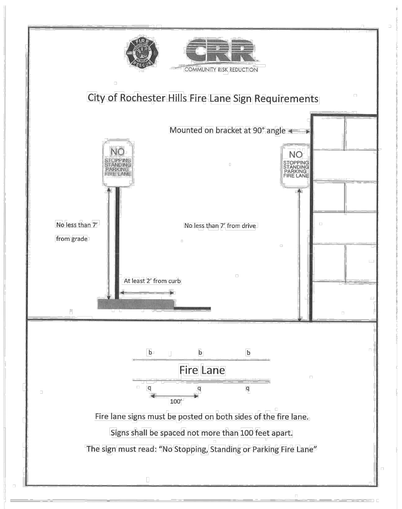


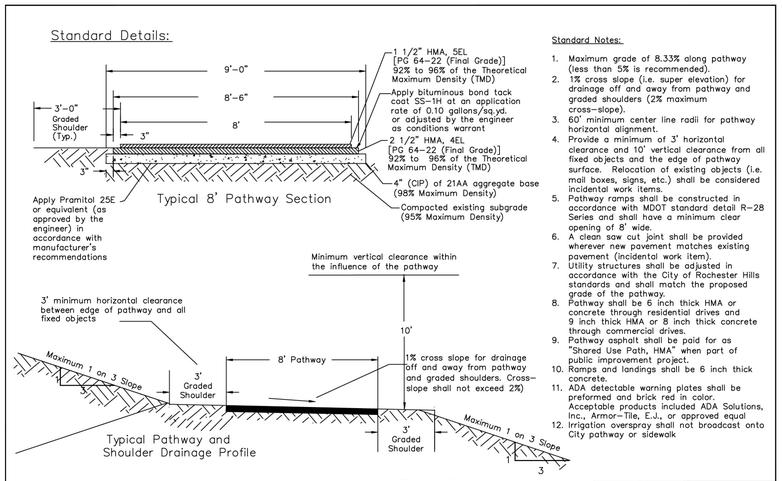
CONCRETE SIDEWALK & DRIVE ACCESS SECTION
PER R.C.O.C. GUIDELINES & SPECIFICATIONS
N.T.S.



SECTION A-A

MDOT DRIVEWAY OPENING DETAIL 'M'
N.T.S.





Standard Notes:

1. Maximum grade of 8.33% along pathway (less than 5% is recommended).
2. 1% cross slope (i.e. super elevation) for drainage off and away from pathway and graded shoulders (2% maximum cross-slope).
3. 60' minimum center line radii for pathway horizontal alignment.
4. Provide a minimum of 3' horizontal clearance and 10' vertical clearance from all fixed objects and the edge of pathway surface. Relocation of existing objects (i.e. mail boxes, signs, etc.) shall be considered incidental work items.
5. Pathway ramps shall be constructed in accordance with MDOT standard detail R-28 Series and shall have a minimum clear opening of 8' wide.
6. A clean saw cut joint shall be provided wherever new pavement matches existing pavement (incidental work item).
7. Utility structures shall be adjusted in accordance with the City of Rochester Hills standards and shall match the proposed grade of the pathway.
8. Pathway shall be 6 inch thick HMA or concrete through residential drives and 9 inch thick HMA or 8 inch thick concrete through commercial drives.
9. Pathway asphalt shall be paid for as "Shared Use Path, HMA" when part of public improvement project.
10. Ramps and landings shall be 6 inch thick concrete.
11. ADA detectable warning plates shall be preformed and brick red in color. Acceptable products included ADA Solutions, Inc., Armor-Tile, E.J., or approved equal
12. Irrigation overspray shall not broadcast onto City pathway or sidewalk

I:\Eng\DWG\DETAILS\PATHWAY\Pathway dwgs\27-HMA Pthwy Const-Ext-Reloc-Std Nts & Detls.dwg

CITY OF ROCHESTER HILLS
STANDARD DETAIL FOR:
Pathway Details:
Hot-Mixed Asphalt Pathway Construction, Extensions and Relocations

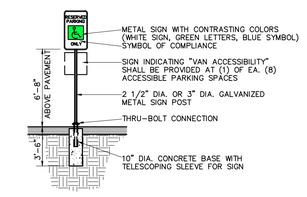
DRAWN BY: S. Bucholz	PLAN DATE: 8/28/1996	REVISIONS: 4/12/2012	2/25/2016	10/30/2024 11/12/2019	2/8/2022 01/25/2022	8/22/2018 01/2/2022
APPROVED BY: Seth Bucholz, City Transportation Technician; Keith Depp, City Project Engineer		NOT TO SCALE		SHEET 1 OF 1		

PATHWAY PAVING & GRADING NOTES

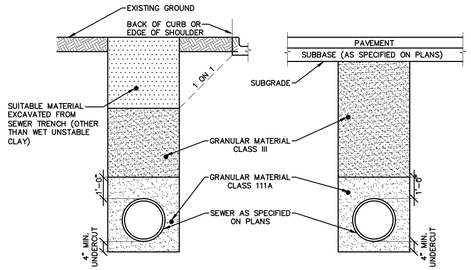
GENERAL:
1. ALL CONSTRUCTION OF PATHWAYS SHALL CONFORM TO THE CITY OF ROCHESTER HILLS' CONSTRUCTION STANDARDS AND APPROVED DETAILS.
2. PATHWAYS SHALL BE EIGHT FEET (8') WIDE, EXCEPT THROUGH DRIVEWAYS. THEN THEY SHALL BE TEN FEET (10') WIDE.
3. A THREE-FOOT (3') SHOULDER SHALL BE GRADED TO SMOOTHLY DRAIN AWAY FROM THE PATHWAY. SHOULDERS SHALL BE SEEDED OR SODDED.
4. MINIMUM TEN-FOOT (10') VERTICAL CLEARANCE FROM THE BASE OF THE PATHWAY TO ANY OBJECT SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY THE CITY.
5. MINIMUM THREE-FOOT (3') HORIZONTAL CLEARANCE FROM THE EDGE OF THE PATHWAY TO ANY OBJECT SHALL BE MAINTAINED, UNLESS OTHERWISE APPROVED BY THE CITY.
6. THE MINIMUM DISTANCE FROM THE EDGE OF THE PATHWAY TO THE BACK OF CURB SHALL BE TEN FEET (10), UNLESS OTHERWISE APPROVED BY THE CITY.
7. WHERE THE ADJACENT CROSS SLOPE EXCEEDS THE ACCEPTABLE 1:3 SLOPE, A SAFETY FENCE OR RAILING SHALL BE CONSTRUCTED WHEN REQUIRED BY THE CITY ENGINEER. THE FENCE OR RAILING SHALL BE DESIGNED AND CONSTRUCTED AS APPROVED BY THE CITY ENGINEER.
8. ALIGNMENT OF PATHWAY SHALL BE DESIGNED TO AVOID EXISTING AND PROPOSED UTILITY STRUCTURES BEING LOCATED IN THE PATHWAY. IF THIS CANNOT BE AVOIDED, THE STRUCTURES SHALL BE LOCATED IN THE CENTER OF THE PATHWAY.
9. SIGNIFICANT GRADE CHANGES MAY REQUIRE THE USE OF RETAINING WALLS TO CONSTRUCT THE PATHWAY. KEYSTONE WALLS OR EQUIVALENT (FULL BLOCK) MAY BE USED. BLOCK COLOR SHALL BE AS APPROVED BY THE CITY. TIMBER RETAINING WALLS ARE NOT ACCEPTABLE.
10. ALL RIGHTS-OF-WAY AREAS SHALL BE FULLY RESTORED TO ORIGINAL OR BETTER CONDITION, AND BE PROPERLY GRADED AFTER PATHWAY CONSTRUCTION.
11. ALL TREE ROOTS SHALL BE CUT AND REMOVED WITHIN THE INFLUENCE OF THE PATHWAY.
12. DURING PATHWAY CONSTRUCTION, SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, PROVIDING NOTIFICATION THAT THE PATHWAY IS CLOSED. PEDESTRIANS SHALL NOT BE DETOURED INTO THE ROADWAY.

CROSSINGS:
1. AT ALL STREET INTERSECTIONS, PATHWAYS SHALL BE RAMPED TO MEET THE STREET AT GRADE. HORIZONTAL CURB CUTS SHALL NOT BE ALLOWED UNLESS APPROVED BY THE CITY ENGINEER. CURBS SHALL BE CLEANLY SAWCUT, REMOVED, AND REPLACED WITH A DROPPED CURB SECTION TO MEET THE EXISTING GRADE, AND COMPLY WITH MDOT RAMP DETAIL R-28 SERIES.
2. AT ALL DRIVEWAY CROSSINGS, PATHWAYS SHALL GO THROUGH THE DRIVE. EXISTING DRIVES SHALL BE CLEANLY SAWCUT AND THE PATHWAY SHALL CONTINUE THROUGH THE DRIVE UNINTERRUPTED. IN GENERAL, THE TRANSVERSE SLOPE OF THE PATHWAY SHALL NOT EXCEED TWO PERCENT (2%).

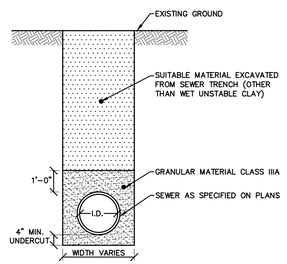
MATERIALS AND FORMS:
3. PATHWAYS SHALL BE FOUR INCHES (4') THICK, HOT MIXED ASPHALT (HMA) COMPRISED OF TWO INCHES (2') OF HMA 36A OVER TWO INCHES (2') OF HMA 13A. PATHWAYS SHALL CONSIST OF AN ADDITIONAL TWO INCHES (2') OF HMA 13A THROUGH EXISTING AND PROPOSED DRIVES AND PATHWAY RAMPS ABUTTING PROPOSED COMMERCIAL DRIVES. PATHWAY RAMPS LOCATED AT PUBLIC AND PRIVATE STREETS AND SIGNALIZED DRIVES SHALL BE CONSTRUCTED IN CONCRETE WITH ADA DETECTABLE WARNING PLATES. CONCRETE PATHWAY RAMPS SHALL BE SIX INCHES (6') THICK, AIRENTRAINED CONCRETE, AT 3,500 PSI COMPRESSIVE STRENGTH.
4. THE AGGREGATE BASE SHALL BE FOUR INCHES (4') MDOT 21AA AGGREGATE BASE COARSE MATERIALS (CRUSHED LIMESTONE OR CRUSHED CONCRETE). ALTERNATE RECYCLED ASPHALT PRODUCT (RAP) BASE COURSE MATERIALS MAY BE CONSIDERED UPON APPROVAL OF THE CITY ENGINEER. ALTERNATE RAP MATERIALS MUST MEET EQUIVALENT STRUCTURAL STRENGTH OF 21AA AGGREGATE (CRUSHED LIMESTONE OR CONCRETE), COMPACTED TO NINETY-SEVEN PERCENT (97%) MAXIMUM DENSITY, PLACED ON BASE TREATED WITH A SOIL STERILANT. THE BASE SHALL HAVE ALL EXISTING TOPSOIL REMOVED AS WELL AS BE FIRM AND COMPACT. THE BASE SHALL AT A MINIMUM BE EXTENDED TO ONE FOOT (1') WIDER THEN THE PROPOSED PATHWAY ON EACH SIDE.



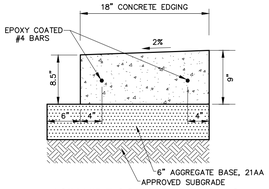
BARRIER FREE PARKING SIGN DETAIL
N.T.S.
Provide (1) for each accessible parking space



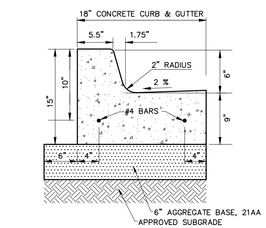
TRENCH DETAIL B SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED
PAID FOR AS "UNDERDRAIN, SUBBASE, 6 INCH, MODIFIED"
N.T.S.



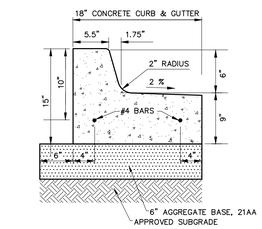
TRENCH DETAIL A SEWER NOT UNDER ROADBED
PAID FOR AS "UNDERDRAIN, SUBBASE, 6 INCH, MODIFIED"
N.T.S.



18" WIDE CONCRETE EDGING
PAID FOR AS "CURB AND GUTTER, CONC, DET F2, MODIFIED"
N.T.S.



CONCRETE CURB DETAIL 'A'
PAID FOR AS "CURB AND GUTTER, CONC, DET F2, MODIFIED"
N.T.S.



CONCRETE CURB DETAIL 'B'
PAID FOR AS "CURB AND GUTTER, CONC, DET F2, MODIFIED"
N.T.S.

ROCHESTER HILLS MICHIGAN

NF ENGINEERS
civil Engineers
Land Surveyors
Land Planners

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL

STATE OF MICHIGAN — STEVEN W. SUTTON — ENGINEER NO. 6201050492 — PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwert, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N , R-11-E
City of Rochester Hills,
Oakland County, Michigan

SHEET
Details

811 Know what's below Call before you dig.

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: E. Oshaben
DESIGNED BY: E. Oshaben
APPROVED BY: P. Kotrba
DATE: 2025-05-01
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
sheet no. C6.0

LAND USE SUMMARY TABLE

Characteristic	Existing Conditions	Proposed Conditions
Total Development Area (ac):	16.32	16.32
Impervious Area (ac):	0.00	3.63
Pervious Area (ac):	16.32	11.71
Water/Pond Area (ac):	0.00	0.99
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated) (ac):	11.38	6.42
Predominant NRCS Soil Type	D	D
Improved areas (turf grass, landscape, row crops) (ac):	0.06	1.82
Predominant NRCS Soil Type	D	D
Wooded Areas (ac):	5.21	2.93
Predominant NRCS Soil Type	D	D
Required CPVC Volume (cft):		47,301
Provided CPVC Volume (cft):		**0**
Per Infiltration Testing by Intertek PSI on September 2nd, 2025, Infiltration is not deemed feasible (PSI Project #03811526). Required CPVC Volume is met via MEP SMP Credit per Oakland County Water Resources Commissioner Stormwater Engineering Design Standards. See MEP SMP Credit Calculations below.		
Total Required Detention Volume (cft):		132,030
Total Provided Volume Provided (cft):		**134,639**
The professional engineer who signs and seals this site plan certifies that the values in this table reflect the WRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.		
Calculated Weighted C Factor:		**0.61**

PROPOSED SURFACE	AREA IMP (SF.)	AREA PER (SF.)	TOTAL AREA (SF.)	TOTAL AREA (AC.)	C (IMP) (-)	C (PER) (-)	C (WEIGHT) (-)
Impervious	157,687	0	157,687	**3.620**	0.95	0.50	**0.950**
Water/Pond	43,124	0	43,124	**0.990**	1.00	0.50	**1.000**
Pervious	0	510,088	510,088	**11.710**	0.95	0.50	**0.500**
TOTAL	**200,812**	**510,088**	**710,900**	**16.320**			**0.61**

REQUIRED DETENTION VOLUME CALCULATIONS

100 Year Post-Development Detention Volume

Name of Project:	**Nowicki Park**	
Location of Project:	**Rochester Hills, MI**	
NFE Project No.:	**O557**	
Contributing Acreage "A":	16.32	*ac*
Weighted Runoff Coefficient "C":	0.61	
Time of Concentration "Tc":	15.00	*min*
1. Calculate Required Water Quality Volume (Vwq) (1" Rainfall Event)		
Vwq = 3,630(C)(A)	36,385	*cft*
2. Calculate Required Forebay Volume (Vf) (0.15" Rainfall Event)		
Vf = 545(C)(A)	5,463	*cft*
3. Calculate Required Channel Protection Volume (Vcpvc) (1.3" Rainfall Event)		
Vcpvc = 4,719(C)(A)	47,301	*cft*
4. Calculate Required Extended Detention Volume (Ved) (1.9" Rainfall Event)		
Ved = 6,897(C)(A)	69,132	*cft*
5. Calculate Extended Detention Outlet Rate (Qed) (48 hour discharge)		
Qed = Ved / [(48 hr)(60 min)(60 sec)] = Ved/172,800	0.40	*cfs*
6. Calculate 100-year Rainfall Intensity (I100)		
I100 = 83.3/(Tc+9.17)^0.81))	6.31	*in/hr*
7. Calculate 100-year Post-Development Peak Inflow Rate (Q100-in)		
Q100-in = (C)(I100)(A)	63.27	*cfs*
8. Calculate the Allowable Release Rate (Qvrr)		
Qvrr = 1.1055-(0.206*LN(A))	0.53	*cfs/ac*
Restricted Outlet rate per local municipality	0.150	*cfs/ac*
9. Calculate Allowable 100-year Storm Outlet Rate (Q100P)		
Q100p = (Qvrr)(A)	2.45	*cfs*
10. Calculate Storage Curve Factor (R)		
R = 0.206-(0.15)(LN(Q100P/Q100-in))	0.694	
11. Calculate Required 100-year Storm Volume In (V100R)		
V100R = 18,985(C)(A)	190,296	*cft*
12. Calculate 100-year Storm Detention Storage Volume (V100D)		
V100D = (V100R)(R)	132,030	*cft*
Vcp(credit)	0	*cft*
TOTAL DETENTION VOLUME REQUIRED:	**132,030**	***cft***

PROVIDED DETENTION VOLUME CALCULATIONS

Volume of Frustum: AB = H (A + B + √AB)/ 3

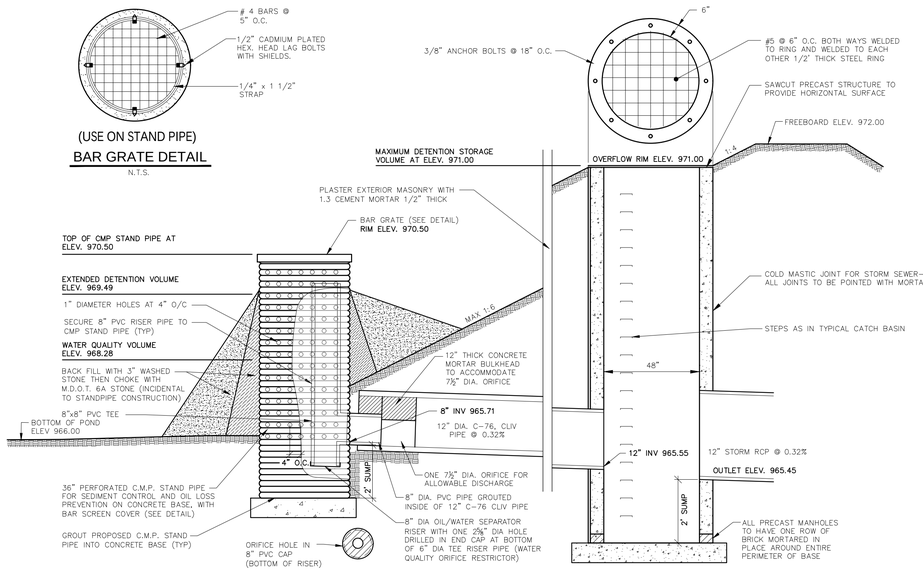
DETENTION BASIN

Contour Elevation	Surface Area (sft)	Incremental Volume (cft)	Cumulative Volume (cft)
966	16,200	--	0
967	19,423	17,787	17,787
968	23,428	21,394	39,181
969	28,679	26,009	65,190
970	34,627	31,606	96,796
971	41,153	37,843	134,639
Volume of Proposed Detention Basin:			***134,639***
TOTAL VOLUME PROVIDED (cft)			**134,639**

MULTI-STAGE DETENTION OUTLET CALCULATIONS

Extended Detention & 100-Year - Circular Orifice

Contributing Acreage "A":	16.32	*ac*
Weighted Runoff Coefficient "C":	0.61	
100-Year Storm Allowable Outlet Rate "Q100p":	2.448	*cfs*
Extended Detention Volume Discharge Rate "Qed":	0.400	*cfs*
Top of Detention Storage "Ztop":	971.00	
Bottom of Detention Storage "Zbot":	966.00	
Elevation of Outlet Control "Zout":	965.71	
WATER QUALITY VOLUME CALCULATIONS		
Water Quality Volume "Vwq":	36,385	*cft*
Water Quality Elevation "Zwq":	968.05	
Calculate Average Head "Hwq":		
Hwq = (Zwq-Zout)	2.340	*ft*
Calculate Required Orifice Area "Aed":		
Awq = Qed / (0.62*(2*g*Hwq)^0.5)	0.053	*sft*
Provided Number of Holes	1	*Hole*
Required Diameter of Holes	2.625	*in*
Provided Orifice Area "Awq-act":	0.038	*sft*
Calculate Actual Average Release Rate "Qwq-act":		
Qwq-act = 0.62*Awq-act*((2*g*Hwq)^0.5)	0.286	*cfs*
Calculate Actual Holding Time "Twq":		
Twq = (Ved/Qed-act)/3600	35.33	*hr*
**** Use (1) 2.625'' Hole @ 965.71 ****		
EXTENDED DETENTION OUTLET CALCULATIONS		
Extended Detention Volume "Ved":	69,132	*cft*
Extended Detention Elevation "Zed":	969.15	
Calculate Average Head "Hed":		
Hed = (Zed-Zout)	3.440	*ft*
Calculate Required Orifice Area "Aed":		
Aed = Qed / (0.62*(2*g*Hed)^0.5)	0.043	*sft*
Provided Number of Holes	1	*Hole*
Required Diameter of Holes	2.75	*in*
Provided Orifice Area "Aed-act":	0.041	*sft*
Calculate Actual Average Release Rate "Qed-act":		
Qed-act = 0.62*Aed-act*((2*g*Hed)^0.5)	0.381	*cfs*
Calculate Actual Holding Time "Ted":		
Ted = (Ved/Qed-act)/3600	50.45	*hr*
**** Use (1) 2.75'' Hole @ 965.71 ****		
100-YEAR FLOOD VOLUME OUTLET CALCULATIONS		
Calculate Head on Extended Detention Holes "Hout":		
Hout = Ztop - Zout	5.290	*ft*
Calculate Flow through Extended Detention Holes "Q100p-ed":		
Q100p-ed = (0.62*Aed-act(2*32.2*Hout)^0.5)	0.472	*cfs*
Calculate Adjusted Required Outlet Release Rate "Q100p-adj":		
Q100p-adj = Q100p - Q100p-ed	1.976	*cfs*
Calculate Head on 100-year Holes "H100p":		
H100p = Ztop - Zed	1.85	*ft*
Calculate Required Orifice Area "A100p":		
A100p = (Q100p-adj / (0.62*(2*g*H100p)^0.5))	0.292	*sft*
Provided Number of Holes	1	*Hole*
Required Diameter of Holes	7.25	*in*
Provided Orifice Area "A100p-act":	0.287	*sft*
Calculate Actual Peak Release Rate "Q100p-act":		
Q100p-act = (0.62*A100p-act) *(2*g*H100p)^0.5)	1.940	*cfs*
Calculate Total Release Rate "Q100p-tot":		
Q100p-tot = Q100p-ed + Q100p-act	2.412	*cfs*
Install 7 1/2" DIA. Orifice in 12" Concrete Pipe from 36" Standpipe		
OVERFLOW WIER FLOW RATE		
10 year flow rate	6.021	*cfs*
Length of Weir Crest (Lweir)	10.000	*ft*
Head Above Wier Crest (Hweir)	0.500	*ft*
Qweir = 3.367*Lweir*Hweir^(3/2)	11.904	*cfs*



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elwertk@rochesterhill.org

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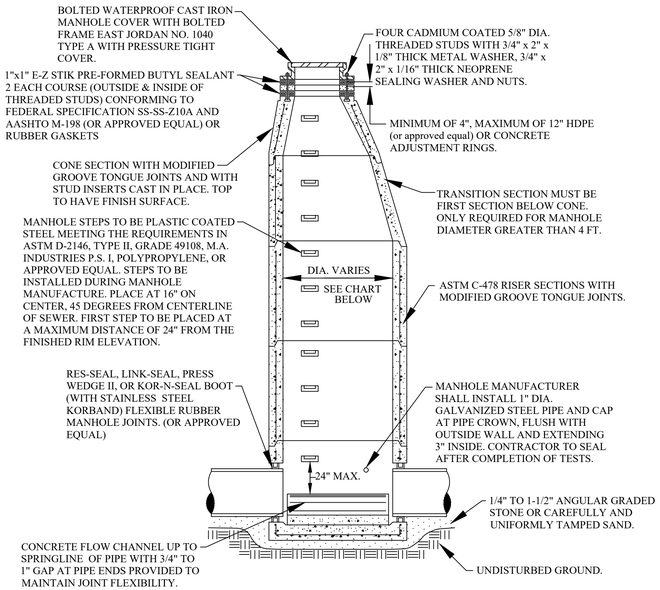
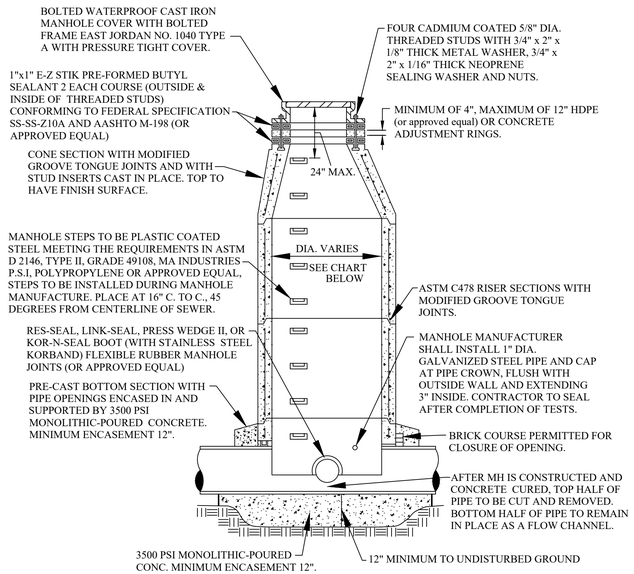


STANDARD MANHOLE

MANHOLE SIZING CHART

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
4'	24"	18"
5'	36"	24"
6'	42"	36"
7'	60"	42"



MANHOLE CONSTRUCTED OVER EXISTING SEWER

MANHOLE SIZING CHART

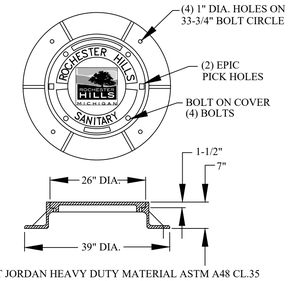
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"

SANITARY SEWER CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS AND THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER (OCWRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY THE CITY OF ROCHESTER HILLS INSPECTION SERVICES.
2. NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER STANDARDS. PRELIMINARY-AIR TESTS ARE WITNESSED BY THE CITY AND FINAL AIR TESTS ARE WITNESSED BY BOTH THE CITY AND THE OCWRC. ONLY PIPE AND PIPE JOINTS APPROVED BY THE CITY MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
3. LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING SEWER, OR EXTENSION, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERTIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
4. AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERTIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED. ALL MAIN LINE PIPE SHALL BE LAID WITH A PIPE LASER BEAM FOR LINE AND GRADE. A TARGET MUST BE INSTALLED AT THE END OF THE PIPE BEING LAYED.
5. SELF-LEVELING ACCESS ASSEMBLY STRUCTURES SHALL BE USED FOR ADJUSTING STRUCTURES WITHIN ASPHALT AND CONCRETE PAVEMENT.
6. ALL SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER.
7. ALL NEW MANHOLES SHALL HAVE CITY APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND BUTYL TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE CITY APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
8. AT ALL CONNECTIONS TO MANHOLES IN ALL SEWERS, OR EXTENSIONS, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
9. GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL NOT BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
10. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS DIG THREE (3) DAYS IN ADVANCE (811) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
11. AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND ALL OTHER UTILITIES.
12. AS A MEANS OF INSURING PROPER INSTALLATION OF THE SANITARY SEWER PIPE, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE SANITARY SEWER PIPE. THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS INSPECTION STANDARDS.

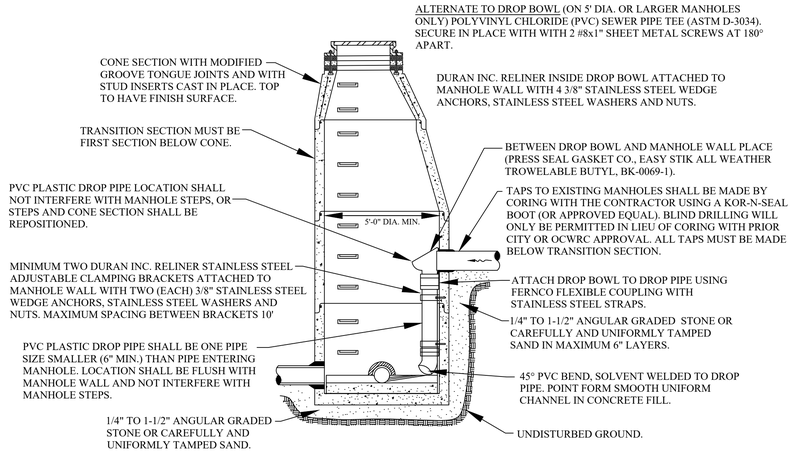
SANITARY SEWER MATERIALS

1. THE FOLLOWING MATERIALS MAY BE USED FOR PUBLIC SANITARY SEWER CONSTRUCTION, APPROVED PIPE MATERIALS MUST CONFORM TO STANDARDS ADOPTED BY THE OFFICE OF THE OAKLAND COUNTY WATER RESOURCES COMMISSIONER:
   - A. FOR SEWERS 8" TO 15" TO BE PVC TRUSS PIPE, ASTM D-2680, WITH GASKET JOINTS, OTHER TYPES OF PIPE AS APPROVED BY CITY ENGINEER.
   - B. FOR 6" SEWER LEADS SHALL BE SOLID WALLED PVC, SDR 23.5, ASTM D-3034 OR PVC SCHEDULE 40 SOLID WALLED, ASTM D-2665. PIPE SHALL HAVE A MINIMUM PIPE STIFFNESS OF 150 P.S.I., AND A MINIMUM DEFLECTION OF 5% AT FAILURE. THE SEWER LEAD MATERIAL SHALL BE COMPATIBLE WITH SEWER MAIN MATERIAL.
   - C. FOR SEWERS GREATER THAN 15" TO BE REINFORCED CONCRETE PIPE (RCP) SHALL CONFORM TO THE CURRENT ASTM D C76 WALL B. JOINTS SHALL BE SYNTHETIC RUBBER AND MEET OR EXCEED THE REQUIREMENTS ESTABLISHED BY ASTM 361.



EAST JORDAN HEAVY DUTY MATERIAL ASTM A48 CL.35 COVER WT., 150 LBS., CATALOG NO. 1040 TYPE A

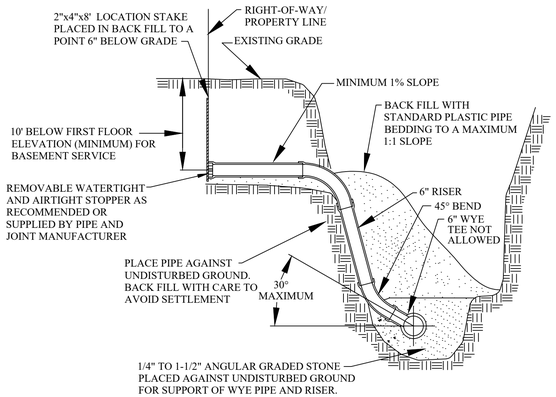
ROCHESTER HILLS MANHOLE COVER



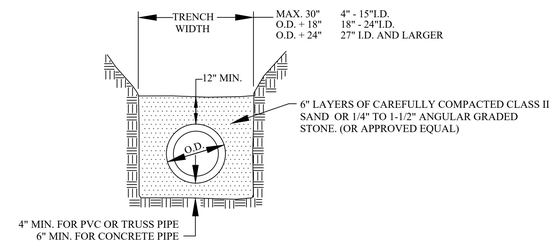
INTERIOR DROP CONNECTION

NOTE: INTERIOR DROP CONNECTION PERMITTED ONLY WHEN APPROVED BY CITY ENGINEER.

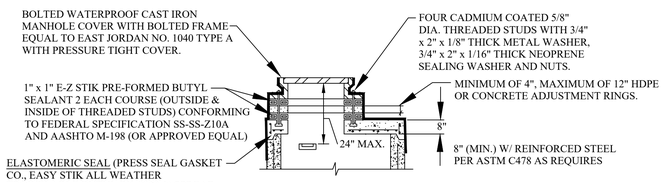
REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: _____	NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION	*City of Rochester Hills*	SANITARY SEWER STANDARD DETAILS	NOT TO SCALE	DATE: 1/10/2019
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES		*1000 Rochester Hills Drive, Rochester Hills, Michigan 48309*		SHEET 1 OF 2	



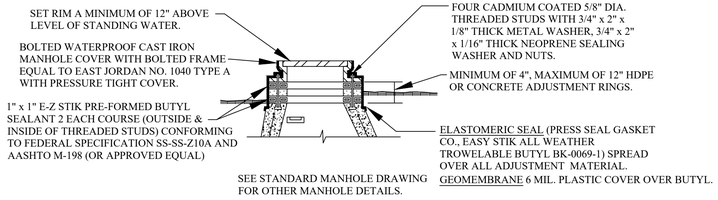
HOUSE LEAD DETAIL



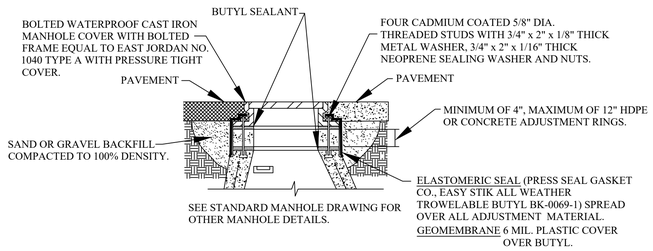
STANDARD BEDDING (CLASS B)



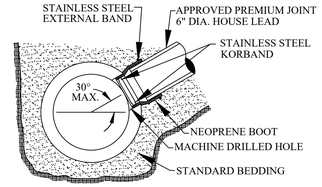
FLAT TOP MANHOLE



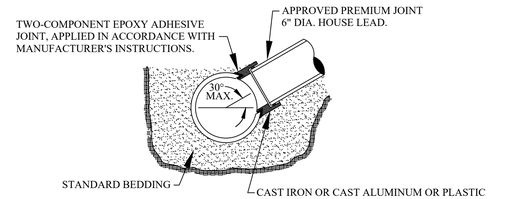
ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS



ADJUSTMENT DETAIL MANHOLE TOPS WITHIN PAVEMENT AREAS

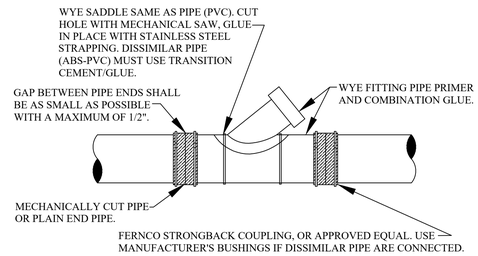


KOR-N-TEE TAP FOR CONCRETE PIPE



NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

SEWER TAP-OVER 12" MAIN SEWER PIPES VITRIFIED CLAY



NOTE: PIPE SHALL BE BEDDED IN STANDARD PLASTIC PIPE BEDDING.

WYE SADDLE OR WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)

CITY OF ROCHESTER HILLS GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

1. ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER THE CITY OF ROCHESTER HILLS INSPECTION.
2. FOR ALL CITY OF ROCHESTER HILLS SYSTEMS CALL 248-841-2510 48-HOURS PRIOR TO SCHEDULING INSPECTION.

   FOR ALL OCWRC-OPERATED SYSTEMS, CALL 248-858-1110 48-HOURS IN ADVANCE PRIOR TO SCHEDULING INSPECTION.
3. SANITARY SEWER MAY NOT BE USED AS A DE-WATERING OUTLET.
4. FITTINGS SHALL BE OF THE SAME MATERIAL AS THE PIPE. FERNCO STRONGBACK COUPLING (OR APPROVED EQUAL) IF DISSIMILAR PIPES ARE CONNECTED. IF DISSIMILAR FITTINGS MUST BE USED, TRANSITION CEMENT/GLUE IS REQUIRED.
5. APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:

   A.PVC PLASTIC, ASTM D3034, SDR 23.5
   B.SOLID WALL PVC SCHEDULE 40, ASTM D-2665
   C. ANY DEVIATIONS FROM ABOVE SPECIFICATIONS REQUIRES APPROVAL BY CITY ENGINEER.
6. FOR 6" LEADS A CLEANOUT MUST BE INSTALLED EVERY 100 FT. FOR 4" LEADS A CLEANOUT MUST BE INSTALLED EVERY 50 FT. 90° BENDS NOT ALLOWED EXCEPT FROM THE HORIZONTAL TO THE VERTICAL WITHIN 5 FEET OF THE BUILDING.

CITY OF ROCHESTER HILLS SANITARY SEWER SYSTEM AS-BUILT DRAWING SPECIFICATIONS

IN AREAS WHERE SANITARY SEWER SYSTEMS ARE OPERATED AND MAINTAINED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICES, PRELIMINARY ACCEPTANCE OF THE SANITARY SEWER SYSTEM MUST BE RENDERED BY THE DEPARTMENT OF PUBLIC SERVICES, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR PRELIMINARY ACCEPTANCE SHALL BE THE SUBMISSION OF AS-BUILT DRAWINGS TO THE CITY OF ROCHESTER HILLS ENGINEERING DIVISION, BY THE DESIGN ENGINEER. AS-BUILT DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

1. FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED IN REPRODUCIBLE PDF FORMAT VIA DIGITAL STORAGE MEDIA. XEROX OR ANY HEAT PROCESS REPRODUCTIONS WILL NOT BE ACCEPTED.
2. ALONG WITH THE PDF PLAN SET PROVIDE TWO (2) SETS OF BLACK-LINED DRAWINGS AND THE PLANS ON ELECTRONIC MEDIA IN AUTOCAD FORMAT (LATEST VERSION).
3. THE COVER SHEET SHALL BE SEALED BY THE PROJECT DESIGN ENGINEER, ALONG WITH THE FOLLOWING CERTIFICATION STATEMENT.

I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE AS-BUILT DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "AS BUILT" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE SANITARY SEWER AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE CITY OF ROCHESTER HILLS.

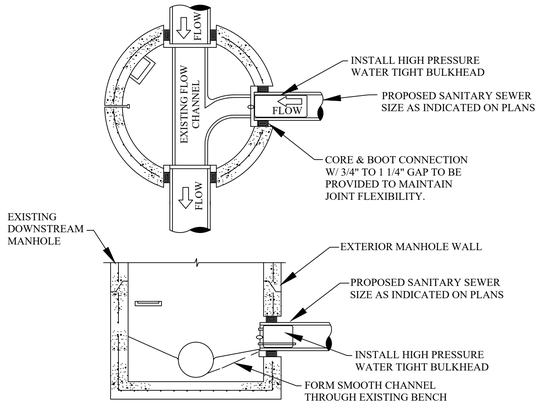
_____
(COMPANY NAME)

_____
(ENGINEER'S SIGNATURE)

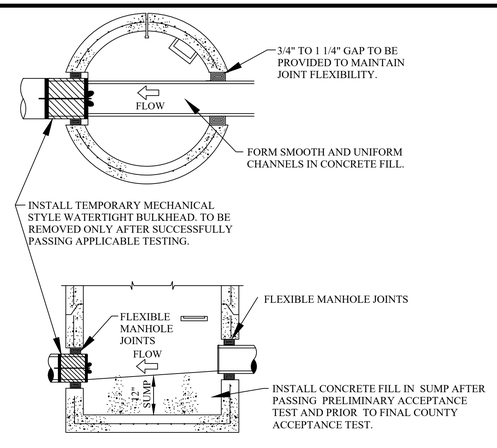
PROFESSIONAL ENGINEER NO. _____

ENGINEER SEAL

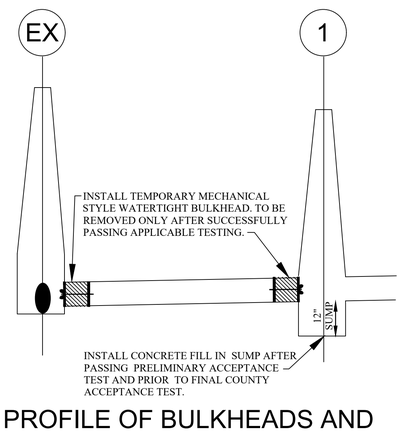
4. THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
5. THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
6. THE SIZE, MANUFACTURER AND MODEL NUMBERS OF ALL VALVES AND PUMPS INSTALLED SHALL BE INDICATED.
7. A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED.
8. THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
9. THE OFFSET OF THE SANITARY MAIN FROM PROPERTY LINES SHALL BE INDICATED.
10. ALL MANHOLES, VALVE WELLS, PUMPS AND ALL SANITARY SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ETC.).
11. ALL UNDERGROUND APPURTENANCES, SUCH AS TFC/ARV WELLS, METER PITS, GRINDER PUMPS AND PUMP STATION PITS, ETC. SHALL BE LOCATED FROM THE NEAREST MANHOLE THAT IS CONNECTED TO THE SAME SANITARY MAIN AS THE APPURTENANCE.
12. THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION IS LESS THAN 18" SHALL BE NOTED.
13. AS-BUILTS SHALL BE PREPARED IN ACCORDANCE WITH CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.



TESTING BULKHEAD IN EXISTING MANHOLE



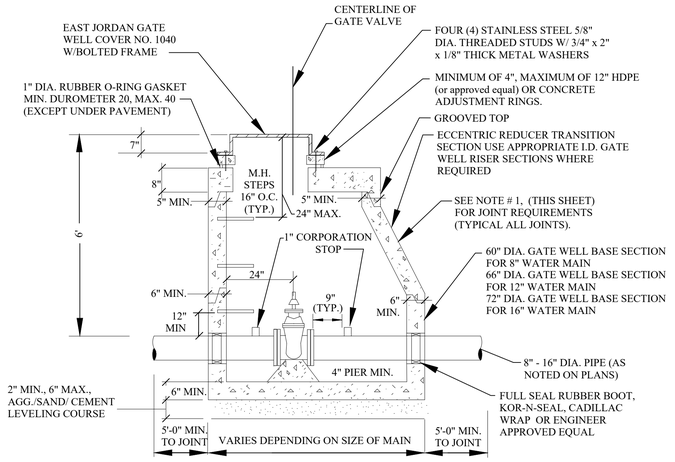
FIRST MANHOLE UPSTREAM FROM SANITARY TAP



PROFILE OF BULKHEADS AND ONE FOOT SUMP

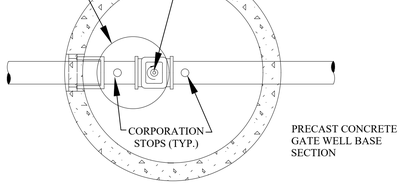
ROCHESTER HILLS MICHIGAN

REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019	NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION	City of Rochester Hills 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309	SANITARY SEWER STANDARD DETAILS	NOT TO SCALE	DATE: 1/10/2019
WYE SADDLE REVISION	12-22-22	PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES				SHEET 2 OF 2	

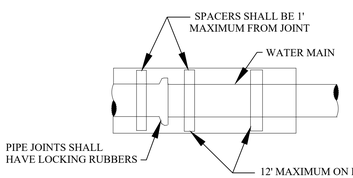


ALL GATE WELLS

MANHOLE STEPS TO BE PLASTIC COATED STEEL MEETING THE REQUIREMENTS IN ASTM D 2146, TYPE II, GRADE 49108. MA. INDUSTRIES P.S.I. POLYPROPYLENE OR APPROVED EQUAL. STEPS TO BE INSTALLED DURING MANHOLE MANUFACTURE, PLACED AT 16" C. TO C.



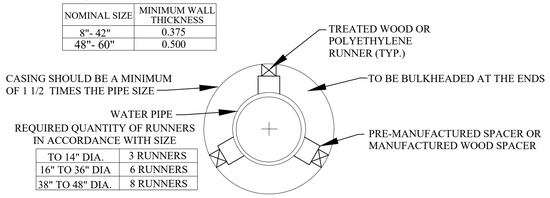
GATE WELL (TYPICAL)



WATER MAIN IN CASING SECTION

UNLESS OTHERWISE SPECIFIED, MINIMUM CASING PIPE SHALL BE ASTM A-139 GRADE B, WALL THICKNESS AS FOLLOWS:

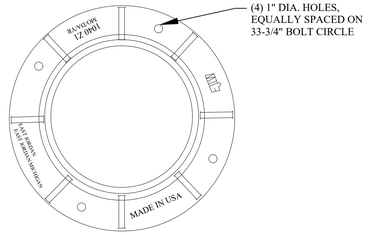
NOMINAL SIZE	MINIMUM WALL THICKNESS
8"- 42"	0.375
48"- 60"	0.500



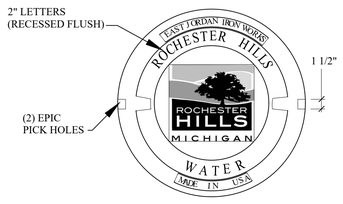
REQUIRED QUANTITY OF RUNNERS IN ACCORDANCE WITH SIZE

TO 14" DIA.	3 RUNNERS
16" TO 36" DIA	6 RUNNERS
38" TO 48" DIA.	8 RUNNERS

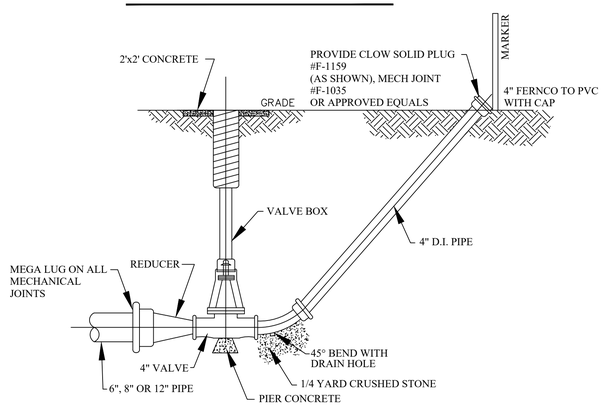
SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE



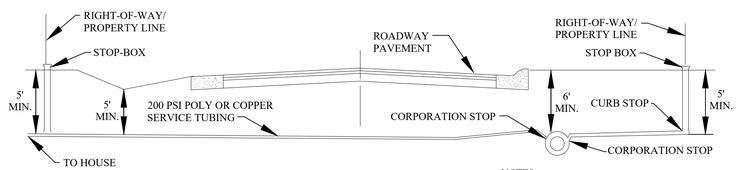
FRAME



LETTERING LAYOUT FOR GATE WELL COVERS

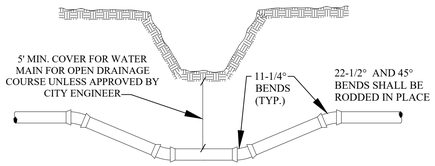


DETAIL OF 4" BLOWOFF

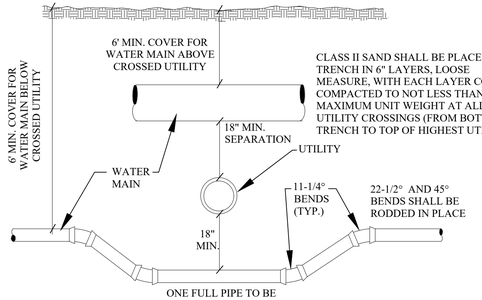


TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

NOTES:
1. WATER SERVICE SHUT-OFF TO BE PLACED AT PROPERTY LINE.
2. LATERAL LOCATION SHALL BE AS REQUESTED BY THE ABUTTING PROPERTY OWNER.
3. ROCHESTER HILLS DPS PERFORMS SERVICE LEAD TAPS UP TO 2" DIAMETER..

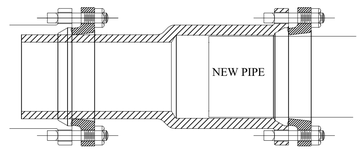


DITCH CROSSING

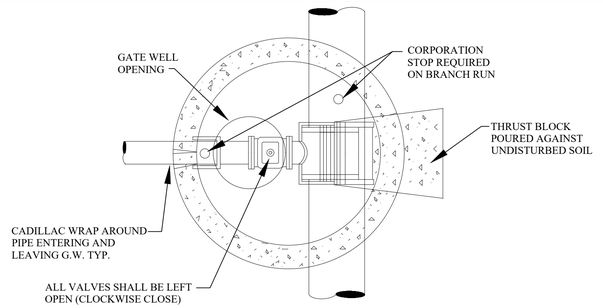


UTILITY CROSSING

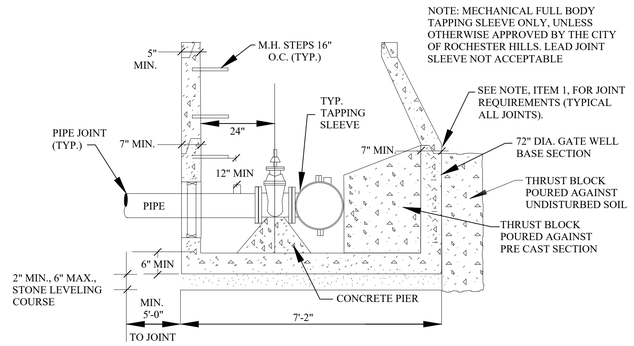
EAST JORDAN MJ x PE DUAL-PURPOSE CUTTING-IN SLEEVE OR APPROVED EQUAL



BOTTLE SLEEVE



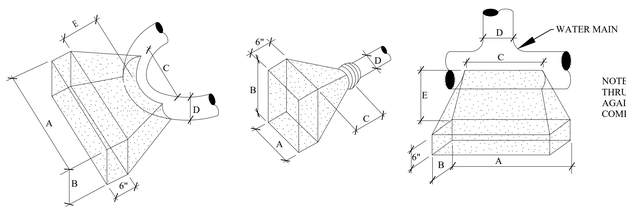
PLAN TAPPING SLEEVE VALVE & WELL (TYPICAL)



TAPPING SLEEVE, VALVE AND WELL (TYPICAL)

NOTES:

1. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
2. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1(i.e. 2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
3. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.
4. FOR ALL PIPE USE A 1" CORPORATION STOP. NO CORPS SHALL BE USED IN CONCRETE PRESSURE PIPE.
5. RUBBER O-RINGS SHALL NOT BE USED IN PAVEMENT.



FOR 90° BENDS OR SMALLER

D	A	B	C	E MIN.
20"	8'	6.5'	3.5'	2.5'
16"	6'	4'	2.5'	2'
12"	4'	3'	2'	1.75'
10"	3'	3'	2'	1.75'
8"	3'	2'	2'	1.5'
6"	2'	1.5'	2'	1.25'

FOR PLUGS

D	A	B	C MIN.
20"	7'	5'	2.5'
16"	4'-10"	4'-10"	2'
12"	4'-4"	3'	1'-9"
10"	3'	2'	1'-6"
8"	2'-10"	2'-6"	1'-6"
6"	1'-6"	1'-6"	3'

FOR TEES

D	A	B	C	E MIN.
20"	6.5'	4.5'	3.5'	3'
16"	4'-8"	4'-8"	2.5'	2.75'
12"	4'	3'	2.5'	2.5'
10"	3'	2'	2'	2.25'
8"	2'-6"	2'	2'	2.25'
6"	2'	2'	2'	2.25'

THRUST BLOCK DETAILS

REVISIONS	DATE

APPROVED BY
CITY COUNCIL, DATE: SEPTEMBER 23, 2019

PREPARED BY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

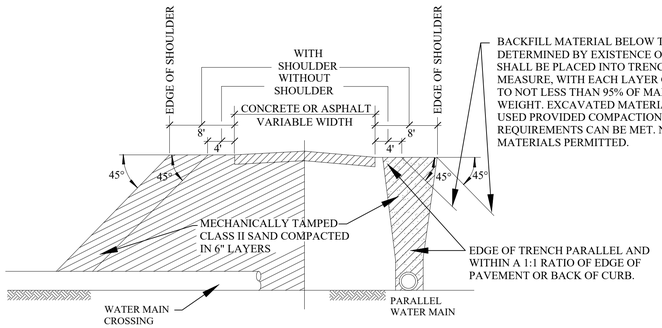
City of Rochester Hills

1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

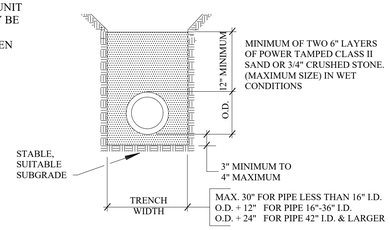
WATER MAIN STANDARD DETAILS

NOT TO SCALE | DATE: 1/10/2018

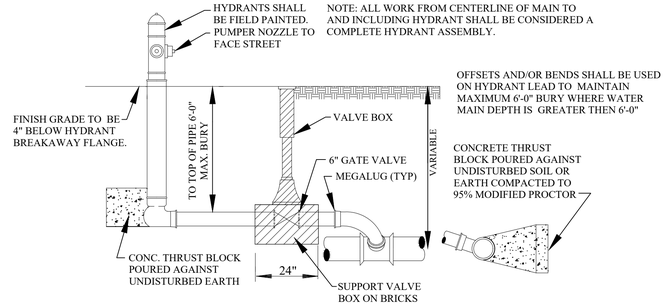
SHEET 1 OF 2 | REV 04/22/2022



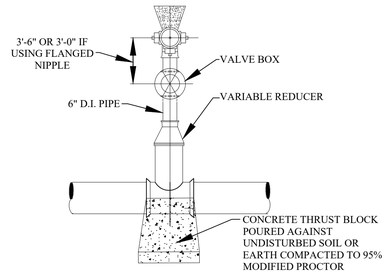
MINIMUM BACKFILL UNDER OR WITHIN PAVEMENT INFLUENCE



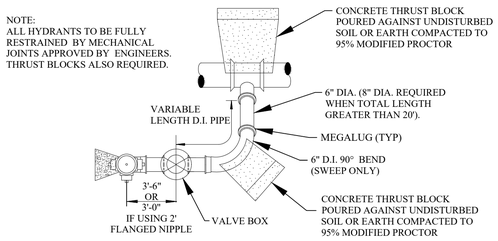
STANDARD BEDDING FOR WATER MAIN



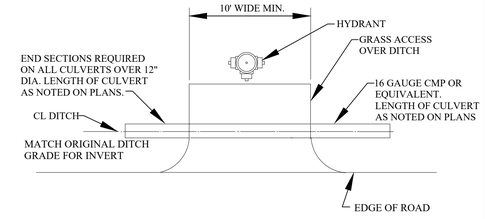
HYDRANT SIDE OUTLET OPTION



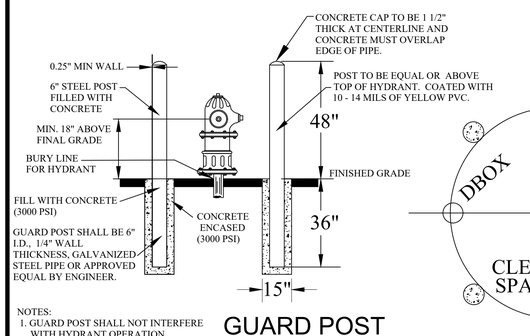
HYDRANT CONNECTION (TYPICAL)



HYDRANT SIDE OUTLET OPTION

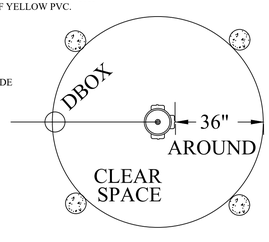


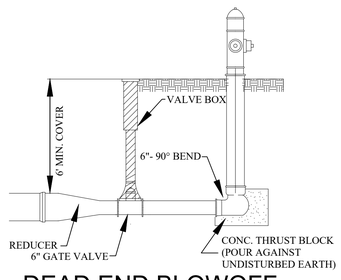
DITCH ENCLOSURE AT HYDRANT/ GATE WELL



GUARD POST

NOTES:
1. GUARD POST SHALL NOT INTERFERE WITH HYDRANT OPERATION
2. TO BE INSTALLED IN ALL PAVED AREAS WHERE VEHICLE EQUIPMENT DAMAGE TO HYDRANT IS POSSIBLE.





DEAD END BLOWOFF CONNECTION

HYDRANT & BLOWOFF DETAILS

GENERAL NOTES

1. ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE CITY OF ROCHESTER HILLS.
2. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED BY THE CITY OF ROCHESTER HILLS AND HELD PRIOR TO THE START OF CONSTRUCTION.
3. CONTRACTOR MUST CONTACT MISS DIG (811) AT LEAST THREE WORKING DAYS PRIOR TO THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION BEGINS.
4. ALL WATER MAIN EASEMENTS SHALL BE PROVIDED PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM.
5. WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF 6 FEET BELOW FINISHED GRADES, INCLUDING OPEN DRAINAGE COURSES.
6. ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS, SHALL BE BACKFILLED WITH COMPACTED CLASS II SAND TO GRADE (95% MAXIMUM UNIT DENSITY).
7. WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN SIX (6) INCH COMPACTED LAYERS TO TOP OF HIGHEST UTILITY.
8. WHERE WATER MAINS DIP UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE CONSTRUCTED WITH 11-1/4° VERTICAL BENDS, 22 1/2° OR 45° BENDS MUST BE RODDED AND PROPERLY ANCHORED.
9. ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE IN ACCORDANCE WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS. WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
10. CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 1 (2'-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATE WELL OPENING.
11. ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE ROCHESTER HILLS PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE OAKLAND COUNTY WATER RESOURCE COMMISSIONER OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER AND RADIOLOGICAL PROTECTION.
12. ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE CITY OF ROCHESTER HILLS, DEPARTMENT OF PUBLIC SERVICES AFTER WATER MAIN ACCEPTANCE AND APPLICABLE PERMITS ARE OBTAINED.
13. ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED PLANS AND SPECIFICATIONS, IS APPROVED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICE.
14. FOR ANY DIRECT TAPPING OF ASBESTOS CEMENT WATER MAIN, THE CLOSEST DOWNSTREAM HYDRANT SHALL BE FLUSHED DURING THE TAPPING PROCEDURE.

WATER MAIN MATERIALS NOTES

1. TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE DOUBLE CHECK VALVE BACKFLOW PREVENTER WITH CURRENT CERTIFICATION.
2. CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE FORD TYPE B-44. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
3. ALL DUCTILE IRON PIPE (D.I.P.) WATER MAIN SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE. A ZINC COATING WITH CLASS 52 MAY BE PROPOSED AND IS SUBJECT TO FINAL DECISION FOR APPROVAL BY THE CITY ENGINEER.
4. THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
5. DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH TWENTY (20) INCHES SIZE. TWENTY-FOUR (24) INCH AND LARGER SHALL BE CLASS 55 DUCTILE IRON PIPE.
6. PIPES TWENTY-FOUR (24) INCHES AND LARGER IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
7. MECHANICAL JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
8. FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
9. FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI, PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS, AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
10. ALL DUCTILE IRON PIPE, FITTINGS AND HYDRANTS SHALL BE ENCASED WITH POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH THE REQUIREMENTS OF A.N.S.I./A.W.W.A. STANDARD SPECIFICATION D1248 AND AWWA C105. POLYETHYLENE TUBE MATERIAL SHALL HAVE A THICKNESS OF .008" (8-MILS). ADHESIVE TAPE SHALL BE A GENERAL PURPOSE ADHESIVE TAPE 2" WIDE AND APPROXIMATELY 10-MILS THICK, SUCH AS SCOTCHRAP. NO.50, POLYKEN NO. 900, OR TAPECOAT CT.

VALVE AND SLEEVE NOTES

1. GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL MEET THE CITY OF ROCHESTER HILLS STANDARD AS DETAILED WITH NON-RISING STEM. (EAST JORDAN, AMERICAN FLOW CONTROL, MUELLER)
2. ALL IN LINE GATE VALVES EIGHT (8) INCH AND LARGER SHALL BE IN WELLS. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES (CLOCKWISE CLOSURE). VALVE BOX USE TO BE APPROVED BY ENGINEERING DIVISION.
3. ALL GATE WELL COVERS SHALL BE CITY OF ROCHESTER HILLS STANDARD AS DETAILED.
4. ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH AN EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY AN EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
5. BUTTERFLY VALVES SHALL BE USED FOR VALVES GREATER THAN 16-INCH DIAMETER AND SHALL BE MODEL 2F11 AS MANUFACTURED BY HENRY PRATT COMPANY OR APPROVED EQUAL.
6. TAPPING VALVES SHALL BE SERIES "A" AS MANUFACTURED BY EAST JORDAN OR RESILIENT SEATED GATE VALVES AS APPROVED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES.
7. TAPPING SLEEVES SHALL BE MANUFACTURED BY ROMAC INDUSTRIES; MUELLER; EAST JORDAN; SMITH-BLAIR OR APPROVED EQUAL AND APPROVED BY THE CITY OF ROCHESTER HILLS. FULL BODY SLEEVES MUST BE USED EXCEPT FOR REINFORCED CONCRETE PRESSURE PIPE OR A.C. PIPE.

HYDRANT REQUIREMENTS

1. ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE OR APPROVED EQUAL.
2. ALL HYDRANTS SHALL BE EAST JORDAN NO. 5-BR-250 TRAFFIC MODEL, OR CITY APPROVED EQUAL. SELF-DRAINING HYDRANTS SHALL NOT BE USED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
3. ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND WITH A FINISH COAT OF RUST-OLEUM SAFETY RED OR APPROVED EQUAL. HYDRANT CAPS SHALL BE PAINTED SAME COLOR AS THE HYDRANT.
4. ALL FIRE HYDRANT JOINTS SHALL BE TOTALLY RESTRAINED BY THE USE OF RESTRAINED JOINT. THRUST BLOCKS ARE ALSO REQUIRED.
5. REFER TO AWWA C502 FOR ALL PROPOSED FIRE HYDRANTS.
6. HYDRANT SHALL HAVE TWO 2 1/2 INCH HOSE CONNECTIONS AND ONE 4 1/2 INCH PUMPER CONNECTION. THE HOSE AND PUMPER CONNECTION SHALL BE DETROIT STANDARD THREADS.

ACCEPTANCE OF NEW WATER MAINS

1. PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET: 1) PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS 2) ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE CITY OF ROCHESTER HILLS ENGINEERING SERVICES 3) THE CITY OF ROCHESTER HILLS MUST BE PROVIDED WITH THE BILL OF SALE AND 4) ALL MYLAR "AS - BUILT DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE CITY OF ROCHESTER HILLS, ENGINEERING SERVICES. THE CITY OF ROCHESTER HILLS INSPECTION DIVISION MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
2. THE CONTRACTOR SHALL NOTIFY THE CITY OF ROCHESTER HILLS, INSPECTION DEPARTMENT (248.841.2510) FOR PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A FORTY-EIGHT (48) HOUR ADVANCE NOTICE IS REQUIRED.
3. THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN IN ACCORDANCE WITH ROCHESTER HILLS STANDARDS. THE WATER MAIN SHALL PASS A 150 PSI PRESSURE TEST FOR A TWO (2) HOUR PERIOD. WATER LOSS SHALL NOT EXCEED A RATE OF 11.65 U.S. GALLONS PER INCH DIAMETER PER MILE OF WATER MAIN IN TWENTY-FOUR (24) HOURS.
4. WHERE CONTRACTOR SUPPLIED GAUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3 1/2" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER AND HAVE CURRENT CERTIFICATION.
5. PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED AND APPROVED PRIOR TO CONNECTING TO THE EXISTING WATER MAIN.

CITY OF ROCHESTER HILLS WATER SYSTEMS AS-BUILT DRAWING SPECIFICATIONS

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE CITY OF ROCHESTER HILLS DEPARTMENT OF PUBLIC SERVICES, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE DEPARTMENT OF PUBLIC SERVICES, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF AS-BUILT DRAWINGS TO THE CITY OF ROCHESTER HILLS, DPS, BY THE DESIGN ENGINEER. AS-BUILT DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

1. FINAL AS-BUILT DRAWINGS SHALL BE PROVIDED IN REPRODUCIBLE PDF FORMAT VIA DIGITAL STORAGE MEDIA. XEROX OR ANY HEAT PROCESS REPRODUCTIONS WILL NOT BE ACCEPTED.
2. ALONG WITH THE PDF PLAN SET PROVIDE TWO (2) SETS OF BLACK-LINED DRAWINGS AND THE PLANS ON ELECTRONIC MEDIA IN AUTOCAD FORMAT (LATEST VERSION).
3. EACH AND EVERY SHEET SHALL BE SEALED BY THE DESIGN ENGINEER, ALONG WITH THE FOLLOWING CERTIFICATION STATEMENT ON THE COVER SHEET:

I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE AS-BUILT DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "AS BUILT" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE CITY OF ROCHESTER HILLS.

(COMPANY NAME)

(ENGINEER'S SIGNATURE)

PROFESSIONAL ENGINEER NO. _____

ENGINEER SEAL

4. THE MAXIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
5. THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
6. THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
7. A TOTAL AS-BUILT DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS AN AS-BUILT DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
8. THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
9. THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
10. ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM TWO FIXED OBJECTS (MANHOLES, BUILDING CORNERS ECT.).
11. ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
12. THE LOCATION AND SIZE OF EVERY RESTRAINED JOINT SHALL BE NOTED.
13. THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE VERTICAL SEPARATION, IS LESS THAN 18" SHALL BE NOTED.
14. AS-BUILT SHALL BE PREPARED IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS AS-BUILT GUIDELINES AS PROVIDED AT THE PRE-CONSTRUCTION MEETING.

ROCHESTER HILLS MICHIGAN

REVISIONS	DATE
REVISION TO FIRE HYDRANT PER EGLE	10-23-2023
REV. ADDED #14 UNDER GENERAL NOTES	12-12-2023
REV. ADDED #6 HYDRANTS	11-14-2025

APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019

PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

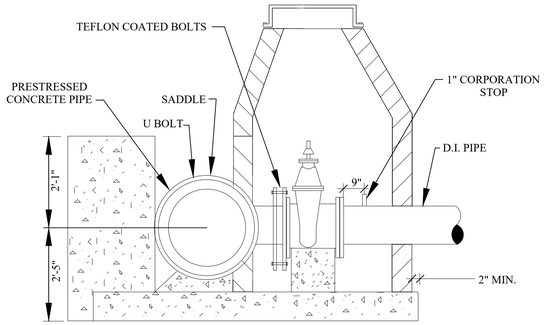
NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

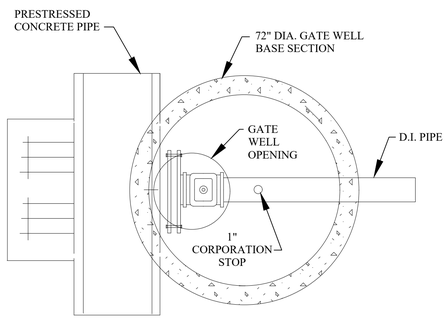
City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

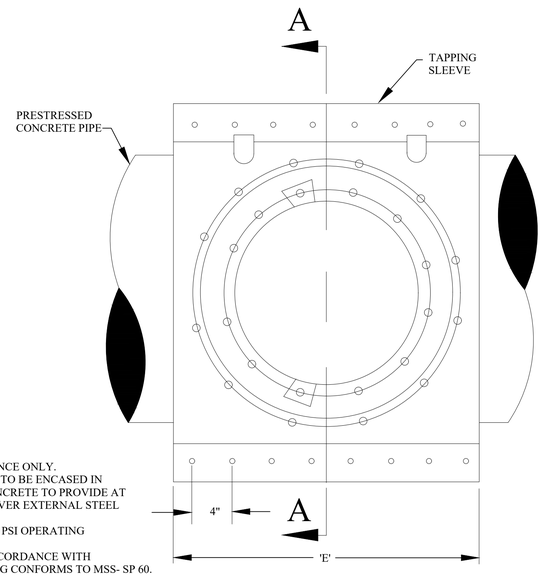
WATER MAIN STANDARD DETAILS

NOT TO SCALE | DATE: 1/10/2019

SHEET 2 OF 2

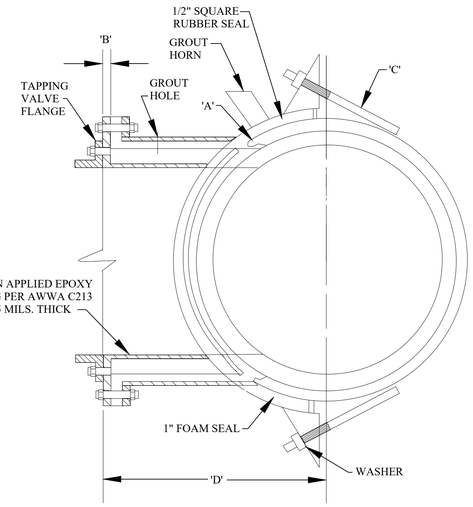






NOTES:
1) THESE DIMENSIONS ARE FOR REFERENCE ONLY.
2) ENTIRE SADDLE, INCLUDING STRAPS, TO BE ENCASED IN PORTLAND CEMENT MORTAR OR CONCRETE TO PROVIDE AT LEAST ONE (1) INCH OF THICKNESS OVER EXTERNAL STEEL SURFACES PRIOR TO BACKFILLING.
3) TAP SADDLES ARE DESIGNED FOR 150 PSI OPERATING PRESSURE.
4) FLANGE DRILLED AND TAPPED IN ACCORDANCE WITH AWWA C207 CLASS D, CENTERING RING CONFORMS TO MSS- SP 60.
5) GROUT SHALL SET A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO PRESSURE TESTING.

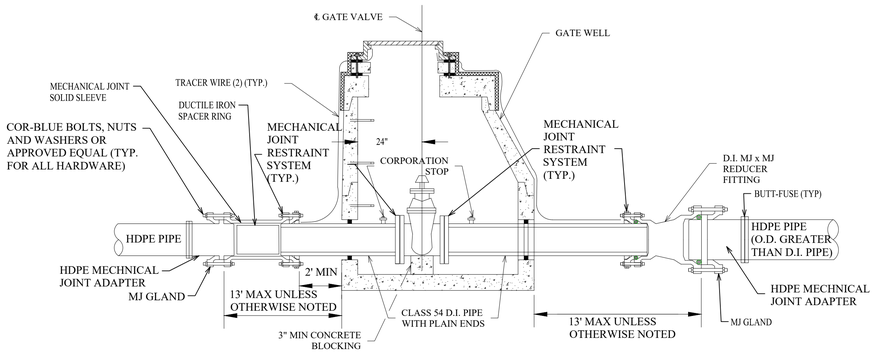
CONCRETE PRESSURE TAP VALVE & WELL ASSEMBLY W/ CONCRETE ENCASEMENT



SECTION A-A

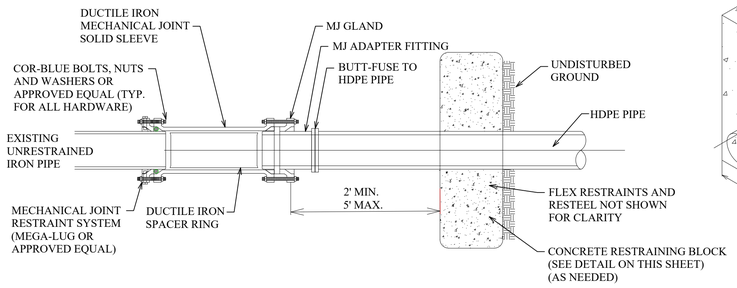
PIPE SIZE X TAP SIZE	A	B	C	D	E
16" X 4"	1/4"	7/8"	6	14-1/16 "	24"
16" X 6"	1/4"	1-1/8"	6	14-5/16 "	24"
16" X 8"	1/4"	1-1/8"	6	14-5/16 "	24"
16" X 10"	1/4"	1-3/8"	7	14-9/16 "	28"
16" X 12"	1/4"	1-3/8"	8	14-9/16 "	32"
20" X 4"	1/4"	7/8"	6	16-1/2 "	24"
20" X 6"	1/4"	1-1/8"	6	16-1/2 "	24"
20" X 8"	1/4"	1-1/8"	6	16-1/2 "	24"
20" X 10"	1/4"	1-3/8"	7	17"	28"
20" X 12"	1/4"	1-3/8"	8	17"	32"
24" X 4"	1/4"	7/8"	6	18-3/4"	24"
24" X 6"	1/4"	1-1/8"	6	19"	24"
24" X 8"	1/4"	1-1/8"	6	19"	24"
24" X 10"	1/4"	1-3/8"	7	19-1/4"	28"
24" X 12"	1/4"	1-3/8"	8	19-1/4"	32"
30" X 4"	1/4"	7/8"	6	22-1/8"	24"
30" X 6"	1/4"	1-1/8"	6	22-3/8"	24"
30" X 8"	1/4"	1-1/8"	6	22-3/8"	24"
30" X 10"	1/4"	1-3/8"	7	22-5/8"	28"
30" X 12"	1/4"	1-3/8"	8	22-5/8"	32"
36" X 4"	1/4"	7/8"	6	25-1/2 "	24"
36" X 6"	1/4"	1-1/8"	6	25-3/4 "	24"
36" X 8"	1/4"	1-1/8"	7	25-3/4 "	28"
36" X 10"	1/4"	1-3/8"	8	26"	32"
36" X 12"	1/4"	1-3/8"	9	26"	36"
42" X 4"	1/4"	7/8"	6	28-7/8"	24"
42" X 6"	1/4"	1-1/8"	7	29-1/8"	28"
42" X 8"	1/4"	1-1/8"	8	29-1/8"	32"
42" X 10"	3/8"	1-3/8"	9	29-3/8"	36"
42" X 12"	3/8"	1-3/8"	10	29-3/8"	40"
48" X 4"	3/8"	7/8"	7	32-1/4"	28"
48" X 6"	3/8"	1-1/8"	7	32-1/2"	28"
48" X 8"	3/8"	1-1/8"	7	32-1/2"	28"
48" X 10"	3/8"	1-3/8"	7	32-3/4"	28"
48" X 12"	3/8"	1-3/8"	9	32-3/4"	36"

CONCRETE TAPPING SLEEVE DETAILS

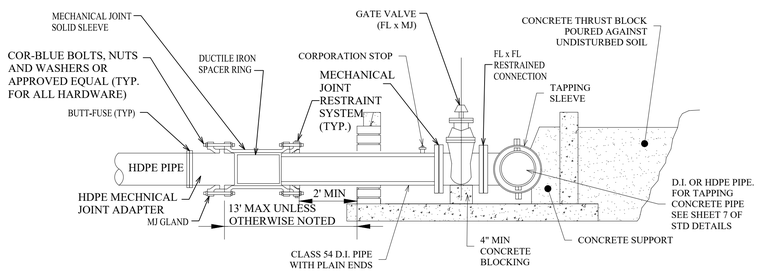


TYPICAL HDPE CONNECTION TO GATE VALVE

NOTES:
1. WHERE GATE VALVE IS IN LINE WITH THE HDPE WATER MAIN, INSTALL D.I. PIPE THROUGH GATE WELL MAKING CONNECTION TO HDPE PIPE OUTSIDE OF GATE WELL AS SHOWN.
2. TRACER WIRES SHALL BE INSTALLED ALONG THE OUTSIDE OF THE GATE WELL AND BENEATH THE FRAME AND COVER.

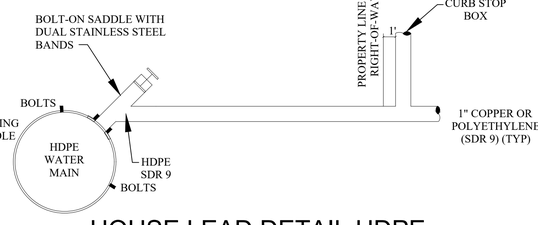


HDPE TO DUCTILE IRON TRANSITIION

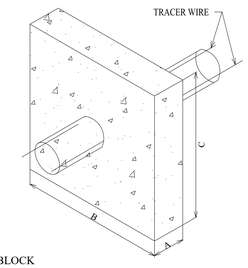


HDPE TAPPING SLEEVE, VALVE & WELL

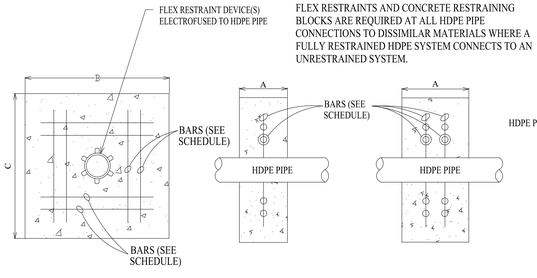
NOTES:
1. SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL TAPPING SLEEVE VALVE AND WELL DETAILS.
2. TAPPING SLEEVES FOR HDPE PIPE REQUIRE AN OUTLET SEAL GASKET AND SPRING WASHERS IN ADDITION TO THE REQUIREMENTS DETAILED IN SHEET 2 (JCM 452, ROMAC SSTH OR APPROVE EQUAL).



HOUSE LEAD DETAIL HDPE TO COPPER OR POLYETHYLENE (SDR 9)



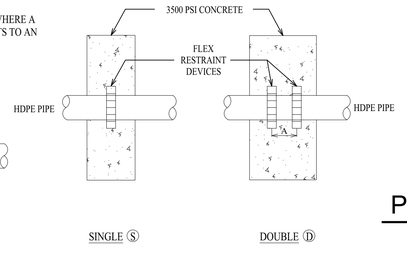
RESTRAINING BLOCK DIMENSIONS



SINGLE FACE RESTEEL Ⓢ DOUBLE FACE RESTEEL Ⓓ

RESTRAINING BLOCK RESTEEL

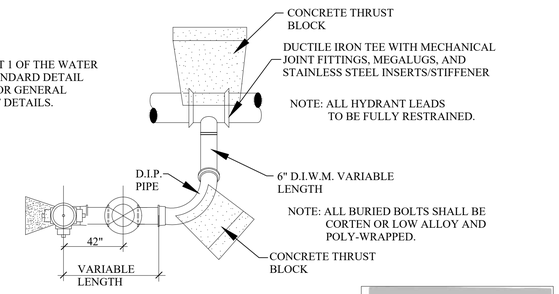
NOTE:
FLEX RESTRAINTS AND CONCRETE RESTRAINING BLOCKS ARE REQUIRED AT ALL HDPE PIPE CONNECTIONS TO DISSIMILAR MATERIALS WHERE A FULLY RESTRAINED HDPE SYSTEM CONNECTS TO AN UNRESTRAINED SYSTEM.



SINGLE Ⓢ DOUBLE Ⓓ

RESTRAINING BLOCK RESTRAINTS

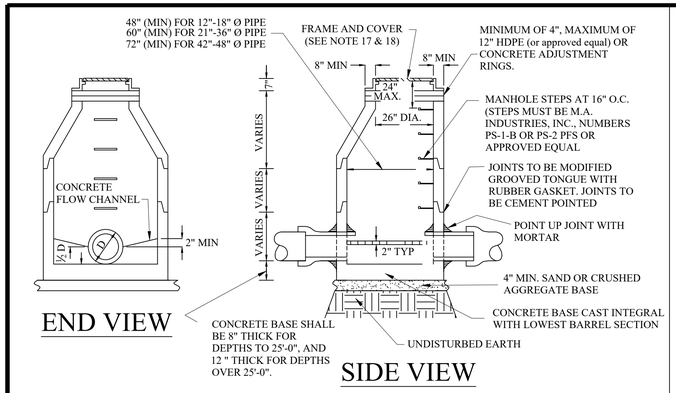
NOTE: SEE SHEET 1 OF THE WATER MAIN STANDARD DETAIL SHEETS FOR GENERAL HYDRANT DETAILS.



PLAN HYDRANT SIDE OUTLET

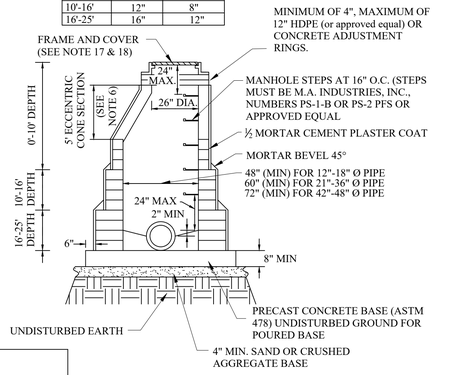
DETAILS FOR HIGH DENSITY POLYETHYLENE PIPE (HDPE)

REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: SEPTEMBER 23, 2019	NOTIFY ROCHESTER HILLS ENGINEERING DIVISION @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION	City of Rochester Hills 1000 Rochester Hills Drive, Rochester Hills, Michigan 48309	WATER MAIN SPECIAL DETAILS	NOT TO SCALE	DATE: 1/10/2019
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES				SHEET 1 OF 1	REV 12/10/2021



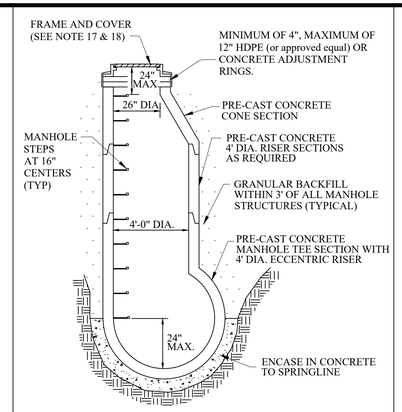
PRE-CAST STORM MANHOLE

BRICK / BLOCK THICKNESS		
DEPTH	BRICK	BLOCK
0'-10'	8"	6"
10'-16'	12"	8"
16'-25'	16"	12"

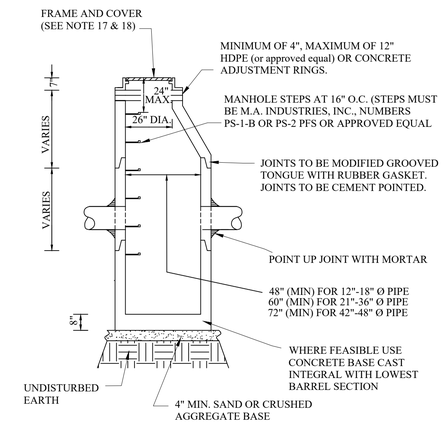


BRICK OR BLOCK MANHOLE

(NOTE: PERMITTED BY CITY ONLY FOR SPECIAL CIRCUMSTANCES)



PRE-CAST TEE MANHOLE DETAIL



PRECAST STORM CATCH BASIN

GENERAL NOTES:

1. ALL EXISTING AND NEW STORM SYSTEMS SHALL BE CLEANED AND FLUSHED ONCE SITE IS 90% BUILT OUT AND VEGETATED. SEDIMENT, ROCK, AND OTHER DEBRIS SHALL BE COLLECTED AND DISPOSED OF IN A PROPER MANNER. IN NO CASE SHALL DEBRIS BE FLUSHED DOWN A STORM OR SANITARY SEWER FOR DISPOSAL. ALL DAMAGED IRRIGATION AND HOUSE DRAINAGE PIPE, DRAIN TILES, SEWER LATERALS AND CULVERTS SHALL BE REPAIRED EXPEDITIOUSLY. DEBRIS COLLECTED SHALL BE DISPOSED IN A COMMERCIAL LANDFILL OR OTHER APPROVED LOCATION.
2. STORM SEWER PIPE SHALL BE OF SIZE AND TYPE NOTED ON THE APPROVED PLANS.
3. REINFORCED CONCRETE PIPE (RCP) SHALL BE MODIFIED GROOVED TONGUE JOINTS WITH O-RING TYPE RUBBER GASKET, PER ASTM C443.
4. ALL CATCH BASIN LEADS AND INLET LEADS SHALL BE ASTM C76-CLASS IV PIPE.
5. MINIMUM PIPE SIZE FOR SEWERS, CATCH BASINS LEADS, AND INLET LEADS SHALL BE 12" NOMINAL INTERNAL DIAMETER.
6. ECCENTRIC CONES SHALL BE PROVIDED ON ALL STRUCTURES, REGARDLESS OF THE MATERIAL USED. PRECAST REINFORCED CONCRETE MANHOLE, BLOCK, OR BRICK TO PROVIDE A TRUE VERTICAL FACE FOR PLACEMENT OF MANHOLE STEPS.
7. THE INSIDE JOINTS OF PIPES SIZES 42" AND LARGER DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
8. ALL PIPES SHALL HAVE CLASS, LOT NUMBER, AND DATE OF MANUFACTURED CONSPICUOUSLY MARKED ON EACH LENGTH BY MANUFACTURER.
9. ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
10. PRECAST REINFORCED CONCRETE SECTIONS SHALL CONFORM TO ASTM 2478.
11. IN DRY, STABLE SOILS, PEASTONE (EQUIVALENT TO M.D.O.T. 34R SPECIFICATIONS) MAY BE SUBSTITUTED FOR THE STANDARD BEDDING. IF THE TRENCH IS WET OR UNSTABLE A GEOTEXTILE FABRIC MUST BE USED TO LINE THE TRENCH PRIOR TO THE PLACEMENT OF THE 2NS SAND, PEASTONE, OR 1/4" - 1-1/2" ANGULAR GRADED STONE.
12. SCHEDULE INSPECTIONS 48 HOURS PRIOR TO START OF CONSTRUCTION BY CALLING THE CITY'S INSPECTION LINE AT 248-841-2510. FULL TIME INSPECTION SHALL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION.
13. THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (811) TO LOCATE EXISTING UNDERGROUND UTILITIES.
14. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY THE OCWRC.
15. MINIMUM SUMP DEPTH IS 2' FOR CATCH BASINS, MINIMUM SUMP DEPTH IS 3' FOR CATCH BASINS WITH FLOATABLE TRAP INSTALLATIONS.
16. AS A MEANS OF INSURING PROPER INSTALLATION OF THE STORM SEWER PIPE, AT THE DISCRETION OF THE CITY ENGINEER, THE CONTRACTOR SHALL VIDEO INSPECT, ACCORDING TO THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS, 100% OF THE STORM SEWER PIPE 12" AND LARGER IN DIAMETER. IF VIDEO INSPECTION IS REQUIRED BY THE CITY ENGINEER THE CONTRACTOR SHALL PROVIDE 24 HOURS NOTICE TO THE CITY OF ROCHESTER HILLS PRIOR TO VIDEO INSPECTION, SO A REPRESENTATIVE MAY BE PRESENT. ROCHESTER HILLS WILL BE PROVIDED WITH A DIGITAL COPY OF THE VIDEO INSPECTION AND LOG IN ACCORDANCE WITH THE CITY OF ROCHESTER HILLS VIDEO INSPECTION STANDARDS.

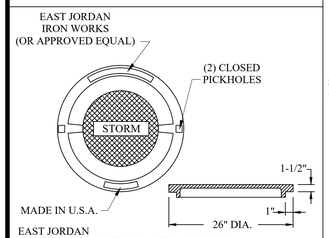
PROJECTS THAT THE CITY ENGINEER MAY IMPOSE THESE REQUIREMENTS ARE:

1. ALL PUBLIC PROJECTS OR PROJECTS BEING CONSTRUCTED ON PUBLIC PROPERTY.
2. ANY PROJECT INVOLVING A DEVELOPMENT, SUBDIVISION, SITE CONDOMINIUM, CONDOMINIUM, OR ASSOCIATION
3. ANY PROJECT THAT WILL RESULT IN MORE THAN ONE OWNER RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE COMPLETE STORM DRAINAGE SYSTEM

COVERS FOR MANHOLES, CATCH BASINS, AND INLETS

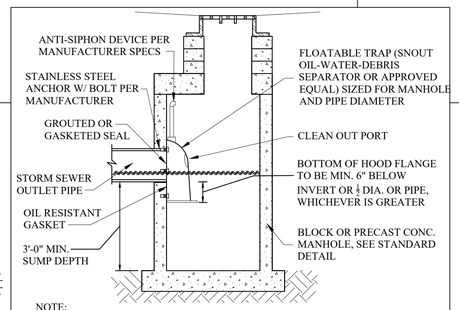
17. MANHOLE FRAME AND COVER SHALL BE EJ 1040, TYPE A COVER OR EQUIVALENT.
18. CATCH BASINS AND INLET FRAME AND COVER SHALL BE AS FOLLOWS:
    a. EJ 7045 WITH TYPE M1 GRATE AND 7050 T2 ADJUSTABLE BACK, OR EQUAL, FOR USE WITH CONCRETE CURB AND GUTTER, (STRAIGHT CURB/ M.D.O.T. F CURB) AND WITH CONCRETE PAVEMENT WITH INTEGRAL CURB.
    b. EJ 7085 WITH TYPE M1 GRATE OR EQUAL, FOR USE WITH CONCRETE B-2 MODIFIED CURB AND GUTTER, AND WITH CONCRETE WITH B-2 MODIFIED INTEGRAL CURB.
    c. EJ 7065 WITH TYPE M1 GRATE AND 7060 T1 DRIVE OVER CURB BACK, OR EQUAL, FOR USE WITH MOUNTABLE CURB AND GUTTER, AND WITH CONCRETE PAVEMENT WITH MOUNTABLE INTEGRAL CURB.
    d. EJ FRAME 1040 WITH TYPE N OVAL GRATE OR TYPE 02 BEEHIVE GRATE, OR EQUAL, FOR USE ON OPEN DITCH STRUCTURES AND ON CATCH BASINS LOCATED IN SWALES, AND IN EASEMENTS OUTSIDE THE PUBLIC STREET RIGHT-OF-WAY.
    e. EJ FRAME 7045Z WITH TYPE M4 VANE STYLE INLET GRATE (RIGHT HAND FLOW OR LEFT HAND FLOW) AND 7060 T1 BACK OR 7050 T2 BACK DEPENDING ON CURB STYLE, OR EQUAL, FOR USE WITH RELIEF BASINS WHICH ARE ON LONGITUDINAL ROAD SLOPES OF 4% OR GREATER.
    f. EJ FRAME 5100 WITH TYPE M1 SINUSOIDAL GRATE, OR EQUAL, FOR USE IN NON-CURB PAVEMENT AREAS.

NOTE: COVERS MUST HAVE THE "DUMP NO WASTE! DRAINS TO WATERWAY" LETTERING (WHEN APPLICABLE).



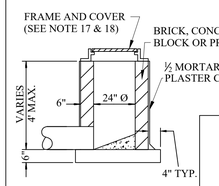
EAST JORDAN
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH

LETTERED MANHOLE COVER

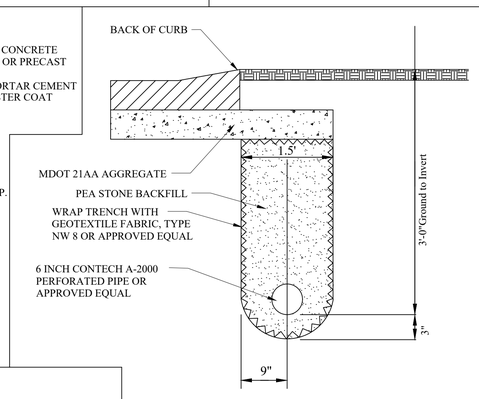


NOTE:
QUANTITY OF FLOATABLE TRAPS REQUIRED FOR A SITE IS DEPENDENT ON TRAFFIC AND EXPECTED POLLUTANT LOAD.
MINIMUM SUMP DEPTH TO BE 2½ TIMES OUTLET PIPE DIAMETER OR 3 FEET, WHICHEVER IS GREATER.
FLOATABLE TRAP AND ANTI-SIPHON DEVICE TO BE SIZED TO MANHOLE STRUCTURE.

CATCH BASIN WITH FLOATABLE TRAP

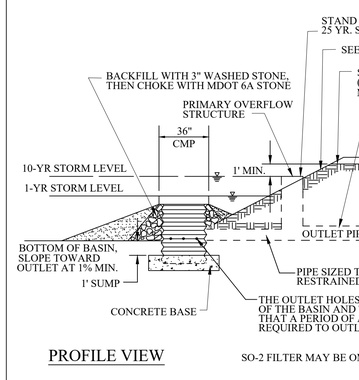


INLET DETAIL



EDGE DRAIN DETAIL

FOR PUBLIC AND PRIVATE ROADS

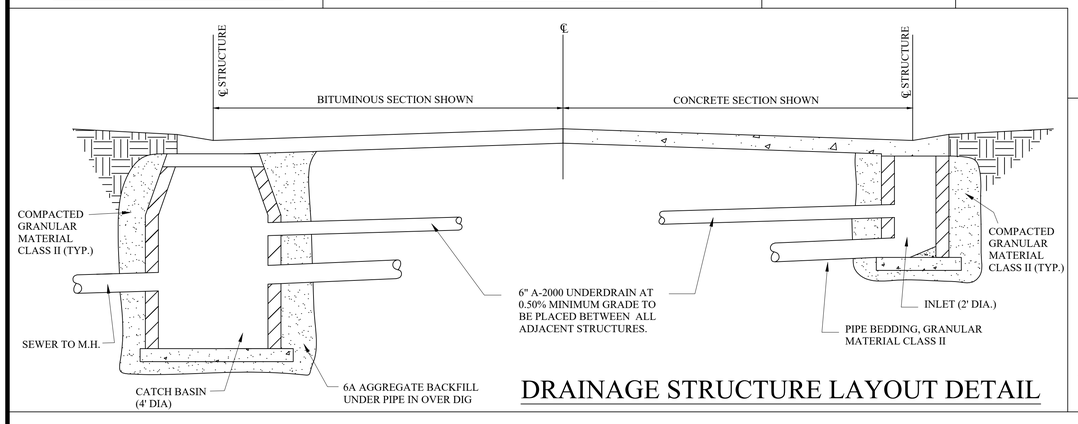


PROFILE VIEW

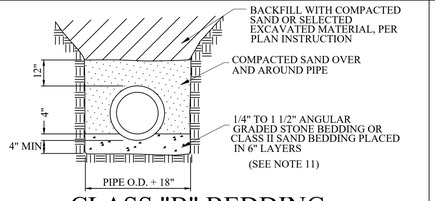
SO-2 FILTER MAY BE OMITTED IF PLACED WITHIN FOREBAY

SO-2 FOREBAY OUTLET FILTER (CMP)

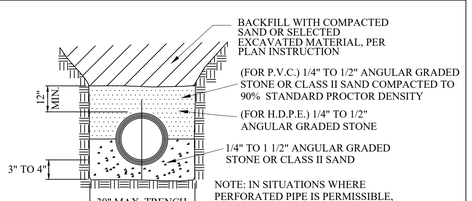
(SEE OCWRC STANDARD DETAILS FOR FOREBAY OUTLET STRUCTURE)



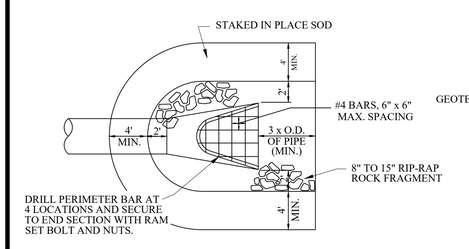
DRAINAGE STRUCTURE LAYOUT DETAIL



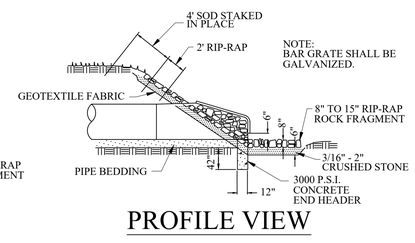
CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER PIPE (CONCRETE OR METAL)



H.D.P.E. OR P.V.C. BEDDING DETAIL

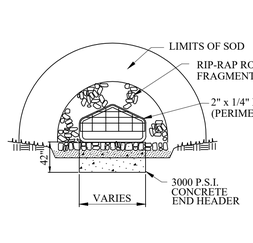


PLAN VIEW

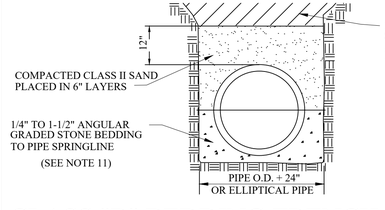


PROFILE VIEW

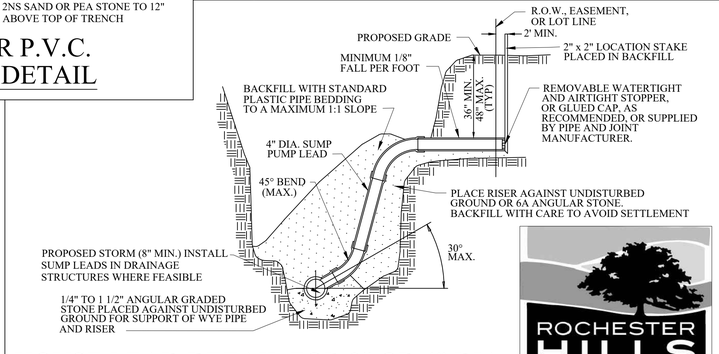
END SECTION AND BAR GRATE DETAIL



END VIEW



CLASS "B" BEDDING TRENCH DETAIL FOR ELLIPTICAL OR 27" DIA. AND LARGER PIPE (CONCRETE OR METAL)



HOUSE LEAD DETAIL FOR 3" OR 4" DIA. PLASTIC SUMP PUMP LEADS

REVISIONS	DATE	APPROVED BY CITY COUNCIL, DATE: _____
		PREPARED BY ENGINEERING DIVISION DEPARTMENT OF PUBLIC SERVICES

NOTIFY ROCHESTER HILLS ENGINEERING DEPARTMENT @ 248-841-2510 48 HRS. PRIOR TO START OF CONSTRUCTION

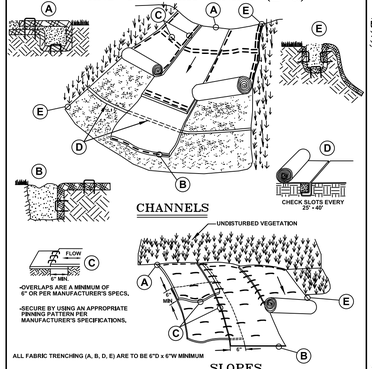
City of Rochester Hills
1000 Rochester Hills Drive, Rochester Hills, Michigan 48309

STORM SYSTEM STANDARD DETAILS

NOT TO SCALE | DATE: 1/10/2019

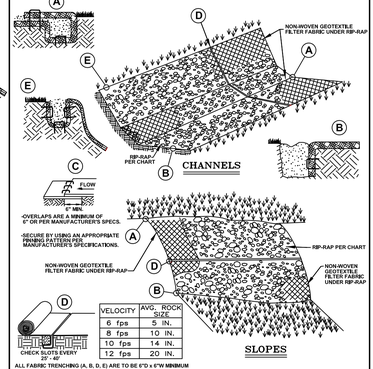
SHEET 1 OF 1

EROSION CONTROL BLANKETS AND TURF MAT LINING (E-9)



DEPENDING ON THE VELOCITY, SLOPE, SOILS, USE PROPER BLANKET OR TURF MAT LINING PER MANUFACTURER'S SPECIFICATIONS TO HANDLE THE SHEER STRESSES OF THE SLOPE/CHANNEL.

RIP-RAP: CHANNELS AND SLOPES (E-10)

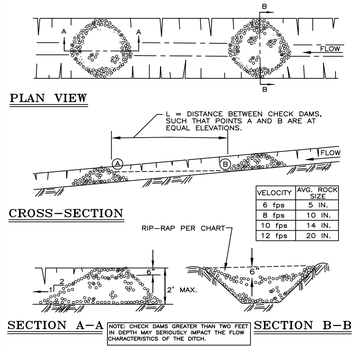


VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

ALL FABRIC TRENCHING (A, B, D, E) ARE TO BE 6"D x 6"W MINIMUM

DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP AND NON-WOVEN GEOTEXTILE FABRIC TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

CHECK DAMS (E-3)



VELOCITY	AVG. ROCK SIZE
6 fps	5 IN.
8 fps	10 IN.
10 fps	14 IN.
12 fps	20 IN.

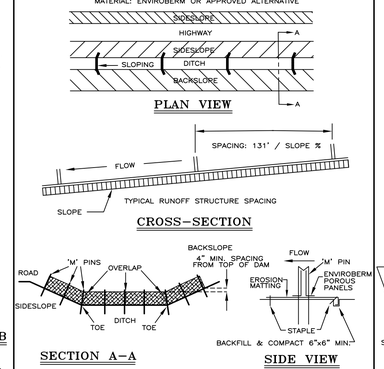
NOTE: CHECK DAMS GREATER THAN TWO FEET IN DEPTH MAY SERIOUSLY IMPACT THE FLOW CHARACTERISTICS OF THE DITCH.

-DEPENDING ON THE VELOCITY, SLOPE AND SOILS, USE THE PROPER SIZED RIP-RAP TO HANDLE THE SHEER STRESS OF THE SLOPE/CHANNEL.

-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

CHECK DAMS ALTERNATIVE "A" (E-3A)

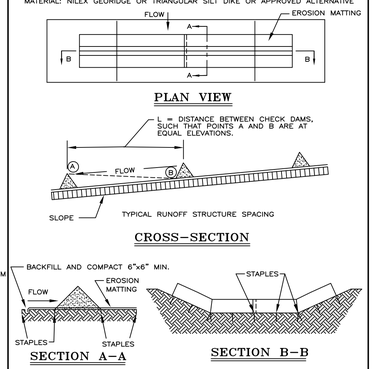
MATERIAL: ENVIROBERM OR APPROVED ALTERNATIVE



-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

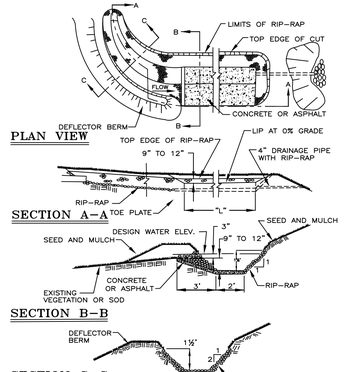
CHECK DAMS ALTERNATIVE "B" (E-3B)

MATERIAL: NILEX GEORIDGE OR TRIANGULAR SILT DIKE OR APPROVED ALTERNATIVE

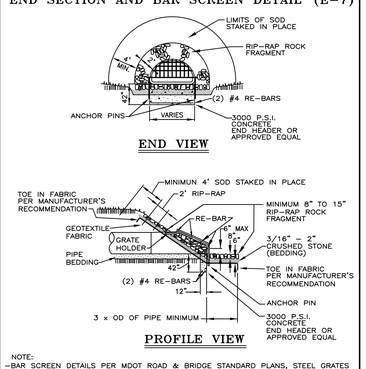


-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LEVEL SPREADER (E-4)



RIP-RAP, END SECTION AND BAR SCREEN DETAIL (E-7)

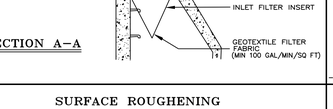


NOTE:
-BAR SCREEN DETAILS PER MDOT ROAD & BRIDGE STANDARD PLANS, STEEL GRATES FOR END SECTIONS. BARS ARE TO BE CUT OFF AT EDGE OF END SECTION.
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

VEGETATIVE BUFFER ZONE (SP-1)

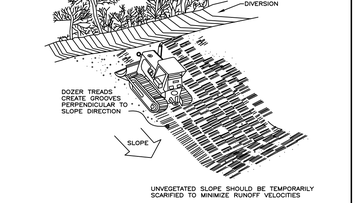
THE GRAPH SHOWN BELOW IS USED TO DETERMINE THE ADEQUACY OF AN EXISTING VEGETATIVE BUFFER ZONE FOR USE AS A SEDIMENT FILTER. THIS GRAPH IS ONLY APPLICABLE IF THE VEGETATION IS 90% DENSE AND AT LEAST 1" IN LENGTH OVER EVERY SQUARE FOOT OF DISTURBED SOIL. AN AREA COVERED WITH WEEDS, OR BUSHES AND TREES WITHOUT A GOOD GROUND COVER IS NOT ACCEPTABLE.

EXAMPLE



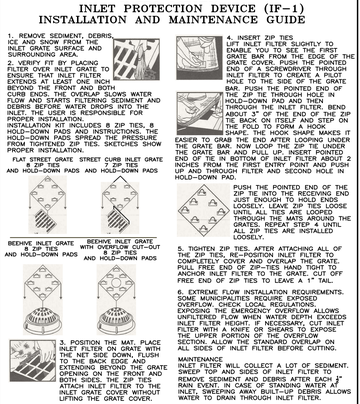
LENGTH OF BUFFER ZONE = ?
% OF SLOPE OF BUFFER ZONE = 5%
WHAT IS THE ACCEPTABLE LENGTH OF THE BUFFER ZONE?

PLOT IN GRAPH BELOW
BUFFER ZONE IS ACCEPTABLE AT 65'



SILT FENCE (SP-2)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)



WINTER/FROZEN GROUND SILT FENCE (SP-2W)

(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)

RYCB INLET FILTER ALTERNATIVE "B" (SI-3B)

MATERIAL: SILT SAVER SedCage® OR APPROVED ALTERNATIVE

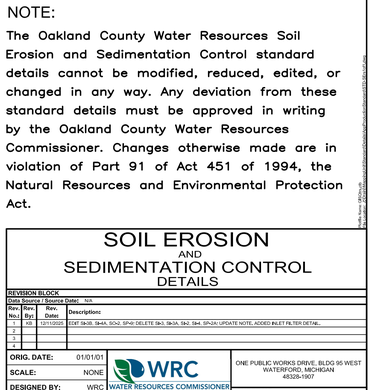
(NOTE: NO PIT REQUIRED WHEN FRAME AND COVER OR GRATE AND COVER ARE IN PLACE.)

EARTH DIVERSION BERM WITH STONE OUTLET FILTER (SP-4)

-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

EARTH DIVERSION BERM (E-2)

GRAVEL INTERCEPTOR DIKE (SP-6)



-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.

LOW POINT INLET FILTER ALT. "A" (SI-2A)

MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

SILT FENCE GRAVEL FILTER (SP-3)

-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.

DITCH SEDIMENT TRAP (SO-4)

NOTE:
FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THE SHEET OR IN THE WRC SOIL EROSION MANUAL.

CURB AND GUTTER INLET FILTER ALTERNATIVE "A" (SI-4A)

(BEFORE AND AFTER PAVING)

MATERIAL: FLEX STORM, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE

SOD INLET FILTER (SI-1)

DEFINITION	SOD INLET FILTERS ARE PADS OF SOD PLACED AROUND A STORM DRAIN INLET OR CATCH BASIN.
PURPOSE	SOD INLET FILTERS ARE INSTALLED TO SLOW THE FLOW OF WATER INTO AN INLET OR CATCH BASIN AND TO FILTER OUT SEDIMENT IN THE PROCESS.
WHERE APPLICABLE	SOD INLET FILTERS SHOULD ONLY BE USED TO HANDLE LIGHT CONCENTRATIONS OF SEDIMENT. THEY ARE BEST USED AFTER FINAL GRADING IS COMPLETE AND DURING THE ESTABLISHMENT OF A VEGETATIVE COVER.

TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-2)

TEMPORARY STONE ACCESS DRIVE (SP-9)

SURFACE ROUGHENING AND SCARIFICATION (E-8)

THIS IS AN EASY AND ECONOMICAL WAY TO REDUCE SOIL EROSION. IT IS SIMPLY THE PLACING OF HORIZONTAL GROOVES IN A SLOPE PERPENDICULAR TO THE FLOW OF RUNOFF. THIS CAN BE DONE BY EITHER DISC HARROWING, BACK BLADING OR JUST RUNNING THE TREADS OF A CRAWLER TRACTOR PERPENDICULAR TO THE SLOPE AS SHOWN BELOW.

UNVEGETATED SLOPE SHOULD BE TEMPORARILY SCARIFIED TO MINIMIZE RUNOFF VELOCITIES

INLET FILTER
INLET PROTECTION DEVICE (IF-1)
INSTALLATION AND MAINTENANCE GUIDE

1. REMOVE SEDIMENT, DEBRIS, ICE AND SNOW FROM THE INLET GRATE SURFACE AND SURROUNDING AREA.

2. VERIFY FIT BY PLACING FILTER OVER INLET GRATE TO ENSURE THAT INLET FILTER EXTENDS AT LEAST ONE INCH BEYOND THE FRONT AND BOTH CURB ENDS. THE OVERLAP SLOWS WATER FLOW SO THAT FILTER DROPS SEDIMENT AND DEBRIS BEFORE WATER DROPS INTO THE INLET. THE USER IS RESPONSIBLE FOR PROPER INSTALLATION.
INSTALLATION KIT INCLUDES 8 ZIP TIES, 8 HOLD-DOWN PADS AND INSTRUCTIONS. THE HOLD-DOWN PADS SPREAD THE PRESSURE FROM TIGHTENED ZIP TIES. SKETCHES SHOW PROPER INSTALLATION.

FLAT STREET GRATE STREET CURB INLET GRATE
8 ZIP TIES 7 ZIP TIES
AND HOLD-DOWN PADS AND HOLD-DOWN PADS

BEEHIVE INLET GRATE 8 ZIP TIES AND HOLD-DOWN PADS

BEEHIVE INLET GRATE WITH OPEN THROAT-OUT 6 ZIP TIES AND HOLD-DOWN PADS

3. POSITION THE MAT. PLACE INLET FILTER ON GRATE WITH THE NET SIDE DOWN, FLUSH TO THE BACK EDGE AND EXTENDING BEYOND THE GRATE OPENING. THE PROTECTED SIDE SHOULD FACE TRAFFIC. ATTACH INLET FILTER TO THE INLET GRATE COVER WITHOUT LIFTING THE GRATE COVER.

4. INSERT ZIP TIES
LIFT INLET FILTER SLIGHTLY TO ENABLE YOU TO SEE THE FIRST GRATE BAR FROM THE EDGE OF THE GRATE COVER. PUSH THE POINTED END OF A SCREWDRIVER THROUGH INLET FILTER TO CREATE A PILOT HOLE TO THE SIDE OF THE GRATE BAR. PUSH THE POINTED END OF THE ZIP TIE THROUGH HOLE IN HOLD-DOWN PAD AND THEN THROUGH THE INLET FILTER. BEND ABOUT 1" INCH OF THE ZIP TIE BACK ON ITSELF AND STEP ON THE FOLD TO FORM A HOOK SHAPE. THE HOOK SHAPE MAKES IT EASIER TO GRAB THE END AFTER LOOPING UNDER THE GRATE BAR. NOW LOOP THE ZIP TIE UNDER THE GRATE BAR AND PULL UP. INSERT POINTED END OF TIE IN BOTTOM OF INLET FILTER ABOUT 2 INCHES FROM THE FIRST ENTRY POINT AND PUSH UP AND THROUGH FILTER AND SECOND HOLE IN HOLD-DOWN PAD.

PUSH THE POINTED END OF THE ZIP TIE INTO THE RECEIVING END JUST ENOUGH TO HOLD ENDS LOOSELY. LEAVE ZIP TIES LOOSE THROUGH THE NEXT TWO GRATE BARS AROUND THE GRATES. REPEAT STEP 4 UNTIL ALL ZIP TIES ARE INSTALLED LOOSELY.

5. TIGHTEN ZIP TIES. AFTER ATTACHING ALL OF THE ZIP TIES, RE-POSITION INLET FILTER TO COMPLETELY COVER OPENING OF THE GRATE. PULL FREE END OF ZIP-TIES HAND TIGHT TO ANCHOR INLET FILTER TO THE GRATE. CUT OFF FREE END OF ZIP TIES TO LEAVE A 1" TAIL.

6. EXTREME FLOW INSTALLATION REQUIREMENTS. SOME MUNICIPALITIES REQUIRE EXPOSED OVERFLOW. CHECK LOCAL REGULATIONS. EXPOSING THE EMERGENCY OVERFLOW ALLOWS WATER TO FLOW AROUND THE FILTER IF IT EXCEEDS INLET FILTER HEIGHT. IF NECESSARY, CUT INLET FILTER WITH A KNIFE OR SHEARS TO EXPOSE THE UPPER PORTION OF THE OVERFLOW SECTION. ALLOW THE STANDARD OVERLAP ON ALL SIDES OF INLET FILTER BEFORE CUTTING.

MAINTENANCE
INLET FILTER WILL COLLECT A LOT OF SEDIMENT. SWEEP TOP AND SIDES OF INLET FILTER TO REMOVE SEDIMENT AND DEBRIS AFTER EACH ½" RAIN EVENT. IN CASE OF STANDING WATER AT INLET, SWEEPING AWAY BUILT-UP DEBRIS ALLOWS WATER TO DRAIN THROUGH INLET FILTER.

NOTE:

The Oakland County Water Resources Soil Erosion and Sedimentation Control standard details cannot be modified, reduced, edited, or changed in any way. Any deviation from these standard details must be approved in writing by the Oakland County Water Resources Commissioner. Changes otherwise made are in violation of Part 91 of Act 451 of 1994, the Natural Resources and Environmental Protection Act.

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK
Data Source / Source Date: N/A

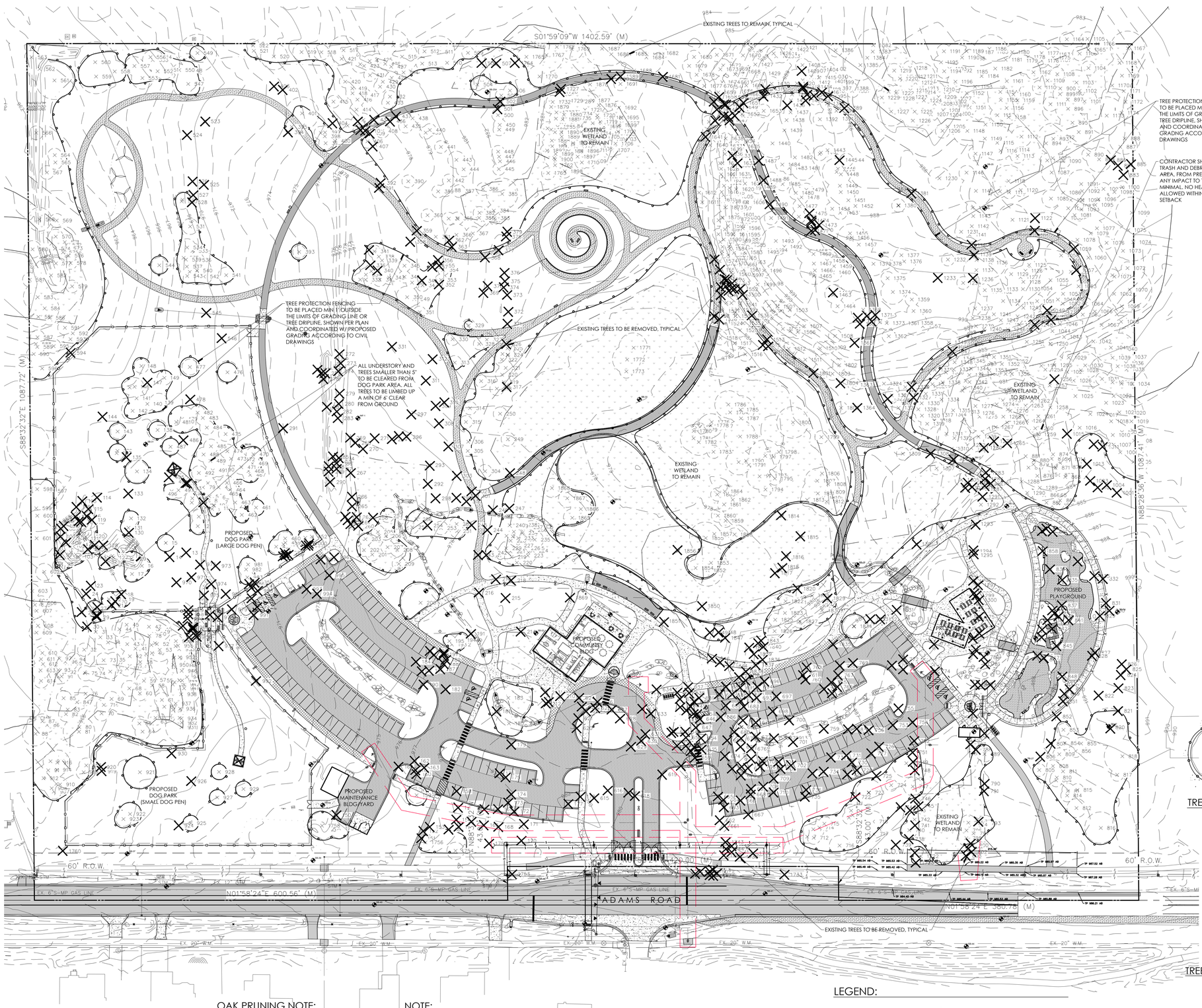
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	KB	12/11/2020	EDIT SK-05, SK-6A, SO-2, SP-9 DELETE SK-3, SK-3A, SK-3, SK-4, SP-2A UPDATE NOTE, ADDED INLET FILTER DETAIL
2			
3			
4			

ORIG. DATE: 01/01/01
SCALE: NONE
DESIGNED BY: WRC
DRAWN BY: Mapping

WRC WATER RESOURCES COMMISSIONER Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 1 of 1



LOCATION KEY

N.T.S.

TREE PROTECTION FENCING TO BE PLACED MIN 1' OUTSIDE THE LIMITS OF GRADING LINE OR TREE DRIPLINE, SHOWN PER PLAN AND COORDINATED W/ PROPOSED GRADING ACCORDING TO CIVIL DRAWINGS

CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM WETLAND AREA, FROM PREVIOUS LANDOWNER. ANY IMPACT TO THE WETLAND SHALL BE MINIMAL. NO HEAVY EQUIPMENT WILL BE ALLOWED WITHIN THE WETLAND OR 25' SETBACK

TREE PRESERVATION SUMMARY:

TOTAL NUMBER OF REGULATED TREES SURVEYED:	1,893
LESS NUMBER OF OFF-SITE TREES:	11
NET TREES ON-SITE:	1,882
SPECIMEN TREES TO BE REMOVED:	21 *(521.7" D.B.H)*
REGULATED TREES TO BE REMOVED:	519
EXEMPT TREES TO BE REMOVED:	85
TOTAL TREES ON-SITE TO REMAIN:	1,257 = *66.79% OF TREES*

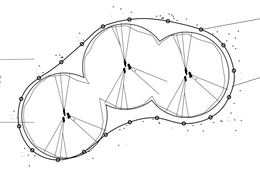
MINIMUM PRESERVATION REQUIREMENT

1,882 TREES - 1 IN BUILDING ENVELOPE = 1,881 x 40% =	752 TREES NEED TO BE PRESERVED
	1,259 TREES PROPOSED TO BE SAVED
SPECIMEN TREES TO REMAIN ON-SITE:	135 = *135 CREDITS*
REGULATED TREES TO REMAIN ON-SITE:	1,025
EXEMPT TREES TO REMAIN:	98 *(ASH)*
REQUIRED SPECIMEN TREE REPLACEMENTS:	131 TREES *(2" CAL.)*
521.7" x 50% = 260.85"	
REQUIRED REGULATED TREE REPLACEMENTS:	519 TREES *(2" CAL.)*
TOTAL REQUIRED REPLACEMENT TREES:	650 TREES
LESS CREDITS FROM PRESERVED SPECIMENS:	- 135 TREES
TOTAL REPLACEMENT TREES REQUIRED:	515 TREES *(2" CAL.)*

NOTE
A BLANKET TREE REMOVAL PERMIT FOR 550 TREES IS REQUESTED TO ACCOUNT FOR POTENTIAL CONFLICTS OR CHANGES DURING CONSTRUCTION. THE BLANKET REMOVAL WOULD RESULT IN 1,247 TREES TO REMAIN (66.26% OF THE TOTAL), WITH REPLACEMENT TREES TOTALING 525, AN ADDITIONAL 12 TREES ABOVE THE CURRENT REQUIRED AMOUNT.

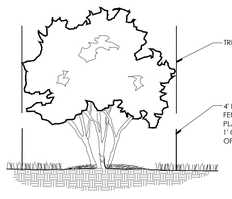
GENERAL TREE PROTECTION NOTES

1. APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
2. ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
3. NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE.
4. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
5. DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE SCHEDULED TO REMAIN.
6. ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
7. SWALES SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
8. TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
9. ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED WITH RIGIDLY STAKED FENCING.
10. THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
11. THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
12. ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
13. THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
14. THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
15. TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.



TREE PROTECTION DETAIL-PLAN

NTS



TREE PROTECTION DETAIL-SECTION

NTS

OAK PRUNING NOTE:
ALL EXISTING OAK TREES ON-SITE SHALL BE PRUNED BETWEEN NOVEMBER AND MARCH, DURING THE DORMANT PERIOD, TO PREVENT THE SPREAD OF OAK WILT DISEASE

NOTE:
INVASIVE AND NUISANCE SPECIES TO BE ERADICATED DURING SITE CLEARING. SPECIES PRESENT ON SITE INCLUDE BUCKTHORN, AUTUMN OLIVE, AND MULBERRY.

LEGEND:

- #12 TREES TO BE REMOVED
- TREE PROTECTION FENCING
- TREES TO REMAIN
- CRITICAL ROOT ZONE

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Overall Tree
Preservation Plan

811 Know what's below Call before you dig.

REVISIONS
2026-02-04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
M. Sandberg

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 60'

60 30 0 30 60 90

NFE JOB NO. O557

SHEET NO. L101

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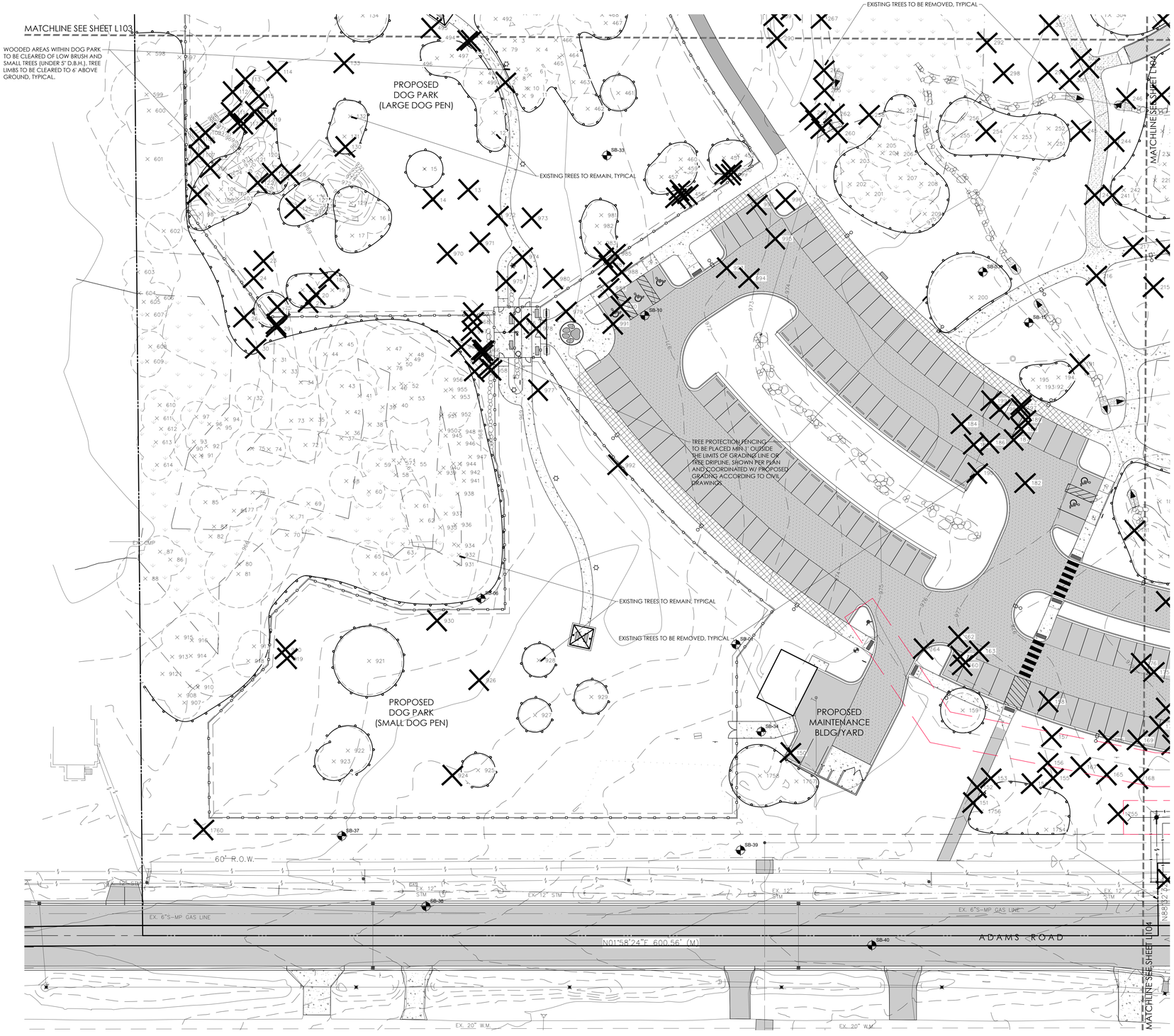

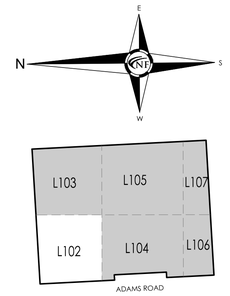

LOCATION KEY

N.T.S.

LEGEND:

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- TREES TO REMAIN
- TREE PROTECTION FENCING
- CRITICAL ROOT ZONE

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CITY FILE NO. E24-008, SECTION #8

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City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree Preservation Plan A

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
M. Sandberg
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L102

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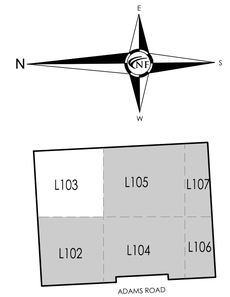

LOCATION KEY

N.T.S.

LEGEND:

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- TREES TO REMAIN
- TREE PROTECTION FENCING
- CRITICAL ROOT ZONE

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CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS
MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree Preservation Plan B

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REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
M. Sandberg

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L103

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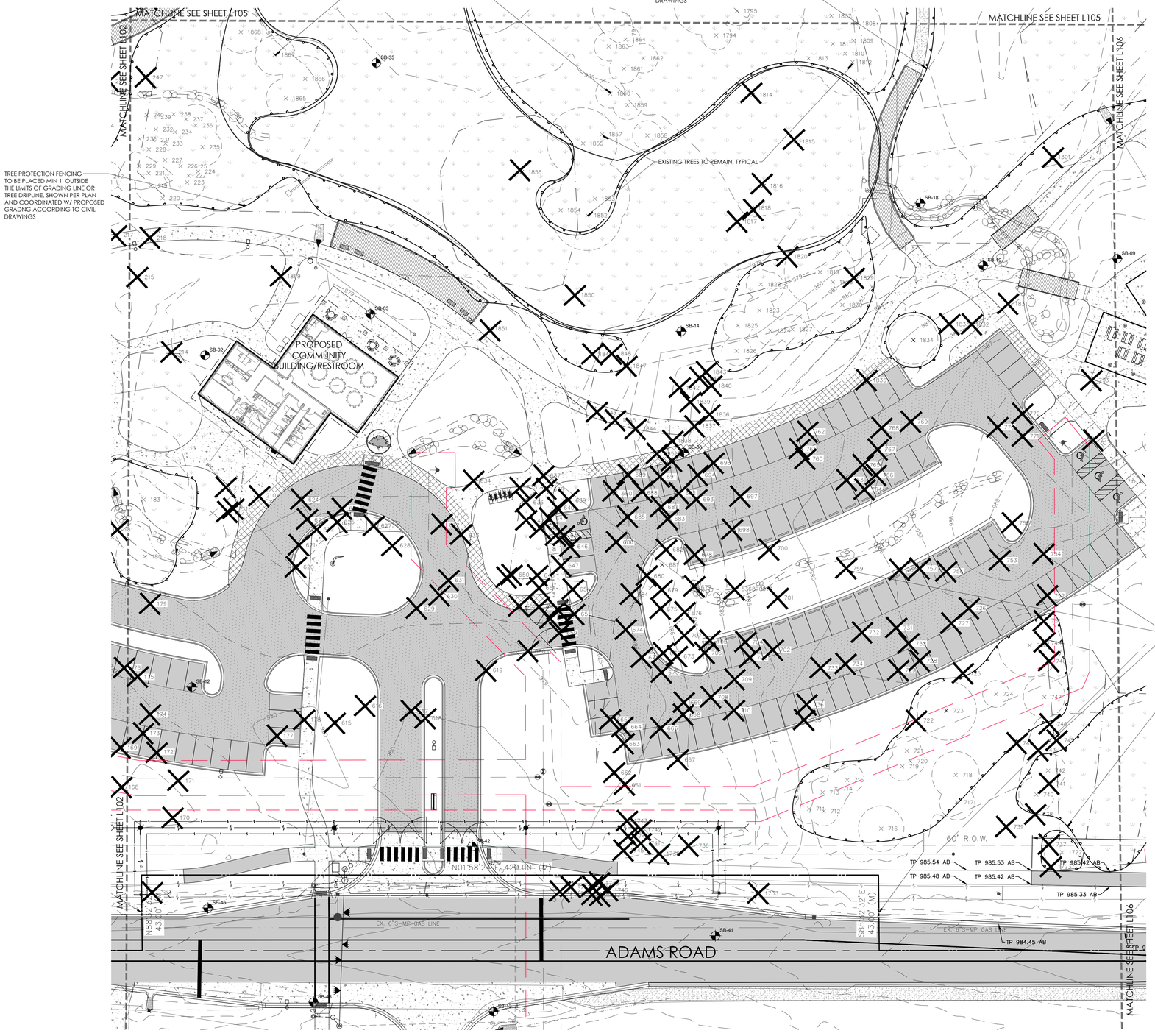

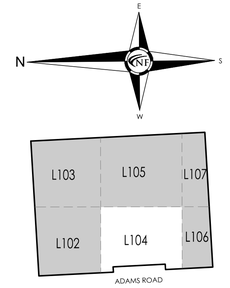

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LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN
- TREE PROTECTION FENCING
- CRITICAL ROOT ZONE

CITY FILE NO. E24-008, SECTION #8

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VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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Oakland County, Michigan

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Tree Preservation Plan C

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REVISIONS
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DRAWN BY:
M. Sandberg

DESIGNED BY:
M. Sandberg

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
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NFE JOB NO. O557

SHEET NO. L104

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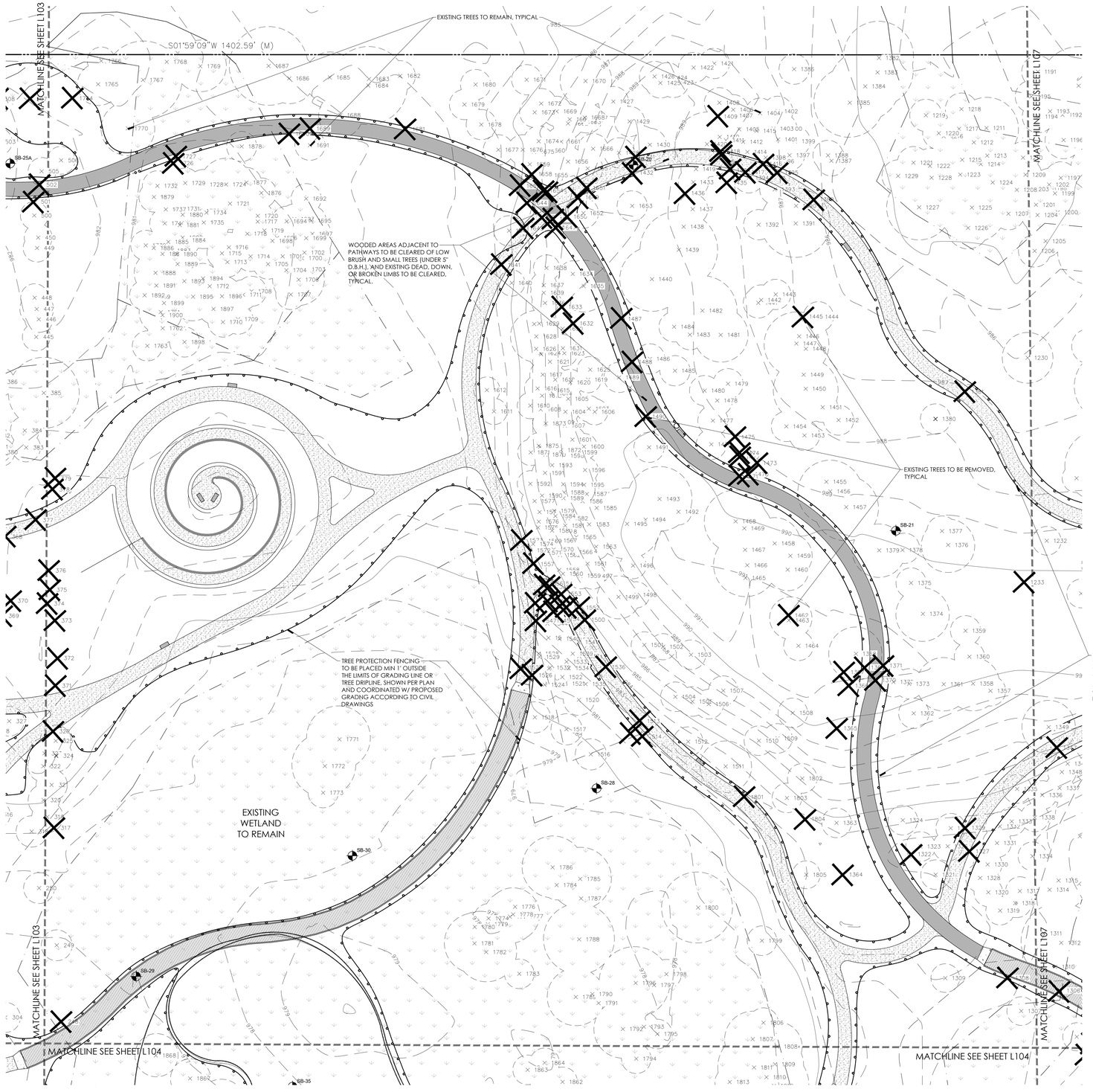

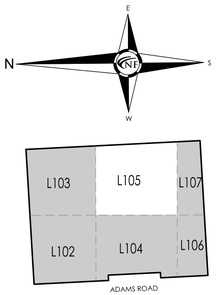

LOCATION KEY

N.T.S.

LEGEND:

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- TREES TO REMAIN
- TREE PROTECTION FENCING
- CRITICAL ROOT ZONE

NOTE:
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CITY FILE NO. E24-008, SECTION #8

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VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
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PONTIAC, MI 48342-5032
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree Preservation Plan D

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REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
M. Sandberg

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L105

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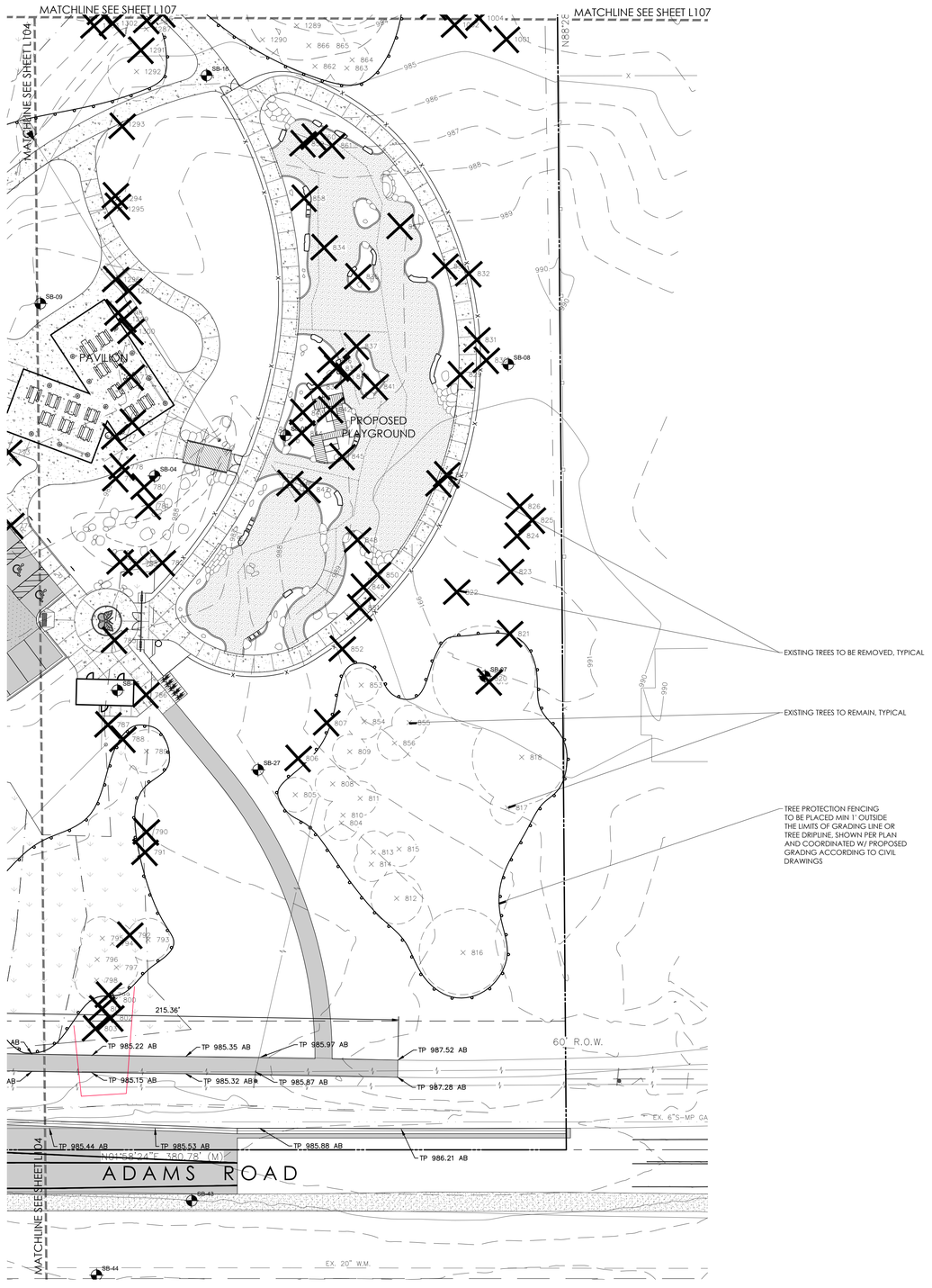

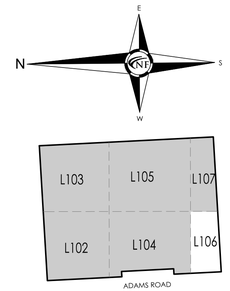

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City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree Preservation Plan E

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
M. Sandberg
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L106

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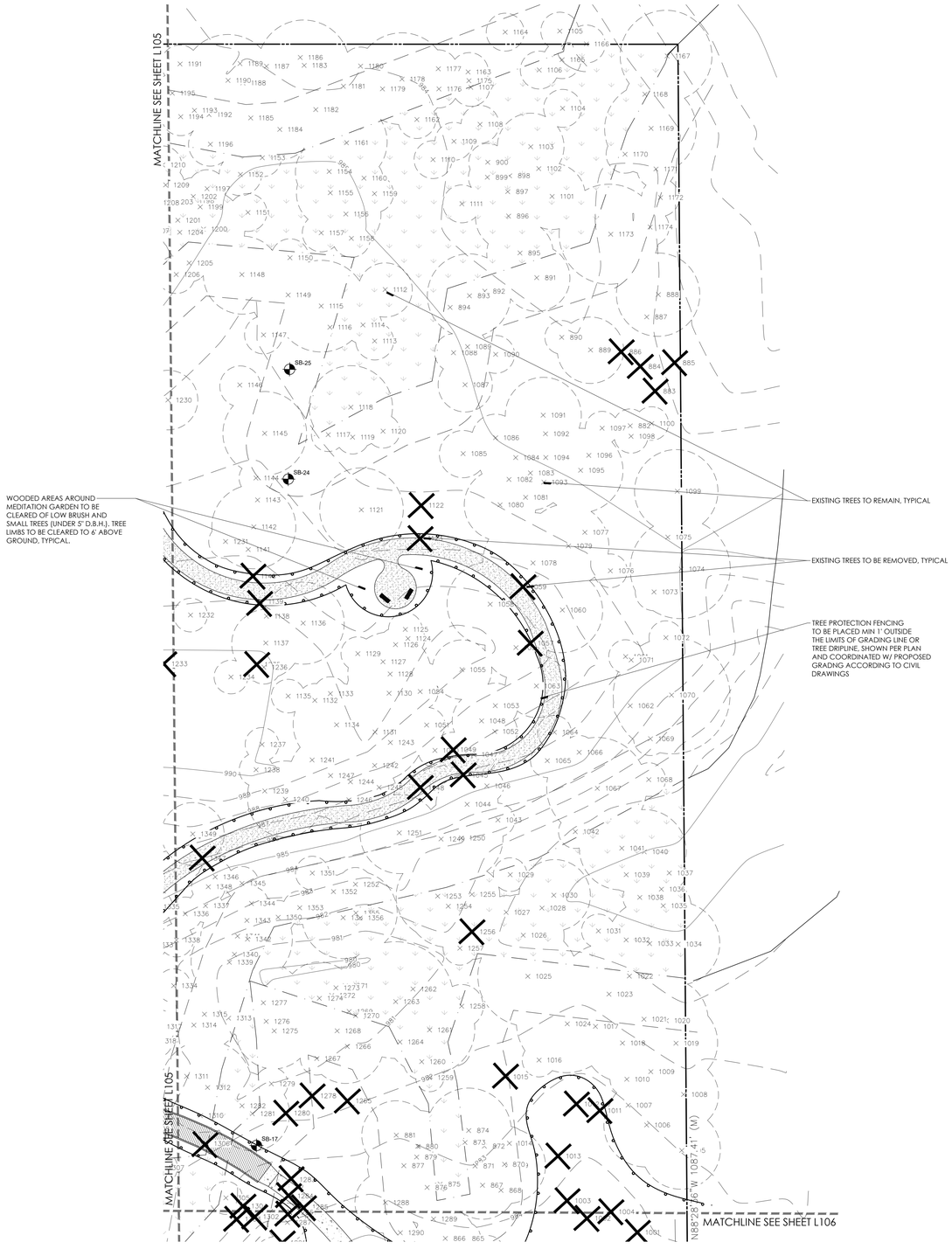

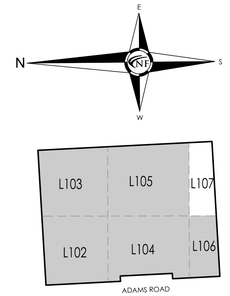

LOCATION KEY

N.T.S.

LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN
- TREE PROTECTION FENCING
- CRITICAL ROOT ZONE

NOTE:
INVASIVE AND NUISANCE SPECIES TO BE ERADICATED DURING SITE CLEARING. SPECIES PRESENT ON SITE INCLUDE BUCKTHORN, AUTUMN OLIVE, AND MULBERRY.

OAK PRUNING NOTE:
ALL EXISTING OAK TREES ON-SITE SHALL BE PRUNED BETWEEN NOVEMBER AND MARCH, DURING THE DORMANT PERIOD, TO PREVENT THE SPREAD OF OAK WILT DISEASE

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Tree Preservation Plan F

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
M. Sandberg

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L107

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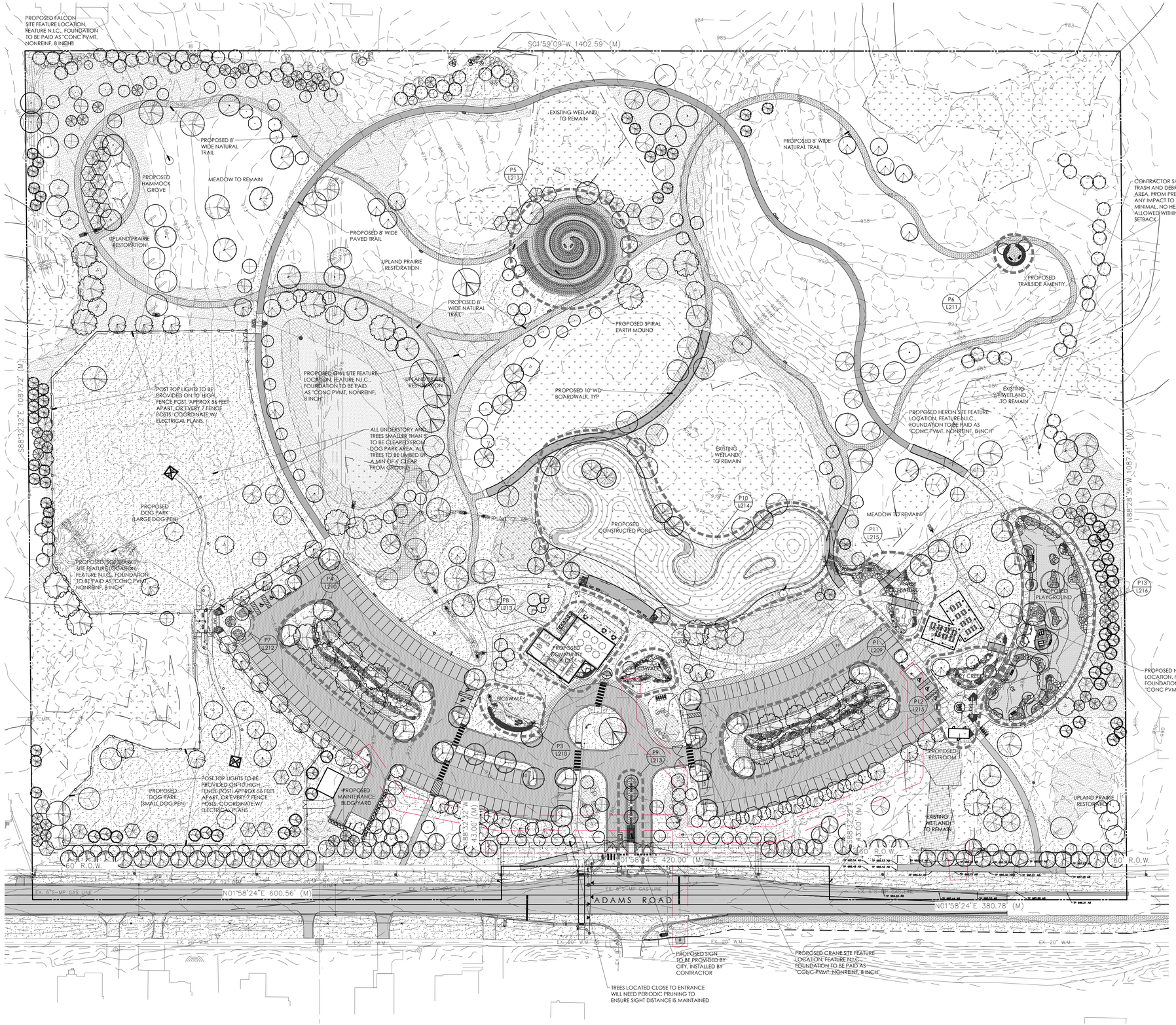

N

E

S

W

L203 | L205 | L207

L202 | L204 | L206

ADAMS ROAD

LOCATION KEY

N.T.S.

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
- ECONOMY PRAIRIE MIX
- BASIC WET SEDGE MEADOW
- EMERGENT WETLAND SEED MIX
- RAIN GARDEN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

PRIOR APPROVAL IS REQUIRED TO PLANT ANY TREE OR SHRUB ON THE PUBLIC RIGHT-OF-WAY. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC ROAD. (TREES MUST BE PLANTED AT LEAST 15' AWAY FROM CURB OR ROAD EDGE WHERE THE SPEED IS MORE THAN 35 MPH.) SHADE TREES AND SHRUBS MUST BE PLANTED AT LEAST 5' FROM THE EDGE OF THE PUBLIC WALKWAY. EVERGREEN AND ORNAMENTAL TREES MUST BE PLANTED AT LEAST 10' FROM THE EDGE OF THE PUBLIC WALKWAY. NO TREES OR SHRUBS MAY BE PLANTED WITHIN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY STREET RIGHT-OF-WAY LINES AT A DISTANCE ALONG EACH LINE OF 25' FROM THEIR POINT OF INTERSECTION. NO TREES OR SHRUBS MAY BE PLANTED IN THE TRIANGULAR AREA FORMED AT THE INTERSECTION OF ANY DRIVEWAY WITH A PUBLIC WALKWAY AT A DISTANCE ALONG EACH LINE OF 15' FROM THEIR POINT OF INTERSECTION. ALL TREES AND SHRUBS MUST BE PLANTED AT LEAST 10' FROM ANY FIRE HYDRANT. SHADE AND EVERGREEN TREES MUST BE AT LEAST 15' AWAY FROM THE NEAREST OVERHEAD WIRE. TREES MUST BE PLANTED A MINIMUM OF 5' FROM AN UNDERGROUND UTILITY, UNLESS THE CITY'S LANDSCAPE ARCHITECT REQUIRES A GREATER DISTANCE.

PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS FORESTRY DIVISION NEEDS TO INSPECT ALL TREES, EXISTING OR PLANTED, TO IDENTIFY ANY THAT POSE A HAZARD TO THE SAFE USE OF THE PUBLIC RIGHT-OF-WAY. FORESTRY MAY REQUIRE THE DEVELOPER TO REMOVE, AND POSSIBLY REPLACE, ANY SUCH TREES.

THESE REQUIREMENTS ARE INCORPORATED INTO THE PLAN.

NOTE:
PROPOSED SIX (6) 'SITE FEATURES' INDICATED ON PLANS ARE NOT IN CONTRACT (NIC) AND WILL BE HANDLED UNDER A SEPARATE CONTRACT. FOUNDATIONS FOR ABOVE WILL BE INSTALLED AS A PART OF THIS CONTRACT AND PAID FOR AS "CONC PVMT, NONREINF, 8 INCH" . ACTUAL TYPE OF FOUNDATION TO BE DETERMINED (SLAB, FOOTINGS, ETC) PRIOR TO INSTALLATION

NOTE:
NO CHEMICALS ARE ALLOWED IN STORMWATER FEATURES OR BUFFER ZONES WITH THE FOLLOWING EXCEPTION: INVASIVE SPECIES MAY BE TREATED WITH CHEMICALS BY A CERTIFIED APPLICATOR. MOWING IS ONLY ALLOWED TWICE PER YEAR

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Overall Planting Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 60'

60 30 0 30 60 90

NFE JOB NO. O557

SHEET NO. L201

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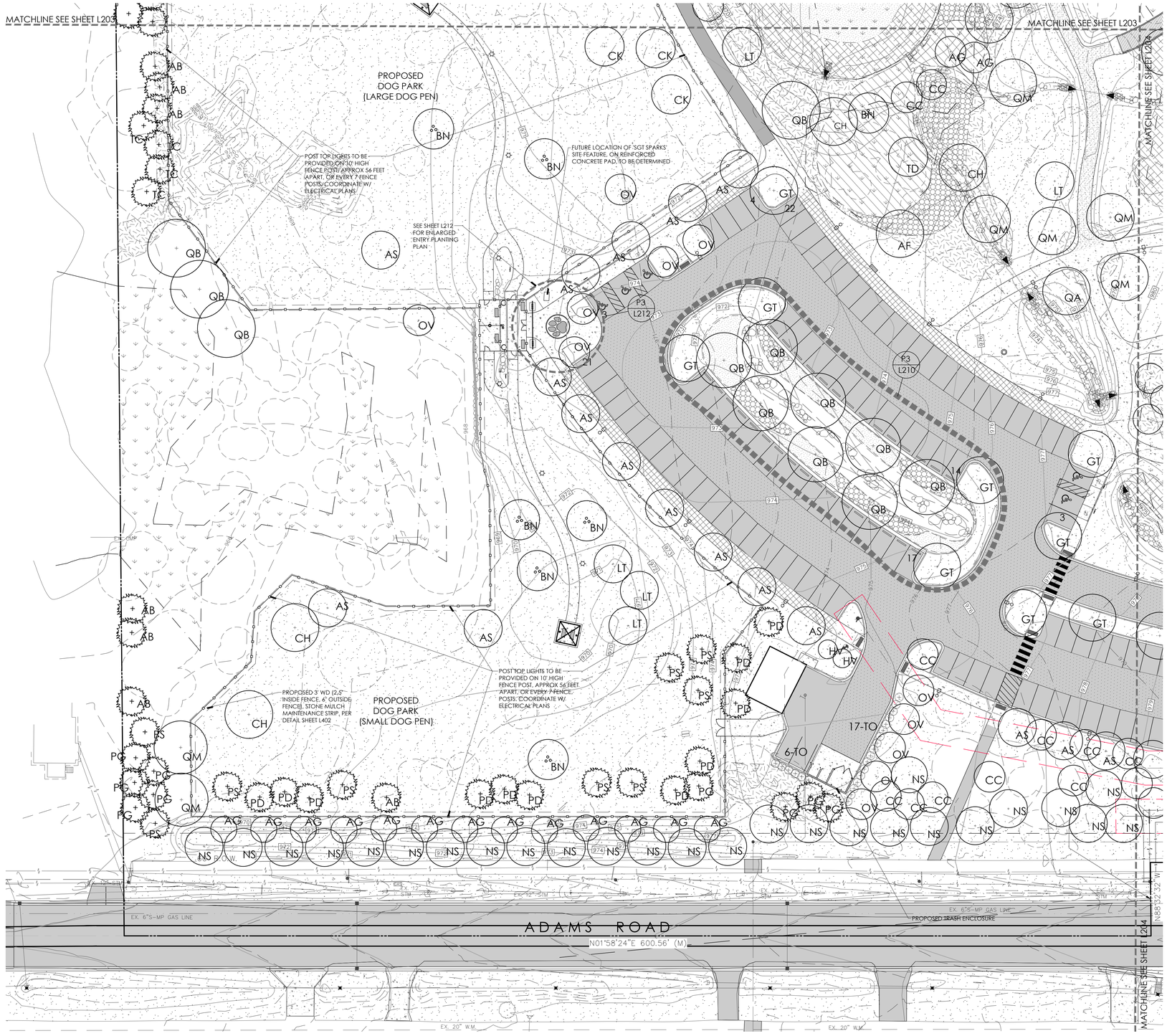

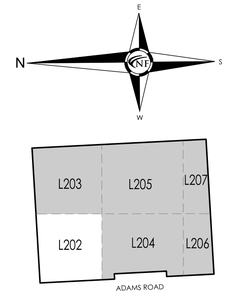

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- PROPOSED DECIDUOUS TREE
- XX PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
- ECONOMY PRAIRIE MIX
- BASIC WET SEDGE MEADOW
- EMERGENT WETLAND SEED MIX
- RAIN GARDEN SEED MIX
- NATIVE DETENTION BASIN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE.
SEE SHEET L217 FOR PLANTING DETAILS, AND SHEET L209 AND L212 FOR DETAILED SHRUB AND GROUNDCOVER PLANTING PLANS

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
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PONTIAC, MI 48342-5032
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SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan A

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L202

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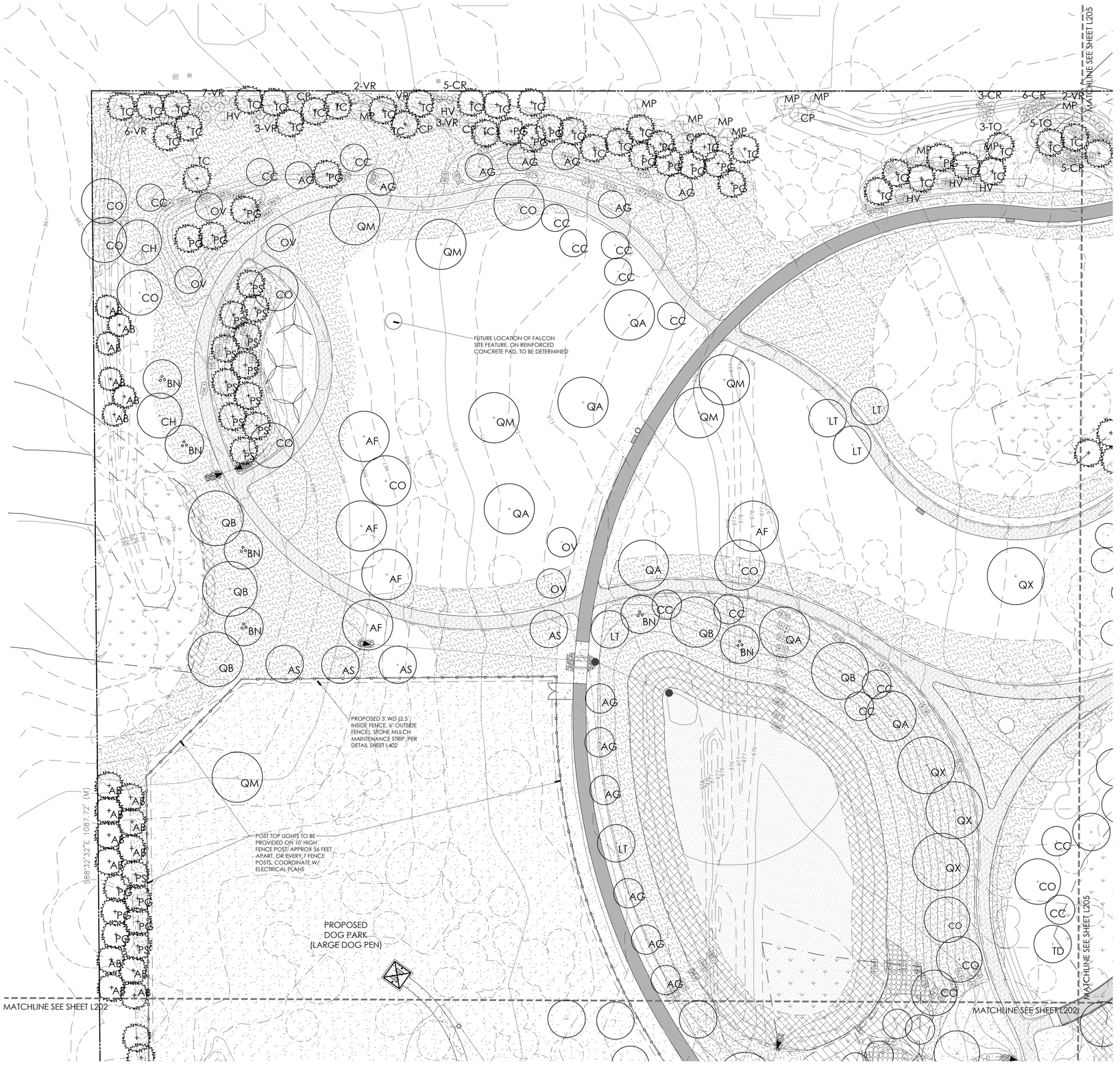

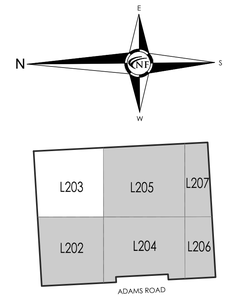

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- XX — PROPOSED DECIDUOUS TREE / PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
- ECONOMY PRAIRIE MIX
- BASIC WET SEDGE MEADOW
- EMERGENT WETLAND SEED MIX
- RAIN GARDEN SEED MIX
- NATIVE DETENTION BASIN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE.
SEE SHEET L217 FOR PLANTING DETAILS

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan B

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY: M. Sandberg
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: 08/05/2025
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L203

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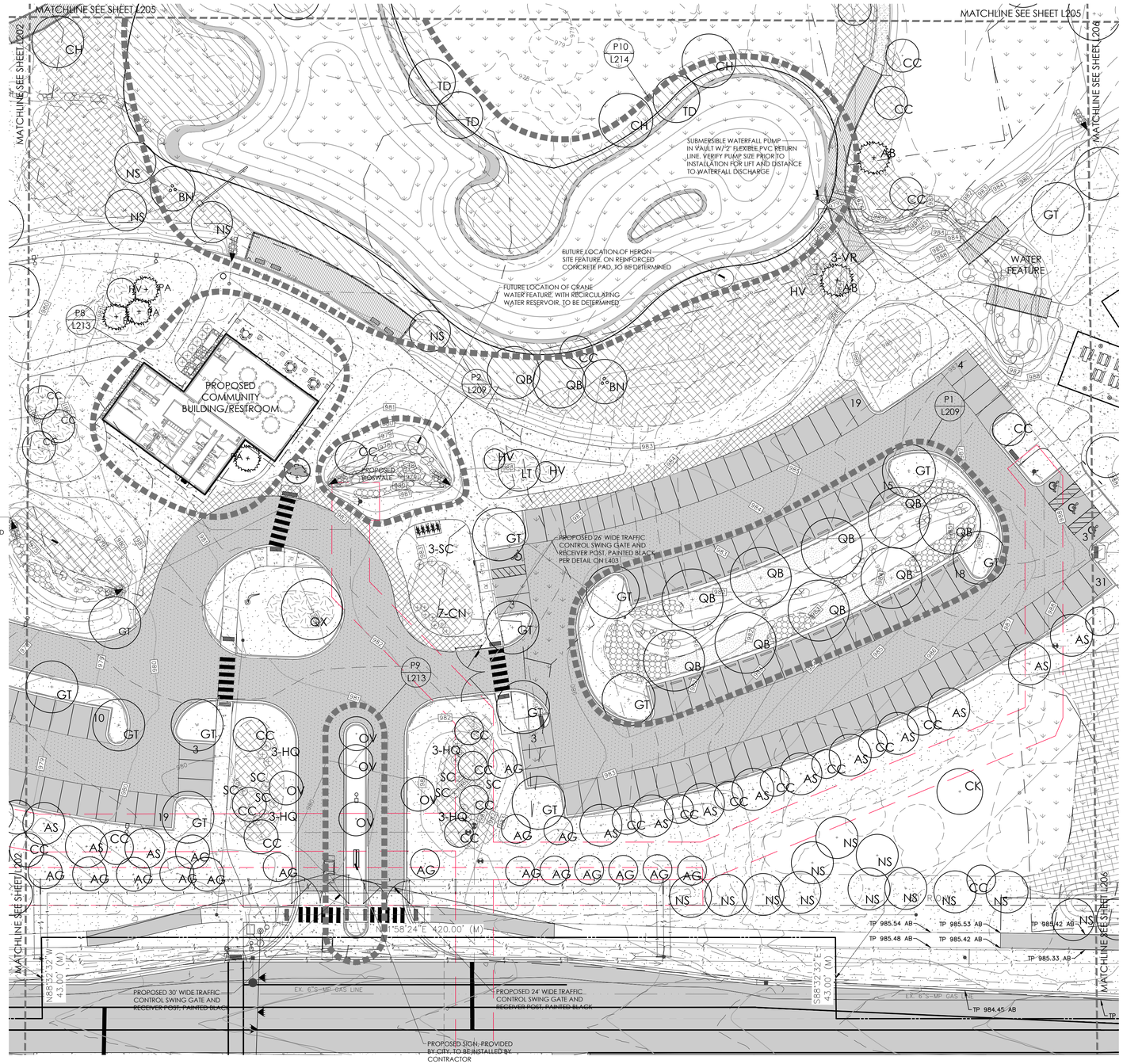

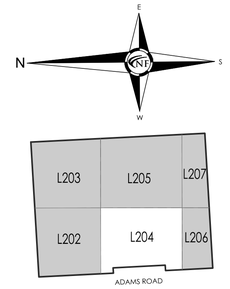

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- PROPOSED DECIDUOUS TREE
- XX PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
- ECONOMY PRAIRIE MIX
- BASIC WET SEDGE MEADOW
- EMERGENT WETLAND SEED MIX
- RAIN GARDEN SEED MIX
- NATIVE DETENTION BASIN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE,
SEE SHEET L217 FOR PLANTING DETAILS, AND SHEET L209 L213 AND L214 FOR DETAILED SHRUB AND GROUNDCOVER PLANTING PLANS

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan C

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L204

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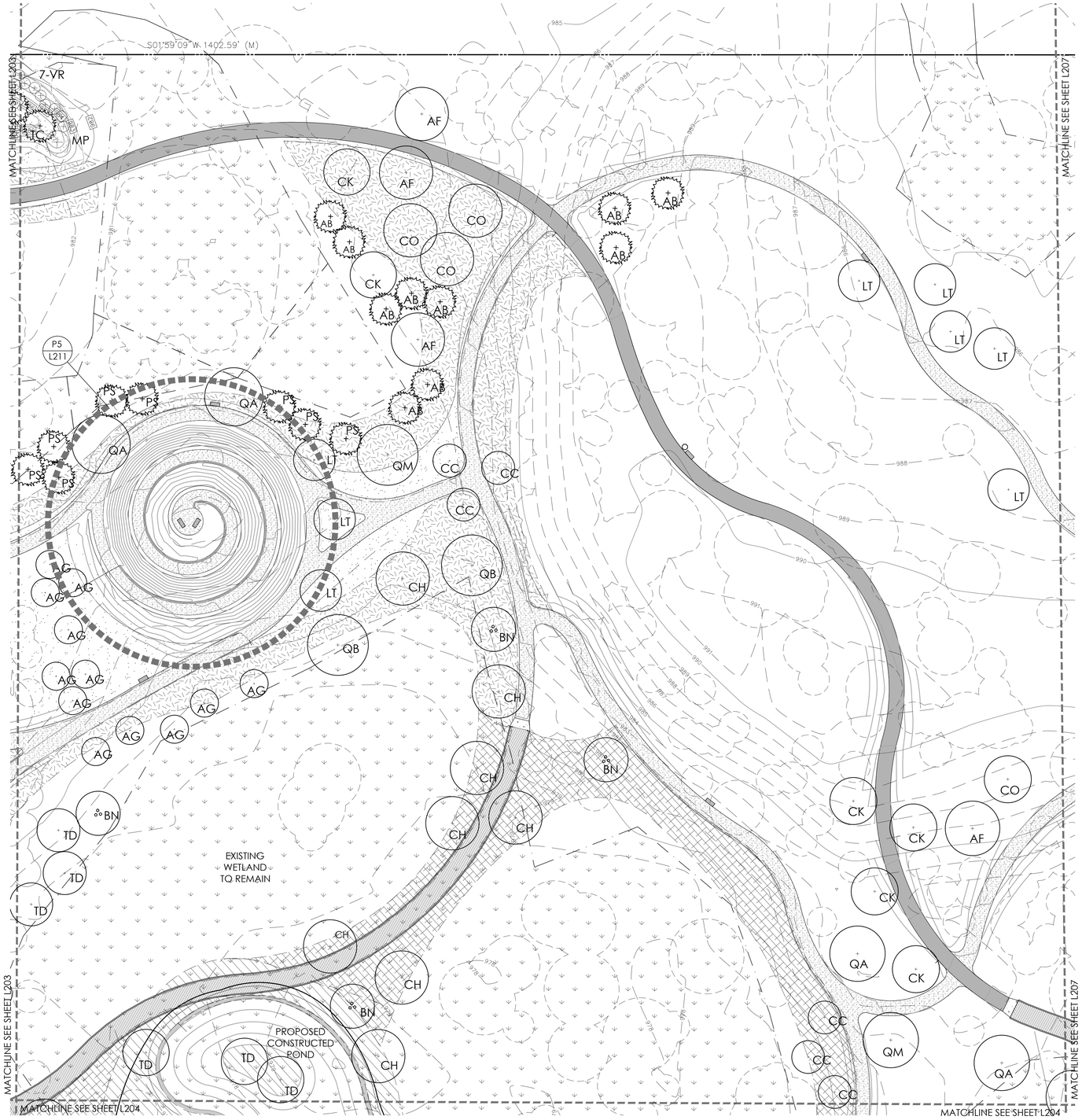

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- XX — PROPOSED DECIDUOUS TREE; PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
- ECONOMY PRAIRIE MIX
- BASIC WET SEDGE MEADOW
- EMERGENT WETLAND SEED MIX
- RAIN GARDEN SEED MIX
- NATIVE DETENTION BASIN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE.
SEE SHEET L217 FOR PLANTING DETAILS, AND SHEET L211 FOR DETAILED SHRUB AND GROUNDCOVER PLANTING PLANS

CITY FILE NO. E24-008, SECTION #8

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SEAL

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CLIENT
City of Rochester Hills

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T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan D

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L205

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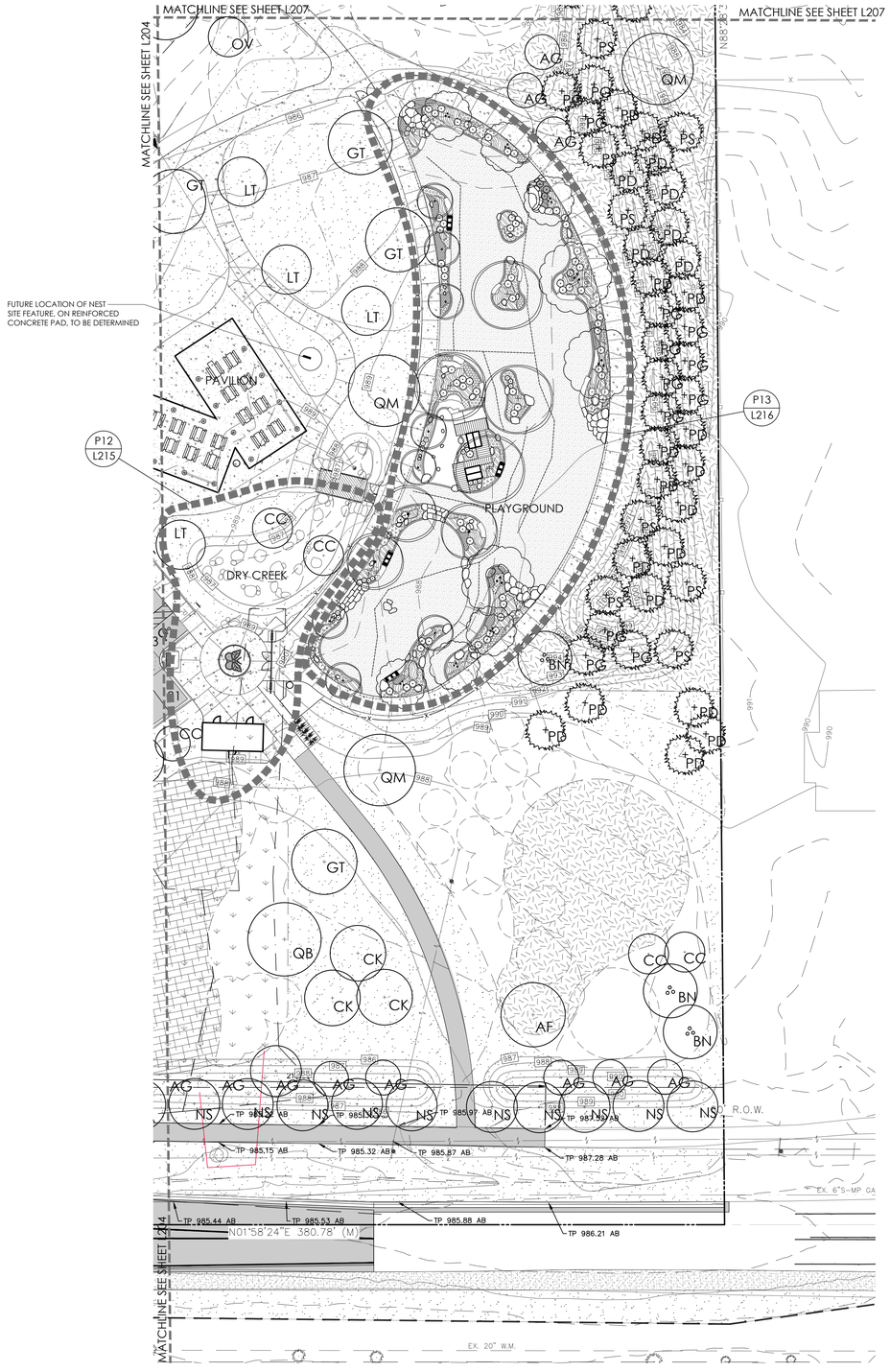

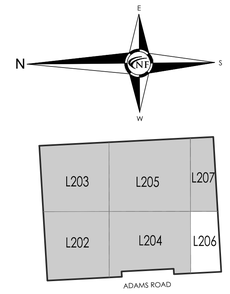

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- PROPOSED DECIDUOUS TREE
- XX PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

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- RAIN GARDEN SEED MIX
- NATIVE DETENTION BASIN SEED MIX
- EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN

NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE,
SEE SHEET L217 FOR PLANTING DETAILS, AND SHEET L215 FOR DETAILED SHRUB AND GROUNDCOVER PLANTING PLANS

CITY FILE NO. E24-008, SECTION #8

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SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan E

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L206

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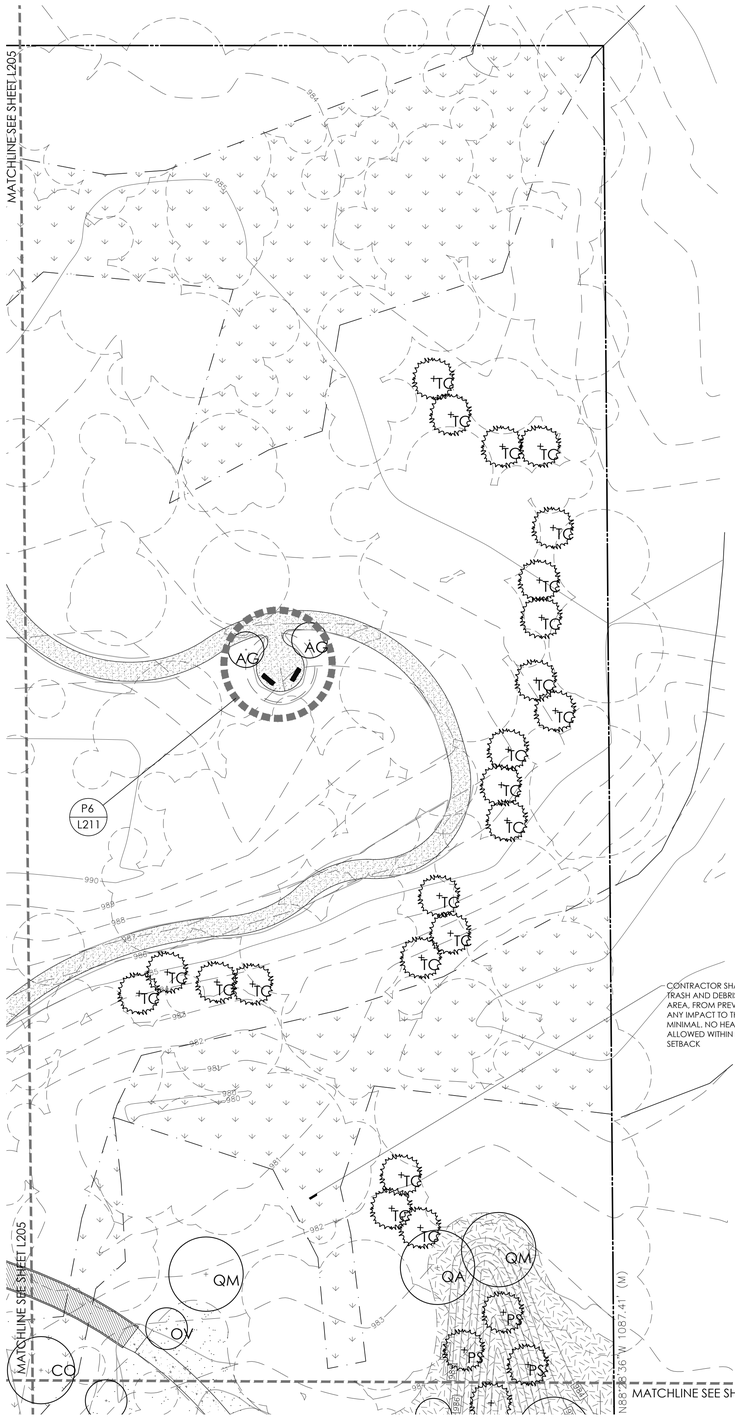

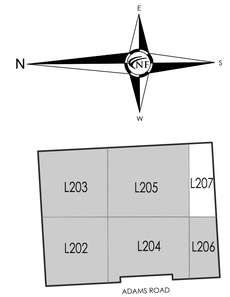

LOCATION KEY

N.T.S.

TREE AND SHRUB LEGEND

- XX — PROPOSED DECIDUOUS TREE; PROPOSED PLANT ID, REFER TO SHEET L218 FOR PLANT SCHEDULE
- PROPOSED CONIFEROUS TREE
- PROPOSED MULTI-STEM TREE
- PROPOSED SHRUB

GROUNDCOVER LEGEND

- LOW MAINTENANCE FESCUE MIX
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NOTE:

SEE SHEET L218 FOR MASTER PLANT SCHEDULE.
SEE SHEET L217 FOR PLANTING DETAILS, AND SHEET L215 FOR DETAILED SHRUB AND GROUNDCOVER PLANTING PLANS

CITY FILE NO. E24-008, SECTION #8

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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Plan F

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L207

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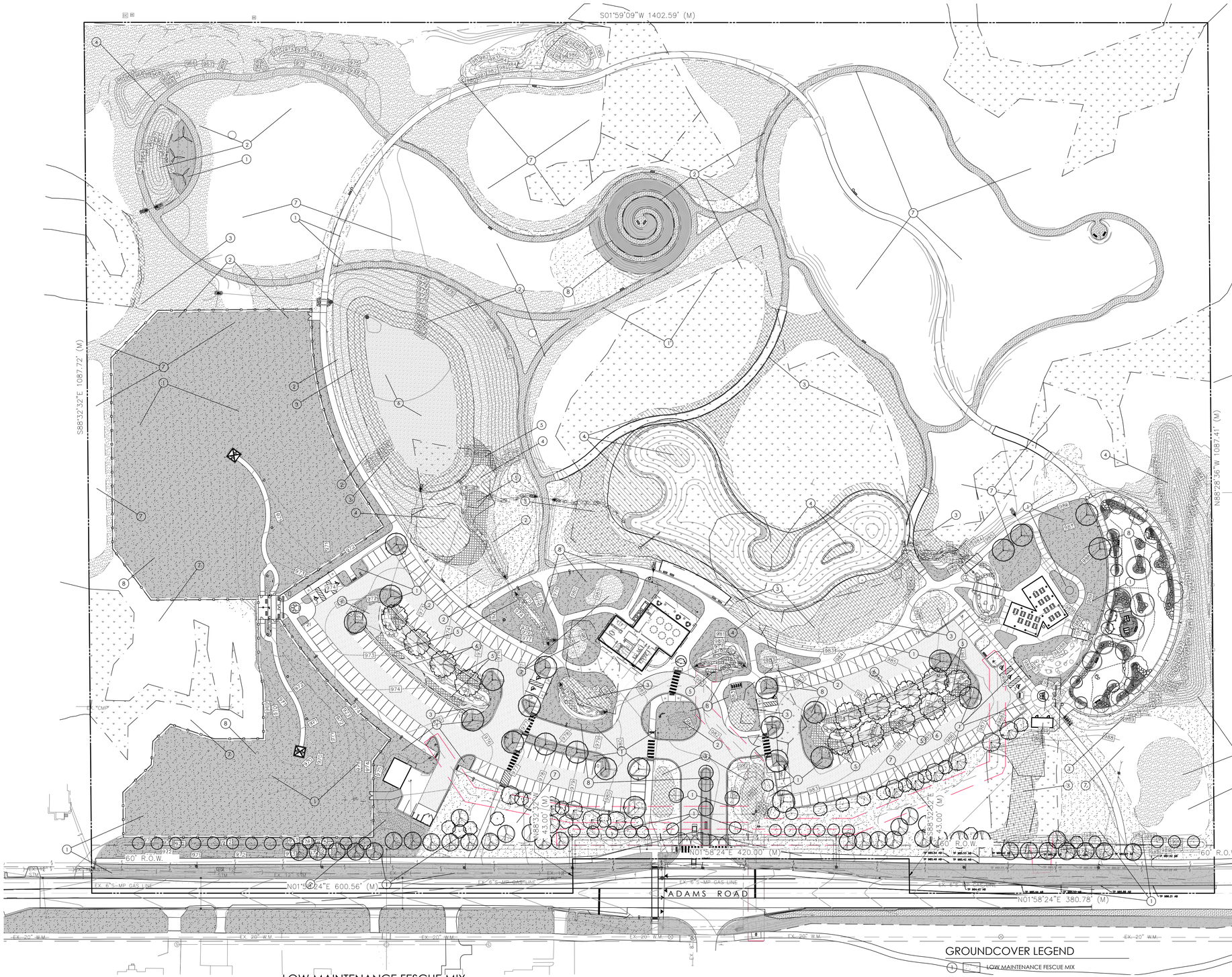


EMERGENT WETLAND MIX

FORBS	GRASSES
SWEET FLAG	BRISTLY SEDGE
COMMON WATER PLANTAIN	FRINGED SEDGE
SWAMP MILKWEED	PORCUPINE SEDGE
SWAMP ASTER	AWL-FRUITED SEDGE
NODDING BUR MARIGOLD	FOX SEDGE
WATER HEMLOCK	GREAT SPIKE RUSK
JOE PYE WEED	CANADA MANNA GRASS
BONESET	REED MANNA GRASS
SOUTHERN BLUE FLAG IRIS	SOFT RUSH
CARDINAL FLOWER	TORREY'S RUSH
GREAT BLUE LOBELIA	RICE CUT GRASS
MONKEY FLOWER	HARD-STEM BULRUSH
ARROW ARUM	DARK GREEN BULRUSH
DITCH STONECROP	WOOL GRASS
PENNSYLVANIA SMARTWEED	RIVER BULRUSH
PICKEREL WEED	SOFT-STEM BULRUSH
GREAT WATER DOCK	
COMMON ARROWHEAD	
COMMON BUR REED	
BLUE VERVAIN	

RECOMMENDED SEEDING RATE: 30 LBS/ACRE

SEED MIX AVAILABLE:
NATIVE CONNECTIONS
3815 N WESTNEDGE AVE
KALAMAZOO, MI 49004
T 269-459-6900

RAIN GARDEN SEED MIX

FORBS	GRASSES
NODDING WILD ONION	FOX SEDGE
SWAMP MILKWEED	CANADA WILD RYE
BUTTERFLY MILKWEED	VIRGINIA WILD RYE
PURPLE CONEFLOWER	FOWL MANNA GRASS
FALSE SUNFLOWER	LITTLE BLUESTEM
GREAT BLUE LOBELIA	WOOL GRASS
WILD BERGAMOT	PRAIRIE CORDGRASS
FOXGLOVE BEARDTONGUE	
MOUNTAIN MINT	TEMPORARY COVER
YELLOW CONEFLOWER	SEED OATS
BLACK-EYED SUSAN	
WILD SENNA	
RIDDELL'S GOLDENROD	
NEW ENGLAND ASTER	
BLUE VERVAIN	
GOLDEN ALEXANDER	

RECOMMENDED SEEDING RATE: 30 LBS/ACRE

SEED MIX AVAILABLE:
NATIVE CONNECTIONS
3815 N WESTNEDGE AVE
KALAMAZOO, MI 49004
T 269-459-6900

NATIVE DETENTION BASIN SEED MIX

ERNMX - 183

GRASSES, SEDGES, RUSHES
DEERTONGUE
SWITCHGRASS
VIRGINIA WILD RYE
FOX SEDGE
WINTER BENTGRASS
SOFT RUSH
PATH RUSH
REDTOP PANICGRASS

RECOMMENDED SEEDING RATE: 20 LBS/ACRE

SEED MIX AVAILABLE:
ERNST CONSERVATION SEEDS
8884 MERCER PIKE
MEADVILLE, PA 16335
T: 800 873-3321

ECONOMY PRAIRIE MIX

FORBS	GRASSES
CANADA THIMBLEWEED	BIG BLUESTEM
COMMON MILKWEED	FIELD OVAL SEDGE
BUTTERFLY MILKWEED	CANADA WILD RYE
LANCE-LEAF COREOPSIS	BOTTLEBRUSH GRASS
PARTRIDGE PEA	JUNE GRASS
SHOWY TICK TREFOIL	LITTLE BLUESTEM
SNEEZEWEED	INDIAN GRASS
ROUND-HEADED BUSH CLOVER	PRAIRIE DROPSEED
ROUGH BLAZINGSTAR	
WILD BERGAMOT	TEMPORARY GRASSES
FOXGLOVE BEARDTONGUE	SEED OATS
HAIRY BEARDTONGUE	
SLENDER MOUNTAIN MINT	
YELLOW CONEFLOWER	RECOMMENDED SEEDING RATE:
BLACK-EYED SUSAN	30 LBS/ACRE
WILD SENNA	
PRAIRIE DOCK	SEED MIX AVAILABLE:
OLD FIELD GOLDENROD	NATIVE CONNECTIONS
STIFF GOLDENROD	3815 N WESTNEDGE AVE
SHOWY GOLDENROD	KALAMAZOO, MI 49004
HEATH ASTER	T 269-459-6900
NEW ENGLAND ASTER	
SKY BLUE ASTER	
FROST ASTER	
COMMON SPIDERWORT	
IRONWEED	
GOLDEN ALEXANDER	

BASIC WET SEDGE MEADOW

FORBS	GRASSES
ANGELICA	BLUE JOINT GRASS
SWAMP MILKWEED	PORCUPINE SEDGE
BONESET	FOX SEDGE
SNEEZEWEED	VIRGINIA WILD RYE
SOUTHERN BLUE FLAG IRIS	SOFT RUSH
GREAT BLUE LOBELIA	RICE CUT GRASS
SEEDBOX	SWITCHGRASS
MONKEY FLOWER	FOWL BLUEGRASS
FOXGLOVE BEARDTONGUE	DARK GREEN BULRUSH
BLACK-EYED SUSAN	
WILD SENNA	TEMPORARY COVER
RIDDELL'S GOLDENROD	SEED OATS
NEW ENGLAND ASTER	
BLUE VERVAIN	
TALL IRONWEED	
GOLDEN ALEXANDER	

RECOMMENDED SEEDING RATE: 35 LBS/ACRE

SEED MIX AVAILABLE:
NATIVE CONNECTIONS
3815 N WESTNEDGE AVE
KALAMAZOO, MI 49004
T 269-459-6900

LOW MAINTENANCE FESCUE MIX

GRASSES
HARD FESCUE (PREMIUM VARIETY)
SHEEP FESCUE
CHEWINGS FESCUE
CREEPING RED FESCUE

RECOMMENDED SEEDING RATE: 200 LBS/ACRE

SEED MIX AVAILABLE:
NATIVE CONNECTIONS
3815 N WESTNEDGE AVE
KALAMAZOO, MI 49004
T 269-459-6900

GENERAL SEED NOTE:

ALL LAWN AREAS DESIGNATED TO BE SEEDED, SHALL BE HYDRO-SEEDED WITH SPECIFIED BLENDS, AND STABILIZED WITH WOOD CELLULOSE FIBER MULCH (2,000 LBS PER ACRE) . IN AREAS SUBJECT TO EROSION, SEEDED LAWN SHALL BE FURTHER STABILIZED WHERE NECESSARY WITH BIODEGRADABLE EROSION BLANKET AND STAKED UNTIL ESTABLISHED. ALL SEED SHALL BE APPLIED OVER A MINIMUM 3" PREPARED TOPSOIL, AND SHALL BE KEPT MOIST AND WATERED DAILY UNTIL ESTABLISHED.
SEEDING INSTALLATION SHALL OCCUR ONLY:
SPRING: APRIL1 TO JUNE1
FALL: AUGUST 15 TO OCTOBER 15

GROUNDCOVER LEGEND

1. LOW MAINTENANCE FESCUE MIX
2. ECONOMY PRAIRIE MIX, ON NATIVE SOIL
3. BASIC WET SEDGE MEADOW, ON NATIVE SOIL
4. EMERGENT WETLAND SEED MIX, ON NATIVE SOIL
5. RAIN GARDEN SEED MIX, ON NATIVE SOIL
6. NATIVE DETENTION BASIN SEED MIX, ON NATIVE SOIL
7. EXISTING UNDERSTORY/GROUNDCOVER TO REMAIN
8. AREAS OF 3" TOPSOIL

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Seeding Plan

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

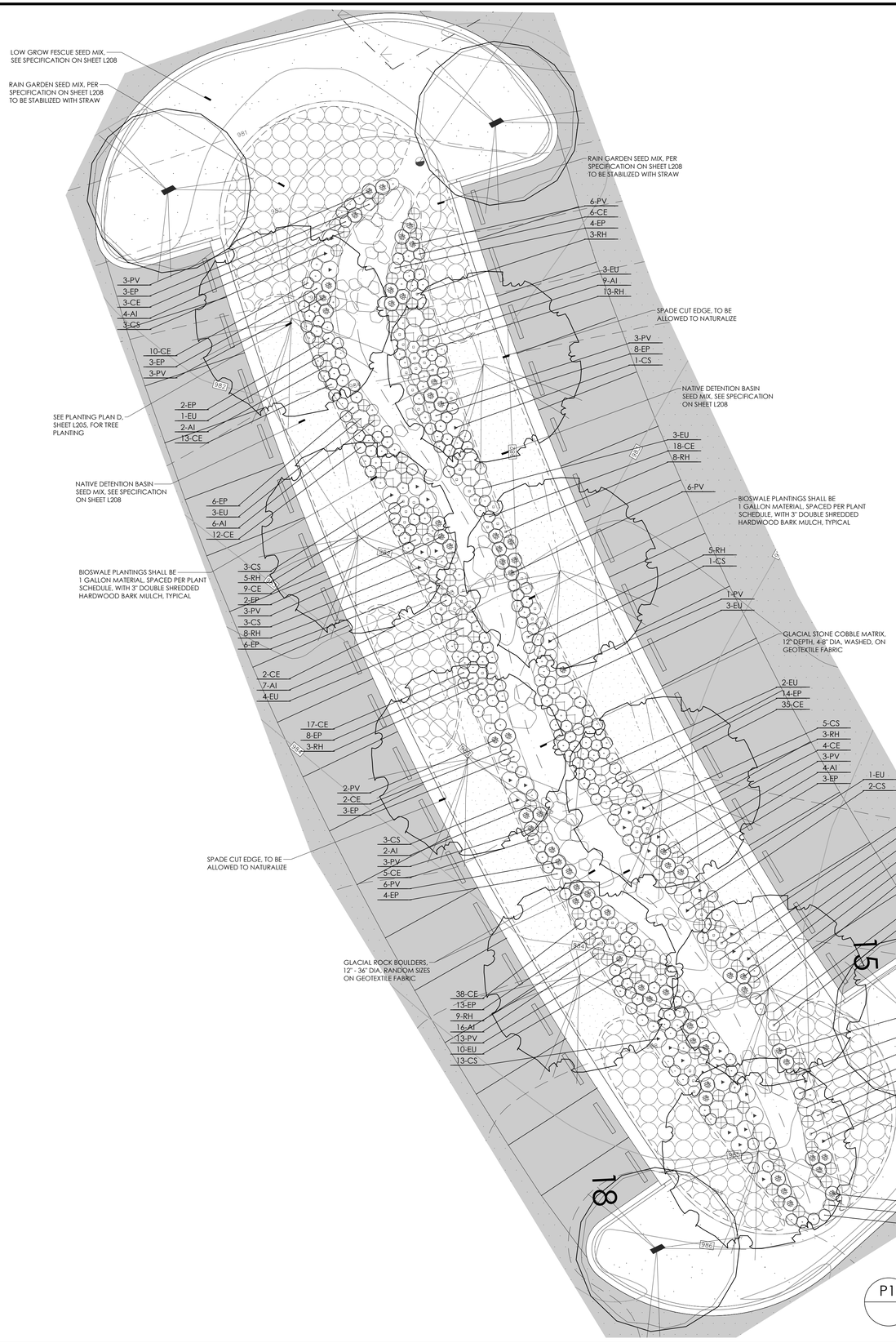
APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 60'
60 30 0 30 60 90

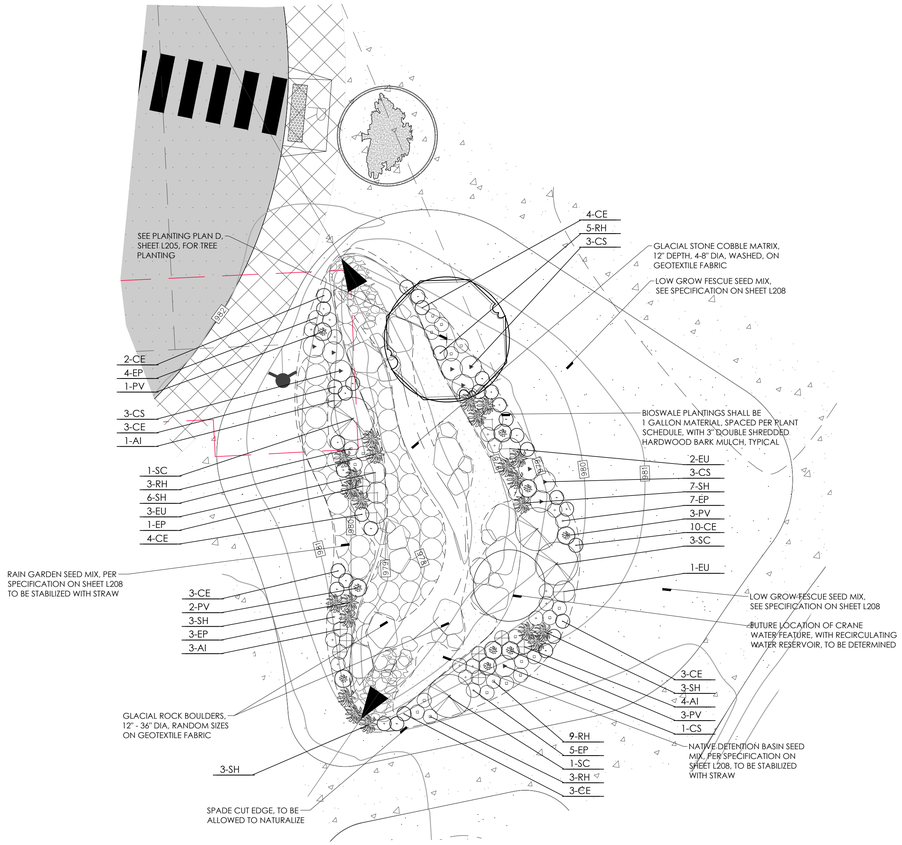
NFE JOB NO. O557
SHEET NO. L208

W:\O500-3000 Files\O000-FILES\O557 Howicki Park\Office\Landscape\Construction Drawings\O557_L1-2026.dwg, 2/4/2026 4:11:28 PM



P1 BIOSWALE A PLANTING PLAN

1" = 10'



P2 BIOSWALE B PLANTING PLAN

1" = 10'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Bioswale Planting Plan A

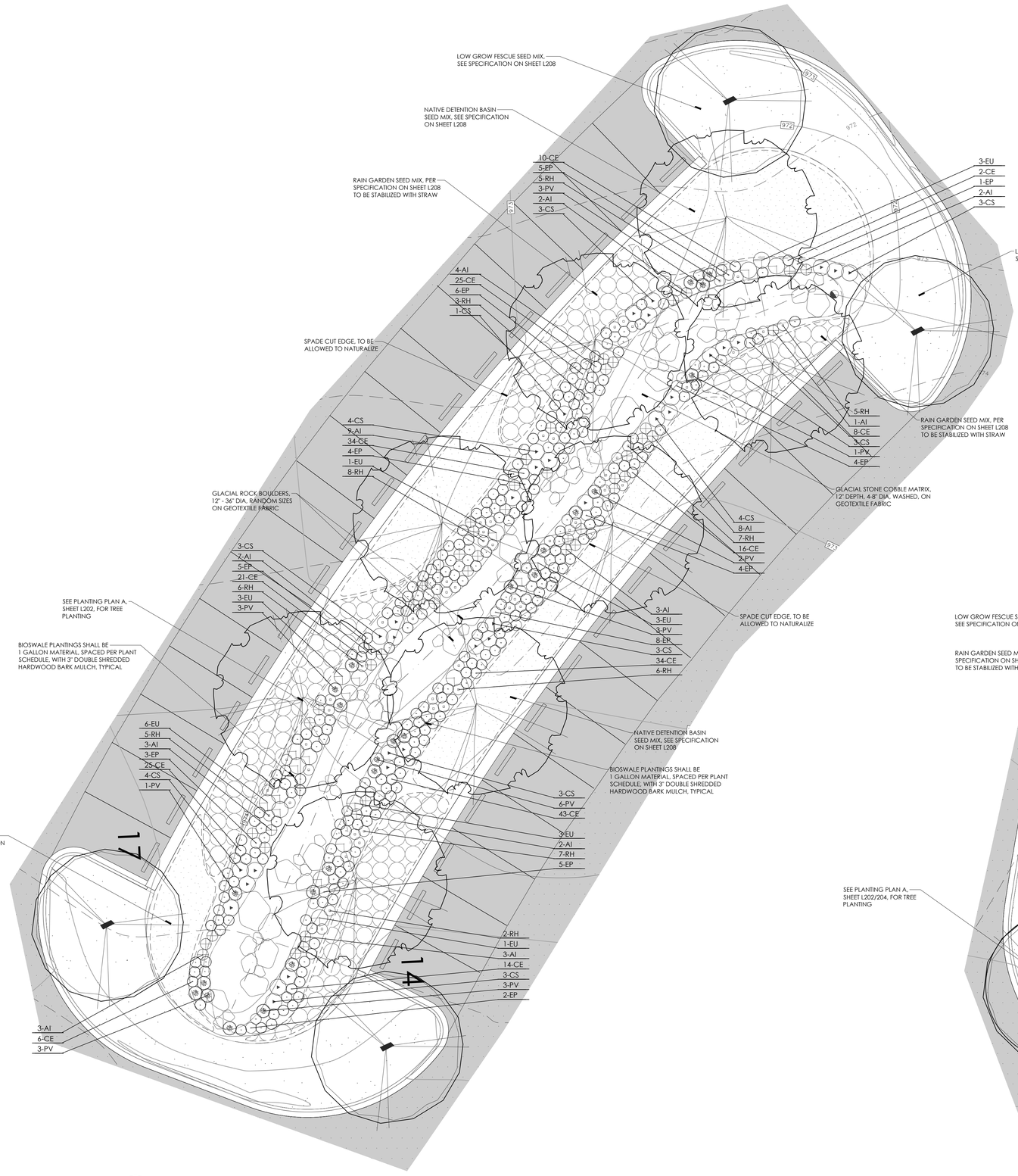
Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 10'
10 5 0 5 10 15

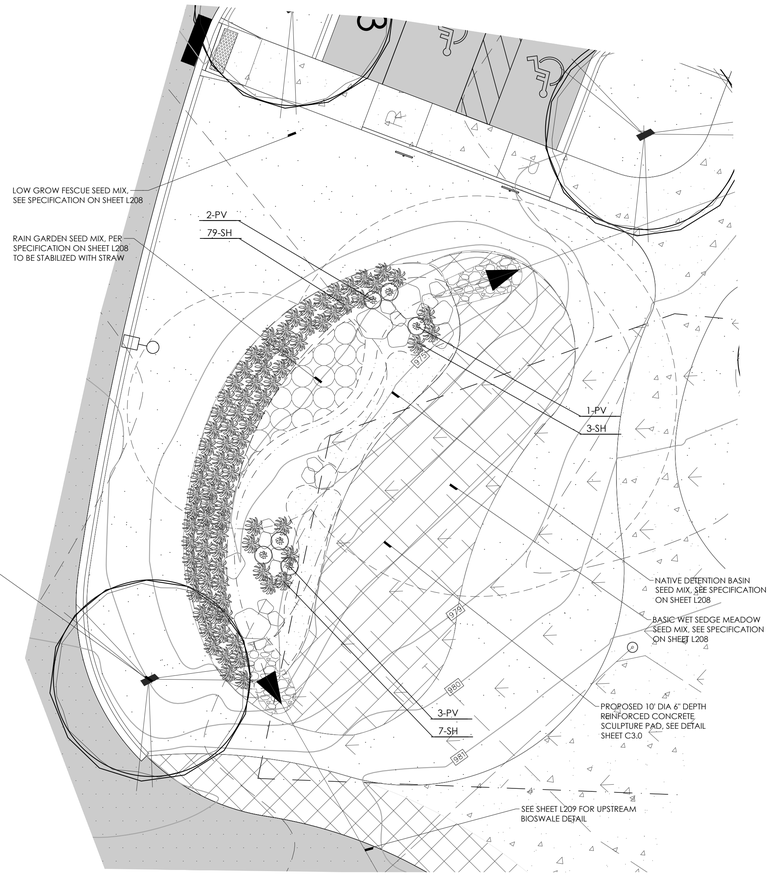
NFE JOB NO. O557
SHEET NO. L209

P:\O557\O500-3000 Plans\O000-PLANS\O557 Nowicki Park\Office\Landscape\Construction Drawings\O557_L3-200.dwg, 2/4/2026 4:16:12 PM



P4 BIOSWALE D PLANTING PLAN

1" = 10'



P3 BIOSWALE C PLANTING PLAN

1" = 10'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Bioswale Planting Plan B

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 10'
10 5 0 5 10 15

NFE JOB NO. O557
SHEET NO. L210

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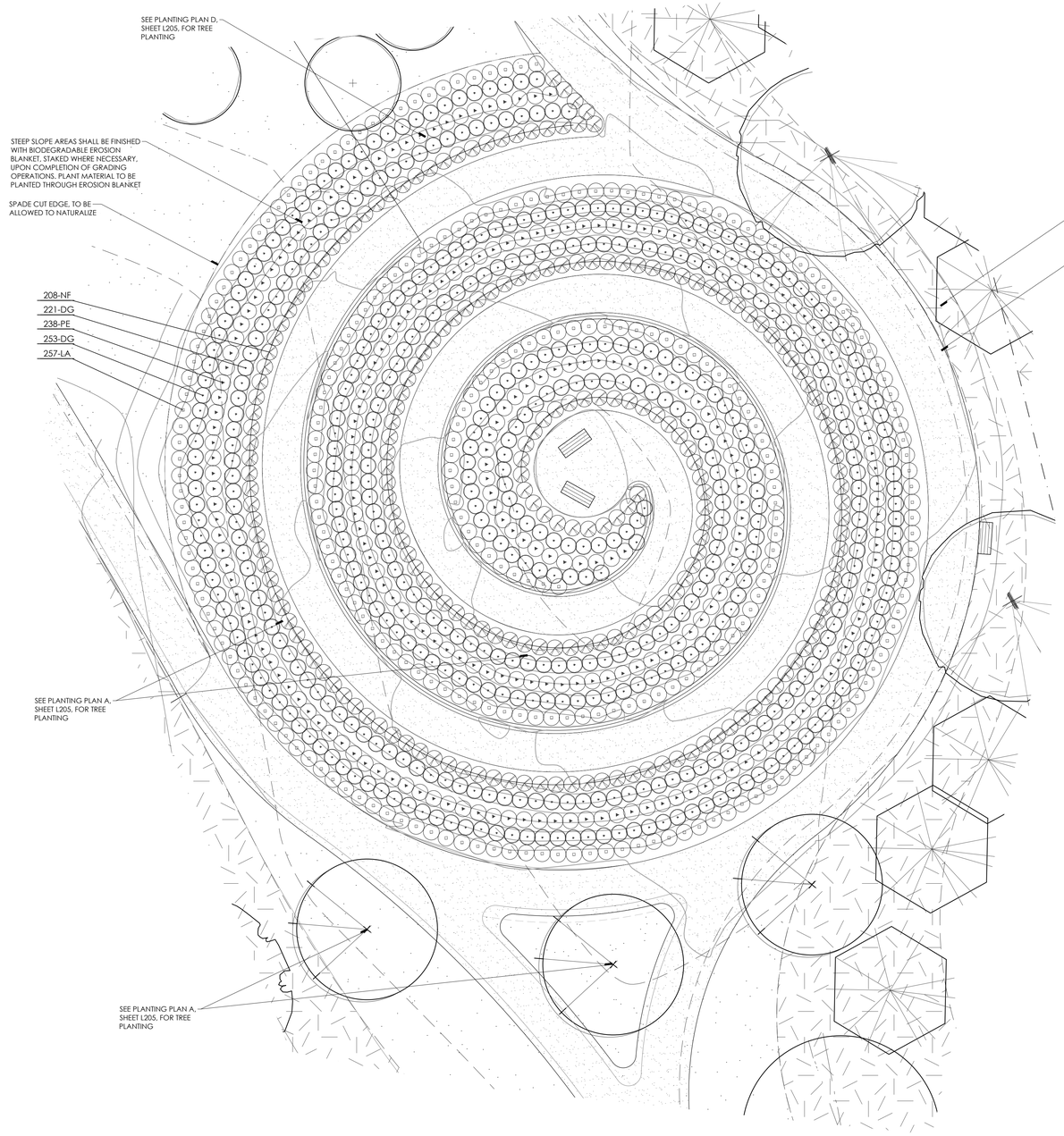
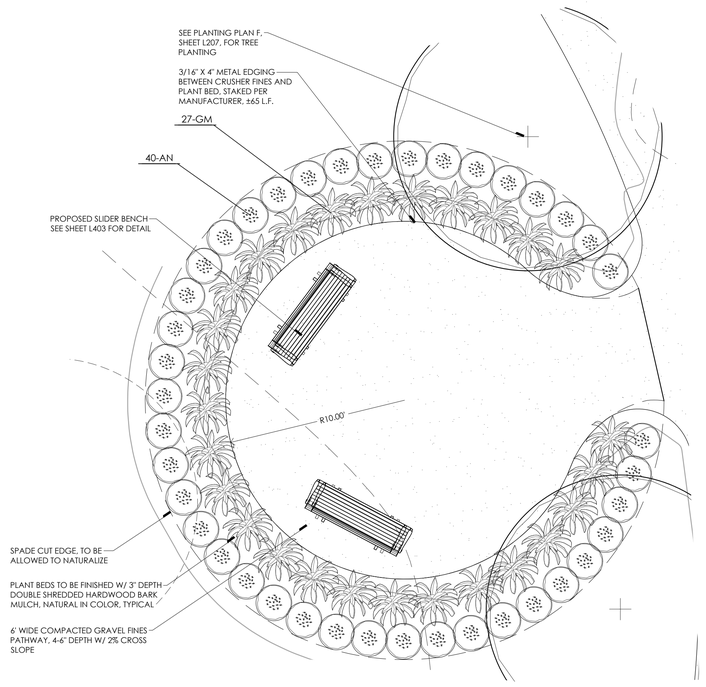


P5 SPIRAL MOUND PLANTING PLAN

1" = 10'



P6 TRAILSIDE AMENITIES PLANTING PLAN

1" = 4'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
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(616) 375-0945

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FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Spiral Mound/Trailside Amenities Planting Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: VARIES
10 5 0 5 10 15

NFE JOB NO. O557

SHEET NO. L211

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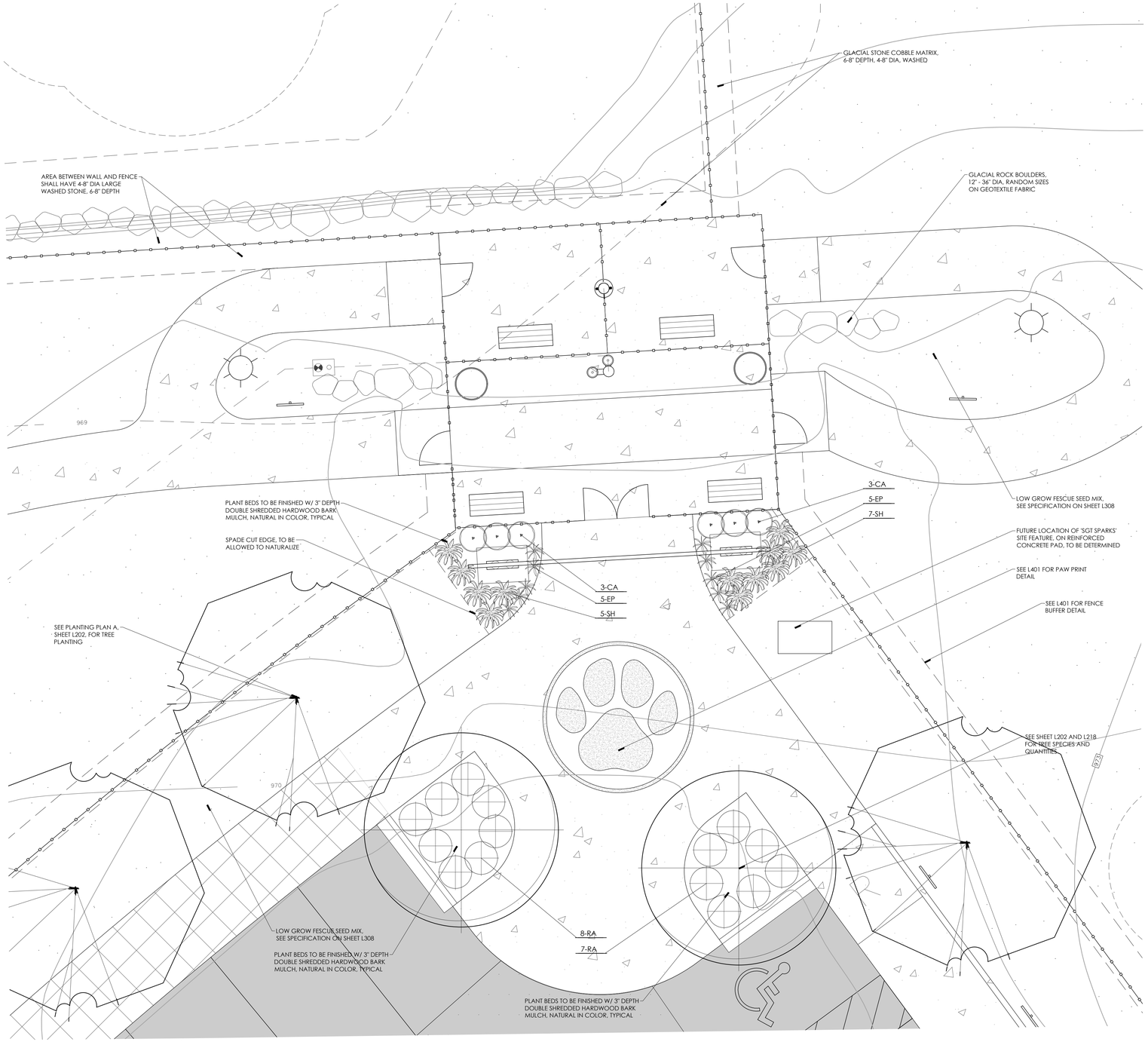

P7 DOG PARK ENTRY PLANTING PLAN

1" = 5'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Dog Park Entry
Planting Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 5'

5 2.5 0 2.5 5 7.5

NFE JOB NO. **O557**

SHEET NO. **L212**

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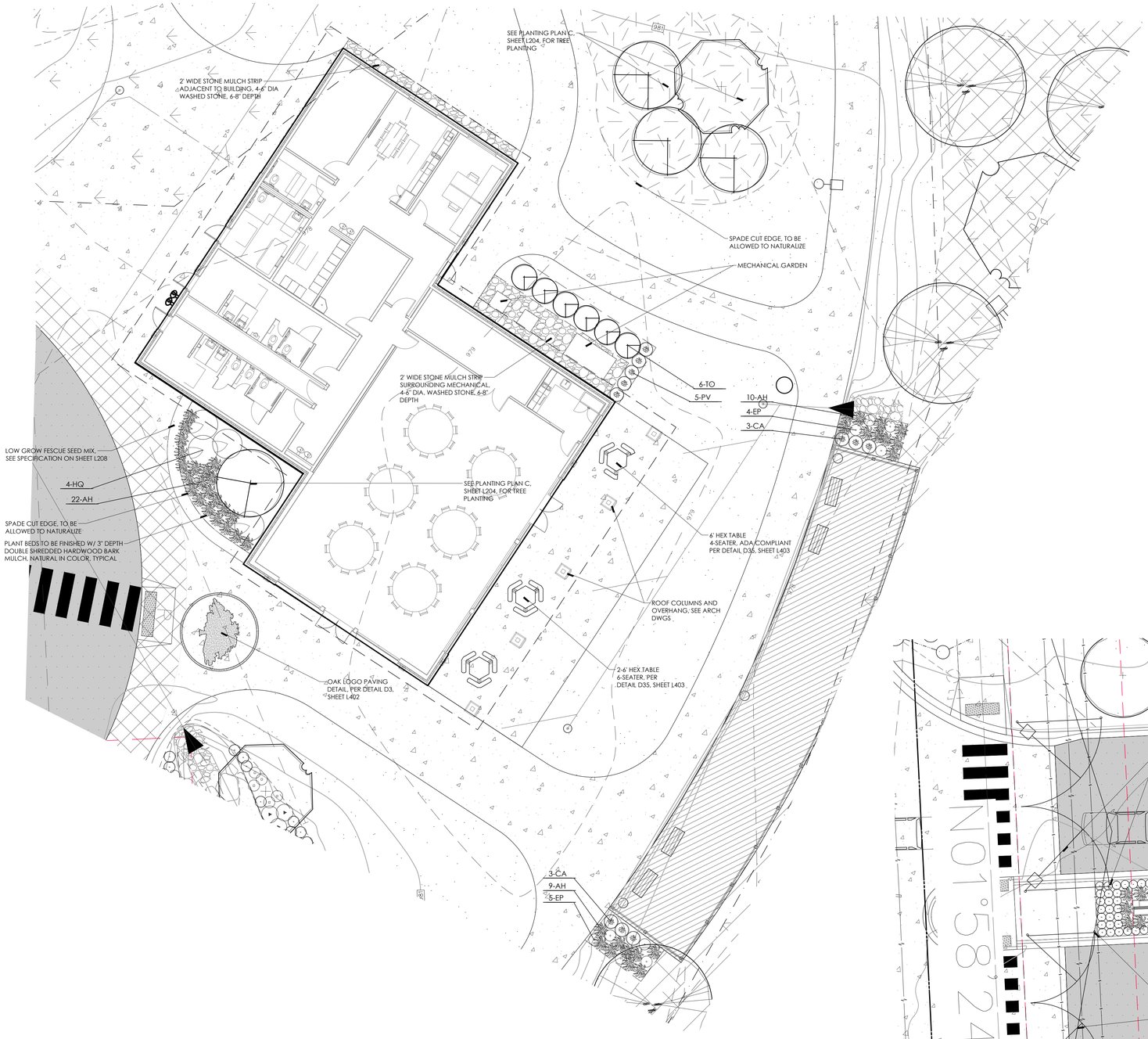
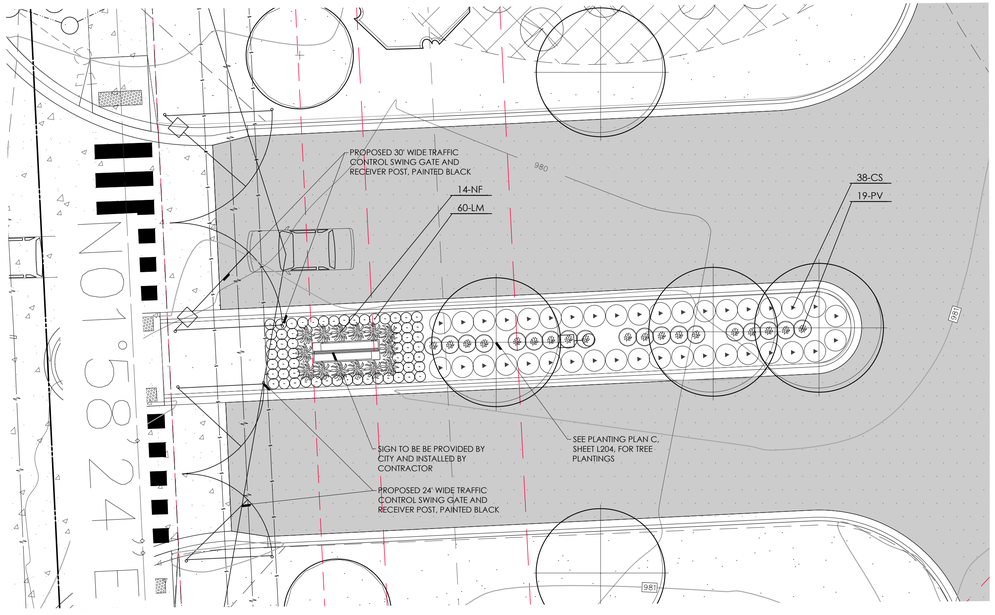


P8 COMMUNITY BUILDING PLANTING PLAN

1" = 10'



P9 PARK ENTRY PLANTING PLAN

1" = 10'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Community Building/
Park Entry Planting Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 10'
10 5 0 5 10 15

NFE JOB NO. O557

SHEET NO. L213

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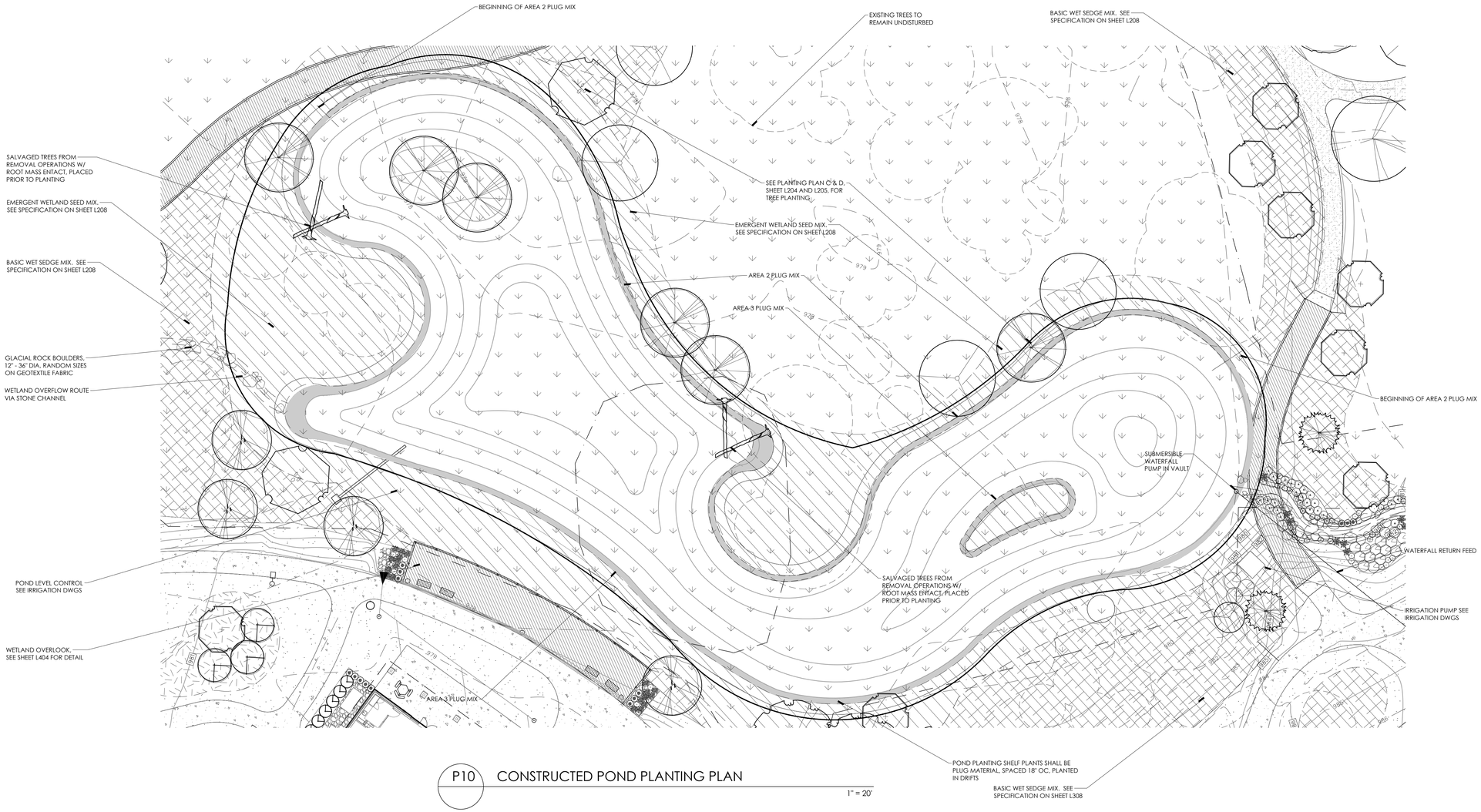

P10 CONSTRUCTED POND PLANTING PLAN

1" = 20'

AREA 1 PLUG MIX

0'-6" BELOW ELEVATION 772.50
APPROXIMATELY 1,343 S.F.
CONSISTING OF:
114 PONTEDERIA CORDATA (PICKEREL WEED), 2 1/4" PLUG, 18" OC
114 ACORUS AMERICANUS (SWEET FLAG), 2 1/4" PLUG, 18" OC
114 MYRICA GALE (SWEET GALE), 2 1/4" PLUG, 18" OC
114 CAREX STRICTUS (TUSSOCK SEDGE), 2 1/4" PLUG, 18" OC
114 IRIS VERSICOLOR (WILD BLUE FLAG IRIS), 2 1/4" PLUG, 18" OC
114 IRIS VIRGINICA (BLUE FLAG IRIS), 2 1/4" PLUG, 18" OC

AREA 2 PLUG MIX

0'-6" BELOW ELEVATION 772.50
APPROXIMATELY 1,115 S.F.
CONSISTING OF:
57 PONTEDERIA CORDATA (PICKEREL WEED), 2 1/4" PLUG, 18" OC
57 ACORUS AMERICANUS (SWEET FLAG), 2 1/4" PLUG, 18" OC
57 MYRICA GALE (SWEET GALE), 2 1/4" PLUG, 18" OC
57 CAREX STRICTUS (TUSSOCK SEDGE), 2 1/4" PLUG, 18" OC
57 IRIS VERSICOLOR (WILD BLUE FLAG IRIS), 2 1/4" PLUG, 18" OC
57 IRIS VIRGINICA (BLUE FLAG IRIS), 2 1/4" PLUG, 18" OC
57 SPARGANIUM EURYCARPUM (COMMON BUR REED), 2 1/4" PLUG, 18" OC
57 LOBELIA CARDINALIS (CARDINAL FLOWER), 2 1/4" PLUG, 18" OC
57 EUPATORIUM PERFOLIATUM (BONESET), 2 1/4", 18" OC
57 POLYGONUM AMPHIBIUM (WATER SMARTWEED), 2 1/4" PLUG, 18" OC

AREA 3 PLUG MIX

0'-6" BELOW ELEVATION 772.50
APPROXIMATELY 204 S.F.
CONSISTING OF:
26 MYRICA GALE (SWEET GALE), 2 1/4" PLUG, 18" OC
26 LOBELIA CARDINALIS (CARDINAL FLOWER), 2 1/4" PLUG, 18" OC
26 EUPATORIUM PERFOLIATUM (BONESET), 2 1/4", 18" OC
26 POLYGONUM AMPHIBIUM (WATER SMARTWEED), 2 1/4" PLUG, 18" OC

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Constructed Pond
Planting Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 20'
20 10 0 10 20 30

NFE JOB NO. O557
SHEET NO. L214

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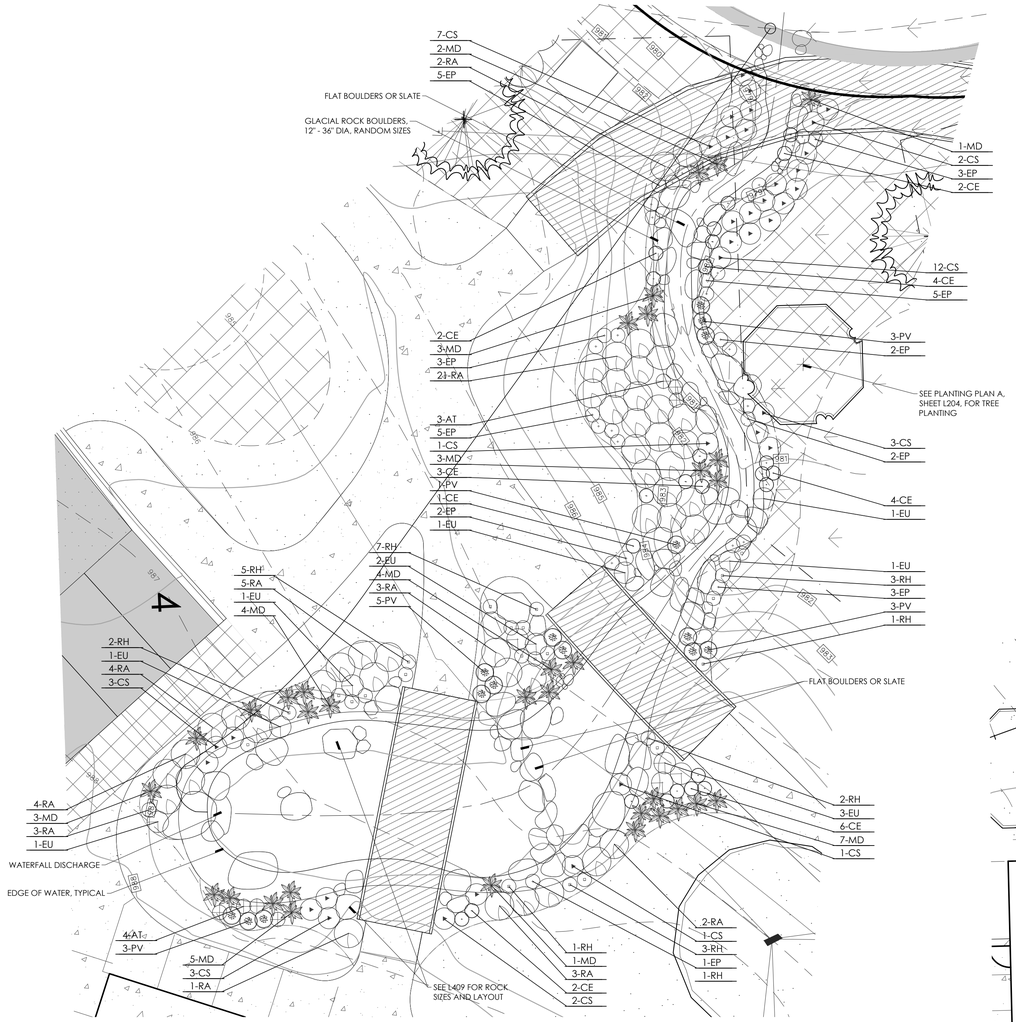
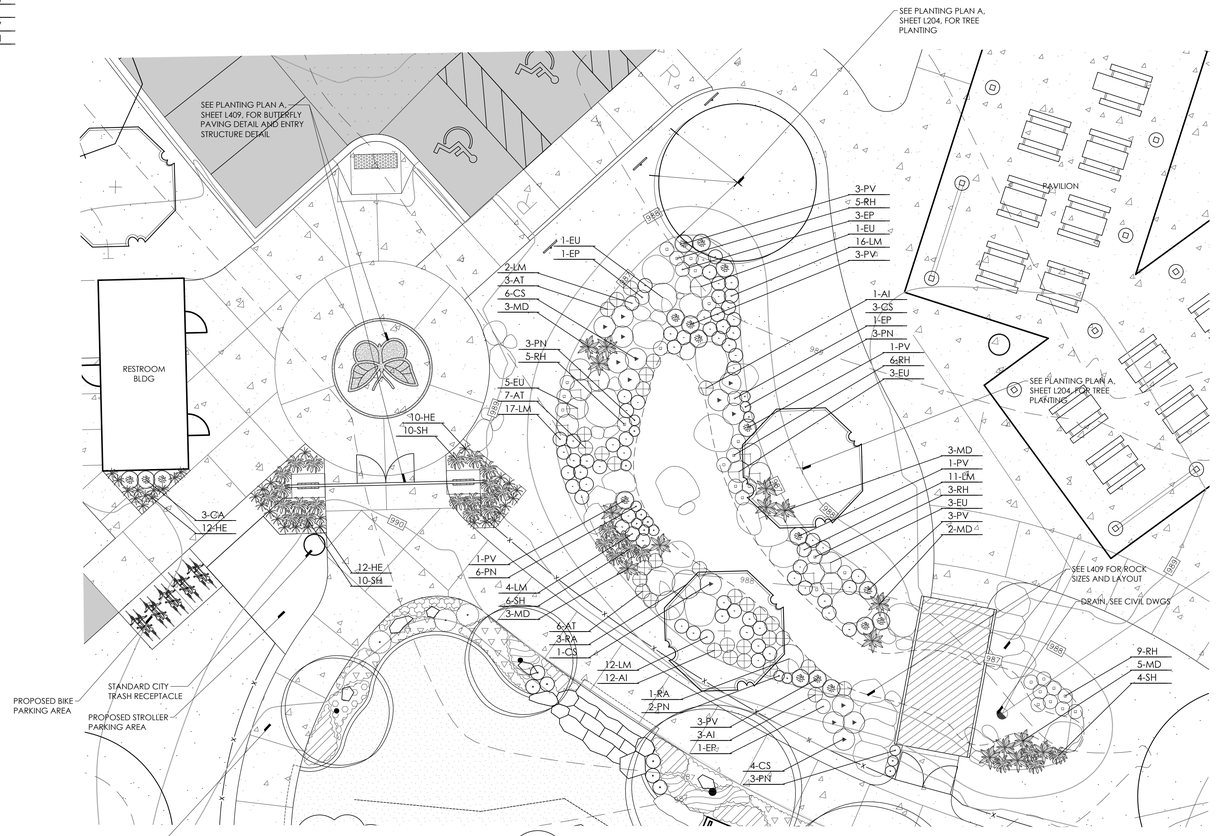


P11 WATERFALL FEATURE PLANTING PLAN

1" = 10'



P12 DRY CREEK PLANTING PLAN

1" = 10'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Water Feature
Planting Plan

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
G. Ostrowski

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 10'

10 5 0 5 10 15

NFE JOB NO. O557

SHEET NO. L215

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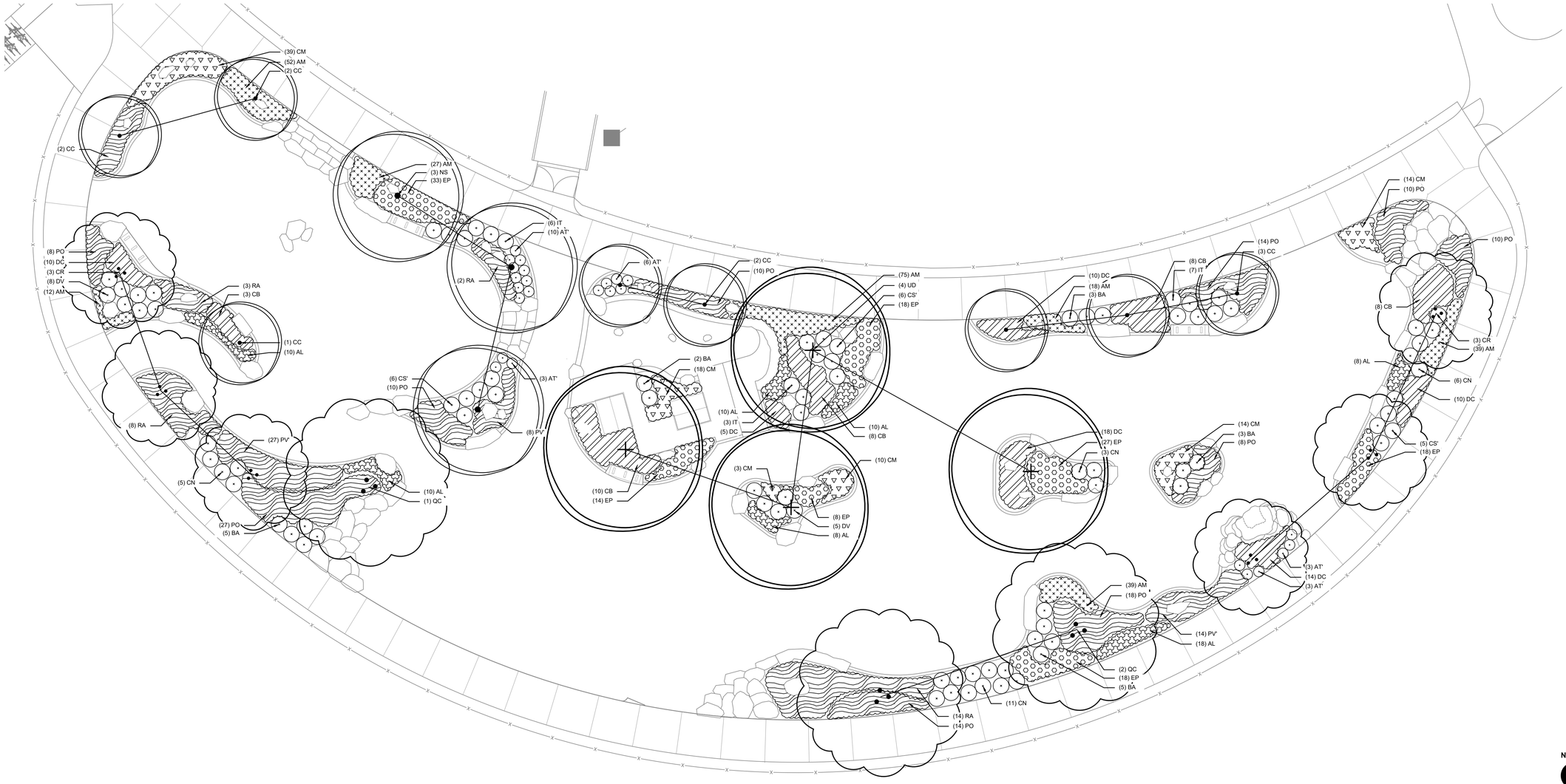
PLANT SCHEDULE

QTY.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS	NATIVE
DECIDUOUS TREES							
10	CC	CERCIS CANADENSIS	EASTERN REDBUD	7-8' HT	B&B	MULTI-TRUNK, TREE FORM	Y
6	CR	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL.	B&B		Y
9	NS	NYSSA SYLVATICA	BLACK TUPELO	3" CAL.	B&B		Y
3	QC	QUERCUS COCCINEA	SCARLET OAK	3" CAL.	B&B		Y
4	UD	ULMUS DAVIDIANA VAR. JAPONICA 'MORTON'	ACCOLADE ELM	3" CAL.	B&B		N
SHRUBS							
262	AM	AMSONIA 'BLUE ICE'	BLUE ICE EASTERN BLUE STAR	#2	CONT.	12" O.C.	Y
19	AT'	AMSONIA TABERNAEMONTANA	EASTERN BLUESTAR	#2	CONT.	24" O.C.	Y
18	BA	BAPTISIA AUSTRALIS	BLUE WILD INDIGO	#2	CONT.	36" O.C.	Y
25	CN	CEANOTHUS AMERICANA	NEW JERSEY TEA	#2	CONT.	36" O.C.	Y
17	CS'	CORNUS STOLONIFERA 'ARCTIC FIRE'	ARCTIC FIRE RED-OSIER DOGWOOD	#2	CONT.	36" O.C.	Y
13	DV	DIERVILLA X 'KODIAK ORANGE'	BUSH HONEYSUCKLE	#2	CONT.	36" O.C.	Y
16	IT	ITEA VIRGINICA "SCENTLANDIA®"	SCENTLANDIA® SWEETSPIRE	#2	CONT.	36" O.C.	Y
27	RA	RHUS AROMATICA 'GRO-LOW'	SUMAC	#2	CONT.	36" O.C.	Y

QTY.	SYM.	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	COMMENTS	NATIVE
ORNAMENTAL GRASSES							
34	CB	CALAMAGROSTIS BRACHYTRICHA	KOREAN FEATHER REED GRASS	#1	CONT.	30" O.C.	N
67	DC	DESCHAMPSIA CESPITOSA 'GOLDTAU'	GOLD DEW TUFTED HAIR GRASS	#1	CONT.	18" O.C.	Y
49	PV'	PANICUM VIRGATUM 'CAPE BREEZE'	SWITCHGRASS	#1	CONT.	24" O.C.	Y
129	PO	PENNISETUM ORIENTALE 'KARLEY ROSE'	KARLEY ROSE FOUNTAIN GRASS	#1	CONT.	24" O.C.	N
PERENNIALS							
74	AL	ALLIUM 'SUMMER BEAUTY'	ORNAMENTAL ONION	#1	CONT.	16" O.C.	N
98	CM	CALAMINTHA NEPETA 'MONTROSE WHITE'	MONTROSE WHITE CALAMINT	#1	CONT.	16" O.C.	N
136	EP	ECHINACEA PURPUREA	PURPLE CONEFLOWER	#1	CONT.	18" O.C.	Y

LANDSCAPE NOTES:

1. PLACE SHREDDED HARDWOOD MULCH TO A MIN. 3" DEPTH IN ALL LANDSCAPE BEDS.
2. REPAIR AND RESTORE ANY DAMAGE OUTSIDE OF LIMIT OF WORK TO ORIGINAL CONDITION.
3. ALL NURSERY STOCK SHALL BE TRUE TO TYPE AND NAME. ALL STOCK SHALL BE FIRST CLASS QUALITY WITH WELL DEVELOPED BRANCH SYSTEMS AND VIGOROUS HEALTHY ROOT SYSTEMS. ALL STOCK SHALL BE WELL FORMED AND THE TRUNKS OF TREES SHALL BE UNIFORM AND STRAIGHT.
4. PLANTING SOIL MIX IN PLAYGROUND LANDSCAPE TO BE 60% TOPSOIL, 20% SAND, AND 20% LEAF COMPOST. TOPSOIL MUST BE AN IMPORTED PRODUCT, FREE OF PLANT SEED.
5. PROVIDE 12" DEPTH TO SUBGRADE FOR PLACING TOPSOIL IN PLAYGROUND LANDSCAPE BEDS. SPREAD PLANTING SOIL MIX TO A MIN. DEPTH OF 12 INCHES, BUT NOT LESS THAN REQUIRED TO MEET FINISH GRADES AFTER NATURAL SETTLEMENT.
6. ALL PLANT QUANTITIES TO BE VERIFIED BY CONTRACTOR PRIOR TO BIDDING.
7. PROTECT ALL TREES AND EXISTING FEATURES TO REMAIN AS SPECIFIED.



ROCHESTER HILLS
MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Playground Planting Plan

Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026
SCALE: 1" = 10'

NORTH

NFE JOB NO. O557
SHEET NO. L216

CITY FILE NO. E24-008, SECTION #8

G:\2511 Nowicki Park\Cadd\Sheets\L540 - Playground Landscape Plan.dwg
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PRAIRIE SEED MIX PLANTING PROCEDURES

SOIL PREPARATION

PROPER SOIL PREPARATION IS CRITICAL TO THE SUCCESS OF ANY PRAIRIE PLANTING.
REMOVE EXISTING VEGETATION BY HERBICIDING, CULTIVATING, OR A COMBINATION OF THE TWO.

LAWNS
A) HERBICIDING. USE A NON-PERSISTENT HERBICIDE SUCH AS "ROUND-UP". FOLLOW MANUFACTURER'S INSTRUCTIONS.
-APPLY ONCE IN PREVIOUS FALL, OR IN MID-SPRING, FOR SPRING PLANTINGS.
-APPLY ONCE IN EARLY FALL FOR FALL PLANTING.
-TILL SOIL AND PLANT. REMOVE DEAD SOD TO CREATE SMOOTH SEEDBED.
B) CULTIVATION. CULTIVATE 2-3 TIMES TO KILL GRASS AND TO WORK UP SOIL. REMOVE DEAD SOD TO CREATE SMOOTH SEEDBED.
C) SOD REMOVAL. USE A SOD-CUTTER TO REMOVE THE SOD, AND THEN TILL THE EXPOSED SOIL TO PREPARE THE SEEDBED.

OLD FIELDS
A) HERBICIDING. MOW IN EARLY SPRING, THEN SPRAY 3 TIMES. ONCE IN MID TO LATE SPRING, ONCE IN MID SUMMER, & ONCE IN EARLY FALL. TILL SOIL AFTER FINAL SPRAYING AND PLANT, OR USE NO-TILL SEEDER AND PLANT DIRECTLY INTO DEAD SOD.
B) CULTIVATION. CULTIVATE 4-6 INCHES DEEP ALL SEASON LONG, EVERY TWO WEEKS TO KILL RHIZOMATOUS PERENNIAL WEEDS. AFTER THE FINAL CULTIVATION LATE IN THE YEAR A DORMANT FALL SEEDING CAN OCCUR. IF FURTHER WEED CONTROL IS DESIRED, THE PLANTING CAN BE DONE IN THE FOLLOWING SPRING, ALLOWING FOR LIGHT SURFACE CULTIVATION TO KILL WEEDS PRIOR TO SPRING PLANTING.

EXISTING AGRICULTURAL FIELDS
DO NOT PLANT FIELDS TREATED WITH ATRAZINE WITHIN THE LAST 2 YEARS.
A) HERBICIDING. SPRAY ONCE IN MID-SPRING FOR SPRING PLANTING, OR ONCE IN EARLY FALL AFTER REMOVAL OF CROP FOR FALL PLANTING. TILL SOIL AND PLANT, OR USE NO-TILL SEEDER AND PLANT DIRECTLY INTO SOIL WITH NO SOIL TILLAGE.
B) CULTIVATION. WORK UP SEEDBED AS FOR ANY OTHER CROP. IF RHIZOMATOUS PERENNIALS ARE PRESENT, WORK UP SOIL ALL YEAR, SAME AS OLD FIELD. AFTER THE EXISTING VEGETATION IS REMOVED, THE SEEDBED SHOULD BE PREPARED BY TILLING OR DISKING, AND THEN DRAGGING OR RAKING SMOOTH. PROPERLY PREPARED SEEDBEDS WILL BE SMOOTH AND FREE OF LARGE CLUMPS. IF WORKING ON HEAVY CLAY SOILS LOW IN ORGANIC MATTER, THE ADDITION OF 2-3 INCHES OF CLEAN TOPSOIL GREATLY IMPROVED THE SEEDBED. GERMINATION AND SEEDLING SURVIVAL WILL BE ENHANCED.

PLANTING

FALL PLANTING - PLANT FROM LATE SEPTEMBER TO FREEZE-UP.
1) SEED OVER WINTERS AS IT WOULD IN NATURE AND COMES UP IN SPRING ON ITS OWN SCHEDULE, WHEN CONDITIONS ARE RIGHT.
2) IN GENERAL, FORB SEED HAS GREATER GERMINATION.
a) RECOMMENDED FOR PLANTING ON SANDY SOILS BECAUSE SEED GERMINATES WHEN SOIL MOISTURE LEVELS ARE OPTIMAL.

EARLY SPRING PLANTING - PLANT FROM MARCH TO APRIL
1) FORBS WILL GERMINATE BETTER THAN IF PLANTED IN LATE SPRING.
2) IF USING WET STRATIFIED SEED (SEE PRAIRIE SEED PROPAGATION), WATER IS NOT CRITICAL.
3) GRASS SEED WILL GERMINATE BETTER THAN IF PLANTED IN FALL.
4) SANDY SOILS SHOULD BE PLANTED AS SOON AS POSSIBLE IN SPRING IF IT IS NOT POSSIBLE TO PLANT IN FALL.

LATE SPRING PLANTING - PLANT FROM MAY TO JUNE
a) MORE TIME FOR SOIL PREPARATION. THIS IS IMPORTANT FOR PLANTING ON HEAVY SOILS.
b) LONGER TIME FOR WEED CONTROL.
c) BEST TIME TO PLANT WARM SEASON GRASSES.

PLANTING METHODS

1) MIX SEED WITH A MUCH LARGER VOLUME OF SLIGHTLY MOIST SAWDUST, VERMICULITE, PERLITE, PEATMOSS, OR SAND. DILUTING THE SEED ASSURES GOOD SEED DISTRIBUTION.
2) PREPARE SOIL FOR PLANTING BY TILLING, RAKING, OR BY DRAGGING WITH A DRAG OR A SECTION OF CHAIN-LINK FENCE. THIS WILL LOOSEN THE SOIL TO ALLOW INCORPORATION OF THE SEED INTO THE SURFACE SOIL.
3) INOCULATE LEGUME SEEDS PRIOR TO PLANTING. PLACE SEED IN BOWL AND MOISTEN WITH WATER UNTIL JUST DAMP. ADD INOCULUM AND MIX THOROUGHLY. THE INOCULUM IS A BENEFICIAL BACTERIUM THAT WORKS WITH THE PLANT ROOTS TO EXTRACT NITROGEN FROM THE AIR.
4) MIX INOCULATED LEGUME SEEDS WITH WILDFLOWER SEEDS. THESE CAN BE MIXED TOGETHER WITH THE PRAIRIE GRASS SEED TO FORM A UNIFORM MIX, OR CAN BE PLANTED IN DRIFTS WITHIN THE GRASSES. GRASS SEED SHOULD BE PLANTED ACROSS THE ENTIRE AREA. THE GRASSED HELP SQUEEZE OUT WEEDS, WHILE THE FLOWERS ALONE USUALLY CANNOT.
5) SOW SEEDS USING ONE-HALF OF THE SEED MIX MATERIAL TO COVER THE ENTIRE AREA. THEN SOW THE OTHER HALF BY WALKING PERPENDICULAR TO THE FIRST LINE OF TRAVEL. THIS ENSURES GOOD COVERAGE ACROSS THE ENTIRE AREA.
6) RAKE SEED IN, OR DRAG LIGHTLY.
7) FIRM WITH A ROLLER OR CULTIPACKER, OR DRIVE ACROSS SEEDED AREA WITH TRACTOR TIRES OR VEHICLE TIRES. NEVER FIRM SOIL WHEN WET.
8) COVER WITH MULCH OR PLANT A NURSE CROP. ON STEEP SLOPES, IT IS OFTEN BENEFICIAL TO PLANT A NURSE CROP AND MULCH THE PLANTING.

MULCH -A CLEAN STRAW MULCH HELPS TO HOLD MOISTURE IN THE SOIL, REDUCE SOIL TEMPERATURES, AND PREVENT EROSION.
-USE SEED-FREE MULCH, SUCH AS MARSH HAY, OR CLEAN WINTER WHEAT STRAW. OAT STRAW IS OK, BUT HIGHER IN WEEDS.
-A MECHANICAL STRAW CHOPPER AND BLOWER MAKE THE STRAW LESS SUSCEPTIBLE TO REMOVAL BY WIND.
-SOIL SURFACE SHOULD BE COVERED, BUT NOT BURIED (APPROX. 1 INCH DEPTH). SOME SOIL SHOULD JUST SHOW THROUGH THE MULCH.
-ON SLOPES OR ON WINDY SITED, STABILIZE HAY BY COVERING IT WITH NETTING AND STAKING IT DOWN.

NURSE CROPS - NURSE CROPS ARE ANNUALS OR SHORT-LIVED PERENNIALS THAT PROVIDE RAPID SOIL STABILIZATION, AND HELP KEEP WEEDS SOWN WITHOUT COMPETING WITH THE PRAIRIE SEEDLINGS. NURSE CROPS CAN BE PLANTED AT THE SAME TIME AS THE PRAIRIE SEED. THEY CAN BE MIXED WITH THE PRAIRIE SEED AND HAND-BROADCASTED TOGETHER. ON LARGE PLANTINGS, OATS CAN BE DRILLED IN PRIOR TO, OR AFTER THE PRAIRIE SEEDING.

SELECTED NURSE CROPS
-OATS: APPLY AT A RATE OF 50 POUNDS/ACRE (2OZ/100 SQ FT) IN SPRING PLANTINGS. USE 100 POUNDS/ACRE (4 OZ/100 SQ FT) IN MID-AUTUMN PLANTINGS, AS IT WILL WINTERKILL AND HEAVIER SEEDING RATES ASSURE BETTER SOIL HOLDING ABILITY.
-ANNUAL RYE: PLANT AT A RATE OF 5 POUNDS/ACRE.
-CANADA WILD RYE: A SHORT-LIVED PERENNIAL PRAIRIE GRASS THAT GROWS RAPIDLY. APPLY AT A RATE OF 3-4 POUNDS/ACRE.

PLANTING IN PROBLEM AREAS

SANDY SOILS: THESE SOILS HAVE LITTLE MOISTURE-HOLDING CAPACITY. IT IS STRONGLY RECOMMENDED THAT MULCH OR A NURSE CROP BE USED TO CONSERVE MOISTURE, UNLESS THE AREA IS TO BE WATERED REGULARLY.
CLAY SOILS: MULCH IS CRITICAL TO SEEDLING SURVIVAL.

1) PREVENTS SOIL FROM DRYING AND CRACKING WHICH DAMAGES TENDER SEEDLING ROOTS.
2) MULCH IS BETTER THAN A COVER CROP. IT IS DIFFICULT FOR ROOTS TO PENETRATE THE HARD SOIL

POST PLANTING MAINTENANCE

YEAR ONE
WATERING
REGULAR WATERING IN THE FIRST TWO MONTHS OF A SPRING OR SUMMER PLANTING IS THE SINGLE MOST IMPORTANT FACTOR IN SUCCESS. WATER ONLY DURING THE MORNING, NEVER AT NIGHT, AS THIS ENCOURAGES FUNGAL DISEASES THAT CAN KILL YOUNG SEEDLINGS.
WEED CONTROL
IF MULCH IS USED, CONTROL ANNUAL WEEDS BY MOWING 4-6 INCHES IN THE FIRST YEAR. WEEDS CAN OUT COMPETE THE PRAIRIE SEEDLINGS, BY DEPRIVING THEM OF WATER, LIGHT, AND SPACE. DO NOT LET WEEDS GET HIGHER THAN 12 TO 14 INCHES BEFORE MOWING. CUTTING DOWN TALL WEEDS CAN SMOTHER THE SMALL SEEDLINGS BELOW. IF A NURSE CROP IS USED, DO NOT NOW IN THE FIRST YEAR, UNLESS WEEDS BECOME A SERIOUS PROBLEM. IF WEEDS ARE DENSE AND BEGIN TO GROW UP TO 16 INCHES CUT THEM DOWN ALONG WITH THE NURSE CROP TO PREVENT SHADING OUT OF PRAIRIE SEEDLINGS.

YEAR TWO
MOW TO 12 TO 18 INCHES IN EARLY SUMMER IF WEEDS ARE A PROBLEM. MOWING LOWER COULD HARM YOUR PLANTS.

YEAR THREE AND BEYOND
MOW AND RAKE, OR BURN, EVERY OTHER YEAR. PLANTINGS CAN BE DIVIDED INTO TWO SECTIONS, AND BURNED IN ALTERNATING YEARS. BURN, OR MOW AND RAKE IN MID-SPRING WHEN LAWNS HAVE GREENED UP AND BEGUN ACTIVE GROWTH. THIS HELPS TO CONTROL UNDESIRABLE COOL SEASON GRASSES AND REMOVES EXCESS PLANT LITTER, ENCOURAGING SOIL WARMING AND EARLIER PLANT GROWTH.

DEMOLITION NOTES:

1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. ALL EXISTING IMPROVEMENTS, MATERIALS AND PLANT MATERIAL TO REMAIN WITHIN THE NEW CONSTRUCTION AREA SHALL BE PROPERLY AND ADEQUATELY PROTECTED FROM DAMAGE DURING THE DEMOLITION OPERATIONS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RESTORE TO THE ORIGINAL CONDITION ANY OF THESE EXISTING ITEMS THAT ARE DAMAGED OR DISTURBED IN ANY WAY.
4. ALL MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE CITY ENGINEER FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE CITY ENGINEER.
5. STREETS, SIDEWALKS AND ADJACENT PROPERTIES SHALL BE PROTECTED THROUGHOUT THE WORK AS REQUIRED BY LOCAL CODES AND REGULATIONS AND APPROVED BY THE OWNER.
6. ALL MATERIAL SPECIFIED TO BE REMOVED SHALL BE DISPOSED OF OFF-SITE PER LOCAL CODES AND REGULATIONS. CONTRACTOR SHALL COORDINATE METHOD OF DISPOSAL WITH CITY ENGINEER PRIOR TO COMMENCEMENT OF WORK.
7. MATERIALS TO BE REUSED OR SALVAGED SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNERS REPRESENTATIVE FOR THAT PURPOSE. ALL SALVAGED MATERIALS SHALL REMAIN THE PROPERTY OF THE OWNER.
8. DURING DEMOLITION OPERATIONS EVERY EFFORT SHALL BE MADE TO CONTROL DUST, PER CITY REQUIREMENTS.
9. TREES AND SHRUBS TO BE REMOVED WITHIN THE LIMITS OF WORK SHALL BE CLEARLY IDENTIFIED WITH BRIGHTLY COLORED RIBBON.
10. GRUBBING SHALL INCLUDE ALL WEEDS, SHRUBS, STUMPS AND ROOT SYSTEMS OF REMOVED PLANT MATERIAL, IRRIGATION PIPING AND ANY OTHER IRRIGATION MATERIALS WITHIN THE LIMITS OF DEMOLITION. GRUBBING SHALL BE TO THE DEPTHS BELOW PROPOSED IMPROVEMENTS INDICATED AS FOLLOWS: CONCRETE PAVING AND WALKWAYS-TOTAL DEPTH OF PAVING AND SUB-BASE; ASPHALT PAVING-TOTAL DEPTH OF PAVING AND SUB-BASE; LAWN AND OTHER PLANTINGS AREAS-REMOVE DEPTH REQUIRED OF STUMPS AND ROOTS OVER TWO (2) INCHES IN DIAMETER AND TURF.
11. PROTECT EXISTING TREES TO REMAIN PER TYPICAL TREE PROTECTION DETAIL.
12. STOCKPILED TOPSOIL SHALL BE STORED ON SITE AND REMAIN PROTECTED FROM CONTAMINATION PRIOR TO REDISTRIBUTION.
13. SAWCUT AND REMOVE EXISTING ASPHALT AS REQUIRED TO INSTALL NEW SITE IMPROVEMENTS AND ADJUST GRADES WITHIN CITY STREETS. ALL WORK WITHIN CITY RIGHT OF WAY SHALL MEET CITY STANDARDS AND SPECIFICATIONS.
14. ARRANGE FOR APPLICABLE UTILITY COMPANY TO RELOCATE EXISTING CABLES, WIRES, PHONE LINES, ETC. ALONG WITH EDISON POWER LINES AS REQUIRED.
15. CONTRACTOR SHALL SECURE AND PAY FOR ALL APPLICABLE PERMITS AND FEES NECESSARY FOR THE COMPLETE CONSTRUCTION OF THE PROJECT.

PLANT MIX SPECIFICATION

STANDARD PLANT MIX BACKFILL SHALL BE PROVIDED FOR ALL PROPOSED PLANTINGS. ONE CUBIC YARD OF PLANT MIX SHALL BE COMPOSED OF:
1/3 SCREENED TOPSOIL
1/3 CLEAN COARSE SAND
1/3 COMPOSTED MANURE

PLANT MIX TYPE 'A' : TREE AND SHRUB PLANT BEDS SHALL BE AMENDED W/ 18-3-6 (50% SRN & MICRONUTRIENTS) SLOW RELEASE FERTILIZER PER MANUFACTURER

PLANT MIX TYPE 'B' : ANNUAL, PERENNIAL AND GROUNDCOVER PLANT BEDS SHALL INCLUDE STANDARD MIX WITH ONE THE AMENDMENTS DESCRIBED BELOW:

1. PCH PLANT SAVER 4-7-4, MYCORRHIZAL FUNGI PLANTING PRODUCT, APPLIED PER MANUFACTURER RECOMMNEDATIONS
2. "ESPOMA HOLLY-TONE", 4-6-4, APPLIED PER MANUFACTURERS RECOMMENDATION

CONSTRUCTION NOTES:

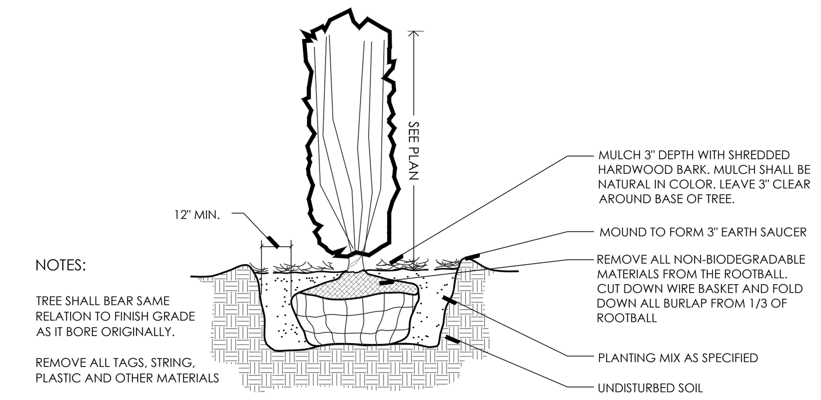
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND / OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO LACK OF SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
6. SEE SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS, MATERIALS, AND EXECUTION.
7. ALL PROPERTY LINES AND LOT LINES SHALL BE VERIFIED PRIOR TO COMMENCING WORK.
8. CONTRACTOR SHALL SUBMIT ALL SAMPLES PER SPECIFICATIONS. ALL SAMPLES SHALL BE APPROVED BY THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
9. DIMENSIONAL FLEXIBILITY SHALL BE WITHIN PLANT BEDS ONLY.
10. CONTRACTOR SHALL COORDINATE ALL SITE LAYOUT WITH THE LANDSCAPE ARCHITECT AND REPORT ANY DIMENSIONAL DISCREPANCIES PRIOR TO CONSTRUCTION.
11. HANDICAPPED RAMPS SHALL MEET ALL CURRENT BARRIER FREE DESIGN CODES.

GRADING NOTES:

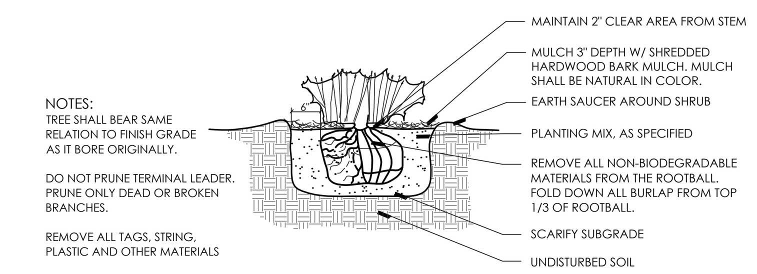
1. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL EXISTING SURVEY INFORMATION INCLUDING THE UTILITY SYSTEMS BEFORE ANY DEMOLITION OR CONSTRUCTION WORK OCCURS. ANY DISCREPANCIES WITH THE SURVEY INFORMATION SHALL BE REPORTED TO THE ARCHITECT AND OWNER'S REPRESENTATIVE IMMEDIATELY.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR COST INCURRED DUE TO DAMAGE AND REPLACEMENT OF SAID UTILITIES.
3. CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND / OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE CITY ENGINEER. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO LACK OF SUCH NOTIFICATION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
5. CONTRACTOR IS RESPONSIBLE FOR REPLACEMENT OF ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
6. NO CHANGE IN CONTRACT PRICE WILL BE ALLOWED FOR ACTUAL OR CLAIMED BETWEEN EXISTING GRADE AND THOSE SHOWN ON PLANS AFTER CONTRACTOR HAS ACCEPTED EXISTING GRADES AND MOVED ON TO THE SITE.
7. ALL PROPOSED GRADES ARE TO MEET AND BLEND IN WITH THE EXISTING GRADE AT PROJECT LIMIT. PRECISE ELEVATIONS INDICATED ON THE PLANS TO BE VERIFIED IN FIELD TO AS-BUILT CONDITION.
8. ALL GRADING AND PLACEMENT OF DRAINAGE STRUCTURES TO BE SUPERVISED IN THE FIELD BY THE OWNER'S REPRESENTATIVE.
9. INSTALL 3" DEPTH TOPSOIL OVER ALL DISTURBED LAWN AREAS.
10. SEED ALL PROPOSED OR DISTURBED LAWN AREAS.

PLANTING NOTES:

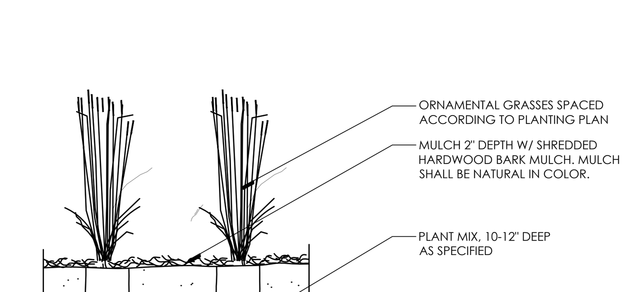
1. THE CONTRACTOR SHALL VERIFY ALL RIGHTS OF WAY, EASEMENTS, PROPERTY LINES AND LIMITS OF WORK, ETC. PRIOR TO COMMENCING WORK.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND COORDINATING WITH ALL PERTINENT UTILITY COMPANIES 72 HOURS IN ADVANCE OF ANY DIGGING TO MAKE HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES AND STRUCTURES. THE CONTRACTOR SHALL TAKE SOLE RESPONSIBILITY FOR ANY COST INCURRED DUE TO DAMAGE OF SAID UTILITIES.
3. THE CONTRACTOR SHALL NOT WILLFULLY PROCEED WITH CONSTRUCTION AS DESIGNED WHEN IT IS OBVIOUS THAT UNKNOWN OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ALL NECESSARY REVISIONS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
4. IN THE EVENT OF ANY DISCREPANCIES BETWEEN THE PLAN AND THE PLANT LIST, THE QUANTITIES ON THE PLAN SHALL PREVAIL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE LANDSCAPE ARCHITECT OR ANY DISCREPANCIES.
5. ANY DISCREPANCIES BETWEEN DIMENSIONED LAYOUT AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE AND LANDSCAPE ARCHITECT. FAILURE TO MAKE SUCH DISCREPANCIES KNOWN WILL RESULT IN CONTRACTOR'S RESPONSIBILITY AND LIABILITY FOR ANY CHANGES AND ASSOCIATED COST.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH CONSTRUCTION INSTALLATION OPERATIONS.
7. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN POSITIVE SURFACE DRAINAGE. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, AND OR OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXISTING MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
9. SEE SPECIFICATIONS, PLANT LIST AND PLANTING DETAILS FOR PLANTING REQUIREMENTS, MATERIALS AND EXECUTION.
10. ALL TREES TO HAVE CLAY LOAM OR CLAY BALLS - TREES WITH SAND BALLS SHALL NOT BE ACCEPTED.
11. ALL TREES TO BE APPROVED BY OWNER'S REPRESENTATIVE AND/OR LANDSCAPE ARCHITECT PRIOR TO DELIVERY TO THE SITE. ANY TREES DELIVERED TO THE SITE NOT PREVIOUSLY APPROVED MAY BE REJECTED AND ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
12. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
13. THE CONTRACTOR TO VERIFY PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION OF PLANT MATERIAL.
14. THE CONTRACTOR SHALL PLACE 3" DEPTH OF SHREDDED BARK MULCH IN ALL PLANTING BEDS, UNLESS OTHERWISE INDICATED.



UPRIGHT EVERGREEN SHRUB PLANTING DETAIL
NTS



HEDGE PLANTING DETAIL
NTS



ORNAMENTAL GRASS PLANTING DETAIL
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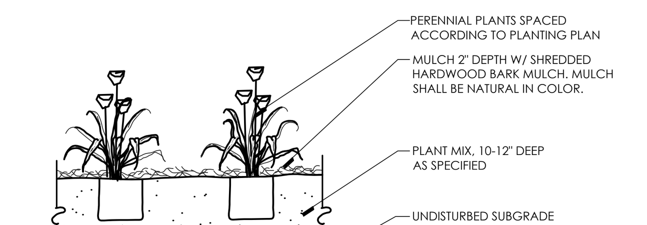
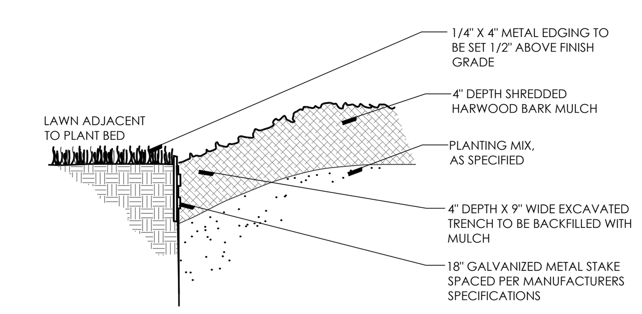
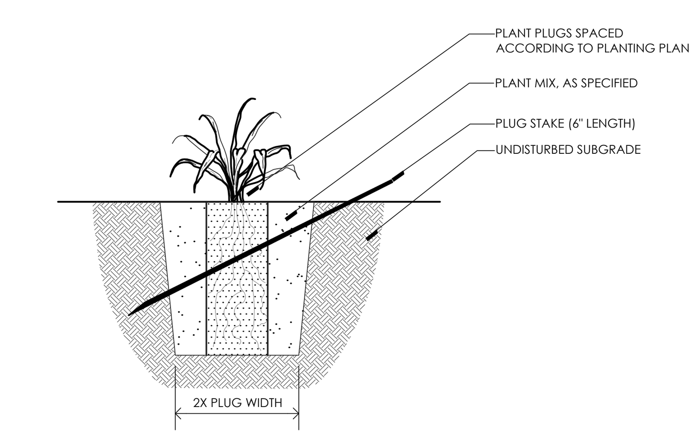


PERENNIAL PLANTING DETAIL
NTS

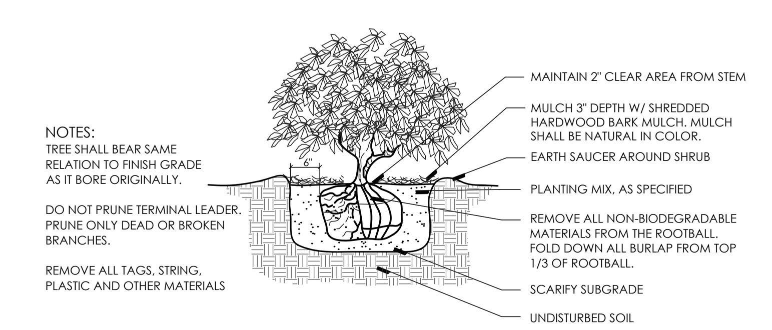


METAL EDGING DETAIL
NTS

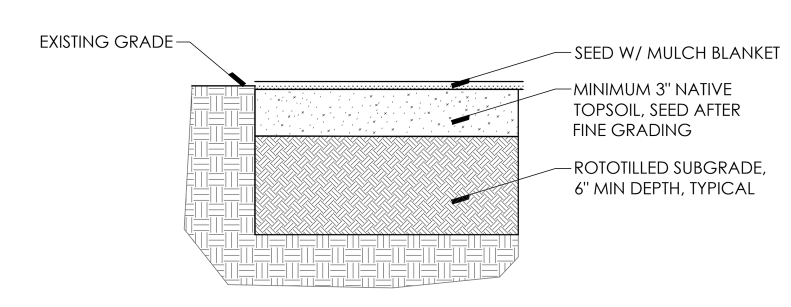
SPADE CUT EDGE DETAIL
NTS



PLANT PLUG STAKING DETAIL
NTS



SHRUB PLANTING DETAIL
DECIDUOUS SHRUB
NTS



SEEDING DETAIL
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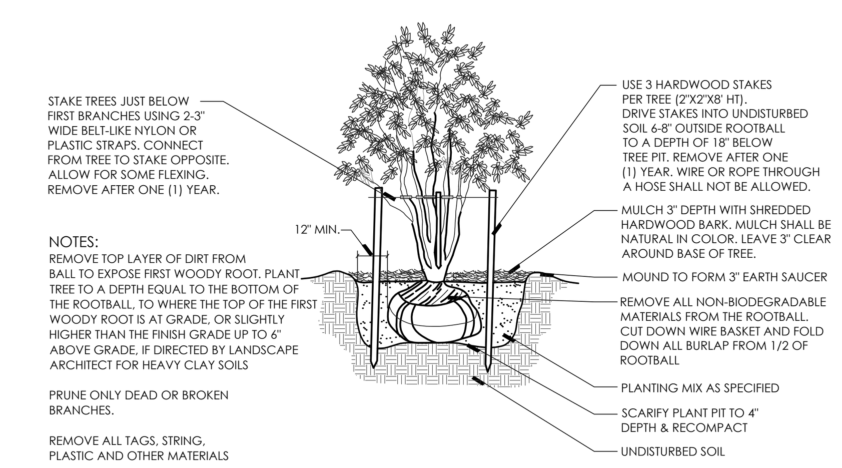
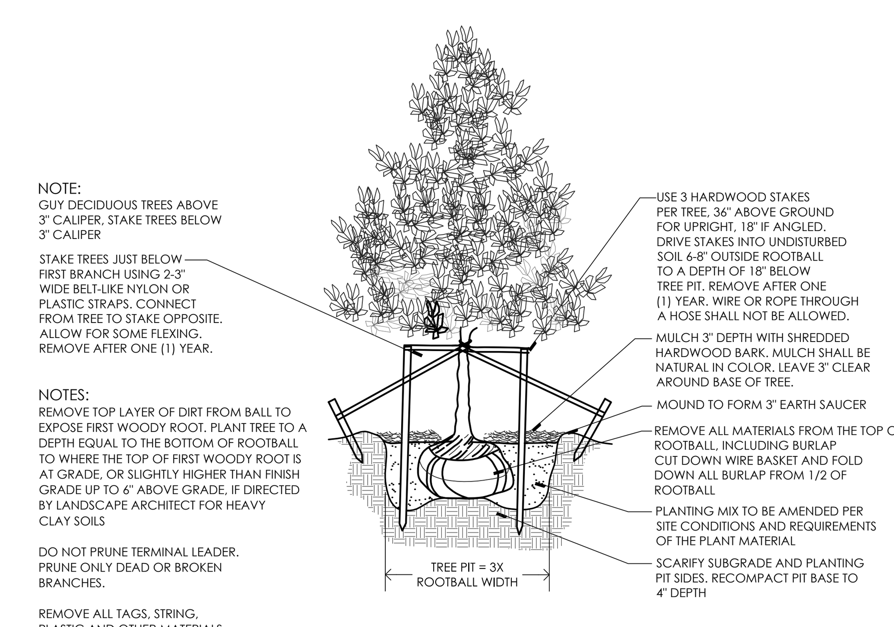


MULTI-STEM TREE PLANTING DETAIL
NTS



DECIDUOUS TREE PLANTING DETAIL
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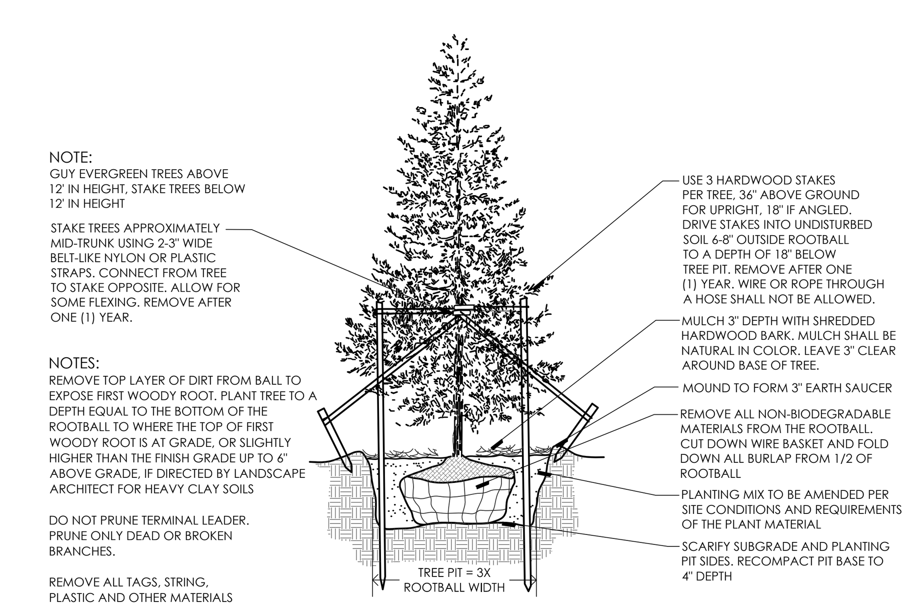

EVERGREEN TREE PLANTING DETAIL
NTS

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1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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City of Rochester Hills

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City of Rochester Hills,
Oakland County, Michigan

SHEET
Planting Details

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DRAWN BY:
G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES

NFE JOB NO. O557
SHEET NO. L217

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PLANT SCHEDULE

KEY	QTY	BOTANICAL/COMMON NAME	SIZE	SPACING	ROOT	COMMENT
DECIDUOUS TREES						
AS	34	Acer saccharum 'Green Mountain' Green Mountain Sugar Maple	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
AF	11	Aesculus flava Yellow Buckeye	2.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
AG	67	Amelanchier x grandiflora 'Autumn Brilliance' Autumn Brilliance Serviceberry	3" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
BN	22	Betula nigra River Birch	10' - 12' HT	SEE PLAN	B&B	CLUMP FORM, 3 - 4 CANES
CR	6	Carpinus caroliniana American Hornbeam	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
CO	17	Carya ovata Shagbark Hickory	2.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
CH	17	Celtis occidentalis Hackberry	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
CC	61	Cercis canadensis Eastern Redbud	2.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
CC	10	Cercis canadensis Eastern Redbud	7-8' HT	SEE PLAN	B&B	CLUMP FORM
CK	13	Cladrastis kentukea Yellowwood	2.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
GT	27	Gleditsia triacanthos 'Shademaster' Shademaster Honeylocust	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
LT	23	Liriodendron tulipifera Tuliptree	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
NS	62	Nyssa sylvatica 'Green Gable' Green Gable Black Tupelo	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
OV	23	Ostrya virginiana American Hophornbeam	2.5" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
QA	12	Quercus alba White Oak	2.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
QB	31	Quercus bicolor Swamp White Oak	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
QC	3	Quercus coccinea Scarlet Oak	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
QM	19	Quercus macrocarpa Bur Oak	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
QX	5	Quercus x bebbiana Bebb's Oak	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
UD	4	Ulmus davidiana var japonica 'Morton' Accolade Elm	3.0" CAL	SEE PLAN	B&B	FULLY BRANCHED HEADS
CONIFEROUS TREES						
AB	36	Abies balsamea Balsam Fir	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
PA	4	Picea abies 'Cuppressina' Columnar Norway Spruce	10' HT	SEE PLAN	B&B	FULL TO GROUND
PD	35	Picea glauca 'Densata' Black Hills Spruce	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
PG	40	Picea glauca White Spruce	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
PS	41	Pinus strobus White Pine	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
TC	59	Tsuga canadensis Eastern Hemlock	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
TD	11	Taxodium distichum 'Shawnee Brave' Shawnee Brave Bald Cypress	8' - 10' HT	SEE PLAN	B&B	FULL TO GROUND
SHRUBS						
AH	41	Amsonia h. 'Halfway to Arkansas' Halfway to Arkansas Narrowleaf Blue Star	2 GAL	30" OC	CONT	
AM	262	Amsonia 'Blue Ice' Blue Ice Eastern Blue Star	2 GAL	12" OC	CONT	
AT'	19	Amsonia tabernaemontana Eastern Blue Star	2 GAL	24" OC	CONT	
BA	18	Baptisia australis Blue Wild Indigo	2 GAL	36" OC	CONT	
CP	5	Cephanthus occidentalis Common Button Bush	24" HT	SEE PLAN	CONT	
CN	32	Ceanothus americanus New Jersey Tea	2 GAL	30" OC	CONT	
CS'	17	Conrus sericea 'Arctic Fire' Arctic Fire Dogwood	2 GAL	36" OC	CONT	
CR	14	Cornus sericea 'Baileyii' Bailey Red Twig Dogwood	30" HT	3' OC	B&B	
CS	168	Conrus sericea 'Kelseyii' Kelsey Dogwood	30" HT	SEE PLAN	B&B	
DV	13	Diervilla x 'Kodiak Orange' Bush Honeysuckle	2 GAL	36" OC	CONT	
HV	11	Hammamelis x i. 'Arnold's Promise' Orange Witch Hazel	3-4' HT	SEE PLAN	CONT	
HQ	16	Hydragea quercifolia Oakleaf Hydrangea	36" HT	5' OC	B&B	
IT	16	Itea virginica 'Scentlania' Scentlandia Sweetspire	2 GAL	5' OC	CONT	
MD	49	Microbiota decussata 'Celtic Pride' Celtic Pride Siberian Cypress	24" HT	SEE PLAN	CONT	
MP	11	Myrica pennsylvanica Bayberry	30" HT	3' OC	B&B	
RA	94	Rhus aromatica 'Grow Low' Grow-Low Fragrant Sumac	2 GAL	24" OC	CONT	
SC	14	Sambucus canadensis American Elderberry	30" HT	SEE PLAN	B&B	
TO	37	Thuja occidentalis 'Nigra' Dark Green Arborvitae	5' HT	SEE PLAN	CONT	
VR	35	Viburnum rhytidophyllum 'Allgheny' Allegheny Viburnum	3-4' HT	5' OC	B&B	
GRASSES. PERENNIALS AND GROUNDCOVERS						
AL	74	Allium 'Summer Beauty' Summer Beauty Ornamental Onion	1 GAL	16" OC	CONT	
AN	40	Andropogon gerardii 'Blackhawks' Blackhawks Big Bluestem	2 GAL	24" OC	CONT	
AI	135	Asclepias incarnata 'Cinderella' Cinderella Swamp Milkweed	2 GAL	24" OC	CONT	
AT	23	Asclepias tuberosa Butterfly Milkweed	2 GAL	30" OC	CONT	
CA	15	Calamagrostis a. 'Karl Foerster' Karl Foerster Feather Reed Grass	2 GAL	24" OC	CONT	
CB	34	Calamagrostis brachytricha Korean Feather Reed Grass	1 GAL	30" OC	CONT	
CM	98	Calamintha nepeta 'Montrose White' Montrose White Calamint	1 GAL	16" OC	CONT	
CE	481	Carex oshimensis 'Everest' Everest Evercolor Sedge	1 GAL	24" OC	CONT	
DC	67	Dechampsia cespitosa 'Goldtau' Gold Dew Tufted Hair Grass	1 GAL	18" OC	CONT	
DG	474	Deutzia gracilis 'Nikko' Nikko Slender Deutzia	2 GAL	24" OC	CONT	
EP	340	Echinacea purpurea 'Cheyenne Spirit' Cheyenne Spirit Coneflower	1 GAL	18" OC	CONT	
EU	84	Eupatorium 'Phantom' Phantom Joe Pye Weed	3 GAL	30" OC	CONT	
GM	27	Geranium maculatum Wild Geranium	2 GAL	24" OC	CONT	
HE	34	Hemerocallis 'Stella D'Oro' Stella D'Oro Daylily	2 GAL	18" OC	CONT	
LA	257	Lavandula x i 'Violet Intrigue' Violet Intrgue Lavender	2 GAL	24" OC	CONT	
LM	122	Liriope muscari 'Big Blue' Big Blue Lily turf	1 GAL	18" OC	CONT	
NF	222	Nepeta faasennii 'Junior Walker' Junior Walker Catmint	2 GAL	24" OC	CONT	
PV	144	Panicum virgatum 'Northwind' Northwind Switchgrass	2 GAL	24" OC	CONT	
PV'	49	Panicum virgatum 'Cape Breeze' Cape Breeze Switchgrass	1 GAL	24" OC	CONT	
PO	129	Pennisetum orientale 'Karley Rose' Karley Rose Fountain Grass	1 GAL	24" OC	CONT	
PN	17	Penstemon 'Dark Towers' Dark Towers Beard Tongue	2 GAL	18" OC	CONT	
PE	238	Perovskia atriplicifolium 'Longin' Longin Russian Sage	3 GAL	30" OC	CONT	
RH	185	Rudbeckia 'American Gold Rush' American Gold Rush Black-Eyed Susan	2 GAL	24" OC	CONT	
SH	156	Sporobolus heterolepis Prairie Dropseed	2 GAL	24" OC	CONT	

WETLAND PLUGS

	171	Acorus americanus American Sweet Flag	2-1/4"	18" OC	PLUG	
	171	Pontederia cordata Pickerelweed	2-1/4"	18" OC	PLUG	
	197	Myrica gale Sweet Gale	2-1/4"	18" OC	PLUG	
	171	Carex strictus Tussock Sedge	2-1/4"	18" OC	PLUG	
	171	Iris versicolor Northern Blue Flag	2-1/4"	18" OC	PLUG	
	171	Iris virginica Virginia Blueflag	2-1/4"	18" OC	PLUG	
	57	Sparganium eurycarpum Giant Bur Reed	2-1/4"	18" OC	PLUG	
	83	Lobelia cardinalis Cardinal flower	2-1/4"	18" OC	PLUG	
	83	Eupatorium perfoliatum Boneset	2-1/4"	18" OC	PLUG	
	83	Polygatum amphibium Water Smartweed	2-1/4"	18" OC	PLUG	

SEED SCHEDULE

TYPE	QTY	SEEDING RATE
SEED MIX		
LOW MAINTENANCE FESCUE MIX	390,000 S.F.	200 LBS/ACRE
ECONOMY PRAIRIE MIX	170,000 S.F.	30 LBS/ACRE
BASIC WET SEDGE MEADOW	60,000 S.F.	35 LBS/ACRE
EMERGENT WETLAND SEED MIX	42,000 S.F.	30 LBS/ACRE
RAIN GARDEN SEED MIX	4,200 S.F.	30 LBS/ACRE
NATIVE DETENTION BASIN SEED MIX	4,500 S.F.	20 LBS/ACRE

CITY FILE NO. E24-008, SECTION #8

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Grand Rapids, MI 49505
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Plant Schedule

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G. Ostrowski
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES

NFE JOB NO. O557
SHEET NO. L218

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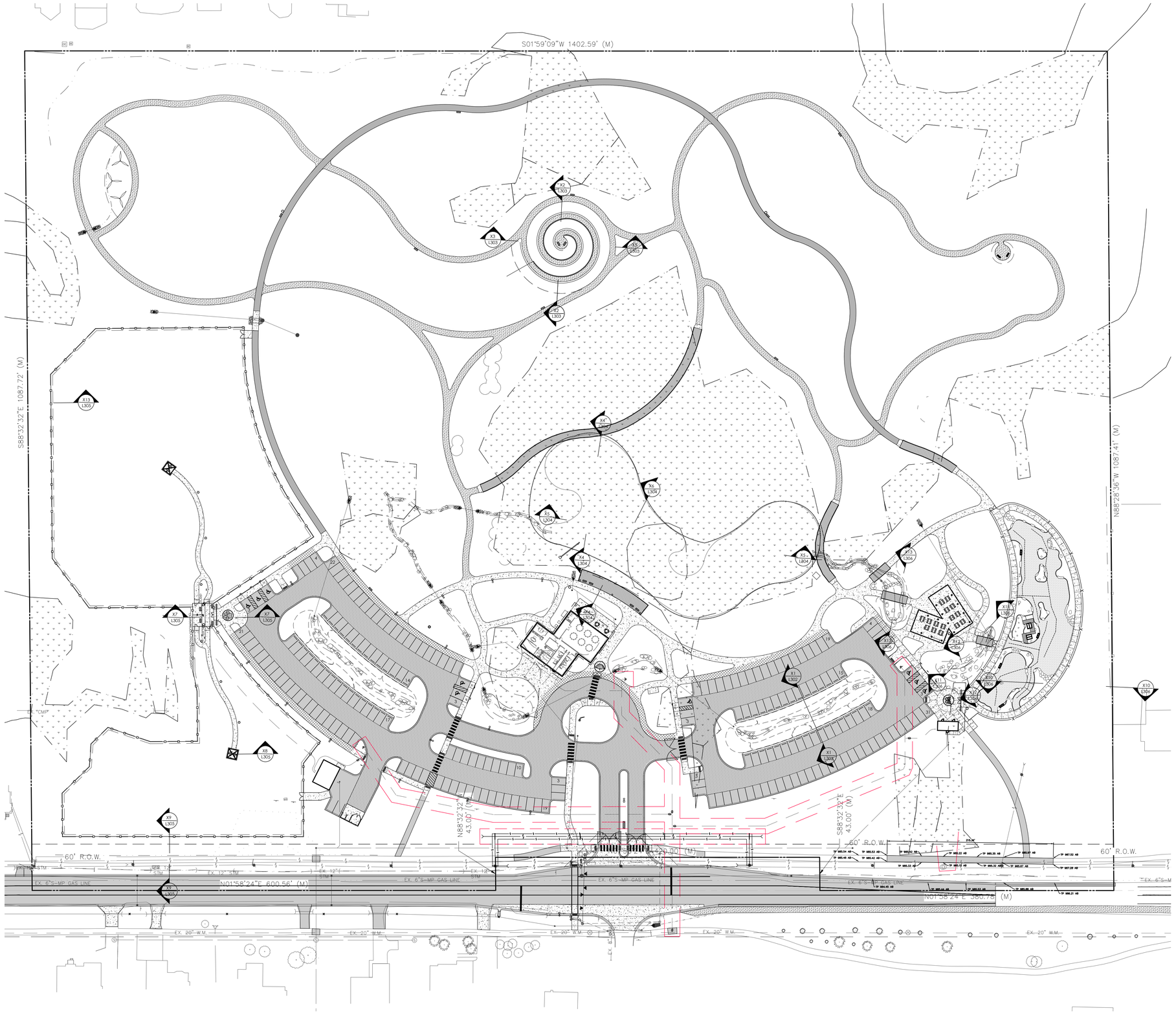

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SHEET
Cross-Section Key

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M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 60'
60 30 0 30 60 90

NFE JOB NO. **O557**
SHEET NO. **L301**

CITY FILE NO. E24-008, SECTION #8

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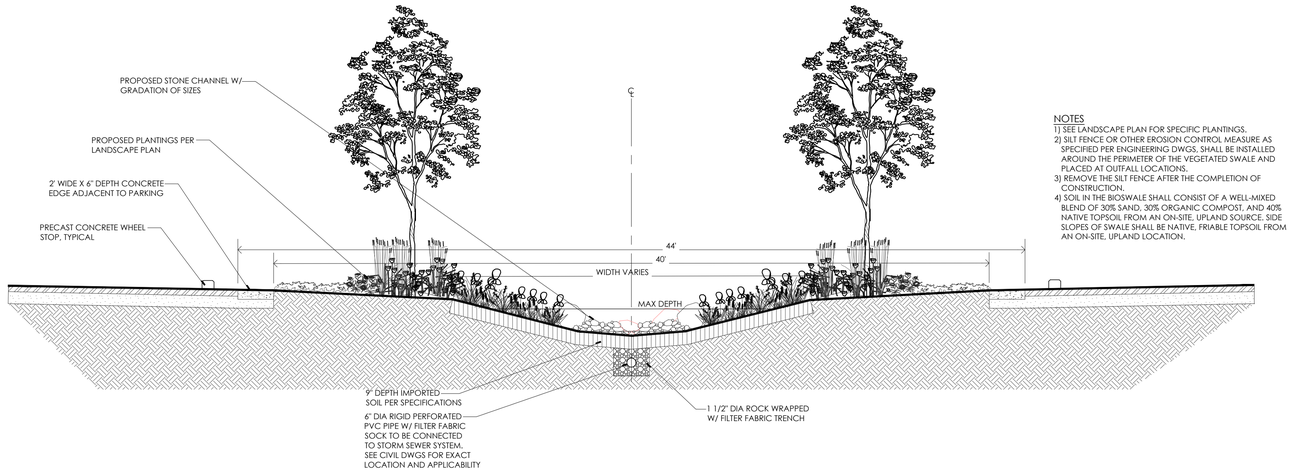
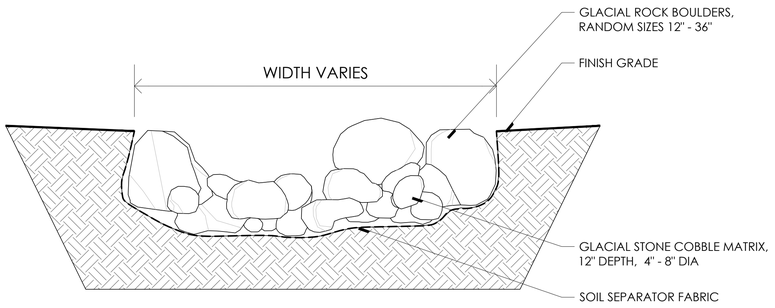


NOTES
1) SEE LANDSCAPE PLAN FOR SPECIFIC PLANTINGS.
2) SILT FENCE OR OTHER EROSION CONTROL MEASURE AS SPECIFIED PER ENGINEERING DWGS, SHALL BE INSTALLED AROUND THE PERIMETER OF THE VEGETATED SWALE AND PLACED AT OUTFALL LOCATIONS.
3) REMOVE THE SILT FENCE AFTER THE COMPLETION OF CONSTRUCTION.
4) SOIL IN THE BIOSWALE SHALL CONSIST OF A WELL-MIXED BLEND OF 30% SAND, 30% ORGANIC COMPOST, AND 40% NATIVE TOPSOIL FROM AN ON-SITE, UPLAND SOURCE. SIDE SLOPES OF SWALE SHALL BE NATIVE, FRIABLE TOPSOIL FROM AN ON-SITE, UPLAND LOCATION.

X1 TYPICAL PARKING LOT BIOSWALE AREA

NTS



SWALE BOTTOM STONE CHANNEL

N.T.S.

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SHEET
Parking Lot Bioswale Sections

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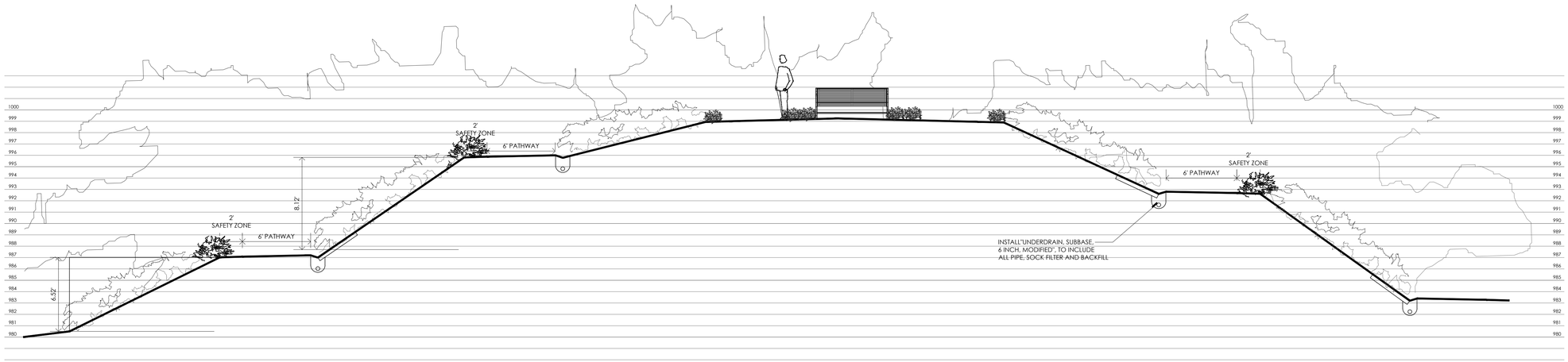
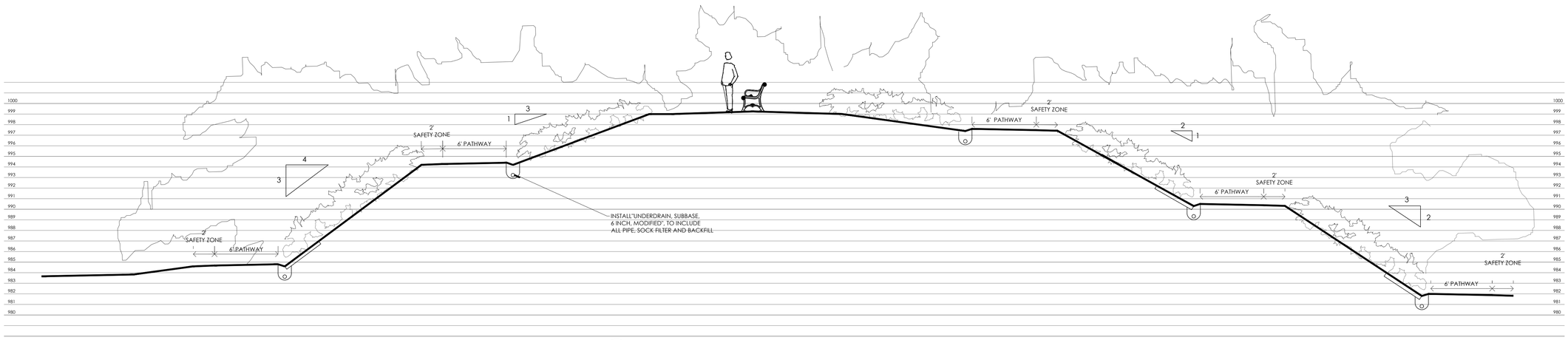


X2 EAST/WEST SPIRAL MOUND SECTION

NTS



X3 NORTH/SOUTH SPIRAL MOUND SECTION

NTS

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SHEET
Spiral Mound Sections

811 Know what's below Call before you dig.

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APPROVED BY:
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SHEET NO. L303

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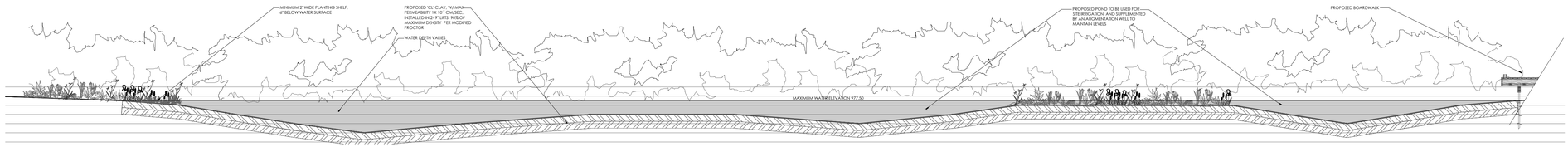
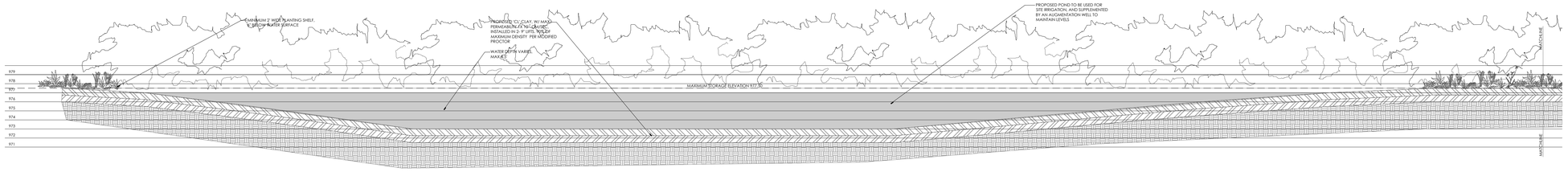


X4 EAST/WEST CONSTRUCTED POND SECTION

NTS



X5 NORTH/SOUTH CONSTRUCTED POND SECTION

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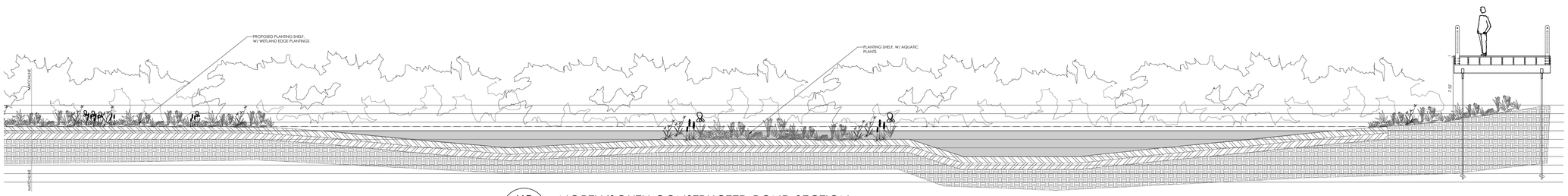

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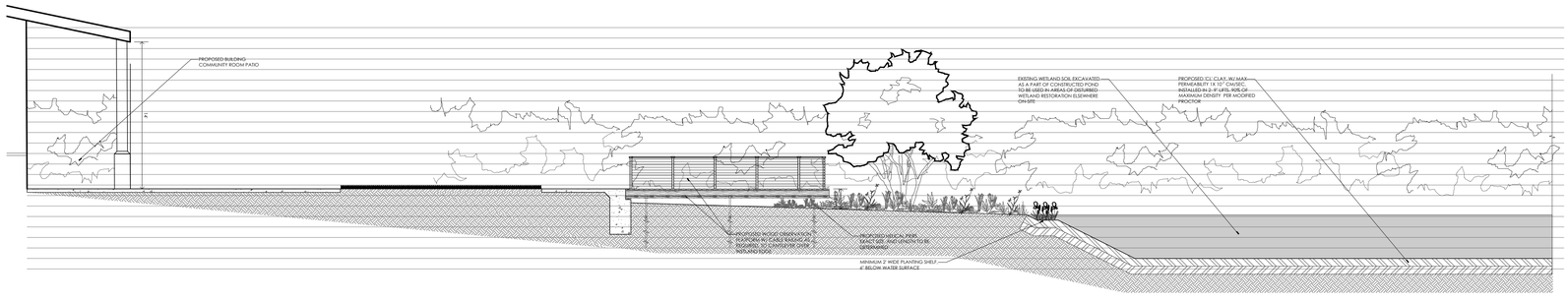

X6 POND OVERLOOK SECTION

NTS

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SHEET
Constructed
Pond/Overlook Sections

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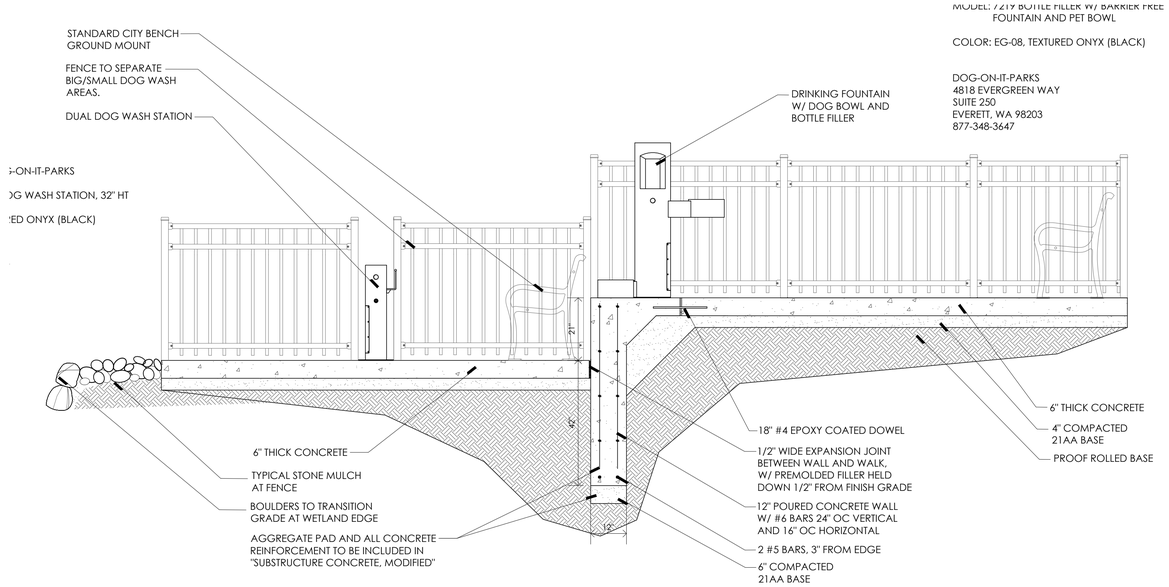
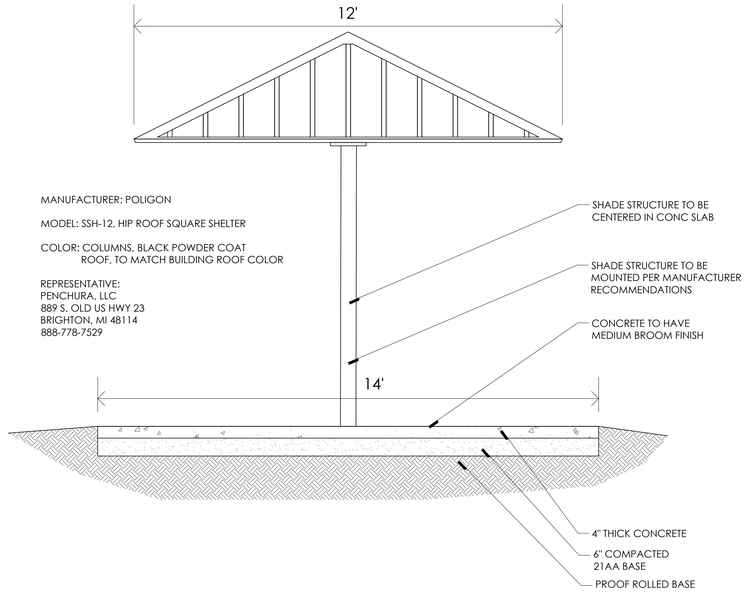


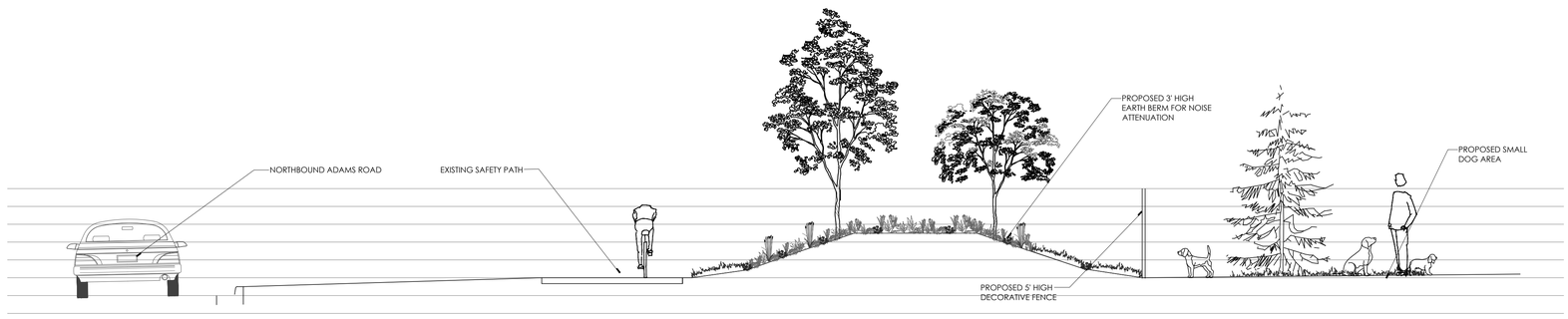
X7 DOG WASH SECTION

1"= 2'-0"



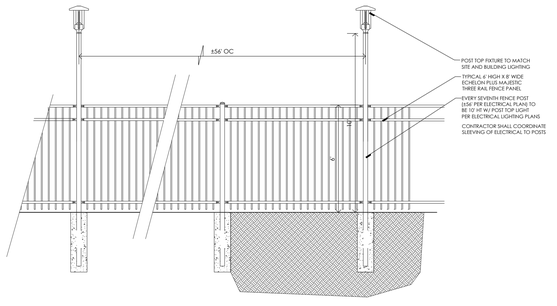
X8 SHADE STRUCTURE SECTION

1"= 2'-0"



X9 DOG PARK SECTION AT ADAMS ROAD

1"= 4'-0"



X13 FENCE POST/LIGHT SECTION

1"= 4'-0"

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Dog Park Sections

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. L305

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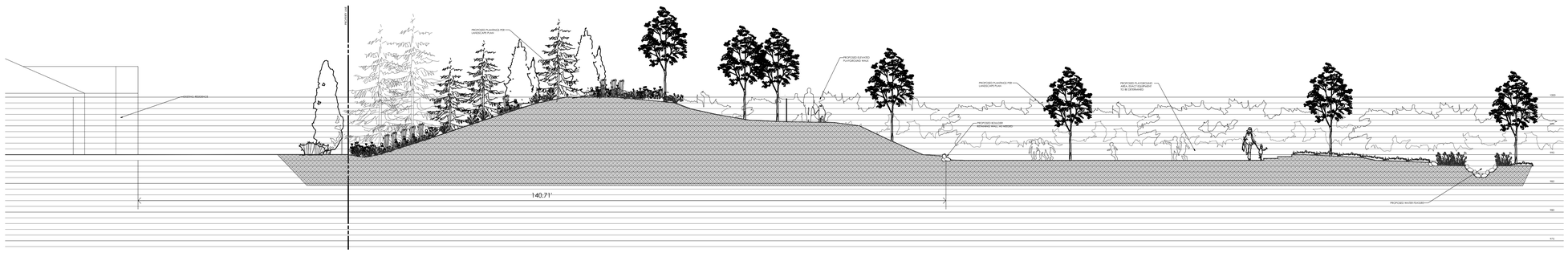
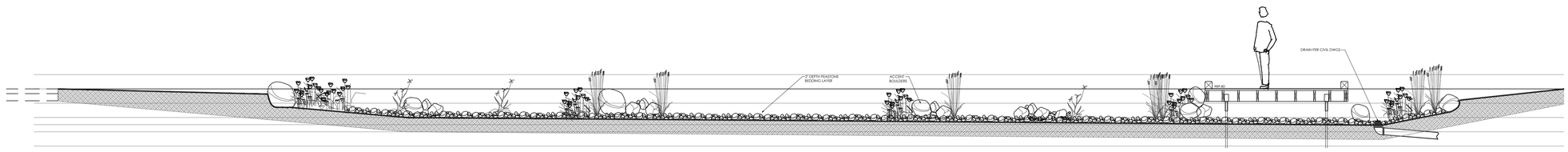


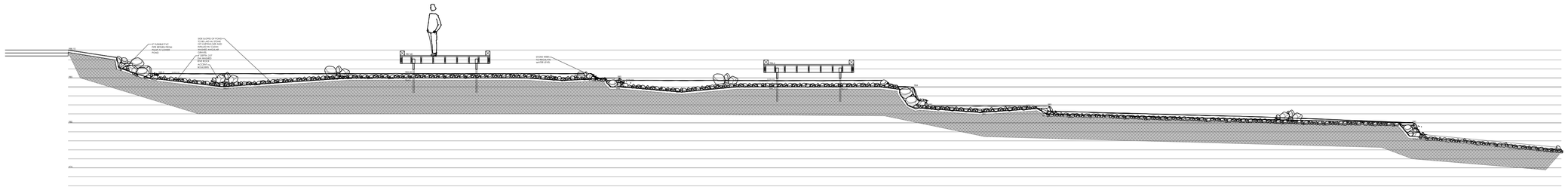
X10 PLAYGROUND SECTION

1"= 10'-0"



X11 DRY CREEK SECTION

1"= 4'-0"



X12 WATERFALL CENTERLINE SECTION

1"= 6'-0"

CITY FILE NO. E24-008, SECTION #8

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Water Feature/Dry Creek Sections

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. L306

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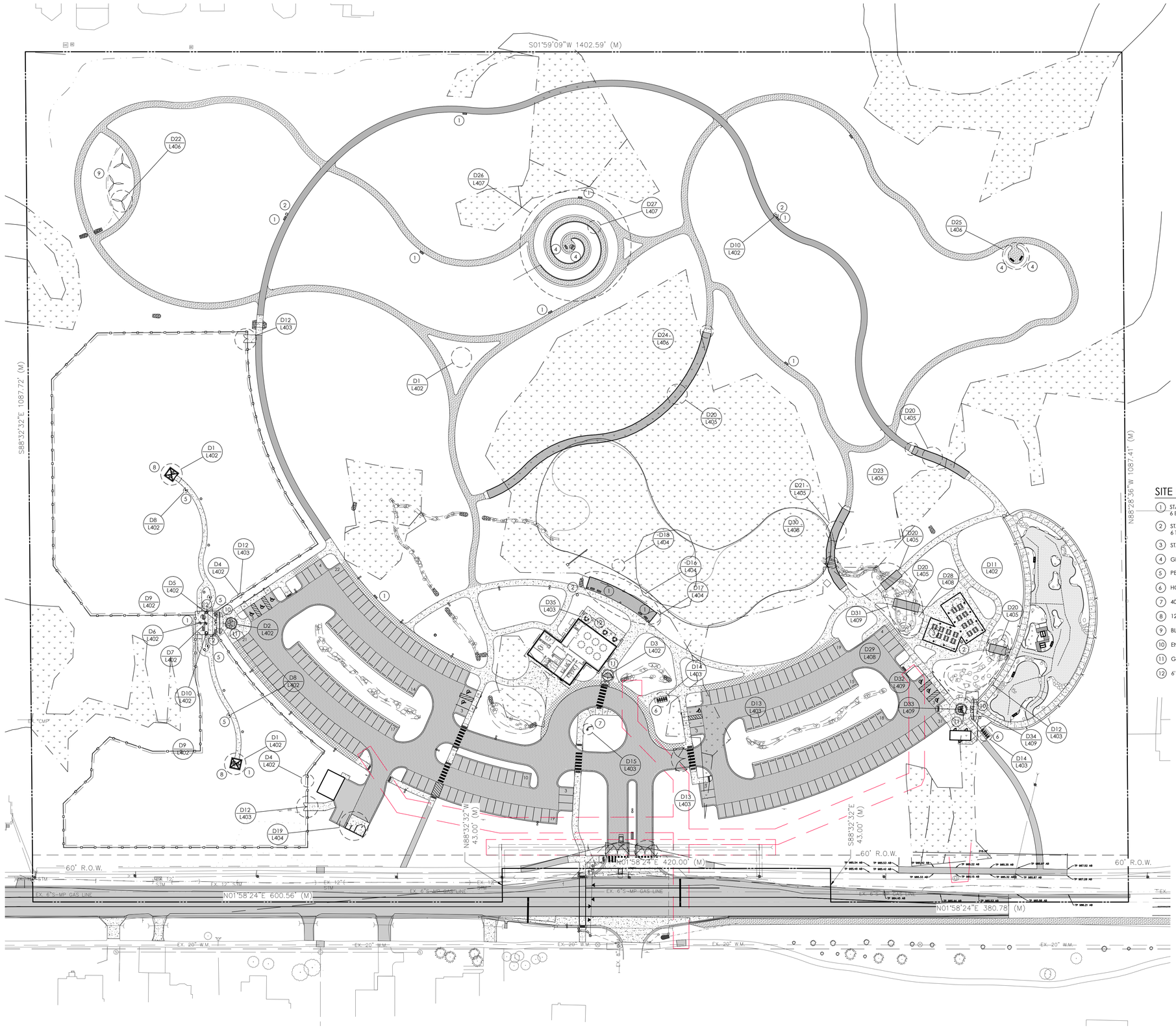

SITE FURNISHING SCHEDULE

1. STANDARD BENCH PER DETAIL D8, SHT L402, 29 TOTAL
   6 BENCHES TO BE PLACED AT THE DIRECTION OF THE CITY
2. STANDARD TRASH RECEPTACLE DETAIL D9, SHT L402, 12 TOTAL
   6 TRASH RECEPTACLES TO BE PLACED AT THE DIRECTION OF THE CITY
3. STANDARD PICNIC TABLE, DETAIL D10, SHT L402, 15 TOTAL, 2 ADA
4. GLIDER BENCH, DETAIL D25, SHT L406, 4 TOTAL
5. PET WASTE STATION, DETAIL D8, SHT L402, 4 TOTAL
6. HOOP STYLE BIKE RACKS, DETAIL D14, SHT L403, 10 TOTAL
7. 40' HIGH FLAGPOLE, DETAIL D15, SHT L403
8. 12'X12' SHADE STRUCTURE, DETAIL D1, SHT 402, 2 TOTAL
9. BLACK LOCUST HAMMOCK POSTS, 12" DIA, DETAIL D22, SHT L406
10. ENTRY STRUCTURE, 2 TOTAL; D5, DETAIL D34, SHTS L402 & L409
11. GLOW STONE AGGREGATE PAVING; DETAILS D2, D3, D33, SHT L402, L409
12. 6' HEX TABLE, 3 STANDARD, 1 ADA, DETAIL D35, SHT L403

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

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1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
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NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
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City of Rochester Hills

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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Detail Reference Plan

Know what's **below**
Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 60'
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. L401

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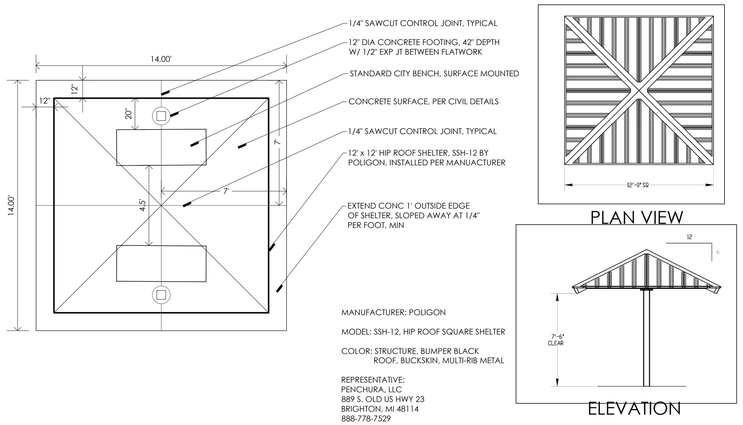
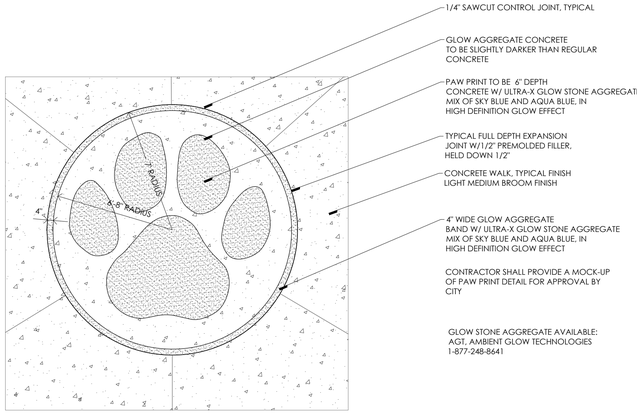


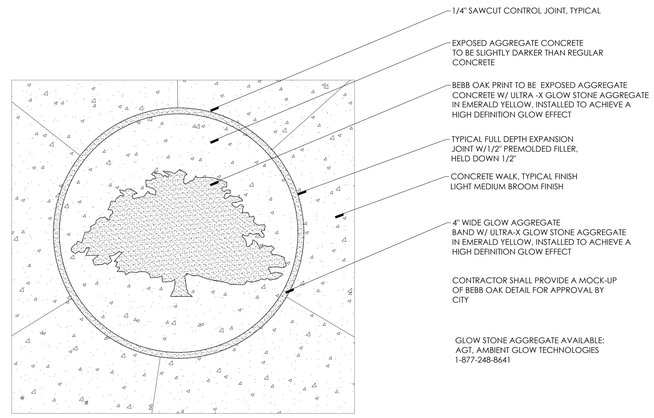
D1 DOG PARK SHADE STRUCTURE

1" = 4'-0"



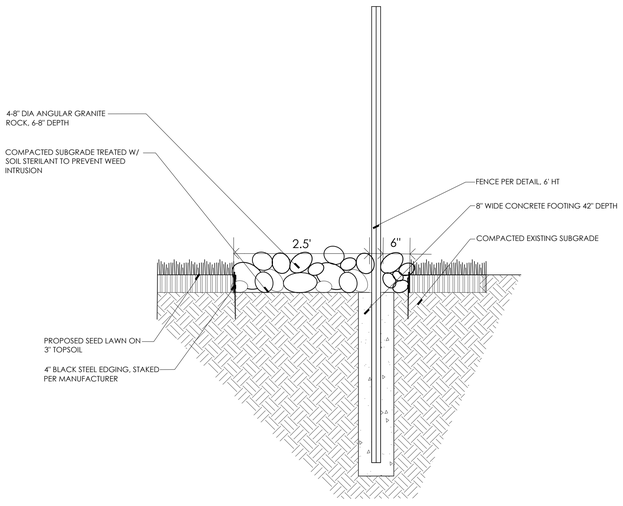
D2 DOG PRINT PAVING DETAIL

1" = 4'-0"



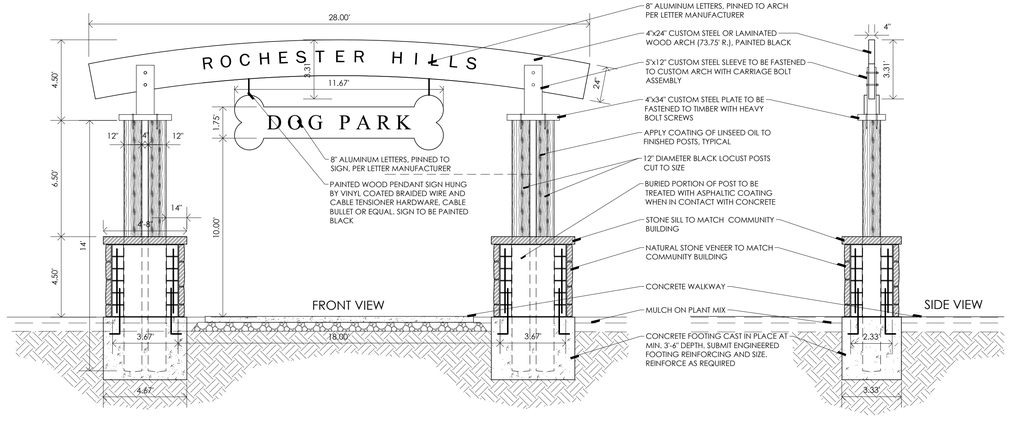
D3 OAK LOGO PAVING DETAIL

1" = 4'-0"



D4 DOG PARK FENCE BUFFER DETAIL

NTS



D5 DOG PARK GATEWAY DETAIL

1" = 4'-0"

MANUFACTURER: DOG-ON-IT-PARKS

MODEL: 7220 DUAL DOG WASH STATION, 32" HT

COLOR: EG-08, TEXTURED ONYX (BLACK)

DOG-ON-IT-PARKS
4818 EVERGREEN WAY
SUITE 250
EVERETT, WA 98203
877-348-3647

D6 DUAL DOG WASH STATION

NTS

MANUFACTURER: DOG-ON-IT-PARKS

MODEL: 7219 BOTTLE FILLER AND BARRIER-FREE FOUNTAIN W/ PET BOWL

COLOR: EG-08, TEXTURED ONYX (BLACK)

DOG-ON-IT-PARKS
4818 EVERGREEN WAY
SUITE 250
EVERETT, WA 98203
877-348-3647

D7 BOTTLE FILLER W/ BARRIER-FREE FOUNTAIN AND PET BOWL

NTS

DISTRIBUTOR: PARKS + DOCKS SUPPLY CO.
BARK PARK WASTE STATION W/ BAGS - WITH CAN
SKU: PBARK-490
COLOR: GREEN

CUSTOMERSERVICE@PARKSANDDOCKS.COM
973-370-4930

D8 DOG WASTE STATION

BENCHES ADJACENT TO PAVED PATH SHALL BE SURFACE MOUNTED PER DETAIL 5/SHEET L590

BENCHES ADJACENT TO GRAVEL PATH SHALL BE ANCHORED TO 12" X12" CONCRETE FOOTING, PER BENCH LEG

D9 BENCH

DISTRIBUTOR: BELSON OUTDOORS

MODEL: PB6-JAM WITH PB1178 ARM REST
6' RECYCLED PLASTIC RESINWOOD BENCH
SURFACE MOUNT
SLAT COLOR: CEDAR
ARM REST COLOR: BLACK

WWW.BELSON.COM
1-800-323-5664

DISTRIBUTOR: BELSON OUTDOORS

MODEL: PB32R, 29.25" DIA X 33" HT
32 GALLON ROUND TRASH RECEPTACLE
WITH RECYCLED PLASTIC SLATS
SLAT COLOR: CEDAR
TOP COLOR: BLACK

WWW.BELSON.COM
1-800-323-5664

D10 TRASH RECEPTACLE

DISTRIBUTOR: FROG FURNISHINGS

MODEL: PB 6CEDGFPIC, 6' LONG GLAVANIZED FRAME TABLE
WITH RECYCLED PLASTIC RESINWOOD SLATS
SLAT COLOR: CEDAR
FRAME COLOR: BLACK

WWW.FROGFURNISHINGS.COM
1-913-361-7611

D11 PICNIC TABLE

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS
MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Dog Park Details

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY: M. Sandberg
DESIGNED BY: G. Ostrowski
APPROVED BY: G. Ostrowski
DATE: 08/05/2025
SCALE: VARIES
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. L402

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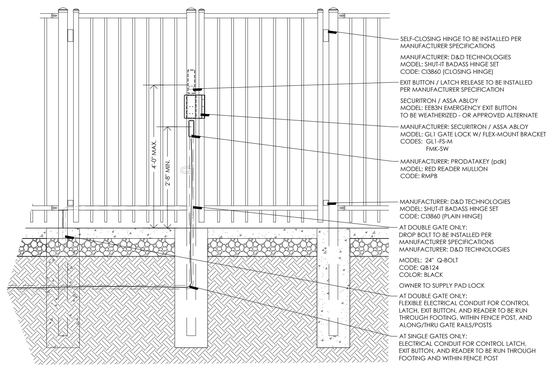
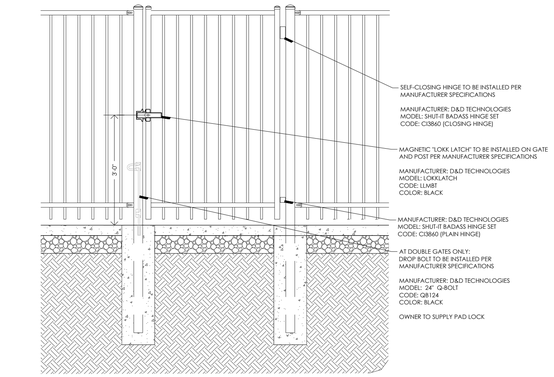
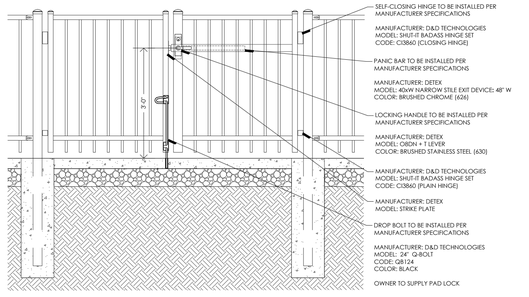


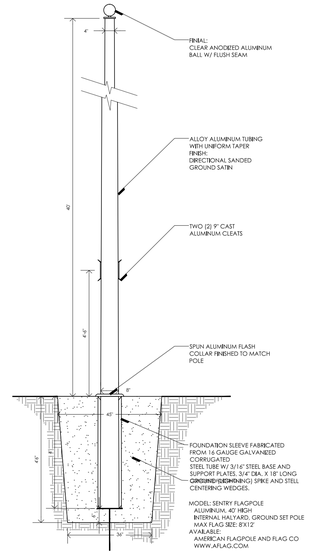
DOG PARK MAIN ENTRIES: 1 DOUBLE + 2 SINGLE GATES



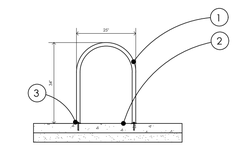
DOG WASH / MAINTENANCE GATES: 2 DOUBLE + 2 SINGLE



PLAYGROUND ENTRIES: 3 DOUBLE GATES



D15 FLAGPOLE DETAIL

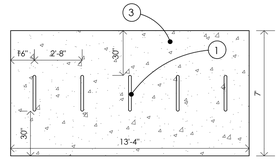


1. POWDER COATED BIKE LOOP. COLOR SHALL BE BLACK.
2. 6" THICK CONCRETE PAVEMENT TO ACCEPT BIKE RACK INSTALLATION ON COMPACTED BASE
3. 3" DEPTH, 3/8" DIA HOLE TO RECEIVE CONCRETE ANCHORS, TYPICAL

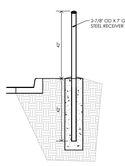
MFR:
DERO BIKE RACKS
HOOP RACK W/ POWDER COAT
FINISH OR APPROVED SUBSTITUTE.
AVAILABLE THRU:
DERO PRODUCTS, 888-337-6729

HOOP BIKE RACK

NTS



D14 BIKE RACK DETAIL-GROUND MOUNT

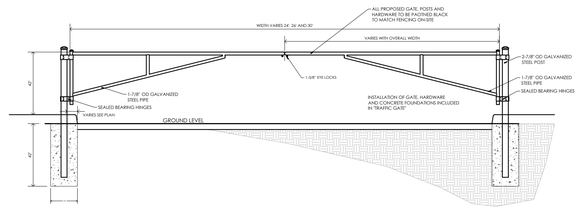


SENTINEL DOUBLE IN-GROUND MANUAL SWING GATE
MANUFACTURER: BARRIER GATE BRANDS
MODEL NUMBER: 14020-24 (24' POST)
14020-28 (28' POST)
14020-30 (30' WIDE)
14030-R (RECEIVER POST, 6 TOTAL)

AVAILABLE: TIGER TEETH STORE
8500 HADDEN ROAD
TWINSBURG, OH 44087
1-888-378-1157
SALES@TIGERTEETHSTORE.COM
COLOR: GALVANIZED STEEL
POST: 3" OD X 7'

GATE RECEIVER POST

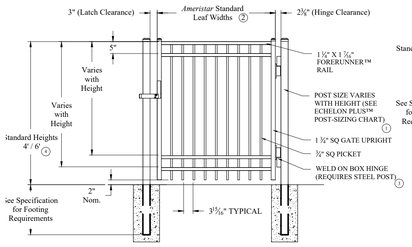
NTS



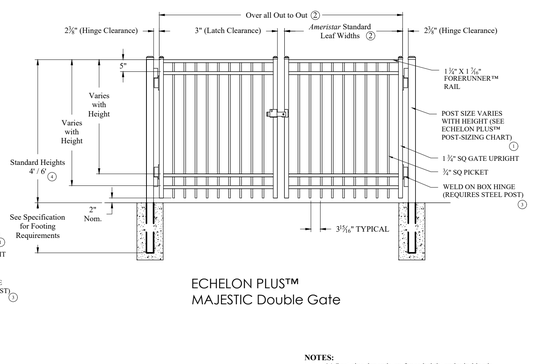
D13 TRAFFIC CONTROL GATE

NTS

NOTES:
1. Post size depends on fence height, weight, and wind loads. See Echelon Plus™ post sizing chart.
2. See Ameristar Gate Table for standard out to outs. Custom gate openings available for special out to out/leaf widths.
3. Additional styles of gate hardware are available on request. This could change the Latch & Hinge Clearance.
4. Fourth rail required for some heights.



ECHELON PLUS™
MAJESTIC Single Gate

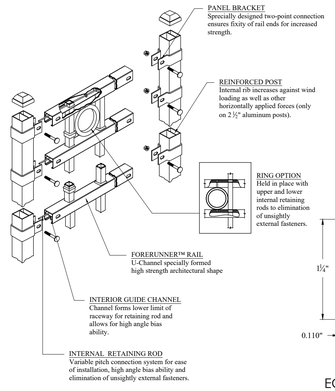


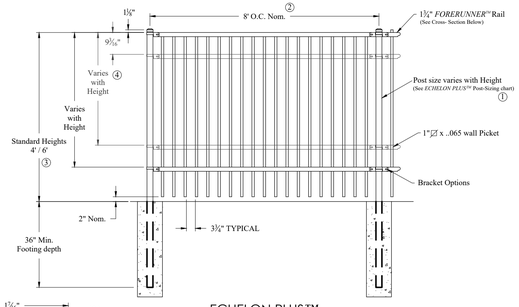
ECHELON PLUS™
MAJESTIC Double Gate

NOTES:
1.) Post size depends on fence height and wind loads. See *ECHELON PLUS* post sizing chart.
2.) Panels also available for 6' on center post spacing
3.) Additional heights available on request. Some heights noted require a third and/or fourth rail.
4.) Third and Fourth rail optional.

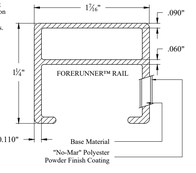
Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.

NOTES:
1. Post size and gauge depends on fence height and wind loads. See ECHELON PLUS™ specifications for post sizing chart.
2. Values shown are nominal and not to be used for installation purposes. See product specification for installation requirements.
3. Additional heights available by request.



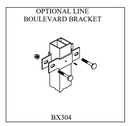


ECHELON PLUS™
MAJESTIC PANEL



ECHELON PLUS™ RAIL

IBC COMPLIANCE
Majestic style with 4-rail configurations shall meet IBC compliance. Panel, post and bracket assemblies shall be subjected to structural performance testing according to Chapter 17 - Structural Tests and Special Inspections - International Building Code (IBC) 2018. Physical testing to be completed by accredited third party testing facility. Completed assembly shall demonstrate loading capacity of 2.5 times prescribed design loads found in section 1607.8.1, 1607.8.1.1 and 1607.8.1.2 of IBC 2018 for Handrails and Guards.



MANUFACTURER: AMERISTAR FENCING

PLAYGROUND FENCING: 4' HIGH MAJESTIC STYLE, 3 RAIL PANEL
DOG PARK FENCING: 6' HIGH MAJESTIC STYLE, 3 RAIL PANEL

MODEL: ECHELON PLUS
COLOR: BLACK

NTS

D12 FENCE AND GATE DETAILS
DOG PARK + PLAYGROUND

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

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CLIENT
City of Rochester Hills

PROJECT LOCATION
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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Fence and Gate Details

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. L403

CITY FILE NO. E24-008, SECTION #8

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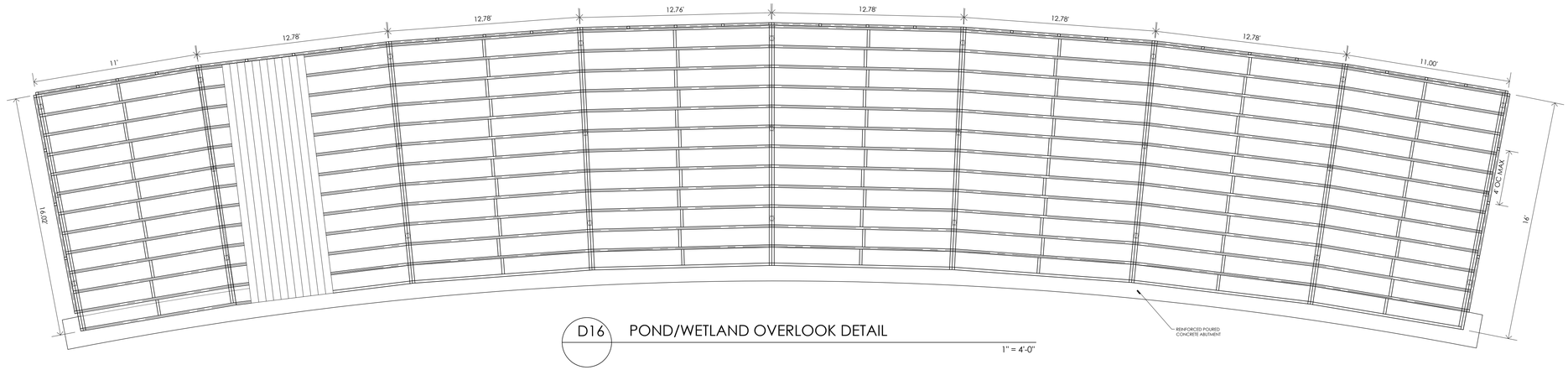
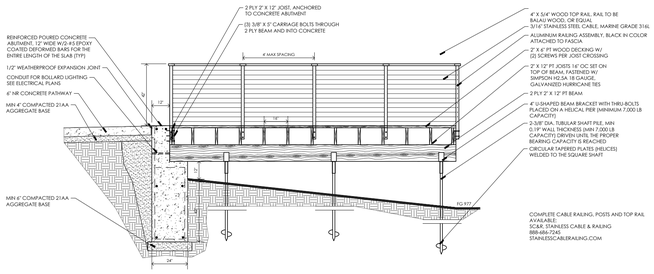


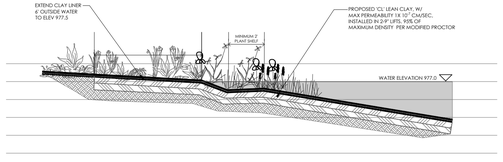
D16 POND/WETLAND OVERLOOK DETAIL

1" = 4'-0"



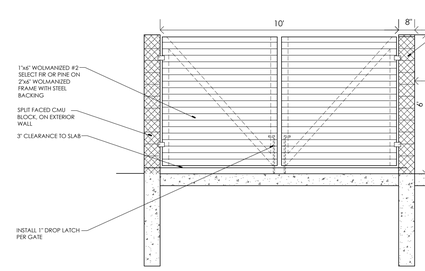
D17 OVERLOOK SECTION

1" = 2'-0"



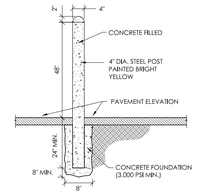
D18 CONSTRUCTED POND EDGE SECTION

1" = 2'-0"



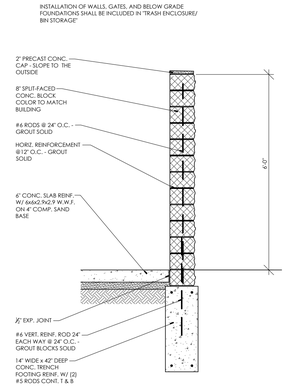
TRASH ENCLOSURE / BIN STORAGE ELEVATION

N.T.S.



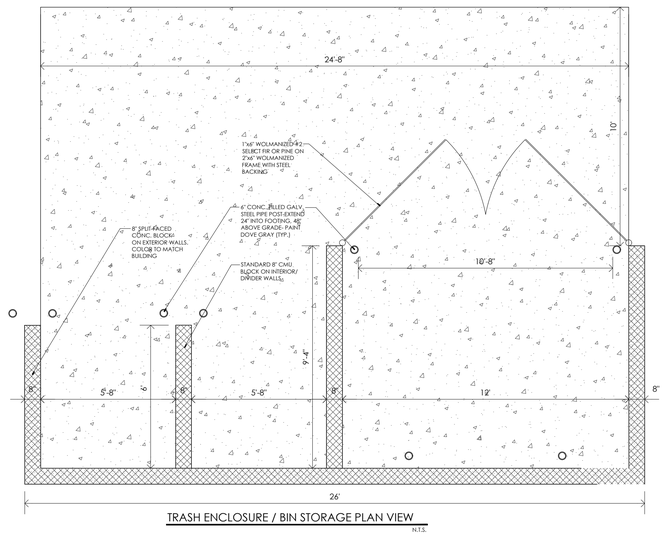
GUARD POST DETAIL

N.T.S.



TRASH ENCLOSURE / BIN STORAGE SECTION

N.T.S.



TRASH ENCLOSURE / BIN STORAGE PLAN VIEW

N.T.S.

D19 TRASH ENCLOSURE/BIN STORAGE DETAIL

NTS

CITY FILE NO. E24-008, SECTION #8

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Pond Overlook/Boardwalk Details

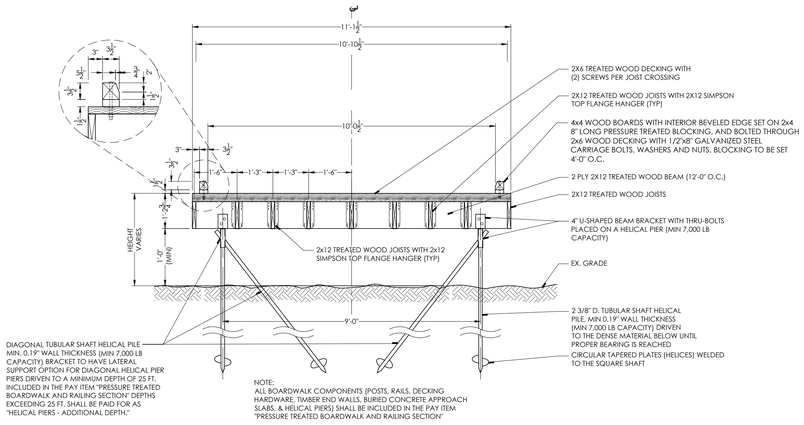
Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES

NFE JOB NO. O557
SHEET NO. L404

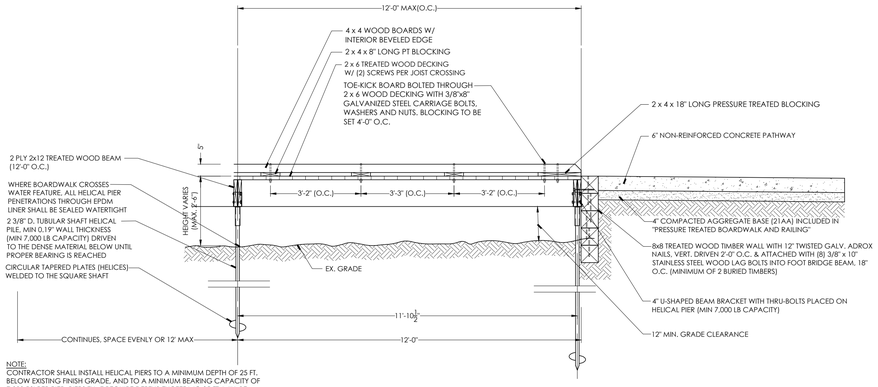
N:\LG\005-3000 Plan\O000-FILES\O557 Howick Park\Office\Landscape\Construction Drawings\O557_L-402.dwg, 2/4/2026 4:48:01 PM



NOTE:
ALL BOARDWALK COMPONENTS (POSTS, RAILS, DECKING HARDWARE, TIMBER END WALLS, BURIED CONCRETE APPROACH SLABS, & HELICAL PIERS) SHALL BE INCLUDED IN THE PAY ITEM "PRESSURE TREATED BOARDWALK AND RAILING SECTION"

BOARDWALK (NO RAILING) - SECTION A-A

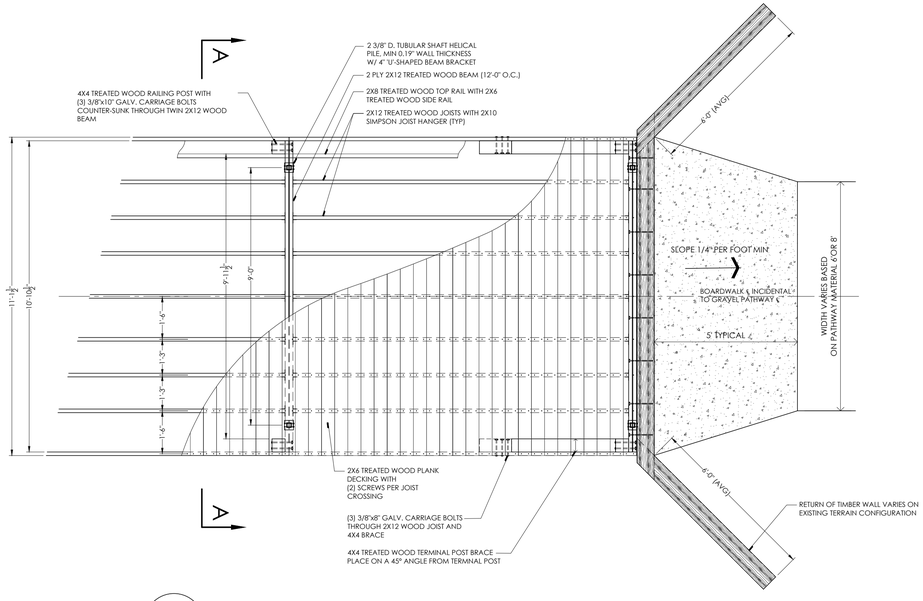
SCALE 1" = 3'



NOTE:
CONTRACTOR SHALL INSTALL HELICAL PIERS TO A MINIMUM DEPTH OF 25 FT, BELOW EXISTING FINISH GRADE, AND TO A MINIMUM BEARING CAPACITY OF 7,000 PSI PER PIER. PIERS THAT REQUIRE DEPTHS EXCEEDING 25 FT. WILL BE ELIGIBLE FOR ADDITIONAL COMPENSATION, IN ACCORDANCE WITH THE CONTRACT

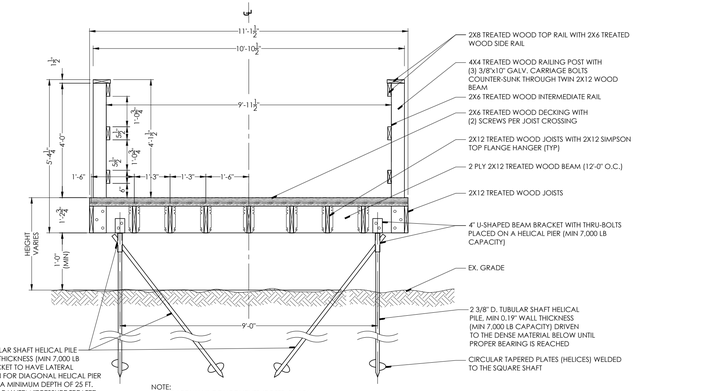
BOARDWALK (NO RAILING) - SECTION ELEVATION

SCALE 1" = 3'



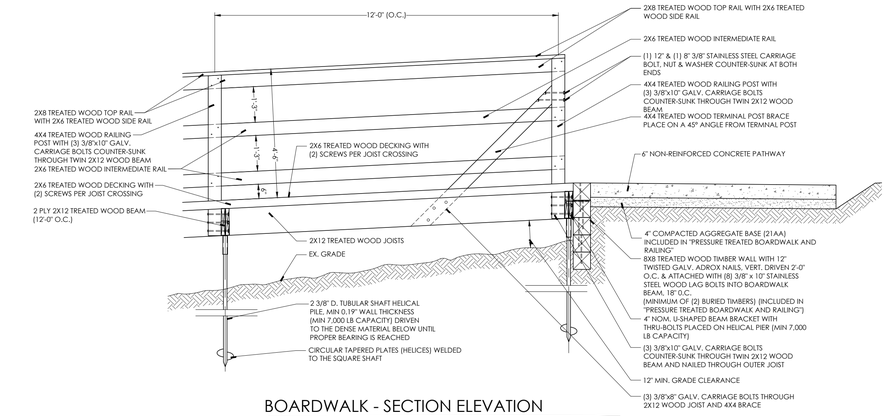
D20 BOARDWALK (NO RAILING) - PLAN VIEW

SCALE 1" = 3'



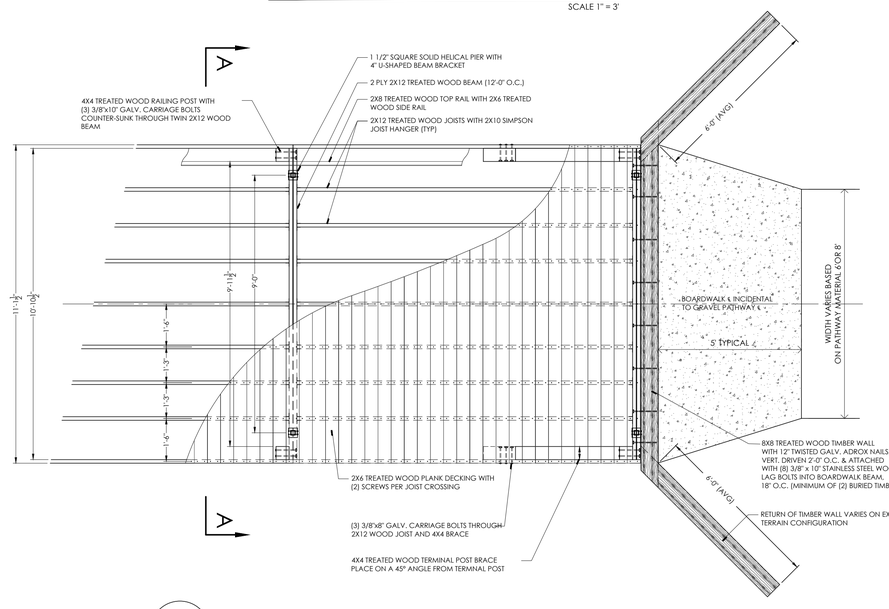
NOTE:
ALL BOARDWALK COMPONENTS (POSTS, RAILS, DECKING HARDWARE, TIMBER END WALLS, BURIED CONCRETE APPROACH SLABS, & HELICAL PIERS) SHALL BE INCLUDED IN THE PAY ITEM "PRESSURE TREATED BOARDWALK AND RAILING "

BOARDWALK - SECTION A-A



BOARDWALK - SECTION ELEVATION

SCALE 1" = 3'



D21 BOARDWALK (WITH RAILING)- PLAN VIEW

SCALE 1" = 3'

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Boardwalk Details

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: VARIES
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L405

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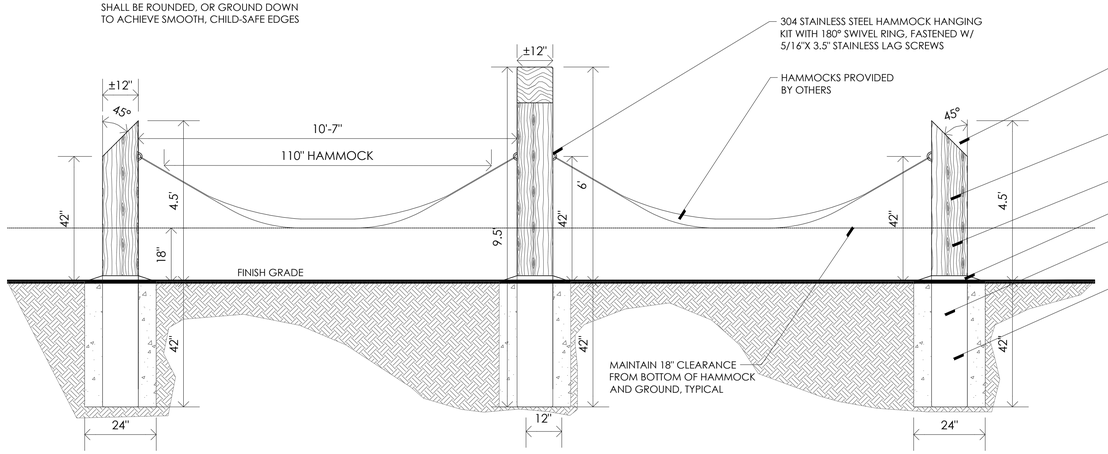
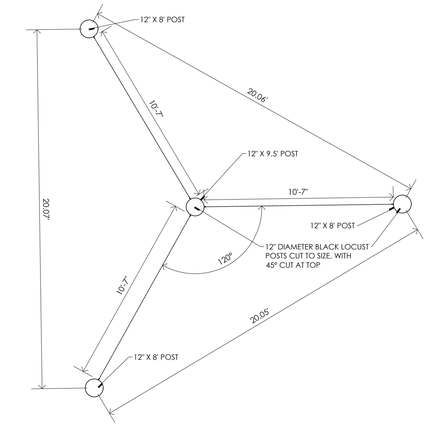
NOTE:
ALL SHARP OR SPLINTERED EDGES ON TIMBERS WITHIN THE HAMMOCK GROVE SHALL BE ROUNDED, OR GROUND DOWN TO ACHIEVE SMOOTH, CHILD-SAFE EDGES



12" DIA X 24' BLACK LOCUST POSTS AVAILABLE:
MIDWEST BLACK LOCUST
21698 WI-60 TRUNK
MUSCODA, WI 53573
608-616-4769
WWW.MIDWESTBLACKLOCUST.COM

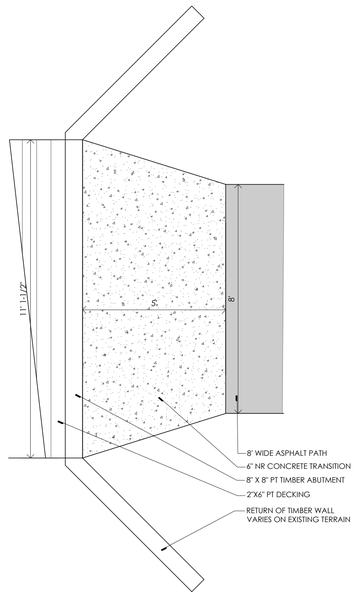
D22 TYPICAL HAMMOCK SECTION

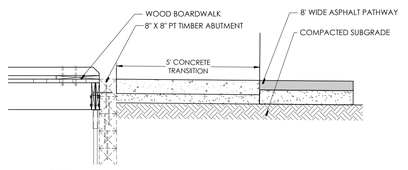
1" = 2'-0"



HAMMOCK POST LAYOUT (TYPICAL OF 3)

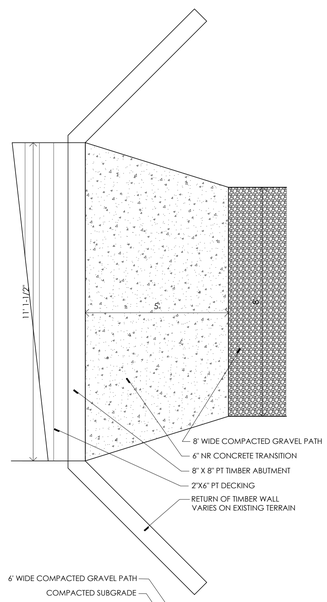
1" = 4'-0"

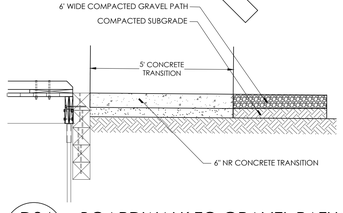




D23 BOARDWALK TO APSHALT TRANSITION

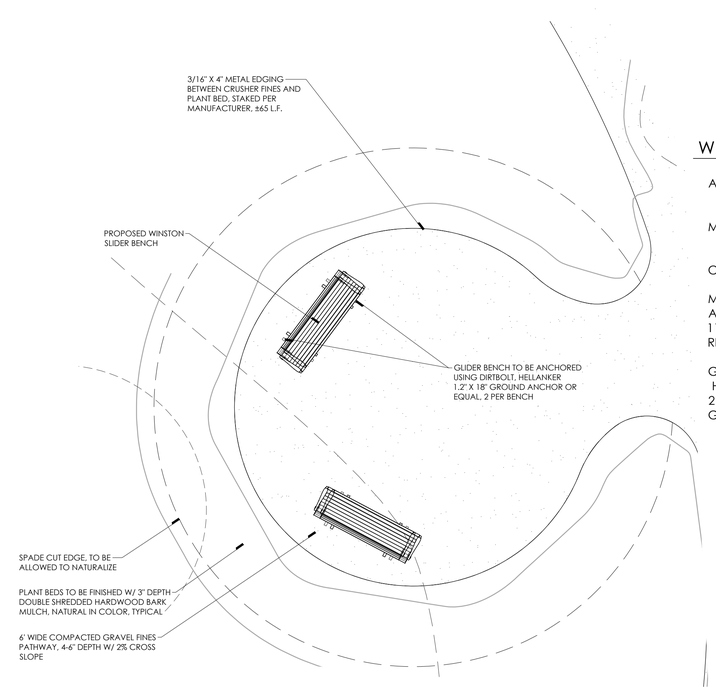
NTS





D24 BOARDWALK TO GRAVEL PATH TRANSITION

NTS



D25 TRAILSIDE AMENITIES LAYOUT PLAN

1" = 4'-0"

WINSTON POLY RECYCLED PLASTIC GLIDER BENCH

NTS

AVAILABLE: FURNITURE LEISURE
1-800-213-2401

MODEL: AL872 WINSTON POLY RECYCLED PLASTIC GLIDER BENCH

COLOR: CEDAR

MANUFACTURER:
A&L FURNITURE CO.
112 FOUR WHEEL DRIVE
REBERSBURG, PA 16872

GROUND ANCHOR AVAILABLE: DIRTBOLT.COM
HELLANKER 1.2" X 18" GROUND ANCHORS,
2 ANCHORS PER BENCH, FASTENED WITH GALVANIZED SCREWS TO BENCH LEG

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
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NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Hammock Grove and Trailside Amenitites Details

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: VARIES
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. L406

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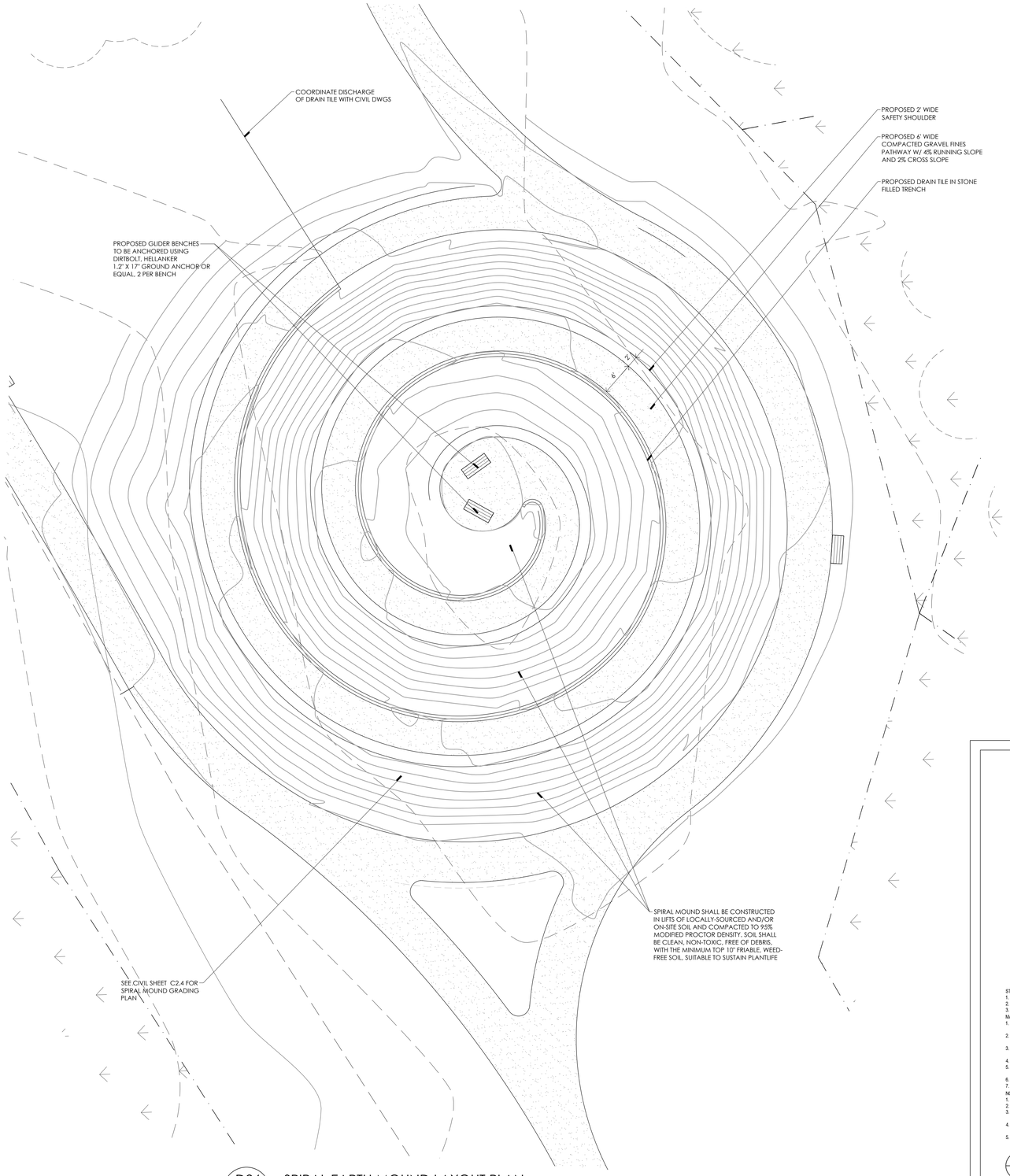
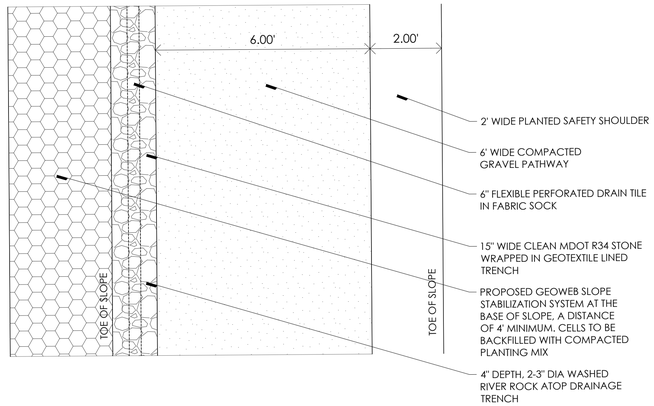
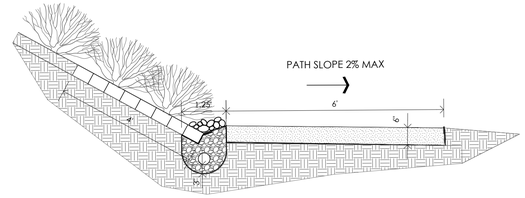


D26 SPIRAL EARTH MOUND LAYOUT PLAN

1" = 10'-0"



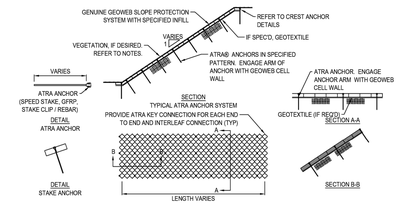


D27 TYPICAL PATH/SLOPE/DRAINAGE DETAIL

1" = 2'-0"

PRESTO GEOSYSTEMS
P.O. BOX 2399, 670 NORTH PERKINS ST.
APPLETON, WI 54912-2399
TOLL FREE:1-800-548-3424
PHONE: (920) 738-1328
www.prestogeo.com

PRESTO GEOSYSTEMS
STRENGTH. FROM THE GROUND UP.
Since 1979



STAKE ANCHOR INSTALLATION STEPS:
1. POSITION THE ATRA ANCHOR NEXT TO THE UP-SLOPE CELL WALL.
2. DRIVE ATRA ANCHOR INTO THE GROUND UNTIL ARM OF ANCHOR IS LOCATED ABOVE GEOWEB CELL WALL.
3. ENGAGE ARM OF ANCHOR TO CELL WALL AND DRIVE UNTIL TIGHT.

MANUFACTURER NOTES:
1. ATRA ANCHORS SHALL CONSIST OF NO. 4 REBAR WITH AN ATRA STAKE CLIP INSERTED INTO THE END OF THE REBAR. LENGTH OF THE ATRA ANCHORS SHALL BE AS SPECIFIED.
2. ONE-PIECE MOLDED POLYMER ATRA SPEED STAKES AND PRE-ASSEMBLED ATRA GFRP (POLYMER) ARE AVAILABLE FROM PRESTO GEOSYSTEMS IN VARIOUS LENGTHS.
3. THE GEOWEB CELLS SHALL BE FILLED WITH THE SPECIFIED MATERIAL (TOPSOIL, STONE, OR CONCRETE) AND SHALL BE SUITABLE TO WITHSTAND THE APPLICABLE HYDRAULIC CONDITIONS.
4. THE GEOWEB SECTIONS SHALL BE ANCHORED TO RESIST SLIDING DUE TO DRIVING AND HYDRAULIC FORCES.
5. IF VEGETATION IS DESIRED, PROVIDE AN EROSION CONTROL BLANKET OR TURF REINFORCEMENT MAT IF THERE IS A POTENTIAL FOR EROSION PRIOR TO ESTABLISHING VEGETATION.
6. THE GEOWEB PANELS SHALL BE CONNECTED WITH ATRA KEYS AT EACH INTERLEAF AND END TO END CONNECTION.
7. REFER TO THE GENERAL DETAIL DRAWINGS FOR ANCHOR DETAILS.

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 013-036

GEOWEB® SLOPE STABILIZATION
GEOWEB SLOPE PROTECTION WITH ATRA ANCHORS

013-036 REVISION DATE 06/10/2022

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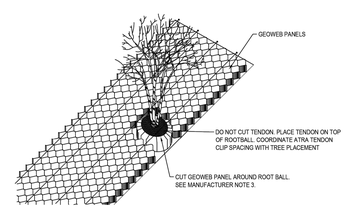
PRESTO GEOSYSTEMS
P.O. BOX 2399, 670 NORTH PERKINS ST.
APPLETON, WI 54912-2399
TOLL FREE:1-800-548-3424
PHONE: (920) 738-1328
www.prestogeo.com

PRESTO GEOSYSTEMS
STRENGTH. FROM THE GROUND UP.
Since 1979



ISOMETRIC

MANUFACTURER NOTES:
1. THE GEOWEB CELLS SHALL BE FILLED WITH THE SPECIFIED MATERIAL (TOPSOIL, STONE, OR CONCRETE) AND SHALL BE SUITABLE TO WITHSTAND THE APPLICABLE HYDRAULIC CONDITIONS.
2. IF FULL SURFACE VEGETATION IS DESIRED, PROVIDE AN EROSION CONTROL BLANKET, HYDROSEED OR A TURF REINFORCEMENT MAT IF THERE IS A POTENTIAL FOR EROSION PRIOR TO ESTABLISHING VEGETATION.
3. THE GEOWEB SECTIONS SHALL BE ANCHORED AT THE CREST TO RESIST SLIDING DUE TO DRIVING AND HYDRAULIC FORCES.
4. THE GEOWEB PANELS SHALL BE CONNECTED WITH ATRA KEYS AT EACH INTERLEAF AND END TO END CONNECTION.
5. CUT THE GEOWEB PANELS TO FIT CLOSELY TO THE ROOT BALL. CONNECT THE CUT PANELS TO THE ADJACENT PANELS WITH ATRA KEYS.
6. LIMIT THE DROP OF THE INFILL TO PREVENT PANEL DISTORTION.

NOTES:
1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
2. DO NOT SCALE DRAWING.
3. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY. THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION.
4. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.
5. CONTRACTORS NOTE: FOR PRODUCT AND COMPANY INFORMATION VISIT www.CADdetails.com/info AND ENTER REFERENCE NUMBER 013-052

GEOWEB® SLOPE STABILIZATION
GEOWEB SLOPE PROTECTION LANDSCAPE ELEMENTS

013-052 REVISION DATE 06/10/2022

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CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Spiral Mound Details

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg

DESIGNED BY:
G. Ostrowski

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557

SHEET NO. L407

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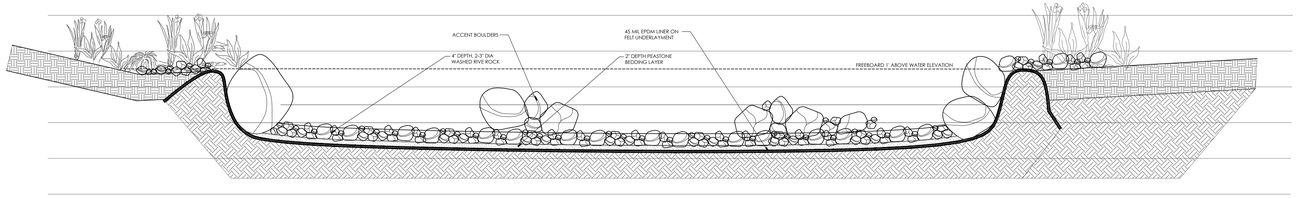
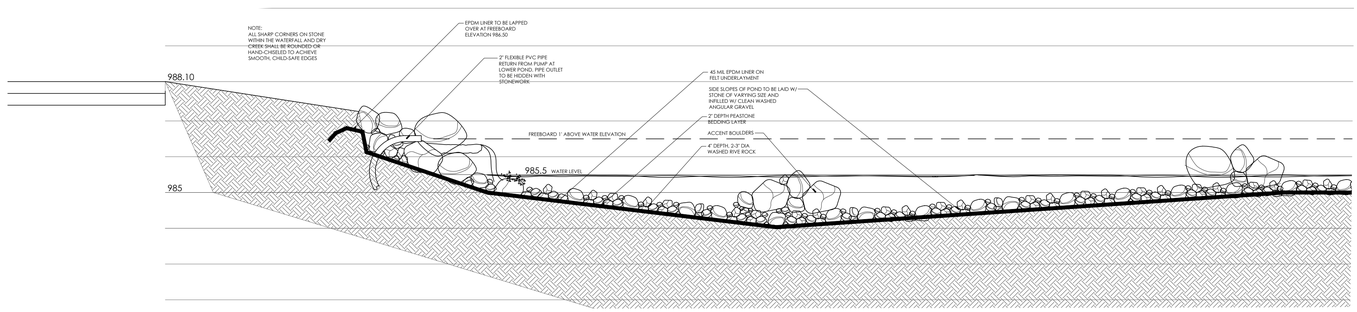


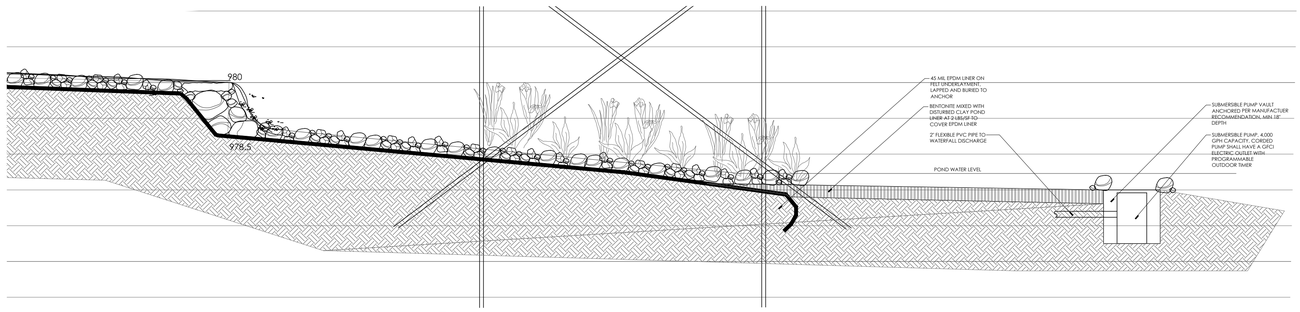
D28 TYPICAL WATER FEATURE CROSS-SECTION

1" = 2'-0"



D29 PARTIAL WATERFALL DISCHARGE DETAIL

1" = 2'-0"



D30 PARTIAL WATERFALL OUTFLOW/RETURN DETAIL

1" = 2'-0"

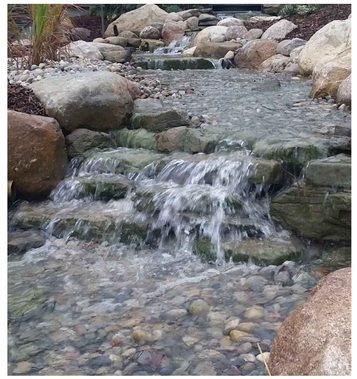
WATERFALL PUMP OUTDOOR TIMER

NTS

MODEL: DEWENWILS WATERPROOF LIGHT SENSOR TIMER W/ 2 GROUNDED OUTLETS PLUG-IN TIMER W/ 100-FOOT RANGE REMOTE CONTROL #SHODT12B2, OR EQUAL

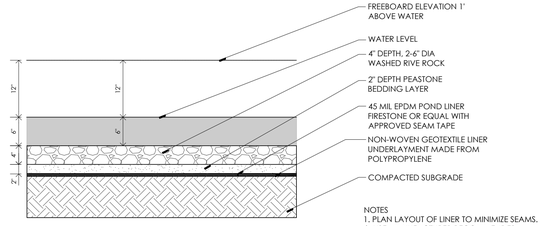
14-3 GROUNDED CORD AND MAX 15 AMP RATING

AVAILABLE: WWW.DEWENWILS.COM



WATERFALL DESIGN INTENT

IT IS THE INTENT TO PROVIDE A WATERFALL FEATURE THAT ADHERES TO THE GENERAL LAYOUT AND COMPONENTS SHOWN ON THE PLAN, BUT ALLOWS THE CONTRACTOR FLEXIBILITY AND CREATIVITY. MAXIMUM WATER DEPTH SHALL NOT EXCEED 12". HEIGHT OF BOARDWALKS OVER FEATURE, SHALL BE NO MORE THAN 30" ABOVE THE POOL, FOR A MINIMUM DISTANCE OF 3' FROM THE EDGE OF THE BOARDWALK. PUMP SHALL BE VERIFIED BY CONTRACTOR FOR ADEQUACY (LIFT, GPH/GPM) IF HEIGHTS AND OR DISTANCE OF PUMP DEVIATES FROM THE PLAN.



NOTES
1. PLAN LAYOUT OF LINER TO MINIMIZE SEAMS.
2. USE MANUFACTURER RECOMMENDED PRIMERS AND ADHESIVES, WITH EVENLY APPLIED PRESSURE ACROSS THE LENGTH OF THE SEAM.
3. AVOID SEAMING IN DIRECT SUNLIGHT, AND BETWEEN TEMPERATURES BETWEEN 40-90°F

WATERFALL BOTTOM DETAIL

NTS

MODEL: RAPIDFLO 4000 GPH ASYNCHRONOUS WATERFALL PUMP, #120997, OR EQUAL
CORD LENGTH: 20' MINIMUM
MAX FLOW RATE: 4,300 GPH
MAX HEAD PRESSURE: 28 FEET
POWER: 115 V/414 WATTS

AVAILABLE: THE POND GUY
1-866-766-3435

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Water Feature/ Dry Creek Details

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: VARIES
4 2 0 2 4 6

NFE JOB NO. O557
SHEET NO. L408

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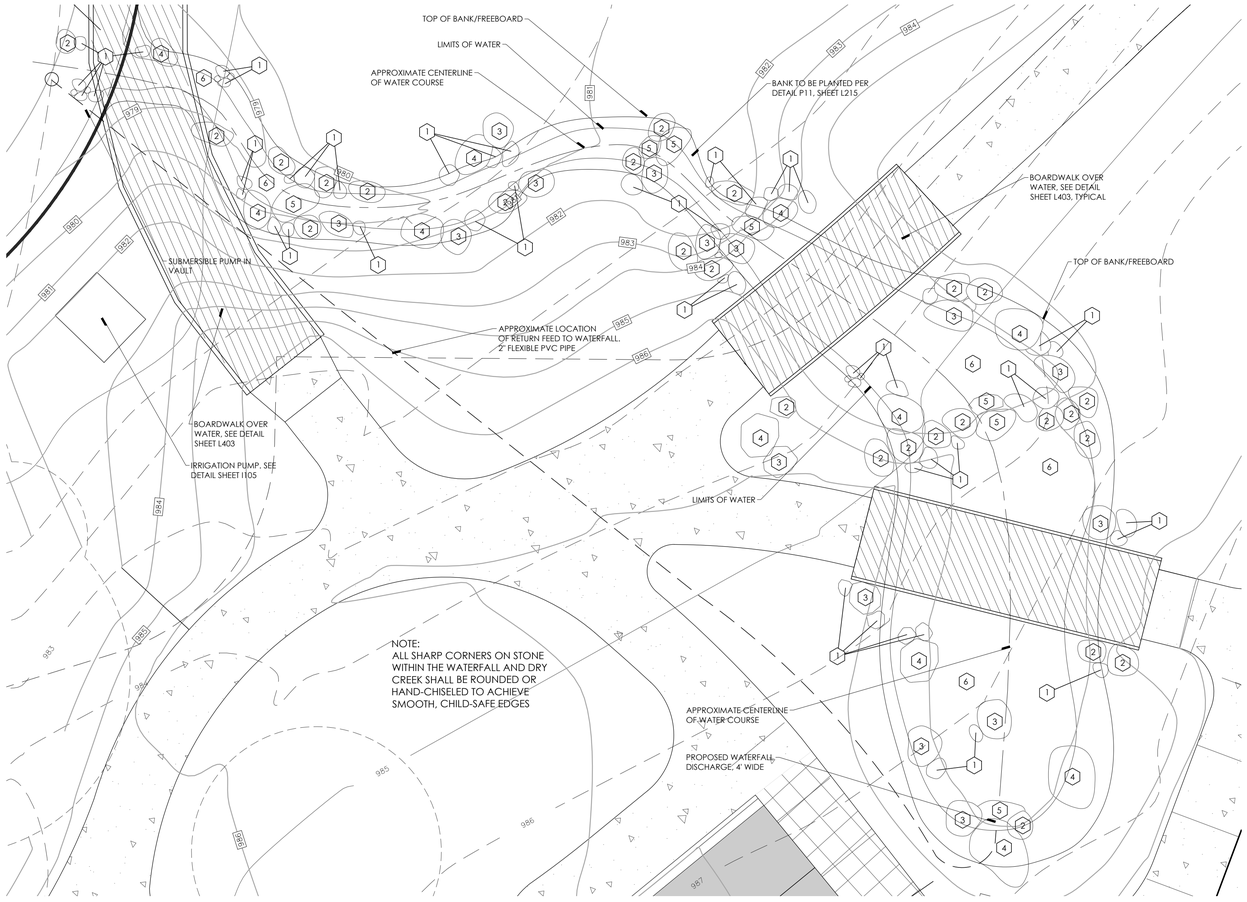
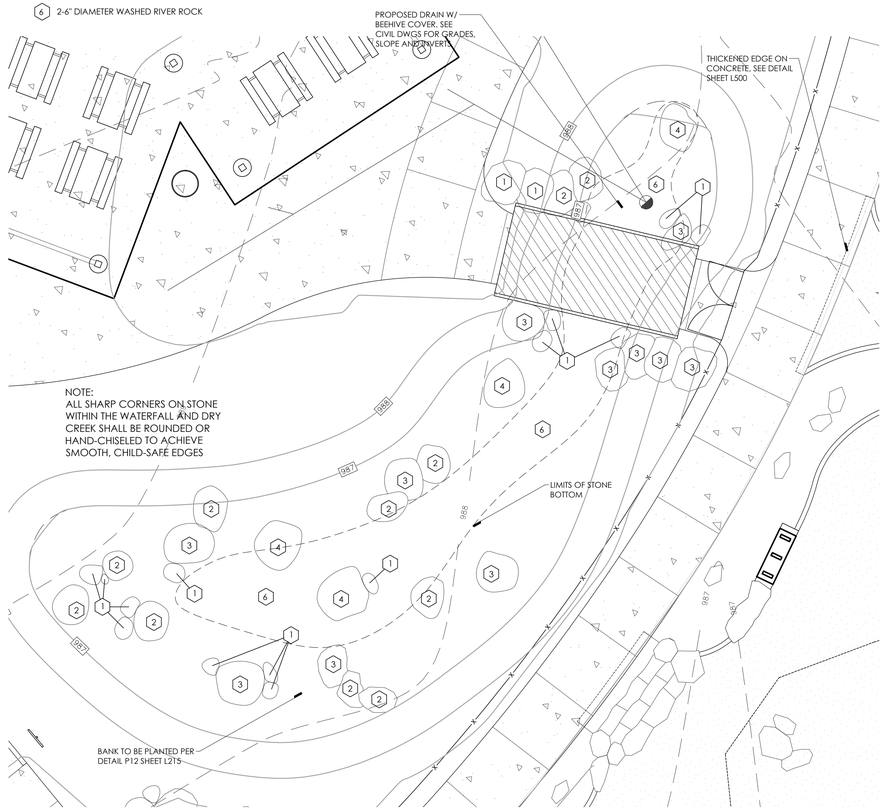


D31 WATER FEATURE/WATERFALL LAYOUT

1" = 8'-0"

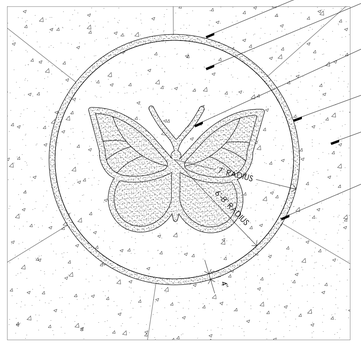
STONE LEGEND

1. 1-2' DIAMETER BOULDERS
2. 2-3' DIAMETER BOULDERS
3. 3-4' DIAMETER BOULDERS
4. 4-5' DIAMETER BOULDERS
5. 3-4' LONG FLAT BOULDERS OR SLATE
6. 2-6" DIAMETER WASHED RIVER ROCK



D32 DRY CREEK LAYOUT

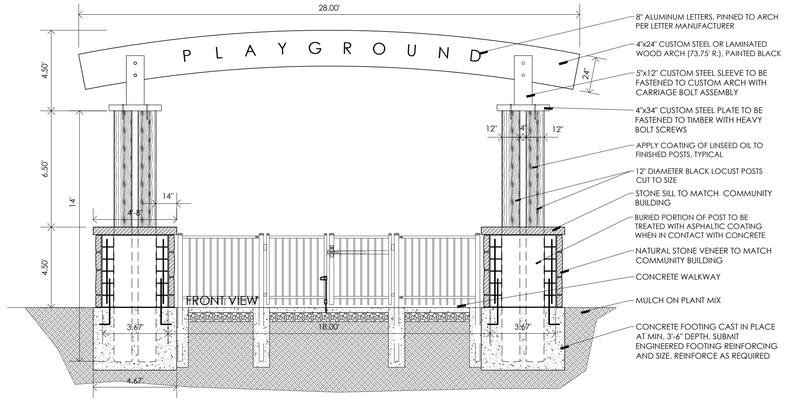
1" = 8'-0"



- 1/4" SAWCUT CONTROL JOINT, TYPICAL
- GLOW AGGREGATE CONCRETE TO BE SLIGHTLY DARKER THAN REGULAR CONCRETE
- BUTTERFLY TO BE 4" DEPTH CONCRETE W/ ULTRA-X GLOW STONE AGGREGATE MIX OF SKY BLUE, EMERALD YELLOW AND AQUA BLUE (IN ROUGHLY EQUAL PROPORTION), IN HIGH DEFINITION GLOW EFFECT
- TYPICAL FULL DEPTH EXPANSION JOINT W/1/2" PREMOLDED FILLER, HELD DOWN 1/2"
- CONCRETE WALK, TYPICAL FINISH LIGHT MEDIUM BROOM FINISH
- 4" WIDE GLOW AGGREGATE BAND W/ ULTRA-X GLOW STONE AGGREGATE MIX OF SKY BLUE AND AQUA BLUE, IN HIGH DEFINITION GLOW EFFECT
- CONTRACTOR SHALL PROVIDE A MOCK-UP OF BUTTERFLY DETAIL FOR APPROVAL BY CITY
- GLOW STONE AGGREGATE AVAILABLE: AGT, AMBIENT GLOW TECHNOLOGIES 1-877-248-8641

D33 BUTTERFLY PAVING DETAIL

1" = 4'-0"



D34 PLAYGROUND GATEWAY DETAIL

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
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City of Rochester Hills,
Oakland County, Michigan

SHEET
Playground Entry Detail

811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
M. Sandberg
DESIGNED BY:
G. Ostrowski
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 4'

NFE JOB NO. O557
SHEET NO. L409

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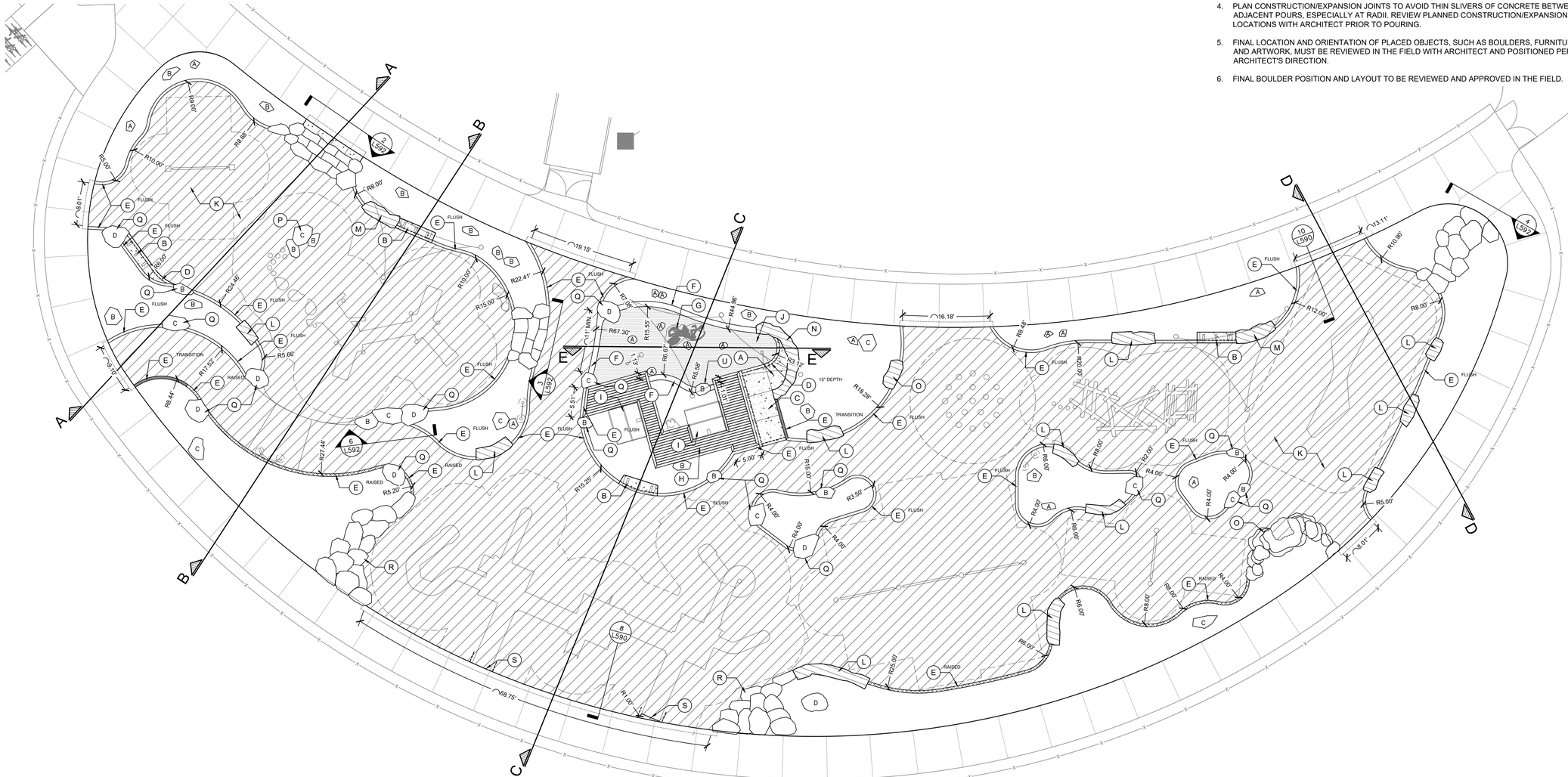
KEYED NOTES

KEY	DESCRIPTION	DETAIL
A	PLAYGROUND CONCRETE	1/L590
B	BENCH PAD	5/L590
C	CONCRETE RAMP TO SAND PIT	9/L590
D	TURNED DOWN EDGE	4/L590
E	CONCRETE PLAY BORDER	6/L590
F	PLAY BORDER AT SAND PIT	7/L590
G	RAPTOR BASE	6/L591
H	BOARDWALK	SHEET L593
I	PLAY HUT FOUNDATION	8/L592
J	SAND PLAY SURFACING	12/L590
K	POURED-IN-PLACE CONCRETE BASE	3/L590
L	CUT STONE SEAT - TYPE 1	1/L591
M	CUT STONE SEAT - TYPE 2	2/L591
N	CUT STONE SEAT - TYPE 3	3/L591
O	BOULDER CAVE	4/L591
P	BOULDER PILE IN TOT PLAYZONE	5/L592
Q	BOULDER AT CONCRETE PLAY BORDER	13/L590
R	OUTCROP SCRAMBLE	7/L592
S	INTERFACE AT TOWER BRIDGE AND SIDEWALK	6/L591

SITE PLAN LEGEND

- POURED-IN-PLACE SURFACING
- SAND PLAY SURFACING
- FLUSH CONCRETE PLAY BORDER
- RAISED CONCRETE PLAY BORDER
- TRANSITION FLUSH TO RAISED CONCRETE PLAY BORDER
- CUT STONE SEAT
- A — 1'-2' DIA. BOULDERS
- B — 2'-3' DIA. BOULDERS
- C — 3'-4' DIA. BOULDERS
- D — 4'-5' DIA. BOULDERS



GENERAL NOTES:

1. ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF LOCAL, STATE, AND FEDERAL LAWS, CODES, ORDINANCES AND REGULATIONS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS FOR WORK PRIOR TO THE START OF CONSTRUCTION. THESE MAY INCLUDE BUILDING PERMITS, CONSTRUCTION RIGHT OF WAY PERMITS, UTILITY CONNECTIONS OR ABANDONMENT PERMITS, ETC.
3. PROTECT THE SITE AND ITS FEATURES, ADJACENT PROPERTIES, AND ALL UTILITIES, KNOWN OR OTHERWISE, FROM DAMAGE OR DISRUPTION OF SERVICE OR ACCESS. DAMAGE TO EXISTING STRUCTURES, SITE FEATURES, OR UTILITIES (ETC.) SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE, AND SHALL NOT BE ACCEPTED WITHOUT THE OWNER'S APPROVAL OF SATISFACTORY REPAIRS.
4. ALL UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CALL "MISS DIG" AND VERIFY ALL UNDERGROUND UTILITIES BEFORE EXCAVATION AT THE SITE. USE PRIVATE UTILITY LOCATOR SERVICE FOR ANY UTILITIES MISS DIG WILL NOT TRACE.
5. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY FOR RESOLUTION.
6. ALL TREES TO REMAIN SHALL BE CAREFULLY PROTECTED. REFER TO SPECIFICATION 311000 FOR ADDITIONAL TREE PROTECTION REQUIREMENTS.
7. CONTRACTORS TO REVIEW ALL SHEETS FOR RELATED INFORMATION.

LAYOUT NOTES:

1. CONSTRUCTION STAKING SHALL BE ACCORDING TO THE DIGITAL CAD FILE MADE AVAILABLE UPON REQUEST. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PLAN THEIR CONSTRUCTION STAKING ACCORDINGLY AND REVIEW ANY DISCREPENCIES WITH THE ARCHITECT.
2. FORMED RADII MUST BE SMOOTH, REGULAR, AND CONTINUOUS. SEGMENTED RADII WILL NOT BE ACCEPTED.
3. SCORING PATTERN TO FOLLOW INTENT SHOWN ON PLAN. SUBMIT SCORING PLANS TO ARCHITECT FOR REVIEW PRIOR TO COMMENCEMENT OF WORK.
4. PLAN CONSTRUCTION/EXPANSION JOINTS TO AVOID THIN SLIVERS OF CONCRETE BETWEEN ADJACENT POURS, ESPECIALLY AT RADII. REVIEW PLANNED CONSTRUCTION/EXPANSION JOINT LOCATIONS WITH ARCHITECT PRIOR TO POURING.
5. FINAL LOCATION AND ORIENTATION OF PLACED OBJECTS, SUCH AS BOULDERS, FURNITURE, AND ARTWORK, MUST BE REVIEWED IN THE FIELD WITH ARCHITECT AND POSITIONED PER THE ARCHITECT'S DIRECTION.
6. FINAL BOULDER POSITION AND LAYOUT TO BE REVIEWED AND APPROVED IN THE FIELD.

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SEAL

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T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Playground Layout

811 Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026
SCALE: 1" = 10'

NORTH

NFE JOB NO. O557
SHEET NO. L501

CITY FILE NO. E24-008, SECTION #8

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POURED-IN-PLACE COLOR LEGEND

COLOR A

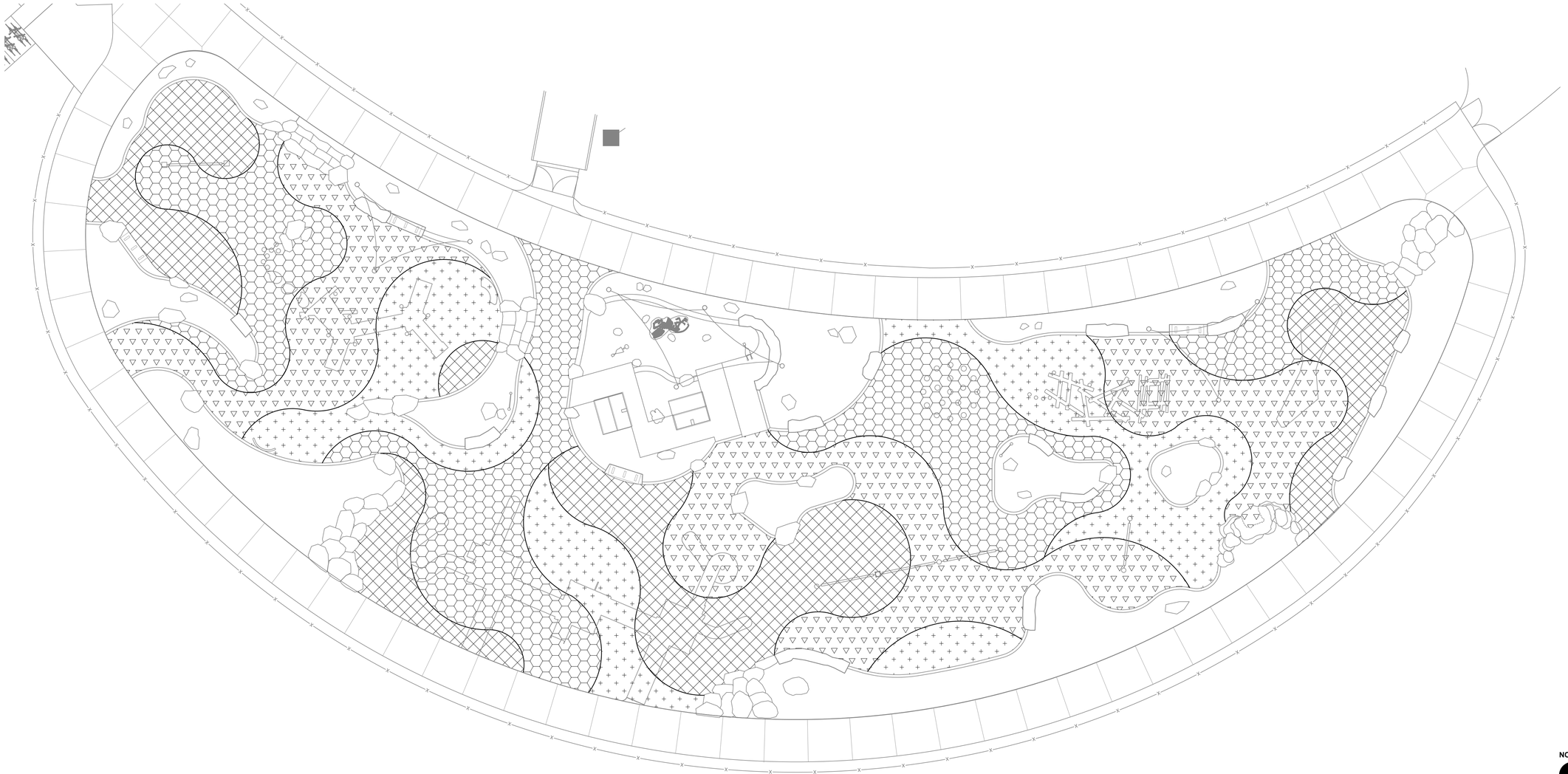
COLOR B

COLOR C

COLOR D

POURED-IN-PLACE NOTES:

1. POURED-IN-PLACE (PIP) INSTALLED BY OTHERS ON TOP OF CONTRACTOR-INSTALLED CONCRETE BASE.
2. CONTRACTOR TO COORDINATE WORK WITH PIP INSTALLER.
3. PIP TO BE A MIX OF COLORS AND PROVIDED ON THIS PLAN. PIP INSTALLER TO COORDINATE FINAL COLOR SELECTION WITH VIRIDIS DESIGN GROUP AND OWNER PRIOR TO INSTALLATION.



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Oakland County, Michigan

SHEET
Poured In Place Layout

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2026-02-04	BID DOCUMENTS

DRAWN BY: AT

DESIGNED BY: MH

APPROVED BY: TB

DATE: 01/29/2026

SCALE: 1" = 10'

10 5 0 5 10 15

NORTH

NFE JOB NO. O557

SHEET NO. L502

CITY FILE NO. E24-008, SECTION #8

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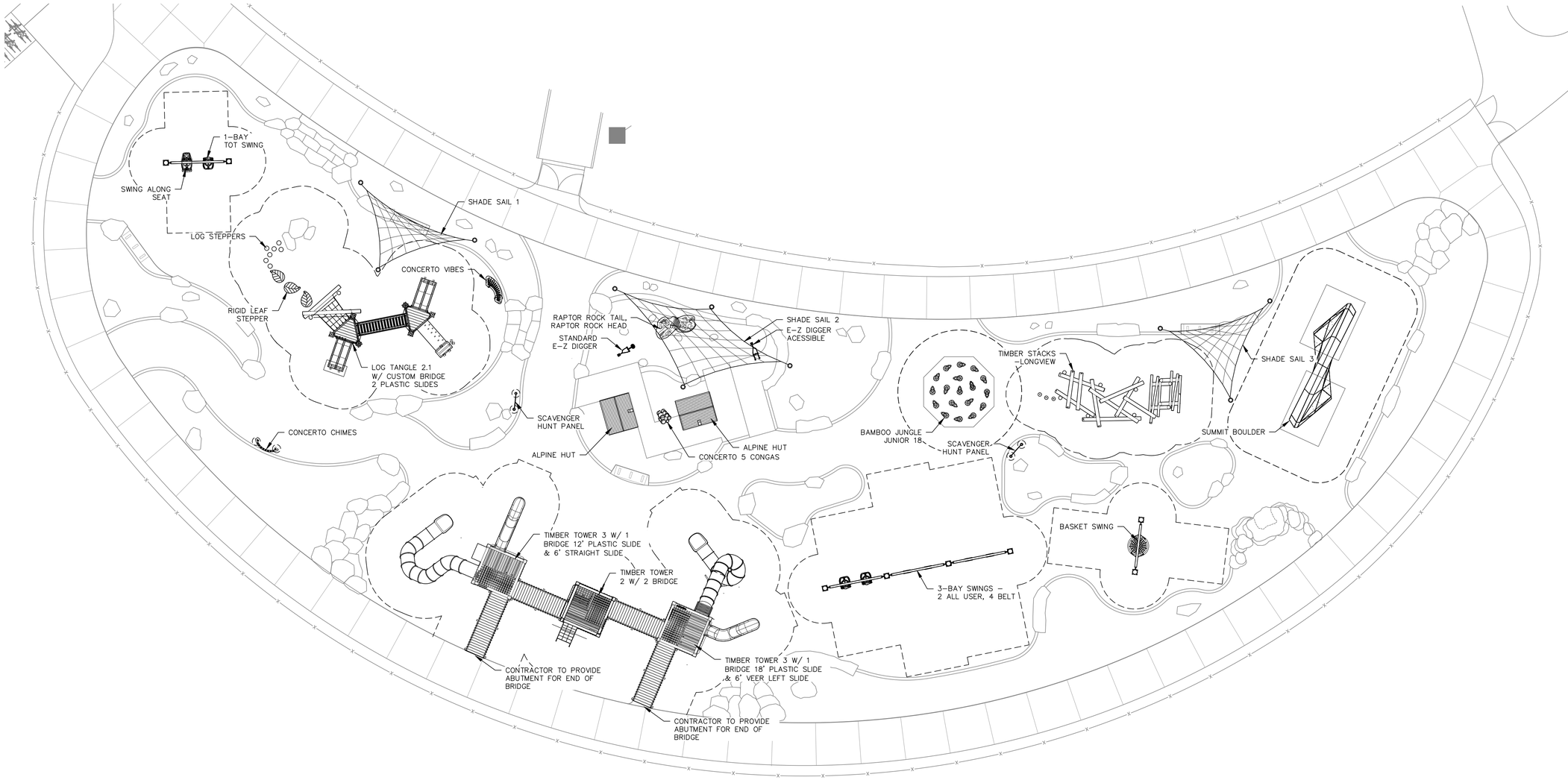
PLAY EQUIPMENT SCHEDULE		
DESCRIPTION	MANUFACTURER	QTY
SAND PLAY		
ALPINE HUT	EARTHSCAPE	2
SCAVENGER HUNT PANEL	PLAYWORLD	2
STANDARD E-Z DIGGER	PLAYWORLD	1
E-Z DIGGER ACCESSIBLE	PLAYWORLD	1
RAPTOR ROCK TAIL	PLAYWORLD	1
RAPTOR ROCK HEAD	PLAYWORLD	1
SHADE SAIL	DUFFER HOLLOW DESIGNS	3
MUSIC		
CONCERTO CHIMES	PLAYWORLD	1
CONCERTO VIBES	PLAYWORLD	1
CONCERTO 5 CONGAS	PLAYWORLD	1
2-5 PLAY		
LOG TANGLE 2.1 W/ CUSTOM BRIDGE 2 PLASTIC SLIDES	EARTHSCAPE	1
1-BAY TOT SWING	EARTHSCAPE	1
SWING ALONG SEAT	PLAYWORLD	1
LOG STEPPERS	EARTHSCAPE	7
RIGID LEAF STEPPERS	EARTHSCAPE	3
5-12 PLAY		
TIMBER STACKS - LONGVIEW	PLAYWORLD	1
SUMMIT BOULDER	TREKFIT	1
BAMBOO JUNGLE JUNIOR 18	TREKFIT	1
3-BAY SWING - 2 ALL USER, 4 BELT	EARTHSCAPE	1
BASKET SWING	EARTHSCAPE	1
TIMBER TOWER 2 W/ 2 BRIDGE	EARTHSCAPE	1
TIMBER TOWER 3 W/ 1 BRIDGE 18' PLASTIC SLIDE & 6' VEER LEFT SLIDE	EARTHSCAPE	1
TIMBER TOWER 3 W/ BRIDGE 12' PLASTIC SLIDE & 6' STRAIGHT SLIDE	EARTHSCAPE	1

PLAY EQUIPMENT NOTES:

1. PLAYGROUND EQUIPMENT TO BE INSTALLED BY OTHERS.
2. CONTRACTOR TO COORDINATE WORK WITH PLAYGROUND INSTALLER.



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City of Rochester Hills,
Oakland County, Michigan

SHEET
Play Equipment Layout

Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026
SCALE: 1" = 10'

NORTH

NFE JOB NO. O557
SHEET NO. L503

CITY FILE NO. E24-008, SECTION #8

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GENERAL NOTES:

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7. CONTRACTORS TO REVIEW ALL SHEETS FOR RELATED INFORMATION.

GENERAL EARTHWORK NOTES:

1. FOR WORK AT OR ABOVE SUBGRADE ELEVATION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE REQUIRED EARTHWORK VOLUMES BASED ON THE GRADING PLAN. IF FILL IS REQUIRED, THE CONTRACTOR SHALL INCLUDE THE REQUIRED VOLUME OF IMPORTED CLASS II ENGINEERED FILL. IF EXCESS SOILS NEED TO BE SPOILED, THE CONTRACTOR SHALL INCLUDE HAULING AND SPOILING SOILS OFF-SITE IN THE BID. NO CONTRACT COST ADJUSTMENTS WILL BE CONSIDERED FOR EARTHWORK REQUIRED TO ACHIEVE THE FINISH GRADES SHOWN.
2. REFER TO THE SPECIFICATIONS FOR FULL EARTHWORK REQUIREMENTS.
3. CONTRACTOR SHALL OBTAIN SOIL EROSION PERMIT(S) WITH THE AUTHORITY HAVING JURISDICTION, INCLUDING SUBMITTING NOTICE OF COVERAGE TO MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY (IF REQUIRED), PRIOR TO DISTURBING ANY SOIL. CONTRACTOR SHALL HAVE TEMPORARY EROSION CONTROLS IN PLACE PRIOR TO STARTING CONSTRUCTION.
4. ALL NEW SIDEWALKS AND PAVEMENTS SHALL BE PLACED AT AN ELEVATION THAT PROVIDES POSITIVE DRAINAGE AND CONSISTENT SLOPES. ENSURE NO LOW SPOTS ARE CREATED. NEW WALKS SHALL MEET EXISTING WALKS FLUSH AT EXISTING GRADE. NOTIFY OWNER AND/OR ENGINEER IF GRADES ON PLAN CANNOT BE MET TO ENSURE POSITIVE DRAINAGE.
5. MATCH ADJACENT PAVEMENT GRADES WHERE NEW PAVEMENT BUTTS TO EXISTING PAVING.
6. CONTRACTOR SHALL BE REQUIRED TO CHECK LINES AND GRADES AGAINST PLANS AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
7. DO NOT BURY ANY DEBRIS, ROOTS, TOPSOIL OR OTHER DELETERIOUS/UNSUITABLE FILL MATERIALS.
8. PLACE SILT FENCE ALONG EDGE OF PAVEMENT OR BACK OF CURB FOLLOWING GRADING OPERATIONS UNTIL SLOPES ARE STABILIZED.

BARRIER - FREE NOTES:

ACCESSIBLE ROUTE(S) MUST COMPLY WITH THE AMERICANS WITH DISABILITIES ACT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

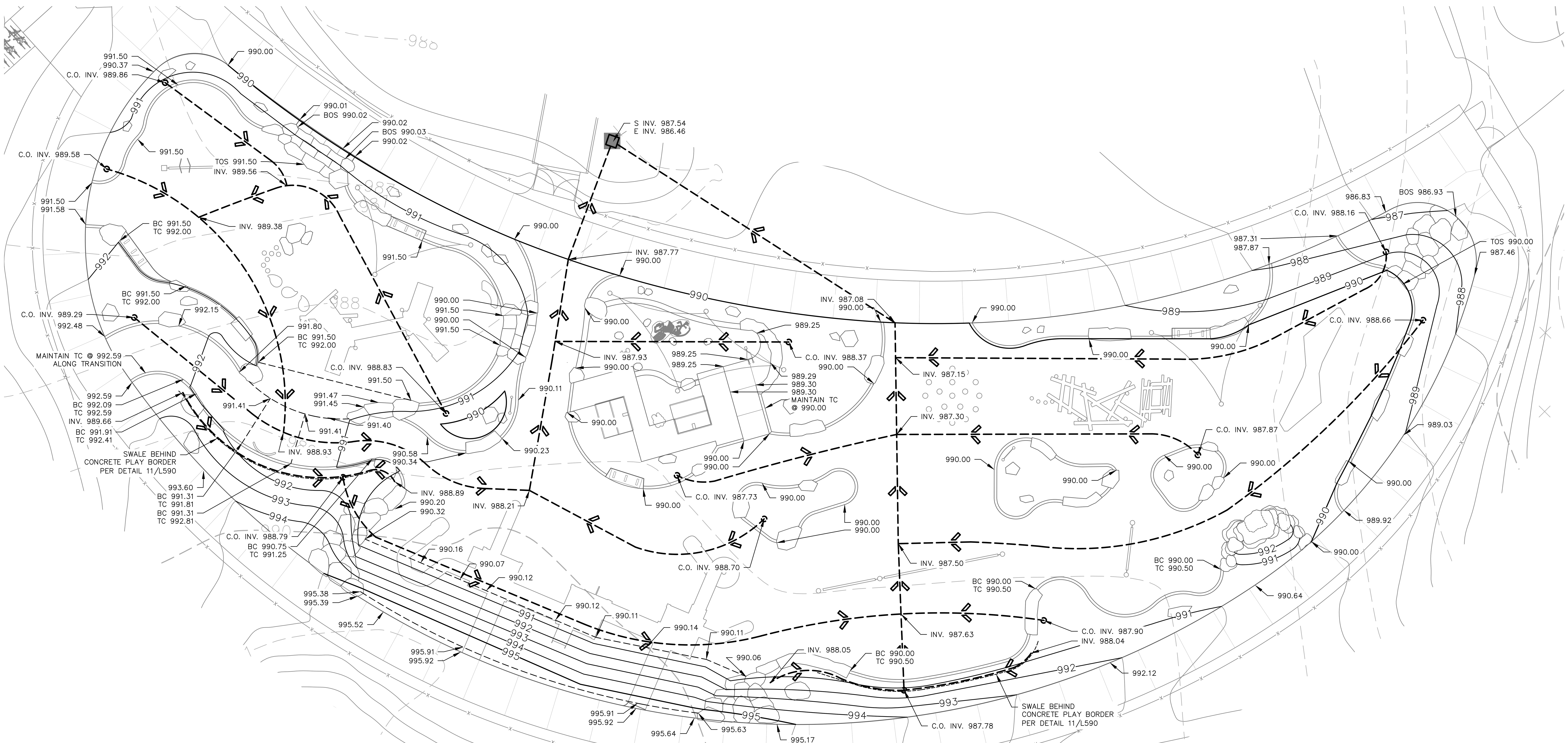
- NO CHANGES IN LEVEL GREATER THAN 1/2" ALONG ACCESSIBLE ROUTE.
- 1:50 (2%) MAXIMUM CROSS-SLOPE ON ACCESSIBLE ROUTE.
- 1:20 (5%) MAXIMUM LONGITUDINAL SLOPE ON ACCESSIBLE ROUTE (EXCEPT WHERE RAMPS ARE PROVIDED).
- 1:12 (8.33%) MAXIMUM LONGITUDINAL SLOPE ON RAMPS.
- 1:50 (2%) MAXIMUM SLOPE (IN ANY DIRECTION) IN B.F. PARKING SPACES AND ACCESS AISLES, LEVEL LANDINGS AT TOPS AND BOTTOMS OF RAMPS AND STAIRS, AND MULTI-DIRECTIONAL PEDESTRIAN SPACES SUCH AS PLAZAS.

LIST OF ABBREVIATIONS:

"BC"	=	BOTTOM OF CURB
"BOS"	=	BOTTOM OF STAIR
"TC"	=	TOP OF CURB GRADE
"TOS"	=	TOP OF STAIR GRADE

PROPOSED FEATURES LEGEND:

SYMBOL	DESCRIPTION	DETAIL
695	EXISTING CONTOURS	
+945.72	EXISTING SPOT ELEVATIONS	
710 / 711	PROPOSED CONTOURS	
945.25	PROPOSED SPOT ELEVATIONS (REFER TO ABBREVIATIONS FOR MORE INFORMATION)	
– – – – – – –	GRADE BREAK	



NORTH

CITY FILE NO. E24-008, SECTION #8

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SHEET
Playground Grading and Utility Plan

Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT

DESIGNED BY: MH

APPROVED BY: TB

DATE: 01/29/2026

SCALE: 1" = 10'

NFE JOB NO. O557

SHEET NO. L510

G:\2511 Nowicki Park\Cadd\Sheets\L510 - Playground Grading & Utility Plan.dwg
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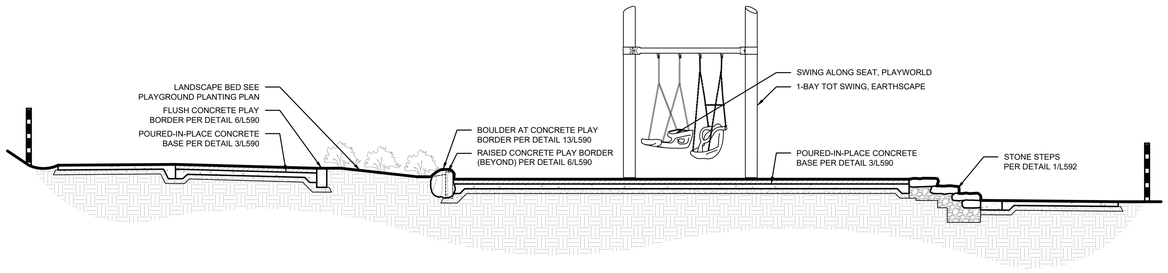
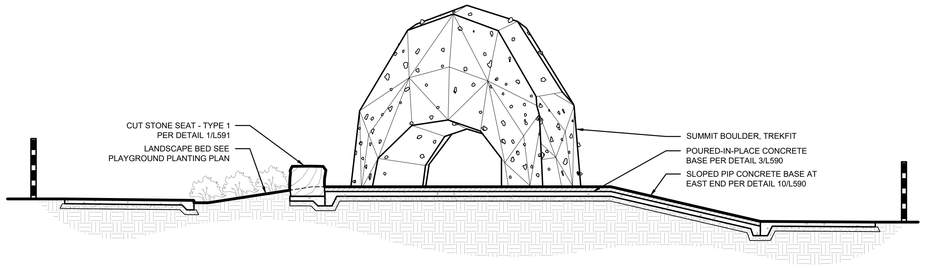


SECTION A

SCALE: 1"= 5'



SECTION D

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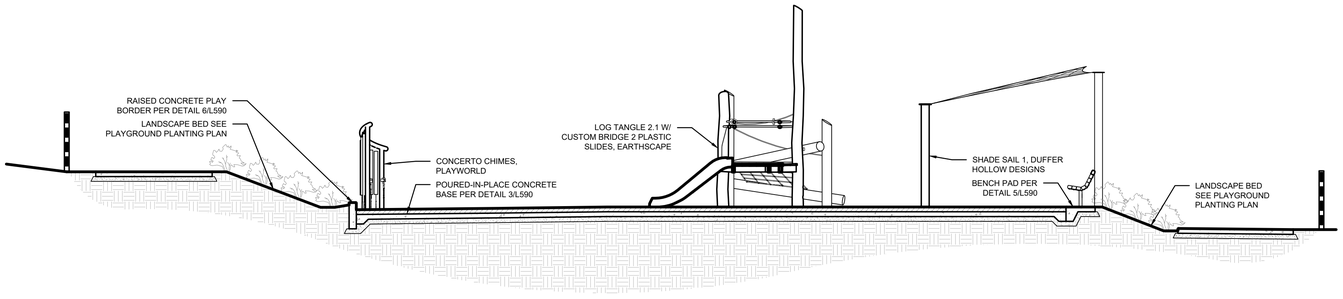
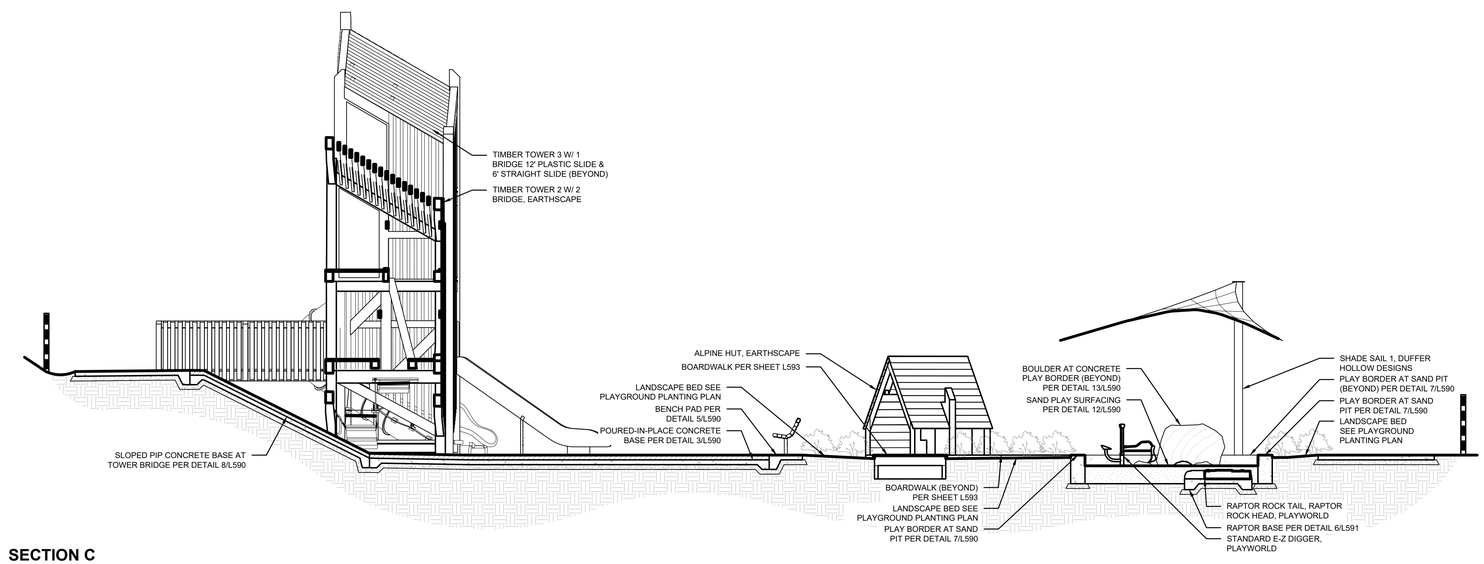


SECTION B

SCALE: 1"= 5'

SECTION E

SCALE: 1"= 5'



SECTION C

SCALE: 1"= 5'

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Oakland County, Michigan

SHEET
Playground Sections

Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026

CITY FILE NO. E24-008, SECTION #8

NFE JOB NO. O557
SHEET NO. L520

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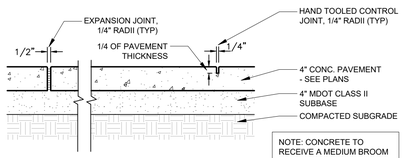
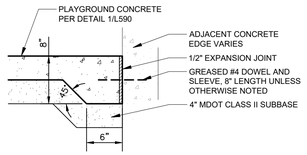


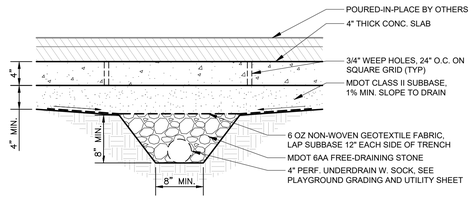
1 Playground Concrete

Not to Scale



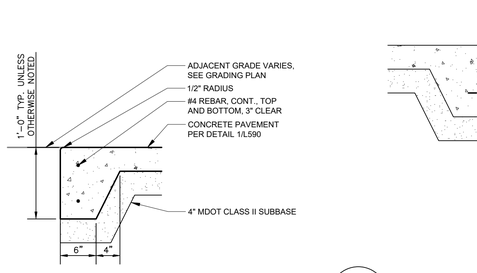
2 Thickened Edge

Not to Scale



3 Poured-In-Place Concrete Base

Not to Scale



4 Turned Down Edge

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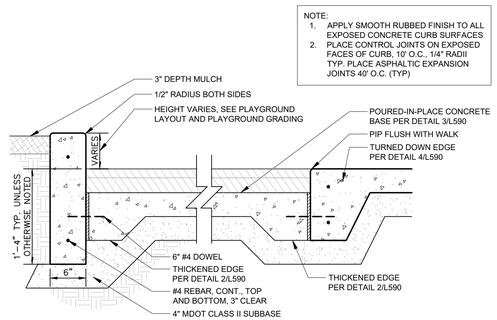
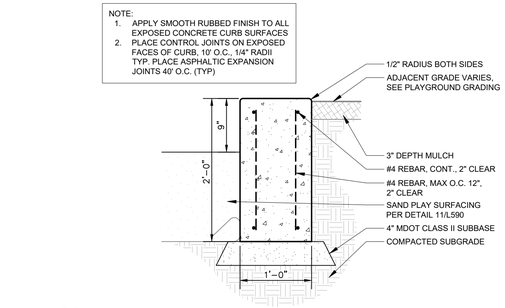


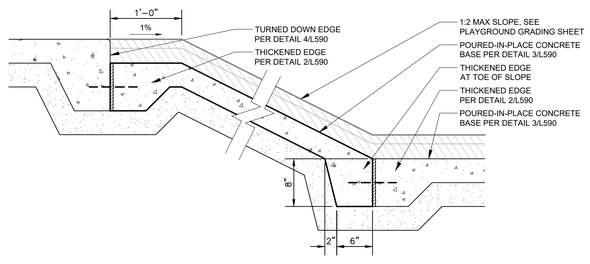
6 Concrete Play Border

Not to Scale



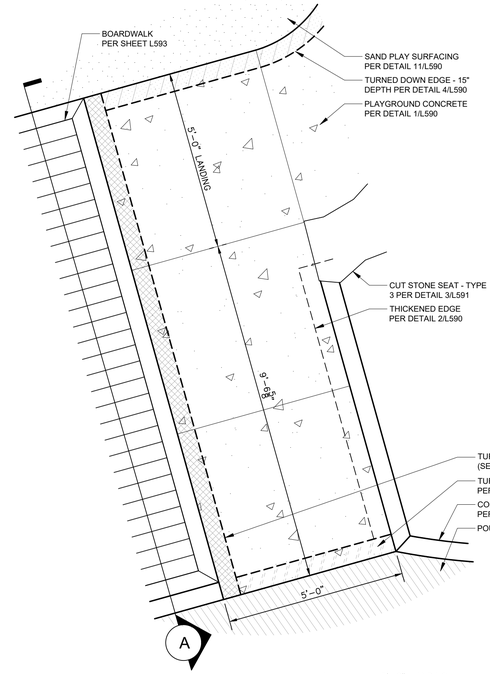
7 Play Border at Sand Pit

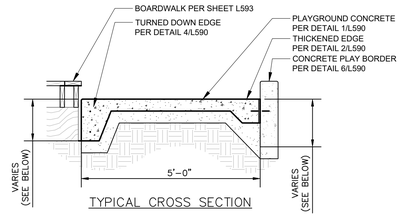
Not to Scale

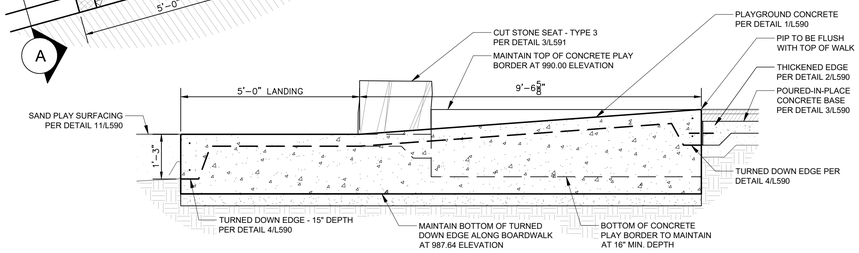


8 Sloped PIP Concrete Base at Tower Bridge

Not to Scale

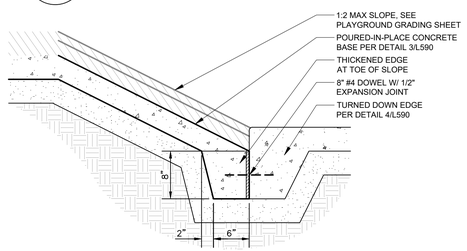






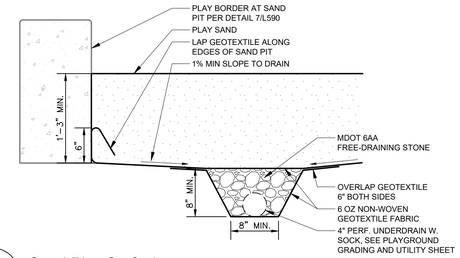
9 Concrete Ramp to Sand Play

Not to Scale



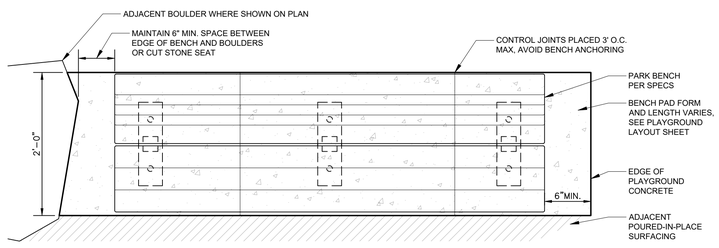
10 Sloped PIP Concrete Base at East End

Not to Scale



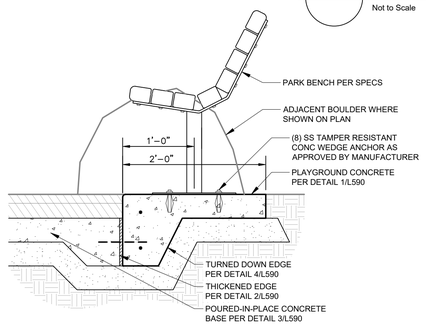
12 Sand Play Surfacing

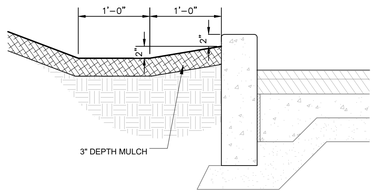
Not to Scale



5 Bench Pad

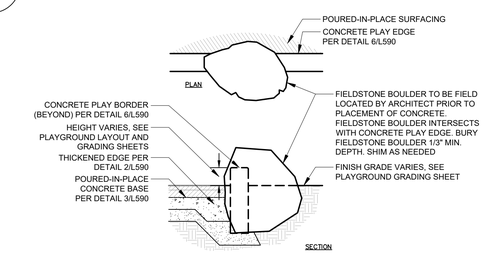
Not to Scale





11 Swale Behind Concrete Play Border

Not to Scale



13 Boulder at Concrete Play Border

Not to Scale

CITY FILE NO. E24-008, SECTION #8

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VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
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SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4 of Section 8 T.3N. , R.11E. City of Rochester Hills, Oakland County, Michigan

SHEET
Details

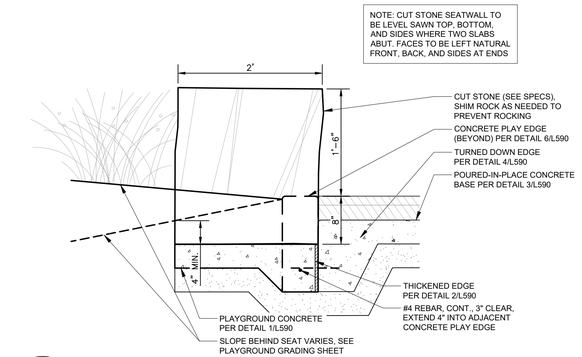
Know what's below. Call before you dig.

REVISIONS

DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

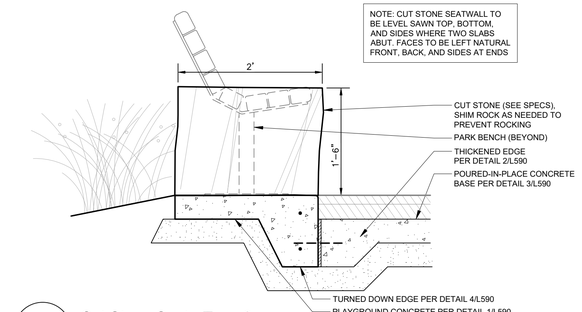
DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026

NFE JOB NO. O557
SHEET NO. L590



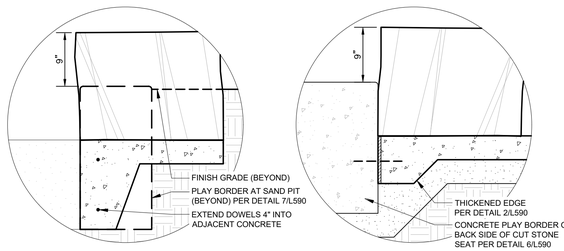
1 Cut Stone Seat - Type 1

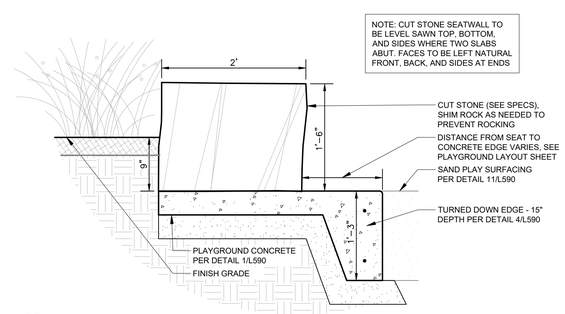
Not to Scale



2 Cut Stone Seat - Type 2

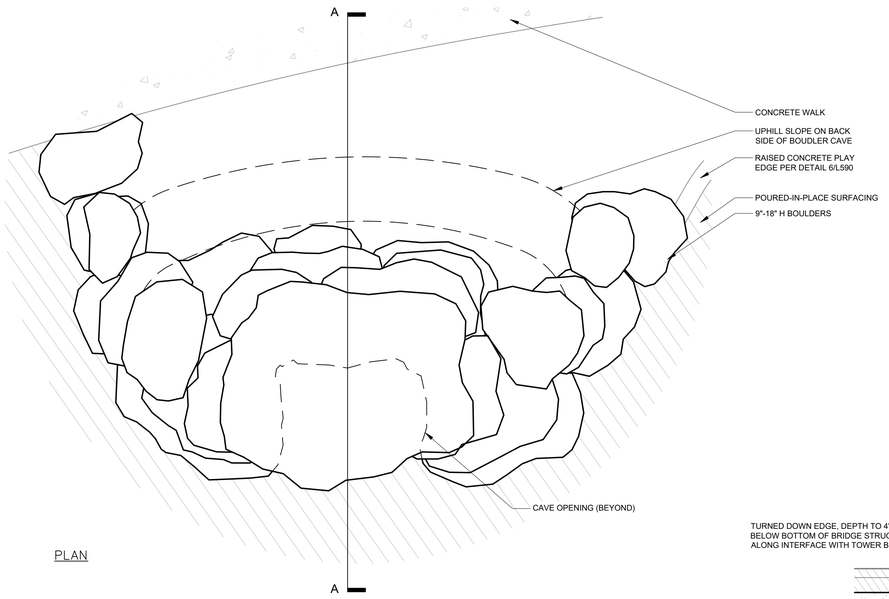
Not to Scale



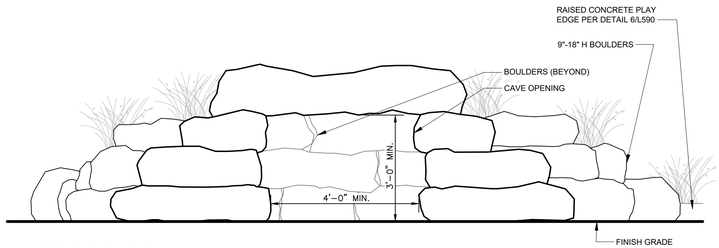


3 Cut Stone Seat - Type 3

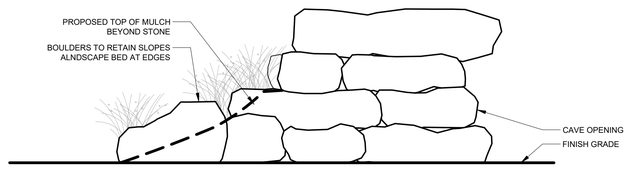
Not to Scale



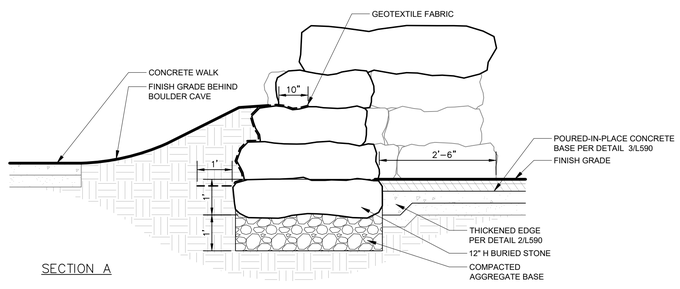
PLAN



FRONT ELEVATION



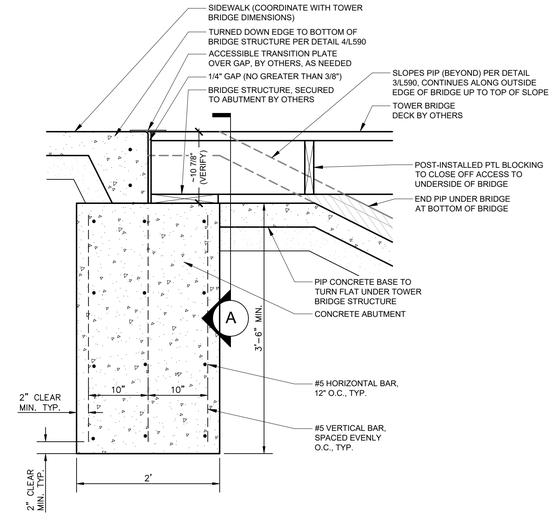
SIDE ELEVATION

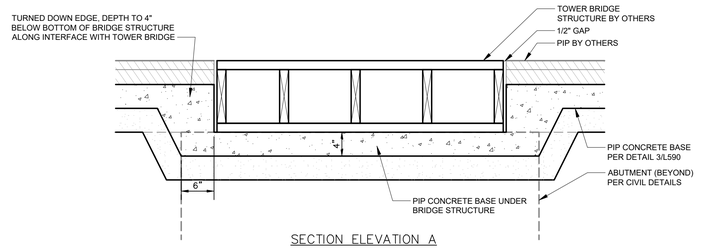


SECTION A

4 Boulder Cave

Not to Scale

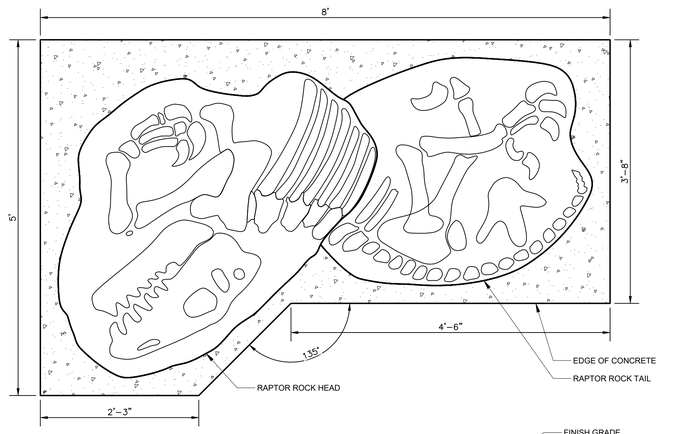


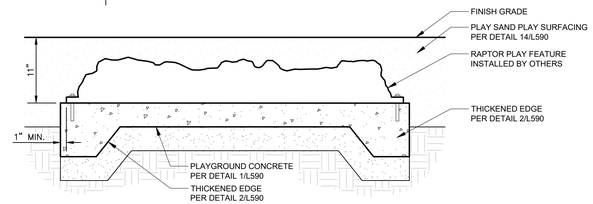


SECTION ELEVATION A

6 Interface at Tower Bridge and Sidewalk

Not to Scale





6 Raptor Base

Not to Scale

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VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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City of Rochester Hills,
Oakland County, Michigan

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APPROVED BY:
TB

DATE:
01/29/2026

NFE JOB NO. **O557**

SHEET NO. L591

CITY FILE NO. E24-008, SECTION #8

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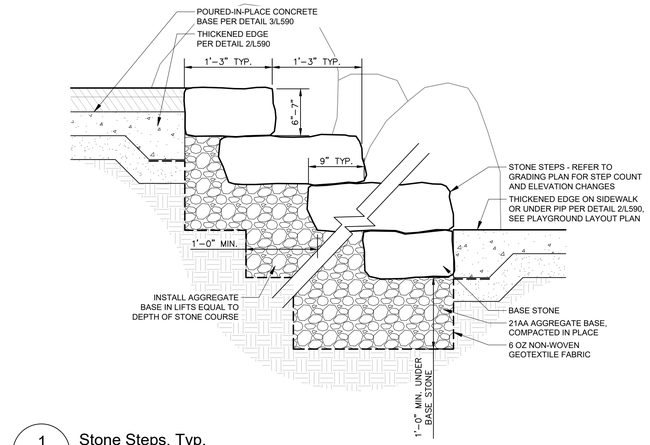
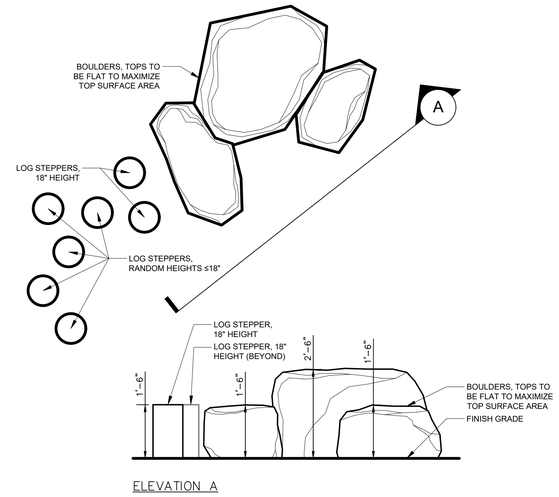


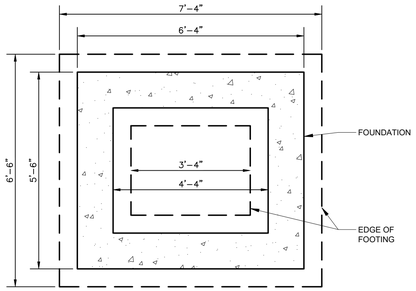
1 Stone Steps, Typ.

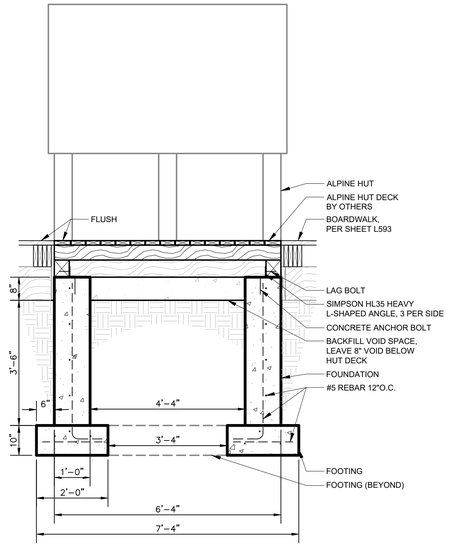
Not to Scale



5 Boulder Pile in Tot Playzone

Not to Scale





8 Play Hut Foundation

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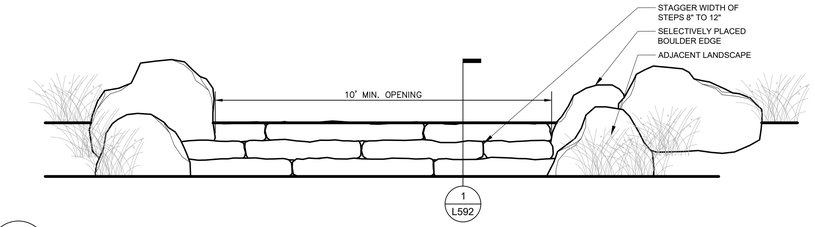
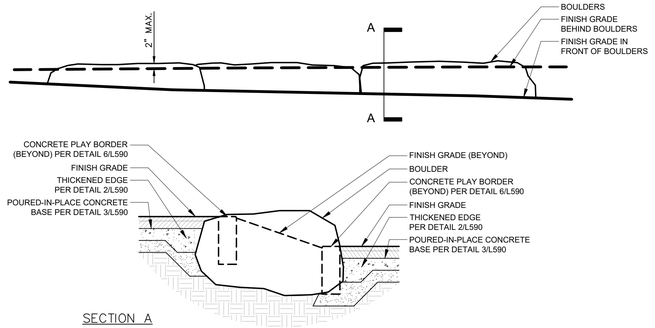


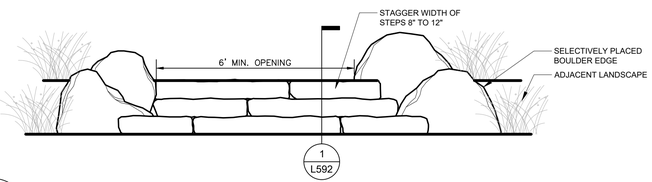
2 West Stone Steps Elevation

Not to Scale



6 Boulders at PIP Grade

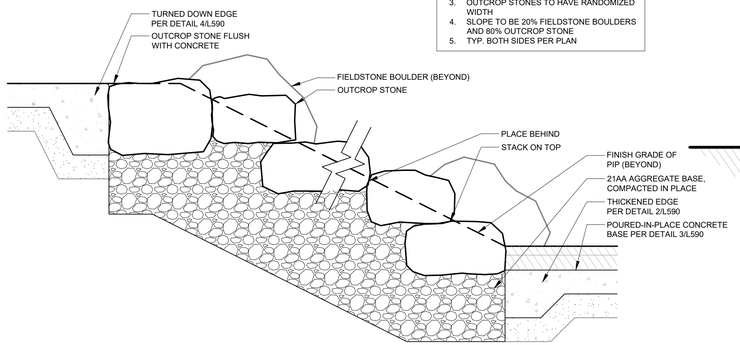
Not to Scale

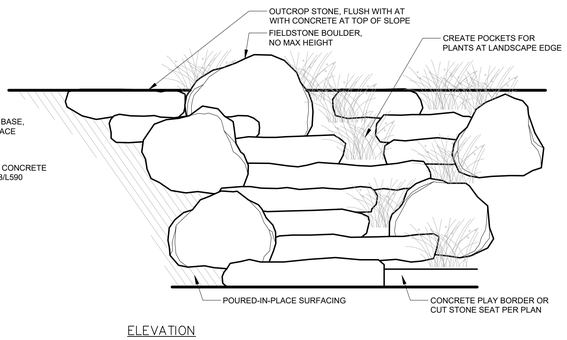


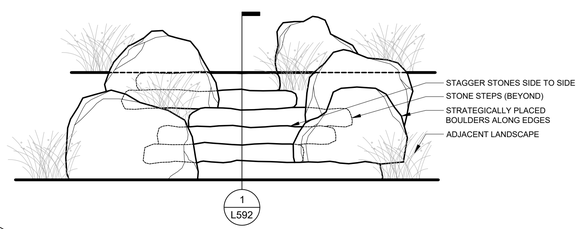
3 Central Stone Steps Elevation

Not to Scale

NOTES:
1. CONTRACTOR TO RANDOMIZE PLACEMENT OF OUTCROP STONES VIA STACKING AND PLACING BEHIND WHERE APPROPRIATE TO CREATE A CLIMBABLE PATH
2. OUTCROP STONES TO HAVE RANDOM HEIGHT BETWEEN 8"-18"
3. OUTCROP STONES TO HAVE RANDOMIZED WIDTH
4. SLOPE TO BE 20% FIELDSTONE BOULDERS AND 80% OUTCROP STONE
5. TYP. BOTH SIDES PER PLAN







4 East Stone Steps Elevation

Not to Scale

7 Outcrop Scramble

Not to Scale

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VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

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APPROVED BY: TB
DATE: 01/29/2026

NFE JOB NO. O557
SHEET NO. L592

CITY FILE NO. E24-008, SECTION #8

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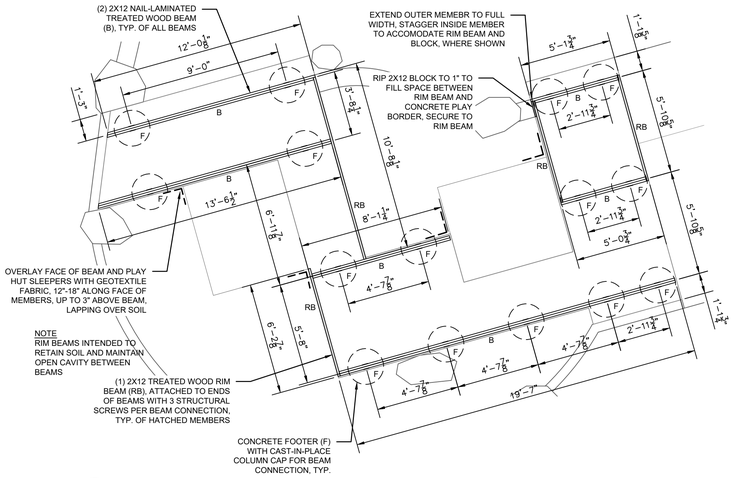
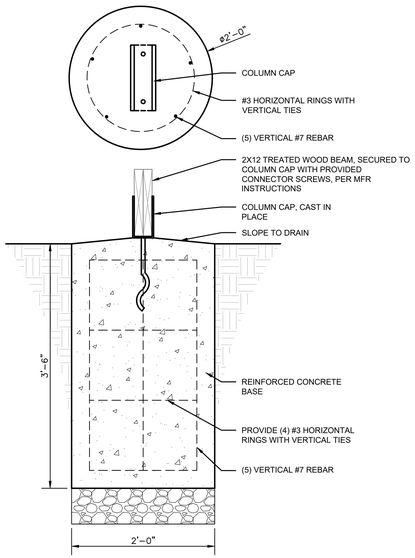


2 DECK BEAM AND FOOTING PLAN

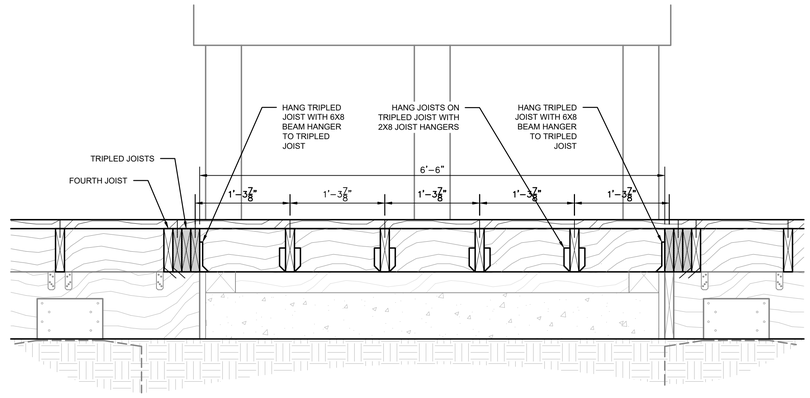
Not to Scale

FASTENER SCHEDULE	
FASTENER TYPE	SPECIFICATION
STRUCTURAL SCREWS	5/16" X 4" GRK RSS STRUCTURAL SCREWS
DECK SCREWS	3" EPOXY COATED EXTERIOR DECK SCREWS, BLACK
NAILS	3 1/2" HOT DIPPED GALVANIZED 16d FRAMING NAILS
HURRICANE TIES	SIMPSON H2.5A 18 GAUGE GALVANIZED HURRICANE TIES
2X8 JOIST HANGER	STANDARD DUTY GALVANIZED JOIST HANGER FOR 2X8 JOIST
6X8 BEAM HANGER	HEAVY DUTY GALVANIZED BEAM HANGER FOR 6X8 BEAM
COLUMN CAP	SIMPSON CCQM COLUMN CAP WITH PROVIDED HARDWARE



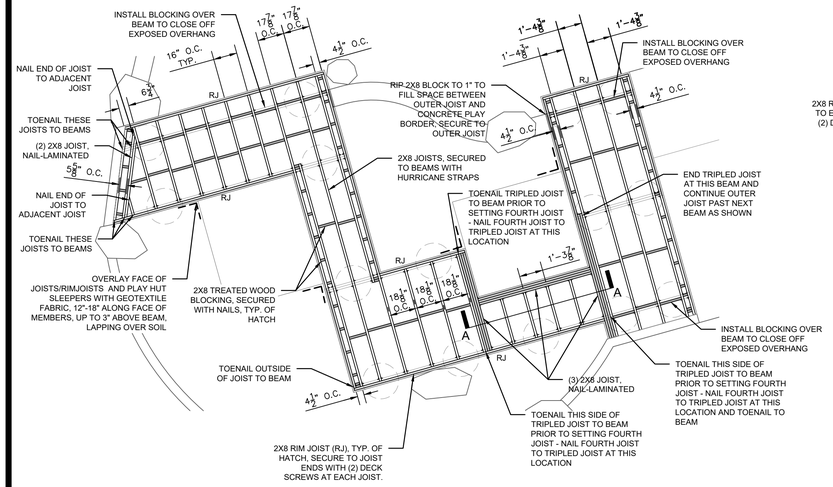
4 DECK FOOTER

Not to Scale



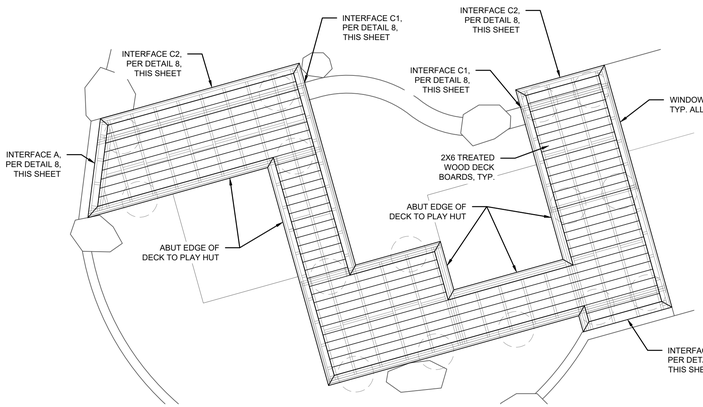
7 DECK SECTION A - A

Not to Scale



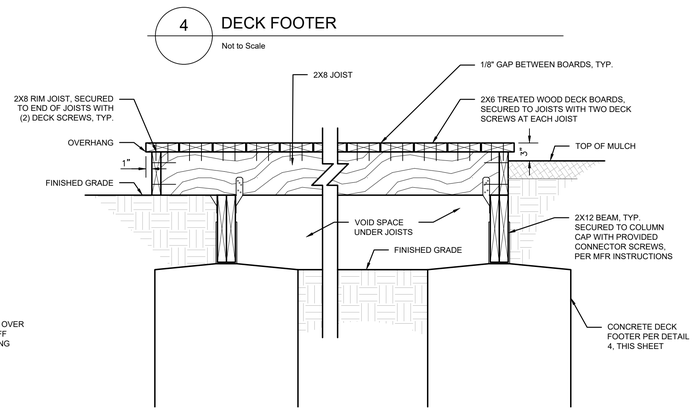
2 DECK JOIST PLAN

Not to Scale



3 DECK PLAN

Not to Scale



5 TYPICAL DECK SECTION THROUGH BEAMS

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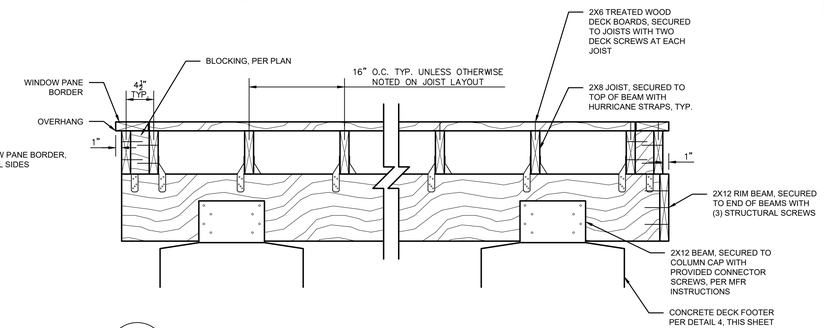
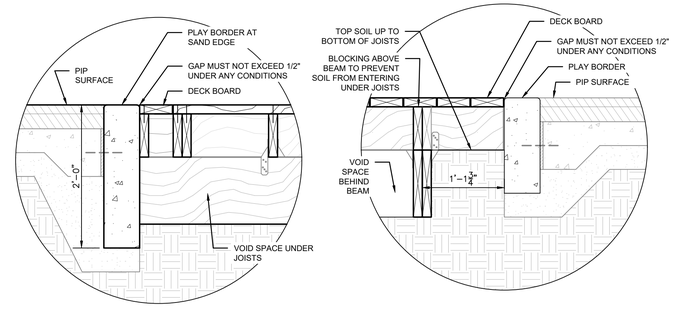


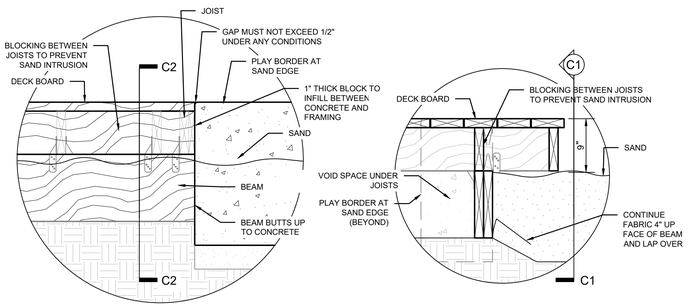
6 TYPICAL DECK SECTION THROUGH JOISTS

Not to Scale



INTERFACE A

INTERFACE B



INTERFACE C1

INTERFACE C2

8 INTERFACE CONDITIONS

Not to Scale

ROCHESTER HILLS MICHIGAN

VIRIDIS Design Group
1430 Monroe Ave NW, Suite 210
Grand Rapids, MI 49505
(616) 375-0945

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4 of Section 8 T.3N. , R.11E. City of Rochester Hills, Oakland County, Michigan

SHEET
Details

Know what's below. Call before you dig.

REVISIONS

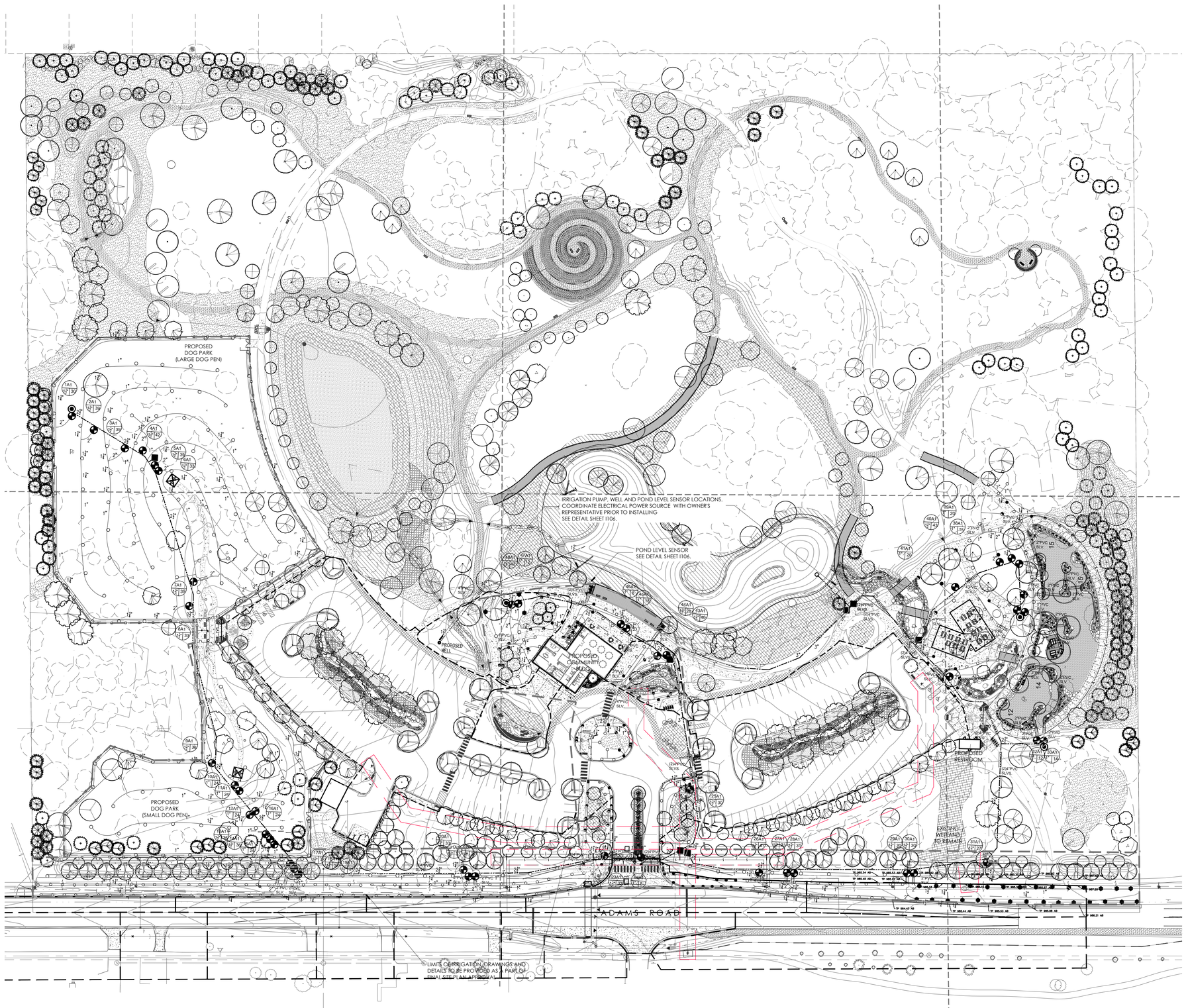
DATE	ISSUED/REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: AT
DESIGNED BY: MH
APPROVED BY: TB
DATE: 01/29/2026

CITY FILE NO. E24-008, SECTION #8

NFE JOB NO. O557
SHEET NO. L593

G:\2511 Nowicki Park\Cadd\Sheets\L593 - Details.dwg
2/6/2026 3:03:37 PM



LOCATION KEY

N.T.S.

IRRIGATION NOTE:

AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WILL BE PROVIDED FOR AREAS IN THE DOG PARK, ALONG THE ADAMS ROAD FRONTAGE AND AROUND THE COMMUNITY BUILDING. THE SOURCE FOR IRRIGATION WILL BE THE CONSTRUCTED POND. THE SYSTEM SHALL OPERATE IN COMPLIANCE WITH LOCAL STANDARDS AND SEASONAL RESTRICTIONS. SEPARATE ZONES SHALL BE PROVIDED FORLAWN AREAS AND PLANTING BEDS. IRRIGATION SHALL BE DESIGNED IN THE THE MOST EFFICIENT MANNER NECESSARY TO FULLY IRRIGATE DESIGNATED AREAS.

CITY FILE NO. E24-008, SECTION #8

ROCHESTER HILLS MICHIGAN

LIQUID ASSETS LLC
IRRIGATION DESIGN & WATER MANAGEMENT
2428 Chippewa Trail
Hastings, MI 49058
T (248) 789-0330
Email: abarnes@lqdassets.org
www.lqdassets.org

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of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Overall Irrigation Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
AJB
DESIGNED BY:
AJB
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 60'
60 30 0 30 60 90

NFE JOB NO. O557
SHEET NO. I101

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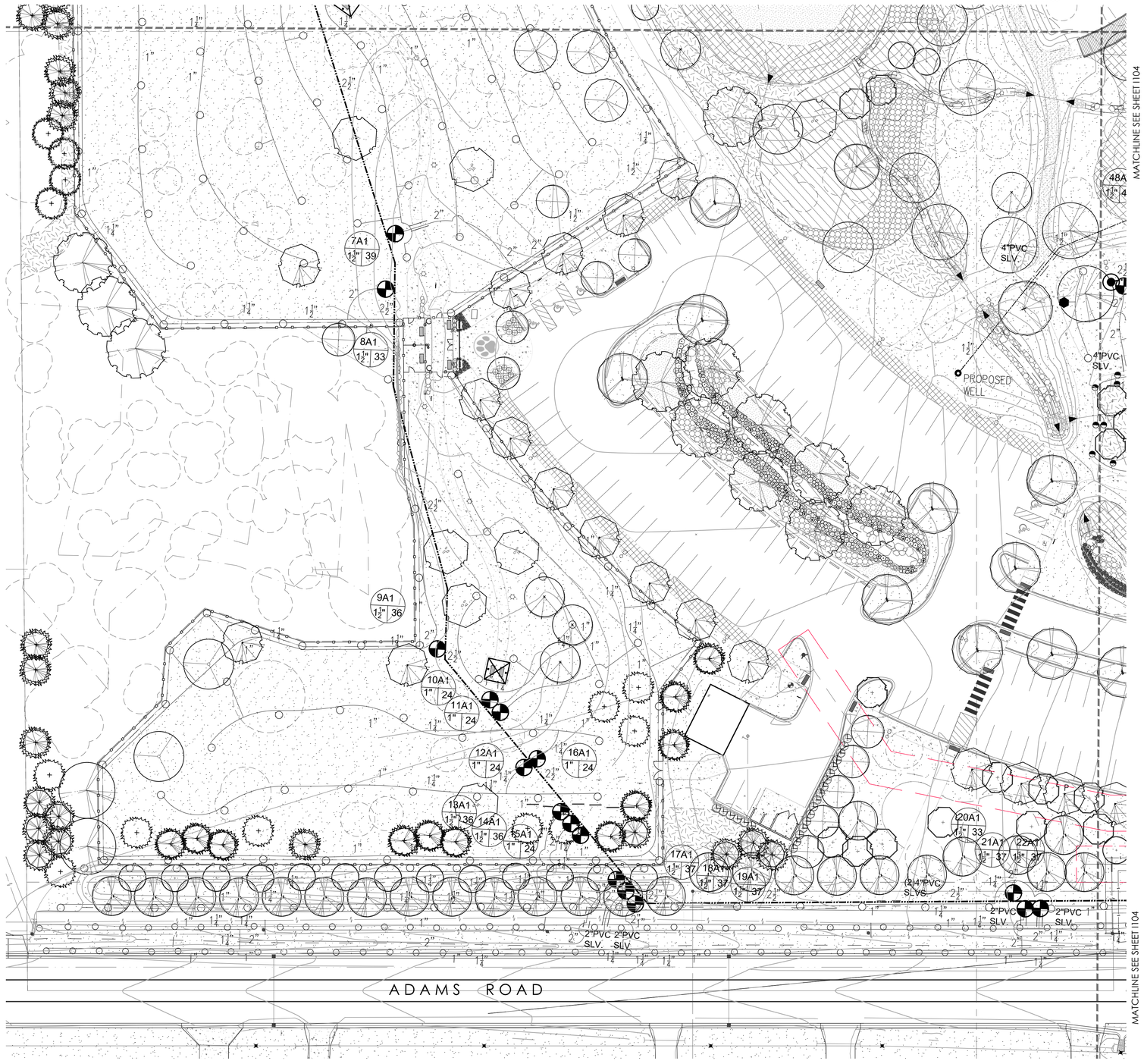
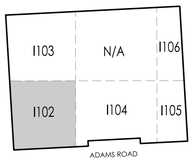


Controller and Station Number
Gallons Per Minute
Valve Size



LOCATION KEY

N.T.S.

IRRIGATION LEGEND:

HUNTER	
FIXED SPRAY POP-UP (12")	PROS-12-PRS40
10 Series	
12 Series	
15 Series	
Strip Series	
FIXED SPRAY POP-UP (12") w/ 2' radius nozzle	PROS-12-PRS40
2' Radius Nozzle	
4' Radius Nozzle	
FIXED SPRAY POP-UP (4")	PROS-04-PRS40
10 Series	
12 Series	
15 Series	
Strip Series	
GEAR DRIVEN ROTARY POP UP MEDIUM RANGE	Hunter PGP ULTRA
1.0 GPM	
2.0 GPM	
4.0 GPM	
GEAR DRIVEN ROTARY POP UP SHORT RANGE w/ check	Hunter PGJ
1.0 GPM	
2.0GPM	
4.0 GPM	
ELECTRIC VALVE W FILTER SENTRY w/ EZDS decoders	ICV-FS Series
QUICK COUPLER VALVE	HQ44-LRC
ELECTRIC CONTROLLER HCCM w/ EZDS decoders (AT PROPOSED PUMP LOCATION)	
PS PROPOSED IRRIGATION PUMP STATION SEE SHEET I106	
ISOLATION GATE VALVE (LINE SIZE)	
RAIN SENSOR DEVICE (Install at all controller locations)	RAIN CLIK (wireless)
PVC MAINLINE, SDR 26, BE,	
POLYETHYLENE PIPE, 100#, NSF APPROVED, Size as shown	
PVC SLEEVES - SDR 26 - Size as shown	

PUMP REQUIREMENTS: 75 GPM @ 80 PSI
(CONTRACTOR TO VERIFY PSI AVAILABLE ON SITE PRIOR TO SYSTEM INSTALLATION)

NOTES:

1. Refer to the specifications for installation details and descriptions, as well as, construction methods which will be accepted.
2. All work shall be in compliance with all local, state, and federal codes and ordinances.
3. All electrical connections shall be made using 3m DBYR-6 splice kits.
4. All control wiring downstream of the controller shall be HUNTER ID WIRE dual strand copper ID Wire ID1 Red UL approved for direct bury.
5. All lateral PVC fitting clamps shall be stainless steel worm gear type clamps. Pipes 1-1/2" or larger shall be double clamped.
6. Pipe routing is schematic. All heads are to be field adjusted to within 2' to take into consideration any obstruction. Final head placements are subject to the landscape architects approval.
7. All sprinkler heads shall be mounted on 2 elbow pvc marlex swing joints as specified.
8. Contractor to verify existing controller location with owner's authorized representative prior to installation.
9. All pipe not sized downstream of control valve is 1".
10. All sleeves shall be PVC SDR 26 (see specifications).
11. Irrigation contractor's point of connection to water source shall be as noted on this sheet.
12. Irrigation contractor shall be responsible for determining and maintaining the irrigation schedule during the project construction and throughout the length of the warranty period.
13. The irrigation schedule shall deliver 1" of precipitation per week +/- natural rainfall quantities for turf grass.
14. Landscape material shall receive adjusted amounts of precipitation to maintain proper plant health.
15. Landscape and turf grass shall be irrigated separately.
16. Rotors and spray zones may not be combined to operate at the same time.
17. When specified, follow manufacturer's product recommendations concerning proper installation of water flow sensors. Allow proper straight pipe distances before and after flow sensors.
18. Follow manufacturers requirements for surge protection along decoder control system .

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46777 WOODWARD AVE.
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SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Enlarged Irrigation Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY: AJB
DESIGNED BY: AJB
APPROVED BY: G. Ostrowski
DATE: 08/05/2025
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. I102

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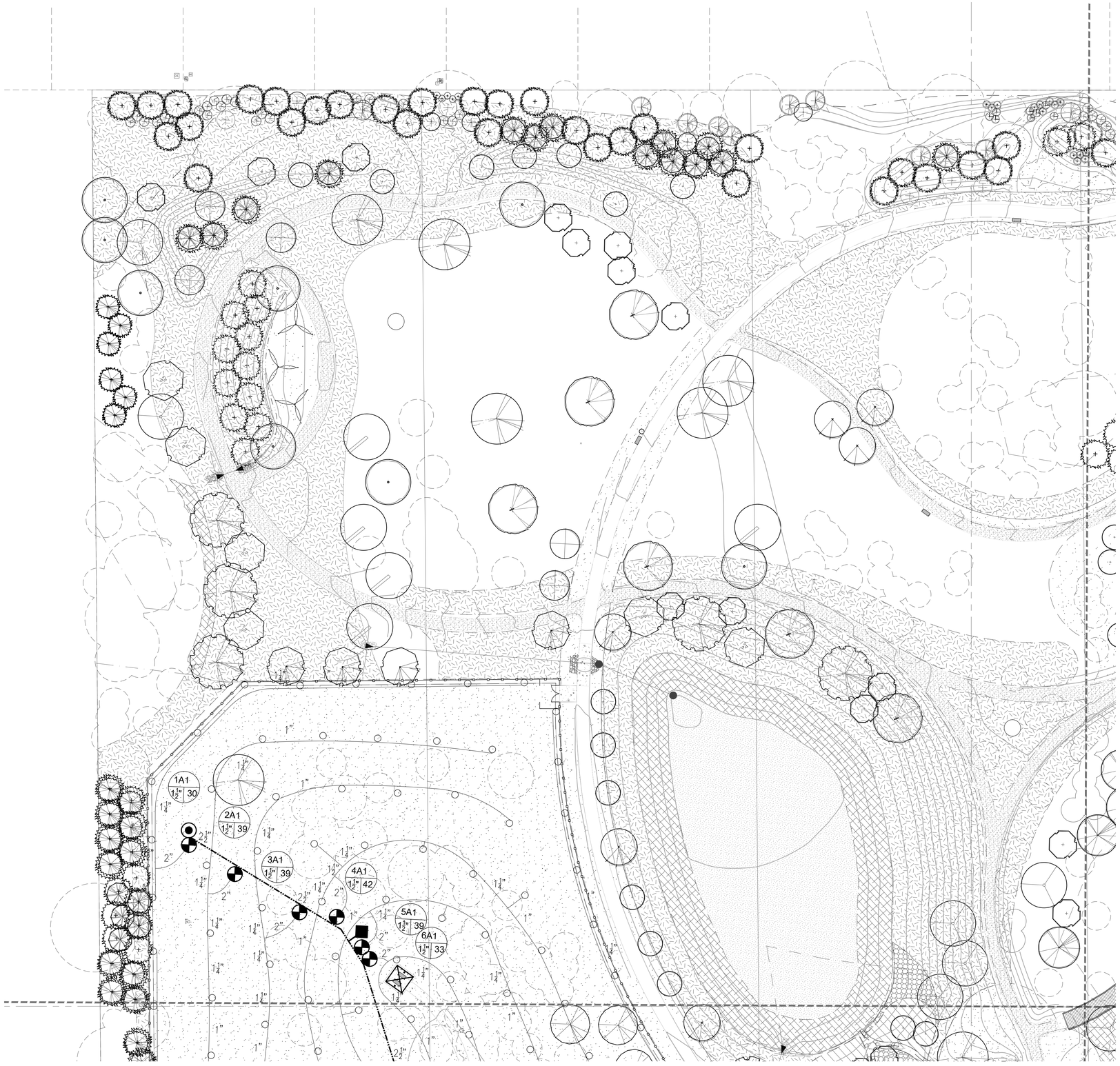
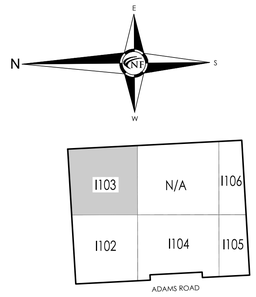


MATCHLINE SEE SHEET I102

MATCHLINE SEE SHEET I102

MATCHLINE SEE SHEET I104



LOCATION KEY

N.T.S.

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811 Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY:
AJB

DESIGNED BY:
AJB

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. I103

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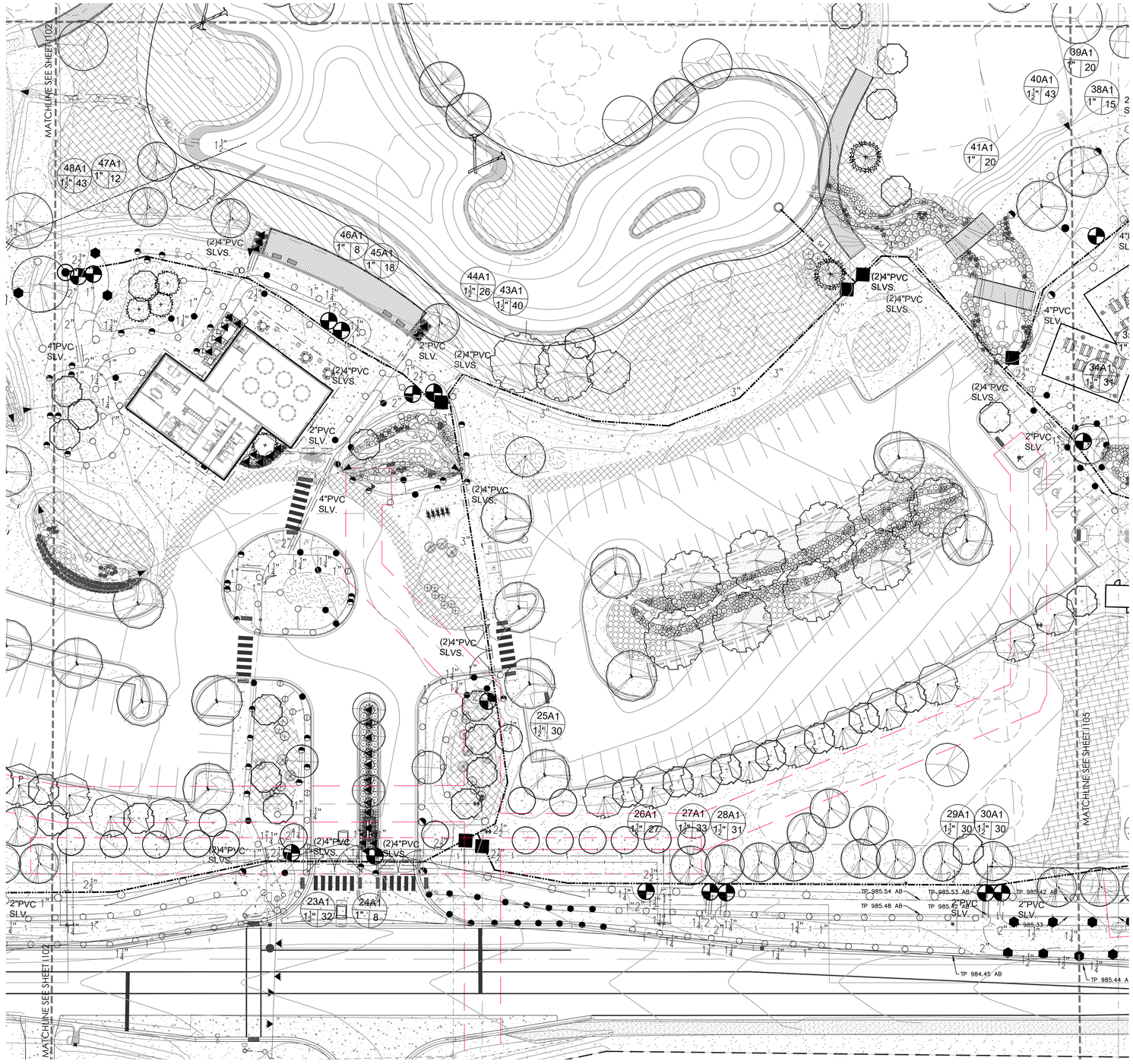

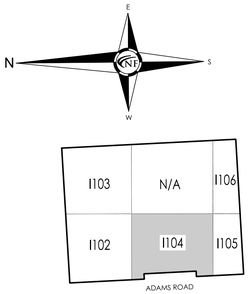

LOCATION KEY

N.T.S.

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SHEET
Enlarged Irrigation Plan

811 Know what's below Call before you dig.

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2026/02/04 BID DOCUMENTS

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AJB

DESIGNED BY:
AJB

APPROVED BY:
G. Ostrowski

DATE:
08/05/2025

SCALE: 1" = 30'
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NFE JOB NO. O557
SHEET NO. I104

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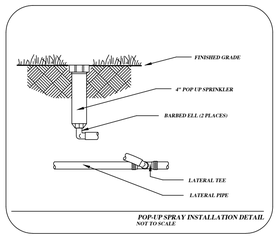
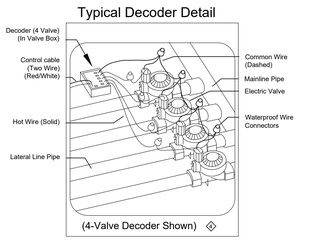
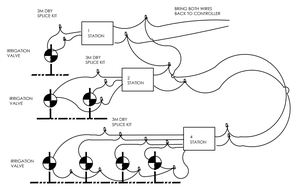
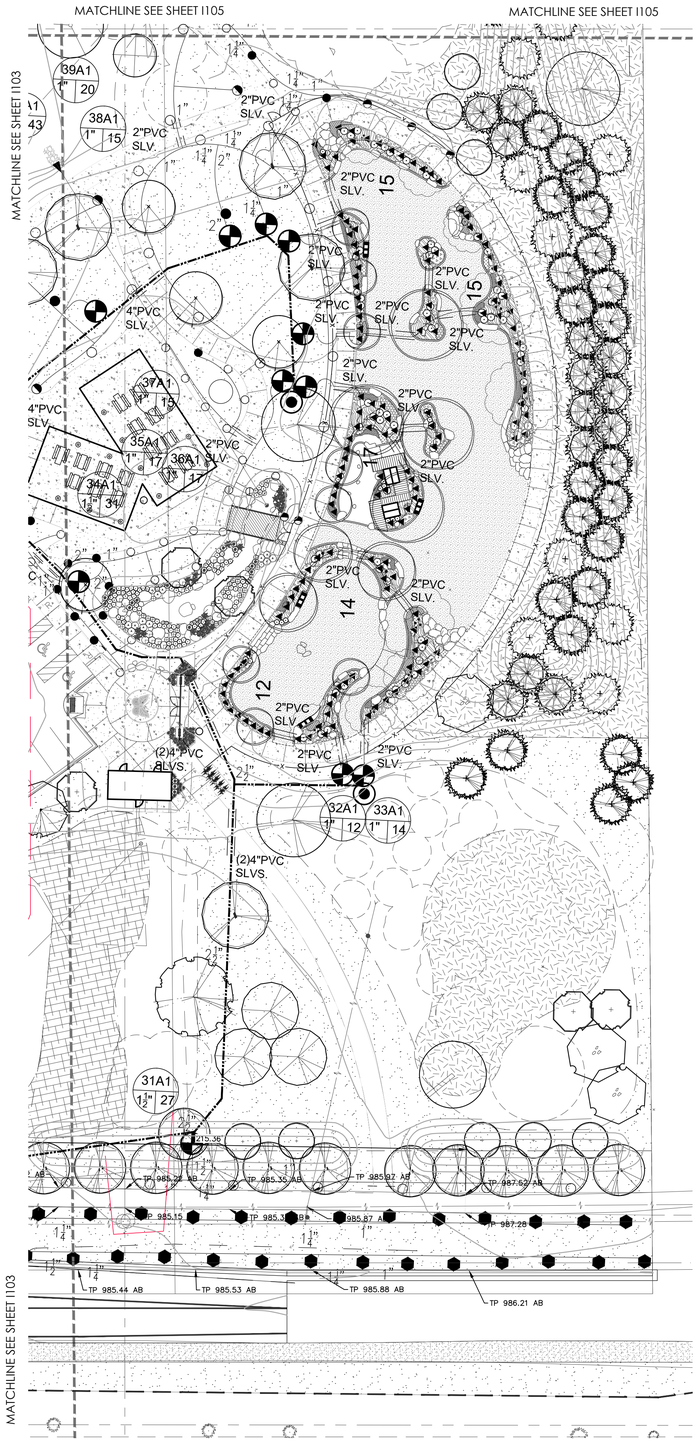


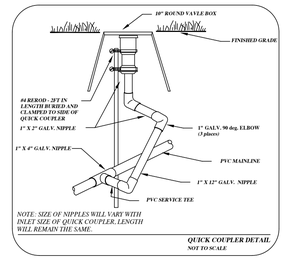
POP-UP SPRAY INSTALLATION DETAIL
NOT TO SCALE





SAMPLE DECODER WIRING DIAGRAM





QUICK COUPLER DETAIL
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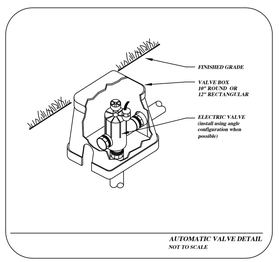

AUTOMATIC VALVE DETAIL
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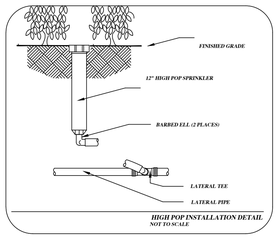

HIGH POP INSTALLATION DETAIL
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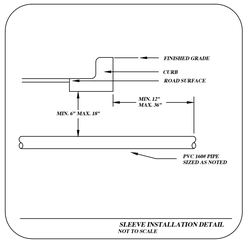
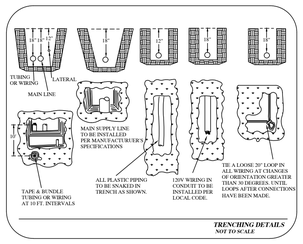
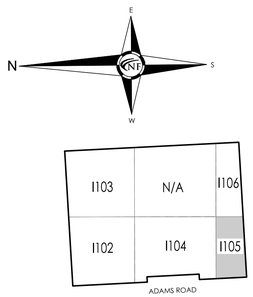


SLEEVE INSTALLATION DETAIL
NOT TO SCALE

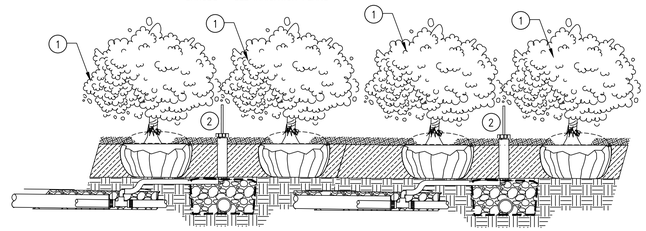


TRENCHING DETAILS
NOT TO SCALE



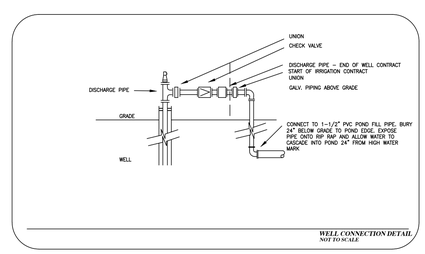
LOCATION KEY
N.T.S.

1. SHRUBS – SEE PLANTING PLAN
2. IRRIGATION HEAD – EVERY TWO SHRUBS – SEE IRRIGATION PLANS



LANDSCA\PE IRRIGATION DETAIL

PIPE SIZE CHART
0–12 GPM = 1" DIAMETER POLYETHYLENE PIPE
12–24 GPM = 1 ¼" DIAMETER POLYETHYLENE PIPE
24–30 GPM = 1 1/2" DIAMETER POLYETHYLENE PIPE
30–60 GPM = 2" DIAMETER POLYETHYLENE PIPE



WELL CONNECTION DETAIL
NOT TO SCALE

WELL RECOMMENDATION:

1. Required 24 gallon per minute capacity
2. Provide Goulds or equal well pump, 240v, single phase.
3. Connect to nearest j–box and wire to nearest circuit panel.
4. Pump to start/stop via 24 volt relay connected to Levelor Senor. See detail this sheet.
5. Use a 5" SDR17 well casing
6. Throttling valve – 50 gal. with 20 lbs back pressure.
7. Include bleed back assembly and screen– stainless steel, telescope type
8. Provide 1–1/2" SDR26 PVC fill pipe back to pond buried 24" deep and 2ft below normal pond water level. Expose end of fill line above grade at rip rap,
9. Submit full product information and shop drawings for review. All work to be constructed per the local Health Dept. and all governing agencies.

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DRAWN BY:
AJB
DESIGNED BY:
AJB
APPROVED BY:
G. Ostrowski
DATE:
08/05/2025
SCALE: 1" = 30'
30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. I105

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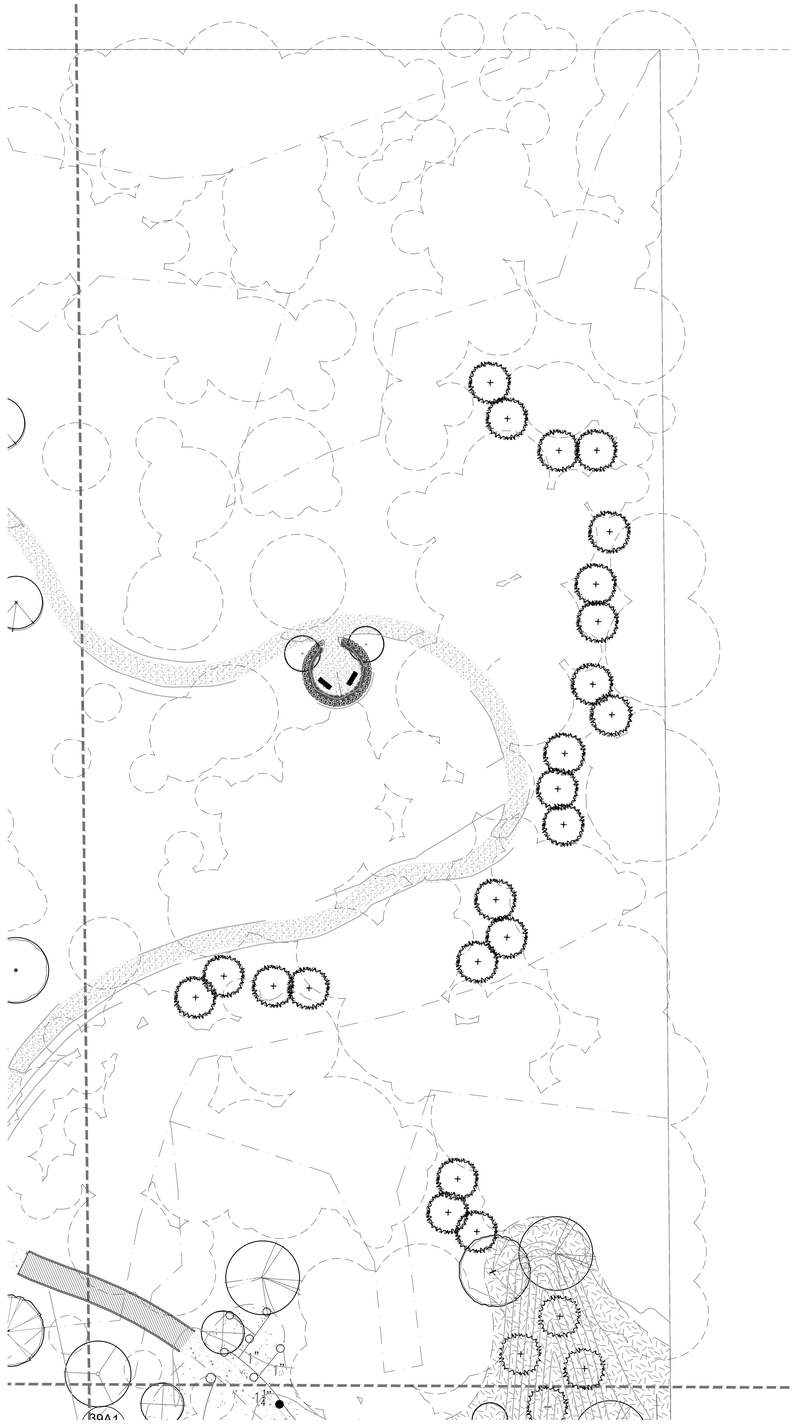
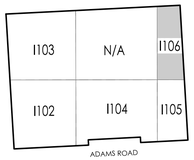


PUMP CAN BE PURCHASED AT
WATERTRONICS
CONTACT PETER BEAUDOIN
262-367-1486

IRRIGATION CONTRACTOR RESPONSIBLE FOR PURCHASE, SHIPPING, OFF LOADING, SETTING AND FULL INSTALLATION OF IRRIGATION PUMP ON CONCRETE PAD 64"X47"X 4". IRRIGATION CONTRACTOR RESPONSIBLE FOR INSTALLATION OF CONCRETE PAD, BURIED PIPE INTAKE PIPE WITH FLOAT AND ELECTRICAL HOOKUP. ELECTRICITY BROUGHT TO PUMP LOCATION BY OTHERS



LOCATION KEY

N.T.S.

PUMP STATION SPECIFICATIONS:
NAME: *NOWICKI PARK*
STATION MODEL: *WMLV-5000-7A-15-208-3-75-100*
STATION TOTAL PERFORMANCE: *75 GPM @ 100 PSI*

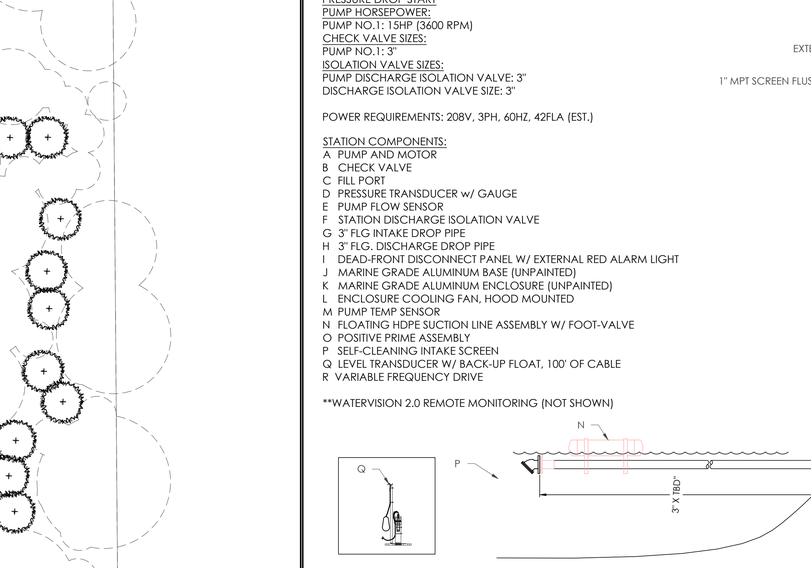
MAXIMUM LIFT = 10 FT.

PRESSURE DROP START
PUMP HORSEPOWER:
PUMP NO.1: 15HP (3600 RPM)
CHECK VALVE SIZES:
PUMP NO.1: 3"
ISOLATION VALVE SIZES:
PUMP DISCHARGE ISOLATION VALVE: 3"
DISCHARGE ISOLATION VALVE SIZE: 3"

POWER REQUIREMENTS: 208V, 3PH, 60HZ, 42FLA (EST.)

STATION COMPONENTS:
A PUMP AND MOTOR
B CHECK VALVE
C FILL PORT
D PRESSURE TRANSDUCER w/ GAUGE
E PUMP FLOW SENSOR
F STATION DISCHARGE ISOLATION VALVE
G 3" FLG INTAKE DROP PIPE
H 3" FLG. DISCHARGE DROP PIPE
I DEAD-FRONT DISCONNECT PANEL W/ EXTERNAL RED ALARM LIGHT
J MARINE GRADE ALUMINUM BASE (UNPAINTED)
K MARINE GRADE ALUMINUM ENCLOSURE (UNPAINTED)
L ENCLOSURE COOLING FAN, HOOD MOUNTED
M PUMP TEMP SENSOR
N FLOATING HDPE SUCTION LINE ASSEMBLY W/ FOOT-VALVE
O POSITIVE PRIME ASSEMBLY
P SELF-CLEANING INTAKE SCREEN
Q LEVEL TRANSDUCER W/ BACK-UP FLOAT, 100' OF CABLE
R VARIABLE FREQUENCY DRIVE

**WATERVISION 2.0 REMOTE MONITORING (NOT SHOWN)

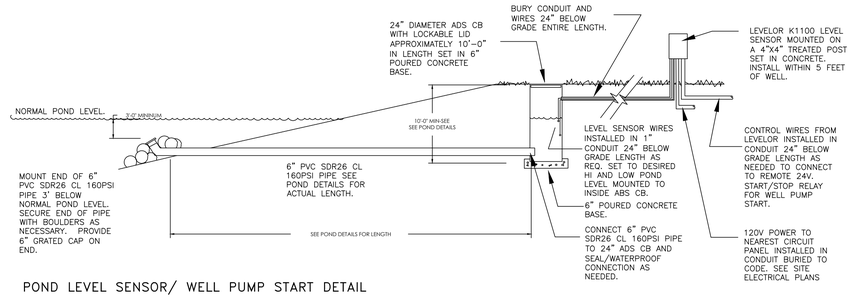


☐ APPROVED AS SUBMITTED	7				DRAWN BY: PJB	DATE: 11/25/2025
☐ APPROVED AS NOTED	6				CHECKED BY: ---	DATE: ---
☐ REVISE AND RESUBMIT	5				THIS DRAWING AND DESIGN, IS THE PROPERTY OF WATERTRONICS AND IS NOT TO BE REPRODUCED IN WHOLE OR PART, NOR EMPLOYED FOR ANY PURPOSE OTHER THAN SPECIFICALLY PERMITTED IN WRITING BY WATERTRONICS.	
SIGNATURE:	4					
NAME:	3					
	2					
	1	12/01/2025	PJB	UPDATE POWER TO 208V 3PH		

TITLE: NOWICKI PARK
IRRIGATION PUMP STATION

WATERTRONICS

SCALE: NTS | SHEET 1 OF 1 SHEETS



POND LEVEL SENSOR/ WELL PUMP START DETAIL

LIQUID ASSETS LLC
IRRIGATION DESIGN & WATER MANAGEMENT
2428 Chippewa Trail
Hastings, MI 49058
T (248) 789-0330
Email: abarnes@lqdassets.org
www.lqdassets.org

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257

SEAL

PROJECT
Eugene Nowicki Park

CLIENT
City of Rochester Hills

PROJECT LOCATION
Part of the NE. 1/4
of Section 8
T.3N. , R.11E.
City of Rochester Hills,
Oakland County, Michigan

SHEET
Enlarged Irrigation Plan

Know what's below Call before you dig.

REVISIONS
2026/02/04 BID DOCUMENTS

DRAWN BY: AJB
DESIGNED BY: AJB
APPROVED BY: G. Ostrowski
DATE: 08/05/2025
SCALE: 1" = 30'

30 15 0 15 30 45

NFE JOB NO. O557
SHEET NO. I106

W:\O500-3000 Files\O500-FILES\O557 Howcroft Park\Office\Landscape\Construction Drawings\Irrigation\O557 - I100 IRRIGATION.dwg, 2/4/2026 5:12:52 PM

CITY OF ROCHESTER HILLS

NOWICKI PARK - COMMUNITY BUILDING, MAINTENANCE BUILDING, FAMILY BATHROOMS BUILDING & PAVILION

Rochester Hills, MI

ISSUED FOR BIDS 02-04-2026

PROJECT TEAM

A3C Collaborative Architecture
Architect - Project Number: 25021
115 1/2 E. Liberty St.
Ann Arbor, MI 48104
734.663.1910

ROCHESTER HILLS
Owner
1000 Rochester Hills Dr
Rochester Hills, MI 48309
248.656.4600

Matrix Engineering
Electrical Engineering
1601 E César E. Chávez Ave
Lansing, MI 48906
517.487.2511

Robert Darvas ASSOCIATES
Structural Engineering
440 S Main St
Ann Arbor, MI 48104
734.761.8713

Nowak & Fraus Engineers
Civil Engineer
46777 Woodward Ave
Pontiac, MI 48342
248.332.7931

VIRIDIS
Landscape Architect
2926 W Main St
Kalamazoo, MI 49006
269.978.5143

ABBREVIATIONS:

NOTE: SEE DOOR, WINDOW AND INTERIOR FINISH SCHEDULES FOR ADDITIONAL ABBREVIATIONS

AB	ANCHOR BOLT
A/C	AIR CONDITIONING
ACPLAS	ACOUSTICAL PLASTER
ACT	ACOUSTIC CEILING TILE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
AP	ACCESS PANEL
APROX	APPROXIMATE
ARCH	ARCHITECTURAL
BD	BOARD
BLDG	BUILDING
BLP	BORROWED LIGHT PANEL
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BS	BOTH SIDES
CFM	CUBIC FEET PER MINUTE
CJ	CONTROL JOINT
CL	CENTER LINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
CT	CERAMIC TILE
DIA	DIAMETER
DS	DOWNSPOUT
DWG	DRAWING
(E), EX	EXISTING
EA	EACH
EF	EXHAUST FAN / EACH FACE
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
EPDM	ETHYLENE PROPYLENE DIENE MONOMER
EQ	EQUAL
EWC	ELECTRIC WATER COOLER
EXP	EXPANSION
EXT	EXTERIOR
FBO	FURNISHED BY OTHERS
FD	FLOOR DRAIN
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF	FINISH FLOOR / FAR FACE
FO	FRAMED OPENING
FRP	FIBER REINFORCED PLASTIC
GALV	GALVANIZED
GB	GRAB BAR
GC	GENERAL CONTRACTOR
GWB	GYPSUM WALL BOARD
H, HORIZ	HORIZONTAL
HC	HANDICAPPED / HOLLOW CORE
HM	HOLLOW METAL
HRU	HEAT RECOVERY UNIT
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IMP	IMPACT RESISTANT
INS	INSULATED
INT	INTERIOR
JT	JOINT
JS	JOINT SUBSTITUTE
L	ANGLE / LENGTH
LAV	LAVATORY
LF	LEFT
LINO	SHEET LINOLEUM
LL	LIVE LOAD
LP	LIGHTING PANEL / LIQUIFIED PROPANE
MAX	MAXIMUM
MDO	MEDIUM DENSITY OVERLAY
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MUA	MAKE-UP AIR
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OF	OUTSIDE FACE
OH	OVERHEAD
PLAM	PLASTIC LAMINATE
PP	POWER PANEL
PT	PRESSURE-TREATED
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
R	RISER / RADIUS
RB	RESILIENT BASE
RD	ROOF DRAIN
REINF	REINFORCED
REQ'D	REQUIRED
RO	ROUGH OPENING
RTU	ROOF TOP UNIT (HVAC)
SC	SOLID CORE
SF	SQUARE FOOT / SUPPLY FAN
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
STRUC	STRUCTURAL
TO	TOP OF
TP	TOILET PAPER (DISPENSER) / TEST PIT
TYP	TYPICAL
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
VB	VAPOR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VP	VISION PANEL
W/	WITH
WC	WATER CLOSET
WD	WOOD
WH	WATER HEATER
W/O	WITH OUT

ABBREVIATIONS LIST — SCALE: N.T.S. — REF'D FROM: TS — 5

ROCHESTER HILLS MICHIGAN

A3C COLLABORATIVE ARCHITECTURE
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104
T: (734) 663 - 1910
F: (866) 732 - 2168
www.a3c.com

Architects Project No: 25021

SEAL

NOT FOR CONSTRUCTION

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

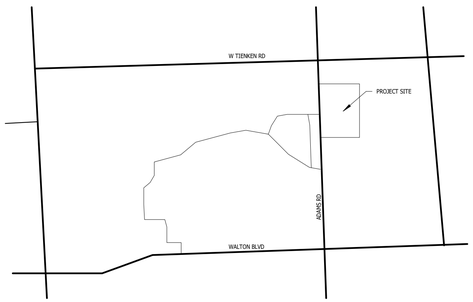
Sheet
TITLE SHEET

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: N.T.S.

NFE JOB NO. 0557 — SHEET NO. G0.01



VICINITY MAP — SCALE: N.T.S. — REF'D FROM: TS — 4

OWNER:

Rochester Hills
Ken Elwert
PH: 248.656.4600
elwertk@rochesterhills.org

CONSULTANT TEAM:

ARCHITECT:
A3C Collabrative Architecture
Project Manager:
Ed Alonso
PH: 734.663.1910
ealonso@a3c.com

MECHANICAL ENGINEER CONSULTANT:
Matrix Engineering
Quinn Myers
PH: 517.487.2511
qmyers@matrixceinc.com

ELECTRICAL ENGINEER CONSULTANT:
Matrix Engineering
Brett Earnest
PH: 517.487.2511
bearnest@matrixceinc.com

STRUCTURAL ENGINEER CONSULTANT:
Robert Darvas Associates
Steve Rudner
PH: 734.761.8713
srudner@robertdarvas.com

CIVIL/LANDSCAPE ENGINEER CONSULTANT:
Nowak & Fraus Engineers
Steve Sutton
PH: 248.332.7931
swsutton@nfe-engr.com

LANDSCAPE ARCHITECT CONSULTANT:
Viridis
Matt Hull
PH: 269.978.5143
matt@virdg.com

PROJECT DIRECTORY — SCALE: N.T.S. — REF'D FROM: TS — 3

SYMBOL LEGEND:

BUILDING SECTION
CUT DIRECTION
SECTION NUMBER
SHEET NUMBER

WALL SECTION
CUT DIRECTION
SECTION NUMBER
SHEET NUMBER

DETAIL
SECTION NUMBER
SHEET NUMBER
AREA OF DETAIL

EXTERIOR ELEVATION
ELEVATION DIRECTION
SECTION NUMBER
SHEET NUMBER

INTERIOR ELEVATION
ELEVATION NUMBER/ DIRECTION
SHEET NUMBER

DATUM REFERENCE

DEMO KEYNOTE

NEW WORK KEYNOTE

EQUIPMENT/ ACCESSORY TAG

WINDOW TAG

PARTITION TAG

DOOR TAG
DOOR NUMBER

ROOM TAG
ROOM NAME
ROOM NUMBER
ROOM AREA (WHEN APPLICABLE)

COLUMN BUBBLE & GRID LINE

EXISTING COLUMN BUBBLE & GRID LINE

REVISION
REVISION NUMBER
REVISION TAG
AREA OF REVISION

DRAWING/ DETAIL NUMBER
SHEET NUMBER WHERE REFERENCED FROM (IF LEFT BLANK, IT DESIGNATES REFERENCE FROM 'THIS SHEET')
DRAWING TITLE
DRAWING SCALE

SYMBOLS LEGEND — SCALE: N.T.S. — REF'D FROM: TS — 2

GENERAL NOTES:

1. ALL DIMENSIONS ARE FROM FINISH FACE OF MATERIAL, UNO.
2. ALL ANGLES ARE 90 DEGREES, UNO.
3. SITE CONDITIONS: THE CONTRACTOR BY COMMENCING THE WORK ACCEPTS THE CONDITIONS OF THE SITE AND THE COMPLETENESS OF THE CONTRACT DOCUMENTS. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL CONDITIONS SHOLD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO BEGINNING THE WORK. NO EXTRAS SHALL BE ALLOWED FOR DISCREPANCIES AFTER WORK HAS BEGUN.
4. DRAWINGS: ALL CONTRACTORS SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS. CONTRACTORS ARE RESPONIBLE FOR COMPLETENESS REVIEW. ITEMS AFFECTING ALL TRADES ARE PLACED THROUGHOUT THE SET OF DRAWINGS. NO "EXTRAS"F FOR MISSED ITEMS IN OTHER SECTIONS WILL BE PERMITTED. THE CONTRACTORS SHALL PROMPTLY NOTIFY THE ARCHITECT OF ANY AMBIGUITY, INCONSISTENCY OR ERROR WHICH THEY DISCOVER UPON EXAMINATION OF THE CONTRACT DOCUMENTS, THE SITE, OR LOCAL CONDITIONS. GENERAL CONTRACTORS SHALL DISTRIBUTE COMPLE SET OF DRAWINGS TO ALL SUBCONTRACTORS. DO NOT SEPARATE DRAWINGS BY DISCIPLINE. DO NOT SCALE.
5. COMPLETENESS: ANY MATERIAL NOT SHOWN ON THE DRAWINGS, NOR SPECIFIED, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK OF A SIMILAR NATURE SHALL BE FURNISHED WITHOUT ADDITIONAL COST TO TO THE OWNER OR ARCHITECT. IN THE CASE OF CONFLICTING QUANTITIES / VALUES, THE GREATER AMOUNT OR THE ONE OF GREATER VALUE SHALL PREVAIL AND BE PROVIDED BY THE CONTRACTOR AS PART OF HIS BASE CONTRACT AND SHALL NOT BECOME A BASIS FOR CHANGER ORDERS OR CLAIMS FOR ADDITIONAL COMPENSATION.

   IN THE CASE OF CONFLICTING OR INCONSISTANT INFORMATION, THE MOST STRINGENT REQUIREMENTS SHALL PREVAIL NAD BE PROVIDED BY THE CONTRACTOR AS PART OF HIS BASE CONTRAT AND SHALL NOT BECOME A BASIS FOR CHANGE ORDERS OR CLAIMS FOR ADDITIONAL COMPENSATION.
6. PROTECTION: GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL BE SOLELY RESPONSIBLE FOR TAKING ALL STEPS NECESSARY TO PROTECT THE PUBLIC AND THE OWNERS PERSONNEL FORM INJURY, AND ADJACENT PROPERTY FORM DAMAGES DURING CONSTRUCTUON AND REQUIRED BY ALL LOCAL CODES. THE GENERAL CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROJECT SECURITY FROM THE START OF THE WORK UNTIL THE OWNER ACCEPTS THE PROJECT AS SUBSTANTIALLY COMPLETE AND / OR OCCUPIABLE.
7. REFER TO CIVIL DRAWINGS FOR USGS DATUM ELEVATION AT THE FINIHS FLOOR AT EACH INDIVIDUAL BUILDING THAT CORRESPNDS WITH F.F.E. ELEVATION 100'-0" NOTED ON ATCHITECTURAL DRAWINGS AND DETAILS.

GENERAL NOTES — SCALE: N.T.S. — REF'D FROM: TS — 1

C:\Users\kjock\Documents\25021-Arch_R23_Service Building_kjock95MA2A.rvt

ISSUED FOR REFERENCE ONLY ○
ISSUED FOR REVIEW ◑
ISSUED FOR BID/PERMIT ●

DRAWING LIST

SHEET NUMBER	SHEET NAME	PRELIMINARY SITE PLAN 08/05/25	PER SITE PLAN REVIEW 09/12/25	50% CD REVIEW 10/06/25	FINAL SITE PLAN 11/06/25	90% CD REVIW 01/12/26	BID DOCUMENTS 02/04/26
00 - GENERAL							
G0.01	TITLE SHEET						●
G0.02	SHEET INDEX						●
03 - STRUCTURAL							
S001	STRUCTURAL NOTES			◑		◑	●
S002	STRUCTURAL NOTES			◑		◑	●
S003	SPECIAL INSPECTIONS			◑		◑	●
S004	TYPICAL DETAILS			◑		◑	●
S005	TYPICAL DETAILS					◑	●
S100	PAVILION PLANS, SECTIONS AND SCHEDULES			◑		◑	●
S101	FAMILY BATHROOM AND MAINTENANCE BUILDING PLANS AND SECTIONS			◑		◑	●
S102	COMMUNITY BUILDING FOUNDATION PLAN			◑		◑	●
S103	COMMUNITY BUILDING ROOF FRAMING PLAN			◑		◑	●
S104	COMMUNITY BUILDING SECTIONS			◑		◑	●
S105	COMMUNITY BUILDING SECTIONS					◑	●
S201	PAVILION DETAILS			◑		◑	●
S202	STRUCTURAL DETAILS					◑	●
S203	STRUCTURAL DETAILS					◑	●
06 - ARCHITECTURAL							
A2.00	CODE COMPLIANCE PLAN - COMMUNITY BUILDING		◑	◑	◑	◑	●
A2.01	CODE COMPLIANCE PLAN - MAINTENANCE, FAMILY BATHROOMS BUILDING & PAVILION		◑	◑	◑	◑	●
A2.02	WALL PARTITION TYPES			◑		◑	●
A2.11	FLOOR PLAN, LEGEND & NOTES - COMMUNITY BUILDING	◑	◑	◑	◑	◑	●
A2.12	FLOOR & CEILING PLAN, ELEVATIONS, LEGEND & NOTES - MAINTENANCE BUILDING	◑	◑	◑	◑	◑	●
A2.13	FLOOR & CEILING PLAN, LEGEND & NOTES - FAMILY BATHROOMS BUILDING	◑	◑	◑	◑	◑	●
A2.14	FLOOR PLAN - PAVILION		◑	◑	◑	◑	●
A2.15	COMMUNITY BUILDING, MAINTENANCE BUILDING & FAMILY BATHROOMS - ROOF PLANS					◑	●
A2.16	ROOF PLAN - PAVILION					◑	●
A2.21	DOOR SCHEDULE / WINDOW SCHEDULE & DETAILS - COMMUNITY BUILDING			◑		◑	●
A2.22	DOOR / WINDOW SCHEDULE & DETAILS - MAINTENANCE & FAMILY BATHROOMS BUILDING			◑		◑	●
A2.23	DOOR & WINDOW DETAILS			◑		◑	●
A2.24	DOOR & WINDOW DETAILS					◑	●
A2.41	INTERIOR FINISH SCHEDULE & KEY			◑		◑	●
A3.11	EXTERIOR ELEVATIONS - COMMUNITY BUILDING	◑	◑	◑	◑	◑	●
A3.12	EXTERIOR ELEVATIONS - COMMUNITY BUILDING	◑	◑	◑	◑	◑	●
A3.13	EXTERIOR ELEVATIONS - MAINTENANCE BUILDING	◑	◑	◑	◑	◑	●
A3.14	EXTERIOR ELEVATIONS - FAMILY BATHROOMS BUILDING	◑	◑	◑	◑	◑	●
A3.15	EXTERIOR ELEVATIONS - PAVILION	◑	◑	◑	◑	◑	●
A3.16	EXTERIOR ELEVATIONS - PAVILION		◑	◑	◑	◑	●
A3.21	BUILDING SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.22	BUILDING SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.23	BUILDING SECTIONS - MAINTENANCE & FAMILY BATHROOMS BUILDING			◑		◑	●
A3.24	BUILDING SECTIONS - PAVILION					◑	●
A3.31	WALL SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.32	WALL SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.33	WALL SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.34	WALL SECTIONS - COMMUNITY BUILDING			◑		◑	●
A3.35	WALL SECTIONS - MAINTENANCE BUILDING			◑		◑	●
A3.36	WALL SECTIONS - FAMILY BATHROOMS BUILDING					◑	●
A3.41	ENLARGED WALL SECTION DETAILS					◑	●
A3.42	ENLARGED WALL SECTION DETAILS					◑	●
A3.62	ROOF DETAILS - PAVILION					◑	●
A4.11	ENLARGED PLANS - COMMUNITY BUILDING			◑		◑	●
A4.21	ENLARGED PLAN DETAILS					◑	●
A5.11	INTERIOR ELEVATIONS - COMMUNITY BUILIDING			◑		◑	●
A5.12	INTERIOR ELEVATIONS - COMMUNITY BUILDING			◑		◑	●
A5.13	INTERIOR ELEVATIONS - FAMILY BATHROOMS BUILDING			◑		◑	●
A6.11	REFLECTED CEILING PLAN - COMMUNITY BUILDING			◑		◑	●
A8.11	CABINET / COUNTERTOP DETAILS			◑		◑	●
A9.11	RENDERINGS - COMMUNITY, MAINTENANCE & FAMILY RESTROOMS BUILDING		◑		◑		
A9.12	EXTERIOR RENDERINGS - PAVILION		◑		◑		
22 - PLUMBING							
P1.00	PLUMBING SYMBOLS, NOTES AND ABBREVIATIONS			◑		◑	●
P4.00	COMMUNITY BUILDING BELOW FLOOR PLAN - PLUMBING NEW			◑		◑	●
P4.01	COMMUNITY BUILDING FLOOR PLAN - PLUMBING NEW			◑		◑	●
P4.02	MAINTENANCE BUILDING BELOW FLOOR - PLUMBING NEW			◑		◑	●
P4.03	MAINTENANCE BUILDING FLOOR PLAN - PLUMBING NEW			◑			●
P4.04	FAMILY BATHROOMS BUILDING BELOW FLOOR PLAN - PLUMBING NEW			◑			●
P4.05	FAMILY BATHROOMS BUILDING PLAN - PLUMBING NEW			◑		◑	●
P9.00	PLUMBING SHEDULES			◑		◑	●

DRAWING LIST

SHEET NUMBER	SHEET NAME	PRELIMINARY SITE PLAN 08/05/25	PER SITE PLAN REVIEW 09/12/25	50% CD REVIEW 10/06/25	FINAL SITE PLAN 11/06/25	90% CD REVIW 01/12/26	BID DOCUMENTS 02/04/26
23 - MECHANICAL							
M1.00	MECHANICAL SYMBOLS, NOTES AND ABBREVIATIONS			◑		◑	●
M4.00	COMMUNITY BUILDING FLOOR PLAN - MECHANICAL NEW			◑		◑	●
M4.01	MAINTENANCE BUILDING FLOOR PLAN - MECHANICAL NEW			◑		◑	●
M4.02	FAMILY BATHROOMS BUILDING FLOOR PLAN - MECHANICAL NEW			◑		◑	●
M6.00	COMMUNITY BUILDING FLOOR PLAN - MECHANICAL PIPING NEW			◑		◑	●
M9.00	MECHANICAL SCHEDULES			◑		◑	●
26 - ELECTRICAL							
E1.00	ELECTRICAL SYMBOLS, ABBREV., + NOTES			◑		◑	●
E4.00	COMMUNITY BUILDING FLOOR PLAN - LIGHTING NEW			◑		◑	●
E4.01	MAINTENANCE BUILDING FLOOR PLAN - LIGHTING NEW			◑		◑	●
E4.02	FAMILY BATHROOMS BUILDNG FLOOR PLAN - NEW LIGHTING			◑		◑	●
E5.00	COMMUNITY BUILDING FLOOR PLAN - POWER NEW			◑		◑	●
E5.01	MAINTENANCE BUILDING FLOOR PLAN - POWER NEW			◑		◑	●
E5.02	FAMILY BATHROOMS BUILDING FLOOR PLAN - POWER NEW			◑		◑	●
E5.03	PAVILION FLOOR PLAN - POWER NEW					◑	●
E6.00	ELECTRICAL RISER DIAGRAM			◑		◑	●
E9.00	ELECTRICAL SCHEDULES						●

ROCHESTER HILLS MICHIGAN

A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

www.a3c.com

Architects Project No: 25021

SEAL

NOT FOR CONSTRUCTION

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
SHEET INDEX

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE:

NFE JOB NO. 0557
SHEET NO. G0.02

SHEET INDEX | SCALE: N.T.S. | REF'D FROM: TS | 1

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STRUCTURAL NOTES

GENERAL

1. THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE DRAWINGS AND THE WRITTEN SPECIFICATIONS. IN THE EVENT OF CONFLICT BETWEEN THE INFORMATION ON THE WRITTEN SPECIFICATIONS, THE DRAWINGS, AND THESE NOTES, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.
2. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE COMPLETED STRUCTURE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING AND BRACING DURING CONSTRUCTION TO ACCOUNT FOR ALL FORCES, INCLUDING BUT NOT LIMITED TO: GRAVITY, WIND, EARTH PRESSURE, AND UNBALANCED FORCES DUE TO CONSTRUCTION SEQUENCE. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, PROCEDURES, TECHNIQUES, SEQUENCES, AND JOB SAFETY.
3. THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION METHODS WILL NOT CAUSE DAMAGE TO ADJACENT BUILDINGS, UTILITIES, OR OTHER PROPERTIES.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE STRUCTURAL WORK WITH THE ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING WORK, AS WELL AS ANY OTHER APPLICABLE TRADES. NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES AND/OR INTERFERENCES IMMEDIATELY.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS BEFORE BEGINNING WORK. CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AND BE RESPONSIBLE FOR SAME.
6. IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND/OR PROCEEDING WITH THE WORK.
7. THE CONTRACTOR SHALL VERIFY ALL OPENING SIZES AND LOCATIONS WITH OTHER DISCIPLINES. THE DRAWINGS DO NOT SHOW ALL OPENINGS REQUIRED. ADDITIONAL OPENINGS, BLOCKOUTS, AND SLEEVES MAY BE REQUIRED BY OTHER DISCIPLINES. OPENINGS REQUIRED BUT NOT SHOWN ON STRUCTURAL DRAWINGS MUST BE APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
8. APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE, OR NOTE.
9. DO NOT SCALE DRAWINGS. ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS.
10. ISOMETRIC VIEWS, IF INCLUDED, ARE TO GIVE A GENERAL SENSE OF THE STRUCTURE AND MASSING. THEY DO NOT SUPERSEDE THE STRUCTURAL DRAWINGS AND ARE PROVIDED AS SUPPLEMENTAL INFORMATION ONLY. THE STRUCTURE SHALL BE PROVIDED PER THE STRUCTURAL DRAWINGS, DETAILS, NOTES, AND SPECIFICATIONS.
11. CENTERLINES OF FRAMING MEMBERS COINCIDE WITH COLUMN CENTERLINES, UNLESS NOTED OTHERWISE.
12. CENTERLINES OF FOUNDATIONS COINCIDE WITH COLUMN LOCATIONS, UNLESS NOTED OTHERWISE.
13. THE CONTRACTOR SHALL OBTAIN COPIES OF THE LATEST CONTRACT DOCUMENTS INCLUDING ALL BULLETINS AND ADDENDA, AND SHALL PROVIDE THE RELEVANT PORTIONS TO ALL SUBCONTRACTORS AND SUPPLIERS PRIOR TO SUBMITTAL OF SHOP DRAWINGS, FABRICATION, AND ERECTION OF STRUCTURAL MEMBERS.
14. STRUCTURAL ENGINEER OF RECORD'S ACCEPTANCE MUST BE SECURED FOR ALL STRUCTURAL SUBSTITUTIONS.
15. NO STRUCTURAL MEMBER SHALL BE CUT, NOTCHED, OR OTHERWISE REDUCED IN STRENGTH UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD.
16. SUPPORT DETAILS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING EQUIPMENT IS BASED UPON AVAILABLE INFORMATION OF MANUFACTURER. CONTRACTOR SHALL COORDINATE REQUIREMENTS OF ACTUAL EQUIPMENT SUPPLIED WITH DETAILS AND SHALL PROVIDE ANY ADDITIONAL FRAMING REQUIRED.
17. PERIODIC SITE OBSERVATION VISITS MAY BE PROVIDED BY THE ARCHITECT/ENGINEER. THE SOLE PURPOSE OF THESE OBSERVATIONS IS TO REVIEW THE GENERAL CONFORMANCE OF THE CONSTRUCTION WITH THE CONTRACT DOCUMENTS. THESE LIMITED OBSERVATIONS SHOULD NOT BE CONSIDERED AS CONTINUOUS OR EXHAUSTIVE INVESTIGATIONS TO VERIFY THAT ALL CONSTRUCTION IS IN COMPLIANCE WITH THE CONTRACT DOCUMENTS.

REFERENCED CODES AND STANDARDS

1. PERFORM ALL CONSTRUCTION IN CONFORMANCE WITH THE LATEST EDITIONS OF THE BUILDING AND DESIGN CODES REFERENCED WITHIN THESE DOCUMENTS. THE CONTRACT DOCUMENTS REFER TO THE FOLLOWING CODES AND STANDARDS, LATEST EDITIONS AS REFERENCED IN THE CURRENT BUILDING CODE IN THE STATE OF THE PROJECT, UNLESS NOTED OTHERWISE:
   - 2021 MICHIGAN BUILDING CODE
   - ASCE 7, MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
   - ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS
   - ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - TMS 402/602, BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES
   - HOT AND COLD WEATHER MASONRY CONSTRUCTION BY THE MASONRY INDUSTRY COUNCIL
   - AISC 303, CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
   - AISC 360, SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
   - NDS, NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

DESIGN CRITERIA

1. GENERAL
   - CONCRETE DESIGN — LRFD
   - STEEL DESIGN — ASD
   - MASONRY DESIGN — ASD
   - WOOD DESIGN — ASD
   - RISK CATEGORY — II
2. DEAD LOADS (SUPERIMPOSED)
   - ROOF — 20 PSF
   -
3. SNOW LOADS
   - GROUND SNOW LOAD (P_G) — 25 PSF
   - SNOW EXPOSURE FACTOR (C_E) — 1
   - SNOW IMPORTANCE FACTOR (I_S) — 1
   - THERMAL FACTOR (C_T) — 1.2
   - FLAT ROOF SNOW LOAD (P_F) — 21 PSF
4. WIND LOADS
   - BASIC WIND SPEED (V) — 115 MPH
   - EXPOSURE CATEGORY — C
   - (SEE WIND LOAD DIAGRAMS)

SUBMITTALS

1. THE CONTRACTOR SHALL SUBMIT FOR ARCHITECT/ENGINEER REVIEW A SCHEDULE WHICH DETAILS THE ESTIMATED QUANTITY OF SUBMITTALS, AND THE DATE THEY WILL BE RECEIVED, AT LEAST TWENTY (20) WORKING DAYS PRIOR TO THE FIRST SUBMITTAL. THE SCHEDULE SHOULD ACCOUNT FOR AT LEAST TEN (10) WORKING DAYS OF REVIEW TIME BY THE ARCHITECT/ENGINEER FOR EACH SUBMITTAL.
2. SHOP DRAWINGS AND/OR DETAILS THAT ARE PREPARED FROM REPRODUCTIONS OF THE STRUCTURAL ENGINEER OF RECORD'S DESIGN DOCUMENTS, IN WHOLE OR IN PART, SHALL NOT BE USED AND WILL BE REJECTED.
3. THE ARCHITECT/ENGINEER MAY RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE PROJECT REQUIREMENTS.
4. THE CONSTRUCTION, MANUFACTURE, AND/OR FABRICATION OF ANY ITEMS PRIOR TO THE ARCHITECT/ENGINEER REVIEW WILL BE ENTIRELY AT THE RISK OF THE CONTRACTOR.
5. ARCHITECT'S/ENGINEER'S REVIEW IS FOR GENERAL CONFORMANCE AND COMPLIANCE WITH THE DESIGN CONCEPT AND CONTRACT DOCUMENTS. ANY ACTION NOTED DOES NOT WAIVE ANY REQUIREMENT OF CONTRACT DOCUMENTS, COORDINATION OF TRADES, AND SATISFACTORY PERFORMANCE OF THEIR WORK WHICH ARE THE CONTRACTOR'S COMPLETE RESPONSIBILITY.
6. FOR COMPONENTS THAT REQUIRE A SPECIALTY ENGINEER, THE SUBMITTAL SHALL BE SEALED BY THE ENGINEER RESPONSIBLE FOR THE DESIGN. "SPECIALTY ENGINEER" IS DEFINED AS THE STRUCTURAL ENGINEER EMPLOYED BY THE SUPPLIER TO DESIGN PRODUCTS TO MEET THE SPECIFIC CRITERIA OUTLINED IN THE CONTRACT DOCUMENTS. SEALING OF THE SUBMITTAL IMPLIES THAT THE SPECIALTY ENGINEER HAS REVIEWED THE CONTRACT DOCUMENTS AND HAS, TO THE BEST OF THEIR KNOWLEDGE, INCORPORATED ALL OF THE SPECIAL DESIGN CRITERIA CONTAINED THEREIN.
7. ITEMS THAT REQUIRE SUBMITTAL FOR STRUCTURAL REVIEW ARE:
   - CONCRETE MIX DESIGNS
   - CONCRETE REINFORCING LAYOUT
   - MASONRY UNIT STRENGTHS
   - MORTAR/GROUT MIX DESIGNS
   - MASONRY REINFORCING LAYOUT
   - ANCHOR RODS
   - STRUCTURAL STEEL
   - PRE-MANUFACTURED WOOD TRUSSES
   - S.I.P. PANELS
   - GLUE LAMINATED TIMBERS
   - LVL AND PSL FRAMING

FOUNDATIONS

1. FOUNDATION CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PROFESSIONAL SERVICE INDUSTRIES, INC. 4500 HELM STREET SUITE 200 PLYMOUTH, MI 48170, DOCUMENT DATED: OCTOBER 10, 2025. PSI REPORT NUMBER 03811526. THE CONTRACTOR SHALL OBTAIN A COPY OF THE SOIL REPORT AND BECOME FAMILIAR WITH THE REQUIREMENTS AND RECOMMENDATIONS THEREIN.
2. A REPRESENTATIVE OF THE [*GEOTECHNICAL ENGINEER*] SHALL BE RETAINED BY THE CONTRACTOR TO VERIFY FOUNDATION INSTALLATION AND CONSTRUCTION IS IN CONFORMANCE [*WITH THE RECOMMENDATIONS OUTLINED IN THE GEOTECHNICAL INVESTIGATION REPORT*].
3. ALL FOOTINGS SHALL BEAR ON UNDISTURBED SOIL, HAVING A MINIMUM SAFE BEARING CAPACITY OF 2,750PSF.
4. CONTRACTOR SHALL NOTIFY THE [*GEOTECHNICAL ENGINEER*] WHEN EXCAVATIONS ARE COMPLETED SO THAT CONDITIONS MAY BE INSPECTED PRIOR TO PLACEMENT OF ANY FILL, REINFORCING, OR CONCRETE. NOTIFY ARCHITECT/ENGINEER OF ANY VARIATION FROM THE ANTICIPATED BEARING CAPACITY FOR APPROPRIATE REDESIGN OR LOWERING OF FOOTING.
5. THE BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE MINIMUM 3'-6" BELOW FINISHED GRADE. IF THE BUILDING WILL BE UNDER CONSTRUCTION DURING FREEZING WEATHER, THE BOTTOMS OF ALL INTERIOR FOUNDATIONS SHALL BE DEPRESSED 3'-6" BELOW CONSTRUCTION GRADE FOR FROST PROTECTION. IF SUCH ADDITIONAL FOOTING DEPTH WILL CAUSE UNDERMINING OF ADJACENT EXISTING FOOTINGS OR STRUCTURES, PROVIDE SHORING, BRACING, OR UNDERPINNING AS REQUIRED, OR LEAVE FOOTING ELEVATION AS DESIGNED AND PROVIDE CONTINUED PROTECTION AND HEAT TO PREVENT FORMATION OF FROST BELOW FOOTING AND ADJACENT TO FOOTING.
6. EDGES OF FOOTINGS SHALL NOT BE PLACED AT A GREATER THAN 1 VERTICAL TO 2 HORIZONTAL SLOPE WITH RESPECT TO ANY ADJACENT FOOTING OR EXCAVATION, UNLESS UNDERPINNING OR SHORING AND BRACING OF EXISTING FOOTING OR EXCAVATION IS PROVIDED. UNDERPINNING SHALL BE DONE SO AS NOT TO CAUSE SETTLEMENTS OF EXISTING STRUCTURE AND SHALL BE SUCH THAT COMPLETE CONTACT IS ACHIEVED BETWEEN NEW UNDERPINNING AND EXISTING CONCRETE.
7. NO FOUNDATIONS OR SLABS SHALL BE PLACED ON OR AGAINST SUB-GRADE CONTAINING WATER, FROST, OR ICE. CONTRACTOR SHALL FURNISH ALL REQUIRED DE-WATERING EQUIPMENT TO MAINTAIN A DRY EXCAVATION UNTIL BACKFILL IS COMPLETE.
8. CONTRACTOR SHALL BE RESPONSIBLE TO ADEQUATELY PROTECT EXCAVATIONS AND SUB-GRADES OF COMPLETED NON-FROST PROTECTED FOUNDATIONS AND SLABS FROM DAMAGE DUE TO FREEZING CONDITIONS UNTIL THE FULL BUILDING ENCLOSURE IS COMPLETED AND HEATED.
9. SLABS ON GRADE SHALL REST ON GRANULAR FILL AS PRESCRIBED BY THE [*GEOTECHNICAL REPORT*]. ALL BACKFILL WITHIN BUILDING LINES SHALL BE ENGINEERED GRANULAR FILL PLACED UNDER THE FULL-TIME SUPERVISION OF A SOIL ENGINEER AND SHALL BE COMPACTED TO ACHIEVE 95% MODIFIED PROCTOR DENSITY (AS DEFINED BY ASTM D1557 MODIFIED PROCTOR TEST). FILL SHALL BE PLACED IN 9" MAXIMUM LIFTS.
10. THE CONTRACTOR SHALL SAFEGUARD AND PROTECT ALL EXCAVATIONS, ADJACENT STRUCTURES, PAVEMENTS, AND UTILITIES. DO NOT REMOVE SHORING, SUCH AS SHEET PILING, IF IT WILL CAUSE SETTLEMENT OR DAMAGE TO EXISTING OR NEW STRUCTURES, PAVEMENT, AND/OR UTILITIES.
11. MAXIMUM LENGTH OF FOUNDATION WALL PLACED IN ONE OPERATION SHALL NOT EXCEED 60 FEET.
12. THE FOUNDATION CONTRACTOR SHALL REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL LOCATIONS OF TRENCHES, PITS, CONDUITS, ETC. NOT SHOWN ON THE STRUCTURAL DRAWINGS.

CONCRETE

1. ALL CONCRETE SHALL BE MADE WITH PORTLAND CEMENT AND STONE AGGREGATE, WITH MIXES DESIGNED TO MEET 28-DAY MINIMUM COMPRESSIVE STRENGTHS IN VARIOUS ELEMENTS OF THE STRUCTURE AS FOLLOWS, UNLESS NOTED OTHERWISE:

ELEMENT	F'C	TYPE	MAX. AGG.	MAX. W/C	MAX. SLUMP
FOOTINGS	3,000	I/II	1 1/2"	0.49	4" (+/- 1")
WALLS AND PIERS	4,500	I/II	3/4"	0.46	4" (+/- 1")
INT. SLAB ON GRADE	4,000	I/II	3/4"	0.46	4" (+/- 1")
EXT. SLAB ON GRADE	4,500	I/II	3/4"	0.46	4" (+/- 1") AIR ENTRAINED

2. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF THE AMERICAN CONCRETE INSTITUTE ACI 301, 318, AND SP-66 (315 INCLUDED AS A CHAPTER), LATEST EDITIONS.
3. PROVIDE NORMAL WEIGHT CONCRETE WITH CURED DENSITY OF 145 PCF AND AGGREGATE CONFORMING TO ASTM C33, UNLESS NOTED OTHERWISE.
4. CONCRETE EXPOSED TO MOISTURE AND FREEZING-AND-THAWING CYCLES (WITH OR WITHOUT EXPOSURE TO DE-ICING CHEMICALS) SHALL BE AIR-ENTRAINED.
5. THE USE OF CALCIUM CHLORIDE AND/OR OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS AND CONCRETE IS PROHIBITED.
6. NO CONCRETE SHALL BE PLACED UNTIL CONCRETE DESIGN MIXES AND PREVIOUS TESTS HAVE BEEN SUBMITTED FOR EACH CLASS OF CONCRETE NOTED ABOVE AND HAVE BEEN APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. CONCRETE PROPORTIONS SHALL BE BASED UPON FIELD EXPERIENCE AND/OR TRIAL BATCHES PER ACI 301 AND ACI 318. THE CONTROLLED CONCRETE TO BE USED SHALL CONFORM TO THE APPROVED DESIGN MIX. THE USE OF ANY ADDITIVES NOT PRESENT IN THE DESIGN MIX IS PROHIBITED. REPRESENTATIVE TEST CYLINDERS WILL BE TAKEN FROM THE CONCRETE PLACED EACH DAY IN ACCORDANCE WITH THE CONCRETE SPECIFICATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING DRAWINGS FOR REVIEW OF ALL JOINTS IN THE CONCRETE WORK INCLUDING CONSTRUCTION, EXPANSION, CONTRACTION, AND MOVEMENT JOINTS. DRAWINGS SHALL BE SUBMITTED AT LEAST TWO WEEKS PRIOR TO EXPECTED START OF WORK. JOINT LOCATIONS SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS DESCRIBED IN ACI 224, LATEST EDITION.
8. ALL CONCRETE STRUCTURAL MEMBERS SHALL BE PLACED FOR THEIR FULL DEPTHS IN ONE OPERATION. CONSTRUCTION JOINTS, SUCH AS DAY'S END PLACEMENT JOINTS, SHALL BE LOCATED IN THE MIDDLE THIRD OF THE SPAN AND BE ROUGHENED. REINFORCING TO RUN THROUGH THE JOINT, BULKHEAD, AND/OR KEY JOINTS. REMOVE LAITANCE PRIOR TO NEXT POUR.
9. ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS, VERIFY WITH THE STRUCTURAL ENGINEER OF RECORD.

10. N CONCRETE SHALL NOT BE PLACED UNTIL PREPARATIONS HAVE BEEN APPROVED BY THE TESTING AND INSPECTION AGENCY INCLUDING FORMWORK, REINFORCEMENT, EMBEDMENTS, AND ACCESSORIES.

1. REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES.
   - DEFORMED BARS — ASTM A615, GRADE 60
   - WELDABLE DEFORMED BARS — ASTM A706, GRADE 60
   - EPOXY COATED DEFORMED BARS — ASTM A775, GRADE 60
   - WELDED WIRE REINFORCEMENT — ASTM A1064
2. UNLESS NOTED OTHERWISE, THE CONCRETE COVER FOR REINFORCEMENT IN CAST-IN-PLACE CONCRETE SHALL NOT BE LESS THAN THE FOLLOWING:
   - CAST AGAINST EARTH — 3"
   - EXPOSED TO EARTH/WEATHER — 2"
   - SLABS, WALLS, AND JOISTS
     - NO.11 BAR AND SMALLER — 3/4"
   - BEAMS AND COLUMNS
     - TIES, STIRRUPS, SPIRALS — 1 1/2"
3. DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI 318, ACI 315R, AND THE ACI DETAILING MANUAL SP-066, LATEST EDITIONS.
4. WHERE A 90-DEGREE, 135-DEGREE, OR 180-DEGREE HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS, UNLESS NOTED OTHERWISE.
5. DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT, UNLESS NOTED OTHERWISE.
6. UNLESS NOTED OTHERWISE, ALL LAP SPLICES ARE TO BE CLASS B TENSION LAP SPLICES EXCEPT THE MINIMUM LAP LENGTH SHALL BE 24".
7. PROVIDE TENSILE, PRE-QUALIFIED, WELDED, OR THREADED MECHANICAL SPLICES FOR BARS LARGER THAN NO.11 OR WHERE INDICATED ON THE DRAWINGS.
8. LAP WELDED WIRE REINFORCEMENT TWO PANEL SPACES. WIRE MESH SHALL BE SUPPORTED ON CHAIRS SO THAT PROPER COVER IS MAINTAINED. DO NOT USE THE METHOD OF PULLING UP WITH A HOOK DURING CONCRETE POURING TO POSITION THE REINFORCING.
9. UNLESS NOTED OTHERWISE, TERMINATE BARS AT DISCONTINUOUS ENDS WITH STANDARD HOOKS.

CONCRETE MASONRY

1. LOAD BEARING AND BACKUP WALL CONCRETE MASONRY CONSTRUCTION SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:
   - CONCRETE BLOCK — ASTM C90, NORMAL WEIGHT, TYPE 1
   - MORTAR — ASTM C270, TYPE M OR S PORTLAND/LIME
   - GROUT — ASTM C476 (3,000 PSI AT 28-DAYS)
   - REINFORCEMENT — ASTM A615, GRADE 60, (MIN. 24" LAP)
   - JOINT REINFORCEMENT — ASTM A951, LADDER TYPE, (MIN 9-GAGE), GALV.
2. UNLESS NOTED OTHERWISE, THE MASONRY COVER FOR REINFORCEMENT SHALL NOT BE LESS THAN THE FOLLOWING:
   - MASONRY FACE EXPOSED TO WEATHER
     - NO.6 BAR AND LARGER — 2"
     - NO.5 BAR AND SMALLER — 1 1/2"
   - MASONRY FACE NOT EXPOSED TO WEATHER — 1 1/2"
   - GALVANIZED WIRE JOINT REINFORCING — 3/4"
3. CONCRETE MASONRY ASSEMBLAGE SHALL DEVELOP 2,500 PSI COMPRESSIVE STRENGTH IN 28-DAYS, UNLESS NOTED OTHERWISE.
4. MORTAR FOR CONCRETE MASONRY SHALL BE TYPE M FOR ALL BELOW GRADE UNITS AND TYPE S AT ABOVE GRADE UNITS.
5. CALCIUM CHLORIDE SHALL NOT BE USED IN MORTAR OR GROUT.
6. LAY MASONRY IN RUNNING BOND, UNLESS NOTED OTHERWISE.
7. HOLLOW-UNIT MASONRY SHALL HAVE FACE SHELL BEDDING EXCEPT AT PIERS, COLUMNS, PILASTERS, THE COURSE IMMEDIATELY ABOVE FOUNDATIONS, AND WHERE CONTAINMENT OF GROUT OR LOOSE FILL INSULATION REQUIRES THAT WEB AND FACE SHELLS BE MORTARED. IN FULLY GROUTED OR UN-GROUTED MASONRY, ONLY THE FACE SHELLS NEED TO BE MORTARED.
8. PLACE LADDER TYPE HORIZONTAL JOINT REINFORCING WITH PREFORMED LAPPED CORNER REINFORCING AT 16" OC VERTICALLY IN ALL MASONRY WALLS U.O.N.
9. WALL SHALL BE REINFORCED VERTICALLY AS SHOWN ON STRUCTURAL DRAWINGS. REINFORCING SHALL BE FULLY GROUTED IN PLACE.
10. WALLS SHALL BE REINFORCED VERTICALLY AT WALL ENDS, CORNERS, AND ALL AROUND DOOR AND WINDOW OPENINGS WITH (2) #5 BARS, UNLESS NOTED OTHERWISE.
11. PROVIDE A CONTINUOUS BOND BEAM WITH (2) #5 BARS CONTINUOUS IN THE TOP COURSE OF ALL BLOCK WALLS, AT LOCATIONS WHERE FRAMING MEMBERS ARE BOLTED TO FACE OF CMU WALLS, BELOW BEAM BEARINGS, AND AT LOCATIONS INDICATED ON THE DRAWINGS. BOND BEAMS SHALL HAVE CORNER BARS AROUND CORNERS AND AT WALL INTERSECTIONS.
12. FILL ALL VOIDS AND BLOCK CELLS SOLIDLY WITH GROUT FOR A DISTANCE OF 24-INCHES BENEATH AND 16-INCHES EACH SIDE OF ALL BEAM REACTIONS OR OTHER CONCENTRATED LOADS, UNLESS NOTED OTHERWISE. GROUT SHALL BE VIBRATED AND RE-VIBRATED AFTER INITIAL WATER LOSS TO ENSURE COMPLETE FILLING OF CORES.
13. VERTICAL CONTROL JOINTS OF A KEY TYPE AS INDICATED ON THE PLANS ARE TO BE PLACED IN ALL MASONRY WALLS AT INTERVALS NOT TO EXCEED 24 FEET APART. THE CONTRACTOR SHALL FURNISH A CONTROL JOINT LOCATION PLAN FOR THE ARCHITECT'S APPROVAL IF THE PLANS DO NOT SUFFICIENTLY DESCRIBE THE LOCATION OF ALL REQUIRED CONTROL JOINTS.

BRICK MASONRY

1. BRICK MASONRY CONSTRUCTION SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
   - BUILDING CODE REQUIREMENTS AND SPECIFICATION FOR MASONRY STRUCTURES, TMS 402/602.
   - TECHNICAL NOTES ON BRICK CONSTRUCTION, TECHNICAL NOTES 1-48, BIA.
   - GUIDE SPECIFICATION FOR BRICK MASONRY, TECHNICAL NOTES 11A-E, BIA.
   - HOT AND COLD WEATHER MASONRY CONSTRUCTION BY THE MASONRY INDUSTRY COUNCIL.
2. BRICK UNITS FOR EXTERIOR USE AS A VENEER SHALL CONFORM TO ASTM C216 GRADE SW, WITH THE FOLLOWING EXCEPTIONS:
   - THE SATURATION COEFFICIENT (C/B) REQUIREMENT SHALL NOT BE WAIVED AS ALLOWED IN SECTIONS 5.1 AND 5.2 UNLESS ENGINEERING DATA AND FIELD RECORDS CAN BE PROVIDED WHICH DEMONSTRATES THE UNITS TO BE SUFFICIENTLY DURABLE AND RESISTANT TO FREEZE-THAW DETERIORATION.
   - INITIAL RATE OF ABSORPTION (IRA) SHALL NOT EXCEED 20 GRAMS PER MINUTE PER 30 SQUARE INCHES OF FACE AREA. FOR COLD WEATHER CONSTRUCTION, THE BRICKS SHALL HAVE A MINIMUM IRA OF 6 GRAMS PER MINUTE PER 30 SQUARE INCHES OF FACE AREA.
3. BRICK MANUFACTURER OR DISTRIBUTOR SHALL PROVIDE THE ARCHITECT WITH BRICK TEST DATA, CERTIFICATE OF COMPLIANCE WITH ASTM C216 GRADE SW, AND THE ABOVE NOTED EXCEPTIONS. BRICK UNITS SHALL NOT BE SHIPPED TO THE SITE UNTIL APPROVAL HAS BEEN RECEIVED FROM THE ARCHITECT.
4. MORTAR FOR BRICK MASONRY SHALL CONFORM TO ASTM C270. MORTAR SHALL BE TYPE M FOR ALL BELOW GRADE UNITS AND TYPE N ABOVE GRADE.
5. IN CMU AND BRICK CAVITY WALLS, PROVIDE CONTINUOUS LADDER TYPE HORIZONTAL JOINT REINFORCING AT 16" OC VERTICAL SPACING WITH ADJUSTABLE VENEER TIE SYSTEM AT 16" OC HORIZONTAL SPACING. THE SYSTEM SHALL PERMIT MOVEMENT OF THE TIE BOTH VERTICALLY AND HORIZONTALLY WITHIN THE PLANE OF THE WALL, BUT SHALL PREVENT MOVEMENT NORMAL TO THE PLANE OF THE WALL.
6. AT CONCRETE WALLS WITH BRICK VENEER, PROVIDE CONTINUOUS VERTICAL DOVETAIL SLOT ANCHORS AT 16" OC HORIZONTAL SPACING WITH TRIANGULAR WIRE TIES INTO THE VENEER AT 16" OC VERTICAL SPACING.

STRUCTURAL STEEL

1. STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS UNLESS NOTED OTHERWISE:
   - W-SHAPES, C-SHAPES, MC-SHAPES — ASTM A992, MIN 50 KSI
   - ANGLES, M-SHAPES, S-SHAPES, HP-SHAPES — ASTM A572, MIN 50 KSI
   - HSS-SHAPES — ASTM A500, GRADE C, MIN 50 KSI
   - PIPES — ASTM A53, GRADE B, MIN 35 KSI
   - ALL OTHER — ASTM A36, MIN 36 KSI
2. CONNECTION MATERIAL SHALL CONFORM TO THE FOLLOWING MINIMUM REQUIREMENTS OR AS NEEDED FOR CONNECTION DESIGN:
   - ANGLES, PLATES & BARS (MAX 4" THICKNESS) — ASTM A572, MIN 50 KSI
   - PLATES & BARS (OVER 4" THICKNESS) — ASTM A36, MIN 36 KSI
   - WT-SHAPES — ASTM A992, MIN 50 KSI
   - BOLTS — ASTM F3125
   - NUTS — ASTM A563
   - WASHERS — ASTM F436
   - THREADED RODS — ASTM A36, MIN 36 KSI
   - ANCHOR RODS — ASTM F1554 WELDABLE, GRADE 55
   - WELD ELECTRODES — E70XX
   - CLEVISES — ASTM A668
3. ALL BOLTED CONNECTIONS ARE BEARING TYPE CONNECTIONS MADE WITH 3/4" DIAMETER HIGH-STRENGTH BOLTS IN 13/16" DIAMETER OPEN HOLES INSTALLED TO THE SNUG TIGHT CONDITION, UNLESS NOTED OTHERWISE.
4. ALL CONNECTIONS NOT SPECIFICALLY DETAILED, SHALL BE BEARING TYPE CONNECTIONS DESIGNED AND DETAILED BY THE FABRICATOR TO SUPPORT THE END REACTIONS NOTED ON THE DRAWINGS. SHEAR TAB CONNECTIONS ARE PERMISSIBLE FOR SECONDARY BEAMS, PRIMARY GIRDERS REQUIRE DOUBLE CLIP ANGLES, TYP.
5. SPLICES SHALL BE ALLOWED ONLY AT LOCATIONS SPECIFICALLY INDICATED ON THE STRUCTURAL DRAWINGS UNLESS APPROVED OTHERWISE BY THE STRUCTURAL ENGINEER OF RECORD.
6. DO NOT USE OVERSIZED OR SLOTTED HOLES FOR ANY CONNECTIONS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
7. PROVIDE L4X4X1/4" SEATS AT COLUMN WEBS WHERE REQUIRED FOR SUPPORT OF ROOF AND FLOOR DECKS.
8. STEEL THAT MAY ACCUMULATE WATER SHALL HAVE DRAIN HOLES. ALL DRAIN PENETRATIONS THROUGH MAIN MEMBERS SHALL NOT EXCEED 1-INCH IN DIAMETER AND SHALL BE GROUND SMOOTH. THESE DRAINS MUST BE KEPT CLEAN AND OPEN.
9. SHOW ALL COPES, HOLES, OPENINGS, AND MODIFICATIONS REQUIRED IN STRUCTURAL STEEL MEMBERS FOR ERECTION OR THE WORK OF OTHER TRADES ON THE SHOP DRAWINGS.
10. ALL WELDING SHALL BE DONE BY CERTIFIED, LICENSED WELDERS AND SHALL BE IN CONFORMANCE WITH THE STRUCTURAL WELDING CODE OF THE AMERICAN WELDING SOCIETY ANSI/AWS D1.1, LATEST EDITION.
11. NO PENETRATIONS ARE PERMITTED THROUGH STRUCTURAL STEEL MEMBERS UNLESS INDICATED ON STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER OF RECORD.
12. MILLED OR BUTT WELDED STIFFENERS SHALL BE PROVIDED ON GIRDERS SUPPORTING A COLUMN AND OVER ALL COLUMNS.
13. APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD SHALL BE MANDATORY FOR THE USE OF CUTTING TORCH IN THE FIELD.
14. ALL GROUT UNDER STEEL PLATES SHALL BE NON-SHRINK "PRE-MIX" TYPE AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI, TESTED IN ACCORDANCE WITH CONCRETE SPECIFICATIONS. USE NON-STAINING GROUT AT EXPOSED LOCATIONS. GROUT BENEATH COLUMN BASE PLATES SHALL BE INSTALLED AS NOTED IN "THE AISC CODE OF STANDARD PRACTICE" AFTER THE STEEL FRAMING ABOVE THE BASE PLATE IS PLUMB AND HELD IN PLACE WITH TEMPORARY GUYING, IF NECESSARY, AND PRIOR TO POURING ANY SUPPORTED SLABS ON METAL DECK THAT ARE SUPPORTED BY THE FRAME OR CONSTRUCTING ANY ENGAGED WALLS THAT WOULD PREVENT PROPER PLUMB OF THE FRAME FROM BEING ACHIEVED.
15. THE STEEL FABRICATOR MAY SUBSTITUTE HEAVIER SECTIONS IN PLACE OF THE SECTIONS SHOWN ON THE DRAWINGS TO ACHIEVE ECONOMY OF REPETITION, FOR AVAILABILITY, OR TO TAKE ADVANTAGE OF ROLLING MILL PRODUCTION SCHEDULES SO LONG AS THE CHANGES ARE MADE KNOWN TO THE ARCHITECT AND STRUCTURAL ENGINEER, AND ARE ACCEPTABLE TO BOTH.
16. ALL STRUCTURAL STEEL SHALL BE PAINTED WITH ONE SHOP-APPLIED COAT OF RUST INHIBITING PRIMER AFTER SURFACE PREPARATION BY THE SOCIETY FOR PROTECTIVE COATINGS (SSPC) SP3 "POWER TOOL CLEANING", UNLESS NOTED OTHERWISE. DO NOT PAINT PORTIONS OF STEEL MEMBERS THAT ARE TO RECEIVE SPRAY-ON FIREPROOFING, NOR SURFACES TO RECEIVE WELDED SHEAR STUDS. STEEL STRUCTURE THAT IS PERMANENTLY EXPOSED TO THE EXTERIOR SHALL BE HOT DIP GALVANIZED ACCORDING TO ASTM A123.
17. ALL STRUCTURAL STEEL EXPOSED TO VIEW IN THE FINISHED WORK INCLUDING BEAMS, COLUMNS, GIRTS, TRUSSES, BRIDGING, BRACING, AND CONNECTIONS SHALL BE CLASSIFIED AS "ARCHITECTURALLY EXPOSED STRUCTURAL STEEL" (AESS) AND SHALL MEET THE ADDITIONAL REQUIREMENT GIVEN IN AISC "STEEL CONSTRUCTION MANUAL", LATEST EDITION - SECTION 10 OF AISC 303 "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES". SEE ARCHITECTURAL DRAWINGS AND SPECS FOR LOCATIONS AND FINISH REQUIREMENTS OF AESS 3.
18. FOR MISCELLANEOUS STEEL CONSTRUCTION NOT SHOWN ON STRUCTURAL DRAWINGS, SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS.

ROCHESTER HILLS
MICHIGAN

A3C COLLABORATIVE ARCHITECTURE
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104
T: (734) 663 - 1910
F: (866) 732 - 2168
www.a3c.com
Architects Project No: 25021

rda
robert darvas associates
consulting structural engineers
440 south main street
ann arbor, mi 48104
RDA No. 25008

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources

CONTACT
Mr. Ken Elwet, CPRE
Ph: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
STRUCTURAL NOTES

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: NM

DESIGNED BY: SMR

DATE: 02/02/26

SCALE:

NFE JOB NO. 0557

SHEET NO. S001

FIELD DRILLED ADHESIVE ANCHORS

1. BASIS OF DESIGN FOR FIELD DRILLED ADHESIVE ANCHORS AND REBAR IN CONCRETE SHALL BE HILTI HIT-HY 200 V3 AS MANUFACTURED BY HILTI, OR EQUIVALENT PRODUCT. BASIS OF DESIGN FOR FIELD DRILLED ADHESIVE ANCHORS AND REBAR IN MASONRY SHALL BE HILTI HIT-HY 270 AS MANUFACTURED BY HILTI, OR EQUIVALENT PRODUCT. FOR HOLLOW OR MULTI-WYTHE MASONRY, PROVIDE APPROPRIATELY SIZED SCREEN TUBE PER INSTALLATION INSTRUCTIONS. FOR SUBSTITUTION PURPOSES, SIGNED AND SEALED CALCULATIONS SHALL BE PROVIDED FOR REVIEW, INDICATING THE SUBSTITUTED ANCHOR MEETS THE CAPACITY REQUIREMENTS OF THE DETAILED ANCHOR.

2. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

3. USE ONLY CODE-APPROVED ANCHORS WITH VALID EVALUATION REPORT FOR USE IN THE BASE MATERIAL SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMIT EVALUATION REPORT TO STRUCTURAL ENGINEER OF RECORD AND SPECIAL INSPECTION AGENT FOR APPROVAL. DO NOT INSTALL ANCHORS UNTIL SUBMITTAL IS RETURNED "REVIEWED WITHOUT COMMENT."

4. ONLY ONE LENGTH ANCHOR SHALL BE PRESENT ON THE JOB SITE FOR A GIVEN ANCHOR DIAMETER, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.

5. ALL FIELD INSTALLED ADHESIVE ANCHORS SHALL CONFORM TO AC-308. INSTALLER OF FIELD INSTALLED ADHESIVE ANCHORS SHALL BE TRAINED BY ANCHOR MANUFACTURER TO ENSURE PROPER INSTALLATION REQUIREMENTS SUCH AS HOLE CLEANING, HORIZONTAL AND OVERHEAD APPLICATIONS, EMBEDMENT DEPTHS GREATER THAN 10 INCHES, AND WATER FILLED HOLES.

6. ADHESIVE ANCHORS OF THE DIAMETER AND EMBEDMENT SHOWN ON THE DRAWINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNDER THE CONTINUOUS SUPERVISION OF AN INDEPENDENT TESTING AGENCY. WHERE THE PROVISIONS OF THE ABOVE REFERENCED DOCUMENTS ARE IN CONFLICT, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. AT LOCATIONS WHERE ANCHORAGE IS NOT SPECIFIED, CONSULT STRUCTURAL ENGINEER OF RECORD.

7. CLEAN EXISTING CONCRETE SURFACE TO SOLID STRUCTURAL CONCRETE. GRIND SMOOTH FOR FULL STEEL CONTACT AND TO PREVENT GAPS BETWEEN STEEL AND CONCRETE. ALTERNATIVELY, PROVIDE NON-SHRINK GROUT IN ALL VOIDS BETWEEN STEEL AND BASE MATERIAL. FOREIGN MATERIAL SHALL NOT BE PLACED IN THE HOLES THAT RECEIVE ADHESIVE ANCHORS. ALL ABANDONED HOLES DRILLED IN CONCRETE SHALL BE COMPLETELY FILLED WITH STRUCTURAL GRADE EPOXY.

8. THE CONTRACTOR SHALL CREATE A TEMPLATE AT EACH ADHESIVE ANCHOR CONNECTION LOCATION **PRIOR** TO FABRICATING HOLES IN CONNECTING PLATES OR ROLLED SHAPES. TEMPLATES SHALL BE MADE BY FIRST LOCATING EXISTING REINFORCING STEEL USING NON-DESTRUCTIVE TESTING EQUIPMENT, AND THEN DRILLING ANCHOR HOLES SUCH THAT NO CONFLICT EXISTS WITH THE EXISTING REINFORCING. ANCHOR LOCATIONS IN THE FIELD MAY BE RELOCATED A MAXIMUM OF 1 1/2 INCHES FROM THE DIMENSIONS SHOWN ON THE DRAWINGS TO AVOID CONFLICTS WITH THE EXISTING REINFORCING STEEL. HOWEVER, DO NOT EXCEED MINIMUM ANCHOR SPACINGS OR EDGE DISTANCES PER MANUFACTURER'S REQUIREMENTS.

9. ADHESIVE ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE FACE OF THE SURFACE BEING DRILLED. THE MAXIMUM TOLERANCE FOR DEVIATION FROM PERPENDICULAR SHALL BE 6 DEGREES. ALL ADHESIVE ANCHORS INSTALLED OUTSIDE OF THE SPECIFIED TOLERANCE SHALL BE CONSIDERED UNACCEPTABLE. USE OF DIAMOND CORE BIT WITH ROUGHENING TOOL FOR ANCHOR HOLES REQUIRES APPROVAL FROM STRUCTURAL ENGINEER OF RECORD PRIOR TO DRILLING.

10. HOLES IN CONNECTION PLATES SHALL BE NO MORE THAN 3/16 INCH LARGER THAN THE ADHESIVE ANCHOR ROD DIAMETER. IF LARGER DIAMETER HOLES ARE USED FOR ERECTION PURPOSES, THE CONTRACTOR MUST PROVIDE PLATE WASHERS WITH HOLES NO MORE THAN 1/16 INCH LARGER THAN THE ANCHOR. PLATE WASHERS MUST BE WELDED TO THE CONNECTION PLATE TO TRANSFER THE LOAD. WELDING MUST TAKE PLACE AFTER HOLES ARE DRILLED, BUT PRIOR TO ADHESIVE INSTALLATION TO AVOID BURNING OR MELTING THE ADHESIVE.

CURTAIN WALL

1. THE CURTAIN WALL MANUFACTURER SHALL DESIGN THE CURTAIN WALL SYSTEM FOR THE APPROPRIATE WIND LOADS AS SPECIFIED IN THE APPLICABLE BUILDING CODE. THE CURTAIN WALL MANUFACTURER SHALL ALSO SUPPLY NON-CONDUCTING ISOLATION BARRIERS AT ANY CONNECTION BETWEEN ALL ALUMINUM OR NON-FERROUS MEMBERS AND STEEL ELEMENTS TO PREVENT GALVANIC CORROSION. THIS INSULATION MATERIAL SHALL ALSO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. CURTAIN WALL SUPPLIER TO COORDINATE THE ANCHORAGE DEVICES REQUIRED WITH THE LOCATION OF ALL STRUCTURAL STEEL.

SAW CUTTING EXISTING CONCRETE AND/OR MASONRY

1. SAW CUTTING OF NEW OPENINGS IN EXISTING CONCRETE AND/OR MASONRY WALLS SHALL BE DONE WITHOUT OVERCUTTING BEYOND THE BOUNDARIES OF THE INTENDED OPENING. ANY STRUCTURAL REPAIRS REQUIRED BY THE STRUCTURAL ENGINEER OF RECORD AS A RESULT OF OVERCUTTING BEYOND THE BOUNDARIES OF AN OPENING SHALL BE PAID FOR BY THE SAW CUTTING CONTRACTOR. SEE DRAWINGS FOR ADDITIONAL INFORMATION.

FIELD DRILLED MECHANICAL ANCHORS

1. BASIS OF DESIGN FOR FIELD DRILLED MECHANICAL ANCHORS IN CONCRETE AND SOLID GROUTED MASONRY SHALL BE HILTI KWIK BOLT TZ2 ANCHORS AS MANUFACTURED BY HILTI, OR EQUIVALENT PRODUCT. FOR SUBSTITUTION PURPOSES, SIGNED AND SEALED CALCULATIONS SHALL BE PROVIDED FOR REVIEW, INDICATING THE SUBSTITUTED ANCHOR MEETS THE CAPACITY REQUIREMENTS OF THE DETAILED ANCHOR.

2. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

3. USE ONLY CODE-APPROVED ANCHORS WITH VALID EVALUATION REPORT FOR USE IN THE BASE MATERIAL SHOWN ON THE CONSTRUCTION DOCUMENTS. SUBMIT EVALUATION REPORT TO STRUCTURAL ENGINEER OF RECORD AND SPECIAL INSPECTION AGENT FOR APPROVAL. DO NOT INSTALL ANCHORS UNTIL SUBMITTAL IS RETURNED "REVIEWED WITHOUT COMMENT."

4. ONLY ONE LENGTH ANCHOR SHALL BE PRESENT ON THE JOB SITE FOR A GIVEN ANCHOR DIAMETER, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS.

5. ALL FIELD INSTALLED MECHANICAL ANCHORS SHALL CONFORM TO AC-193. INSTALLER OF FIELD INSTALLED MECHANICAL ANCHORS SHALL BE TRAINED BY ANCHOR MANUFACTURER TO ENSURE PROPER INSTALLATION REQUIREMENTS SUCH AS DRILLING METHODS, HOLE CLEANING, AND INSTALLATION TORQUE.

6. MECHANICAL ANCHORS OF THE DIAMETER AND EMBEDMENT SHOWN ON THE DRAWINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNDER THE CONTINUOUS SUPERVISION OF AN INDEPENDENT TESTING AGENCY. WHERE THE PROVISIONS OF THE ABOVE REFERENCED DOCUMENTS ARE IN CONFLICT, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. AT LOCATIONS WHERE ANCHORAGE IS NOT SPECIFIED, CONSULT STRUCTURAL ENGINEER OF RECORD.

7. CLEAN EXISTING CONCRETE SURFACE TO SOLID STRUCTURAL CONCRETE. GRIND SMOOTH FOR FULL STEEL CONTACT AND TO PREVENT GAPS BETWEEN STEEL AND CONCRETE. ALTERNATIVELY, PROVIDE NON-SHRINK GROUT IN ALL VOIDS BETWEEN STEEL AND BASE MATERIAL. FOREIGN MATERIAL SHALL NOT BE PLACED IN THE HOLES THAT RECEIVE MECHANICAL ANCHORS. ALL ABANDONED HOLES DRILLED IN CONCRETE SHALL BE COMPLETELY FILLED WITH STRUCTURAL GRADE EPOXY.

8. THE CONTRACTOR SHALL CREATE A TEMPLATE AT EACH MECHANICAL ANCHOR CONNECTION LOCATION **PRIOR** TO FABRICATING HOLES IN CONNECTING PLATES OR ROLLED SHAPES. TEMPLATES SHALL BE MADE BY FIRST LOCATING EXISTING REINFORCING STEEL USING NON-DESTRUCTIVE TESTING EQUIPMENT, AND THEN DRILLING ANCHOR HOLES SUCH THAT NO CONFLICT EXISTS WITH THE EXISTING REINFORCING. ANCHOR LOCATIONS IN THE FIELD MAY BE RELOCATED A MAXIMUM OF 1 1/2 INCHES FROM THE DIMENSIONS SHOWN ON THE DRAWINGS TO AVOID CONFLICTS WITH THE EXISTING REINFORCING STEEL. HOWEVER, DO NOT EXCEED MINIMUM ANCHOR SPACINGS OR EDGE DISTANCES MANUFACTURER'S REQUIREMENTS.

9. MECHANICAL ANCHORS SHALL BE INSTALLED PERPENDICULAR TO THE FACE OF THE SURFACE BEING DRILLED. THE MAXIMUM TOLERANCE FOR DEVIATION FROM PERPENDICULAR SHALL BE 6 DEGREES. ALL MECHANICAL ANCHORS INSTALLED OUTSIDE OF THE SPECIFIED TOLERANCE SHALL BE CONSIDERED UNACCEPTABLE. USE OF DIAMOND CORE BIT WITH ROUGHENING TOOL FOR ANCHOR HOLES REQUIRES APPROVAL FROM STRUCTURAL ENGINEER OF RECORD PRIOR TO DRILLING.

10. HOLES IN CONNECTION PLATES SHALL BE NO MORE THAN 3/16 INCH LARGER THAN THE MECHANICAL ANCHOR ROD DIAMETER. IF LARGER DIAMETER HOLES ARE USED FOR ERECTION PURPOSES, THE CONTRACTOR MUST PROVIDE PLATE WASHERS WITH HOLES NO MORE THAN 1/16 INCH LARGER THAN THE ANCHOR. PLATE WASHERS MUST BE WELDED TO THE CONNECTION PLATE TO TRANSFER THE LOAD.

WOOD FRAMING

1. ALL WOOD FRAMING SHALL CONFORM TO THE "TIMBER CONSTRUCTION MANUAL" BY THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION" BY THE AMERICAN FOREST & PAPER ASSOCIATION – AMERICAN WOOD COUNCIL.

2. WOOD FOR WALL, FLOOR, AND ROOF FRAMING SHALL CONFORM TO THE FOLLOWING:

• DOUGLAS FIR-LARCH (DF) – NO.2 OR BETTER	
• BENDING (F_B)	900 PSI
• SHEAR (F_V)	180 PSI
• TENSION PARALLEL TO THE GRAIN (F_T)	575 PSI
• COMPR. PARALLEL TO THE GRAIN (F_C)	1,350 PSI
• COMPR. PERPEN. TO THE GRAIN (F_C)	625 PSI
• MODULUS OF ELASTICITY (E)=	1,600,000 PSI
• SOUTHERN PINE (SP) – NO.2 OR BETTER	
• BENDING (F_B)	975 PSI
• SHEAR (F_V)	175 PSI
• TENSION PARALLEL TO THE GRAIN (F_T)	600 PSI
• COMPR. PARALLEL TO THE GRAIN (F_C)	1,400 PSI
• COMPR. PERPEN. TO THE GRAIN (F_C)	660 PSI
• MODULUS OF ELASTICITY (E)=	1,600,000 PSI
• LAMINATED STRAND LUMBER (LSL):	
• BENDING (F_B)=	1,700 PSI
• SHEAR (F_V)=	425 PSI
• TENSION PARALLEL TO THE GRAIN (F_T)	1,075 PSI
• COMPR. PARALLEL TO THE GRAIN (F_C)	1,835 PSI
• COMPR. PERPEN. TO THE GRAIN (F_C)	710 PSI
• MODULUS OF ELASTICITY (E)=	1,300,000 PSI
• LAMINATED VENEER LUMBER (LVL):	
• BENDING (F_B)=	2,600 PSI
• SHEAR (F_V)=	285 PSI
• TENSION PARALLEL TO THE GRAIN (F_T)	1,555 PSI
• COMPR. PARALLEL TO THE GRAIN (F_C)	2,510 PSI
• COMPR. PERPEN. TO THE GRAIN (F_C)	710 PSI
• MODULUS OF ELASTICITY (E)=	2,000,000 PSI
• PARALLEL STRAND LUMBER (PSL):	
• BENDING (F_B)=	2,400 PSI
• SHEAR (F_V)=	190 PSI
• TENSION PARALLEL TO THE GRAIN (F_T)	1,755 PSI
• COMPR. PARALLEL TO THE GRAIN (F_C)	2,500 PSI
• COMPR. PERPEN. TO THE GRAIN (F_C)	545 PSI
• MODULUS OF ELASTICITY (E)=	1,800,000 PSI

3. BASIS FOR DESIGN OF WOOD I-JOISTS IS "TJI" TRUS JOIST BY WEYERHAEUSER. ALL WOOD I-JOISTS SHALL BE USED ACCORDING TO THE MANUFACTURER'S REQUIREMENTS, INCLUDING USE OF SQUASH BLOCKS, DOUBLERS, STIFFENERS, BRIDGING, AND PROPER FASTENINGS. FOLLOW MANUFACTURER'S HOLE CUTTING INSTRUCTIONS FOR LOCATIONS OF HOLES IN WEBS FOR PLUMBING AND WIRING. DO NO CUT OR NOTCH CHORDS.

4. PLYWOOD FLOOR DECK AND WALL SHEATHING SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE TRADEMARK OF THE APA – THE ENGINEERED WOOD ASSOCIATION, AND SHALL MEET THE REQUIREMENTS OF THE LATEST EDITION OF "U.S. PRODUCT STANDARDS, PS 1 FOR CONSTRUCTION AND INDUSTRIAL PLYWOOD". PLYWOOD THICKNESS IS SHOWN ON THE DRAWINGS.

5. GLUE FOR WOOD CONSTRUCTION SHALL COMPLY WITH SPECIFICATION AFG-01 OF THE APA – THE ENGINEERED WOOD ASSOCIATION.

6. THE NUMBER AND SIZE OF FASTENERS CONNECTING WOOD MEMBERS SHALL NOT BE LESS THAN THE REQUIREMENTS SET FORTH IN THE BUILDING CODE FASTENING SCHEDULE.

7. ALL WOOD CONSTRUCTION CONNECTORS SHALL BE MANUFACTURED BY SIMPSON STRONG-TIE OR APPROVED EQUAL.

8. PROVIDE 1X4 CROSS BRIDGING NOT OVER 8-FEET OC FOR ALL WOOD JOISTS AND 2X SOLID BLOCKING BETWEEN JOISTS AT ALL SUPPORTS.

9. ALL WALL, FLOOR, AND ROOF SHEATHING IS TO BE ORIENTATED PERPENDICULAR TO ITS SUPPORTING MEMBER, UNLESS OTHERWISE NOTED.

10. ALL WOOD ROOF TRUSSES SHALL BE SHOP FABRICATED TO THE REQUIRED DIMENSIONS, AND SHALL BE CAPABLE OF SUPPORTING ALL SUPERIMPOSED DEAD LOADS PLUS SNOW AND/OR LIVE LOAD AS SPECIFIED IN THE APPLICABLE BUILDING CODE.
    - SHOP DRAWINGS SHALL BE SUBMITTED TO THE ARCHITECT FOR APPROVAL AND SHALL BEAR THE SEAL OF A PE REGISTERED IN THE STATE OF THE PROJECT.
    - THE TRUSS MANUFACTURER IS TO ENGINEER AND PROVIDE ALL HEADERS AND GIRDER TRUSSES FOR FLUSH FRAMED TRUSS SUPPORT CONDITIONS.
    - ALL TRUSSES WHICH FLUSH FRAME INTO HEADERS OR GIRDER TRUSSES SHALL BE CONNECTED WITH METAL HANGERS DESIGNED BY A PE LICENSED IN THE STATE OF THE PROJECT AND SUPPLIED BY THE TRUSS MANUFACTURER. TRUSS HANGERS ARE TO INCLUDE PROPER NAILS OR BOLTS AS REQUIRED BY THEIR DESIGN. PRE-ENGINEERED TRUSS HANGERS BY "SIMPSON" WILL BE ACCEPTABLE. SIZE AND CAPACITY OF TRUSS HANGERS IS TO BE SHOWN ON THE SHOP DRAWINGS.
    - PROVIDE SIMPSON H2.5A HURRICANE TIES AT CONNECTION BETWEEN ALL ROOF TRUSSES AND BEARING WALLS.

PREMANUFACTURED WOOD TRUSSES

1. THE FOLLOWING DESIGN DATA SHALL BE INCLUDED ON THE SHOP DRAWINGS:
    - METAL CONNECTORS' SIZE
    - LUMBER GRADES
    - DESIGN LOADING AND ALLOWABLE UNIT STRESS INCREASES
    - CALCULATED DEFLECTIONS

2. TRUSSES ARE DESIGNED FOR IN SERVICE CONDITIONS ONLY. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROPERLY BRACE TRUSSES DURING LIFTING AND ERECTION.

3. TRUSS MANUFACTURER SHALL DESIGN ALL FLOOR AND ROOF TRUSSES FOR ALL GRAVITY, SHEAR, AND WIND LOADS. TRUSS LENGTHS AND PROFILES SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO FABRICATION.

4. CONFIGURATION AND SIZE OF WEB AND CHORD MEMBERS SHALL BE DETERMINED BY TRUSS MANUFACTURER.

5. CONTRACTOR SHALL KEEP TRUSSES LATERALLY BRACED DURING ERECTION UNTIL ALL DIAPHRAGMS AND PERMANENT BRACING ARE INSTALLED.

6. DESIGN AND FABRICATION CRITERIA OF ALL WOOD TRUSSES SHALL MEET THE "NATIONAL DESIGN SPECIFICATIONS FOR STRESS – GRADE LUMBER AND ITS FASTENING" BY NATIONAL FOREST PRODUCTS ASSOCIATIONS (LATEST REVISION), "TIMBER CONSTRUCTION STANDARDS" BY AMERICAN INSTITUTE OF TIMBER CONSTRUCTION (LATEST REVISION), AND "DESIGN SPECIFICATIONS FOR LIGHT METAL CONNECTED WOOD TRUSSES" BY TRUSS PLATE INSTITUTE.

7. THE MOISTURE CONTENT OF LUMBER SHALL NOT EXCEED 19%, NOR BE LESS THAN 7% AT THE TIME OF FABRICATION.

8. CHORD AND WEB MEMBERS SHALL BE EITHER SOUTHERN PINE OR DOUGLAS FIR.

9. ALL TRUSS CONNECTOR PLATES SHALL BE MANUFACTURED FROM STRUCTURAL QUALITY GALVANIZED SHEET METAL NOT LESS THAN 20-GAUGE THICKNESS WITH MINIMUM YIELD OF 33,000 PSI AND MINIMUM ULTIMATE TENSILE STRENGTH OF 45,000 PSI. THE CORROSION RESISTANT COATING SHALL MEET OR EXCEED ASTM A653: STANDARD SPECIFICATION FOR SHEET METAL.

10. OPEN JOINTS WHICH DEPEND ON THE STIFFNESS OF THE METAL CONNECTOR PLATE TO TRANSMIT STRESSES AND IMPROPER FITTING JOINTS WILL NOT BE PERMITTED.

11. DEAD KNOTS AND WANES ON LUMBER SHALL NOT BE USED UNDER THE CONNECTOR PLATES.

12. DESIGN AND DETAILING OF PRE-MANUFACTURED PRODUCTS, CONNECTIONS, AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE AITC "TIMBER CONSTRUCTION MANUAL" AND THE NFPA "NATIONAL DESIGN SPECIFICATIONS FOR WOOD CONSTRUCTION."

13. TRUSSES SHALL BE DESIGNED AND FABRICATED BY TRUSS MANUFACTURER. THE DESIGN SHALL BE PREPARED BY A REGISTERED ENGINEER BEARING A LICENSE IN THE STATE OF THE PROJECT.

ROCHESTER HILLS
MICHIGAN

A3C COLLABORATIVE ARCHITECTURE
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

www.a3c.com

Architects Project No: 25021

robert darvas associates
consulting structural engineers
440 south main street
ann arbor, mi 48104
RDA No. 25008

PROJECT
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Site Improvements

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City of Rochester Hills
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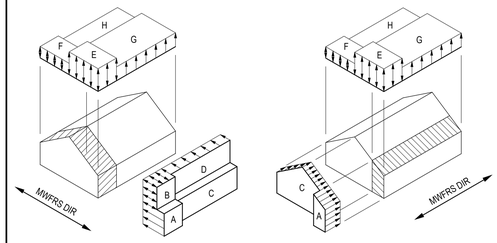
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE:

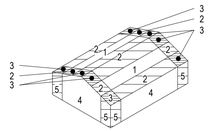
NFE JOB NO. 0557
SHEET NO. S002

MAIN WIND FORCE RESISTING SYSTEM (psf)									
HORIZONTAL PRESSURES				VERTICAL PRESSURES				OVERHANG PRESSURES	
A	B	C	D	E	F	G	H	Eoh	Goh
± 21.0	± 10.9	± 13.9	± 6.5	± 25.2	± 14.3	± 17.5	± 11.1	± 35.3	± 27.6



COMPONENTS AND CLADDING

LOAD (psf)								
ZONE	10 SF		20 SF		50 SF		100 SF	
1	9.7	-23.8	9.1	-23.2	8.3	-22.4	7.7	-21.8
2	9.7	-39.9	9.1	-35.7	8.3	-30.1	7.7	-25.8
3	9.7	-60.1	9.1	-49.8	8.3	-36.1	7.7	-25.8
4	23.8	-25.8	22.7	-24.7	21.3	-23.3	20.2	-22.2
5	23.8	-31.9	22.7	-29.7	21.3	-26.9	20.2	-24.7
2 ROH	-	-34.3	-	-33.7	-	-32.9	-	-32.3
3 ROH	-	-56.5	-	-44.3	-	-28.3	-	-16.1



MICHIGAN BUILDING CODE 2021		
TABLE 1705.3 - REQUIRED SPECIAL INSPECTION AND TESTS OF CONCRETE CONSTRUCTION		
TYPE	**CONTINUOUS**	**PERIODIC**
Inspect reinforcement, and verify placement, lapping and lap connections.	--	X
Inspect anchors cast in concrete	--	X
Inspect anchors post-installed in hardened concrete members		
Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.	X	
Mechanical anchors and adhesive anchors not defined above		X
Verify use of required design mix	--	X
Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	X	--
Inspect concrete placement for proper application techniques	X	--
Verify maintenance of specified curing temperature and techniques	--	X
Inspect formwork for shape, location, and dimensions of the concrete member being formed	--	X
TABLE 1705.6 - REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS		
TYPE	**CONTINUOUS**	**PERIODIC**
Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	X	--
Verify excavations are extended to proper depth and have reached proper material.	X	--
Perform classification and testing of compacted fill materials	--	X
Verify use of proper materials, densities, and lift thicknesses during placement and compaction of compacted fill.	X	--
Prior to placement of compacted fill, observe subgrade and verify that the site has been prepared properly.	X	--

STRUCTURAL STEEL REQUIREMENTS PER: AISC 360 - CHAPTER N - QUALITY CONTROL AND QUALITY ASSURANCE			
MINIMUM REQUIREMENTS			
PER IBC 2015 1705.2.1 STRUCTURAL STEEL: SPECIAL INSPECTIONS AND NONDESTRUCTIVE TESTING OF STEEL ELEMENTS IN BUILDINGS, STRUCTURES, AND PORTIONS THEREOF SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360			
QC	QUALITY CONTROL	O	THE INSPECTOR SHALL OBSERVE THESE ITEMS ON A RANDOM BASIS. OPERATIONS NEED NOT BE DELAYED PENDING THESE INSPECTIONS.
QA	QUALITY ASSURANCE	P	THESE TASKS SHALL BE PERFORMED FOR EACH WELDED JOINT (OR BOLTED CONNECTION)

TABLE N5.4-1 - INSPECTION TASKS PRIOR TO WELDING		
TASK	**QC**	**QA**
Welding qualification records and continuity records	P	O
Welding procedure specifications (WPS) available	P	P
Manufacturer certifications for welding consumables available	P	P
Material identification (type/grade)	O	O
Material identification system	O	O
Fit-up of groove welds (including joint geometry): • Joint penetrations • Dimensions (alignment, root opening, root face, bevel) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location) • Backing type and fit (if applicable)	O	O
Configuration and finish of access holes	O	O
Fit-up of fillet welds: • Dimensions (alignment, gaps at root) • Cleanliness (condition of steel surfaces) • Tacking (tack weld quality and location)	O	O
Check welding equipment	O	--
TABLE N5.4-2 - INSPECTION TASKS DURING WELDING		
Control and handling of welding consumables: • Packaging • Exposure Control	O	O
No welding over cracked tack welds	O	O
Environmental conditions • Wind speed within limits • Precipitation and temperature	O	O
WPS followed: • Settings on welding equipment • Travel speed • Selected welding materials • Shielding gas type/flow rate • Preheat applied • Interpass temperature maintained (min/max) • Proper position (F, V, H, OH)	O	O
Welding techniques: • Interpass and final cleaning • Each pass within profile limitation • Each pass meets quality requirements	O	O
TABLE N5.4-3 - INSPECTION TASKS AFTER WELDING		
Welds cleaned	O	O
Size, length, and location of welds	P	P
Welds meet visual acceptance criteria: • Crack prohibition, weld/base-metal fusion, crater cross section • Weld profiles, weld size, undercut	P	P
Backing removed and weld tabs removed (if required)	P	P
Repair activities	P	P
Document acceptance or rejection of welded joint or member	P	P
No prohibited welds have been added without the approval of the EOR	O	O
TABLE N5.6-1 - INSPECTION TASKS PRIOR TO BOLTING		
TASK	**QC**	**QA**
Manufacturer's certifications available for fastener materials	O	P
Fasteners marked in accordance with ASTM requirements	O	O
Correct fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)	O	O
Correct bolting procedure selected for joint detail	O	O
Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements	O	O
Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used	P	O
Proper storage provided for bolts, nuts, washers, and other fastener components	O	O
TABLE N5.6-2 - INSPECTION TASKS DURING BOLTING		
Fastener assemblies placed in all holes and washers and nuts are positioned as required	O	O
Joint brought to the snug-tight condition prior to pretensioning operation	O	O
Fastener component not turned by the wrench prevented from rotating	O	O
Fasteners are pretensioned in accordance with RSCS Specification, progressing systematically from the rigid point toward the free edges	O	O
TABLE N5.6-3 - INSPECTION TASKS AFTER BOLTING		
Document acceptance or rejection of bolted connections	P	P

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MICHIGAN

A3C COLLABORATIVE ARCHITECTURE
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104
T: (734) 663 - 1910
F: (866) 732 - 2168
www.a3c.com

Architects Project No: 25021

rda
robert darvas associates
consulting structural engineers
440 south main street
ann arbor, mi 48104
RDA No. 25008

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources

CONTACT
Mr. Ken Elwet, CPRE
Ph: 248-656-4673
elwertk@rochesterhill.org

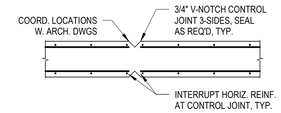
PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
SPECIAL INSPECTIONS

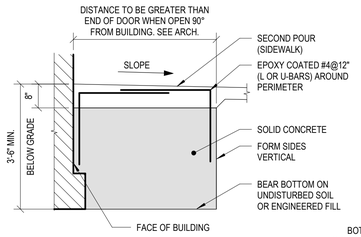
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE: 12" = 1'-0"

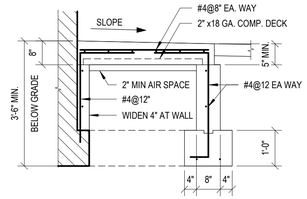
NFE JOB NO. 0557
SHEET NO. S003



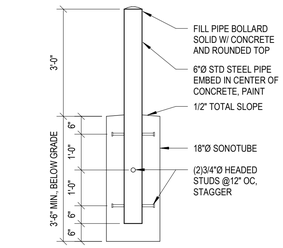
15 S004 WALL CONTROL JOINT
Not to Scale



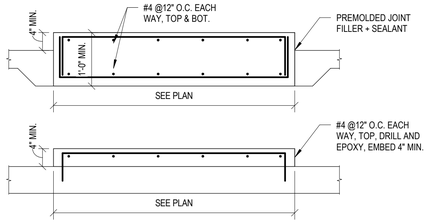
16 S004 FROST-PROOF ENTRY SLAB
Not to Scale



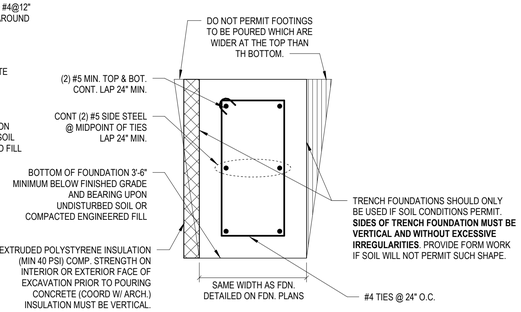
17 S004 SUPPORTED ENTRY SLAB
Not to Scale



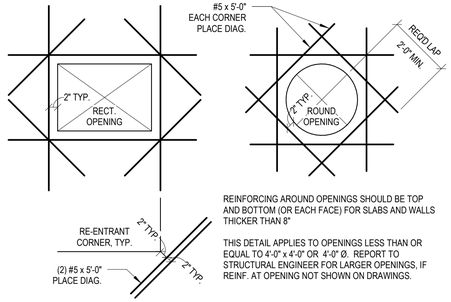
18 S004 TYPICAL BOLLARD DETAIL
Scale: 1/2" = 1'-0"



10 S004 CONCRETE MECHANICAL PAD
Not to Scale



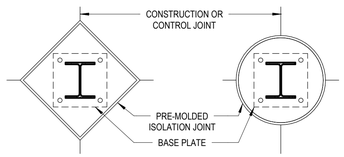
11 S004 TRENCH FOUNDATION
Not to Scale



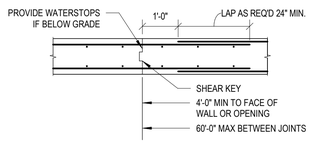
REINFORCING AROUND OPENINGS SHOULD BE TOP AND BOTTOM (OR EACH FACE) FOR SLABS AND WALLS THICKER THAN 8"

THIS DETAIL APPLIES TO OPENINGS LESS THAN OR EQUAL TO 4'-0" x 4'-0" OR 4'-0" Ø. REPORT TO STRUCTURAL ENGINEER FOR LARGER OPENINGS, IF REINF. AT OPENING NOT SHOWN ON DRAWINGS.

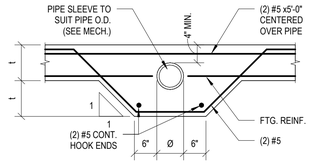
12 S004 REINFORCING AT CONCRETE OPENINGS
Not to Scale



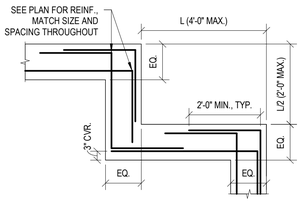
13 S004 COLUMN ISOLATION JOINTS
Not to Scale



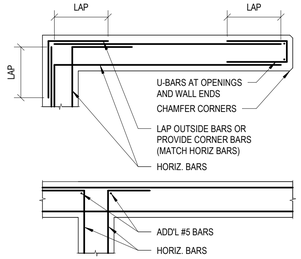
14 S004 WALL CONSTRUCTION JOINT
Not to Scale



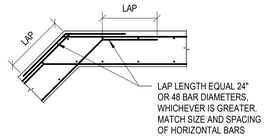
6 S004 PIPE THROUGH FOUNDATION
Not to Scale



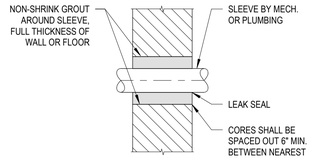
7 S004 STEPPED FOUNDATION DETAIL
Not to Scale



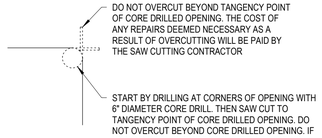
8 S004 TYPICAL WALL AND CORNER REINFORCING
Not to Scale



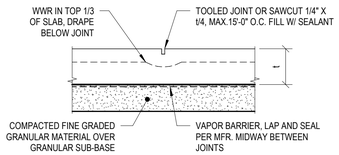
9 S004 ANGLED WALL CORNER
Not to Scale



1 S004 CORING AND SLEEVING IN EXISTING CONCRETE
Not to Scale

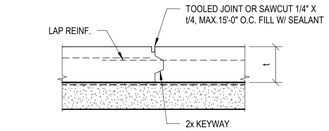


2 S004 NEW OPENINGS IN EXISTING CONCRETE
Not to Scale



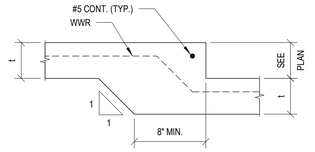
CONTROL JOINT

- PURPOSE OF SLAB ON GRADE JOINTING IS TO BREAK THE SLAB POURS INTO SIZES THAT ARE MANAGEABLE FOR FINISHING AND TO LIMIT TOTAL SHRINKAGE.
- PLACE CONSTRUCTION JOINTS SUCH THAT THE MAXIMUM SLAB POUR SIZE IS LIMITED TO 60'-0" x 60'-0". THIS POUR LIMITATION MAY BE EXPANDED BASED ON CONTRACTOR'S METHOD OF PLACEMENT, CURING TECHNIQUE, AND EXPERIENCE IN CONTROLLING CRACKING IN SIMILAR POUR SIZES. A POUR PLAN SHALL BE SUBMITTED AND REVIEWED BY RDA. ANY COMMENTS MADE BY RDA ARE ONLY RECOMMENDATIONS AS THE CONTRACTOR IS ULTIAMTELY RESPONSIBLE FOR CONCRETE PLACEMENT AND ASSOCIATED RESULTS.
- SLAB POURS SHALL BE SQUARE IF POSSIBLE, BUT IN NO CASE SHALL THEY BE GREATER THAN TWICE AS LONG AS THEY ARE WIDE.
- CONTROL JOINTS SHALL SUBDIVIDE A SLAB POUR INTO APPROX. 15'-0" x 15'-0" OR SMALLER AREAS.
- JOINTS SHALL BE PLACED WHERE POSSIBLE TO ALIGN WITH MAIN COLUMN LINES AND TO ELIMINATE RE-ENTRANT CORNERS IN THE SLAB.
- PROVIDE SLAB JOINT PATTERN AS SHOWN ON THE DRAWINGS, OR IF NOT SHOWN, CONTRACTOR SHALL SUPPLY A PROPOSED JOINT LAYOUT PATTER TO THE ARCHITECT FOR APPROVAL.



CONSTRUCTION JOINT

3 S004 TYPICAL SLAB ON GRADE JOINTS
Not to Scale



4 S004 DEPRESSION IN SLAB ON GRADE
Not to Scale

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A3C COLLABORATIVE ARCHITECTURE
115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104
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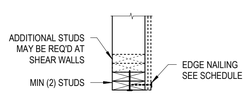
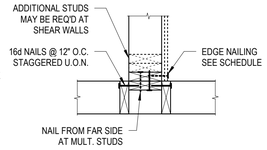
2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE: As indicated

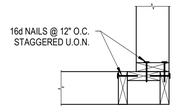
NFE JOB NO. 0557
SHEET NO. S004



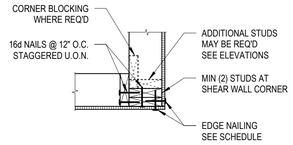
FREE WALL END



INTERSECTION

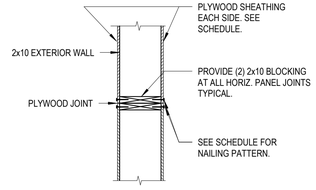


NON-SHEAR CORNER



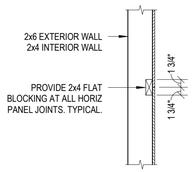
SHEAR WALL CORNER

9 | S005 — TYPICAL WALL ENDS AND INTERSECTIONS — Not to Scale

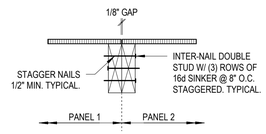


TYPICAL PLYWOOD JOINT DETAIL AT HORIZONTAL JOINTS IN SHEAR WALL PANELS WITH SHEATHING ON BOTH SIDES.

10A | S005 — Scale: 3/4" = 1'-0"

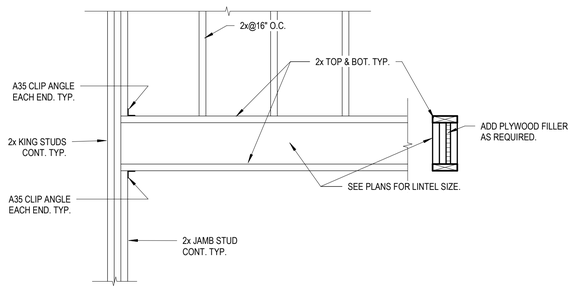


10 | S005 — TYPICAL PLYWOOD JOINT DETAIL AT HORIZ JOINTS IN SHEAR WALL PANELS — Not to Scale

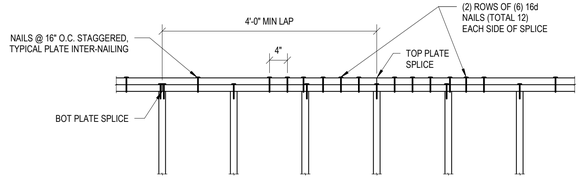


TYPICAL WALL PANEL JOINT PLAN DETAIL FOR PANELIZED CONSTRUCTION

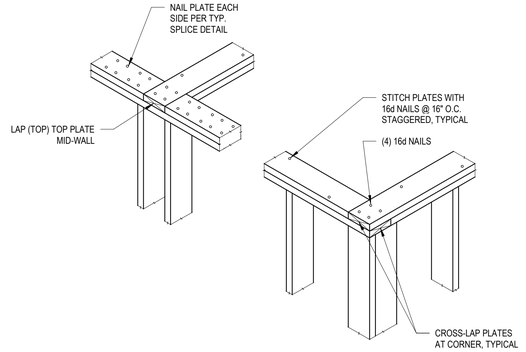
11 | S005 — Not to Scale



12 | S005 — TYPICAL LINTEL DETAIL — Scale: 3/4" = 1'-0"

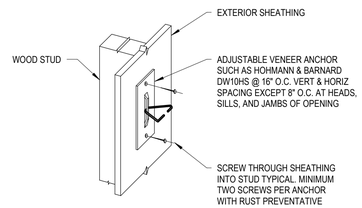


5 | S005 — TYPICAL TOP PLATES SPLICES — Not to Scale



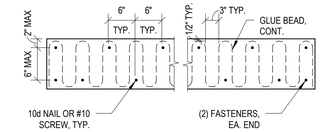
6 | S005 — TYPICAL TOP PLATE LAPS — Not to Scale

7 | S005 — TYPICAL SILL PLATE BOLTING — Not to Scale

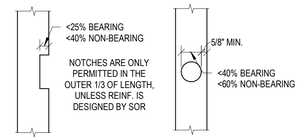


TYPICAL VENEER CONSTRUCTION AT WOOD STUD BACKUP

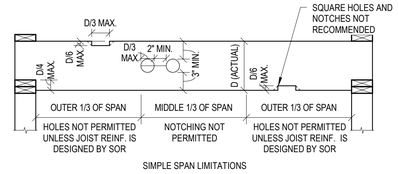
8 | S005 — Not to Scale



1 | S005 — FASTEN AND GLUE MULTIPLE PLY BEAMS — Not to Scale



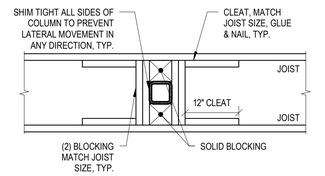
2 | S005 — NOTCHES AND HOLES IN STUD WALLS — Not to Scale



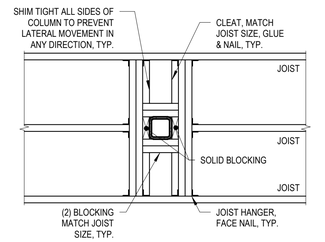
SIMPLE SPAN LIMITATIONS

PERMITTED HOLES AND NOTCHES IN FLOOR JOISTS

3 | S005 — Not to Scale



COLUMN DOES NOT INTERFERE WITH JOISTS



COLUMN DOES INTERFERE WITH JOISTS

4 | S005 — COLUMN BLOCKING BETWEEN JOISTS — Not to Scale

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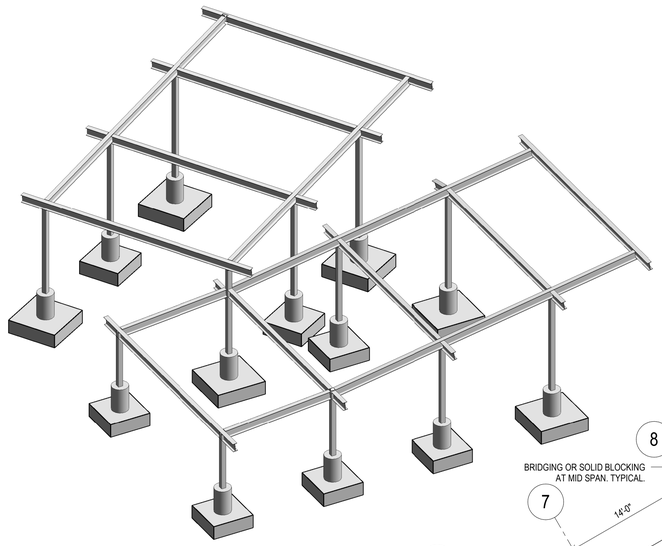
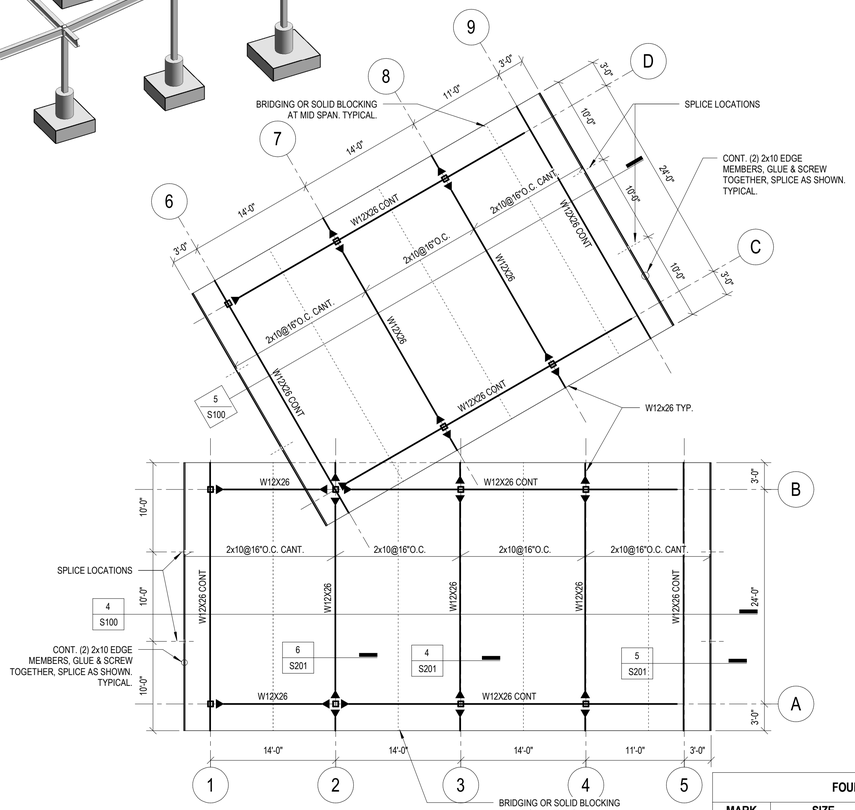
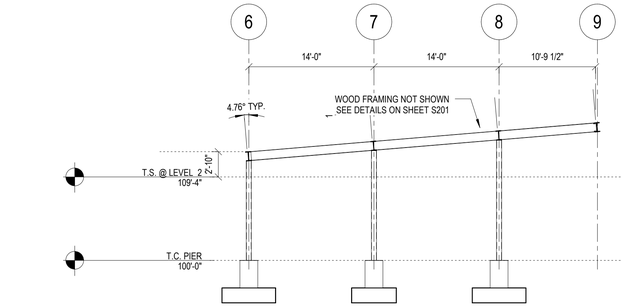
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. S005

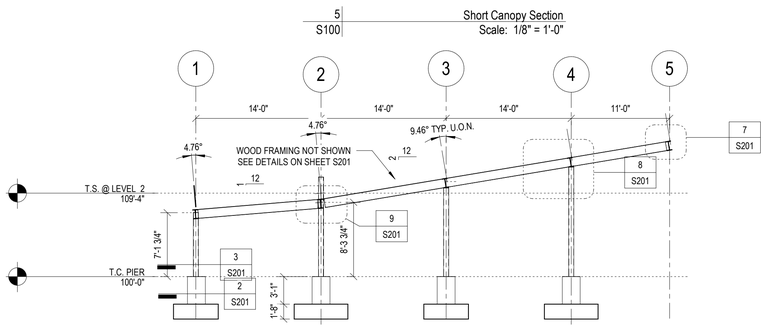
T.S. @ LEVEL 2													T.S. @ LEVEL 2
109'-4"	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	HSS7X7X3/8	109'-4"
T.C. PIER													T.C. PIER
100'-0"													100'-0"
Column Locations	A-1	A-2	A-3	A-4	B-1	B-2	B-3	B-4	C-7	C-8	D-6	D-7	D-8







5 S100 Short Canopy Section
Scale: 1/8" = 1'-0"



4 S100 Long Canopy Section
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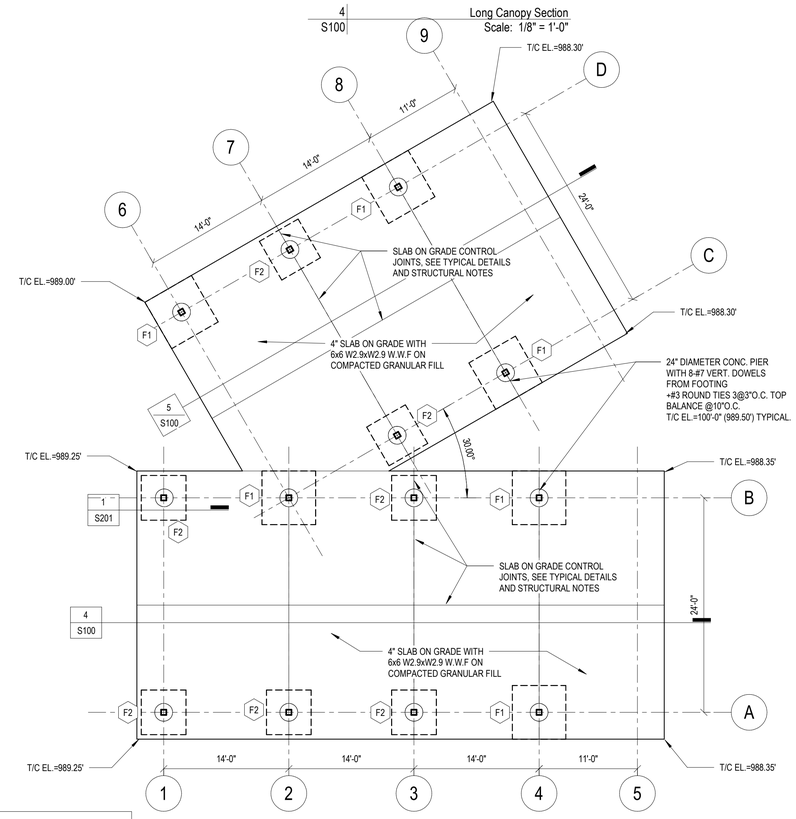

FOUNDATION SCHEDULE		
MARK	SIZE	REINFORCING
F1	72" x 72" x 20"	7-#7 TOP & BOT EACH WAY HOOK EACH END.
F2	60" x 60" x 20"	7-#6 TOP & BOT EACH WAY HOOK EACH END

5'-6" 2'-0" 2'-0" 4'-6"

1 S100 Pavilion Foundation Plan
Scale: 1/8" = 1'-0"

TRUE NORTH

TRUE NORTH S100 Pavilion Foundation Plan
Scale: 1/8" = 1'-0"

ALL FEL MEMBERS ARE HOR DIR GALVANIZED (G90)

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115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

www.a3c.com

Architects Project No: 25021

rda robert darvas associates
consulting structural engineers
440 south main street
ann arbor, mi 48104
RDA No. 25008

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources

CONTACT
Mr. Ken Elwet, CPRE
Ph: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
PAVILION PLANS, SECTIONS AND SCHEDULES

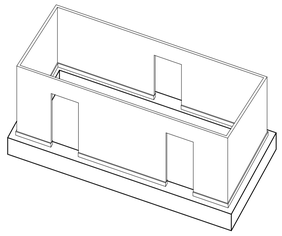
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE: 1/8" = 1'-0"

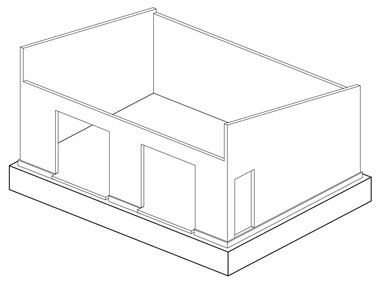
NFE JOB NO. 0557
SHEET NO. S100

MAINTENANCE BUILDING & FAMILY BATHROOM SHEAR WALL SCHEDULE

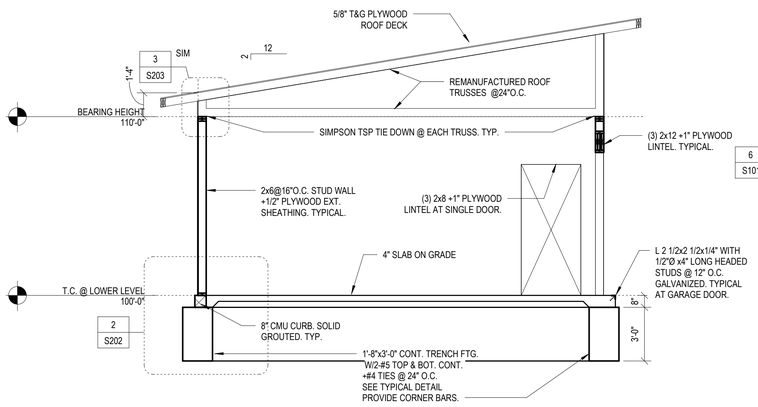
TYPE	STUD SIZE	SHEATHING	SIDES	BLOCKING	EDGE NAILS	FIELD NAILS	END STUD	HOLDOWN	COMMENTS
MAINTENANCE BUILDING	2x6 STUDS @ 16" O.C.	1/2" PLY	1 SIDE	ALL EDGES	8d @ 6" O.C.	8d @ 12" O.C.	(2) 2x6	HDU8-SDS2.5	
FAMILY BATHROOM	2x4 STUDS @ 16" O.C.	1/2" PLY	1 SIDE	ALL EDGES	8d @ 6" O.C.	8d @ 12" O.C.	(2) 2x4	HDU5-SDS2.5	
SEE SHEET SOO5 FOR SHEAR WALL TYPICAL DETAILS									



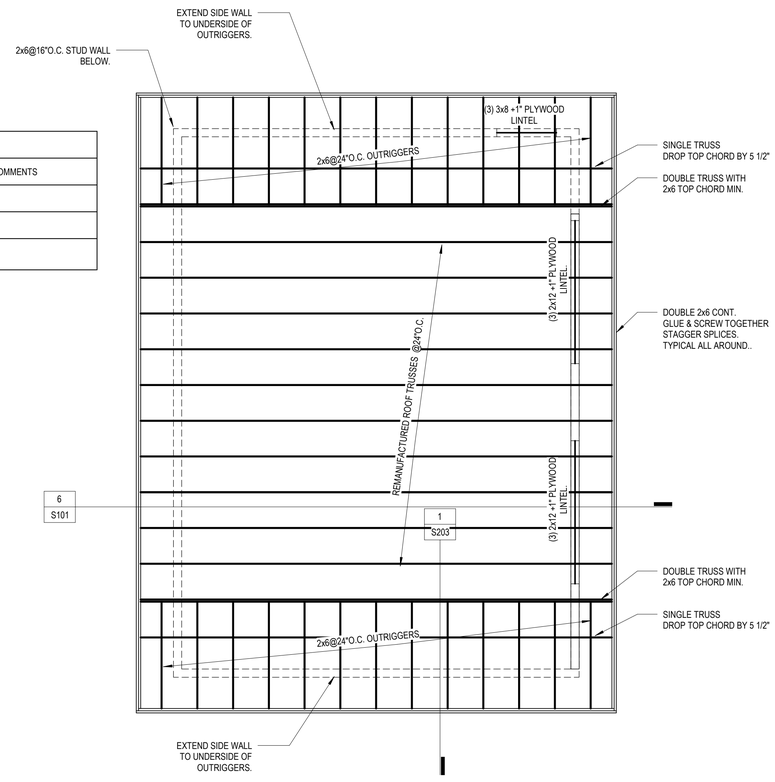
8 S101 — 3D -FAMILY BATHROOMS — Not to Scale



7 S101 — 3D - MAINTENANCE BUILDING — Scale:

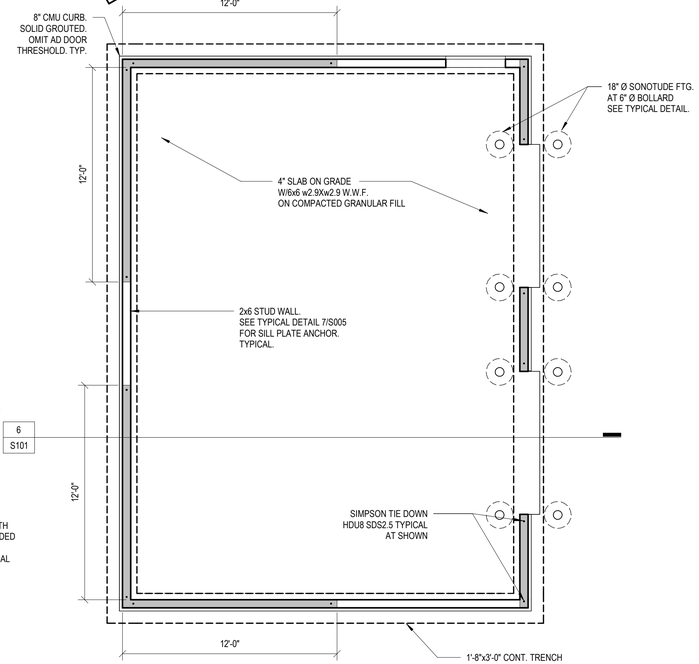


6 S101 — MAINTENANCE BUILDING SECTION — Scale: 1/4" = 1'-0"



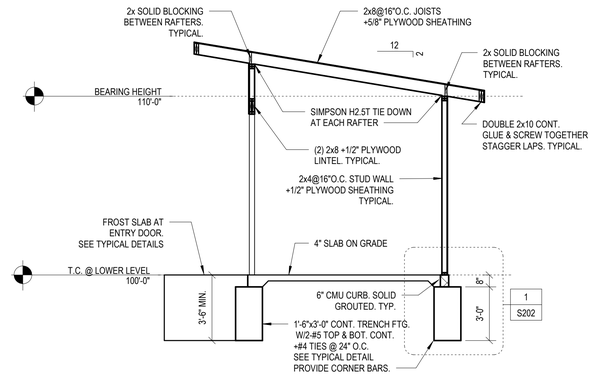
NORTH

5 S101 — MAINTENANCE BUILDING ROOF FRAMING PLAN — Scale: 1/4" = 1'-0"

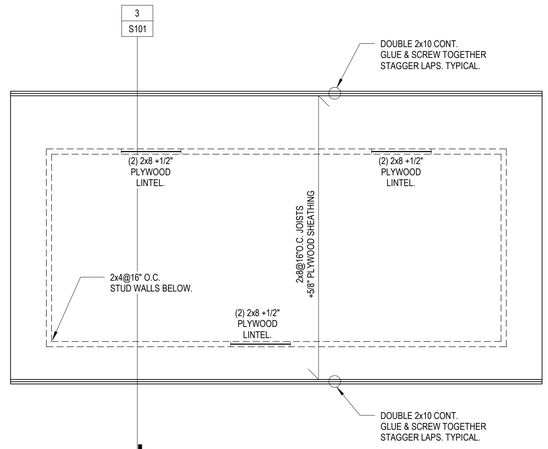


NORTH

4 S101 — MAINTENANCE BUILDING FOUNDATION PLAN — Scale: 1/4" = 1'-0"

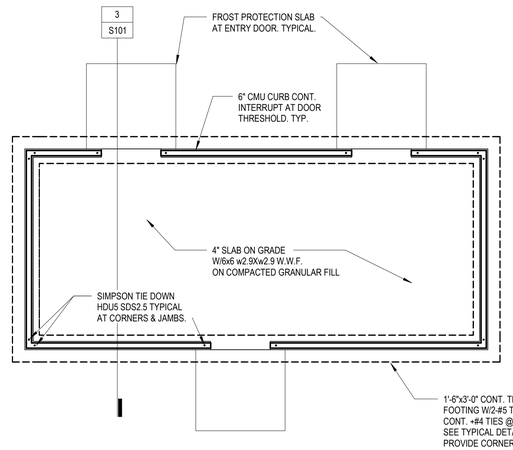


3 S101 — FAMILY BATHROOMS BUILDING SECTION — Scale: 1/4" = 1'-0"



NORTH

2 S101 — FAMILY BATHROOMS BUILDING ROOF FRAMING PLAN — Scale: 1/4" = 1'-0"



NORTH

1 S101 — FAMILY BATHROOMS BUILDING FOUNDATION PLAN — Scale: 1/4" = 1'-0"

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115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

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F: (866) 732 - 2168

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PROJECT LOCATION
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City of Rochester Hills,
Oakland County, Michigan

Sheet
FAMILY BATHROOM AND MAINTENANCE BUILDINGS PLANS AND SECTIONS.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

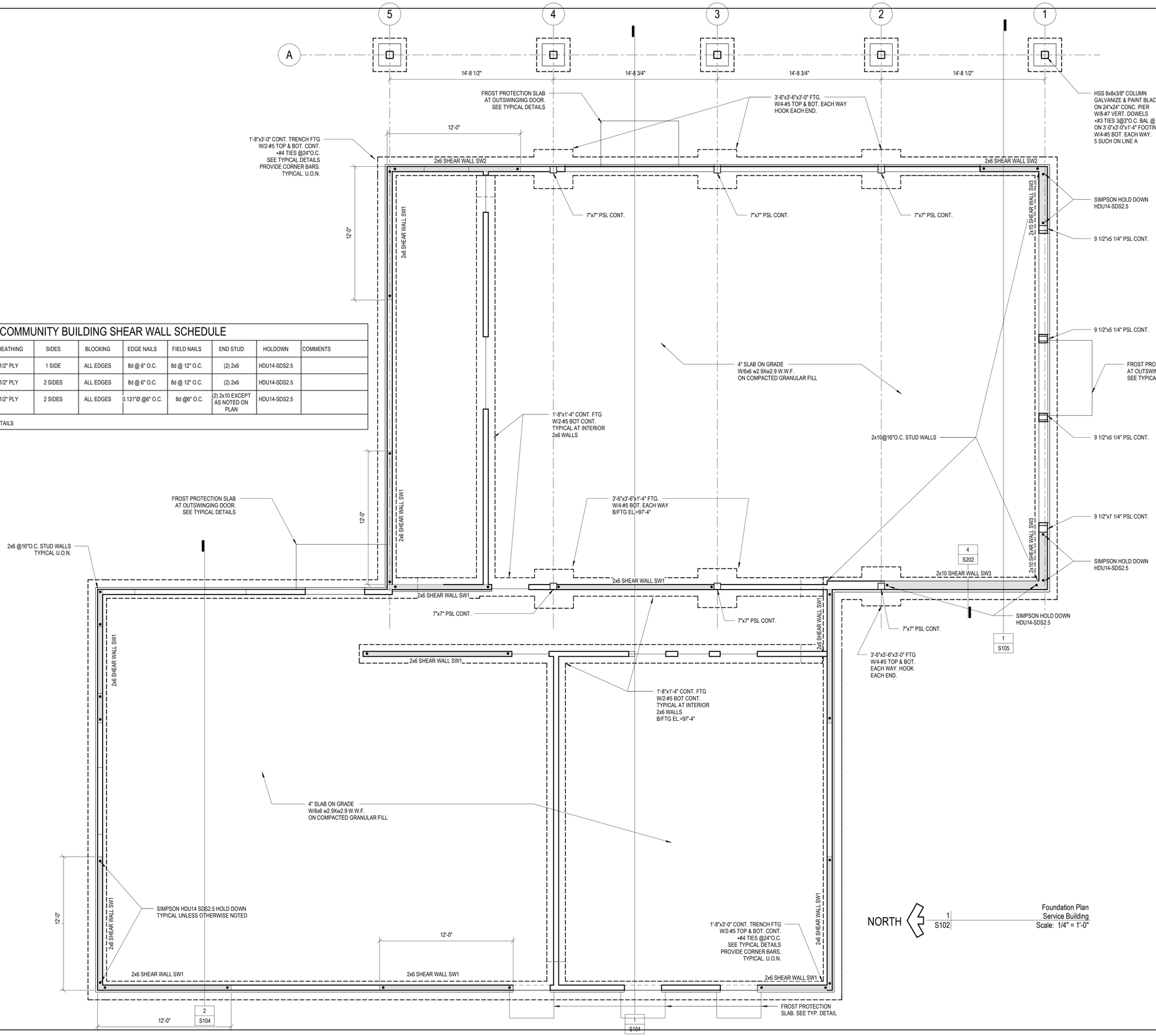
DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. S101

COMMUNITY BUILDING SHEAR WALL SCHEDULE

TYPE	STUD SIZE	SHEATHING	SIDES	BLOCKING	EDGE NAILS	FIELD NAILS	END STUD	HOLDOWN	COMMENTS
SW-1	2x6 STUDS @ 16" O.C.	1/2" PLY	1 SIDE	ALL EDGES	8d @ 6" O.C.	8d @ 12" O.C.	(2) 2x6	HDU14-SDS2.5	
SW-2	2x6 STUDS @ 16" O.C.	1/2" PLY	2 SIDES	ALL EDGES	8d @ 6" O.C.	8d @ 12" O.C.	(2) 2x6	HDU14-SDS2.5	
SW-3	2x10 STUDS @ 16" O.C.	1/2" PLY	2 SIDES	ALL EDGES	0.131"Ø @6" O.C.	8d @6" O.C.	(2) 2x10 EXCEPT AS NOTED ON PLAN	HDU14-SDS2.5	

SEE SHEET SOO5 FOR SHEAR WALL TYPICAL DETAILS



NORTH

1 / S102 — Foundation Plan, Service Building, Scale: 1/4" = 1'-0"

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ANN ARBOR, MI 48104
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PROJECT LOCATION
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City of Rochester Hills,
Oakland County, Michigan

Sheet
COMMUNITY BUILDING FOUNDATION PLAN

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DRAWN BY: NM
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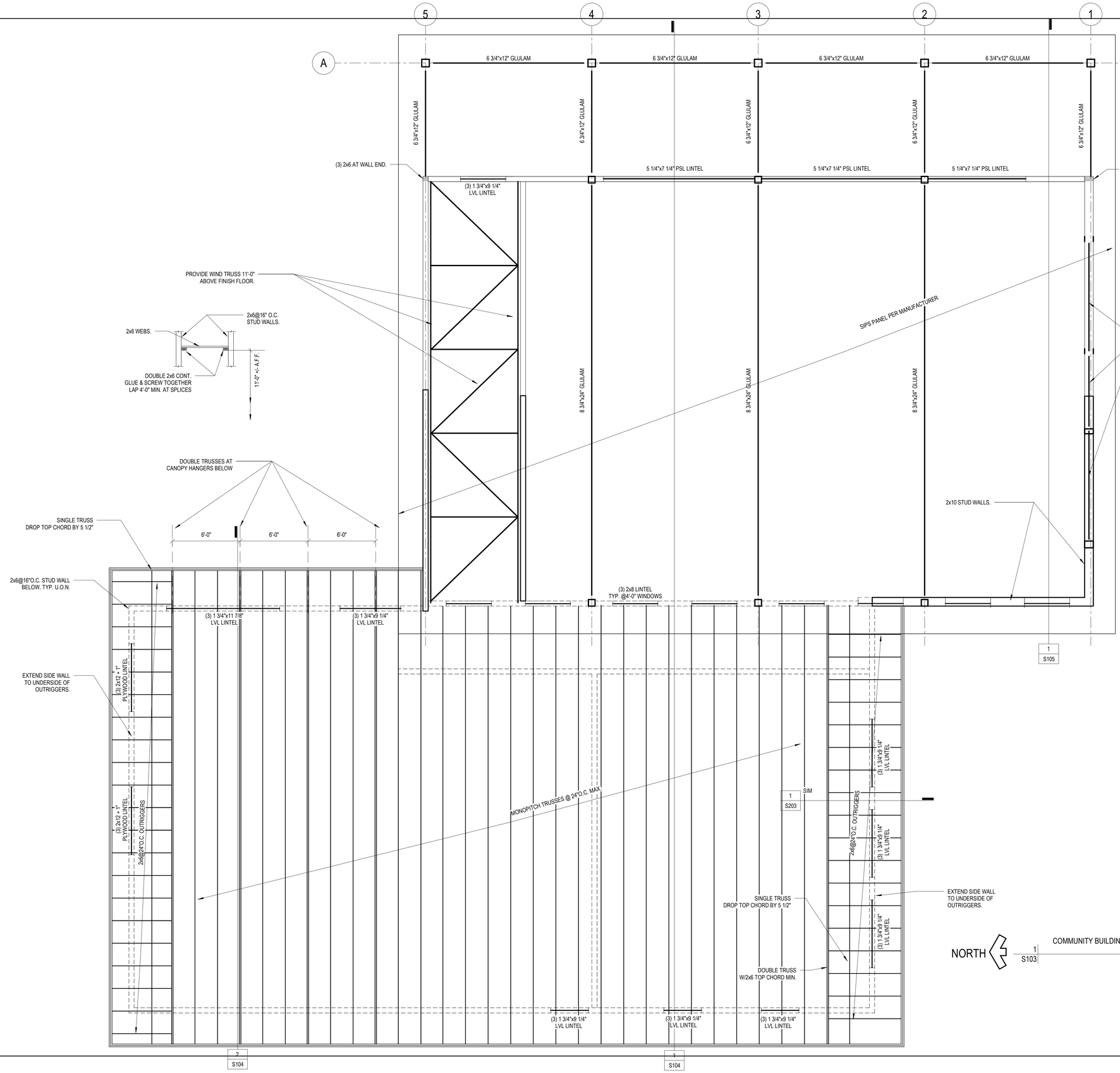
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. S102



NORTH

1 S103 COMMUNITY BUILDING ROOF FRAMING PLAN
Scale: 1/4" = 1'-0"

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F: (866) 732 - 2168

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Mr. Ken Elwet, CPRE
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elwertk@rochesterhill.org

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COMMUNITY BUILDING ROOF FRAMING PLAN

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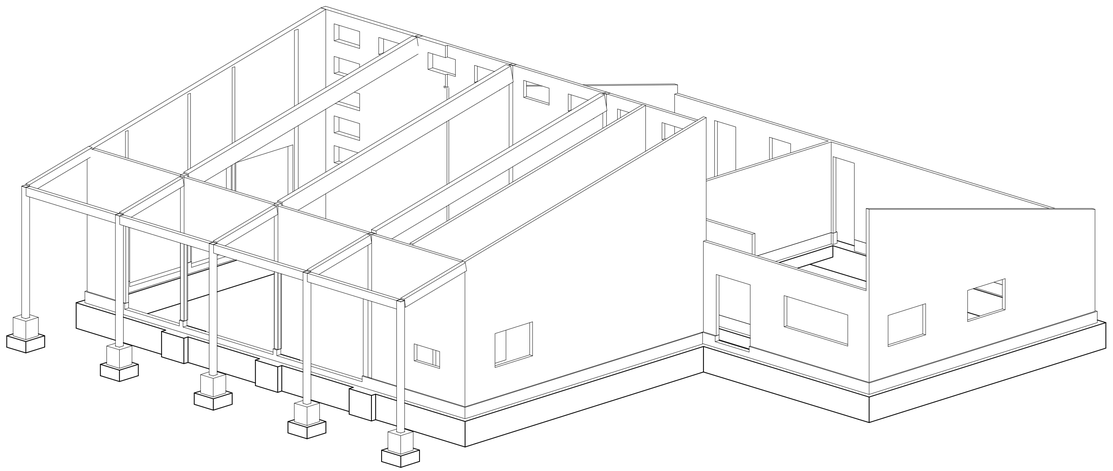
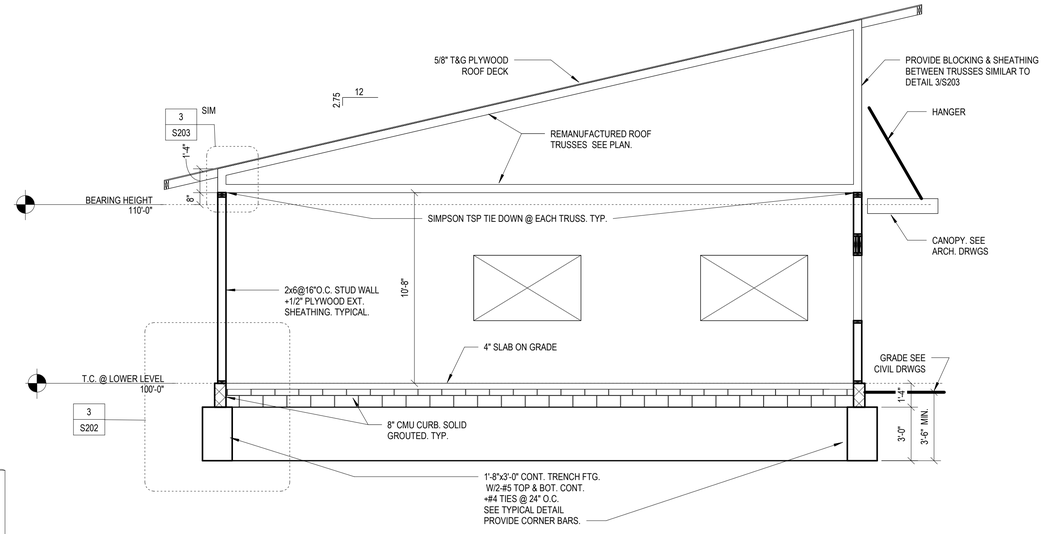
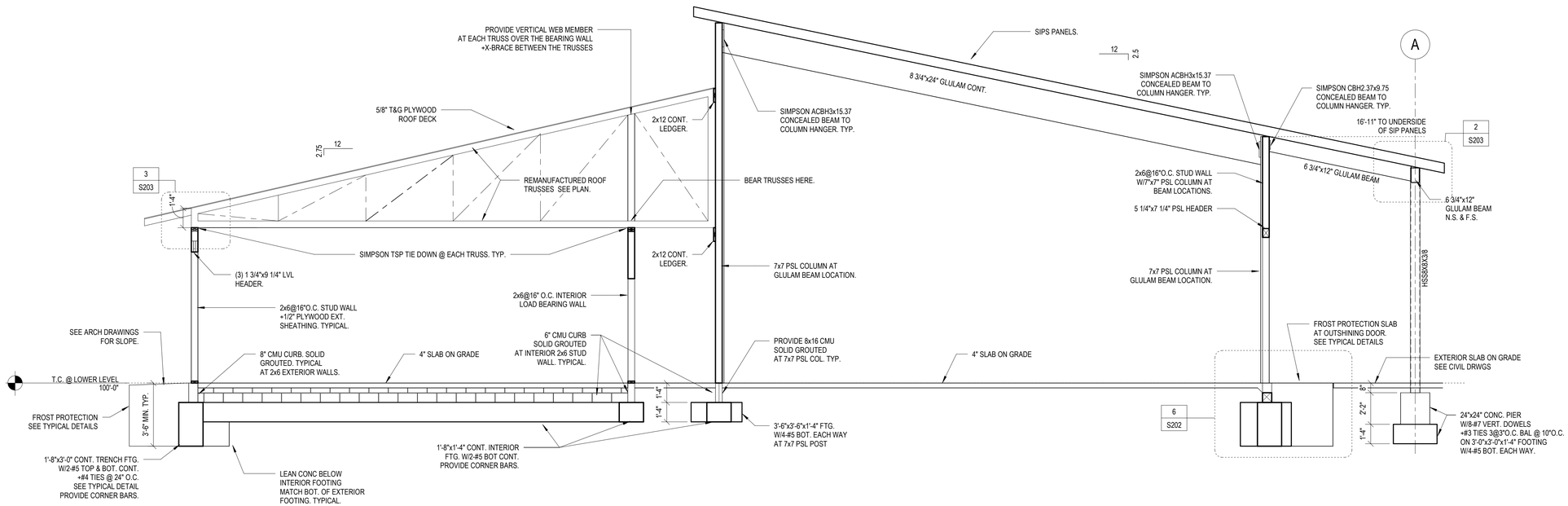
NFE JOB NO. 0557
SHEET NO. S103





2 S104 COMMUNITY BUILDING SECTION
Scale: 1/4" = 1'-0"



1 S104 COMMUNITY BUILDING SECTION THRU COMMUNITY ROOM
Scale: 1/4" = 1'-0"

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Sheet
COMMUNITY BUILDING
SECTIONS

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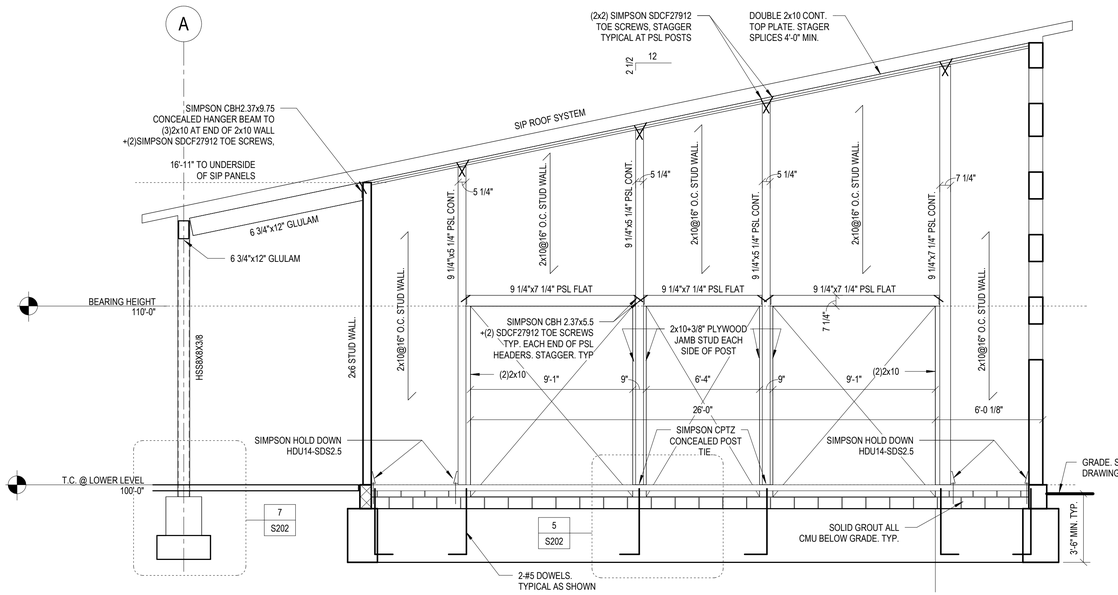
DESIGNED BY:
SMR

DATE:
02/02/26

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

NFE JOB NO.
0557

SHEET NO.
S104



1 S105 COMMUNITY ROOM EAST WALL ELEVATION
Scale: 1/4" = 1'-0"

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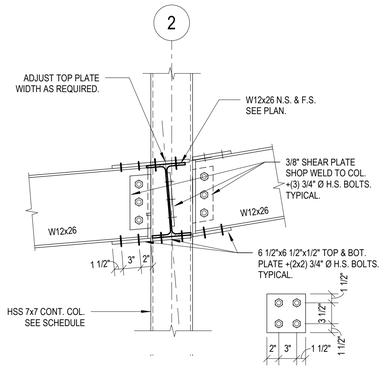
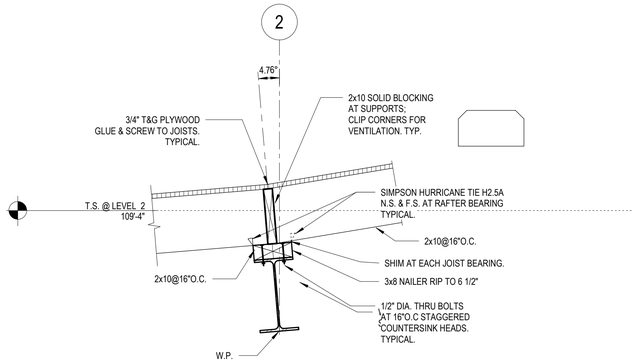
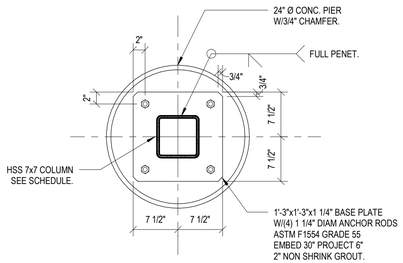
NFE JOB NO.
0557
SHEET NO.
S105



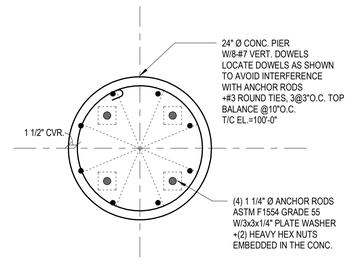
9 S201 — Column B-2 and B-6 Detail
Scale: 1" = 1'-0"



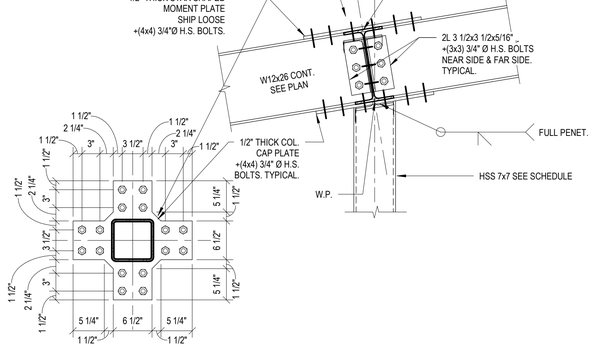
6 S201 — Beam on LIne 2 Detail
Scale: 1" = 1'-0"



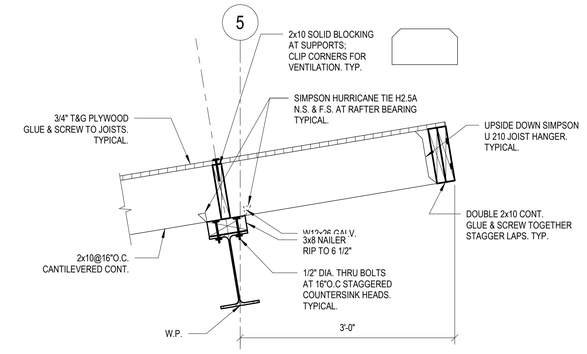
3 S201 — Typical Base Plate Plan Detail
Scale: 1" = 1'-0"



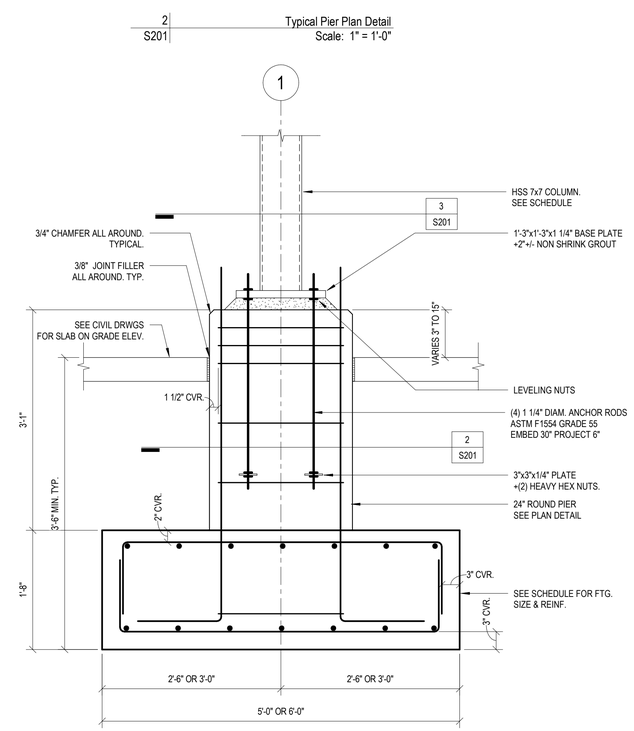
2 S201 — Typical Pier Plan Detail
Scale: 1" = 1'-0"



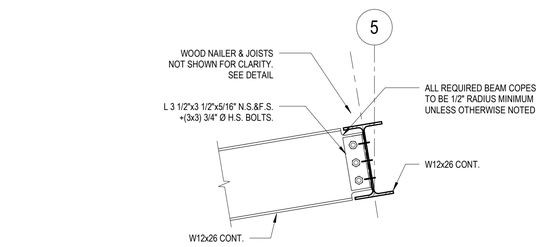
8 S201 — Typical Column Cap Plate Detail
Scale: 1" = 1'-0"



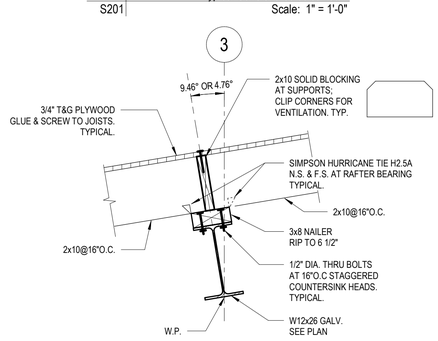
5 S201 — Typical Cantilevered Joist Detail
Scale: 1" = 1'-0"



1 S201 — Typical Footing Detail
Scale: 1" = 1'-0"



7 S201 — Beam Connection Detail
Scale: 1" = 1'-0"



4 S201 — Typical Joist Bearing Detail
Scale: 1" = 1'-0"

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PROJECT LOCATION
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Sheet
PAVILION DETAILS

DATE	ISSUED / REVISED
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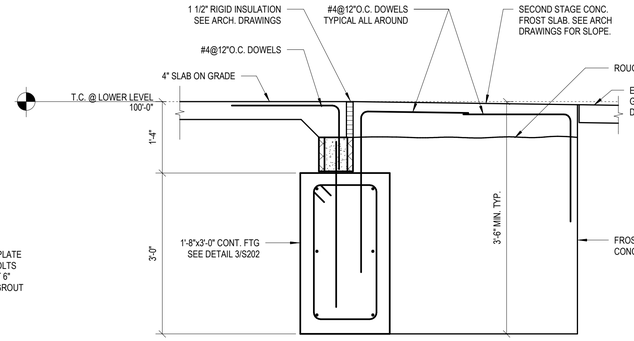
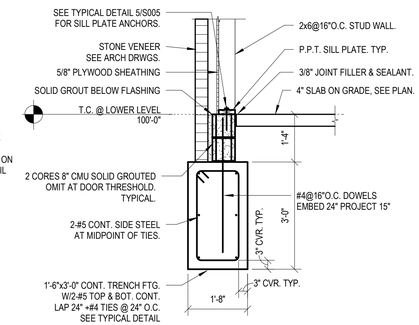
DATE: 02/02/26
SCALE: 1" = 1'-0"

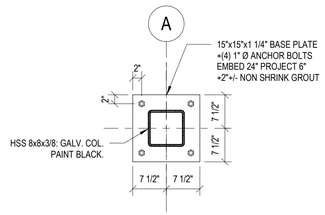
NFE JOB NO. 0557
SHEET NO. S201



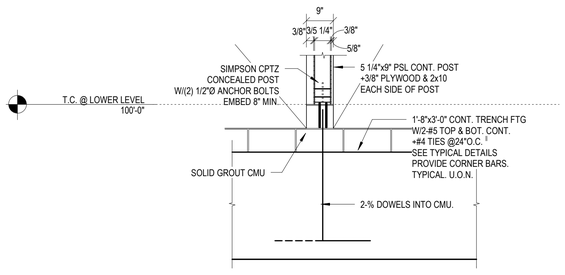
6 COMMUNITY BUILDING FOUNDATION DETAIL AT ENTRY DOOR
S202 Scale: 3/4" = 1'-0"



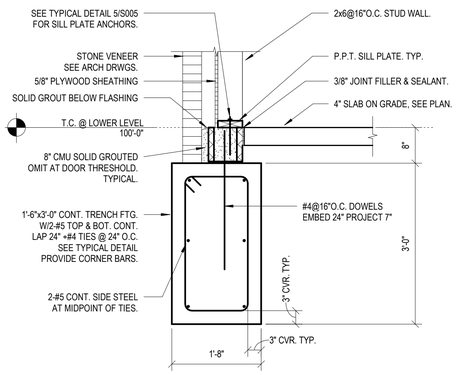
3 COMMUNITY BUILDING FOOTING DETAIL AT EXTERIOR 2x6 WALL
S202 Scale: 1/2" = 1'-0"



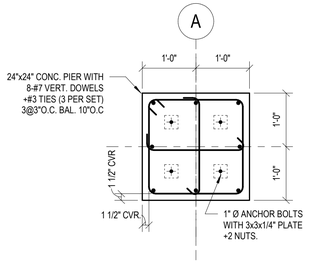
9 COMMUNITY ROOM BASE PLATE PLAN DETAIL
S202 Scale: 3/4" = 1'-0"



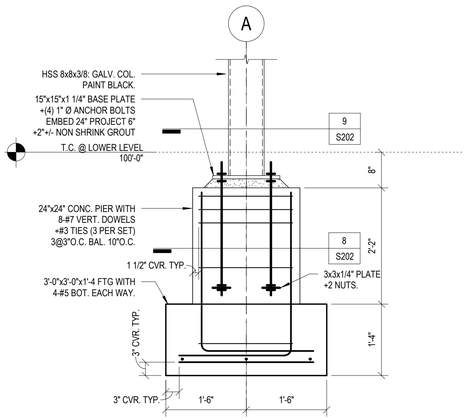
5 COMMUNITY BUILDING EAST WALL PSL POST BEARING DETAIL
S202 Scale: 1/2" = 1'-0"



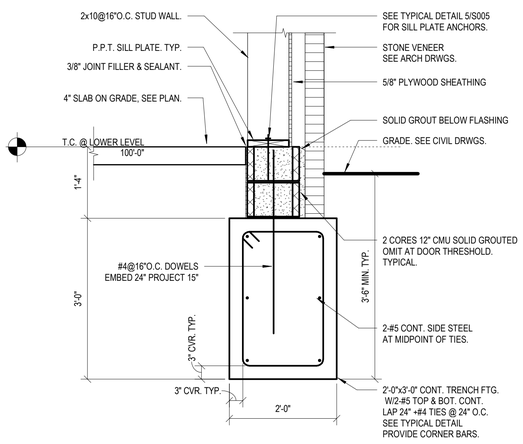
2 MAINTENANCE BUILDING FOOTING DETAIL
S202 Scale: 3/4" = 1'-0"



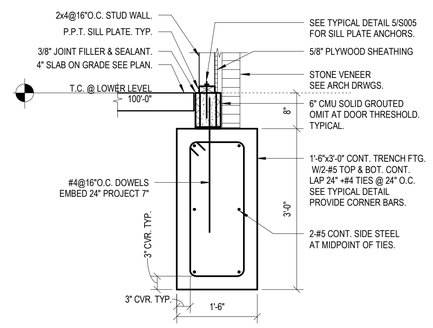
8 COMMUNITY ROOM PIER PLAN DETAIL
S202 Scale: 3/4" = 1'-0"



7 COMMUNITY BUILDING PIER DETAIL
S202 Scale: 3/4" = 1'-0"



4 COMMUNITY BUILDING FOOTING DETAIL AT EXTERIOR 2x10 WALL
S202 Scale: 3/4" = 1'-0"



1 FAMILY BATHROOMS FOOTING DETAIL
S202 Scale: 3/4" = 1'-0"

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T: (734) 663 - 1910
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Architects Project No: 25021

rda robert darvas associates
consulting structural engineers
440 south main street
ann arbor, mi 48104
RDA No. 25008

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources

CONTACT
Mr. Ken Elwet, CPRE
Ph: 248-656-4673
elwertk@rochesterhill.org

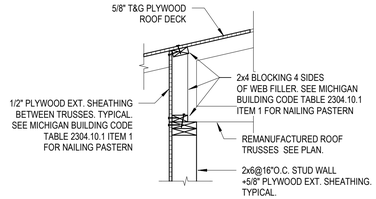
PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
STRUCTURAL DETAILS

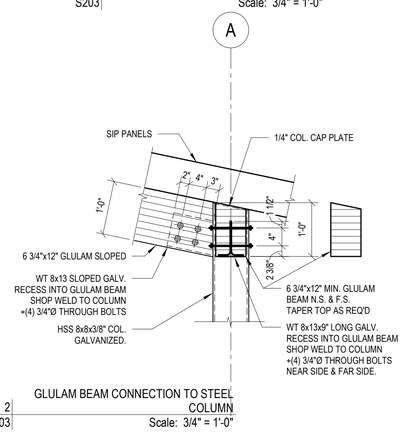
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE:
SCALE: As indicated

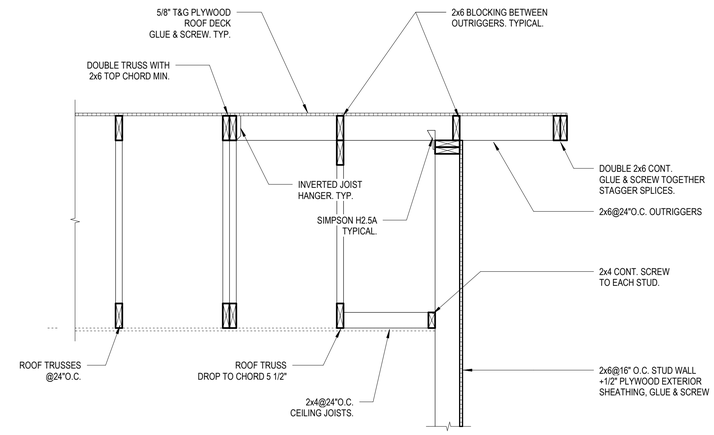
NFE JOB NO. 0557
SHEET NO. S202



3 | S203 COMMUNITY BUILDING TRUSS END DETAIL
Scale: 3/4" = 1'-0"



GLULAM BEAM CONNECTION TO STEEL COLUMN
2 | S203
Scale: 3/4" = 1'-0"



1 | S203 MAINTENANCE BUILDING ROOF DETAIL
Scale: 3/4" = 1'-0"

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2026-02-04	BID DOCUMENTS

DRAWN BY: NM
DESIGNED BY: SMR
DATE: 02/02/26
SCALE: 3/4" = 1'-0"

NFE JOB NO. 0557
SHEET NO. S203

CODE SUMMARY

APPLICABLE CODES:	2021 MICHIGAN BUILDING CODE (MBC 2021) 2021 MICHIGAN PLUMBING CODE (MPC 2021) 2021 MICHIGAN MECHANICAL (MMC 2021) 2023 NATIONAL ELECTRICAL CODE (NEC 2023) WITH PART 8 STATE AMENDMENTS 2017 ICC A117.1 - ACCESSIBLE & USEABLE BUILDING & FACILTIES 2021 MICHIGAN ENERGY CODE - INTERNATIONAL ENERGY CONSERVATION CODE 2021 (IECC 2021) OR ASHREA 90.1-2019 2021 INTERNATIONAL FIRE CODE 2019 NFPA 13 & 13R 2019 NFPA 72 FIRE ALARM CODE	SECTION
PROJECT DESCRIPTION:	NEW CONSTRUCTION - COMMUNITY BUILDING AREA - 4,845 SF BUILDING AREA WITH PATIO ROOF OVERHANGS - 5,554 SF	
USE GROUPS:	B - BUSINESS AREAS (OFFICES, RESTROOMS, STORAGE, ETC.) A-3 - ASSEMBLY (COMMUNITY ROOM) NONSEPARATED OCCUPANCIES	
ALLOWABLE:	BUILDING AREA, HEIGHT & NUMBER OF STORIES SHALL BE BASED ON THE MOST RESTRICTIVE ALLOWANCED FOR THE OCCUPANCY GROUPS.	508.3.2
SEPARATION:	NO SEPARATION IS REQUIRED BETWEEN NONSEPARATED OCCUPANCIES	508.3.3
CONSTRUCTION TYPE:	V-B WITHOUT AUTOMATIC SPRINKLER SYSTEM	602
ALLOWABLE BUILDING: (STORIES & HEIGHT)	B (NS) - 2 STORY 40 FEET A-3 (NS) - 1 STORY 40 FEET	504.3 & 504.4
ACTUAL BUILDING:	1 STORY 26'-0" ALLOWED (MEETS MOST RESTRICTIVE A-3)	
ALLOWABLE BUILDING AREA:	B - 9,000 SF (NS) A-3 - 6,000 SF (NS)	T506.2
ACTUAL BUILDING:	B - 2,495 SF A-3 - 2,350 SF TOTAL BUILDING - 4,845 SF (MEETS MOST RESTRITIVE A-3) BUILDING AREA WITH PATIO ROOF OVERHANG - 5,554 SF (MEETS MOST RESTRICTIVE A-3 USE)	
FIRE RESITIVE CONST.	STRUCTURAL FRAME: 0 HOUR EXT. BEARING WALLS: 0 HOUR INT BEARING WALLS: 0 HOUR EXT NON-BRG WALLS 0 HOUR INTR NON-BRG WALLS: 0 HOUR FLOOR CONSTRUCTION: 0 HOUR ROOF CONSTRUCTION: 0 HOUR	T601 T601 T601 T601 T601 T601 T601
FIRE PROTECTION SYSTEMS:	THE COMMUNITY BUILDING WILL NOT HAVE A AUTOMATIC SPRINKLER SYSTEM THROUGHOUT. 903 THE BUILDING DOES NOT EXCEED 12,000 SF THE OCCUPANT LOAD IS LESS THAN 300 AND THE FLOOR AREA IS AT THE LEVEL OF EXIT DISCHARGE 903.2.1.3 THE COMMUNITY BUIDLING WILL NOT HAVE A FULL FIRE ALARM SYSTEM. 907 GROUP A - OCCUPANT LOAD IS LESS THAN 300 AND HAS 1 LEVEL OF EXIT DISCHARGE 907.2.1 GROUP B - OCCUPANT LOAD IS LESS THAN 500 AND HAS 1 LEVEL OF EXIST DISCHARGE 907.2.2	

OCCUPANT LOAD COMMUNITY BUILDING T1004.5

OCCUPANT LOAD				
OCCUPANCY TYPE	FUNCTION OF SPACE	AREA	FLOOR AREA - SF PER	OCCUPANTS
BUSINESS (B)	BUSINESS AREAS	2,419	150	17
ASSEMBLY (A-3)	ASSEMBLY (CONCENTRATED CHAIRS ONLY - NOT FIXED)	1,856	7 NET	266
MECHANICAL RM	MECHANICAL	157	300	1
ACCESSORY STORAGE AREAS	STORAGE	413	300 GROSS	2
TOTAL COMMUNITY BUILDING		4,845 SF		286

COMMON PATH OF EGRESS TRAVEL AND EXIT ACCESS TRAVEL DISTANCE WITHOUT AUTOMATIC SPRINKLER SYSTEM. TABLE 1006.2.1 AND 1017.2

COMMON PATH OF EGRESS (WITH ONE EXIT)	OCCUPANCY GROUP B OCCUPANCY GROUP A	100 FT 75 FT	T 1006.2.1
EXIT ACCESS TRAVEL	OCCUPANCY B OCCUPANCY A-3	200 FT 200 FT	T 1017.2

MICHIGAN ENERGY CODES 2021 - ASHRAE STD.90.1-2019

THE BELOW ARE MINIMUN CODE PERFPRMANICES
REFER TO SPECIFICATIONS AND DRAWINGS FOR REQUIRED PRODUCT VALUSES - EQUAL TO HIGHER PERFORMANCE REQUIRED

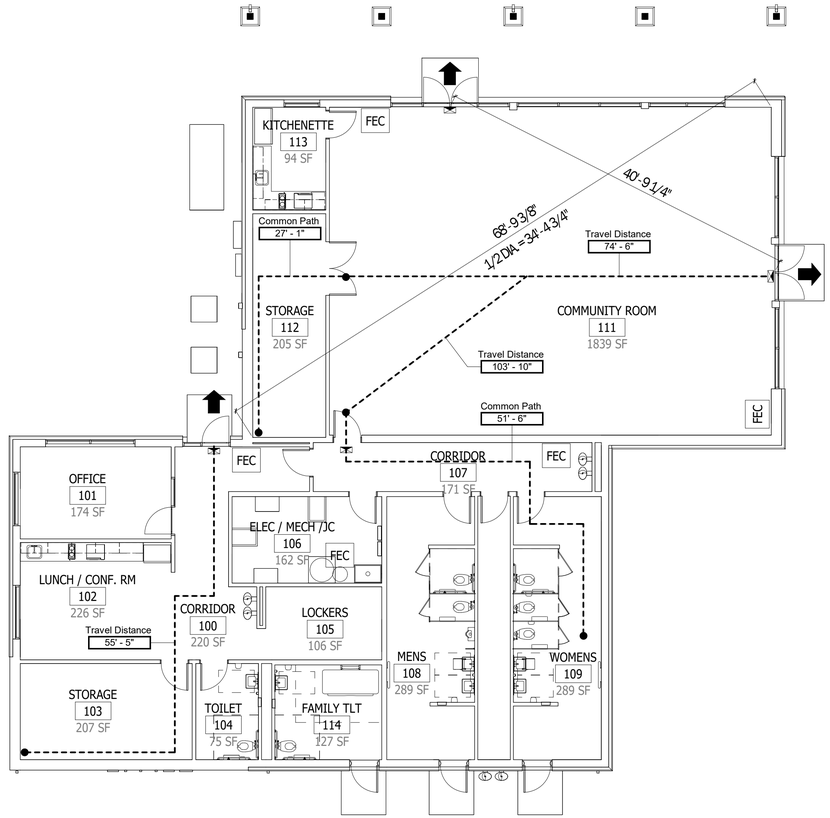
COMMUNITY BUILDING DESIGNATED AS NONRESIDENTAIL
CLIMATE ZONE 5A. BUILDING ENVELOPE REQUIRMENT PER TABLE 5.5-5 (0F ASHRE STD 90.1 - 2019)

BUILIDNG ELEMENT	MIN. R-VAULE OF INSULATION AND/OR ASSEMBLY MAX U-VALUE	MAX SHGC
ROOF	R-30 c.i., U-0.032 (SEE DRAWINGS FOR SIP INSULATION ABOVE DECK R-49, U-0.021 (ATTIC INSULATION)	
MASS WALLS WOOD FRAMED	R-13 + R-7.5 c.i. OR R20 + R3.8ci, U-0.051	
SLAB ON GRAD	R-15 FOR 24IN	
OPAQUE DOORS - SWING	U-0.370	
-NONSWING	U-0.310	
FENESTRATION- FIXED	U-0.36	SHGC - 0.38
-OPERABLE	U-0.45	SHGC - 0.33
-ENTRANCE DOOR	U-0.63	SHGC - 0.33

GENERAL NOTES
1. PROVIDE CONTINIOUS AIR BARRIER (SEE DRAWINGS SPECOFOCATINS FOR AIR/VAPOR BARRIER)

CODE COMPLIANCE LEGEND

- EXIT SIGN, REFER TO ELEC. FOR MORE INFORMATION
- EGRESS DOOR
- TRAVEL DISTANCE PATH
- FEC — FIRE EXTINGUISHER CABINET
- FEC — FIRE EXTINGUISHER & BRACKET



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PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
CODE COMPLIANCE PLAN - COMMUNITY BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.00

CODE SUMMARY COMMUNITY BLDG — SCALE: 1/2" = 1'-0" — REF'D FROM:

CODE COMPLIANCE PLAN - COMMUNITY BUILDING — SCALE: 1/8" = 1'-0" — REF'D FROM: A2.21 — 1

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CODE SUMMARY

APPLICABLE CODES:	2021 MICHIGAN BUILDING CODE (MBC 2021) 2021 MICHIGAN PLUMBING CODE (MPC 2021) 2021 MICHIGAN MECHANICAL (MMC 2021) 2023 NATIONAL ELECTRICAL CODE (NEC 2023) WITH PART 8 STATE AMENDMENTS 2017 ICC A117.1 - ACCESSIBLE & USEABLE BUILDING & FACILTIES 2021 MICHIGAN ENERGY CODE - INTERNATIONAL ENERGY CONSERVATION CODE 2021 (IECC 2021) 2021 INTERNATIONAL FIRE CODE 2019 NFPA 13 & 13R 2019 NFPA 72 FIRE ALARM CODE		SECTION
PROJECT DESCRIPTION:	**NEW CONSTRUCTION - MAINTENANCE BUILDING - 768 SF**		
USE GROUP: CONSTRUCTION TYPE:	S-1 - (MODERATE-HAZARD STORAGE) V-B WITH NO AUTOMATIC SPRINKLER SYSTEM		602
ALLOWABLE BUILDING: (STORIES & HEIGHT)	S (NS) - 1 STORY 40 FEET		504.3 & 504.4
ACTUAL BUILDING:	1 STORY 15'-8" - ALLOWED		
ALLOWABLE BUILDING AREA:	S-1 - 9,000 SF (NS)		
ACTUAL BUILDING:	S-1 - 768 SF - ALLOWED		
FIRE RESITIVE CONST.	STRUCTURAL FRAME: EXT. BEARING WALLS: INT BEARING WALLS: EXT NON-BRG WALLS INTR NON-BRG WALLS: FLOOR CONSTRUCTION: ROOF CONSTRUCTION:	0 HOUR 0 HOUR 0 HOUR 0 HOUR 0 HOUR 0 HOUR 0 HOUR	T601 T601 T601 T601 T601 T601 T601
FIRE PROTECTION SYSTEMS:	THE MAINTENANCE BUILDING WILL NOT HAVE A AUTOMATIC SPRINKLER SYSTEM. GROUP S-1 LESS THAN 12,000 SF & 5,000 SF AND ONLY 1 STORY. THE MAINTENANCE BUIDLING WILL NOT HAVE A AUTOMATIC FIRE ALARM SYSTEM. GROUP S - LESS THAN 3 STORIES		903 907 907.2.10

OCCUPANT LOAD MAINTENANCE BUILDING — T1004.5

OCCUPANT LOAD				
OCCUPANCY TYPE	FUNCTION OF SPACE	AREA	FLOOR AREA - SF PER	OCCUPANTS
STORAGE (S-1)	STORAGE AREAS	768	200 GROSS	4
TOTAL MAINTENANCE		768 SF		4

COMMON PATH OF EGRESS TRAVEL AND EXIT ACCESS TRAVEL DISTANCE WITHOUT AUTOMATIC SPRINKLER SYSTEM. TABLE 1006.2.1 AND 1017.2

COMMON PATH OF EGRESS (WITH ONE EXIT)	OCCUPANCY GROUP S-1, OL<30, WITHOUT SPRINKLER SYSTEM	100 FT	T 1006.2.1
EXIT ACCESS TRAVEL	OCCUPANCY S-1 WITHOUT SPRINKLER SYSTEM	200 FT	T 1017.2

SEMIHEATED BUILDING. SEE CODE COMPLIANCE PLAN FOR ENERGY CODE REQUIREMENTS

PROJECT DESCRIPTION:	**NEW CONSTRUCTION - FAMILY BATHROOMS BUILDING (STAND ALONE) - 320 SF**		
USE GROUP: CONSTRUCTION TYPE:	U - (UTILITY AND MISCELLANEOUS) V-B WITH NO AUTOMATIC SPRINKLER SYSTEM		602
ALLOWABLE BUILDING: (STORIES & HEIGHT)	U (NS) - 1 STORY 40 FEET		504.3 & 504.4
ACTUAL BUILDING:	1 STORY 13'-5" - ALLOWED		
ALLOWABLE BUILDING AREA:	U - 5,500 SF (NS)		
ACTUAL BUILDING:	U - 320 SF - ALLOWED		
FIRE PROTECTION SYSTEMS:	THE BUILDING WILL NOT HAVE A AUTOMATIC SPRINKLER SYSTEM OR A AUTOMATIC FIRE ALARM SYSTEM.		903.2.11

OCCUPANT LOAD FAMILY BATHROOMS BUILDING — T1004.5

NO SPECIFIC OCCUPANT LOAD FACTOR (ASSUME MAX. OF 4 IN EACH FAMILY BATHROOM.

COMMON PATH OF EGRESS TRAVEL AND EXIT ACCESS TRAVEL DISTANCE WITHOUT AUTOMATIC SPRINKLER SYSTEM. TABLE 1006.2.1 AND 1017.2

COMMON PATH OF EGRESS (WITH ONE EXIT)	OCCUPANCY GROUP U, OL<30, WITHOUT SPRINKLER SYSTEM	100 FT	T 1006.2.1
EXIT ACCESS TRAVEL	OCCUPANCY U WITHOUT SPRINKLER SYSTEM	300 FT	T 1017.2

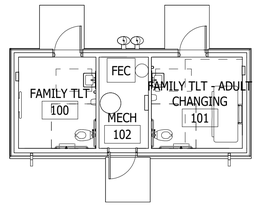
BUILDING TO BE SHUT DOWN IN THE WINTER TIME. NO ENERGY CODE REQUIREMENTS. NO INSULATION.

PROJECT DESCRIPTION:	**NEW CONSTRUCTION - PAVILION BUILDING - ROOF AREA 3,062 SF (OPEN AIR STRUCTURE)**		
USE GROUP: CONSTRUCTION TYPE:	A-5 - (ASSEBMLY - OPEN AIR PAVILION) V-B WITH NO AUTOMATIC SPRINKLER SYSTEM		602
ALLOWABLE BUILDING: (STORIES & HEIGHT)	A-5 (NS) - UNLIMITED STORIES & 40 FT		T504.3 & T504.4
ACTUAL BUILDING:	1 STORY 18'-1" - ALLOWED		
ALLOWABLE BUILDING AREA:	A-5 - UNLIMITED (NS)		
ACTUAL BUILDING:	A-5 ROOF AREA 3,062 SF - ALLOWED		

OCCUPANT LOAD PAVILION BUILDING — T1004.5

OCCUPANT LOAD				
OCCUPANCY TYPE	FUNCTION OF SPACE	AREA	FLOOR AREA - SF PER	OCCUPANTS
ASSEMBLY (A-5)	ASSEMBLY (UNCONCENTRATED (TABLES & CHAIRS))	3,062	15 NET	205
PAVILION IS SHOWING (14) 8'-0" PICNIC TABLES WITH 8 PEOPLE PER PICNIC TABLE TOTAL OCCUPANTS AT 112.				

OPEN AIR STRUCTURE. NO ENGERY CODE REQUIREMENTS. NO INSULATION.



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CODE COMPLIANCE LEGEND

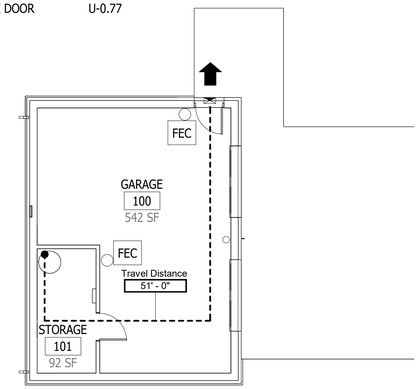
- EXIT SIGN, REFER TO ELEC. FOR MORE INFORMATION
- EGRESS DOOR
- TRAVEL DISTANCE PATH
- FEC — FIRE EXTINGUISHER CABINET
- FEC — FIRE EXTINGUISHER & BRACKET

MICHIGAN ENERGY CODE 2021 - ASHREA STD.90.1 - 2019

THE BELOW ARE MINIMUM CODE PERFORMANCES.
REFER TO SPECIFICATIONS AND DRAWINGS FOR REQUIREDPRODUCT VALUES - EQUAL OR HOGHER PERFORMANCE REQUIRED

MAINTENANCE BUILDING DESIGNATED AS SEMIHEATED
CLIMATE ZONE 5A. BUILDING ENVELOPE REQUIREMENTS PER TABLE 5.5-5 (OF ASHREA STD.90.1 - 2019)

BUILDING ELEMENT	MIN. R-VALUE OF INSULATION AND/OR ASSEMBLY MAX U-VALUE	MAX. SHCG
ROOF	R-30, U-0.034 (ATTIC INSULATION)	
MASS WALLS WOOD FRAMED	R-13, U-0.089	
SLAB ON GRADE FLOORS -UNHEATED	R-15 FOR 24IN	
OPAQUE DOORS - SWING	U-0.370	
-NONSWING	U-0.36	
FENESTRATION - FIXED	U-0.50	
-OPERABLE	U-0.65	
-ENTRANCE DOOR	U-0.77	



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PROJECT LOCATION
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City of Rochester Hills,
Oakland County, Michigan

Sheet
CODE COMPLIANCE PLAN - MAINTENANCE, FAMILY BATHROOMS BUILDING & PAVILION

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.01

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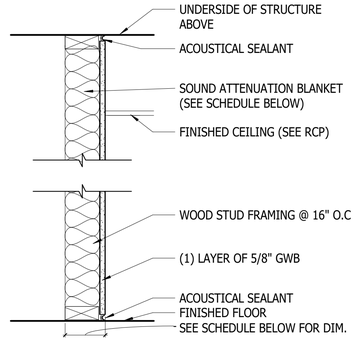
CODE SUMMARY MAINTENANCE, FAM. BATH & PAVILION — SCALE: 1/2" = 1'-0" — REF'D FROM:

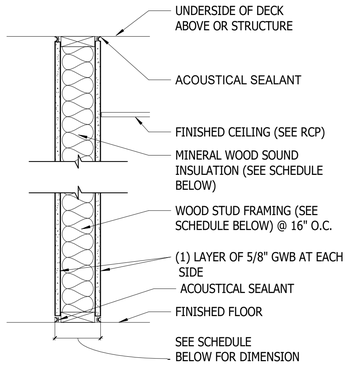
CODE COMPLIANCE PLAN - FAMILY BATHROOMS BUILDING — SCALE: 1/8" = 1'-0" — REF'D FROM: A2.21 — 2

CODE COMPLIANCE PLAN - MAINTENANCE BUILDING — SCALE: 1/8" = 1'-0" — REF'D FROM: A2.21 — 1



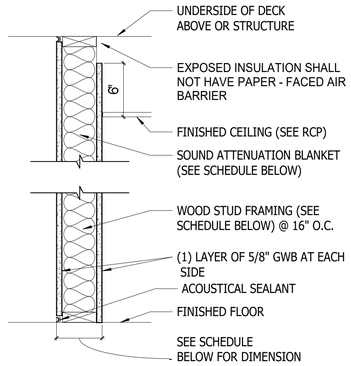
TYPE	STUD SIZE	PART. THICK	SOUND ATTN BLANKET	RATING DESIGN	WALL HEIGHT
F3a	2X3	3 1/8"	NONE	N/A	FULL HT.
F4a	2X4	4 1/8"	FULL DEPTH	N/A	FULL HT.
F4b	2X4	4 1/8"	NONE	N/A	6" ABOVE CLG.
F4c	2X4	4 1/8"	NONE	N/A	FULL HT.

F# FURRING - NON RATED PARTITIONS



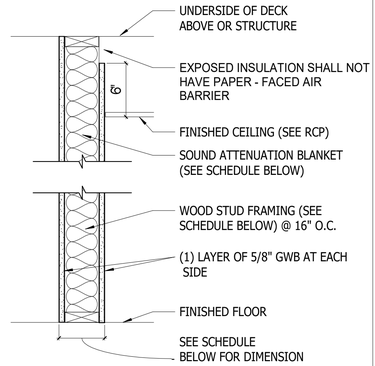
TYPE	STUD SIZE	PART. THICK.	SOUND ATTN BLANKET	RATING DESIGN	WALL HEIGHT
S6a	2X6	6 3/4"	FULL DEPTH	N/A	FULL

S#a STUD - NON RATED PARTITIONS



TYPE	STUD SIZE	PART. THICK.	SOUND ATTN BLANKET	RATING DESIGN	WALL HEIGHT
S4c	2X4	4 3/4"	FULL DEPTH	N/A	FULL
S4d	2X4	4 3/4"	NONE	N/A	6" ABOVE CLG

S#a STUD - NON RATED PARTITIONS



TYPE	STUD SIZE	PART. THICK.	SOUND ATTN BLANKET	RATING DESIGN	WALL HEIGHT
S4a	2x4	4 3/4"	FULL DEPTH	N/A	FULL
S4b	2x4	4 3/4"	NONE	N/A	FULL

S#a STUD - NON RATED PARTITIONS

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City of Rochester Hills,
Oakland County, Michigan

Sheet
WALL PARTITION TYPES

Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 1 1/2" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A2.02

PARTITION TYPES | SCALE: 1 1/2" = 1'-0" | REF'D FROM: | 1

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GENERAL NEW WORK NOTES:

1. GENERAL FLOOR PLAN / PARTITION NOTES AND PARTITION TYPES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.
2. SEE SHEET A2.02 FOR PARTITION TYPES LEGEND.
3. SEE FLOR PLAN AND ENLARGED PLANS FOR PARTITION TYPE DESIGNATIONS..
4. ALL INTERIOR PARTITION DIMENSIONS ARE TO FINISH FACE, UNO.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.
6. PROVIDE ACOUSTICAL GASKETS AT FLOOR TRACKS OF ALL NEW PARTITIONS. ACOUSTICALLY ATTENUATE ALL BOXES, REGISTERS, AND OTHER PENETRATIONS, FURNITURE, ETC. LOCATED WITHIN OR THROUGH NEW PARTITIONS TO MAINTAIN WALL SOUND RATINGS.
7. SEE SHEET A2.21 FOR DOOR SCHEDULE AND RELATED DETAILS.
8. SEE SHEET A2.41 FOR INTERIOR FINISH SCHEDULE AND KEY.
9. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS. LAYOUT ALL WALLS PRIOR TO COMMENCEMENT OF FRAMING AND NOTIFY ARCHITECT FOR DISPOSITION OF MAJOR DIMENSIONAL CONFLICTS.
10. PROVIDE ADDITIONAL REINFORCEMENT TO STRUCTURE AS REQUIRED FOR ANY CLG. HUNG ITEMS (I.E. TOILET PARTITIONS , FOLDING PARTITIONS, CLG. MOUNTED ITEMS.)
11. BUILDING TO MEET CURRENT MICHIGAN ENERGY CODES
12. SEE CIVIL DWGS FOR PAVING AND WALKS
13. REFER TO CIVIL DRAWINGS FOR USGS DATUM ELEVATION AT THE FINISH FLOOR AT EACH INDIVIDUAL BUILDING THAT CORRESPONDS WITH F.F.E. ELEVATION 100'-0" NOTED ON ARCHITECTURAL DRAWINGS AND DETAILS.

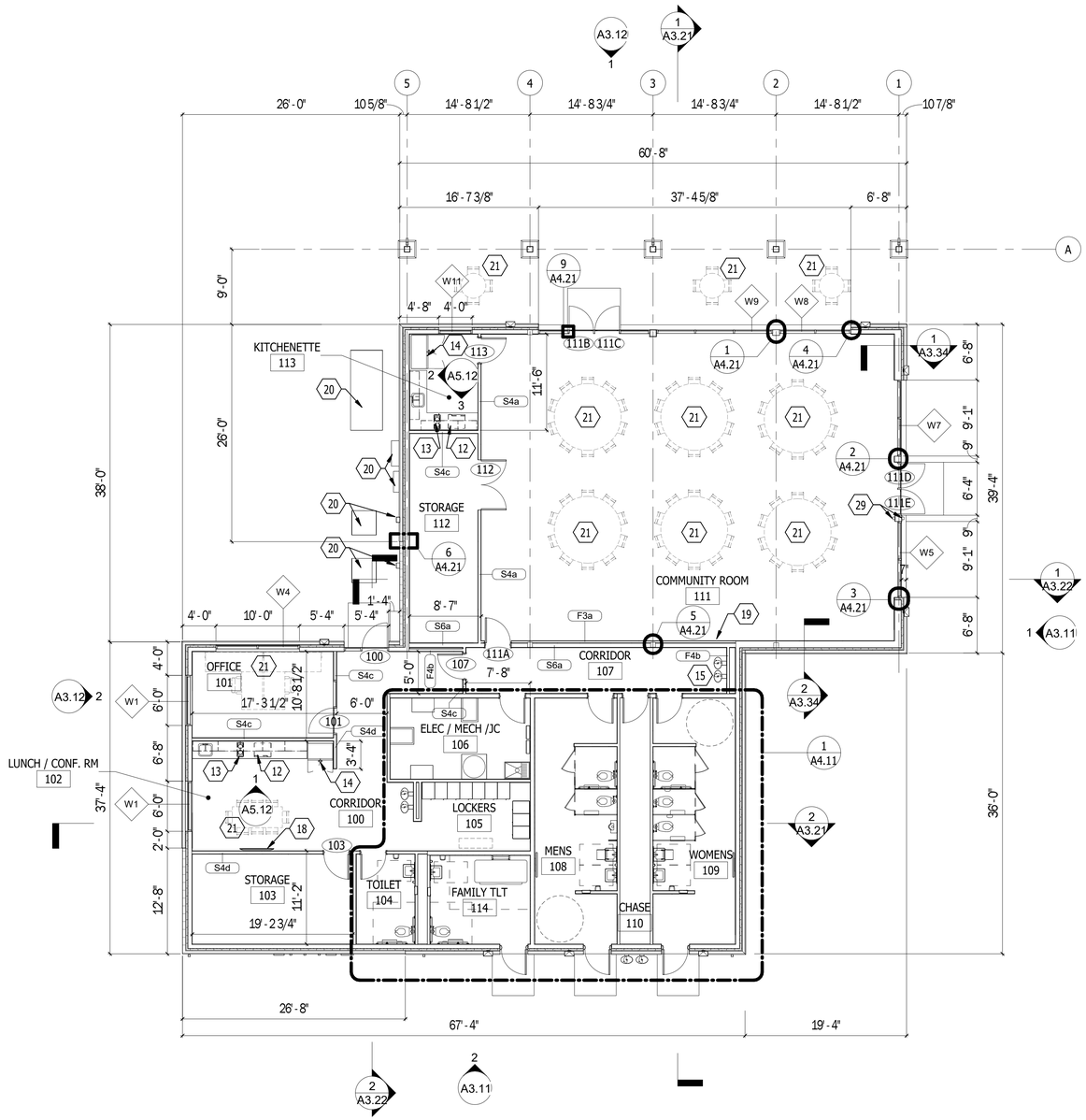
NEW WORK LEGEND:

- NEW STUD WALL
- NEW DOOR
- FURNITURE (OF/OI)
- # KEYNOTE TAG
- X NEW COLUMN TAG
- NO. DOOR TAG
- NO. WINDOW TAG
- NO. PARTITION TAG

NEW WORK KEYNOTES:

O = OWNER, C= CONTRACTOR, F=FURNISHED, & I-INSTALLED
THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.

1. BABY CHANGING TABLE (CF/CI)
2. TOILET PAPER DISPENSER (CF/CI)
3. NOTE NOT USED
4. SANITARY DISPOSAL (ONLY IN WOMENS AND UNISEX TOILET ROOMS) (CF/CI)
5. HORIZONTAL GRAB BAR (CF/CI)
6. VERTICAL GRAB BAR (CF/CI)
7. 24"X36" MIRROR (CF/CI)
8. WALL MOUNTED SOAP DISPENSER (OF/CI)
9. PAPER TOWEL DISPENSER AND WASTE RECEPTACLE (CF/CI)
10. ADULT CHANGING TABLE (CF/CI) - SEE FLOOR PLAN FOR NOTE ON SUPPORT REQUIREMENTS.
11. WALL MOUNTED LIGHT (SEE REFLECTED CEILING PLAN AND ELC. DWGS) (CF/CI)
12. MICROWAVE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
13. COFFEE MACHINE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
14. COMMERCIAL REFRIGERATOR (OF/OI) - VERIFY WITH OWNER FOR SIZE PRIOR TO INSTALL OF CABINETS
15. HI/LO DRINKING FOUNTAIN WITH APRON FOR HIGH FOUNTAIN TO 27" HIGH OFF GROUND (CANE DETECTION) (CF/CI)
16. HAND DRYER (CF/CI)
17. STEP N WASH (CF/CI)
18. TV (OF/OI) (SEE ELEC. DWGS FOR POWER & DATA)
19. WALL MOUNTED (2) MONITORS & A/V EQUIPMENT (OF/OI) - SEE ELEC DWGS FOR ITEMS FOR GC TO PROVIDE
20. MECH / ELEC EQUIPMENT. SEE MECH & ELEC DWGS.
21. FURNITURE (OF/OI) - FURNITURE SUPPLIER TO DETERMINE ACCESSIBLE REQUIREMENTS
22. ADD 1" MARINE GRADE PLYWOOD TO THE STUD WALL SECURED EVERY 4" FROM FLOOR TO 67" HIGH. VERIFY REQUIREMENTS WITH ADULT CHANGING TABLE SUPPLIER - PROVIDE GYP. BD. OVER PLYWOOD
23. LOCKERS 18"W X 24"D X 72"H WITH SLOPED TOP - PROVIDE (1) ACCESSIBLE LOCKER
24. 20" X 4'-0" WOOD BENCH WITH METAL PEDESTALS TO MATCH COLOR OF LOCKERS - 19" HIGH
25. PROVIDE SCHULTER EDGE TRIM - SEE SHEET A2.41 FOR TYPE & FINISH/COLOR
26. PROVIDE RAISED SLAB AT EQUPIMENT INDICATED - SEE MECH DWGS & SPECIFICATIONS FOR INFORMATION
29. ACTUATORS FOR DOOR OPERATORS - EACH SIDE OF DOOR



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A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

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Architects Project No: 25021

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PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
FLOOR PLAN, LEGEND & NOTES - COMMUNITY BUILDING

Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

TRUE NORTH

NFE JOB NO. 0557
SHEET NO. A2.11

KEYNOTES, NOTES & LEGEND — SCALE: N.T.S — REF'D FROM: — 2

NEW WORK PLAN - COMMUNITY BUILDING — SCALE: 1/8" = 1'-0" — REF'D FROM: A2.21 — 1

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GENERAL REFLECTED CEILING NOTES:

1. COORDINATE NEW MECHANICAL AND ELECTRICAL COMPONENT QUANTITIES, TYPES, AND SIZES WITH MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. COORDINATE THE EXACT LOCATION OF MECHANICAL AND ELECTRICAL COMPONENTS LOCATED ABOVE OR WITHIN CEILINGS AS INDICATED ON MECHANICAL AND ELECTRICAL DRAWINGS, BUT NOT SHOWN ON THIS PLAN, WITH THE ARCHITECT. GENERALLY, COMPONENTS SHALL BE CENTERED IN CEILING TILES, UNO.

REFLECTED CEILING PLAN KEYNOTES:

1. GYP. BD. ATTACHED TO UNDERSIDE OF ROOF TRUSSES.
2. ALUMINUM VENTED SOFFIT ROOF JOISTS
3. METAL DOWNSPOUTS TO METAL GUTTER
4. 20"X30" METAL ACCESS DOOR FOR ATTIC ACCESS

CEILING LEGEND:

LIGHT FIXTURE

RCP KEYNOTES, NOTES & LEGEND | SCALE: N.T.S | REF'D FROM: | 4

GENERAL NEW WORK NOTES:

1. GENERAL FLOOR PLAN / PARTITION NOTES AND PARTITION TYPES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.
2. SEE SHEET A2.02 FOR PARTITION TYPES LEGEND.
3. SEE FLOR PLAN AND ENLARGED PLANS FOR PARTITION TYPE DESIGNATIONS..
4. ALL INTERIOR PARTITION DIMENSIONS ARE TO FINISH FACE, UNO.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.
6. PROVIDE ACOUSTICAL GASKETS AT FLOOR TRACKS OF ALL NEW PARTITIONS. ACOUSTICALLY ATTENUATE ALL BOXES, REGISTERS, AND OTHER PENETRATIONS, FURNITURE, ETC. LOCATED WITHIN OR THROUGH NEW PARTITIONS TO MAINTAIN WALL SOUND RATINGS.
7. SEE SHEET A2.21 FOR DOOR SCHEDULE AND RELATED DETAILS.
8. SEE SHEET A2.41 FOR INTERIOR FINISH SCHEDULE AND KEY.
9. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS. LAYOUT ALL WALLS PRIOR TO COMMENCEMENT OF FRAMING AND NOTIFY ARCHITECT FOR DISPOSITION OF MAJOR DIMENSIONAL CONFLICTS.
10. PROVIDE ADDITIONAL REINFORCEMENT TO STRUCTURE AS REQUIRED FOR ANY CLG. HUNG ITEMS (I.E. TOILET PARTITIONS , FOLDING PARTITIONS, CLG. MOUNTED ITEMS.)
11. BUILDING TO MEET CURRENT MICHIGAN ENERGY CODES
12. REFER TO CIVIL DRAWINGS FOR USGS DATUM ELEVATION AT THE FINISH FLOOR AT EACH INDIVIDUAL BUILDING THAT CORRESPONDS WITH F.F.E. ELEVATION 100'-0" NOTED ON ARCHITECTURAL DRAWINGS AND DETAILS.
13. SEE CIVIL DWGS FOR PAVING AND WALKS

NEW WORK LEGEND:

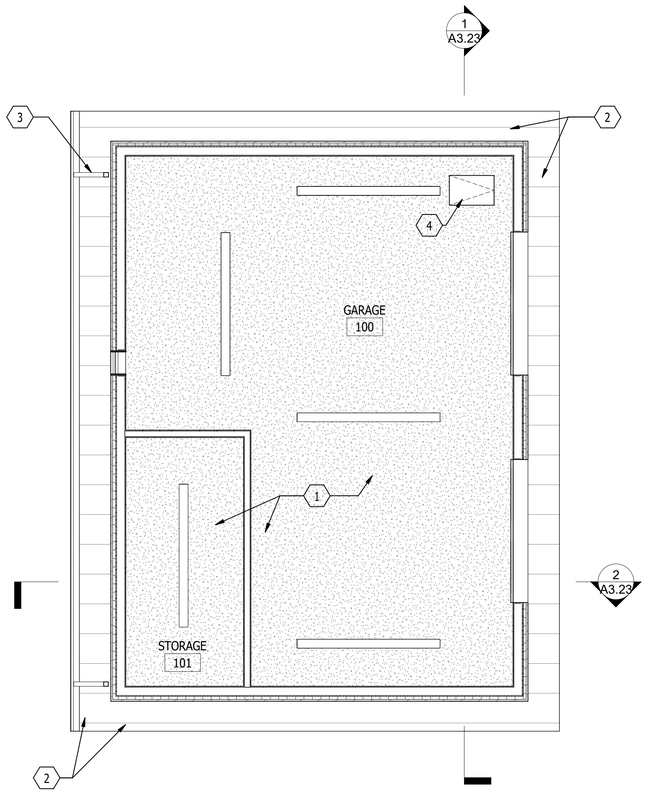
- NEW STUD WALL
- NEW DOOR
- FURNITURE
- # KEYNOTE TAG
- X NEW COLUMN TAG
- NO. DOOR TAG
- NO. WINDOW TAG
- NO. PARTITION TAG

NEW WORK KEYNOTES:

O = OWNER, C = CONTRACTOR, F = FURNISHED, & I = INSTALLED

1. WORK BENCH (OF/OI)
2. HAZARDOUS MATERIALS CABINET (OF/OI)
3. UTILITY VEHICLE (OF/OI)
4. MECH / ELEC EQUIPMENT. SEE MECH / ELEC DWGS.
5. TRENCH DRAIN - SEE PLUMBING DWGS

NEW WORK KEYNOTES, NOTES & LEGEND | SCALE: N.T.S | REF'D FROM: | 3



REFLECTED CEILING PLAN - MAINTENANCE BUILDING | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.21 | 2

NEW WORK PLAN - MAINTENANCE BUILDING | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.21 | 1

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1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT

Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION

Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet

FLOOR & CEILING PLAN, ELEVATIONS, LEGEND & NOTES - MAINTENANCE BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.12

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GENERAL REFLECTED CEILING NOTES:

1. COORDINATE NEW MECHANICAL AND ELECTRICAL COMPONENT QUANTITIES, TYPES, AND SIZES WITH MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. COORDINATE THE EXACT LOCATION OF MECHANICAL AND ELECTRICAL COMPONENTS LOCATED ABOVE OR WITHIN CEILINGS AS INDICATED ON MECHANICAL AND ELECTRICAL DRAWINGS, BUT NOT SHOWN ON THIS PLAN, WITH THE ARCHITECT. GENERALLY, COMPONENTS SHALL BE CENTERED IN CEILING TILES, UNO.

REFLECTED CEILING PLAN KEYNOTES:

1. MOISTURE RESISTANCE GYP. BD. TO UNDERSIDE OF SLOPING ROOF JOISTS
2. ALUMINUM VENTED SOFFIT AT ROOF JOISTS
3. METAL DOWNSPOUTS TO METAL GUTTER
4. PAINT EXPOSED WOOD JOISTS AND WOOD DECK

CEILING LEGEND:

- WALL MOUNTED LIGHT FIXTURE
- SUSPENDED LIGHT FIXTURE

GENERAL NEW WORK NOTES:

1. GENERAL FLOOR PLAN / PARTITION NOTES AND PARTITION TYPES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.
2. SEE SHEET A2.02 FOR PARTITION TYPES LEGEND.
3. SEE FLOR PLAN AND ENLARGED PLANS FOR PARTITION TYPE DESIGNATIONS..
4. ALL INTERIOR PARTITION DIMENSIONS ARE TO FINISH FACE, UNO.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.
6. PROVIDE ACOUSTICAL GASKETS AT FLOOR TRACKS OF ALL NEW PARTITIONS. ACOUSTICALLY ATTENUATE ALL BOXES, REGISTERS, AND OTHER PENETRATIONS, FURNITURE, ETC. LOCATED WITHIN OR THROUGH NEW PARTITIONS TO MAINTAIN WALL SOUND RATINGS.
7. SEE SHEET A2.21 FOR DOOR SCHEDULE AND RELATED DETAILS.
8. SEE SHEET A2.41 FOR INTERIOR FINISH SCHEDULE AND KEY.
9. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS. LAYOUT ALL WALLS PRIOR TO COMMENCEMENT OF FRAMING AND NOTIFY ARCHITECT FOR DISPOSITION OF MAJOR DIMENSIONAL CONFLICTS.
10. PROVIDE ADDITIONAL REINFORCEMENT TO STRUCTURE AS REQUIRED FOR ANY CLG. HUNG ITEMS (I.E. TOILET PARTITIONS , FOLDING PARTITIONS, CLG. MOUNTED ITEMS.)
11. BUILDING TO MEET CURRENT MICHIGAN ENERGY CODES

NEW WORK KEYNOTES:

O=OWNER, C=CONTRACTOR, F=FURNISHED, & I=INSTALLED

1. BABY CHANGING TABLE (CF/CI)
2. TOILET PAPER DISPENSER (CF/CI)
3. NOTE NOT USED
4. SANITARY DISPOSAL (ONLY IN WOMENS AND UNISEX TOILET ROOMS) (CF/CI)
5. HORIZONTAL GRAB BAR (CF/CI)
6. VERTICAL GRAB BAR (CF/CI)
7. 24"X36" MIRROR (CF/CI)
8. WALL MOUNTED SOAP DISPENSER (OF/CI)
9. PAPER TOWEL DISPENSER AND WASTE RECEPTACLE (CF/CI)
10. ADULT CHANGING TABLE (CF/CI)
11. WALL MOUNTED LIGHT (SEE REFLECTED CEILING PLAN AND ELC. DWGS) (CF/CI)
12. HAND DRYER (CF/CI)
13. MECH / ELEC EQUIPMENT. SEE MECH / ELEC DWGS.
14. HI/LO DRINKING FOUNTAIN WITH APRON FOR HIGH FOUNTAIN TO 27" HIGH OFF GROUND (CANE DETECTION) (CF/CI)
15. ADD 1" MARINE GRADE PLYWOOD TO THE STUD WALL SECURED EVERY 4" FROM FLOOR TO 67" HIGH. VERIFY REQUIREMENTS WITH ADULT CHANGING TABLE SUPPLIER - PROVIDE GYP. BD. OVER PLYWOOD.

NEW WORK LEGEND:

- NEW STUD WALL
- NEW DOOR
- # KEYNOTE TAG
- X NEW COLUMN TAG
- NO. DOOR TAG
- NO. PARTITION TAG

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115 1/2 E. LIBERTY STREET
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PROJECT
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Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
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City of Rochester Hills,
Oakland County, Michigan

Sheet
FLOOR & CEILING PLAN, LEGEND & NOTES - FAMILY BATHROOMS BUILDING

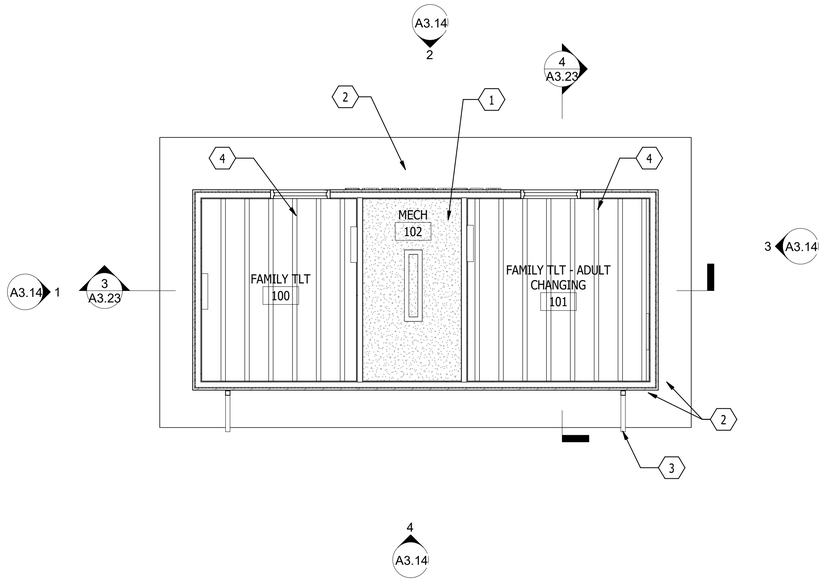
Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: Designer
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

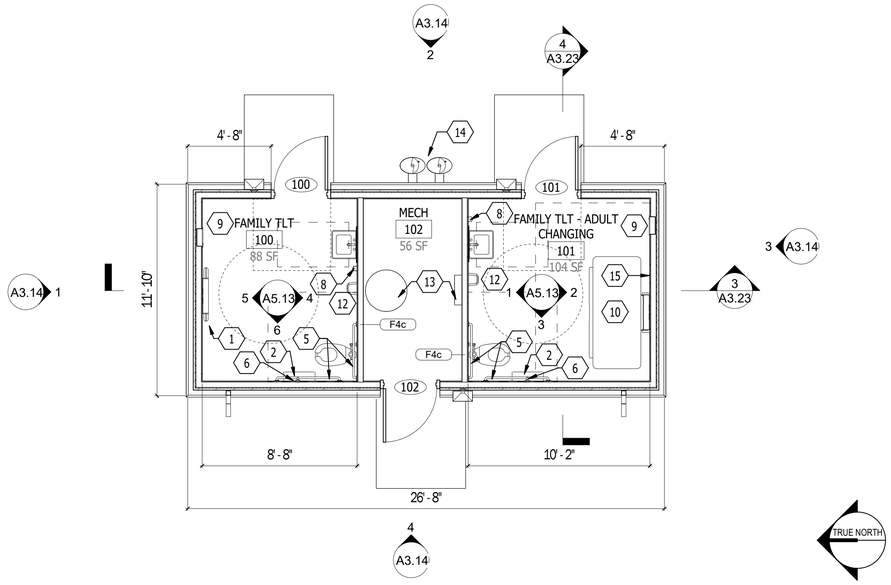
NFE JOB NO. 0557
SHEET NO. A2.13

RCP KEYNOTES, NOTES & LEGEND — SCALE: N.T.S — REF'D FROM: — 4



REFELECTED CEILING PLAN - FAMILY BATHROOMS BUILDNG — SCALE: 1/4" = 1'-0" — REF'D FROM: A2.21 — 2

KEYNOTES, NOTES & LEGEND — SCALE: N.T.S — REF'D FROM: — 3



NEW WORK PLAN - FAMILY BATHROOMS BUILDING — SCALE: 1/4" = 1'-0" — REF'D FROM: A2.21 — 1

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GENERAL NEW WORK NOTES:

1. GENERAL FLOOR PLAN / PARTITION NOTES AND PARTITION TYPES APPLY TO ALL FLOOR PLANS AND ENLARGED FLOOR PLANS INCLUDED WITHIN THIS DOCUMENT SET.
2. SEE SHEET A2.02 FOR PARTITION TYPES LEGEND.
3. SEE FLOOR PLAN AND ENLARGED PLANS FOR PARTITION TYPE DESIGNATIONS..
4. ALL INTERIOR PARTITION DIMENSIONS ARE TO FINISH FACE, UNO.
5. THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.
6. PROVIDE ACOUSTICAL GASKETS AT FLOOR TRACKS OF ALL NEW PARTITIONS. ACOUSTICALLY ATTENUATE ALL BOXES, REGISTERS, AND OTHER PENETRATIONS, FURNITURE, ETC. LOCATED WITHIN OR THROUGH NEW PARTITIONS TO MAINTAIN WALL SOUND RATINGS.
7. SEE SHEET A2.21 FOR DOOR SCHEDULE AND RELATED DETAILS.
8. SEE SHEET A2.41 FOR INTERIOR FINISH SCHEDULE AND KEY.
9. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING WORK OR SUPPLYING MATERIALS OR COMPONENTS. LAYOUT ALL WALLS PRIOR TO COMMENCEMENT OF FRAMING AND NOTIFY ARCHITECT FOR DISPOSITION OF MAJOR DIMENSIONAL CONFLICTS.
10. PROVIDE ADDITIONAL REINFORCEMENT TO STRUCTURE AS REQUIRED FOR ANY CLG. HUNG ITEMS (I.E. TOILET PARTITIONS , FOLDING PARTITIONS, CLG. MOUNTED ITEMS.)
11. BUILDING TO MEET CURRENT MICHIGAN ENERGY CODES

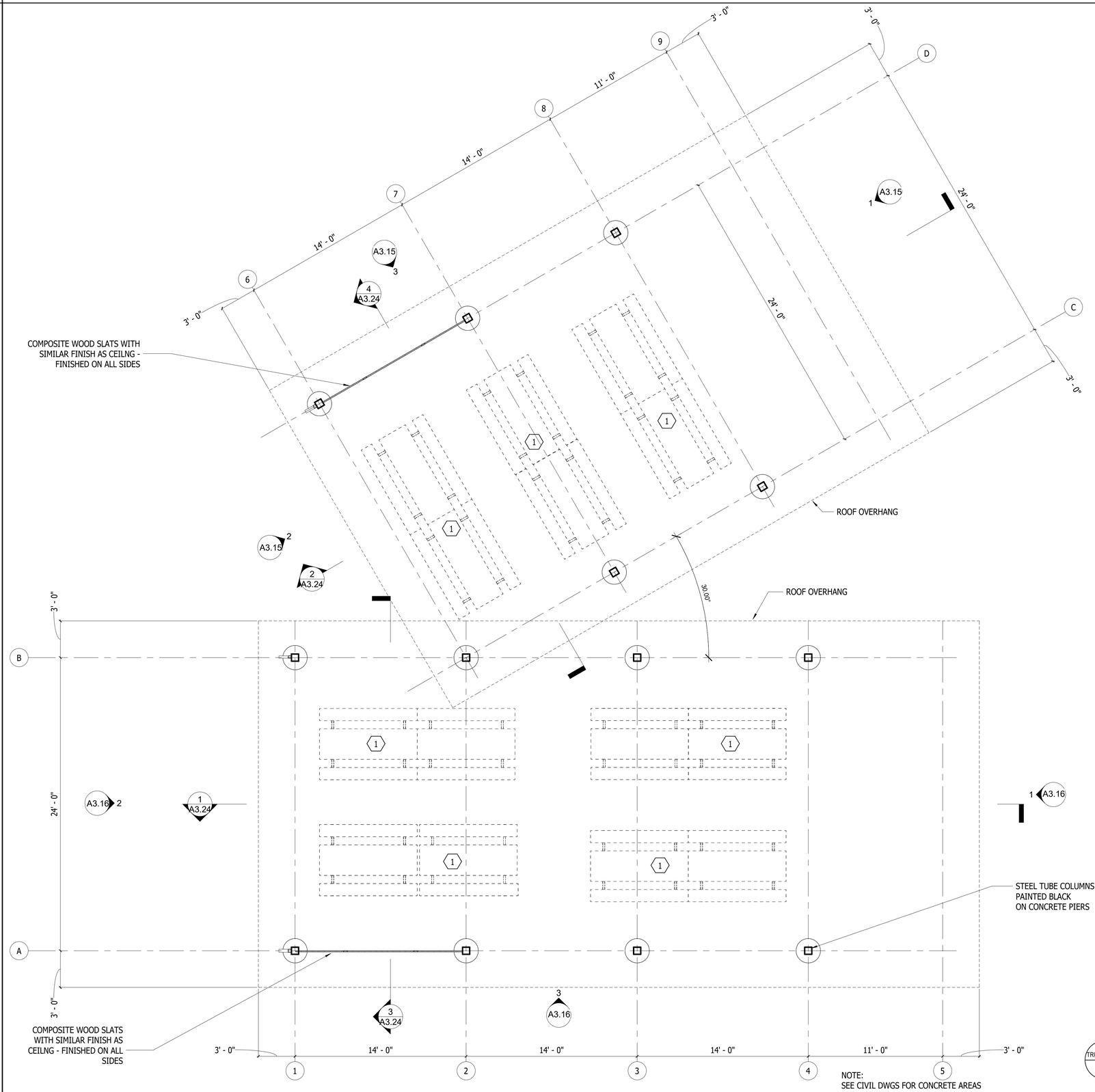
NEW WORK KEYNOTES:

O = OWNER, C = CONTRACTOR, F =FURNISHED, & I - INSTALLED

1 PICNIC TABLES (OF/OI)

NEW WORK LEGEND:

- NEW STUD WALL
- NEW CMU WALL
- NEW DOOR
- # KEYNOTE TAG
- X NEW COLUMN TAG
- NO. DOOR TAG
- NO. WINDOW TAG
- NO. PARTITION TAG



NOTE:
SEE CIVIL DWGS FOR CONCRETE AREAS

TRUE NORTH

KEYNOTES, NOTES & LEGEND | SCALE: N.T.S | REF'D FROM: | 2

NEW WORK PLAN | SCALE: 1/4" = 1'-0" | REF'D FROM: | 1

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PROJECT LOCATION
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Section 8
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City of Rochester Hills,
Oakland County, Michigan

Sheet
FLOOR PLAN, LEGEND & NOTES - PAVILION

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DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.14

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ROOF PLAN KEYNOTES:

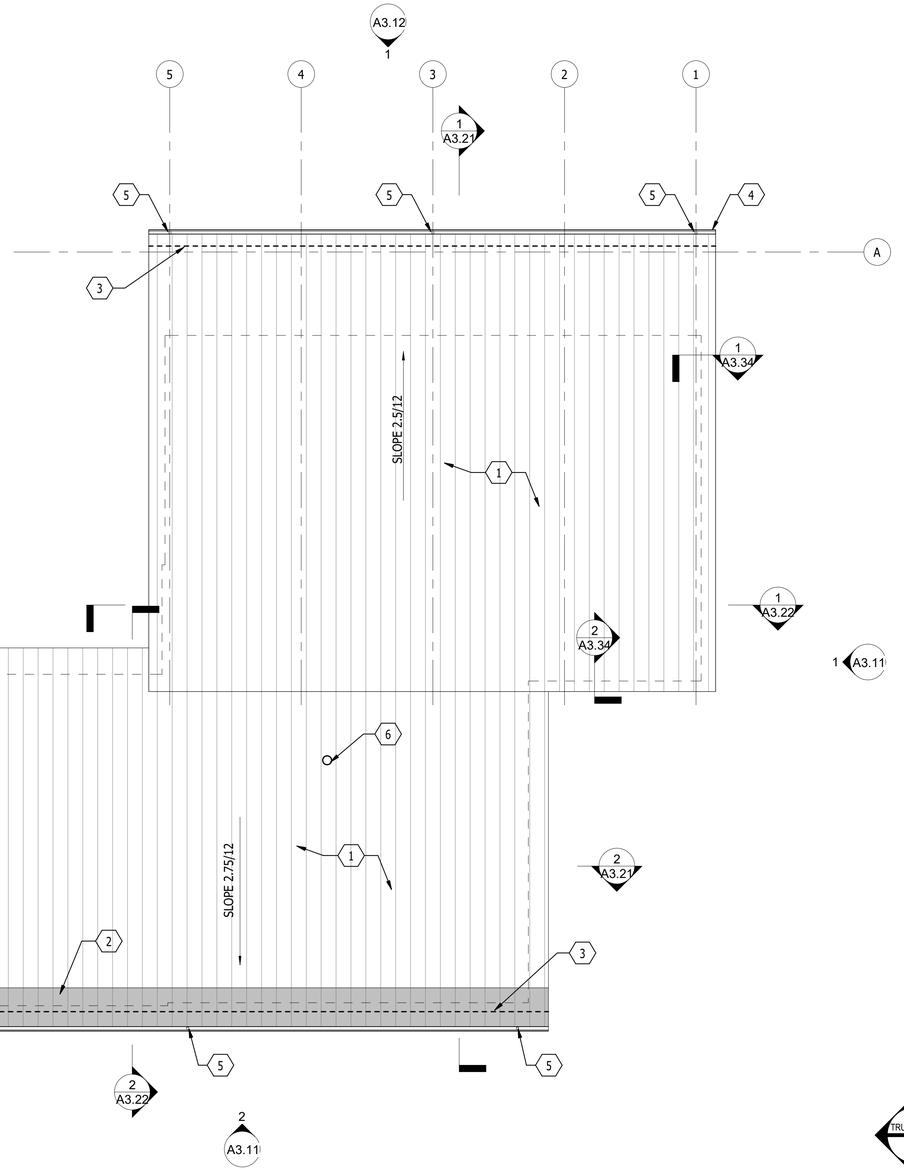
1. STANDING SEAM METAL ROOF - MR1
2. ICE AND WATER SHIELD (2'-0" BACK FROM EXTERIOR WALL EDGE)
3. SNOW GUARDS
4. METAL GUTTER
5. METAL DOWNSPOUT
6. VENT THROUGH ROOF - FLASH AS REQUIRED - SEE PLUMBING DWGS FOR LOCATIONS

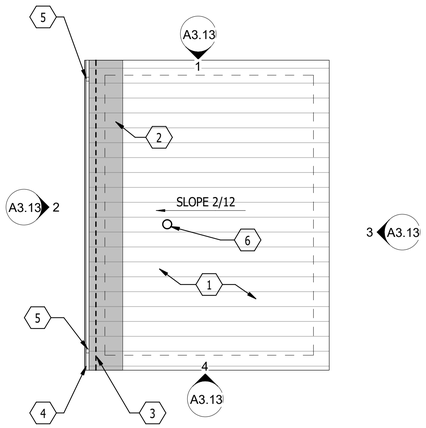
ROOF PLAN LEGEND:

- SNOW GUARD
- DOWNSPOUT
- ROOF SLOPE
- OUTLINE OF BUILDING BELOW
- ICE AND WATER SHIELD

ROOF PLAN KEY NOTES AND LEGEND

SCALE: N.T.S. | REF'D FROM: TS | 4

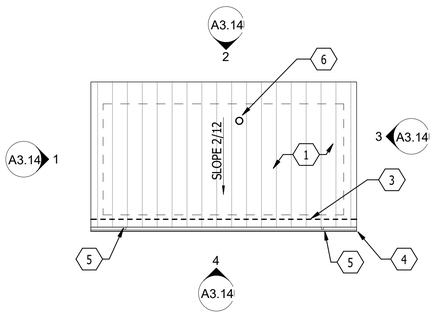




TRUE NORTH

ROOF PLAN - MAINTENANCE BUILDING

SCALE: 1/8" = 1'-0" | REF'D FROM: | 3



TRUE NORTH

ROOF PLAN - FAMILY RESTROOM BUIDLING

SCALE: 1/8" = 1'-0" | REF'D FROM: | 2

TRUE NORTH

ROOF PLAN - COMMUNITY BUILDING

SCALE: 1/8" = 1'-0" | REF'D FROM: | 1

ROCHESTER HILLS MICHIGAN

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PROJECT LOCATION
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Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
COMMUNITY BUILDING, MAINTENANCE BUILDING & FAMILY BATHROOMS - ROOF PLANS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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DESIGNED BY: Designer
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.15

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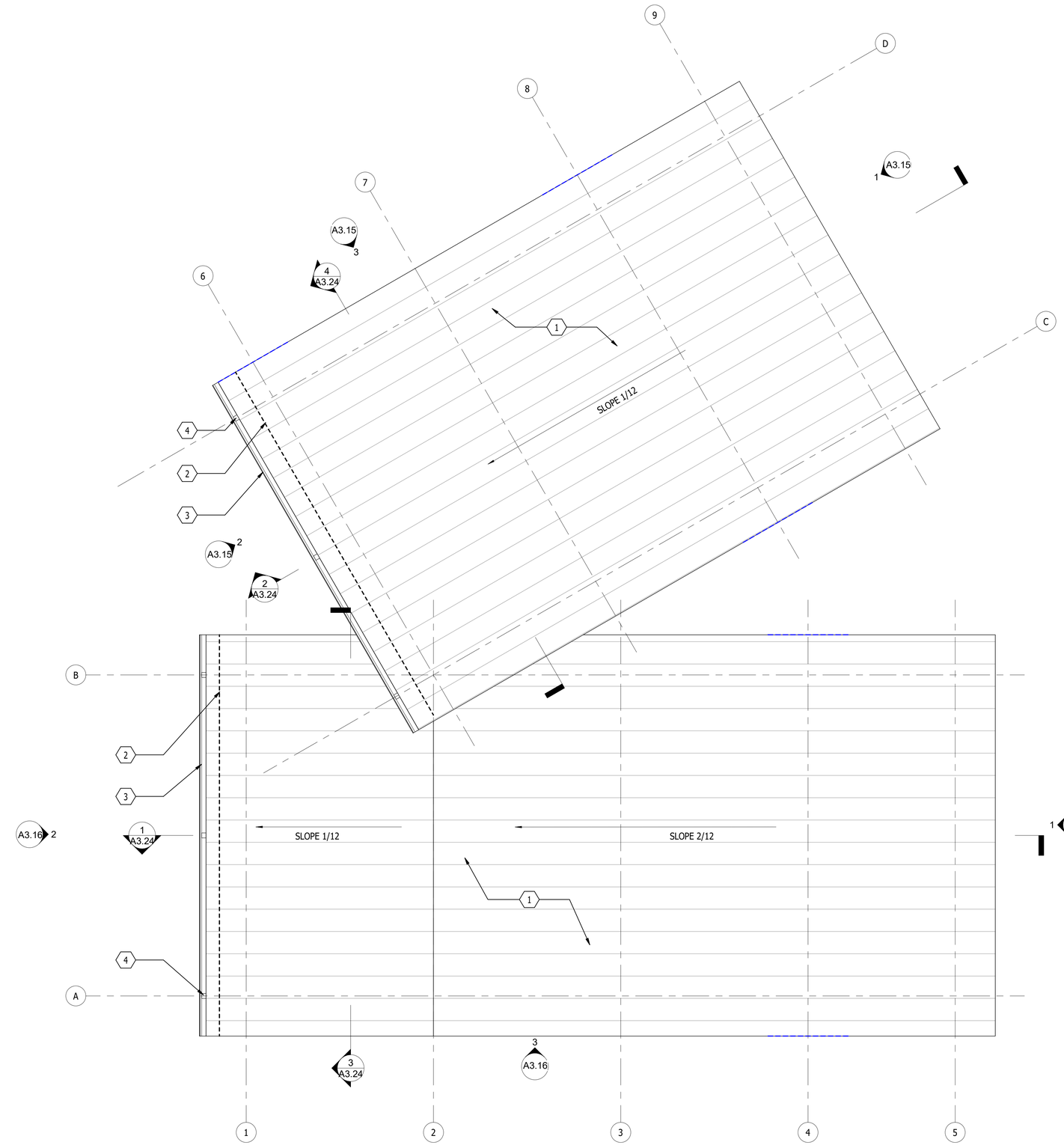
ROOF PLAN KEYNOTES:

1. STANDING SEAM METAL ROOF - MR1
2. SNOW GUARDS
3. METAL GUTTER
4. METAL DOWNSPOUT

ROOF PLAN LEGEND:

- SNOW GUARD
- DOWNSPOUT
- ROOF SLOPE
- OUTLINE OF BUILDING BELOW



ROOF PLAN KEYNOTES AND LEGEND | SCALE: N.T.S. | REF'D FROM: TS | 2

ROOF PLAN - PAVILION | SCALE: 1/4" = 1'-0" | REF'D FROM: | 1

ROCHESTER HILLS MICHIGAN

A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
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PROJECT
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Rochester Hills, MI 48309

CONTACT

Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION

Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ROOF PLAN - PAVILION

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: Author
DESIGNED BY: Designer
APPROVED BY: Approver
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.16

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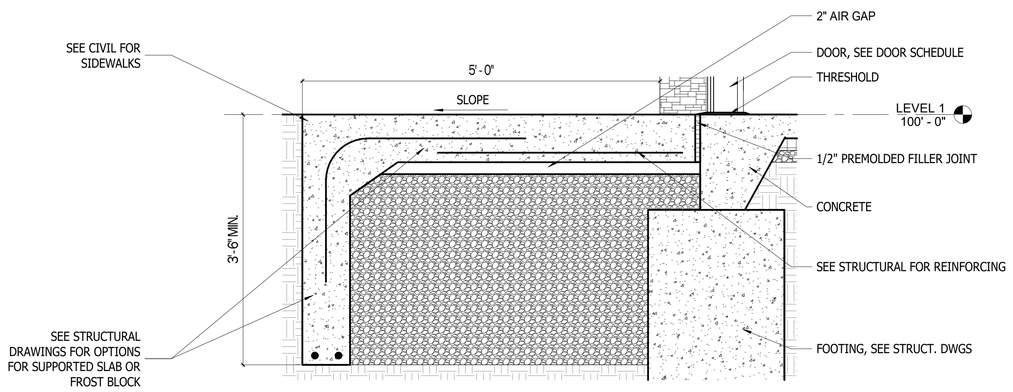


FROST SLAB DETAIL

SCALE: 1" = 1'-0"
REF'D FROM: A3.33

3

OPENING COVERING SCHEDULE

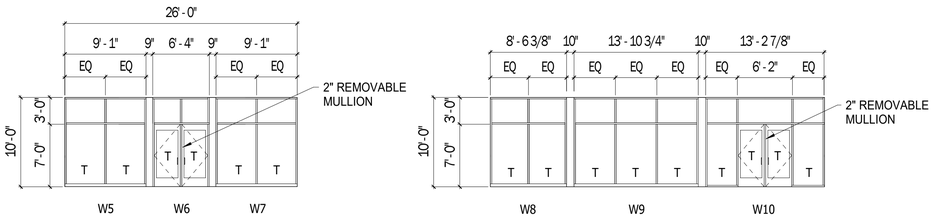
ROOM #	WINDOW #	COVER TYPE	# OF WINDOWS
101	W1	2	1
101	W4	2	1
102	W1	2	1
111	W2	1	11
111	W5	2	1
111	W6	2	1
111	W7	2	1
111	W8	2	1
111	W9	2	1
111	W10	2	1

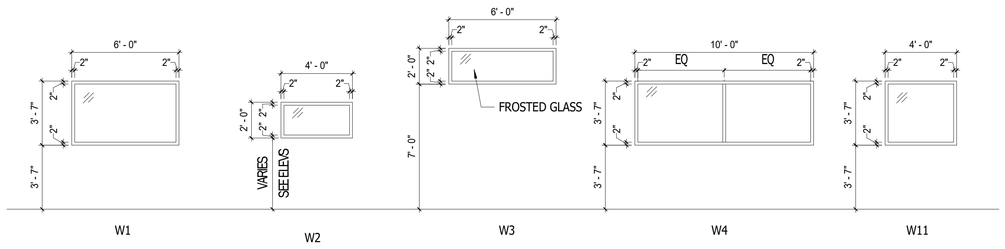
OPENING COVERING SCHEDULE KEY

1	MOTORIZED SOLAR SHADE 3% OPENNESS
2	MANUAL SOLAR SHADE 3% OPENNESS

OPENING COVERING SCHEDULE GENERAL NOTES:

1. INTERIOR WINDOW COVERINGS REQUIRED AT ALL EXTERIOR GLAZING ASSOCIATED WITH WINDOW TYPES U.N.O INCLUDING DOORS, TRANSOM WINDOWS, AND SIDELITE.
2. SEE EXTERIOR AND INTERIOR ELEVATIONS FOR WINDOW AND FRAME TYPES AND FOR FURTHER NOTES.





WINDOW TYPES

SCALE: 1/8" = 1'-0"
REF'D FROM:

2

DOOR SCHEDULE - COMMUNITY BUILDING

DOOR NUMBER	ROOM NAME	DOOR WIDTH	DOOR HEIGHT	DOOR THK	PANEL TYPE	PANEL MTL	PANEL FINISH	PANEL GLAZING	FRAME TYPE	FRAME MATL	FRAME FINISH	THRESHOLD	DETAILS HEAD DTL	DETAILS JAMB DTL	DETAILS SILL DTL	NOTES HDW SET	NOTES FIRE RATING	NOTES KEY NOTES
LEVEL 1																		
100	CORRIDOR	3' - 0"	7' - 0"	1 3/4"	B	AL	FACT	TMP/INS	F2	AL	FACT	AL	#6/A3.41	#7,8/A4.21	#3/A2.21	AL1		2,5,8
101	OFFICE	3' - 0"	7' - 0"	1 3/4"	B	WD	STN	TMP	F5	HM	PTD		#3/A2.23	#1/A2.23		1		2,4
103	STORAGE	3' - 0"	7' - 0"	1 3/4"	A	WD	STN		F1	HM	PTD		#3/A2.23	#1/A2.23		2		
104	TOILET	3' - 0"	7' - 0"	1 3/4"	A	WD	STN		F1	HM	PTD		#3/A2.23	#1/A2.23		3		3
106	ELEC / MECH /JC	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD		#3/A2.23	#1/A2.23		4		2
107	CORRIDOR	3' - 0"	7' - 0"	1 3/4"	A	WD	STN		F1	HM	PTD		#3/A2.23	#1/A2.23		5		2
108A	MENS	3' - 0"	7' - 0"	1 3/4"	A	FRP	FACT		F4	FRP	FACT	AL	#7/A3.41	#7,8/A4.21	#3/A2.21	15		2,7
108B	MENS	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD		#3/A2.23	#1/A2.23		7		2
109A	WOMENS	3' - 0"	7' - 0"	1 3/4"	A	FRP	FACT		F4	FRP	FACT	AL	#7/A3.41	#7,8/A4.21	#3/A2.21	15		2,7
109B	WOMENS	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD		#3/A2.23	#1/A2.23		7		2
110	CHASE	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD		#3/A2.23	#1/A2.23		4		2
111A	COMMUNITY ROOM	3' - 0"	7' - 0"	1 3/4"	B	WD	STN	TMP	F1	HM	PTD		#4/A2.24	#1/A2.24		8		
111B	COMMUNITY ROOM	2' - 11"	7' - 0"	1 3/4"	B	AL	FACT	TMP/INS		AL	FACT	AL	#8/A3.41	#9/A4.21	#3/A2.21	AL2		1,2,5
111C	COMMUNITY ROOM	2' - 11"	7' - 0"	1 3/4"	B	AL	FACT	TMP/INS		AL	FACT	AL	#8/A3.41	#9/A4.21	#3/A2.21	AL2		1,2,5
111D	COMMUNITY ROOM	2' - 11"	7' - 0"	1 3/4"	B	AL	FACT	TMP/INS		AL	FACT	AL	#8/A3.41	#9/A4.21	#3/A2.21	AL3		1,2,5,7
111E	COMMUNITY ROOM	2' - 11"	7' - 0"	1 3/4"	B	AL	FACT	TMP/INS		AL	FACT	AL	#8/A3.41	#9/A4.21	#3/A2.21	AL3		1,2,5,7
112	STORAGE	6' - 0"	7' - 0"	1 3/4"	A	WD	STN		F3	HM	PTD		#3/A2.23	#1/A2.23		9		
113	KITCHENETTE	3' - 0"	7' - 0"	1 3/4"	B	WD	STN		F1	HM	PTD		#3/A2.23	#1/A2.23		2		
114	FAMILY TLT	3' - 0"	7' - 0"	1 3/4"	A	FRP	FACT		F4	FRP	FACT	AL	#7/A3.41	#7,8/A2.23	#3/A2.21	14		2,3
Grand total: 19																		

GENERAL NOTES - DOOR SCHEDULE:

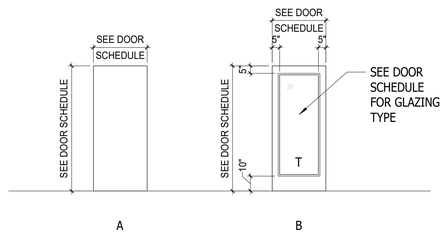
1. ALL DOOR HARDWARE SHALL MEET AMERICANS WITH DISABILITIES ACT (ADA).
2. COORDINATE HARDWARE KEYING AND MASTER KEYING REQUIREMENTS WITH OWNER
3. SEE PROJECT MANUAL FOR HARDWARE SETS.
4. EXTERIOR GLASS TO BE 1" INSULATED, CLEAR, TEMPERED, U.N.O. INTERIOR TO BE 1/4", CLEAR, TEMPERED, U.N.O.
5. NO WIRE GLASS.
6. WOOD DOORS TO BE WHITE MAPLE WITH WHEAT (WH18) FACTORY STAIN.

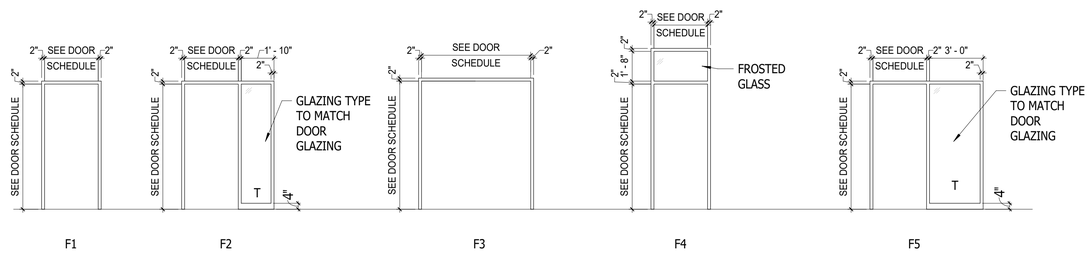
DOOR ABBRV.

AL	ALUMINUM	STL	STEEL
CLR	CLEAR	STN	STAIN
FACT	FACTORY (PRE-FINISHED)	TMP	TEMPERED
HC	HONEYCOMB	OHD	OVERHEAD DOOR
HM	HOLLOW METAL	PTD	PAINTED
INS	INSULATED	WD	WOOD SOLID CORE

KEY NOTES:

1. SEE EXTERIOR ELEVATIONS AND WINDOW TYPES FOR FRAME
2. DOORS TO BE LOCKABLE (NO CARD READER)
3. SINGLE OCCUPANCY TOILETS TO HAVE DEADBOLT WITH OCCUPANCY INDICATOR
4. SEE DETAILS #3, 6, 7 & 8 / A2.23 FOR INTERIOR SIDELITE DETAILS
5. SEE DETAILS #3 & 4 / A4.21 FOR EXTERIOR SIDELITE DETAILS
6. PROVIDE ELECTRIFIED DOOR OPENERS FOR GARAGE DOORS
7. ELECTRIC STRIKE WITH ACTUATORS ON EACH SIDE OF DOOR. SEE HARDWARE SETS AND SPECS. SEE FLOOR PLAN FOR LOCATIONS.
8. PREP DOOR FOR ELECTRIC STRIKE.





DOOR & FRAME TYPES

SCALE: 1/4" = 1'-0"
REF'D FROM:

1

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T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
DOOR SCHEDULE / WINDOW SCHEDULE & DETAILS - COMMUNITY BUILDING

Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.21

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DOOR SCHEDULE - MAINTENANCE BUILDING

DOOR NUMBER	ROOM NAME	DOOR			PANEL				FRAME			THRESHOLD	DETAILS			NOTES		
		WIDTH	HEIGHT	THK	TYPE	MTL	FINISH	GLAZING	TYPE	MATL	FINISH		HEAD DTL	JAMB DTL	SILL DTL	HDW SET	FIRE RATING	Comments
LEVEL 1																		
100A	GARAGE	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD	AL	#6/A3.41	#8/A3.35	#3/A2.21	12		2
100B	GARAGE	8' - 0"	8' - 0"	1 1/2"	OHD	STL	FACT						#5/A2.24	#2/A.2.24		BY MFG		
100C	GARAGE	8' - 0"	8' - 0"	1 1/2"	OHD	STL	FACT						#5/A2.24	#2/A.2.24		BY MFG		
101	GARAGE	3' - 0"	7' - 0"	1 3/4"	A	HM	PTD		F1	HM	PTD		#3/2.23	#1/A2.23		13		
Grand total: 4																		

GENERAL NOTES - DOOR SCHEDULE:

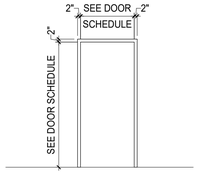
1. ALL DOOR HARDWARE SHALL MEET AMERICANS WITH DISABILITIES ACT (ADA).
2. COORDINATE HARDWARE KEYING AND MASTER KEYING REQUIREMENTS WITH OWNER
3. SEE PROJECT MANUAL FOR HARDWARE SETS.
4. EXTERIOR GLASS TO BE 1" INSULATED, CLEAR, TEMPERED, U.N.O. INTERIOR TO BE 1/4", CLEAR, TEMPERED, U.N.O.
5. NO WIRE GLASS.
6. WOOD DOORS TO BE WHITE MAPLE WITH WHEAT (WH18) FACTORY STAIN.

DOOR ABBRV.

AL	ALUMINUM	STL	STEEL
CLR	CLEAR	STN	STAIN
FACT	FACTORY (PRE-FINISHED)	TMP	TEMPERED
HC	HONEYCOMB	OHD	OVERHEAD DOOR
HM	HOLLOW METAL	PTD	PAINTED
INS	INSULATED	WD	WOOD SOLID CORE

KEY NOTES:

1. SEE EXTERIOR ELEVATIONS AND WINDOW TYPES FOR FRAME
2. DOORS TO BE LOCKABLE (NO CARD READER)
3. SINGLE OCCUPANCY TOILETS TO HAVE DEADBOLT WITH OCCUPNACY INDICATOR
4. SEE DETAILS #3, 6, 7 & 8 / A2.23 FOR INTERIOR SIDELITE DETAILS
5. SEE DETAILS #3 & 4 / A4.21 FOR EXTERIOR SIDELITE DETAILS
6. PROVIDE ELECTRIFIED DOOR OPENERS FOR GARAGE DOORS



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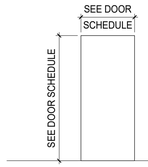

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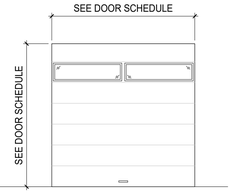

OHD

MAINTENANCE BUILDING DOOR AND FRAME TYPES

SCALE: N.T.S. | REF'D FROM: TS | 2

DOOR SCHEDULE - FAMILY BATHROOMS BUILDING

DOOR NUMBER	ROOM NAME	DOOR			PANEL				FRAME			THRESHOLD	DETAILS			NOTES		
		WIDTH	HEIGHT	THK	TYPE	MTL	FINISH	GLAZING	TYPE	MATL	FINISH		HEAD DTL	JAMB DTL	SILL DTL	HDW SET	FIRE RATING	Comments
LEVEL 1																		
100	FAMILY TLT	3' - 0"	7' - 0"	1 3/4"	L	FRP	FACT		F2	FRP	FACT	AL	#7/A3.41	#7,8/A4.21	#3/A2.21	10		2,3
101	FAMILY TLT - ADULT CHANGING	3' - 0"	7' - 0"	1 3/4"	L	FRP	FACT		F2	FRP	FACT	AL	#7/A3.41	#7,8/A4.21	#3/A2.21	10		2,3
102	MECH	3' - 0"	7' - 0"	1 3/4"	L	FRP	FACT		F1	FRP	FACT	AL	#6/3.41	#7,8/A4.21	#3/A2.21	11		2
Grand total: 3																		

GENERAL NOTES - DOOR SCHEDULE:

1. ALL DOOR HARDWARE SHALL MEET AMERICANS WITH DISABILITIES ACT (ADA).
2. COORDINATE HARDWARE KEYING AND MASTER KEYING REQUIREMENTS WITH OWNER
3. SEE PROJECT MANUAL FOR HARDWARE SETS.
4. EXTERIOR GLASS TO BE 1" INSULATED, CLEAR, TEMPERED, U.N.O. INTERIOR TO BE 1/4", CLEAR, TEMPERED, U.N.O.
5. NO WIRE GLASS.
6. WOOD DOORS TO BE WHITE MAPLE WITH WHEAT (WH18) FACTORY STAIN.

DOOR ABBRV.

AL	ALUMINUM	STL	STEEL
CLR	CLEAR	STN	STAIN
FACT	FACTORY (PRE-FINISHED)	TMP	TEMPERED
HC	HONEYCOMB	OHD	OVERHEAD DOOR
HM	HOLLOW METAL	PTD	PAINTED
INS	INSULATED	WD	WOOD SOLID COR

KEY NOTES:

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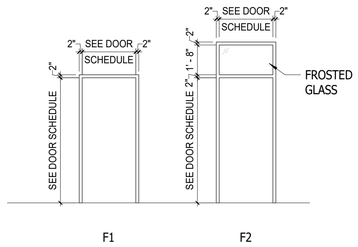

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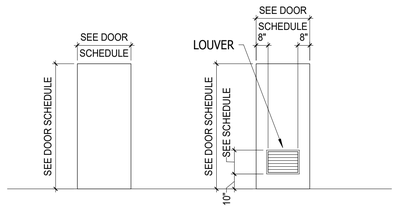

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FAMILY BATHROOMS BUILDING DOOR & FRAME TYPES

SCALE: N.T.S. | REF'D FROM: TS | 1

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Sheet
DOOR / WINDOW SCHEDULE & DETAILS - MAINTENANCE & FAMILY BATHROOMS BUILDING

Know what's below Call before you dig.

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DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A2.22

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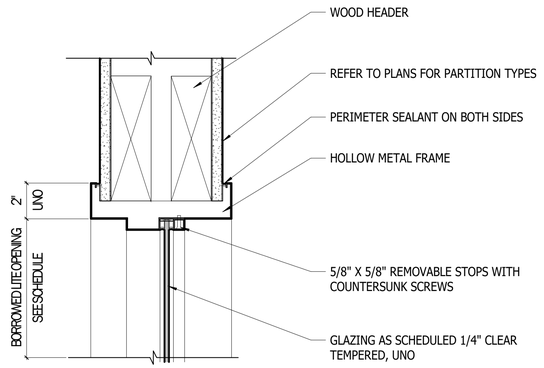
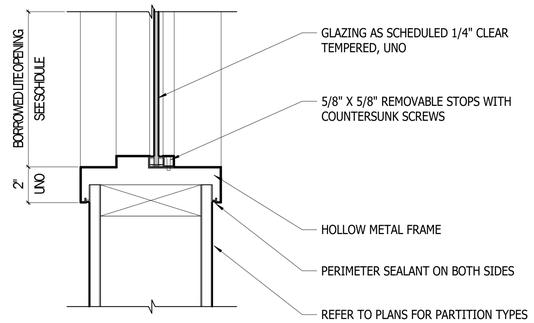
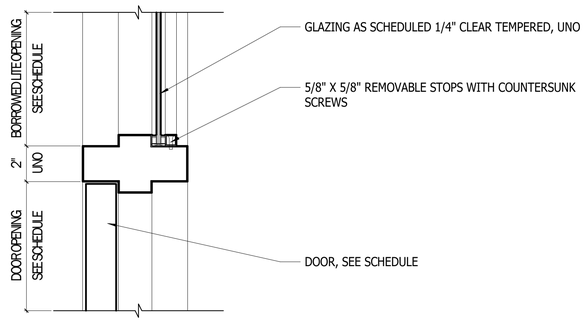


WINDOW - HM HEAD | SCALE: 3" = 1'-0" | REF'D FROM: | 6



WINDOW - HM JAMB | SCALE: 3" = 1'-0" | REF'D FROM: | 5



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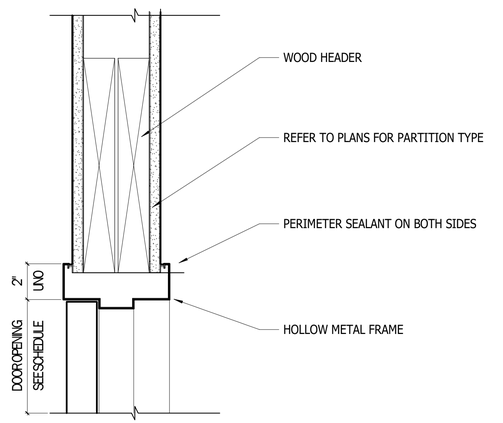
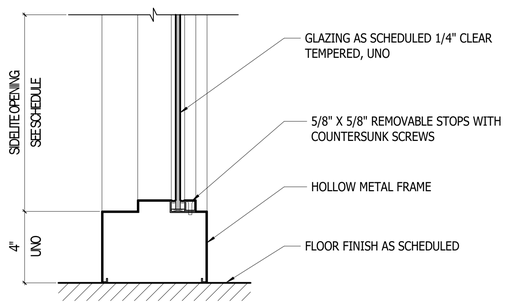
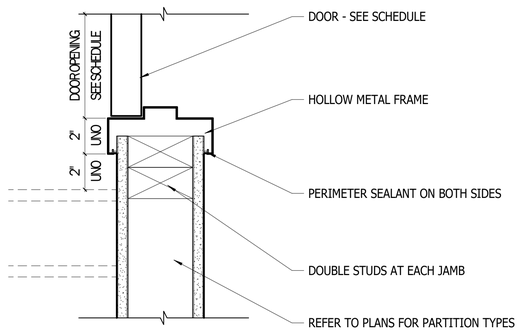


DOOR- HM HEAD | SCALE: 3" = 1'-0" | REF'D FROM: | 3



WINDOW - HM SIDELITE | SCALE: 3" = 1'-0" | REF'D FROM: | 2



DOOR- HM JAMB | SCALE: 3" = 1'-0" | REF'D FROM: | 1

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elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
DOOR & WINDOW DETAILS

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DATE: 02/02/26
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NFE JOB NO. 0557
SHEET NO. A2.23

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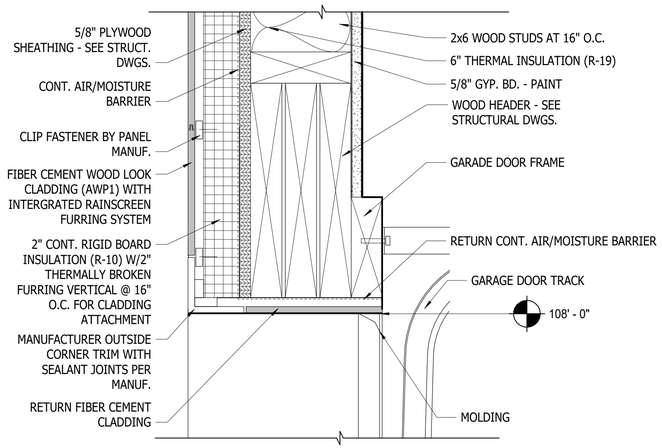
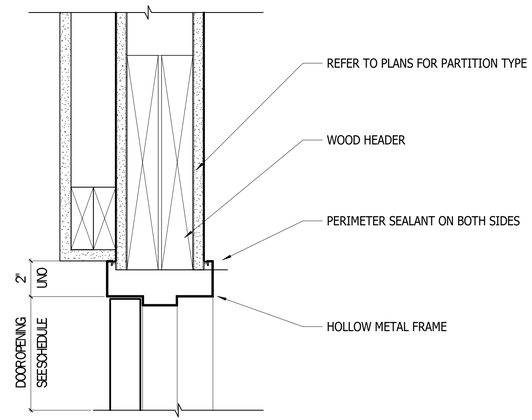
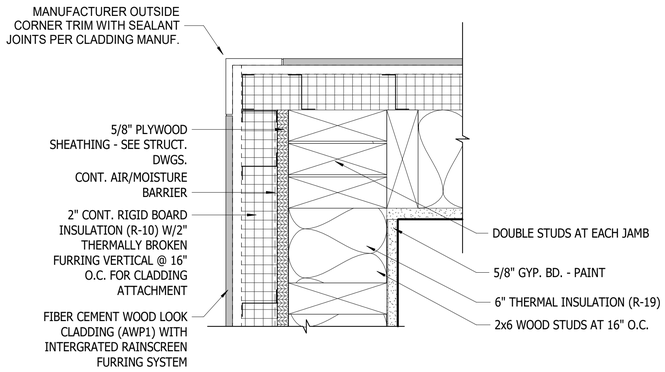


GARAGE DOOR- HM HEAD | SCALE: 3" = 1'-0" | REF'D FROM: | 5



DOOR- HM HEAD - FURRING | SCALE: 3" = 1'-0" | REF'D FROM: | 4



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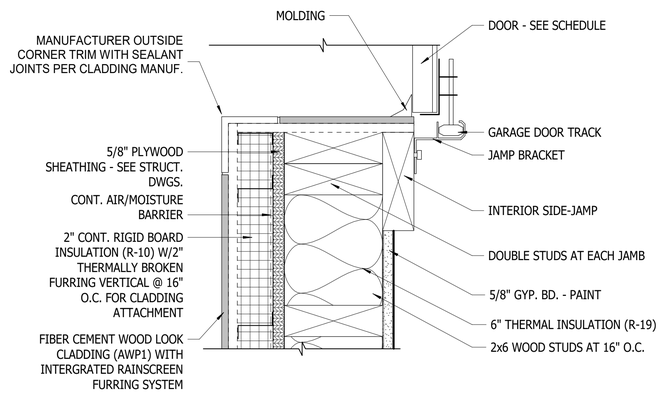
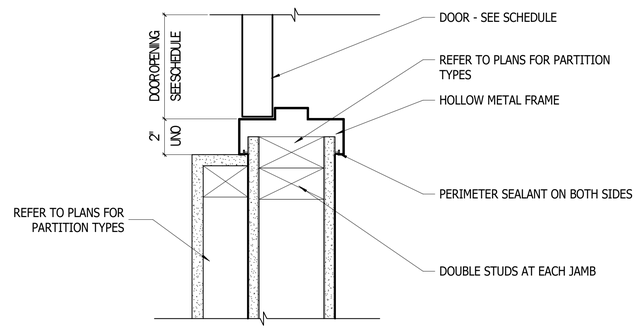


GARAGE DOOR- HM JAMB | SCALE: 3" = 1'-0" | REF'D FROM: | 2



DOOR- HM JAMB - FURRING | SCALE: 3" = 1'-0" | REF'D FROM: | 1

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FINISH SCHEDULE -MAINTENANCE BUILDING

ROOM	NAME	FLOOR FINISH	BASE 1	WALL N.	WALL E.	WALL S.	WALL W.	CLG 1	CLG 2	WNW SILL	MILLWORK	KEYED NOTE
100	GARAGE	S CONC	RB1	PT1	PT1	PT1	PT1	GWB	PT4			
101	STORAGE	S CONC	RB1	PT1	PT1	PT1	PT1	GWB	PT4			

KEYED NOTES:
1. OVERHEAD DOORS TO BE FACTORY POWDER COATED - COLOR XXXX
2. HOLLOW METAL DOORS TO BE PAINTED PT1 SEMI-GLOSS ON INTERIOR AND PAINT PTX ON EXTERIOR

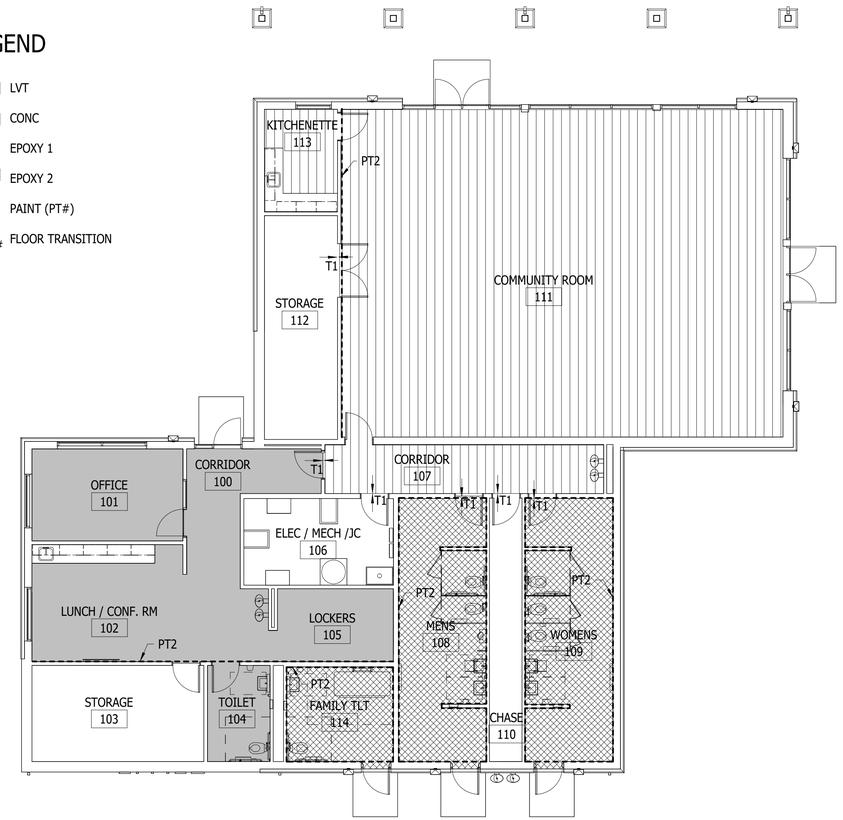
FINISH SCHEDULE - FAMILY BATHROOM BUILDING

ROOM	NAME	FLOOR FINISH	BASE 1	WALL N.	WALL E.	WALL S.	WALL W.	CLG 1	CLG 2	WNW SILL	MILLWORK	KEYED NOTE
100	FAMILY TLT	EPY2	-	FRP/PT1	FRP/PT1	FRP/PT1	FRP/PT1	EXP				
101	FAMILY TLT - ADULT CHANGING	EPY2	-	FRP/PT1	FRP/PT1	FRP/PT1	FRP/PT1	EXP				
102	MECH	S CONC	RB1	EXP	EXP	EXP	EXP	EXP				

KEYED NOTES:
1. HOLLOW METAL DOORS TO BE PAINTED PT-1 SEMI-GLOSS ON INTERIOR AND PAINT PTX O SEMI-GLOSS ON EXTERIOR.

LEGEND

- LVT
- CONC
- EPOXY 1
- EPOXY 2
- PAINT (PT#)
- T# FLOOR TRANSITION



FINISH PLAN - COMMUNITY BUILDING

SCALE: 1/8" = 1'-0"
REF'D FROM: A2.21

1

CODE	MATERIAL	MANUFACTURER	STYLE	COLOR	SIZE	MFR CODE	CONTACT	NOTES
ACT1	ACOUSTICAL CEILING TILE	ARMSTRONG	ULTIMA	WHITE	24"X24" X3/4"	1911		WHITE,PRELUDE 15/16" BEVEILED TEGULAR
ACT2	ACOUSTICAL CEILING TILE	ARMSTRONG	CORTEGA	WHITE	24"X48" X5/8"	769WH		WHITE,PRELUDE 15/16" SQUARE LAY IN
AWP1	ARCHITECTURAL WALL PANEL	NICHIHA	VINTAGEWOOD	POPLAR				AWP 1818 SERIES
CTW1	CERAMIC TILE WALL	AMERICAN OLEAN	WINDMERE	SCOTTISH WHITE	12"X12"	W101		
CTW2	CERAMIC TILE WALL	AMERICAN OLEAN	WINDMERE	ENGLISH GREY	2"X2"	W103		
EXP	EXPOSED							
EPY1	EPOXY	SHERWIN WILLIAMS	1/8" DECO FLAKE	MOOSE				
EPY2	EPOXY	SHERWIM WILLIAMS	1/8" DECO FLAKE	LIMESTONE				
FRP	FIBERGLASS REINFORCED PLASTIC	MARLITE	PEBBLED	LIGHT GREY		P 151		
L1	LOCKERS			TBD (STANDARD COLOR)	18"W X 24"D X 72"H			SLOPED TOP
LVT1	LUXURY VINYL TILE	SHAW CONTRACT	CROSSING PATHS 2.5	THATCH	18X18	91720		INSTALL PATTERN: MONOLITHIC
PL1	PLASTIC LAMINATE	FORMICA		PECAN WOODLINE		5883		
PT1	PAINT	SHERWIN WILLIAMS	EGGSHELL	TOQUE WHITE		SW 7003		
PT2	PAINT	SHERWIN WILLIAMS	EGGSHELL	SAGE		SW 2860		
PT3	PAINT	SHERWIN WILLIAMS	LATEX,FLAT	HIGH REFLECTIVE WHITE		SW 7757		
RB1	RESILIENT BASE	ROPPE	700 SERIES,COVED	LIGHT BROWN	4"	147		
S CONC	SEALED CONCRETE							
SP1	STALL PARTITIONS	ASI GLOBAL PARTITIONS	SOLID PLASTIC (HDPE)	OLIVE		#9223		
SSM1	SOLID SURFACE	WILSONART		AVALANCHE MELANGE		9175ML		
SV1	STONE VENEER	HALQUIST	LEDGE COLLECTION	CASCADE			Dave Lacovi dave@beldenbricksales.com	FULL VENEER, RAKED JOINT
WPS1	WOOD ACOUSTICAL PANEL SYSTEM	REAL ACOUSTIX	MICROPERF SELF CONTAINED	WHITE OAK				
MR1	METAL ROOF	ATAS	2" FIELD-LOK	ANCHOR GREY				STANDING SEAM METAL ROOF

FINISH SCHEDULE - COMMUNITY BUILDING

ROOM	NAME	FLOOR FINISH	BASE 1	WALL N.	WALL E.	WALL S.	WALL W.	CLG 1	CLG 2	WNW SILL	MILLWORK	KEYED NOTE
100	CORRIDOR	EPY1	RB1	PT1	PT1	PT1/PT2	PT1	ACT1				1
101	OFFICE	EPY1	RB1	PT1	PT1	PT1	PT1	ACT1				
102	LUNCH / CONF. RM	EPY1	RB1	PT1	PT1	PT2	PT1	ACT1				1
103	STORAGE	S CONC	RB1	PT1	PT1	PT1	PT1	GWP	PT3			
104	TOILET	EPY1	EPY1	PT1	PT1	PT1	PT1	GWB	PT3			
105	LOCKERS	EPY1	RB1	PT1	PT1	PT1	PT1	ACT1				
106	ELEC / MECH /JC	S CONC	RB1	PT1	PT1	PT1	PT1	GWB	PT3			
107	CORRIDOR	LVT1	RB1	PT1	PT1	PT1	PT1	ACT1				
108	MENS	EPY2	-	CTW/PT2	CTW/PT2	CTW/PT2	CTW/PT2	GWB	PT3			1
109	WOMENS	EPY2	-	CTW/PT2	CTW/PT2	CTW/PT2	CTW/PT2	GWB	PT3			1
110	CHASE	S CONC	RB1	EXP	EXP	EXP	EXP	GWB	PT3			
111	COMMUNITY ROOM	LVT1	RB1	PT1	PT1	PT1	PT2	WPS1				1
112	STORAGE	S CONC	RB1	PT1	PT1	PT1	PT1	ACT2				
113	KITCHENETTE	LVT1	RB1	PT1	PT1	PT1	PT1	ACT1				
114	FAMILY TLT	EPY2	-	CTW/PT2	CTW/PT2	CTW/PT2	CTW/PT2	GWB	PT3			1

NOTES:

1. ALL EXPOSED CONDUIT, ELECT. BOXES, PIPES AND BUILDING FRAMING SHALL BE PAINTED.

2. PROVIDE FLOOR TRANSITIONS AS FOLLOWS:
   RESILIENT BY ROPPE - COLOR LIGHT BROWN, PROFILE AS REQUIRED, REDUCER T1 WHERE REQUIRED AT CONCRETE FLOOR FINISHES
   PROVIDE SCHULTER METAL EDGE (JOLLY) IN BRUSHED NICKEL FINISH AT TILE AREAS

   PAINT SHEENS AREA TO BE AS FOLLOWS UNLESS OTHERWISE INDICATED:
   WALLS- EGG SHELL
   CEILINGS - FLAT
   METAL DOORS AND FRAMES - SEMI-GLESS - SEE DOOR SCHEDULE

3. ALL WOOD DOORS TO BE VT INDUSTRIES WHITE MAPLE COLOR WHEAT (WH18) FACTORY FINISHED

KEYED NOTES:

1. SEE FINISH PLAN FOR PAINT LOCATIONS

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elwertk@rochesterhill.org

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Sheet
INTERIOR FINISH SCHEDULE & KEY

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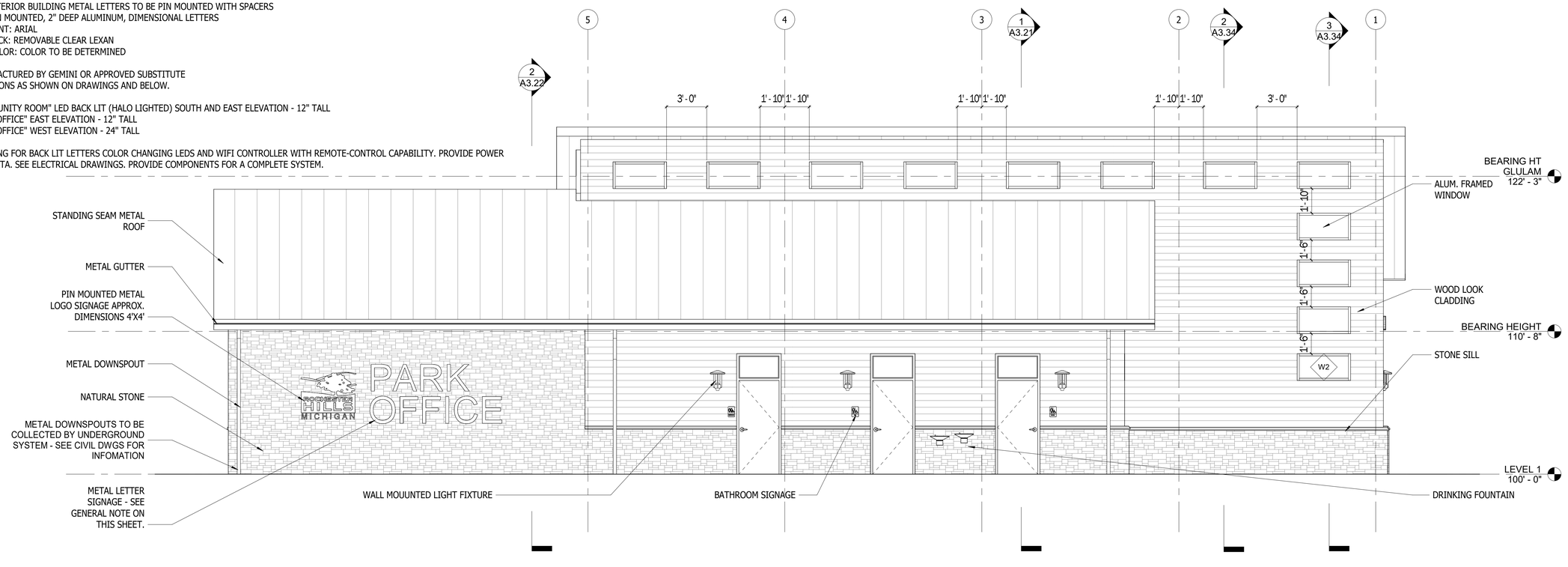
GENERAL SIGNAGE NOTE:
ALL SIGNS MUST MEET THE REQUIREMENTS OF THE CITY AND BE APPROVED UNDER SEPARATE PERMITS ISSUED BY THE BUILDING DEPARTMENT.
ALL EXTERIOR BUILDING METAL LETTERS TO BE PIN MOUNTED WITH SPACERS
- · PIN MOUNTED, 2" DEEP ALUMINUM, DIMENSIONAL LETTERS
- · FONT: ARIAL
- · BACK: REMOVABLE CLEAR LEXAN
- · COLOR: COLOR TO BE DETERMINED

MANUFACTURED BY GEMINI OR APPROVED SUBSTITUTE
LOCATIONS AS SHOWN ON DRAWINGS AND BELOW.

"COMMUNITY ROOM" LED BACK LIT (HALO LIGHTED) SOUTH AND EAST ELEVATION - 12" TALL
"PARK OFFICE" EAST ELEVATION - 12" TALL
"PARK OFFICE" WEST ELEVATION - 24" TALL

LIGHTING FOR BACK LIT LETTERS COLOR CHANGING LEDS AND WIFI CONTROLLER WITH REMOTE-CONTROL CAPABILITY. PROVIDE POWER AND DATA. SEE ELECTRICAL DRAWINGS. PROVIDE COMPONENTS FOR A COMPLETE SYSTEM.



WEST ELEVATION

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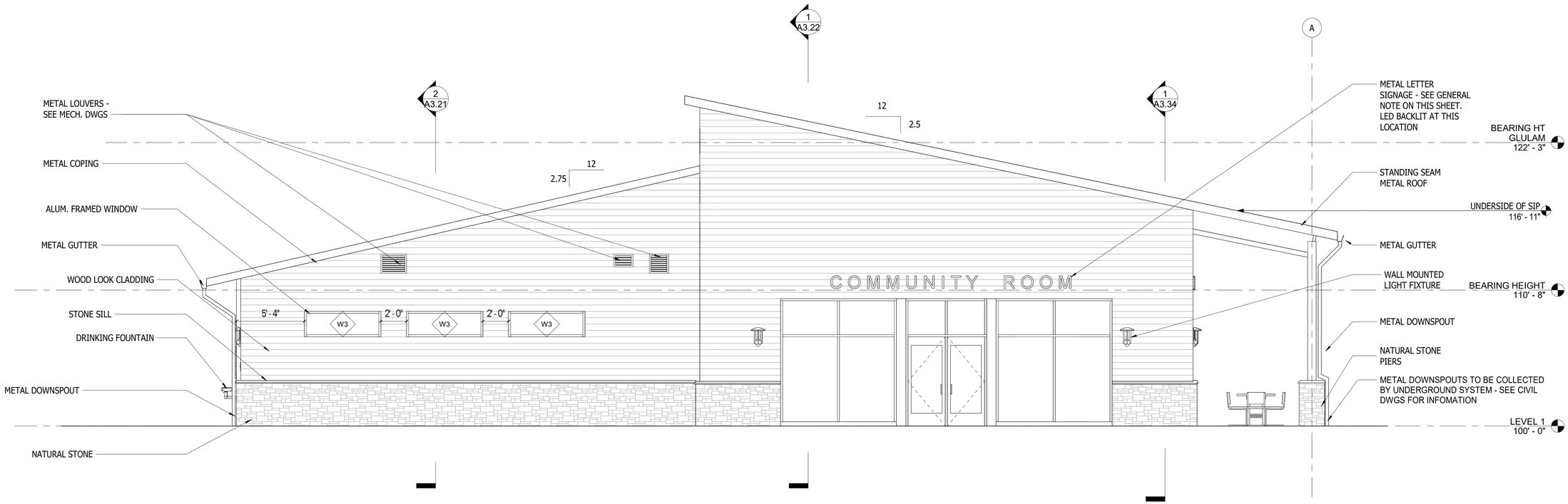

SOUTH ELEVATION

SCALE: 1/4" = 1'-0"
REF'D FROM: A2.11
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elwertk@rochesterhill.org

PROJECT LOCATION
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EXTERIOR ELEVATIONS - COMMUNITY BUILDING

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GENERAL NOTE:
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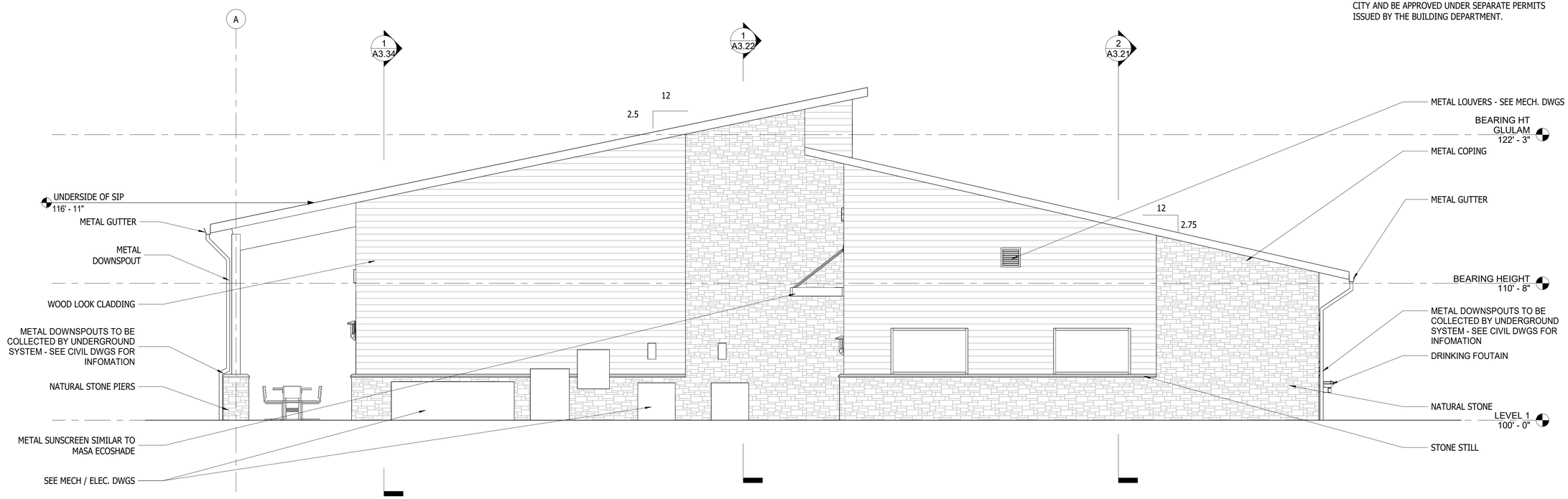

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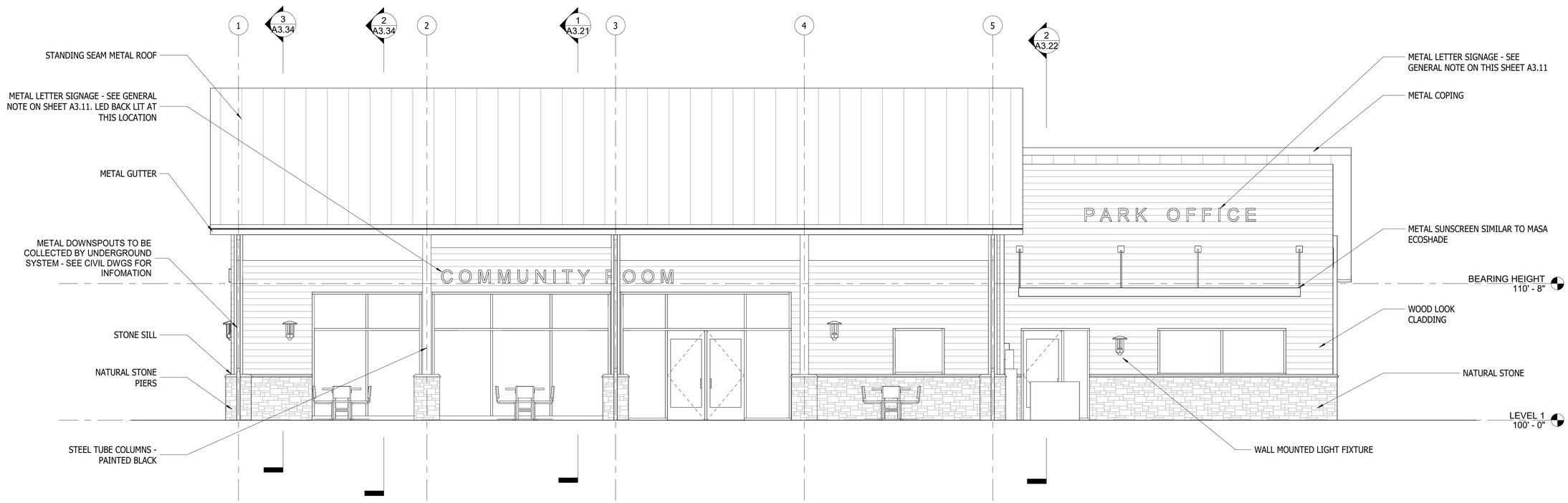

EAST ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.11 | 1

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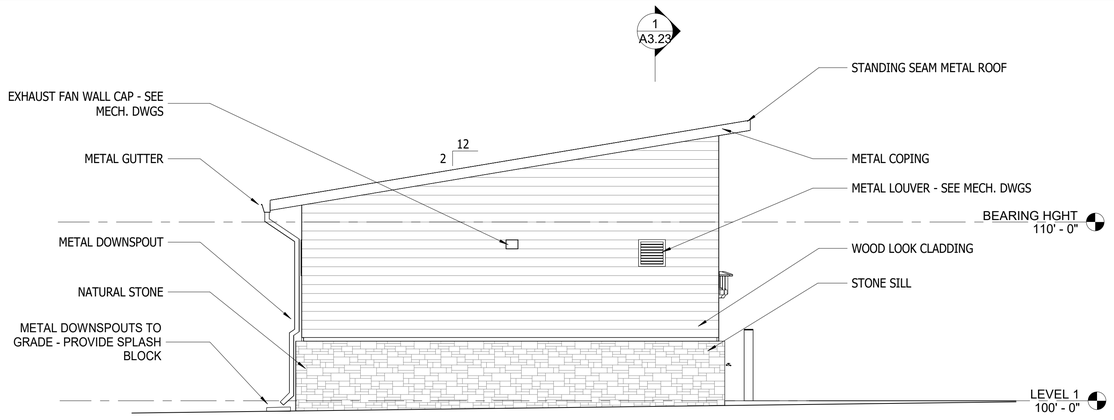

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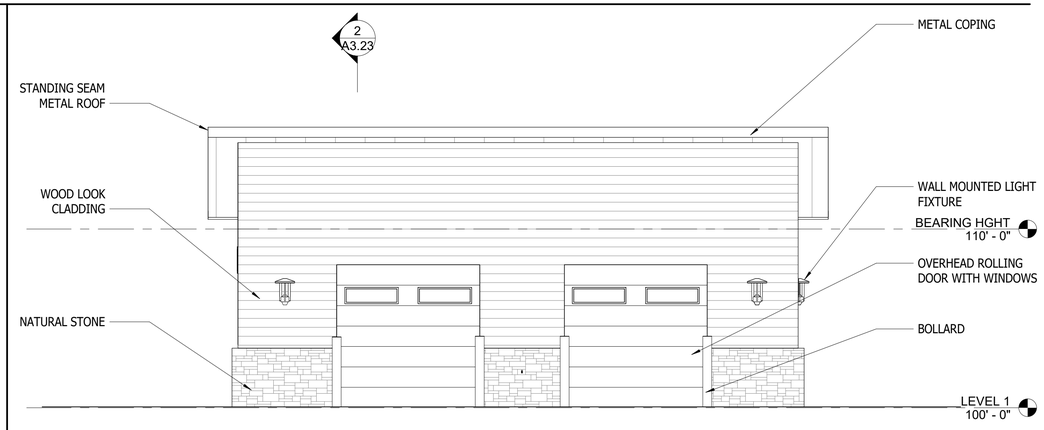

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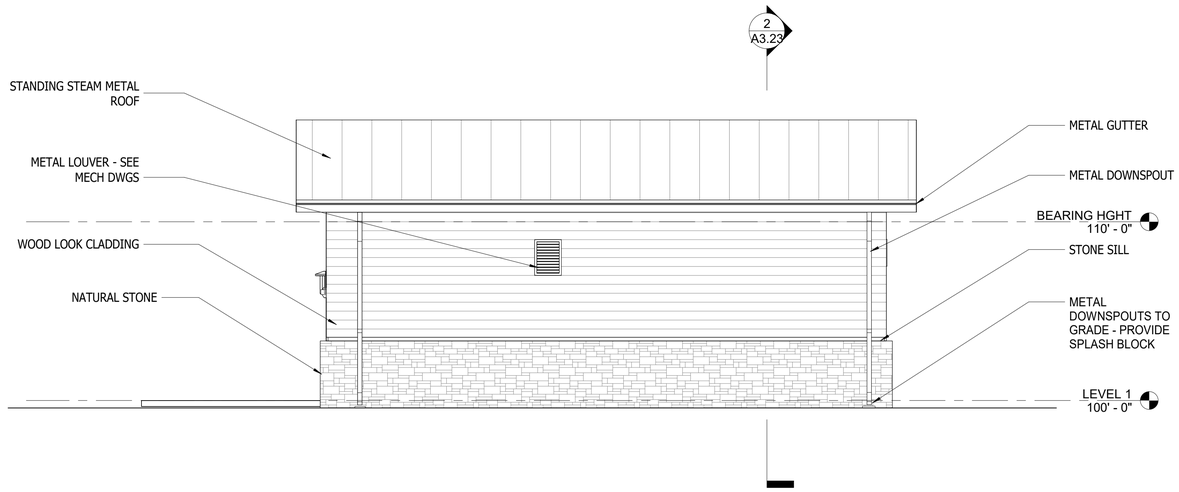

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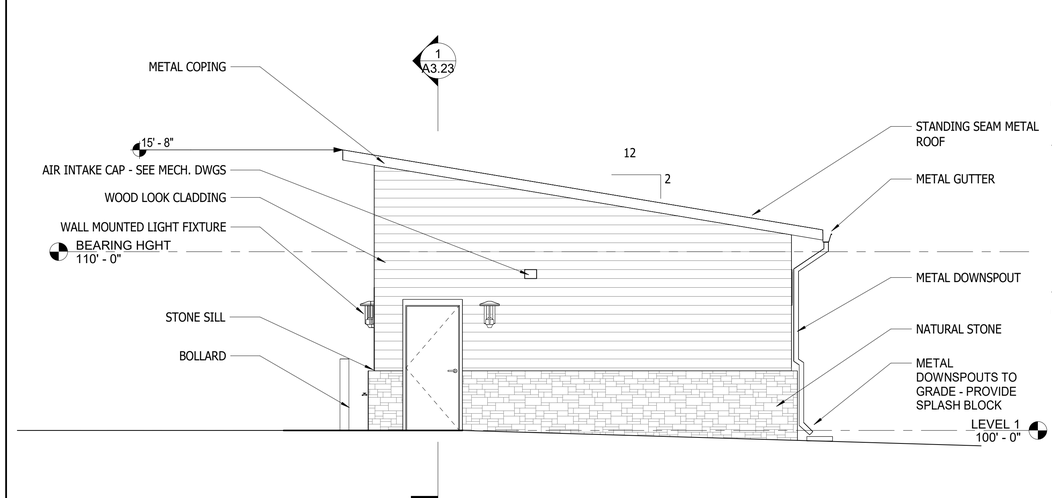

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- COLOR: COLOR TO BE DETERMINED

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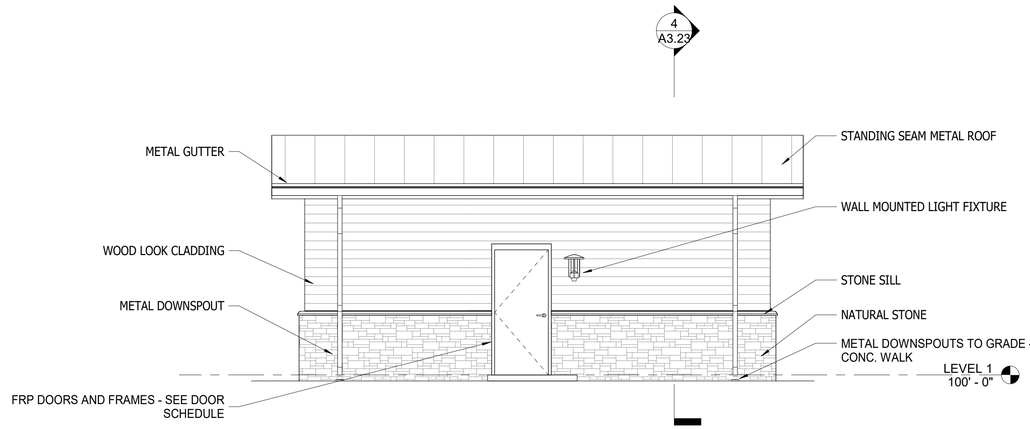
"RESTROOM" EAST ELEVATION - 12" TALL



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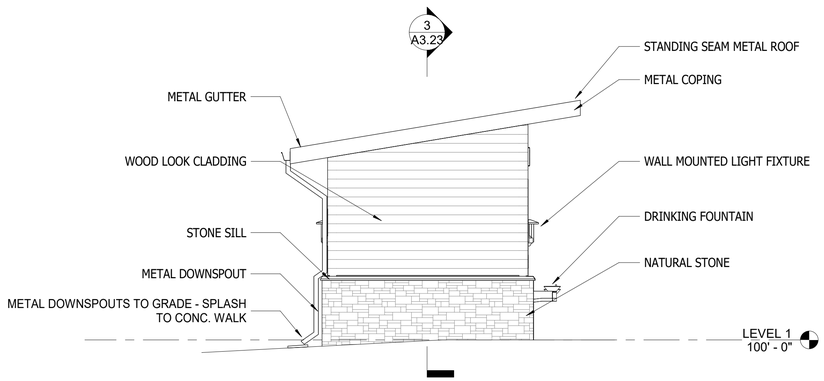

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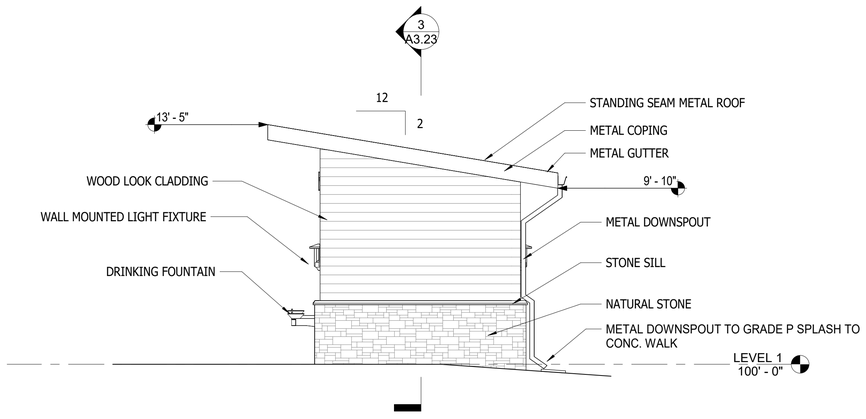

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EXTERIOR ELEVATIONS - FAMILY BATHROOMS BUILDING

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NFE JOB NO. 0557
SHEET NO. A3.14

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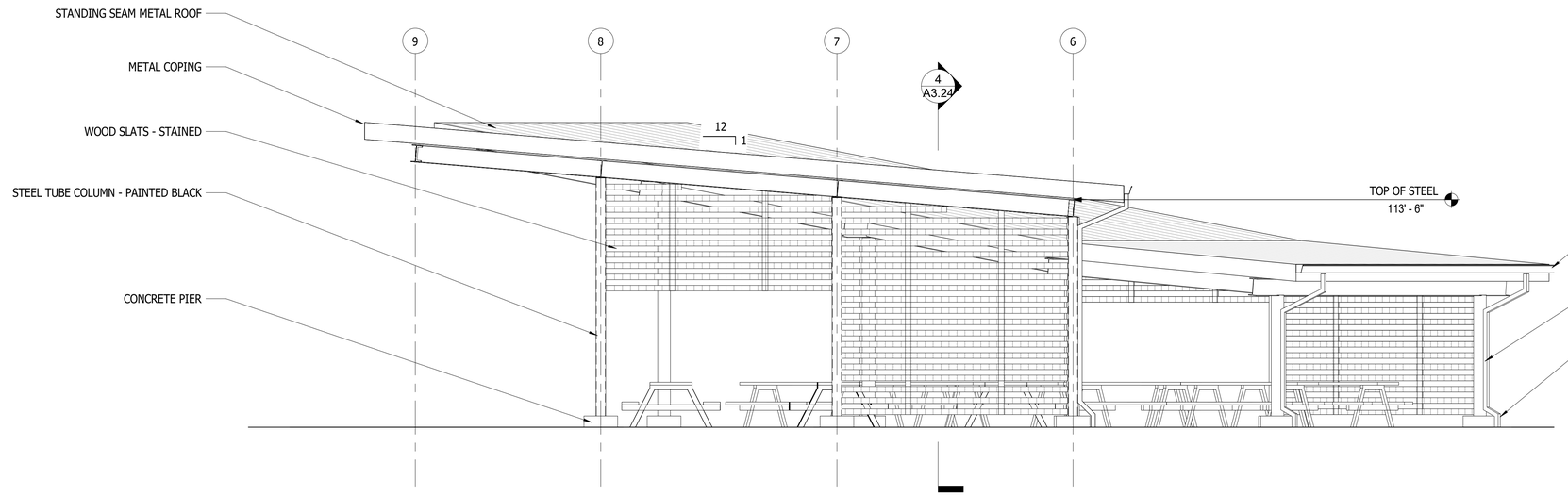

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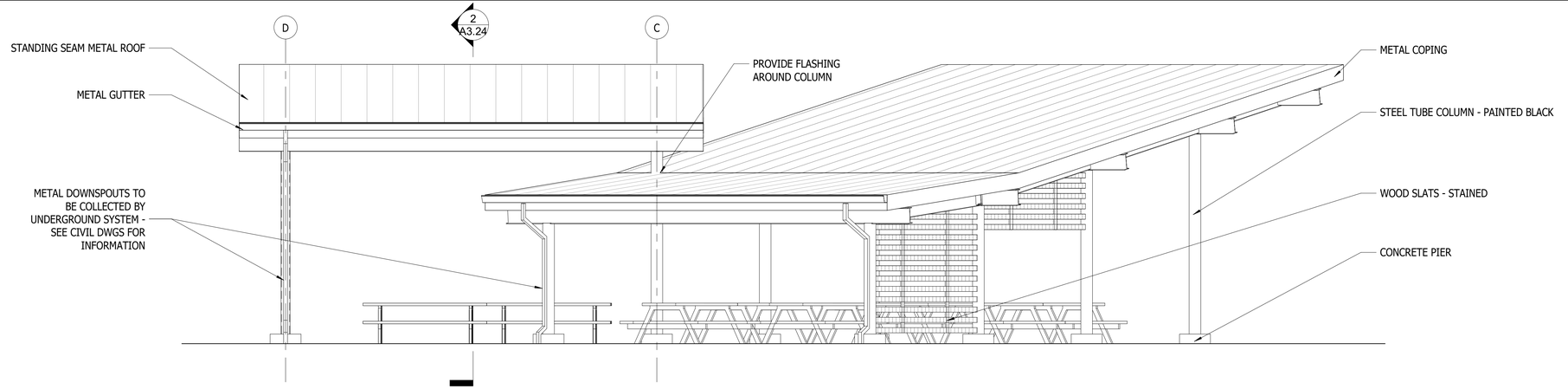

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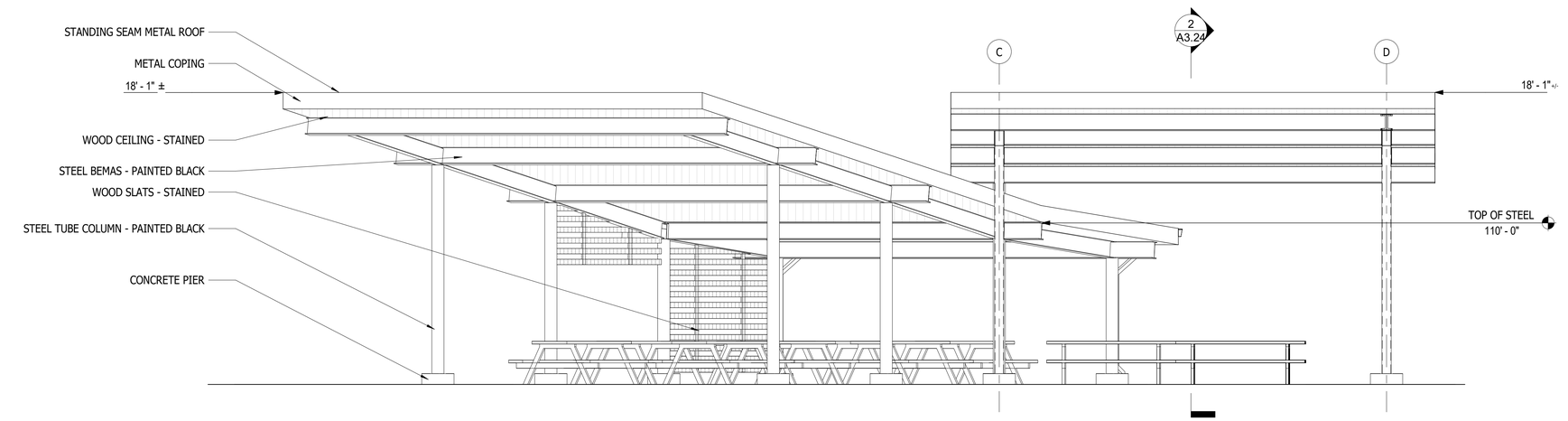

ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.14 | 1

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Ph.: 248-656-4673
elwertk@rochesterhill.org

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-PAVILION

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SHEET NO. A3.15

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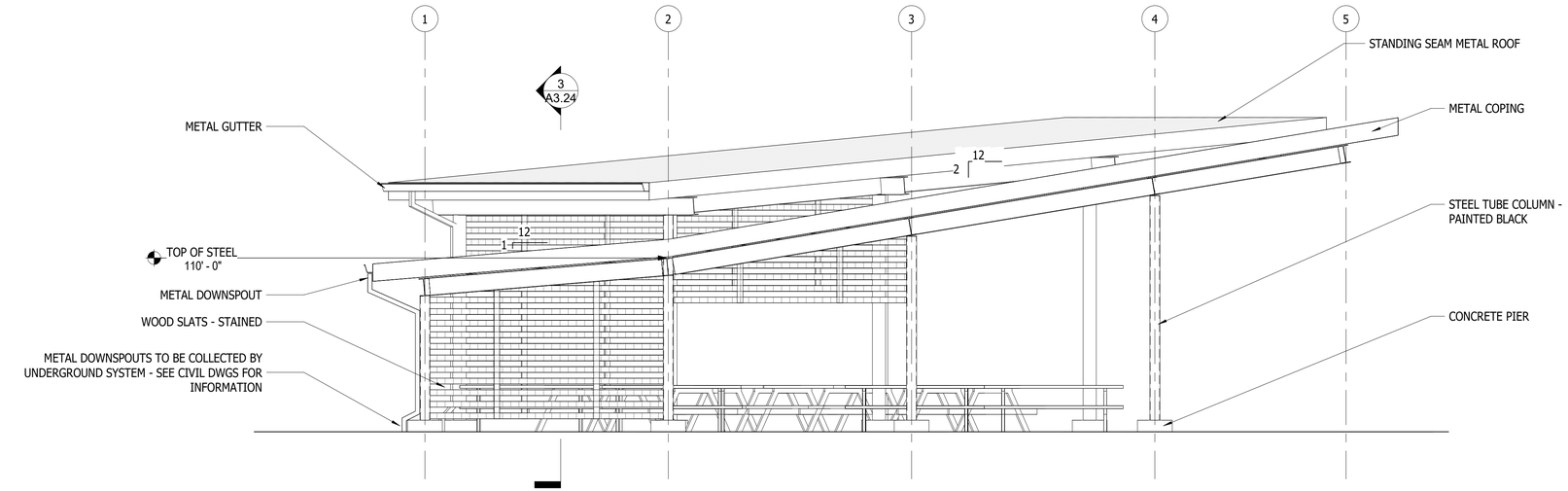

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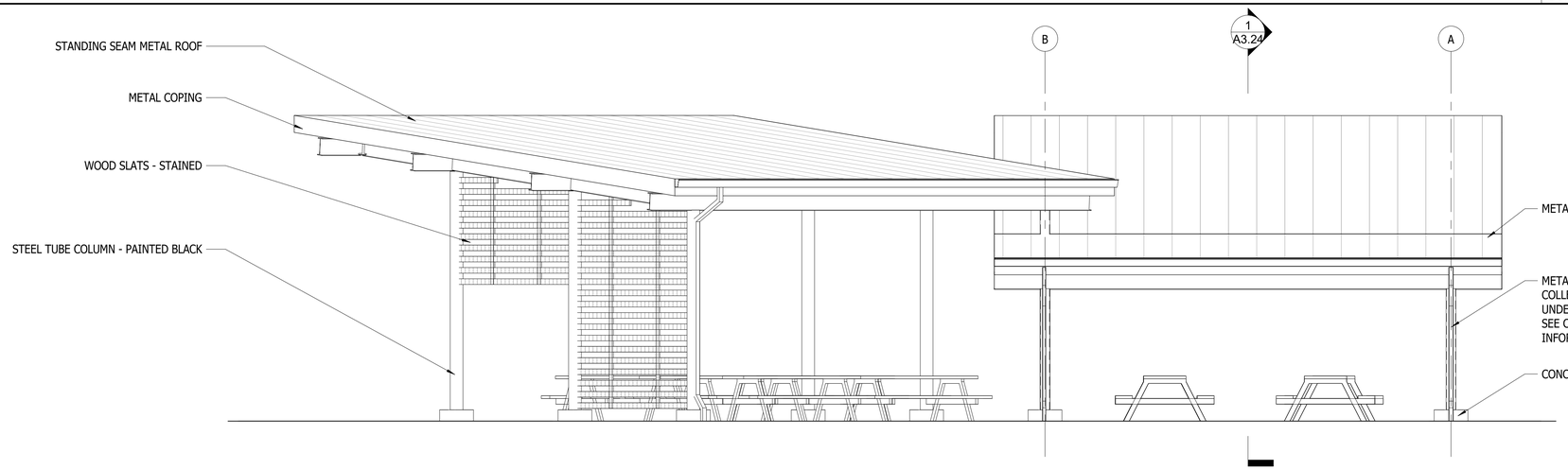

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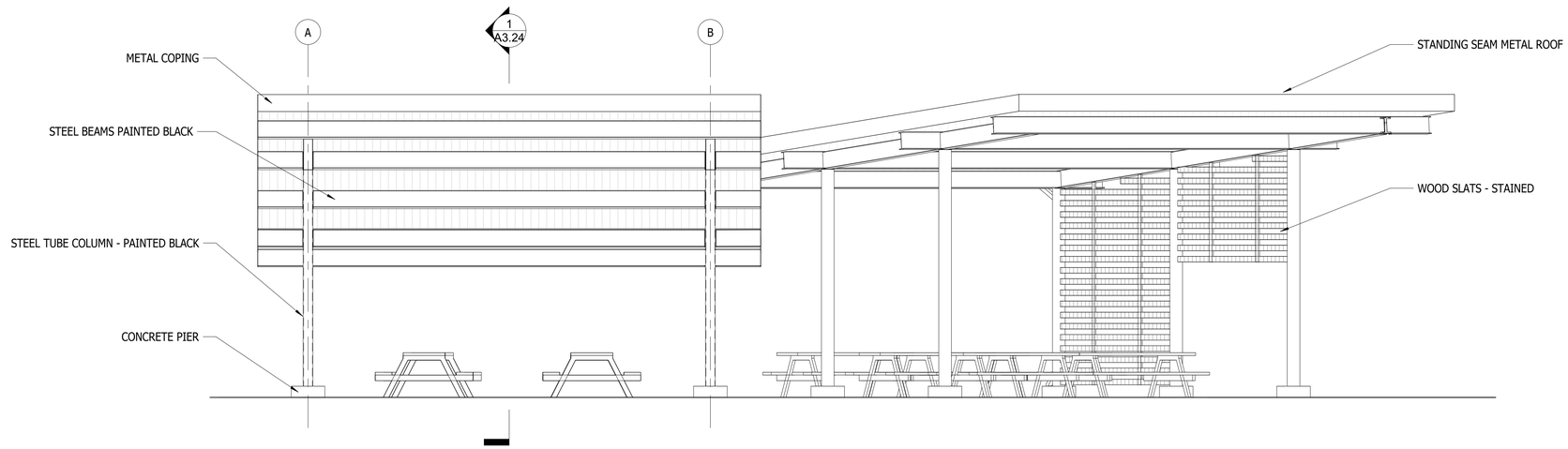

ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.14 | 1

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Sheet
EXTERIOR ELEVATIONS - PAVILION

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

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SHEET NO. A3.16

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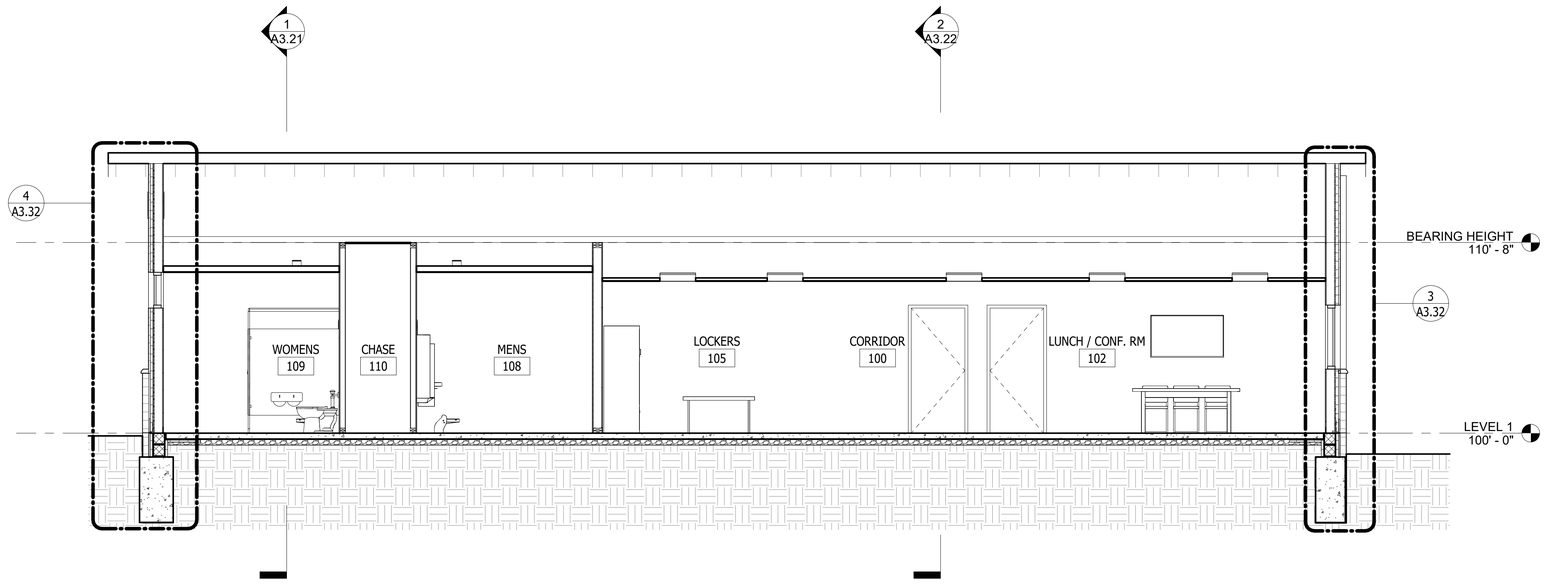

BUILDING SECTION

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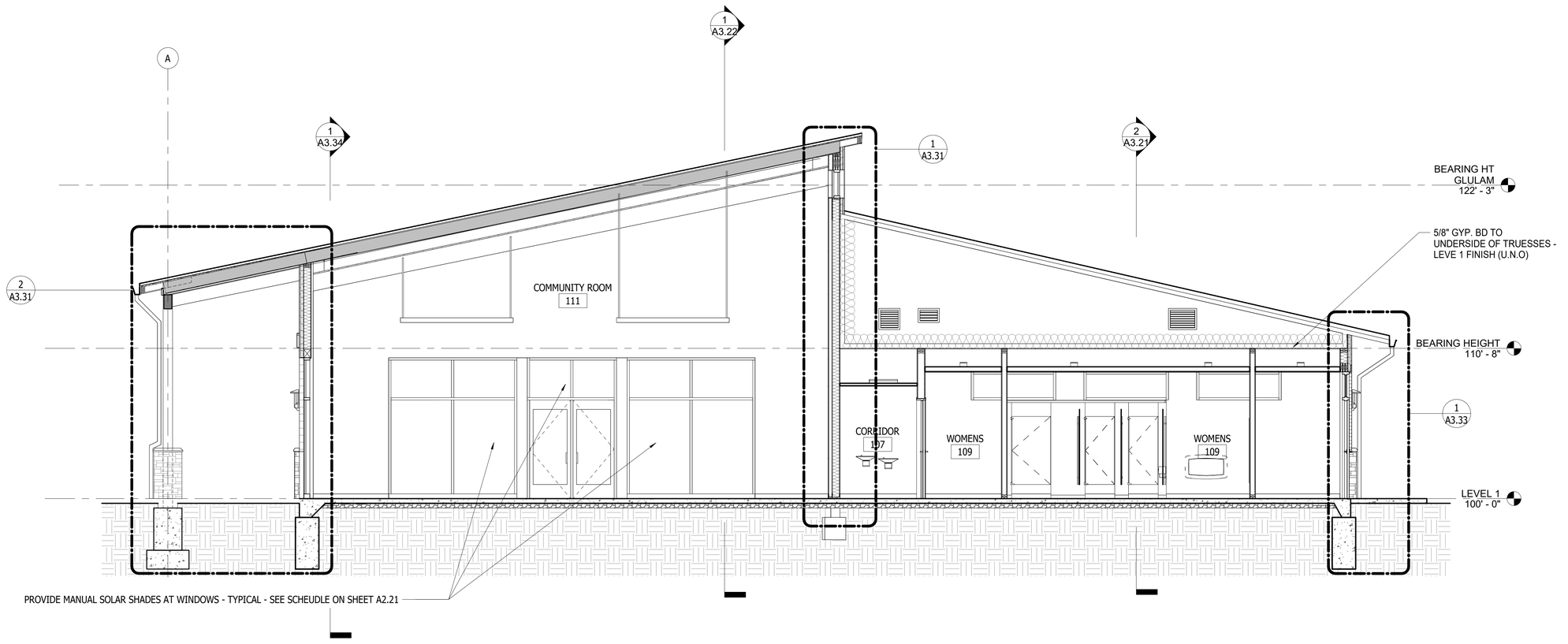

BUILDING SECTION

SCALE:	1/4" = 1'-0"	1
REF'D FROM:	A2.11	

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SHEET NO. A3.21

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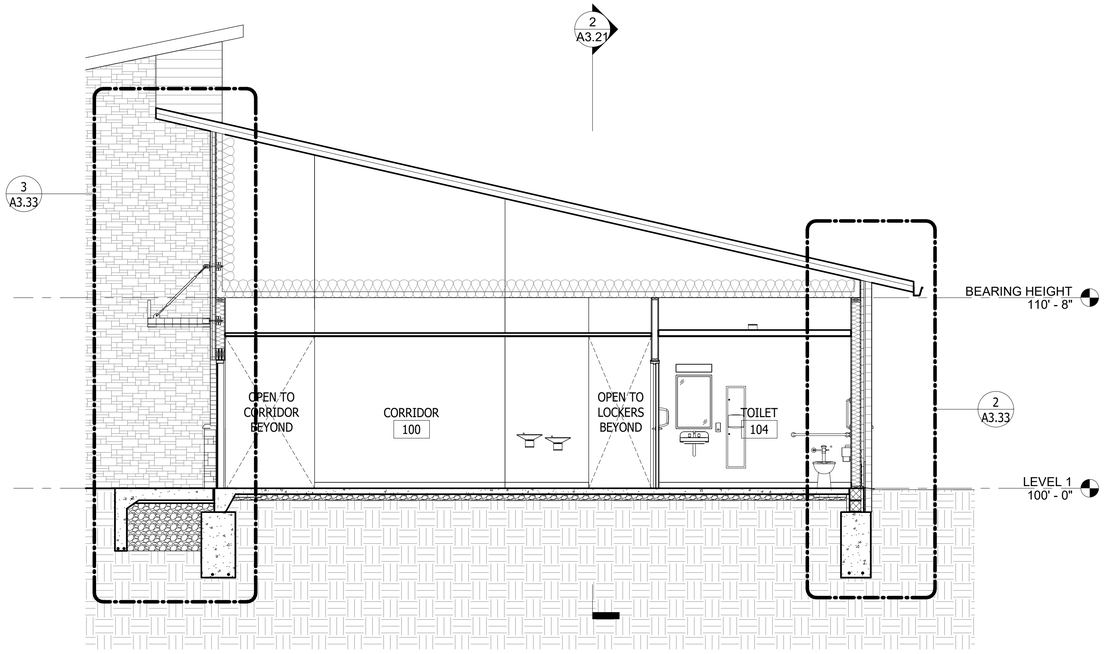

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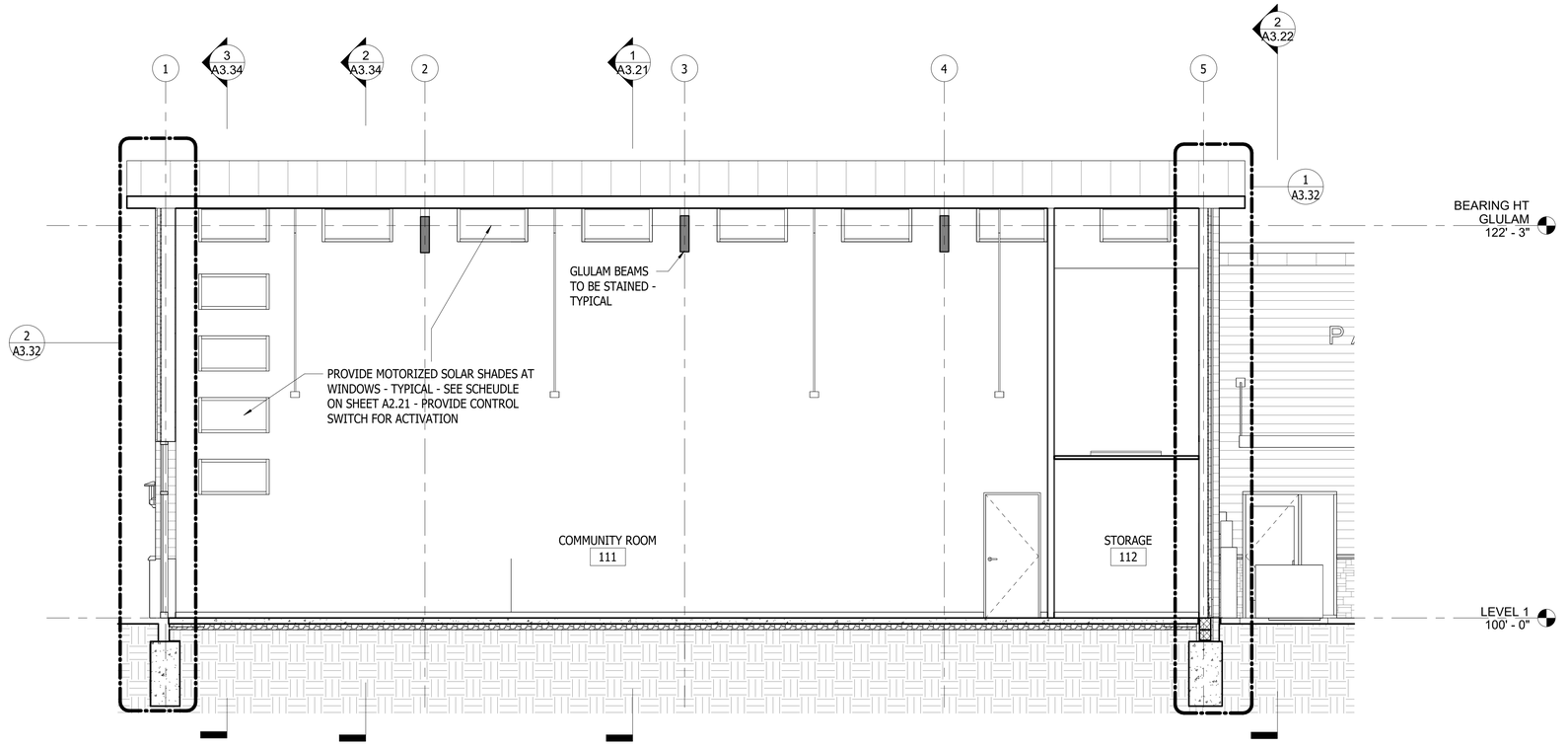

BUILDING SECTION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.11 | 1

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DATE: 02/02/26
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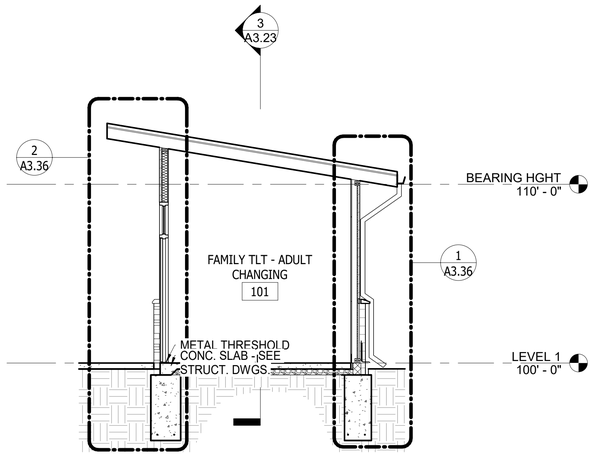
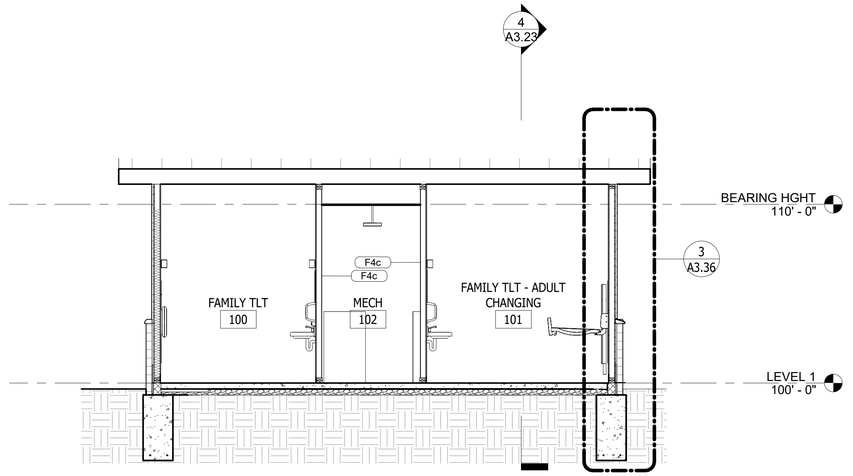


FAMILY BATHROOMS BUILDING SECTION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 4



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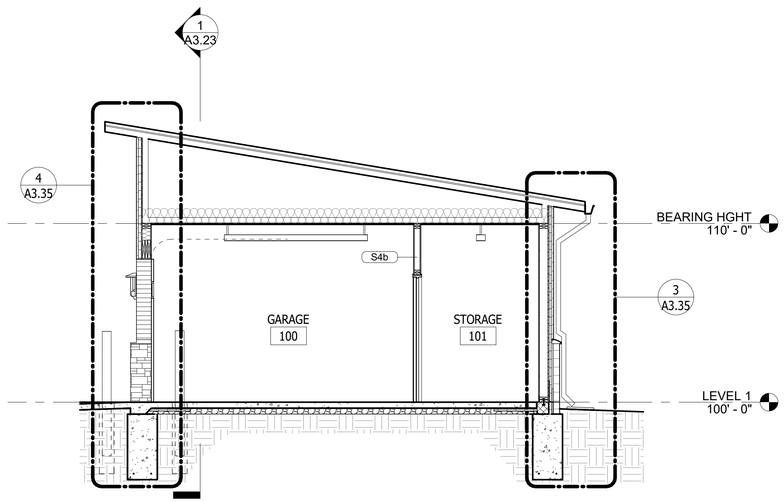

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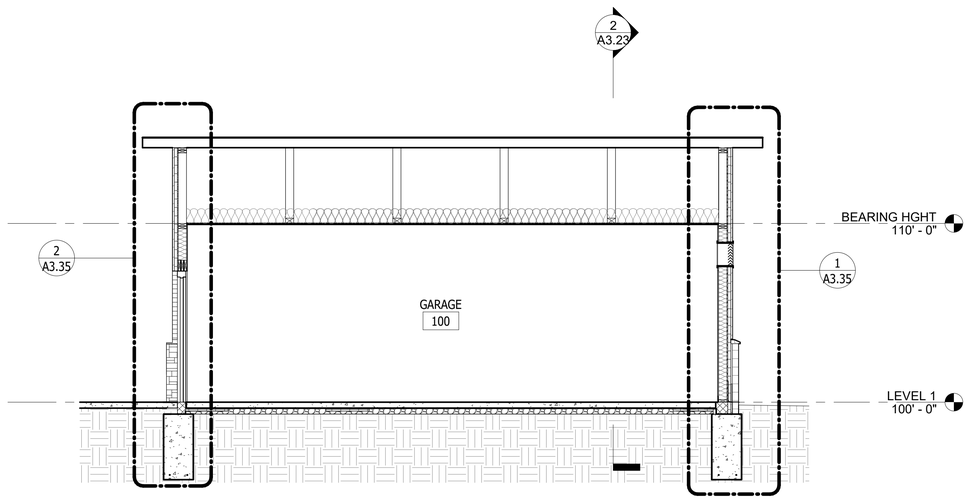

MAINTENANCE BUILDING SECTION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.12 | 1

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elwertk@rochesterhill.org

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BUILDING SECTIONS - MAINTENANCE & FAMILY BATHROOMS BUILDING

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SHEET NO. A3.23

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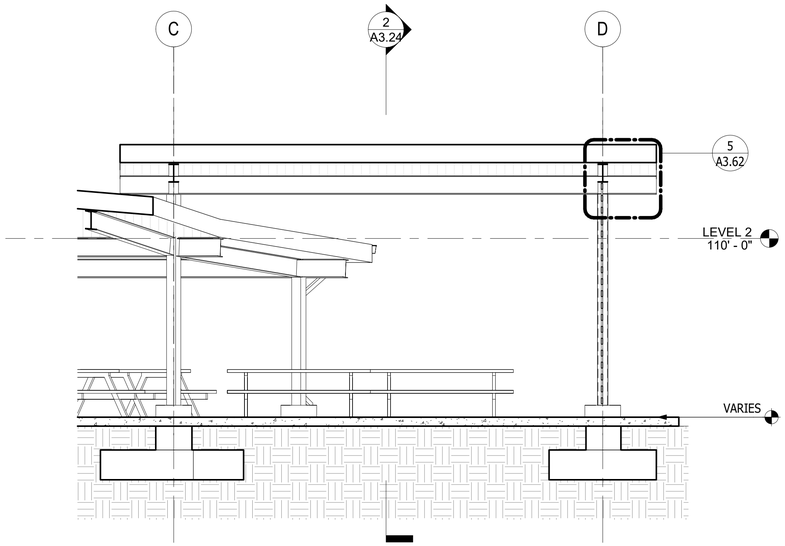

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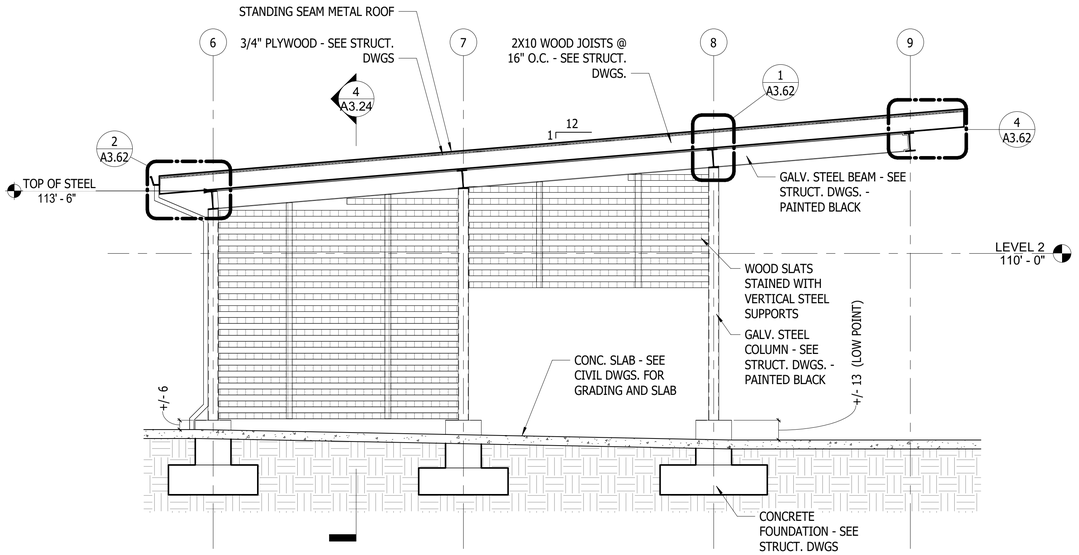
SHEET NOTE:
CONCRETE SLAB VARIES IN ELEVATION SEE CIVIL DRAWINGS FOR GRADING AND STRUCTURAL FOR HEIGHT OF PIERS



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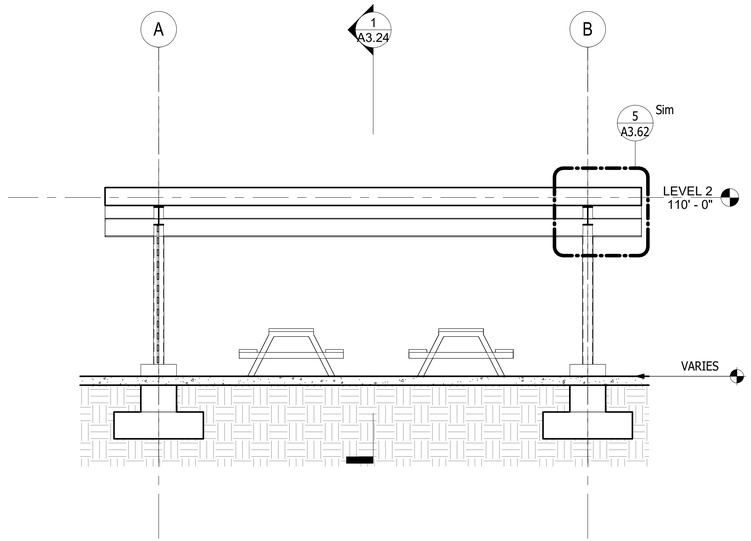

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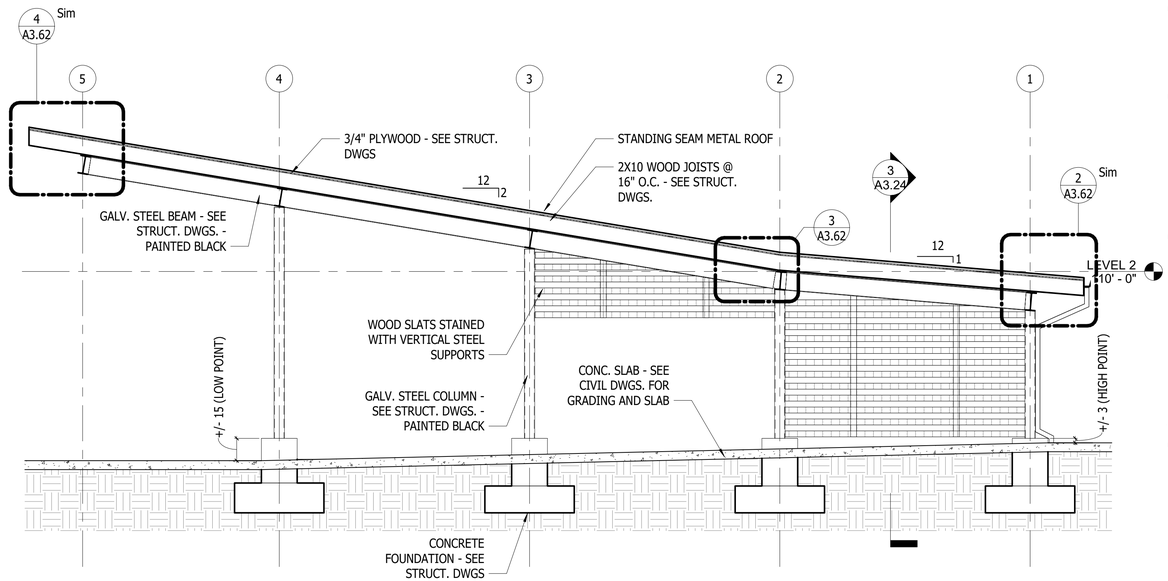

BUILDING SECTION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.14 | 1

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BUILDING SECTION - PAVILION

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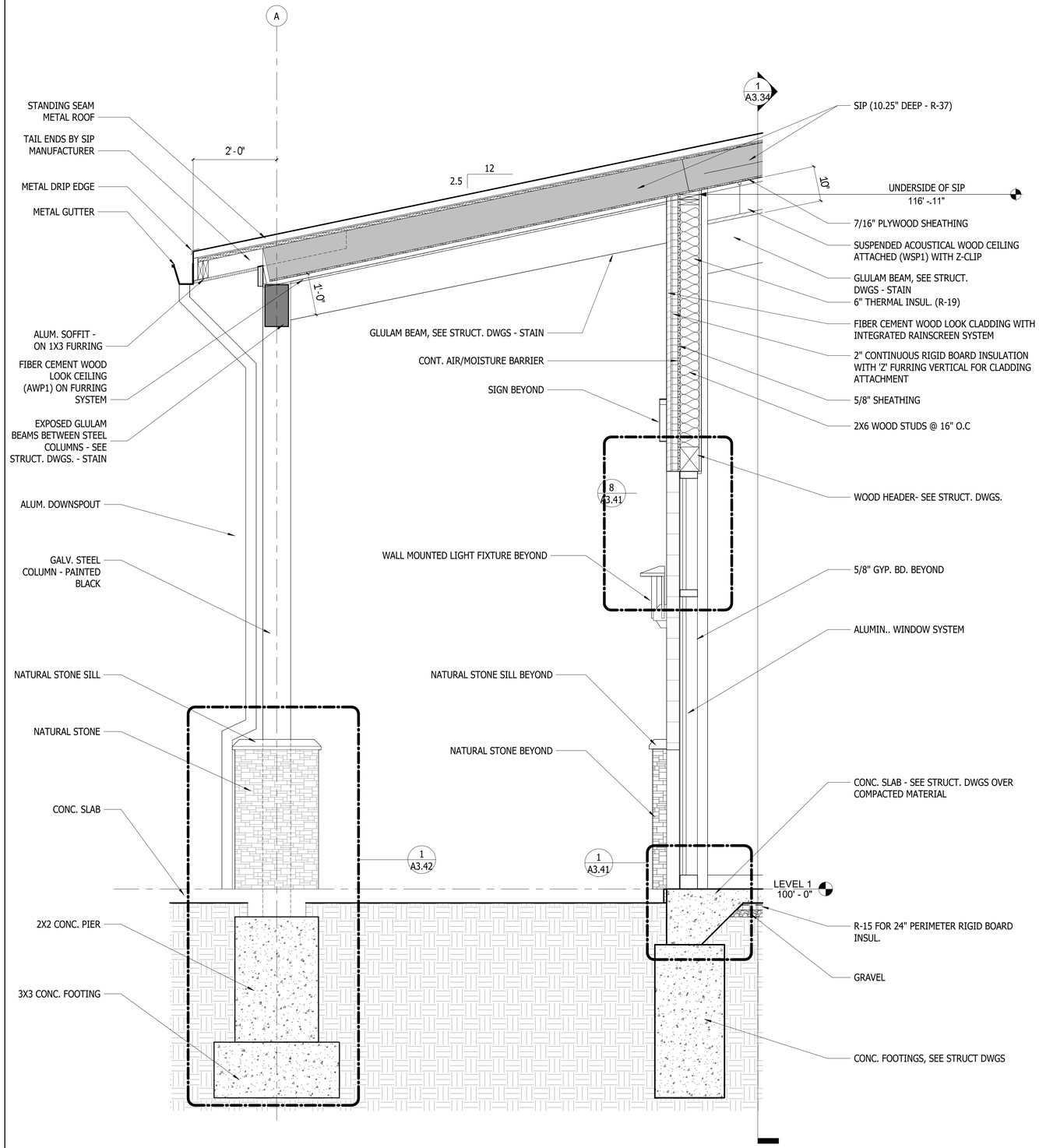
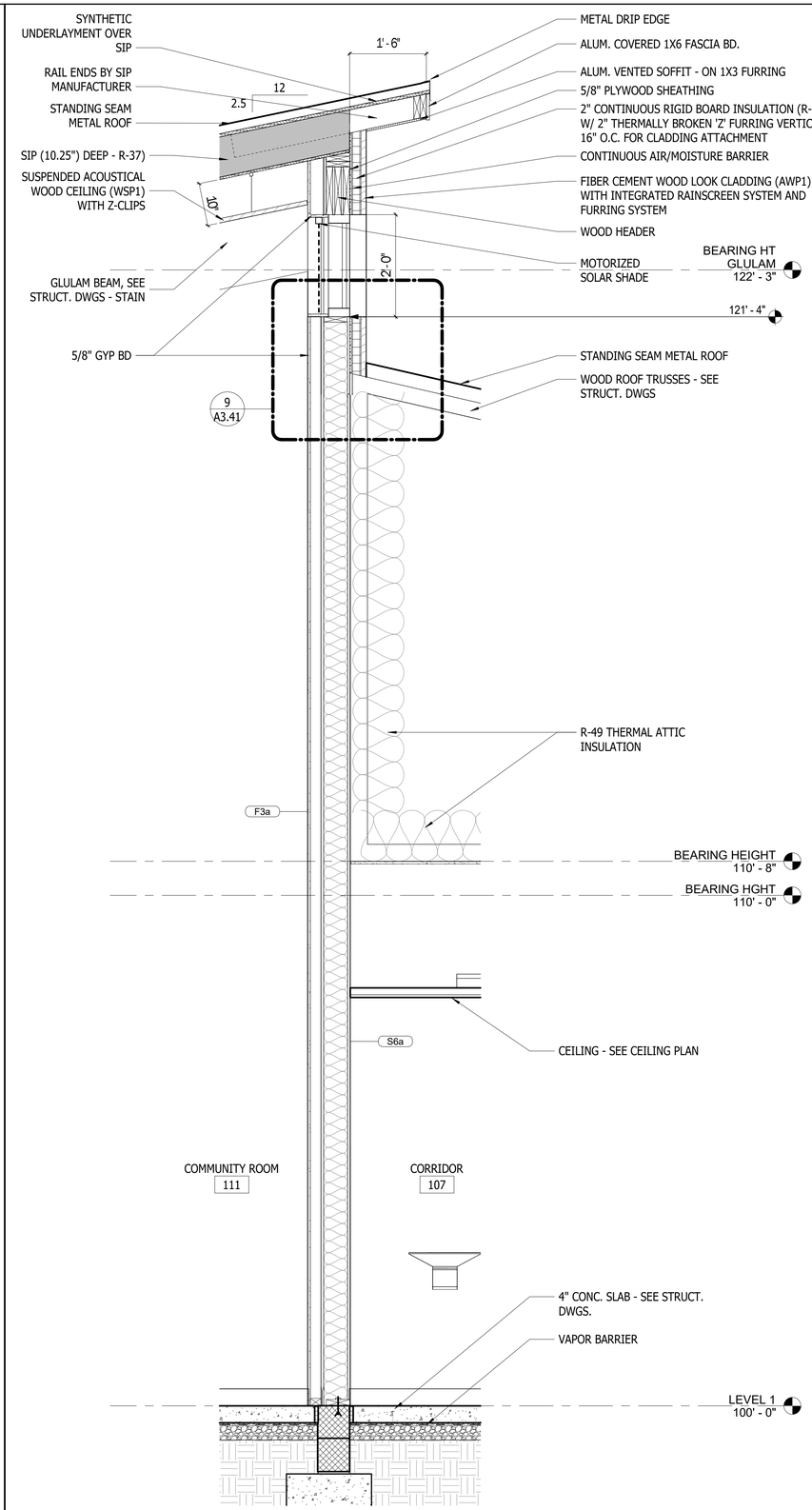


WALL SECTION | SCALE: 3/4" = 1'-0" | REF'D FROM: A3.21 | 2



WALL SECTION | SCALE: 3/4" = 1'-0" | REF'D FROM: A3.21 | 1

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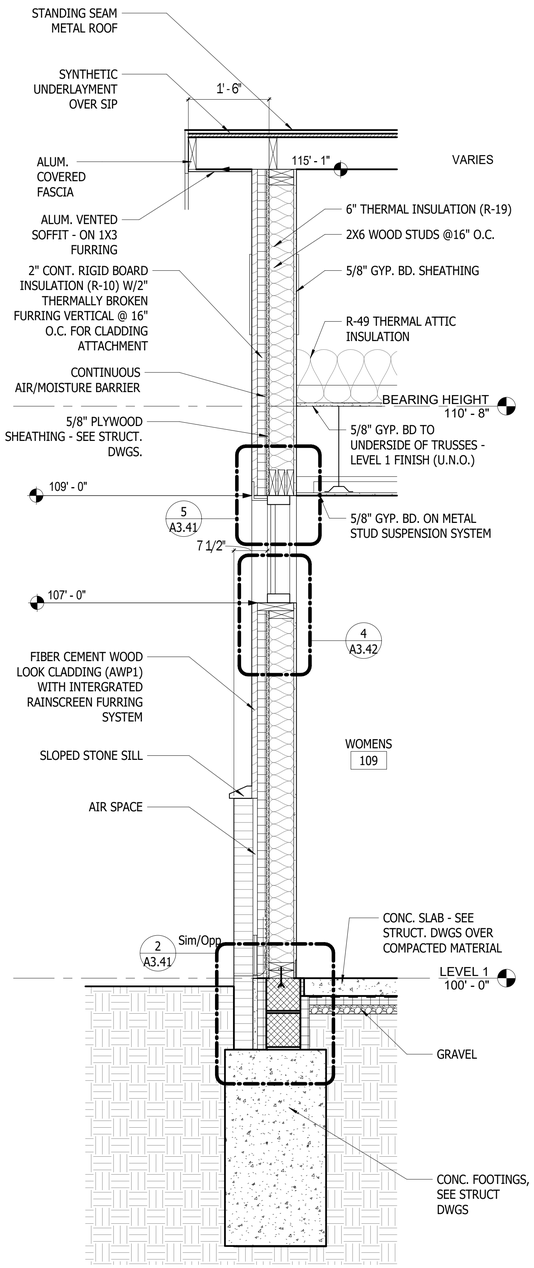
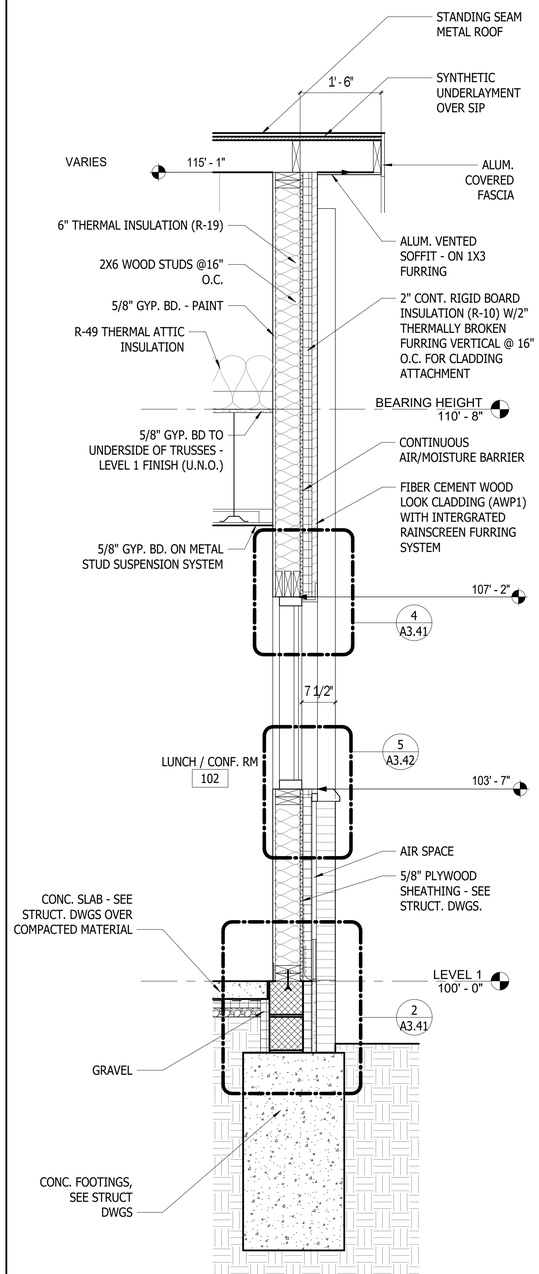


WALL SECTION — SCALE: 3/4" = 1'-0" — REF'D FROM: A3.21 — 4



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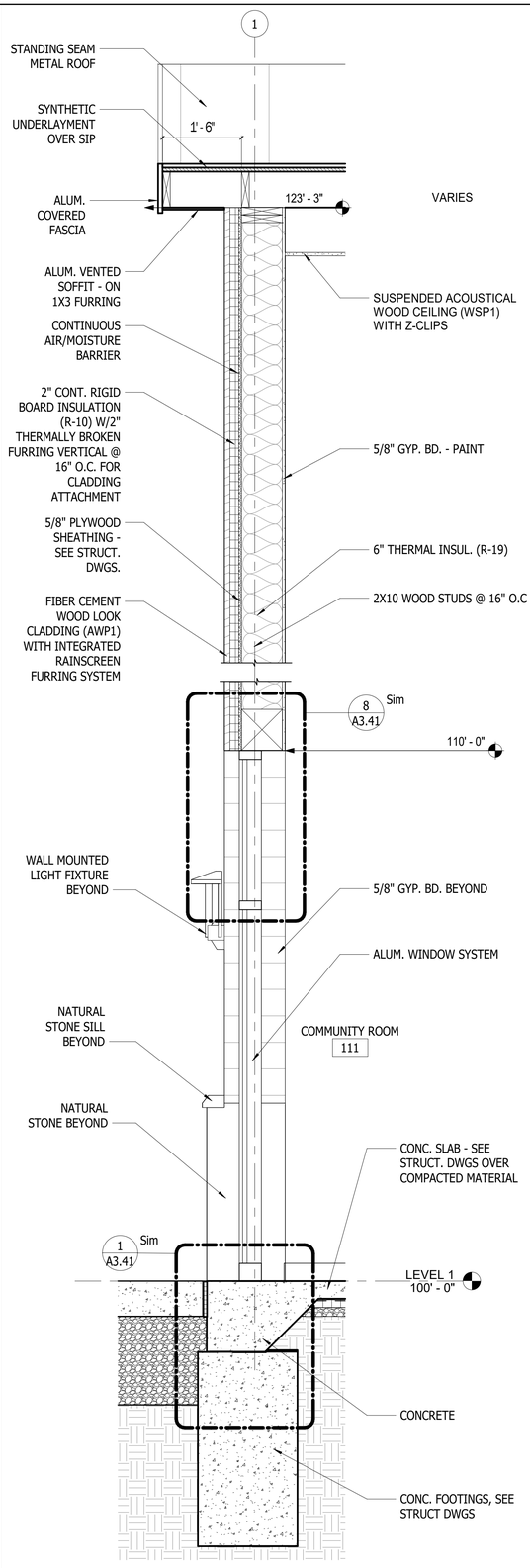

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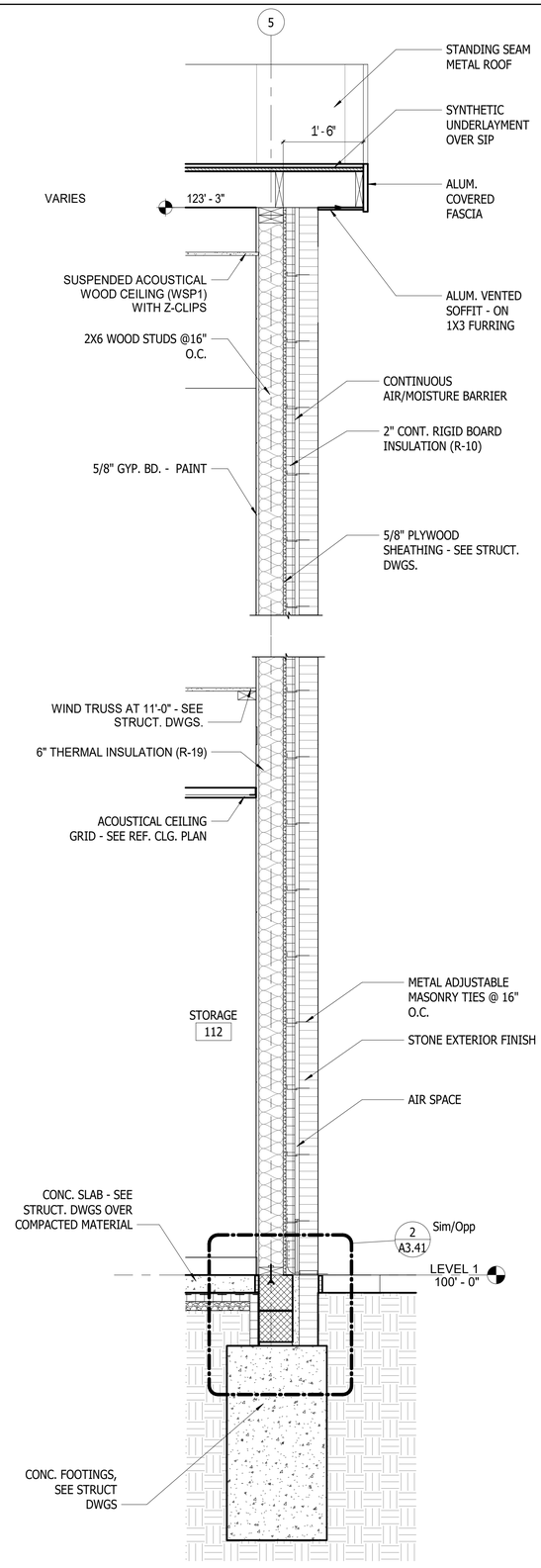

WALL SECTION — SCALE: 3/4" = 1'-0" — REF'D FROM: A3.22 — 1

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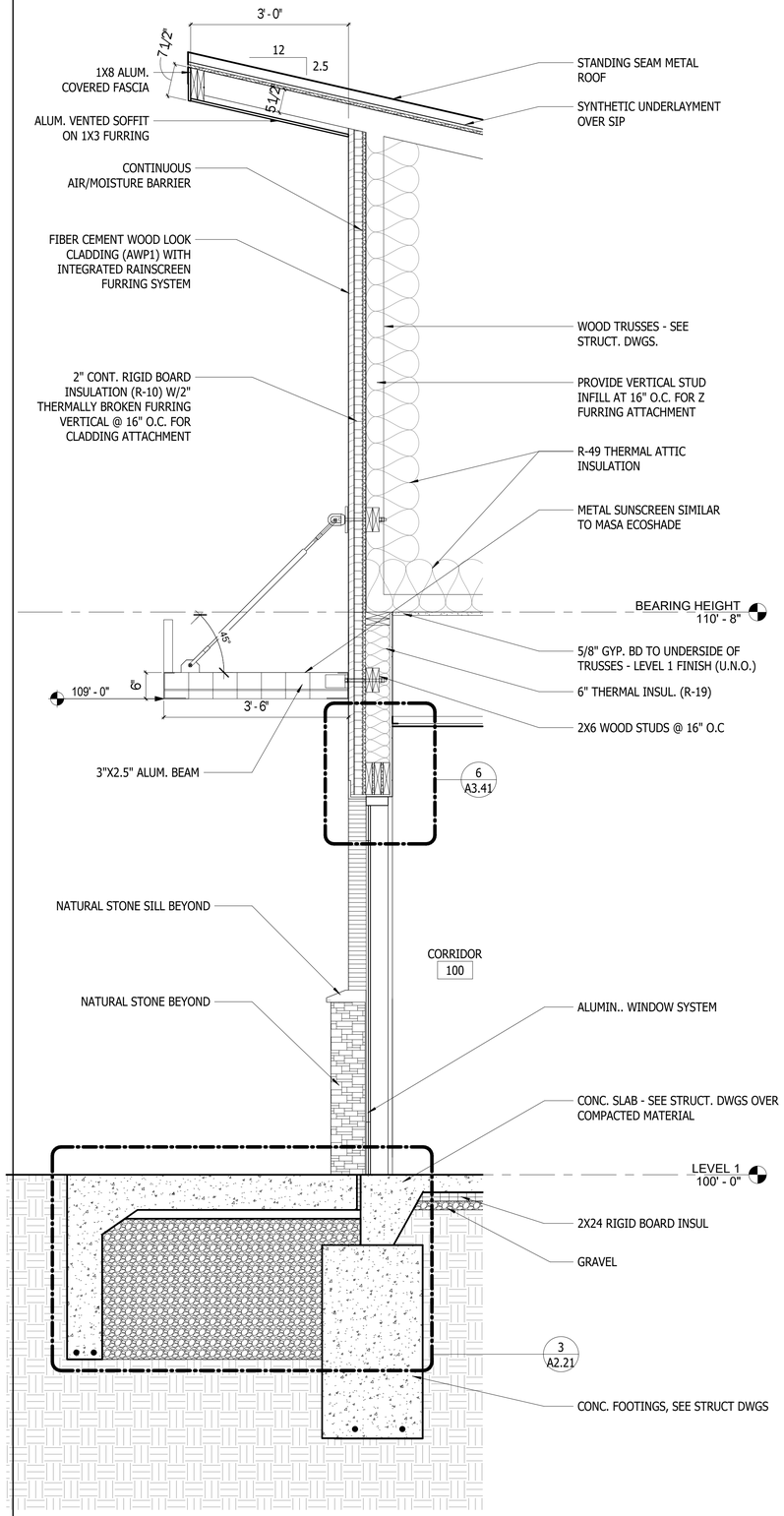
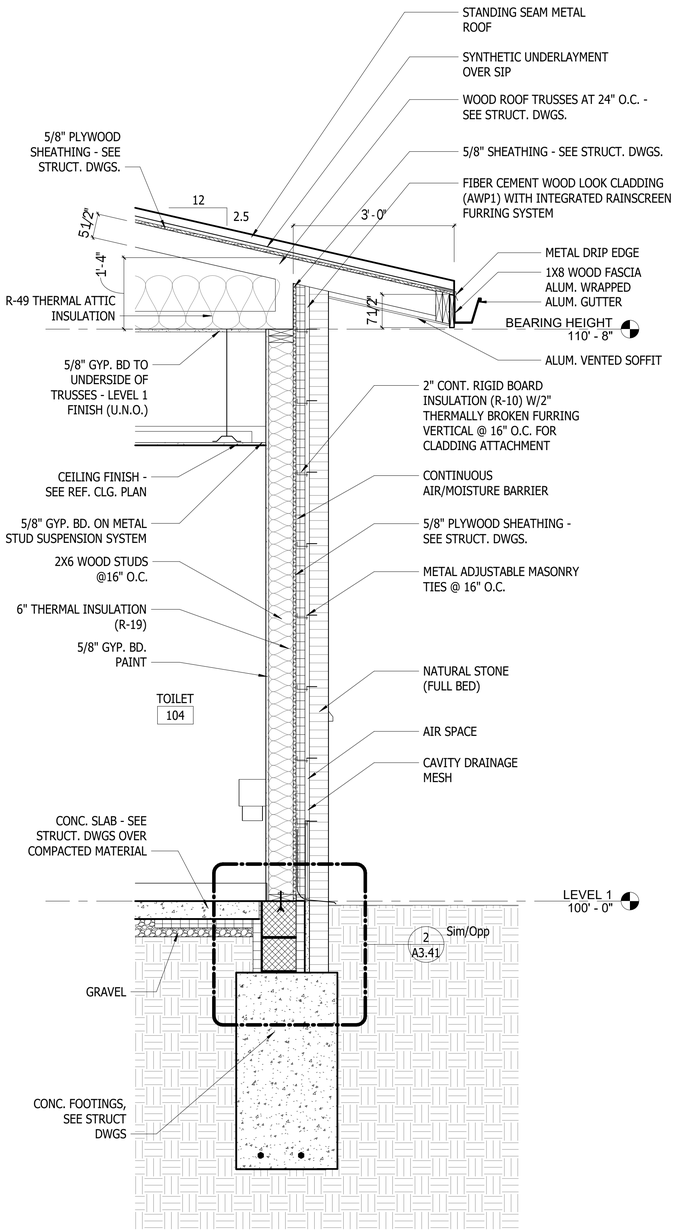


WALL SECTION SCALE: 3/4" = 1'-0" REF'D FROM: A3.22 3



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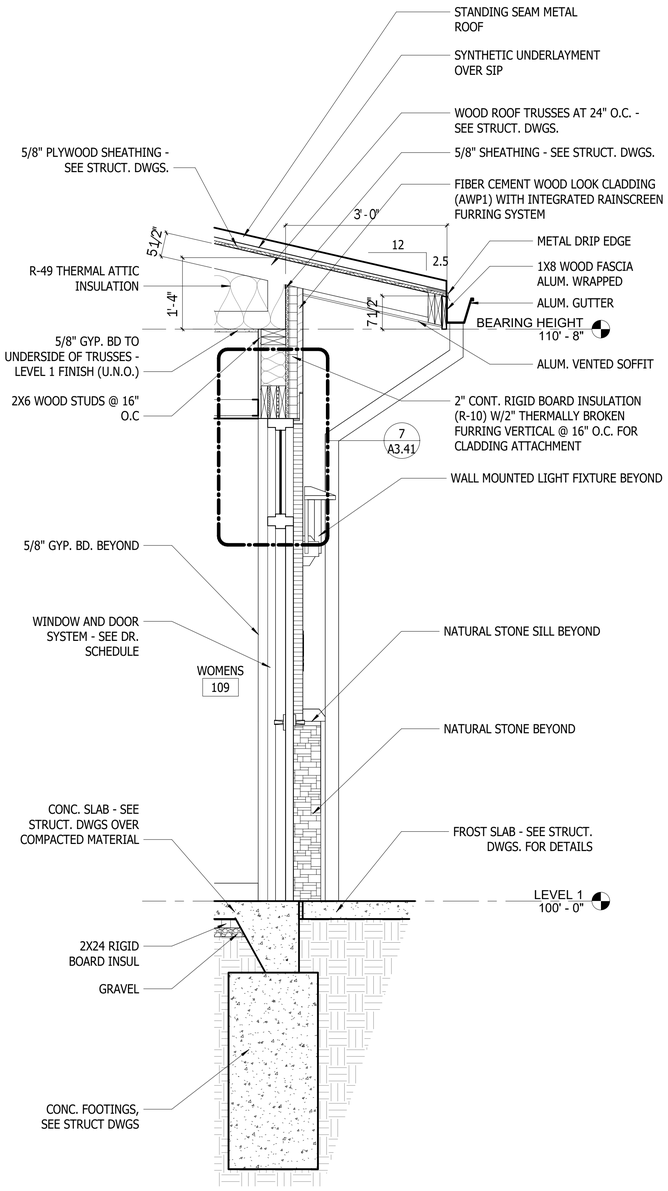

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DRAWN BY: KLJ
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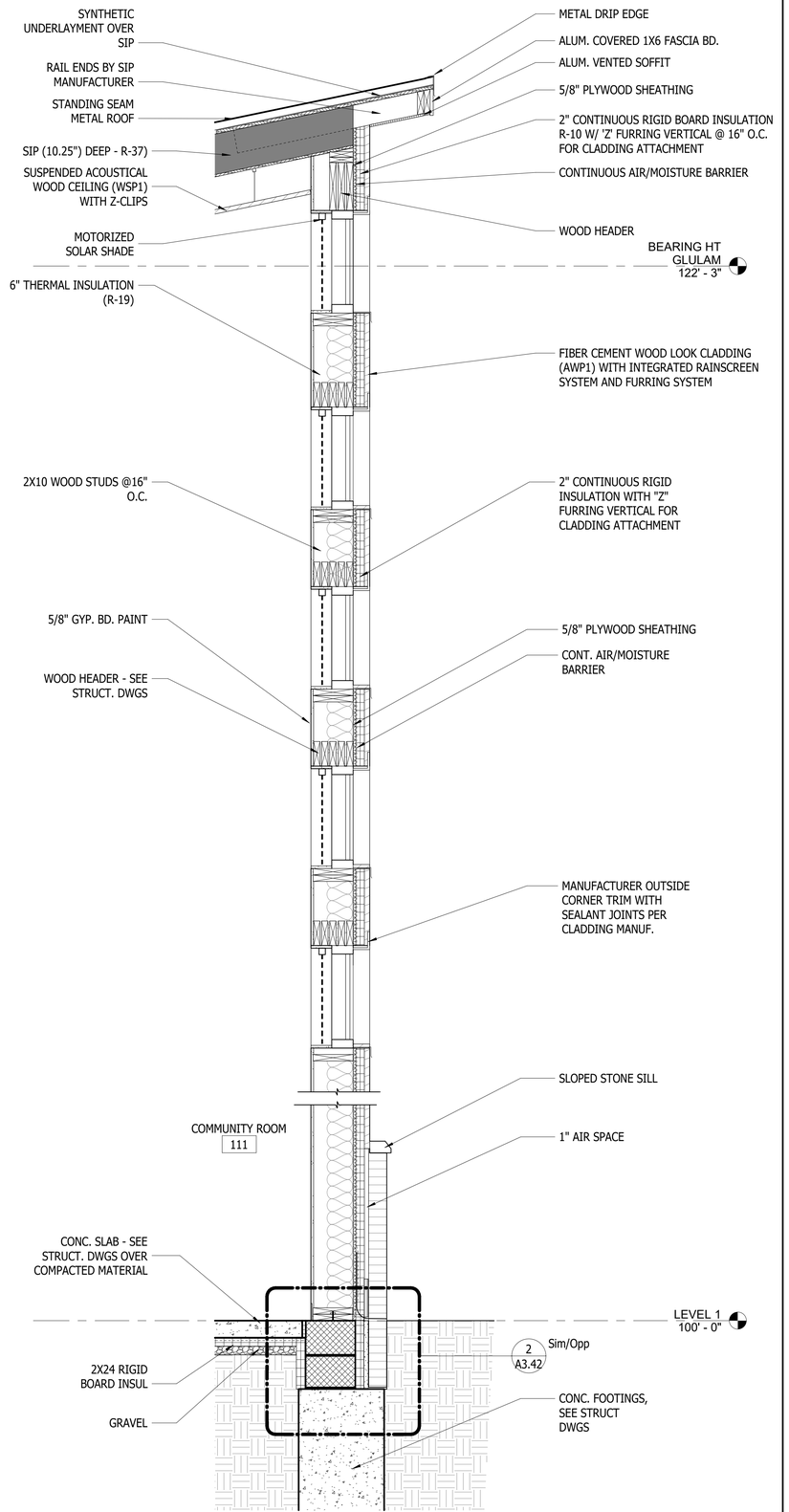
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 3/4" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.33

C:\Users\kjock\Documents\25021-Arch_R23_Service Building_kjock58MA2A.rvt



WALL SECTION 3

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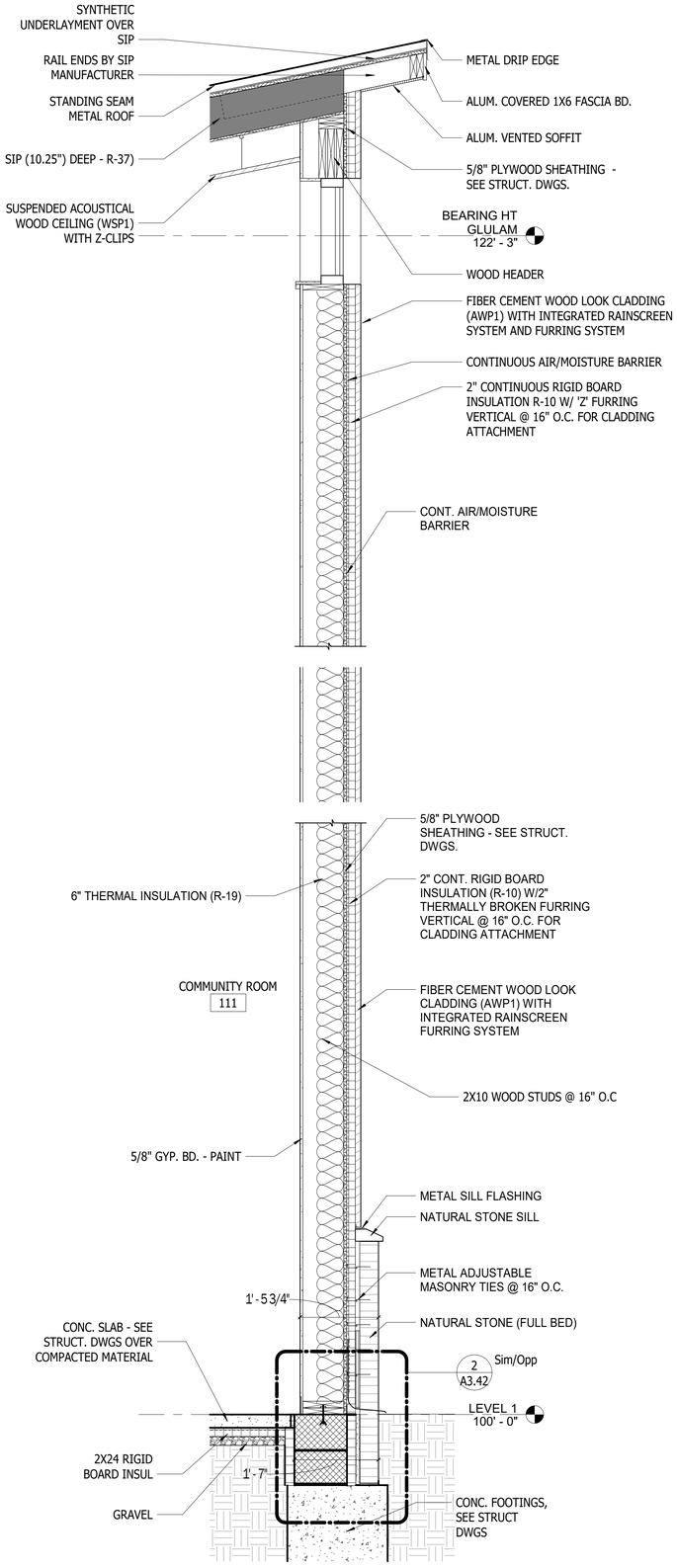

WALL SECTION 2

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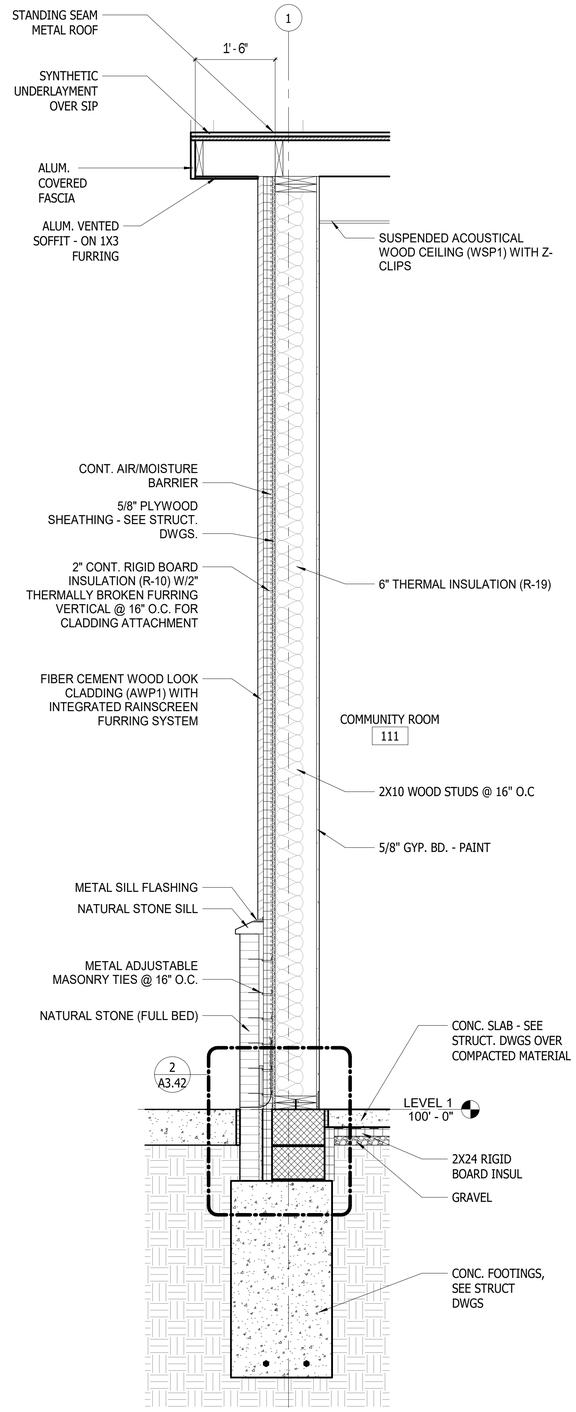
REF'D FROM: A2.11



WALL SECTION 1

SCALE: 3/4" = 1'-0"
REF'D FROM: A2.11

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PROJECT
Nowicki Park
Site Improvements

CLIENT
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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
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City of Rochester Hills,
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Sheet
WALL SECTIONS - COMMUNITY BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 3/4" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.34

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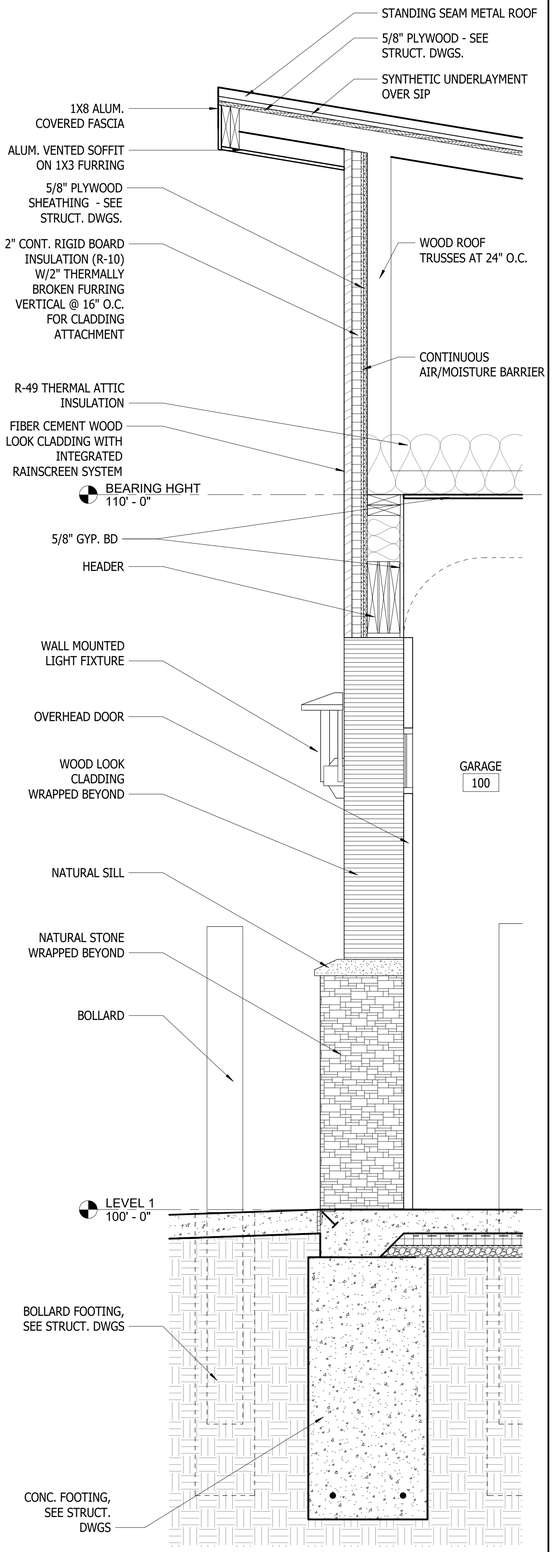
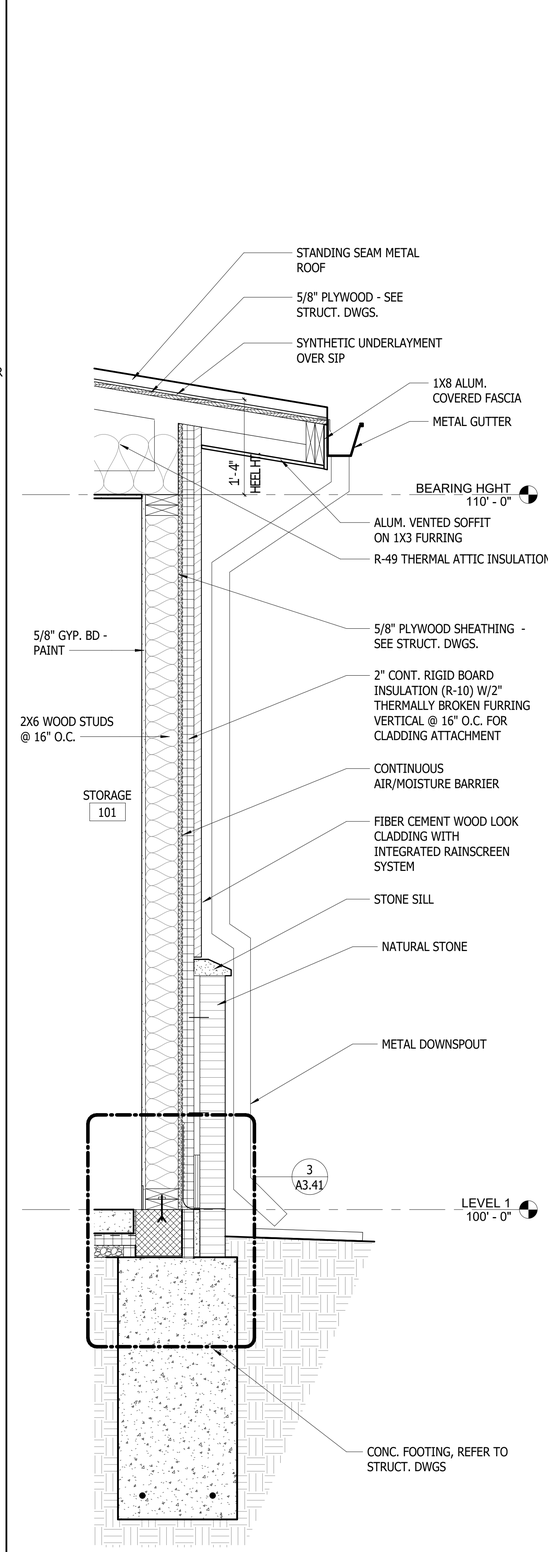
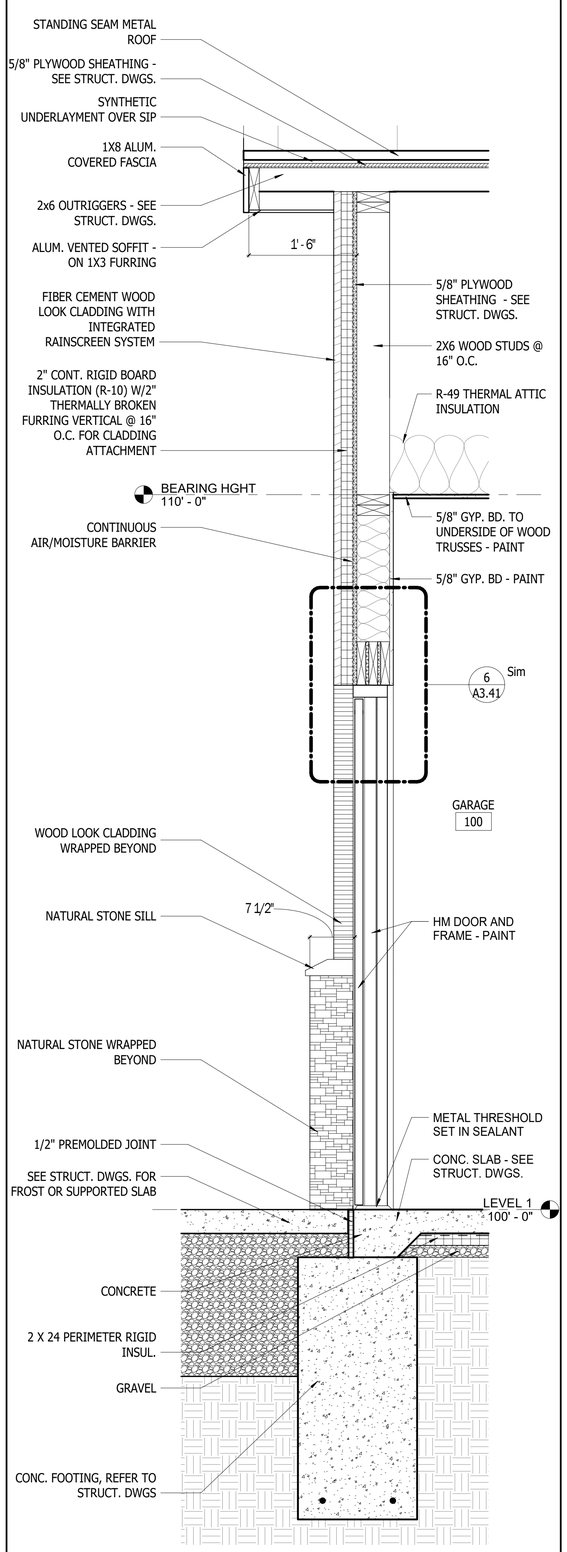


WALL SECTION | SCALE: 1" = 1'-0" | REF'D FROM: A3.23 | 4



WALL SECTION | SCALE: 1" = 1'-0" | REF'D FROM: A3.23 | 3



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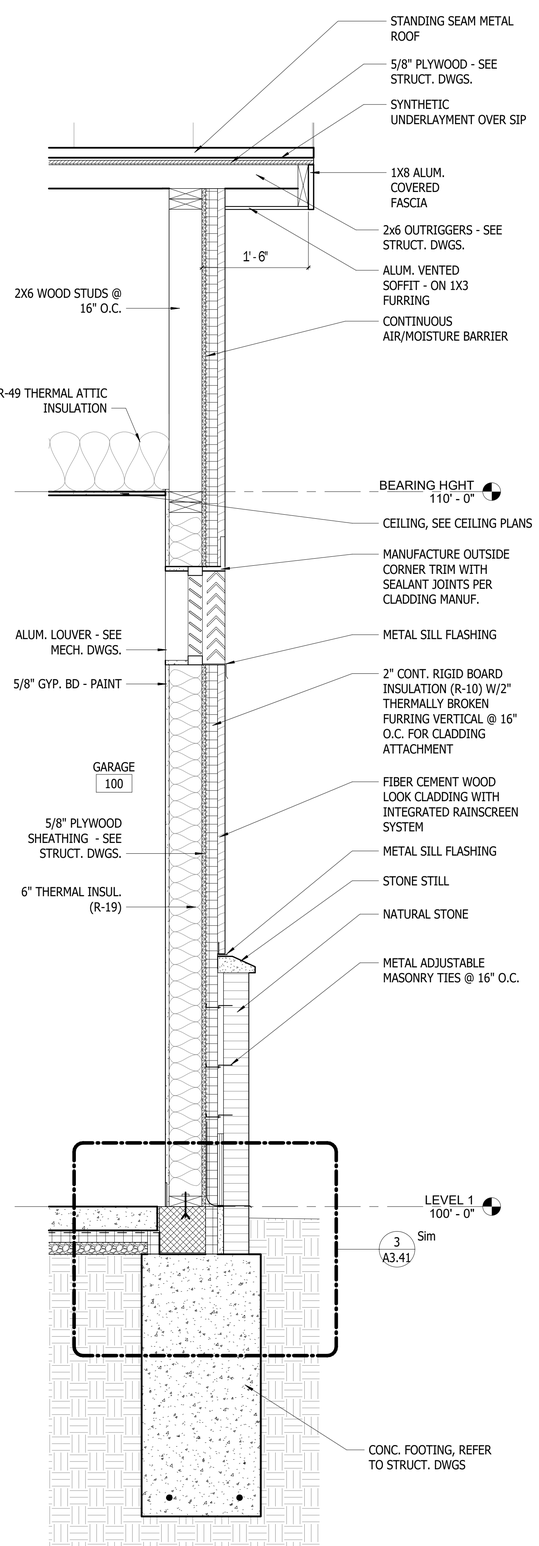

WALL SECTION | SCALE: 1" = 1'-0" | REF'D FROM: A3.23 | 1

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Nowicki Park
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CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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Section 8
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City of Rochester Hills,
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Sheet
WALL SECTIONS - MAINTENANCE BUILDING

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 1" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.35

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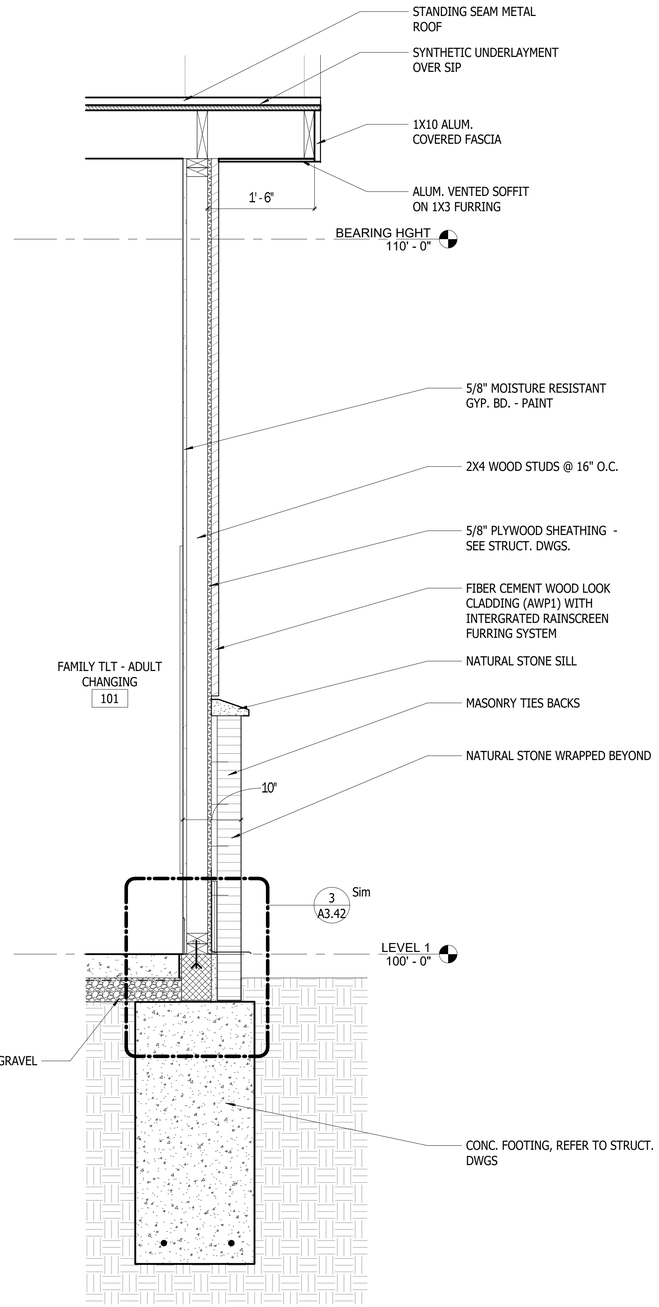
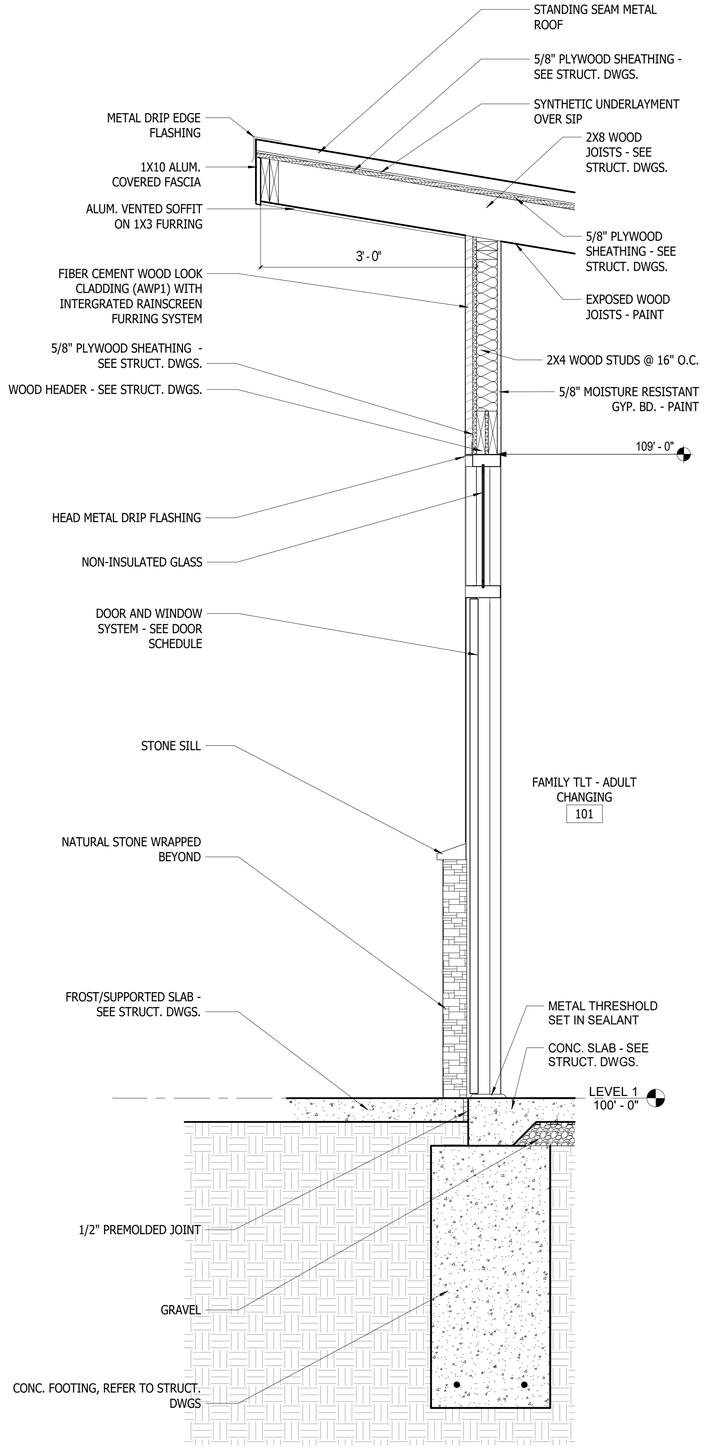


WALL SECTION | SCALE: 1" = 1'-0" | REF'D FROM: A3.23 | 3



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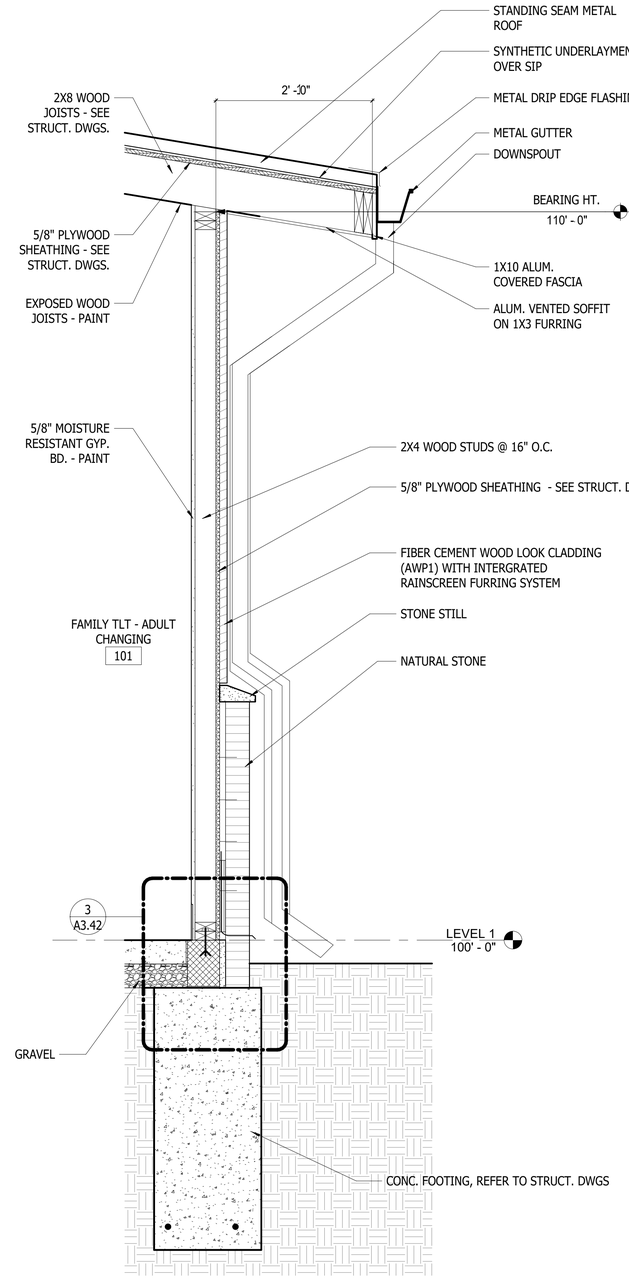

WALL SECTION | SCALE: 1" = 1'-0" | REF'D FROM: A3.23 | 1

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Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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Sheet
WALL SECTIONS - FAMILY BATHROOMS BUILDING

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
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APPROVED BY: FEA
DATE: 02/02/26
SCALE: 1" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.36

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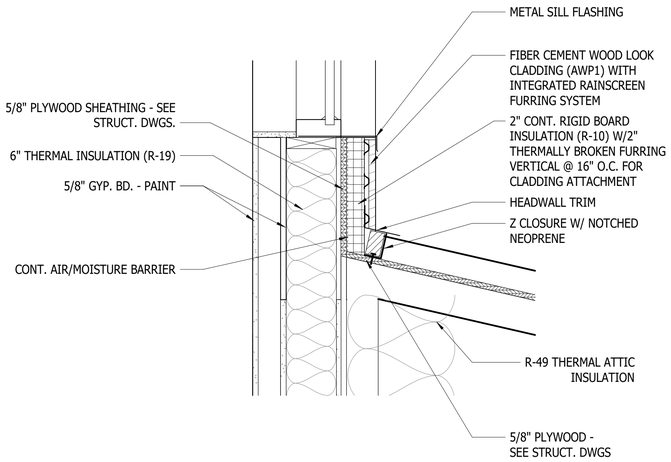
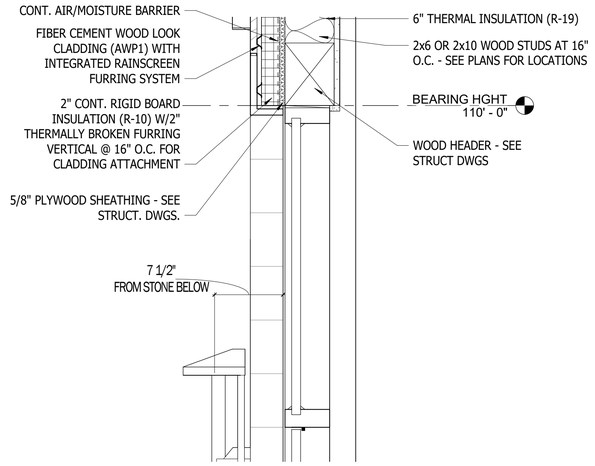
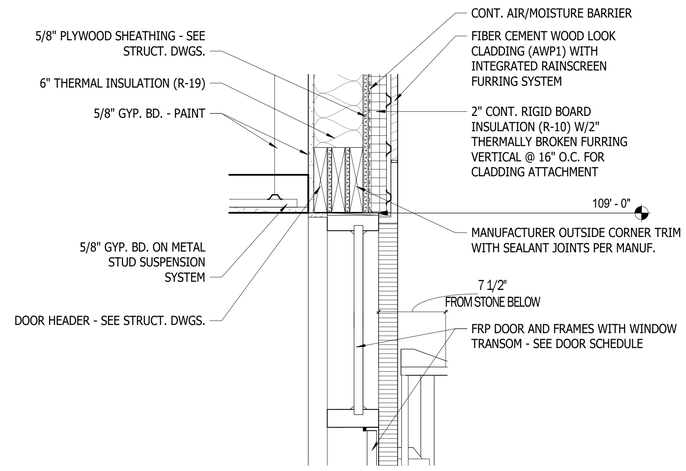


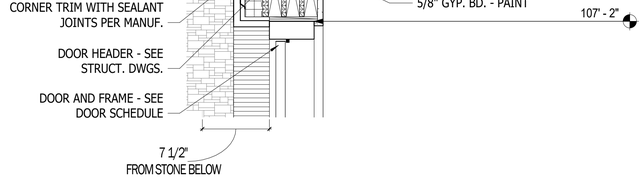
TRANSOM - JAMB | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.31 | 9



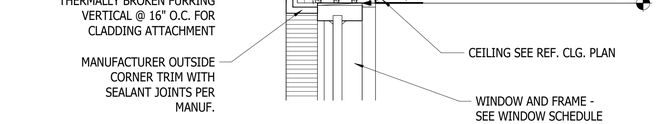
EXTERIOR DOOR - HEAD | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.31 | 8



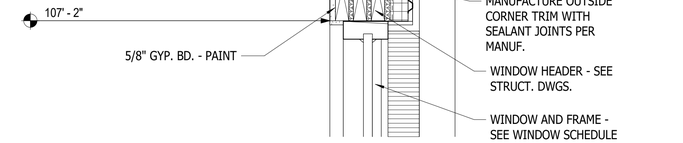
TRANSOM - HEAD | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.33 | 7



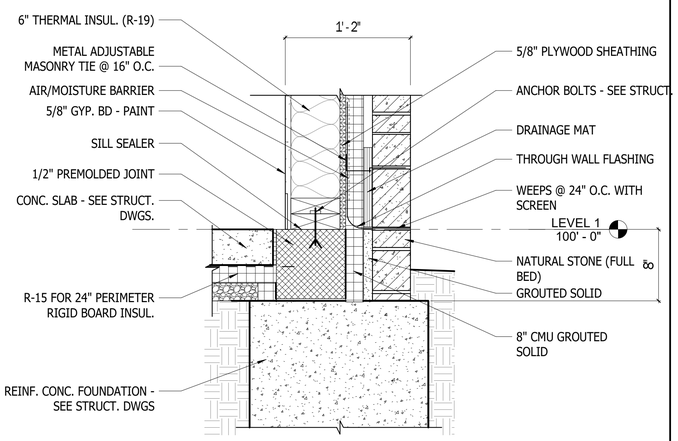
EXTERIOR DOOR - HEAD | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.33 | 6



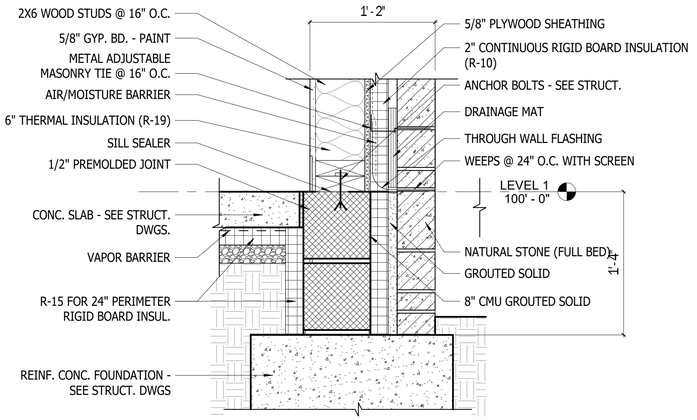
EXTERIOR WINDOW - HEAD | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.32 | 5



EXTERIOR WINDOW - HEAD | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.32 | 4



WALL SECTION DETAIL - TYP. FOUNDATION | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.35 | 3



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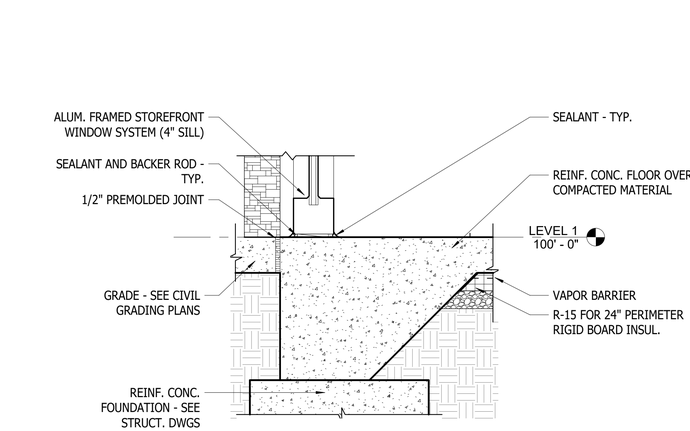

WALL SECTION DETAIL - TYP. SILL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.31 | 1

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Site Improvements

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Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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Section 8
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Sheet
ENLARGED WALL SECTION DETAILS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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DESIGNED BY: XXX
APPROVED BY: XXX
DATE: 02/02/26
SCALE: 1 1/2" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.41

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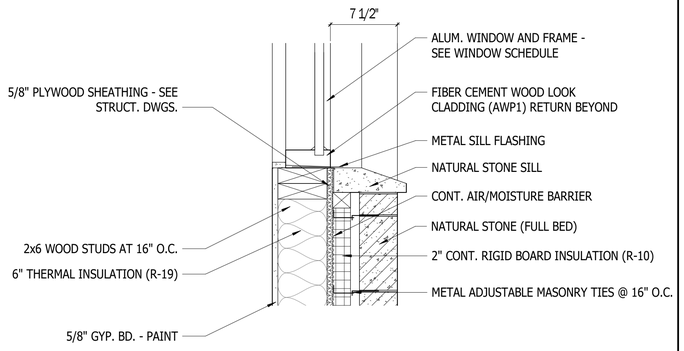
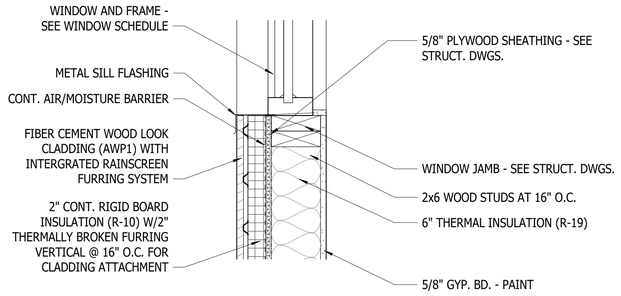
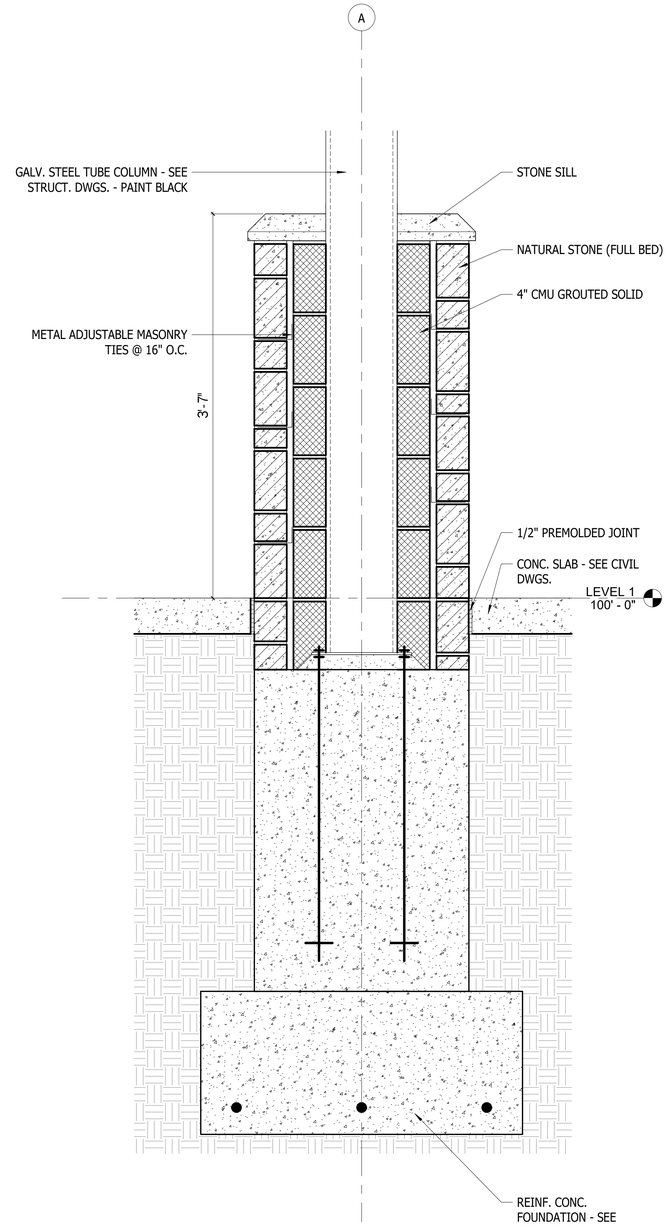


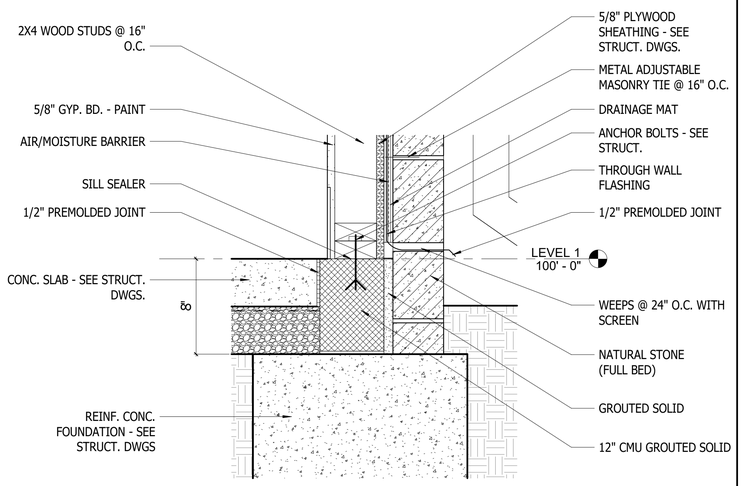
EXTERIOR WINDOW - SILL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.32 | 5



EXTERIOR WINDOW - SILL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.32 | 4



WALL SECTION DETAIL - TYP. FOUNDATION | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.31 | 1



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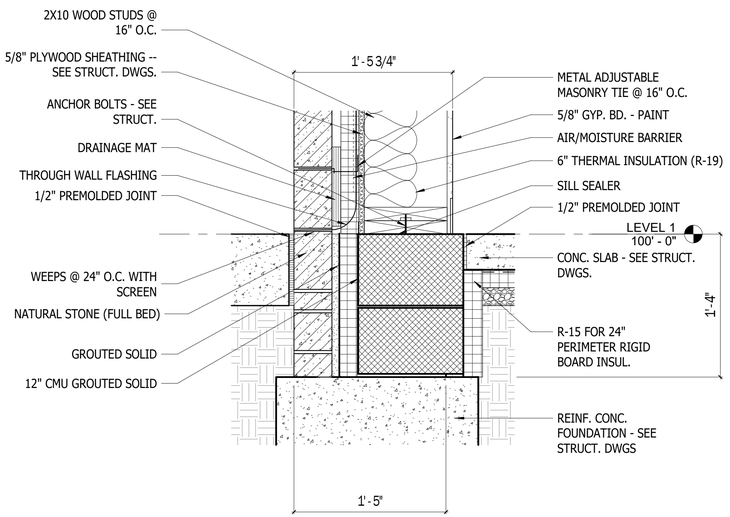

WALL SECTION DETAIL - TYP. FOUNDATION | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.34 | 2

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Mr. Ken Elwet, CPRE
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elwertk@rochesterhill.org

PROJECT LOCATION
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Sheet
ENLARGED WALL SECTION DETAILS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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DESIGNED BY: XXX
APPROVED BY: XXX
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A3.42

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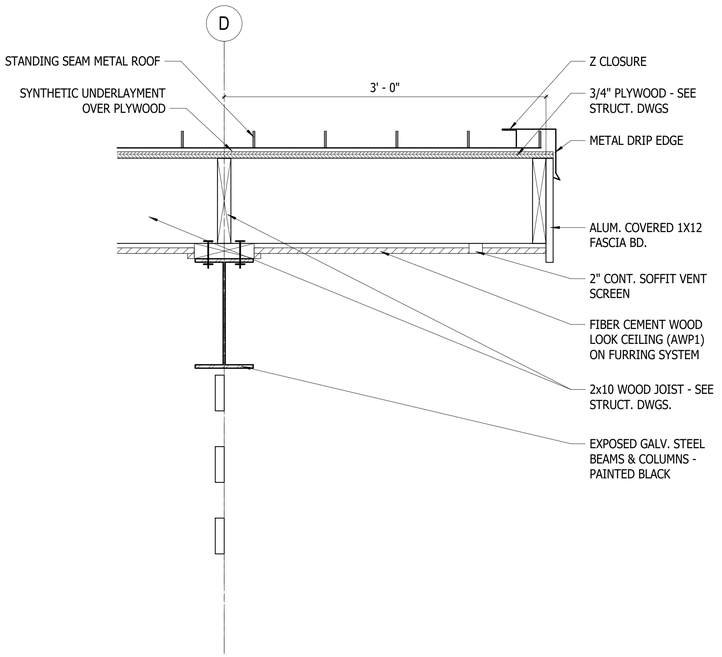
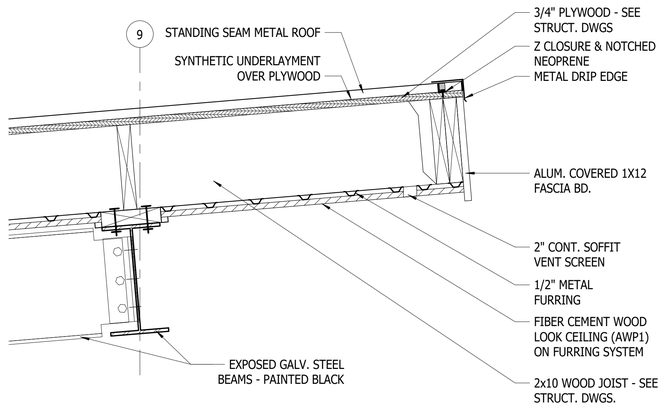


ENLARGED SECTION DETAIL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.24 | 5



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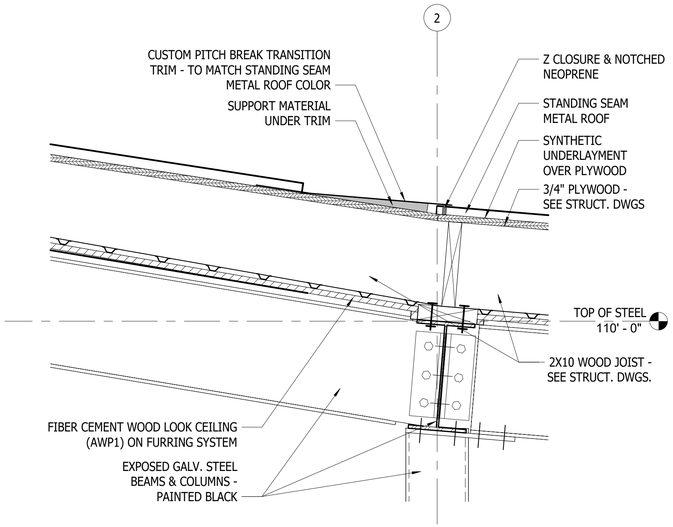
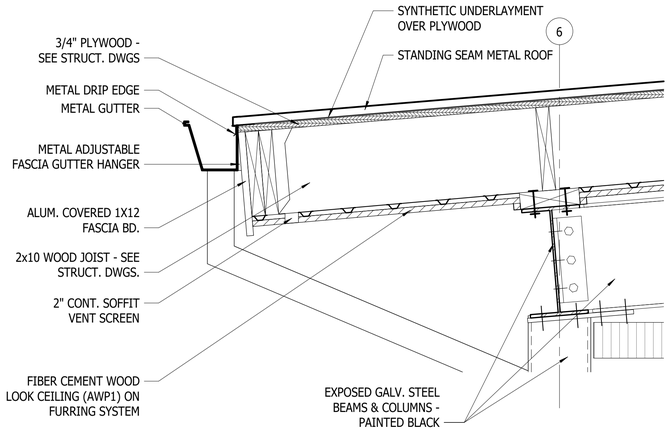


NOTE:
REFER TO MANUFACTURERS RECOMMENDED DETAIL

ENLARGED SECTION DETAIL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.24 | 3



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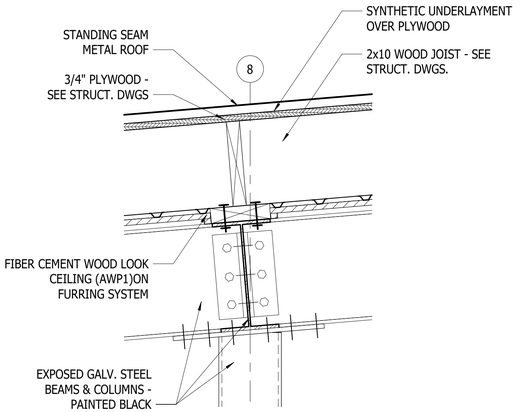

ENLARGED SECTION DETAIL | SCALE: 1 1/2" = 1'-0" | REF'D FROM: A3.24 | 1

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Architects Project No: 25021

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PROJECT
Nowicki Park
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CLIENT
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Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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Section 8
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City of Rochester Hills,
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Sheet
ROOF DETAILS - PAVILION

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: FN
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 1 1/2" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A3.62

C:\Users\kjosk\Documents\25101-Arch_R23_Pavilion 2_kjosk9MOA.rvt

NEW WORK KEYNOTES:

O = OWNER, C= CONTRACTOR, F=FURNISHED, & I-INSTALLED
THE CONTRACTOR SHALL FURNISH AND INSTALL WALL REINFORCING FOR INSTALLATION OF EQUIPMENT, CASEWORK, TOILET ACCESSORIES, HANDRAILS, FURNITURE, ETC.

1. BABY CHANGING TABLE (CF/CI)
2. TOILET PAPER DISPENSER (CF/CI)
3. NOTE NOT USED
4. SANITARY DISPOSAL (ONLY IN WOMENS AND UNISEX TOILET ROOMS) (CF/CI)
5. HORIZONTAL GRAB BAR (CF/CI)
6. VERTICAL GRAB BAR (CF/CI)
7. 24"X36" MIRROR (CF/CI)
8. WALL MOUNTED SOAP DISPENSER (OF/CI)
9. PAPER TOWEL DISPENSER AND WASTE RECEPTACLE (CF/CI)
10. ADULT CHANGING TABLE (CF/CI) - SEE FLOOR PLAN FOR NOTE ON SUPPORT REQUIREMENTS.
11. WALL MOUNTED LIGHT (SEE REFLECTED CEILING PLAN AND ELC. DWGS) (CF/CI)
12. MICROWAVE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
13. COFFEE MACHINE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
14. COMMERCIAL REFRIGERATOR (OF/OI) - VERIFY WITH OWNER FOR SIZE PRIOR TO INSTALL OF CABINETS
15. HI/LO DRINKING FOUNTAIN WITH APRON FOR HIGH FOUNTAIN TO 27" HIGH OFF GROUND (CANE DETECTION) (CF/CI)
16. HAND DRYER (CF/CI)
17. STEP N WASH (CF/CI)
18. TV (OF/OI) (SEE ELEC. DWGS FOR POWER & DATA)
19. WALL MOUNTED (2) MONITORS & A/V EQUIPMENT (OF/OI) - SEE ELEC DWGS FOR ITEMS FOR GC TO PROVIDE
20. MECH / ELEC EQUIPMENT. SEE MECH & ELEC DWGS.
21. FURNITURE (OF/OI) - FURNITURE SUPPLIER TO DETERMINE ACCESSIBLE REQUIREMENTS
22. ADD 1" MARINE GRADE PLYWOOD TO THE STUD WALL SECURED EVERY 4" FROM FLOOR TO 67" HIGH. VERIFY REQUIREMENTS WITH ADULT CHANGING TABLE SUPPLIER - PROVIDE GYP. BD. OVER PLYWOOD
23. LOCKERS 18"W X 24"D X 72"H WITH SLOPED TOP - PROVIDE (1) ACCESSIBLE LOCKER
24. 20" X 4'-0" WOOD BENCH WITH METAL PEDESTALS TO MATCH COLOR OF LOCKERS - 19" HIGH
25. PROVIDE SCHULTER EDGE TRIM - SEE SHEET A2.41 FOR TYPE & FINISH/COLOR
26. PROVIDE RAISED SLAB AT EQUPIMENT INDICATED - SEE MECH DWGS & SPECIFICATIONS FOR INFORMATION
29. ACTUATORS FOR DOOR OPERATORS - EACH SIDE OF DOOR
30. UTILITY SHELF WITH MOP & BROOM HOLDERS AND HOOKS

ROCHESTER HILLS MICHIGAN

A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

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Architects Project No: 25021

SEAL

NOT FOR CONSTRUCTION

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ENLARGED PLANS - COMMUNITY BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

ENLARGED BATHROOMS PLAN

SCALE: 1/2" = 1'-0"
REF'D FROM: A2.11

1

NFE JOB NO. 0557

SHEET NO. A4.11

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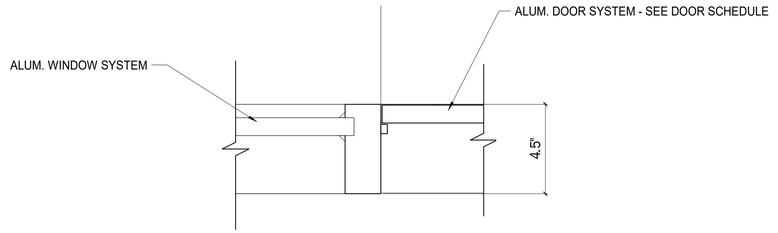
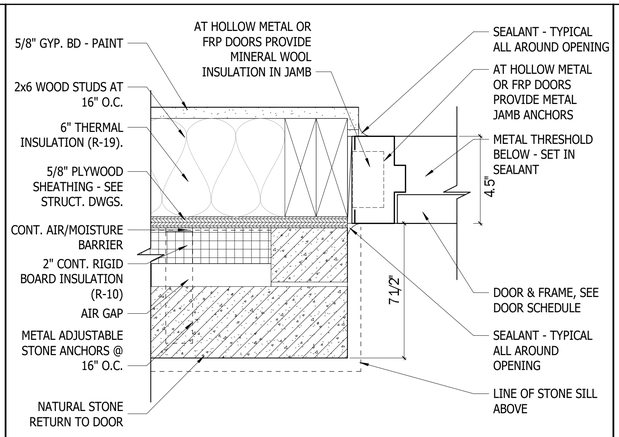
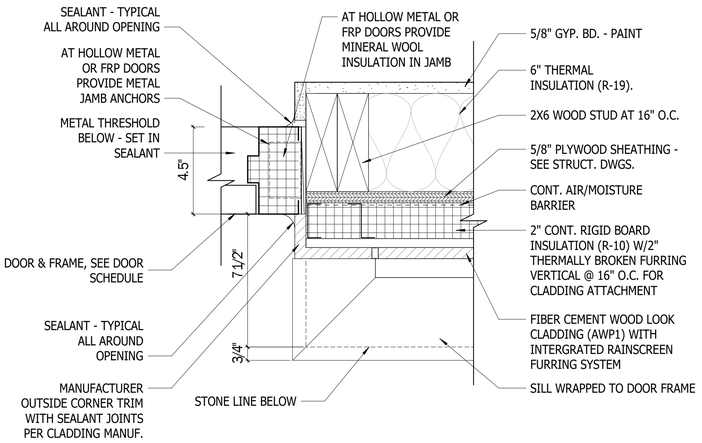






PLAN DETAIL - DOOR JAMB

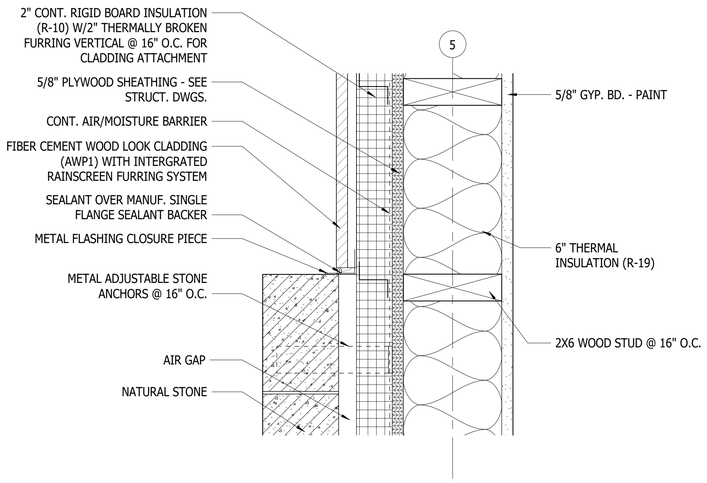
SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 9

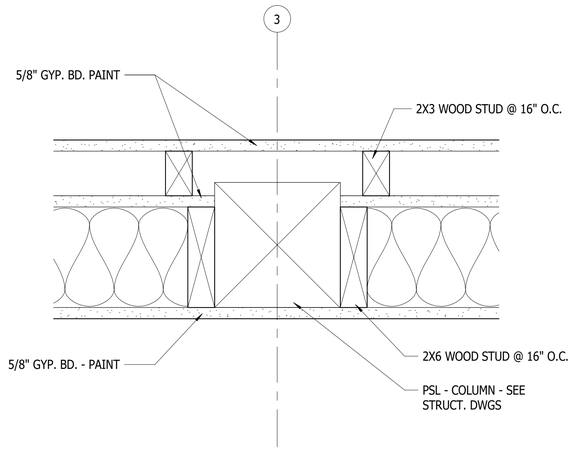
PLAN DETAIL - DOOR JAMB

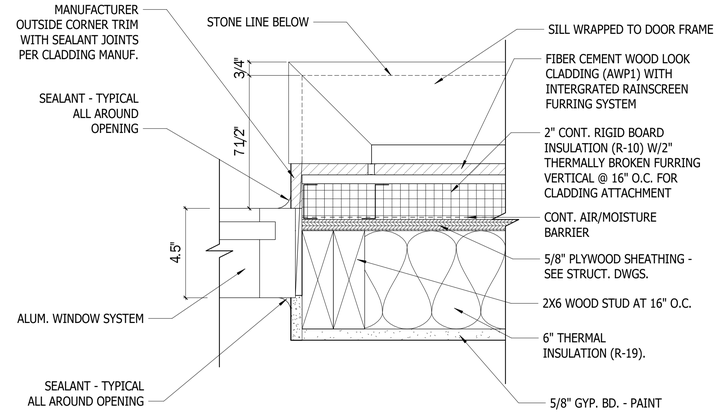
SCALE: 3" = 1'-0" | REF'D FROM: A4.11 | 8

PLAN DETAIL - DOOR JAMB

SCALE: 3" = 1'-0" | REF'D FROM: A4.11 | 7







PLAN DETAIL

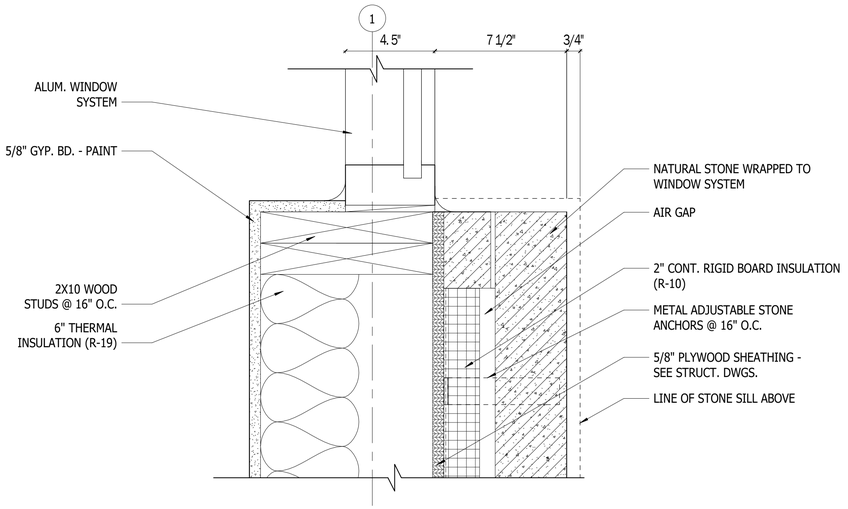
SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 6

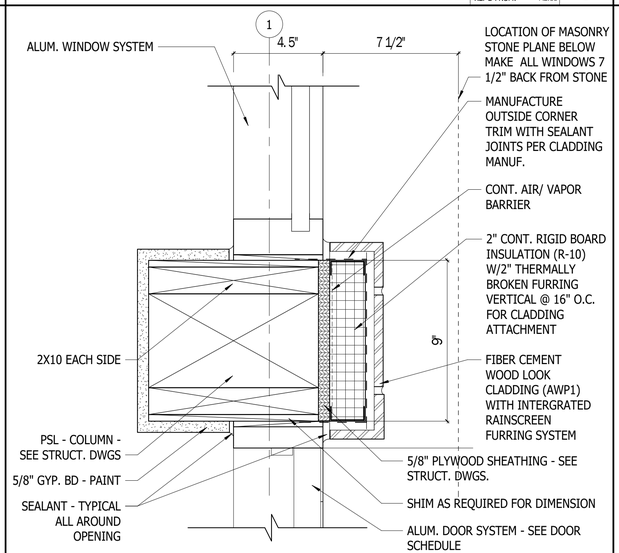
PLAN DETAIL

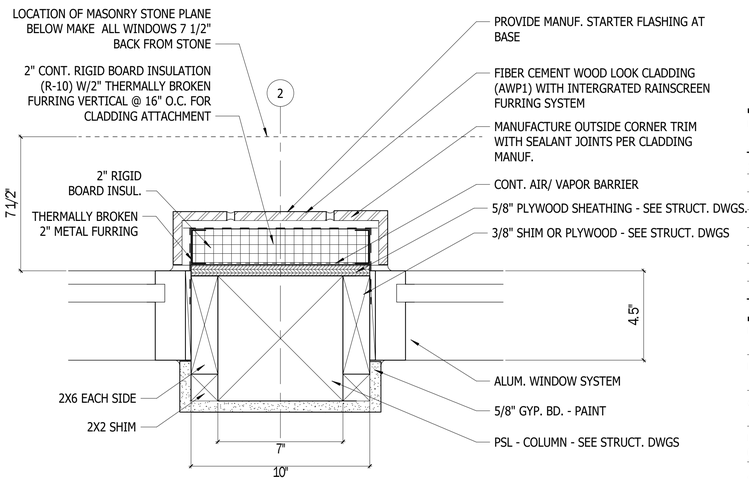
SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 5

PLAN DETAIL - WINDOW JAMB

SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 4







PLAN DETAIL - WINDOW JAMB

SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 3

PLAN DETAIL

SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 2

PLAN DETAIL

SCALE: 3" = 1'-0" | REF'D FROM: A2.11 | 1

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Sheet
ENLARGED PLAN DETAILS

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2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 3" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A4.21

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NEW WORK KEYNOTES:

GENERAL NOTE:
SEE FINISH SCHEDULE SHEET A2.41 FOR FINISH TYPES

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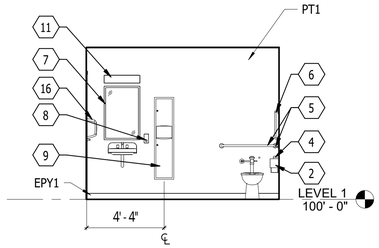
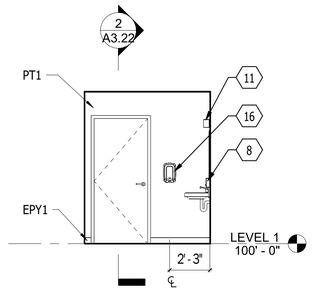
10. ADULT CHANGING TABLE (CF/CI)
11. WALL MOUNTED LIGHT (SEE REFLECTED CEILING PLAN AND ELC. DWGS) (CF/CI)
16. HAND DRYER (CF/CI)
17. STEP N WASH (CF/CI)
25. PROVIDE SCHULTER EDGE TRIM - SEE SHEET a2.41 FOR TYPE & FINISH/COLOR

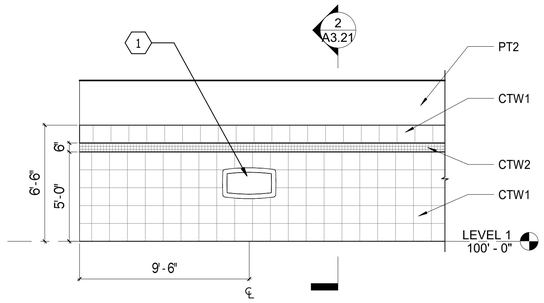
NEW WORK KEYNOTES | SCALE: N.T.S. | REF'D FROM: TS | 10



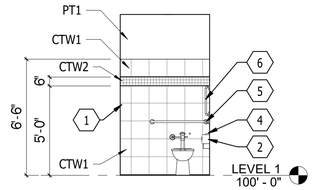
TOILET 104 ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 9



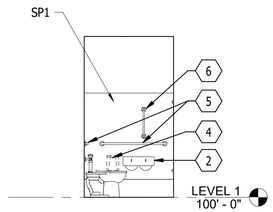
TOILET 104 ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 8



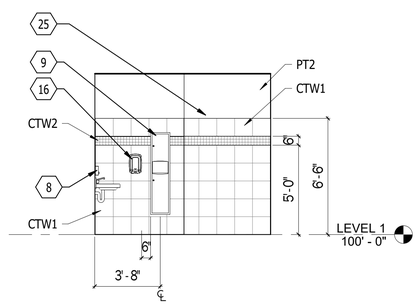
RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 7



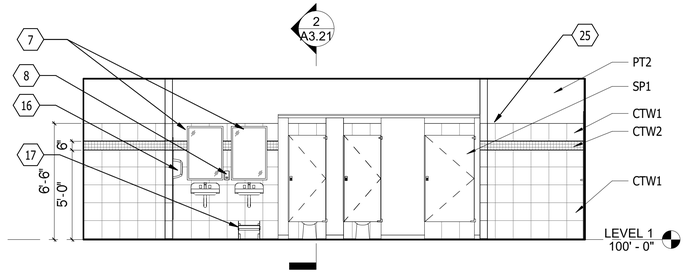
ADA TOILET ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 6



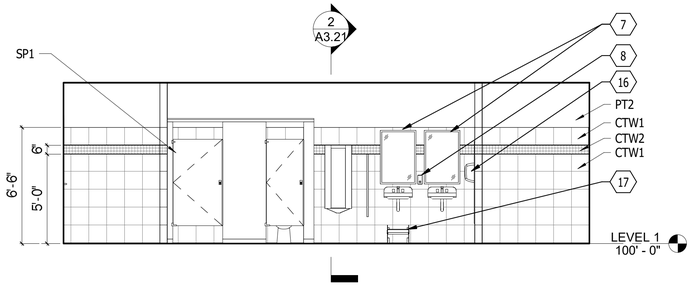
ADA TOILET ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 5



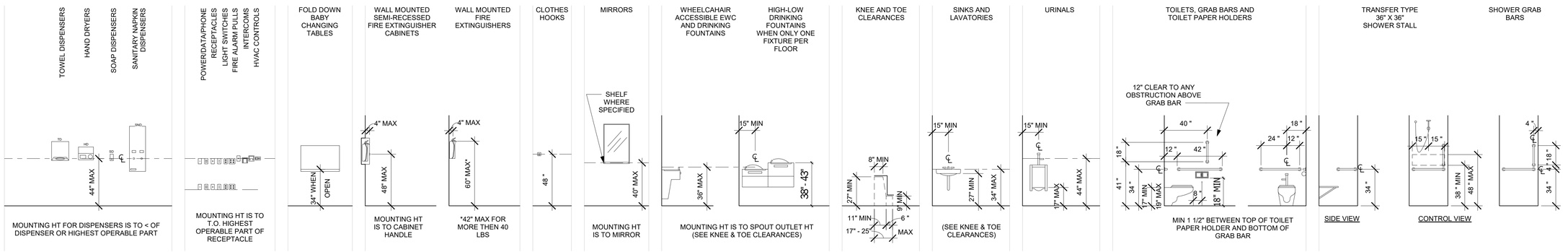
RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 4



WOMENS 110 ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 3



MENS 109 ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A4.11 | 2



NOTE: THIS DRAWING REPRESENTS TYPICALLY ENCOUNTERED ITEMS. NOT ALL ITEMS SHOWN MAY OCCUR WITHIN THE SCOPE IF THIS PROJECT. REFER TO COMPLETE SPECIFICATION AND DRAWING DOCUMENTION SET.

TYPICAL MOUNTING HEIGHTS | SCALE: 1/4" = 1'-0" | REF'D FROM: | 1

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elwertk@rochesterhill.org

PROJECT LOCATION
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T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
INTERIOR ELEVATIONS - COMMUNITY BUILIDING

Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: XXX
DESIGNED BY: XXX
APPROVED BY: XXX
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A5.11

C:\Users\jkordi\Documents\25021-Arch_R23_Service Building_kjordi5MADA.rvt

NEW WORK KEYNOTES:

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11. WALL MOUNTED LIGHT (SEE REFLECTED CEILING PLAN AND ELC. DWGS) (CF/CI)
12. MICROWAVE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
13. COFFEE MACHINE (OF/OI) - VERIFY HIEGHT WITH OWNER PRIOR TO CABINET INSTALL
14. COMMERCIAL REFRIGERATOR (OF/OI) - VERIFY WITH OWNER FOR SIZE PRIOR TO INSTALL OF CABINETS
15. HI/LO DRINKING FOUNTAIN WITH APRON FOR HIGH FOUNTAIN TO 27" HIGH OFF GROUND (CANE DETECTION) (CF/CI)
16. HAND DRYER (CF/CI)
17. STEP N WASH (CF/CI)
18. TV (OF/OI) (SEE ELEC. DWGS FOR POWER & DATA)
19. WALL MOUNTED (2) MONITORS & A/V EQUIPMENT (OF/OI) - SEE ELEC DWGS FOR ITEMS FOR GC TO PROVIDE
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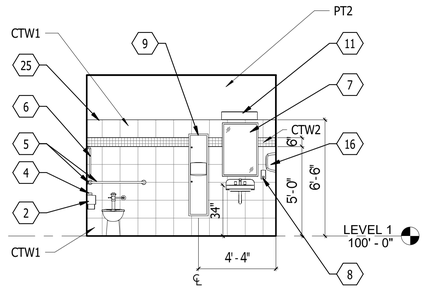
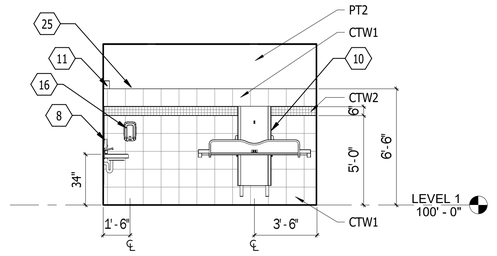
25. PROVIDE SCHULTER EDGE TRIM - SEE SHEET A2.41 FOR TYPE & FINISH/COLOR
26. PROVIDE RAISED SLAB AT EQUPIMENT INDICATED - SEE MECH DWGS & SPECIFICATIONS FOR INFORMATION
27. PLATSTIC LAMINATE COVERED (PL1) BASE AND UPPER CABINETS - SEE DETAILS ON SHEET A8.11 - COVER ALL EXPOSED EDGES
28. SOLID SURFACE COUNTERTOP, BACKSPLASH AND SIDESPLASHES (SSM1) - SEE DETAILS ON SHEET A8.11

GENERAL NOTE:
SEE FINISH SCHEDULE SHEET A2.41 FOR FINISH TYPES

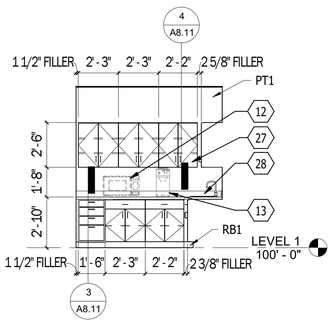
NEW WORK KEYNOTES — SCALE: N.T.S. — REF'D FROM: TS — 6



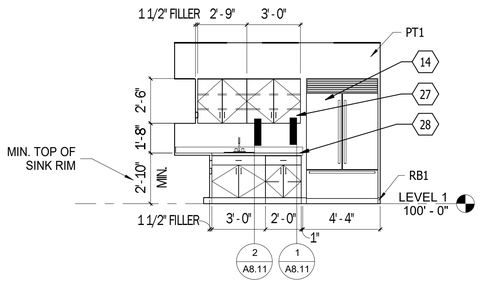
FAMILY TLT 114 ELEVATION — SCALE: 1/4" = 1'-0" — REF'D FROM: A4.11 — 5



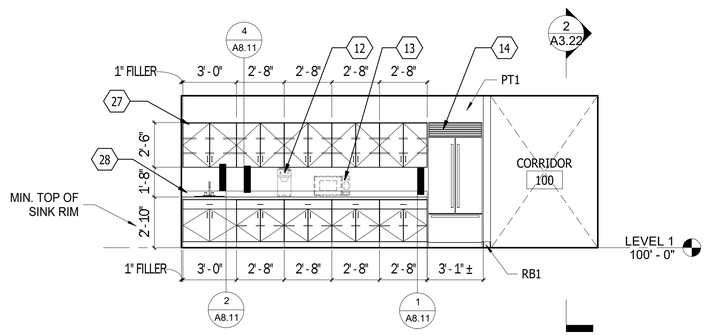
FAMILY TLT 114 ELEVATION — SCALE: 1/4" = 1'-0" — REF'D FROM: A4.11 — 4



KITCHENETTE 113 ELEVATION — SCALE: 1/4" = 1'-0" — REF'D FROM: A2.11 — 3



KITCHENETTE 113 ELEVATION — SCALE: 1/4" = 1'-0" — REF'D FROM: A2.11 — 2



LUNCH / CONF. ROOM 102 ELEVATION — SCALE: 1/4" = 1'-0" — REF'D FROM: A2.11 — 1

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DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A5.12

C:\Users\kjock\Documents\25021-Arch_R23_Service Building_kjock58AOA.rvt

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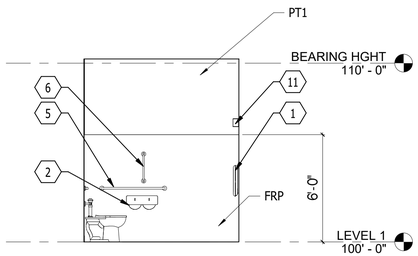
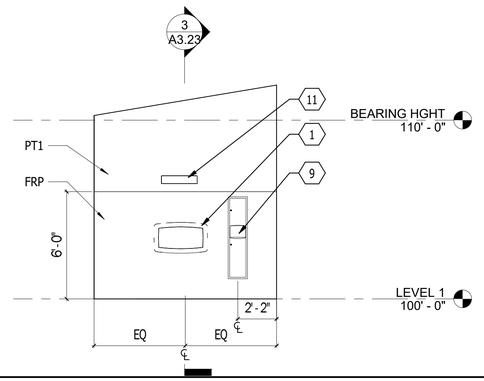
25. PROVIDE SCHULTER EDGE TRIM - SEE SHEET a2.41 FOR TYPE & FINISH/COLOR

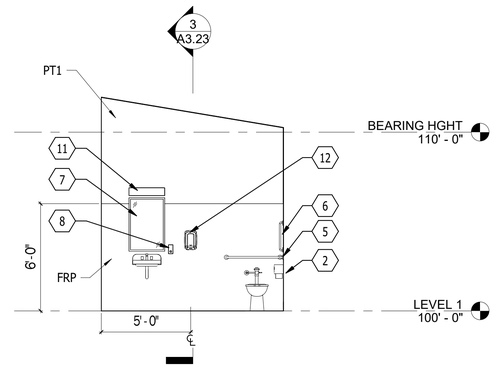
NEW WORK KEYNOTES | SCALE: N.T.S. | REF'D FROM: TS | 7



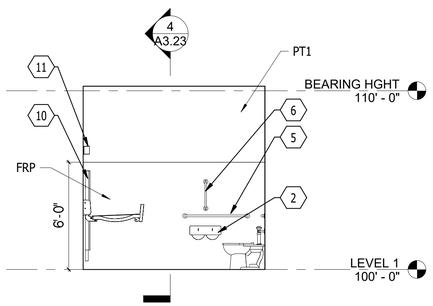
RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 6



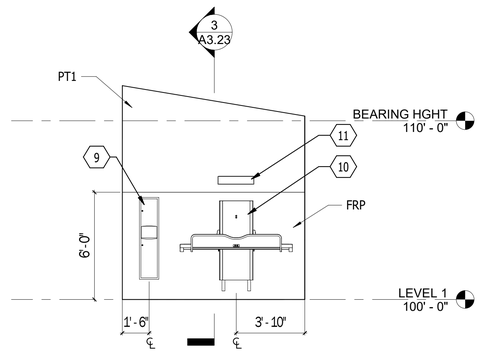
RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 5



RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 4



ADULT CHANGING RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 3



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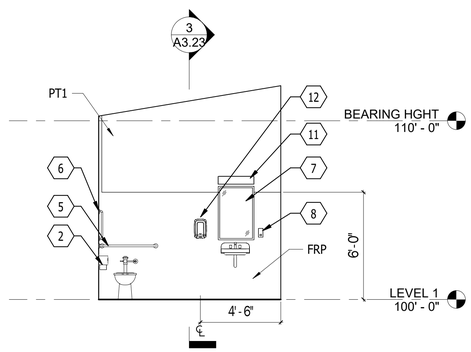


ADULT CHANGING RESTROOM ELEVATION | SCALE: 1/4" = 1'-0" | REF'D FROM: A2.13 | 1

ROCHESTER HILLS MICHIGAN

A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

www.a3c.com

Architects Project No: 25021

SEAL

NOT FOR CONSTRUCTION

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
INTERIOR ELEVATIONS - FAMILY BATHROOMS BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A5.13

C:\Users\kjock\Documents\25021-Arch_R23_Service Building_kjock58MDA.rvt

REFLECTED CEILING PLAN KEYNOTES:

1. GYP. BD. ATTACHED TO UNDERSIDE OF ROOF TRUSSES
2. ALUMINUM VENTED SOFFIT ROOF JOIST
3. METAL DOWNSPOUTS TO METAL GUTTER
4. 20"X30" METAL ACCESS DOOR FOR ATTIC ACCESS

GENERAL REFLECTED CEILING NOTES:

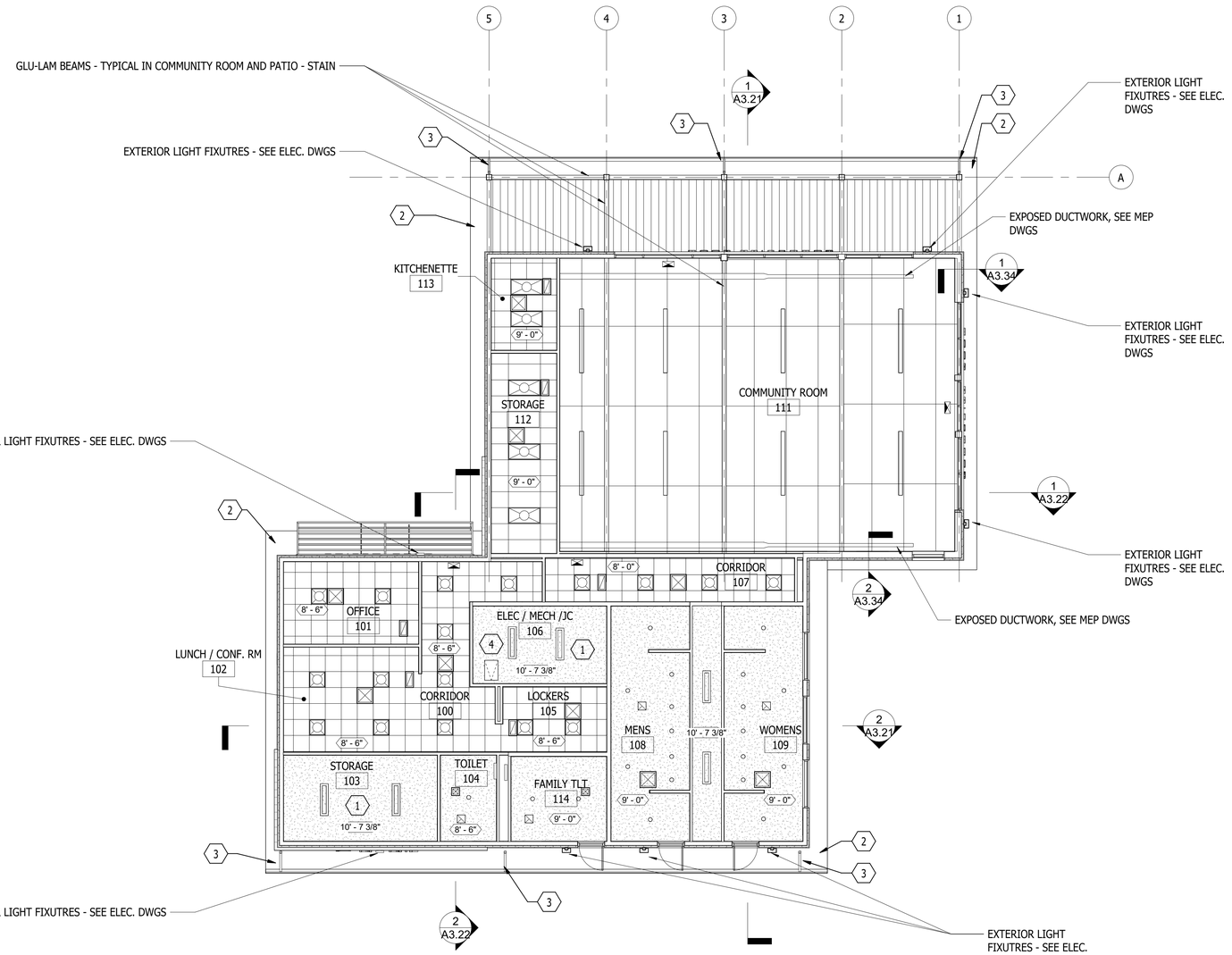
1. COORDINATE NEW AND EXISTING MECHANICAL AND ELECTRICAL COMPONENT QUANTITIES, TYPES, AND SIZES WITH MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. COORDINATE THE EXACT LOCATION OF MECHANICAL AND ELECTRICAL COMPONENTS LOCATED ABOVE OR WITHIN CEILINGS AS INDICATED ON MECHANICAL AND ELECTRICAL DRAWINGS, BUT NOT SHOWN ON THIS PLAN, WITH THE ARCHITECT. GENERALLY, COMPONENTS SHALL BE CENTERED IN CEILING TILES, UNO.

2. WHERE EXISTING CEILING TILE AND GRID REQUIRE COMPLETION DUE TO PARTITION, CEILING DIFFUSER OR LIGHT FIXTURE REMOVAL, RESTORE CEILING WITH NEW TILE AND GRID COMPONENTS TO MATCH EXISTING ADJACENT CEILING AREAS TO REMAIN.

3. WHERE EXISTING FIRE RATED WALLS OR CEILINGS ARE ALTERED OR PENETRATED TO INSTALL NEW CONSTRUCTION, PATCH AND SEAL OPENINGS WITH FIRE RATED CONSTRUCTION TO MAINTAIN INTEGRITY OF EXISTING WALL OR CEILING FIRE RATING.

REFLECTED CEILING PLAN LEGEND:

- NEW SUPPLY DIFFUSER
- NEW RETURN DIFFUSER
- NEW EXHAUST DIFFUSER
- 2x2 CEILING TILE AND GRID
- GWB CEILING
- WOOD PANELS
- WOOD ACOUSTICAL PANEL SYSTEM
- DOWN LIGHT
- 2x4 LIGHT FIXTURE
- 2x2 LIGHT FIXTURE
- SUSPENDED LIGHT FIXTURE
- LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- EXIT LIGHT



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A3C COLLABORATIVE ARCHITECTURE

115 1/2 E. LIBERTY STREET
ANN ARBOR, MI 48104

T: (734) 663 - 1910
F: (866) 732 - 2168

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PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
REFLECTED CEILING PLAN - COMMUNITY BUILDING

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. A6.11

KEYNOTES, NOTES & LEGEND | SCALE: N.T.S | REF'D FROM: | 2

REFLECTED CEILING PLAN | SCALE: 1/8" = 1'-0" | REF'D FROM: A2.21 | 1

C:\Users\kjolof\Documents\25021-Arch_R23_Service Building_kjolof58AQA.rvt

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MICHIGAN

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ANN ARBOR, MI 48104

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F: (866) 732 - 2168

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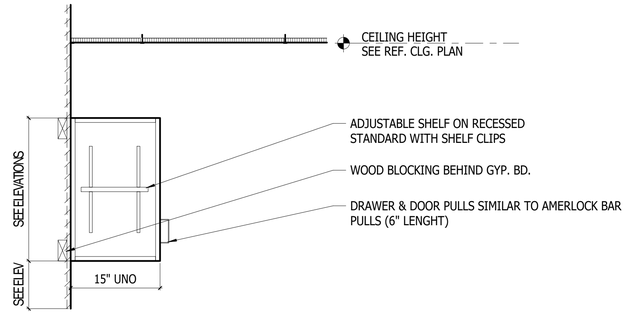
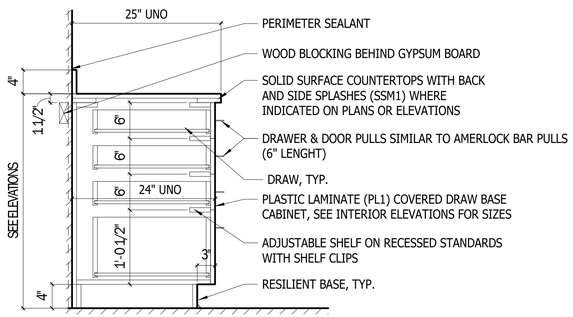
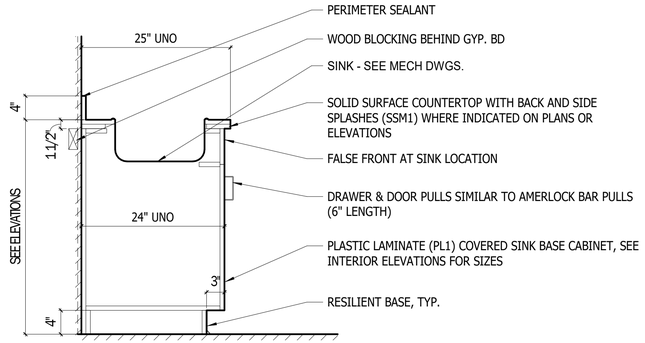


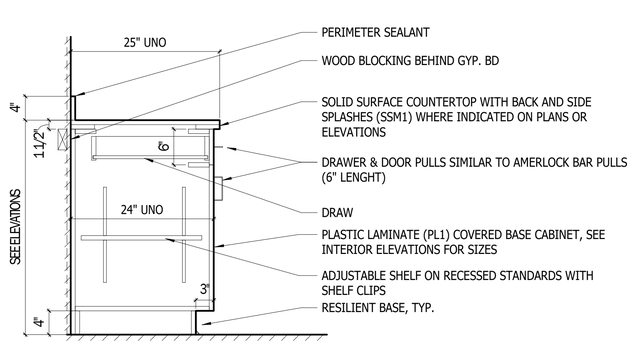
WALL CABINET | SCALE: 1" = 1'-0" | REF'D FROM: A5.12 | 4



BASE CABINET - 4 DRAWERS | SCALE: 1" = 1'-0" | REF'D FROM: A5.12 | 3



SINK BASE CABINET | SCALE: 1" = 1'-0" | REF'D FROM: A5.12 | 2



BASE CABINET WITH DRAW | SCALE: 1" = 1'-0" | REF'D FROM: A5.12 | 1

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
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Section 8
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City of Rochester Hills,
Oakland County, Michigan

Sheet
CABINET / COUNTERTOP DETAILS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: KLJ
DESIGNED BY: XXX
APPROVED BY: FEA
DATE: 02/02/26
SCALE: 1" = 1'-0"

NFE JOB NO. 0557
SHEET NO. A8.11

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PLUMBING ABBREVIATIONS

BFS	BELOW FLOOR SLAB
BWV	BACK WATER VALVE
CB	CATCH BASIN
CI	CAST IRON
CO	CLEAN OUT
CV	CONTROL VALVE
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DN	DOWN
DWH	DOMESTIC WATER HEATER
E.T.C.	ELECTRICAL TRADES CONTRACTOR
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
FD	FLOOR DRAIN
FC	FINAL CONNECTIONS
FF	FINISH FLOOR
FT	FEET
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HEAD (FT)
HP	HORSE POWER
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
LAV	LAVATORY
MAX	MAXIMUM
MIN	MINIMUM
MS	MOP SINK
M.T.C.	MECHANICAL TRADES CONTRACTOR
MTD	MOUNTED
NTS	NOT TO SCALE
P	PUMP
PD	PRESSURE DROP
PVC	POLY-VINYL-CHLORIDE
RI	ROUGH-IN
REQ'D	REQUIRED
SAN	SANITARY
SK	SINK
SQ. FT.	SQUARE FEET
SS	SERVICE SINK
S&W	STOP & WASTE
STR	STRAINER
SV	STACKED VENT
TYP.	TYPICAL
UR	URINAL
VS	VENT STACK
VTR	VENT THRU ROOF
W	WASTE
WB	WET BULB
WC	WATER CLOSET
WH	WALL HYDRANT
WS	WASTE STACK
W&V	WASTE AND VENT
X-CW	EXIST. CW PIPING
	ITEM
	EXISTING

GENERAL PLUMBING NOTES

1. ALL PLUMBING WORK SHALL CONFORM TO MICHIGAN PLUMBING CODE, LATEST APPLICABLE EDITION, AND ALL APPLICABLE LOCAL CODES.
2. INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
3. INSTALL ISOLATION BALL VALVES @ ALL FIXTURE WATER SUPPLY LINES.
4. SITE CONTRACTOR TO RUN UTILITIES TO 5'-0" FROM BUILDING LINE.
5. ALL INVERT ELEVATIONS ARE BASED ON A FINISH FLOOR LEVEL OF 100'-0". ALL INVERTS, STATED OR NOT, NEW OR EXISTING, SHALL BE COORDINATED IN THE FIELD. VERIFY EXISTING INVERTS PRIOR TO STARING WORK.
6. ALL ELEVATIONS SHOWN ARE INVERTS OF PIPING. THE SLEEVES SHALL BE COORDINATED WITH THESE ELEVATIONS.
7. ALL PIPE SIZES SHOWN ARE SERVICE SIZE. SIZE SLEEVES FOR 1" CLEAR SPACE BETWEEN PIPE AND SLEEVE FOR INSTALLATION OF MECHANICAL SEAL.
8. CONTRACTOR TO VERIFY LOCATIONS OF EXISTING UNDERGROUND UTILITIES BEFORE BEGINNING WORK.
9. MECHANICAL SEALS REQUIRED FOR BELOW GRADE WALL PENETRATIONS. ALL WALL AND SLAB PENETRATIONS OF MASONRY OR CONCRETE CONSTRUCTION SHALL BE SLEEVED.
10. ALL FLOOR DRAINS TO BE EQUIPPED WITH CODE APPROVED TRAP SEALS UNLESS OTHERWISE NOTED.
11. 2% SLOPE FOR ALL SANITARY PIPING 2-1/2" OR LESS IN DIAMETER. 1% SLOPE FOR ALL SANITARY PIPING 3" OR MORE IN DIAMETER.
12. PROVIDE SHOCK STOPS FOR EVERY PLUMBING GROUP. PROVIDE SHOCK ABSORBER IN THE DOMESTIC COLD AND HOT WATER PIPING. SHOCK ABSORBERS TO BE LOCATED IN AN ACCESSIBLE LOCATION.
13. PROVIDE AIR ELIMINATION DEVICES FOR EACH PLUMBING SYSTEM.
14. THE CONTRACTOR SHALL FIELD VERIFY THE SIZES, LOCATION, ELEVATIONS, AND DETAILS OF ALL EXISTING CONDITIONS THAT MAY AFFECT THE WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
16. ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
17. DESIGN AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CODES AND REGULATIONS ENFORCED BY LOCAL BUILDING OFFICIALS.
18. IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
19. DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.
20. ANY INFORMATION FOUND ON THE DRAWINGS AND NOT IN THE SPECIFICATIONS, OR FOUND IN SPECIFICATIONS AND NOT IN THE DRAWINGS, SHALL BE CONSTRUED AS TO BE INCLUDED IN BOTH THE SPECIFICATIONS AND THE DRAWINGS. ANY CONFLICT BETWEEN THE PLANS AND THE SPECIFICATIONS WILL BE INTERPRETED BY THE ARCHITECT. IN THE EVENT OF CONFLICT, FOR THE PURPOSE OF BIDDING, THE CONTRACTOR SHALL PRESUME THE MOST EXPENSIVE COMBINATION OF QUALITY AND QUANTITY OF WORK SHALL PREVAIL.
21. PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
22. UNLESS OTHERWISE NOTED, ALL PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON AT EACH PENETRATION OF A FINISHED SURFACE.
23. PLUMBING UTILITY PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR OR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
24. ALL FIXTURES SHALL HAVE SHUTOFF STOP VALVES IN AN ACCESSIBLE LOCATION. PIPING BEYOND THE STOP VALVES AND EXPOSED IN OCCUPIED SPACES SHALL BE CHROME-PLATED. ANY NOTED SHUTOFF VALVES ARE IN ADDITION TO THIS REQUIREMENT.

PLUMBING SYMBOLS LEGEND

PLUMBING PIPING

CW	COLD WATER
CW	COLD WATER BELOW FINISH SLAB
HW	HOT WATER
HW	HOT WATER BELOW FINISH SLAB
HWR	HOT WATER RETURN
HWR	HOT WATER RETURN BELOW FINISH SLAB
G	GAS (NATURAL)
SAN	SANITARY WASTE
SAN	SANITARY WASTE BELOW FINISH SLAB
V	VENT PIPING
V	VENT PIPING BELOW FINISH SLAB

PLUMBING VALVES

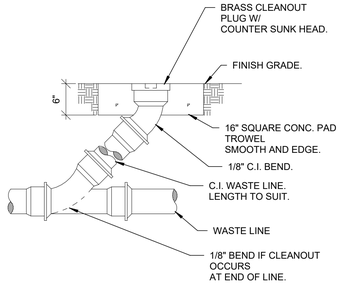
- GATE VALVE
- GAS COCK
- CHECK VALVE
- BALANCE COCK
- CIRCUIT SETTER
- GLOBE VALVE
- GAS PRESSURE REGULATOR

MISCELLANEOUS NOTES

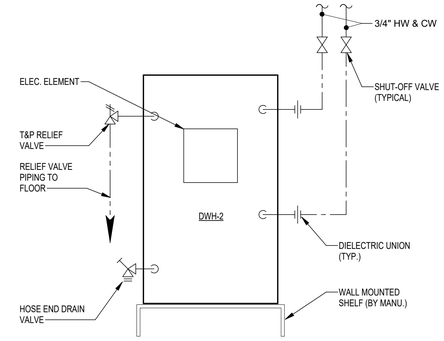
- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- (X) INDICATES PLAN NOTE
- (X) INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
- XX DETAIL NUMBER
- XXXX PAGE LOCATION INDICATES
- DIRECTION OF DETAIL SECTION

PLUMBING EQUIPMENT

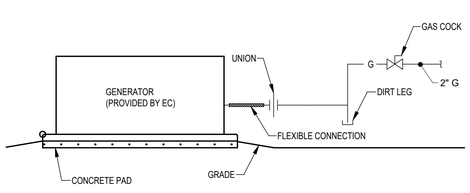
- FLOW DIRECTION
- PIPING DROP
- PIPING RISE
- FLOOR CLEANOUT
- INLINE PIPING DROP
- INLINE PIPING RISE
- PIPING TEE
- PIPING ELBOW
- INLINE CLEANOUT
- PLUMBING TRAP
- THERMOMETER
- CONNECTION
- PUMP
- FLOOR DRAIN & FLOOR SINK
- BACK FLOW PREVENTER
- PIPE CAP
- PIPE BREAK
- (M) WATER METER
- (M) GAS METER



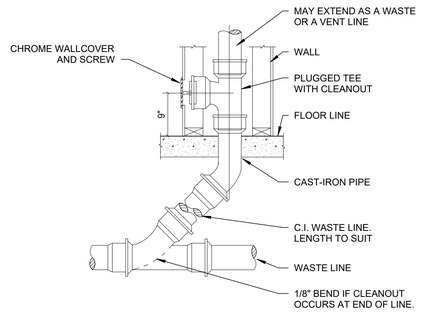
6 CLEAN-OUT DETAIL
NOT TO SCALE



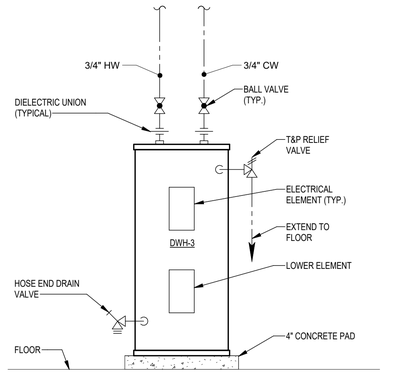
3 SHELF MOUNTED ELECTRIC WATER HEATER DETAIL
NOT TO SCALE



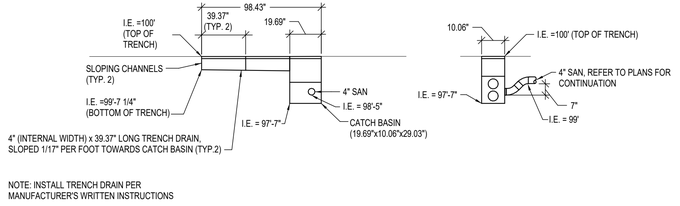
7 GENERATOR GAS PIPING DETAIL
NOT TO SCALE



5 WALL CLEANOUT DETAIL
NOT TO SCALE

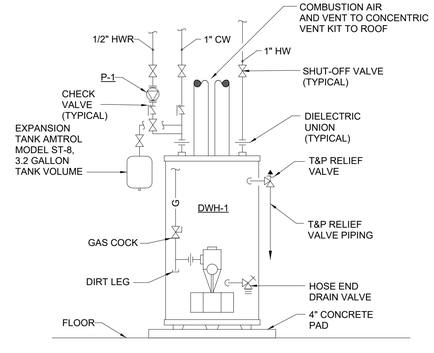


2 ELECTRIC WATER HEATER DETAIL
NOT TO SCALE



NOTE: INSTALL TRENCH DRAIN PER MANUFACTURER'S WRITTEN INSTRUCTIONS

4 TRENCH DRAIN DETAIL
NOT TO SCALE



1 GAS FIRED WATER HEATER DETAIL
NOT TO SCALE

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

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PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
PLUMBING SYMBOLS, NOTES, AND ABBREVIATIONS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: CDW
DESIGNED BY: QAM
APPROVED BY: CAT
DATE: 02/04/2026
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. P1.00

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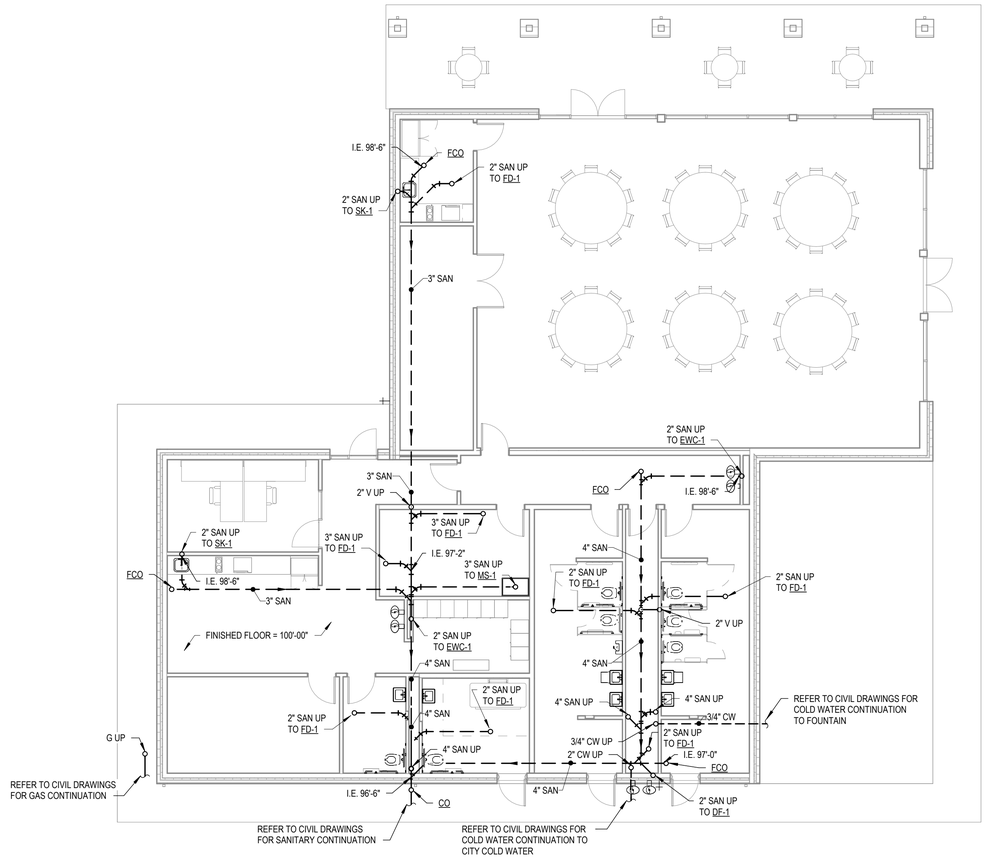

COMMUNITY BUILDING BELOW FLOOR PLAN - PLUMBING NEW

SCALE: 1/8" = 1'-0"

MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

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Sheet
COMMUNITY BUILDING BELOW FLOOR PLAN - PLUMBING NEW

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APPROVED BY: CAT
DATE: 02/04/2026
SCALE: 1/8" = 1'-0"

NFE JOB NO. 0557
SHEET NO. P4.00

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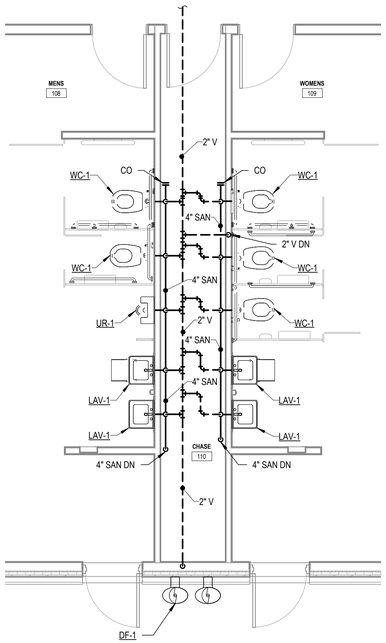
PLUMBING KEY NOTES

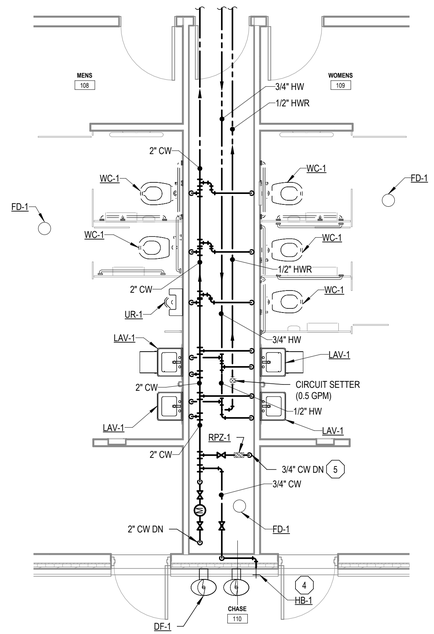
1. INSTALL GAS FIRED WATER HEATER AT LOCATION SHOWN. CONNECT TO HOT WATER, COLD WATER, AND GAS PIPING. VENT THROUGH ROOF WITH CONCENTRIC VENT KIT.
2. INSTALL WALL HYDRANT (WH-1) UNDER LAVATORY AT LOCATION SHOWN. COLD WATER DROP TO LAVATORY SHALL BE 3/4".
3. INSTALL REFRIGERATOR OUTLET BOX FOR COLD WATER CONNECTION TO REFRIGERATOR ICE MAKER.
4. INSTALL HOSE BIBB BELOW DRINKING FOUNTAIN AT LOCATION SHOWN. HOSE BIBB SHALL BE USED TO WINTERIZE THE DRINKING FOUNTAIN WHEN THE OUTSIDE AIR TEMPERATURE IS NEARING FREEZING.
5. PROVIDE ENGINEER WITH FOUNTAIN SPECIFICATIONS FOR REVIEW PRIOR TO INSTALLING DOMESTER WATER SUPPLY PIPING TO THE FOUNTAIN.

GAS LOAD SUMMARY

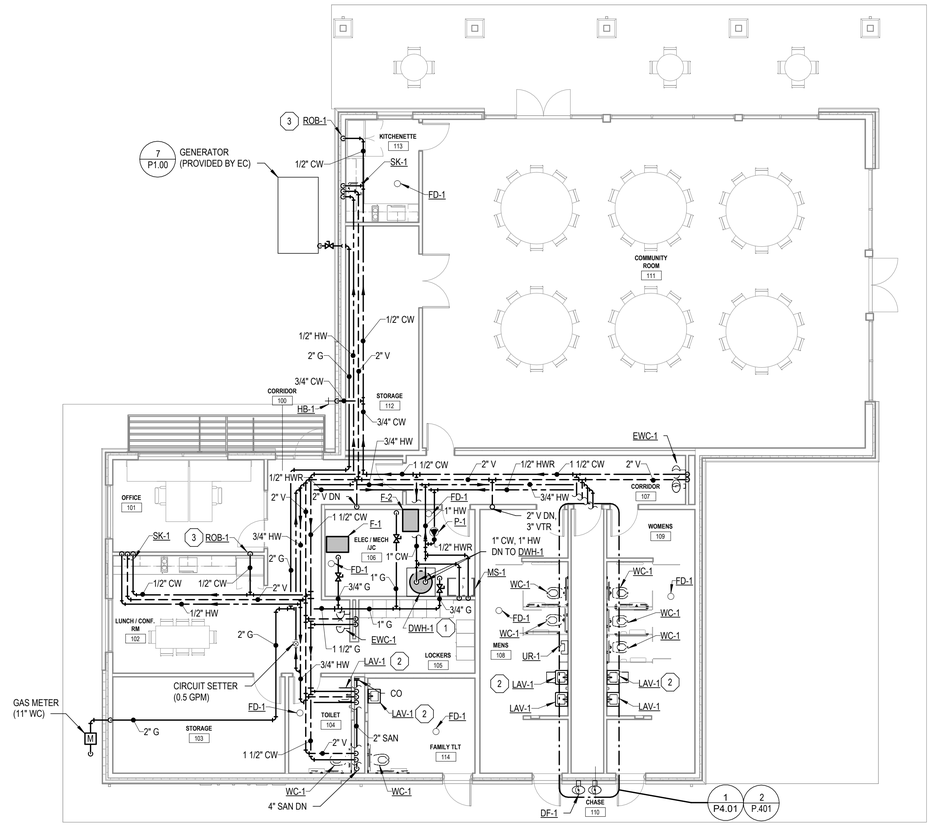
DWH-1 =	40 MBH @ 4-11 IN. WC.
F-1 =	60 MBH @ 4.5-14 IN. WC.
F-2 =	100 MBH @ 4.5-14 IN. WC.
GENERATOR =	512 MBH @ 4.5-14 IN. WC.
GAS LOAD TOTAL =	712 MBH @ 11 IN. WC.



1 P4.01 ENLARGED FLOOR PLAN - SANITARY AND VENT
SCALE = 1/4" = 1'-0"



2 P4.01 ENLARGED FLOOR PLAN - DOMESTIC WATER
SCALE = 1/4" = 1'-0"



COMMUNITY BUILDING FLOOR PLAN - PLUMBING NEW
SCALE: 1/8" = 1'-0"

MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
COMMUNITY BUILDING
FLOOR PLAN - PLUMBING
NEW

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APPROVED BY: CAT
DATE: 02/04/2026
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. P4.01

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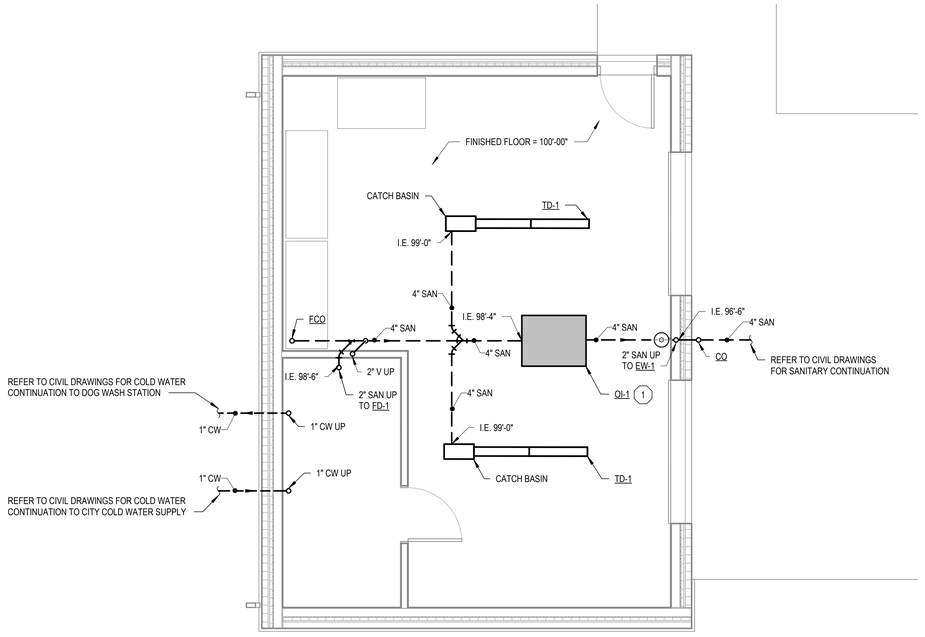

PLUMBING KEY NOTES

(1) INSTALL OIL INTERCEPTOR BELOW FINISH FLOOR AT LOCATION SHOWN. CONNECT TO SANITARY PIPING. INSTALL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

MAINTENANCE BUILDING BELOW FLOOR PLAN - PLUMBING NEW

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

ROCHESTER HILLS MICHIGAN

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LANSING, MI 48906
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MAINTENANCE BUILDING BELOW FLOOR PLAN - PLUMBING NEW

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NFE JOB NO. 0557
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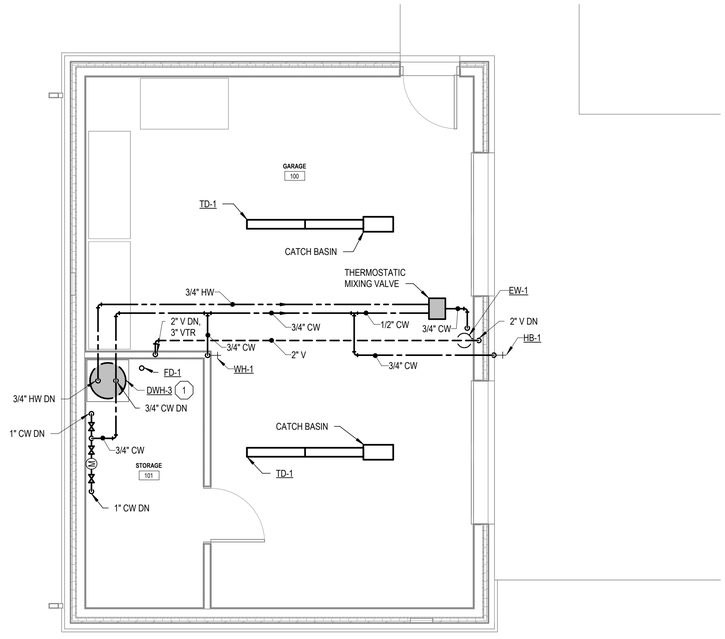

PLUMBING KEY NOTES

1. INSTALL ELECTRIC WATER HEATER ON 4" CONCRETE PAD AT LOCATION SHOWN. CONNECT TO HOT WATER AND COLD WATER PIPING.

MAINTENANCE BUILDING FLOOR PLAN - PLUMBING NEW
SCALE: 1/4" = 1'-0"

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MICHIGAN

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Rochester Hills, MI 48309

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elwertk@rochesterhill.org

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MAINTENANCE BUILDING FLOOR PLAN - PLUMBING NEW

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SHEET NO. P4.03

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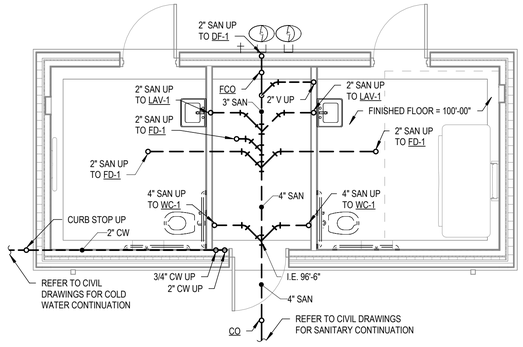

FAMILY BATHROOMS BUILDING BELOW FLOOR PLAN - PLUMBING NEW

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

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PHONE: 517.487.2511
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FAMILY BATHROOMS BUILDING BELOW FLOOR PLAN - PLUMBING NEW

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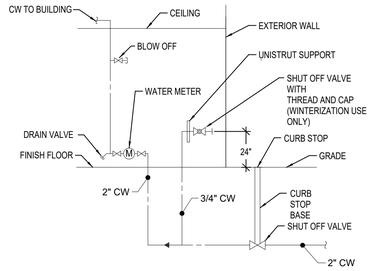
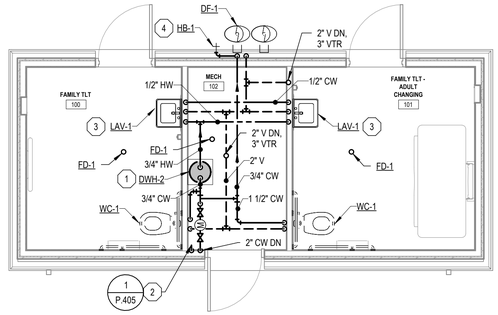


NOTES:
1. CITY TO WINTERIZE THE BUILDING WHEN OUTSIDE AIR TEMPERATURES ARE FORECASTED BELOW FREEZING. COORDINATE WITH CITY OF ROCHESTER FOR SHUT DOWN OF WATER SERVICE AND WATER METER REMOVAL.
2. DOMESTIC COLD WATER PIPING PRIOR TO THE CURB STOP SHALL BE AT A MINIMUM BURY DEPTH OF 42" BELOW GRADE.

1 DOMESTIC WATER WINTERIZATION DETAIL
NOT TO SCALE



FAMILY BATHROOMS BUILDING FLOOR PLAN - PLUMBING NEW
SCALE: 1/4" = 1'-0"

GENERAL PLUMBING NOTES

1. SLOPE DOMESTIC COLD WATER PIPING AND DOMESTIC HOT WATER PIPING IN THE DIRECTION INDICATED WITH FLOW ARROWS FOR WINTER DRAIN DOWN.
2. INSTALL ADDITIONAL SHUTOFF VALVES AND QUICK CONNECTS AT HIGH POINTS OF PIPING AND INSTALL HOSE DRAIN END CONNECTIONS WITH SHUT OFF VALVES AT LOW POINTS AS REQUIRED FOR PROPER WINTERIZATION OF PIPING.

PLUMBING KEY NOTES

1. INSTALL ELECTRIC WATER HEATER ON WALL MOUNTED SHELF AT LOCATION SHOWN. CONNECT TO HOT WATER AND COLD WATER PIPING.
2. INSTALL WINTERIZATION VALVE ASSEMBLY AT LOCATION SHOWN. REFER TO DETAIL 1 ON THIS SHEET.
3. INSTALL WALL HYDRANT UNDER LAVATORY AT LOCATION SHOWN.
4. INSTALL HOSE BIBB BELOW DRINKING FOUNTAIN AT LOCATION SHOWN. HOSE BIBB SHALL BE USED TO WINTERIZE THE DRINKING FOUNTAIN WHEN THE OUTSIDE AIR TEMPERATURE IS NEARING FREEZING.

ROCHESTER HILLS MICHIGAN

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SHEET NO. P4.05

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OIL INTERCEPTOR SCHEDULE

TAG	MODEL	OIL HOLDING CAPACITY (GAL)	GPM	INLET/ OUTLET	DIMENSIONS			COMMENTS
					WIDTH	DEPTH	HEIGHT	
OI-1	Z1188	110	100	4"	33-5/8"	42-3/4"	27"	1,2,3

NOTES:
1. BASED ON: ZURN
2. INSTALL BELOW FINISH FLOOR
3. PROVIDE EXTENSIONS AS NEEDED FOR ACCESS COVERS TO BE FLUSH WITH FINISH FLOOR

ELECTRIC WATER HEATER SCHEDULE

TAG	MODEL	LOCATION	GALLON CAPACITY	GPH @ 90°F RISE	ELECTRICAL			HOT WATER TEMP.	COMMENTS
					VOLTAGE	PHASE	WATTS		
DWH-2	JER-06 SCD	MECH 102	6	8	208	1	1650	120 F	1,2,4
DWH-3	JER-30 DAK	STORAGE 101	30	21	208	1	1650	120 F	1,3,4

NOTES:
1. BASED ON: LOCHINVAR
2. WALL MOUNTED SHELF BY MANUFACTURER
3. INSTALL ON 4" CONCRETE PAD
4. DISCONNECT BY EC

GAS FIRED WATER HEATER SCHEDULE

TAG	MODEL	LOCATION	GALLON CAPACITY	INPUT MBH	GPH @ 100°F RISE	VENT SIZE	COMBUSTION AIR SIZE	HOT WATER TEMP.	COMMENTS
DWH-1	PRN040	ELEC / MECH / JC 106	38	40	45	3"	3"	120 F	1,2,3,4

NOTES:
1. BASED ON: LOCHINVAR
2. INSTALL ON 4" CONCRETE PAD
3. CONCENTRIC VENT KIT
4. EC TO PROVIDE 120V/1PH OUTLET NEAR WATER HEATER FOR VENT

CIRCULATING PUMP SCHEDULE

TAG	MODEL	LOCATION	SYSTEM	FLUID	GPM	HEAD (FT)	TEMP (°F)	TYPE	ELECTRICAL			COMMENTS
									FLA	VOLTS	PHASE	
P-1	UPS 15-35 SFC	ELEC / MECH / JC 106	DOM-HW	HWR	1.0	10	120	INLINE	0.95	120	1	1,2,3,4

NOTES:
1. BASED ON: GRUNDFOS
2. PROVIDE AQUASTAT
3. BRONZE BODY
4. DISCONNECT BY EC

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	BASIS OF DESIGN		MIN ROUGH-IN				FAUCET TYPE	FIXTURE SIZE	ACCESSORIES & COMMENTS
		MANUFACTURER	MODEL	CW	HW	SAN	VENT			
WC-1	WATER CLOSET WALL MTD (B.F.)	ZURN	Z5615-BWL	1"	-	4"	2"	MANUAL FLUSH VALVE. BASED ON SLOAN: 111-1.6	-	17" RIM HEIGHT, PROVIDE HANDLE ON OPPOSITE SIDE OF NEAREST WALL FOR ADA COMPLIANCE, CARRIER
UR-1	WALL HUNG URINAL (B.F.)	ZURN	Z5755-U	3/4"	-	2"	2"	MANUAL FLUSH VALVE. BASED ON ZURN: Z6003PL-ULF	-	PROVIDE Z1222 URINAL CARRIER
LAV-1	WALL HUNG LAVATORY (B.F.)	ZURN	Z5634.514.3.35	1/2"	1/2"	2"	2"	WALL MOUNTED SINGLE LEVER FAUCET.	20"x18"	LAVATORY CARRIER, UNDERSINK TWV - STD. ASSE 1070, ADA COMPLIANT
SK-1	STAINLESS STEEL SINK (B.F.)	ELKAY	LRAD252265	1/2"	1/2"	2"	2"	SINGLE HANDLE GOOSENECK FAUCET. BASED ON ELKAY: LK6000CR	20"x18"	STAINLESS STEEL ASSE 1070 THERMOSTATIC VALVE, 18 GAUGE TYPE 304 STAINLESS STEEL BOWL, 1-1/4" P-TRAP, ANGLE STOPS, CHROME PLATED SUPPLIES, SINGLE COMPARTMENT
MS-1	MOP SINK	ZURN	Z1996-36	1/2"	1/2"	3"	-	BASED ON ZURN: Z843MI-RC	36" x 24" x 10"	HOSE AND MOP RACK, TWV-STD, ASSE 1070
DF-1	DRINKING FOUNTAIN WALL HUNG BI-LEVEL	ELKAY	EHWM217C	1/2"	-	2"	2"	-	-	IN-WALL CARRIER, NON-FILTERED, CANE-DETECTION DEVICE, ADA COMPLIANT
EWC-1	ELECTRIC WATER COOLER WALL HUNG BI-LEVEL (B.F.)	ELKAY	LZSTL8WSSP	1/2"	-	2"	2"	-	-	WATER COOLER CARRIER, BOTTLE FILLER, SENSOR ACTIVATED
TD-1	TRENCH DRAIN	ACO	K100	-	-	4"	-	-	4" (INTERNAL WIDTH) x 98.43" (INCLUDES CATCH BASIN LENGTH)	CONSISTS OF (2) 39.37" SECTIONS AND (1) 901G IN-LINE CATCH BASIN. GRATE BASED ON ACO 494D BLACK PLASTIC LONGITUDINAL SLOTTED GRATE.
FD-1	FLOOR DRAIN	WADE	1100STD	-	-	-	-	-	-	SEE PLAN FOR SANITARY SIZE, ASSE 1072 TRAP SEAL
HB-1	HOSE BIBB	WOODFORD	B65	3/4"	-	-	-	-	-	AUTO DRAINING, HOSE CONNECTION, VACUUM BREAKER, LOCKABLE, FREEZE PROOF
WH-1	WALL HYDRANT	ZURN	Z1341XL	3/4"	-	-	-	-	-	AUTO DRAINING, HOSE CONNECTION, VACUUM BREAKER, LOCKABLE
EW-1	EMERGENCY EYE WASH	HAWS	7260BT-7270BT	3/4"	3/4"	2"	2"	-	-	PROVIDE HAWS 9201EW - ASSE 1071 MIXING VALVE
ROB-1	REFRIGERATOR OUTLET BOX	SIOUX CHIEF	696	1/2"	-	-	-	-	-	SIOUX CHIEF 696 SERIES OXBOX OUTLET BOX
RPZ-1	REDUCED PRESSURE BACKFLOW PREVENTER	ZURN	375XLS	1"	-	-	-	-	-	PROVIDE STRAINER AND AIR GAP, ASSE 1013

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Sheet
PLUMBING SCHEDULES

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MECHANICAL ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
AC	AIR COMPRESSOR
A.T.C.	ARCHITECTURAL TRADES CONTRACTOR
B.A.S.	BUILDING AUTOMATION SYSTEM
CAF	COMBUSTION AIR FAN
CC	COOLING COIL
CFM	CUBIC FEET PER MINUTE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
DB	DRY BULB
DIA	DIAMETER
DN	DOWN
DPR	DAMPER
EAT	ENTERING AIR TEMPERATURE
EF	EXHAUST FAN
EG	EXHAUST GRILLE
E.T.C.	ELECTRICAL TRADES CONTRACTOR
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXIST	EXISTING
F	FURNACE
FF	FINISH FLOOR
FPM	FEET PER MINUTE
FT	FEET
FTR	FINNED TUBE RADIATION
GAL	GALLON
GFRH	GAS FIRED RADIANT HEATER
GR	GRILLE
H	HUMIDIFIER
HC	HEATING COIL
HD	HEAD (FT)
HP	HORSE POWER
HHP	HORIZONTAL HEAT PUMP
HTG	HEATING
HVAC	HEATING, VENTILATION, & AIR CONDITIONING
HX	HEAT EXCHANGER
ID	INSIDE DIAMETER
I.E.	INVERT ELEVATION
LAT	LEAVING AIR TEMPERATURE
LH	LATENT HEAT (MBH)
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	BTU PER HOUR (THOUSAND)
MIN	MINIMUM
M.T.C.	MECHANICAL TRADES CONTRACTOR
N.C.	NOISE CRITERIA
NTS	NOT TO SCALE
P	PUMP
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
REQ'D	REQUIRED
RG	RETURN GRILLE
RLH	RELIEF HOOD
RTU	ROOF TOP UNIT
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SH	SENSIBLE HEAT (MBH)
SQ. FT.	SQUARE FEET
TC	TOTAL COOLING (MBH)
T&P	TEMPERATURE & PRESSURE RELIEF VALVE
TYP	TYPICAL
UH	UNIT HEATER
X-SA	EXISTING ITEM (EXISTING SUPPLY AIR DUCT)
	ITEM
	EXISTING

GENERAL HVAC NOTES

1. ALL WORK SHALL CONFORM TO MICHIGAN MECHANICAL CODE, LATEST APPLICABLE EDITION.
2. LOCATE EXHAUST OUTLETS OF VENTILATION SYSTEMS, COMBUSTION EQUIPMENT STACKS, & PLUMBING VENTS AT LEAST 10 FEET FROM OUTDOOR AIR INTAKES.
3. INSTALL ALL EQUIPMENT, MATERIALS, AND ACCESSORIES PER MANUFACTURERS WRITTEN INSTRUCTIONS.
4. PROVIDE BALANCE DAMPERS FOR EACH DIFFUSER/GRILLE AND BRANCH DUCT.
5. MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICES SHALL NOT EXCEED 6'-0" IN LENGTH WITH A MAXIMUM OF ONE 90° TURN AND SHALL BE INSULATED. ELBOWS SHALL BE MIN. 1.5 RADIUS. CONNECTIONS TO TERMINAL DEVICES SHALL BE BANDED AND TAPED.
6. COORDINATE LOUVER SIZES WITH ARCHITECTURAL TRADES PRIOR TO CONSTRUCTION.
7. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER DISCIPLINES PRIOR TO CONSTRUCTION TO AVOID CONFLICTS.
8. OFFSET PIPING TO ACCOMMODATE LARGE DUCTWORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ALL EQUIPMENT AND MATERIALS IN A "NEW" CONDITION DURING CONSTRUCTION.
10. ALL WORK SHALL BE PERFORMED BY LICENSED CONTRACTORS AND SUBCONTRACTORS AS REQUIRED BY LAW.
11. CONTRACTOR SHALL USE LOW PRESSURE LOSS DUCT FITTINGS IN ACCORDANCE WITH SMACNA. (WYES, RADIUSED OR VANED TEES, ETC.) DUCTWORK SHALL BE GALVANIZED SHEET METAL, MIN. 26 GA.
12. ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSION. INCREASE DUCT SIZE FOR LINING.
13. CONSTRUCT ALL TRANSFER DUCTS W/ 1-INCH THICK LINING.
14. ALL EXPOSED ROUND DUCTWORK SHALL BE SPIRAL.
15. ALL EXTERNALLY ISOLATED HVAC EQUIPMENT SHALL HAVE FLEXIBLE DUCT CONNECTORS.
16. ALL CONDENSATE DRAIN PIPING SET @ MIN. 1% SLOPE.
17. ALL CONDENSATE DRAIN PIPING TO TERMINATE TO DRAIN V/A AIR GAP.
18. IF THERE IS CONFLICTING INFORMATION IN THE PLANS OR SPECIFICATIONS THE MORE STRINGENT AND GREATER COST ITEM SHALL BE USED.
19. DRAWINGS INDICATE REQUIRED SIZES AND POINTS OF TERMINATION OF PIPES AND DUCTS AND SUGGESTED ROUTES. IT IS NOT INTENTION OF DRAWINGS TO INDICATE ALL NECESSARY OFFSETS. INSTALL WORK IN MANNER TO CONFORM TO STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. DO NOT SCALE FROM DRAWINGS.
20. ANY INFORMATION FOUND ON THE DRAWINGS AND NOT IN THE SPECIFICATIONS, OR FOUND IN SPECIFICATIONS AND NOT IN THE DRAWINGS, SHALL BE CONSTRUED AS TO BE INCLUDED IN BOTH THE SPECIFICATIONS AND THE DRAWINGS. ANY CONFLICT BETWEEN THE PLANS AND THE SPECIFICATIONS WILL BE INTERPRETED BY THE ARCHITECT. IN THE EVENT OF CONFLICT, FOR THE PURPOSE OF BIDDING, THE CONTRACTOR SHALL PRESUME THE MOST EXPENSIVE COMBINATION OF QUALITY AND QUANTITY OF WORK SHALL PREVAIL.
21. ABUSE OF THE REQUEST FOR INFORMATION (RFI) PROCESS WILL NOT BE TOLERATED. RFI'S REQUESTING INFORMATION ALREADY CONTAINED IN THE DESIGN DOCUMENTS, INVOLVING MEANS AND METHODS OF CONSTRUCTION, COORDINATION OF WORK BETWEEN TRADES, OR ITEMS NOT PREVIOUSLY AND THOROUGHLY INVESTIGATED AND RESEARCHED BY THE GENERAL CONTRACTOR WILL BE RETURNED UNANSWERED TO THE GENERAL CONTRACTOR. ALLOW TWO WEEKS FOR RFI RESPONSES FROM THE DESIGN TEAM.
22. PERFORM WORK IN ACCORDANCE WITH THE LATEST EDITIONS, REVISIONS, AMENDMENTS, OR SUPPLEMENTS OF APPLICABLE STATUTES, ORDINANCES, CODES OR REGULATIONS OF FEDERAL, STATE, AND LOCAL AUTHORITIES HAVING JURISDICTION IN EFFECT ON THE DATE BIDS ARE RECEIVED.
23. WHERE APPROVED STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UNDERWRITERS, LABORATORIES, AMERICAN CODES, ASA, ASHRAE, ARI, NEC, STATE FIRE INSURANCE REGULATION BODY, NFPA OR OTHERS, THESE STANDARDS SHALL BE FOLLOWED WHETHER OR NOT INDICATED ON THE DRAWING AND SPECIFICATIONS.
24. DUCTWORK SHALL BE ACOUSTICALLY LINED WITHIN 10 FT OF THE INTAKE AND/OR DISCHARGE OF A FAN.
25. UNDERGROUND GAS SERVICE BY UTILITY COMPANY, REFER TO CIVIL DRAWINGS. COORDINATE SERVICE, METER, ETC. LOCATIONS WITH UTILITY COMPANY.
26. DUCT/PIPING LAYOUT IS SCHEMATIC. EXACT LOCATION OF DUCT/PIPING AND EQUIPMENT SHALL BE COORDINATED WITH BUILDING STRUCTURE, EQUIPMENT FURNISHED, ARCHITECTURAL DRAWINGS, AND ALL OTHER TRADES PRIOR TO INSTALLATION. ANY CONTRACTOR INSTALLING WORK WITHOUT PRIOR COORDINATION SHALL RELOCATE HIS WORK AT HIS EXPENSE TO ALLOW PROPER INSTALLATION OF ANY AND ALL TRADES WORK.
27. UNLESS OTHERWISE NOTED, ALL DUCT/PIPING SHALL BE CONCEALED WHEREVER POSSIBLE. PROVIDE CHROME ESCUTCHEON OR ALUMINUM DUCT COLLAR AT EACH PENETRATION OF A FINISHED SURFACE.
28. DUCT/PIPING SHALL NOT BE RUN ABOVE ELECTRICAL GEAR IN THE SERVICE SPACE REQUIRED BY THE NATIONAL ELECTRICAL CODE.
29. PROVIDE TRAP FOR CONDENSATION DRAIN LINES.
30. PROVIDE VIBRATION ISOLATION AT EACH CONNECTION TO A MOTORIZED PIECE OF EQUIPMENT BY THE HVAC CONTRACTOR.
31. MOUNT THERMOSTAT/SENSORS AT 48" AFF UNLESS NOTED OTHERWISE.
32. THE HVAC CONTRACTOR SHALL CLOSELY COORDINATE AIR DEVICE AND DUCTWORK LOCATIONS WITH REFLECTED CEILING AND STRUCTURAL PLANS.

MECHANICAL SYMBOLS LEGEND

HVAC DUCTWORK SYMBOLS

- SUPPLY AIR DUCT RISER
- RETURN AIR DUCT RISER
- OUTSIDE AIR DUCT RISER (AS NOTED)
- EXHAUST AIR DUCT
- INSULATED DUCTWORK (AS NOTED)
- SUPPLY AIR DIFFUSER (SQUARE)
- SUPPLY AIR DIFFUSER (INLINE)
- TURNING VANES
- SURFACE MTD. GRILLE
- SUPPLY AIR DIFFUSER (ROUND)
- 90° TEE W/45° APPROACH
- CONICAL TAKE-OFF
- CONICAL TAKE-OFF W/ DAMPER
- BALANCE DAMPER
- RETURN AIR DUCT BOOT
- ECCENTRIC REDUCER
- CONCENTRIC REDUCER
- CEILING EXHAUST FAN

HVAC DUCTWORK & DIFFUSER TAGS

SD-1	250
8"ø	---

TAG	CFM
NECK SIZE	REMARKS

MISCELLANEOUS NOTES

- POINT OF CONNECTION BETWEEN NEW AND EXISTING
- POINT OF EXISTING TO REMAIN AND EXISTING TO BE REMOVED
- (X) INDICATES PLAN NOTE
- (X) INDICATES DEMOLITION NOTE
- DETAIL BUBBLE
- XX DETAIL NUMBER
- XXXX PAGE LOCATION INDICATES
- (XX) DIRECTION OF DETAIL SECTION

HVAC PIPING

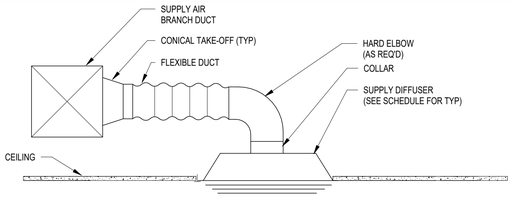
- CD CONDENSATE DRAIN
- DX DIRECT EXPANSION

TEMPERATURE CONTROL SYMBOLS

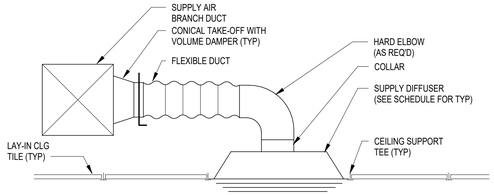
- (T) THERMOSTAT
- (P) PRESSURE GAUGE
- (M) DAMPER (ELECTRIC OPERATION)
- [M] DAMPER (PNEUMATIC OPERATION)
- DAMPER BLADES

HVAC DUCTWORK

- SA SUPPLY AIR DUCT
- RA RETURN AIR DUCT
- OA OUTSIDE AIR DUCT
- EA EXHAUST AIR DUCT

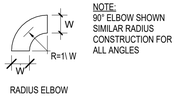


4 HARD CEILING DIFFUSER DETAIL
NOT TO SCALE



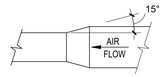
3 LAY-IN DIFFUSER DETAIL
NOT TO SCALE

ELBOW

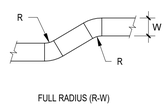


NOTE:
90° ELBOW SHOWN SIMILAR RADIUS CONSTRUCTION FOR ALL ANGLES

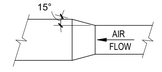
TRANSITION - DIVERGING FLOW



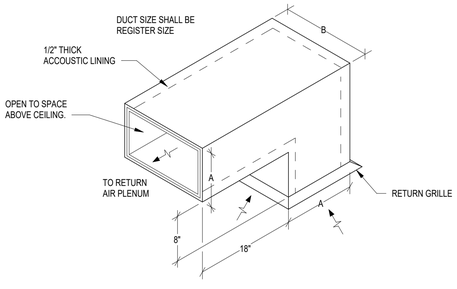
OFFSET



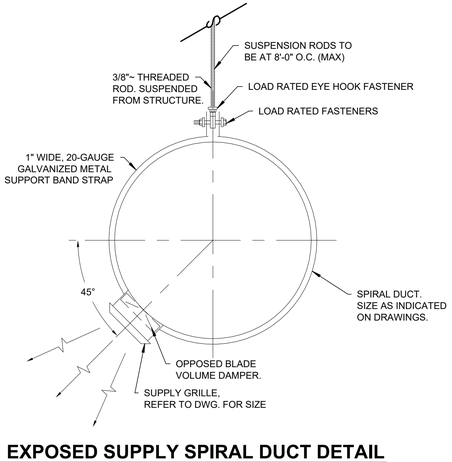
TRANSITION - CONTRACTION FLOW



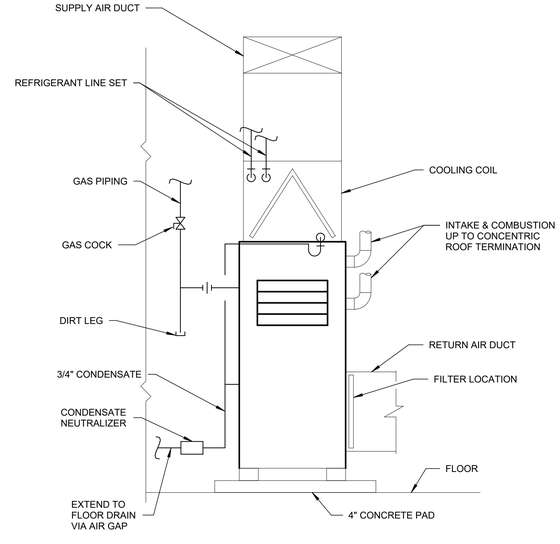
2 RECTANGULAR TRANSITIONS, OFFSETS, AND ELBOWS
NOT TO SCALE



6 RETURN BOOT DETAIL
NOT TO SCALE



5 EXPOSED SUPPLY SPIRAL DUCT DETAIL
NOT TO SCALE



1 FURNACE DETAIL
NOT TO SCALE

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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Sheet
MECHANICAL SYMBOLS, NOTES, AND ABBREVIATIONS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

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APPROVED BY: CAT
DATE: 02/04/2026
SCALE: As indicated

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SHEET NO. M1.00

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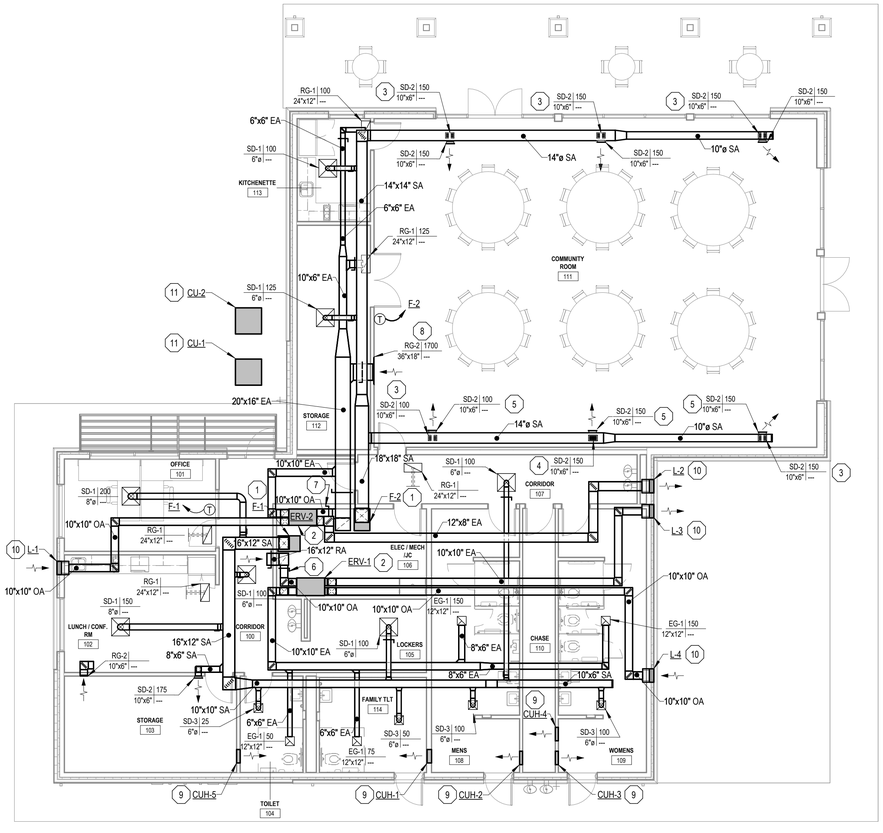

COMMUNITY BUILDING FLOOR PLAN - MECHANICAL NEW

SCALE: 1/8" = 1'-0"

MECHANICAL KEY NOTES

1. INSTALL FURNACE AT LOCATION SHOWN. LINE THE FIRST 10' OF SUPPLY AND RETURN DUCTWORK. ROUTE DX PIPING TO ASSOCIATED CONDENSING UNIT. VENT THROUGH ROOF WITH CONCENTRIC VENT. REFER TO SHEET M6.00 FOR VENT, CONDENSATE, AND DX PIPING ROUTES.
2. INSTALL ENERGY RECOVERY VENTILATOR ON WALL AT LOCATION SHOWN. OUTSIDE AIR AND EXHAUST AIR DUCTWORK SHALL BE INSULATED FROM THE ENERGY RECOVERY UNIT TO THE ASSOCIATED LOUVERS AND ROUTED THROUGH THE ATTIC. INSTALL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
3. INSTALL SUPPLY DIFFUSER ON THE BOTTOM OF EXPOSED DUCTWORK.
4. INSTALL SUPPLY DIFFUSER ON THE TOP OF EXPOSED DUCTWORK.
5. INSTALL SUPPLY DIFFUSER ON A 45° ANGLE ON SIDE OF EXPOSED DUCTWORK.
6. BALANCE OUTSIDE AIR DAMPER TO 425 CFM.
7. BALANCE OUTSIDE AIR DAMPER TO 450 CFM.
8. INSTALL TOP OF RETURN GRILLE 15' AFF ON WALL AT LOCATION SHOWN.
9. INSTALL BOTTOM OF CABINET UNIT HEATER 6" AFF AT LOCATION SHOWN.
10. INSTALL TOP OF LOUVER 13'-6" AFF AT LOCATION SHOWN. COORDINATE HEIGHT WITH GENERAL TRADES CONTRACTOR PRIOR TO INSTALLATION.
11. INSTALL CONDENSING UNIT ON 4" CONCRETE PAD AT LOCATION SHOWN. CONCRETE PAD SHALL EXTEND 4" BEYOND THE EQUIPMENT FOOTPRINT ON ALL SIDES.

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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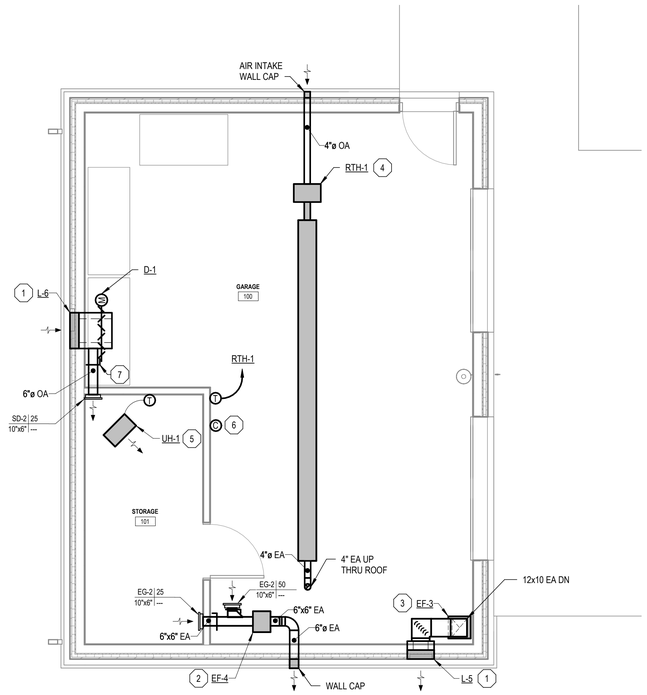

MAINTENANCE BUILDING FLOOR PLAN - MECHANICAL NEW

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

MECHANICAL KEY NOTES

1. INSTALL TOP OF LOUVER 9'-0" AFF AT LOCATION SHOWN. COORDINATE HEIGHT WITH GENERAL TRADES CONTRACTOR PRIOR TO INSTALLATION.
2. INSTALL INLINE EXHAUST FAN AND ASSOCIATED EXHAUST DUCTWORK AT LOCATION SHOWN. SUSPEND FROM CEILING ABOVE.
3. INSTALL INLINE EXHAUST FAN AT LOCATION SHOWN. EXHAUST DUCT SHALL EXTEND AND CONNECT TO ASSOCIATED LOUVER AND EXTEND DOWN TO 12" AFF.
4. INSTALL RADIANT TUBE HEATER AT LOCATION SHOWN. SUSPEND FROM CEILING ABOVE. INSTALL PER THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. INSTALL ELECTRIC UNIT HEATER AT LOCATION SHOWN. SUSPEND FROM CEILING ABOVE.
6. PROVIDE CARBON MONOXIDE/NITROGEN DIOXIDE GAS DETECTION SYSTEM TO ALARM VIA VISION AND AUDIO. NUMBER AND LOCATION OF SENSORS SHALL BE INSTALLED PER MANUFACTURERS INSTALLATION INSTRUCTIONS. PLANS ONLY INDICATE POSSIBLE LOCATIONS OF SENSORS BUT WILL VARY PER MANUFACTURER.
7. BALANCE OUTSIDE AIR DAMPER TO 25 CFM.

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MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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MAINTENANCE BUILDING FLOOR PLAN - MECHANICAL NEW

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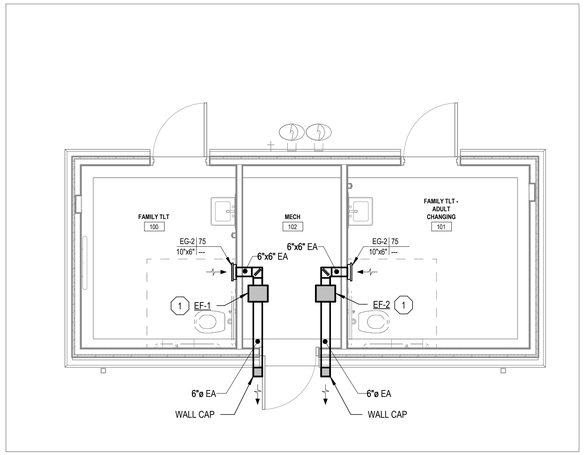

FAMILY BATHROOMS BUILDING FLOOR PLAN - MECHANICAL NEW

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

MECHANICAL KEY NOTES

1. INSTALL INLINE EXHAUST FAN AND ASSOCIATED EXHAUST DUCTWORK AT LOCATION SHOWN. SUSPEND FROM ROOF ABOVE.

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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FAMILY BATHROOMS BUILDING FLOOR PLAN - MECHANICAL NEW

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SHEET NO. M4.02

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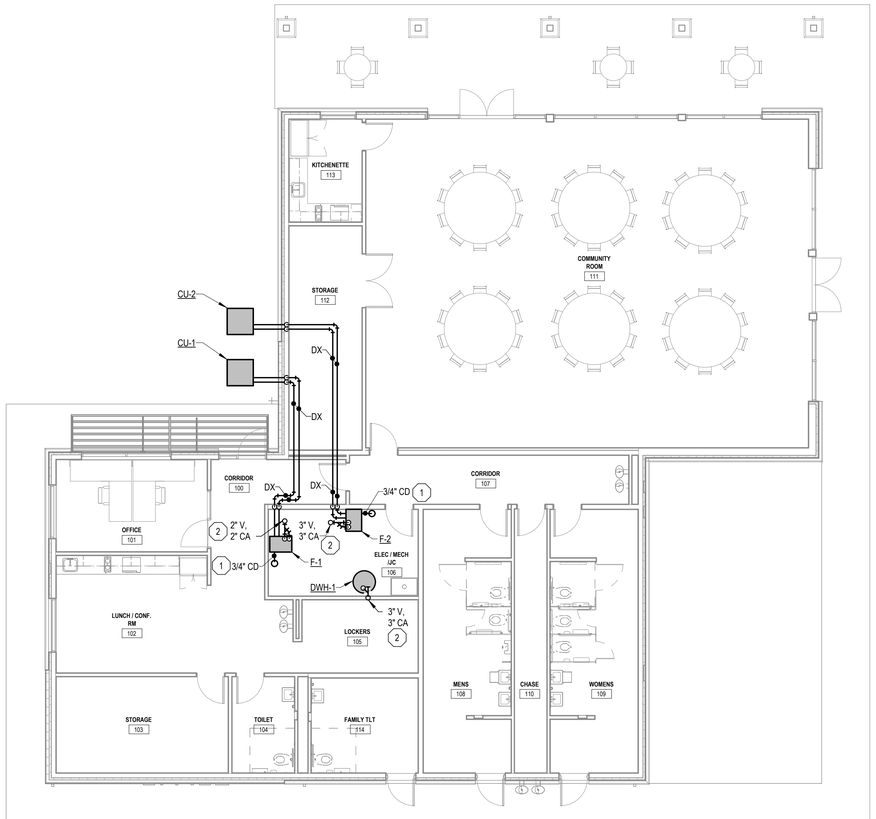

COMMUNITY BUILDING FLOOR PLAN - MECHANICAL PIPING NEW

SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. ALL CONDENSATE PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8 INCH PER FOOT.

MECHANICAL KEY NOTES

1. ROUTE 3/4" CONDESATE DOWN TO FLOOR DRAIN. TERMINATE VIA AIR GAP.
2. VENT THROUGH ROOF WITH CONCENTRIC VENT.

MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
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SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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SHEET NO. M6.00

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CONDENSING UNIT SCHEDULE

TAG	SERVES	MODEL	CAPACITY MBH	SEER2	ELECTRICAL				COMMENTS
					VOLTAGE	PHASE	FLA	DISC. BY	
CU-1	F-1	26TPA836	36	17	208	1	16.7	EC	1,2,3
CU-2	F-2	26TPA860	60	16.5	208	1	24.4	EC	1,2,3

NOTES:
1. BASED ON: CARRIER
2. 4" CONCRETE PAD
3. INCLUDE THE FOLLOWING ACCESSORIES: EVAPORATOR FREEEZESTAT, TXV VALVE, FAN CYCLING KIT, COMPRESSOR SHORT CYCLE CONTROL, REFRIGERANT FILTER/DRIER, AND CRANKCASE HEATER

ABBREVIATIONS:
EC - ELECTRICAL CONTRACTOR
MC - MECHANICAL CONTRACTOR
NR - NOT REQUIRED

DIFFUSER, REGISTER, & GRILLE SCHEDULE

MARK	MODEL	NECK SIZE	FACE SIZE	CFM RANGE (MIN-MAX)	PATTERN	MOUNT	MATERIAL	COLOR	100 FPM THROW	COMMENTS
SD-1	TMS	6"	24x24	50-135	3 CONE / 4-WAY	LAY-IN	STEEL	WHITE	3'	1,2,3,4
SD-1	TMS	8"	24x24	140-245	3 CONE / 4-WAY	LAY-IN	STEEL	WHITE	5'	1,2,3,4
SD-2	272RL	10x6	10x6	140-240	ADJ DBL DEFL	SURFACE	EXT AL BLDS	WHITE	9'-16'	1,2,3,4,5
SD-3	TMS	6"	12x12	50-135	3 CONE / 4-WAY	SURFACE	STEEL	WHITE	3'	1,2,3,4,5
RG-1	50F	24x12	24x12	1000	1/2"x1/2"x1/2" GRID	LAY-IN	ALUMINUM	WHITE		1,2,3,4
RG-2	23RL	10x6	10x6	175	1/2" SPC - 0° DFL	SURFACE	STEEL	WHITE	-	1,2,3,4
RG-2	23RL	36x18	36x18	1688-2110	1/2" SPC - 0° DFL	SURFACE	STEEL	WHITE	-	1,2,3,4
EG-1	50F	12x12	12x12	500	1/2"x1/2"x1/2" GRID	SURFACE	ALUMINUM	WHITE	-	1,2,3,4,5
EG-2	23RL	10x6	10x6	175	1/2" SPC - 0° DFL	SURFACE	STEEL	WHITE	-	1,2,3,4

NOTES:
1. BASED ON: TITUS
2. MAX. NC - 30
3. MAX. APD - 0.10 INCHES
4. SELECT BORDER TO MATCH ROOM FINISH SCHEDULE
5. INTEGRAL DAMPER

VENTILATION REQUIREMENTS SCHEDULE

ROOM	SERVED BY	FLOOR AREA	REQUIRED OA CFM (CFM/SQ.FT)	OCC. DENSITY PER 1000 SQFT.	POPULATION OF AREA SERVED	REQUIRED OA (CFM/PERSON)	REQUIRED OUTSIDE AIR
CORRIDOR 100	F-1	220	0.06	-	-	-	14
OFFICE 101	F-1	174	0.06	5	1	5	16
LUNCH / CONF. ROOM 102	F-1	225	0.06	50	12	5	74
STORAGE 103	F-1	208	0.12	-	-	-	25
CORRIDOR 107	F-1	175	0.06	-	-	-	11
STORAGE 112	F-2	205	0.12	-	-	-	25
KITCHENETTE 113	F-2	94	0.06	5	1	5	9
COMMUNITY ROOM 111	F-2	1856	0.06	120	60	5	412

NOTES:
1. MINIMUM VENTILATION RATES PER THE MICHIGAN MECHANICAL CODE.

EXHAUST FAN SCHEDULE

TAG	MODEL	CFM	TYPE	DRIVE	ESP ("WC)	FAN RPM	SONES	FLA	VOLTAGE	PHASE	DISC. BY	COMMENTS
EF-1	CSP-A125	75	INLINE	DIRECT	0.3	980	0.4	0.18	120	1	EC	1,2,3,4
EF-2	CSP-A125	75	INLINE	DIRECT	0.3	980	0.4	0.18	120	1	EC	1,2,3,4
EF-3	SQ-95-VG	550	INLINE	DIRECT	0.3	1398	6.9	2.8	120	1	EC	1,2,5
EF-4	CSP-A125	75	INLINE	DIRECT	0.3	980	0.4	0.18	120	1	EC	1,2,3,6

NOTES:
1. BASED ON: GREENHECK
2. BACKDRAFT DAMPER
3. WALL CAP
4. FAN IS TO BE INTERLOCKED WITH LIGHT SWITCH
5. FAN SHALL BE INTERLOCKED WITH SPACE GAS DETECTION SYSTEM TO START AND RUN CONTINUOUSLY WHEN GAS DETECTION SYSTEM IS IN ALARM
6. FAN TO RUN CONTINUOUSLY

GAS-FIRED RADIANT HEATER SCHEDULE

TAG	MODEL	INPUT MBH	OUTPUT MBH	LENGTH (FT)	MOUNTING HEIGHT (FT)	FLUE & VENT SIZE (IN.)	VOLTS	PHASE	FLA	DISC.	COMMENTS
RTH-1	DX3L-20-50	50	42.5	20	12	4"	120	1	4.8	MANU	1,2,3,4,5,6,7,8

NOTES:
1. BASED ON: DETROIT RADIANT PRODUCTS
2. INCLUDE THE FOLLOWING ACCESSORIES: WALL MOUNTED THERMOSTAT, FACTORY VENT TERMINATION, AND FACTORY OVERLOAD PROTECTION
3. MOUNTING HEIGHT IS TO THE CENTER OF THE TUBE.
4. MANUFACTURER TO PROVIDE ALL ROOF AND WALL CAPS REQUIRED FOR INSTALLATION.
5. CONTRACTOR SHALL VERIFY REQUIRED CLEARANCES AND MOUNT ACCORDINGLY WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS
6. ALUMINUM REFLECTORS
7. PERMANENT SEALED BEARINGS
8. SINGLE STAGE HEATING

GAS FURNACE SCHEDULE

TAG	LOCATION	MODEL	CFM	OA CFM	E.S.P. ("WC)	FAN HP	GAS HEAT EXCHANGER						COOLING COIL			COMB. AIR SIZE	VENT SIZE	ELECTRICAL				COMMENTS
							INPUT MBH	OUTPUT MBH	MAT	LAT	TEMP. RISE	AFUE	MODEL	TC (MBH)	APD ("W.C.)			VOLTAGE	PHASE	FLA	DISC. BY	
F-1	ELEC / MECH / JC 106	59TP6	1100	400	0.9	1/2	60	58	58	90	49	97.3%	CVAVA36	36	.21	2"	2"	120	1	7.1	EC	1,2,3,4,5,6,7,8
F-2	ELEC / MECH / JC 106	59TP6	1925	450	0.8	1	100	97	51	98	47	96.2%	CVAVA60	60	.38	3"	3"	120	1	13.2	EC	1,2,3,4,5,6,7,8

NOTES:
1. BASED ON: CARRIER
2. DO NOT EXCEED 5 ELBOWS FOR COMB./VENT PIPING
3. FILTER RACK
4. ROUTE CONDENSATE TO NEAREST FLOOR DRAIN
5. CONDENSATE NEUTRALIZER KIT
6. PROVIDE CONCENTRIC VENT (10' FROM OUTDOOR AIR INTAKES)
7. 7-DAY PROGRAMMABLE THERMOSTAT
8. SUPPLY FAN SHALL RUN CONTINUOUSLY WHILE OCCUPIED

ABBREVIATIONS:
EC - ELECTRICAL CONTRACTOR
MC - MECHANICAL CONTRACTOR

ENERGY RECOVERY UNIT SCHEDULE

TAG	MODEL	EXCHANGER EFFECTIVENESS				DECK	MODE	CFM	E.S.P.	EAT (°F & GR/LBM)		LAT (°F & GR/LBM)		ELECTRICAL				COMMENTS
		SENSIBLE		TOTAL										VOLTS	PHASE	HZ	MCA	
		WINTER	SUMMER	WINTER	SUMMER					DB	WB	DB	WB					
ERV-1	HE-07	72.3%	72.3%	71.1%	54.4%	EA	SUMMER	425	0.8	75	62.4	-	-	120	1	60	6.1	1,2,3,4
							WINTER			70	51.2	-	-					
						OA	SUMMER	425	0.8	89.5	73.3	78	66.4					
							WINTER			-1	-1.9	55.4	42.8					
ERV-2	HE-07	77.1%	77.1%	77.0%	75.2%	EA	SUMMER	400	0.8	75	62.6	-	-	120	1	60	12.2	1,2,3,4
							WINTER			70	51.5	-	-					
						OA	SUMMER	450	0.8	90	90	79.3	73.3					
							WINTER			-10	-10	47.2	38.4					

NOTES:
1. BASED ON: RENEWAIRE
2. FUSED DISCONNECT BY UNIT MANUFACTURER
3. BACKDRAFT DAMPER ON INTAKE AND EXHAUST OUTLETS
4. SUPPLY/EXHAUST FANS SHALL RUN CONTINUOUSLY WHILE OCCUPIED. INTERLOCK WITH ASSOCIATED FURNACE

LOUVER SCHEDULE

TAG	FUNCTION	MAKE/ MODEL	NECK SIZE		DEPTH	INLET FREE AREA (SQ FT)	CFM	PRESSURE DROP (" W.C.)	FINISH	SCREEN	COMMENTS
			WIDTH	HEIGHT							
L-1	INTAKE	L6375D	18	18	6	0.9	450	0.03	MILL.	BIRD	1,2
L-2	EXHAUST	L6375D	18	18	6	0.56	450	0.08	MILL.	BIRD	1,2
L-3	EXHAUST	L6375D	18	12	6	0.53	425	0.08	MILL.	BIRD	1,2
L-4	INTAKE	L6375D	18	18	6	0.85	425	0.03	MILL.	BIRD	1,2
L-5	EXHAUST	L6375D	18	18	6	0.69	550	0.08	MILL.	BIRD	1,2
L-6	INTAKE	L6375D	24	24	6	1.1	550	0.03	MILL.	BIRD	1,2

NOTES:
1. BASED ON: RUSKIN
2. COORDINATE LOUVER FINISH WITH ARCHITECT PRIOR TO ORDERING LOUVER.

DAMPER SCHEDULE

TAG	FUNCTION	MODEL	WIDTH	HEIGHT	DEPTH	MIN. CFM	MAX. CFM	WATTS	VOLTAGE	COMMENTS
D-1	INTAKE AIR	TED-50	24	24	6	25	550	-	24	1,2,3,4

NOTES:
1. BASED ON: RUSKIN
2. DAMPER ACTUATOR BASED ON BELIMO
3. LOW LEAKAGE AND LOW PRESSURE
4. INTERLOCK WITH SPACE GAS DETECTION SYSTEM TO FULLY OPEN WHEN GAS DETECTION SYSTEM IS IN ALARM.

ELECTRIC UNIT HEATER SCHEDULE

TAG	MODEL	LOCATION	CAPACITY (KW)	MAX BTUS	ELECTRICAL				COMMENTS
					VOLTAGE	PHASE	FLA	DISC. BY	
UH-1	UH5	STORAGE 101	5	17100	208	1	24.1	EC	1,2,3,4

NOTES:
1. BASED ON: MARKEL
2. VERTICAL MOUNTED FAN FORCED
3. CEILING BRACKET
4. THERMOSTAT

CABINET UNIT HEATER SCHEDULE

TAG	SERIES	SIZE	LOCATION	ELECTRICAL			MAX BTUS	COMMENTS
				VOLTAGE	PHASE	WATTS		
CUH-1	3310	14-1/8" x 19-1/2" x 4"	FAMILY TLT 114	208	1	3000	10240	1,2,3,4
CUH-2	3310	14-1/8" x 19-1/2" x 4"	MENS 108	208	1	4800	16380	1,2,3,4
CUH-3	3310	14-1/8" x 19-1/2" x 4"	WOMENS 109	208	1	4800	16380	1,2,3,4
CUH-4	3310	14-1/8" x 19-1/2" x 4"	CHASE 110	208	1	3000	10240	1,2,3,4
CUH-5	3310	14-1/8" x 19-1/2" x 4"	TOILET 104	208	1	3000	10240	1,2,3,4

NOTES:
1. BASED ON: MARKEL
2. BUILT-IN DOUBLE POLE TAMPER PROOF THERMOSTAT
3. RECESSED FRAME
4. INTERNAL DISCONNECT

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
MECHANICAL SCHEDULES

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: CDW
DESIGNED BY: QAM
APPROVED BY: CAT
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. M9.00

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL NOTES:

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ACCEPTED EDITION OF THE NATIONAL ELECTRICAL CODE, NEC, AND ALL STATE AND LOCAL CODES.
2. COORDINATE THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND CONNECTIONS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND EQUIPMENT DRAWINGS.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER, CONDUITS, CABLETRAY, AND OTHER COMPONENTS AS SHOWN ON THE EQUIPMENT PROVIDER DRAWINGS FOR INSTALLATION OF SYSTEM.
4. "BACK TO BACK" OR THROUGH THE WALL BOXES SHALL NOT BE USED.
5. INSTALL HANDLE LOCK-ON, ON ALL CIRCUIT BREAKERS CONTROLLING NIGHT LIGHT, EMERGENCY LIGHT AND EXIT LIGHT CIRCUITS.
6. ALL RECEPTACLES SHALL BE HARD USE, SPECIFICATION GRADE.
7. PROVIDE TAMPER RESISTANT RECEPTACLES WHERE REQUIRED BY APPLICABLE CODES.
8. RECEPTACLES INDICATED AS GROUND FAULT CIRCUIT INTERRUPTER TYPE SHALL BE MOUNTED IN AN ACCESIBLE LOCATION, PER CODE OR PROVIDED WITH A GFCI BREAKER.
9. ALL CONDUCTORS SHALL BE COPPER. ALUMINUM WIRES SHALL NOT BE USED.
10. MINIMUM CONDUIT SIZE SHALL BE 1/2" FOR POWER FEEDS AND 1" FOR DATA FEEDS.
11. FINAL CONNECTION TO ITEMS SUBJECT TO VIBRATION SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.
12. 120/208VAC CIRCUIT WIRING FOR ANY ROOM OR AREA MAY BE GROUPED INTO RACEWAYS UNLESS SEPARATE RACEWAYS ARE REQUIRED BY THE NEC. COMPLY WITH NEC REQUIREMENTS FOR CONDUCTOR DERATING.
13. PROVIDE EQUIPMENT GROUNDING CONDUCTORS FOR ALL POWER AND LIGHTING CIRCUITS.
14. ALL LIGHTING AND POWER CONDUCTORS SHALL BE 12 AWG MINIMUM. ALL CONTROL CONDUCTORS SHALL BE 14 AWG MINIMUM OR AS SPECIFIED BY MANUFACTURER.
15. DEDICATED NEUTRAL SHALL BE PROVIDED FOR ALL CIRCUITS. SHARED NEUTRALS ARE NOT ALLOWED.
16. BASIS OF DESIGN IS FOR A COMPLETE ELECTRICAL SYSTEM, INSTALLED PER CODE REQUIREMENTS.
17. PROVIDE AN UNSWITCHED HOT TO ALL EMERGENCY BATTERY PACKS, LIGHTING INVERTERS AND EMERGENCY LIGHTING UNITS AHEAD OF AN LIGHTING CONTROLS FROM THE BRANCH CIRCUIT SERVING LIGHTING IN THE SURROUNDING AREA.

ABBREVIATIONS

A, AMP	AMPERES
AF	AMP FUSE OR AMP FRAME
AFC	AVAILABLE FAULT CURRENT (SYMMETRICAL)
A.F.F.	ABOVE FINISHED FLOOR
AIC.	AMPERE INTERRUPTING CAPACITY
AM.	AMMETER
ASYM.	ASYMMETRICAL
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAP.	CAPACITY OR CAPACITOR
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT ,CCT	CIRCUIT
C.O.	CONDUIT ONLY
CONN.	CONNECT OR CONNECTION
CU	COPPER
DA	DURESS ALARM
DB	DOOR BELL
DISC.	DISCONNECT
DPST	DOUBLE POLE SINGLE THROW
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER (COORDINATE ACCESSIBILITY OF GFCI)
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EMERG, EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METAL TUBING
FIXT.	FIXTURE
FLA	FULL LOAD AMPERES
FLUOR.	FLUORESCENT
GRC,GCR	GALVANIZED RIGID CONDUIT
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRD,GND,G	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ.	HERTZ
IMC	INTERMEDIATE METAL CONDUIT
I.G.	ISOLATED GROUND
INCAND.	INCANDESCENT
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE, METAL HALIDE OR MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
N.C.	NORMALLY CLOSED
N.E.C.	NATIONAL ELECTRICAL CODE
N.I.C.	NOT IN CONTRACT
NF	NON FUSIBLE
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLOADS
P	POLE
PB	PULLBOX
PH OR Ø	PHASE
PNL	PANEL
PR	PAIR
PVC	POLYVINYL CHLORIDE
PWR.	POWER
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SOL	SOLENOID
SPDT	SINGLE POLE DOUBLE THROW
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SW.	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
XFMR	TRANSFORMER
TTB	TELEPHONE TERMINAL BACKBOARD
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
VD	VOLTAGE DROP
VM	VOLT METER
W	WATTS OR WIRE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XP	EXPLOSION PROOF

GENERAL

MOUNTING HEIGHTS TO BE AS INDICATED, UON. MOUNTING HEIGHTS ARE TO CENTER OF DEVICE FROM FINISHED FLOOR OR GRADE, UON. SEE SPECIFICATION DIV 26 FOR ADDITIONAL REQUIREMENTS.

KEY NOTE REFERENCE SYMBOL. DENOTES "SEE KEY NOTE NO. 2"

FOOT ON DEVICE INDICATES WALL MOUNTED

DEMOLITION AND REMODEL

EXISTING ELECTRICAL ITEM TO BE REMOVED, UON.

EXISTING ELECTRICAL ITEM TO REMAIN

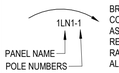
B — EXISTING ELECTRICAL ITEM TO BE REMOVED AND PROVIDED WITH A BLANK COVERPLATE

EXISTING ELECTRICAL CIRCUIT TO BE REMOVED SHOWN ONLY WHERE CLARIFICATION BETWEEN EXISTING TO REMAIN AND REMOVED ITEMS IS REQUIRED

SEE PLANS AND NOTES FOR DEVICES INTEND FOR REUSE AND / OR REPURPOSING.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

CIRCUIT DESIGNATIONS



BRANCH CIRCUIT HOMERUN. PROVIDE PHASE, NEUTRAL AND GROUND CONDUCTORS FOR EACH INDICATED CIRCUIT OR MULTI WIRE BRANCH AS REQUIRED. PROVIDE SWITCH LEGS FOR SWITCH CIRCUITING AS REQUIRED. PROVIDE EQUIPMENT GROUND WIRE IN ALL BRANCH CIRCUIT RACEWAYS/CIRCUITS. PROVIDE SEPARATE ISOLATED GROUND WIRE TO ALL ISOLATED GROUND DEVICES.

CONDUIT SIZE	MAX QUANTITY OF CONDUCTORS PER CONDUIT		
	CONDUCTOR SIZE		
	12	10	8
3/4 INCH	5 TO 8	5 TO 6	1 TO 3
1 INCH	9 TO 13	7 TO 11	4 TO 5
SEE SPECIFICATONS FOR LIMITATIONS ON QUANTITY OF CURRENT CARRYING CONDUCTORS PER CONDUIT			

CONDUIT RISER UP

CONDUIT RISER DOWN

INDICATES CIRCUIT CONTINUATION

STUB INTO ACCESSIBLE CORRIDOR CEILING SPACE UNLESS OTHERWISE NOTED

CONDUIT SEAL FITTING FOR HAZARDOUS AREAS

CONDUIT SLEEVE

CAP END OF CONDUIT

CABLE OR CORD CONNECTED

LIGHTING

NOTE A: UPPER CASE ALPHANUMERIC SUBSCRIPT DENOTES FIXTURE TYPE. SEE SCHEDULE(S)

NOTE B: LOWER CASE LETTER SUBSCRIPT PROVIDED ADJACENT TO SWITCHING DEVICE AND ASSOCIATED LIGHT FIXTURE(S) WHERE REQUIRED FOR CLARIFICATION.

CEILING LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

DIRECTIONAL AIMED FIXTURE AIM IN DIRECTION OF ARROW

WALL BRACKET LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

RECESSED LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

WALL BRACKET LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

UNDERCABINET/ COUNTER LIGHT OUTLET OR STRIP LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

LINEAR PENDANT/SUSPENDED LIGHT FIXTURE CONNECTED TO NORMAL SOURCE

EXIT LIGHT OUTLET WITH FIXTURE - SHADING INDICATES LOCATION OF FACE(S). ARROWS INDICATE DIRECTIONAL ARROWS WHERE REQUIRED. WALL MOUNTED SIGNS AT +90" CENTERED ABOVE DOOR WHERE APPLICABLE

EMERGENCY LIGHT FIXTURE WITH INTEGRAL BATTERY SOURCE AND HEADS

TRACK LIGHT OUTLET WITH FIXTURE. TYPE INDICATED, QUANTITY AND LENGTH AS SHOWN OR SCHEDULED

PENDANT LIGHT FIXTURE CONNECTED TO NORMAL SOURCE

LIGHTING STANDARD POLE FIXTURE, PROVIDE QUANTITY OF HEADS AND ORIENTATION AS INDICATED

LIGHTING STANDARD WITH POST-TOP FIXTURE

BOLLARD FIXTURE

CEILING LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

WALL SCONCE LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

LINEAR WALL LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

SURFACE / STRIP LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

PENDANT LIGHT FIXTURE CONNECTED TO EMERGENCY SOURCE

LINEAR PENDANT/SUSPENDED LIGHT FIXTURE CONNECTED TO EMERGENCY SOURCE

S — SWITCH AT +48" U.O.N.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE VARIOUS TYPES OF SWITCHES.

NO SUBSCRIPT - SINGLE POLE
2 — DOUBLE POLE
3 — THREE WAY
4 — FOUR WAY
D — DIMMER, COMPATIBLE WITH FIXTURE.
f — FUSED
L — PILOT LIGHT
LV — LOW VOLTAGE/DIGITAL SWITCH
OS — WALL SWITCH OCCUPANCY SENSOR, DUAL TECHNOLOGY.
DOS — WALL SWITCH OCCUPANCY SENSOR W/ DIMMER, DUAL TECHNOLOGY.
TE — MANUAL STARTER WITH THERMAL ELEMENT
XP — EXPLOSION PROOF
M — MOTOR RATED

WIRELESS DEVICE

PC — EXTERIOR PHOTOCELL. ON/OFF WITH ADJUSTABLE SET-POINT.

DH — DAYLIGHT HARVESTING SENSOR. ANALOG 0-10V OUTPUT WITH INTEGRAL MOTION SENSOR.

OS — CEILING / DIRECTIONAL / DIRECTIONAL WALL MOUNTED OCCUPANCY SENSOR DUAL TECHNOLOGY, WITH REQUIRED POWER PACKS.

TC — TIME CLOCK AT +48"

POWER AND DIAGRAMS

NOTE:
A. OUTLETS IN FINISHED OR SHELL SPACES SHALL BE MOUNTED AT +18" UON.
B. OUTLETS IN GARAGE, MECHANICAL, AND ELECTRICAL SPACES SHALL BE MOUNTED AT 48" UON.
C. OUTLETS SHALL BE TAMPER PROOF, WHERE REQUIRED PER CODE.
D. OUTLETS SHALL HAVE AFCI PROTECTION, WHERE REQUIRED PER CODE.
E. OUTLETS SHALL HAVE GFCI PROTECTION, WHERE REQUIRED PER CODE.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE DIFFERENT TYPES OF RECEPTACLES

WP — WEATHERPROOF, EXTRA DUTY, WITH STEEL IN-USE COVER.
CL — CLOCK MOUNTED AT +84", REGRESSED SINGLE RECEPTACLE, WITH CLOCK HANGER.
H — HORIZONTAL MOUNTING
U — DUAL USB INCLUDED WITH RECEPTACLE TYPE SHOWN.

TYPICAL SYMBOLOGY:

20A, 125V, 2 POLE, 3 WIRE GROUNDING DUPLEX RECEPTACLE, NEMA 5-20R

20A, 125V, 2 POLE, 3 WIRE GROUNDING SINGLE RECEPTACLE, NEMA 5-20R

20A, 125V, 2 POLE, 3 WIRE GROUNDING DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R

250V, 2 POLE, 3 WIRE GROUNDING SINGLE RECEPTACLE, SIZE AND TYPE AS NOTED.

RECEPTACLES WITH GROUND FAULT CIRCUIT INTERRUPTER

RECEPTACLES MOUNTED 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE, UON.

RECEPTACLES WITH GFCI AND MOUNTED 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE.

CEILING MOUNTED RECEPTACLE. TYPE AS INDICATED ABOVE.

CEILING MOUNTED GFCI RECEPTACLES, TYPE AS INDICATED ABOVE.

FLUSH FLOOR MOUNTED RECEPTACLE, TYPE AS INDICATED ABOVE.

FLUSH FLOOR MOUNTED RECEPTACLE, GFCI, TYPE AS INDICATED ABOVE.

PEDESTAL MOUNTED RECEPTACLE, TYPE AS INDICATED ABOVE.

SPECIAL PURPOSE RECEPTACLE. SUBSCRIPT DENOTES NEMA TYPE.

COMBINATION POWER/ COMMUNICATIONS FLOOR BOX, TYPE AND COMMUNICATIONS DEVICE AS INDICATED.

JUNCTION BOX. 4" SQUARE, UON. WALL AND CEILING MOUNTED.

PIGTAIL TO SWITCH DENOTES TOP HALF OF RECEPTACLE SWITCHED.

SURFACE RECEPTACLE STRIP. TYPE AND LENGTH AS INDICATED.

JUNCTION BOX. 4" SQUARE, UON. WALL AND CEILING MOUNTED.

208 VOLT PANELBOARD AT +72" TO TOP

480 VOLT PANELBOARD AT +72" TO TOP

M — ELECTRIC METER

CABLE TRAY OR WIREWAY

SAFETY SWITCH AT +54". CHARACTERISTICS AS INDICATED BY FRAME/POLES.

FUSED SAFETY SWITCH AT +54". CHARACTERISTICS AS INDICATED BY FRAME/FUSESIZE/POLES.

MAGNETIC MOTOR STARTER AT +54". CHARACTERISTICS AS INDICATED BY FRAME SIZE/POLES/NEMA SIZE.

COMBINATION MAGNETIC MOTOR STARTER WITH DISCONNECT AT +54". CHARACTERISTICS AS INDICATED BY FRAME/FUSE/POLES/NEMA SIZE

AFD — ADJUSTABLE FREQUENCY DRIVE WITH INTEGRAL CIRCUIT BREAKER DISCONNECT

MAGNETIC CONTACTOR AT +54". AMPS/POLES/CONTACT VOLTS/ COIL VOLTS AS INDICATED.

CB — SEPARATELY MOUNTED, ENCLOSED MOLDED CASE CIRCUIT BREAKER AT +48". FLUSH MOUNTED IN FINISHED AREAS. AMP/POLES AS INDICATED.

CIRCUIT BREAKER. AMP/POLES AS INDICATED

FUSE. SIZE AS INDICATED

FUSIBLE SWITCH. AMP/POLES/FUSE SIZE AS INDICATED

AUTOMATIC TRANSFER SWITCH +72" TO TOP OR FLOOR MOUNTED.

DISCONNECT STABS FOR DRAWOUT TYPE EQUIPMENT

TRANSFORMER

GROUND CONNECTION

MOTOR CONNECTION, HP AS INDICATED

G — GENERATOR

START-STOP PUSHBUTTON STATION AT +48"

GROUND BUS ON STANDOFFS

CONTROL PANEL:

EQUIPMENT OR TERMINAL CABINET AT +72" TO TOP

PS — POWER SUPPLY

PUSHBUTTON STATION AT +48"

FIRE DETECTION AND ALARM

FACP — CONTROL PANEL AT +72" TO TOP

FAA — FIRE ALARM ANNUNCIATOR PANEL AT +72" TO TOP

F — MANUAL STATION AT +48"

FIRE SUPPRESSION SYSTEM ABORT SWITCH STATION AT +48"

COMBINATION CARBON MONOXIDE / SMOKE DETECTOR WITH ANNUNCIATION

SD — SMOKE DETECTOR - PHOTO ELECTRIC AREA BEAM

DD — DUCT SMOKE DETECTOR

FD — FIRE/ SMOKE DAMPER

HD — AUTOMATIC HEAT DETECTOR

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE THE VARIOUS TYPE OF HEAT DETECTORS

NO SUBSCRIPT - FIXED TEMPERATURE (155 DEGREE U.O.N.)
R/F — COMBINATION RATE OF RISE FIXED TEMPERATURE (135 DEGREE U.O.N.)
XP — EXPLOSION PROOF, FIXED TEMPERATURE (135 DEGREE U.O.N.) CLASS 1, GROUP C

NOTE: WALL MOUNT VISUAL AND COMBINATION AUDIO/VISUAL NOTIFICATION APPLIANCES AT +80" AFF TO BOTTOM OF FACE PLATE U.O.N.

V — VISUAL NOTIFICATION APPLICANCE

A — WALL MOUNTED AUDIBLE NOTIFICATION APPLIANCE

AV — WALL MOUNTED COMBINATION AUDIBLE/VISUAL NOTIFICATION APPLIANCE

V — CEILING MOUNTED VISUAL NOTIFICATION APPLIANCE

A — CEILING MOUNTED AUDIBLE NOTIFICATION APPLIANCE

AV — CEILING MOUNTED COMBINATION AUDIBLE/VISUAL NOTIFICATION APPLIANCE

DH — MAGNETIC DOOR HOLDER. COORDINATE MOUNTING HEIGHT WITH DOOR MANUFACTURER.

FR — ELECTROMECHANICAL DOOR RELEASE. COORDINATE WITH DOOR MANUFACTURER.

FS — SPRINKLER OR STANDPIPE FLOW ALARM SWITCH CONNECTION

TS — VALVE TAMPER SWITCH

F — AIR PRESSURE MONITOR SWITCH FOR PRE-ACTION OR DRY PIPE SPRINKLER SYSTEM

TELECOMMUNICATION

GENERAL NOTES

NOTE A: OUTLETS IN FINISHED OR SHELL SPACES SHALL BE MOUNTED AT +18" UON.
NOTE B: OUTLETS LOCATED AT COUNTERS SHALL BE LOCATED 18"AFF IN KNEE SPACE IF PROVIDED OR 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE IF NO KNEE SPACE IS PROVIDED UON.
NOTE C: WHERE ASTERISK (*) IS INDICATED NEXT TO OUTLET AT WORK COUNTER, OUTLET SHALL BE LOCATED ABOVE COUNTER RATHER THAN IN KNEE SPACE.

STANDARD TELECOMMUNICATIONS OUTLET - PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH SINGLE GANG MUD RING AND (1) 1" CONDUIT TO ABOVE FINISHED CEILING, MOUNTED AT 18" AFF, UON. PROVIDE PLASTIC BUSHING AT THE ENDS OF THE CONDUITS. DATA DEVICES AND WIRING PROVIDED BY OTHERS, UON.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE THE VARIOUS (NON-STANDARD) TYPES OF OUTLETS

F — FLOOR MOUNTED.
C — CEILING MOUNTED.
W — MOUNTED 48" AFF, UON.
M — MOUNTED 72" AFF, UON.
T — TELEPHONE AT 44" AFF, UON.
TV — TELEVISION, MOUNTED AT NOTED HEIGHT.
B — BLANK (ROUGH-IN TO ACCESSABLE CEILING SPACE) WITH BLANK COVERPLATE
F — FIBER
— THE FIRST NUMBER INDICATES THE NUMBER OF CAT6 CABLES. THE SECOND NUMBER INDICATES THE TO QUANTITY OF JACK LOCATIONS.

C — CLOCK - SEE SPECIFICATIONS FOR REQUIREMENTS.

S — SPEAKER FOR PA SYSTEM.

DO — ADA DOOR CONTROL OPENER, COORDINATE WITH DOOR REQUIREMENTS

DC — DOOR CONTROLS, COORDINATE WITH SECURITY, AUTO AND MANUAL CONTROLS

SECURITY

FIXED VIDEO SURVEILANCE CAMERA

DOOR POSITION SWITCH

CONNECTION TO ELECTRIC OR PNEUMATIC DOOR LOCK

CR — CARD READER AT +48"

NOTE:
SYMBOLS SHOWN ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE A CHECK LIST OF DEVICES REQUIRED BY THE CONTRACT

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MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL SYMBOLS, ABBREV., + NOTES

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NFE JOB NO. 0557
SHEET NO. E1.00

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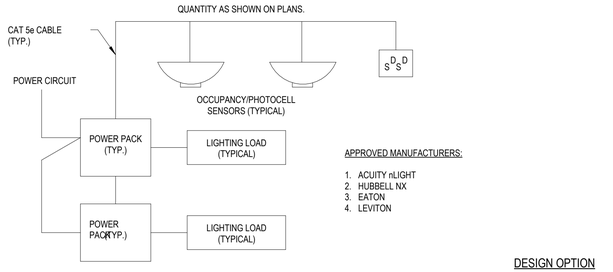


2 E4.00 **LTG - PP/OS/D**
NOT TO SCALE

BASIS OF DESIGN:

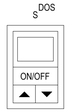
1. PROVIDE ACUITY #WSX-PDT-D-SA

APPROVED ALTERNATES:

1. EATON
2. LEVITON
3. HUBBELL

SEQUENCE OF OPERATION:

1. ALL CONTROLS TO BE COMPLIANT WITH MICHIGAN ENERGY CODE, BASED UPON ASHRAE 90.1, 2019.
2. MANUAL ON, LOCAL DIMMING AND ON/OFF OVERRIDE, AUTOMATIC OFF.



3 E4.00 **LTG - Standalone DOS**
NOT TO SCALE

BASIS OF DESIGN:

1. PROVIDE ACUITY #WSX-PDT

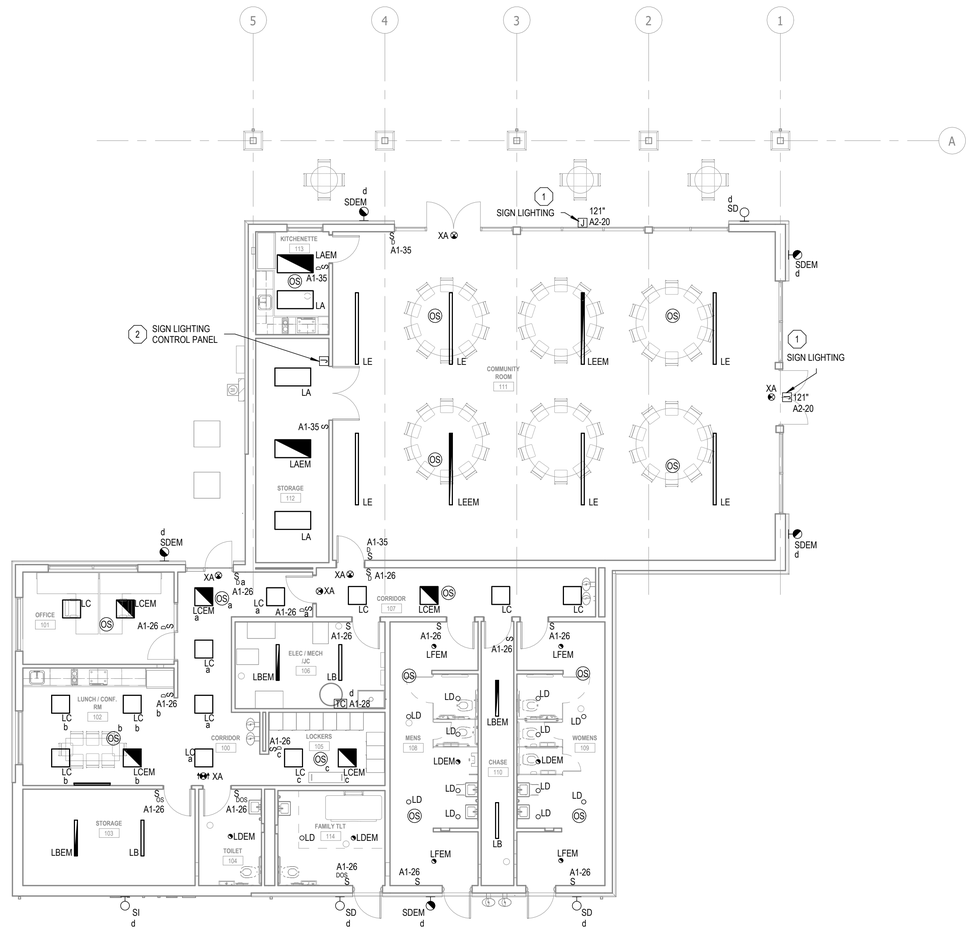
APPROVED ALTERNATES:

1. EATON
2. LEVITON
3. HUBBELL

SEQUENCE OF OPERATION:

1. ALL CONTROLS TO BE COMPLIANT WITH MICHIGAN ENERGY CODE, BASED UPON ASHRAE 90.1, 2019.
2. MANUAL ON, ON/OFF OVERRIDE, AUTOMATIC OFF.
3. TOILETS AND STORAGE CLOSETS SHALL BE AUTOMATIC ON/OFF.

4 E4.00 **LTG - Standalone OS**
NOT TO SCALE



1 E4.00 **COMMUNITY BUILDING FLOOR PLAN - LIGHTING NEW**
SCALE = 1/8" = 1'-0"

KEYNOTES:

1 SIGN MANUFACTURER SHALL PROVIDE SLOAN RGB COLOR CHANING LED 'S FOR EXTERIOR SIGN LIGHTING AND CONTROL PANEL WITH COLOR CHANGING CAPABILITY, OR EQUAL. CONTRACTOR SHALL INSTALL NECESSARY POWER AND DATA FOR SYSTEM.

2 SIGN LIGHTING CONTROL PANEL SHALL HAVE ASTRONOMICAL PROGRAMMABILITY WITH BATTERY BACK TIME CLOCK.

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Nowicki Park
Site Improvements

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City of Rochester Hills
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1000 Rochester Hills Dr.
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CONTACT
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elwertk@rochesterhill.org

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COMMUNITY BUILDING FLOOR PLAN - LIGHTING NEW

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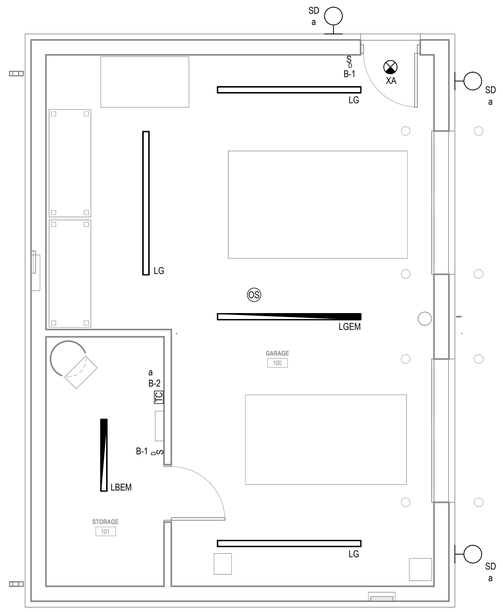

1 E4.01 **MAINTENANCE BUILDING FLOOR PLAN - LIGHTING NEW**
SCALE = 1/4" = 1'-0"

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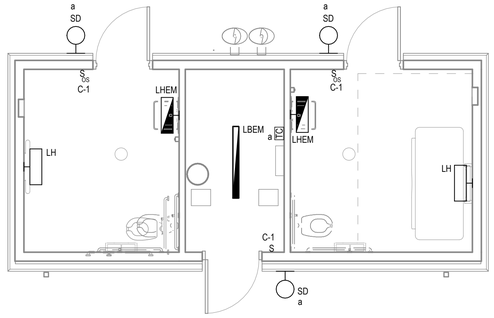

1 / E4.02 **FAMILY BATHROOMS BUILDING FLOOR PLAN - LIGHTING NEW**

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

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CONSULTING ENGINEERS, INC.
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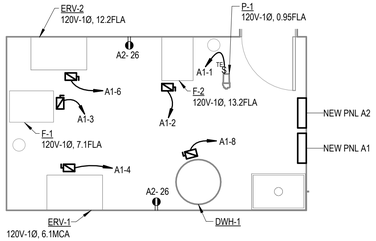
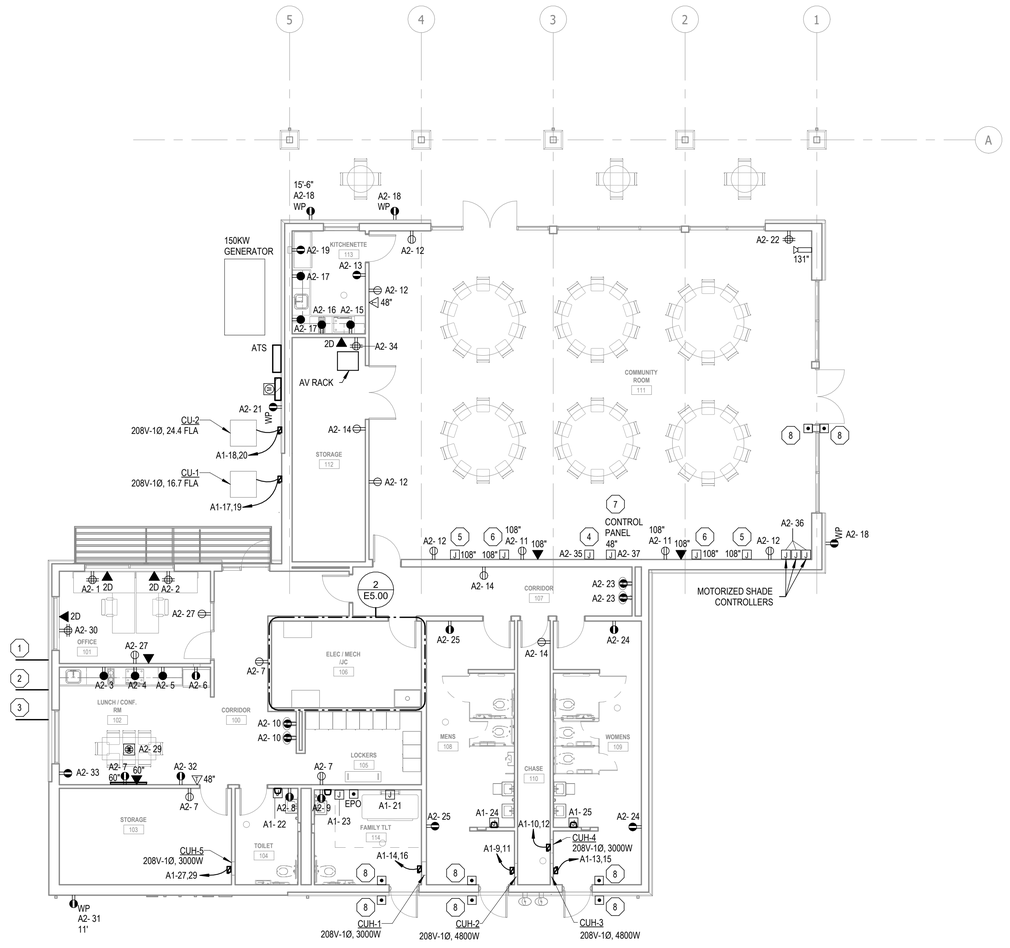


2 / E5.00 COMMUNITY BUILD FLOOR PLAN - ENLARGED VIEW

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



1 / E5.00 COMMUNITY BUILDING FLOOR PLAN - POWER NEW

SCALE = 1/8" = 1'-0"

KEYNOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL 2" POLYPIPE TO WATER TIGHT GROUND JUNCTION BOX ON OUTSIDE OF BUILDING. CIVIL TO RUN CONDUIT TO LIGHT POLES FOR POSSIBLE FUTURE CAMERAS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL 1" POLYPIPE TO WATER TIGHT GROUND JUNCTION BOX ON OUTSIDE OF BUILDING. CIVIL TO DETERMINE LOCATION.
3. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FOR POWER AND DATA TO DOG FENCE AREA FOR ACCESS CONTROL. VERIFY SIZING WITH ACCESS CONTROL CONTRACTOR.
4. CONTRACTOR SHALL PROVIDE AND INSTALL 3/4" CONDUIT FROM 3-GANG BOX TO ROOM 112. REFER TO DATA CONSULTANT DRAWINGS.
5. CONTRACTOR SHALL PROVIDE AND INSTALL 1/2" CONDUIT TO ROOM 112 FOR SPEAKER. REFER TO DATA CONSULTANT DRAWINGS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL 1/2" CONDUIT FROM PAC525 BOX TO ROOM 112 FOR SPEAKER. REFER TO DATA CONSULTANT DRAWINGS.
7. CONTRACTOR SHALL PROVIDE AND INSTALL 3/4" CONDUIT FROM 2-GANG BOX TO ROOM 112. REFER TO DATA CONSULTANT DRAWINGS.
8. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY BOXES, PIECES, AND PARTS FOR ADA PUSH BUTTON.

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CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
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Rochester Hills, MI 48309

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Ph.: 248-656-4673
elwertk@rochesterhill.org

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COMMUNITY BUILDING FLOOR PLAN - POWER NEW

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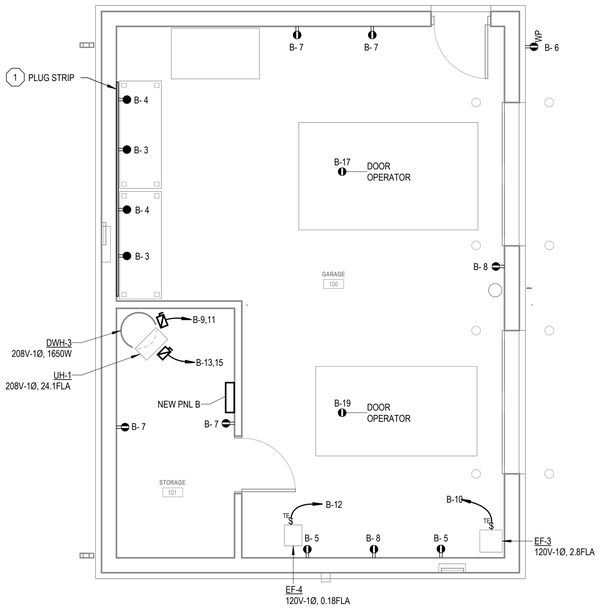
KEYNOTES:

1 CONTRACTOR SHALL PROVIDE AND INSTALL NEW PLUGMOLD ABOVE COUNTER.



1 / E5.01 **MAINTENANCE BUILDING FLOOR PLAN - POWER NEW**

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

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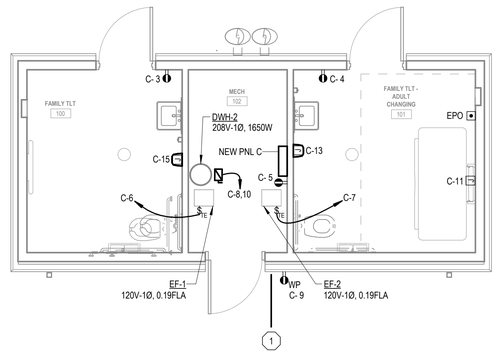
KEYNOTES:

1 CONTRACTOR SHALL PROVIDE AND INSTALL SPARE 1" CND FOR POTENTIAL FUTURE SITE LIGHTING.



1 / E5.02 **FAMILY BATHROOMS BUILDING FLOOR PLAN - POWER NEW**

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

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FAMILY BATHROOMS BUILDING FLOOR PLAN - POWER NEW

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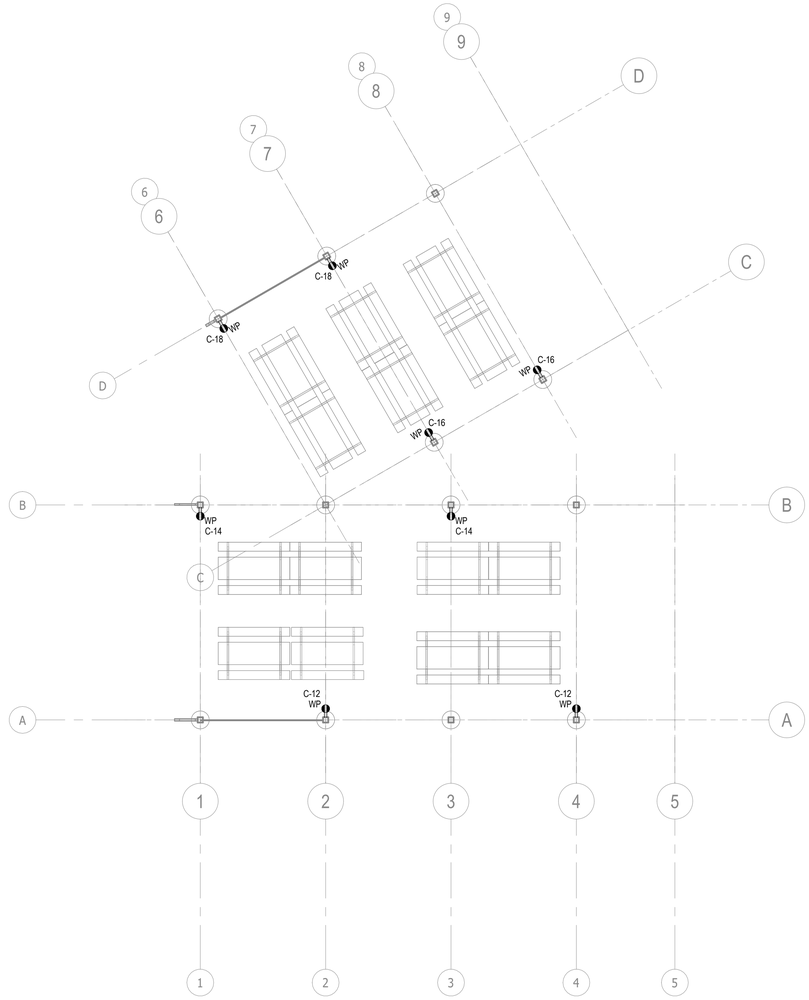

1 E5.03 PAVILION FLOOR PLAN - POWER NEW

SCALE = 1/8" = 1'-0"

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PAVILION FLOOR PLAN - POWER NEW

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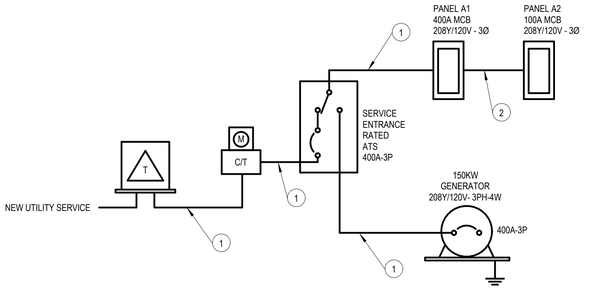
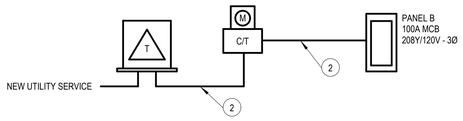


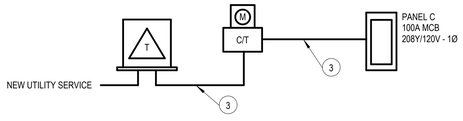
1 E6.00 **COMMUNITY BUILDING ELECTRICAL RISER DIAGRAM**
NOT TO SCALE

FEEDER SCHEDULE

1. (4) 500KCMIL, (1) #3 GND, 3" CND
2. (4) #2, (1) #8 GND, 1 1/4" CND
3. (3) #2, (1) #8 GND, 1 1/4" CND



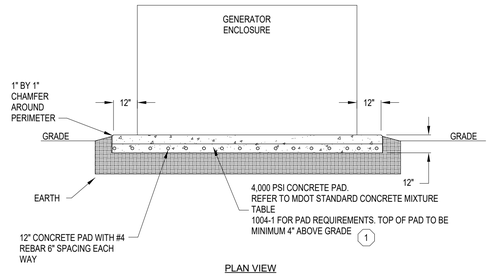
3 E6.00 **MAINTENANCE BUILDING ELECTRICAL RISER DIAGRAM**
NOT TO SCALE



2 E6.00 **FAMILY BATHROOM BUILDING ELECTRICAL RISER DIAGRAM**
NOT TO SCALE

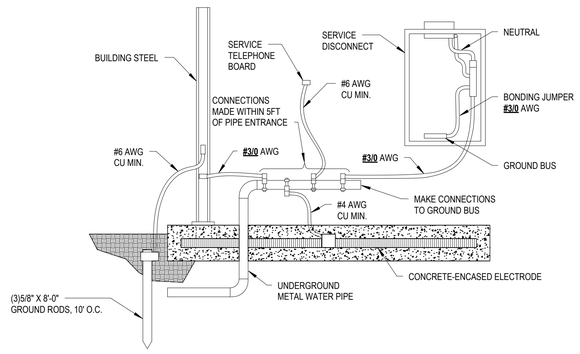
ELECTRICAL KEY NOTES

1. CONTRACTOR SHALL COORDINATE EXACT SIZE OF CONCRETE PAD WITH GENERATOR ENCLOSURE SIZE. PAD SHALL HAVE 12" CLEARANCE ON SIDES, AND 3' CLEARANCE ON FRONT AND BACK.



PLAN VIEW

4 E6.00 **GENERATOR CONCRETE PAD**
NOT TO SCALE



5 E6.00 **GROUNDING & BONDING**
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ELECTRICAL RISER DIAGRAM

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Panel: A1

Location: ELEC / MECH /JC 106 | **Volts:** 208Y/120 Wye | **A.I.C. Rating:** 14kAIC
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 400 A
Enclosure: TYPE 1 | **Bus Rating:** 400A
Series: PANELBOARD | **Neutral Buss:** Yes
Sub-Feed Lugs: No | **Ground Buss:** Yes

Notes:
CIRCUITS SHOWN WITH AN ASTERIC "*" IN THE DESCRIPTION SHALL BE GFCI TYPE CIRCUIT BREAKERS.

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	P-1	20	1	0.11	1.58					1	20	F-2	2
3	F-1	20	1			0.85	0.73			1	20	ERV-1	4
5	WELL PUMP	20	2					0.50	1.46	1	20	ERV-2	6
7	--	--	--	0.50	0.60					1	20	DWH-1	8
9	CUH-2	30	2			2.40	1.50			2	20	CUH-4	10
11	--	--	--					2.40	1.50	--	--	--	12
13	CUH-3	30	2	2.40	1.50					2	20	CUH-1	14
15	--	--	--			2.40	1.50			--	--	--	16
17	CU-1	25	2					1.74	2.54	2	30	CU-2	18
19	--	--	--	1.74	2.54					--	--	--	20
21	ADULT CHANGING STATION	20	1			1.92	1.25			1	20	TOILET 104 HAND DRYER	22
23	FAMILY TLT 114 HAND DRYER	20	1					1.25	1.25	1	20	MENS 108 HAND DRYER	24
25	WOMENS 109 HAND DRYER	20	1	1.25	0.78					1	20	INTERIOR LIGHTING	26
27	CUH-5	20	2			1.50	0.25			1	20	EAST & SOUTH EXTERIOR LIGHTING	28
29	--	--	--					1.50	0.39	2	20	DOG PARK LIGHTING	30
31	PARKING LOT LIGHTING	20	2	0.65	0.39					--	--	--	32
33	--	--	--			0.65	0.29			2	20	DOG PARK LIGHTING	34
35	INTERIOR LIGHTING	20	1					0.44	0.29	--	--	--	36
37	PANEL A2	100	3	8.02	0.10					1	20	CRANE PUMP	38
39	--	--	--			8.40	1.00			2	20	ICE SCULPTURE HEATING COIL	40
41	--	--	--					6.94	1.00	--	--	--	42
43	DOG PARK LIGHTING	20	2	0.34	0.27					2	20	DOG PARK LIGHTING	44
45	--	--	--			0.34	0.27			--	--	--	46
47	SITE LIGHTING	20	2					0.29	0.00	1	20	SPARE	48
49	--	--	--	0.29	0.00					1	20	SPARE	50
51	SPARE	20	1			0.00	0.00			1	20	SPARE	52
53	SPARE	20	1					0.00	--	1	--	SPACE	54
55	SPARE	20	1	0.00	--					1	--	SPACE	56
57	SPACE	--	1			--	--			1	--	SPACE	58
59	SPACE	--	1					--	--	1	--	SPACE	60
			Total Load:	23 kW		25 kW		23 kW					
			Total Amps:	192 A		211 A		196 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	8229 VA	125.00%	10286 VA		
Motor	32495 VA	103.90%	33764 VA	**Total Load:**	71.80 kW
Other	24740 VA	100.00%	24740 VA	**Demand Load:**	75.13 kW
RECEPT	5160 VA	100.00%	5160 VA	**Connected Amps:**	199 A
				Demand Amps:	209 A

Notes:

Panel: A2

Location: ELEC / MECH /JC 106 | **Volts:** 208Y/120 Wye | **A.I.C. Rating:** 14kAIC
Supply From: A1 | **Phases:** 3 | **Mains Type:** MLO
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: TYPE 1 | **Bus Rating:** 100 A
Series: PANELBOARD | **Neutral Buss:** Yes
Sub-Feed Lugs: No | **Ground Buss:** Yes

Notes:
CIRCUITS SHOWN WITH AN ASTERIC "*" IN THE DESCRIPTION SHALL BE GFCI TYPE CIRCUIT BREAKERS.

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	OFFICE RECEPT	20	1	0.36	0.36					1	20	OFFICE RECEPTACLE	2
3	LUNCH/CONF. RM RECEPTACLE	20	1			1.50	1.50			1	20	LUNCH/CONF. RM RECEPTACLE	4
5	LUNCH/CONF. RM RECEPTACLE	20	1					0.18	1.20	1	20	LUNCH/CONF. RM FRIDGE RECEPT	6
7	S CORRIDOR & STORAGE RECEPT	20	1	0.72	0.18					1	20	SOUTH TOILET RECEPTACLE	8
9	FAMILY TOLIET RECEPTACLE	20	1			0.18	0.60			1	20	CORRIDOR 100 EWC-1*	10
11	SOUTH COMMUNITY RM...	20	1					0.36	0.90	1	20	NORTH COMMUNITY ROOM RECEPT	12
13	KITCHENETTE RECEPTACLE	20	1	0.18	0.54					1	20	N STORAGE & CORRIDOR RECEPT	14
15	KITCHENETTE RECEPTACLE	20	1			1.50	1.50			1	20	KITCHENETTE RECEPTACLE	16
17	KITCHENETTE RECEPTACLE	20	1					0.36	0.54	1	20	NORTH OUTSIDE RECEPTACLE	18
19	KITCHENETTE FRIDGE RECEPTACLE	20	1	1.20	2.40					1	20	EXTERIOR SIGNAGE LIGHTING	20
21	WEST OUTSIDE RECEPTACLE	20	1			0.18	0.36			1	20	NORTH COMMUNITY ROOM RECEPT	22
23	CORRIDOR 107 EWC-1*	20	1					0.60	0.36	1	20	WOMENS BATHROOM RECEPTACLE	24
25	MENS BATHROOM RECEPTACLE	20	1	0.36	0.36					1	20	ELEC/MECH/JC RECEPTACLES	26
27	OFFICE PRINTER RECEPTACLE	20	1			0.36	0.18			1	20	NORTH OUTSIDE 15' RECEPTACLE	28
29	CONF. RM FLOOR QUAD...	20	1					0.18	0.36	1	20	OFFICE QUAD RECEPTACLE	30
31	SOUTH OUTSIDE 15' RECEPTACLE	20	1	0.18	0.18					1	20	LUNCH/CONF. RM RECEPTACLE	32
33	LUNCH/CONF. RM RECEPTACLE	20	1			0.18	0.36			1	20	STORAGE RECEPTACLE	34
35	S. COMMUNITY ROOM 3-GANG BOX	20	1					1.00	0.90	1	20	COMMUNITY ROOM MOTORIZED...	36
37	S. COMMUNITY RM CONTROL PANEL	20	1	1.00	--					1	--	SPACE	38
39	SPACE	--	1			--	--			1	--	SPACE	40
41	SPACE	--	1					--	--	1	--	SPACE	42
			Total Load:	8 kW		8 kW		7 kW					
			Total Amps:	68 A		71 A		58 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	2400 VA	125.00%	3000 VA		
Other	14720 VA	100.00%	14720 VA	**Total Load:**	23.36 kW
RECEPT	5160 VA	100.00%	5160 VA	**Demand Load:**	23.96 kW
				Connected Amps:	65 A
				Demand Amps:	67 A

Notes:

Panel: B

Location: STORAGE 101 | **Volts:** 208Y/120 Wye | **A.I.C. Rating:** 10kAIC
Supply From: | **Phases:** 3 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 4 | **Mains Rating:** 100 A
Enclosure: TYPE 1 | **Bus Rating:** 100 A
Series: PANELBOARD | **Neutral Buss:** Yes
Sub-Feed Lugs: No | **Ground Buss:** Yes

Notes:

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
1	INTERIOR LIGHTING	20	1	0.17	0.14					1	20	EXTERIOR LIGHTING	2
3	WORKSTATION RECEPTACLE	20	1			0.36	0.36			1	20	WORKSTATION RECEPTACLE	4
5	GARAGE RECEPTACLE	20	1					0.36	0.18	1	20	EXTERIOR RECEPTACLE	6
7	GARAGE & STORAGE RECEPTACLE	20	1	0.72	0.36					1	20	GARAGE RECEPTACLE	8
9	DWH-3	20	2			0.83	0.34			1	20	EF-3	10
11	--	--	--					0.83	0.02	1	20	EF-4	12
13	UH-1	30	2	2.51	0.54					1	20	ROADSIDE RECEPTACLE	14
15	--	--	--			2.51	0.72			1	20	ROADSIDE RECEPTACLE	16
17	GARAGE DOOR OPERATOR	20	1					1.20	0.54	1	20	ROADSIDE RECEPT	18
19	GARAGE DOOR OPERATOR	20	1	1.20	0.00					1	20	SPARE	20
21	SPARE	20	1			0.00	0.00			1	20	SPARE	22
23	SPARE	20	1					0.00	0.00	1	20	SPARE	24
25	SPARE	20	1	0.00	--					1	--	SPACE	26
27	SPACE	--	1			--	--			1	--	SPACE	28
29	SPACE	--	1					--	--	1	--	SPACE	30
			Total Load:	6 kW		5 kW		3 kW					
			Total Amps:	49 A		45 A		26 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	208 VA	125.00%	260 VA		
Motor	7020 VA	117.85%	8274 VA	**Total Load:**	13.87 kW
Other	2980 VA	100.00%	2980 VA	**Demand Load:**	15.17 kW
RECEPT	3480 VA	100.00%	3480 VA	**Connected Amps:**	38 A
				Demand Amps:	42 A

Notes:

Panel: C

Location: MECH 102 | **Volts:** 208/120 Single | **A.I.C. Rating:** 14kAIC
Supply From: | **Phases:** 1 | **Mains Type:** MCB
Mounting: SURFACE | **Wires:** 3 | **Mains Rating:** 100 A
Enclosure: TYPE 1 | **Bus Rating:** 100 A
Series: PANELBOARD | **Neutral Buss:** Yes
Sub-Feed Lugs: No | **Ground Buss:** Yes

Notes:

CKT	Circuit Description	Trip	Poles	A		B		Poles	Trip	Circuit Description	CKT
1	INTERIOR LIGHTING	20	1	0.13	0.04			1	20	EXTERIOR LIGHTING	2
3	FAMILY TLT RECEPTACLE	20	1			0.18	0.18	1	20	FAMILY TLT - ADULT CHANGING...	4
5	MECH RECEPTACLE	20	1	0.18	0.02			1	20	EF-1	6
7	EF-2	20	1			0.00	0.83	2	20	DWH-2	8
9	EXTERIOR RECEPTACLE	20	1	0.18	0.83			--	--	--	10
11	ADULT CHANGING STATION	20	1			1.92	0.36	1	20	PAVILION RECEPTACLE	12
13	FAMILY TLT 101 HAND DRYER	20	1	1.25	0.36			1	20	PAVILION RECEPTACLE	14
15	FAMILY TLT 100 HAND DRYER	20	1			1.25	0.36	1	20	PAVILION RECEPTACLE	16
17	IRRIGATION PUMP	20	1	1.92	0.36			1	20	PAVILION RECEPTACLE	18
19	PARK PUMP	20	1			1.92	0.72	1	20	ROADSIDE RECEPTACLE	20
21	SPARE	20	1	0.00	0.54			1	20	ROADSIDE RECEPTACLE	22
23	SPARE	20	1			0.00	0.00	1	20	SPARE	24
25	SPARE	20	1	0.00	0.00			1	20	SPARE	26
27	SPACE	--	1			--	0.00	1	20	SPARE	28
29	SPACE	--	1	--	--			1	--	SPACE	30
			Total Load:	6 kW		8 kW					
			Total Amps:	56 A		72 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
LTG	176 VA	125.00%	220 VA		
Motor	1673 VA	124.66%	2085 VA	**Total Load:**	13.53 kW
Other	5680 VA	100.00%	5680 VA	**Demand Load:**	13.99 kW
RECEPT	720 VA	100.00%	720 VA	**Connected Amps:**	65 A
				Demand Amps:	67 A

Notes:

LIGHT FIXTURE SCHEDULE

ID	MANUFACTURER	MODEL NO.	VOLTAGE	REQUIRED LAMPS WATT	REQUIRED LAMPS TYPE	DESCRIPTION	NOTES
LA	ELITE	24-EDGE-LED-3000L-DIM10-MVOLT-40K-85	120-277V	31 W	LED, 4000K, 31000LM	LED 2X4 RECESSED TROFFER	
LAEM	ELITE	24-EDGE-LED-3000L-DIM10-MVOLT-40K-85-0-EMG-LED-10W	120-277V	31 W	LED, 4000K, 3100LM	LED 2X4 RECESSED TROFFER WITH 10W EM BATTERY	
LB	ELITE	OLS-DI-LED-2-S-4-D500L-U500L-DIM10-MVOLT-40K-85	120-277V	18 W	LED, 4000K, 500LM	LED 4' LINEAR DIRECT/INDIRECT PENDANT	
LBEM	ELITE	OLS-DI-LED-2-S-4-D500L-U500L-DIM10-MVOLT-40K-85-0-EMG-LED-10W	120-277V	18 W	LED, 4000K, 500LM	LED 4' LINEAR DIRECT/INDIRECT PENDANT WITH EMERGENCY BATTERY BACKUP	
LC	ELITE	22-EDGE-LED-2000L-DIM10-MVOLT-40K-85	120-277V	23 W	LED, 4000K, 2100LM	LED 2X2 RECESSED TROFFER	
LCEM	ELITE	22-EDGE-LED-2000L-DIM10-MVOLT-40K-85-0-EMG-LED-10W	120-277V	23 W	LED, 4000K, 2100LM	LED 2X2 RECESSED TROFFER WITH EMERGENCY BATTERY BACKUP	
LD	ELITE	RL675-700L-DIMTR-120-40K-90-WH	120-277V	14 W	LED, 4000K, 800LM	LED 6" DOWNLIGHT	
LDEM	ELITE	RL675-700L-DIMTR-120-40K-90-WH-EMG-LED-G-16W-HV-FLEX	120-277V	14 W	LED, 4000K, 800LM	LED 6" DOWNLIGHT WITH 16W EM BATTERY	CONTRACTOR SHALL PROVIDE AND INSTALL 16W EMERGENCY BACKUP BATTERY
LE	ELITE	OLS-DI-LED-2-S-8-D500L-U500L-DIM10-MVOLT-40K-85	120-277V	36 W	LED, 4000K, 500LM	LED 8' LINEAR DIRECT/INDIRECT PENDANT	
LEEM	ELITE	OLS-DI-LED-2-S-8-D500L-U500L-DIM10-MVOLT-40K-85-0-EMG-LED-10W	120-277V	36 W	LED, 4000K, 500LM	LED 8' LINEAR DIRECT/INDIRECT PENDANT WITH EMERGENCY BATTERY BACKUP	
LFEM	ELITE	RL675-1100L-DIMTR-120-347-40K-90-WH-EMG-LED-G-16W-HV-FLEX	120-277V	14 W	LED, 4000K, 1200LM	LED 6" DOWNLIGHT WITH 16W EM BATTERY	
LG	ELITE	8-SLEEK-R-LED-8000L-DIM10-MVOLT-40K-85	120-277V	74 W	LED, 4000K, 8100LM	LED 8' SUSPENDED DIRECT LINEAR STRIP	
LGEM	ELITE	8-SLEEK-R-LED-8000L-DIM10-MVOLT-40K-85-0-EMG-LED-10W	120-277V	74 W	LED, 4000K, 8100LM	LED 8' SUSPENDED DIRECT LINEAR STRIP WITH EMERGENCY BATTERY BACKUP	
LH	KENALL	FS524R-2TB-PIA-MW-25L40K-DV	120-277V	29 W	LED, 4000K, 2000LM	2' LINEAR WALL BRACKET	
LHEM	KENALL	FS524R-2TB-PIA-MW-25L40K-DV	120-277V	29 W	LED, 4000K, 2000LM	2' LINEAR WALL BRACKET WITH EMERGENCY BATTERY BACKUP	CONTRACTOR SHALL PROVIDE AND INSTALL 16W EMERGENCY BACKUP BATTERY
SA	COOPER LIGHTING	GALN-SA2C-830-U-T2-QU-BK	120-277V	108 W	LED, 3000K, 14000LM	LED SITE LIGHT WITH T2 DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF
SA POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SB	COOPER LIGHTING	GALN-SA2C-830-U-T4FT-QU-BK	120-277V	108 W	LED, 3000K, 14000LM	LED SITE LIGHT WITH T4FT DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF UNLESS NOTED OTHERWISE
SB POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SC	STERNBERG LIGHTING	PT-US660-S4-84L30T5-MDL002-SV1	120-277V	47 W	LED, 3000K, 5400LM	LED DECORATIVE POST TOP SITE LIGHT WITH T5 DISTRIBUTION	MOUNTING HEIGHT: 12' AFF
SC POLE	STERNBERG LIGHTING	SSA12G400	-	0 W		12' LIGHT POLE	
SD	STERNBERG LIGHTING	US270-16L30T3-MDL003-SV1	120-277V	14 W	LED, 3000K, 3500LM	LED DECORATIVE WALL SCONCE	MOUNTING HEIGHT: SEE SHEET SE2.00
SDEM	STERNBERG LIGHTING	US270-16L30T3-MDL003-SV1	120-277V	14 W	LED, 3000K, 3500LM	LED DECORATIVE WALL SCONCE. PROVIDE 14W EM BATTERY BACKUP	MOUNTING HEIGHT: SEE SHEET SE2.00
SE	COOPER LIGHTING	TCRS8W-BK-7030	120-277V	8 W	LED, 3000K, 850LM	LED GROUND MOUNTED FLOODLIGHT	MOUNTING HEIGHT: 0' AFF
SF	STERNBERG LIGHTING	US360-42IN-08L-30-TA-MDL06-SV4	120-277V	37 W	LED, 3000K, 1150LM	LED BOLLARD, 42 INCHES TALL	
SG	STERNBERG LIGHTING	PT-US660-S4-84L30T5-MDL002-SV1	120-277V	98 W	LED, 3000K, 5400LM	LED DECORATIVE POST TOP SITE LIGHT WITH T5 DISTRIBUTION	MOUNTING HEIGHT: 12' AFF
SH	COOPER LIGHTING	GALN-SA2C-830-U-5WQ-BK	120-277V	108 W	LED, 3000K, 15000LM	LED SITE LIGHT WITH TYPE 5 WIDE DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF
SH POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SI	COOPER LIGHTING	1003-SU2-RCS-RW-LED 3090-F-BK-24-L2-UNV-RSM	120-277V	40 W	LED, 3000K, 1300LM	LED SIGN LIGHT. DUAL HEAD. BLACK FINISH.	MOUNTING HEIGHT: SEE SHEET SE2.00
XA	LITHONIA	EDG-1-G-EL-SD	UNV	3 W	LED	EXIT SIGN	

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL SCHEDULES

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. E9.00

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

NOT TO BE USED AS CONSTRUCTION DRAWINGS

GENERAL NOTES:

1. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ACCEPTED EDITION OF THE NATIONAL ELECTRICAL CODE, NEC, AND ALL STATE AND LOCAL CODES.
2. COORDINATE THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND CONNECTIONS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND EQUIPMENT DRAWINGS.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER, CONDUITS, CABLETRAY, AND OTHER COMPONENTS AS SHOWN ON THE EQUIPMENT PROVIDER DRAWINGS FOR INSTALLATION OF SYSTEM.
4. "BACK TO BACK" OR THROUGH THE WALL BOXES SHALL NOT BE USED.
5. INSTALL HANDLE LOCK-ON, ON ALL CIRCUIT BREAKERS CONTROLLING NIGHT LIGHT, EMERGENCY LIGHT AND EXIT LIGHT CIRCUITS.
6. ALL RECEPTACLES SHALL BE HARD USE, SPECIFICATION GRADE.
7. PROVIDE TAMPER RESISTANT RECEPTACLES WHERE REQUIRED BY APPLICABLE CODES.
8. RECEPTACLES INDICATED AS GROUND FAULT CIRCUIT INTERRUPTER TYPE SHALL BE MOUNTED IN AN ACCESIBLE LOCATION, PER CODE OR PROVIDED WITH A GFCI BREAKER.
9. ALL CONDUCTORS SHALL BE COPPER. ALUMINUM WIRES SHALL NOT BE USED.
10. MINIMUM CONDUIT SIZE SHALL BE 1/2" FOR POWER FEEDS AND 1" FOR DATA FEEDS.
11. FINAL CONNECTION TO ITEMS SUBJECT TO VIBRATION SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.
12. 120/208VAC CIRCUIT WIRING FOR ANY ROOM OR AREA MAY BE GROUPED INTO RACEWAYS UNLESS SEPARATE RACEWAYS ARE REQUIRED BY THE NEC. COMPLY WITH NEC REQUIREMENTS FOR CONDUCTOR DERATING.
13. PROVIDE EQUIPMENT GROUNDING CONDUCTORS FOR ALL POWER AND LIGHTING CIRCUITS.
14. ALL LIGHTING AND POWER CONDUCTORS SHALL BE 12 AWG MINIMUM. ALL CONTROL CONDUCTORS SHALL BE 14 AWG MINIMUM OR AS SPECIFIED BY MANUFACTURER.
15. DEDICATED NEUTRAL SHALL BE PROVIDED FOR ALL CIRCUITS. SHARED NEUTRALS ARE NOT ALLOWED.
16. BASIS OF DESIGN IS FOR A COMPLETE ELECTRICAL SYSTEM, INSTALLED PER CODE REQUIREMENTS.
17. PROVIDE AN UNSWITCHED HOT TO ALL EMERGENCY BATTERY PACKS, LIGHTING INVERTERS AND EMERGENCY LIGHTING UNITS AHEAD OF AN LIGHTING CONTROLS FROM THE BRANCH CIRCUIT SERVING LIGHTING IN THE SURROUNDING AREA.

ABBREVIATIONS

A, AMP	AMPERES
AF	AMP FUSE OR AMP FRAME
AFC	AVAILABLE FAULT CURRENT (SYMMETRICAL)
A.F.F.	ABOVE FINISHED FLOOR
AIC.	AMPERE INTERRUPTING CAPACITY
AM.	AMMETER
ASYM.	ASYMMETRICAL
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CAP.	CAPACITY OR CAPACITOR
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT ,CCT	CIRCUIT
C.O.	CONDUIT ONLY
CONN.	CONNECT OR CONNECTION
CU	COPPER
DA	DURESS ALARM
DB	DOOR BELL
DISC.	DISCONNECT
DPST	DOUBLE POLE SINGLE THROW
EC	ELECTRICAL CONTRACTOR
EWC	ELECTRIC WATER COOLER (COORDINATE ACCESSIBILITY OF GFCI)
ELEC	ELECTRIC OR ELECTRICAL
ELEV	ELEVATION OR ELEVATOR
EMERG, EM	EMERGENCY
EPO	EMERGENCY POWER OFF
EMT	ELECTRICAL METAL TUBING
FIXT.	FIXTURE
FLA	FULL LOAD AMPERES
FLUOR.	FLUORESCENT
GRC,GCR	GALVANIZED RIGID CONDUIT
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GRD,GND,G	GROUND
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HZ.	HERTZ
IMC	INTERMEDIATE METAL CONDUIT
I.G.	ISOLATED GROUND
INCAND.	INCANDESCENT
JB	JUNCTION BOX
KAIC	THOUSAND AMPERE INTERRUPTING CAPACITY
KVA	KILOVOLT AMPERES
KW	KILOWATT
KWH	KILOWATT HOUR
LTG	LIGHTING
LV	LOW VOLTAGE
MATV	MASTER ANTENNA TELEVISION
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE, METAL HALIDE OR MOUNTING HEIGHT
MLO	MAIN LUGS ONLY
N.C.	NORMALLY CLOSED
N.E.C.	NATIONAL ELECTRICAL CODE
N.I.C.	NOT IN CONTRACT
NF	NON FUSIBLE
N.O.	NORMALLY OPEN
NTS	NOT TO SCALE
OL	OVERLOADS
P	POLE
PB	PULLBOX
PH OR Ø	PHASE
PNL	PANEL
PR	PAIR
PVC	POLYVINYL CHLORIDE
PWR.	POWER
REC	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
SOL	SOLENOID
SPDT	SINGLE POLE DOUBLE THROW
SPKR	SPEAKER
SPST	SINGLE POLE SINGLE THROW
SW.	SWITCH
SWBD	SWITCHBOARD
SYM	SYMMETRICAL
TEL	TELEPHONE
XFMR	TRANSFORMER
TTB	TELEPHONE TERMINAL BACKBOARD
TV	TELEVISION
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERES
VD	VOLTAGE DROP
VM	VOLT METER
W	WATTS OR WIRE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XP	EXPLOSION PROOF

GENERAL

MOUNTING HEIGHTS TO BE AS INDICATED, UON. MOUNTING HEIGHTS ARE TO CENTER OF DEVICE FROM FINISHED FLOOR OR GRADE, UON. SEE SPECIFICATION DIV 26 FOR ADDITIONAL REQUIREMENTS.

KEY NOTE REFERENCE SYMBOL. DENOTES "SEE KEY NOTE NO. 2"

FOOT ON DEVICE INDICATES WALL MOUNTED

DEMOLITION AND REMODEL

EXISTING ELECTRICAL ITEM TO BE REMOVED, UON.

EXISTING ELECTRICAL ITEM TO REMAIN

B — EXISTING ELECTRICAL ITEM TO BE REMOVED AND PROVIDED WITH A BLANK COVERPLATE

EXISTING ELECTRICAL CIRCUIT TO BE REMOVED SHOWN ONLY WHERE CLARIFICATION BETWEEN EXISTING TO REMAIN AND REMOVED ITEMS IS REQUIRED

SEE PLANS AND NOTES FOR DEVICES INTEND FOR REUSE AND / OR REPURPOSING.

NOT TO BE USED AS CONSTRUCTION DRAWINGS

CIRCUIT DESIGNATIONS

1LN1-1 — PANEL NAME / POLE NUMBERS

BRANCH CIRCUIT HOMERUN. PROVIDE PHASE, NEUTRAL AND GROUND CONDUCTORS FOR EACH INDICATED CIRCUIT OR MULTI WIRE BRANCH AS REQUIRED. PROVIDE SWITCH LEGS FOR SWITCH CIRCUITING AS REQUIRED. PROVIDE EQUIPMENT GROUND WIRE IN ALL BRANCH CIRCUIT RACEWAYS/CIRCUITS. PROVIDE SEPARATE ISOLATED GROUND WIRE TO ALL ISOLATED GROUND DEVICES.

CONDUIT SIZE	MAX QUANTITY OF CONDUCTORS PER CONDUIT		
	CONDUCTOR SIZE		
	12	10	8
3/4 INCH	5 TO 8	5 TO 6	1 TO 3
1 INCH	9 TO 13	7 TO 11	4 TO 5
SEE SPECIFICATONS FOR LIMITATIONS ON QUANTITY OF CURRENT CARRYING CONDUCTORS PER CONDUIT			

CONDUIT RISER UP

CONDUIT RISER DOWN

INDICATES CIRCUIT CONTINUATION

STUB INTO ACCESSIBLE CORRIDOR CEILING SPACE UNLESS OTHERWISE NOTED

CONDUIT SEAL FITTING FOR HAZARDOUS AREAS

CONDUIT SLEEVE

CAP END OF CONDUIT

CABLE OR CORD CONNECTED

LIGHTING

NOTE A: UPPER CASE ALPHANUMERIC SUBSCRIPT DENOTES FIXTURE TYPE. SEE SCHEDULE(S)

NOTE B: LOWER CASE LETTER SUBSCRIPT PROVIDED ADJACENT TO SWITCHING DEVICE AND ASSOCIATED LIGHT FIXTURE(S) WHERE REQUIRED FOR CLARIFICATION.

CEILING LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

DIRECTIONAL AIMED FIXTURE AIM IN DIRECTION OF ARROW

WALL BRACKET LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

RECESSED LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

WALL BRACKET LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

UNDERCABINET/ COUNTER LIGHT OUTLET OR STRIP LIGHT OUTLET WITH FIXTURE CONNECTED TO NORMAL SOURCE

LINEAR PENDANT/SUSPENDED LIGHT FIXTURE CONNECTED TO NORMAL SOURCE

EXIT LIGHT OUTLET WITH FIXTURE - SHADING INDICATES LOCATION OF FACE(S). ARROWS INDICATE DIRECTIONAL ARROWS WHERE REQUIRED. WALL MOUNTED SIGNS AT +90" CENTERED ABOVE DOOR WHERE APPLICABLE

EMERGENCY LIGHT FIXTURE WITH INTEGRAL BATTERY SOURCE AND HEADS

TRACK LIGHT OUTLET WITH FIXTURE. TYPE INDICATED, QUANTITY AND LENGTH AS SHOWN OR SCHEDULED

PENDANT LIGHT FIXTURE CONNECTED TO NORMAL SOURCE

LIGHTING STANDARD POLE FIXTURE, PROVIDE QUANTITY OF HEADS AND ORIENTATION AS INDICATED

LIGHTING STANDARD WITH POST-TOP FIXTURE

BOLLARD FIXTURE

CEILING LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

WALL SCONCE LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

LINEAR WALL LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

SURFACE / STRIP LIGHT OUTLET WITH FIXTURE CONNECTED TO EMERGENCY SOURCE

PENDANT LIGHT FIXTURE CONNECTED TO EMERGENCY SOURCE

LINEAR PENDANT/SUSPENDED LIGHT FIXTURE CONNECTED TO EMERGENCY SOURCE

S — SWITCH AT +48" U.O.N.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE VARIOUS TYPES OF SWITCHES.

NO SUBSCRIPT - SINGLE POLE
2 — DOUBLE POLE
3 — THREE WAY
4 — FOUR WAY
D — DIMMER, COMPATIBLE WITH FIXTURE.
f — FUSED
L — PILOT LIGHT
LV — LOW VOLTAGE/DIGITAL SWITCH
OS — WALL SWITCH OCCUPANCY SENSOR, DUAL TECHNOLOGY.
DOS — WALL SWITCH OCCUPANCY SENSOR W/ DIMMER, DUAL TECHNOLOGY.
TE — MANUAL STARTER WITH THERMAL ELEMENT
XP — EXPLOSION PROOF
M — MOTOR RATED

WIRELESS DEVICE

PC — EXTERIOR PHOTOCELL. ON/OFF WITH ADJUSTABLE SET-POINT.

DH — DAYLIGHT HARVESTING SENSOR. ANALOG 0-10V OUTPUT WITH INTEGRAL MOTION SENSOR.

OS — CEILING / DIRECTIONAL / DIRECTIONAL WALL MOUNTED OCCUPANCY SENSOR DUAL TECHNOLOGY, WITH REQUIRED POWER PACKS.

TC — TIME CLOCK AT +48"

POWER AND DIAGRAMS

NOTE:
A. OUTLETS IN FINISHED OR SHELL SPACES SHALL BE MOUNTED AT +18" UON.
B. OUTLETS IN GARAGE, MECHANICAL, AND ELECTRICAL SPACES SHALL BE MOUNTED AT 48" UON.
C. OUTLETS SHALL BE TAMPER PROOF, WHERE REQUIRED PER CODE.
D. OUTLETS SHALL HAVE AFCI PROTECTION, WHERE REQUIRED PER CODE.
E. OUTLETS SHALL HAVE GFCI PROTECTION, WHERE REQUIRED PER CODE.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE DIFFERENT TYPES OF RECEPTACLES

WP — WEATHERPROOF, EXTRA DUTY, WITH STEEL IN-USE COVER.
CL — CLOCK MOUNTED AT +84", REGRESSED SINGLE RECEPTACLE, WITH CLOCK HANGER.
H — HORIZONTAL MOUNTING
U — DUAL USB INCLUDED WITH RECEPTACLE TYPE SHOWN.

TYPICAL SYMBOLOGY:

20A, 125V, 2 POLE, 3 WIRE GROUNDING DUPLEX RECEPTACLE, NEMA 5-20R

20A, 125V, 2 POLE, 3 WIRE GROUNDING SINGLE RECEPTACLE, NEMA 5-20R

20A, 125V, 2 POLE, 3 WIRE GROUNDING DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R

250V, 2 POLE, 3 WIRE GROUNDING SINGLE RECEPTACLE, SIZE AND TYPE AS NOTED.

RECEPTACLES WITH GROUND FAULT CIRCUIT INTERRUPTOR

RECEPTACLES MOUNTED 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE, UON.

RECEPTACLES WITH GFCI AND MOUNTED 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE.

CEILING MOUNTED RECEPTACLE. TYPE AS INDICATED ABOVE.

CEILING MOUNTED GFCI RECEPTACLES, TYPE AS INDICATED ABOVE.

FLUSH FLOOR MOUNTED RECEPTACLE, TYPE AS INDICATED ABOVE.

FLUSH FLOOR MOUNTED RECEPTACLE, GFCI, TYPE AS INDICATED ABOVE.

PEDESTAL MOUNTED RECEPTACLE, TYPE AS INDICATED ABOVE.

SPECIAL PURPOSE RECEPTACLE. SUBSCRIPT DENOTES NEMA TYPE.

COMBINATION POWER/ COMMUNICATIONS FLOOR BOX, TYPE AND COMMUNICATIONS DEVICE AS INDICATED.

JUNCTION BOX. 4" SQUARE, UON. WALL AND CEILING MOUNTED.

PIGTAIL TO SWITCH DENOTES TOP HALF OF RECEPTACLE SWITCHED.

SURFACE RECEPTACLE STRIP. TYPE AND LENGTH AS INDICATED.

JUNCTION BOX. 4" SQUARE, UON. WALL AND CEILING MOUNTED.

208 VOLT PANELBOARD AT +72" TO TOP

480 VOLT PANELBOARD AT +72" TO TOP

M — ELECTRIC METER

CABLE TRAY OR WIREWAY

SAFETY SWITCH AT +54". CHARACTERISTICS AS INDICATED BY FRAME/POLES.

FUSED SAFETY SWITCH AT +54". CHARACTERISTICS AS INDICATED BY FRAME/FUSESIZE/POLES.

MAGNETIC MOTOR STARTER AT +54". CHARACTERISTICS AS INDICATED BY FRAME SIZE/POLES/NEMA SIZE.

COMBINATION MAGNETIC MOTOR STARTER WITH DISCONNECT AT +54". CHARACTERISTICS AS INDICATED BY FRAME/FUSE/POLES/NEMA SIZE

AFD — ADJUSTABLE FREQUENCY DRIVE WITH INTEGRAL CIRCUIT BREAKER DISCONNECT

MAGNETIC CONTACTOR AT +54". AMPS/POLES/CONTACT VOLTS/ COIL VOLTS AS INDICATED.

CB — SEPARATELY MOUNTED, ENCLOSED MOLDED CASE CIRCUIT BREAKER AT +48". FLUSH MOUNTED IN FINISHED AREAS. AMP/POLES AS INDICATED.

CIRCUIT BREAKER. AMP/POLES AS INDICATED

FUSE. SIZE AS INDICATED

FUSIBLE SWITCH. AMP/POLES/FUSE SIZE AS INDICATED

AUTOMATIC TRANSFER SWITCH +72" TO TOP OR FLOOR MOUNTED.

DISCONNECT STABS FOR DRAWOUT TYPE EQUIPMENT

TRANSFORMER

GROUND CONNECTION

MOTOR CONNECTION, HP AS INDICATED

G — GENERATOR

START-STOP PUSHBUTTON STATION AT +48"

GROUND BUS ON STANDOFFS

CONTROL PANEL:

EQUIPMENT OR TERMINAL CABINET AT +72" TO TOP

PS — POWER SUPPLY

PUSHBUTTON STATION AT +48"

FIRE DETECTION AND ALARM

FACP — CONTROL PANEL AT +72" TO TOP

FAA — FIRE ALARM ANNUNCIATOR PANEL AT +72" TO TOP

F — MANUAL STATION AT +48"

FIRE SUPPRESSION SYSTEM ABORT SWITCH STATION AT +48"

COMBINATION CARBON MONOXIDE / SMOKE DETECTOR WITH ANNUNCIATION

SD — SMOKE DETECTOR - PHOTO ELECTRIC AREA BEAM

DD — DUCT SMOKE DETECTOR

FD — FIRE/ SMOKE DAMPER

HD — AUTOMATIC HEAT DETECTOR

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE THE VARIOUS TYPE OF HEAT DETECTORS

NO SUBSCRIPT - FIXED TEMPERATURE (155 DEGREE U.O.N.)
R/F — COMBINATION RATE OF RISE FIXED TEMPERATURE (135 DEGREE U.O.N.)
XP — EXPLOSION PROOF, FIXED TEMPERATURE (135 DEGREE U.O.N.) CLASS 1, GROUP C

NOTE: WALL MOUNT VISUAL AND COMBINATION AUDIO/VISUAL NOTIFICATION APPLIANCES AT +80" AFF TO BOTTOM OF FACE PLATE U.O.N.

V — VISUAL NOTIFICATION APPLICANCE

A — WALL MOUNTED AUDIBLE NOTIFICATION APPLIANCE

AV — WALL MOUNTED COMBINATION AUDIBLE/VISUAL NOTIFICATION APPLIANCE

V — CEILING MOUNTED VISUAL NOTIFICATION APPLIANCE

A — CEILING MOUNTED AUDIBLE NOTIFICATION APPLIANCE

AV — CEILING MOUNTED COMBINATION AUDIBLE/VISUAL NOTIFICATION APPLIANCE

DH — MAGNETIC DOOR HOLDER. COORDINATE MOUNTING HEIGHT WITH DOOR MANUFACTURER.

FR — ELECTROMECHANICAL DOOR RELEASE. COORDINATE WITH DOOR MANUFACTURER.

FS — SPRINKLER OR STANDPIPE FLOW ALARM SWITCH CONNECTION

TS — VALVE TAMPER SWITCH

F — AIR PRESSURE MONITOR SWITCH FOR PRE-ACTION OR DRY PIPE SPRINKLER SYSTEM

TELECOMMUNICATION

GENERAL NOTES

NOTE A: OUTLETS IN FINISHED OR SHELL SPACES SHALL BE MOUNTED AT +18" UON.
NOTE B: OUTLETS LOCATED AT COUNTERS SHALL BE LOCATED 18"AFF IN KNEE SPACE IF PROVIDED OR 4" ABOVE COUNTER OR BACK SPLASH AS APPLICABLE IF NO KNEE SPACE IS PROVIDED UON.
NOTE C: WHERE ASTERISK (*) IS INDICATED NEXT TO OUTLET AT WORK COUNTER, OUTLET SHALL BE LOCATED ABOVE COUNTER RATHER THAN IN KNEE SPACE.

▼ — STANDARD TELECOMMUNICATIONS OUTLET - PROVIDE EXTRA DEEP DOUBLE GANG BOX WITH SINGLE GANG MUD RING AND (1) 1" CONDUIT TO ABOVE FINISHED CEILING, MOUNTED AT 18" AFF, UON. PROVIDE PLASTIC BUSHING AT THE ENDS OF THE CONDUITS. DATA DEVICES AND WIRING PROVIDED BY OTHERS, UON.

THE FOLLOWING SUBSCRIPTS ARE USED TO INDICATE THE VARIOUS (NON-STANDARD) TYPES OF OUTLETS

F — FLOOR MOUNTED.
C — CEILING MOUNTED.
W — MOUNTED 48" AFF, UON.
M — MOUNTED 72" AFF, UON.
T — TELEPHONE AT 44" AFF, UON.
TV — TELEVISION, MOUNTED AT NOTED HEIGHT.
B — BLANK (ROUGH-IN TO ACCESSABLE CEILING SPACE) WITH BLANK COVERPLATE
F — FIBER
— THE FIRST NUMBER INDICATES THE NUMBER OF CAT6 CABLES. THE SECOND NUMBER INDICATES THE TO QUANTITY OF JACK LOCATIONS.

C — CLOCK - SEE SPECIFICATIONS FOR REQUIREMENTS.

S — SPEAKER FOR PA SYSTEM.

DO — ADA DOOR CONTROL OPENER, COORDINATE WITH DOOR REQUIREMENTS

DC — DOOR CONTROLS, COORDINATE WITH SECURITY, AUTO AND MANUAL CONTROLS

SECURITY

FIXED VIDEO SURVEILANCE CAMERA

DOOR POSITION SWITCH

CONNECTION TO ELECTRIC OR PNEUMATIC DOOR LOCK

CR — CARD READER AT +48"

NOTE:
SYMBOLS SHOWN ARE FOR REFERENCE ONLY AND DO NOT CONSTITUTE A CHECK LIST OF DEVICES REQUIRED BY THE CONTRACT

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN — JOSEPH F. SOVIS, JR. — ENGINEER NO. 6201042247 — LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

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Sheet
ELECTRICAL SYMBOLS, ABBREV., + NOTES

811 — Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE: 1/8" = 1'-0"

NFE JOB NO. 0557
SHEET NO. SE1.00

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LIGHT FIXTURE SCHEDULE

ID	MANUFACTURER	MODEL NO.	VOLTAGE	REQUIRED LAMPS		DESCRIPTION	NOTES
				WATT	TYPE		
SA	COOPER LIGHTING	GALN-SA2C-830-U-T2-QU-BK	120-277V	108 W	LED, 3000K, 14000LM	LED SITE LIGHT WITH T2 DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF
SA POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SB	COOPER LIGHTING	GALN-SA2C-830-U-T4FT-QU-BK	120-277V	108 W	LED, 3000K, 14000LM	LED SITE LIGHT WITH T4FT DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF UNLESS NOTED OTHERWISE
SB POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SC	STERNBERG LIGHTING	PT-US660-S4-84L30T5-MDL002-SV1	120-277V	47 W	LED, 3000K, 5400LM	LED DECORATIVE POST TOP SITE LIGHT WITH T5 DISTRIBUTION	MOUNTING HEIGHT: 12' AFF
SC POLE	STERNBERG LIGHTING	SSA12G400	-	0 W	-	12' LIGHT POLE	
SD	STERNBERG LIGHTING	US270-16L30T3-MDL003-SV1	120-277V	14 W	LED, 3000K, 3500LM	LED DECORATIVE WALL SCONCE	MOUNTING HEIGHT: SEE SHEET SE2.00
SE	COOPER LIGHTING	TCRS8W-BK-7030	120-277V	8 W	LED, 3000K, 850LM	LED GROUND MOUNTED FLOODLIGHT	MOUNTING HEIGHT: 0' AFF
SF	STERNBERG LIGHTING	US360-42IN-08L-30-TA-MDL06-SV4	120-277V	37 W	LED, 3000K, 1150LM	LED BOLLARD, 42 INCHES TALL	
SG	STERNBERG LIGHTING	PT-US660-S4-84L30T5-MDL002-SV1	120-277V	98 W	LED, 3000K, 5400LM	LED DECORATIVE POST TOP SITE LIGHT WITH T5 DISTRIBUTION	MOUNTING HEIGHT: 12' AFF
SH	COOPER LIGHTING	GALN-SA2C-830-U-5WQ-BK	120-277V	108 W	LED, 3000K, 15000LM	LED SITE LIGHT WITH TYPE 5 WIDE DISTRIBUTION AND BLACK FINISH	MOUNTING HEIGHT: 15' AFF
SH POLE	COOPER LIGHTING	SSA-5-T-15-W-D-N-1	-	0 W	-	15' LIGHT POLE WITH BLACK FINISH	
SI	COOPER LIGHTING	1003-SU2-RCS-RW-LED 3090-F-BK-24-L2-UNV-RSM	120-277V	40 W	LED, 3000K, 1300LM	LED SIGN LIGHT. DUAL HEAD. BLACK FINISH.	MOUNTING HEIGHT: SEE SHEET SE2.00

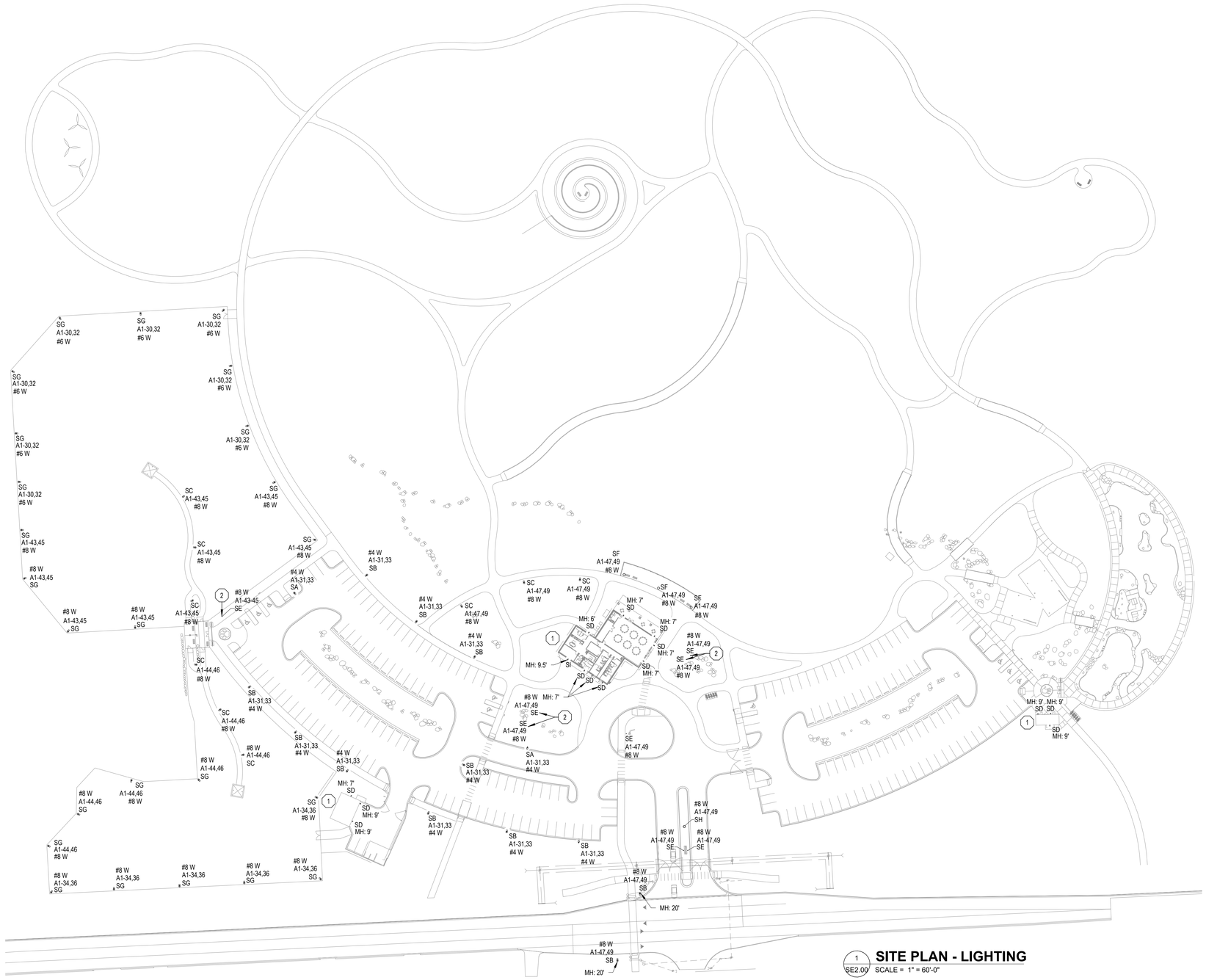
GENERAL ELECTRICAL NOTES:

1. REFER TO SHEET E9.00 FOR ALL PANEL SCHEDULE INFORMATION.
2. ALL SITE LIGHTING SHALL BE CIRCUITED THROUGH LIGHTING CONTACTOR. SEE DETAIL 4 ON SE8.00.

KEYNOTES:

1 CIRCUITING FOR ALL BUILDING MOUNTED LIGHTING IS SHOWN ON SHEET E4.00, E4.01, AND E4.02.

2 CONTRACTOR SHALL CONFIRM FINAL LOCATION OF LIGHTING WITH CIVIL ENGINEER/SCULPTURE BEFORE INSTALLATION.



1 SE2.00 **SITE PLAN - LIGHTING**
SCALE = 1" = 60'-0"

NOT TO BE USED AS CONSTRUCTION DRAWINGS

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ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
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PHONE: 517.487.2511
WEB: www.matrixceinc.com

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Sheet
SITE PLAN - LIGHTING

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DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE: As indicated

NFE JOB NO. 0557
SHEET NO. SE2.00

1 SE2.01 **SITE PLAN - PHOTOMETRICS**
SCALE = 1" = 60'-0"

NOT TO BE USED AS CONSTRUCTION DRAWINGS

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1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
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DATE: 02/04/2026
SCALE: 1" = 60'-0"

NFE JOB NO. 0557
SHEET NO. SE2.01

KEYNOTES:

1. CONTRACTOR SHALL PROVIDE AND INSTALL EMPTY CONDUIT TO ENTRANCE OF DOG PARK FOR SECURITY ACCESS CONTROL. COORDINATE WITH A/V CONSULTANT FOR EXACT REQUIREMENTS.
2. CONTRACTOR SHALL PROVIDE AND INSTALL POWER PEDESTAL KIT FOR RECEPTACLE.
3. CONTRACTOR SHALL PROVIDE AND INSTALL HANDHOLE IN THIS APPROXIMATE LOCATION.
4. CONTRACTOR SHALL VERIFY FINAL POSITION WITH CIVIL ENGINEER BEFORE INSTALLATION. PROVIDE AND INSTALL PROGRAMMABLE TIMER FOR PUMP.
5. CONTRACTOR SHALL CONFIRM ELECTRICAL REQUIREMENTS AND FINAL LOCATION BEFORE INSTALLATION.
6. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT TO SPEAKER LOCATION. COORDINATE WITH A/V CONSULTANT FOR EXACT LOCATIONS.

1 SE2.02 **SITE PLAN - POWER**
SCALE = 1" = 60'-0"

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

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Sheet
SITE PLAN - POWER

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SHEET NO. SE2.02

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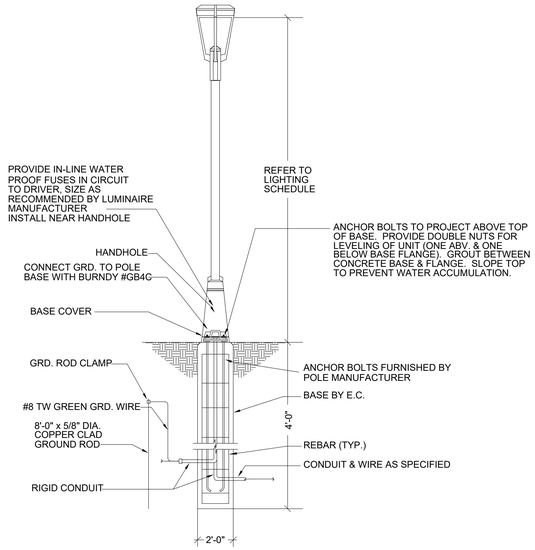
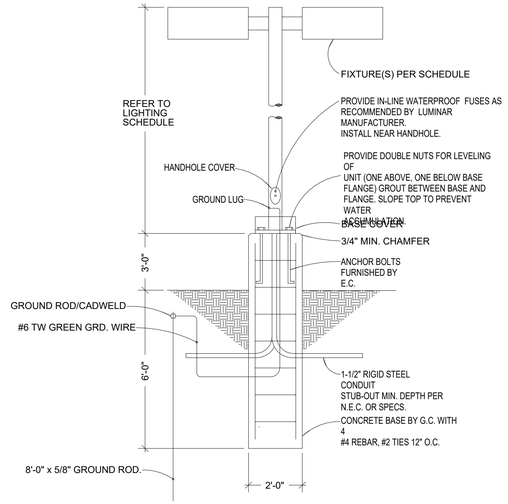


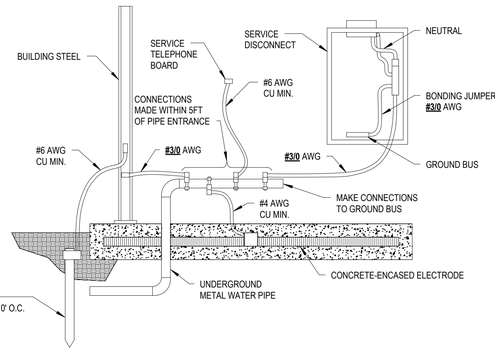
NOTES:
1. USE FOR ALL TYPE "SC" LIGHT FIXTURES.

1 SE8.00 **POLE BASE DETAIL**
NOT TO SCALE

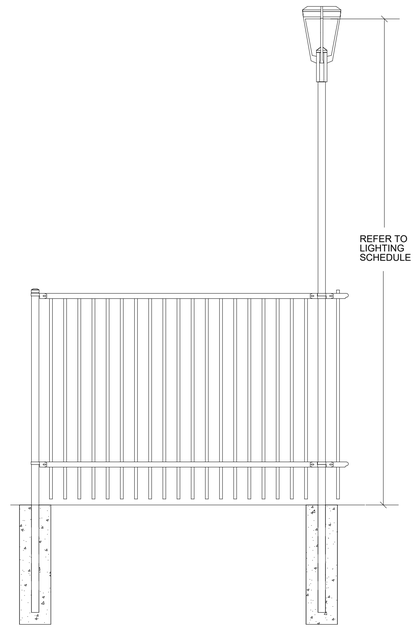


NOTES:
1. USE FOR ALL TYPE "SA", "SB", AND "SH" LIGHT FIXTURES.

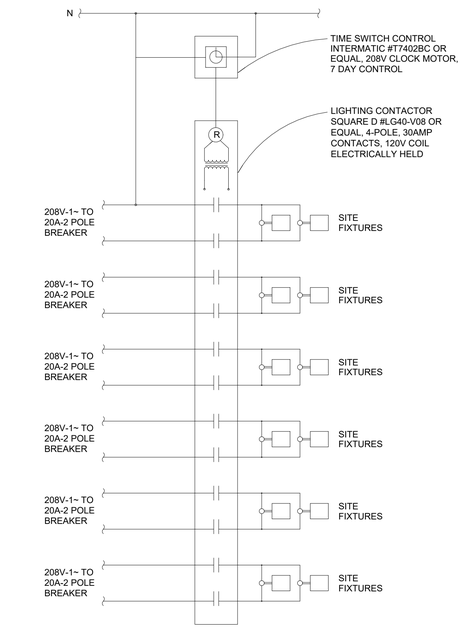
2 SE8.00 **PARKING LOT POLE BASE DETAIL**
NOT TO SCALE



5 SE8.00 **GROUNDING AND BONDING**
NOT TO SCALE



3 SE8.00 **FENCE POST - LIGHTING DETAIL**
NOT TO SCALE



4 SE8.00 **LIGHTING TIME CLOCK CONTACTOR DETAIL**
NOT TO SCALE

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Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL DETAILS

811 Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE: 1/8" = 1'-0"

NFE JOB NO. 0557
SHEET NO. SE8.00

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

SA/SB/SH

Project		Catalog #		Type	
Prepared by		Notes		Date	

McGraw-Edison

GALN Galleon II

Area / Site Luminaire

Product Features

BAA · TAA · FADC · Light Architect™

Product Certifications

ENEC · DLC LISTED · DLC PREMIUM · 3G VIB · IP66 · CE CERTIFIED · 5 YEAR · RoHS

Interactive Menu

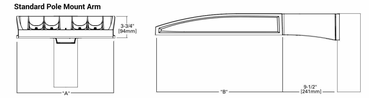
- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 5
- Product Specifications page 5
- Energy and Performance Data page 6
- Control Options page 13

Quick Facts

- Lumen packages range from 3,300 - 102,700 (33W - 658W)
- 17 optical distributions
- Efficacy up to 178 LPW

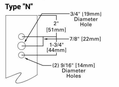
Dimensional Details

Standard Pole Mount Arm



Pole Drilling Pattern

Type "N"



Number of Light Squares	Width "A"	Housing Length "B"	Weight with Standard or QM Arm	EPA with Standard or QM Arm
1-4	16"	22"	29 lb	0.95
5-6	22"	22"	39 lb	0.95
7-9	22"	28-1/8"	48 lb	1.1

NOTES: For arm selection requirements and additional line art, see Mounting Details section.

NOTES:
1. IDA Certified (3000K CCT and warmer only, fixed mounting options)

McGraw-Edison

GALN Galleon II

Ordering Information

SAMPLE NUMBER: **GALN-SA4C-740-U-T4FT-GM**

Product Family [1,2]	Light Engine Configuration			Color Temperature	Voltage	Distribution	Mounting	Finish
	Light Square	Square Count	Lumen Output					
GALN=Galleon II **BAA-GALN**=Galleon II Buy American Act Compliant [28] **TAA-GALN**=Galleon II Trade Agreements Act Compliant [28] **BABA-GALN**=Galleon II BABA/GSA Compliant [28]	**SA**=16 LED Light Square **SB**=26 LED Light Square	1=1 Light Square 2=2 Light Squares 3=3 Light Squares 4=4 Light Squares 5=5 Light Squares 6=6 Light Squares 7=7 Light Squares 8=8 Light Squares 9=9 Light Squares	**A**=Output Level 1 **B**=Output Level 2 **C**=Output Level 3 **D**=Output Level 4 [4, 5] **Z**=Configured Output*	**722**=702CRI, 2200K **727**=702CRI, 2700K **730**=702CRI, 3000K **735**=702CRI, 3500K **740**=702CRI, 4000K **750**=702CRI, 5000K **760**=702CRI, 6000K **827**=802CRI, 2700K **830**=802CRI, 3000K **835**=802CRI, 3500K **840**=802CRI, 4000K **930**=902CRI, 3000K **935**=902CRI, 3500K **940**=902CRI, 4000K **950**=902CRI, 5000K **AMB**=Amber [6, 16]	**U**=120-277V **H**=347V-480V [1,29] **1**=120V **2**=208V **3**=240V **4**=277V **8**=480V [1,29] **9**=347V **DV**=277V-480V DuroVolt Drivers [8, 29, 30]	**T1**=Type I **T2**=Type II **T2R**=Type II Roadway **T3**=Type III **T3R**=Type III Roadway **T4FT**=Type IV Forward Throw **T4W**=Type IV Wide **SNQ**=Type V Square Narrow **SMQ**=Type V Square Medium **SWQ**=Type V Square Wide **SL2**=Type II w/Spill Control **SL3**=Type III w/Spill Control **SL4**=Type IV w/Spill Control **SLL**=90° Spill Light Eliminator Left **SLR**=90° Spill Light Eliminator Right **RW**=Rectangular Wide Type I **AFL**=Automotive Frontline	**[blank]**=Standard Pole Mount Arm **QU**=Quick Mount Universal Arm **QM**=Pole Mount Arm with Quick Mount Adaptor **PA**=Pole Mount, Adjustable [9] **SP**=3" Slipfitter, Adjustable [9] **SP2**=2-3/8" Slipfitter, Adjustable [9] **QMA**=Quick Mount Mast Arm, Fixed **MA**=Mast Arm, Fixed **WM**=Wall Mount, Fixed **WA**=Wall Mount, Adjustable **UP**=Upswept Arm	**AP**=Grey **BZ**=Bronze **BK**=Black **DP**=Dark Platinum **GM**=Graphite Metallic **WH**=White **SALN**=Custom Color

Options (Add as Suffix)	Controls and Systems Options (Add as Suffix)	Accessories (Order Separately) [17]
DIM=External 0-10V Dimming Leads [10] **F**=Single Fuse (120, 277 or 347V Specify Voltage) **FF**=Double Fuse (208, 240 or 480V Specify Voltage) **25KSP**=25kA rated surge protective device [10] **DL**=Two Circuits [4] **HA**=50°C High Ambient [11] **HSS**=Installed House Side Shield [12] **BCS**=Backlight Control Shield [13, 28] **GRSBK**=Glare Reducing Shield, Black [4] **GRSWH**=Glare Reducing Shield, White [4] **LCF**=Light Square Trim Painted to Match Housing [28] **TH**=Tool-less Door Hardware [3] **CC**=Coastal Construction finish [3] **L90**=Optics Rotated 90° Left **R90**=Optics Rotated 90° Right **35DCM**=3 Standard Deviation Color Matching [26] **A4E145**=After Hours Dim, 5 Hours [27] **A4D245**=After Hours Dim, 6 Hours [27] **A4D255**=After Hours Dim, 7 Hours [27] **A4D355**=After Hours Dim, 8 Hours [27] **DALI**=DALI Drivers	**BPC**=Button Type Photocontrol. Must specify voltage 120V, 208V, 240V or 277V. [4] **PR**=NEMA 3-PIN Photocontrol Receptacle **PR7**=NEMA 7-PIN Photocontrol Receptacle [6] **PRCMS**=Add-A-Node Wireless Controller [31] **PSC**=Photocontrol Shorting Cap **SPD2**=Dimming Motion Sensor, 9'-20' mounting [9] **SPD4**=Dimming Motion Sensor, 21'-40' mounting [9] **SPD2/X**=Dimming Motion Sensor, limited square count, 9'-20' mounting [9] **SPD4/X**=Dimming Motion Sensor, limited square count, 21'-40' mounting [9] **MS/DIM-L20**=Motion Sensor for Dimming Operation, 9'-20' Mounting [9] **MS/DIM-L40**=Motion Sensor for Dimming Operation, 21'-40' Mounting [9] **WLS2XX**=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 7'-20' Mounting [14, 15, 28] **WLS4XX**=WaveLinx LITE, SR Driver, Dimming Motion and Daylight, Bluetooth Programmable, 13'-40' Mounting [14, 15, 28] **WPS2XX**=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 7'-15' Mounting [14, 15, 28, 32] **WPS4XX**=WaveLinx PRO, SR Driver, Dimming Motion and Daylight, WAC Programmable, 13'-40' Mounting [14, 15, 28, 32] **DIM/I-L20**=AirMesh Occupancy Sensor (9'-20' Mounting) [18, 19] **DIM/I-L40**=AirMesh Occupancy Sensor (21'-40' Mounting) [18, 19]	**GA/BA1016**=NEMA Photocontrol Multi-Tap - 105-285V **GA/BA1027**=NEMA Photocontrol - 480V **GA/BA1027-3**=NEMA Photocontrol - 347V **GA/BA1213**=Photocontrol Shorting Cap **GA/BA1014**=120V Photocontrol **MA1252**=10kV Surge Module Replacement **MA1036-XX**=Single Tenon Adapter for 2-3/8" O.D. Tenon **MA1037-XX**=2@180° Tenon Adapter for 2-3/8" O.D. Tenon **MA1197-XX**=2@120° Tenon Adapter for 2-3/8" O.D. Tenon **MA1188-XX**=4@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1189-XX**=2@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1190-XX**=3@90° Tenon Adapter for 2-3/8" O.D. Tenon **MA1191-XX**=3@120° Tenon Adapter for 2-3/8" O.D. Tenon **MA1038-XX**=Single Tenon Adapter for 3-1/2" O.D. Tenon **MA1039-XX**=2@180° Tenon Adapter for 3-1/2" O.D. Tenon **MA1192-XX**=3@120° Tenon Adapter for 3-1/2" O.D. Tenon **MA1193-XX**=4@90° Tenon Adapter for 3-1/2" O.D. Tenon **MA1194-XX**=3@90° Tenon Adapter for 3-1/2" O.D. Tenon **MA1195-XX**=2@90° Tenon Adapter for 3-1/2" O.D. Tenon **SRA238**=Adapter kit for mounting 3" SP arm to 2-3/8" O.D. vertical tenon **FSIR-100**=Wireless Configuration Tool for MS/DIM [9] **LS/HSS**=Field Installed House Side Shield for SA Light Squares [4, 12] **LS/HSS-SB**=Field Installed House Side Shield for SB Light Squares [4, 12] **LS/BCS**=Backlight Control Shield [4] **LS/GRSBK-XPR**=Glare Reducing Shield, Black [4, 22] **LS/GRSWH-XPR**=Glare Reducing Shield, White [4, 22] **LS/PRS**=Perimeter Shield, Black [4] **WSLC-1P-18A**=WaveLinx Outdoor Control Module [21, 28, 33] **TLT-G1-HV**= AirMesh 7-PIN node, 110-480V [21, 28, 29] **GS038-450-002**= AirMesh central base station with 5-Button control [28]

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our Pole Match Charts for AASHTO wind load requirements.
2. Designs GALN Crossvolution® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details.
3. Coastal construction finish salt spray tested to over 5,000 hours per ASTM B117, with a scribe rating of 9 per ASTM D1654.
4. When using SA light squares, Output Level 4 not available with color temperatures 722, 727, 827, 830 or 930 when HSS is used.
5. T4 options not 3G rated. Not available with Coastal Construction (CC) option.
6. Not available with voltage options H, 8 or 9.
7. Not available with SB14 or SB26 configurations. Not available in combination with HA high ambient and sensor options at Output Level 3. H voltage not available with sensor options, choose voltage 8 or 9.
8. Not available with T2R, T3R, SNQ, SMQ, SWQ. SP2 limited to 3 GV. 3 GV not available with SL2, SL3 or SL4 distributions. Can be used with HSS option.
9. One required for each Light Square.
10. 2L is not available with SB light squares. Not available with SPB at 347V or 480V. Not available with WaveLinx or 20kV surge option.
11. Requires PR7.
12. Requires XX with sensor color (WH, BZ or BK).
13. WAC Gateway required to enable field-configurability. Order WAC-PoE and WPOE-12D (15V to PoE injector) power supply if needed. WAC not required for LC Bluetooth sensors.
14. Requires WaveLinx PRO Gateway for cloud or local observatory use. Choose Output Level 1; supplied at 500mA drive current only. Not available with SB light squares. Exact luminaire wattage available in IES files. Available with SNQ, SMQ, SL2, SL3 and SL4 distributions. Can be used with HSS option.
15. Set of 4 pcs. One set required per Light Square.
16. HA option not available with Output Level 4 or AMB Amber.
17. Some options may be TAA compliant. Refer to options.
18. Cannot be used with other control options.
19. Low voltage control lead brought out 18" outside fixture. Not available with DALI or integrated controls options.
20. Not available if any SPB, LWR, or WaveLinx sensor is selected. Motion sensor has an integral photocell.
21. Requires the use of SPC photocontrol or the PR7 or PR photocontrol receptacle with photocontrol accessory. Not available with SB light squares when using Output Level 4.
22. Not for use with T1, 14FT, 14W or DL optics. See IES files for details. Not available with SB light squares.
23. Sensor configuration mobile application required for configuration. See controls page for details.
24. Not available with SB light squares. Not available with SPB. Not available with SPD2 or SPD4.
25. Not available with HSS, DRSBK or DRSWH.
26. Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.
27. Not for use with SB light squares. Luminaires sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.
28. Duravolt drivers feature added protection from power quality issues such as loss of neutral, transients and voltage fluctuations. Visit www.cooperlighting.com/duravolt for more information.
29. 480V not to be used with ungrounded or impedance grounded systems.
30. Not available with SA14 or SA16. Not available with SB1, or any SB configuration using Output Level 1. Not available with any control option except SPR.
31. Cannot be used with DALI, PR7, or other motion response control options. Not available with SB light squares when using Output Level 4.
32. Use GALN Product Configurator to specify lumen output, drive current and wattage. Not available with AMB. Not available with SB light squares.
33. Uses the FSP-211 motion sensor. The FSIR-100 configuration tool is required to adjust parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Cooper Lighting Solutions for more information.
34. Requires WaveLinx Outdoor Control Module (WSLC-1P-18A) or other controls systems (FSADC, SPBs).
35. Requires AirMesh central base station GS038-450-002 and Synapse commissioning for operation.
36. 3-step MacAdam ellipse binning. Available in 740 CRI/CCT only. Longer lead times apply, consult your lighting representative at Cooper Lighting Solutions for more information.
37. Not available with SB light squares.
38. Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or the Build America Buy America Act (BABA). BABA is the minimum Government compliance requirement for the Build America Buy America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.

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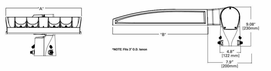
GALN Galleon II

Mounting Details

Wall Mount, Adjustable (WA)

3" Slipfitter, Adjustable (SP)



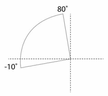
2-3/8" Slipfitter, Adjustable (SP2)

Pole Mount, Adjustable Arm (PA)

Fixture Weights and EPAs

Tilt Angle (Degrees)	Number of Light Squares	Weight	1 @ 90°	2 @ 180°	2 @ 90°	2 @ 120°	3 @ 90°	3 @ 120°	4 @ 90°
0°	1-4	33.5 lb (15.2 kg)	0.85	1.70	1.46	1.66	2.31	2.25	2.35
	5-6	43.5 lb (19.7 kg)	0.86	1.71	1.62	1.80	2.49	2.35	2.50
	7-9	52.5 lb (23.8 kg)	0.98	1.95	1.75	1.98	2.73	2.55	2.76
15°	1-4	33.5 lb (15.2 kg)	1.10	1.71	1.95	2.26	2.81	3.30	2.87
	5-6	43.5 lb (19.7 kg)	1.42	1.71	2.27	2.72	3.13	3.63	3.15
	7-9	52.5 lb (23.8 kg)	1.69	1.96	2.67	3.22	3.65	4.38	3.72
30°	1-4	33.5 lb (15.2 kg)	1.72	1.81	2.58	3.21	3.44	4.59	3.53
	5-6	43.5 lb (19.7 kg)	2.26	2.29	3.11	4.00	3.97	5.27	4.00
	7-9	52.5 lb (23.8 kg)	2.75	2.85	3.73	4.83	4.71	6.45	4.81
45°	1-4	33.5 lb (15.2 kg)	2.25	2.36	3.10	4.00	3.96	5.63	4.08
	5-6	43.5 lb (19.7 kg)	2.96	2.99	3.81	5.06	4.67	6.49	4.71
	7-9	52.5 lb (23.8 kg)	3.63	3.76	3.73	6.17	5.59	8.03	5.73
60°	1-4	33.5 lb (15.2 kg)	2.63	2.77	3.49	4.58	4.34	6.21	4.48
	5-6	43.5 lb (19.7 kg)	3.46	3.51	4.32	5.84	5.19	7.01	5.22
	7-9	52.5 lb (23.8 kg)	4.27	4.44	5.25	7.15	6.23	8.80	6.40

Adjustable Arm Range of Motion
- Includes WA, SP, SP2 and PA mounting options
- Adjustable in increments of 5°
- Must maintain downward facing orientation



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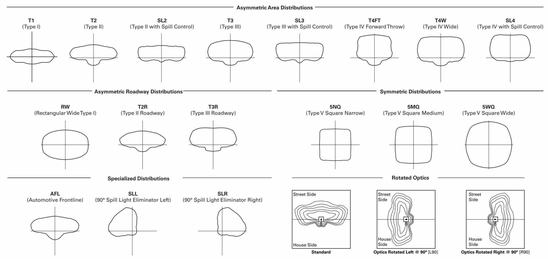
GALN Galleon II

Optical Distributions



Product Specifications

Construction
- Die-cast aluminum housing and heat sink
- Three housing sizes, using 1 to 9 light squares

Optics
- High-efficiency injection-molded AccuLED Optics technology
- 17 optical distributions for area site and roadway applications
- 4 shielding options include HSS, BCS, GRS and PFS
- IDA Certified (3000K CCT and warmer only, fixed mounting options)
- 5 step MacAdam ellipse binning (5 SDCM) standard with 70CRI and 80CRI. 3SDCM option available with 740 CRI/CCT. 3 step MacAdam ellipse binning standard with 90CRI

Electrical
- Removable power tray assembly includes drivers, surge modules and control modules for ease of maintenance and serviceability
- Standard with 0-10V dimming
- Standard with 10kV surge module, optional 20kV surge module
- Suitable for operation in -40°C to 40°C ambient environments. Optional 50°C high ambient (HA) configuration
- Luminaire available with the field adjustable dimming controller (FADC) to manually adjust wattage and reduce the total lumen output and light levels. Comes pre-set to the highest position at the lumen output selected

Mounting
- Arms are factory installed, enabling closed-housing installation
- All arms suitable for round or square pole installation
- All arms provide clearance for multiple fixture installations at 90°

Finish
- 6 standard finishes use super durable TGIC polyester powder coat paint, providing 2.5 mil nominal thickness and salt-spray tested to 3,000 hours per ASTM B117
- RAL and custom color matches available
- Coastal Construction (CC) option salt-spray tested to 5,000 hours per ASTM B117, achieving a scribe rating of 9 per ASTM D1654

Compliance
- Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified
- IDA Certified (3000K CCT and warmer only, fixed mounting options)
- FHWA and FTA agencies are utilizing their BAA rules for BABA compliance. Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or the Buy America Build America Act (BABA).BABA is the minimum Government compliance requirement for the Buy America Build America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards.
- Please refer to the DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements

Typical Applications
- Outdoor, Parking Lots, Walkways, Roadways, Building Areas
- Sports lighting, including tennis, pickleball, basketball courts

Warranty
- Five-year limited warranty. Consult website for details. www.cooperlighting.com/legal

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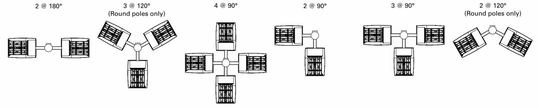
GALN Galleon II

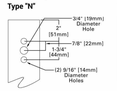
Mounting Details

Pole Configuration Options

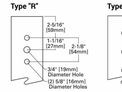


Pole Drilling Patterns

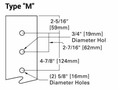
Type "N"



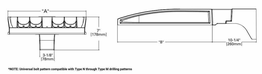
Type "R"



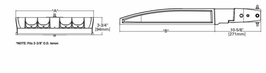
Type "M"



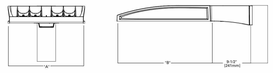
Quick Mount Universal Arm (QU)



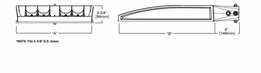
Quick Mount Mast Arm (QMA)



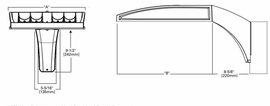
Pole Mount Arm with Quick Mount Adaptor (QM)



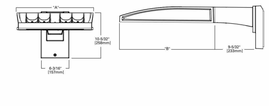
Mast Arm, Fixed (MA)



Upswept Arm (UP)



Wall Mount, Fixed (WM)



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GALN Galleon II

Energy and Performance Data

Lumen Maintenance (TM-21)

Output Level	Ambient Temperature	25,000 hours*	50,000 hours*	60,000 hours*	100,000 hours**	Theoretical L70 hours**
Output Levels 1-3	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.7%	98.3%	98.1%	97.4%	> 1.9M
	50°C	98.2%	97.2%	96.8%	95.2%	> 851,000
Output Level 4	25°C	99.4%	99.0%	98.9%	98.3%	> 2.4M
	40°C	98.5%	97.9%	97.7%	96.7%	> 1.3M

* Supported by IES TM-21 standards.
** Theoretical values represent estimations commonly used; however, refer to the IES position on LED Product Lifetime Prediction, IES PS 10-18, explaining proper use of IES TM-21 and LM-80.

Lumen Multiplier

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

FADC Settings
SA1-SA3 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	25%
2	48%
3	56%
4	65%
5	75%
6	80%
7	85%
8	90%
9	95%
10	100%

Note: +/-5% typical value

FADC Settings
SA4-SA6 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	14%
2	25%
3	32%
4	43%
5	49%
6	57%
7	65%
8	72%
9	80%
10	100%

Note: +/-5% typical value

FADC Settings
SA7-SA9 (All Output Levels)

FADC Position	Percent of Typical Lumen Output
1	19%
2	38%
3	47%
4	63%
5	74%
6	85%
7	95%
8	97%
9	100%
10	100%

Note: +/-5% typical value

Drive Currents

Lumen Output	SA Light Squares	SB Light Squares
Output Level 1	615mA	350mA
Output Level 2	800mA	450mA
Output Level 3	1050mA	615mA
Output Level 4	1200mA	900mA

GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN — JOSEPH F. SOVIS, JR. — NO. 6201042247 — LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE CUT SHEETS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. SE8.01

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

McGraw-Edison GALN Galleon II

SA Light Squares, Output Level 1, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		33	63	93	121	154	182	215	244	274
Input Current @ 120V		0.283	0.529	0.778	1.058	1.310	1.556	1.839	2.089	2.335
Input Current @ 208V		0.165	0.309	0.460	0.618	0.771	0.919	1.082	1.240	1.379
Input Current @ 240V		0.143	0.270	0.398	0.540	0.671	0.796	0.944	1.078	1.194
Input Current @ 277V		0.125	0.237	0.352	0.473	0.581	0.705	0.818	0.962	1.057
Input Current @ 347V		0.098	0.181	0.272	0.362	0.454	0.544	0.636	0.738	0.816
Input Current @ 480V		0.073	0.133	0.200	0.267	0.335	0.400	0.470	0.554	0.600
Optics										
T1	Lumens	4,619	9,180	13,628	18,059	22,861	27,070	31,796	36,863	41,385
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	140	146	147	149	148	149	148	151	151
T2	Lumens	4,654	9,249	13,730	18,194	23,032	27,273	32,034	37,138	41,694
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	141	147	148	150	150	150	149	152	152
T2R	Lumens	4,716	9,372	13,913	18,437	23,340	27,637	32,462	37,634	42,251
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	143	149	150	152	152	152	151	154	154
T3	Lumens	4,589	9,120	13,538	17,940	22,711	26,892	31,587	36,620	41,112
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	139	145	146	148	147	148	147	150	150
T3R	Lumens	4,735	9,411	13,970	18,513	23,436	27,751	32,596	37,790	42,425
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	143	149	150	153	152	152	152	155	155
T4FT	Lumens	4,617	9,176	13,622	18,051	22,851	27,058	31,782	36,847	41,366
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	140	146	146	149	148	149	148	151	151
T4W	Lumens	4,631	9,203	13,662	18,104	22,918	27,138	31,876	36,955	41,488
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	150	149	149	148	151	151
SL2	Lumens	4,619	9,180	13,627	18,058	22,860	27,069	31,795	36,861	41,383
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	140	146	147	149	148	149	148	151	151
SL3	Lumens	4,586	9,115	13,531	17,931	22,699	26,879	31,571	36,602	41,091
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	139	145	145	148	147	148	147	150	150
SL4	Lumens	4,529	9,002	13,363	17,708	22,417	26,544	31,178	36,146	40,580
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	137	143	144	146	146	146	145	148	148
5NQ	Lumens	4,829	9,598	14,247	18,880	23,901	28,301	33,242	38,539	43,266
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3
	Lumens per Watt	146	152	153	156	155	155	155	158	158
5MQ	Lumens	4,853	9,645	14,318	18,974	24,020	28,442	33,407	38,731	43,482
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	147	153	154	157	156	156	155	159	159
5WQ	Lumens	4,843	9,625	14,288	18,934	23,969	28,382	33,337	38,649	43,390
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	147	153	154	156	156	156	155	158	158
SLL/ SLR	Lumens	3,989	7,927	11,768	15,594	19,741	23,375	27,456	31,831	35,736
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5
	Lumens per Watt	121	126	127	129	128	128	128	130	130
RW	Lumens	4,774	9,488	14,085	18,665	23,628	27,979	32,863	38,100	42,774
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	145	151	151	154	153	154	153	156	156
AFL	Lumens	4,673	9,286	13,785	18,268	23,126	27,384	32,164	37,290	41,864
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	142	147	148	151	150	150	150	153	153

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

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McGraw-Edison GALN Galleon II

SA Light Squares, Output Level 2, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		44	82	121	164	204	243	286	325	364
Input Current @ 120V		0.367	0.689	1.014	1.378	1.704	2.027	2.393	2.716	3.041
Input Current @ 208V		0.213	0.401	0.594	0.802	0.997	1.188	1.400	1.605	1.782
Input Current @ 240V		0.184	0.347	0.510	0.694	0.860	1.021	1.210	1.386	1.531
Input Current @ 277V		0.160	0.303	0.449	0.605	0.757	0.898	1.065	1.242	1.347
Input Current @ 347V		0.125	0.235	0.355	0.471	0.592	0.710	0.828	0.958	1.065
Input Current @ 480V		0.092	0.172	0.258	0.344	0.432	0.517	0.605	0.706	0.775
Optics										
T1	Lumens	5,748	11,423	16,957	22,470	28,446	33,683	39,563	45,867	51,494
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T2	Lumens	5,790	11,508	17,083	22,638	28,658	33,935	39,859	46,210	51,879
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	132	140	141	138	140	140	139	142	143
T2R	Lumens	5,868	11,662	17,311	22,941	29,041	34,388	40,391	46,827	52,572
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5
	Lumens per Watt	133	142	143	140	142	142	141	144	144
T3	Lumens	5,710	11,347	16,845	22,322	28,258	33,461	39,303	45,565	51,155
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	130	138	139	136	139	138	137	140	141
T3R	Lumens	5,892	11,710	17,383	23,035	29,161	34,530	40,558	47,020	52,788
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	134	143	144	140	143	142	142	145	145
T4FT	Lumens	5,745	11,418	16,949	22,460	28,433	33,668	39,546	45,847	51,471
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
T4W	Lumens	5,762	11,451	16,999	22,526	28,517	33,767	39,662	45,982	51,622
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	140	140	137	140	139	139	141	142
SL2	Lumens	5,747	11,422	16,956	22,469	28,444	33,681	39,561	45,865	51,491
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	131	139	140	137	139	139	138	141	141
SL3	Lumens	5,707	11,342	16,836	22,311	28,244	33,444	39,283	45,542	51,129
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	130	138	139	136	138	138	137	140	140
SL4	Lumens	5,636	11,201	16,627	22,034	27,893	33,028	38,794	44,976	50,493
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	128	137	137	134	137	136	136	138	139
5NQ	Lumens	6,009	11,942	17,727	23,492	29,739	35,214	41,362	47,953	53,835
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	137	146	147	143	146	145	145	148	148
5MQ	Lumens	6,039	12,001	17,816	23,609	29,887	35,389	41,568	48,191	54,103
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	137	146	147	144	147	146	145	148	149
5WQ	Lumens	6,026	11,976	17,778	23,559	29,824	35,315	41,480	48,090	53,989
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	137	146	147	144	146	145	145	148	148
SLL/ SLR	Lumens	4,963	9,863	14,642	19,403	24,563	29,085	34,163	39,607	44,465
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	113	120	121	118	120	120	119	122	122
RW	Lumens	5,940	11,806	17,526	23,224	29,400	34,813	40,891	47,407	53,222
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	135	144	145	142	144	143	143	146	146
AFL	Lumens	5,814	11,555	17,153	22,730	28,775	34,073	40,021	46,398	52,090
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4
	Lumens per Watt	132	141	142	139	141	140	140	143	143

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

COOPER Lighting Solutions a signify business

McGraw-Edison GALN Galleon II

SA Light Squares, Output Level 3, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		57	108	160	213	269	321	377	429	481
Input Current @ 120V		0.478	0.905	1.338	1.810	2.244	2.675	3.150	3.584	4.013
Input Current @ 208V		0.279	0.532	0.780	1.064	1.313	1.559	1.845	2.093	2.339
Input Current @ 240V		0.243	0.458	0.664	0.916	1.123	1.328	1.582	1.788	1.991
Input Current @ 277V		0.213	0.404	0.582	0.808	0.997	1.164	1.401	1.589	1.745
Input Current @ 347V		0.164	0.322	0.471	0.644	0.795	0.943	1.117	1.269	1.414
Input Current @ 480V		0.121	0.235	0.341	0.469	0.579	0.681	0.814	0.923	1.022
Optics										
T1	Lumens	7,101	14,113	20,950	27,763	35,146	41,616	48,882	56,671	63,623
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T2	Lumens	7,154	14,219	21,107	27,970	35,408	41,927	49,247	57,094	64,098
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	126	132	132	131	132	131	131	133	133
T2R	Lumens	7,250	14,408	21,389	28,344	35,881	42,487	49,905	57,857	64,954
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	127	133	134	133	133	132	132	135	135
T3	Lumens	7,054	14,020	20,812	27,580	34,914	41,342	48,560	56,297	63,203
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
T3R	Lumens	7,280	14,468	21,477	28,461	36,029	42,663	50,111	58,096	65,222
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	128	134	134	134	134	133	133	135	136
T4FT	Lumens	7,098	14,107	20,941	27,751	35,130	41,598	48,860	56,646	63,594
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
T4W	Lumens	7,119	14,148	21,003	27,832	35,233	41,720	49,004	56,812	63,781
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	131	131	130	130	132	133
SL2	Lumens	7,101	14,112	20,949	27,761	35,144	41,614	48,879	56,668	63,619
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	125	131	131	130	131	130	130	132	132
SL3	Lumens	7,051	14,013	20,802	27,566	34,897	41,321	48,535	56,269	63,172
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	124	130	130	129	130	129	129	131	131
SL4	Lumens	6,963	13,839	20,543	27,223	34,463	40,808	47,932	55,569	62,386
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	122	128	128	128	128	127	127	130	130
5NQ	Lumens	7,424	14,755	21,903	29,025	36,743	43,508	51,104	59,247	66,515
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	130	137	137	136	137	136	136	138	138
5MQ	Lumens	7,461	14,828	22,012	29,169	36,926	43,725	51,359	59,542	66,846
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	138	137	137	136	136	139	139
5WQ	Lumens	7,445	14,797	21,966	29,108	36,849	43,633	51,250	59,417	66,705
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	131	137	137	137	137	136	136	139	139
SLL/ SLR	Lumens	6,132	12,187	18,091	23,973	30,348	35,936	42,210	48,935	54,938
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	108	113	113	113	113	112	112	114	114
RW	Lumens	7,340	14,587	21,653	28,694	36,325	43,013	50,522	58,573	65,757
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	129	135	135	135	135	134	134	137	137
AFL	Lumens	7,183	14,276	21,193	28,084	35,552	42,098	49,448	57,327	64,359
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	126	132	132	132	132	131	131	134	134

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

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McGraw-Edison GALN Galleon II

SA Light Squares, Output Level 4, 4000K CCT, 70 CRI

Galleon II IES Files | Supplemental Lumen Tables

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		65	125	184	245	309	368	433	493	552
Input Current @ 120V		0.546	1.041	1.535	2.082	2.578	3.070	3.619	4.114	4.605
Input Current @ 208V		0.318	0.610	0.893	1.219	1.504	1.786	2.113	2.397	2.679
Input Current @ 240V		0.276	0.523	0.758	1.046	1.282	1.516	1.806	2.041	2.274
Input Current @ 277V		0.241	0.460	0.662	0.920	1.133	1.325	1.593	1.807	1.987
Input Current @ 347V		0.187	0.370	0.543	0.740	0.915	1.085	1.285	1.459	1.628
Input Current @ 480V		0.138	0.269	0.391	0.537	0.663	0.782	0.932	1.057	1.173
Optics										
T1	Lumens	7,814	15,529	23,053	30,549	38,672	45,793	53,787	62,358	70,007
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T2	Lumens	7,872	15,645	23,225	30,777	38,962	46,135	54,189	62,824	70,530
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	126	126	125	125	127	128
T2R	Lumens	7,977	15,854	23,535	31,188	39,482	46,751	54,913	63,663	71,472
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	127	128	127	127	129	129
T3	Lumens	7,762	15,427	22,901	30,348	38,418	45,491	53,433	61,947	69,546
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
T3R	Lumens	8,010	15,920	23,632	31,317	39,645	46,944	55,139	63,925	71,767
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	123	127	128	128	128	128	127	130	130
T4FT	Lumens	7,810	15,522	23,043	30,535	38,655	45,772	53,763	62,330	69,976
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
T4W	Lumens	7,833	15,568	23,110	30,625	38,769	45,907	53,921	62,513	70,182
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	121	125	126	125	125	125	125	127	127
SL2	Lumens	7,813	15,528	23,052	30,547	38,670	45,790	53,784	62,354	70,003
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	120	124	125	125	125	124	124	126	127
SL3	Lumens	7,758	15,419	22,889	30,332	38,398	45,468	53,406	61,916	69,511
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	119	123	124	124	124	124	123	126	126
SL4	Lumens	7,662	15,228	22,605	29,955	37,921	44,903	52,742	61,146	68,646
	BUG Rating	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	118	122	123	122	123	122	122	124	124
5NQ	Lumens	8,169	16,235	24,101	31,938	40,431	47,874	56,232	65,193	73,190
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	126	130	131	130	131	130	130	132	133
5MQ	Lumens	8,210	16,316	24,221	32,097	40,632	48,113	56,512	65,517	73,554
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	131	132	131	131	131	131	133	133
5WQ	Lumens	8,192	16,282	24,170	32,029	40,546	48,011	56,393	65,379	73,399
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	126	130	131	131	131	130	130	133	133
SLL/ SLR	Lumens	6,747	13,410	19,906	26,379	33,394	39,542	46,445	53,846	60,451
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	104	107	108	108	108	107	107	109	110
RW	Lumens	8,076	16,050	23,826	31,574	39,970	47,329	55,592	64,450	72,356
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	124	128	129	129	129	129	128	131	131
AFL	Lumens	7,904	15,709	23,320	30,902	39,120	46,323	54,410	63,079	70,817
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	122	126	127	126	127	126	126	128	128

* Nominal data for 70 CRI. ** For additional performance data, please reference the Galleon Supplemental Performance Guide.

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McGraw-Edison GALN Galleon II

SB Light Squares, Output Level 1, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		31	57	85	114	142	171	199	227	256
Input Current @ 120V		0.263	0.484	0.717	0.952	1.201	1.434	1.685	1.918	2.151
Input Current @ 208V		0.154	0.280	0.420	0.552	0.700	0.839	0.979	1.119	1.259
Input Current @ 240V		0.136	0.245	0.370	0.483	0.615	0.740	0.860	0.985	1.110
Input Current @ 277V		0.122	0.216	0.330	0.425	0.546	0.660	0.762	0.876	0.989
Input Current @ 347V		-	-	0.248	0.328	0.413	0.495	0.577	0.665	0.743
Input Current @ 480V		-	-	0.182	0.238	0.304	0.364	0.426	0.493	0.547
Optics										
T1	Lumens	4,696	9,389	14,086	18,816	23,716	28,470	33,388	37,964	42,763
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
	Lumens per Watt	152	164	166	165	167	167	168	167	167
T2	Lumens	4,704	9,404	14,109	18,846	23,754	28,515	33,442	38,024	42,831
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5
	Lumens per Watt	152	164	167	165	168	167	168	167	168
T2R	Lumens	4,835	9,667	14,503	19,373	24,418	29,313	34,377	39,087	44,029
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
	Lumens per Watt	156	169	171	170	172	172	173	172	172
T3	Lumens	4,751	9,497	14,249	19,033	23,989	28,798	33,773	38,401	43,256
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G4
	Lumens per Watt	154	166	168	167	169	169	170	169	169
T3R	Lumens	4,874	9,743	14,618	19,526	24,611	29,544	34,648	39,396	44,376
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5
	Lumens per Watt	158	170	173	171	174	173	174	173	174
T4FT	Lumens	4,692	9,380	14,074	18,799	23,694	28,444	33,358	37,929	42,724
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	152	164	166	165	167	166	168	167	167
T4W	Lumens	4,738	9,472	14,211	18,983	23,926	28,723	33,685	38,300	43,142
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	153	165	168	167	169	168	169	169	169
SL2	Lumens	4,719	9,433	14,153	18,905	23,828	28,605	33,546	38,143	42,965
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5
	Lumens per Watt	153	165	167	166	168	167	168	168	168
SL3	Lumens	4,640	9,276	13,916	18,589	23,430	28,127	32,986	37,506	42,247
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5
	Lumens per Watt	150	162	164	163	165	165	166	165	165
SL4	Lumens	4,706	9,408	14,115	18,854	23,764	28,527	33,456	38,040	42,849
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	152	164	167	165	168	167	168	168	168
5NQ	Lumens	4,975	9,945	14,921	19,931	25,121	30,157	35,367	40,213	45,297
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3
	Lumens per Watt	161	174	176	175	177	176	178	177	177
5MQ	Lumens	4,972	9,939	14,912	19,919	25,106	30,139	35,346	40,189	45,269
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	161	173	176	175	177	176	178	177	177
5WQ	Lumens	4,802	9,600	14,403	19,239	24,249	29,110	34,139	38,817	43,724
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	155	168	170	169	171	170	171	171	171
SLL/SLR	Lumens	4,730	9,457	14,188	18,952	23,887	28,676	33,630	38,238	43,072
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	153	165	168	166	169	168	169	168	169
RW	Lumens	4,889	9,773	14,663	19,586	24,686	29,635	34,755	39,517	44,513
	BUG Rating	B2-U0-G1	B3-U0-G1	B4-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G3	B5-U0-G4
	Lumens per Watt	158	171	173	172	174	173	175	174	174
AFL	Lumens	4,828	9,652	14,482	19,344	24,381	29,269	34,325	39,029	43,963
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B3-U0-G3
	Lumens per Watt	156	168	171	170	172	171	172	172	172

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McGraw-Edison GALN Galleon II

SB Light Squares, Output Level 2, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		40	74	109	147	183	220	257	293	330
Input Current @ 120V		0.330	0.627	0.919	1.255	1.547	1.838	2.174	2.466	2.758
Input Current @ 208V		0.192	0.370	0.533	0.739	0.902	1.066	1.272	1.435	1.598
Input Current @ 240V		0.169	0.327	0.467	0.655	0.794	0.933	1.121	1.260	1.400
Input Current @ 277V		0.150	0.294	0.412	0.588	0.706	0.823	1.000	1.118	1.235
Input Current @ 347V		0.112	0.215	0.316	0.431	0.531	0.632	0.746	0.847	0.947
Input Current @ 480V		0.086	0.160	0.230	0.320	0.390	0.460	0.550	0.620	0.690
Optics										
T1	Lumens	5,895	11,786	17,683	23,620	29,771	35,739	41,913	47,656	53,681
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	148	159	162	161	163	162	163	163	163
T2	Lumens	5,905	11,805	17,711	23,658	29,818	35,796	41,980	47,732	53,766
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	160	162	161	163	162	164	163	163
T2R	Lumens	6,070	12,135	18,206	24,319	30,652	36,797	43,154	49,067	55,270
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	153	164	167	165	168	167	168	168	168
T3	Lumens	5,963	11,922	17,887	23,892	30,114	36,151	42,396	48,206	54,300
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	150	161	164	163	165	164	165	165	165
T3R	Lumens	6,118	12,231	18,350	24,511	30,894	37,087	43,494	49,454	55,706
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	154	166	168	167	169	168	169	169	169
T4FT	Lumens	5,890	11,775	17,667	23,599	29,744	35,706	41,875	47,613	53,632
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	159	162	161	163	162	163	163	163
T4W	Lumens	5,948	11,891	17,840	23,830	30,035	36,056	42,285	48,079	54,157
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	161	163	162	164	164	165	164	164
SL2	Lumens	5,923	11,842	17,766	23,732	29,912	35,908	42,111	47,882	53,935
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	160	163	161	164	163	164	164	164
SL3	Lumens	5,824	11,644	17,469	23,335	29,412	35,308	41,407	47,081	53,033
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5
	Lumens per Watt	146	158	160	159	161	160	161	161	161
SL4	Lumens	5,907	11,810	17,718	23,668	29,831	35,811	41,998	47,752	53,789
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	148	160	162	161	163	162	164	163	163
5NQ	Lumens	6,245	12,484	18,731	25,020	31,535	37,857	44,397	50,480	56,862
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
	Lumens per Watt	157	169	172	170	173	172	173	172	173
5MQ	Lumens	6,241	12,477	18,719	25,005	31,516	37,834	44,370	50,450	56,827
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	157	169	171	170	173	172	173	172	172
5WQ	Lumens	6,028	12,051	18,080	24,151	30,440	36,542	42,855	48,728	54,887
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5
	Lumens per Watt	151	163	166	164	167	166	167	166	167
SLL/SLR	Lumens	5,938	11,871	17,811	23,791	29,986	35,997	42,216	48,001	54,069
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	149	161	163	162	164	163	164	164	164
RW	Lumens	6,137	12,268	18,406	24,587	30,989	37,201	43,628	49,606	55,877
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	154	166	169	167	170	169	170	169	170
AFL	Lumens	6,061	12,117	18,179	24,283	30,606	36,742	43,089	48,993	55,187
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4
	Lumens per Watt	152	164	166	165	168	167	168	167	167

COOPER Lighting Solutions a signify business

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN JOSEPH F. SOVIS, JR. ENGINEER NO. 6201042247 LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE
CUT SHEETS

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. SE8.02

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL ELECTRICAL NOTES:

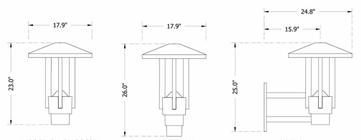
CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

SB Light Squares, Output Level 3, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		54	101	149	201	250	301	351	400	450
Input Current @ 120V		0.437	0.857	1.259	1.714	2.116	2.518	2.973	3.375	3.776
Input Current @ 208V		0.254	0.498	0.721	0.996	1.219	1.442	1.717	1.940	2.163
Input Current @ 240V		0.223	0.437	0.628	0.874	1.065	1.256	1.501	1.693	1.884
Input Current @ 277V		0.197	0.386	0.550	0.772	0.936	1.100	1.322	1.485	1.649
Input Current @ 347V		0.150	0.292	0.432	0.584	0.724	0.863	1.016	1.155	1.295
Input Current @ 480V		0.111	0.213	0.311	0.427	0.525	0.622	0.738	0.836	0.933
Optics										
T1	Lumens	7,841	15,675	23,517	31,414	39,594	47,531	55,743	63,381	71,393
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	144	155	158	157	159	158	159	159	159
T2	Lumens	7,853	15,700	23,555	31,464	39,657	47,607	55,832	63,482	71,507
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	144	156	158	157	159	158	159	159	159
T2R	Lumens	8,073	16,139	24,214	32,344	40,766	48,938	57,393	65,257	73,507
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	148	160	162	161	163	163	164	163	163
T3	Lumens	7,931	15,856	23,789	31,776	40,051	48,080	56,386	64,112	72,217
	BUG Rating	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	146	157	160	158	161	160	161	160	161
T3R	Lumens	8,137	16,267	24,405	32,599	41,088	49,325	57,846	65,773	74,087
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	150	161	164	162	165	164	165	165	165
T4FT	Lumens	7,834	15,661	23,496	31,385	39,558	47,488	55,692	63,324	71,329
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	144	155	158	156	159	158	159	158	159
T4W	Lumens	7,910	15,814	23,726	31,693	39,946	47,953	56,238	63,944	72,027
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	145	157	159	158	160	159	160	160	160
SL2	Lumens	7,878	15,749	23,629	31,562	39,781	47,756	56,006	63,681	71,731
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	145	156	158	158	157	159	159	159	159
SL3	Lumens	7,746	15,486	23,234	31,035	39,117	46,958	55,070	62,616	70,532
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	142	153	156	155	157	156	157	157	157
SL4	Lumens	7,857	15,707	23,565	31,477	39,674	47,627	55,855	63,509	71,538
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	144	156	158	157	159	158	159	159	159
5NQ	Lumens	8,305	16,604	24,911	33,275	41,940	50,348	59,046	67,137	75,624
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G4
	Lumens per Watt	153	165	167	166	168	167	168	168	168
5MQ	Lumens	8,300	16,594	24,896	33,255	41,915	50,318	59,010	67,097	75,578
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	153	164	167	166	168	167	168	168	168
5WQ	Lumens	8,017	16,027	24,046	32,120	40,484	48,600	56,996	64,806	72,998
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	147	159	161	160	162	162	163	162	162
SLL/SLR	Lumens	7,997	15,788	23,687	31,641	39,880	47,875	56,146	63,839	71,909
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	145	156	159	158	160	159	160	160	160
RW	Lumens	8,162	16,317	24,480	32,699	41,215	49,476	58,024	65,975	74,315
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5
	Lumens per Watt	150	162	164	163	165	164	166	165	165
AFL	Lumens	8,061	16,115	24,177	32,295	40,705	48,865	57,307	65,160	73,397
	BUG Rating	B1-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G4	B4-U0-G4
	Lumens per Watt	148	160	162	161	163	162	164	163	163

Project Name _____ Qty _____

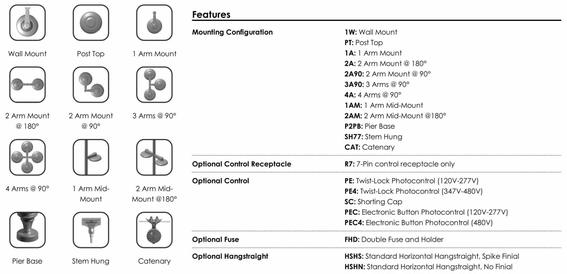
Type _____ Catalog / Part Number _____



US660-S4 / US660H (4" Slipfitter) / (Hanging) | US660-S5 (5" Slipfitter) | US660SM (Side Mount)

Certifications

Mounting Configuration



Description

The US660 Usonia luminaire illuminates pedestrian walkways and smaller roadways with minimalist elegance. Its open-body design and clean lines, inspired by classic architectural principles, deliver bold, timeless illumination.

EPA: 1.08 (ft²) | WEIGHT: 35 LBS

Features

Mounting Configuration	**1W:** Wall Mount **PT:** Post Top **1A:** 1 Arm Mount **2A:** 2 Arm Mount @ 180° **2A90:** 2 Arm Mount @ 90° **3A90:** 3 Arms @ 90° **4A:** 4 Arms @ 90° **1AM:** 1 Arm Mid-Mount **2AM:** 2 Arm Mid-Mount @180° **P2PB:** Pier Base **SH77:** Stem Hung **CAT:** Catenary
Optional Control Receptacle	**R7:** 7-Pin control receptacle only
Optional Control	**PE:** Twist-Lock Photocontrol (120V-277V) **PE4:** Twist-Lock Photocontrol (347V-480V) **SC:** Shorting Cap **PEC:** Electronic Button Photocontrol (120V-277V) **PEC4:** Electronic Button Photocontrol (480V)
Optional Fuse	**FHD:** Double Fuse and Holder
Optional Hangstraight	**HSHS:** Standard Horizontal Hangstraight, Spike Finial **HSHN:** Standard Horizontal Hangstraight, No Finial **HSHB:** Standard Horizontal Hangstraight, Ball Finial **EZ:** Vertical Hangstraight, Large, "EZ" Mount
Optional House Side Shield	**BLOC:** Back Light Optical Control
Optional Fixed Dimming Resistor Board	**FDRB:** Fixed Dimming Resistor Board

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SB Light Squares, Output Level 4, 4000K, 70 CRI

Number of Light Squares		1	2	3	4	5	6	7	8	9
Nominal Power (Watts)		80	148	218	294	365	440	513	585	658
Input Current @ 120V		0.638	1.234	1.840	2.469	3.094	3.680	4.349	4.934	5.519
Input Current @ 208V		0.367	0.705	1.045	1.410	1.779	2.090	2.513	2.824	3.135
Input Current @ 240V		0.320	0.614	0.913	1.227	1.567	1.827	2.220	2.480	2.740
Input Current @ 277V		0.280	0.537	0.813	1.075	1.402	1.626	1.992	2.215	2.439
Input Current @ 347V		0.219	0.430	0.640	0.897	1.089	1.280	1.537	1.729	1.920
Input Current @ 480V		0.160	0.313	0.479	0.700	0.829	0.958	1.179	1.308	1.437
Optics										
T1	Lumens	10,654	21,299	31,955	42,684	53,800	64,585	75,742	86,121	97,008
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	144	147	145	147	147	148	147	147
T2	Lumens	10,671	21,333	32,006	42,752	53,886	64,688	75,863	86,258	97,162
	BUG Rating	B2-U0-G2	B3-U0-G3	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	147	148
T2R	Lumens	10,969	21,929	32,901	43,948	55,392	66,496	77,984	88,670	99,879
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	149	151	150	152	151	152	152	152
T3	Lumens	10,777	21,545	32,324	43,177	54,420	65,329	76,616	87,114	98,127
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	146	148	147	149	148	149	149	149
T3R	Lumens	11,056	22,103	33,161	44,295	55,830	67,022	78,600	89,371	100,668
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	139	150	152	151	153	152	153	153	153
T4FT	Lumens	10,644	21,280	31,926	42,646	53,751	64,526	75,674	86,043	96,920
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	144	146	145	147	148	147	147	147
T4W	Lumens	10,748	21,488	32,239	43,063	54,277	65,158	76,414	86,885	97,869
	BUG Rating	B2-U0-G2	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	146	148	147	149	148	149	149	149
SL2	Lumens	10,704	21,400	32,106	42,886	54,054	64,890	76,100	86,528	97,467
	BUG Rating	B2-U0-G2	B3-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	148	148
SL3	Lumens	10,525	21,042	31,570	42,169	53,151	63,805	74,828	85,082	95,837
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5
	Lumens per Watt	132	143	145	144	146	145	146	145	146
SL4	Lumens	10,675	21,342	32,020	42,771	53,908	64,715	75,895	86,295	97,204
	BUG Rating	B2-U0-G3	B3-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	134	145	147	146	148	147	148	148	148
5NQ	Lumens	11,285	22,561	33,849	45,214	56,988	68,412	80,230	91,224	102,756
	BUG Rating	B3-U0-G1	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	142	153	155	154	156	155	156	156	156
5MQ	Lumens	11,278	22,547	33,828	45,187	56,954	68,371	80,182	91,169	102,694
	BUG Rating	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	142	153	155	154	156	155	156	156	156
5WQ	Lumens	10,893	21,778	32,673	43,644	55,009	66,037	77,445	88,057	99,189
	BUG Rating	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	137	148	150	149	151	150	151	151	151
SLL/SLR	Lumens	10,731	21,453	32,186	42,993	54,199	65,051	76,290	86,743	97,709
	BUG Rating	B2-U0-G3	B3-U0-G4	B3-U0-G5	B4-U0-G5	B4-U0-G5	B4-U0-G5	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	135	145	148	146	149	148	149	148	148
RW	Lumens	11,090	22,171	33,263	44,431	56,001	67,228	78,842	89,645	100,978
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4	B5-U0-G4	B5-U0-G5	B5-U0-G5	B5-U0-G5
	Lumens per Watt	139	150	153	151	153	153	154	153	153
AFL	Lumens	10,953	21,897	32,852	43,882	55,309	66,397	77,868	88,518	99,730
	BUG Rating	B2-U0-G1	B3-U0-G2	B3-U0-G3	B3-U0-G3	B4-U0-G4	B4-U0-G4	B4-U0-G5	B4-U0-G5	B5-U0-G5
	Lumens per Watt	138	148	151	149	152	151	152	151	152

Finish

Urban Gun Metal Textured | Urban Gun Metal Matte | Urban Bronze Textured | Urban Bronze Matte | Urban Silver Textured | Urban Silver Matte | Urban White Textured | Urban White Matte | Black Textured | Old World Gray Tex | Cedar | Custom Match

CCT - Color Temp (K)

2,700K | 3,000K | 4,000K | 5,000K

Distribution Type

Type 2 | Type 3 | Type 4 | Type 5

Physical

Luminaire	**US660:** Usonia, Medium Post Top **US660H:** Usonia, Medium Hanging **US660SM:** Usonia, Medium Side Mount
Fitter	**S4:** To EXTERNALLY slip fit 4" SQ pole **S5:** To EXTERNALLY slip fit 5" SQ pole
Lens	**SV1:** Flat SoftVue™ Light Diffused Acrylic **SV2:** Flat SoftVue™ Moderate Diffused Acrylic **SV4:** Flat SoftVue™ Maximum Diffused Acrylic
Finish	**UGMT:** Urban Gun Metal Textured **UGM:** Urban Gun Metal Matte **UBT:** Urban Bronze Textured **UB:** Urban Bronze Matte **USLT:** Urban Silver Textured **USL:** Urban Silver Matte **UWHT:** Urban White Textured **UWH:** Urban White Matte **BKT:** Black Textured **OWGT:** Old World Gray Tex **CD:** Cedar **CM:** Custom Match

Light Source

LED	**84L:** 84 LEDs
CCT - Color Temp (K)	**27:** 2,700K **30:** 3,000K **40:** 4,000K **50:** 5,000K
Distribution Type	**T2:** Type 2 **T3:** Type 3 **T4:** Type 4 **T5:** Type 5

Electrical and control

Driver	**MDL001:** 120V-277V, 10mA **MDH001:** 347V-480V, 10mA **MDL002:** 120V-277V, 20mA **MDH002:** 347V-480V, 20mA **MDL003:** 120V-277V, 30mA **MDH003:** 347V-480V, 30mA **MDL005:** 120V-277V, 50mA **MDH005:** 347V-480V, 50mA

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Control Options

0-10V (DIM)
This fixture is offered standard with 0-10V dimming driver(s). The DIM option provides 0-10V dimming wire leads for use with a lighting control panel or other control method.

Photocontrol (BPC, PR and PR7)
Optional button-type photocontrol (BPC) and photocontrol receptacles (PR and PR7) provide a flexible solution to enable "dusk-to-dawn" lighting by sensing light levels. Advanced control systems compatible with NEMA 7-pin standards can be utilized with the PR7 receptacle.

After Hours Dim (AHD)
This feature allows photocontrol-enabled luminaires to achieve additional energy savings by dimming during scheduled portions of the night. The dimming profile will automatically take effect after a "dusk-to-dawn" period has been calculated from the photocontrol input. Specify the desired dimming profile for a simple, factory-shipped dimming solution requiring no external control wiring. Reference the After Hours Dim supplemental guide for additional information.

Dimming Occupancy Sensor (SPB and MS/DIM-LXX)
These passive infrared (PIR) sensors are factory installed in the luminaire housing. When the SPB (FSP-321 or FSP-311) or MS/DIM (FSP-211) sensor options are selected, the occupancy sensor is connected to a dimming driver and the luminaire dims when no motion is detected. After a set period of time, the luminaire returns to full light output. Both sensors are factory preset to dim down to approximately 10% power with a time delay of five minutes. The MS/DIM sensor requires the FSIR-100 programming tool to adjust factory defaults. The SPB sensor default parameters are listed in the table below and can be configured utilizing the Sensor Configuration mobile application for iOS and Android devices. The SPB/X is configured to control only the specified number of light squares (See SPB/X Availability Table below.) An integral photocontrol can be activated with the app for "dusk-to-dawn" control or daylight harvesting - the factory default is off. Four sensor colors are available; Bronze, Black, Gray and White, and are automatically selected based on the luminaire finish as indicated by the table below.

SPB sensor finish matched to luminaire finish

Luminaire Finish		SPB Sensor Finish*
WH	White	White
BK	Black	Black
GM	Graphite Metallic	Black
BZ	Bronze	Bronze
AP	Gray	Gray
DP	Dark Platinum	Gray

*SPB bezel color automatically selected based on luminaire finish

SPB/X Availability Table

Fixture Square Count	Available SPB/X Square Count
1	Not Available
2	Not Available
3	Not Available
4	2
5	2 or 3
6	3
7	2, 3, 4 or 5
8	2, 3, 5 or 6
9	3 or 6

Default Program Settings (Out of the Box Functionality)

Occupancy Sensor

Setting	MS/DIM	SPB	WaveLinx Lite (WLS4 / WLS2)	WaveLinx (WPS)
High Mode %	100%	100%	100%	100%
Low Mode %	10%	10%	50%	50%
Time Delay	5 min	5 min	15 min	15 min
Cut Off Delay	1 hr	1 hr	Disabled	Disabled
Photocell Enabled	No	No	Yes	Yes

WaveLinx Wireless Control and Monitoring System
Operates on a wireless mesh network based on IEEE 802.15.4 standards enabling wireless control of outdoor lighting. WaveLinx (WPS2 to WPS4) outdoor wireless sensors offer passive infrared (PIR) occupancy and photocell for closed loop daylight harvesting. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx mobile application for set-up and configuration. At least one Wireless Area Controller (WAC) is required for full functionality and remote communication (including adjustment of any factory pre-set). WaveLinx Lite (WLS4 and WLS2) outdoor wireless sensors provide PIR occupancy and photocell for closed loop daylight harvesting. Sensors are factory preset to dim down to 50% after 15 minutes of no motion detected. Two lens options are available for mounting heights of 7' to 40'. Use the WaveLinx Lite mobile application for set-up and configuration. WAC not required. WaveLinx Outdoor Control Module (WOLC-7P-10A) accessory provides a photocontrol enabling astronomic or time-based schedules to provide ON, OFF and dimming control of fixtures utilizing a 7-PIN receptacle. The out-of-box functionality is ON at dusk and OFF at dawn.

For mounting heights up to 15' (WPS2 and WLS2)

For mounting heights up to 40' (WPS4 and WLS4)

AirMesh (DIM10)
AirMesh-integrated wireless controls system includes factory installed DIM10 Synapse control module and FSP-201 motion sensor; requires additional AirMesh components for operation. Contact Synapse at www.synapsewireless.com for product support, warranty and terms and conditions.

How to Order

Mounting Configuration	Overall Drop Length (in inches) [6]	Luminaire	Fitter [2]	LED	CCT - Color Temp (K)	Distribution Type	Driver	Lens
1W Wall Mount **PT** Post Top **1A** 1 Arm Mount [1] **2A** 2 Arm Mount @ 180° [1] **2A90** 2 Arm Mount @ 90° [1] **3A90** 3 Arms @ 90° [1] **4A** 4 Arms @ 90° [1] **1AM** 1 Arm Mid-Mount **2AM** 2 Arm Mid-Mount @180° [1] **P2PB** Pier Base [2] **SH77** Stem Hung **CAT** Catenary [3] [4]		**US660** Usonia, Medium Post Top **US660H** Usonia, Medium Hanging **US660SM** Usonia, Medium Side Mount	**S4** To EXTERNALLY slip fit 4" SQ pole **S5** To EXTERNALLY slip fit 5" SQ pole	**84L** 84 LEDs	**27** 2,700K **30** 3,000K **40** 4,000K **50** 5,000K	**T2** Type 2 **T3** Type 3 **T4** Type 4 **T5** Type 5	**MDL001** 120V-277V, 10mA **MDH001** 347V-480V, 10mA **MDL002** 120V-277V, 20mA **MDH002** 347V-480V, 20mA **MDH003** 347V-480V, 30mA **MDL005** 120V-277V, 50mA **MDH005** 347V-480V, 50mA	**SV1** Flat SoftVue™ Light Diffused Acrylic **SV2** Flat SoftVue™ Moderate Diffused Acrylic **SV4** Flat SoftVue™ Maximum Diffused Acrylic

Notes:
1. For use with hanging (H) or side mount (SM) fixture only.
2. For use with Post Top fixture only.
3. For use with hanging (H) fixture only.
4. Requires EZ hang-straight.
5. Minimum 29" Overall Drop Length.

Cooper Lighting Solutions
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

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Specifications and dimensions subject to change without notice.

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ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL
JOSEPH F. SOVIS, JR.
ENGINEER
NO. 6201042247
LICENSED PROFESSIONAL ENGINEER
STATE OF MICHIGAN

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE CUT SHEETS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. SE8.03

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

How to Order

Optional Control Receptacle [4] [7]	Optional Control	Optional Fuse [18]	Optional Hangstraight [2]	Optional House Side Shield [11]	Optional Fixed Dimming Resistor Board [9]	Finish
R7 7-Pin control receptacle only	**PE** Twist-Lock Photocontrol (120V-277V) [8] **PE4** Twist-Lock Photocontrol (347V-480V) [8] **SC** Shorting Cap [8] **PEC** Electronic Button Photocontrol (120V-277V) [8] **PEC4** Electronic Button Photocontrol (480V) [8]	**FHD** Double Fuse and Holder	**HSHS** Standard Horizontal Hangstraight, Spike Finial **HSHN** Standard Horizontal Hangstraight, No Finial **HSHB** Standard Horizontal Hangstraight, Ball Finial **EZ** Vertical Hangstraight, Large, "EZ" Mount [10]	**BLOC** Back Light Optical Control	**FDRB** Fixed Dimming Resistor Board	**UGMT** Urban Gun Metal Textured **UGM** Urban Gun Metal Matte **UBT** Urban Bronze Textured **UB** Urban Bronze Matte **USLT** Urban Silver Textured **USL** Urban Silver Matte **UWHT** Urban White Textured **UWH** Urban White Matte **BKT** Black Textured **OWGT** Old World Gray Tex **CD** Cedar **CM** Custom Match

Notes:

3. For use with hanging (H) fixture only.
4. Not for use with FDRB.
7. Not for use with STEM, CAT, or EZ mounting style.
8. Requires control receptacle.
9. Not for use with R7.
10. Base loose for installation in base.
11. Not for use with TS optic.

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Specifications

Housing	The housing is constructed utilizing precision cast aluminum parts.
LED Module	The field replaceable internal LED module comes factory sealed with an IP66 rating. The internal heat sink is sealed to the lens to protect the LED platform from the outside elements.
Fitter	This "Post Top" style includes a fitter to slip a pole/tenon, mechanically attaching to the tenon with included hardware.. **S4** - Externally slip fits a 4" square x 2.75" tall pole/tenon **S5** - Internally slip fits a 5" square and extending 3" into the pole/tenon **(.250 maximum wall thickness)**
Hang-Straight	A hang-straight transition is required for most hanging mounting configurations. The Standard **(HSHx)** is an aluminum ball and swivel horizontal hang-straight. Available with a spike **(S)**, a ball **(B)**, or no finial **(N)**. The hang-straight slips a **4" long by 2-3/8" OD** horizontal tenon. The **(EZ)** is a cast stainless steel ball and swivel vertical hang-straight. The special 2-part design allows for easy installation. It is factory installed under an arm and on the fixture.
Side Mount	The side mount variant can be used on wall and pole mounting configurations. The arm is constructed and shipped integral to the luminaire and constructed of 1.5" extruded aluminum. The **Post Mount** version includes a 2.5"x1.5.25" cast aluminum backplate welded to the pole shaft. The **Wall Mount** version includes a 4.75"x1.5.25" cast aluminum backplate for mounting, requiring wall mounting hardware by others.
Catenary Mount	The Catenary mount option includes a cast aluminum spun wire clamp, which accommodates cables **1/4"-5/8"** in diameter. Below the clamp is a decorative cast aluminum wire box and cover which transitions to the **EZ** vertical Hangstraight for fixture attachment. **Aircraft Cable by others.**
Hardware	Includes Stainless steel hardware. Most finishes will include hardware with a Black Oxide conversion coating. Light finishes will get non-color coated hardware **(Whites and Silvers)**
Lens	Optional glare reducing SoftVue™ lens provides optimal visual comfort. Uses a .125" thick acrylic lens. Offered with Soft Vue Medium Diffused Acrylic **(SV1)**, Soft Vue Heavy Diffused Acrylic **(SV2)** or Soft Vue Maximum Diffused Acrylic **(SV4)**.
Serviceability	Removable leg allows for easy access to the driver compartment for maintenance.
UL Listing	UL listed per UL1598 and CSA C22.2 No. 250.0 for the United States and Canada. Suitable for Wet Locations.
Electronic Driver	The LED driver is UL recognized and will be securely mounted inside the fixture, for optimized performance and longevity. It will be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections for fixture installation and maintenance. It will have DC voltage output and be a constant current design. It runs at 50/60HZ and will have overload, overheat, and short circuit protection. It will be supplied with a supplemental line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It will be a high efficiency driver with a THD less than 20% and a high-power factor greater than .9. It will be dimming capable using a 0-10V signal, consult factory for more information.
NightSky® Friendly	Dark sky design properties with a U0 BUG rating.
IP Rating	IP66 rated optical module for enhanced protection against dust and water intrusion.
Finish	Our 6 Stage Polyester Powder coat paint system offers a beautiful high-end finish that holds up to even the most extreme environments. Each part is inspected for quality and consistency before being released for shipment. Our system exceeds AAMA 2604, AAMA 2605, ASTM D523 and ASTM D4214 requirements.
Urban Finish	The Urban finish palette was created to highlight a modern, elegant aesthetic. All finishes are a 1 part powder coat with metallic flakes for a superior appearance. Finishes are available in textured or matte. Available finishes include: **Black Textured**, **Urban Gun Metal**, **Urban Bronze**, **Urban Silver and Urban White**
Custom Finish	Custom finishes are offered to adapt to any application. **Custom Match** option is available to blend sternberg product with the site, consult factory for more information.
Warranty	7-year limited warranty. See Website for Terms and Conditions.

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LEDs	The LEDs in this system will be fully shielded in a direct downward position to maximize efficiency. The LEDs are mounted to maximize thermal transfer to the heat sink surface. The LEDs shall be 100% recyclable; not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. Lumen maintenance shall be determined in accordance with IESNA TM-21, based on LED manufacturer LM-80 test data of no less than 6,000 hours and in-situ testing of the luminaire by an NVLAP accredited Energy Efficient Lighting Products lab. The high-performance white LEDs will have a predicted lumen depreciation of approximately 100,000 hours with greater than 70% of initial output at 25°C. The high brightness, high-output white LEDs shall be 4000K nominal (2700K, 3000K, 3500K or 5000K optional) correlated color temperature (CCT) with a 70 (minimum) color rendering index (CRI). Consult factory for custom CCT or CRI. The luminaire shall have a minimum _____ (see table) delivered initial lumens when operated at steady state with an average ambient temperature of 25°C (77°F). **CCT Lumen Derate Values from 4,000K** 2,700K (70+ CRI)=**.85** 3,000K (70+ CRI)=**.92** 3,500K (70+ CRI)=**1.00** 5,000K (70+ CRI)=**1.00**
Optics	The luminaire shall be provided with individual, refractor type optics applied to each LED. The luminaire shall provide Type ___ (2, 3, 4 or 5) light distribution per the IESNA classifications. Testing shall be done in accordance with IESNA LM-79.
Backlight Optical Control	**BLOC Optic (BLOC):** An optional "Back Light Optical Control" shield can be provided at the factory. This is an internal optic level "House Side Shield" offering significantly reduced backlight and glare while maintaining the original design aesthetics of the luminaire.
Fixed Dimming Resistor Board (FDRB)	Optional numbered 10-step selector switch allows for fine adjustment of the light levels in the field, repeatable from location to location. Offers dimming from 25% to 100% of the original output. Enclosure is composite material, sealed to protect components for the life of the product.
Photocontrols	**Button Photocell:** The photocontrol shall be mounted on the fixture and pre-wired to driver. The electronic button type photocontrol is instant on and will turn on at 1.5 footcandles and will turn off at 2-3 footcandles. See pole spec sheet for pole mounted version. **Twist-Lock Style (Hangstraight Mount):** The photocontrol shall be mounted externally on the hangstraight and pre-wired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turn-off at 2-3 footcandles. If an **R7** is specified alongside a **BALL** or **SPIKE** style finial on hang-straight, a decorative cap (with window) is included to cover a **STANDARD** photocell. Use the **NO FINIAL** hangstraight option if the **R7** is used with a **WIRELESS CONTROLLER**. **Twist-Lock Style (Roof Mount):** The photocontrol shall be mounted on the roof and prewired to driver. The twist lock type photocontrol is instant on with a 3-6 second turn off, and shall turn on at 1.5 footcandles with a turnoff at 2-3 footcandles. Photocontrol is 120-277 volt.

Lumen Chart(s)

Tested with SV1 lens

Model #	T2 DELIVERED LUMENS	BUG	EFFICACY (LPW)	T3 DELIVERED LUMENS	BUG	EFFICACY (LPW)	T4 DELIVERED LUMENS	BUG	EFFICACY (LPW)	T5 DELIVERED LUMENS	BUG	EFFICACY (LPW)	WATTAGE
84L-40-T-_MDL005	11815	B2U002	120.6	10620	B2U002	108.4	11255	B2U002	114.8	11840	B3U001	120.8	98
84L-30-T-_MDL005	10905	B2U002	111.3	9805	B2U002	100.1	10390	B2U002	106.0	10930	B3U001	111.5	98
84L-27-T-_MDL005	9995	B2U002	102.0	8985	B2U002	91.7	9525	B2U002	97.2	10020	B3U001	102.2	98
84L-40-T-_MDL003	8115	B2U001	124.8	7285	B2U002	112.1	7715	B2U002	118.7	8125	B3U001	125.0	65
84L-30-T-_MDL003	7490	B2U001	115.2	6725	B2U002	103.5	7120	B2U002	109.5	7500	B3U001	115.4	65
84L-27-T-_MDL003	6865	B2U001	105.6	6165	B2U002	94.8	6530	B2U002	100.5	6875	B3U001	105.8	65
84L-40-T-_MDL002	5835	B1U001	124.1	5245	B1U001	111.6	5555	B1U001	118.2	5845	B2U001	124.4	47
84L-30-T-_MDL002	5385	B1U001	114.6	4840	B1U001	103.0	5130	B1U001	109.1	5395	B2U001	114.8	47
84L-27-T-_MDL002	4935	B1U001	105.0	4440	B1U001	94.5	4700	B1U001	100.0	4945	B2U001	105.2	47
84L-40-T-_MDL001	3645	B1U001	121.5	3290	B1U001	109.7	3480	B1U001	116.0	3655	B2U001	121.8	30
84L-30-T-_MDL001	3365	B1U001	112.2	3035	B1U001	101.2	3210	B1U001	107.0	3375	B2U001	112.5	30
84L-27-T-_MDL001	3085	B1U001	102.8	2785	B1U001	92.8	2945	B1U001	98.2	3095	B2U001	103.2	30

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Hangstraight

Horizontal Hang-straights slip fit 4" long by 2-3/8" OD horizontal tenon

Standard Horizontal Hangstraight, Spike Finial **(HSHS)**

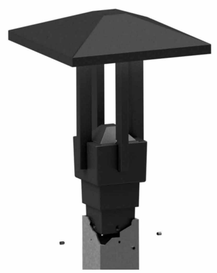
Standard Horizontal Hangstraight, Ball Finial **(HSHB)**

Standard Horizontal Hangstraight, No Finial **(HSHN)**

"EZ" Vertical hangstraight **(EZ)**

Fitters

(S4) 4" Slipfitter
Externally slip fits a 4" square x 2.75" tall pole/tenon



(S5) 5" Slipfitter
Internally slip fits a 5" square and extending 3" into the pole/tenon (.250 maximum wall thickness)

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Options

Button Photocell
(PEC/PEC4)

7-Pin NEMA Twist-Lock Receptacle and Photocell
(R7-PE)

Fixed Dimming Resistor Board
(FDRB)

Double Fuse Holder & (2) 3A Fuses **(FHD)**

Back Light Optical Control
(BLOC)

Arm Examples

Arm: 480 | **Hangstraight:** EZ

Arm: HM | **Hangstraight:** EZ

Arm: OD | **Hangstraight:** EZ

Side Mount Luminaire

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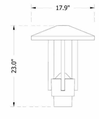
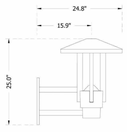
Dimensions

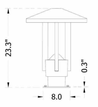


Post Top, 4" Slipfitter & Hanging
(US660-S4 & US660H)

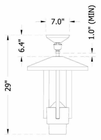
Post Top, 5" Slipfitter
(US660-S5)



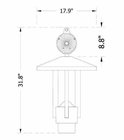
Side Mount
(US660SM)



Pier Base
(P2PB-US660-S4)



Stem Hung
(SM77-US660H)



Catenary
(CAT-US660H)

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ROCHESTER HILLS
MICHIGAN

MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN
JOSEPH F. SOVIS, JR.
ENGINEER
NO. 6201042247
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE
CUT SHEETS

811
Know what's **below**
Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. SE8.04

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

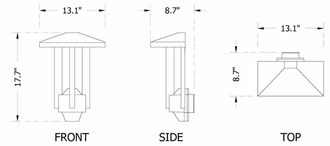
GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

SD

Project Name _____ Qty _____

Type _____ Catalog / Part Number _____



Certifications

cULus LISTED · DarkSky Friendly · IP66

Finish

Urban Gun Metal Textured · Urban Gun Metal Matte · Urban Bronze Textured · Urban Bronze Matte · Urban Silver Textured · Urban Silver Matte · Urban White Textured · Urban White Matte · Black Textured · Old World Gray Tex · Cedar · Custom Match

CCT - Color Temp (K)

2,700K · 3,000K · 4,000K · 5,000K

Description

The US270 Usonia wall sconce elevates building facades with its refined, open-body design. Delivering uniform illumination, it creates a striking yet subtle architectural presence.

WEIGHT: 16.14 LBS

Physical

Model	**US270:** Usonia Sconce
Lens	**SV1:** Flat SoftVue™ Light Diffused Acrylic **SV2:** Flat SoftVue™ Moderate Diffused Acrylic **SV4:** Flat SoftVue™ Maximum Diffused Acrylic
Finish	**UGMT:** Urban Gun Metal Textured **UGM:** Urban Gun Metal Matte **UBT:** Urban Bronze Textured **UB:** Urban Bronze Matte **USLT:** Urban Silver Textured **USL:** Urban Silver Matte **UWHT:** Urban White Textured **UWH:** Urban White Matte **BKT:** Black Textured **OWGT:** Old World Gray Tex **CD:** Cedar **CM:** Custom Match

Light Source

LED	**16L:** 16 LEDs
CCT - Color Temp (K)	**27:** 2,700K **30:** 3,000K **40:** 4,000K **50:** 5,000K

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Distribution Type

Type 2 · Type 3 · Type 4

Distribution Type	**T2:** Type 2 **T3:** Type 3 **T4:** Type 4

Electrical and control

Driver	**MDL001:** 120V-277V, 10mA **MDL002:** 120V-277V, 20mA **MDL003:** 120V-277V, 30mA **MDL004:** 120V-277V, 37mA

Features

Optional Control	**PEC:** Electronic Button Photocontrol (120V-277V)
Optional Fixed Dimming Resistor Board	**FDRB:** Fixed Dimming Resistor Board

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How to Order

Model	LED	CCT - Color Temp (K)	Distribution Type	Driver	Lens	Optional Control [1]	Optional Fixed Dimming Resistor Board [2]	Finish
US270 Usonia Sconce	**16L** 16 LEDs	**27** 2,700K **30** 3,000K **40** 4,000K **50** 5,000K	**T2** Type 2 **T3** Type 3 **T4** Type 4	**MDL001** 120V-277V, 10mA **MDL002** 120V-277V, 20mA **MDL003** 120V-277V, 30mA **MDL004** 120V-277V, 37mA	**SV1** Flat SoftVue™ Light Diffused Acrylic **SV2** Flat SoftVue™ Moderate Diffused Acrylic **SV4** Flat SoftVue™ Maximum Diffused Acrylic	**PEC** Electronic Button Photocontrol (120V-277V)	**FDRB** Fixed Dimming Resistor Board	**UGMT** Urban Gun Metal Textured **UGM** Urban Gun Metal Matte **UBT** Urban Bronze Textured **UB** Urban Bronze Matte **USLT** Urban Silver Textured **USL** Urban Silver Matte **UWHT** Urban White Textured **UWH** Urban White Matte **BKT** Black Textured **OWGT** Old World Gray Tex **CD** Cedar **CM** Custom Match

Notes:

1. Not for use with FDRB.
2. Not for use with PEC

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Specifications

Housing	The housing is constructed utilizing precision cast aluminum parts.
LED Module	The field replaceable internal LED module is available for simplified maintenance. The internal heat sink is sealed to the lens to protect the LED platform from the outside elements.
Installation	Features a stainless steel wedge plate for mounting. 2 stainless steel set screws on the underside securely fasten the luminaire to the wall.
Hardware	Includes Stainless steel hardware. Most finishes will include hardware with a Black Oxide conversion coating. Light finishes will get non-color coated hardware **(Whites and Silvers)**
Lens	Optional glare reducing SoftVue™ lens provides optimal visual comfort. Uses a .125" thick acrylic lens. Offered with Soft Vue Medium Diffused Acrylic **(SV1)**. Soft Vue Heavy Diffused Acrylic **(SV2)** or Soft Vue Maximum Diffused Acrylic **(SV4)**.
UL Listing	UL listed per UL1598 and CSA C22.2 No. 250.0 for the United States and Canada. Suitable for Wet Locations.
Electronic Driver	The LED driver is UL recognized and will be securely mounted inside the fixture, for optimized performance and longevity. It will have DC voltage output and be a constant current design. It runs at 50/60HZ and will have overload, overheat, and short circuit protection. It will be supplied with a supplemental line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C62.41.2 guidelines. It will be a high efficiency driver with a THD less than 20% and a high-power factor greater than .9. It will be dimming capable using a 0-10V signal, consult factory for more information.
NightSky® Friendly	Dark sky design properties with a U0 BUG rating.
IP Rating	IP66 rated luminaire for enhanced protection against dust and water intrusion.
Finish	Our 6 Stage Polyester Powder coat paint system offers a beautiful high-end finish that holds up to even the most extreme environments. Each part is inspected for quality and consistency before being released for shipment. Our system exceeds AAMA 2604, AAMA 2605, ASTM D523 and ASTM D4214 requirements.
Urban Finish	The Urban finish palette was created to highlight a modern, elegant aesthetic. All finishes are a 1 part powder coat with metallic flakes for a superior appearance. Finishes are available in textured or matte. Available finishes include: **Black Textured**, **Urban Gun Metal**, **Urban Bronze**, **Urban Silver and Urban White**
Custom Finish	Custom finishes are offered to adapt to any application. **Custom Match** option is available to blend sternberg product with the site, consult factory for more information.
Warranty	7-year limited warranty. See Website for Terms and Conditions.
LEDs	The LEDs in this system will be fully shielded in a direct downward position to maximize efficiency. The LEDs are mounted to maximize thermal transfer to the heat sink surface. The LEDs shall be 100% recyclable; not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. Lumen maintenance shall be determined in accordance with IESNA TM-21, based on LED manufacturer LM-80 test data of no less than 6,000 hours and in-situ testing of the luminaire by an NVLAP accredited Energy Efficient Lighting Products lab. The high-performance white LEDs will have a predicted lumen depreciation of approximately 100,000 hours with greater than 70% of initial output at 25°C. The high brightness, high-output white LED's shall be 4000K nominal (2700K, 3000K or 5000K options) correlated color temperature (CCT) with a 70 (minimum) color rendering index (CRI). Consult factory for custom CCT or CRI. The luminaire shall have a minimum _____ (see table) delivered initial lumens when operated at steady state with an average ambient temperature of 25°C [77°F]. **CCT Lumen Derate Values from 4,000K** 2,700K (70+ CRI)=**.85** 3,000K (70+ CRI)=.**92** 5,000K (70+ CRI)=**1.00**
Optics	The luminaire shall be provided with individual, refractor type optics applied to each LED. The luminaire shall provide Type ___ (2, 3 or 4) light distribution per the IESNA classifications. Testing shall be done in accordance with IESNA LM-79.
Fixed Dimming Resistor Board (FDRB)	Optional numbered 10-step selector switch allows for fine adjustment of the light levels in the field, repeatable from location to location. Offers dimming from 25% to 100% of the original output. Enclosure is composite material, sealed to protect components for the life of the product.

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Photocontrols	**Button Photocell:** The photocontrol will be mounted on the fixture and pre-wired to driver. The electronic button type photocontrol is instant on and will turn on at 1.5 footcandles and will turn off at 2-3 footcandles. Bottom of sconce to be at least 5' away from reflective surfaces to minimize photocontrol cycling.

Lumen Chart(s)

Tested with SV1 lens

Model #	T2 DELIVERED LUMENS	BUG	EFFICACY (LPW)	T3 DELIVERED LUMENS	BUG	EFFICACY (LPW)	T4 DELIVERED LUMENS	BUG	EFFICACY (LPW)	WATTAGE
16L-40-T-_MDL004	1840	B0U0G0	108.2	1735	B0U0G1	102.1	1865	B0U0G1	109.7	17
16L-30-T-_MDL004	1700	B0U0G0	100.0	1600	B0U0G0	94.1	1720	B0U0G1	101.2	17
16L-27-T-_MDL004	1565	B0U0G0	91.5	1470	B0U0G0	86.5	1580	B0U0G1	92.9	17
16L-40-T-_MDL003	1475	B0U0G0	105.4	1390	B0U0G1	99.3	1495	B0U0G1	106.8	14
16L-30-T-_MDL003	1360	B0U0G0	97.1	1285	B0U0G1	91.8	1380	B0U0G1	98.6	14
16L-27-T-_MDL003	1250	B0U0G0	89.3	1175	B0U0G1	83.9	1265	B0U0G1	90.4	14
16L-40-T-_MDL002	1055	B0U0G0	105.5	995	B0U0G0	99.5	1075	B0U0G0	107.5	10
16L-30-T-_MDL002	975	B0U0G0	97.5	920	B0U0G0	92.0	990	B0U0G0	99.0	10
16L-27-T-_MDL002	895	B0U0G0	89.5	840	B0U0G0	84.0	910	B0U0G0	91.0	10
16L-40-T-_MDL001	545	B0U0G0	90.8	515	B0U0G0	85.8	550	B0U0G0	91.7	6
16L-30-T-_MDL001	505	B0U0G0	84.2	475	B0U0G0	79.2	510	B0U0G0	85.0	6
16L-27-T-_MDL001	460	B0U0G0	76.7	435	B0U0G0	72.5	465	B0U0G0	77.5	6

Options

Button Photocell **(PEC)**
(Installed on backside of unit)

Fixed Dimming Resistor Board
(FDRB)

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SE

Lumark

DESCRIPTION

Combining value and performance in a unique, patent-pending durable design, the Tracer LED floodlight luminaire delivers superior uniformity and excellent illumination to the targeted application. The rugged, die-cast housing is IP66 rated for exceptional durability and long-term reliability. The Tracer floodlight provides design flexibility for applications such as landscape, accent, facade, or sign lighting.

Catalog #	TCRS8W-BK-7030	**Type**	
Project			
Comments		**Date**	
Prepared by			

SPECIFICATION FEATURES

Construction
Heavy-duty, die-cast aluminum housing provides durability and an IP66 rating to protect against moisture and contaminants. Clear tempered glass lens protects optics and encloses the front cover of the luminaire.

Optics
The discrete LED optics provide illumination that has been precisely designed to shape the distribution as spot, medium, or wide. Multiple lumen packages ranging from 550 up to 2,900 lumens. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 5000K CCT or 3000K CCT available. Removable, pre-installed standard symmetric snoot as well included and field-replaceable with included extended visor for more cut-off applications.

Electrical
LED driver is internally mounted for optimal heat sinking. 120-277V 50/60Hz standard operation. Integral 4kV surge is standard. 0-10V dimming is standard with external purple and grey leads. Suitable for ambient temperatures from -40°C to 40°C. 90% lumen maintenance greater than 60,000 hours per IESNA TM-21.

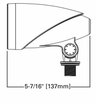
Mounting
Heavy-duty, die-cast aluminum knuckle base utilizes tooth-lock adjustment with visual 15° adjustment indicators that allow for precise rotation of the luminaire. Knuckle fits 1/2" NPS available mounting junction box cover (supplied by others) and is secured with supplied locking nut.

Finish
Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Standard color is carbon bronze. Additional colors available in summit white, black, and verde green. Consult your lighting representitive at Cooper Lighting Solutions for a complete selection of standard colors.

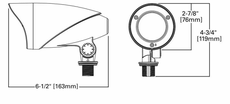
Warranty
Five-year warranty.

DIMENSIONS

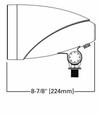
Tracer Small (Standard symmetric snoot)



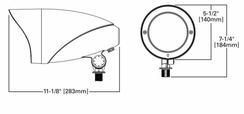
Tracer Small (Optional extended visor)



Tracer Large (Standard symmetric snoot)



Tracer Large (Optional extended visor)



COOPER Lighting Solutions

*www.designlights.org

TCRS / TCRL
TRACER

Solid State LED

FLOODLIGHT

DLC PREMIUM

CERTIFICATION DATA

UL/cUL Wet Location Listed
DesignLights Consortium® Qualified*
IP66 Fixture and Optical Chamber
LM79/LM80 Compliant
FCC Class A
1.5G Vibration Rated
RoHS Compliant

ENERGY DATA

Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60Hz
-40°C Min. Ambient Temperature Rating
+40°C Max. Ambient Temperature Rating

EPA
Effective Projected Area (Sq. Ft.): 0.55

SHIPPING DATA

Approximate Net Weight:
Small fixture=2 lbs. (0.91kgs.)
Large fixture=5 lbs. (2.27kgs.)

TCDLI

TD506032EN
September 30, 2019 9:40 AM

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN · JOSEPH F. SOVIS, JR. · ENGINEER NO. 6201042247 · LICENSED PROFESSIONAL ENGINEER

PROJECT

Nowicki Park
Site Improvements

CLIENT

City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT

Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION

Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet

ELECTRICAL FIXTURE CUT SHEETS

Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE

DESIGNED BY: BAE

APPROVED BY: JFS

DATE: 02/04/2026

SCALE:

NFE JOB NO. 0557

SHEET NO. SE8.05

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

POWER AND LUMENS

Light Engine		TCRS5	TCRS8	TCRL15	TCRL20	TCRL26
Power (Watts)		5.0	8.0	12.0	17.6	25.1
Input Current @ 120V (A)		0.04	0.07	0.10	0.15	0.22
Input Current @ 277V (A)		0.02	0.03	0.05	0.07	0.10
Configuration						
Spot (20°)	4000K/5000K Lumens	530	812	1,500	2,039	2,718
	3000K Lumens	512	785	1,450	1,971	2,628
Medium (30°)	4000K/5000K Lumens	552	846	1,630	2,215	2,953
	3000K Lumens	533	818	1,575	2,141	2,854
Wide (50°)	4000K/5000K Lumens	561	860	1,657	2,251	3,002
	3000K Lumens	542	831	1,602	2,176	2,902

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
Up to 40°C	90%	153,000

LUMEN MULTIPLIER

Ambient Temperature	Lumen Multiplier
10°C	1.02
15°C	1.01
25°C	1.00
40°C	0.97

ORDERING INFORMATION

Sample Number: TCRS5S-WH-7050

Product Family [1]	Light Engine	Distribution
TCRS=Tracer Flood Small LED **TCRL=**Tracer Flood Large LED	**TCRS:** **5=**5W, 550 Nominal Lumens **8=**8W, 850 Nominal Lumens **TCRL:** **15=**15W, 1,600 Nominal Lumens **20=**20W, 2,200 Nominal Lumens **26=**26W, 2,900 Nominal Lumens	**S=**Spot **M=**Medium **W=**Wide
Options (Add as Suffix) [2]		
(blank)=Carbon Bronze (Standard) **BK=**Black **VG=**Verde Green **WH=**White **7030=**70 CRI / 3000K CCT **7050=**70 CRI / 5000K CCT		

NOTES: 1. DesignLights Consortium® Qualified. Refer to www.designlights.org Qualified Products List under Family Models for details. 2. Extended lead times apply to any options selected.

STOCK ORDERING INFORMATION

Stock SKUs	
Small	**Large**
TCRS5S=Tracer Small 5W, 550 lumens, Spot Distribution	**TCRL15S=**Tracer Large 15W, 1,600 lumens, Spot Distribution
TCRS5M=Tracer Small 5W, 550 lumens, Medium Distribution	**TCRL15M=**Tracer Large 15W, 1,600 lumens, Medium Distribution
TCRS5W=Tracer Small 5W, 550 lumens, Wide Distribution	**TCRL20M=**Tracer Large 20W, 2,200 lumens, Medium Distribution
TCRS8S=Tracer Small 8W, 850 lumens, Spot Distribution	**TCRL26S=**Tracer Large 26W, 2,900 lumens, Spot Distribution
TCRS8M=Tracer Small 8W, 850 lumens, Medium Distribution	**TCRL26M=**Tracer Large 26W, 2,900 lumens, Medium Distribution
TCRS8W=Tracer Small 8W, 850 lumens, Wide Distribution	

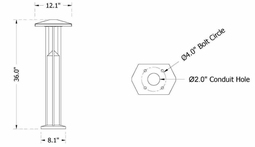
NOTES: Options not available with stock products. Refer to standard ordering information to add options. Stock fixture is 4000K, dimming, 120-277V, carbon bronze only.

How to Order

Model	Overall Height (In Inches)	LED	CCT - Color Temp (K)	Distribution Type	Driver	Lens	Optional Fixed Dimming Resistor Board	Finish
US360 Usonia Bollard	**24IN** 24" **30IN** 30" **36IN** 36" **42IN** 42" **48IN** 48"	**08L** 8LEDs	**27** 2,700K **30** 3,000K **40** 4,000K **50** 5,000K	**TA** Type Asymmetric **TS** Type Symmetric	**MDL02** 120V-277V, 175mA **MDH02** 347V-480V, 175mA **MDL04** 120V-277V, 375mA **MDH04** 347V-480V, 375mA **MDL06** 120V-277V, 640mA **MDH06** 347V-480V, 640mA	**CA** Clear Acrylic **SV1** Flat SoftVue™ Light Diffused Acrylic **SV2** Flat SoftVue™ Moderate Diffused Acrylic **SV4** Flat SoftVue™ Maximum Diffused Acrylic	**FDRB** Fixed Dimming Resistor Board	**UGMT** Urban Gun Metal Textured **UGM** Urban Gun Metal Matte **UBT** Urban Bronze Textured **UB** Urban Bronze Matte **USLT** Urban Silver Textured **USL** Urban Silver Matte **UWHT** Urban White Textured **UWH** Urban White Matte **BKT** Black Textured **OWGT** Old World Gray Tex **CD** Cedar **CM** Custom Match

Project Name _____ Qty _____

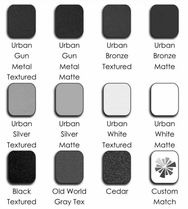
Type _____ Catalog / Part Number _____



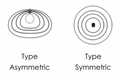
Certifications

cULus LISTED · IP66 · WARRANTY

Finish



Distribution Type



Description

The US360 Usonia bollard offers subtle sophistication for pathways, plazas, and pedestrian spaces. Its supporting legs flow seamlessly into the base shroud, and the bollard delivers uniform illumination that complements and enhances the surrounding environment.

EPA: 1.2 - 1.7 (ft²) | WEIGHT: 19.4 - 22.2 LBS

Features

Model	**US360:** Usonia Bollard
Overall Height (In Inches)	24" 30" 36" 42" 48"
Lens	**CA:** Clear Acrylic **SV1:** Flat SoftVue™ Light Diffused Acrylic **SV2:** Flat SoftVue™ Moderate Diffused Acrylic **SV4:** Flat SoftVue™ Maximum Diffused Acrylic
Optional Fixed Dimming Resistor Board	**FDRB:** Fixed Dimming Resistor Board
Finish	**UGMT:** Urban Gun Metal Textured **UGM:** Urban Gun Metal Matte **UBT:** Urban Bronze Textured **UB:** Urban Bronze Matte **USLT:** Urban Silver Textured **USL:** Urban Silver Matte **UWHT:** Urban White Textured **UWH:** Urban White Matte **BKT:** Black Textured **OWGT:** Old World Gray Tex **CD:** Cedar **CM:** Custom Match

CCT - Color Temp (K)

Light Source

LED	**08L:** 8LEDs
CCT - Color Temp (K)	**27:** 2,700K **30:** 3,000K **40:** 4,000K **50:** 5,000K
Distribution Type	**TA:** Type Asymmetric **TS:** Type Symmetric
Driver	**MDL02:** 120V-277V, 175mA **MDH02:** 347V-480V, 175mA **MDL04:** 120V-277V, 375mA **MDH04:** 347V-480V, 375mA **MDL06:** 120V-277V, 640mA **MDH06:** 347V-480V, 640mA

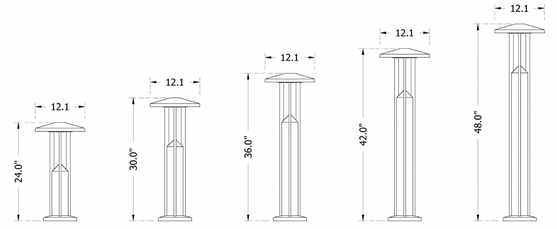
Specifications

Installation	Four 3/8" diameter by 12" long, hot-dipped galvanized "L" type anchor bolts shall be provided in a 4" bolt circle in a square pattern for anchorage. It will include tamper resistant stainless steel hardware. Bollard will be provided with a grounding stud on the base. **CONCRETE FOOTING DESIGN BY OTHERS**
Construction	The specialty bollard shaft shall be made of ASTM 6061 extruded aluminum and tempered to a T6 condition. The integral anchor base shall be made of heavy wall, 356 alloy cast aluminum with a .25" thick floor. It will include a decorative slipping base cover.
Hardware	Includes Stainless steel hardware. Most finishes will include hardware with a Black Oxide conversion coating. Light finishes will get non-color coated hardware **(Whites and Silvers)**
Lens	Optional glare reducing SoftVue™ lens provides optimal visual comfort.
UL Listing	UL listed per UL1598 and CSA C22.2 No. 250.0 for the United States and Canada. Suitable for Wet Locations.
Electronic Driver	The LED driver is UL recognized and will be securely mounted inside the fixture, for optimized performance and longevity. It will be supplied with a quick-disconnect electrical connector on the power supply, providing easy power connections for fixture installation and maintenance. It will have DC voltage output and be a constant current design. It runs at 50/60HZ and will have overload, overheat, and short circuit protection. It will be supplied with a supplemental line-ground, line-neutral and neutral-ground electrical surge protection in accordance with IEEE/ANSI C.62.41.2 guidelines. It will be a high efficiency driver with a THD less than 20% and a high-power factor greater than .9. It will be dimming capable using a 0-10V signal, consult factory for more information.
IP Rating	IP66 rated optical module for enhanced protection against dust and water intrusion.
Finish	Our 6 Stage Polyester Powder coat paint system offers a beautiful high-end finish that holds up to even the most extreme environments. Each part is inspected for quality and consistency before being released for shipment. Our system exceeds AAMA 2604, AAMA 2605. ASTM D523 and ASTM D4214 requirements.
Urban Finish	The Urban finish palette was created to highlight a modern, elegant aesthetic. All finishes are a 1 part powder coat with metallic flakes for a superior appearance. Finishes are available in textured or matte. Available finishes include: **Black Textured, Urban Gun Metal, Urban Bronze, Urban Silver and Urban White**
Custom Finish	Custom finishes are offered to adapt to any application. **Custom Match** option is available to blend sternberg product with the site, consult factory for more information.
Warranty	7-year limited warranty. See Website for Terms and Conditions.
LEDs	The LEDs in this system will be fully shielded. The LEDs are mounted to maximize thermal transfer to the heat sink surface. The LEDs shall be 100% recyclable; not contain lead, mercury or any other hazardous substances and shall be RoHS compliant. Lumen maintenance shall be determined in accordance with IESNA TM-21, based on LED manufacturer LM-80 test data of no less than 6,000 hours and in-situ testing of the luminaire by an NVLAP accredited Energy Efficient Lighting Products lab. The high-performance white LEDs will have a predicted lumen depreciation of approximately 100,000 hours with greater than 70% of initial output at 25°C. The high brightness, high-output white LED's shall be 4000K nominal (2700K, 3000K or 5000K optional) correlated color temperature (CCT) with a 70 (minimum) color rendering index (CRI). Consult factory for custom CCT or CRI. The luminaire shall have a minimum __ (see table) delivered initial lumens when operated at steady state with an average ambient temperature of 25°C (77°F). **CCT Lumen Derate Values from 4,000K** 2,700K (70+ CRI)=**.85** 3,000K (70+ CRI)=**.92** 5,000K (70+ CRI)=**1.00**
Optics	The luminaire shall be provided with a reflector style optical system. The luminaire shall provide Type ___ (Symmetric or Asymmetric) light distribution. Testing shall be done in accordance with IESNA LM-79.
Fixed Dimming Resistor Board (FDRB)	Optional numbered 10-step selector switch allows for fine adjustment of the light levels in the field, repeatable from location to location. Offers dimming from 25% to 100% of the original output. Enclosure is composite material, sealed to protect components for the life of the product.

Lumen Chart(s)

Model #	TA DELIVERED LUMENS	BUG	EFFICACY (LPW)	TS DELIVERED LUMENS	BUG	EFFICACY (LPW)	WATTAGE
08L-40-T_-MDL06	1250	B1U0G1	33.8	1710	B1U0G0	46.2	37
08L-30-T_-MDL06	1155	B1U0G1	31.2	1580	B1U0G0	42.7	37
08L-27-T_-MDL06	1060	B1U0G1	28.6	1445	B1U0G0	39.1	37
08L-40-T_-MDL04	760	B1U0G1	38.0	1065	B1U0G0	53.3	20
08L-30-T_-MDL04	700	B1U0G1	35.0	985	B1U0G0	49.3	20
08L-27-T_-MDL04	645	B1U0G1	32.3	900	B1U0G0	45.0	20
08L-40-T_-MDL02	360	B0U0G0	36.0	510	B1U0G0	51.0	10
08L-30-T_-MDL02	330	B0U0G0	33.0	470	B1U0G0	47.0	10
08L-27-T_-MDL02	305	B0U0G0	30.5	430	B1U0G0	43.0	10

Dimensions



Options

Fixed Dimming Resistor Board
(FDRB)

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN
JOSEPH F. SOVIS, JR.
ENGINEER
NO. 6201042247
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE
CUT SHEETS

Know what's below
Call before you dig.

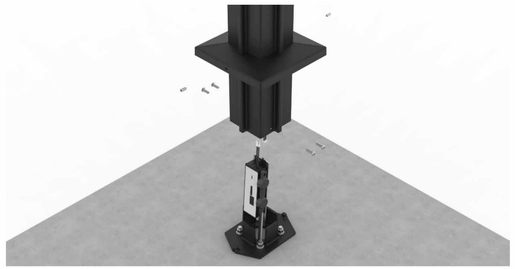
DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

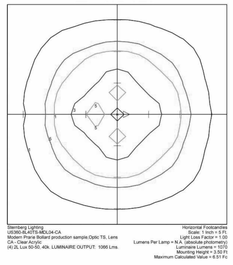
NFE JOB NO. 0557
SHEET NO. SE8.06

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

Mounting Details

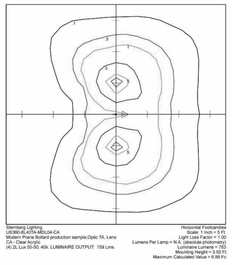


Photometry



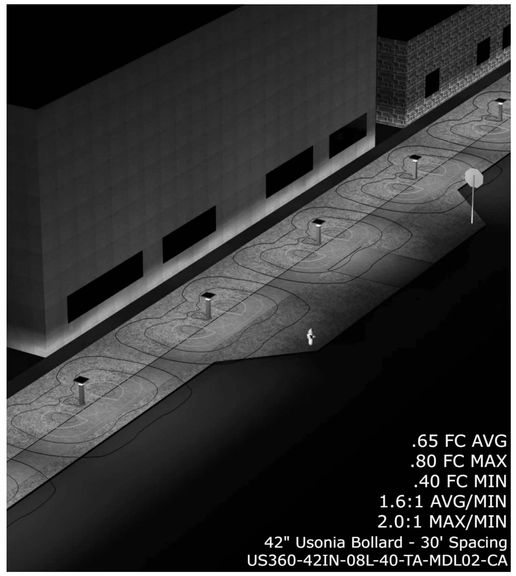
Sternberg Lighting
Model#: US360-08L04-CA
Modern Prairie Bollard production sample.Optic:TA, Lens CA - Clear Acrylic
(4) 2L Lua 50-5O, 40k. LUMINAIRE OUTPUT: 1066 Lms.

Horizontal Footcandles
Light Loss Factor = 1.00
Lumens Per Lamp = N.A. (absolute photometry)
Test Number: 29476
Mounting Height = 2.32 Ft
Maximum Calculated Value = 6.51 Fc



Sternberg Lighting
Model#: US360-08L04-CA
Modern Prairie Bollard production sample.Optic:TA, Lens CA - Clear Acrylic
(4) 2L Lua 50-5O, 40k. LUMINAIRE OUTPUT: 759 Lms.

Horizontal Footcandles
Light Loss Factor = 1.00
Lumens Per Lamp = N.A. (absolute photometry)
Test Number: 29478
Mounting Height = 2.32 Ft
Maximum Calculated Value = 6.58 Fc



GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

SI

Lumiere

Catalog #		Type
Project		
Comments		Date
Prepared by		

DESCRIPTION

Lanterra 1003 Sign is a 3.25" line voltage sign lighting luminaire that attaches to a wall mounted straight arm and is available in aimable single and dual head configurations along with 90 degree elbow options to meet any desired rotation and vertical adjustment required for a project. Multiple standard stem length arms up to 36" are available. The luminaire also comes with various mounting, field replaceable optics and premium color tuning options. Various lenses, louvers and color or dichroic filters which can combine up to two at once to create multiple lighting effects. The fixture may be used indoors or outdoors and carries IP66 rating.

SPECIFICATION FEATURES

Material
Housing, hood and mounting stem are precision-machined from corrosion resistant billet stock 6061-T6 aluminum.

Finish
Fixtures constructed from 6061-T6 aluminum are double protected by an ROHS compliant chemical film undercoating and polyester powder coat paint finish, surpassing the rigorous demands of the outdoor environment. A variety of standard colors are available.

Hood
Hood is removable and accepts up to two internal accessories at once (lenses, louvers and filters) to achieve multiple lighting effects. Weep holes prevents water and mineral stains from collecting on the lens, even in the straight up position. The flush lens design reduces fixture length, minimizes debris collection and prevents water and mineral stains from collecting on the lens.

Gasket
Housing and hood are sealed with a high temperature silicone O-ring gasket to prevent water intrusion.

Lens
Tempered glass lens, factory sealed with high temperature silicone O-ring to prevent water intrusion and breakage due to thermal stock.

Hardware
Stainless steel hardware is standard to provide maximum corrosion resistance.

Electrical
Long life LED system coupled with electronic driver (120-277V/50-60Hz) is compatible with TRIAC (Leading Edge Dimming), ELV (Trailing Edge Dimming) and 0-10V dimming to deliver optical performance. Light can be dimmed from100-1% while maintaining constant CCT. It will operate in -30°C to 50°C unless noted otherwise. The driver incorporates surge protection. LED's are available in 2700K, 3000K, 3500K at 90CRI and 97CRI, 4000K at 80CRI and 97CRI, 5000K at 80CRI and are industry leading high output with 87% lumen maintenance at 60,000hrs.

Compliance
Components are UL recognized and luminaires are cULus listed for 50°C ambient environments unless noted otherwise, wet location listed, and ROHS compliant. IP66 Rated. Options to meet Buy American Act requirements

Warranty
Lumiere warrants the Lanterra series of fixtures against defects in material and workmanship for five (5) years. Auxiliary equipment such as LED drivers carries the original manufacturer's warranty.

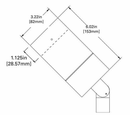
Lanterra 1003

BAA

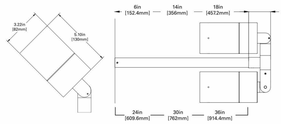
LED
INTERIOR / EXTERIOR
SIGN FLOOD LIGHT
CERTIFICATION DATA
cULus - 1598
Wet Location Listed - IP66
LM79/LM80 Compliant
ROHS Compliant
10W LED, L70/102,000@25° Celcius
20W LED, L70/102,000@25° Celcius

DIMENSIONS

RW HOOD



FL HOOD



ORDERING INFORMATION

DOMESTIC PREFERENCES *	SERIES	NUMBER OF HEADS	KNUCKLE STYLE	HOOD	LED CCT & CRI	FIELD REPLACEABLE OPTIC	FINISH	STEM LENGTH	LIGHT LEVEL	VOLTAGE	MOUNTING	OPTIONS
[Blank]=Standard **BAA**=Buy American Act	1003	S1[1] S2[1] SU1 SU2[1]	1 Head 2 Head 1 Head 90 Elbow 2 Head 90 Elbow	RCS Center Rear Swivel with Lock Rotation RW Standard-Recessed Lens with weep holes - Outdoor RI Recessed Lens with no weep holes- Indoor FL Flush lens hood	**Standard CRI** LED2790 - 2700K, 90 CRI LED 3090 - 3000K, 90 CRI LED 3590 - 3500K, 90 CRI LED 4080 - 4000K, 80 CRI LED 5080 - 5000K, 80 CRI **Premium CRI** LED 2797 - 2700K, 97 CRI LED 3097 - 3000K, 97 CRI LED 3597 - 3500K, 97 CRI LED 4097 - 4000K, 97 CRI	S Spot M Medium Flood F Wide Flood W Spot, Medium, Wide Flood	**Standard Paint Finish** BK Black BZ Bronze CS City Silver WT White	6 6" Stem 14 14" Stem 24 24" Stem 30 30" Stem 36 36" Stem 24' 24' Stem 36' 36' Stem	L1 Light Level 1 (10W) L2 Light Level 2 (20W) LC1 Light Level Color 1 (12W) LC2 Light Level Color 2 (20W)	UNV 120-277V	Surface Mount - Wall, Ceiling, Ground RSM Round Surface Mount - mounts directly to junction box. Thermal Compliance (unless otherwise noted IMC) 1900-53 nox-LCI nox-RSM (4IMC) Remote Driver Housing WRR[1] Remote Driver Housing - Round Wall WRS[1] Remote Driver Housing - Square Wall Thermal Compliance (unless otherwise noted IMC) 1900-53 nox-LCI nox-WRx (4IMC) 1900-53.5 nox-LCI nox-WRx (4IMC) Integral Driver Mount WIS[1] Wall Integral Driver Plate Thermal Compliance (unless otherwise noted 4IMC) 1900-53.500 nox-LI nox-WIS (5IMC)	SVP02[1] Standalone integral sensor

Notes: 1. Order LC remote separately. 2. 1900-51 and 1900-53.5 not available for LC2. 3. 1900-53 and 1900-53.5 not available for L2, L3 and LC2. 4. Not available for single head option (S1/ S01) with ROHS only. 5. S2 Standard for double head. 6. Only available for LDCR

7. Remote Driver up to 60'
8. Only product configurations with this designated prefix are built to be compliant with the Buy American Act of 1933 (BAA). Please refer to SIGNIFICANT PRODUCTS website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.

9. Accessories are sold separately and will be separately analyzed under domestic preference requirements. Consult factory for further information.

COOPER Lighting Solutions

TD506028EN
12-2021

Specifications and dimensions subject to change without notice.

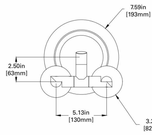
ACCESSORIES - ORDER SEPARATELY

ACCESSORIES[1]						OPTICS
LCTL1R2RT4SJL-PK*	Light Comissioning Tool (LCT)	**Filters**		**Lens**	**Louver**	LLR-S-3-4 15° Spot
		F71-3 Peach Dichroic	F79-3 Neutral Density Dichroic	LSL-3 Linear Spread Lens	LVR-3 45° Hex Cell Louver	LLR-M-3-4 25° Medium
ISHR01LUM	Programming Remote for sensor	F72-3 Amber Dichroic	F80-3 Magenta Dichroic	DIF-3 Diffused Lens		LLR-F-3-4 36° Flood
		F73-3 Green Dichroic	F22-3 Red Color	OSL-3 Overall Spread Lens		LLR-W-3-4 60° Wide Flood
ISHR02LUM	Personal Control Remote for sensor	F74-3 Medium Blue	F23-3 Blue Color			LLR-K-3-4 Spot, Medium, Flood, Wide Flood Optic Kit
		F75-3 Yellow Dichroic	F33-3 Green Color			LLR-S-LC-3-4 20° Spot - Color tuning optic
		F76-3 Red Dichroic	F44-2 Green Color			LLR-M-LC-3-4 32° Medium - Color tuning optic
		F77-3 Dark Blue Dichroic	F55-3 Yellow Color			LLR-F-LC-3-4 42° Flood - Color tuning optic
		F78-3 Light Blue Dichroic	F66-3 Mercury Color			LLR-W-LC-3-4 56° Wide Flood - color tuning optic
						LR-K-LC-3-4 Spot, Medium, Flood, Wide Flood Color tuning optic Kit

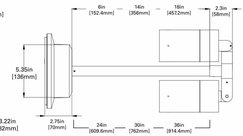
MOUNTINGS

ROUND SURFACE MOUNT (RSM)

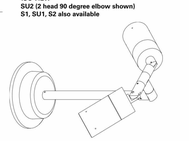
TOP VIEW



FRONT VIEW

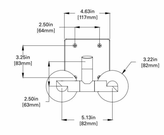


ISO VIEW
SU2 (2 head 90 degree elbow shown)
S1, SU1, S2 also available

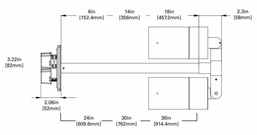


WALL INTEGRAL DRIVER PLATE (WIS)

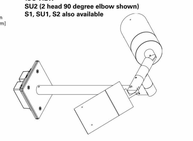
TOP VIEW



FRONT VIEW

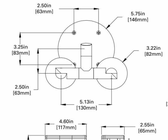


ISO VIEW
SU2 (2 head 90 degree elbow shown)
S1, SU1, S2 also available

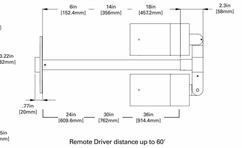


REMOTE DRIVER HOUSING ROUND WALL (WRR)

TOP VIEW

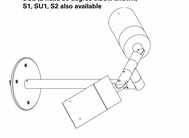


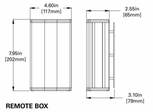
FRONT VIEW



Remote Driver distance up to 60'

ISO VIEW
SU2 (2 head 90 degree elbow shown)
S1, SU1, S2 also available

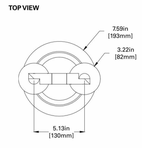




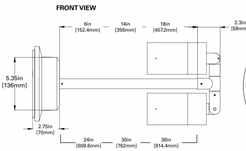
REMOTE BOX

ROUND SURFACE MOUNT (RSM)

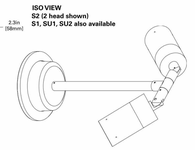
TOP VIEW



FRONT VIEW

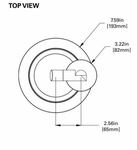


ISO VIEW
S2 (2 head shown)
S1, SU1, SU2 also available

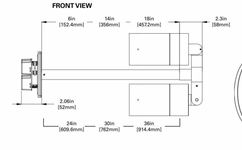


ROUND SURFACE MOUNT (RSM)

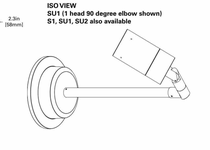
TOP VIEW



FRONT VIEW

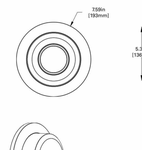


ISO VIEW
SU1 (1 head 90 degree elbow shown)
S1, SU1, SU2 also available

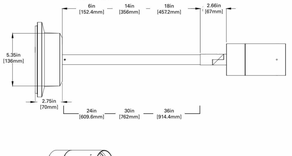


ROUND SURFACE MOUNT (RSM)

TOP VIEW



FRONT VIEW



ISO VIEW
S1 (1 head RCS shown)
S2, SU1, SU2 also available

PHOTOMETRICS

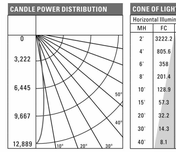
Test Number	P29476
Lumcat	1003-{A1, S1, SU1, W1}-X-FL-LED4080-S-BK-L2-UNV
Lumens	1700 Lm
Watts	20.1 W
LPW	84.6 Lm/W
CCT	4000K
SC (0/90/45)	0.27 / 0.27 / 0.27
Beam Angle	16°

COLOR METRIC SUMMARY

TM-30-15	Rf = 82.5
	Rg = 94.3
CRI/CIE	Ra = 83.1
	R9 = 11.4

15°

CANDLE POWER DISTRIBUTION



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	3222.2	0.4	0.4
4'	805.6	1	1
6'	358	1.6	1.6
8'	201.4	2	2
10'	128.9	2.6	2.6
15'	57.3	4	4
20'	32.2	5.4	5.4
30'	14.3	8.2	8.2
40'	8.1	10.8	10.8

CANDELA TABLE

Angle	0-deg
0	12889
5	9969
10	4210
15	1746
20	1126
30	298
40	22
50	6
60	5
70	3
80	1
90	0

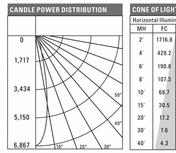
Test Number	P29477
Lumcat	1003-{A1, S1, SU1, W1}-X-FL-LED4080-M-BK-L2-UNV
Lumens	1623 Lm
Watts	20.1 W
LPW	80.8 Lm/W
CCT	4000K
SC (0/90/45)	0.41 / 0.41 / 0.41
Beam Angle	24.1°

COLOR METRIC SUMMARY

TM-30-15	Rf = 82.5
	Rg = 94.3
CRI/CIE	Ra = 83.1
	R9 = 11.4

25°

CANDLE POWER DISTRIBUTION



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	1716.8	0.8	0.8
4'	429.2	1.6	1.6
6'	190.8	2.4	2.4
8'	107.3	3.2	3.2
10'	68.7	4	4
15'	30.5	6	6
20'	17.2	8	8
30'	7.6	12.2	12.2
40'	4.3	16.2	16.2

CANDELA TABLE

Angle	0-deg
0	6867
5	6216
10	4343
15	2302
20	1191
30	326
40	29
50	9
60	5
70	3
80	1
90	0

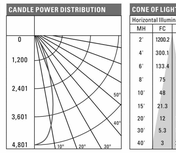
Test Number	P29478
Lumcat	1003-{A1, S1, SU1, W1}-X-FL-LED4080-F-BK-L2-UNV
Lumens	1787 Lm
Watts	20.1W
LPW	88.9 Lm/W
CCT	4000K
SC (0/90/45)	0.59 / 0.59 / 0.56
Beam Angle	35.4°

COLOR METRIC SUMMARY

TM-30-15	Rf = 82.5
	Rg = 94.3
CRI/CIE	Ra = 83.1
	R9 = 11.4

36°

CANDLE POWER DISTRIBUTION



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	1200.2	1	1
4'	300.1	2.2	2.2
6'	133.4	3.4	3.4
8'	75	4.6	4.6
10'	48	5.8	5.8
15'	21.3	8.8	8.8
20'	12	11.6	11.6
30'	5.3	17.6	17.6
40'	3	23.4	23.4

CANDELA TABLE

Angle	0-deg
0	4801
5	4641
10	4056
15	3055
20	1850
30	365
40	27
50	6
60	3
70	2
80	1
90	0

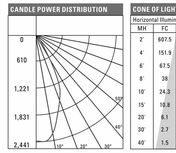
Test Number	P29479
Lumcat	1003-{A1, S1, SU1, W1}-X-FL-LED4080-W-BK-L2-UNV
Lumens	1630 Lm
Watts	20.1 W
LPW	81.1 Lm/W
CCT	4000K
SC (0/90/45)	0.79 / 0.79 / 0.76
Beam Angle	51.1°

COLOR METRIC SUMMARY

TM-30-15	Rf = 82.5
	Rg = 94.3
CRI/CIE	Ra = 83.1
	R9 = 11.4

60°

CANDLE POWER DISTRIBUTION



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	607.5	1.4	1.4
4'	151.9	3	3
6'	67.5	4.6	4.6
8'	38	6.2	6.2
10'	24.3	7.9	7.8
15'	10.8	11.9	11.8
20'	6.1	15.8	15.8
30'	2.7	23.5	23.6
40'	1.5	31.6	31.6

CANDELA TABLE

Angle	0-deg
0	2430
5	2439
10	2278
15	1922
20	1605
30	653
40	168
50	65
60	6
70	4
80	1
90	0

CCT/CRI	LED2790	LED3090	LED3590	LED4080	LED5080	LED2797	LED3097	LED3597	LED4097
FC Multiplier	0.754	0.798	0.808	1.000	1.039	0.699	0.706	0.801	0.793

Light Level	L1	L2
FC Multiplier	0.542	1.000

ROCHESTER HILLS
MICHIGAN

MATRIX
CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixeinc.com

SEAL

STATE OF MICHIGAN
JOSEPH F. SOVIS, JR.
ENGINEER
NO. 6201042247
LICENSED PROFESSIONAL ENGINEER

PROJECT
Nowicki Park
Site Improvements

CLIENT
City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT
Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION
Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet
ELECTRICAL FIXTURE
CUT SHEETS

811
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DATE	ISSUED / REVISED
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APPROVED BY:
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DATE:
02/04/2026

SCALE:

NFE JOB NO.
0557

SHEET NO.
SE8.07

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park_MEP - R23.rvt

PHOTOMETRICS (PREMIUM COLOR TUNING)

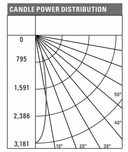
Test Number	P29558
Lumcat	1003-(A1, S1, SU1, W1)-X-FL-(LEDCB, LEDCR)-S-BK-LC-UNV
Lumens	650 Lm
Watts	24.3 W
LPW	26.7 Lm/W
CCT	3500K
SC (0/90/45)	0.39 / 0.39 / 0.42
Beam Angle	23.2°

COLOR METRIC SUMMARY

TM-30-15	Rf = 90.6
	Rg = 100.4
CRI/CIE	Ra = 92.7
	R9 = 67.5

2700K 3000K 3500K 4000K

20°



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	795.2	0.6	0.6
4'	198.8	1.4	1.4
6'	88.4	2.2	2.2
8'	49.7	3	3
10'	31.8	3.8	3.8
15'	14.1	5.8	5.8
20'	8	7.8	7.8
30'	3.5	11.6	11.6
40'	2	15.6	15.6

CANDELA TABLE

Angle	0-deg
0	3181
5	2813
10	1881
15	1080
20	540
30	35
40	7
50	2
60	1
70	1
80	1
90	0

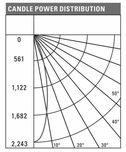
Test Number	P29559
Lumcat	1003-(A1, S1, SU1, W1)-X-FL-(LEDCB, LEDCR)-M-BK-LC-UNV
Lumens	643 Lm
Watts	24.2 W
LPW	26.6 Lm/W
CCT	3500K
SC (0/90/45)	0.5 / 0.5 / 0.51
Beam Angle	29.9°

COLOR METRIC SUMMARY

TM-30-15	Rf = 90.6
	Rg = 100.4
CRI/CIE	Ra = 92.7
	R9 = 67.5

2700K 3000K 3500K 4000K

32°



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	560.8	0.8	0.8
4'	140.2	1.8	1.8
6'	62.3	2.8	2.8
8'	35	3.8	3.8
10'	22.4	4.8	4.8
15'	10	7.4	7.4
20'	5.8	9.8	9.8
30'	2.5	14.8	14.8
40'	1.4	19.8	19.8

CANDELA TABLE

Angle	0-deg
0	2243
5	2095
10	1634
15	1116
20	662
30	55
40	5
50	2
60	2
70	1
80	1
90	0

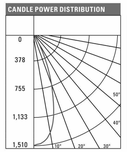
Test Number	P29560
Lumcat	1003-(A1, S1, SU1, W1)-X-FL-(LEDCB, LEDCR)-F-BK-LC-UNV
Lumens	651 Lm
Watts	24.3 W
LPW	26.8 Lm/W
CCT	3500K
SC (0/90/45)	0.64 / 0.64 / 0.62
Beam Angle	39.3°

COLOR METRIC SUMMARY

TM-30-15	Rf = 90.6
	Rg = 100.4
CRI/CIE	Ra = 92.7
	R9 = 67.5

2700K 3000K 3500K 4000K

42°



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	377.5	1.2	1.2
4'	94.4	2.4	2.4
6'	41.9	3.8	3.8
8'	23.6	5	5
10'	15.1	6.4	6.4
15'	6.7	9.6	9.6
20'	3.8	12.8	12.8
30'	1.7	19.2	19.2
40'	0.9	25.6	25.6

CANDELA TABLE

Angle	0-deg
0	1510
5	1473
10	1352
15	1083
20	734
30	145
40	7
50	5
60	2
70	1
80	1
90	0

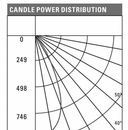
Test Number	P29561
Lumcat	1003-(A1, S1, SU1, W1)-X-FL-(LEDCB, LEDCR)-W-BK-LC-UNV
Lumens	664 Lm
Watts	24.3 W
LPW	27.3 Lm/W
CCT	3500K
SC (0/90/45)	0.83 / 0.83 / 0.77
Beam Angle	51.1°

COLOR METRIC SUMMARY

TM-30-15	Rf = 90.6
	Rg = 100.4
CRI/CIE	Ra = 92.7
	R9 = 67.5

2700K 3000K 3500K 4000K

56°



CONE OF LIGHT

Horizontal Illuminance on Floor

MH	FC	L	W
2'	248.8	1.6	1.6
4'	62.2	3.2	3.2
6'	27.6	4.8	4.8
8'	15.5	6.6	6.6
10'	10	8.2	8.2
15'	4.4	12.4	12.4
20'	2.5	16.6	16.6
30'	1.1	24.8	24.8
40'	0.6	33.2	33.2

CANDELA TABLE

Angle	0-deg
0	995
5	981
10	927
15	853
20	725
30	303
40	26
50	5
60	4
70	3
80	0
90	0

LUMEN TABLE

		1003-(A1, S1/SU1, W1) Regressed Hood - Black					
		L1 - 10 W			L2 - 20 W		
		CBCP	Lumens	LPW	CBCP	Lumens	LPW
S Spot 15°	LED2790	5324	621	63.4	9818	1145	57.0
	LED3090	5432	657	67.0	10286	1212	60.3
	LED3590	5705	666	67.9	10520	1227	61.1
	LED4080	7057	823	84.0	13014	1518	75.5
	LED5080	7331	855	87.3	13519	1577	78.5
	LED2797	4935	576	58.7	9100	1062	52.8
	LED3097	4981	581	59.3	9186	1072	53.3
	LED3597	5650	659	67.3	10419	1216	60.5
	LED4097	5596	653	66.6	10319	1204	59.9
M Medium Flood 25°	LED2790	2829	590	60.2	5218	1088	54.1
	LED3090	2993	624	63.7	5519	1151	57.3
	LED3590	3032	632	64.5	5590	1166	58.0
	LED4080	3750	782	79.8	6916	1442	71.8
	LED5080	3896	813	82.9	7185	1498	74.6
	LED2797	2622	547	55.8	4836	1009	50.2
	LED3097	2647	552	56.3	4882	1018	50.7
	LED3597	3003	626	63.9	5537	1155	57.5
	LED4097	2974	620	63.3	5484	1144	56.9
F Flood 40°	LED2790	1943	666	68.0	3584	1229	61.1
	LED3090	2056	705	71.9	3791	1300	64.7
	LED3590	2082	714	72.9	3840	1317	65.5
	LED4080	2576	883	90.1	4750	1629	81.0
	LED5080	2676	918	93.6	4934	1692	84.2
	LED2797	999	560	57.1	1842	1032	51.4
	LED3097	1818	623	63.6	3353	1150	57.2
	LED3597	2062	707	72.2	3803	1304	64.9
	LED4097	2042	700	71.5	3766	1292	64.3
W Wide Flood 55°	LED2790	999	560	57.1	1842	1032	51.4
	LED3090	1057	592	60.4	1949	1092	54.3
	LED3590	1070	600	61.2	1974	1106	55.0
	LED4080	1324	742	75.7	2442	1368	68.1
	LED5080	1376	771	78.7	2537	1421	70.7
	LED2797	926	519	52.9	1708	957	47.6
	LED3097	935	524	53.4	1724	966	48.0
	LED3597	1060	594	60.6	1955	1095	54.5
	LED4097	1050	588	60.0	1936	1085	54.0

TM30 DATA

	CCT/CRI	Rf	Rg	Ra	R9
1003	2790	90.9	98.9	91.7	58.3
	3090	90.8	99.1	92.5	62.6
	3590	90.6	100.4	92.7	67.5
	4080	82.5	94.3	83.1	11.4
	5080	81.6	94.1	82	6
	2797	94.9	100	98.1	86.9
	3097	94	100.3	97.8	88.9
	3597	92.9	99.3	97.2	89.1
	4097	91.5	98.7	95.4	84

LUMEN MAINTENANCE

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C, 40°C, 50°C	> 87%	> 102,000

POWER TABLE

Number of Heads	Light Level	Input Current (A) at 120 VAC	Input Current (A) at 277 VAC	Input Power (W)
S1, SU1	L1	0.08	0.03	10
	L2	0.177	0.088	20.93
	LC1	0.1	0.085	11.4
	LC2	0.183	0.088	21.44
S2, SU2	L1	0.16	0.06	20
	L2	0.354	0.176	41.86
	LC1	0.2	0.17	22.8
	LC2	0.366	0.176	42.88

INTEGRATED SENSOR - SVPD2

The Lanterra Sign 1003 with Integrated Sensor technology provides automatic energy savings without sacrificing performance. Traditionally, these types of energy savings required coordination between the luminaire and a lighting control system. The Lanterra Sign 1003 delivers superior lighting with integrated PIR occupancy sensing and daylighting controls.

Capture the benefits of traditional lighting controls, without complicated circuit planning or special wiring. The Lanterra Sign 1003 delivers automatic ON to an energy saving light level, while ensuring lighting is turned OFF when the space is unoccupied.

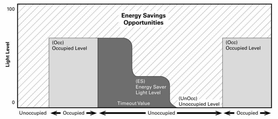
The SVPD2 sensor is configured for outdoor use, so the integral daylight sensor will enable the luminaire to automatically adjust to daylight conditions by turning off when sufficient sunlight is present. Consult factory for indoor configuration.

Occupied light levels and unoccupied light levels can be adjusted using the integrated sensor programming remote (Catalog Number: ISHH01LUM). While the default unoccupied level is OFF, a lower light level can be saved instead using the programming remote. The integrated sensor personal remote (Catalog Number: ISHH02LUM) provides code compliant manual raise, lower, ON, OFF control.

The Lanterra Sign 1003 with Integrated Sensor is easy to install with no special wiring and ensures energy savings out-of-the-box with default control settings.

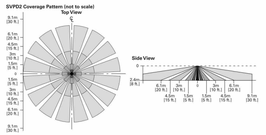
HOW IT WORKS

- As the user enters the space controlled by the integral sensor, the lighting turns ON to the occupied light level.
- Lighting will remain at the occupied level until the space is unoccupied. This will start the occupancy timeout period (default 20 minutes).
- If the space remains unoccupied for half of the timeout period, the lighting will automatically reduce to the Energy Saver light level (default matches occupied level). This adjustable light level is often set to half of the occupied daylight level using the programming remote.
- At the end of the timeout period the lighting will go to the unoccupied light level. This adjustable light level uses the OFF default setting.
- If sufficient sunlight is present, the luminaire will remain OFF, regardless of occupancy.

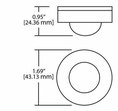


Coverage

SVPD2 Coverage Pattern (not to scale)



Sensor Dimensions



Optional Remote Controls

ISHH01LUM Programming Remote

ISHH02LUM Personal Control Remote

ROCHESTER HILLS MICHIGAN

MATRIX CONSULTING ENGINEERS, INC.
1601 E. CESAR E. CHAVEZ AVE.
LANSING, MI 48906
MATRIX PROJECT: 24157.00 & 250059.00
PHONE: 517.487.2511
WEB: www.matrixceinc.com

SEAL

STATE OF MICHIGAN
JOSEPH F. SOVIS, JR.
ENGINEER
NO. 6201042247
LICENSED PROFESSIONAL ENGINEER

PROJECT

Nowicki Park
Site Improvements

CLIENT

City of Rochester Hills
Parks & Natural Resources
1000 Rochester Hills Dr.
Rochester Hills, MI 48309

CONTACT

Mr. Ken Elwet, CPRE
Ph.: 248-656-4673
elwertk@rochesterhill.org

PROJECT LOCATION

Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet

ELECTRICAL FIXTURE CUT SHEETS

811 Know what's below Call before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

NFE JOB NO. 0557
SHEET NO. SE8.08

Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

SA POLE/SB POLE/SH POLE

Aluminum Poles

SSA SQUARE STRAIGHT ALUMINUM

Catalog #		Type
Project		
Comments		Date
Prepared by		

FEATURES
- Straight square shaft 6005-T6 aluminum alloy polished
- 356-T6 cast aluminum alloy base with aluminum knock-in bolt covers
- 8'-35' mounting heights
- Drilled or tenon (specify)

DESIGN CONSIDERATIONS - VIBRATIONS AND NON-GROUND MOUNTED INSTALLATIONS

The information contained herein is for general guidance only and is not a replacement for professional judgment. Design considerations for wind-induced vibrations and non-ground mounted installations (e.g., installations on bridges or buildings) are not included in this document. Consult with a professional, and local and federal standards, before ordering to ensure product is appropriate for the intended purpose and installation location. Refer to the Cooper Lighting Solutions Light Pole White Paper for risk factors and design considerations. Learn more.

NOTE: The Limited Warranty for this product specifically excludes fatigue failure or similar damage resulting from vibration, harmonic oscillation or resonance.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Cooper Lighting Solutions or visit www.cooperlighting.com for available options, accessories and ordering information.

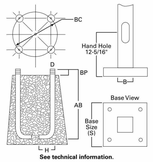
ORDERING INFORMATION

SAMPLE NUMBER: SSA4T08WXM1G

Product Family	Shaft Size (Inches) [1]	Wall Thickness (Inches)	Mounting Height (Feet)	Base Type	Finish	Mounting Type	Number and Location of Arms	Options (Add as Suffix)
SSA=Square Straight Aluminum	**4**=4" **5**=5" **6**=6" **9**=9" Steel; 6-3/4" Aluminum	**T**=0.125" **M**=0.188" **X**=0.250"	**08**=8' **10**=10' **12**=12' **15**=15' **18**=18' **20**=20' **25**=25' **30**=30' **35**=35'	**W**=Aluminum	**A**=Satin Brushed Aluminum **B**=Clear Anodized **C**=Dark Bronze Anodized **D**=Black Anodized **E**=Medium Bronze Anodized **F**=Dark Bronze **J**=Summit White **K**=Carbon Bronze **L**=Dark Platinum **R**=Hartford Green **S**=Silver **T**=Graphite Metallic **V**=Grey **W**=White **X**=Custom Color **BK**=Black Smooth **BT**=Black Textured	**2**=2-3/8" O.D. Tenon (4" Long) **3**=3-1/2" O.D. Tenon (6" Long) **4**=4" O.D. Tenon (8" Long) **9**=3" O.D. Tenon (4" Long) **6**=2-3/8" O.D. Tenon (6" Long) **7**=4" O.D. Tenon (10" Long) **A**=Type A Drilling **C**=Type C Drilling **E**=Type E Drilling **F**=Type F Drilling **G**=Type G Drilling **J**=Type J Drilling **K**=Type K Drilling **M**=Type M Drilling **N**=Type N Drilling **R**=Type R Drilling	**1**=Single **2**=2 at 180° **3**=Triple [4] **4**=4 at 90° **5**=2 at 90° **X**=None	**A**=1/2" Tapped Hub [3] **B**=3/4" Tapped Hub [3] **C**=Convenience Outlet [4] **E**=GFCI Convenience Outlet [4] **F**=Vibration Pad **G**=Ground Lug **H**=Additional Hand Hole [5] **V**=Vibration Dampener

NOTES: 1. All shaft sizes nominal. **2.** Square poles are 3 at 90°, round poles are 3 at 120°. **3.** Tapped Hub is located 5" below the pole top and on the same side of pole as hand hole, unless specified otherwise. **4.** Outlet is located 4" above base and on same side of pole as hand hole, unless specified otherwise. Receptacle not included, provision only. **5.** Additional hand hole is located 12" below pole top and 90° from standard hand hole location, unless otherwise specified.

ANCHORAGE DATA



See technical information.

Pole	Anchor Bolt and Template Package	Template Only	Bolt Circle (inches)	Number of Bolts	Anchor Bolt Size (inches)
SSA4TxxW	317QB404	229354D	9	4	3/4 x 17 x 3
SSA4MxxW	317QB404	229354D	9	4	3/4 x 17 x 3
SSA5TxxW	317QB405	229357D	11	4	3/4 x 17 x 3
SSA5MxxW	317QB405	229357D	11	4	3/4 x 17 x 3
SSA6MxxW	436QB406	229243D	12-1/2	4	1 x 36 x 4
SSA6XxxW	436QB406	229243D	12-1/2	4	1 x 36 x 4
SSA9XxxW	436QB468	228520D	14-1/4	4	1 x 36 x 4

Effective Projected Area (At Pole Top)

Mounting Height (Feet)	Catalog Number [1,2]	Wall Thickness (Inches)	Base Square [3] (Inches)	Bolt Circle Diameter (Inches)	Anchor Bolt Projection [3] (Inches)	Shaft Size [3] (Inches)	Anchor Bolt Diameter x Length x Hook (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet) [4]				Max. Fixture Load - Includes Bracket (Pounds)
MH			**S**	**BC**	**BP**	**B**	**D x AB x H**		**70 mph**	**80 mph**	**90 mph**	**100 mph**	
8	SSA4T08W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	23	26.6	19.9	15.2	11.9	350
12	SSA4T12W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	32	16.0	11.5	8.5	6.3	260
15	SSA4T15W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	39	9.1	6.2	4.2	2.8	200
15	SSA4M15W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	55	14.8	10.6	7.7	5.6	200
15	SSA5T15W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	52	16.0	11.3	8.1	5.8	260
18	SSA4T18W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	46	6.4	4.0	2.3	1.1	100
18	SSA4M18W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	66	11.0	7.4	5.0	3.3	150
18	SSA5T18W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	61	11.8	7.8	5.1	3.2	150
18	SSA5M18W	0.188	11-9/16	11	3-1/4	5	3/4 x 17 x 3	85	19.2	13.5	9.6	6.8	260
20	SSA4M20W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	72	8.8	5.6	3.5	1.9	150
20	SSA5T20W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	66	9.5	5.9	3.5	1.7	100
20	SSA5M20W	0.188	11-9/16	11-1/8	3-1/4	5	3/4 x 17 x 3	94	16.4	11.2	7.6	5.0	150
25	SSA5M25W	0.188	11-1/2	11	3-1/4	5	3/4 x 17 x 3	115	10.2	6.0	3.2	1.1	100
25	SSA6M25W	0.188	12-3/4	12-1/2	4	6	1 x 36 x 4	140	16.6	10.6	6.5	3.5	260
30	SSA6X30W	0.250	12-3/4	12-1/2	4	6	1 x 36 x 4	215	14.8	9.0	5.0	2.1	260
30	SSA9X30W [6]	0.250	15-1/8	14-5/8	4-1/8	6-3/4	1 x 36 x 4	237	21.1	13.5	8.2	4.5	260
35	SSA9X35W [6]	0.250	15-1/8	14-5/8	4-1/8	6-3/4	1 x 36 x 4	274	14.1	7.6	3.1	--	150

Effective Projected Area (18° Above Pole Top)

Mounting Height (Feet)	Catalog Number [1,2]	Wall Thickness (Inches)	Base Square [3] (Inches)	Bolt Circle Diameter (Inches)	Anchor Bolt Projection [3] (Inches)	Shaft Size [3] (Inches)	Anchor Bolt Diameter x Length x Hook (Inches)	Net Weight (Pounds)	Maximum Effective Projected Area (Square Feet) [4]				Max. Fixture Load - Includes Bracket (Pounds)
MH			**S**	**BC**	**BP**	**B**	**D x AB x H**		**70 mph**	**80 mph**	**90 mph**	**100 mph**	
8	SSA4T08W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	23	22.2	16.6	12.7	10	350
12	SSA4T12W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	32	14.1	10.1	7.4	5.5	260
15	SSA4T15W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	39	8.2	5.6	3.8	2.5	200
15	SSA4M15W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	55	13.4	9.6	6.9	5.1	200
15	SSA5T15W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	52	14.4	10.2	7.3	5.2	260
18	SSA4T18W	0.125	10	9	3-1/8	4	3/4 x 17 x 3	46	5.9	3.6	2.1	0.9	100
18	SSA4M18W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	66	10.0	6.8	4.6	3.0	150
18	SSA5T18W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	61	10.8	7.2	4.7	2.9	150
18	SSA5M18W	0.188	11-9/16	11	3-1/4	5	3/4 x 17 x 3	85	17.6	12.4	8.8	6.2	260
20	SSA4M20W	0.188	10	9	3-1/8	4	3/4 x 17 x 3	72	8.1	5.2	3.2	1.7	150
20	SSA5T20W	0.125	11-9/16	11	3-1/4	5	3/4 x 17 x 3	66	8.8	5.5	3.2	1.5	100
20	SSA5M20W	0.188	11-9/16	11-1/8	3-1/4	5	3/4 x 17 x 3	94	15.2	10.3	7.0	4.7	150
25	SSA5M25W	0.188	11-1/2	11	3-1/4	5	3/4 x 17 x 3	115	9.5	5.6	3.0	1.0	100
25	SSA6M25W	0.188	12-3/4	12-1/2	4	6	1 x 36 x 4	140	15.6	9.9	6.1	3.3	260
30	SSA6X30W	0.250	12-3/4	12-1/2	4	6	1 x 36 x 4	215	14.0	8.5	4.7	2.0	260
30	SSA9X30W [6]	0.250	15-1/8	14-5/8	4-1/8	6-3/4	1 x 36 x 4	237	20.0	12.8	7.8	4.3	260
35	SSA9X35W [6]	0.250	15-1/8	14-5/8	4-1/8	6-3/4	1 x 36 x 4	274	13.5	7.2	2.9	--	150

NOTES:
1. Catalog number includes pole with hardware kit. Anchor bolts not included. Before installing, make sure proper anchor bolts and templates are obtained.
2. Tenon size or machining for rectangular arms must be specified. Hand hole position relative to drill location.
3. Shaft size, base square, anchor bolts and projections may vary slightly. All dimensions nominal.
4. EPAs based on shaft properties with wind normal to flat. EPAs calculated using base wind velocity as indicated plus 30% gust factor.
5. Factory installed vibration damper.

VIBRATION

Vibrations may cause damage to structures, including poles. Vibrations are unpredictable, and there are many factors and variables that can cause damaging vibrations. Many wind conditions exist that can create damaging vibrations to poles and luminaires, such as constant winds between 10-30 mph. Although all pole types can experience vibration, straight square poles seem to be most prone. Vibration dampers and/or a round tapered design may be used to mitigate damage from vibrations, but there is no guarantee damaging vibrations will be prevented. Vibration dampers are not included with this pole but can be ordered separately. Consult with a professional, and local and federal standards, to ensure this pole is appropriate for the intended purpose and installation location. Refer to Cooper Lighting Solutions' Light Pole White Paper for risk factors and design considerations.

MAINTENANCE

Perform inspections periodically. A prudent inspection schedule would be: one week after installation, one month after installation, yearly after installation, and following any major wind event. During the inspection, check the poles for cracks. If cracks are detected, remedial action is required. Recheck anchor bolt torques and re-tighten according to the recommended torque values. Check for missing covers and pole caps and replace as necessary. Check the pole for corrosion and deterioration of the finish. Should there be corrosion or deterioration, take remedial action to correct.

WARNING: Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to pole white paper WP513001EN for additional support information. Before installing, make sure proper anchor bolts and templates are obtained. The use of unauthorized accessories such as banners, signs, cameras or pennants for which the pole was not designed voids the pole warranty and may result in pole failure causing serious injury or property damage. Information regarding total loading capacity can be supplied upon request. The pole warranty is void unless poles are used and installed as assembled pole and luminaire combination. This warranty specifically excludes failure as the result of a third party act or omission, misuse, unanticipated uses, fatigue failure or similar phenomena resulting from induced vibration, harmonic oscillation or resonance associated with movement of air currents around the products.

Specifications and dimensions subject to change without notice. Consult your lighting representative at Cooper Lighting Solutions or visit www.cooperlighting.com for available options, accessories and ordering information.

Cooper Lighting Solutions
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.cooperlighting.com

Canada Sales
1925 McLaughlin Road
Mississauga, Ontario L5R 1B8
P: 905-501-3000
F: 905-501-3172

Specifications and dimensions subject to change without notice.

SC POLE

urbanline

SternbergLighting ESTABLISHED 1923

10' TO 30' SQUARE STRAIGHT ALUMINUM POLES (SSA)

Job Name | Client Name
Job Location | Created By | Date
Product | Quote | Customer Approval | Date

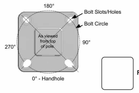
Sternberg Model	Pole Height	Shaft Size	Wall Thickness	Slotted SQ Base Width	Base Thickness	Handhole Size	Weight LBS	Bolt Circle	Bolt Proj +/-.25	DBL Nutted Anchor bolt ASTM F1554 GRADE 55 Galv Thread	Max Loading Capacities: 90 MPH 1.3-SEC. Gust MAX EPA 1 (SQ FT)	90 MPH 1.3-SEC. Gust MAX WEIGHT (lbs)	110 MPH 1.3-SEC GUST MAX EPA 1 (SQ FT)	110 MPH 1.3-SEC GUST MAX WEIGHT (lbs)	130 MPH 1.3-SEC GUST MAX EPA 1 (SQ FT)	130 MPH 1.3-SEC GUST MAX WEIGHT (lbs)	150 MPH 1.3-SEC Gust MAX EPA 1 (SQ FT)	150 MPH 1.3-SEC Gust MAX WEIGHT (lbs)	Base Cover Options
SSA10G400	10	4	0.125	9.94	0.375	2"x4"	39	8.5"-9.63"	3.13	3/4"	8.7	260	5.1	260	3.1	260	1.8	260	2403-4, ML900-4
SSA12G400	12	4	0.125	9.94	0.375	2"x4"	43	8.5"-9.63"	3.13	3/4"	6.5	260	3.5	260	1.8	260	0.7	260	2403-4, ML900-4
SSA14G400	14	4	0.125	9.94	0.375	2"x4"	48	8.5"-9.63"	3.13	3/4"	4	200	1.9	200	0.7	200	-	200	2403-4, ML900-4
SSA16G400	16	4	0.125	9.94	0.375	2"x4"	52	8.5"-9.63"	3.13	3/4"	2.7	200	0.8	200	-	200	-	200	2403-4, ML900-4
SSA16T400	16	4	0.188	9.94	0.375	2"x4"	61	8.5"-9.63"	3.13	3/4"	5.4	200	2.6	200	1	200	-	200	2403-4, ML900-4
SSA18G400	18	4	0.125	9.94	0.375	2"x4"	57	8.5"-9.63"	3.13	3/4"	1.8	100	-	100	-	100	-	100	2403-4, ML900-4
SSA18T400	18	4	0.188	9.94	0.375	2"x4"	68	8.5"-9.63"	3.13	3/4"	4.1	150	1.6	150	-	150	-	150	2403-4, ML900-4
SSA18T500	18	5	0.188	11.56	0.500	2"x4"	87	10.5"-11.5"	3.25	3/4"	8.1	260	4	260	1.6	260	-	260	2403-5, ML900-5
SSA20T400	20	4	0.188	9.94	0.375	2"x4"	75	8.5"-9.63"	3.13	3/4"	2.8	150	-	150	-	150	-	150	2403-4, ML900-4
SSA20T500	20	5	0.188	11.56	0.500	2"x4"	96	10.5"-11.5"	3.25	3/4"	6.5	150	2.7	150	-	150	-	150	2403-5, ML900-5
SSA20T600	20	6	0.188	12.75	0.563	2-5/8"x5"	151	12"-13"	4.00	1.0"	11.4	150	5.6	150	2.2	150	-	150	2404-6
SSA25E600	25	6	0.250	12.75	0.563	2-5/8"x5"	184	12"-13"	4.00	1.0"	16.4	260	8.9	260	4.8	260	1.9	260	2404-6
SSA25T500	25	5	0.188	11.56	0.500	2"x4"	118	10.5"-11.5"	3.25	3/4"	2.7	100	-	100	-	100	-	100	2403-5, ML900-5
SSA25T600	25	6	0.188	12.75	0.563	2-5/8"x5"	177	12"-13"	4.00	1.0"	5.7	260	1.1	260	-	260	-	260	2404-6
SSA25E600	25	6	0.250	12.75	0.563	2-5/8"x5"	219	12"-13"	4.00	1.0"	9.9	260	3.9	260	-	260	-	260	2404-6
SSA30E600 *	30	6	0.250	12.75	0.563	2-5/8"x5"	253	12"-13"	4.00	1.0"	4.4	260	-	260	-	260	-	260	2404-6

CROSS SECTION	MODEL NUMBER	FIXTURE MOUNTING	BASE COVER	OPTIONS	COLOR
SSA	SSA10G400 SSA20T400 SSA12G400 SSA20T500 SSA14G400 SSA20T600 SSA16G400 SSA20E600 SSA16T400 SSA25T500 SSA18G400 SSA25T600 SSA18T400 SSA25E600 SSA18T500 SSA30E600*	**Drill Mounting** D1 = 1 Luminaire D2 = 2 @ 180° D4 = 4 @ 90° D5 = 2 @ 90° D6 = 3 @ 90° **Tenon Mounting** P2 = 2.38" OD x 4.00" P3 = 3.00" OD x 3.00" P4 = 4.00" OD x 6.00"	2403-4 2403-5 2404-6 ML900-4 ML900-5	See Accessories at www.sternberglighting.com (Please specify with code)	**UGMT -** Urban Gun Metal Textured **UGM -** Urban Gun Metal Matte **UBT -** Urban Bronze Textured **USLT -** Urban Silver Textured **UWHT -** Urban White Textured **UB -** Urban Bronze Matte **USL -** Urban Silver Matte **UWH -** Urban White Matte **BKT -** Black Textured

SSA = Square Straight Aluminum

* Indicates vibration dampener installed

Anchor Base Detail



4", 5" or 6" Rounded Corner Profile .75" Corner Radius

OPTIONAL BASE COVERS

Square 2403
13" Sq. x 6-1/2" H
Throat Size 4" or 5" Sq.
2403-4
2403-5

Square 2404
14-1/2" Sq. x 7-1/4" H
Throat Size 6" Sq.
2404-6

Square ML900
17.4" Sq. x 5.9" H
Throat Size 4" or 5" Sq.
ML900-4
ML900-5

CLICK FOR FAQ's

800-621-3376 | 555 Lawrence Ave., Roselle, IL 60172 | contactus@sternberglighting.com | www.sternberglighting.com

* Factory installed vibration damper.

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GENERAL ELECTRICAL NOTES:

CUT SHEET SHOWS STANDARD CALCULATION AT 4000K FOR THE LIGHT FIXTURE. ALL FIXTURES ON THE DRAWINGS HAVE A SPECIFIED COLOR TEMPERATURE OF 3000K.

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PROJECT LOCATION

Part of the NW 1/4
Section 8
T-3-N, R-11-E
City of Rochester Hills,
Oakland County, Michigan

Sheet

ELECTRICAL POLE CUT SHEETS

Know what's **below** **Call** before you dig.

DATE	ISSUED / REVISED
2026-02-04	BID DOCUMENTS

DRAWN BY: BAE
DESIGNED BY: BAE
APPROVED BY: JFS
DATE: 02/04/2026
SCALE:

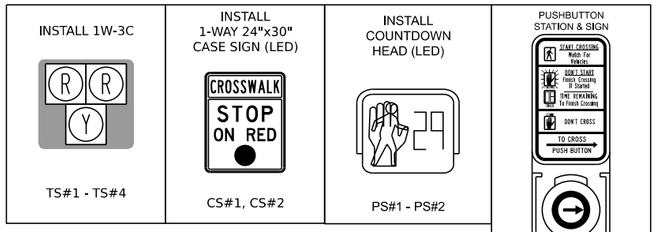
NFE JOB NO. 0557
SHEET NO. SE8.09

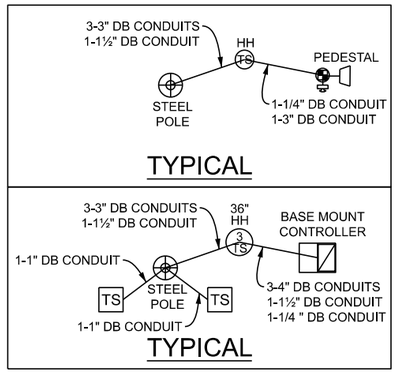
Autodesk Docs://Nowicki Park/250059.00 - Nowicki Park - MEP - R23.rvt

LIST OF MATERIAL

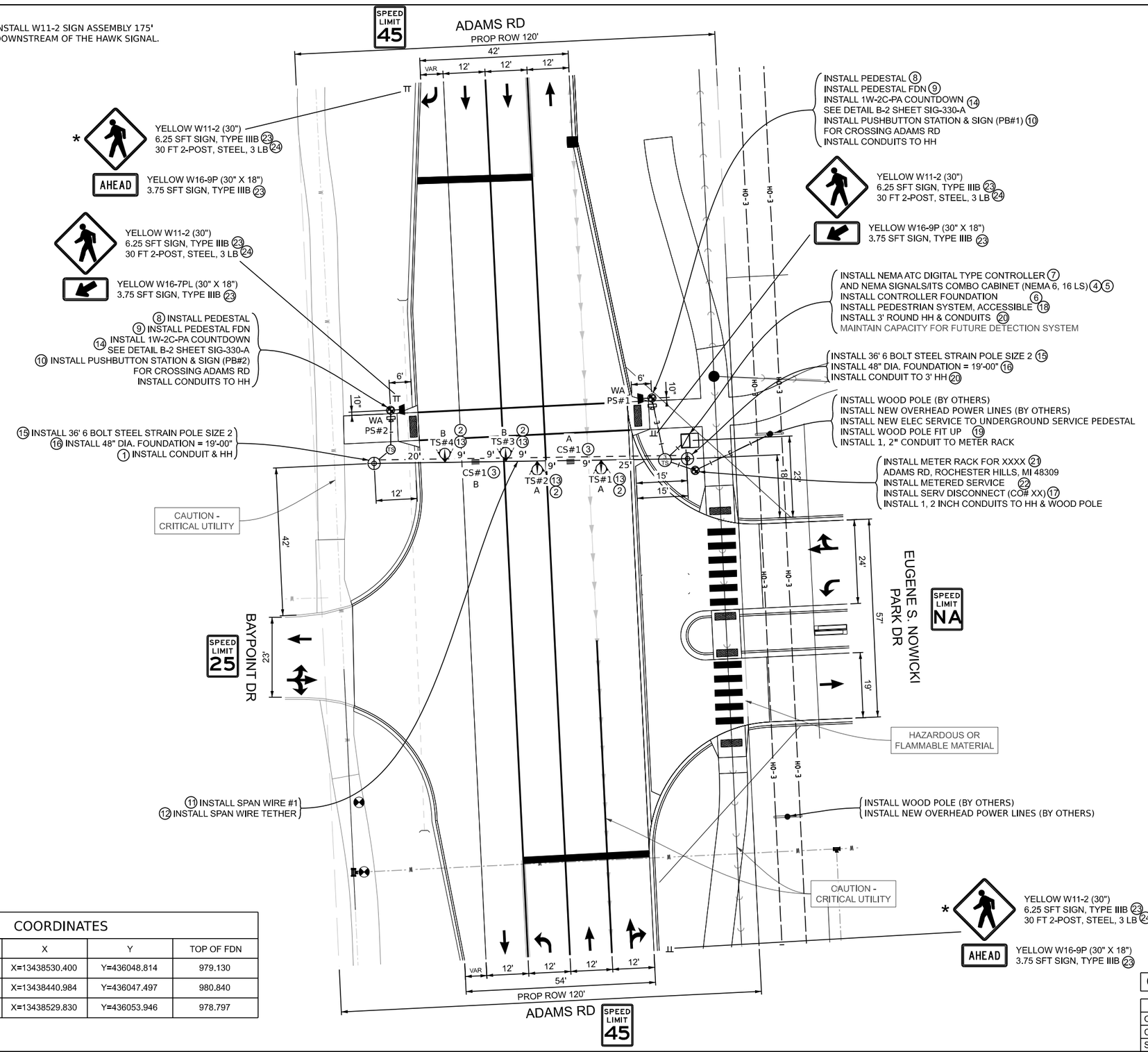
NO.	ITEM	QUANTITIES
1	Hh, Round, 2 foot Dia, RCOC	1 Ea
2	Backplate, TS, RCOC	4 Ea
3	Case Sign (LED), One Way, 24 inch by 30 inch	2 Ea
4	Cabinet, ITS Type, RCOC	1 Ea
5	Cabinet, ITS Type, Delivered, RCOC	1 Ea
6	Controller Fdn, Base Mtd	1 Ea
7	Controller, Digital Type, Delivered, SCATS, RCOC	1 Ea
8	Pedestal, Alum, RCOC	2 Ea
9	Pedestal, Fdn	2 Ea
10	Push Button Station and Sign	2 Ea
11	Span Wire	1 Ea
12	Span Wire Tether	1 Ea
13	TS, One Way Span Wire Mtd (LED), Long Life	4 Ea
14	TS, Pedestrian, One Way Pedestal Mtd (LED) Countdown	2 Ea
15	Strain Pole, Steel, 6 bolt, Size 2	2 Ea
16	Strain Pole Fdn, 6 Bolt, 48 inch	38 Ft
17	Serv Disconnect	1 Ea
18	Pedestrian Signal System, Accessible	1 Ea
19	Wood Pole, Fit Up, Sec Serv Pole	1 Ea
20	Hh, Round, 3 foot Dia, RCOC	1 Ea
21	TS, Service Rack, Metered, RCOC	1 Ea
22	Metered Serv	1 Ea
23	Sign, Type IIIB	40 Sft
24	Post, Steel, 3 pound	120 Ft
◯	Conduit, DB, 1, 1 1/2 inch	20 Ft
◯	Conduit, DB, 1, 2 inch	35 Ft
◯	Conduit, DB, 3, 3 inch	20 Ft
◯	Conduit, DB, 3, 4 inch	10 Ft
◯	Conduit, DB, 1, 1 1/4 inch	40 Ft
◯	Conduit, DB, 1, 3 inch	30 Ft
◯	Cable, Sec, 600V, 1, 3/C#6	60 Ft
◯	Power Co. (Est. Cost to Contractor)	5000 Dlr

NOTE:
UTILIZE A TEMPORARY STEEL CASING DURING STRAIN POLE FOUNDATION INSTALLATIONS PER THE GEOTECHNICAL REPORT.





COORDINATES				
ITEM	QUADRANT	X	Y	TOP OF FDN
STRAIN POLE	NORTHEAST	X=13438530.400	Y=436048.814	979.130
STRAIN POLE	NORTHWEST	X=13438440.984	Y=436047.497	980.840
CONTROLLER	NORTHEAST	X=13438529.830	Y=436053.946	978.797



CO # XX

SIGNALS	
OPENINGS:	16
CYCLIC WATTS:	174
STEADY WATTS:	90

FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION
1	2026-2-4		BID DOCUMENTS				

Clark Dietz

ROAD COMMISSION for OAKLAND COUNTY

0 HORZ. (FT) 30

FILE: D_241007_SIGNAL_CON001.dgn

DATE: 01/26/26
DESIGN UNIT:SIGNALS
TSC:

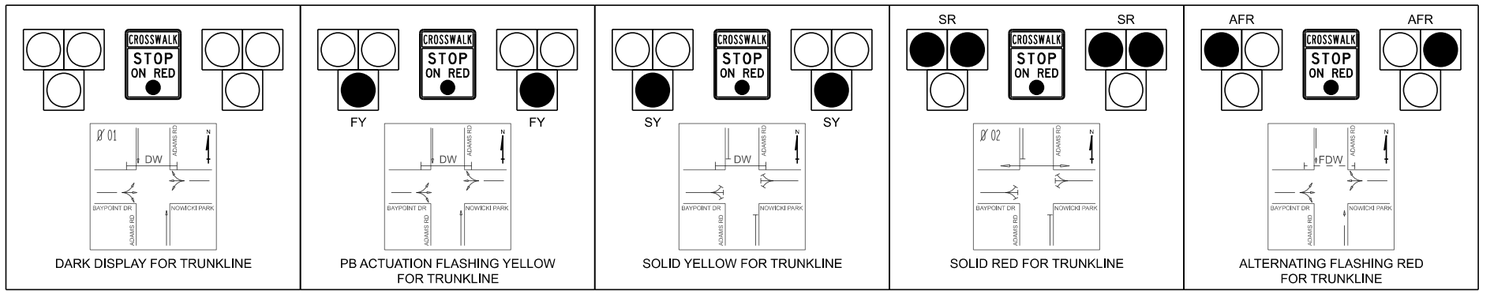
CS:
JN: 241007

TRAFFIC SIGNAL INSTALL
ADAMS RD AT NOWICKI PARK/BAYPOINT DR
CITY OF ROCHESTER HILLS, OAKLAND COUNTY

DRAWING: ADAMS SIGNAL 001
SHEET: SECT

PROJECT NOTES:

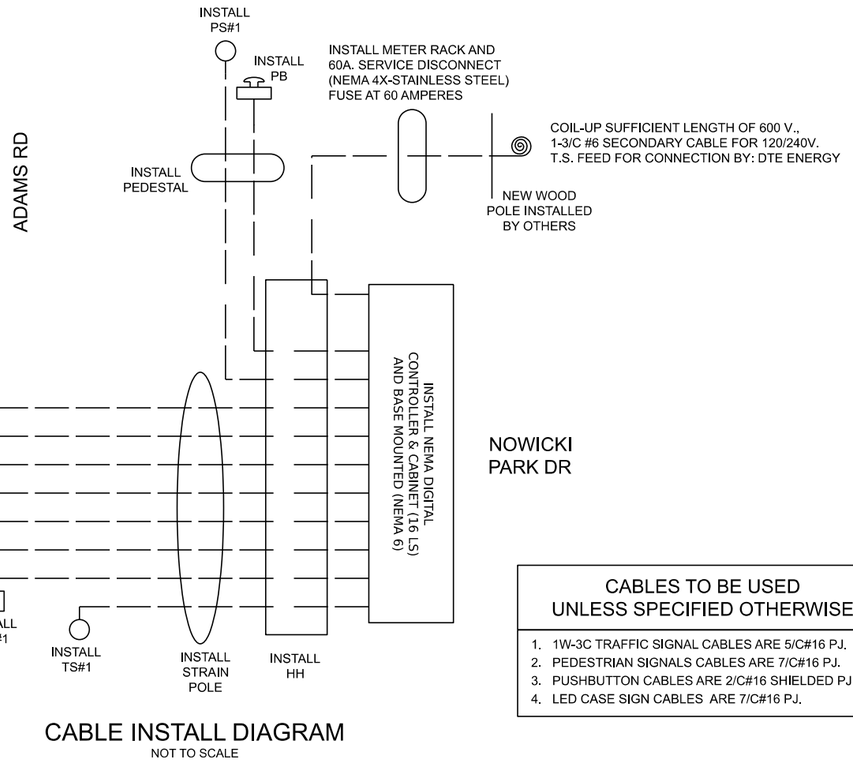
1. USE THE FOLLOWING DOCUMENTS FOR STRAIN POLES
   - -MDOT SIG-020-B (6 Anchor Bolt Strain Pole and Foundation)
   - -MDOT Special Provision for Steel Strain Pole 20SP-820A-01
   - -MDOT Special Provision for Source of Steel and Iron (Buy America) 20SP-105A-04
2. PRIOR TO SIGNAL TURN ON/CUTOVER, PLEASE CONTACT MR. STEVE WHEELER AT 248-858-7250 EIGHT WEEKS PRIOR IN ORDER TO OBTAIN RCOC BOARD APPROVAL.
3. NEW SIGNAL SHALL BE IN FLASH FOR A MINIMUM OF 7 CALENDAR DAYS PRIOR TO ACTIVATION.
4. FOR ELECTRICAL SERVICE INSPECTION CONTACT DTE AT 734-664-0585. COST TO CONTRACTOR WILL BE INCIDENTAL.
5. CONTACT: SASO TRPCESKI OF DTE 313-460-0738 FOR SERVICE DISCONNECT AND INSTALLATION OF SECONDARY SERVICE. COST TO CONTRACTOR: $5,000.
6. ANCHOR BOLTS - CONSTRUCTION ENGINEER TO VERIFY BOLTS ARE QUALITY ASSURANCE TESTED AND FORWARD COPY OF RESULTS TO RCOC.



PHASING DIAGRAM

SIGNAL NOTES:

1. PUSHBUTTON MUST BE NO MORE THAN 10 INCHES FROM THE EDGE OF SIDEWALK (REACH CONSIDERATION).
2. PUSHBUTTON MUST BE IN THE MIDDLE OF A 5 FOOT MINIMUM LONG SECTION OF SIDEWALK (LANDING) WITH A SLOPE OF NO MORE THAN 2% EACH SIDE.
3. PUSHBUTTONS SHOULD BE LOCATED WITH THE FACE OF THE PUSHBUTTON PARALLEL TO THE CROSSWALK TO BE USED.
4. MAINTAIN A MINIMUM UNDER CLEARANCE OF 18 FEET OVER ROADWAY FOR ALL TRAFFIC SIGNALS, CASE SIGNS, BOTTOM TETHERS, AND STREET NAME SIGNS.

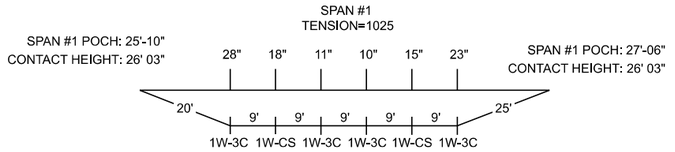


CABLE INSTALL DIAGRAM
NOT TO SCALE

CABLES TO BE USED UNLESS SPECIFIED OTHERWISE

1. 1W-3C TRAFFIC SIGNAL CABLES ARE 5/C#16 PJ.
2. PEDESTRIAN SIGNALS CABLES ARE 7/C#16 PJ.
3. PUSHBUTTON CABLES ARE 2/C#16 SHIELDED PJ.
4. LED CASE SIGN CABLES ARE 7/C#16 PJ.

SPAN CALCULATIONS
NOT TO SCALE



SPAN CALCULATION NOTES:

1. POCH (POLE CONTACT HEIGHT) IS SHOWN ABOVE FDN GRADE. CONTAC HEIGHT IS SHOWN ABOVE CL GRADE FIELD ADJUSTMENTS ARE TO BE MADE FOR ANY DIFFERENCE IN GRADE AT POLE VS AT ROAD GRADE TO ENSURE ALL SPAN WIRE MOUNTED SIGNAL EQUIPMENT IS AT OR ABOVE THE MINIMUM 18' CLEARANCE HEIGHT.
2. ENSURE ALL SIGNALS HAVE THE SAME BOTTOM HEIGHT.
3. PROVIDE GALVANIZED STEEL PREFORMED ARMOR ROD SPAN WIRE REINFORCEMENT AT ALL ATTACHMENTS TO SPAN WIRE AND BOTTOM TETHER. INSTALL ARMOR ROD WHICH EXTENDS A MINIMUM OF 8 INCHES EACH DIRECTION FROM THE SPAN WIRE AND TETHER ASSEMBLY. THE ARMOR ROD SHALL FULLY ENCOMPASS THE SPAN WIRE AND TETHER WIRE DIAMETER. NOT PAID FOR SEPARATELY.

FINAL ROW PLAN REVISIONS SUBMITTAL DATE:							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION
1	2026-2-4		BID DOCUMENTS				

ClarkDietz

ROAD COMMISSION for OAKLAND COUNTY

NO SCALE

FILE: D_241007_SIGNAL_CON002.dgn

DATE: 01/26/26
DESIGN UNIT:SIGNALS
TSC:

CS:
JN: 241007

TRAFFIC SIGNAL WIRING INSTALL
ADAMS RD AT NOWICKI PARK/BAYPOINT DR
CITY OF ROCHESTER HILLS, OAKLAND COUNTY

DRAWING: ADAMS SIGNAL 002
SHEET: SECT

		Diagonal Span If Required	All Traffic Signals	Pedestrian	Pushbutton	Case Sign or Street Sign if Required	
	Color	20/C	7/C	7/C	2/C	3/C	
1	White	Common (case sign)	Common	Common	Common	Common	
2	Black	Case sign	Spare	Spare	24V+	120V AC	
3	Red	A Ø-Red	A Ø-Red	DW1		Ground	
4	Green	A Ø-Green	A Ø-Green	W1			
5	Orange	A Ø-Amber	A Ø-Amber	DW2			
6	Blue	Green arrow	Green arrow	W2			
7	White w/black tracer	C Ø-Amber	FYA	Spare common			
8	Green w/black tracer	B Ø-Green					
9	Orange w/black tracer	B Ø-Amber					
10	Red w/black tracer	B Ø-Red					
11	Blue w/black tracer	C Ø-Green					
12	Black w/white tracer	C Ø-Red					
13	Green w/white tracer	D Ø-Green					
14	Orange w/red tracer	D Ø-Amber					
15	Red w/white tracer	D Ø-Red					
16	Black w/red tracer	FYA					
17	Blue w/white tracer	Spare					
18	Blue w/red tracer	Common					
19	White w/red tracer	Common					
20	Red w/green tracer	Case sign ground					

#12/3-conductor-colors 1 through 3
#16/7-conductor-colors 1 through 7
#14/12-conductor-colors 1 through 12
#14/20-conductor-colors 1 through 20
#12/2-conductor shielded 1 through 2

COLOR CODE FOR WIRING CONNECTION SIGNAL LAMPS

NOTE:
Neutrals from each LED shall be on individual terminals on terminal strip inside signal head, so that each neutral can be individually removed without affecting the performance of any other LED.

NOTE:
For 7/C traffic signal wires apply phase tape at any termination point as follows:
A Ø-Green
B Ø-Orange
C Ø-Red
D Ø-Blue

NOT TO SCALE

File: PW:TR/Sig/Web/OCSD/Develop/oc 026a.dgn Rev. 09/18/12

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL)

FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

COLOR CODE FOR WIRING OF SIGNALS

APRIL 2010 PLAN DATE

OC-026-A

SHEET 1 of 1

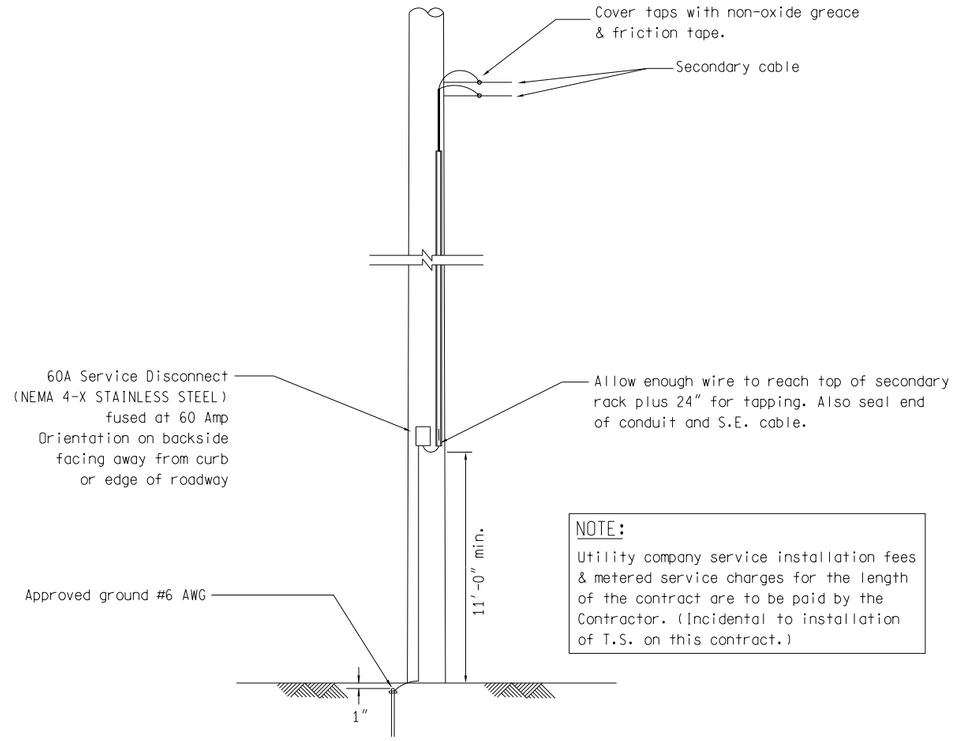
AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION
1	2026-2-4		BID DOCUMENTS				

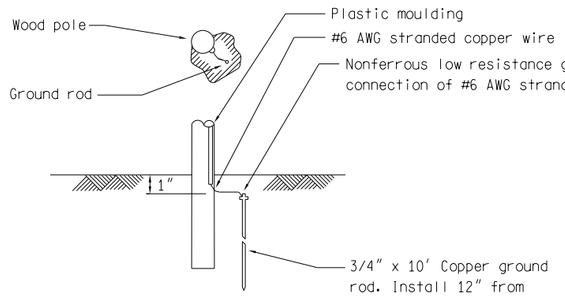
MDOT Michigan Department of Transportation

DATE:
DESIGN UNIT:
FILE:
TSC:
CS:
JN:

DRAWING SHEET



DETAIL A: SERVICE POLE



NOTE:

① For all cable poles, install one 3/4" x 10'0" ground rod as shown on "Ground Rod Installation". Connect ground rod with #6 AWG copper wire.

② Ground must read 10 OHMS or less.

DETAIL B: GROUND ROD INSTALLATION

NOT TO SCALE

File: PW:TR/Sig/Web/OCSD/Develop/oc 24.dgn Rev. 12/28/12

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

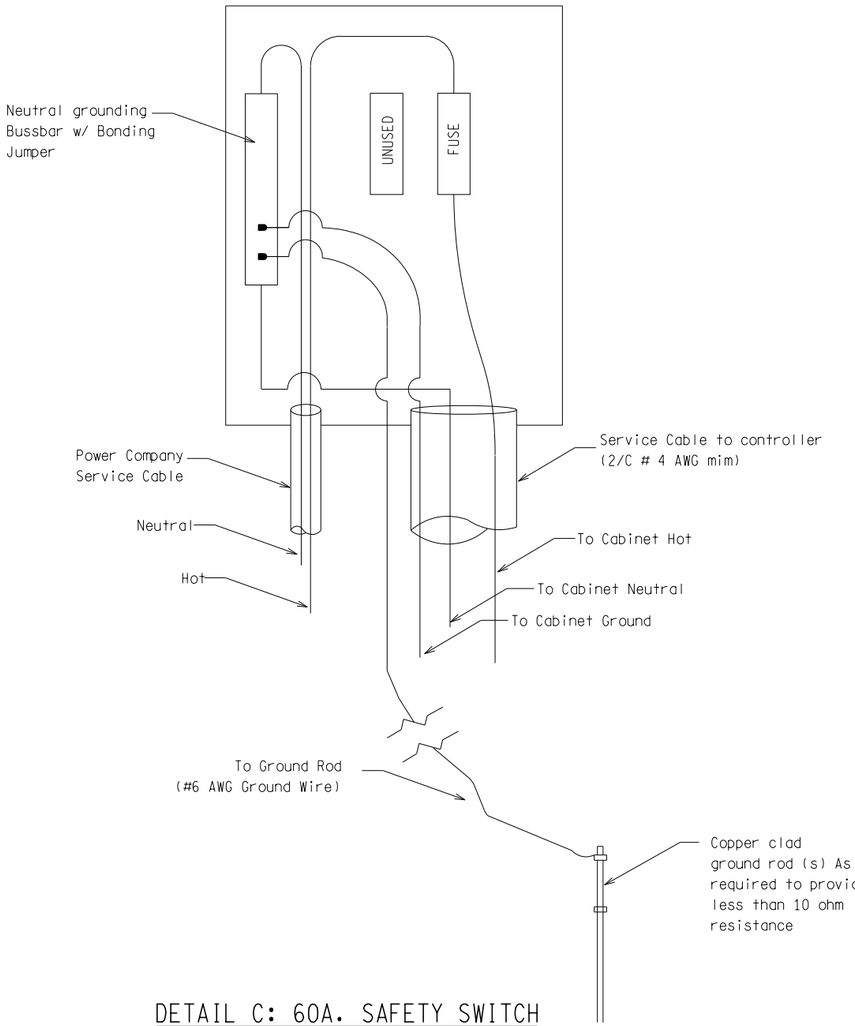
ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL) FHWA APPROVAL DATE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

TYPICAL CABLE POLES

APRIL 2010 PLAN DATE	OC-050-C	SHEET 1 of 2



DETAIL C: 60A. SAFETY SWITCH

NOTES:

1. Seperate ground rods shall be used when controller & safety switch are not on the same pole.
2. Check for 10 OHMs or less.

NOT TO SCALE

ROAD COMMISSION FOR OAKLAND COUNTY	(SPECIAL DETAIL) FHWA APPROVAL DATE	APRIL 2010 PLAN DATE	OC-050-C	SHEET 2 of 2

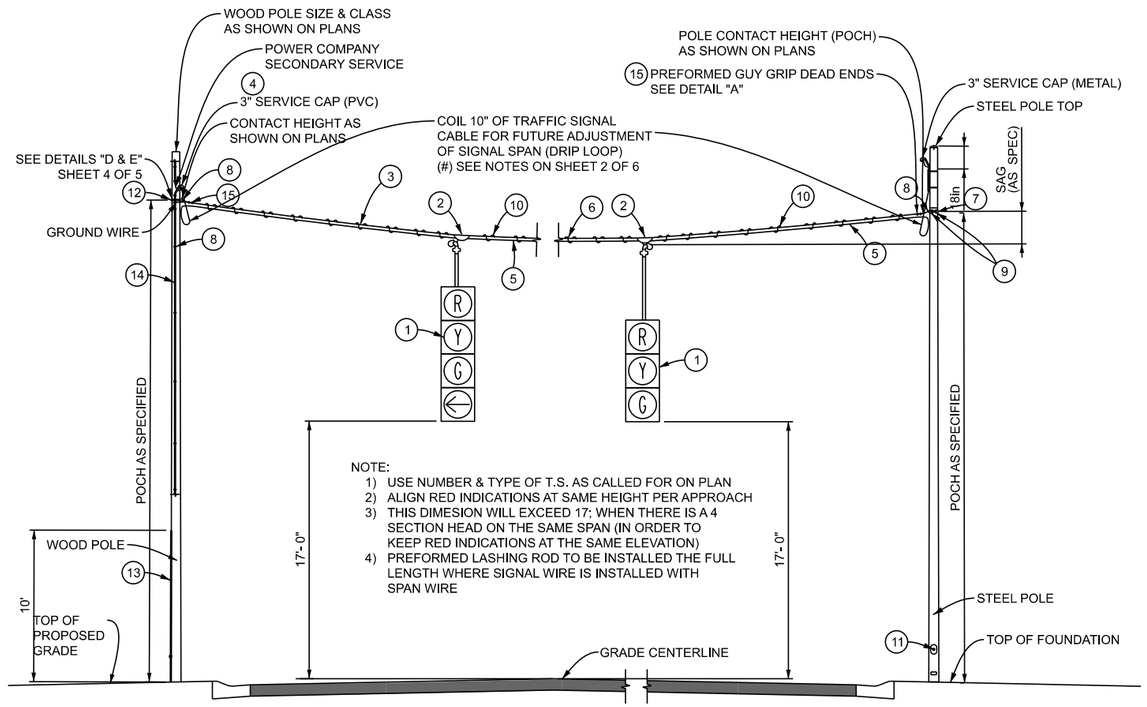
File: PW:TR/Sig/Web/OCSD/Develop/oc 24.dgn Rev. 12/28/12

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION
1	2026-2-4		BID DOCUMENTS				

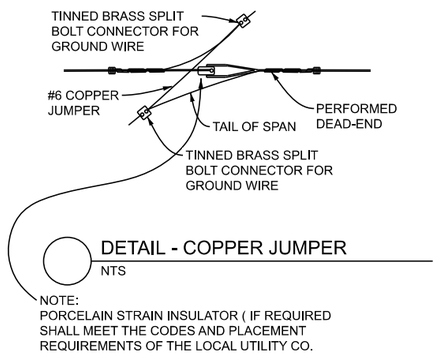
MDOT Michigan Department of Transportation

	DATE:	CS:		DRAWING	SHEET
	DESIGN UNIT:	JN:			
FILE:	TSC:				



1 DETAIL - TYPICAL SPAN WIRE INSTALLATION T.S.
NTS STEEL POLE & WOOD POLES

NO.	ITEM
1	TRAFFIC SIGNAL (NO. HEADS AS INDICATED)
2	SPAN WIRE HANGER
3	5/16" EXTRA HIGH STRENGTH SPAN WIRE
4	3" SERVICE CAP (WEATHERHEAD), (METAL FOR STEEL AND PVC FOR WOOD POLES)
5	P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
6	PREFORMED LASHING RODS
7	POLE BAND CLAMP (STEEL POLE)
8	GUY THIMBLE (2" DIA.)
9	(2) 5/8" X 4" LONG BOLT, NUT, WASHERS PER POLE BAND CLAMP (STEEL POLE)
10	INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
11	ACCESS HAND HOLE ALL NEW & EXISTING STEEL POLES
12	5/8" EYEBOLT, OVAL EYE AND NUT
13	WOOD MOULDING OR PLASTIC DUCT (10' FROM GROUND LEVEL)
14	3" SCHEDULE 80 PVC OR RIGID METAL (*) SEE NOTE ON SHEET 2 OF 5
15	PREFORMED GUY GRIP DEAD ENDS



DETAIL - COPPER JUMPER
NTS

NOTE:
PORCELAIN STRAIN INSULATOR (IF REQUIRED SHALL MEET THE CODES AND PLACEMENT REQUIREMENTS OF THE LOCAL UTILITY CO.

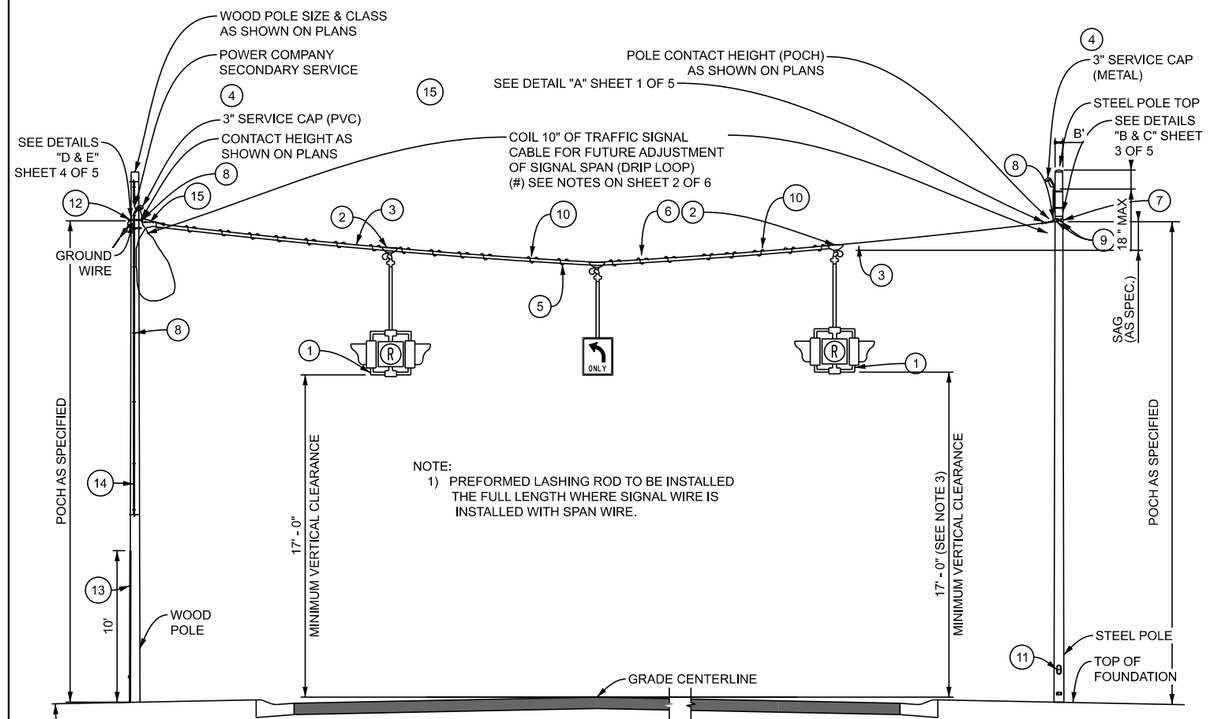
APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 1 OF 7



1 TYPICAL FLASHING BEACON INSTALLATION ON STEEL AND WOOD POLES
NTS

NO.	ITEM
1	TRAFFIC SIGNAL (NO. HEADS AS INDICATED)
2	SPAN WIRE HANGER
3	5/16" EXTRA HIGH STRENGTH SPAN WIRE
4	3" SCHEDULE 80 PVC OR RIGID METAL (*) SEE NOTE ON SHEET 2 OF 5
5	P.J. TRAFFIC SIGNAL CABLE (AS SPECIFIED)
6	PREFORMED LASHING RODS
7	POLE BAND CLAMP (STEEL POLE)
8	GUY THIMBLE (2" DIA.)
9	(2) 5/8" X 4" LONG BOLT, NUT, WASHERS PER POLE BAND CLAMP (STEEL POLE)
10	INSTALL SPAN WIRE PREFORMED (ARMOR ROD) UNDER EACH SPAN HANGER
11	ACCESS HAND HOLE ALL NEW & EXISTING STEEL POLES
12	5/8" EYEBOLT, OVAL EYE AND NUT
13	WOOD MOULDING OR PLASTIC DUCT (10' FROM GROUND LEVEL)
14	3" SERVICE CAP (WEATHERHEAD), (METAL FOR STEEL AND PVC FOR WOOD POLES)
15	PREFORMED GUY GRIP DEAD ENDS

NOTES:
(*) FOR PROJECTS MAINTAINED BY THE WAYNE CO. DEPARTMENT OF PUBLIC SERVICES (WCDPS), USE RIGID METAL FOR CONDUIT(S) FROM GRADE LEVEL TO 10' (MIN.) ABOVE GRADE OR AS DIRECTED BY THE ENGINEER.

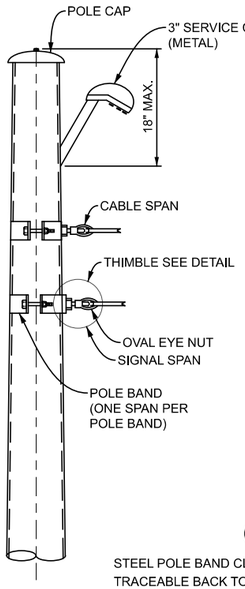
(#) FOR PROJECTS MAINTAINED BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), USE DRIP LOOP (WITHOUT COIL) FOR FUTURE ADJUSTMENT OF SIGNAL SPAN.

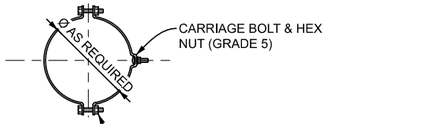
MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

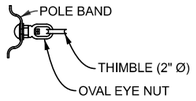
STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

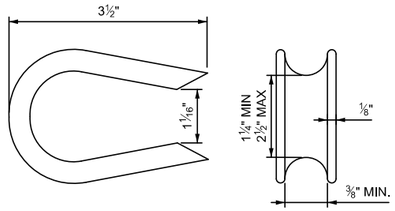
(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 2 OF 7

SECT





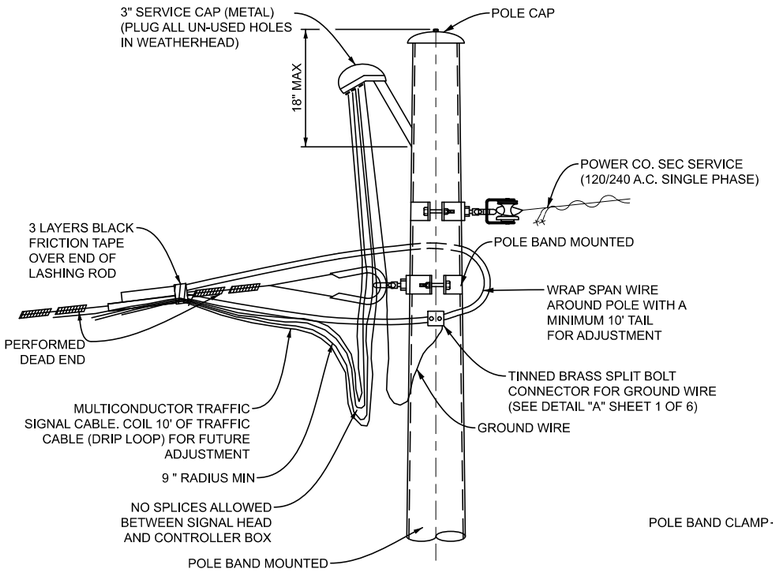




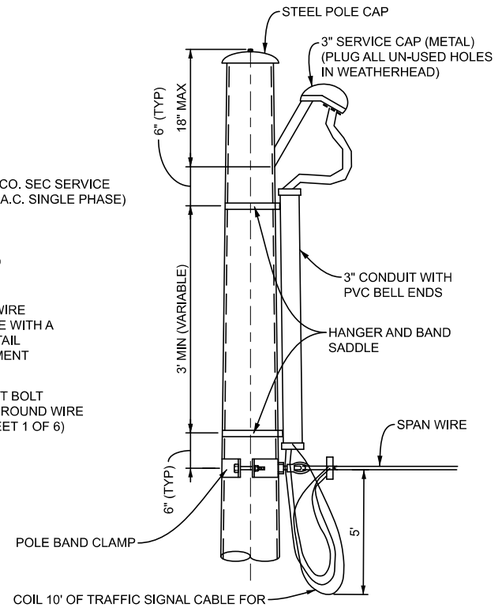
A DETAIL - POLE BAND CLAMP ON STEEL POLE

STEEL POLE BAND CLAMPS MUST BE STAMPED WITH IDENTIFICATION THAT IS TRACEABLE BACK TO THE MANUFACTURER, WHICH CAN BE USED TO DETERMINE THE MONTH AND YEAR OF CLAMP MANUFACTURE. THE STAMPING METHOD MUST BE A LOW STRESS STAMPING METHOD. THE STAMP CANNOT BE LOCATED NEAR THE BOLTED FLANGE, MUST BE LOCATED NEAR THE CENTER OF THE CLAMP ON THE BACK SIDE FACING AWAY FROM TRAFFIC, AND BE VISIBLE AFTER GALVANIZING. ALL BEND RADII ARE TO BE A MINIMUM OF 1.5 TIMES THE POLE BAND THICKNESS.

B DETAIL - THIMBLE

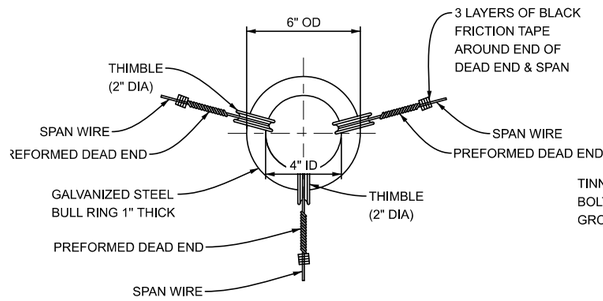


C DETAIL-CABLING ON STEEL POLE

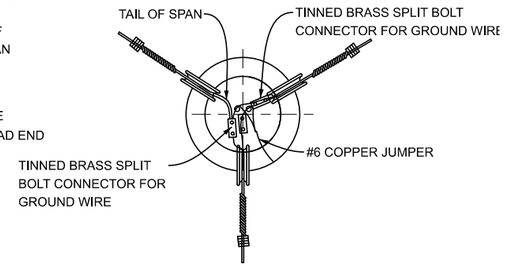


D DETAIL - SERVICE CABLE ON STEEL POLE

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE CASING DETAILS			
	(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 3 OF 7

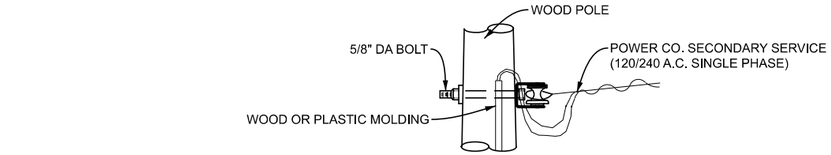


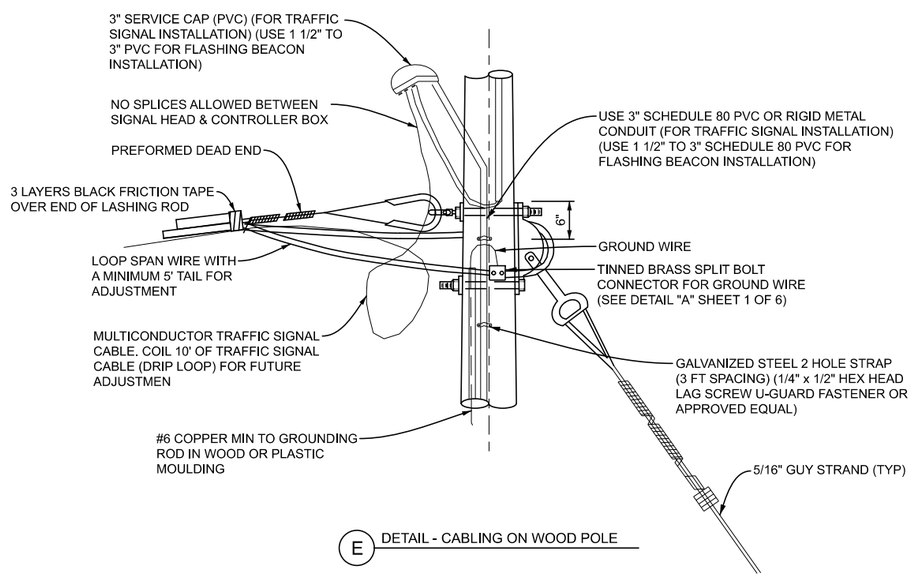
DETAIL
3-WAY TIE OFF BULL RING



DETAIL COPPER JUMPER
3-WAY TIE OFF

NOTE:
PORCELAIN STRAIN INSULATOR (IF REQUIRED) SHALL MEET THE CODES AND PLACEMENT REQUIREMENTS OF THE LOCAL UTILITY CO.

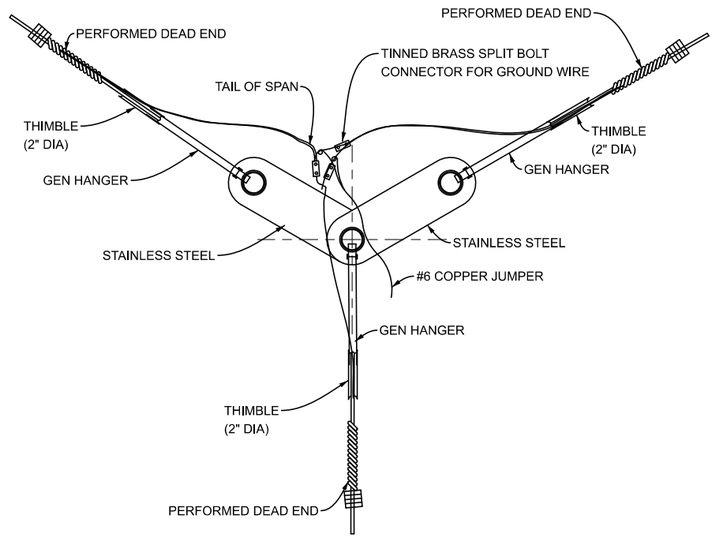




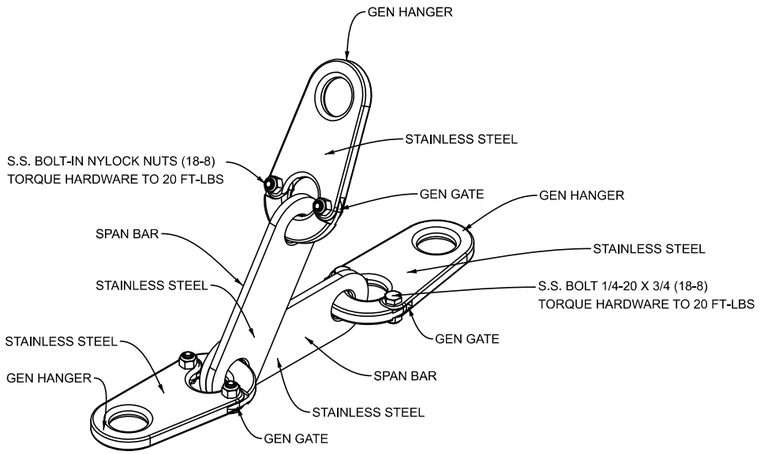
E DETAIL - CABLING ON WOOD POLE

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE CASING DETAILS			
	(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 4 OF 7

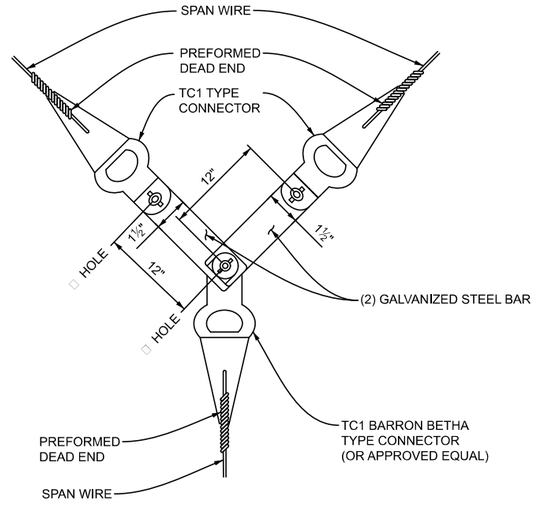
SECT



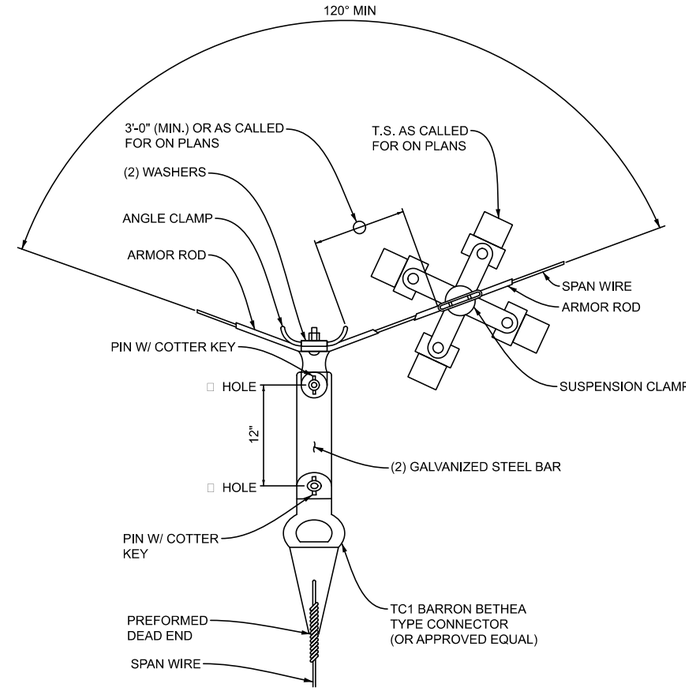
DETAIL COPPER JUMPER
3-WAY TIE OFF



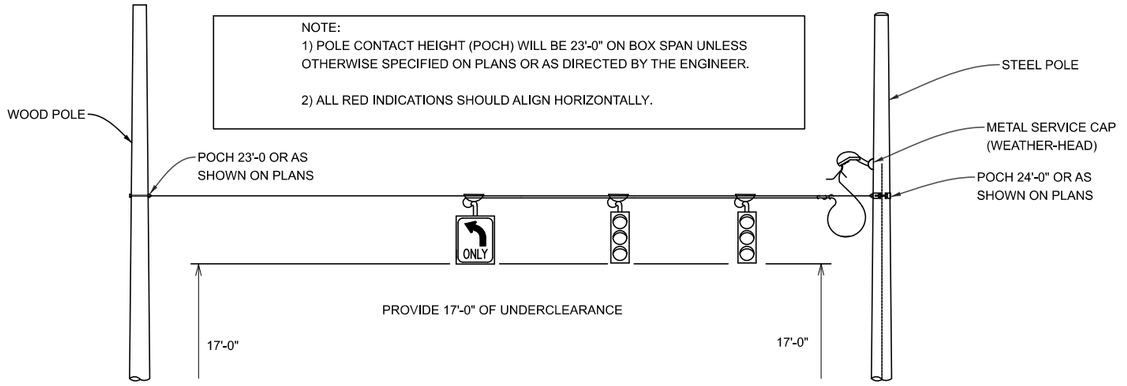
DETAIL SPAN HANGER ASSEMBLY (ALTERNATE)



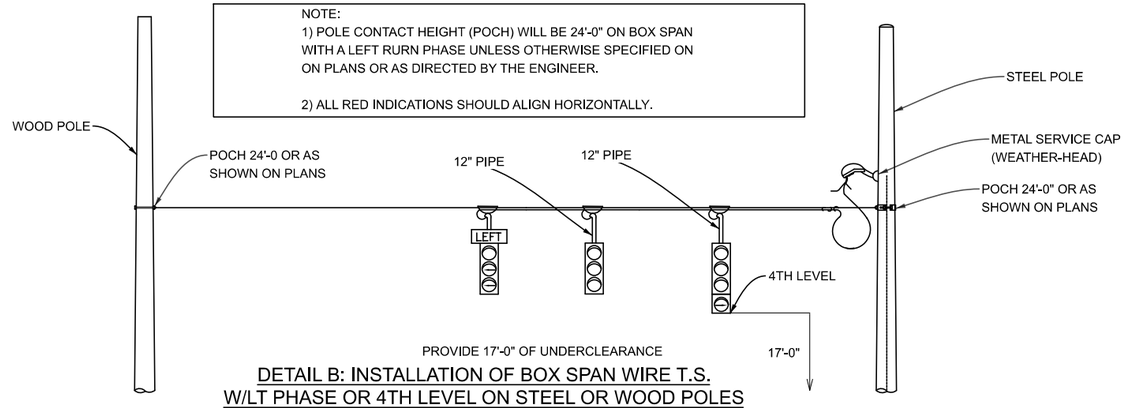
PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION



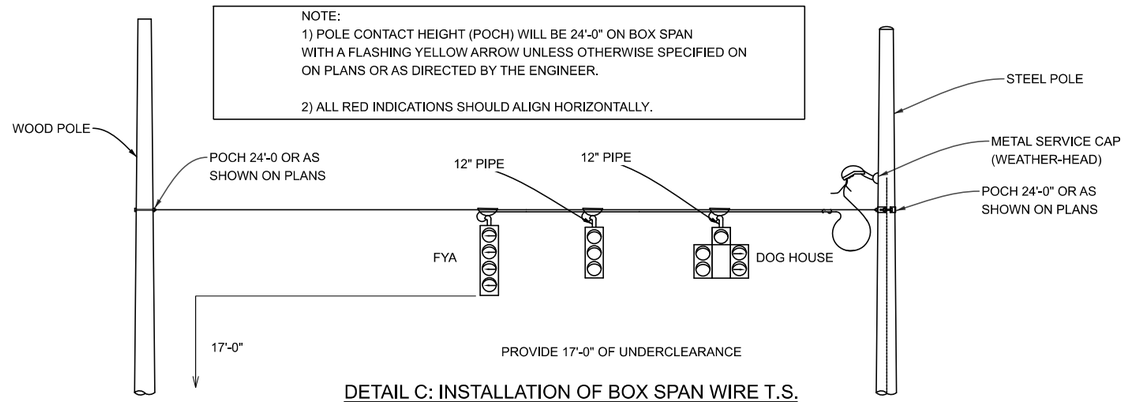
PULL-OFF CONNECTION DETAIL (ALTERNATE)
FOR 3-WAY SUSPENSION



DETAIL INSTALLATION OF BOX SPAN WIRE T.S. ON STEEL OR WOOD POLES



DETAIL B: INSTALLATION OF BOX SPAN WIRE T.S.
W/LT PHASE OR 4TH LEVEL ON STEEL OR WOOD POLES



DETAIL C: INSTALLATION OF BOX SPAN WIRE T.S.
FYA AND DOGHOUSE ON STEEL OR WOOD POLES

BOX SPAN WIRE T.S ON STEEL OR WOOD POLES FOR USE ON OAKLAND COUNTY ROADS ONLY

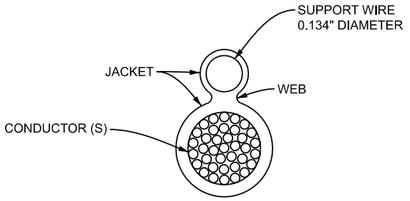
MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

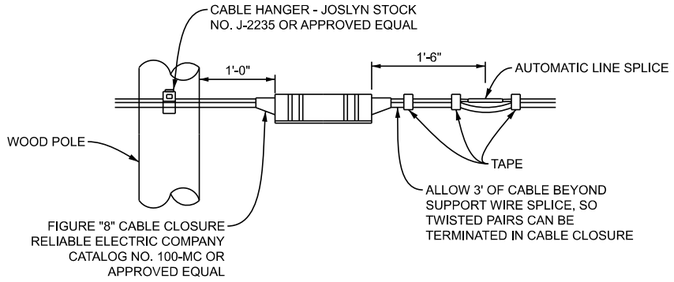
STANDARD PLAN FOR
SPAN WIRE CASING DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/27/23 PLAN DATE	SIG-010-A	SHEET 7 OF 7

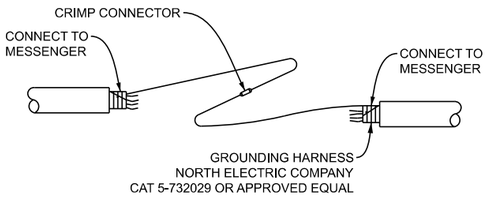
SECT



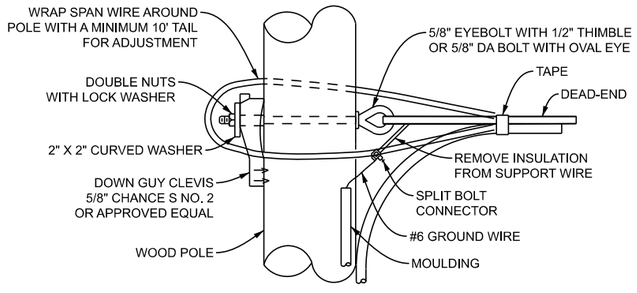
A DETAIL - INTEGRAL MESSENGER (I.M.) CABLE
N.T.S.



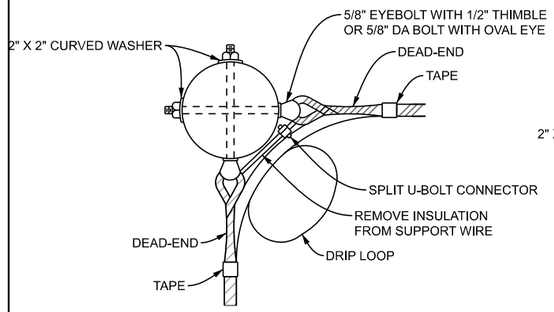
B DETAIL - AERIAL SPLICE
N.T.S.



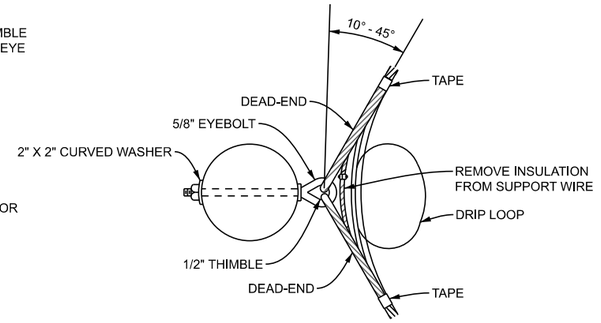
C DETAIL - CABLE CLOSURE
N.T.S.



D DETAIL - DEAD-END POLE
N.T.S.

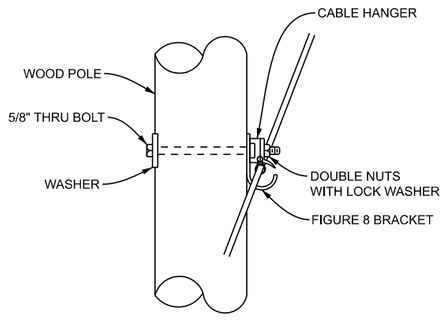


E DETAIL - 90° CORNER POLE
N.T.S.

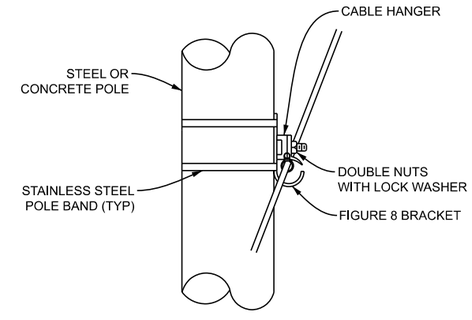


NOTE:
FOR DETAILS 4, 5, AND 6, INDIVIDUAL CONNECTORS TO BE TAPED WITH THREE LAYERS OF APPROVED PLASTIC TAPE & OVERALL ONE LAYER OF HALF LAP APPROVED PLASTIC TAPE

F DETAIL - 10° - 45° ANGLE POLE
N.T.S.



H (WOOD POLE)
DETAIL - TANGENT POLE
N.T.S.



I (STEEL OR CONCRETE POLE)
DETAIL - TANGENT POLE
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
INSTALLATION OF INTEGRAL
MESSENGER CABLE

(SPECIAL DETAIL)	05/20/22	SIG-011-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 3

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
INSTALLATION OF INTEGRAL
MESSENGER CABLE

(SPECIAL DETAIL)	05/20/22	SIG-011-A	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 3

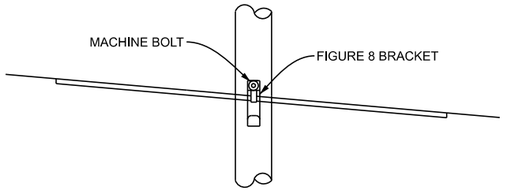
SECT

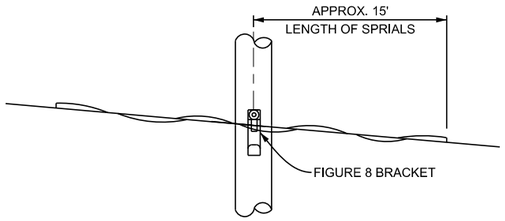
DESCRIPTION:
INTEGRAL MESSENGER WIRE CONSISTS OF A SUPPORT WIRE AND A CONDUCTOR CORE LAID PARALLEL AND COVERED WITH A SINGLE EXTRUSION OF BLACK LOW DENSITY POLYETHYLENE. THE SINGLE EXTRUSION PROVIDES A JACKET OVER THE SUPPORT WIRE AND CORE, AND FORMS A WEB BETWEEN THE TWO. SEE DETAIL "1" . THE SUPPORT WIRE IS 0.134 INCHES IN DIAMETER, GRADE 190 STEEL, CLASS A GALVANIZED,EXTRA HIGH STRENGTH STEEL HAVING A RATED BREAKING STRENGTH OF 2680 POUNDS.

INSTALLATION:
EVERY EFFORT SHALL BE MADE TO LIMIT THE LENGTH OF SPANS TO A MAXIMUM OF 250 FEET. INTEGRAL MESSENGER WIRE IS PRONE TO LOW FREQUENCY WIND VIBRATION COMMONLY REFERRED TO AS "DANCING". PROLONGED LOW AMPLITUDE VIBRATION WILL EVENTUALLY CAUSE OPEN CIRCUITAND/OR SUPPORT WIRE FAILURE. THEREFORE, REA RECOMMENDS THAT ALL INTEGRAL MESSENGER DISTRIBUTION WIRE BE SPIRALED APPROXIMATELY ONE SPIRAL FOR EACH 15 FEET OF SPAN.

SPIRALING OF THE WIRE SHOULD BE DONE FROM EVERY OTHER POLE BY APPLYING THE SPIRALING TORQUE TO THE SUPPORT CLAMP AFTER THE TWO OUTSIDE BOLTS HAVE BEEN PROPERLY TIGHTENED, THUS KEEPING THE SPIRALING TORQUE ON THE SUPPORT WIRE AND NOT ON THE CORE. AS SPIRALING OPERATIONS PROCEED ALONG A LEAD, SPIRALING AT ALTERNATE POLES SHOULD BE IN OPPOSITE DIRECTIONS, THEREBY REDUCING THE TORSION OTHERWISE IMPOSED ON THOSE CLAMPS WHICH ARE AT THE INTERMEDIATE POLES. THE PROCEDURE TO BE FOLLOWED IN SPIRALING DISTRIBUTION WIRE IS SHOWN IN DETAIL "B".

WHEN PULLING THE WIRE UP TO CORRECT SAG, A SUITABLE WIRE GRIP SHOULD BE USED DIRECTLY ON THE SUPPORT WIRE. THE GRIP SHOULD BE OF SUCH A DESIGN AS TO GIVE PROPER HOLDING POWER AND YET NOT DAMAGE THE SUPPORT WIRE JACKET.THE CRESCENT TOOL COMPANY #800 OR AN EQUIVALENT GRIP IS SUGGESTED. A STANDARD LINE WIRE GRIP SHOULD NOT BE USED BECAUSE IT WILL DAMAGE THE INSULATION. IF THE INSULATION IS DAMAGED IN ANY WAY, IT MUST BE REPAIRED WITH SEALING COMPOUND
OR BY CUTTING OUT THE DAMAGED PORTION. AT DEAD-ENDS, IT IS NECCESSARY TO REMOVE THE SUPPORT WIRE COVERING BEFORE APPLYING THE DEAD-END GRIPS. IT MUST BE DONE CAREFULLLY TO AVOID DAAMAGING THE SUPPORT WIRE OR CORE, THE ELECTRICAL CONTINUITY OF THE SUPPORTWIRE MUST BE MAINTAINED THROUGHT THE LEAD.





NOTES:
1. SUPPORT AND POSITION INTEGRAL MESSENGER WIRE WITH CABLE BRACKETS.

2. FASTEN AND SUPPORT CLAMP TO THE SUPPORT MESSENGER AT THE POLE. TIGHTEN THE CARRIAGE BOLTS TO THE MANUFACTURER'S SPECIFICATIONS.

3. SPIRAL WIRE IN THE OPPOSITE DIRECTION FROM WHICH THE PREVIOUS ADJACENT SPIRALING OPERATION WAS PERFORMED. IF THE ADJACENT SPANS ARE UNEQUAL USE THE SHORTER SPAN FOR DETERMINING THE NUMBER OF SPIRALS.

4. PLACE THE CLAMP ON THE MACHINE BOLT AND TIGHTEN NUTS TO THE MANUFACTURER'S SPECIFICATIONS.

J DETAIL - I.M. CABLE SPIRALS
N.T.S.

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
INSTALLATION OF INTEGRAL MESSENGER CABLE

(SPECIAL DETAIL)	05/20/22	SIG-011-A	SHEET
FHWA APPROVAL	PLAN DATE		3 OF 3

SECT

STRAIN POLE DESIGN CRITERIA:

THE DESIGN OF THE STRAIN POLE STRUCTURES SHOWN ON SIG-021-A IS BASED ON THE AASHTO LRFD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES, AND TRAFFIC SIGNALS, FIRST EDITION (2015), WITH 2017 TO 2022 INTERIM REVISIONS.

THE DESIGN IS BASED ON THE MAXIMUM WIND AREAS AND WEIGHTS SHOWN BELOW IN THE SPAN WIRE LOADING TABLE. THE SUM OF THE WEIGHTS AND AREAS (VIEWED PERPENDICULAR TO THE SPAN) OF ALL SIGNALS, SIGNS, DEVICES AND OTHER EQUIPMENT SUPPORTED ON EACH SPAN MUST BE LESS THAN THE MAXIMUM VALUES SHOWN. THE SPAN LENGTH IS DEFINED AS THE STRAIGHT HORIZONTAL DISTANCE BETWEEN POLES. FOR TIE-OFF CONFIGURATIONS, THE SPAN LENGTH IS DEFINED AS THE LONGEST HORIZONTAL DISTANCE BETWEEN ANY TWO ADJACENT POLES MEASURED ALONG THE LENGTHS OF EACH WIRE.

LOAD PARAMETERS:

WIND LOAD (EXTREME EVENT LIMIT STATE): 1700-YEAR MRI BASIC WIND SPEED MAP, 120 MPH DESIGN WIND SPEED

WIND LOAD (SERVICE I EVENT LIMIT STATE): 10-YEAR MRI BASIC WIND SPEED MAP, 76 MPH DESIGN WIND SPEED

HEIGHT AND EXPOSURE FACTOR (K_z): K_z IS CALCULATED USING A HEIGHT (Z) MEASURED FROM TOP OF THE DRILLED SHAFT (IT IS ASSUMED THAT THE POLE IS GROUND-MOUNTED).

DIRECTIONALITY FACTOR (K_z): 0.85

GUST EFFECT FACTOR (G): 1.14

WIND DRAG COEFFICIENT FOR WIND AREA (C_d): 1.2

WIND LOAD REDUCTION FACTOR FOR FREE-SWINGING DEVICES SUPPORTED BY THE SPAN WIRE (UNTETHERED CONFIGURATIONS): 0.65

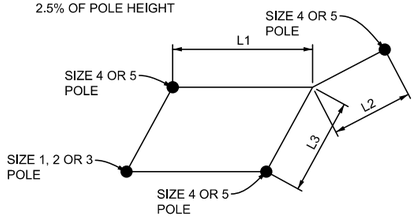
WIRE SAG: 5% (TYPICAL), 6.5% FOR SPANS WITH TIE-OFFS

STRAIN POLE LOADING: SEE SPAN WIRE LOADING TABLE BELOW. IN ADDITION, A DISAPPEARING LEGEND SIGN (45 LBS & 9 SFT WIND AREA) IS APPLIED MIDWAY ALONG ALL TIE-OFF SPANS (WHERE APPLICABLE). NO OTHER LOAD IS ALLOWED ON TIE-OFF SPANS.

SPAN WIRE + ELECTRIC CABLES WEIGHT: 1.155 LB/FT FOR 5/16" SPAN WIRE AND 1.467 LB/FT FOR 1/2" SPAN WIRE

SERVICABILITY PARAMETERS:

LIMIT FOR HORIZONTAL DEFLECTION AT TOP OF POLE UNDER DEAD LOAD ONLY: 2.5% OF POLE HEIGHT

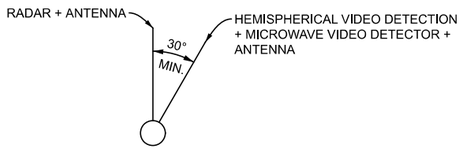


NOTES:
1. L1, L2 AND L3 ARE TIE-OFF SPANS.
2. SEE SIG-021 FOR POLE SIZES.
3. USE A SPAN LENGTH OF MAX(L1+L2, L2+L3) FOR DRILLED SHAFT LENGTH SELECTION FOR POLES CONNECTED TO TIE-OFF SPANS.

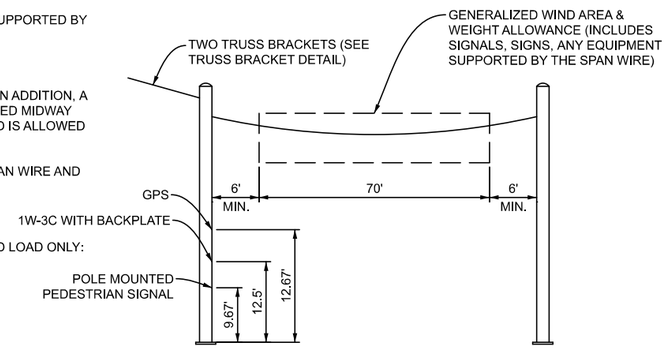
3 DETAIL - STRAIN POLE CONFIGURATION

SPAN WIRE LOADING TABLE			
SPAN LENGTH	WEIGHT OF GENERALIZED LOAD (LBS)**	MAX PERP. WIND AREA (TETHERED SPANS, SIGNALS WITH BACKPLATES) (SFT)**	MAX PERP. WIND AREA (UNTETHERED SPANS, SIGNALS WITHOUT BACKPLATES) (SFT)**
UP TO 100 FT	328	58.0	31.0
101 FT TO 120 FT	328	58.0	31.0
121 FT TO 150 FT	328	58.0	31.0
151 FT TO 175 FT	370	58.0	37.0
176 FT TO 200 FT	370	58.0	37.0

**WEIGHTS AND AREAS INCLUDE ALLOWANCE FOR SIGNALS, SIGNS, AND ANYTHING ELSE CARRIED BY THE CABLES.



1 DETAIL - TRUSS BRACKET



2 DETAIL - STRAIN POLE LOADING ELEVATION VIEW

STRAIN POLE LOADING TABLE (POLE MOUNTED EQUIPMENT)		
EQUIPMENT	WEIGHT LBS	AREA SFT
ANTENNA	20	0.09
GPS MODULE	30	0.75
POLE MOUNTED PEDESTRIAN SIGNAL	25	1.78
1W-3C SIGNAL (WITH BACKPLATE)	43	8.67
18' STEEL TRUSS BRACKET	106	7.29
HEMISPHERICAL VIDEO DETECTION	22	2.11
MICROWAVE VEHICLE DETECTOR	4	0.97
RADAR VEHICLE DETECTOR	4	0.97

SEE ELEVATION VIEW FOR EQUIPMENT MOUNTING LOCATIONS.

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
TRAFFIC SIGNAL STRAIN POLE LOADING TABLE AND DESIGN CRITERIA

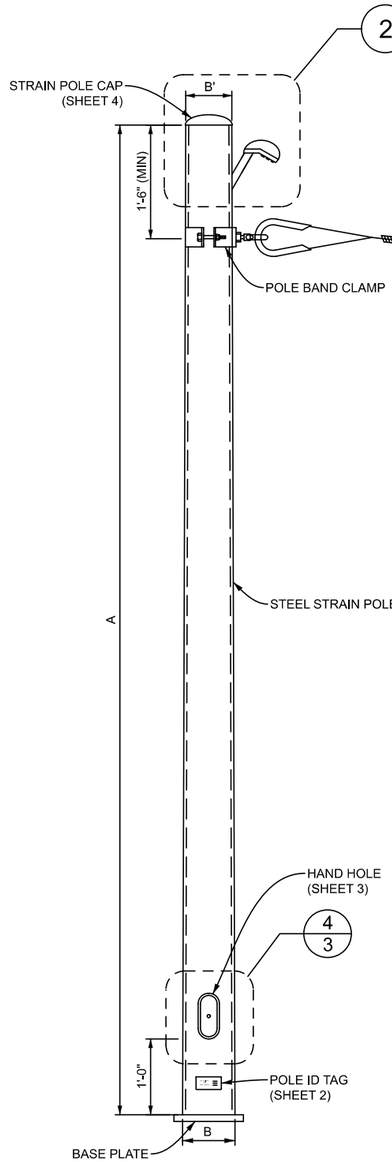
(SPECIAL DETAIL) FHWA APPROVAL	05/17/24 PLAN DATE	SIG-020-B	SHEET 1 OF 1

MDOT Michigan Department of Transportation

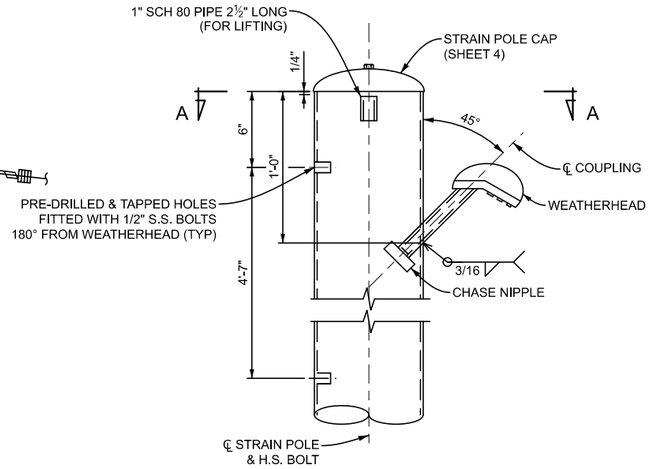
DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR

(SPECIAL DETAIL) FHWA APPROVAL	#### PLAN DATE		SHEET OF

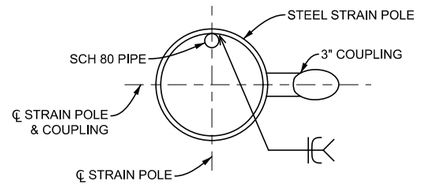


1 DETAIL - STEEL STRAIN POLE



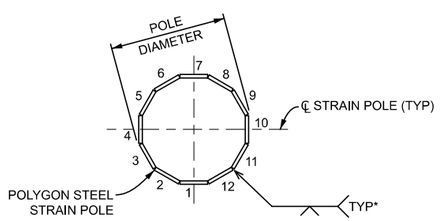
ORIENTATION OF 3" COUPLING TO BE 90° OR 270° FROM POLE HAND HOLE

2 DETAIL - COUPLING



SCH 80 PIPE ORIENTED 180° TO POLE HAND HOLE

A SECTION - ROUND POLE



* LONGITUDINAL WELD JOINT

A' SECTION - 12-SIDED POLYGON (OPTIONAL)

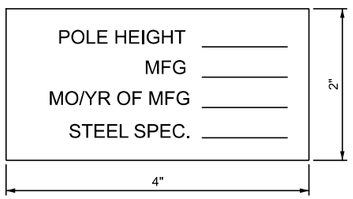
STRAIN POLE REQUIREMENTS								
				NOT CONNECTED TO TIE-OFF SPANS			CONNECTED TO TIE-OFF SPANS	
MARK	DESCRIPTION		UNIT	SIZE 1A	SIZE 1B	SIZE 2	SIZE 3	SIZE 4	SIZE 5
A	POLE LENGTH		FT	30		36	40	36	40
W	MIN POLE WALL THICKNESS	GR 50 STEEL	IN	5/8		5/8	5/8	5/8	5/8
		GR 65 STEEL	IN	1/2		1/2	1/2	1/2	1/2
B'	POLE DIAMETER - TOP *		IN	12.3 (MIN) ± 1/2		13.96 (MIN) ± 1/2	14.4 (MIN) ± 1/2	14.96 (MIN) ± 1/2	15.4 (MIN) ± 1/2
B	POLE DIAMETER - BOTTOM *		IN	16.5 ± 1/2		19 ± 1/2	20 ± 1/2	20 ± 1/2	21 ± 1/2
-	FULL LENGTH TAPER		IN / FT	+0.002 0.14 -0.000		+0.002 0.14 -0.000	+0.002 0.14 -0.000	+0.002 0.14 -0.000	+0.002 0.14 -0.000
E	POLE BASE FILLET WELD	GR 50 STEEL	IN	7/16		7/16	1/2	7/16	1/2
		GR 65 STEEL	IN	7/16		7/16	7/16	7/16	7/16
F	POLE BASE LANDING		IN	5/8		5/8	5/8	5/8	5/8
-	ANCHOR BOLT DIAMETER		IN	1 ¾	2	2	2	2	2
-	ANCHOR BOLT HOLE DIAMETER		IN	2 1/16	2 5/16	2 5/16	2 5/16	2 5/16	2 5/16
-	ANCHOR BOLT CIRCLE DIAMETER		IN	24	27	27	27	29	29
C	ANCHOR BOLT CHORD		IN	12	13 ½	13 ½	13 ½	14 ½	14 ½
D	BASE PLATE EDGE		IN	15 ¼	17 ½	17 ½	17 ½	20 ¼	20 ¼
T	BASE PLATE THICKNESS		IN	2 ¼	2 ¼	2 ¼	2 ¼	2 ¼	2 ¼
P.O.C.H.	12 ½" POLE BAND CLAMP		FT-IN	21'-6" TO 28'-6"		-	-	-	-
P.O.C.H.	13 ½" POLE BAND CLAMP		FT-IN	17'-0" TO 21'-0"		32'-6" TO 34'-6"	-	-	-
P.O.C.H.	14 ½" POLE BAND CLAMP		FT-IN	-		25'-6" TO 32'-0"	32'-6" TO 38'-6"	32'-6" TO 34'-6"	-
P.O.C.H.	15 ½" POLE BAND CLAMP		FT-IN	-		18'-0" TO 25'-0"	25'-6" TO 32'-0"	25'-6" TO 32'-0"	32'-6" TO 38'-6"
P.O.C.H.	16 ½" POLE BAND CLAMP		FT-IN	-		17'-0" TO 17'-6"	18'-0" TO 25'-0"	18'-0" TO 25'-0"	25'-6" TO 32'-0"
P.O.C.H.	17 ½" POLE BAND CLAMP		FT-IN	-		-	17'-0" TO 17'-6"	17'-0" TO 17'-6"	18'-0" TO 25'-0"
P.O.C.H.	18 ½" POLE BAND CLAMP		FT-IN	-		-	-	-	17'-0" TO 17'-6"
* DIAMETERS GIVEN ARE O.D.									

NOTES:

1. SEE SIG-020-B FOR LOADING TABLE AND DESIGN CRITERIA.
2. ROUND OR 12-SIDED SECTIONS ARE ALLOWED.
3. MULTI-PLY SECTIONS ARE NOT ALLOWED.
4. STRAIN POLES USED IN APPLICATIONS OTHER THAN TRAFFIC SIGNALS REQUIRE UNIQUE DESIGN CALCULATIONS FOR THE SPECIFIC LOADING CASE.
5. MINIMUM REQUIRED TENSILE STRENGTH (Fu) FOR WELD CONSUMABLES:
   Fu = 70 KSI FOR GR. 50 POLE
   Fu = 80 KSI FOR GR. 65 POLE EXCEPT Fu = 70 KSI FOR LONGITUDINAL SEAM WELDS QUALIFIED PER AWS D1.1

ABBREVIATIONS:

S.S. = STAINLESS STEEL
GA. = GAUGE
GR = GRADE
O.D. = OUTSIDE DIAMETER
I.D. = INSIDE DIAMETER
H.S. = HIGH STRENGTH
SCH. = SCHEDULE
P.O.C.H. = POINT OF CONTACT HEIGHT OF THE POLE BAND CLAMP, MEASURED FROM THE BOTTOM OF THE STRAIN POLE



NOTES:

1. ATTACH ID TAG TO STRAIN POLE AT LOCATIONS SHOWN 4" ABOVE BASE OF TUBE, BELOW HANDHOLE,WITH (4) #8 x 3/8" S.S. TYPE U DRIVE SCREWS.
2. STAMP IN LETTERS WITH 3/8" CHARACTERS.
3. STEEL SPEC. REFERS TO THE ASTM SPECIFICATION AND GRADE: "AXXX GR YY"

3 DETAIL - STRAIN POLE S.S. ID TAG

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
6 ANCHOR BOLT TRAFFIC SIGNAL
STRAIN POLE AND COUPLING DETAILS

(SPECIAL DETAIL)	08/28/24	SIG-021-B	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 7

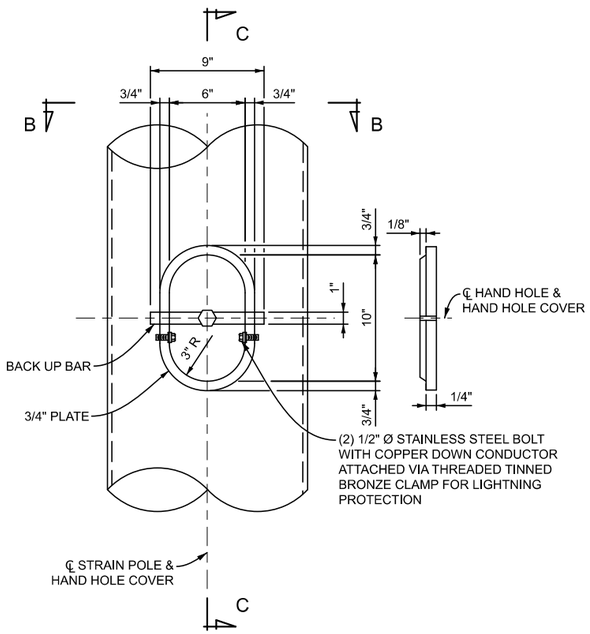
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

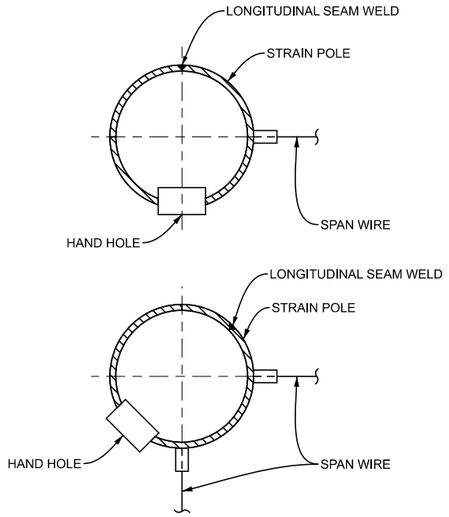
STANDARD PLAN FOR
STRAIN POLE REQUIREMENTS

(SPECIAL DETAIL)	08/28/24	SIG-021-B	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 7

SECT

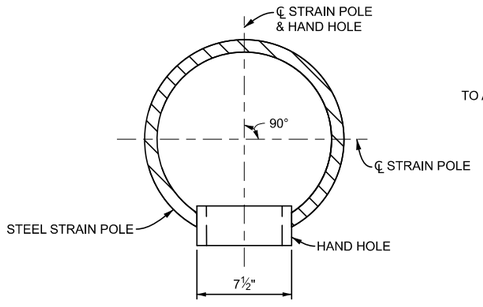


4 DETAIL - HAND HOLE



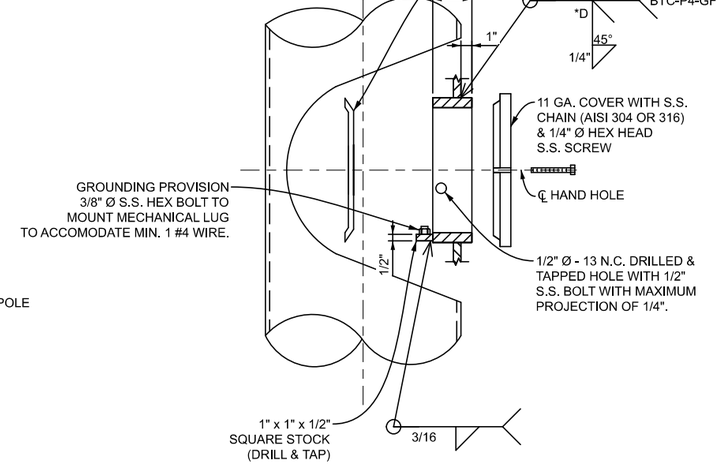
LONGITUDINAL SEAM WELD MUST BE 90° MINIMUM FROM THE HAND HOLE AND 30° MINIMUM FROM THE ℄ COUPLING (SEE SECTION A FOR ℄ COUPLING).

5 DETAIL - STRAIN POLE ORIENTATION



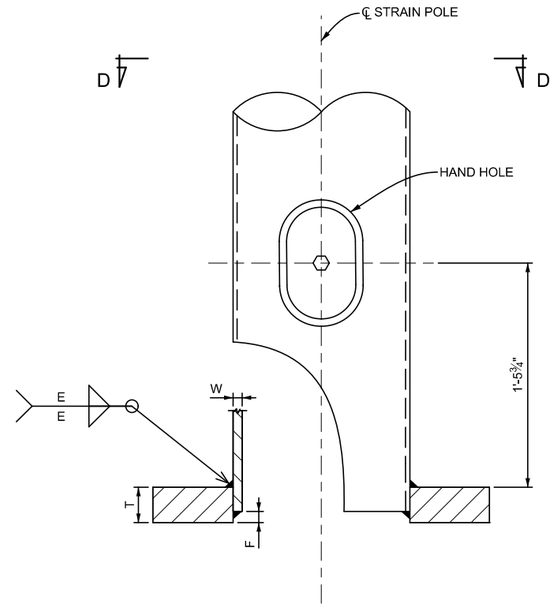
SEE STRAIN POLE ORIENTATION DETAIL

B SECTION - HAND HOLE



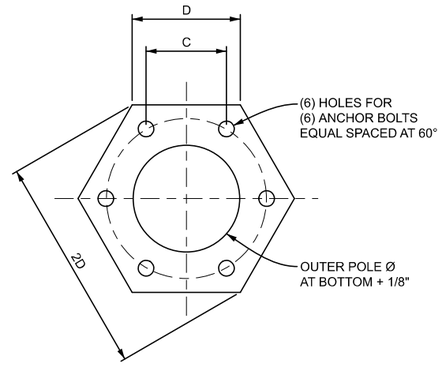
* GROOVE DEPTH (D) EQUALS WELD SIZE (S) EQUALS POLE WALL THICKNESS MINUS ⅛ INCH FLAT (1G) OR HORIZONTAL (2G) POSITION

C SECTION - HAND HOLE



ANCHOR BOLTS NOT SHOWN FOR CLARITY.

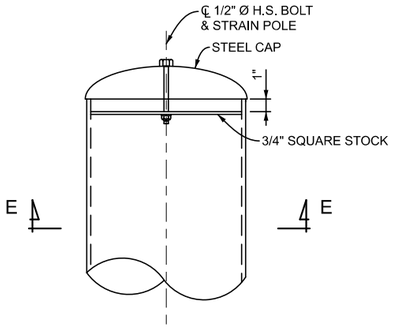
6 DETAIL - BASE PLATE



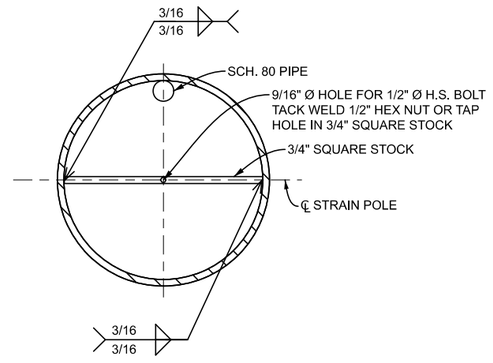
NOTES:

1. STRAIN POLE NOT SHOWN FOR CLARITY.
2. SEE STRAIN POLE REQUIREMENTS TABLE ON SHEET 2 FOR:
   ANCHOR BOLT CIRCLE Ø
   ANCHOR BOLT HOLE Ø
   ANCHOR BOLT Ø

D SECTION - BASE PLATE



7 DETAIL - STRAIN POLE CAP



E SECTION - STRAIN POLE CAP

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR HAND HOLE & STRAIN POLE ORIENTATION DETAILS			
	(SPECIAL DETAIL) FHWA APPROVAL	08/28/24 PLAN DATE	SIG-021-B	SHEET 3 OF 7

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR BASE PLATE AND STRAIN POLE CAP DETAILS			
	(SPECIAL DETAIL) FHWA APPROVAL	08/28/24 PLAN DATE	SIG-021-B	SHEET 4 OF 7

SECT

STRAIN POLE FOUNDATION REQUIREMENTS

			NOT CONNECTED TO TIE-OFF SPANS				CONNECTED TO TIE-OFF SPANS	
MARK	DESCRIPTION	UNIT	SIZE 1A	SIZE 1B	SIZE 2	SIZE 3	SIZE 4	SIZE 5
A	POLE LENGTH	FT	30		36	40	36	40
	ANCHOR BOLT DIAMETER	IN	1 ¾	2	2	2	2	2
	ANCHOR BOLT CIRCLE DIAMETER	IN	24	27	27	27	29	29
	ANCHOR BOLT LENGTH	IN	72		72	72	72	72
	FOUNDATION DIAMETER	IN	42	48	48	48	48	48

NOTES:

1. ALL WORK AND MATERIALS MUST BE IN ACCORDANCE WITH THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. CONSTRUCT STRAIN POLE FOUNDATIONS ACCORDING TO SECTION 718.03 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

2. IF SOIL CONDITIONS INDICATE THERE IS NO NEED FOR A CASING PAY ITEM AS SHOWN ON THE PLAN, THE CONTRACTOR SHALL REQUEST PERMISSION OF THE ENGINEER TO INSTALL THE FOUNDATION WITHOUT CASING.

3. WHEN THE CASING PAY ITEM IS INCLUDED ON THE PLANS FOR A FOUNDATION (DUE TO GRANULAR SOILS, A WET HOLE OR OTHER UNSTABLE CONDITIONS), STEEL CASING (SMOOTH WALLED) IS TO BE INSTALLED TO ENABLE THE FOUNDATION TO BE POURED. THE THICKNESS OF THE STEEL CASING IS TO BE DETERMINED BY THE CONTRACTOR. THE STEEL MUST BE LEFT IN PLACE. SMOOTH WALLED STEEL CASING OUTSIDE DIAMETER TO MEET OR EXCEED FOUNDATION DIAMETER. IF SOIL EXTENDING LATERALLY WITHIN 6 FEET OF THE DRILLED SHAFT FOUNDATION IS LOOSENED OR OTHERWISE DISTURBED, SCARIFY MATERIAL AT THE BASE OF THE EXCAVATION BELOW THE DEPTH OF DISTURBANCE AND RECOMPACT IN ACCORDANCE WITH 206.03.B OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. COMPACT ALL BACKFILL PLACED ABOVE THE RECOMPACTED BASE OF EXCAVATION IN ACCORDANCE WITH 206.03.B OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

4. WHEN THE CASING PAY ITEM IS CALLED FOR ON THE PLANS, THE STEEL CASING MAY STOP AT THE CONDUIT ENTRANCE TO FOUNDATION. TOP OF FOUNDATION MUST THEN BE FORMED SEPARATELY, EVEN THOUGH THE STEEL CASING STOPS AT THE CONDUIT ENTRANCE. THE CASING PAY ITEM QUANTITY WILL BE PAID FOR BASED ON ACTUAL LINEAR FEET INSTALLED.

5. CONSTRUCT STRAIN POLE FOUNDATIONS, CASED OR UNCASED, ACCORDING TO SUBSECTION 820.03.A AND 718 OF THE STANDARD SPECIFICATIONS FOR CONSTRUCTION. ALL WORK AND MATERIALS MUST BE IN ACCORDANCE WITH THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

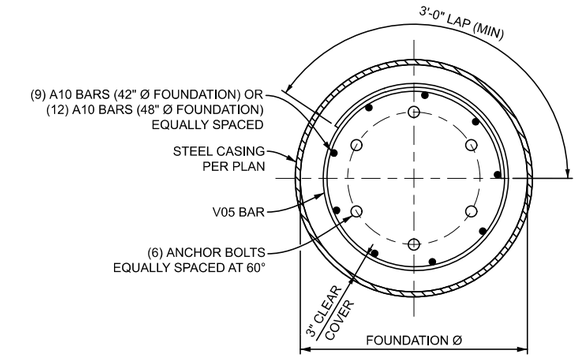
6. STEEL REINFORCEMENT MUST CONFORM TO SECTION 905 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.

7. EXPOSED CONCRETE SURFACES MUST BE CAST IN FORMS.

8. CONDUITS AND ANCHOR BOLTS MUST BE RIGIDLY INSTALLED BEFORE CONCRETE IS PLACED. ANCHOR BOLTS MUST BE SPACED BY MEANS OF A TEMPLATE. THE CENTER OF THE TEMPLATE MUST COINCIDE WITH THE CENTER OF THE FOUNDATION.

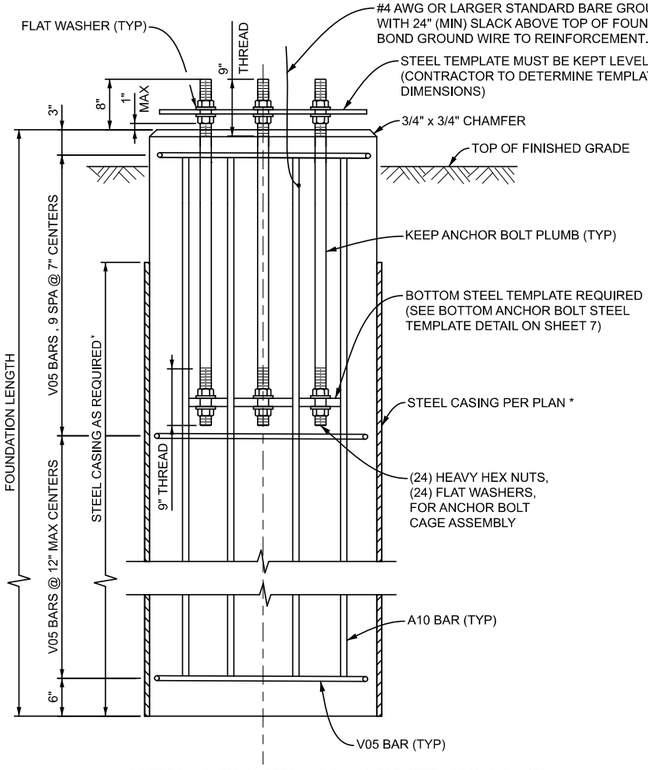
9. GROUNDING OF POLE INCLUDES ADDING #4 BARE COPPER GROUND WIRE BONDED BY LISTED MECHANICAL CONNECTION TO FOUNDATION REINFORCING STEEL AND HAVING 24" OF SLACK ABOVE THE TOP OF FOUNDATION.

10. INSTALL COPPER CLAD GROUND ROD(S) AS DIRECTED BY ENGINEER AND IN ACCORDANCE WITH CURRENT N.E.C. ALL GROUNDS MUST PROVIDE LESS THAN 10 OHM RESISTANCE TO GROUND.



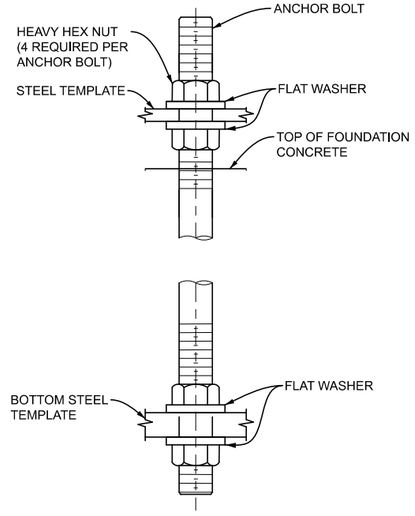
SEE STRAIN POLE FOUNDATION REQUIREMENTS TABLE ON PAGE 5 FOR:
ANCHOR BOLT CIRCLE Ø, ANCHOR BOLT Ø, & FOUNDATION Ø

8 DETAIL - FOUNDATION PLAN

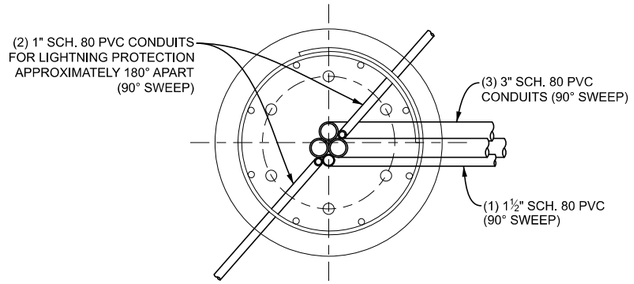


* SEE FOUNDATION NOTES AND PLANS FOR STEEL CASING PAY ITEM

9 DETAIL - FOUNDATION ELEVATION

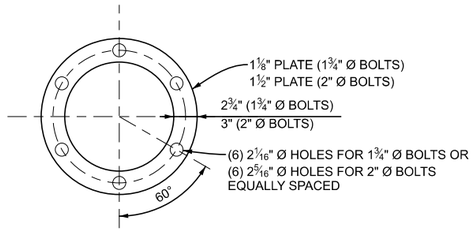


10 DETAIL - ANCHOR BOLT WASHER PLACEMENT



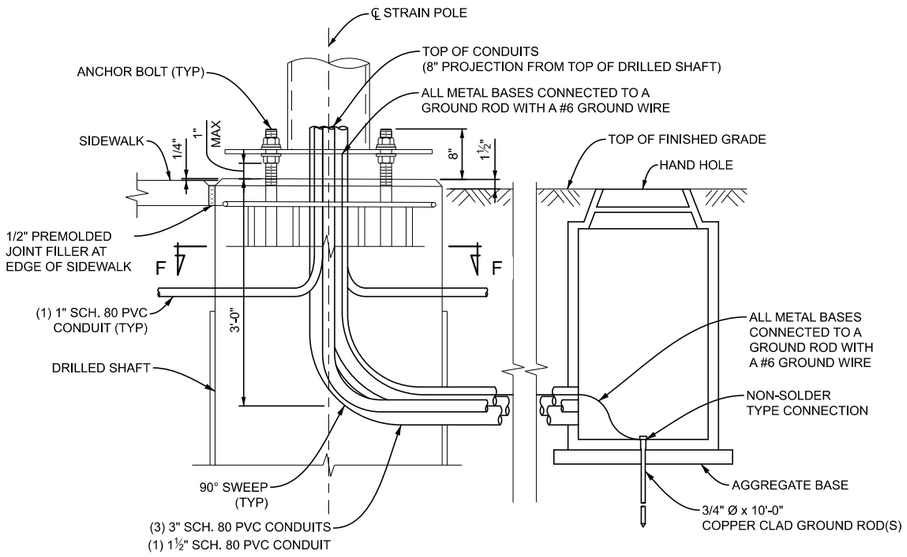
SECURE CONDUITS TOGETHER WITH SUITABLE BANDING TO ENSURE PLACEMENT TOGETHER PRIOR TO CONCRETE POUR.

F SECTION-CONDUIT LAYOUT



SEE STRAIN POLE FOUNDATION REQUIREMENTS TABLE ON SHEET 5 FOR:
ANCHOR BOLT CIRCLE Ø
ANCHOR BOLT HOLE Ø
FOUNDATION Ø

12 DETAIL - BOTT. ANCHOR BOLT STEEL TEMPLATE



11 DETAIL - CONDUIT LAYOUT

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
CONDUIT DETAILS

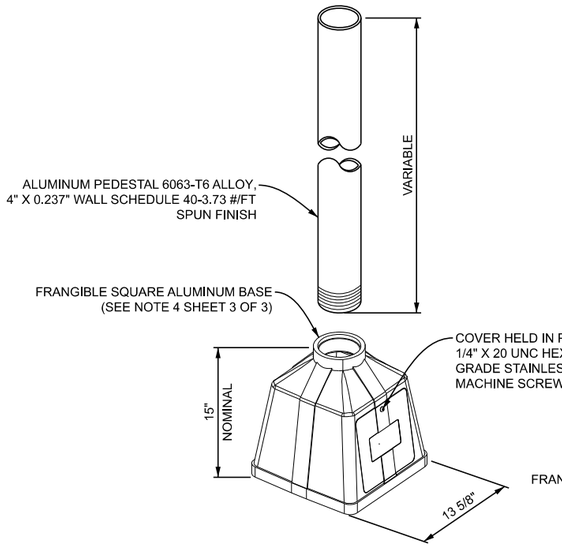
(SPECIAL DETAIL)	08/28/24	SIG-021-B	SHEET
FHWA APPROVAL	PLAN DATE		7 OF 7

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

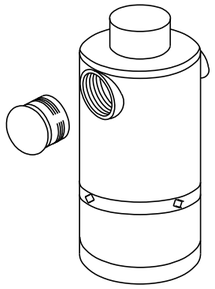
STANDARD PLAN FOR

(SPECIAL DETAIL)	####		SHEET
FHWA APPROVAL	PLAN DATE		OF

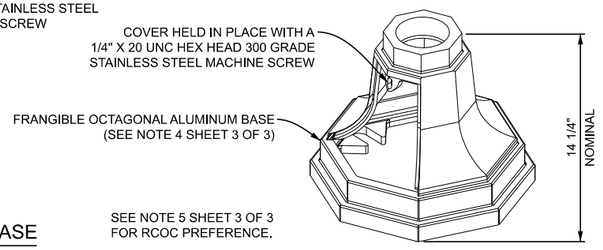
SECT



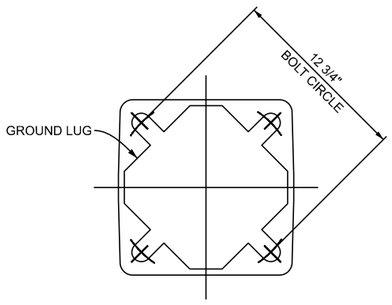
A DETAIL - SQUARE ALUMINUM BASE
N.T.S.



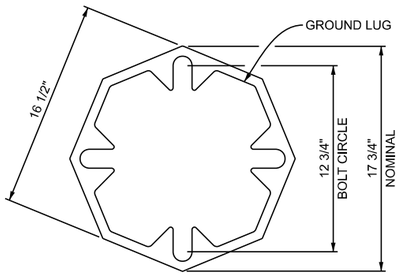
POST TOP
C DETAIL - (SLIP FITTER)
N.T.S.



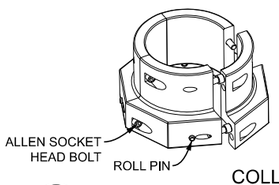
D DETAIL - OCTOGONAL BASE
N.T.S.



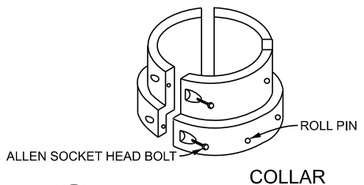
B DETAIL - SQUARE BASE BOTTOM PLAN
N.T.S.



E DETAIL - OCTOGONAL BASE BOTTOM PLAN
N.T.S.

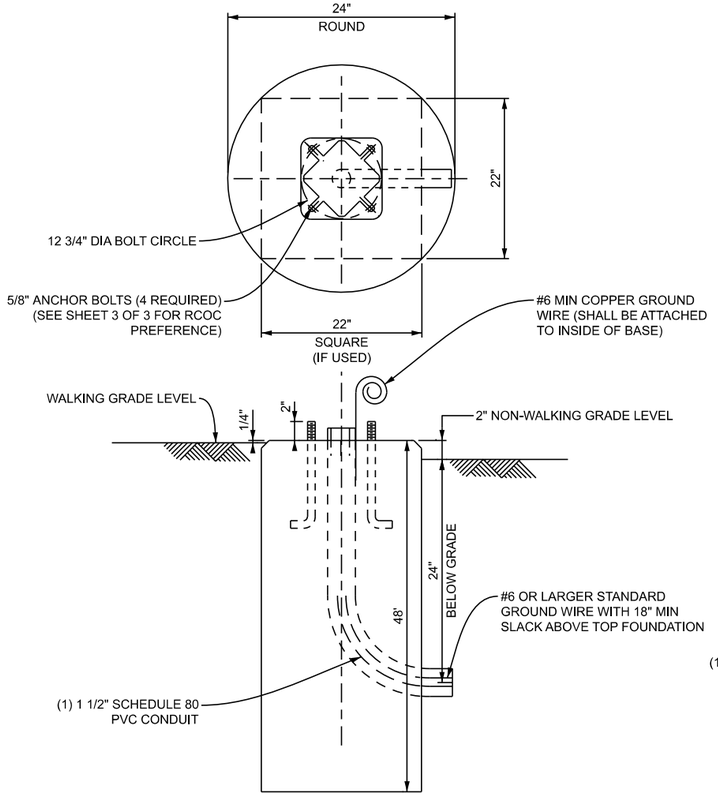


COLLAR
F DETAIL - (OCTOGANAL BASE)
N.T.S.

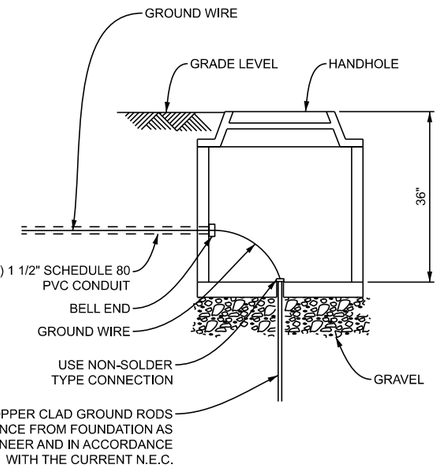


COLLAR
G DETAIL - (SQUARE BASE)
N.T.S.

NOTE:
USE PEDESTAL COLLAR FOR PEDESTAL LENGTH
GREATER THAN OR EQUAL TO 14' (TYPICAL FOR
3 COLOR TRAFFIC SIGNALS WITH PEDESTRIAN SIGNALS).



H DETAIL - PEDESTAL FOUNDATION
N.T.S. SEE NOTES 1, 2 & 3 ON SHEET 3 OF 3



I DETAIL - HANDHOLE
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
PEDESTAL FOUNDATION

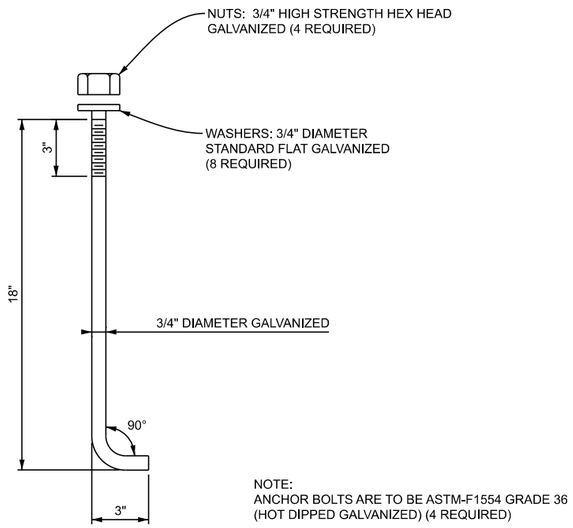
(SPECIAL DETAIL) FHWA APPROVAL	07/29/2025 PLAN DATE	SIG-070-B	SHEET 1 OF 3

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

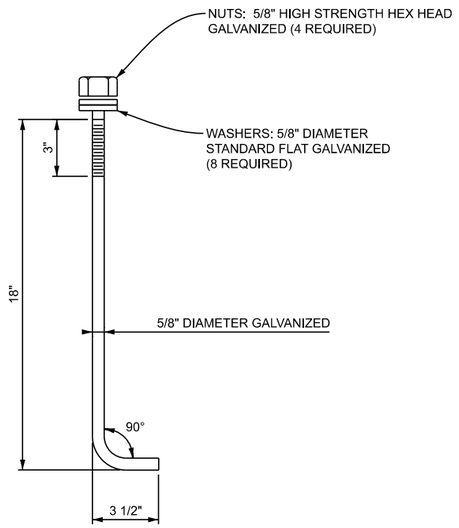
STANDARD PLAN FOR
PEDESTAL FOUNDATION

(SPECIAL DETAIL) FHWA APPROVAL	07/29/2025 PLAN DATE	SIG-070-B	SHEET 2 OF 3

SECT



NOTE:
ANCHOR BOLTS ARE TO BE ASTM-F1554 GRADE 36
(HOT DIPPED GALVANIZED) (4 REQUIRED)



FOR USE ON MDOT TRUNKLINE

FOR USE ON OAKLAND COUNTY ROADS ONLY

J DETAIL - ANCHOR BOLT DETAIL
N.T.S.

NOTES:
1) ALTERNATE FOUNDATION MAY BE CONSTRUCTED 22"X22" SQUARE - 48" DEEP.

2) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND.

3) CONSTRUCTION JOINTS NOT PERMITTED IN FOUNDATION.

4) PEDESTAL BASE MUST MEET THE REQUIREMENTS OF NATIONAL COOPERATIVE HIGHWAY RESEARCH PROGRAM REPORT 350 (NCHRP 350) OR MANUAL FOR ASSESSING SAFETY HARDWARE (MASH) AND HAVE FEDERAL HIGHWAY ADMINISTRATION (FHWA) ACCEPTANCE. PEDESTAL BASE MUST ALSO BE CERTIFIED TO HAVE A 4-INCH MAXIMUM STUB HEIGHT AFTER THE SUPPORT HAS BROKEN AWAY FROM ITS BASE, AS SPECIFIED IN THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINARIES, AND TRAFFIC SIGNALS AND THE AASHTO ROADSIDE DESIGN GUIDE.

5) USE THE OCTAGONAL BASE AS A PREFERENCE BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), FOR USE ON OAKLAND COUNTY ROADS ONLY.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
PEDESTAL FOUNDATION

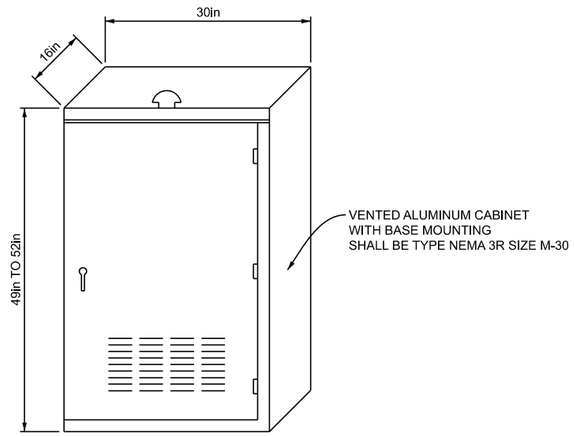
(SPECIAL DETAIL)	07/29/2025	SIG-070-B	SHEET
FHWA APPROVAL	PLAN DATE		3 OF 3

SECT

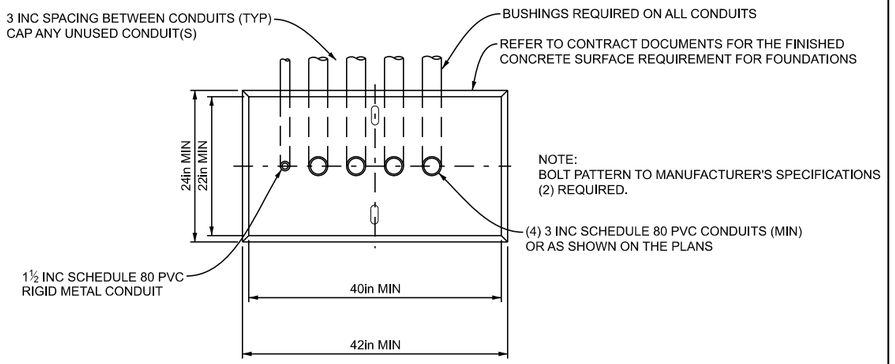
NOTE:
1) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND, WITH A 10' (MIN) SPACING BETWEEN GROUND RODS.

2) ALL INSULATED JACKETS ARE TO REMAIN ON CABLE ENTERING CONTROLLER.

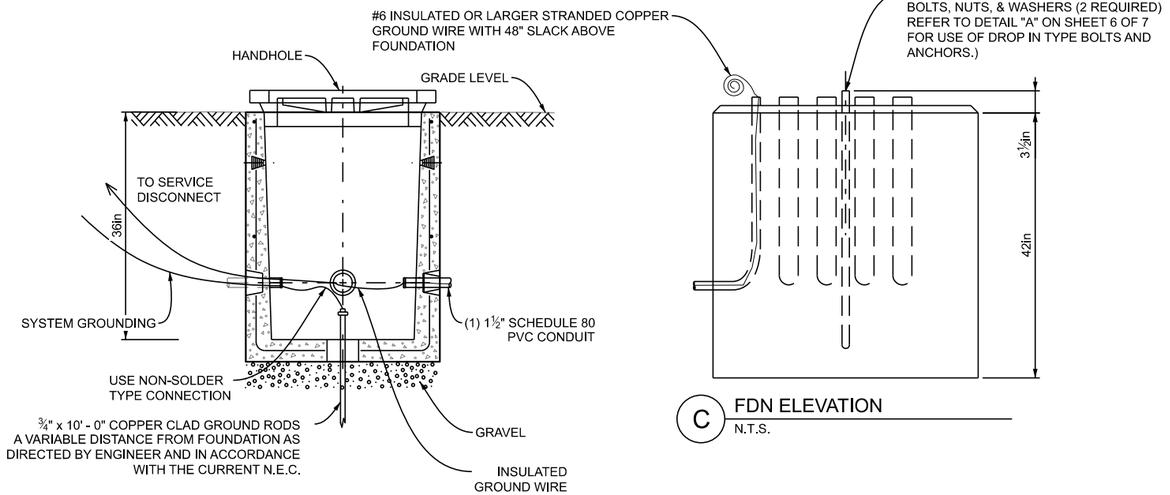
3) KEEP 1-3" CONDUIT ON LEFT SIDE OPEN FOR I.T.S.



A BASE MTD TRAFFIC SIGNAL CONTROLLER CABINET
N.T.S.



B PLAN
N.T.S.



C FDN ELEVATION
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

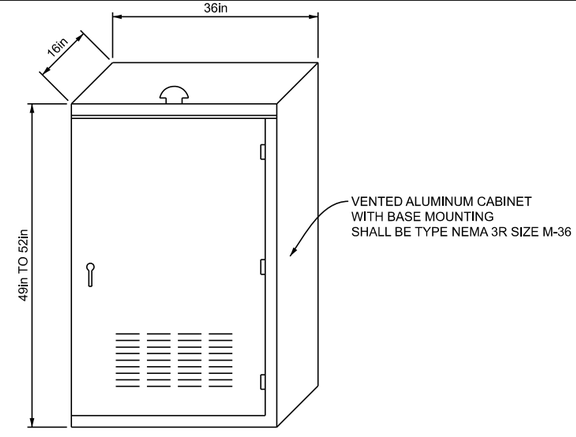
STANDARD PLAN FOR
BASE MOUNTED T.S.
CONTROLLER CABINET/FOUNDATIONS

(SPECIAL DETAIL)	11/05/25	SIG-110-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 7

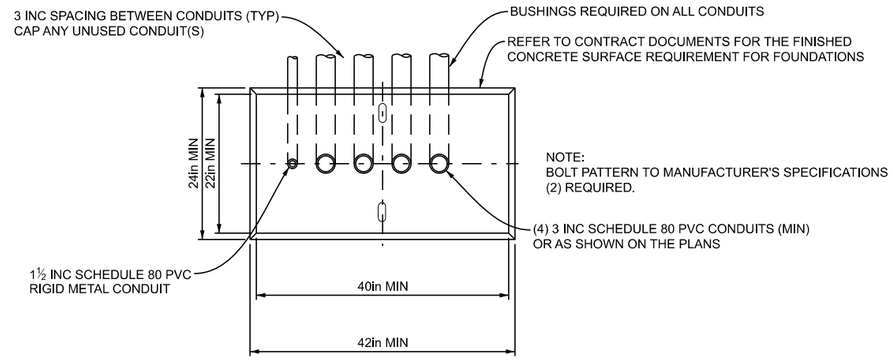
NOTE:
1) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND, WITH A 10' (MIN) SPACING BETWEEN GROUND RODS.

2) ALL INSULATED JACKETS ARE TO REMAIN ON CABLE ENTERING CONTROLLER.

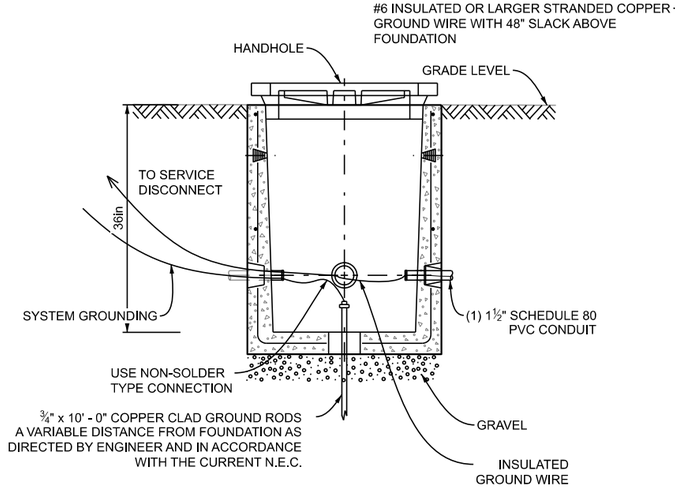
3) KEEP 1-3" CONDUIT ON LEFT SIDE OPEN FOR I.T.S.

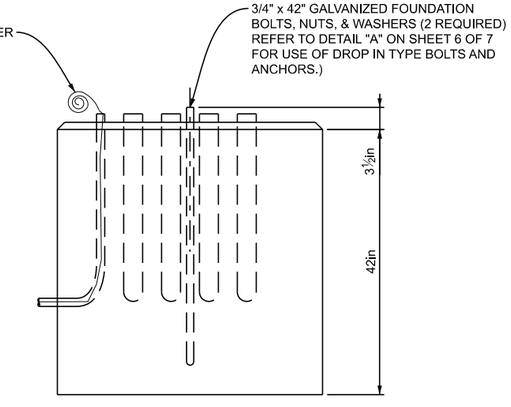


D BASE MTD TRAFFIC SIGNAL CONTROLLER CABINET
N.T.S.



E PLAN
N.T.S.





F FDN ELEVATION
N.T.S.

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BASE MOUNTED T.S.
CONTROLLER CABINET/FOUNDATIONS

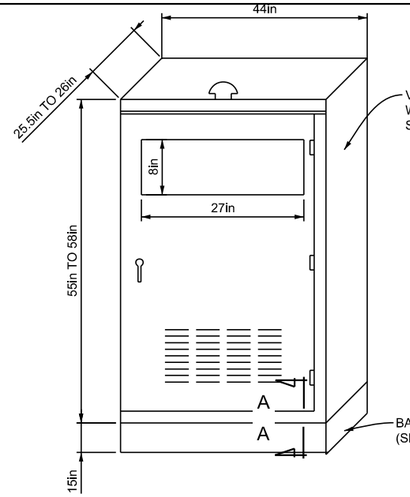
(SPECIAL DETAIL)	11/05/25	SIG-110-A	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 7

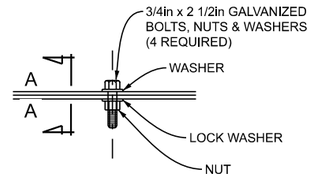
SECT

NOTE:
1) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND, WITH A 10' (MIN) SPACING BETWEEN GROUND RODS.

2) ALL INSULATED JACKETS ARE TO REMAIN ON CABLE ENTERING CONTROLLER.

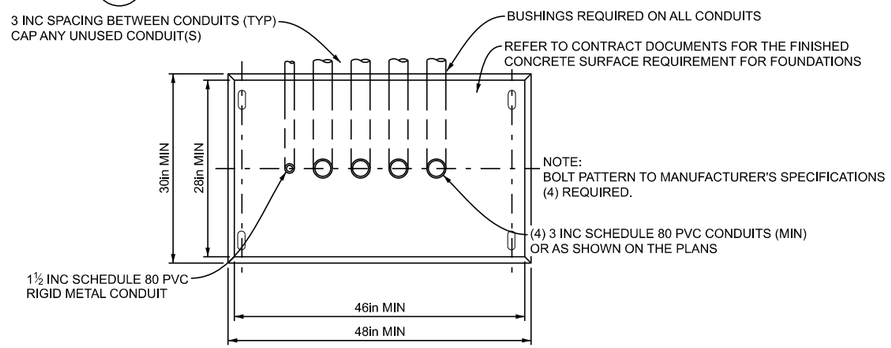
3) KEEP 1-3" CONDUIT ON LEFT SIDE OPEN FOR I.T.S.



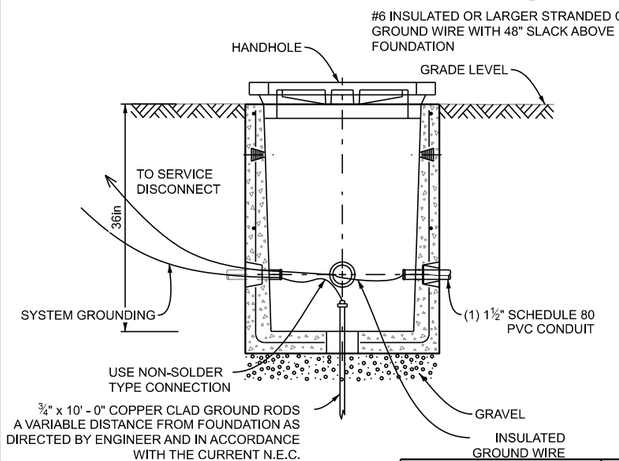


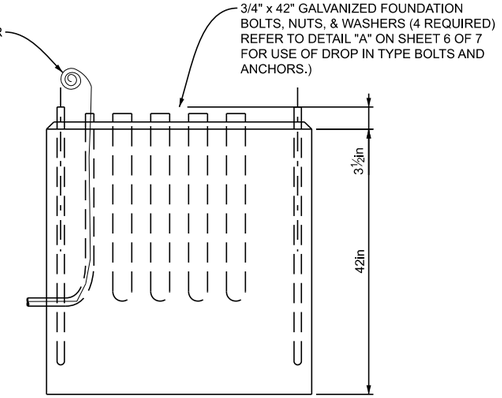
1 SECTION A A
N.T.S.

G BASE MTD TRAFFIC SIGNAL CONTROLLER CABINET
N.T.S.



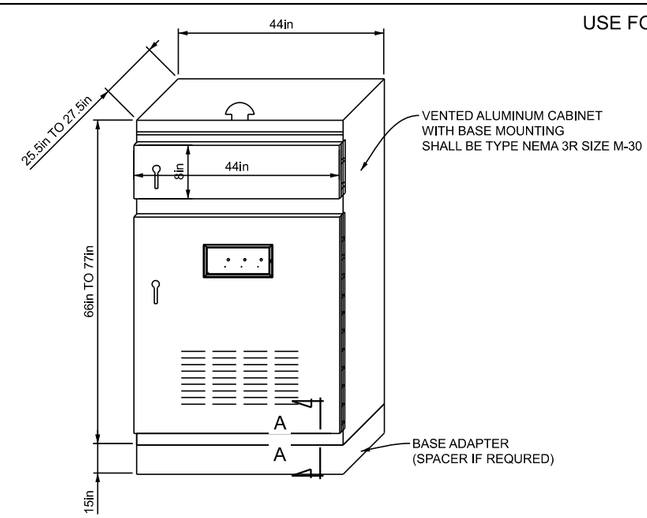
H PLAN
N.T.S.

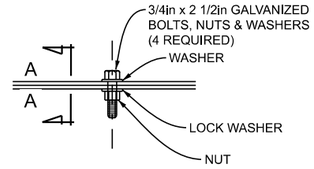




I FDN ELEVATION
N.T.S.

USE FOR I.T.S. APPLICATIONS





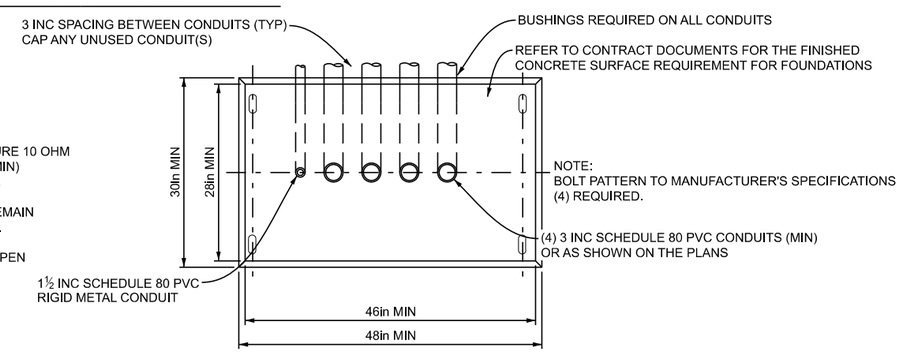
2 SECTION A A
N.T.S.

J BASE MTD TRAFFIC SIGNAL CONTROLLER CABINET
N.T.S. (I.T.S. CABINET IF USED)

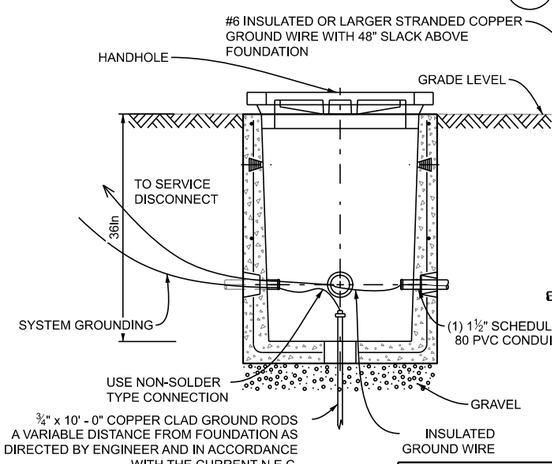
NOTE:
1) GROUNDING SYSTEM SHALL MEASURE 10 OHM OR LESS TO GROUND, WITH A 10' (MIN) SPACING BETWEEN GROUND RODS.

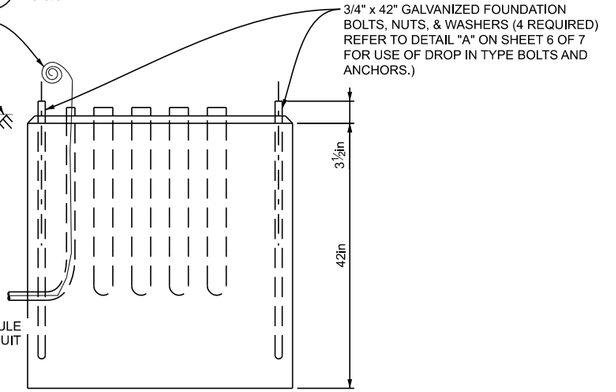
2) ALL INSULATED JACKETS ARE TO REMAIN ON CABLE ENTERING CONTROLLER.

3) KEEP 1-3" CONDUIT ON LEFT SIDE OPEN FOR I.T.S.

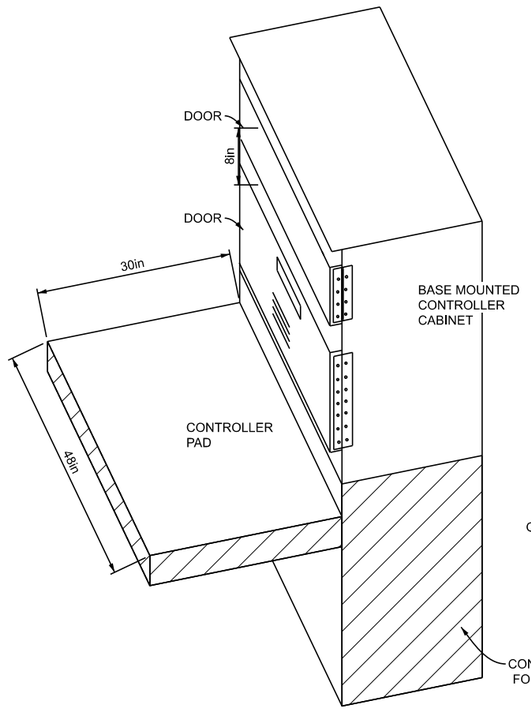


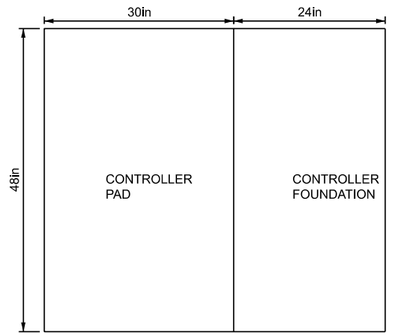
K FDN PLAN
N.T.S.



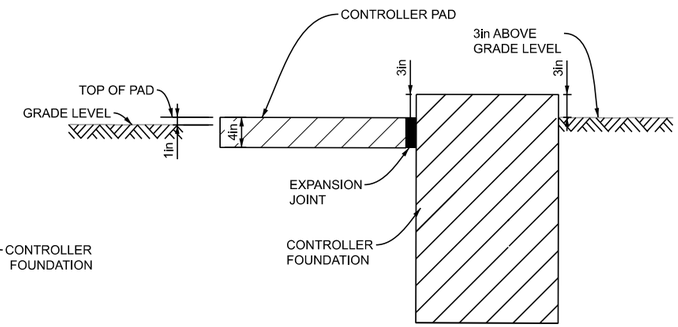


L FDN ELEVATION
N.T.S.





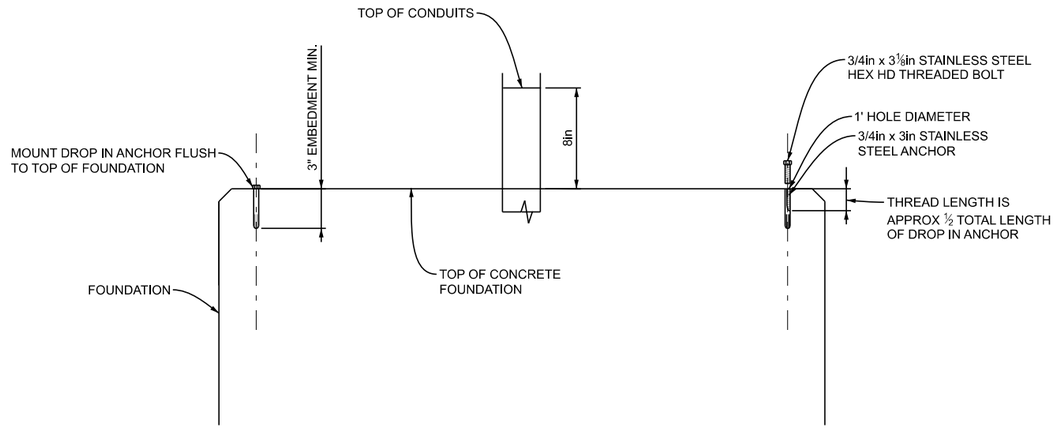
M TOP VIEW
N.T.S.



N SIDE VIEW
N.T.S.

O BASE MOUNTED CONTROLLER PAD
N.T.S.

NOTE:
PAYMENT FOR CONTROLLER PAD TO BE INCLUDED IN CONTROLLER FOUNDATION PAY ITEM
CONTROLLER CABINET DOOR TO OPEN TOWARD PAD.



NOTES:

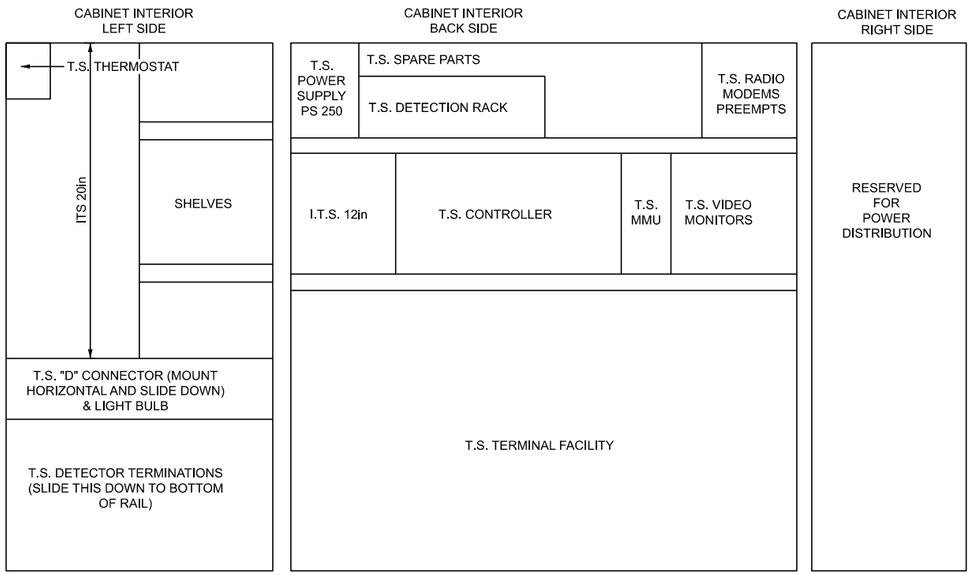
1. USE AISI 300 SERIES STAINLESS STEEL FOR ALL BOLTS AND ANCHORS.
2. USE DROP IN FOUNDATION BOLTS AND ANCHORS AS DIRECTED BY THE ENGINEER.

P ALTERNATIVE DET "A": DROP IN FDN BOLTS & ANCHORS
N.T.S.

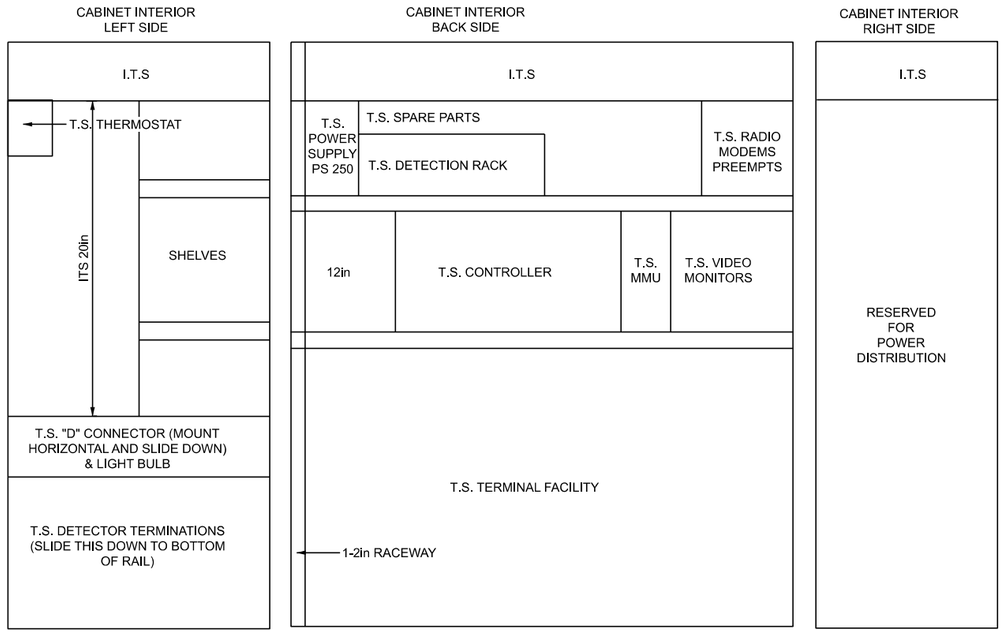
MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR BASE MOUNTED T.S. CONTROLLER CABINET/FOUNDATIONS			
	(SPECIAL DETAIL) FHWA APPROVAL	11/05/25 PLAN DATE	SIG-110-A	SHEET 5 OF 7

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR BASE MOUNTED T.S. CONTROLLER CABINET/FOUNDATIONS			
	(SPECIAL DETAIL) FHWA APPROVAL	11/05/25 PLAN DATE	SIG-110-A	SHEET 6 OF 7

SECT



Q TRAFFIC SIGNAL NEMA 3R SIZE 6
N.T.S. CABINET REQUIREMENTS



R TRAFFIC SIGNAL NEMA 3R SIZE 6 STRETCH
N.T.S. CABINET REQUIREMENTS FOR ITS APPLICATIONS

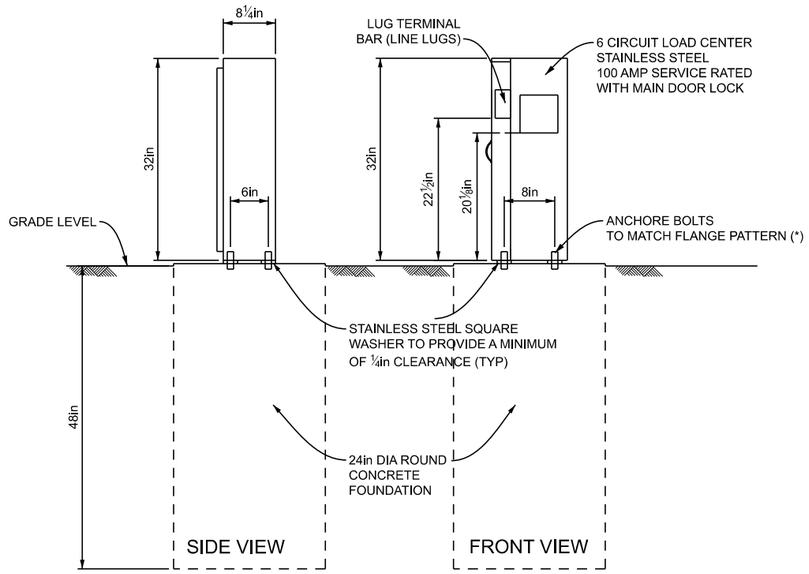
MDOT
Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BASE MOUNTED T.S.
CONTROLLER CABINET/FOUNDATIONS

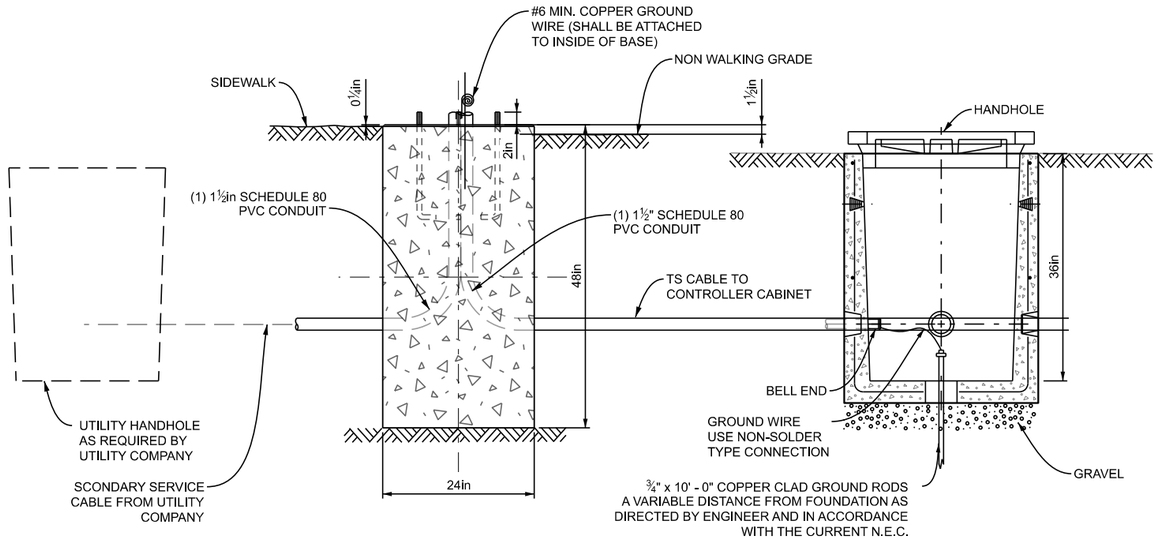
(SPECIAL DETAIL)	11/05/25	SIG-110-A	SHEET
FHWA APPROVAL	PLAN DATE		7 OF 7

SECT

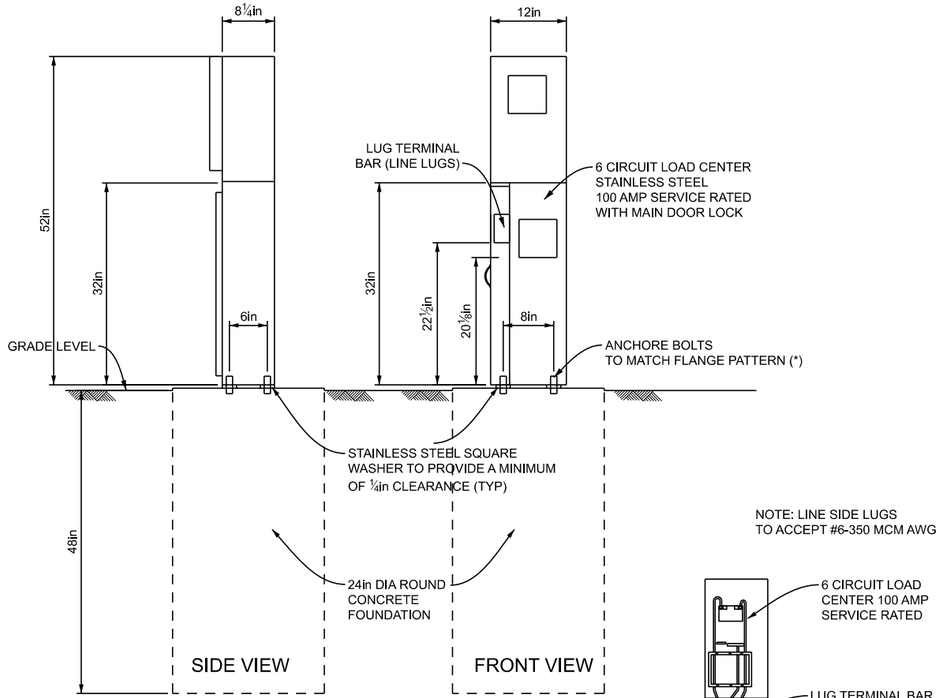


A DETAIL - PEDESTAL MOUNTED ON FOUNDATION
N.T.S. UNDERGROUND SERVICE

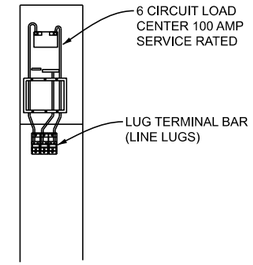
(*) NOTE: STAINLESS STEEL ANCHOR BOLTS OR STAINLESS STEEL DROP INS, TO BE USED ON EXISTING FOUNDATIONS WITH PROPER GRADE AND SIZE.



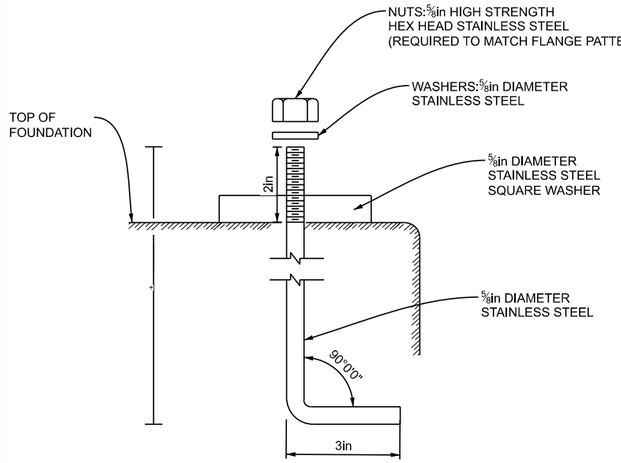
B DETAIL - HANDHOLE
N.T.S.



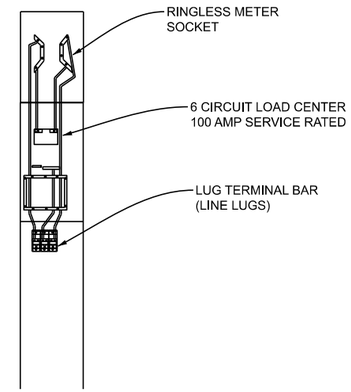
NOTE: LINE SIDE LUGS TO ACCEPT #6-350 MCM AWG



C DETAIL - WIRING DIAGRAM
N.T.S UNMETERED



D DETAIL - ANCHORE BOLT
N.T.S.



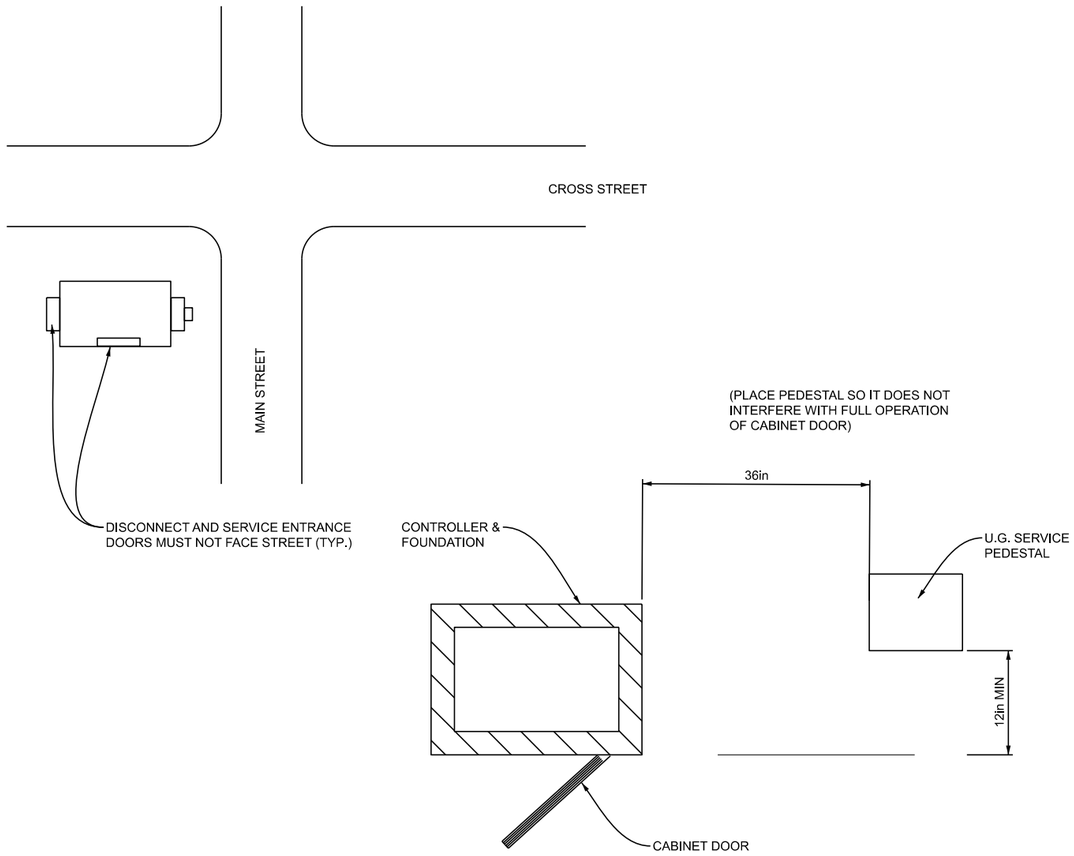
E DETAIL - WIRING DIAGRAM
N.T.S. METERED

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR UNDERGROUND SERVICE METERED AND UNMETERED		
		(SPECIAL DETAIL) FHWA APPROVAL	06/15/23 PLAN DATE	SIG-210-B	SHEET 1 OF 3

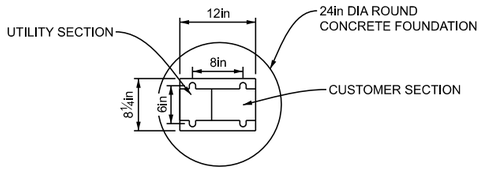
MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR UNDERGROUND SERVICE METERED AND UNMETERED			
	(SPECIAL DETAIL) FHWA APPROVAL	06/15/23 PLAN DATE	SIG-210-B	SHEET 2 OF 3

SECT

PREFERRED SITE ORIENTATION PLAN



F DETAIL - PREFERRED PEDESTAL & FOUNDATION
N.T.S. ORIENTATION PLAN



G DETAIL - BOLT PATTERN LAYOUT
N.T.S.

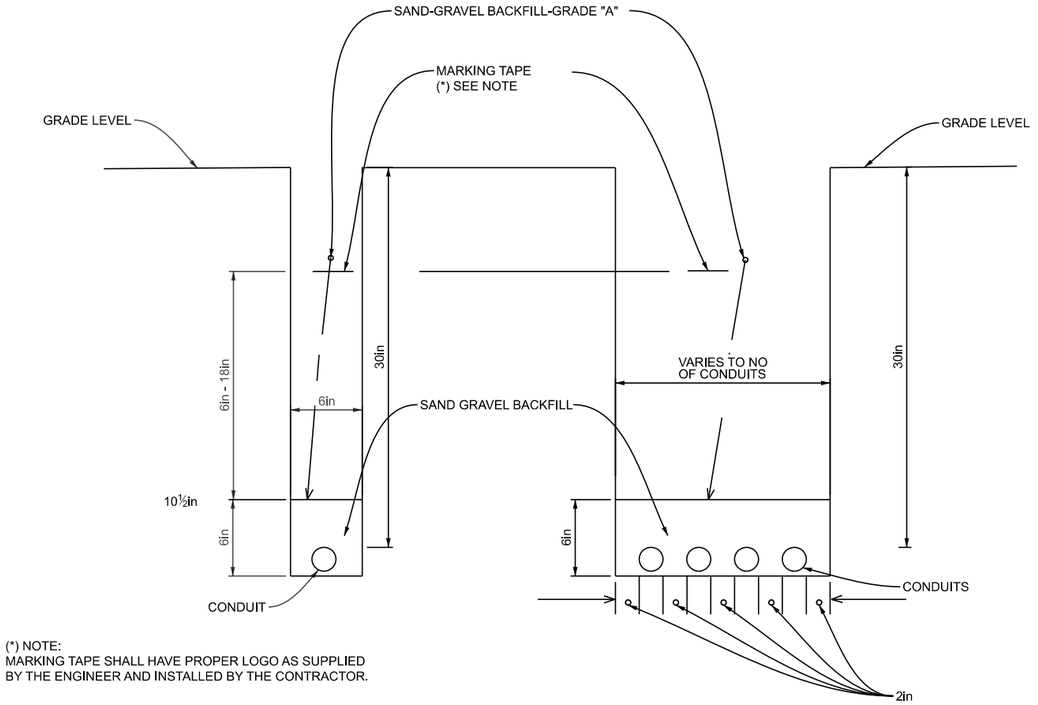
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
UNDERGROUND SERVICE
METERED AND UNMETERED

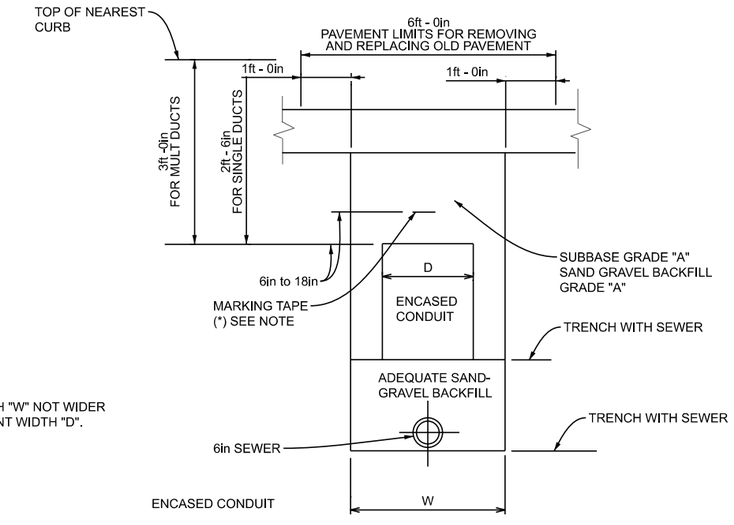
(SPECIAL DETAIL) FHWA APPROVAL	06/15/23 PLAN DATE	SIG-210-B	SHEET 3 OF 3

SECT



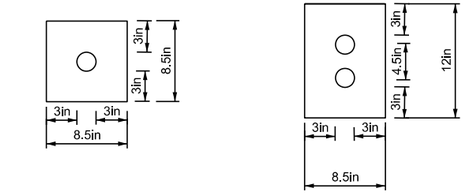
(*) NOTE:
MARKING TAPE SHALL HAVE PROPER LOGO AS SUPPLIED
BY THE ENGINEER AND INSTALLED BY THE CONTRACTOR.

A DETAIL - DIRECT BURIAL CONDUIT(S)/CABLE(S)
N.T.S.



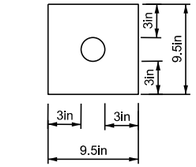
NOTE:
PREFERRED TRENCH WIDTH "W" NOT WIDER
THAN CONDUIT ENCASEMENT WIDTH "D".

B TYPICAL - SECTION OF TRENCH
N.T.S.

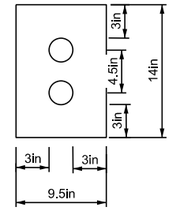


ONE 2in CONDUIT

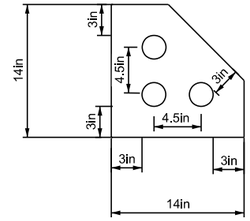
TWO 2in CONDUIT



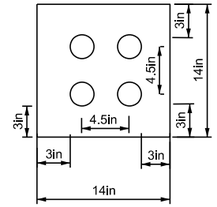
ONE
2 1/2" CONDUIT



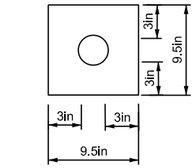
TWO
2 1/2" CONDUIT



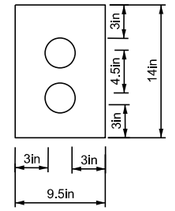
THREE
2 1/2" CONDUIT



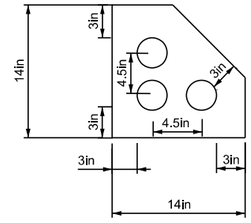
FOUR
2 1/2" CONDUIT



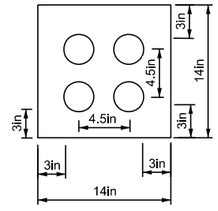
ONE
3" CONDUIT



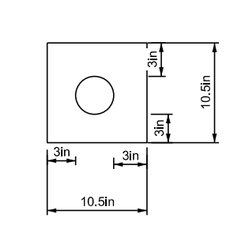
TWO
3" CONDUIT



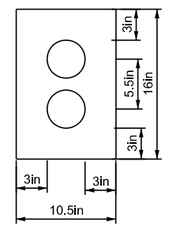
THREE
3" CONDUIT



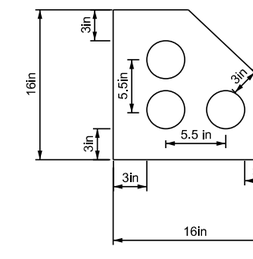
FOUR
3" CONDUIT



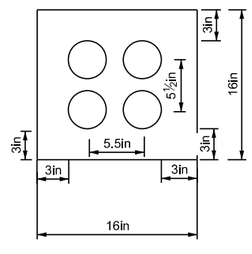
ONE
4" CONDUIT



TWO
4" CONDUIT



THREE
4" CONDUIT



FOUR
4" CONDUIT

C DETAIL - ENCASED SECTIONS
N.T.S. CONDUITS

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
CONDUIT
(DIRECT BURIAL/ENCASE)

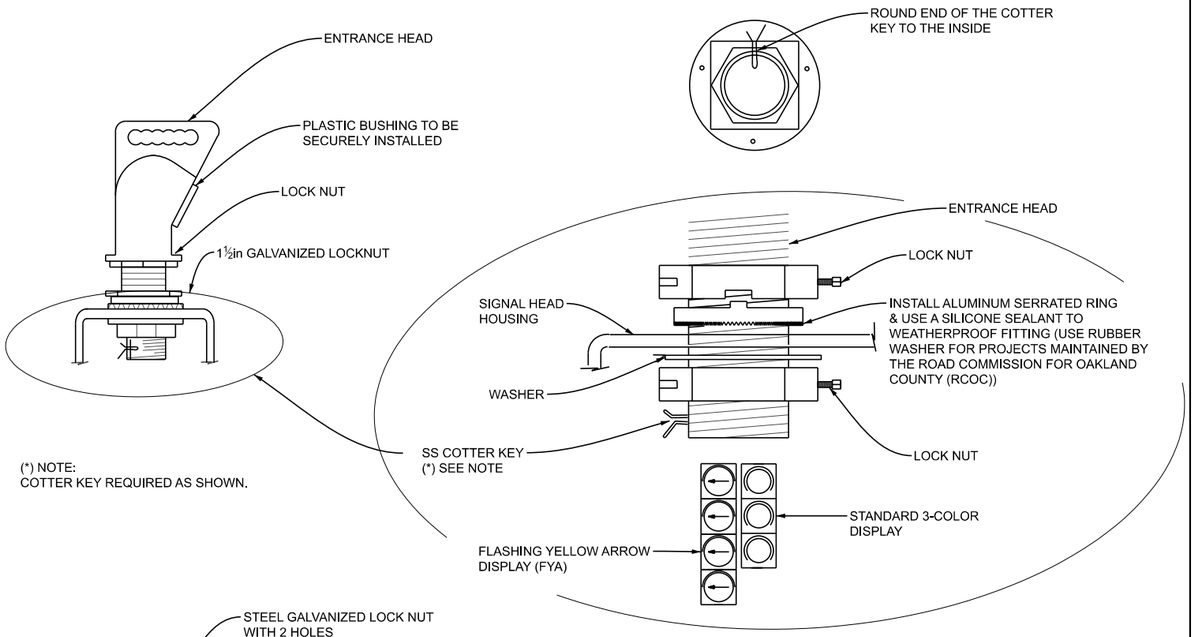
(SPECIAL DETAIL) FHWA APPROVAL	07/12/23 PLAN DATE	SIG-250-A	SHEET 1 OF 2

MDOT Michigan Department of Transportation
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
CONDUIT
(DIRECT BURIAL/ENCASE)

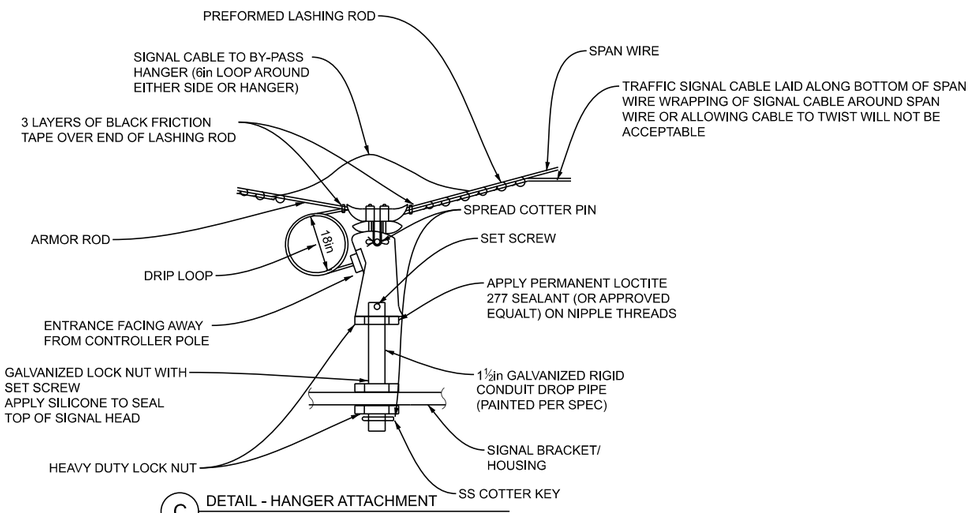
(SPECIAL DETAIL) FHWA APPROVAL	07/12/23 PLAN DATE	SIG-250-A	SHEET 2 OF 2

SECT



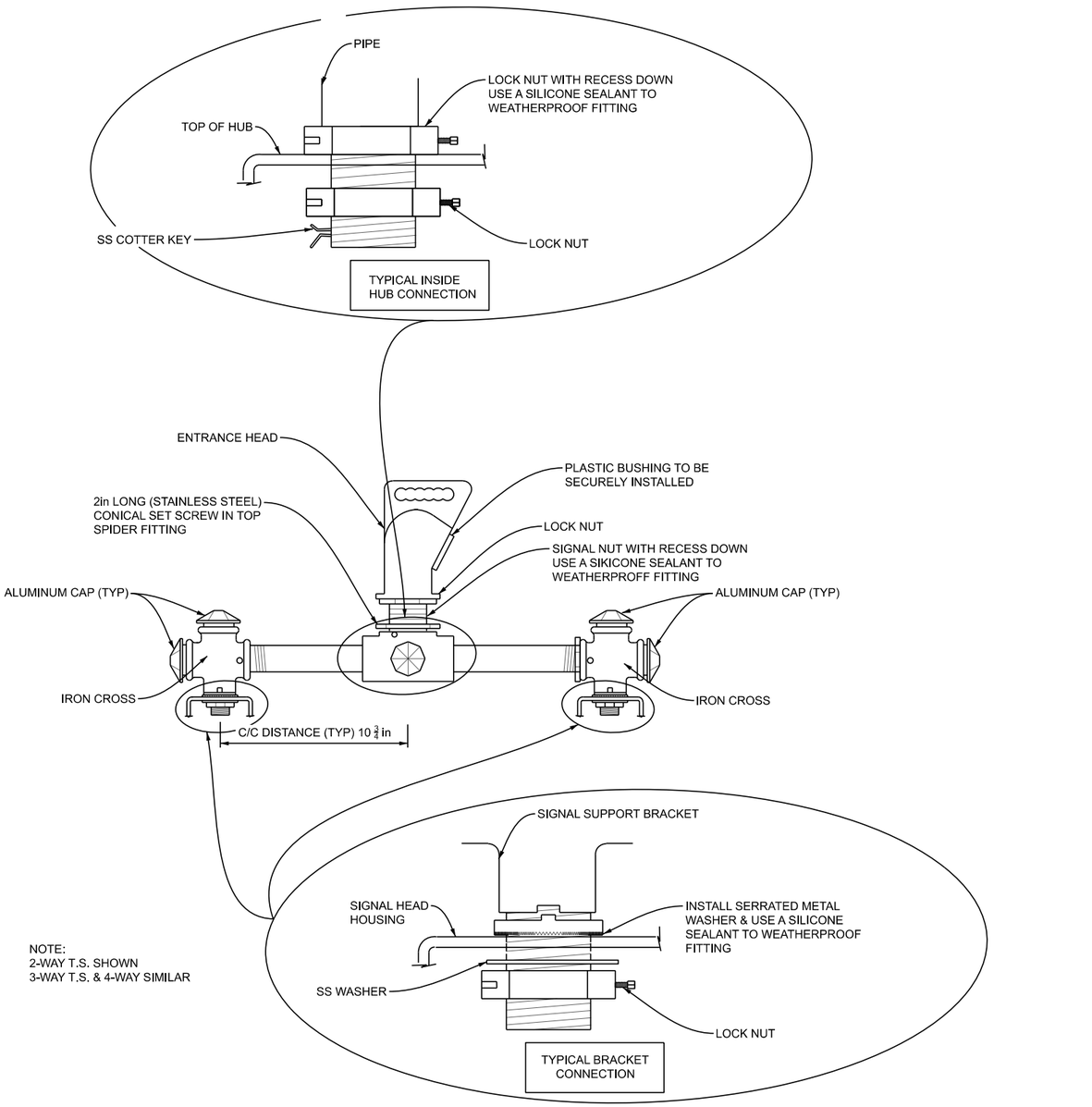
A DETAIL - OH SIGNAL LOCK NUT DETAIL
N.T.S.

B DETAIL - ONE-WAY TRAFFIC SIGNAL HEAD
N.T.S.



C DETAIL - HANGER ATTACHMENT
N.T.S.

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT	MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE MOUNTED T.S. BRACKET ASSEMBLY		
		(SPECIAL DETAIL) FHWA APPROVAL	07/24/23 PLAN DATE	SIG-300-A	SHEET 1 OF 3



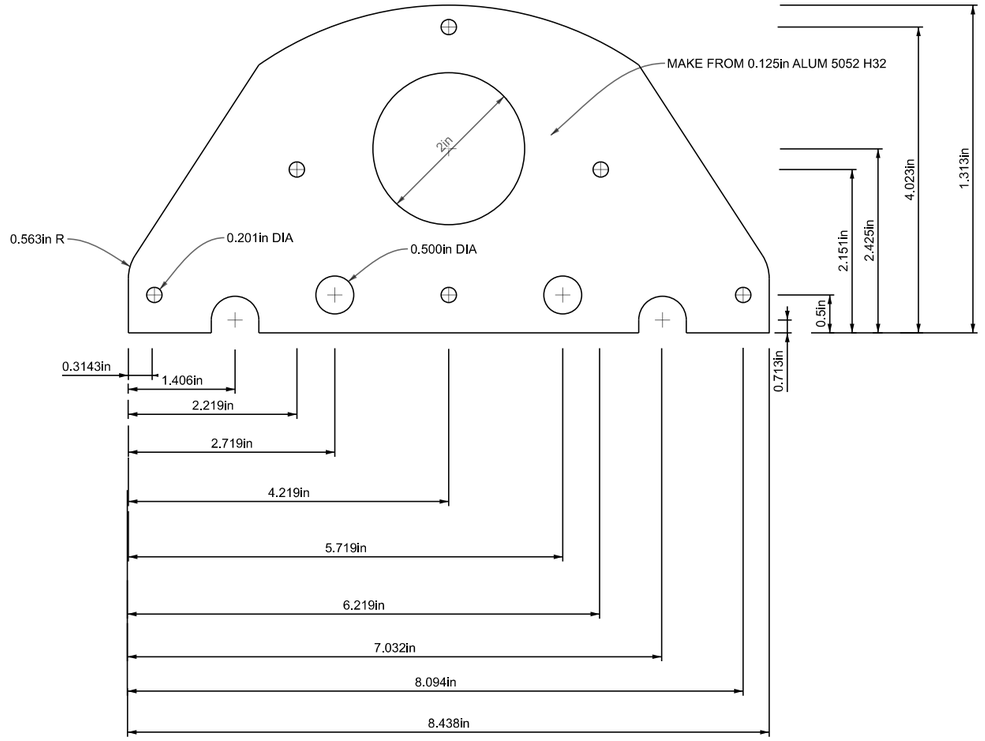
D DETAIL - MULTIPLE-WAY TRAFFIC SIGNAL HEAD(S)
N.T.S.

NOTE:
1) EXTERIOR SURFACE OF ALL MOUNTING ASSEMBLE LOCATED BELOW SPAN CLAMPS, INCLUDING STEMS, LOCK NUTS, AND RELATED HARDWARE MUST MATCH THE CURRENT FHWA HIGHWAY YELLOW COLOR TOLERANCE CHART PER THE STANDARD SPECIFICATIONS FOR CONSTRUCTION.

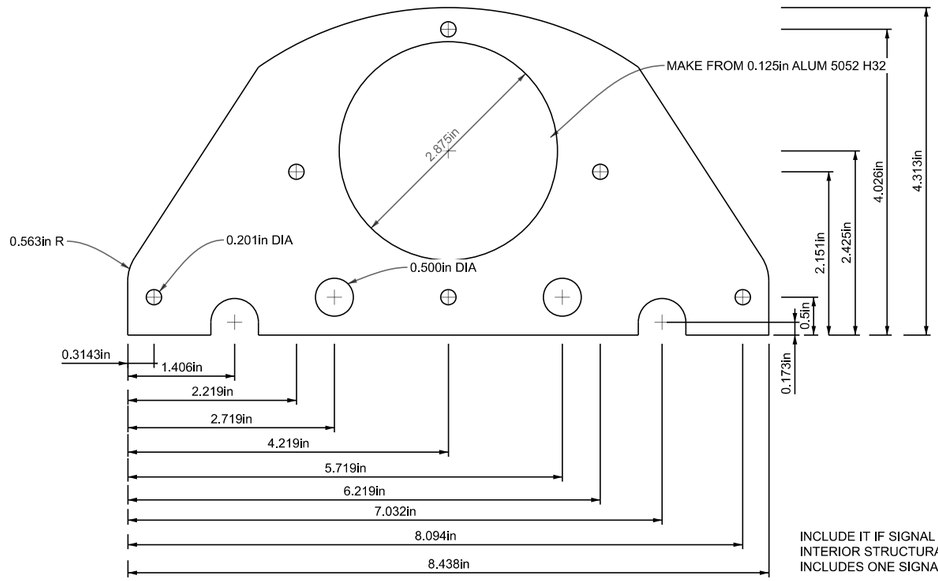
2) TOLERANCE WITHIN ± 1/16in FOR ALL BRACKETING.

MDOT Michigan Department of Transportation DEPARTMENT DIRECTOR BRADLEY C. WIEFERICH, PE	STANDARD PLAN FOR SPAN WIRE MOUNTED T.S. BRACKET ASSEMBLY			
	(SPECIAL DETAIL) FHWA APPROVAL	07/24/23 PLAN DATE	SIG-300-A	SHEET 2 OF 3

SECT



E DETAIL - INSIDE SIGNAL HOUSE
N.T.S.



F DETAIL - OUTSIDE SIGNAL HOUSE
N.T.S.

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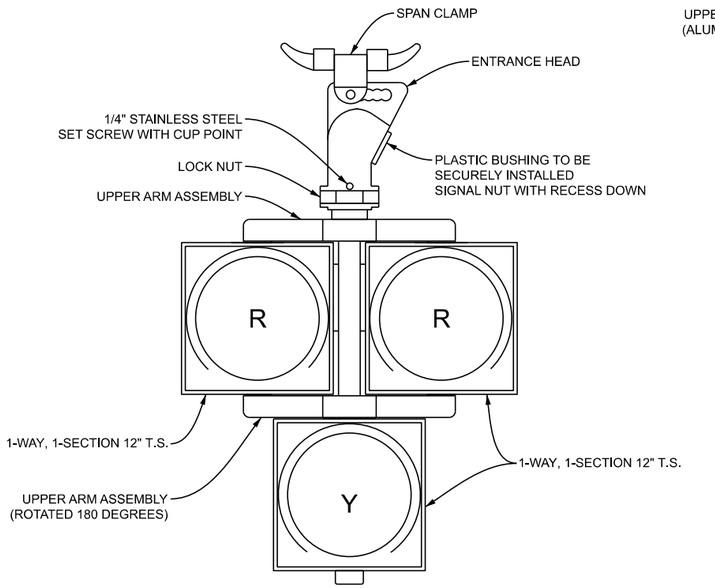
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

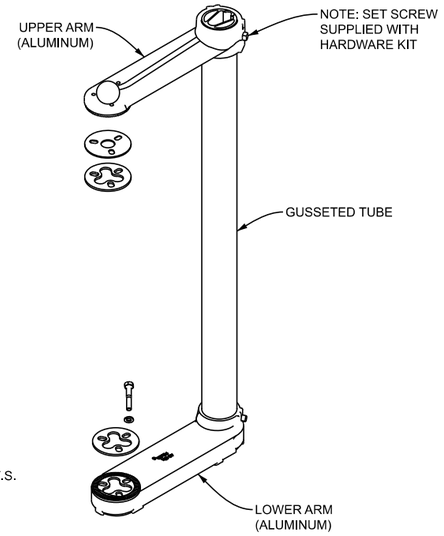
STANDARD PLAN FOR
SPAN WIRE MOUNTED
T.S. BRACKET ASSEMBLY

(SPECIAL DETAIL)	07/24/23	SIG-300-A	SHEET
FHWA APPROVAL	PLAN DATE		3 OF 3

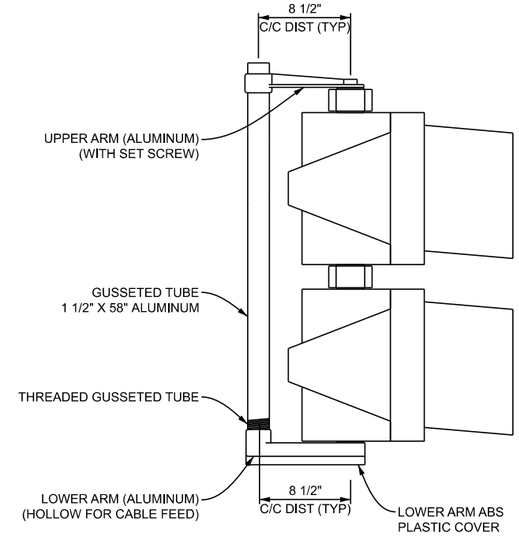
SECT



SPAN WIRE DISPLAY



ISOMETRIC VIEW

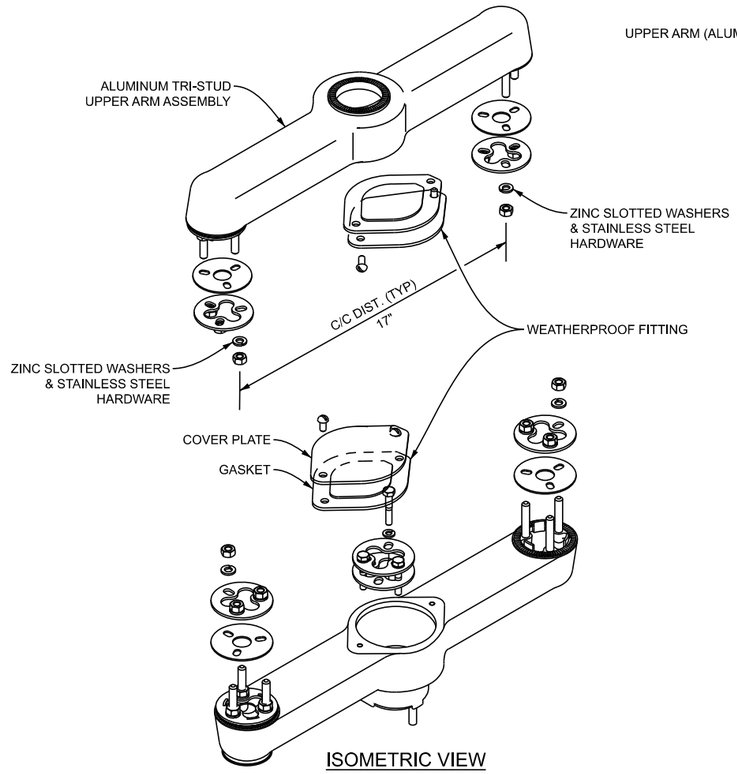


SIDE VIEW

HIGH INTENSITY ACTUATED CROSSWALK BEACON

A DETAIL - (TO STOP TRAFFIC FOR PEDESTRIAN CROSSING LOCATIONS)

N.T.S.



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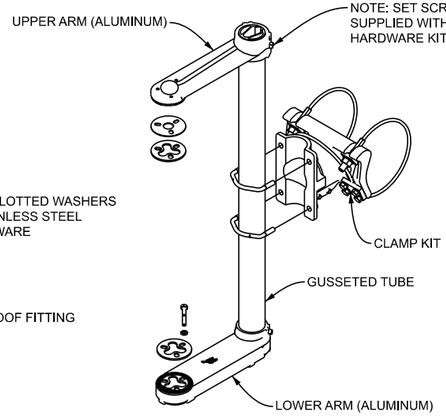

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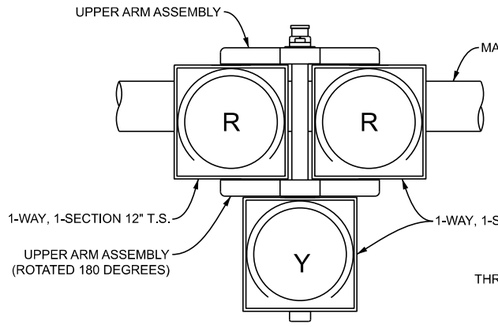
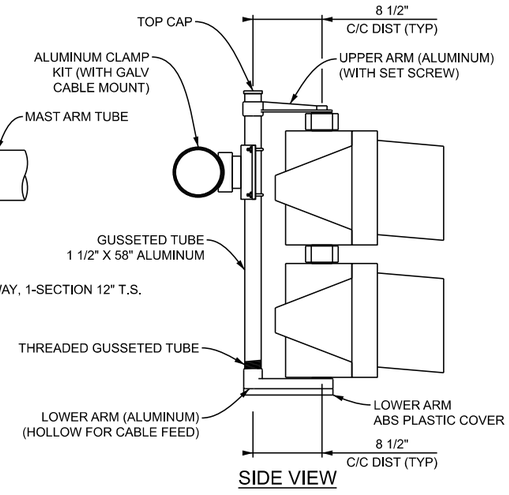


FRONT VIEW



SIDE VIEW

B DETAIL - MAST ARM DISPLAY

N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BRACKETING FOR
HAWK SIGNAL DISPLAY

(SPECIAL DETAIL)	02/21/2024	SIG-303-A	SHEET 1 OF 2
FHWA APPROVAL	PLAN DATE		

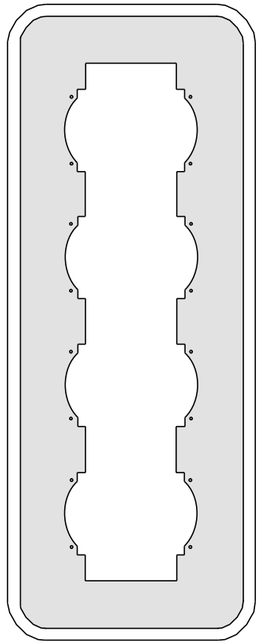
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BRACKETING FOR
HAWK SIGNAL DISPLAY

(SPECIAL DETAIL)	02/21/2024	SIG-303-A	SHEET 2 OF 2
FHWA APPROVAL	PLAN DATE		

SECT



A 12 INCH 4 SECTION
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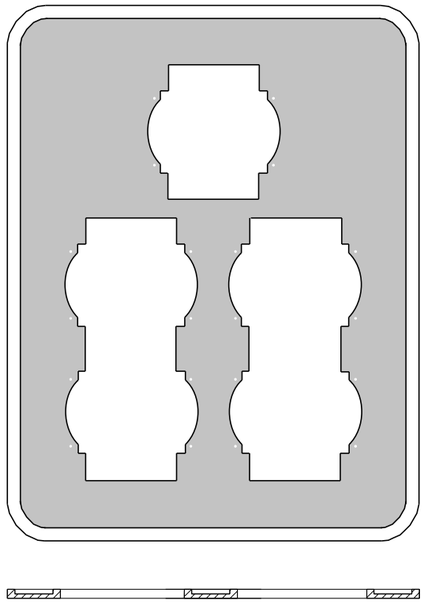
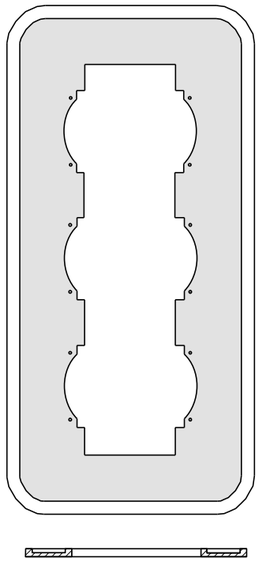


B 12 INCH 5 SECTION
N.T.S.



C 12 INCH 3 SECTION
N.T.S.

NOTES:

1) Backplates are to be used for mast arm type (fixed support) or tethered span wire type installations as indicated on the plans or as directed by the Engineer.

2) Backplates must be a one piece construction unless otherwise directed by the Engineer.

3) Do not cut the backplate for installation.

4) Use one inch border with yellow signal heads and visors.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

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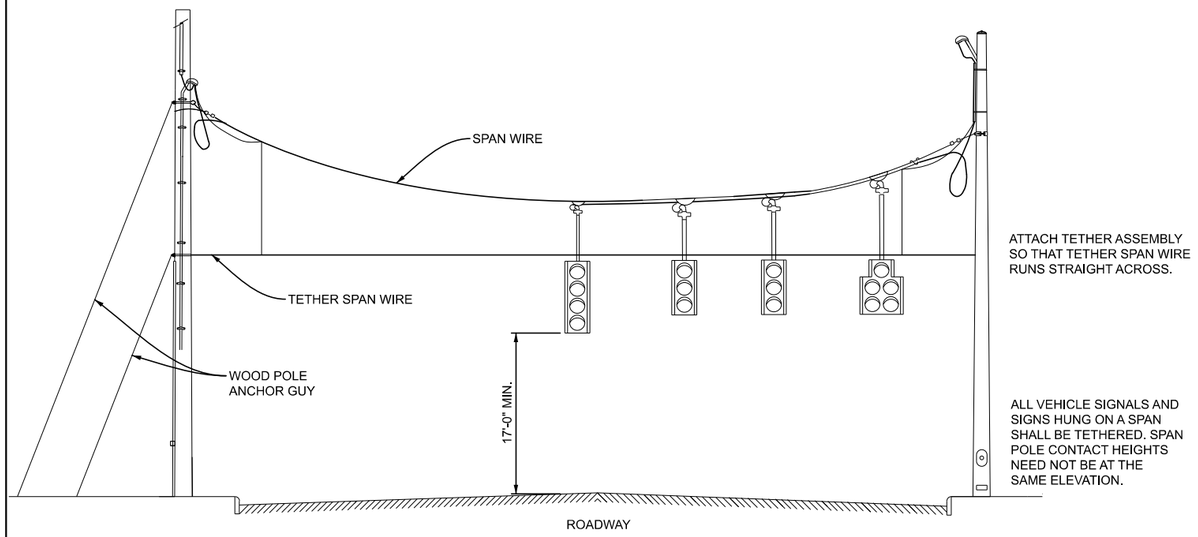
BRADLEY C. WIEFERICH, PE

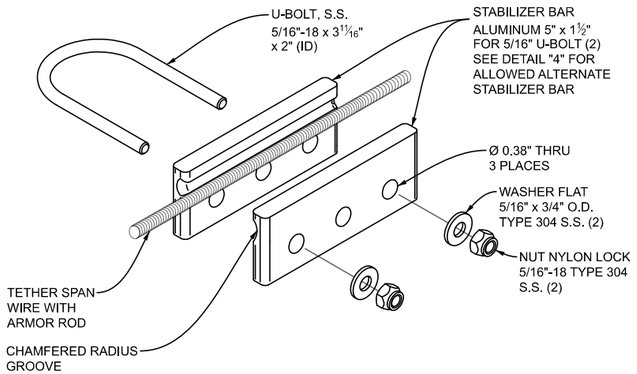
STANDARD PLAN FOR
TRAFFIC SIGNAL BACKPLATES

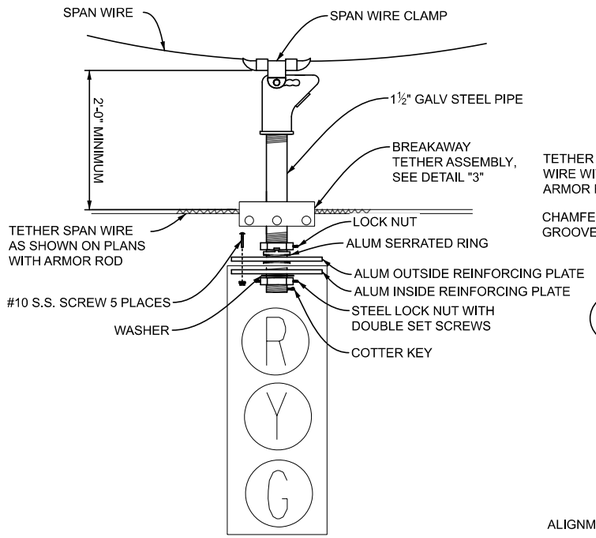
(SPECIAL DETAIL)	07/12/22	SIG-304-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 1

SECT



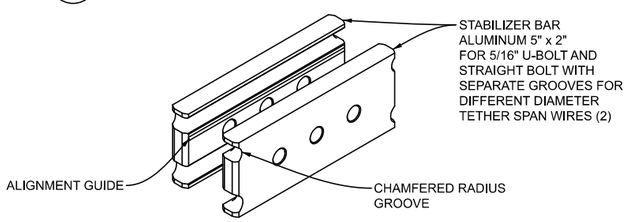
1 DETAIL - TOP TETHER



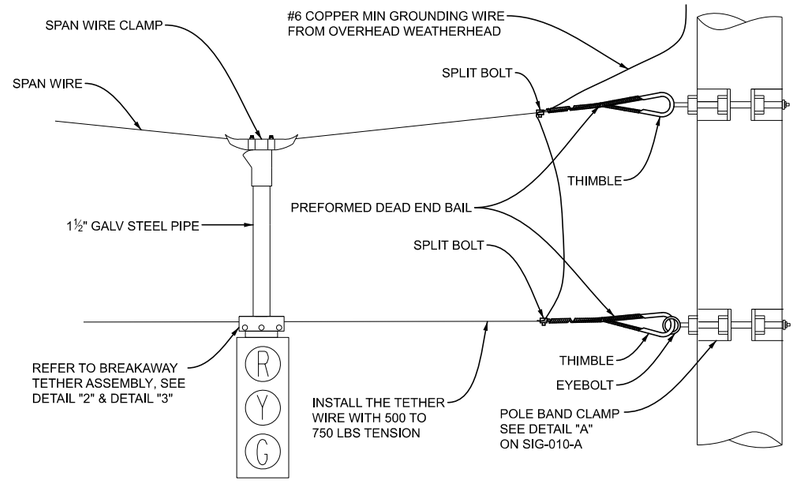


2 DETAIL - SPAN WIRE INSTALLATION

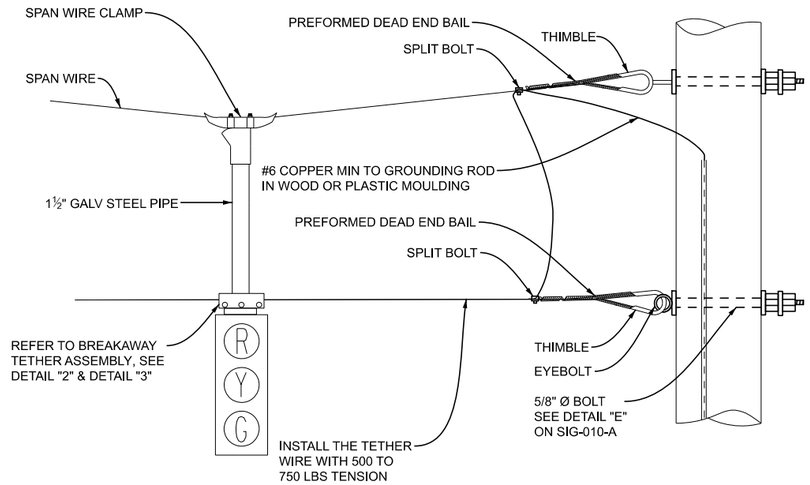
3 DETAIL - BREAKAWAY TETHER ASSEMBLY FOR TOP OF SIGNAL HEAD



4 DETAIL - ALTERNATE STABILIZER BAR



5 TOP TETHER SPAN WIRE STEEL POLE CONNECTION



6 TOP TETHER SPAN WIRE WOOD POLE CONNECTION

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
SPAN WIRE TOP TETHER DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/28/25 PLAN DATE	SIG-305-E	SHEET 1 OF 5

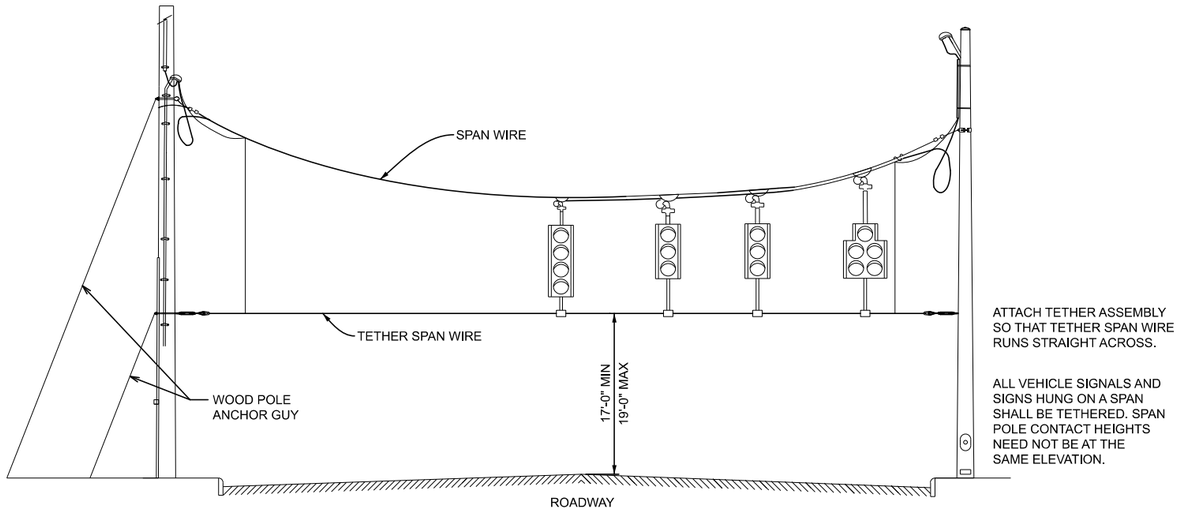
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

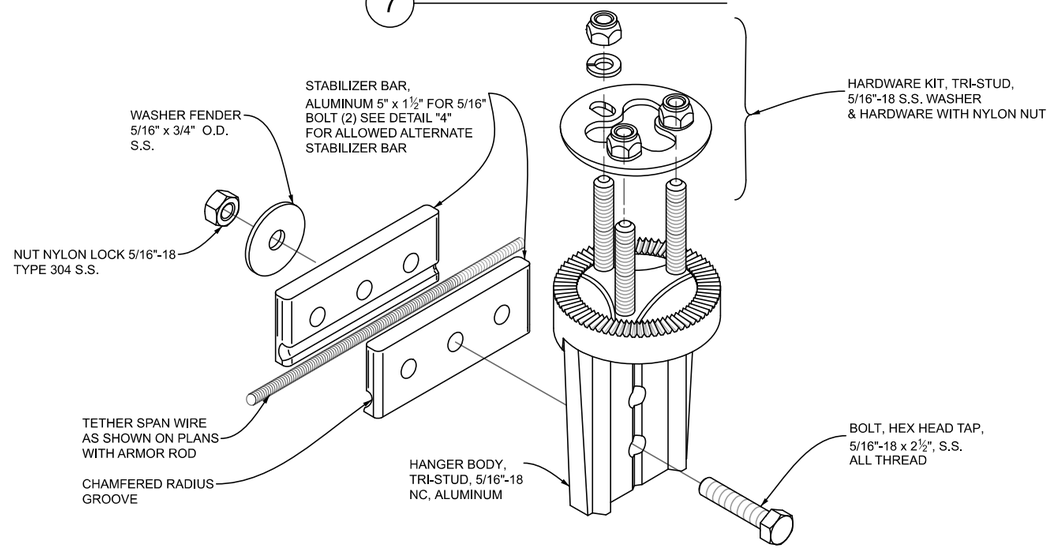
STANDARD PLAN FOR
TOP TETHER CONNECTION DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/28/25 PLAN DATE	SIG-305-E	SHEET 2 OF 5

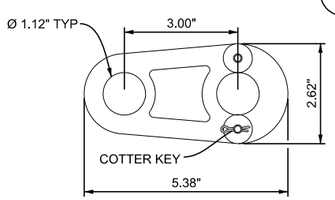
SECT



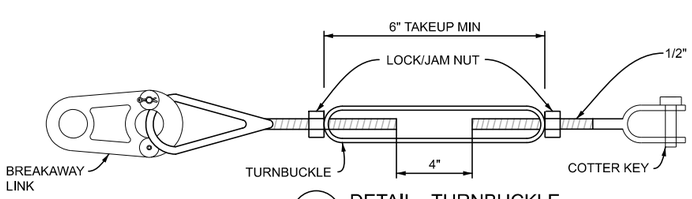
7 BOTTOM TETHER INSTALLATION



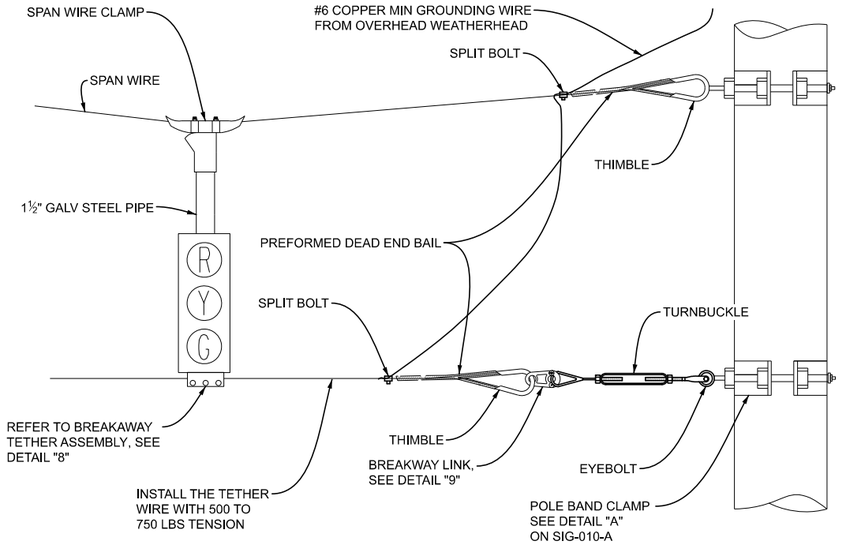
8 DETAIL - TETHER ASSEMBLY TRI-STUD BREAKAWAY



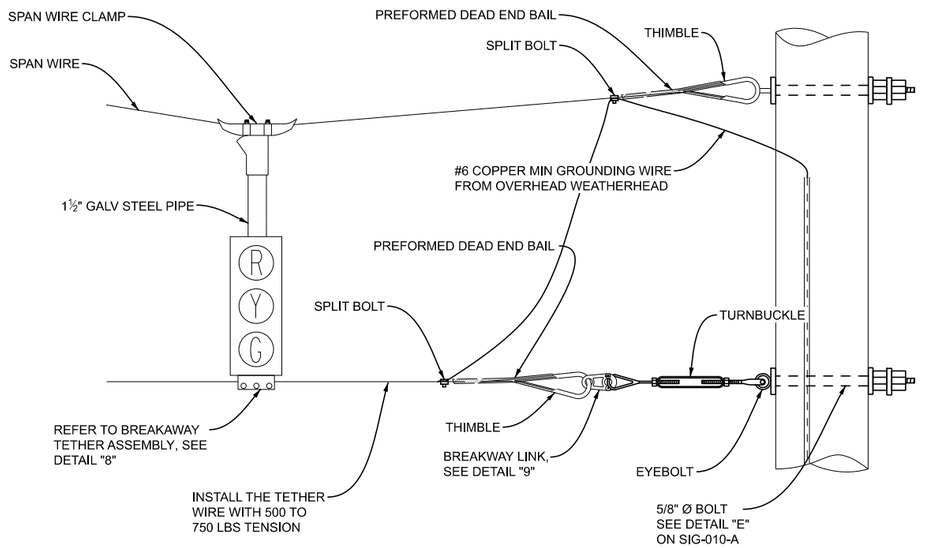
9 DETAIL - BREAKAWAY TETHER ASSEMBLY FOR BOTTOM OF SIGNAL HEAD



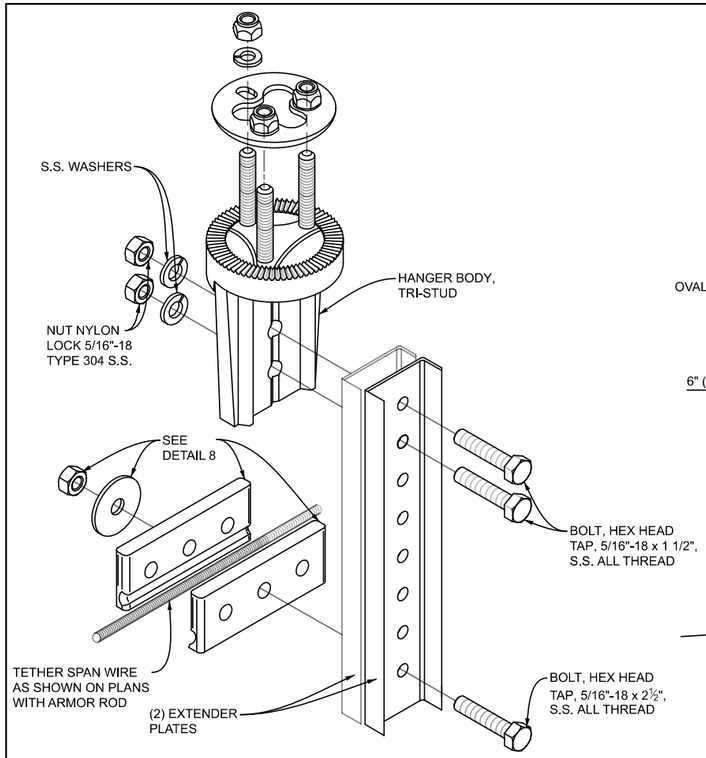
10 DETAIL - TURNBUCKLE



11 BOTTOM TETHER SPAN WIRE STEEL POLE CONNECTION



12 BOTTOM TETHER SPAN WIRE WOOD POLE CONNECTION

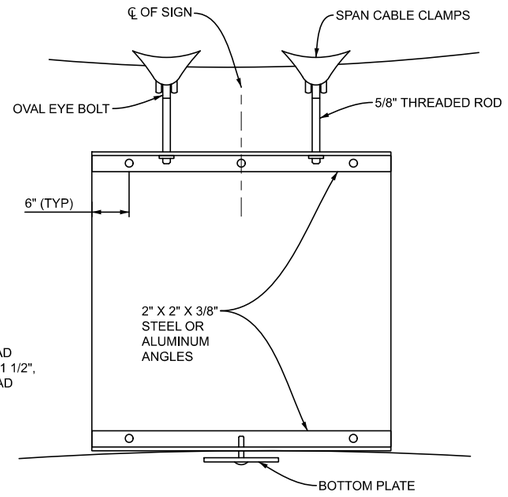


EXTENDER OPTION 22" - 72" NOMINAL LENGTH (CUT TO REQUIRED LENGTH AS NEEDED)

13

NOTES:

1. BREAKAWAY LINK AND TURNBUCKLE ARE REQUIRED AT BOTH ENDS OF ALL BOTTOM TETHER SPANS. IF BREAKAWAY LINK BEGINS TO YIELD DURING INSTALLATION, IT SHALL BE REMOVED AND REPLACED. THE WIRE TENSION SHALL BE ADJUSTED TO MINIMIZE MOVEMENT OF SIGNAL HEADS IN HIGH WINDS. TYPICAL TENSION IS 500 TO 750 LBS.
2. INSTALL GROUND WIRE AT BOTH ENDS OF TOP AND BOTTOM TETHERING.
3. IF SIGNAL ORIENTATION IS NOT PERPENDICULAR TO SPAN AND TETHER WIRE, THEN USE AN ANCHOR EXTENSION. CLAMP ASSEMBLY MUST BE ATTACHED TO THE FLAT SIDE OF THE EXTENDER BAR.
4. GROUNDING WIRE ANCHOR HEIGHT TO THE SPAN WIRE IS ADJUSTED IN THE FIELD BEFORE BREAKAWAY LINK IS INSTALLED. GROUNDING WIRE LENGTH SHALL BE ADJUSTED SO THAT THE MINIMUM VERTICAL CLEARANCE OF THE SAGGING TETHER WIRE ABOVE THE PAVEMENT WITHOUT THE BREAKAWAY LINK INSTALLED IS AT LEAST 14'. GROUNDING WIRE SHALL CONTAIN ENOUGH SLACK FOR HEAD TO SWAY IN HIGH WINDS. GROUNDING WIRE SHALL BE ATTACHED TO THE SPAN WIRE USING A TINNED COPPER SPLIT BOLT.
5. TRAFFIC SIGNAL HOUSING REINFORCEMENT PLATES ARE REQUIRED WHEN TETHERING.
   A. TOP TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP OF THE POLYCARBONATE HOUSING. (2 PLATES TOTAL)
   B. BOTTOM TETHERING REQUIRES REINFORCEMENT PLATES AT THE TOP AND BOTTOM OF POLYCARBONATE HOUSING. (4 PLATES TOTAL)
   C. BOTTOM TETHERING 5-SECTION HEADS REQUIRES REINFORCEMENT PLATES ON THE TOP AND BOTTOM OF THE POLYCARBONATE HOUSING (12 TOTAL) AND AN ALUMINUM TRI-STUD UPPER ARM ASSEMBLY IN PLACE OF THE BOTTOM BRACKET.
   D. IF POLYCARBONATE HOUSING CONNECTS TO AN ALUMINUM CASE SIGN, REINFORCEMENT PLATES MUST BE USED AT THE CONNECTION.



DETAIL - OVERHEAD LANE ASSIGNMENT SIGN CONNECTION

14

NOTES:

1. ALUMINUM ANGLES SHALL BE USED FOR ALUMINUM SIGNS (TYPE III).
2. STEEL OR ALUMINUM ANGLES MAY BE USED ON PLYWOOD SIGNS (TYPE II).

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
EXTENDER OPTION AND OVERHEAD LANE ASSIGNMENT SIGN CONNECTION DETAILS

(SPECIAL DETAIL) FHWA APPROVAL	07/28/25 PLAN DATE	SIG-305-E	SHEET 5 OF 5

MDOT Michigan Department of Transportation

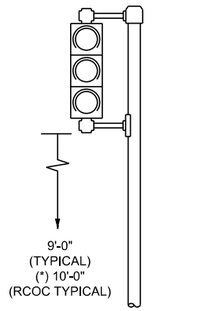
DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR

(SPECIAL DETAIL) FHWA APPROVAL	PLAN DATE		SHEET OF

SECT

(*) REFER TO NOTE 4 ON SHEET 2 OF 2



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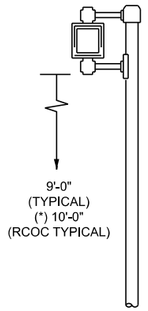

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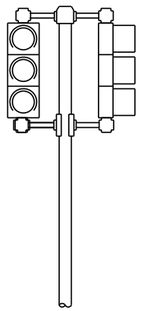

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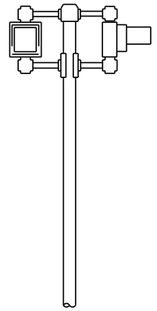

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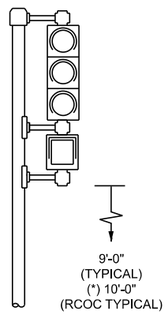

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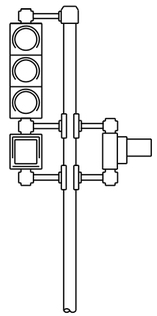

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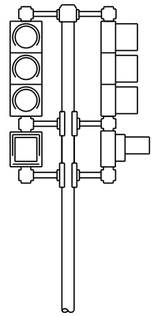

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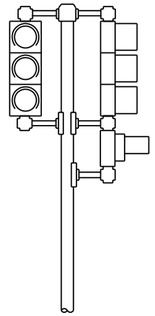

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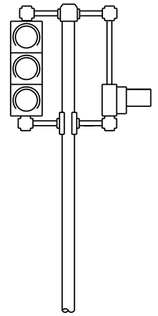

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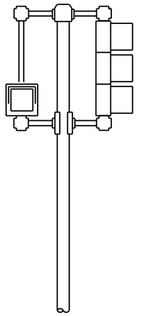

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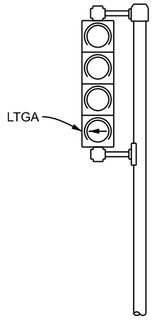

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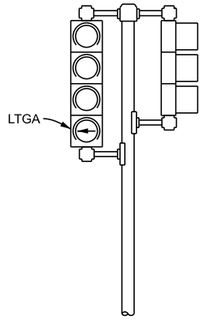

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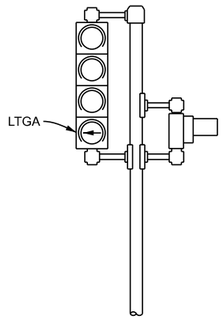

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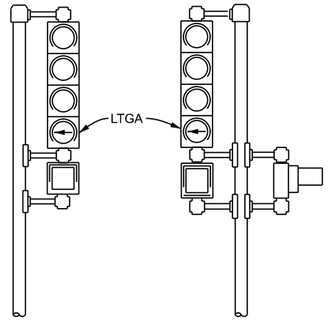
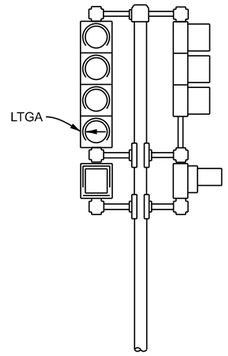


N-2 N.T.S.

O-2 N.T.S.

LEFT TURN GREEN ARROW (LTGA)



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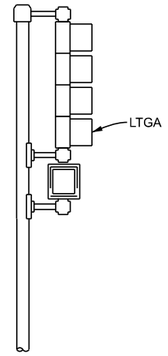
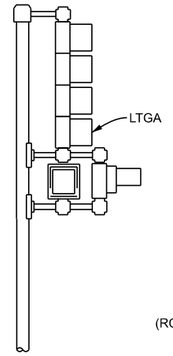
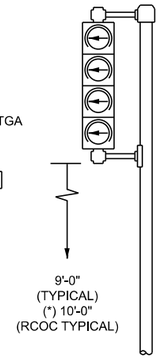


Q-2 N.T.S.

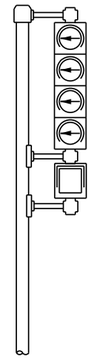


R-2 N.T.S.

LEFT TURN GREEN ARROW (LTGA)

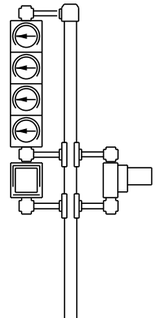


S-2 N.T.S. (FYA)

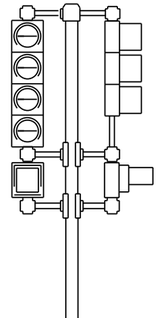


T-2 N.T.S. (FYA)

FLASHING YELLOW ARROW (FYA)

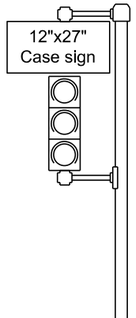


U-2 N.T.S. (FYA)

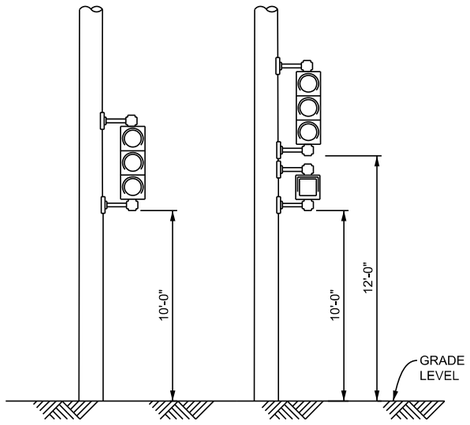


V-2 N.T.S. (FYA)

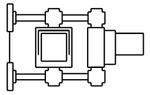
FLASHING YELLOW ARROW (FYA)



W-2 N.T.S. WITH CASE SIGN



X DETAIL - RCOC MOUNTING DETAIL
N.T.S. (*) SEE NOTE



LED PED

NOTE:
WALKING PERSON AND
HAND SYMBOL ARE FILLED.

LED PED
(FILLED)

COUNTDOWN
LED PED
(FILLED SYMBOLS)

NOTE:
1) PIPE ASSEMBLY SHALL BE SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE TRAFFIC SIGNALS AND PEDESTRIAN SIGNALS FOR PROPER MAINTENANCE AND CLEAR VEHICULAR AND PEDESTRIAN VIEWING.

2) PIPE ASSEMBLY SHALL BE OF SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE AN ILLUMINATED (12"X27") CASE SIGN FOR PROPER MAINTENANCE AND CLEAR VEHICULAR VIEWING.

3) BRACKET LENGTHS ARE 16 INCHES FOR LED PEDESTRIAN SIGNALS AND FOR LED PEDESTRIAN COUNTDOWN SIGNALS.

4) TOLERANCE WITHIN +/- ⅛" FOR BRACKETING.

(*) FOR PROJECTS MAINTAINED BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), USE THE BOTTOM HEIGHTS AND BRACKET ASSEMBLIES AS SHOWN FOR THE RCOC MOUNTING DETAIL.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
PEDESTAL MOUNTED
SIGNAL DISPLAYS

(SPECIAL DETAIL)	02/02/2024	SIG-330-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 2

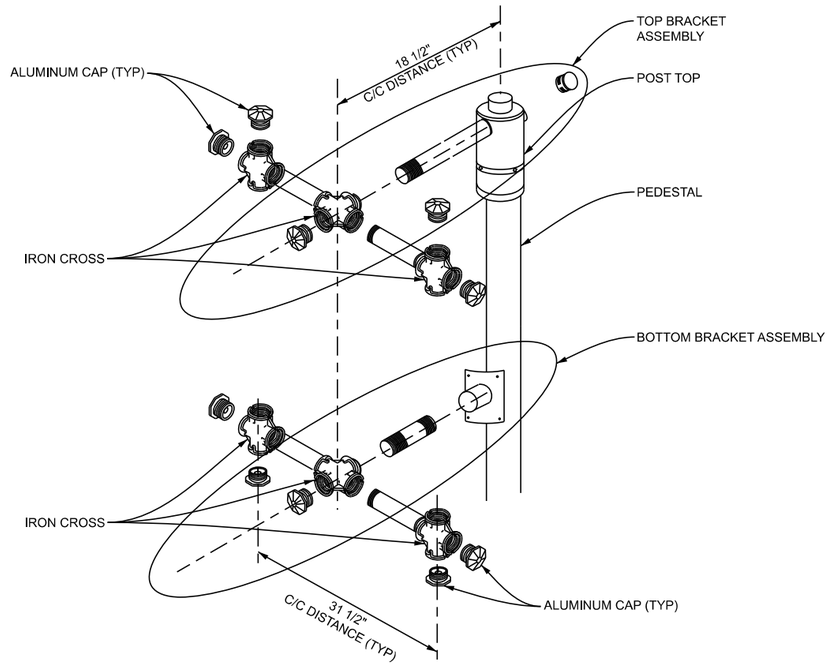
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

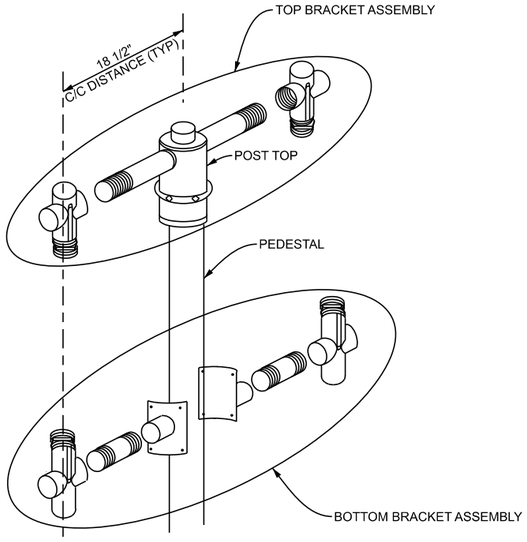
STANDARD PLAN FOR
PEDESTAL MOUNTED
SIGNAL DISPLAYS

(SPECIAL DETAIL)	02/02/2024	SIG-330-A	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 2

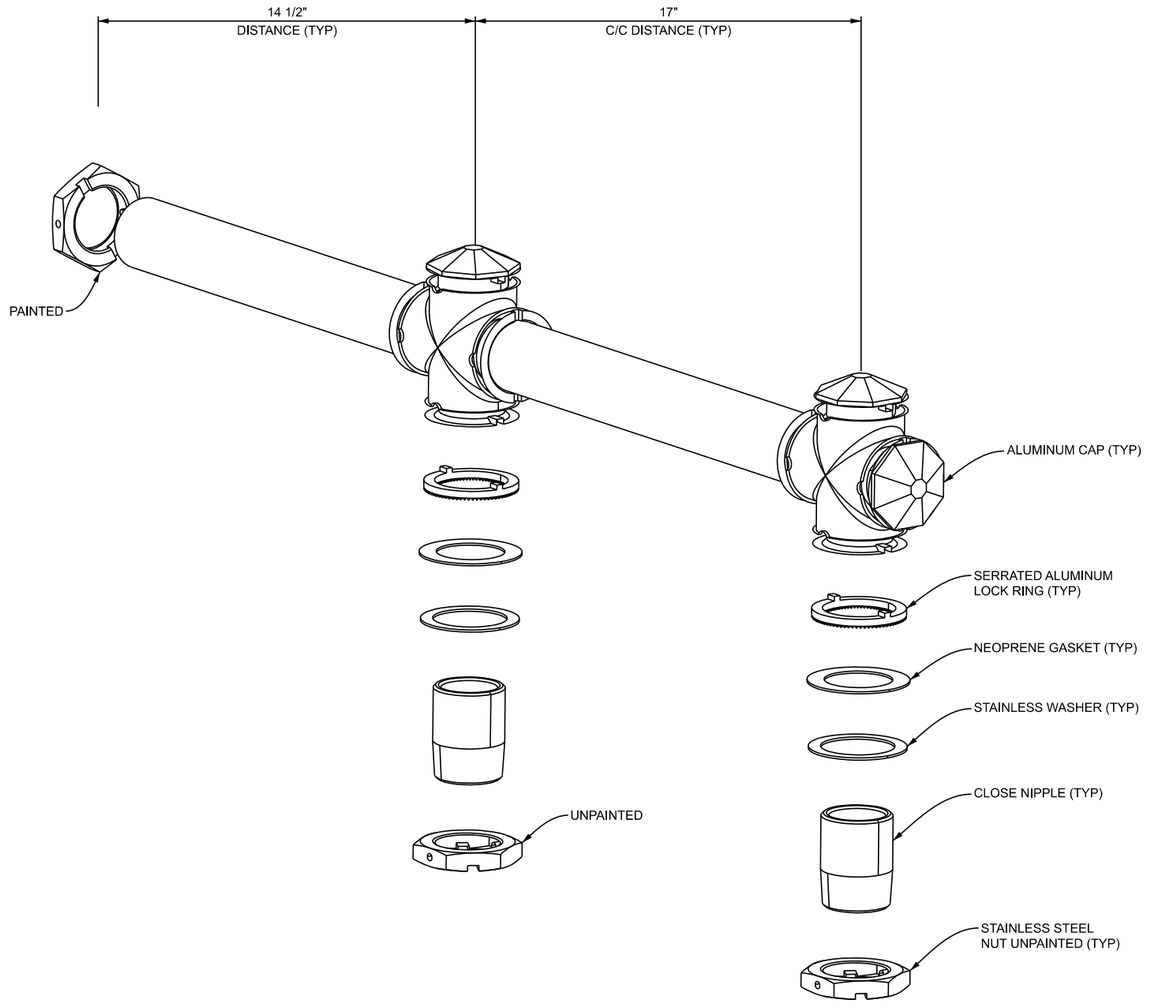
SECT



A DETAIL - SIGNAL MOUNTING HARDWARE FOR BACKSIDE BRACKET
N.T.S.



B DETAIL - SIGNAL MOUNTING HARDWARE - STANDARD BRACKET
N.T.S.



C DETAIL - SIGNAL MOUNTING HARDWARE - 2 WAY BRACKET
N.T.S.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
PEDESTAL MOUNTING
FOR SIGNALS

(SPECIAL DETAIL)	02/08/2024	SIG-331-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 2

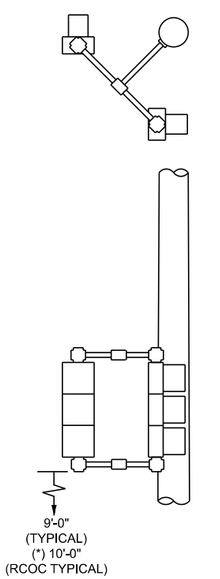
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

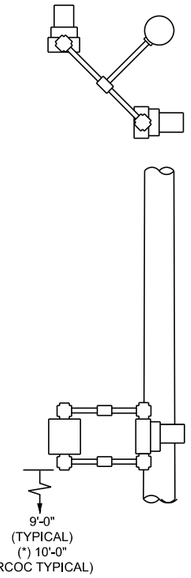
STANDARD PLAN FOR
PEDESTAL MOUNTING
FOR SIGNALS

(SPECIAL DETAIL)	02/08/2024	SIG-331-A	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 2

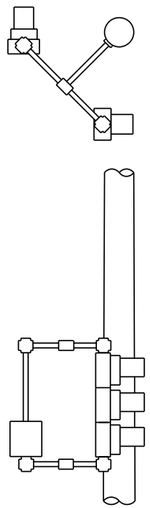
SECT



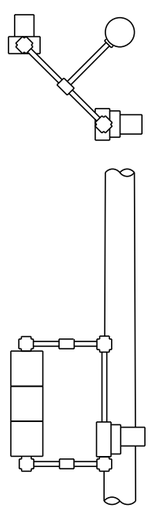
A-3 N.T.S.



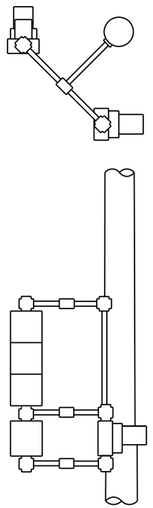
B-3 N.T.S.



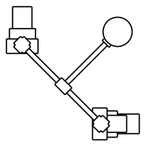
C-3 N.T.S.

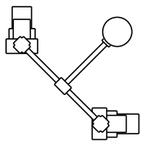


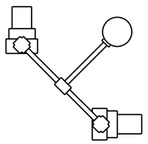
D-3 N.T.S.

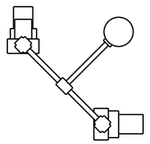


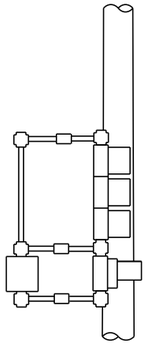
E-3 N.T.S.

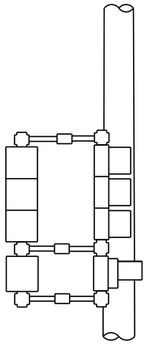


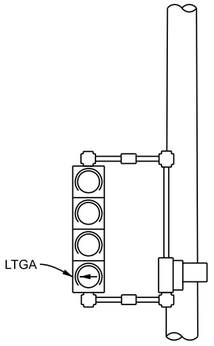


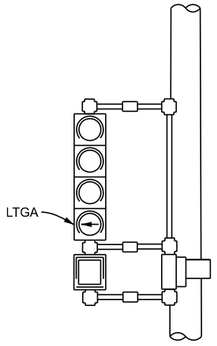












F-3 N.T.S.

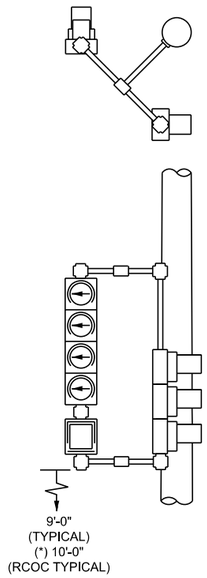
G-3 N.T.S.

H-3 N.T.S.

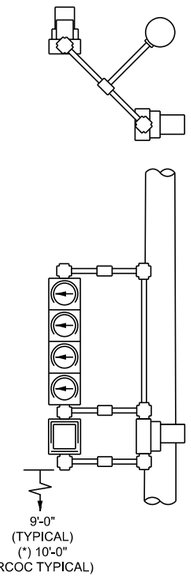
I-3 N.T.S.

LEFT TURN GREEN ARROW (LTGA)

(*) REFER TO NOTE 5 ON SHEET 2 OF 2

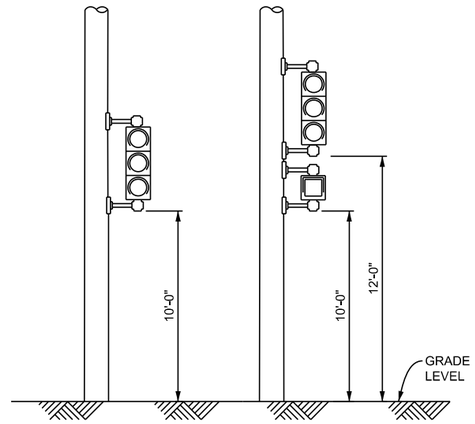


J-3 N.T.S. (FYA)



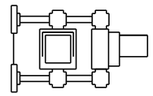
K-3 N.T.S. (FYA)

FLASHING YELLOW ARROW (FYA)



X DETAIL - RCOC MOUNTING DETAIL

N.T.S. (*) SEE NOTE (*) SEE NOTE



LED PED

NOTE:
WALKING PERSON AND
HAND SYMBOL ARE FILLED.

LED PED
(FILLED)

COUNTDOWN
LED PED
(FILLED SYMBOLS)

NOTES:

1) THE RELATIVE POSITION OF 2-WAY T.S. & PEDESTRIAN BRACKET ARM SIGNALS WITHIN THE BRACKET ASSEMBLY SHALL BE REVERSED (I.E. THE SIGNAL NEAREST THE POLE GOES TO THE OUTSIDE OF THE BRACKET ASSEMBLY & THE OUTSIDE SIGNAL GOES INBOARD OR NEAREST TO POLE) ACCORDING TO THE PLAN VIEW TO PROVIDE CLEAR VEHICULAR AND PEDESTRIAN VIEWING.

2) PIPE ASSEMBLY SHALL BE OF SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE TRAFFIC SIGNALS AND PEDESTRIAN SIGNALS FOR PROPER MAINTENANCE AND CLEAR VEHICULAR AND PEDESTRIAN VIEWING.

3) PIPE ASSEMBLY SHALL BE OF SUCH LENGTH AND HEIGHT AS TO ACCOMMODATE AN ILLUMINATED (12"X27") CASE SIGN FOR PROPER MAINTENANCE AND CLEAR VEHICULAR VIEWING.

4) BRACKET LENGTHS ARE 16 INCHES FOR LED PEDESTRIAN SIGNALS AND LED PEDESTRIAN COUNTDOWN SIGNALS.

6) TOLERANCE WITHIN +/- ⅛" FOR BRACKETING.

(*) FOR PROJECTS MAINTAINED BY THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC), USE THE BOTTOM HEIGHTS AND BRACKET ASSEMBLIES AS SHOWN FOR THE RCOC MOUNTING DETAIL.

APPROVED BY: _____
DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____
DIRECTOR, BUREAU OF DEVELOPMENT

MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BACK BRACKET
SIGNAL DISPLAYS

(SPECIAL DETAIL)	02/16/17	SIG-342-A	SHEET
FHWA APPROVAL	PLAN DATE		1 OF 2

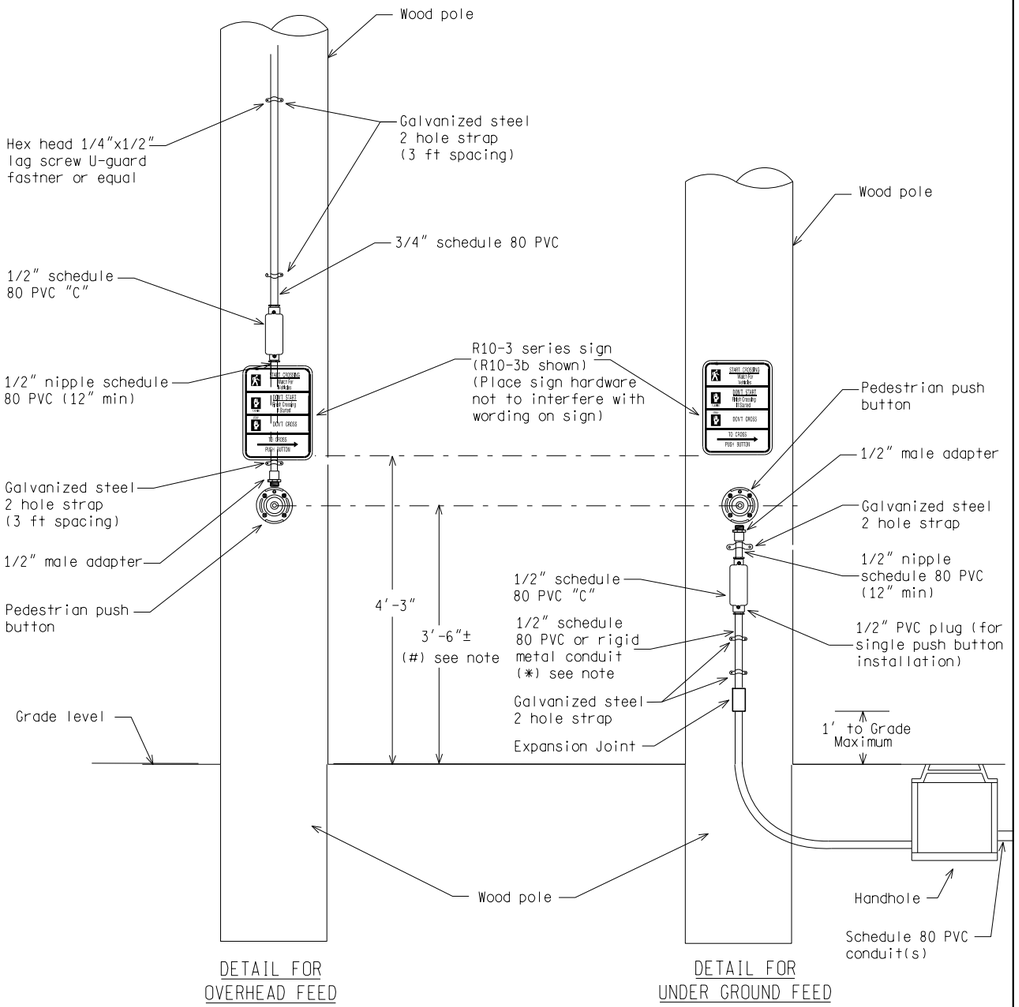
MDOT Michigan Department of Transportation

DEPARTMENT DIRECTOR
BRADLEY C. WIEFERICH, PE

STANDARD PLAN FOR
BACK BRACKET
SIGNAL DISPLAYS

(SPECIAL DETAIL)	02/16/17	SIG-342-A	SHEET
FHWA APPROVAL	PLAN DATE		2 OF 2

SECT



DETAIL FOR OVERHEAD FEED

DETAIL FOR UNDER GROUND FEED

Note: (*) For projects maintained by the Wayne Co. Department of Public Services (WCDPS), use rigid metal for conduit(s) from grade level to 10' (min.) above grade or as directed by the Engineer.

(#) If pushbutton is from 10" to 24" from edge of sidewalk an acceptable range is 38" to 46"

PEDESTRIAN PUSH BUTTON DETAILS ON WOOD POLE

NOT TO SCALE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG400A.dgn Rev. 02/16/17

MDOT Michigan Department of Transportation

PREPARED BY TRAFFIC AND SAFETY

DRAWN BY:

CHECKED BY:

ENGINEER OF DELIVERY

ENGINEER OF DEVELOPMENT

(SPECIAL DETAIL) FHWA APPROVAL DATE

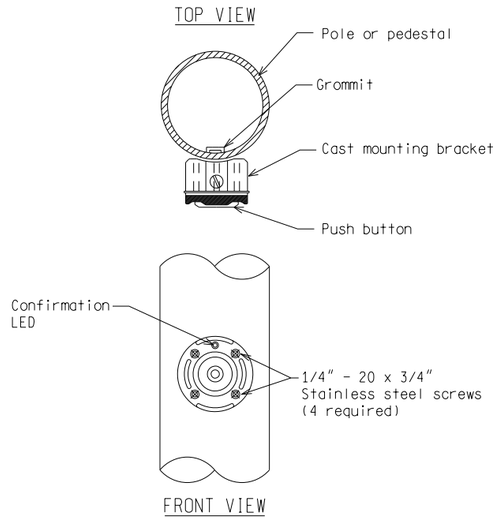
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR

PEDESTRIAN PUSH BUTTON DETAILS

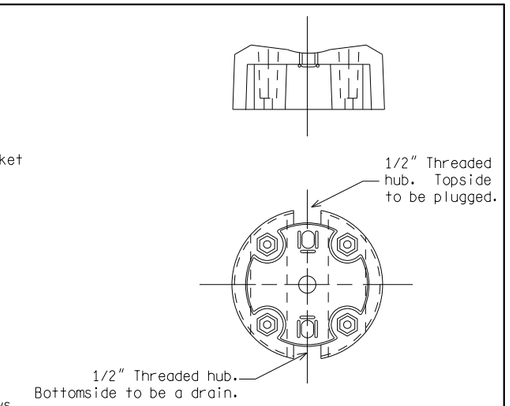
PLAN DATE

SIG-400-A

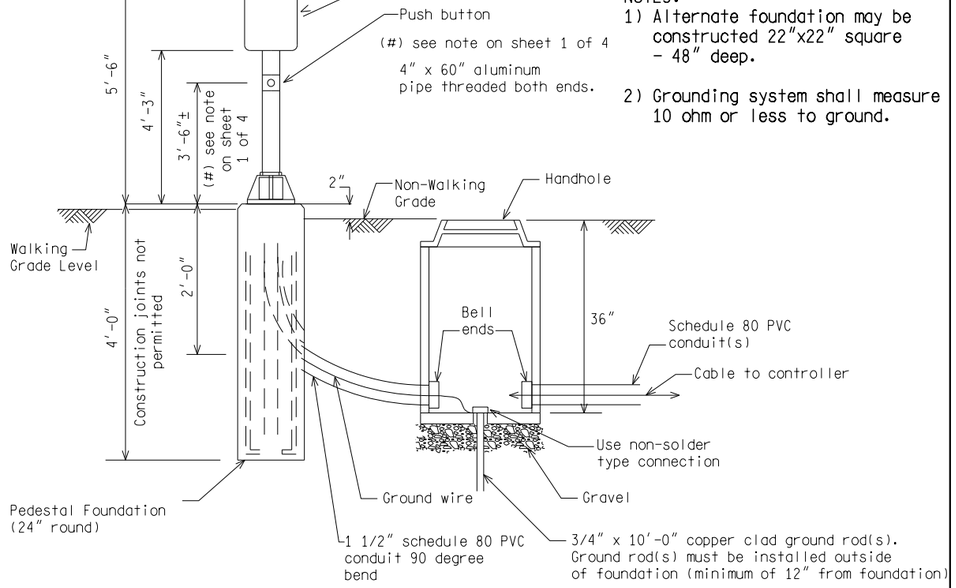
SHEET 1 of4



PEDESTRIAN PUSHBUTTON INSTALLATION ON STEEL POLE OR PEDESTAL



CAST MOUNTING BRACKET FOR PEDESTRIAN PUSHBUTTON



NOTES:
1) Alternate foundation may be constructed 22"x22" square - 48" deep.
2) Grounding system shall measure 10 ohm or less to ground.

PUSH BUTTON PEDESTAL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN

(SPECIAL DETAIL) FHWA APPROVAL DATE

File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG400A.dgn Rev. 02/16/17

PLAN DATE

SIG-400-A

SHEET 2 of4

AS-LET PLAN REVISIONS

NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION

MDOT Michigan Department of Transportation

FILE:

DATE:

DESIGN UNIT:

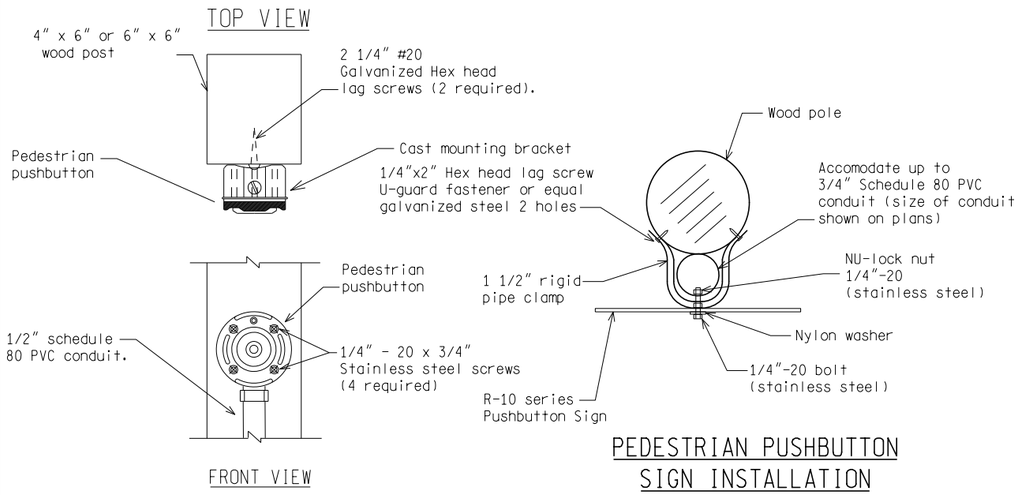
TSC:

CS:

JN:

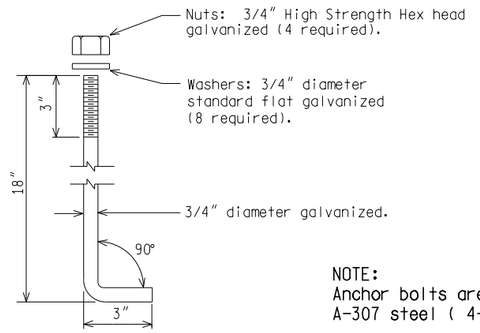
DRAWING

SHEET



PEDESTRIAN PUSHBUTTON INSTALLATION ON WOOD POST

PEDESTRIAN PUSHBUTTON SIGN INSTALLATION ON WOOD POLE

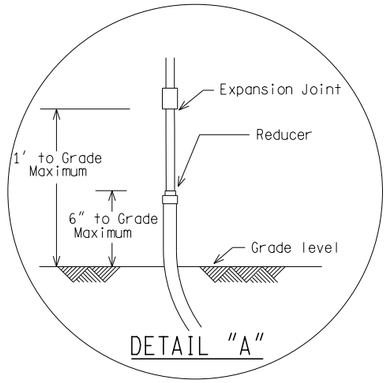


NOTE:
Anchor bolts are to be ASTM A-307 steel (4-required)

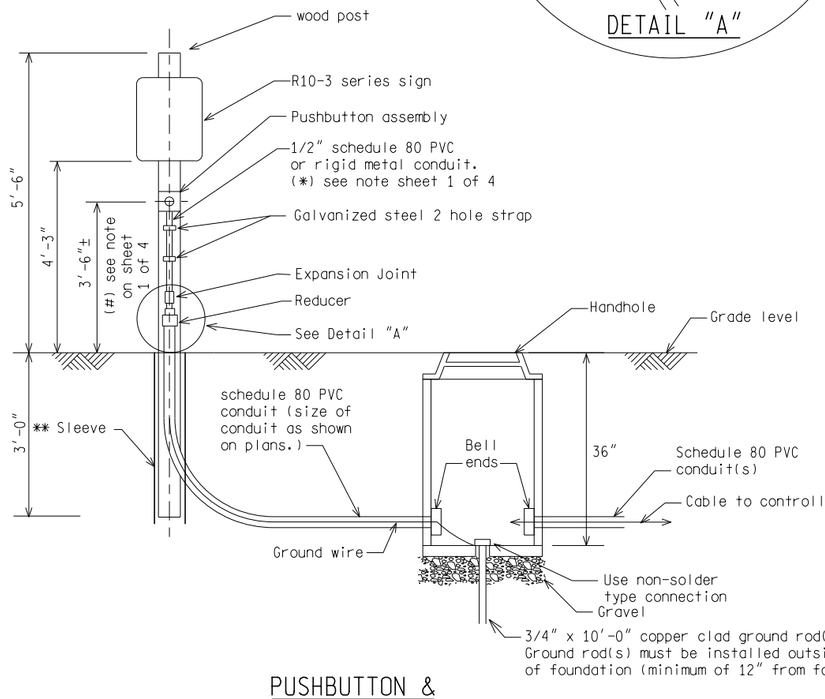
ANCHOR BOLT DETAIL

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-400-A	SHEET 3 of4
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG400A.dgn Rev. 02/16/17		PLAN DATE		



DETAIL "A"



PUSHBUTTON & WOOD POST

** Refer to Standard Plan for Wood Posts

NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN	(SPECIAL DETAIL) FHWA APPROVAL DATE		SIG-400-A	SHEET 4 of4
File: RefDoc/TR/Signals/Web/Sp Det/Fin/SIG400A.dgn Rev. 02/16/17		PLAN DATE		

AS-LET PLAN REVISIONS											
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION	MDOT Michigan Department of Transportation			
								FILE:	DATE: DESIGN UNIT: TSC:	CS: JN:	DRAWING SHEET