iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

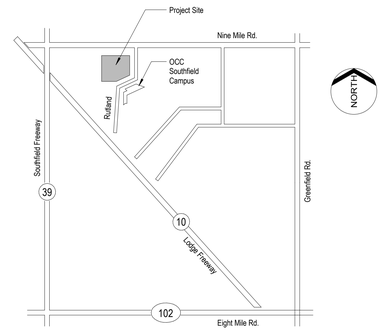
Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

List of Drawings

Code Information

Building:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, Incorporating the 2015 Edition of the International Building Code as referenced by the 2015 Michigan Rehabilitation Code for Existing Buildings
Barrier Free:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, Incorporating the 2015 Edition of the International Building Code
Energy:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Part 10a - Michigan Energy Code for Buildings and Structures, Not Including Residential Buildings, Incorporating the 2013 Edition of the ANSI/ASHRAE/IESNA Standard 90.1
Structural:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, Incorporating the 2015 Edition of the International Building Code
Mechanical:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Mechanical Division, 2021 Michigan Mechanical Code, Incorporating the 2021 Edition of the International Mechanical Code
Plumbing:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Plumbing Division, 2021 Michigan Plumbing Code, Incorporating the 2021 Edition of the International Plumbing Code
Fire Protection:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, 2015 Michigan Building Code, Incorporating the 2013 Edition of NFPA 13 - Installation of Sprinkler Systems
Electrical:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Electrical Division, 2017 Michigan Electrical Code, Incorporating the 2017 Edition of the National Electrical Code
Fire Alarm:	Michigan Department of Licensing and Regulatory Affairs, Bureau of Construction Codes, Electrical Division, Incorporating the 2013 Edition of NFPA 72 - National Fire Alarm and Signaling Code



Site Map

Registration Seal

STATE OF MICHIGAN
BRANDON SUNDBERG
ARCHITECT
No. 1301053791
LICENSED ARCHITECT

Signature
Date

STATE OF MICHIGAN
JOSEPH L SCHWERTZ
License No. 6201054064
REGISTERED PROFESSIONAL ENGINEER

Signature
Date

STATE OF MICHIGAN
MICHAEL C NOWICKI
ENGINEER
No. 37761
REGISTERED PROFESSIONAL ENGINEER

Signature
Date

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

iDS Project Number
24140-1000
OCC Project Number
SF25-003

Oakland Community College

Southfield Campus

22322 Rutland Dr, Southfield, MI 48075

Driving Pad & Maintenance Garage

Site Cover Sheet

SITE & LANDSCAPING PLANS
Bids 04-03-2025

PARCEL DESCRIPTION

PARCELS: 24-36-126-007; 24-36-126-006; 24-36-105-010; 24-36-105-009
SITE ADDRESS: 17117 WEST 9 MILE ROAD, SOUTHFIELD, MI 48075
MAIN CAMPUS ADDRESS: 22322 RUTLAND DRIVE, SOUTHFIELD, MI 48075

"I HEREBY CERTIFY THAT I HAVE READ THE TOWNSHIP'S LAND DEVELOPMENT ORDINANCE (AND ITS RELATED ENGINEERING AND CONSTRUCTION STANDARDS), AND I HAVE PREPARED THESE PLANS IN CONFORMITY WITH THE REQUIREMENTS OF SAID ORDINANCE.

JULI SALA, P.E., LEED AP BD+C
MICHIGAN REGISTRATION #62010-62165

LOCATION MAP
NOT TO SCALE

INDEX TO SHEETS

DESIGN AND CONSTRUCTION STANDARDS

THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE PERFORMED IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION AND THE STANDARD DETAIL SHEETS ATTACHED TO THIS PLAN SET UNLESS MODIFIED BY A SPECIAL PROVISION OR NOTES ELSEWHERE ON THE PLANS. SHOULD A CONFLICT ARISE BETWEEN THE AFOREMENTIONED STANDARDS, THE MUNICIPAL STANDARD DETAIL SHEETS ATTACHED TO THIS PLAN SET SHALL TAKE PRECEDENT.

WATER MAIN PERMIT No. W-________

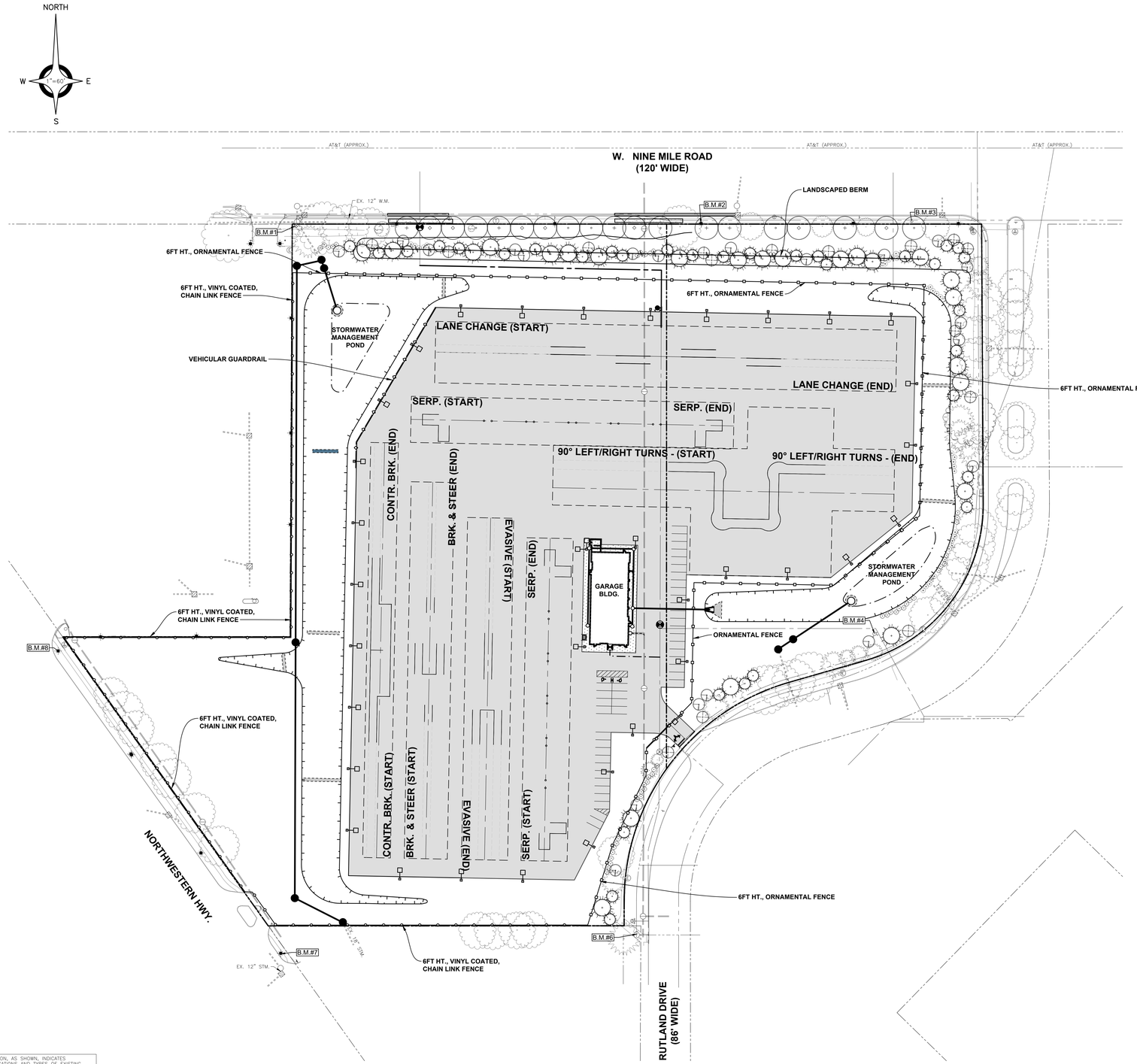
ITEM	SIZE	LENGTH	LOCATION
WATER MAIN	12"	388 FT	RE-ROUTE OF WATER MAIN
HYDRANT & LEADS	6"	5 FT	REPLACE EXISTING HYDRANT WITH NEW AT REVISED LOCATION
DOMESTIC LEAD	$2\frac{1}{2}$"	81 FT	NEW $2\frac{1}{2}$" TYPE "K" COPPER SERVICE LEAD
MISCELLANEOUS	12 "	2 EA	LINE STOPS

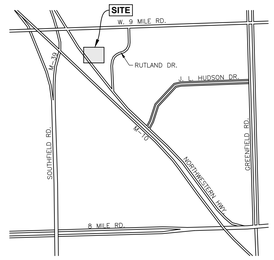
ANDERSON, ECKSTEIN AND WESTRICK, INC.

CIVIL ENGINEERS, LAND SURVEYORS, ARCHITECTS
SHELBY TOWNSHIP, MICHIGAN

C0.00

0369-0088 O.C.C. SOUTHFIELD CAMPUS - DRIVING PAD AND MAINTENANCE GARAGE





LOCATION MAP
NOT TO SCALE

PARKING SUMMARY

TOTAL PROPOSED PARKING	43
A.D.A. SPACES PROVIDED	01

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK W / CURB FACED WALK
- CONC. CURB & GUTTER
- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SERVICE LEAD
- PROPOSED WATER SERVICE LEAD
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE IN BOX (SERVICE LINE SHUTOFF)

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

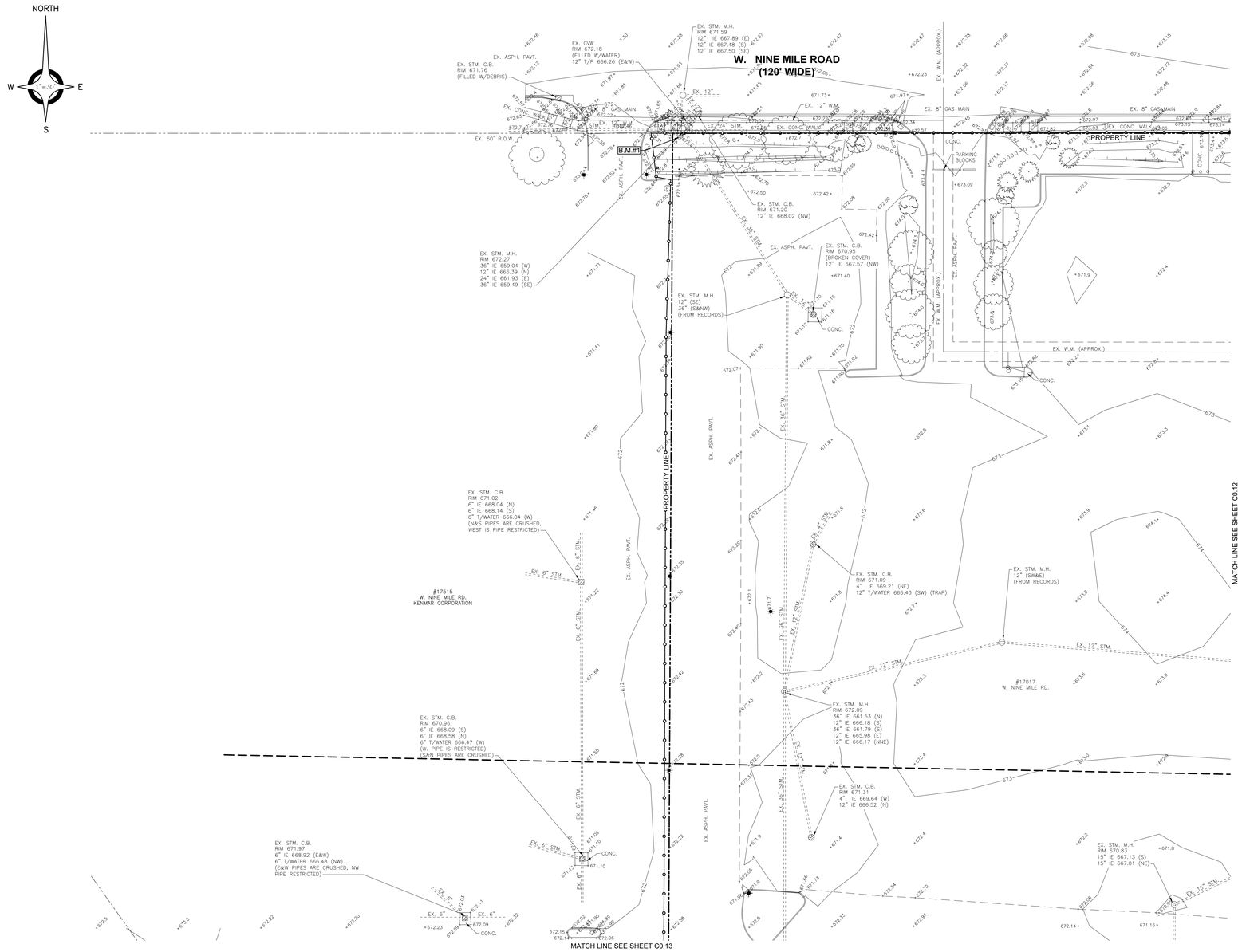
AEW Drawing Title

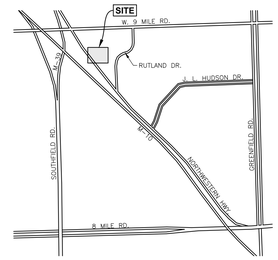
General Site Plan

IDS Project Number
24140-1000

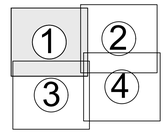
AEW PROJECT NUMBER
0369-0088

Drawing Number
C0.01





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 1
TOP OF HYDRANT ON SOUTH SIDE OF 9 MILE RD. 40' ± EAST OF DRIVE TO #17515.
ELEVATION: 675.36

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

LEGEND

- BOUNDARY LINE
- CENTERLINE DITCH
- SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
- SIGN
- DOUBLE SIGN
- ELECTRIC MANHOLE
- POWER POLE
- LIGHT POLE
- ELECTRIC HANDHOLE
- TRAFFIC LIGHT
- SIGNAL HANDHOLE
- PHONE MANHOLE
- PHONE PEDESTAL
- COMMUNICATION BOX
- SANITARY MANHOLE
- SANITARY SEWER
- HYDRANT
- GATE VALVE & WELL
- VALVE BOX
- SPRINKLER HEAD
- WATER MAIN
- STORM CATCH BASIN (PAVT.)
- STORM CATCH BASIN (FIELD)
- STORM MANHOLE
- STORM SEWER
- GAS MAIN
- OVHD. UTIL.
- UTILITY MARKER
- GAS LINE MARKER

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

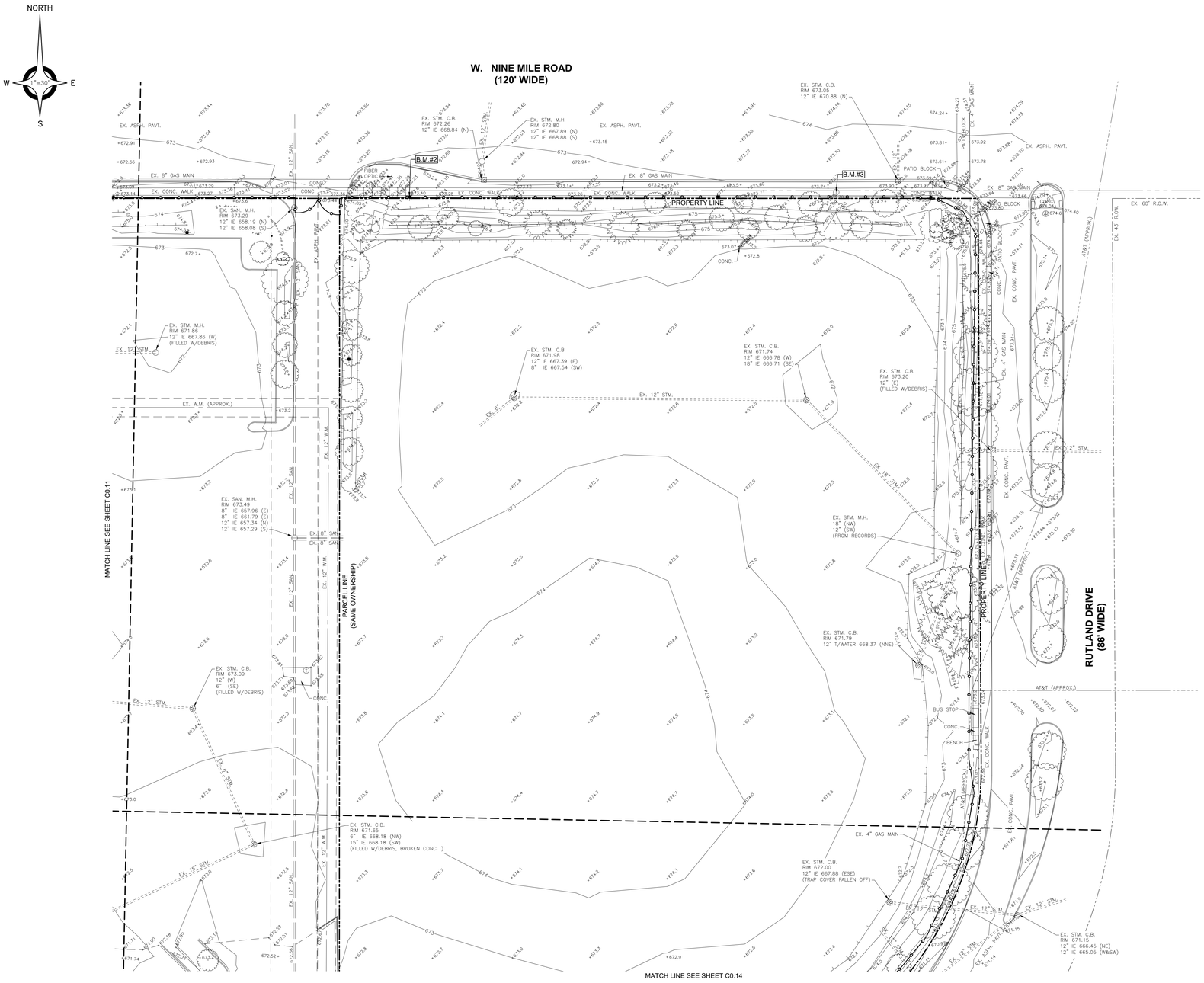
AEW Drawing Title

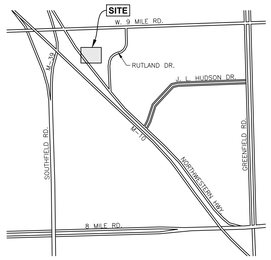
Topographic Survey
Northwest

IDS Project Number
24140-1000

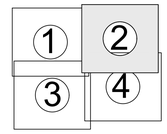
AEW PROJECT NUMBER
0369-0088

Drawing Number
C0.11





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 2
CHIS "X" NORTHWEST BOLT OF LIGHT POLE ON SOUTH SIDE OF 9 MILE RD. ±55' EAST OF ABANDONED DRIVE.
ELEVATION: 674.52

BENCH MARK NO. 3
CHIS "X" NORTH RIM OF PHONE M.H. IN WALK SOUTH SIDE OF 9 MILE RD., OPPOSITE DRIVE #16550.
ELEVATION: 673.83

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

LEGEND

- BOUNDARY LINE
- CENTERLINE DITCH
- SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
- SIGN
- DOUBLE SIGN
- ELECTRIC MANHOLE
- POWER POLE
- LIGHT POLE
- ELECTRIC HANDHOLE
- TRAFFIC LIGHT
- SIGNAL HANDHOLE
- PHONE MANHOLE
- PHONE PEDESTAL
- COMMUNICATION BOX
- SANITARY MANHOLE
- SANITARY SEWER
- HYDRANT
- GATE VALVE & WELL
- VALVE BOX
- SPRINKLER HEAD
- WATER MAIN
- STORM CATCH BASIN (PAVT.)
- STORM CATCH BASIN (FIELD)
- STORM MANHOLE
- STORM SEWER
- GAS MAIN
- OVHD. UTIL.
- UTILITY MARKER
- GAS LINE MARKER

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

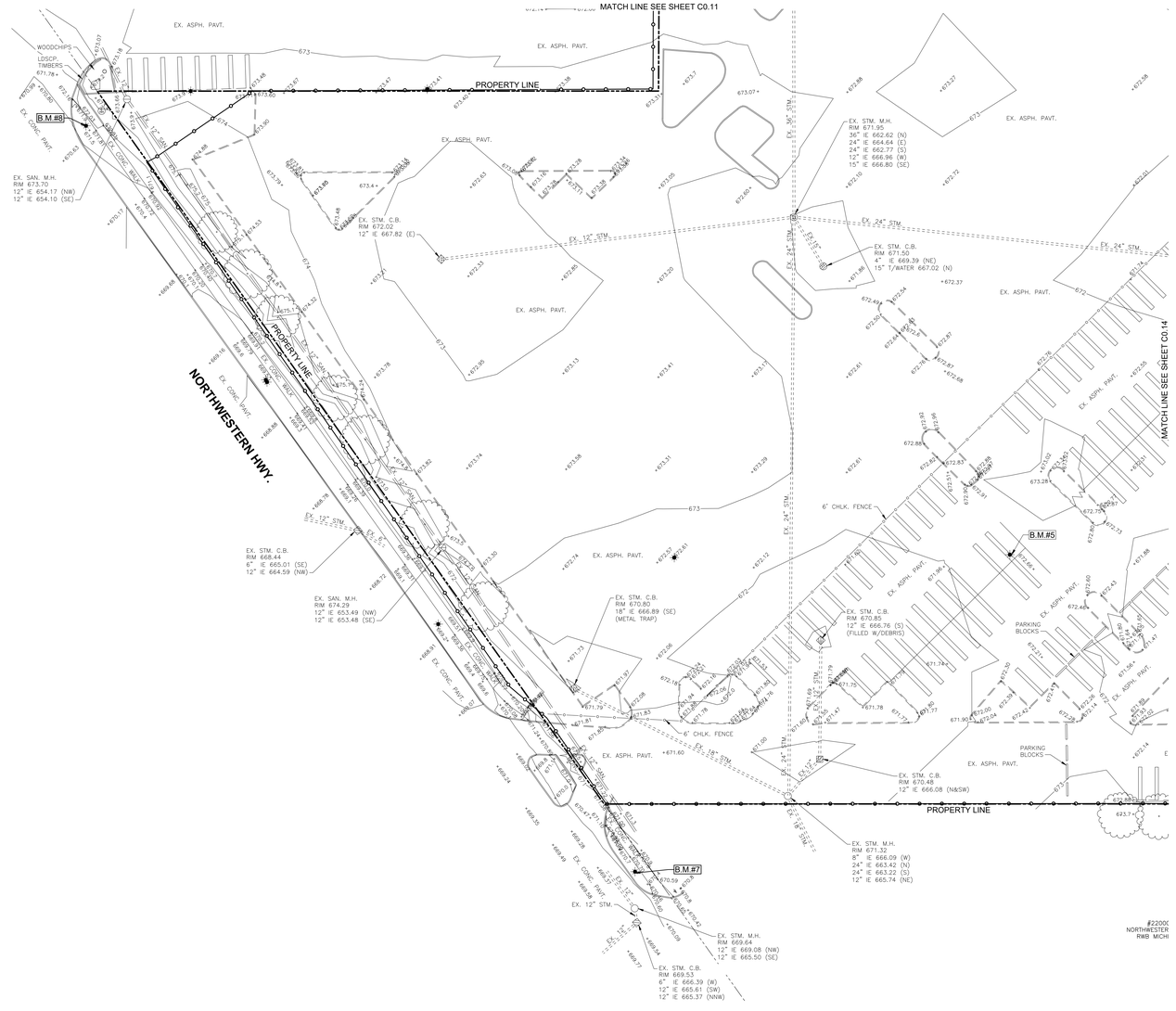
AEW Drawing Title

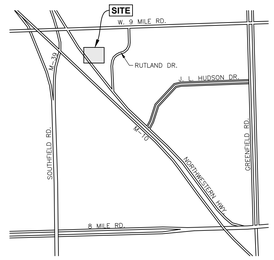
Topographic Survey
Northeast

IDS Project Number
24140-1000

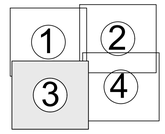
AEW PROJECT NUMBER
0369-0088

Drawing Number
C0.12





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 7
CHIS "X" ON SOUTHWEST SIDE OF STEEL LIGHT POLE BASE, NORTHEAST SIDE OF NORTHWESTERN HWY., NORTH SIDE OF DRIVE #22000.
ELEVATION: 672.00

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

LEGEND

- BOUNDARY LINE
- CENTERLINE DITCH
- SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
- SIGN
- DOUBLE SIGN
- ELECTRIC MANHOLE
- POWER POLE
- LIGHT POLE
- ELECTRIC HANDHOLE
- TRAFFIC LIGHT
- SIGNAL HANDHOLE
- PHONE MANHOLE
- PHONE PEDESTAL
- COMMUNICATION BOX
- SANITARY MANHOLE
- SANITARY SEWER
- HYDRANT
- GATE VALVE & WELL
- VALVE BOX
- SPRINKLER HEAD
- WATER MAIN
- STORM CATCH BASIN (PAVT.)
- STORM CATCH BASIN (FIELD)
- STORM MANHOLE
- STORM SEWER
- GAS MAIN
- OVHD. UTIL.
- UTILITY MARKER
- GAS LINE MARKER

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

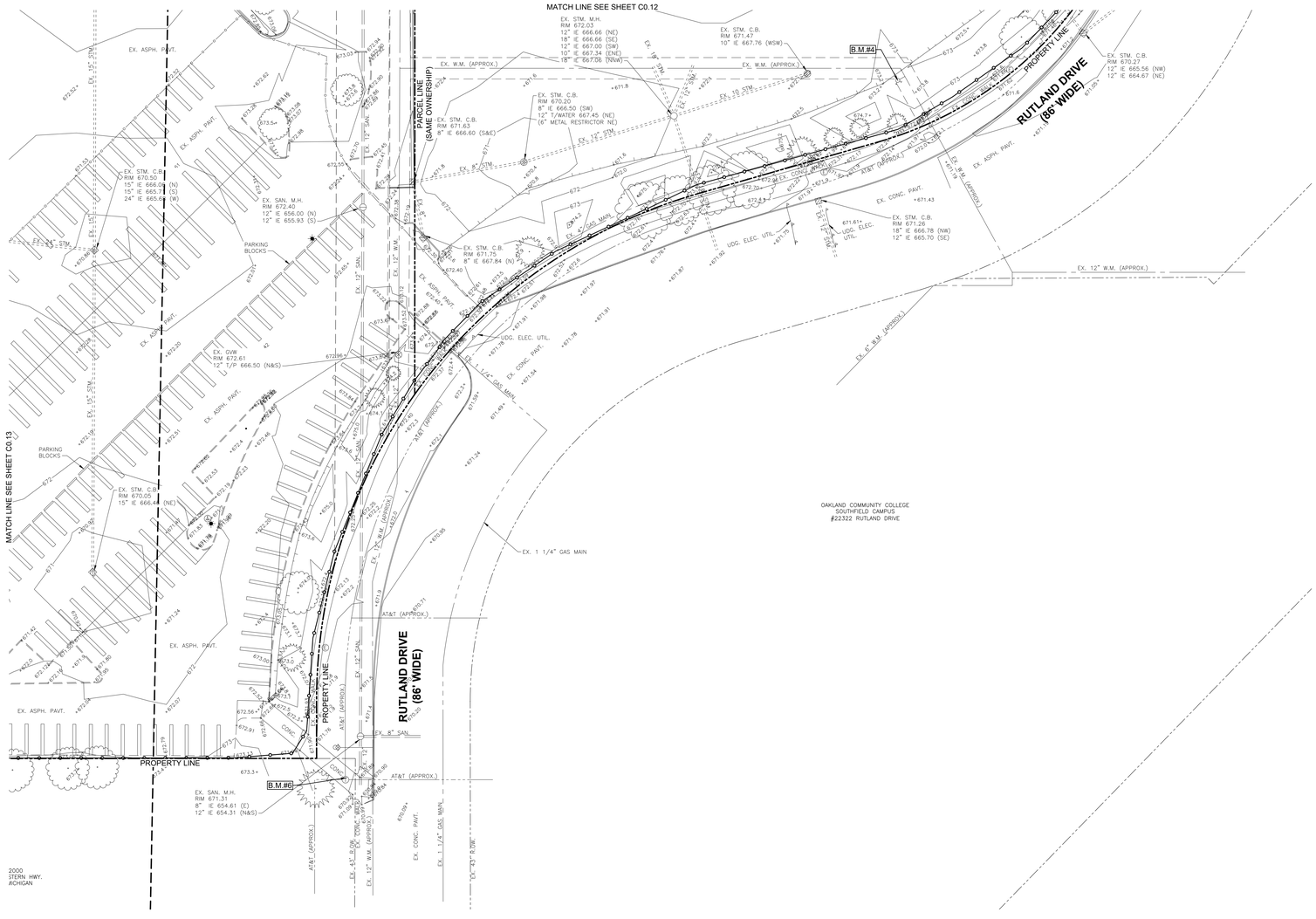
AEW Drawing Title

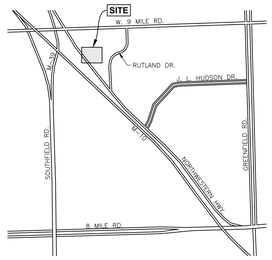
Topographic Survey
Southwest

IDS Project Number
24140-1000

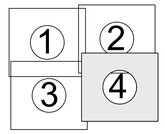
AEW PROJECT NUMBER
0369-0088

Drawing Number
C0.13





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK, WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

LEGEND

- BOUNDARY LINE
- CENTERLINE DITCH
- +000.0 SPOT ELEVATION ("+" INDICATES ELEVATION LOCATION UNLESS OTHERWISE INDICATED)
- SIGN
- DOUBLE SIGN
- ELECTRIC MANHOLE
- POWER POLE
- LIGHT POLE
- ELECTRIC HANDHOLE
- TRAFFIC LIGHT
- SIGNAL HANDHOLE
- PHONE MANHOLE
- PHONE PEDESTAL
- COMMUNICATION BOX
- SANITARY MANHOLE
- SANITARY SEWER
- HYDRANT
- GATE VALVE & WELL
- VALVE BOX
- SPRINKLER HEAD
- WATER MAIN
- STORM CATCH BASIN (PAVT.)
- STORM CATCH BASIN (FIELD)
- STORM MANHOLE
- STORM SEWER
- GAS MAIN
- OVHD. UTIL.
- UTILITY MARKER
- GAS LINE MARKER

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

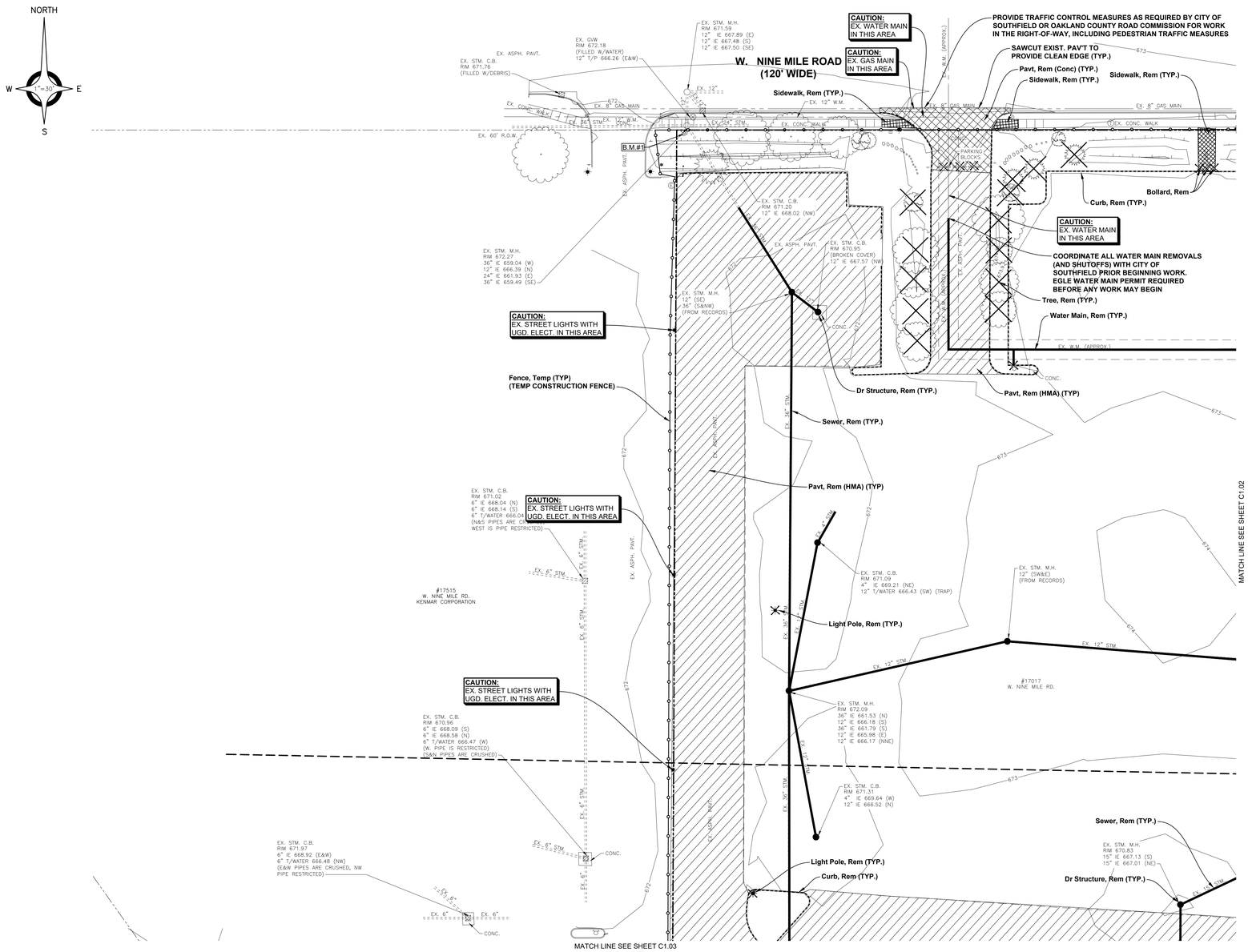
AEW Drawing Title

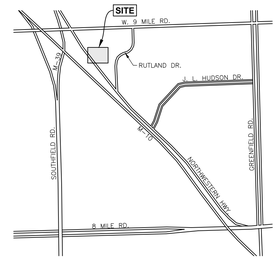
Topographic Survey
Southeast

IDS Project Number
24140-1000

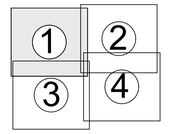
AEW PROJECT NUMBER
0369-0088

Drawing Number
C0.14





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 1
TOP OF HYDRANT ON SOUTH SIDE OF 9 MILE RD. 40' ± EAST OF DRIVE TO #17515.
ELEVATION: 675.36

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

ESTIMATED REMOVAL QUANTITIES (TOTAL)

1. Tree, Rem, 6 inch to 18 inch	44	Ea
2. Tree, Rem, Less than 6 inch	1	Ea
3. Dr Structure, Rem	28	Ea
4. Sewer, Rem, Less than 24 inch	2,664	Ft
5. Sewer, Rem, 24 inch to 48 inch	1,109	Ft
6. Curb, Rem	4,740	Ft
7. Conc, Barrier, Rem (Parking Block)	49	Ea
8. Bollard, Rem	3	Ea
9. Pavt, Rem (HMA)	30,481	Syd
10. Pavt, Rem (Conc)	295	Syd
11. Sidewalk, Rem	103	Syd
12. Sewer Bulkhead, 8 inch	2	Ea
13. Sewer Bulkhead, 12 inch	4	Ea
14. Sewer, Abandon, 12 inch or less	4	Ea
14. Fence, Rem	823	Ft
15. Light Pole, Rem	8	Ea
16. Pedestal, Rem	1	Ea
17. Hydrant, Rem	1	Ea
18. Hh, Rem (Handhole)	1	Ea
19. Water Main, Rem, 12 inch or less	404	Ft

ESTIMATED GENERAL CONDITIONS QUANTITIES (TOTAL)

1. Fence, Temp, 72 inch	3,770	Ft
2. Fence Gate, Temp, 20 foot	1	Ea
3. Traffic Control and Maintenance	1	Lsum

REMOVAL LEGEND

- REMOVE EXIST. BITUMINOUS PAVT.
- REMOVE EXIST. CONC. PAVT.
- REMOVE EXIST. CONC. WALK
- REMOVE EXIST. SWR.
- REMOVE EXIST. FENCE
- REMOVE EXIST. CONC. CURB & GUTTER
- REMOVE EXIST. TREE
- REMOVE EXIST. MISC. SITE FEATURES

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

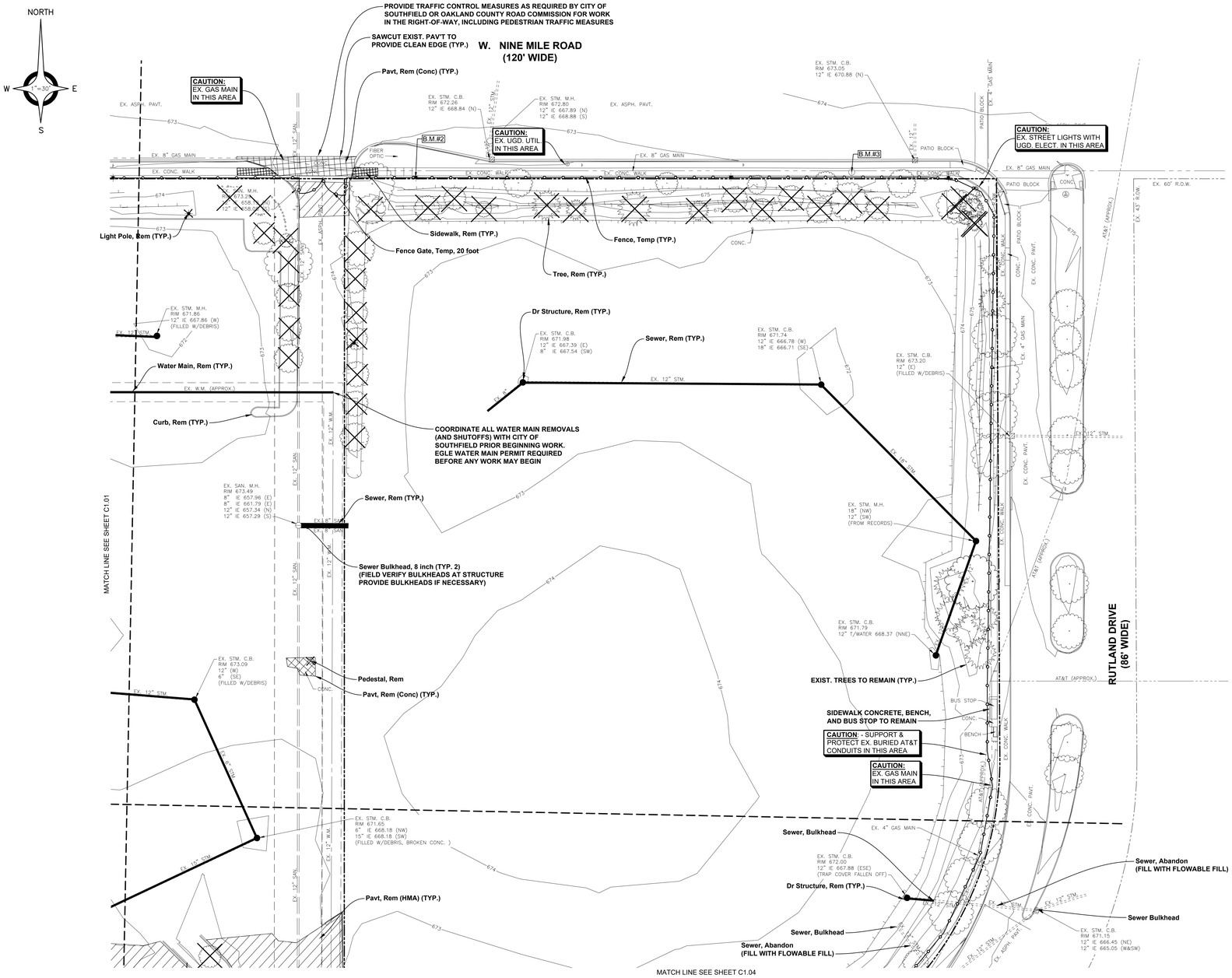
AEW Drawing Title

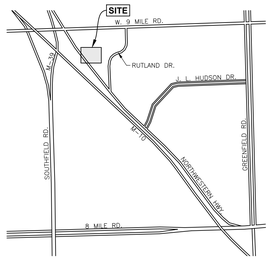
Removal Plan
Northwest

IDS Project Number
24140-1000

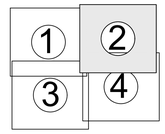
AEW PROJECT NUMBER
0369-0088

Drawing Number
C1.01





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 2
CHIS "X" NORTHWEST BOLT OF LIGHT POLE ON SOUTH SIDE OF 9 MILE RD. ±55' EAST OF ABANDONED DRIVE.
ELEVATION: 674.52

BENCH MARK NO. 3
CHIS "X" NORTH RIM OF PHONE M.H. IN WALK SOUTH SIDE OF 9 MILE RD., OPPOSITE DRIVE #16550.
ELEVATION: 673.83

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

REMOVAL LEGEND

- REMOVE EXIST. BITUMINOUS PAVT.
- REMOVE EXIST. CONC. PAVT.
- REMOVE EXIST. CONC. WALK
- REMOVE EXIST. SWR.
- REMOVE EXIST. FENCE
- REMOVE EXIST. CONC. CURB & GUTTER
- REMOVE EXIST. TREE
- REMOVE EXIST. MISC. SITE FEATURES

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY; AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-008\DWG\CIVIL\30X42-IDS-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

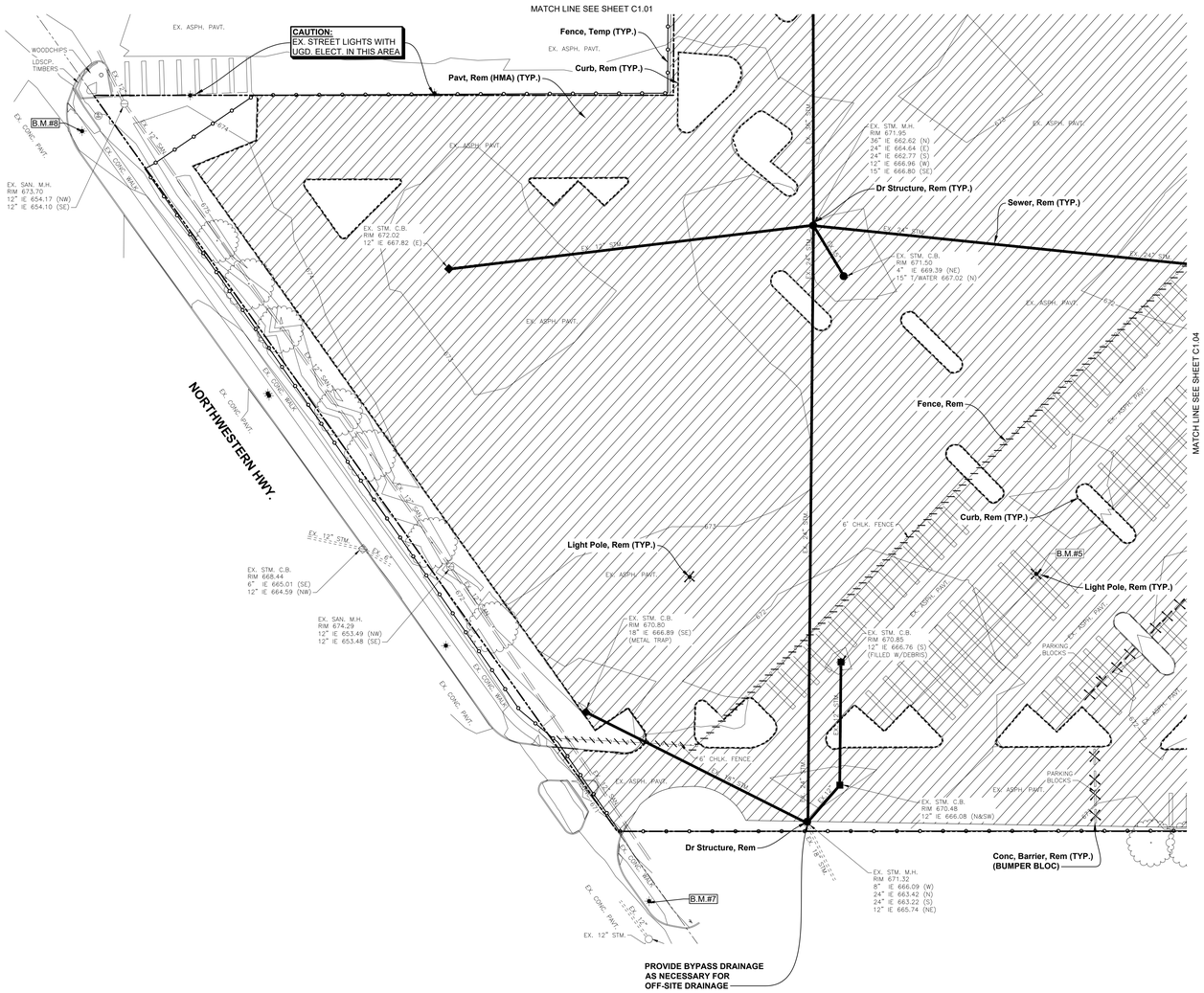
AEW Drawing Title

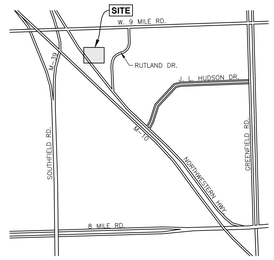
Removal Plan
Northeast

IDS Project Number
24140-1000

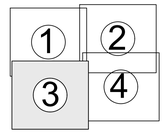
AEW PROJECT NUMBER
0369-0088

Drawing Number
C1.02





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 7
CHIS "X" ON SOUTHWEST SIDE OF STEEL LIGHT POLE BASE, NORTHEAST SIDE OF NORTHWESTERN HWY., NORTH SIDE OF DRIVE #22000.
ELEVATION: 672.00

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

REMOVAL LEGEND

- REMOVE EXIST. BITUMINOUS PAVT.
- REMOVE EXIST. CONC. PAVT.
- REMOVE EXIST. CONC. WALK
- REMOVE EXIST. SWR.
- REMOVE EXIST. FENCE
- REMOVE EXIST. CONC. CURB & GUTTER
- REMOVE EXIST. TREE
- REMOVE EXIST. MISC. SITE FEATURES

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

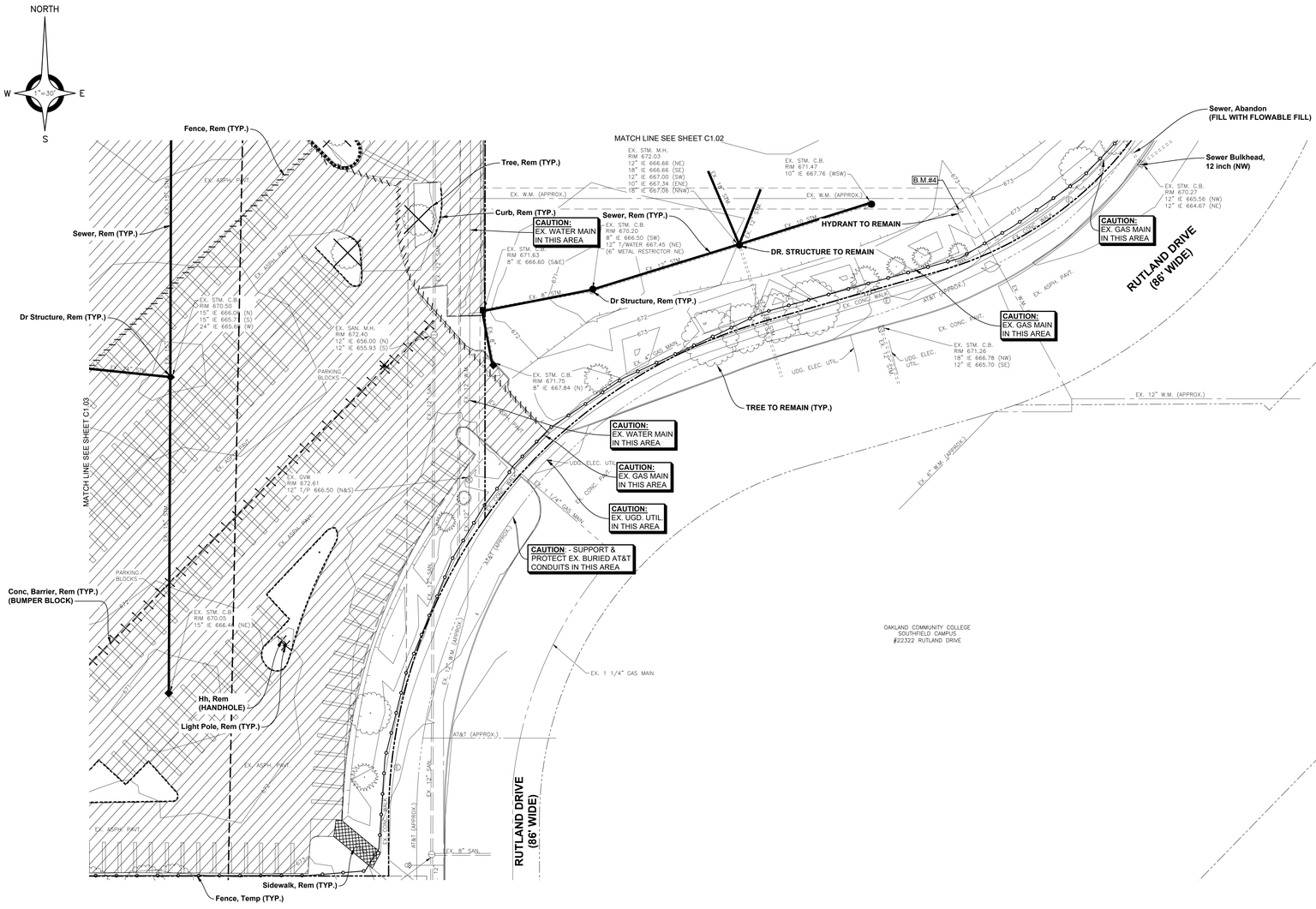
AEW Drawing Title

Removal Plan Southwest

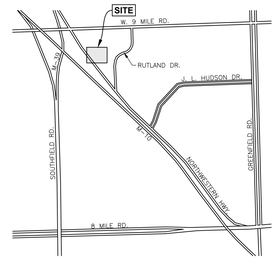
IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

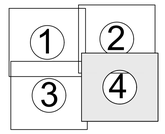
Drawing Number
C1.03



OAKLAND COMMUNITY COLLEGE
SOUTHFIELD CAMPUS
#22322 RUTLAND DRIVE



LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK, WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

REMOVAL LEGEND

- REMOVE EXIST. BITUMINOUS PAVT.
- REMOVE EXIST. CONC. PAVT.
- REMOVE EXIST. CONC. WALK
- REMOVE EXIST. SWR.
- REMOVE EXIST. FENCE
- REMOVE EXIST. CONC. CURB & GUTTER
- REMOVE EXIST. TREE
- REMOVE EXIST. MISC. SITE FEATURES

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

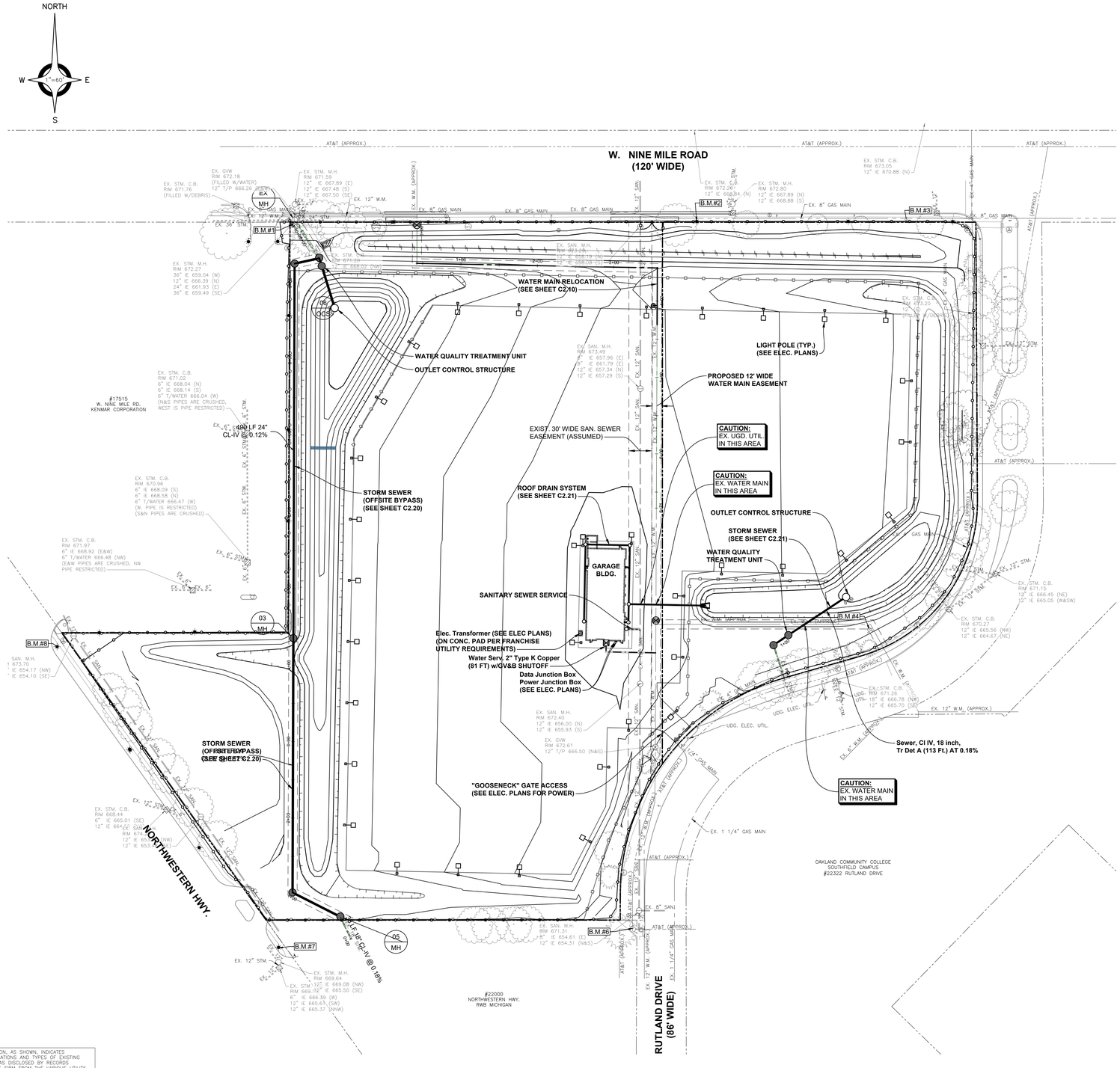
AEW Drawing Title

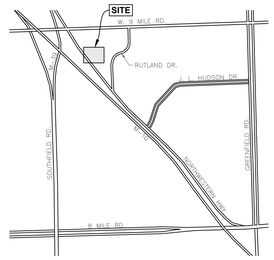
Removal Plan
Southeast

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C1.04





LOCATION MAP
NOT TO SCALE

ESTIMATED UTILITIES QUANTITIES (TOTAL)

STORM SEWER		
1. Storm Sewer, CL III, 18 inch, Tr Det A	114	Ft
2. Storm Sewer, CL III, 24 inch, Tr Det A	504	Ft
3. Storm Sewer, CL IV, 24 inch, Tr Det B	490	Ft
4. Storm Sewer Cleanout, 6 inch	5	Ea
5. Storm Sewer, PVC Sch 40, 6 inch, Tr Det B	259	Ft
6. Storm Sewer, PVC Sch 40, 8 inch, Tr Det B	100	Ft
7. Storm Sewer, Service, Downspout	4	Ea
8. Storm Sewer, Service, Underdrain	1	Ea
9. Dr Structure, 48 inch dia	1	Ea
10. Dr Structure, 60 inch dia	4	Ea
11. Dr Structure, 96 inch dia	1	Ea
12. Dr Structure, WQU (Aquaswirl AS-7)	1	Ea
13. Dr Structure, WQU (Aquaswirl AS-9)	1	Ea
14. Dr Structure, Outlet Control, 48 inch	1	Ea
14. Dr Structure, Outlet Control, 60 inch	1	Ea
15. End Section, CMP, 8 inch	1	Ea
16. Underdrain, Fnd, 6 inch	350	Ft
WATER MAIN		
1. Fire Hydrant	1	Ea
2. Water Main Line Stop, 12 inch	2	Ea
3. Water Main, DI, 6 inch, Tr Det G	5	Ft
4. Water Main, DI, 12 inch, Tr Det F	363	Ft
5. Water Main, DI, 12 inch, Tr Det G	25	Ft
6. Water Serv., 2.5" Type "K" Copper	81	Ft
7. Water Main Connection, 12 inch	2	Ea
8. Water Main Conflict, 12 inch (DEFLECTION)	1	Ea
SANITARY SEWER		
1. Sanitary Sewer Cleanout, 6 inch	1	Ea
2. Sanitary Sewer, Serv Lead, PVC Sch 40, 6 inch	20	Ft

PROPOSED UTILITIES LEGEND

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED WATER MAIN
- PROPOSED SANITARY SERVICE LEAD
- PROPOSED WATER SERVICE LEAD
- UTILITY EASEMENT
- SAND BACKFILL
- PROPOSED CURB STOP (WATER SERV.)
- PROPOSED HYDRANT
- PROPOSED LINE STOP
- PROPOSED STORM MANHOLE
- PROPOSED SITE LIGHT
- PROPOSED CLEANOUT

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

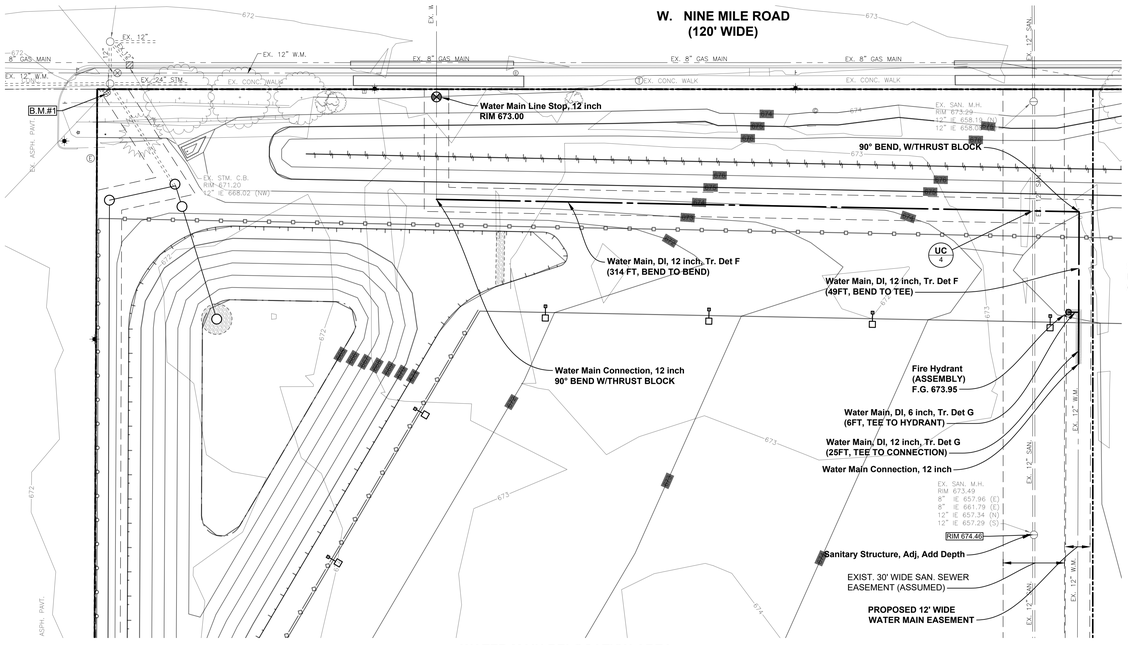
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

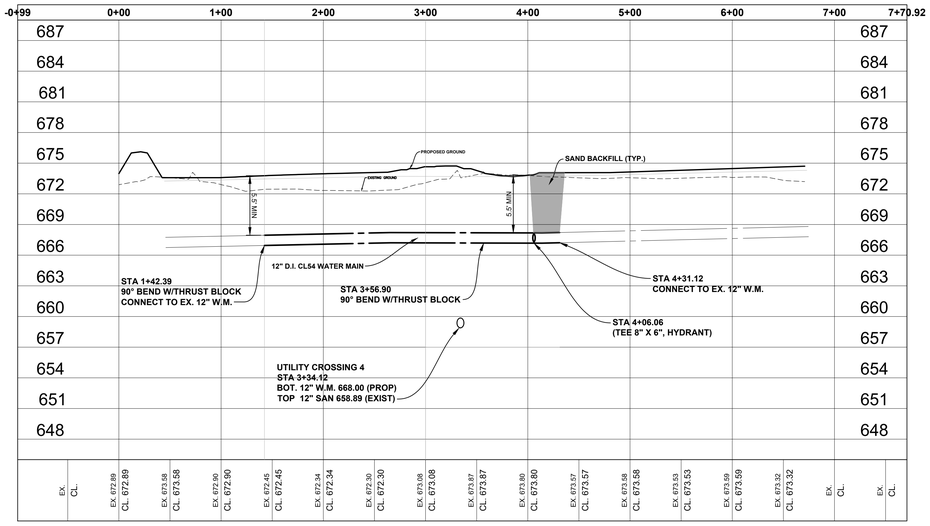
Overall Utility Plan

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

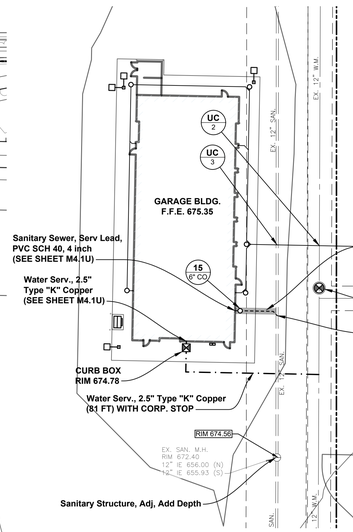
Drawing Number
C2.00



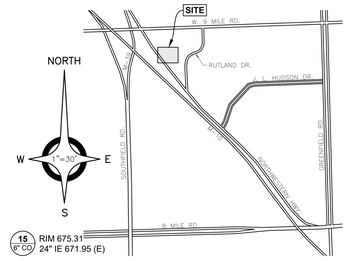
WATER MAIN RELOCATION AREA
PLAN VIEW (SCALE 1" = 30')



WATER MAIN PROFILE MH 5 TO MH 1
SCALE: VERT. 1" = 6' ; HORIZ. 1" = 60'



GARAGE BUILDING AREA
PLAN VIEW (SCALE 1" = 30')



LOCATION MAP
NOT TO SCALE

15 6" CO RIM 675.31
24" IE 671.95 (E)

Sanitary Sewer, Serv Lead,
PVC SCH 40, 6 inch (20 FT)
AT 1.00% SLOPE MIN

Water Main Line Stop, 12 inch
RIM 674.81

Sewer Tap, 6 inch
WYE CONNECTION
6" IE 656.48 (W) (PROP.)
12" IE 656.23 (N/S) (EXIST)
SEE "HOUSE LEAD DETAIL" ON O.C.W.R.C.
SANITARY SEWER DETAILS AND NOTES

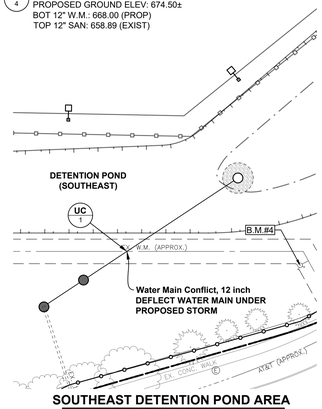
UTILITY CROSSINGS TABLE

UC 1 UTILITY CROSSING #1
EXIST. GRADE: 672.45
BOT 18" STM: 666.67 (PROP)
TOP 12" WM: 665.17 (EXIST. - DEFLECTED)
(DEFLECT WM AS NEEDED FOR 18" VERT. SEPARATION)

UC 2 UTILITY CROSSING #2
EXIST. GRADE: 672.62
BOT 8" STM: 670.48 (PROP)
TOP 12" WM: 667.12± (EXIST)

UC 3 UTILITY CROSSING #3
BOT 8" STM: 670.59 (PROP)
TOP 12" SAN: 657.34 (EXIST)

UC 4 UTILITY CROSSING #4
PROPOSED GROUND ELEV: 674.50±
BOT 12" W.M.: 668.00 (PROP)
TOP 12" SAN: 658.89 (EXIST)



SOUTHEAST DETENTION POND AREA
PLAN VIEW (SCALE 1" = 30')

UTILITIES LEGEND

- PROPOSED STORM SEWER
- PROPOSED WATER MAIN
- PROPOSED SANITARY SERVICE LEAD
- PROPOSED WATER SERVICE LEAD
- UTILITY EASEMENT
- SAND BACKFILL
- PROPOSED CURB STOP (WATER SERV.)
- PROPOSED HYDRANT
- PROPOSED LINE STOP
- PROPOSED SITE LIGHT
- PROPOSED CLEANOUT
- 1 STMH — STRUCTURE NUMBER DIAMETER AND TYPE OF STRUCTURE
- UC 1 — UTILITY CROSSING #

ESTIMATED WATER MAIN & SAN. SEWER QUANTITIES (THIS SHEET)

WATER MAIN

1. Fire Hydrant	1	Ea
2. Water Main Line Stop, 12 inch	2	Ea
3. Water Main, DI, 6 inch, Tr Det G	5	Ft
4. Water Main, DI, 12 inch, Tr Det F	363	Ft
5. Water Main, DI, 12 inch, Tr Det G	25	Ft
6. Water Serv., 2.5" Type "K" Copper	81	Ft
7. Water Main Connection, 12 inch	2	Ea
8. Water Main Conflict, 12 inch (DEFLECTION)	1	Ea

SANITARY SEWER

1. Sanitary Sewer Cleanout, 6 inch	1	Ea
2. Sanitary Sewer, Serv Lead, PVC Sch 40, 6 inch	20	Ft
3. Sanitary Structure, Adj, Add Depth	2	Ea

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-0087\DWG\CIVIL\300x42-IDS-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

Water Main and Sanitary Sewer Plan and Profile

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C2.10

1 (5'MH) RIM 672.51
24" IE 605.75 (W) (PROP)
24" IE 661.81 (W) (PROP)
36" IE 659.83 (NW) (EXIST)

2 (5'MH) RIM 672.29
24" IE 661.95 (S)
24" IE 661.85 (NE)

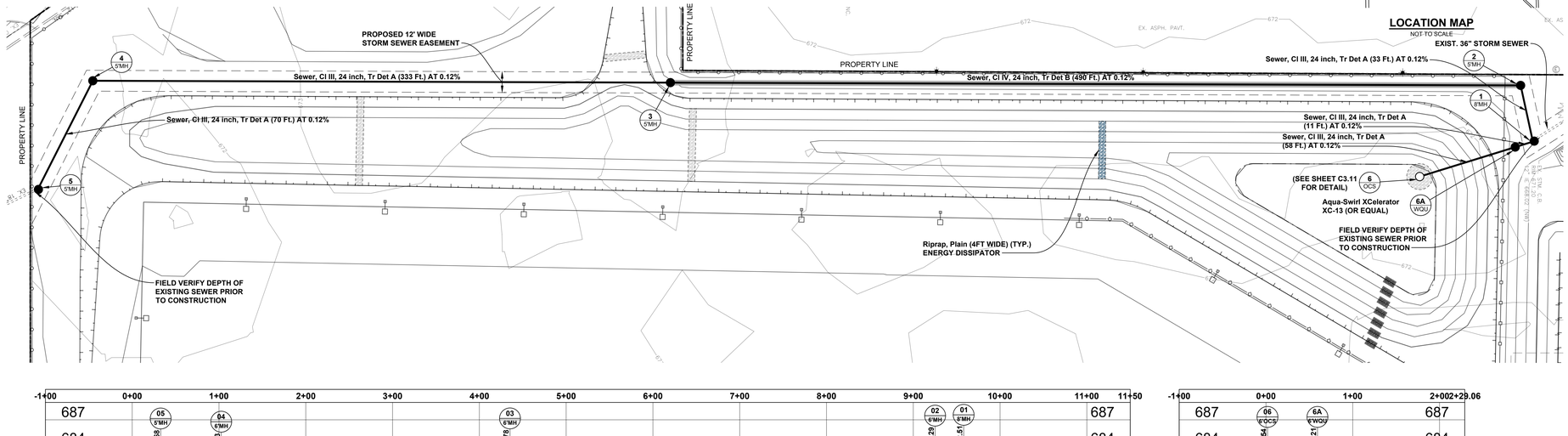
3 (5'MH) RIM 671.78
24" IE 662.54 (N/S)

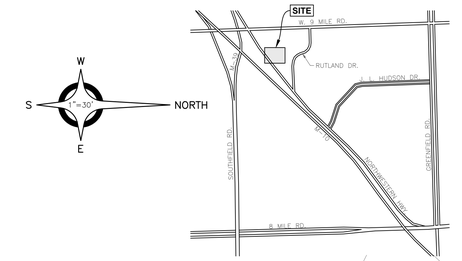
4 (5'MH) RIM 671.23
24" IE 663.04 (SE)
24" IE 662.94 (N)

5 (5'MH) RIM 671.76
24" IE 663.22 (S) (EXIST)
24" IE 663.12 (NE) (PROP)

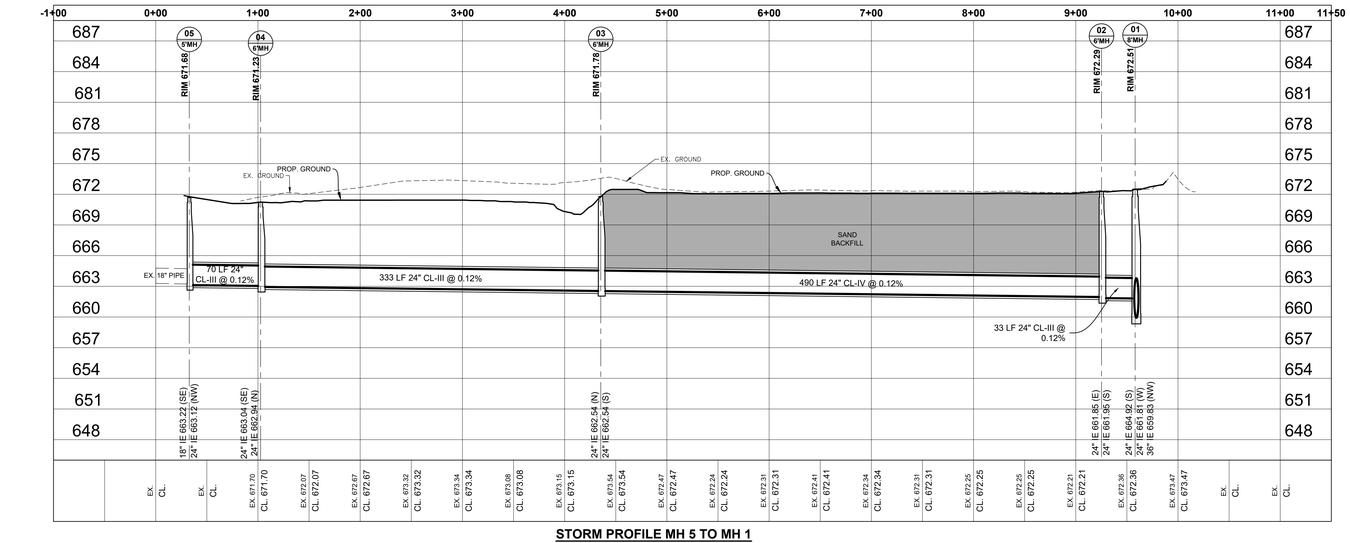
6 (OCS) RIM 669.33
24" IE 665.75 (NW)

6A (WQU) RIM 672.21
24" IE 664.94 (SE/NW)

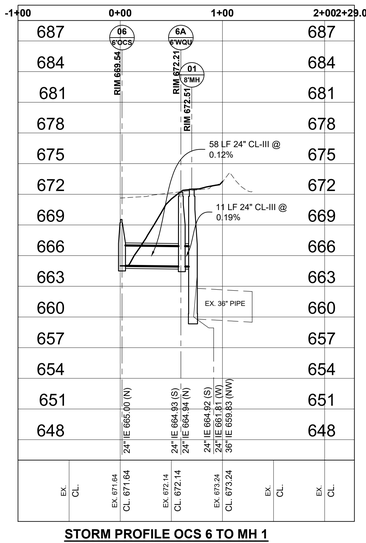




LOCATION MAP
NOT TO SCALE



STORM PROFILE MH 5 TO MH 1
SCALE: VERT. 1" = 6' ; HORIZ. 1" = 60'



STORM PROFILE OCS 6 TO MH 1
SCALE: VERT. 1" = 6' ; HORIZ. 1" = 60'

UTILITIES LEGEND

- PROPOSED STORM SEWER
- EXIST. STORM SEWER
- SAND BACKFILL
- OCS — OUTLET CONTROL STRUCTURE
- WQU — WATER QUALITY TREATMENT UNIT
- PROPOSED STORM MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED CLEANOUT
- EXIST. CATCH BASIN (PAVT.)
- EXIST. CATCH BASIN (FIELD)
- (1 / 8'MH) STRUCTURE NUMBER DIAMETER AND TYPE OF STRUCTURE
- (UC / 1) UTILITY CROSSING #

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

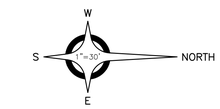
Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

Storm Sewer - West Plan and Profile

Project Number	Drawing Number
24140-1000	C2.20
AEW PROJECT NUMBER 0369-0088	



UTILITY STRUCTURES TABLE

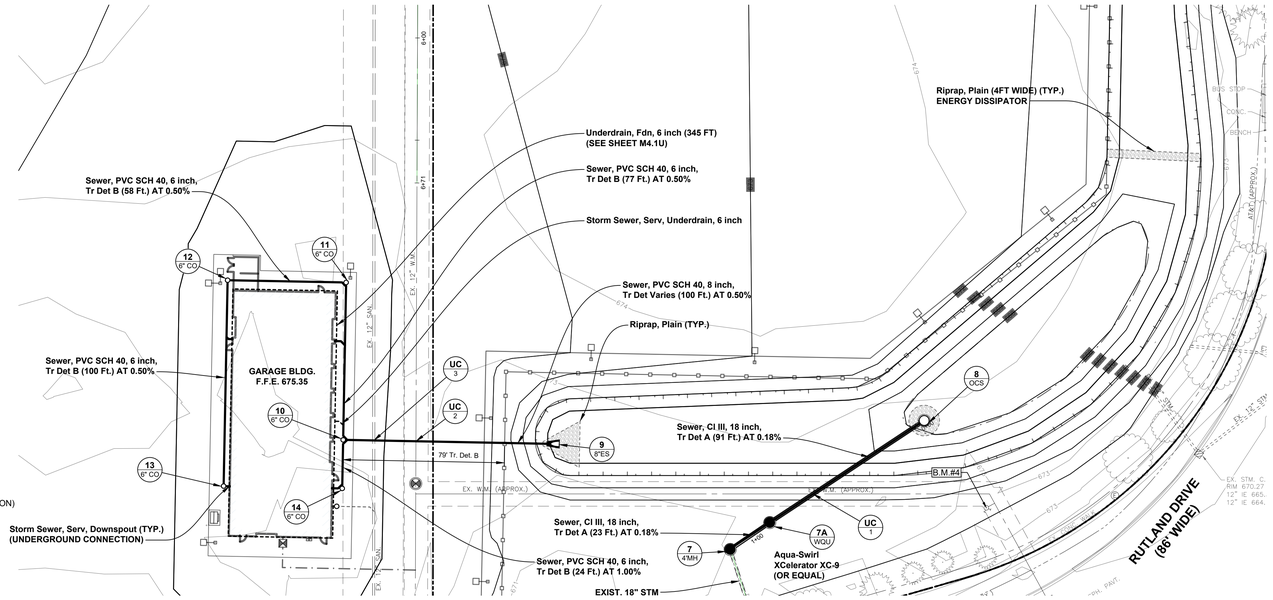
7 / STMH	RIM 673.45 18" IE 666.80 (NE) 18" IE 666.66 (SE)(EXIST)	11 / 6" CO	RIM 675.27 6" IE 671.11 (W/S)
7A / WQU	RIM 673.25 18" IE 666.84 (NE/SW)	12 / 6" CO	RIM 675.29 6" IE 671.40 (S/E)
8 / OCS	RIM 670.33 18" IE 667.00 (SW)	13 / 6" CO	RIM 675.30 6" IE 671.90 (N)
9 / 8" ES	8" IE 670.14 (W)	14 / 6" CO	RIM 675.31 24" IE 669.79 (N)
10 / 6" CO	RIM 675.25 6" IE 670.73 (N/S) 8" IE 670.65 (E)		

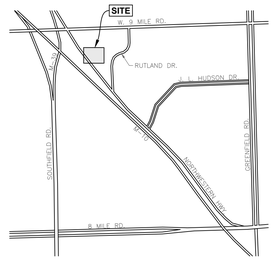
UTILITY CROSSINGS TABLE

UC 1 UTILITY CROSSING #1
EXIST. GRADE: 672.45
BOT 18" STM: 666.67 (PROP)
TOP 12" WM: 665.17 (EXIST. - DEFLECTED)
(DEFLECT WM AS NEEDED FOR 18" VERT. SEPARATION)

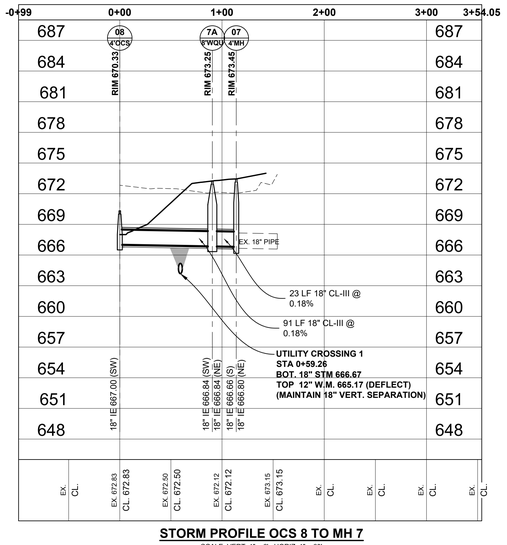
UC 2 UTILITY CROSSING #2
EXIST. GRADE: 672.62
BOT 8" STM: 670.48 (PROP)
TOP 12" WM: 667.12± (EXIST)

UC 3 UTILITY CROSSING #3
BOT 8" STM: 670.59 (PROP)
TOP 12" SAN: 657.34 (EXIST)





LOCATION MAP
NOT TO SCALE



STORM PROFILE OCS 8 TO MH 7
SCALE: VERT. 1" = 6' ; HORIZ. 1" = 60'

UTILITIES LEGEND

- PROPOSED STORM SEWER
- PROPOSED UNDERDRAIN
- PROPOSED SANITARY SERVICE LEAD
- PROPOSED WATER SERVICE LEAD
- SAND BACKFILL
- PROPOSED STORM MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED CLEANOUT
- EXIST. CATCH BASIN (PAVT.)
- EXIST. CATCH BASIN (FIELD)
- EXIST. STORM SEWER
- OCS — OUTLET CONTROL STRUCTURE
- WQU — WATER QUALITY TREATMENT UNIT
- 1 / STMH — STRUCTURE NUMBER, DIAMETER AND TYPE OF STRUCTURE
- UC 1 — UTILITY CROSSING #

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

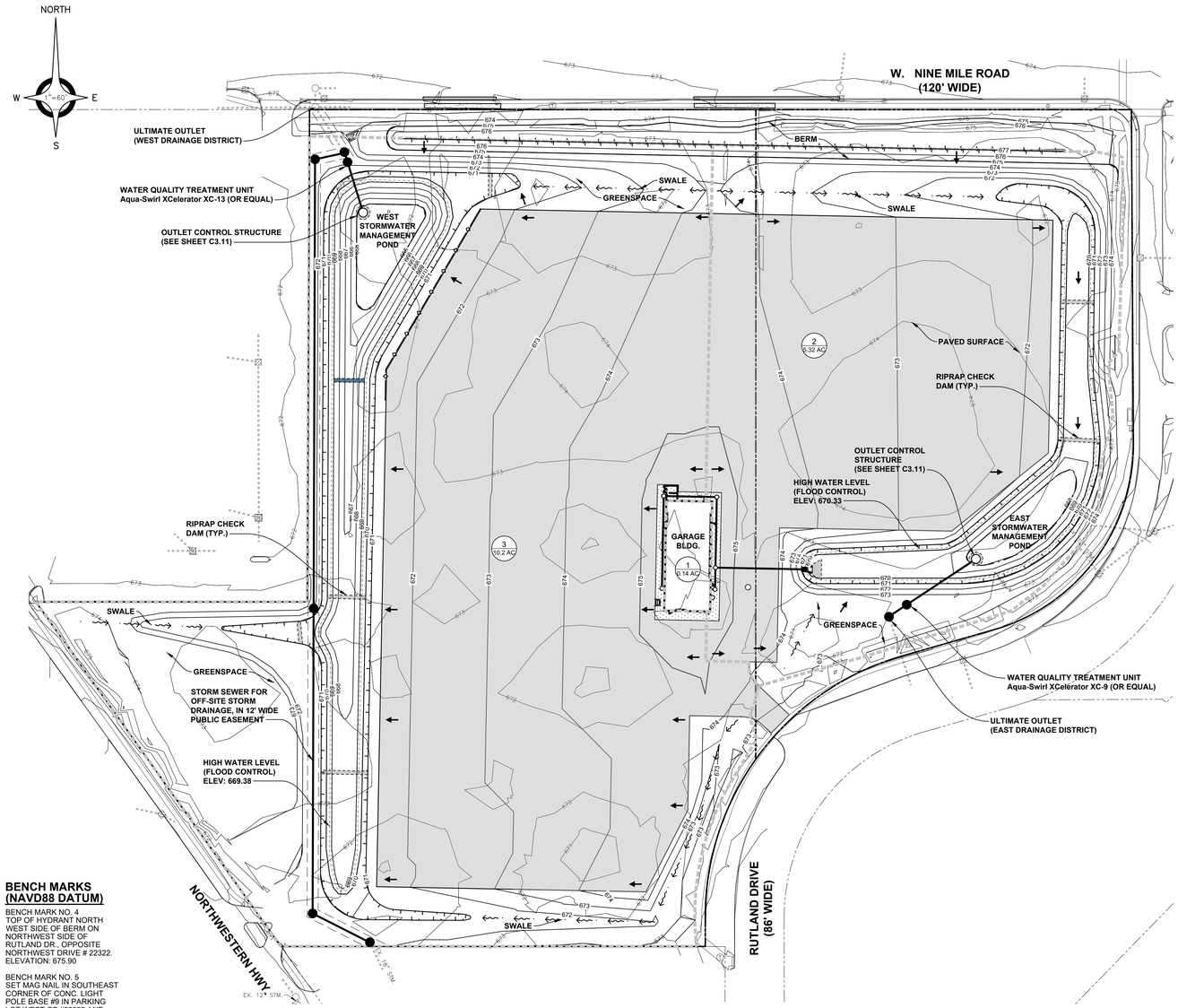
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

Storm Sewer - East
Plan and Profile

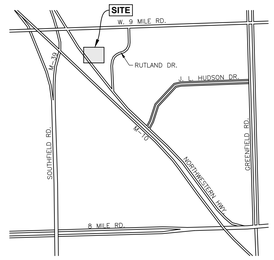
IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C2.21



DRAINAGE AREAS LEGEND

- PROPOSED STORM SEWER
- DRAINAGE AREA LIMITS
- PROPOSED STORM MANHOLE
- PROPOSED CLEANOUT
- EXIST. CATCH BASIN (PAVT.)
- EXIST. CATCH BASIN (FIELD)
- EXIST. STORM SEWER
- 3 / 10.2 AC — DRAINAGE AREA # / TOTAL AREA IN ACRES



LOCATION MAP
NOT TO SCALE

OAKLAND COUNTY DETENTION CALCULATIONS (WEST POND)

Part A: Determination of Surface Runoff				
Total Site Area	A	= 10.22	ac	
Runoff Coefficient	C	= 0.73		
Time of Concentration	T_C	= 20.00	min	
Rainfall Return Period	p	= 100	years	
Rainfall Depth	p_{100}	= 5.40	inch	
Rainfall Intensity (Eq. III-7)	I	= 5.41	in/hr	$= 30.2p^{0.22}/(T_C+9.17)^{0.81}$
Peak Runoff (Eq. III-1)	Q	= 40.12	cfs	= C*I*A
Volume (Eq. III-3)	V	= 145,290	cf	= 3,630*p*C*A
Part C: Channel Protection Volume Control				
Required CPVC Volume (Eq. III-9)	V_{CP-R}	= 34,977	cf	= 4,719*C*A
Provided CPVC Volume	V_{CP-P}	=	cf	
Part D: Water Quality Control				
Required Water Quality Volume (Eq. III-17)	V_{WQ}	= 26,906	cf	= 3,630*C*A
Option 1: Manufactured Treatment System (MTS)				
Water Quality Rate (Eq. III-18)	Q_{WQ}	= 14.57	cfs	$= C*A*(30.20/(T_C + 9.17)^{0.81})$
Option 2: Forebay				
Required Forebay Volume (Eq. III-19)	$V_{F\,B1}$	= 2,791	cf	= 545*C*A
	$V_{F\,B2}$	= 768	cf	=545*C*A
Part E: Channel Protection Rate Control: Extended Detention				
Required Extended Detention Volume (Eq. III-21)	V_{ED}	= 51,120	cf	= 6,897*C*A
Head	h_{ED}	= 4.06	Ft	$= Z_{ED}-Z_{Out}$
Required No. of 1-inch Holes (Eq. III-22)	H_{ED}	= 5		$= V_{ED}/(4.666*h_{ED}^{0.50})$
Part F: Detention and Flood Control Facilities				
100-Year Post Development Flow Rate (Eq. III-23)	Q_{100N}	= 40.12	cfs	= C*I*A
Variable Release Rate (Eq. III-25)	Q_{VRR}	= 0.627	cfs/ac	= 1.1055-[.206*ln(A)]
100-Year Post Development Peak Discharge	Q_{100p}	= 6.40	cfs	$= Q_{VRR}*A$
Storage Curve Factor (Eq. III-26)	R	= 0.48		$= 0.206-0.15*\ln(Q_{100P}/Q_{100N})$
100-Year Post Development Runoff Volume (Eq. III-27)	V_{100R}	= 140,717	cf	$= 18,985*C*A$
100-Year Detention Volume (Eq. III-28)	**V_{1000}**	**= 67,719**	**cf**	$= V_{100R}*R-V_{CP-P}$

OAKLAND COUNTY DETENTION CALCULATIONS (EAST POND)

Part A: Determination of Surface Runoff				
Total Site Area	A	= 5.46	ac	
Runoff Coefficient	C	= 0.74		
Time of Concentration	T_C	= 20.00	min	
Rainfall Return Period	p	= 100	years	
Rainfall Depth	p_{100}	= 5.40	inch	
Rainfall Intensity (Eq. III-7)	I	= 5.41	in/hr	$= 30.2p^{0.22}/(T_C+9.17)^{0.81}$
Peak Runoff (Eq. III-1)	Q	= 21,96	cfs	= C*I*A
Volume (Eq. III-3)	V	= 79,542	cf	= 3,630*p*C*A
Part C: Channel Protection Volume Control				
Required CPVC Volume (Eq. III-9)	V_{CP-R}	= 19,149	cf	= 4,719*C*A
Provided CPVC Volume	V_{CP-P}	= 0	cf	
Part D: Water Quality Control				
Required Water Quality Volume (Eq. III-17)	V_{WQ}	= 14,730	cf	= 3,630*C*A
Option 1: Manufactured Treatment System (MTS)				
Water Quality Rate (Eq. III-18)	Q_{WQ}	= 7.97	cfs	$= C*A*(30.20/(T_C + 9.17)^{0.81})$
Option 2: Forebay				
Required Forebay Volume (Eq. III-19)	$V_{F\,A1}$	= 315	cf	= 545*C*A
	$V_{F\,A2}$	= 1,625	cf	=545*C*A
Part E: Channel Protection Rate Control: Extended Detention				
Required Extended Detention Volume (Eq. III-21)	V_{ED}	= 27,987	cf	= 6,897*C*A
Head	h_{ED}	= 3.05	Ft	$= Z_{ED}-Z_{Out}$
Required No. of 1-inch Holes (Eq. III-22)	H_{ED}	= 3		$= V_{ED}/(4.666*h_{ED}^{0.50})$
Part F: Detention and Flood Control Facilities				
100-Year Post Development Flow Rate (Eq. III-23)	Q_{100N}	= 21.96	cfs	= C*I*A
Variable Release Rate (Eq. III-25)	Q_{VRR}	= 0.756	cfs/ac	= 1.1055-[.206*ln(A)]
100-Year Post Development Peak Discharge	Q_{100p}	= 4.12	cfs	$= Q_{VRR}*A$
Storage Curve Factor (Eq. III-26)	R	= 0.46		$= 0.206-0.15*\ln(Q_{100P}/Q_{100N})$
100-Year Post Development Runoff Volume (Eq. III-27)	V_{100R}	= 77,039	cf	$= 18,985*C*A$
100-Year Detention Volume (Eq. III-28)	**V_{1000}**	**= 35,195**	**cf**	$= V_{100R}*R-V_{CP-P}$

WEIGHTED C CALCULATIONS

Drainage Area	Impervious Area (C = 0.95)	Water (C = 1.0)	Pervious Area HGS A C = .10	Pervious Area HGS B C = .20	Pervious Area HGS C C = .25	Pervious Area HGS D C = .30	Total	Weighted C
East Drainage District								
1	6.000						6.000	0.95
2	133.606					98.078	231.684	0.74
SubTotal	139.606					98.078	237.684	**0.74**
West Drainage District								
3	245.175					199.889	445.064	0.73
SubTotal	245.175					199.889	445.064	**0.73**

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK. WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator
V. Grant
Project Designer
J. Sala
Project Architect / Engineer
J. Sala
Drawn By
B. Koci
Q.M. Review
M. Sommers
Approved
J. Sala
Drawing Scale
1" = 60'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

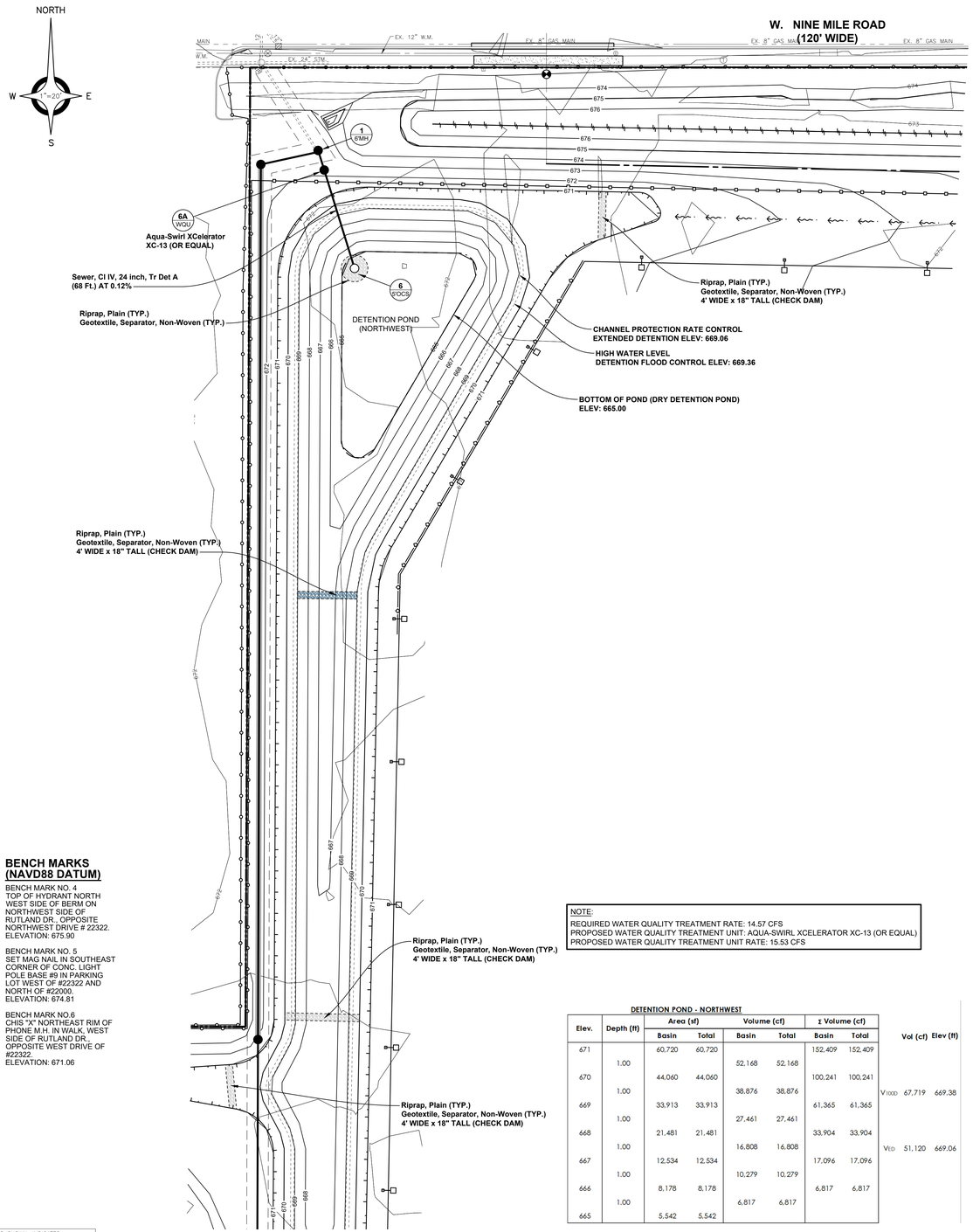
AEW Drawing Title

Overall Drainage Plan

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C3.00

M:\0369\0369-0087\DWG\CIVIL\3D\42-105-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM



BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK, WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

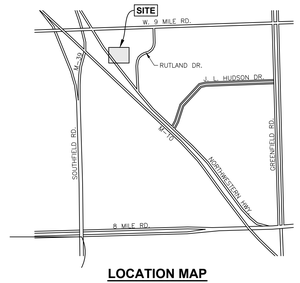
NOTE:
REQUIRED WATER QUALITY TREATMENT RATE: 14.57 CFS
PROPOSED WATER QUALITY TREATMENT UNIT: AQUA-SWIRL XCELERATOR XC-13 (OR EQUAL)
PROPOSED WATER QUALITY TREATMENT UNIT RATE: 15.53 CFS

DETENTION POND - NORTHWEST

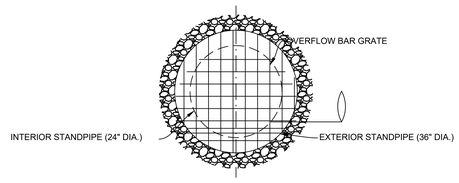
Elev.	Depth (ft)	Area (sf) Basin	Area (sf) Total	Volume (cf) Basin	Volume (cf) Total	Σ Volume (cf) Basin	Σ Volume (cf) Total		Vol (cf)	Elev (ft)
671		60,720	60,720			152,409	152,409			
	1.00			52,168	52,168					
670		44,060	44,060			100,241	100,241			
	1.00			38,876	38,876			V_{100D}	67,719	669.38
669		33,913	33,913			61,365	61,365			
	1.00			27,461	27,461					
668		21,481	21,481			33,904	33,904			
	1.00			16,808	16,808			V_{ED}	51,120	669.06
667		12,534	12,534			17,096	17,096			
	1.00			10,279	10,279					
666		8,178	8,178			6,817	6,817			
	1.00			6,817	6,817					
665		5,542	5,542							

DRAINAGE AREAS LEGEND

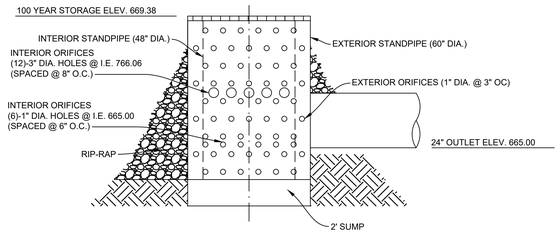
- 670 — MAJOR CONTOUR
- 669 — MINOR CONTOUR
- TOP OF BANK
- DETENTION STORAGE MARK
- EXIST. CATCH BASIN (PAVT.)
- EXIST. CATCH BASIN (FIELD)
- EXIST. STORM SEWER
- 6 / 6" OCS — STRUCTURE NUMBER / STRUCTURE TYPE AND DIAMETER



LOCATION MAP
NOT TO SCALE



PLAN VIEW



PROFILE VIEW

OUTLET CONTROL STRUCTURE DETAIL OCS 6

NOT TO SCALE

OUTLET DESIGN CALCULATIONS

Orifice 1: Extended Detention Volume Orifice Sizing (Dewatered in 48 Hours)/Forebay Orifice

Number of Holes	N =	6		
Selected Diameter of Holes	D_O =	1	in	@ Elev. 665.00
Orifice Area	A =	0.03	sf	
Actual Release Rate (Extended Detention)	$Q_{act\ ED}$ =	0.33	cfs	= $0.62*A_O*(2*g*h_{ov})^{0.5}$)
Actual Release Time (Extended Detention)	T_{ED} =	43.31	hr	=(V_{ED})/($Q_{act\ ED}$ *3600)

Orifice 2: Detention and Flood Control Facilities

Orifice Requirements				
100-Year Post Development Peak Discharge	Q_{100p} =	6.40	cfs	
Storage Eleveation (Flood Control)	Z_{FC} =	669.38		
Outlet Eleveation	Z_{out} =	665.00		
Head (Flood Control)	h_{FC} =	4.38	ft	= Z_{FC}-Z_{out}
Orifice Area Required	A_O =	0.62	sf	= Q_{100p}/(0.62*(2*g*h_{FC})$^{0.5}$)
Orifice Selection				
Number of Holes	N =	12		
Required Diameter of Holes	D_O =	3.07	in	
Selected Diameter of Holes	D_O =	3	in	@ Elev. 669.06
Orifice Area	A =	0.59	sf	
Actual Release Rate (Flood Control)	$Q_{act\ FC}$ =	6.13	cfs	= $0.62*A_O*(2*g*h_{FC})^{0.5}$)
Actual Release Time (Flood Control)	T_{FC} =	3.07	hr	=(V_{FC})/(Q_{100p}*3600)
Is $Q_{act\ fc}$ less than Q_{100p} ?		Yes		Acceptable

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 20'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

Storm Water Management Plan Northwest Pond

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C3.11

DETENTION POND

Elevation	Depth (ft)	Area (sf) Basin	Area (sf) Total	Volume (cf) Basin	Volume (cf) Total	Σ Volume (cf) Basin	Σ Volume (cf) Total
671		31,154	31,154			52,753	52,753
	1.00			26,107	26,107		
670		21,366	21,366			26,647	26,647
	1.00			16,663	16,663		
669		12,368	12,368			9,983	9,983
	1.00			8,350	8,350		
668		4,899	4,899			1,633	1,633
	1.00			1,633	1,633		
667		0	0				

Top of FB

V_{100D}	35,195	670.33
V_{ED}	27,987	670.05

Orifice 1: Extended Detention Volume Orifice Sizing (Dewatered in 48 Hours)/Forebay Orifice

Number of Holes	N	=	3		
Selected Diameter of Holes	D_O	=	1	in	@ Elev. 667.00
Orifice Area	A	=	0.02	sf	
Actual Release Rate (Extended Detention)	$Q_{act\ ED}$	=	0.14	cfs	$= 0.62*A_O*[(2*g*h_{mod})^{0.5}]$
Actual Release Time (Extended Detention)	T_{ED}	=	54.69	hr	$=[V_{ED})/(Q_{act\ ED}*3600]$

Orifice 2: Detention and Flood Control Facilities

Orifice Requirements

100-Year Post Development Peak Discharge	Q_{100p}	=	4.12	cfs	
Storage Eleveation (Flood Control)	Z_{FC}	=	670.33		
Outlet Eleveation	Z_{out}	=	667.00		
Head (Flood Control)	h_{FC}	=	3.33	ft	$= Z_{FC}-Z_{out}$
Orifice Area Required	A_O	=	0.45	sf	$= Q_{100p}/[0.62*(2*g*h_{FC})^{0.5}]$

Orifice Selection

Number of Holes	N	=	9		
Required Diameter of Holes	D_O	=	3.04	in	
Selected Diameter of Holes	D_O	=	3	in	@ Elev. 670.05
Orifice Area	A	=	0.44	sf	
Actual Release Rate (Flood Control)	$Q_{act\ FC}$	=	4.01	cfs	$= 0.62*A_O*[(2*g*h_{FC})^{0.5}]$
Actual Release Time (Flood Control)	T_{FC}	=	2.44	hr	$=[V_{FC})/(Q_{100p}*3600]$
Is $Q_{act\ fc}$ less than Q_{100p} ?			Yes		Acceptable

NOTE:
REQUIRED WATER QUALITY TREATMENT RATE: 7.97 CFS
PROPOSED WATER QUALITY TREATMENT UNIT: AQUA-SWIRL XCELERATOR XC-9 (OR EQUAL)
PROPOSED WATER QUALITY TREATMENT UNIT RATE: 8.29 CFS

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

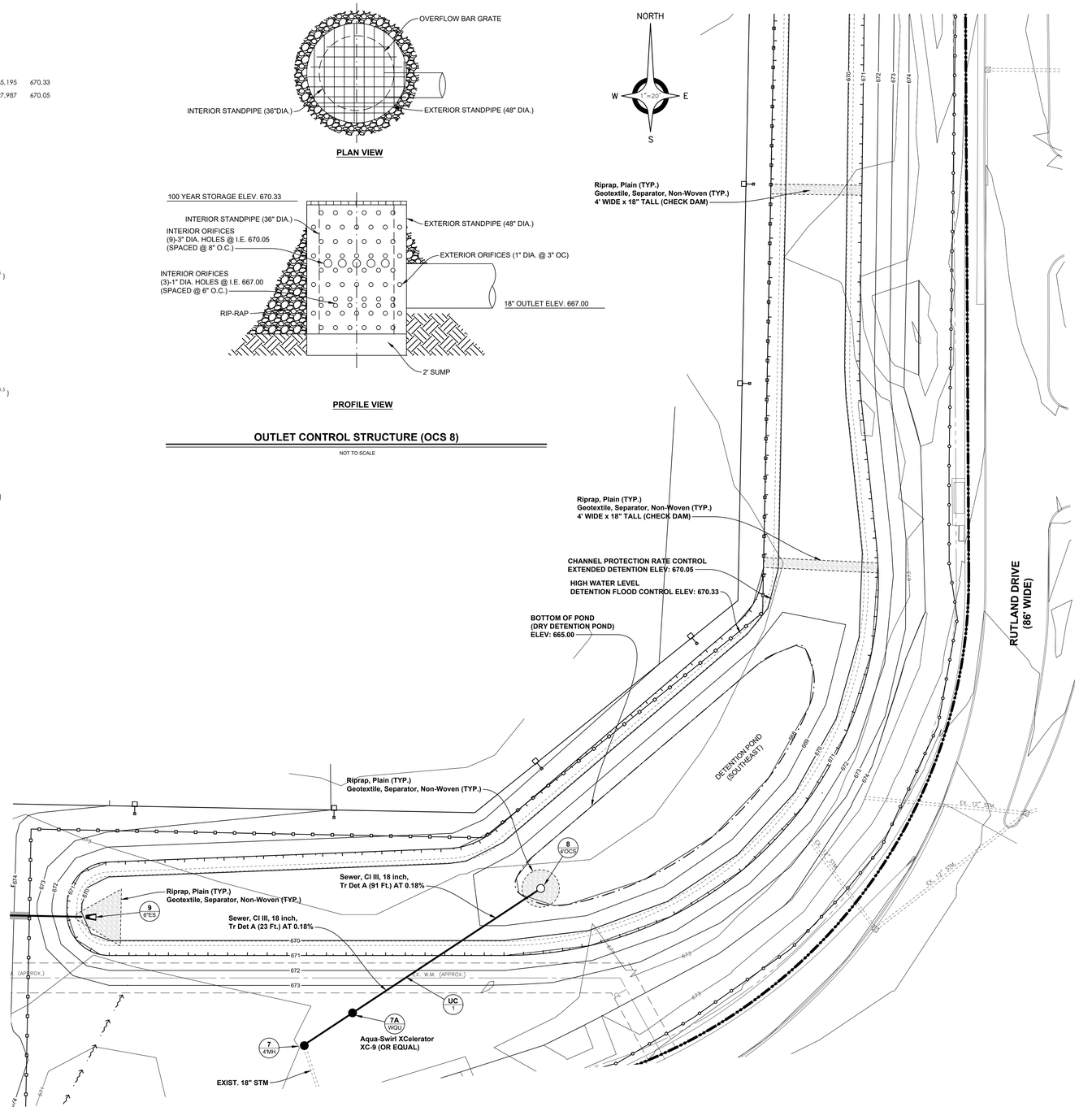
BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK, WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

PLAN VIEW

PROFILE VIEW

OUTLET CONTROL STRUCTURE (OCS 8)

NOT TO SCALE



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-0087\DWG\CIVIL\30X42-IDS-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 20'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

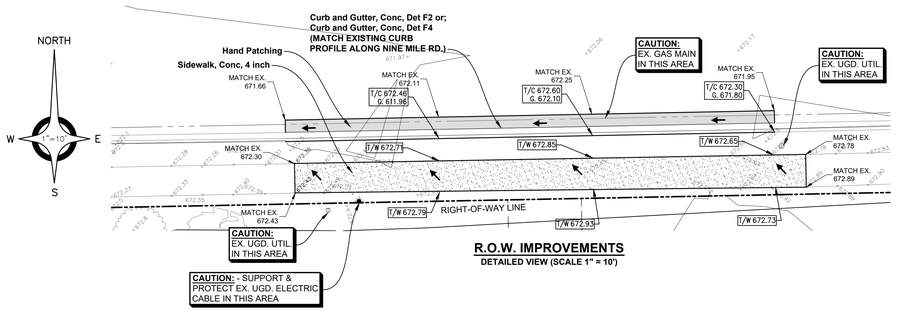
AEW Drawing Title

Storm Water Management Plan Southeast Pond

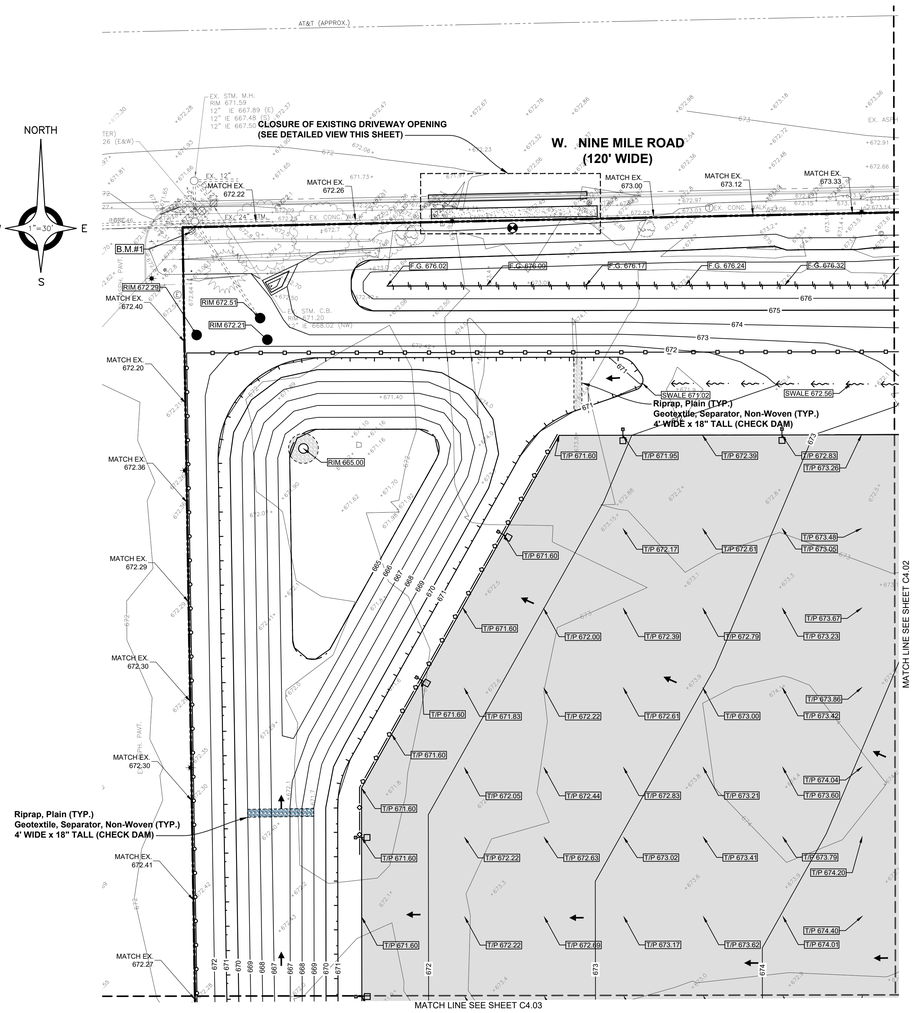
IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C3.12



R.O.W. IMPROVEMENTS
DETAILED VIEW (SCALE 1" = 10')



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

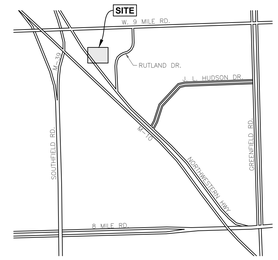
PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

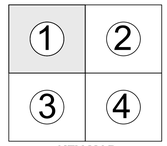
3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK
- CONC. CURB & GUTTER
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE IN BOX (SERVICE LINE SHUTOFF)
- T/W 861.00 PROPOSED GRADE
- FLOW ARROW
- 000.00 EXIST. GRADE
- T/C TOP CONC. CURB
- T/W TOP CONC. WALK
- G. TOP CONC. GUTTER
- T/P TOP OF PAVEMENT
- F/G FINISHED GROUND GRADE (GRASS)



LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 1
TOP OF HYDRANT ON SOUTH SIDE OF 9 MILE RD. 40' ± EAST OF DRIVE TO #17515.
ELEVATION: 675.36

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

ESTIMATED PAVING AND GRADING QUANTITIES (TOTAL)

EARTHWORK (GRADING)		
1. Excavation, Earth (Haul-Off)	5,038	Cyd
2. Granular Material, CL II	82,520	Cyd
3. Hand Patching (HMA)	20	Tons
4. Subgrade Manipulation (On-site earthmoving)	81,901	Syd
5. Aggregate Base, 6 inch (21AA Limestone)	444	Syd
6. Aggregate Base, 10 inch (21AA Limestone)	41,764	Syd
7. Geotextile Stabilization (Tensar NX750)	41,764	Syd
8. Geogrid Separator, Non-Woven	160	Syd
9. Riprap, Plain	160	Syd
PAVING		
1. HMA, 3 EML	1	Ea
2. HMA, 5 EML	2	Ea
3. Conc Pavt, Nonreinf, 6 inch	5	Ft
4. Curb and Gutter, Conc, Det F2	363	Ft
5. Sidewalk, Conc, 4 inch	25	Ft

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

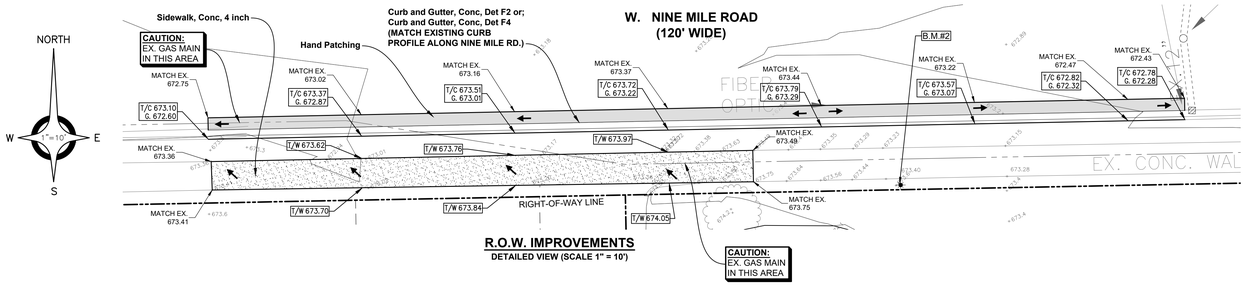
AEW Drawing Title

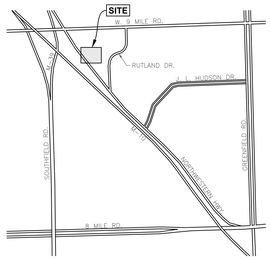
Paving and Grading Plan
Northwest

IDS Project Number
24140-1000

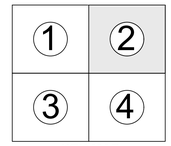
AEW PROJECT NUMBER
0369-0088

Drawing Number
C4.01

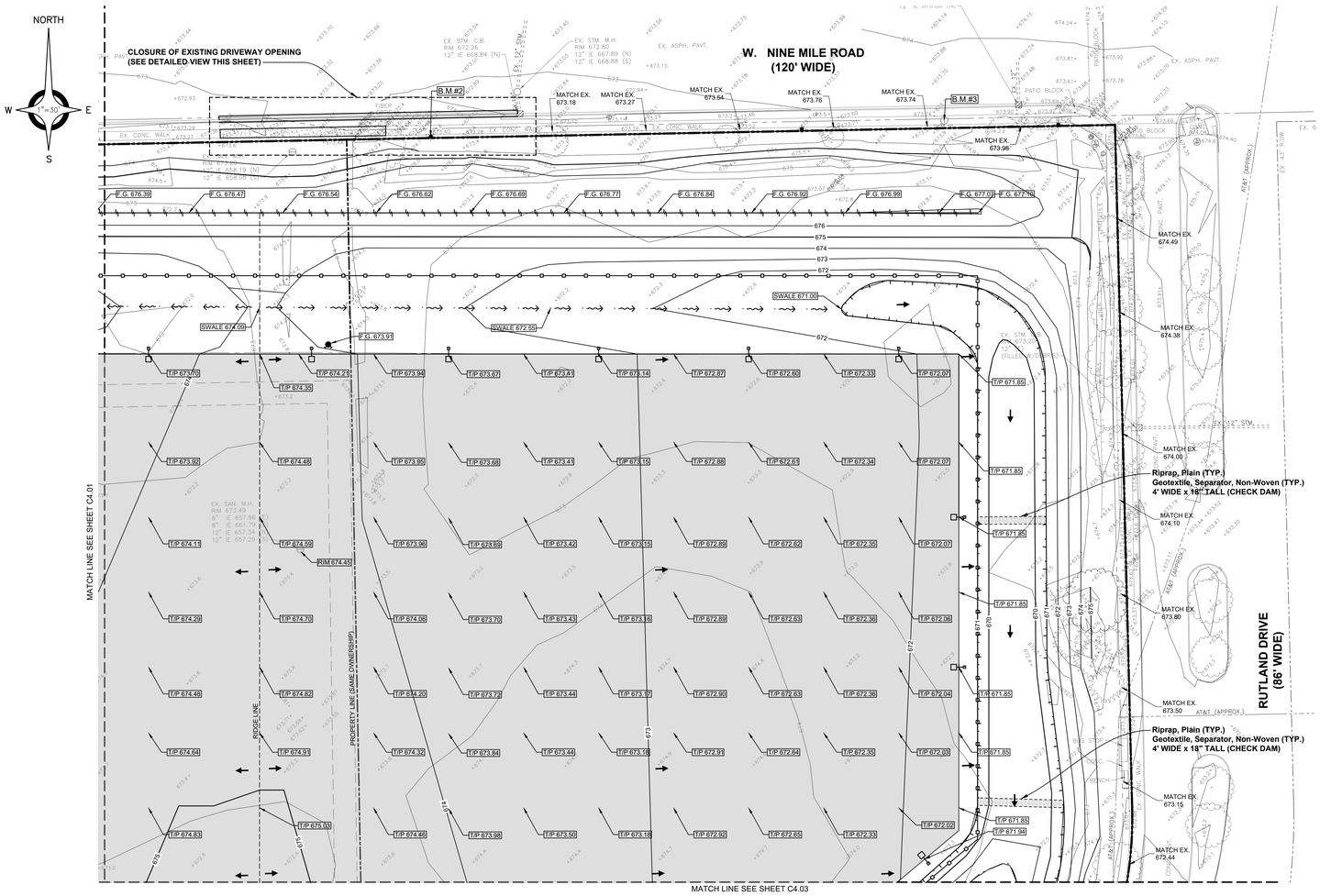




LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE



BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 2
CHIS "X" NORTHWEST BOLT OF LIGHT POLE ON SOUTH SIDE OF 9 MILE RD. ±55' EAST OF ABANDONED DRIVE.
ELEVATION: 674.52

BENCH MARK NO. 3
CHIS "X" NORTH RIM OF PHONE M.H. IN WALK SOUTH SIDE OF 9 MILE RD., OPPOSITE DRIVE #16550.
ELEVATION: 673.83

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK
- CONC. CURB & GUTTER
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE IN BOX (SERVICE LINE SHUTOFF)
- T/W 861.00 PROPOSED GRADE
- FLOW ARROW
- 000.00 EXIST. GRADE
- T/C TOP CONC. CURB
- T/W TOP CONC. WALK
- G. TOP CONC. GUTTER
- T/P TOP OF PAVEMENT
- F/G FINISHED GROUND GRADE (GRASS)

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

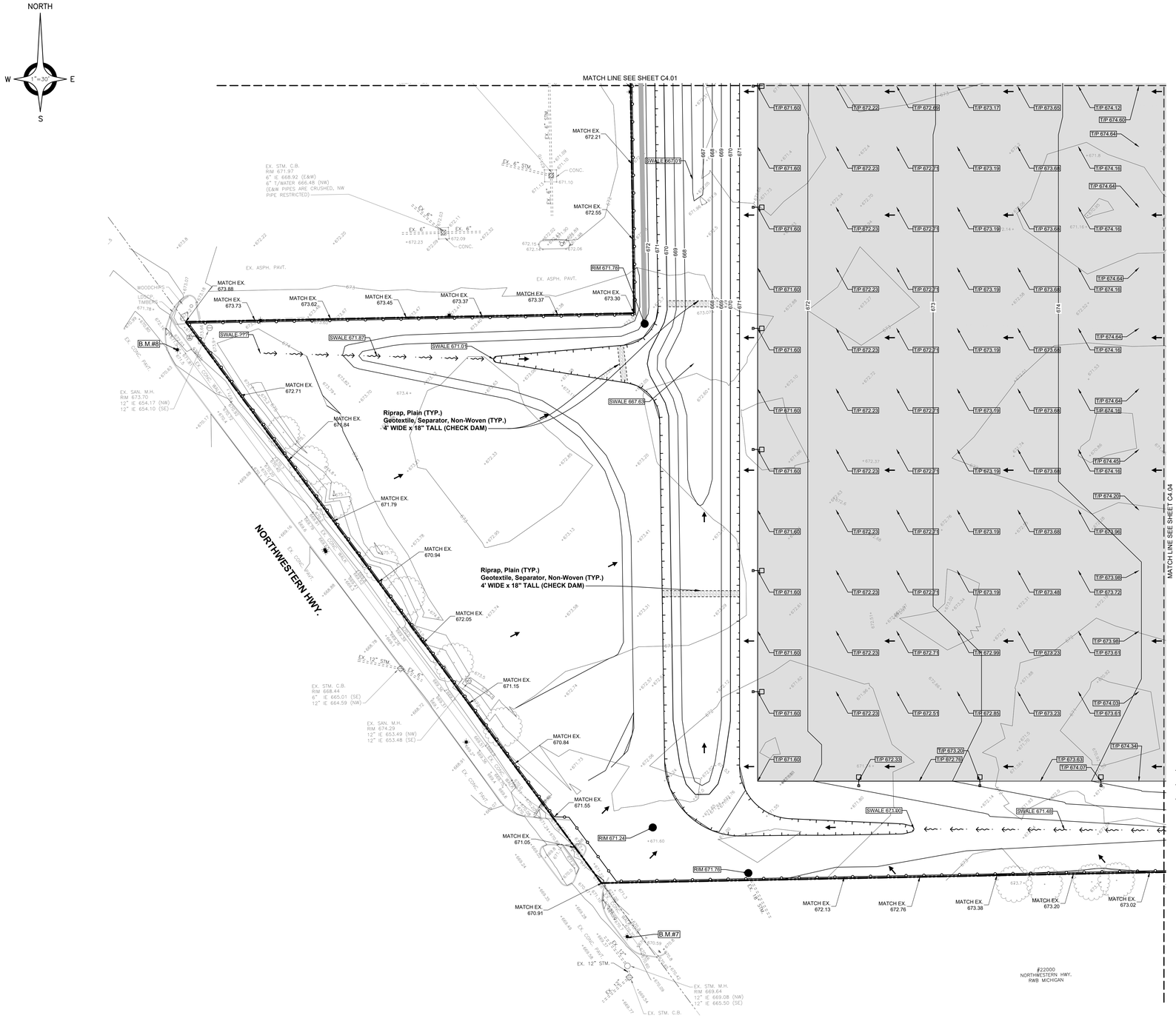
AEW Drawing Title

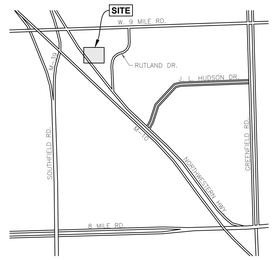
Paving and Grading Plan
Northeast

IDS Project Number
24140-1000

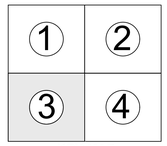
AEW PROJECT NUMBER
0369-0088

Drawing Number
C4.02





LOCATION MAP
NOT TO SCALE



KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 7
CHIS "X" ON SOUTHWEST SIDE OF STEEL LIGHT POLE BASE, NORTHEAST SIDE OF NORTHWESTERN HWY., NORTH SIDE OF DRIVE #22000.
ELEVATION: 672.00

BENCH MARK NO. 8
CHIS "X" ON SOUTHEAST BOLT OF LIGHT POLE ON NORTHEAST SIDE OF NORTHWESTERN HWY., SOUTH OF DIVE TO #17515.
ELEVATION: 673.15

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK
- CONC. CURB & GUTTER
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE IN BOX (SERVICE LINE SHUTOFF)
- T/W 861.00 PROPOSED GRADE
- FLOW ARROW
- 000.00 EXIST. GRADE
- T/C TOP CONC. CURB
- T/W TOP CONC. WALK
- G. TOP CONC. GUTTER
- T/P TOP OF PAVEMENT
- F/G FINISHED GROUND GRADE (GRASS)

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

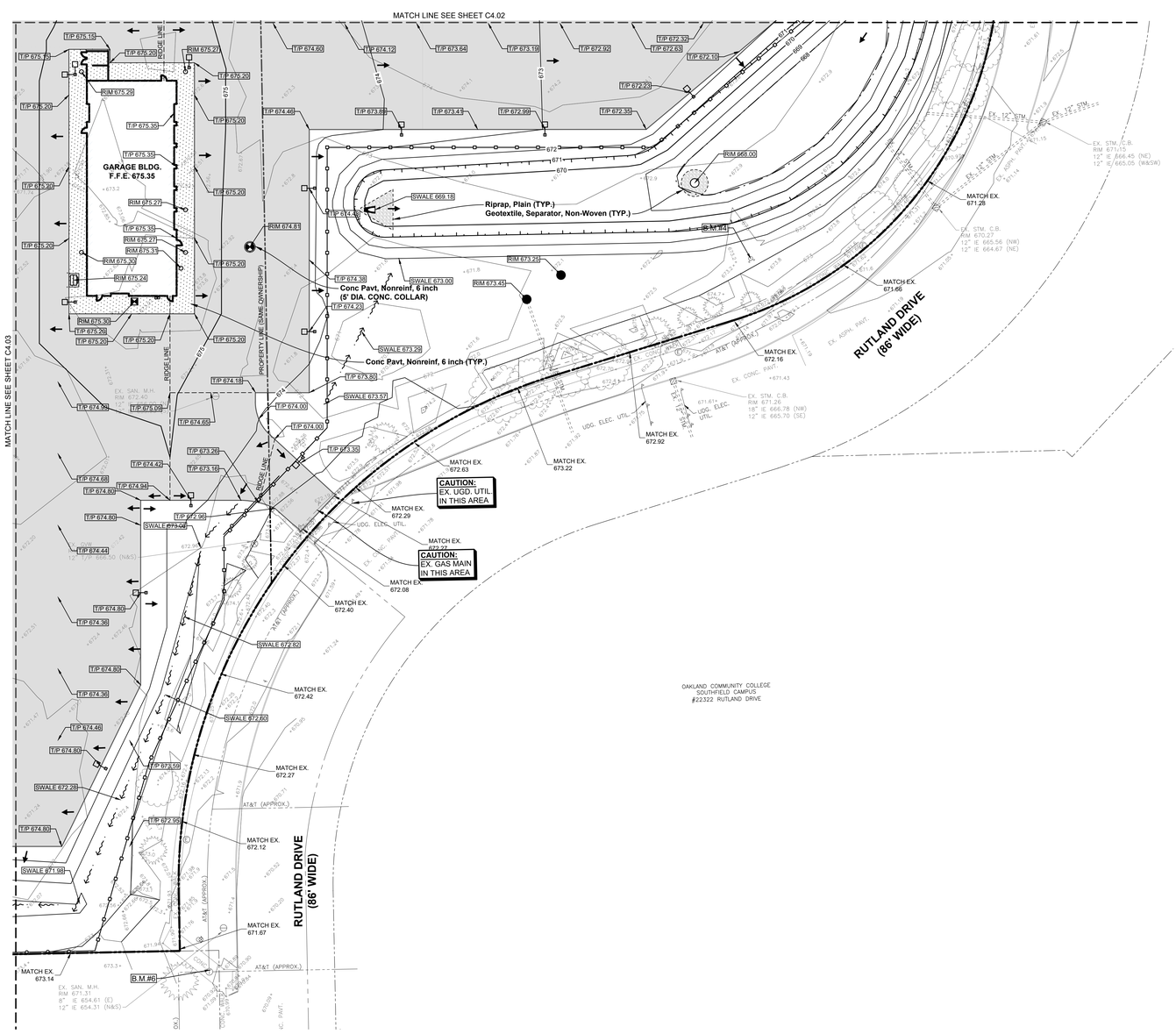
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

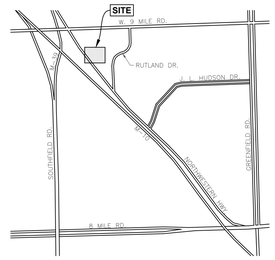
AEW Drawing Title

Paving and Grading Plan Southwest

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C4.03





LOCATION MAP
NOT TO SCALE

1	2
3	4

KEY MAP
NOT TO SCALE

BENCH MARKS (NAVD88 DATUM)

BENCH MARK NO. 4
TOP OF HYDRANT NORTH WEST SIDE OF BERM ON NORTHWEST SIDE OF RUTLAND DR., OPPOSITE NORTHWEST DRIVE # 22322.
ELEVATION: 675.90

BENCH MARK NO. 5
SET MAG NAIL IN SOUTHEAST CORNER OF CONC. LIGHT POLE BASE #9 IN PARKING LOT WEST OF #22322 AND NORTH OF #22000.
ELEVATION: 674.81

BENCH MARK NO.6
CHIS "X" NORTHEAST RIM OF PHONE M.H. IN WALK, WEST SIDE OF RUTLAND DR., OPPOSITE WEST DRIVE OF #22322.
ELEVATION: 671.06

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK
- CONC. CURB & GUTTER
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED SANITARY MANHOLE
- PROPOSED LIGHT POLE
- PROPOSED HYDRANT
- PROPOSED GATE VALVE IN BOX (SERVICE LINE SHUTOFF)
- T/W 861.00 PROPOSED GRADE
- FLOW ARROW
- 000.00 EXIST. GRADE
- T/C TOP CONC. CURB
- T/W TOP CONC. WALK
- G. TOP CONC. GUTTER
- T/P TOP OF PAVEMENT
- F/G FINISHED GROUND GRADE (GRASS)

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title
OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

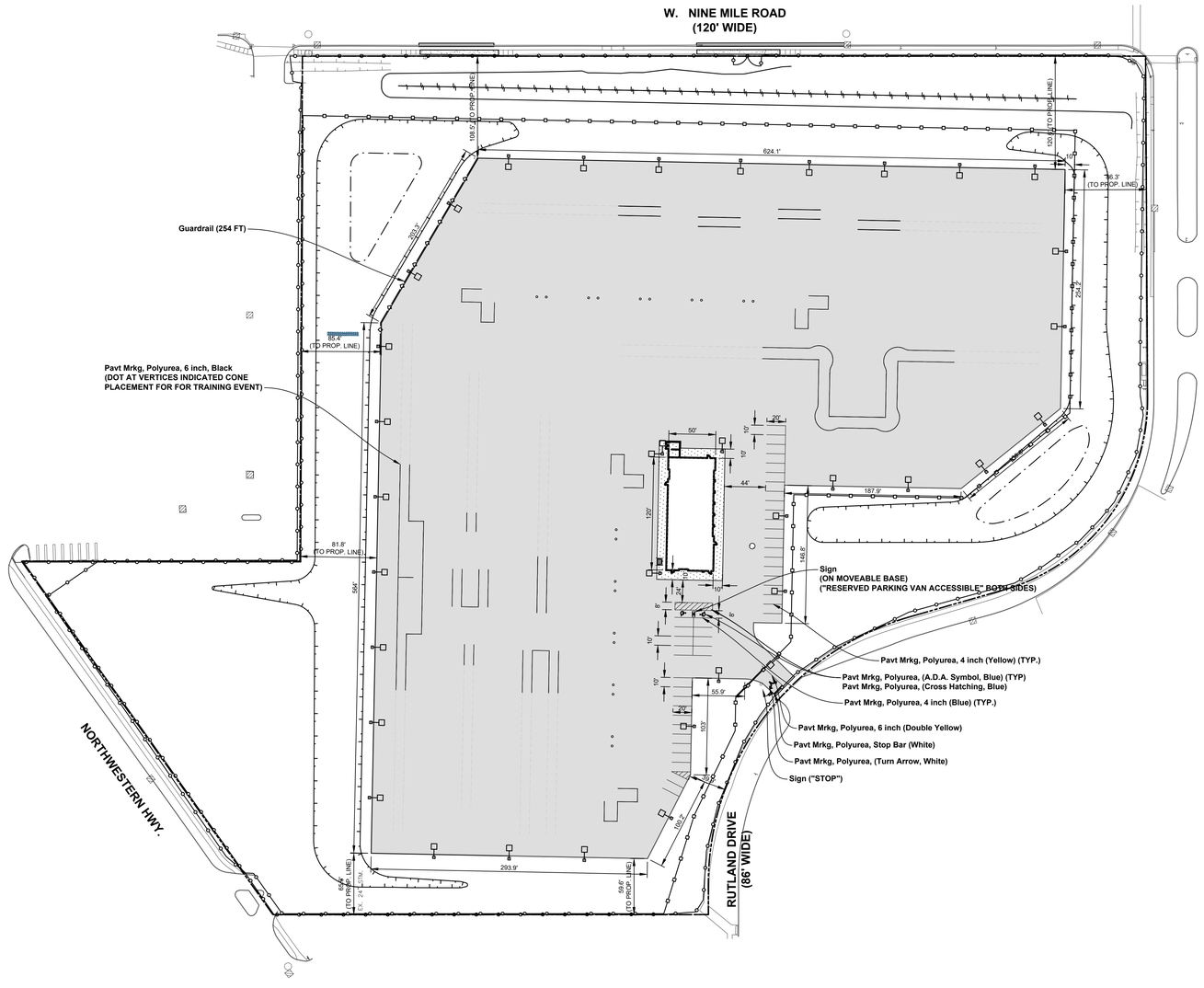
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

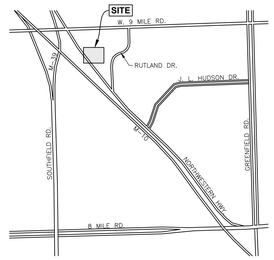
AEW Drawing Title

Paving and Grading Plan Southeast

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C4.04





LOCATION MAP
NOT TO SCALE

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK W / CURB FACED WALK
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE

ESTIMATED STRIPING AND SIGNAGE QUANTITIES (TOTAL)

1. Post, Steel, 3lb (Ground Driven Post)	1	Ea
2. Post, LDPE, on Moveable Base	1	Ea
3. Sign, Type IIIB	10	Sft
4. Pavt Mrkg, Polyurea, 4 inch Blue	48	Ft
5. Pavt Mrkg, Polyurea, 4 inch Yellow	971	Ft
6. Pavt Mrkg, Polyurea, 24 inch O.C. Cross Hatching, Yellow	89	Sft
7. Pavt Mrkg, Polyurea, 24 inch O.C. Cross Hatching, Blue	320	Sft
8. Pavt Mrkg, Polyurea, 24 inch, Stop Bar, White	12	Ft
9. Pavt Mrkg, Polyurea, Accessible Sym	2	Ea
10. Pavt Mrkg, Polyurea, Rt and Lt Turn Arrow Sym	1	Ea
11. Pavt Mrkg, 6 inch Dia. Dot, Black	152	Ea

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

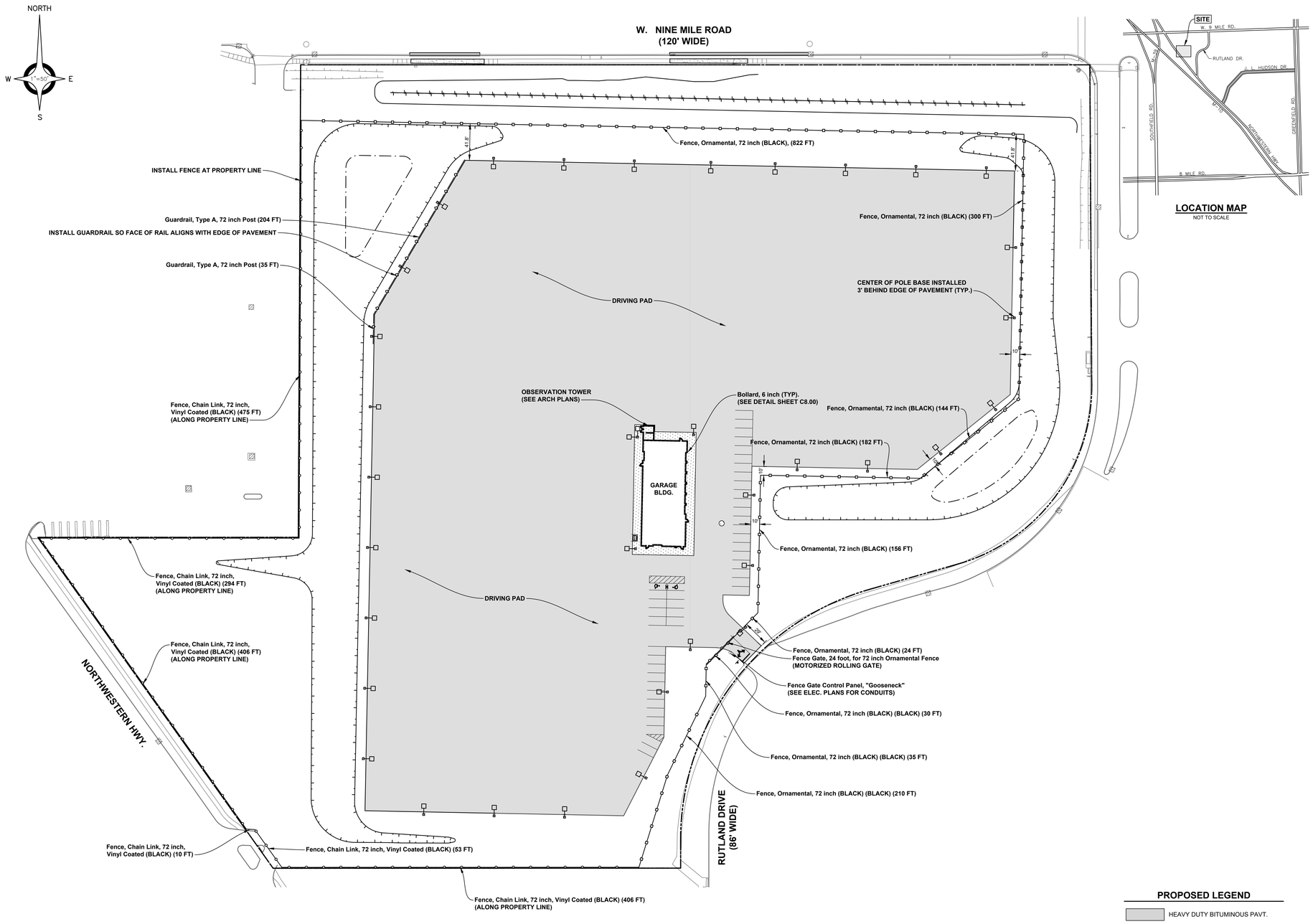
AEW Drawing Title

Signage, Striping, and Geometrics Plan

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C5.00



UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

ESTIMATED FENCING AND MISC. CONSTRUCTION QUANTITIES (TOTAL)

1. Bollard, 6 inch	18	Ea
2. Fence, Chain Link, 72 inch, Vinyl Coated (BLACK)	1,644	Ft
3. Fence Gate Keypad (Gooseneck)	1	Ea
4. Fence, Ornamental, 72 inch	1,903	Ft
5. Fence Gate, 24 foot, for 72 inch Ornamental Fence	1	Ea

PROPOSED LEGEND

- HEAVY DUTY BITUMINOUS PAVT.
- CONC. PAVT.
- CONCRETE SIDEWALK W / CURB FACED WALK
- PROPOSED GUARDRAIL
- PROPOSED VINYL COATED, CHAIN LINK FENCE
- PROPOSED ORNAMENTAL FENCE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 50'

Issued for	Issue Date
50% CDs - Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

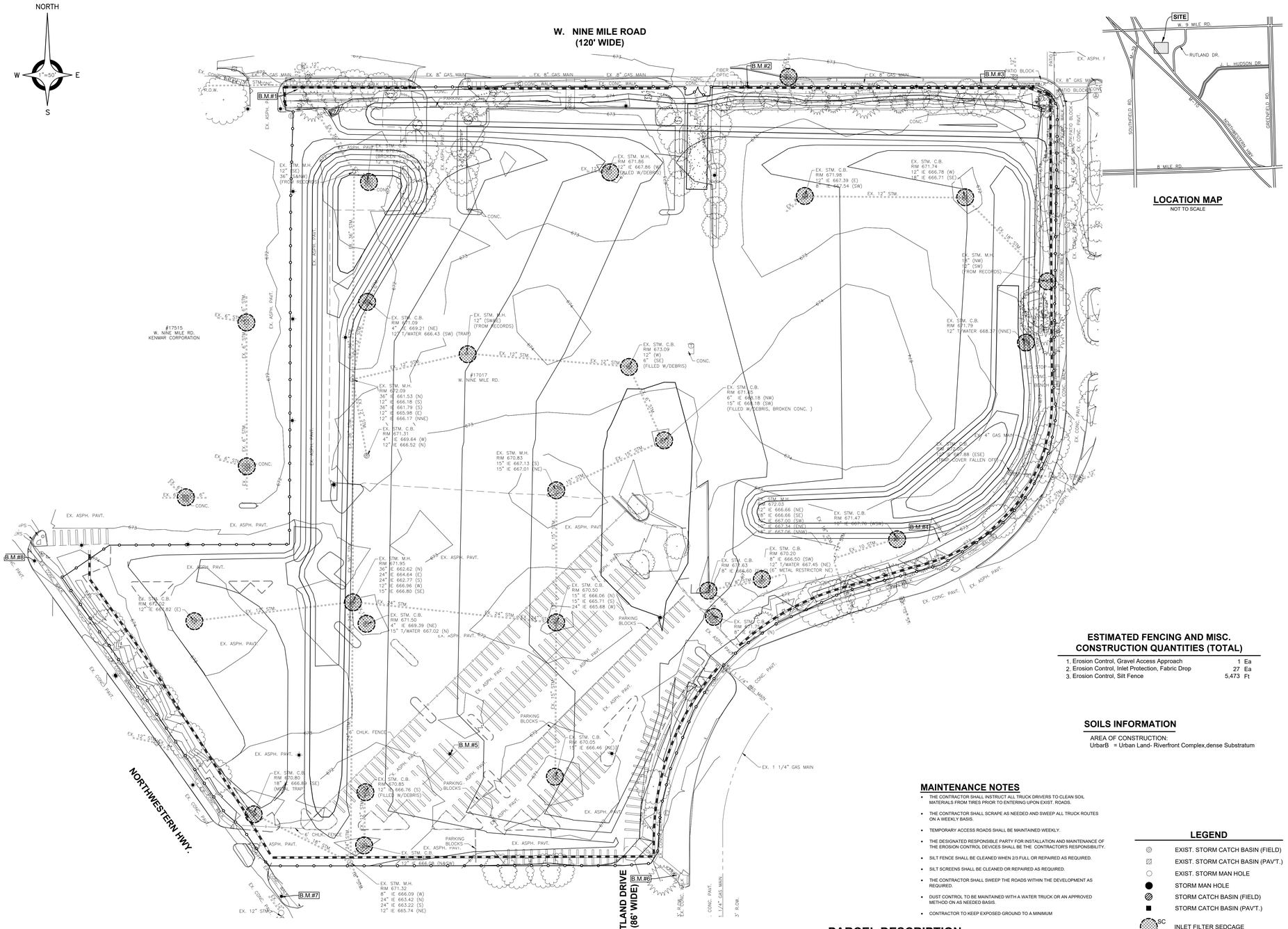
AEW Drawing Title

Fencing and Misc. Site Construction

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C5.10



ESTIMATED FENCING AND MISC. CONSTRUCTION QUANTITIES (TOTAL)

1. Erosion Control, Gravel Access Approach	1	Ea
2. Erosion Control, Inlet Protection, Fabric Drop	27	Ea
3. Erosion Control, Silt Fence	5,473	Ft

SOILS INFORMATION

AREA OF CONSTRUCTION:
UrbanB = Urban Land- Riverfront Complex,dense Substratum

MAINTENANCE NOTES

- THE CONTRACTOR SHALL INSTRUCT ALL TRUCK DRIVERS TO CLEAN SOIL MATERIALS FROM TIRES PRIOR TO ENTERING UPON EXIST. ROADS.
- THE CONTRACTOR SHALL SCRAPE AS NEEDED AND SWEEP ALL TRUCK ROUTES ON A WEEKLY BASIS.
- TEMPORARY ACCESS ROADS SHALL BE MAINTAINED WEEKLY.
- THE DESIGNATED RESPONSIBLE PARTY FOR INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL DEVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- SILT FENCE SHALL BE CLEANED WHEN 2/3 FULL OR REPAIRED AS REQUIRED.
- SILT SCREENS SHALL BE CLEANED OR REPAIRED AS REQUIRED.
- THE CONTRACTOR SHALL SWEEP THE ROADS WITHIN THE DEVELOPMENT AS REQUIRED.
- DUST CONTROL TO BE MAINTAINED WITH A WATER TRUCK OR AN APPROVED METHOD ON AS NEEDED BASIS.
- CONTRACTOR TO KEEP EXPOSED GROUND TO A MINIMUM

LEGEND

- EXIST. STORM CATCH BASIN (FIELD)
- EXIST. STORM CATCH BASIN (PAVT.)
- EXIST. STORM MAN HOLE
- STORM MAN HOLE
- STORM CATCH BASIN (FIELD)
- STORM CATCH BASIN (PAVT.)
- INLET FILTER SEDCAGE
- INLET FILTER
- SILT FENCE
- LIMITS OF DISTURBANCE

PARCEL DESCRIPTION

PARCELS: 24-36-126-007; 24-36-126-006; 24-36-105-010; 24-36-105-009
SITE ADDRESS: 17117 WEST 9 MILE ROAD, SOUTHFIELD, MI 48075
MAIN CAMPUS ADDRESS: 22322 RUTLAND DRIVE, SOUTHFIELD, MI 48075

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 50'

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

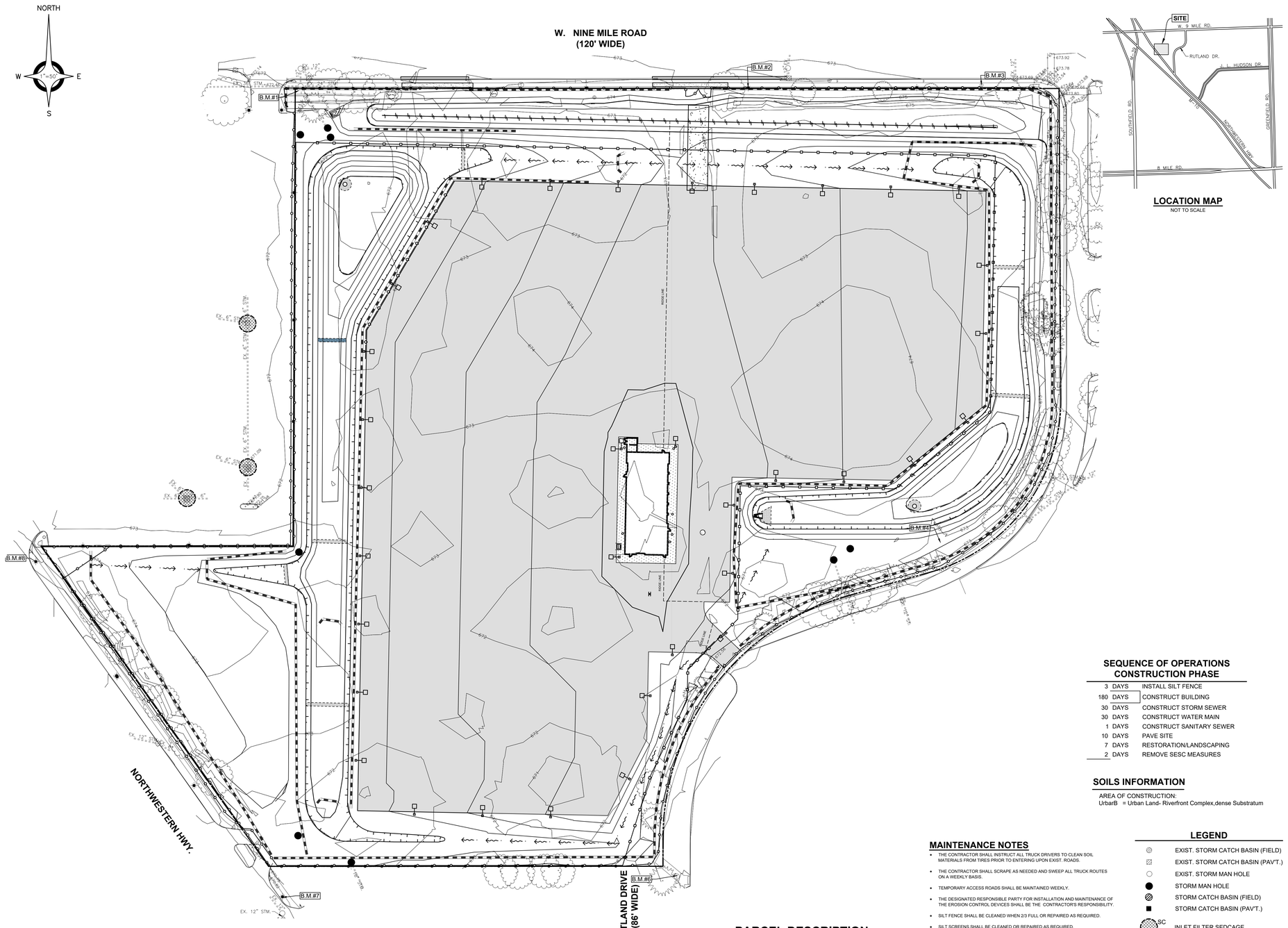
AEW Drawing Title

Soil Erosion and Sedimentation Control Plan Phase 1

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C6.00



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 West Long Lake, Suite 200
Troy, Michigan 48098

5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

LOCATION MAP
NOT TO SCALE

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

NORTH

SEQUENCE OF OPERATIONS
CONSTRUCTION PHASE

3	DAYS	INSTALL SILT FENCE
180	DAYS	CONSTRUCT BUILDING
30	DAYS	CONSTRUCT STORM SEWER
30	DAYS	CONSTRUCT WATER MAIN
1	DAYS	CONSTRUCT SANITARY SEWER
10	DAYS	PAVE SITE
7	DAYS	RESTORATION/LANDSCAPING
2	DAYS	REMOVE SESC MEASURES

SOILS INFORMATION

AREA OF CONSTRUCTION:
UrbarB = Urban Land- Riverfront Complex,dense Substratum

MAINTENANCE NOTES

- THE CONTRACTOR SHALL INSTRUCT ALL TRUCK DRIVERS TO CLEAN SOIL MATERIALS FROM TIRES PRIOR TO ENTERING UPON EXIST. ROADS.
- THE CONTRACTOR SHALL SCRAPE AS NEEDED AND SWEEP ALL TRUCK ROUTES ON A WEEKLY BASIS.
- TEMPORARY ACCESS ROADS SHALL BE MAINTAINED WEEKLY.
- THE DESIGNATED RESPONSIBLE PARTY FOR INSTALLATION AND MAINTENANCE OF THE EROSION CONTROL DEVICES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- SILT FENCE SHALL BE CLEANED WHEN 2/3 FULL OR REPAIRED AS REQUIRED.
- SILT SCREENS SHALL BE CLEANED OR REPAIRED AS REQUIRED.
- THE CONTRACTOR SHALL SWEEP THE ROADS WITHIN THE DEVELOPMENT AS REQUIRED.
- DUST CONTROL TO BE MAINTAINED WITH A WATER TRUCK OR AN APPROVED METHOD ON AS NEEDED BASIS.
- CONTRACTOR TO KEEP EXPOSED GROUND TO A MINIMUM

LEGEND

⊘	EXIST. STORM CATCH BASIN (FIELD)
▨	EXIST. STORM CATCH BASIN (PAV'T.)
○	EXIST. STORM MAN HOLE
●	STORM MAN HOLE
⊘	STORM CATCH BASIN (FIELD)
■	STORM CATCH BASIN (PAV'T.)
⊗ SC	INLET FILTER SEDCAGE
⊗	INLET FILTER
▥	SILT FENCE
— — —	LIMITS OF DISTURBANCE

PARCEL DESCRIPTION

PARCELS: 24-36-126-007; 24-36-126-006; 24-36-105-010; 24-36-105-009
SITE ADDRESS: 17117 WEST 9 MILE ROAD, SOUTHFIELD, MI 48075
MAIN CAMPUS ADDRESS: 22322 RUTLAND DRIVE, SOUTHFIELD, MI 48075

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-0087\DWG\CIVIL\30X42-IDS-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

Project Administrator
V. Grant
Project Designer
J. Sala
Project Architect / Engineer
J. Sala
Drawn By
B. Koci
Q.M. Review
M. Sommers
Approved
J. Sala
Drawing Scale
1" = 50'

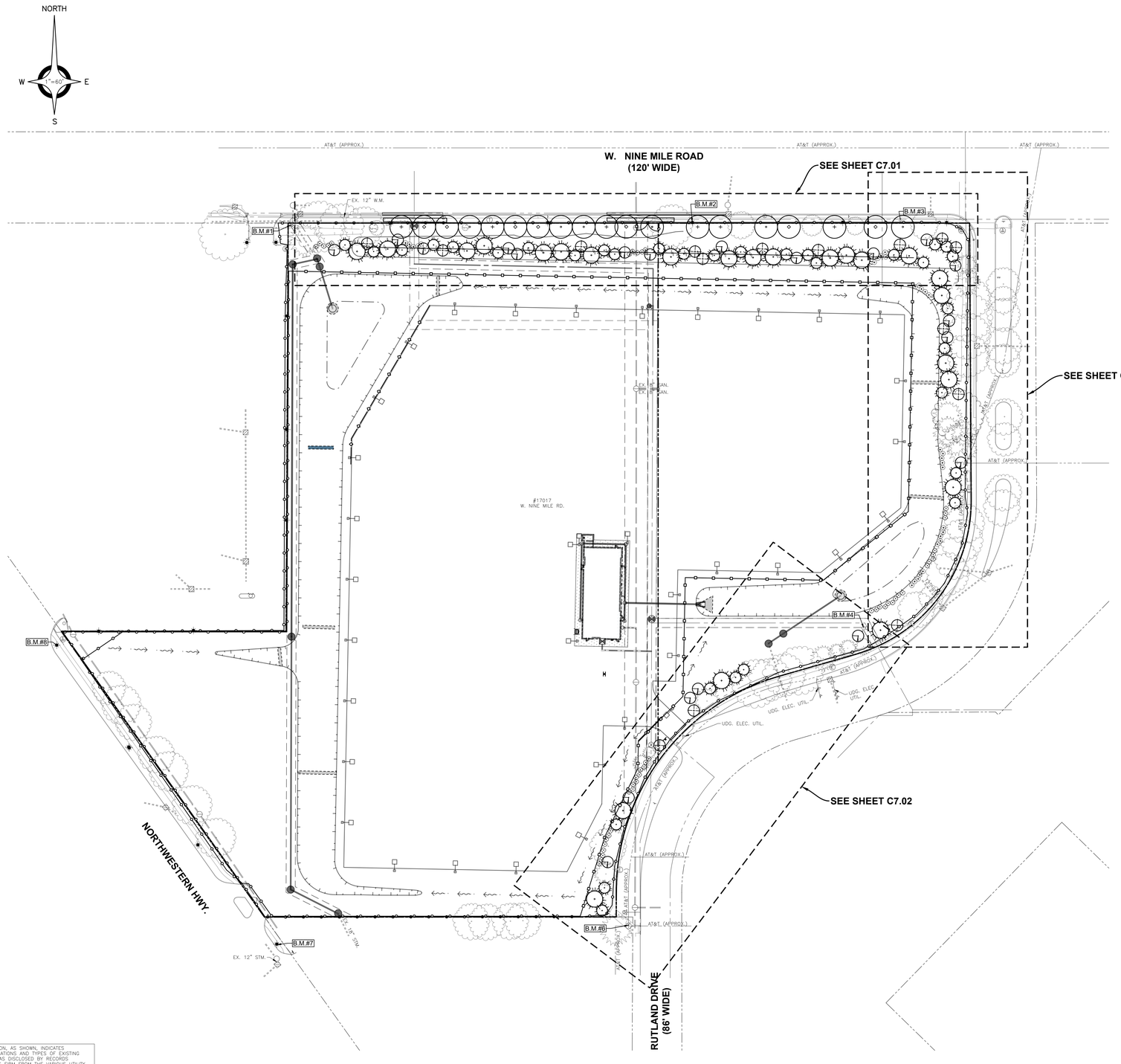
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

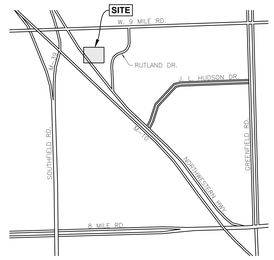
AEW Drawing Title

Soil Erosion and
Sedimentation Control Plan
Phase 2

IDS Project Number
24140-1000
AEW PROJECT NUMBER
0369-0088

Drawing Number
C6.10





LOCATION MAP
NOT TO SCALE

LEGEND

- PROPOSED CANOPY TREES
- PROPOSED EVERGREEN TREES
- PROPOSED UNDERSTORY TREES
- PROPOSED SHRUBS

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 60'

Issued for	Issue Date
Quality Management Review	03-13-2025
Bids	04-03-2025

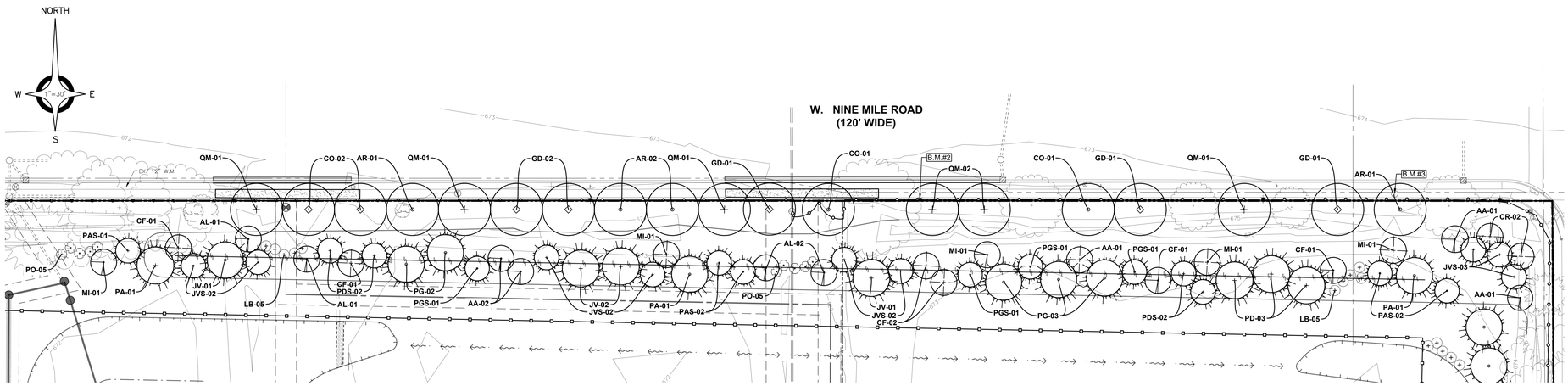
AEW Drawing Title

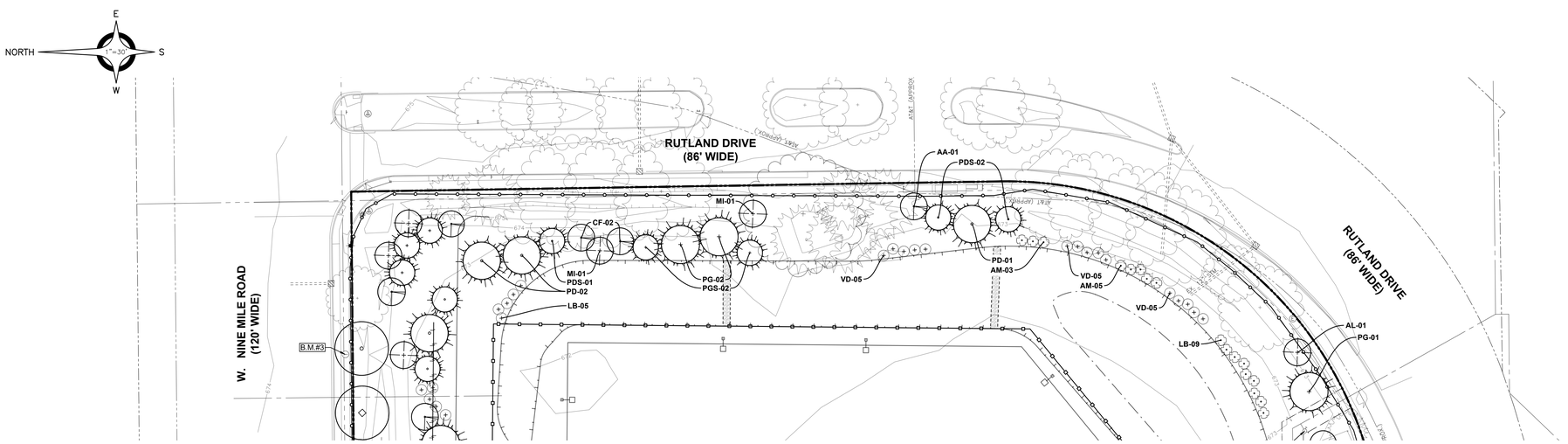
Overall Landscape Plan

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C7.00





LEGEND

- PROPOSED CANOPY TREES
- PROPOSED EVERGREEN TREES
- PROPOSED UNDERSTORY TREES
- PROPOSED SHRUBS

PLANT MATERIAL SCHEDULE

Qty.	Key	Scientific Name	Common Name	Size	Spacing	Comments
CANOPY TREES						
4	AR	*Acer rubrum*	Red Maple	2.5" cal.	Match	
4	CO	*Celtis occidentalis*	Hackberry	2.5" cal.	Match	
5	GD	*Gymnocladus dioicus*	Kentucky Coffeetree	2.5" cal.	Match	
6	QM	*Quercus macrocarpa*	Bur Oak	2.5" cal.	Match	
EVERGREEN TREES						
4	JV	*Juniperus virginiana*	Eastern Red Cedar	8-ft B&B	Match	
9	JVS	*Juniperus virginiana*	Eastern Red Cedar	6-ft B&B	Match	
3	PA	*Picea abies*	Norway Spruce	8-ft B&B	Match	
5	PAS	*Picea abies*	Norway Spruce	6-ft B&B	Match	
8	PG	*Picea glauca var. densata*	Black Hills Spruce	8-ft B&B	Match	
6	PGS	*Picea glauca var. densata*	Black Hills Spruce	6-ft B&B	Match	
6	PD	*Pseudotsuga menziesii*	Douglas Fir	8-ft B&B	Match	
7	PDS	*Pseudotsuga menziesii*	Douglas Fir	6-ft B&B	Match	
UNDERSTORY TREES						
6	AA	*Amelanchier arborea*	Juneberry	6-ft B&B	Match	Multi-Stem
5	AL	*Amelanchier laevis*	Smooth Shadbush	6-ft B&B	Match	Multi-Stem
8	CF	*Cornus florida*	Flowering Dogwood	1.5" cal.	Match	
2	CR	*Cornus 'Rutgan'*	Stellar Pink Dogwood	6-ft B&B	Match	Multi-Stem
7	MI	*Malus ioensis*	Prairifire Crabapple	1.5" cal.	Match	
SHRUBS, PERENNIALS & GRASSES						
8	AM	*Aronia melanocarpa*	Black Chokeberry	3 gal.	4-ft O.C.	
24	LB	*Lindera benzoin*	Spicebush	3 gal.	6-ft O.C.	
10	PO	*Physocarpus opulifolius*	Ninebark	3 gal.	6-ft O.C.	
15	VD	*Viburnum dentatum var. lucidum*	Smooth Arrow-wood	3 gal.	6-ft O.C.	

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-0087\DWG\CIVIL\30X42-IDS-TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 West Long Lake, Suite 200
Troy, Michigan 48098

5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	1" = 30'

Issued for	Issue Date
Quality Management Review	03-13-2025
Bids	04-03-2025

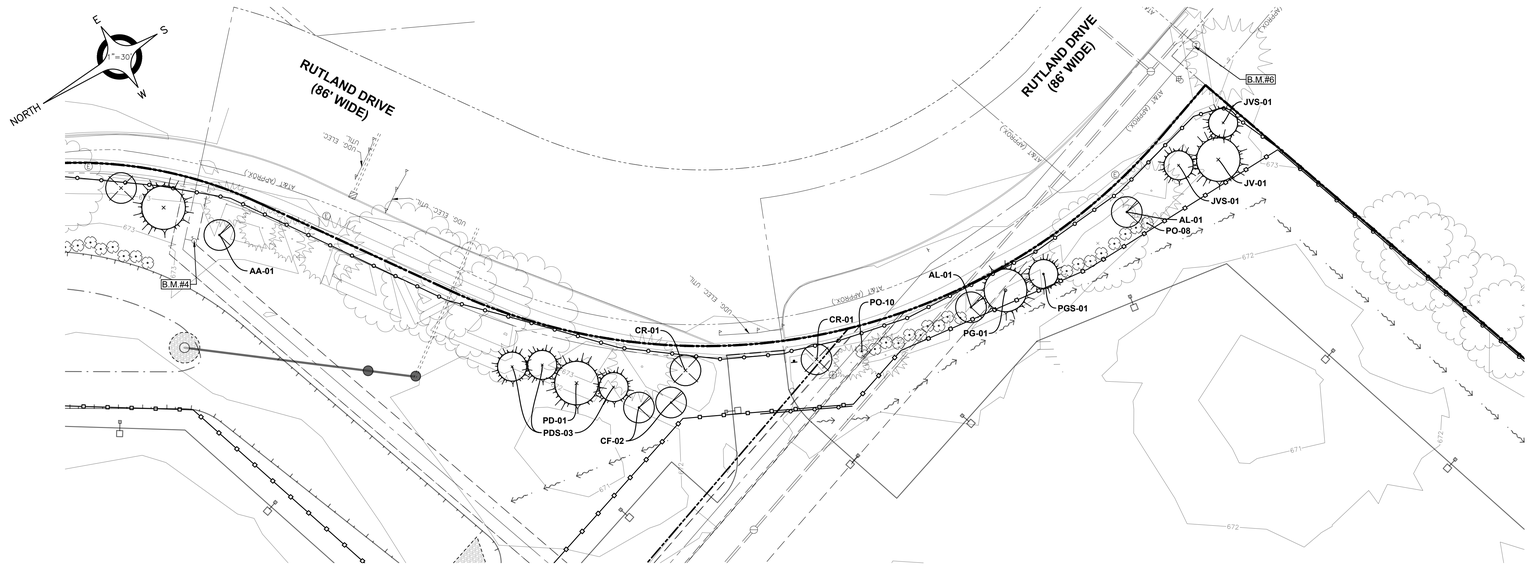
AEW Drawing Title

Landscape Plan

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C7.01

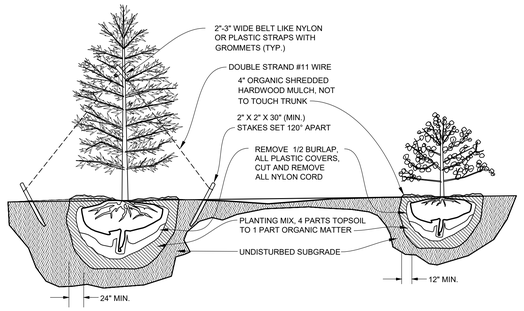


PLANT MATERIAL SCHEDULE

Qty.	Key	Scientific Name	Common Name	Size	Spacing	Comments
		CANOPY TREES				
	AR	*Acer rubrum*	Red Maple	2.5" cal.	Match	
	CO	*Celtis occidentalis*	Hackberry	2.5" cal.	Match	
	GD	*Gymnocladus dioicus*	Kentucky Coffeetree	2.5" cal.	Match	
	QM	*Quercus macrocarpa*	Bur Oak	2.5" cal.	Match	
		EVERGREEN TREES				
1	JV	*Juniperus virginiana*	Eastern Red Cedar	8-ft B&B	Match	
2	JVS	*Juniperus virginiana*	Eastern Red Cedar	6-ft B&B	Match	
	PA	*Picea abies*	Norway Spruce	8-ft B&B	Match	
	PAS	*Picea abies*	Norway Spruce	6-ft B&B	Match	
1	PG	*Picea glauca var. densata*	Black Hills Spruce	8-ft B&B	Match	
1	PGS	*Picea glauca var. densata*	Black Hills Spruce	6-ft B&B	Match	
1	PD	*Pseudotsuga menziesii*	Douglas Fir	8-ft B&B	Match	
3	PDS	*Pseudotsuga menziesii*	Douglas Fir	6-ft B&B	Match	
		UNDERSTORY TREES				
1	AA	*Amelanchier arborea*	Juneberry	6-ft B&B	Match	Multi-Stem
2	AL	*Amelanchier laevis*	Smooth Shadbush	6-ft B&B	Match	Multi-Stem
2	CF	*Cornus florida*	Flowering Dogwood	1.5" cal.	Match	
2	CR	*Cornus 'Rutgan'*	Stellar Pink Dogwood	6-ft B&B	Match	Multi-Stem
	MI	*Malus ioensis*	Prairifire Crabapple	1.5" cal.	Match	
		SHRUBS, PERENNIALS & GRASSES				
	AM	*Aronia melanocarpa*	Black Chokeberry	3 gal.	4-ft O.C.	
	LB	*Lindera benzoin*	Spicebush	3 gal.	6-ft O.C.	
18	PO	*Physocarpus opulifolius*	Ninebark	3 gal.	6-ft O.C.	
	VD	*Viburnum dentatum var. lucidum*	Smooth Arrow-wood	3 gal.	6-ft O.C.	

GENERAL LANDSCAPE NOTES:

1. ALL CONSTRUCTION AND PLANT MATERIAL LOCATION SHALL BE ADJUSTED ON SITE IF NECESSARY AS APPROVED BY THE OWNER'S REPRESENTATIVE.
2. ANY SUBSTITUTIONS OF PLANT MATERIAL OR ALTERATION IN PLANT SIZES OR SPECIFICATION TO BE APPROVED BY THE OWNER'S REPRESENTATIVE.
3. ALL LARGE TREES AND EVERGREENS SHALL BE STAKED, GUYED, AND WRAPPED PER DETAILS SHOWN ON PLAN.
4. ALL PLANT BEDS SHALL BE DRESSED WITH MINIMUM 4" DEPTH ORGANIC SHREDDED HARDWOOD MULCH.
5. DIG SHRUB PITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
6. REMOVE ALL TWINE, WIRE, AND BURLAP FROM TREE AND SHRUB EARTH BALLS, AND FROM TREE TRUNKS.
7. TRUNK FLARE OF ALL WOODY MATERIAL SHALL BE EXPOSED.
8. INSTALLATION OF PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
9. PLANT MATERIAL, ESPECIALLY EVERGREENS, SHALL BE PLANTED HIGHER THAN NORMAL WHEN HEAVY SOIL CONDITIONS (CLAY, ETC.) PREVAIL.
10. ALL PLANTING AREAS SHALL BE FREE OF WEEDS, PREPARED WITH APPROPRIATE SOIL MIXTURES, AND FERTILIZED PRIOR TO PLANT INSTALLATION.
11. NO TREES OR EVERGREENS SHALL BE INSTALLED OVER ANY PROPOSED OR EXISTING UTILITY LINES AS SHOWN ON THE OVERALL LANDSCAPE PLAN. SEE UTILITY PLAN FOR EXACT LOCATION AND DETAILS.



TREE PLANTING DETAIL
NO SCALE

SHRUB PLANTING DETAIL
NO SCALE

LEGEND

- PROPOSED CANOPY TREES
- PROPOSED EVERGREEN TREES
- PROPOSED UNDERSTORY TREES
- PROPOSED SHRUBS

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	

Issued for	Issue Date
Quality Management Review	03-13-2025
Bids	04-03-2025

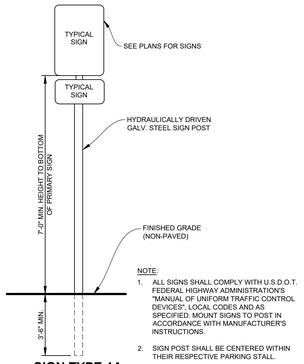
AEW Drawing Title

Landscape Plan and Details

IDS Project Number
24140-1000

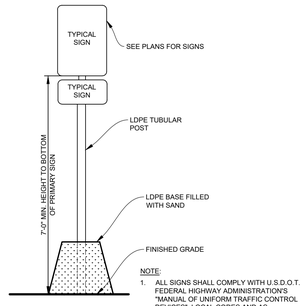
AEW PROJECT NUMBER
0369-0088

Drawing Number
C7.02



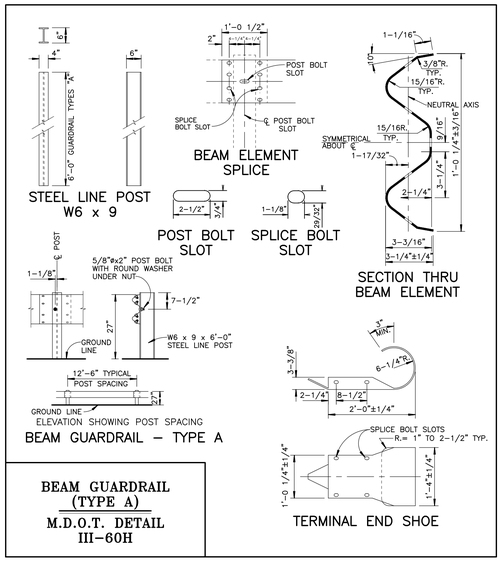
NOTE:
1. ALL SIGNS SHALL COMPLY WITH U.S.D.O.T. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES"; LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. SIGN POST SHALL BE CENTERED WITHIN THEIR RESPECTIVE PARKING STALL.

SIGN TYPE 1A
(NON PAVED AREAS)
NOT TO SCALE

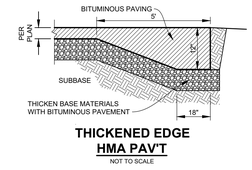


NOTE:
1. ALL SIGNS SHALL COMPLY WITH U.S.D.O.T. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES"; LOCAL CODES AND AS SPECIFIED. MOUNT SIGNS TO POST IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. SIGN POST SHALL BE CENTERED WITHIN THEIR RESPECTIVE PARKING STALL.

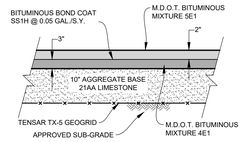
SIGN TYPE 4A
(MOVEABLE LDPE. BASE)
NOT TO SCALE



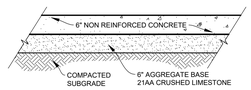
BEAM GUARDRAIL
(TYPE A)
M.D.O.T. DETAIL
III-60H



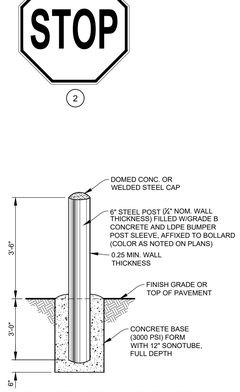
THICKENED EDGE
HMA PAV'T
NOT TO SCALE



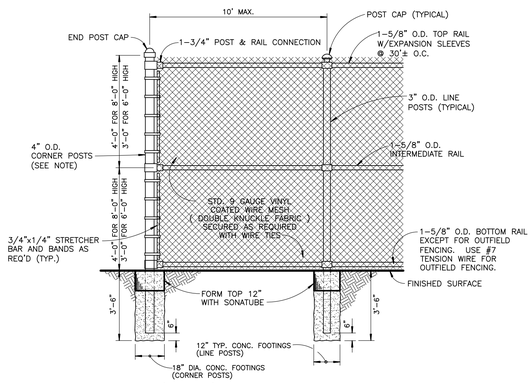
BITUMINOUS PAVEMENT SECTION
NOT TO SCALE (HEAVY DUTY W/TX-5)



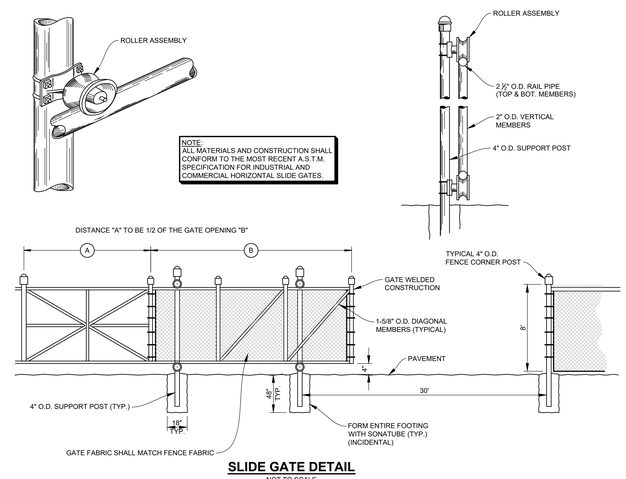
TYPICAL 6" CONCRETE
PAVEMENT SECTION
NOT TO SCALE



6" DIA. BOLLARD WITH LDPE COVER
NOT TO SCALE



TYP. 6' OR 8' HIGH CHAIN LINK FENCE DETAIL
NOT TO SCALE



SLIDE GATE DETAIL
NOT TO SCALE

SLIDGATE.DWG
MISC-DETS

2

10

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF EXISTING FACILITIES ONLY, AS DISCLOSED BY RECORDS PROVIDED TO THIS FIRM FROM THE VARIOUS UTILITY COMPANIES. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATIONS AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF THESE PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN THE FIELD. DURING THE CONSTRUCTION, THE CONTRACTOR SHALL PROTECT AND SUPPORT ALL UTILITIES THAT ARE ENCOUNTERED. (ALL COSTS FOR UTILITY LOCATION VERIFICATION, SUPPORT AND PROTECTION SHALL BE INCLUDED IN THE PROPOSED PAY ITEM CONFLICTING WITH THAT UTILITY).

DURING CONSTRUCTION, THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR ANY AND ALL OVERHEAD AND / OR BURIED UTILITIES.

3 WORKING DAYS BEFORE YOU DIG
CALL MISS DIG 811 TOLL FREE

M:\0369\0369-0087\DWG\CIVIL\3D\42-IDS TBLK.DWG LAYOUT: Model 10/18/2023 3:25:30 PM

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 West Long Lake, Suite 200
Troy, Michigan 48098
5211 Cascade Road SE, Suite 300
Grand Rapids, Michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, Michigan 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
275 East Liberty Street
Ann Arbor, Michigan 48104
734.213.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC
51301 Schienherr Rd.,
Shelby Township, Michigan 48315
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

Project Address:
22322 Rutland Drive
Southfield , MI 48075

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	J. Sala
Project Architect / Engineer	J. Sala
Drawn By	B. Koci
Q.M. Review	M. Sommers
Approved	J. Sala
Drawing Scale	NTS

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

AEW Drawing Title

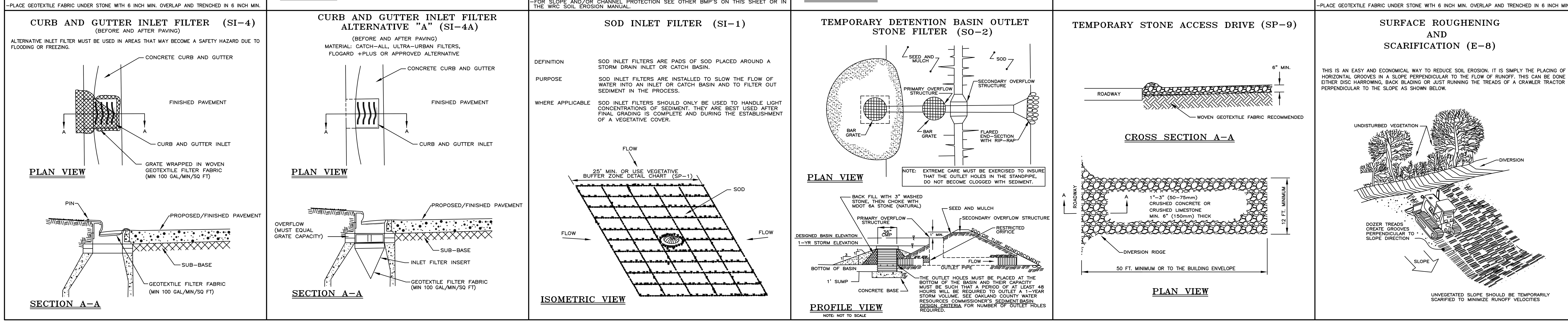
Site Details

IDS Project Number
24140-1000

AEW PROJECT NUMBER
0369-0088

Drawing Number
C8.00


EROSION CONTROL BLANKETS AND TURF MAT LINING (E-9)
CHANNELS
SLOPES
ALL FABRIC TRENCHING (A, B, D, E) ARE TO BE 6"D x 6"W MINIMUM
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)
CHANNELS
SLOPES
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)
PLAN VIEW
CROSS-SECTION
SECTION A-A
SECTION B-B
-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
PLAN VIEW
CROSS-SECTION
SECTION A-A
SIDE VIEW
-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
PLAN VIEW
CROSS-SECTION
SECTION A-A
SECTION B-B
-FOR SLOPE AND/OR CHANNEL PROTECTION SEE OTHER BMP'S ON THIS SHEET OR IN THE WRC SOIL EROSION MANUAL.
LEVEL SPREADER (E-4)
PLAN VIEW
SECTION A-A
SECTION B-B
SECTION C-C
RIP-RAP, END SECTION AND BAR SCREEN DETAIL (E-7)
END VIEW
PROFILE VIEW
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)
EXAMPLE
SLOPE OF VEGETATED SLOPE
SILT FENCE (SP-2)
(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)
PLAN VIEW
FRONT VIEW
SECTION A-A
SECTION B-B
SILT FENCE ALTERNATIVE "A" (SP-2A)
(MATERIAL: SILT SHIELD OR APPROVED EQUIVALENT)
PLAN VIEW
SECTION B-B
2% GRADE MAXIMUM SLOPE
WINTER/FROZEN GROUND SILT FENCE (SP-2W)
(MATERIAL: AMOCO PRO PEX 2130 OR APPROVED EQUIVALENT)
PLAN VIEW
FRONT VIEW
SECTION A-A
SECTION B-B
RYCB INLET FILTER (SI-3)
NOTE: MATERIAL IS NOT SILT FENCE MATERIAL
RYCB INLET FILTER ALTERNATIVE "A" (SI-3A)
PLAN VIEW
SECTION A-A
RYCB INLET FILTER ALTERNATIVE "B" (SI-3B)
MATERIAL: SILT SAVER 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)
PLAN VIEW
FRONT VIEW
ISOMETRIC VIEW
-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.
EARTH DIVERSION BERM (E-2)
CROSS - SECTION
PLAN VIEW
GRAVEL INTERCEPTOR DIKE (SP-6)
CROSS-SECTION
PLAN VIEW
-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 (SI-2)
ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.
SECTION A-A
PROFILE VIEW
LOW POINT INLET FILTER ALT. "A" (SI-2A)
MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE
PLAN VIEW
SECTION A-A
SILT FENCE GRAVEL FILTER (SP-3)
PLAN VIEW
FRONT VIEW
CROSS SECTION
-PLACE GEOTEXTILE FABRIC UNDER STONE WITH 6 INCH MIN. OVERLAP AND TRENCHED IN 6 INCH MIN.
DITCH SEDIMENT TRAP (SO-4)
PLAN VIEW
END VIEW
SECTION A-A
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 (SI-4)
(BEFORE AND AFTER PAVING)
ALTERNATIVE INLET FILTER MUST BE USED IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING.
PLAN VIEW
SECTION A-A
CURB AND GUTTER INLET FILTER ALTERNATIVE "A" (SI-4A)
(BEFORE AND AFTER PAVING)
MATERIAL: CATCH-ALL, ULTRA-URBAN FILTERS, FLOGARD +PLUS OR APPROVED ALTERNATIVE
PLAN VIEW
SECTION A-A
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.
ISOMETRIC VIEW
TEMPORARY DETENTION BASIN OUTLET STONE FILTER (SO-2)
PLAN VIEW
NOTE: EXTREME CARE MUST BE EXERCISED TO INSURE THAT THE OUTLET HOLES IN THE STANDPIPE, DO NOT BECOME CLOGGED WITH SEDIMENT.
PROFILE VIEW
NOTE: NOT TO SCALE
TEMPORARY STONE ACCESS DRIVE (SP-9)
CROSS SECTION A-A
PLAN VIEW
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

NOTE:

WHILE PERFORMING WORK INVOLVING GROUNDS MAINTENANCE AND/OR THE CONSTRUCTION/MAINTENANCE OF ANY INFRASTRUCTURE, INCLUDING ROADS, WATER MAINS, SANITARY SEWERS, STORM DRAINS AND STORM WATER BEST MANAGEMENT PRACTICES (BMPS), CONTRACTORS SHALL MINIMIZE POLLUTION FROM STORM WATER RUNOFF THAT CAN AFFECT WATER QUALITY RELATED TO WORK ACTIVITIES. POLLUTANTS THAT COULD IMPAIR WATER QUALITY MAY INCLUDE FUEL, GREASE AND OIL, NUTRIENTS, BACTERIA AND PATHOGENS, LITTER AND DEBRIS, AND SOIL EROSION AND SEDIMENTATION. APPLICABLE BMPS SHALL BE IMPLEMENTED BY THE CONTRACTOR TO THE MAXIMUM EXTENT PRACTICABLE TO PROTECT WATER QUALITY AND WILDLIFE HABITAT.

Plotfile Name: GISQtrs.ctb
File Location: J:\Drain\MappingUnit\Standard\Details\App

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK

Data Source / Source Date: N/A

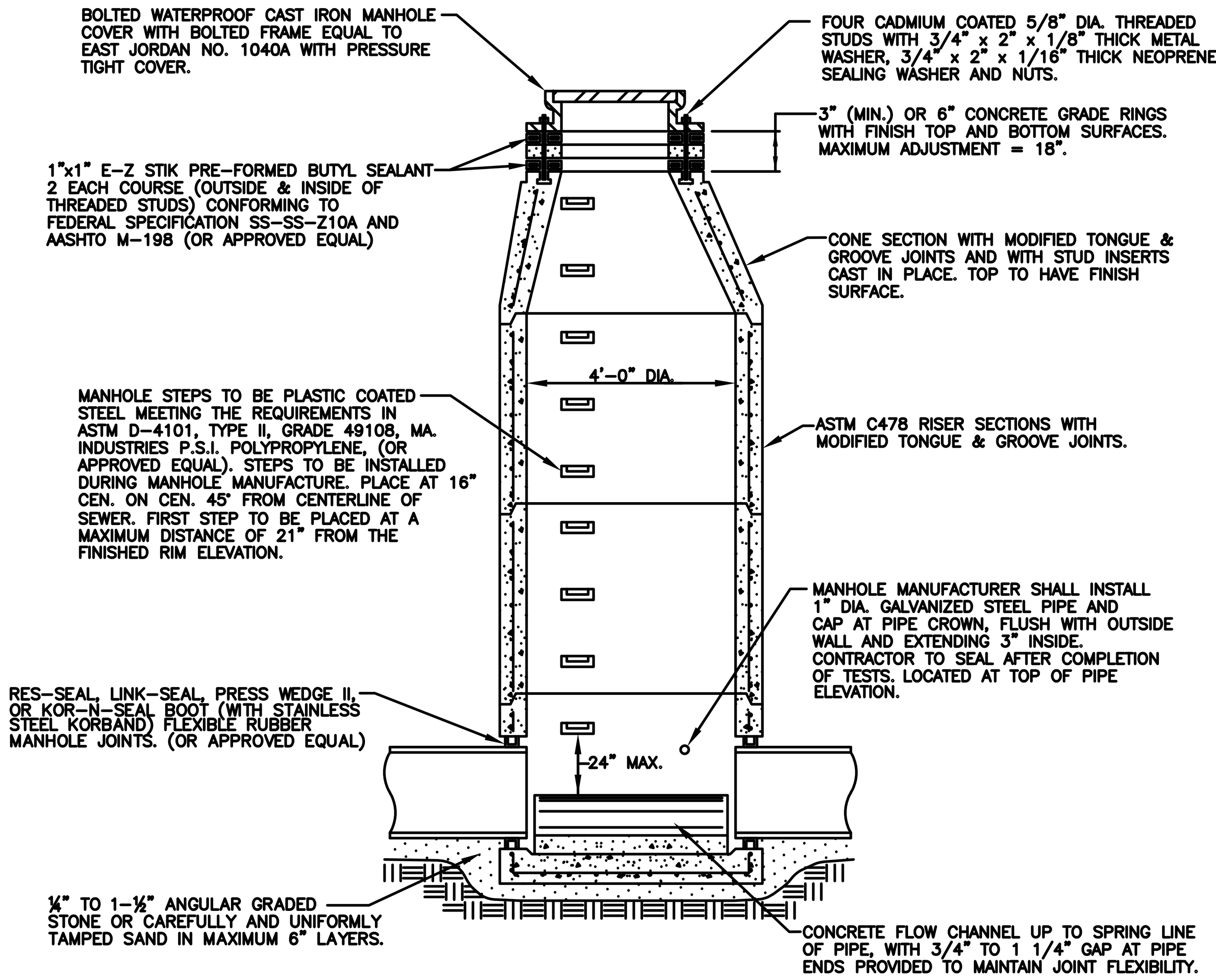
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	lz	3-22-07	PROPOSED DETAIL EDITS
2	lz	2-26-09	STANDARDS COMMITTEE APPROVAL / NAME CHANGES
3	DS	3-25-11	SILT FENCE ALTERNATIVE "A" DETAIL (SP-2A) ADDED
4	DS	4-16-13	STANDARDS COMMITTEE APPROVAL / NOTE CHANGES

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

WRC WATER RESOURCES COMMISSIONER Jim Nash

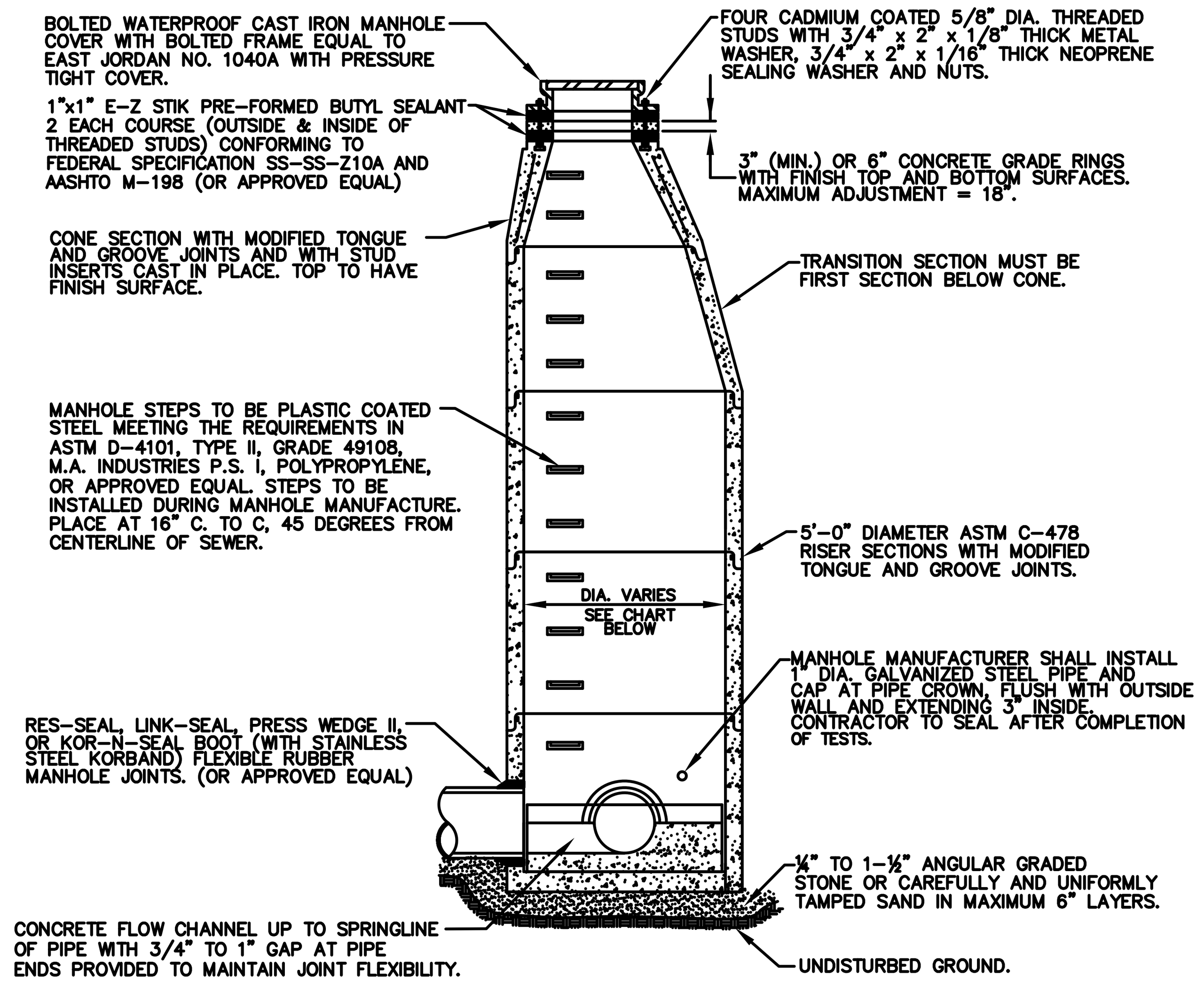
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 1 of 1



STANDARD MANHOLE

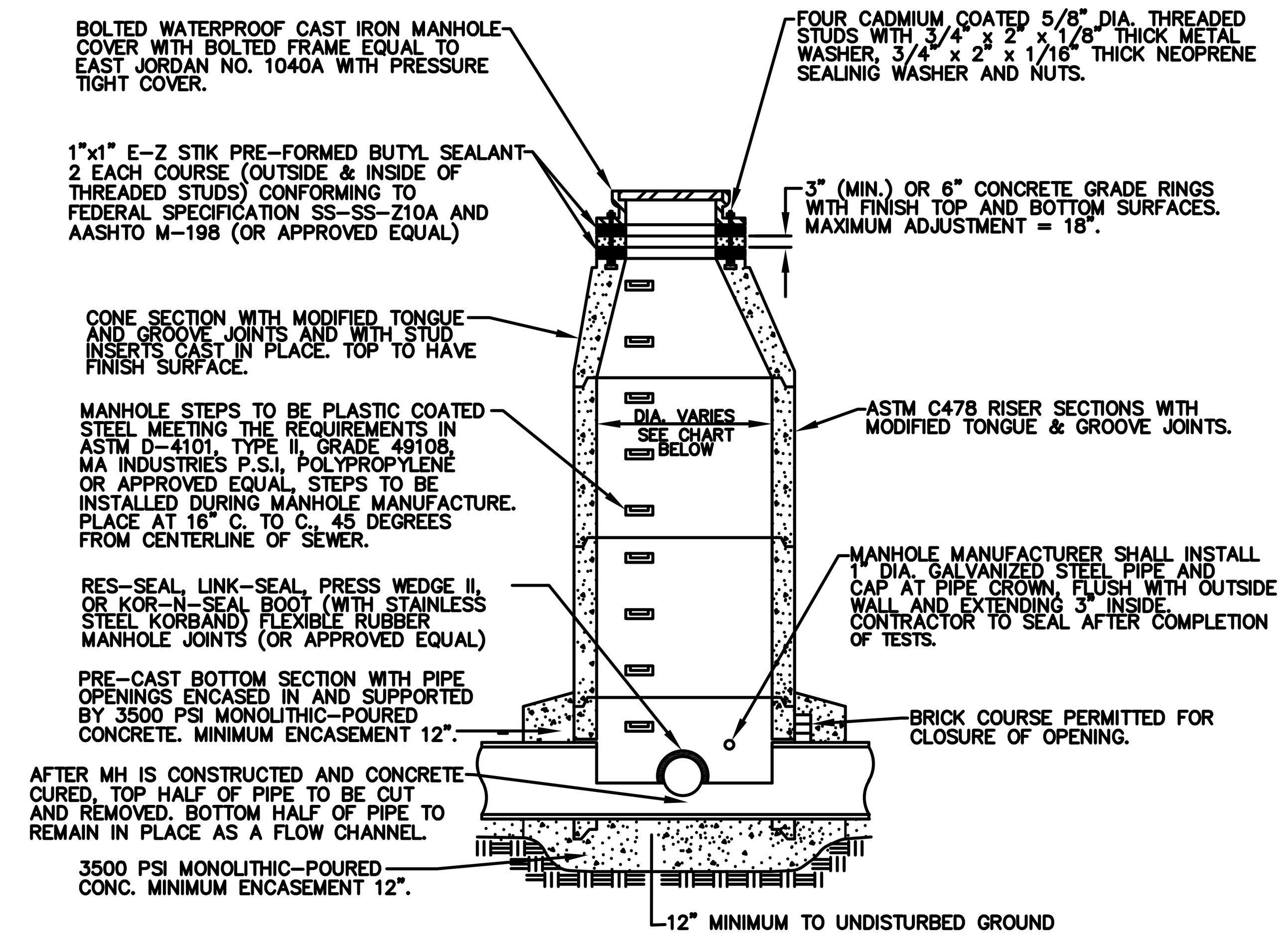
MAX. PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAX. PIPE SIZE FOR RIGHT ANGLE INSTALLATION
24"	18"



STANDARD OVERSIZED MANHOLE

MANHOLE SIZING CHART

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



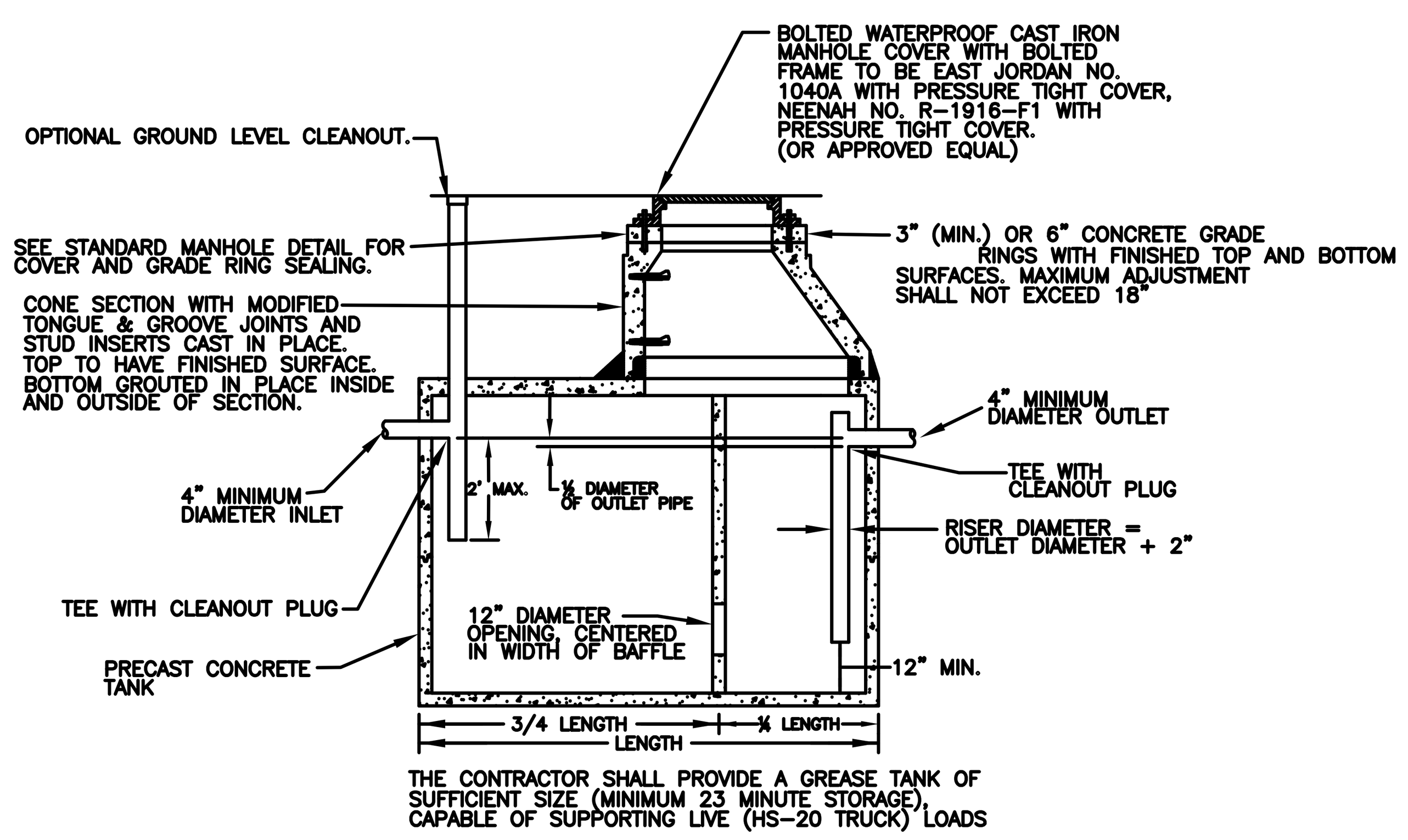
MANHOLE CONSTRUCTED OVER EXISTING SEWER

MANHOLE SIZING CHART

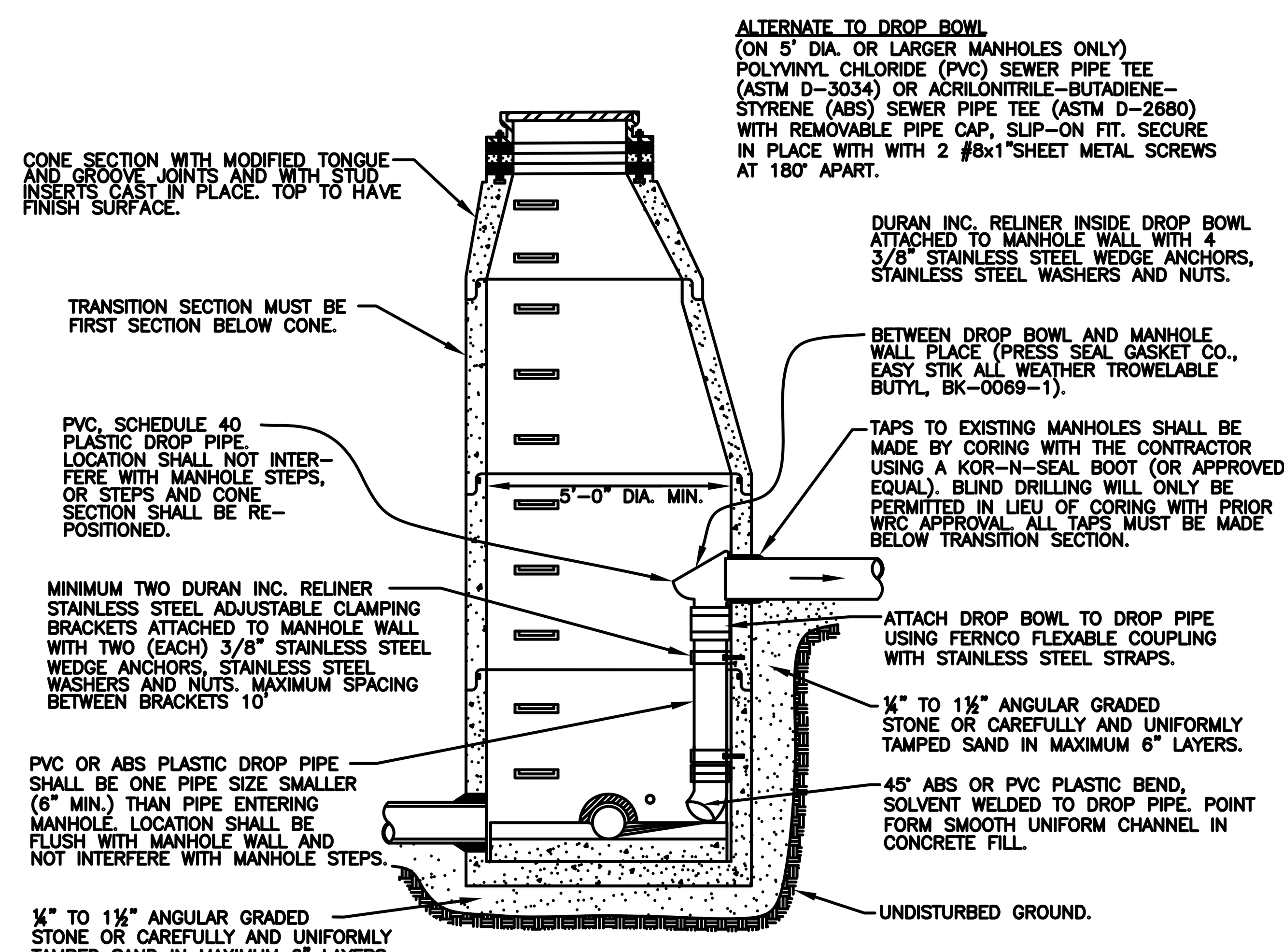
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"

SANITARY SEWER CONSTRUCTION NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL UNIT OF GOVERNMENT.
2. AT ALL CONNECTIONS TO WRC SEWERS OF EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. GRAVITY SEWER PERMIT CHANGES ARE $250 FOR EACH CONNECTION PLUS $25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE $250 PER 2,460 L.F. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF $250. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST, IN ACCORDANCE WITH THE ABOVE PRICE SCHEDULE. THE CONTRACTOR SHALL ALSO HAVE POSTED WITH WRC A $5,000 SURETY BOND AND $500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND WRC (248-858-1105) 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY COUNTY PERSONNEL AND MUST BE SCHEDULED BY MUNICIPALITY OR IT'S CONSULTANT IN ADVANCE WITH 24 HOUR NOTICE AT 248-858-1105.
3. 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 WATER RESOURCES COMMISSIONER STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY WRC MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
4. LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING WRC SEWER, OR EXTENSION THERETO, 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.
5. 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.
6. ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIRTIGHT AND WATERTIGHT STOPPERS.
7. ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER. ALL FLEXIBLE, SEMI-FLEXIBLE, OR COMPOSITE SEWER PIPE SHALL BE INSTALLED IN CONFORMANCE TO WRC SPECIFICATIONS.
8. ALL NEW MANHOLES SHALL HAVE WRC APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE WRC APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
9. AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THERETO, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
10. TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT (OR WRC APPROVED EQUAL) AFTER CORING IS COMPLETED. BLIND DRILLING WILL ONLY BE PERMITTED IN LIEU OF CORING WITH PRIOR WRC APPROVAL.
11. MANHOLES CONSTRUCTED DIRECTLY ON WRC SEWERS SHALL BE PROVIDED WITH COVERS READING "WATER RESOURCES COMMISSIONER-SANITARY" IN RAISED LETTERS.
12. NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
13. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
14. AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
15. NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
16. IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX (6") INCHES BELOW THE FINISHED GRAVEL SURFACE.



DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK FOR OUTLET PIPE BURIAL 42" AND DEEPER



INTERIOR DROP CONNECTION

Plotfile Name: GISQtrs.ctb
File Location: J:\Drain\MappingUni

REVISION BLOCK

Parcel Base / Source Date: N/A

Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DS	3-23-11	REMOVED STANDARD MONITORING MANHOLE
2	KB	6-21-16	ADDED NOTE "REQUIRES ADVANCED APPROVAL BY WRC" AND UPDATE PHONE # IN NOTE #2
3	KB	7-22-20	UPDATED MH STEPS TO ASTM# D-4101
4	KB	9-27-23	REMOVED EXTERIOR DROP CONNECTION DETAIL

SANITARY SEWER DETAILS AND NOTES

ORIG. DATE:	08/21/02
SCALE:	NO SCALE
DESIGNED BY:	WRC
DRAWN BY:	WRC Mapping

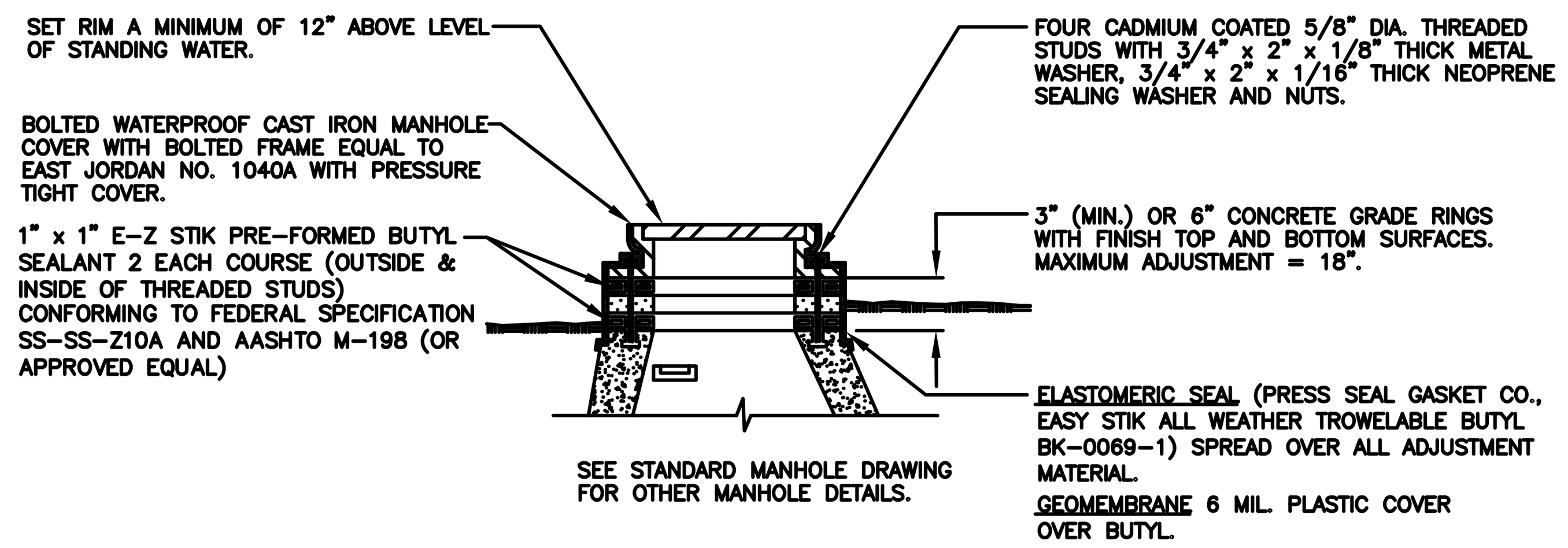
WRC
WATER RESOURCES COMMISSIONER
Jim Nash

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

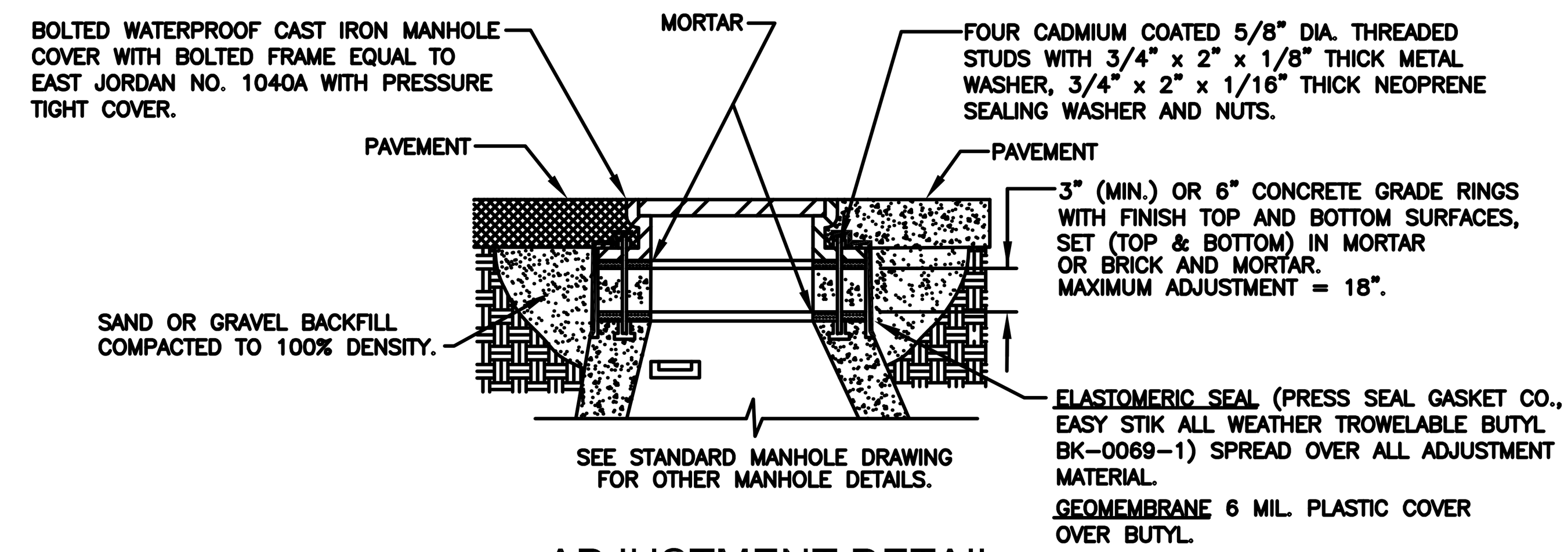
SHEET NO.: 1 of 2

MANHOLE RIM ADJUSTMENT CHART

MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



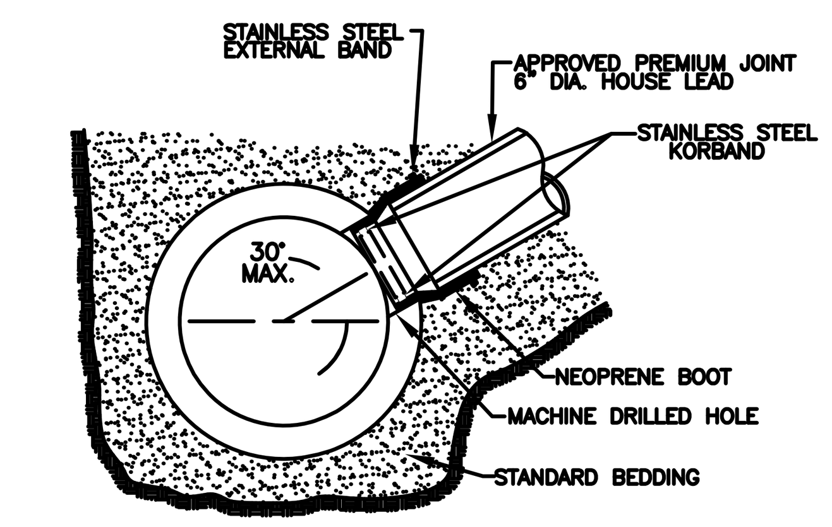
ADJUSTMENT DETAIL FOR
MANHOLE TOPS WITHIN FLOOD PRONE AREAS



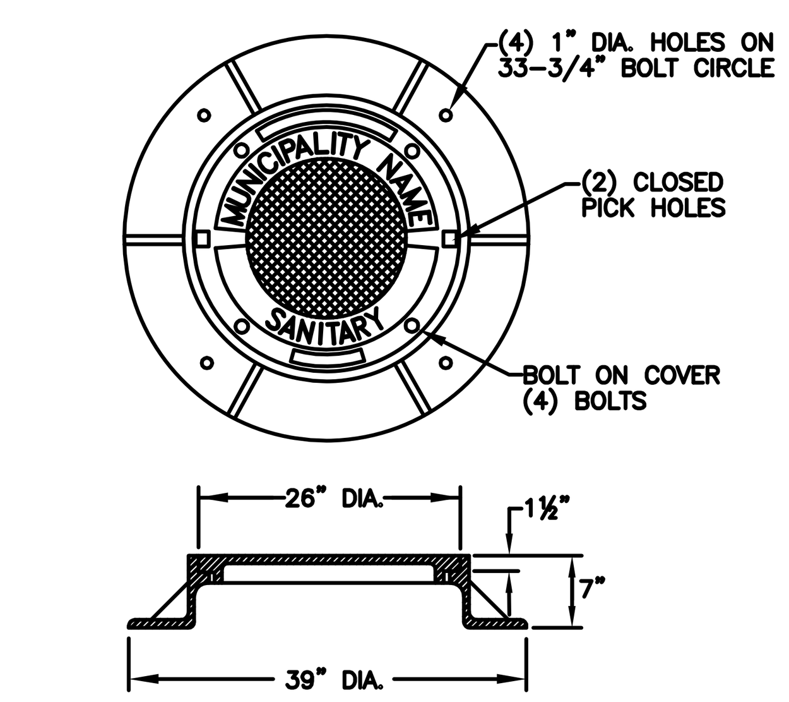
ADJUSTMENT DETAIL
MANHOLE TOPS WITHIN PAVEMENT AREAS

WATER RESOURCES COMMISSIONER GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

1. ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER WATER RESOURCES COMMISSIONER (WRC) AND/OR LOCAL UNIT OF GOVERNMENT INSPECTION.
2. FOR ALL WRC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OR WORK TO SCHEDULE INSPECTION.
3. NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DEWATERING OUTLET.
4. WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN WRC APPROVED ADAPTER.
5. APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
   A. ABS PLASTIC, ASTM D2751, SDR 23.5.
   B. PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2665, SCHEDULE 40.
   C. DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE SUPER BEL TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
   D. ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY WRC.
6. ALLOWABLE TYPES OF SEWER PIPE ADAPTERS:
   A. FERNCO ADAPTER/REDUCER DONUTS.
   B. FERNCO FLEXIBLE COUPLING.
   C. MISSION CLAY BAND-SEAL COUPLING.
   D. SMITH-BLAIR STAINLESS STEEL REPAIR CLAMP.
   E. HURON-CLINTON O-RING ADAPTER.
   F. HAMILTON-KENT GEAR GRIP ADAPTER.
   G. PLANT FABRICATED JOINT CONVERSION PIPE.

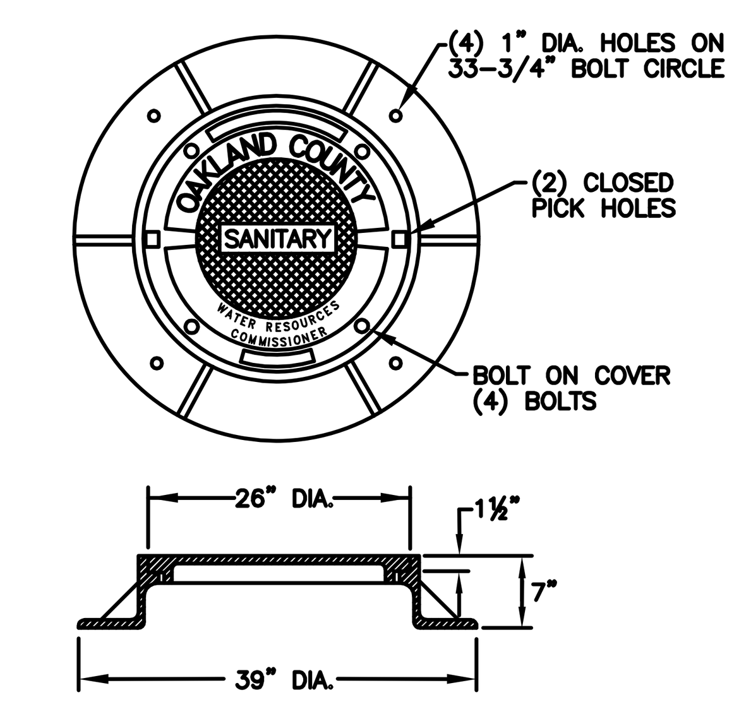


KOR-N-TEE TAP FOR CONCRETE PIPE



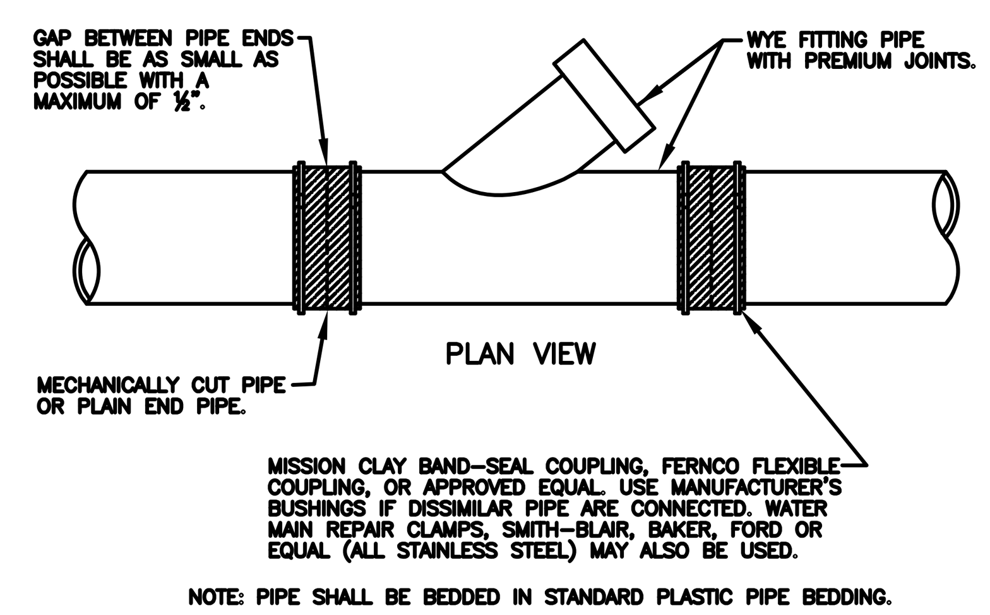
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040A
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.
2" RAISED LETTERS, 1" RAISED LETTERS
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER



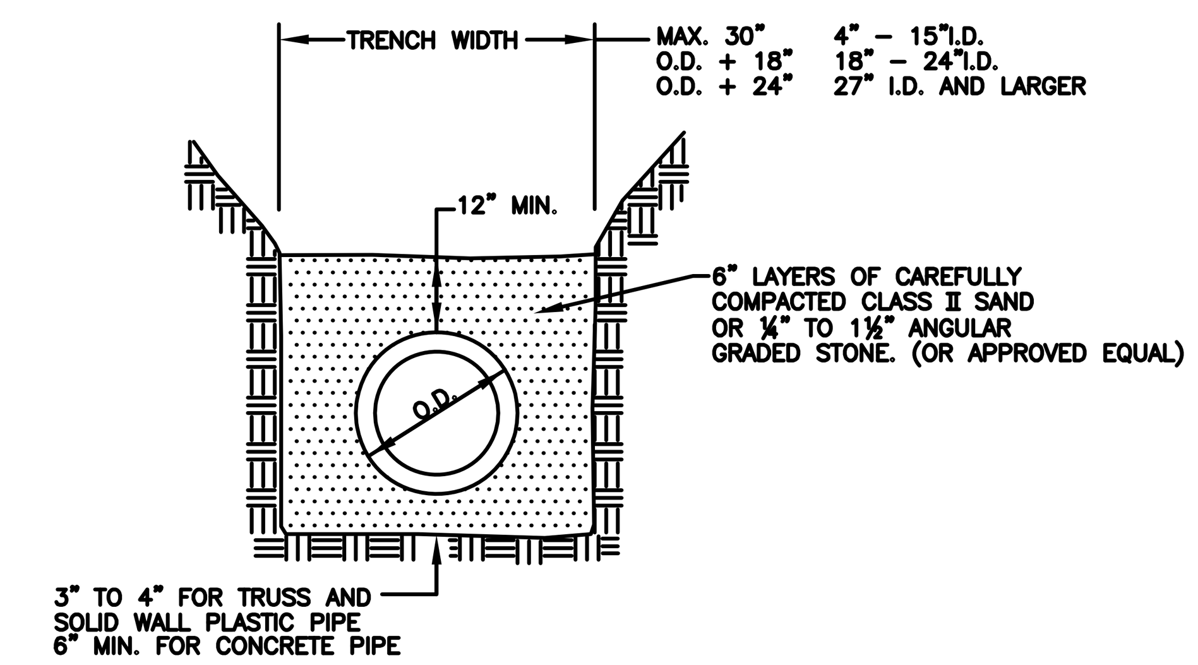
EAST JORDAN IRON WORKS
HEAVY DUTY MATERIAL ASTM A48 CL.35
COVER WT., 150 LBS., CATALOG NO. 1040APT
PATTERN NO. 1040A, PRODUCT NO. NCR09-1280 C
2" RAISED LETTERS, 1" RAISED LETTERS, 3/4" RAISED LETTERS
ALL RECESSED FLUSH.

W.R.C. LETTERED MANHOLE COVER



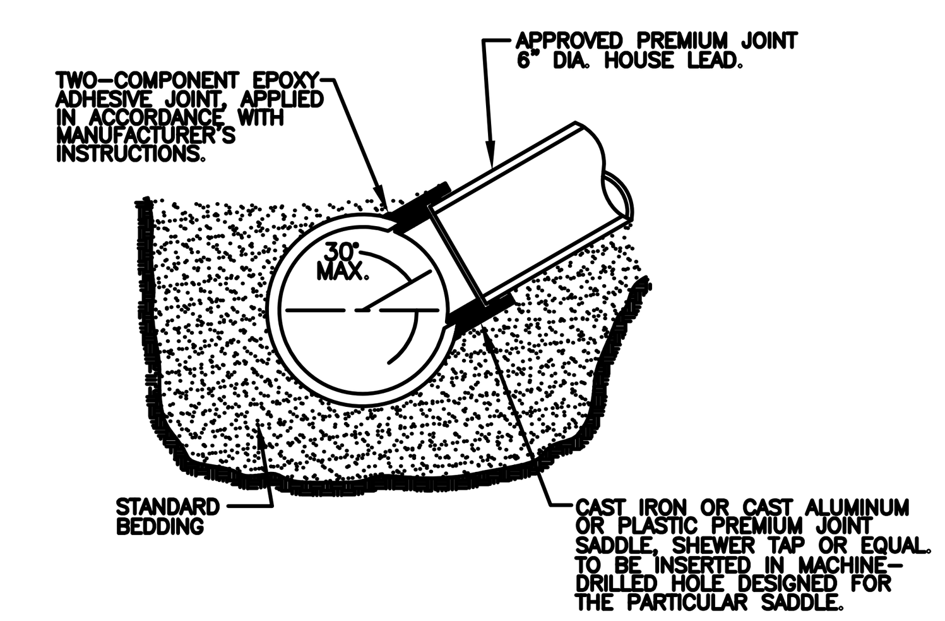
NOTE: PIPE SHALL BE BEDDED IN STANDARD PLASTIC PIPE BEDDING.

WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS
(RIGID PIPE)



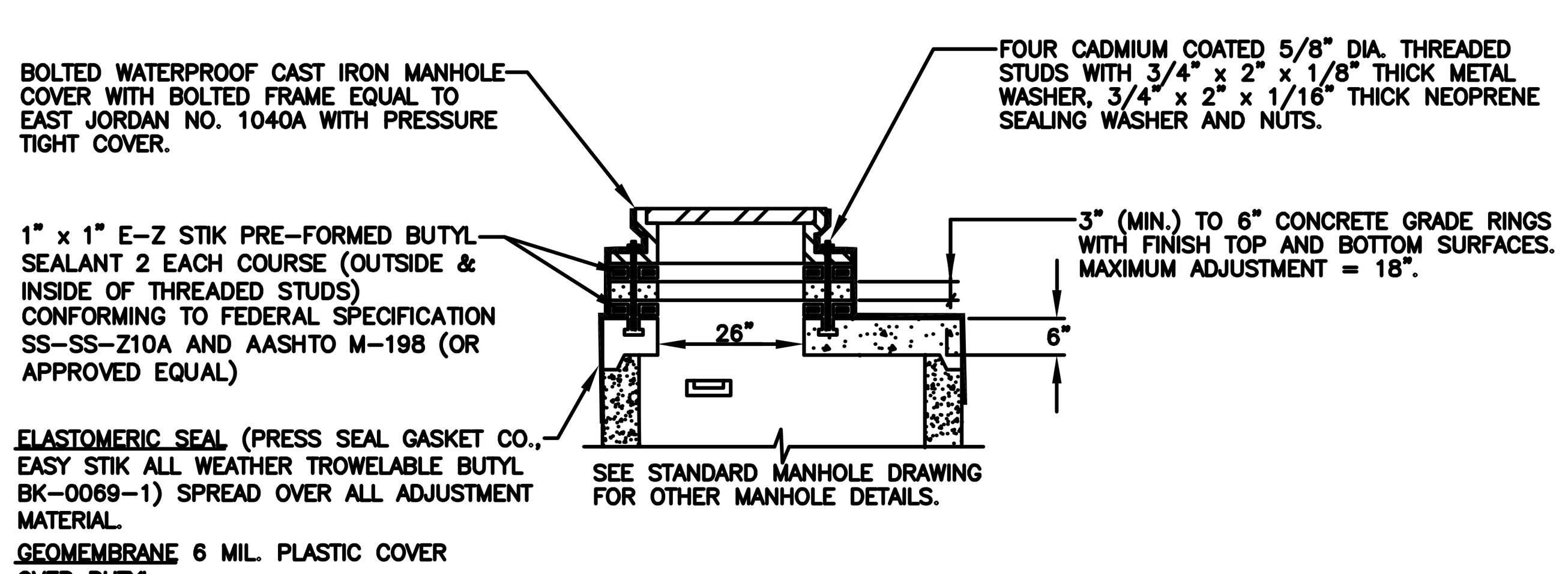
NOTE:
APPROVAL MAY BE GIVEN TO ALTERNATE MATERIALS AND METHODS TO ACHIEVE CLASS B BEDDING.

STANDARD BEDDING
(CLASS B)

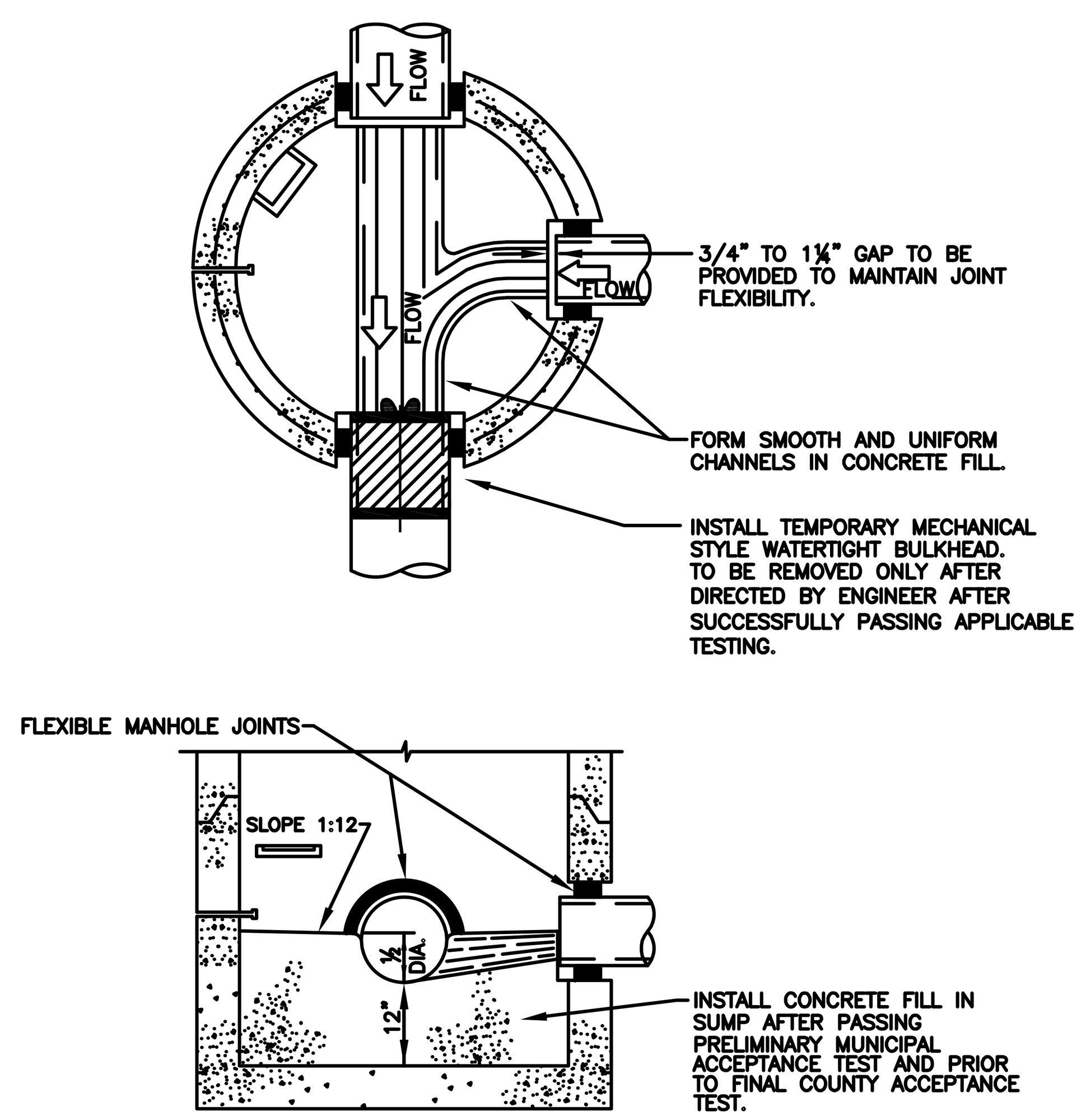


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION. DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE, ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

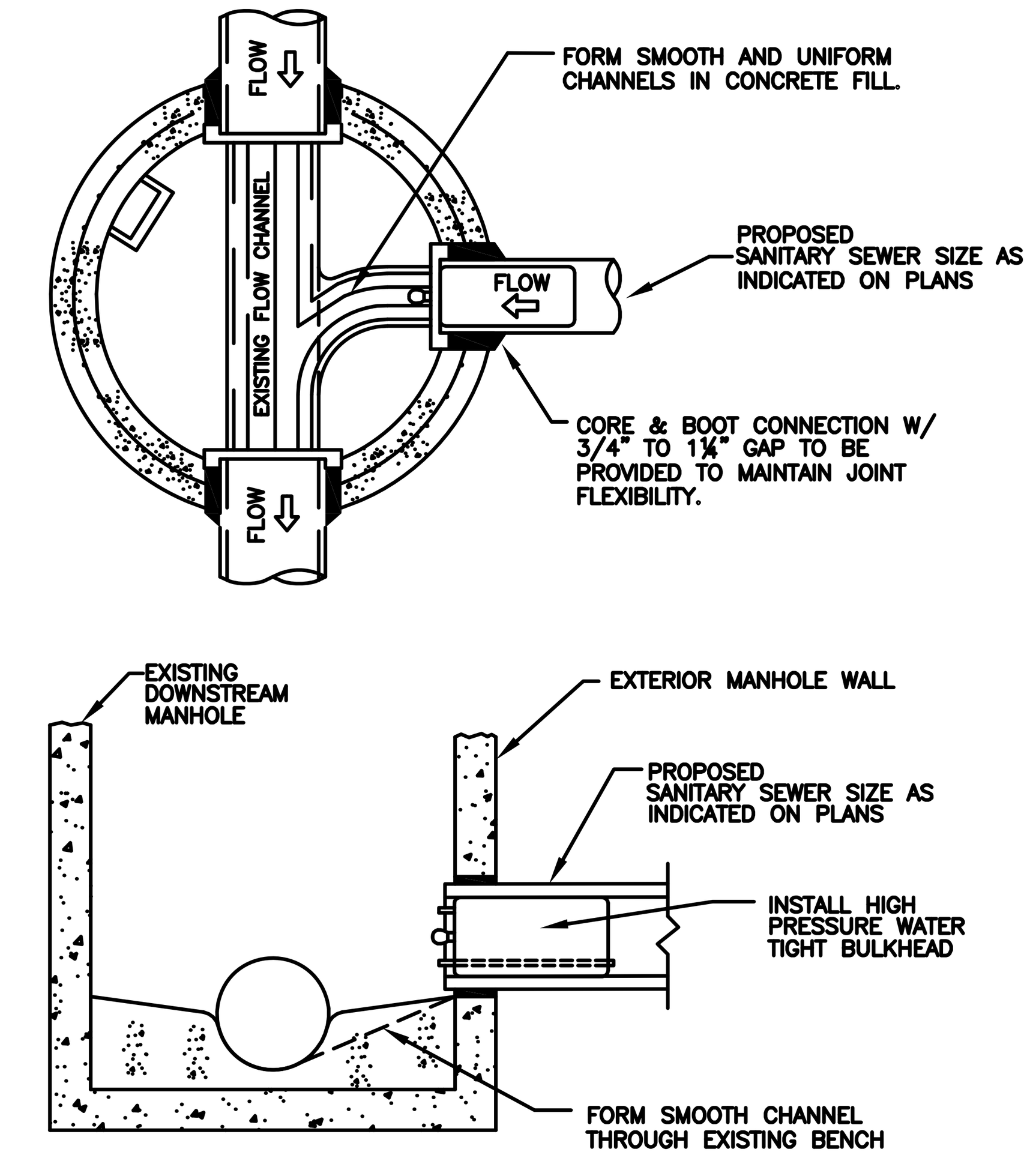
SEWER TAP-ALL SIZES OF MAIN SEWER PIPES
VITRIFIED CLAY



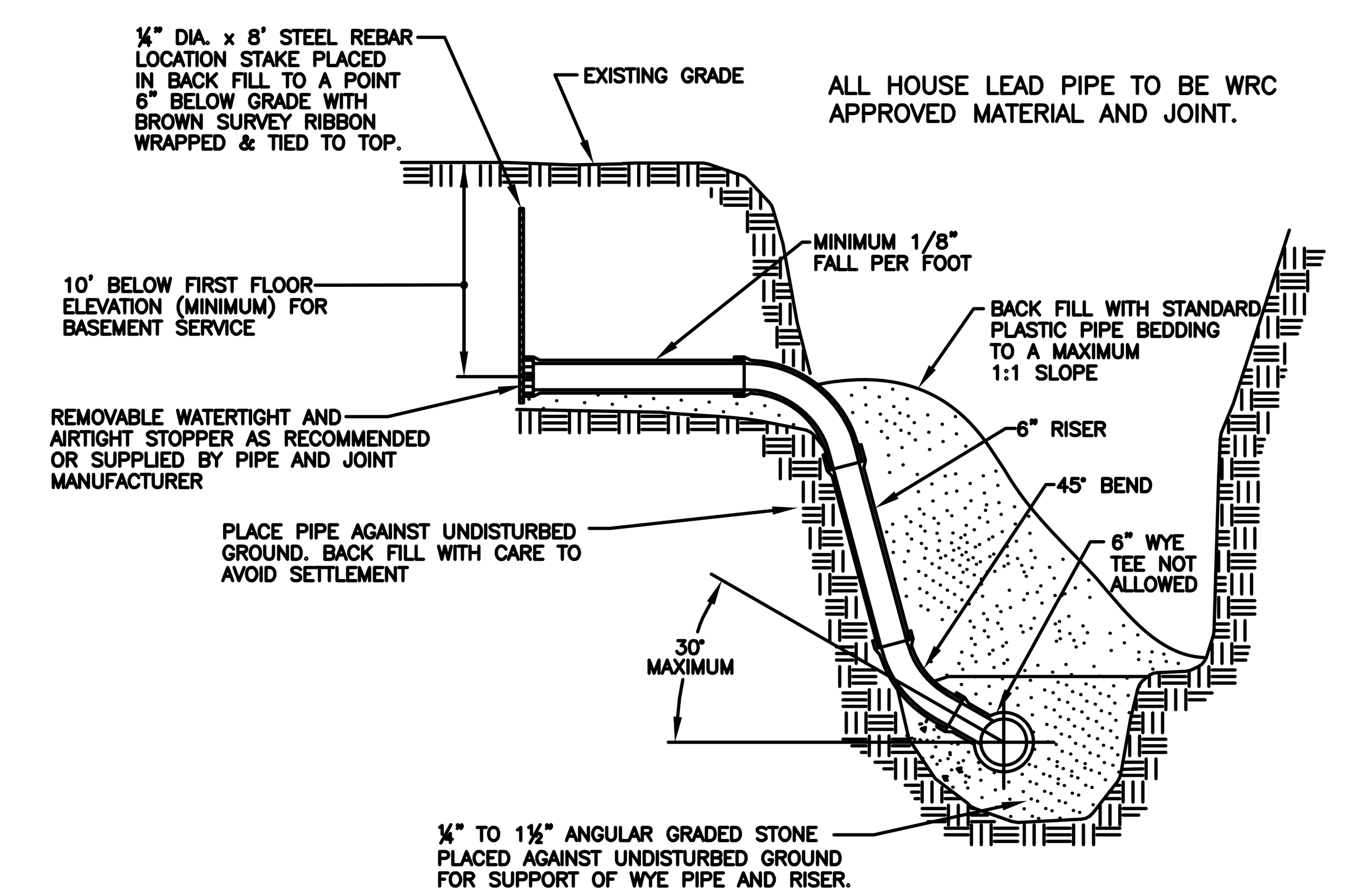
FLAT TOP MANHOLE



SUMP MANHOLE FOR TESTING,
CLEANING AND DEWATERING



TESTING BULKHEAD WITH PIPE TAP



ALL HOUSE LEAD PIPE TO BE WRC APPROVED MATERIAL AND JOINT.

HOUSE LEAD DETAIL

Plotfile Name: GISQtrs.ctb

REVISION BLOCK

Parcel Base / Source Date: N/A

Rev. No.:	Rev. By:	Rev. Date:	Description:
1	DS	06/28/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	lz	05/28/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	lz	07/14/09	STANDARDS COMMITTEE APPROVAL FOR DETAIL CHANGES
4	DS	02/03/14	REPLACE/UPDATE OCDC WITH WRC FOR THE MANHOLE COVER DETAIL

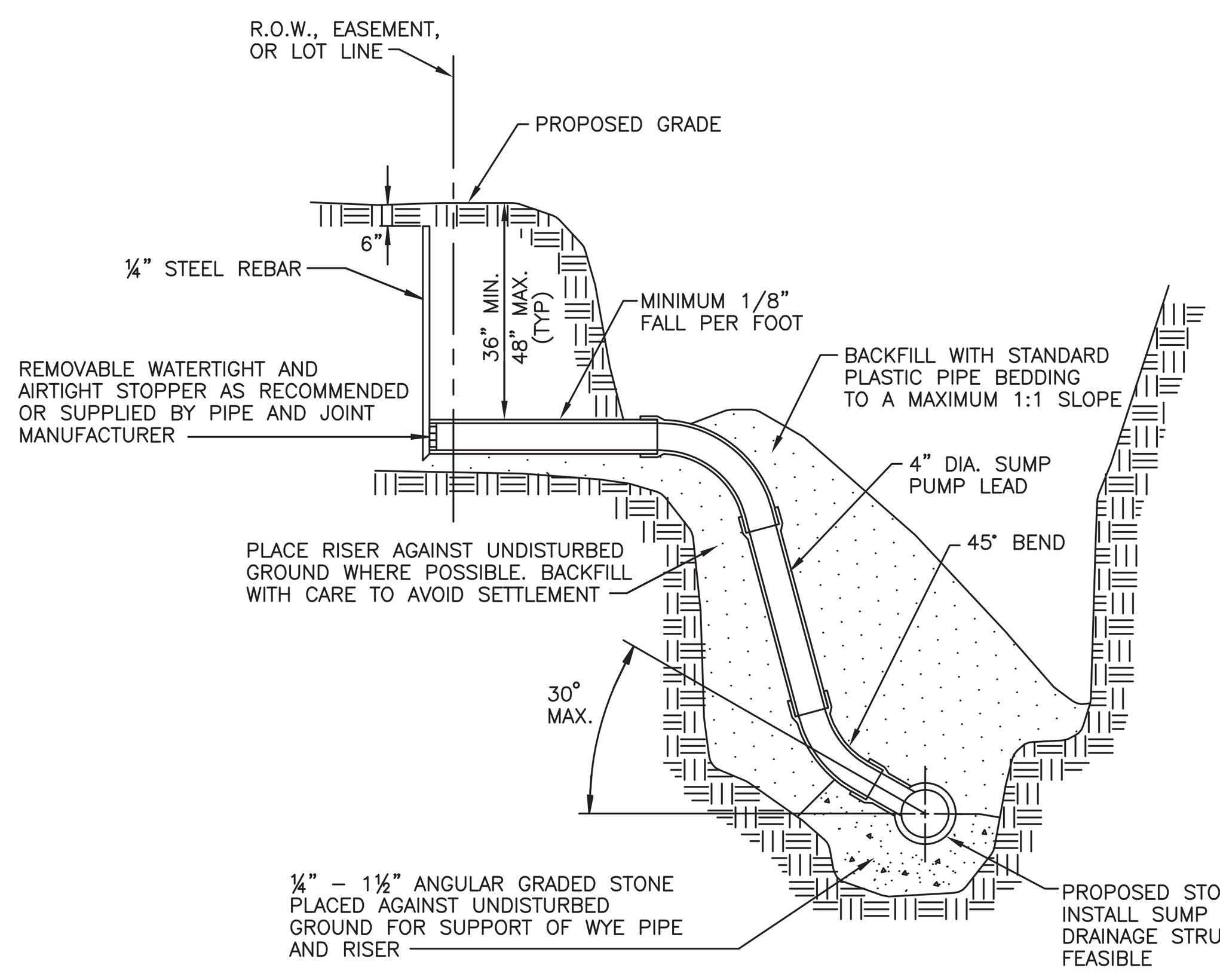
SANITARY SEWER DETAILS AND NOTES

ORIG. DATE:	05-09-03
SCALE:	NO SCALE
DESIGNED BY:	MWD
DRAWN BY:	Mapping Staff

WATER RESOURCES COMMISSIONER
Jim Nash

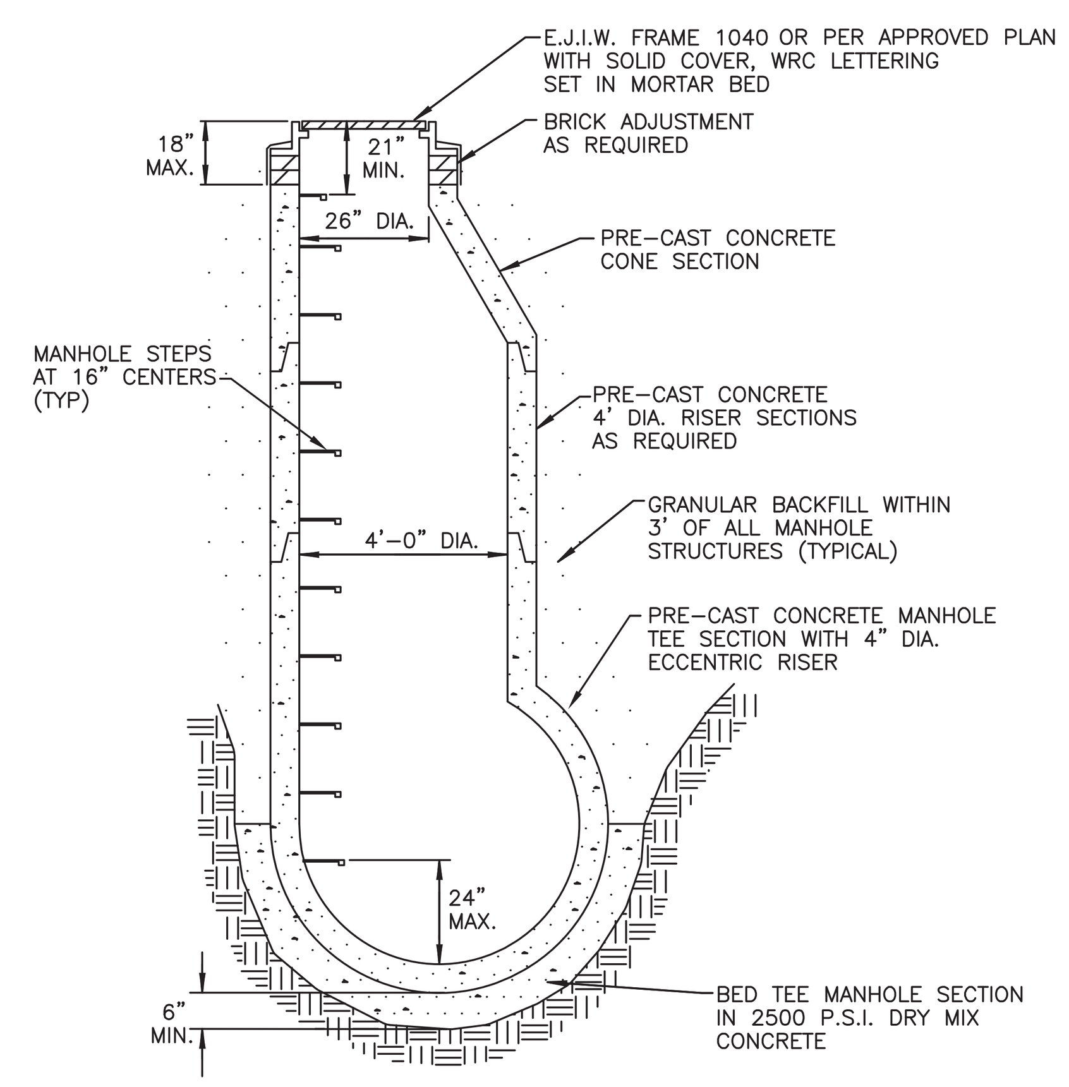
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 2 of 2



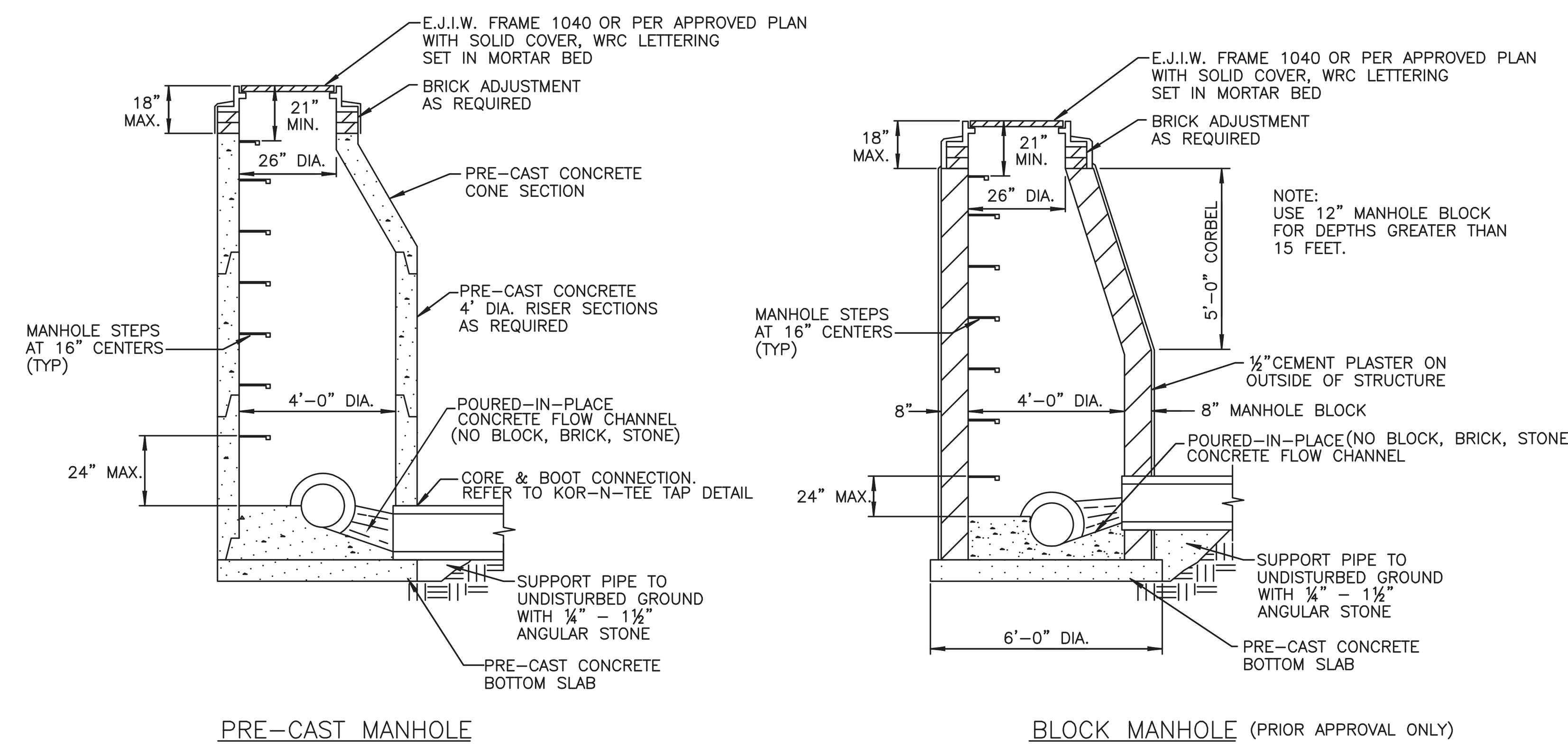
HOUSE LEAD DETAIL FOR 4" DIA. PLASTIC SUMP PUMP LEADS

NO SCALE



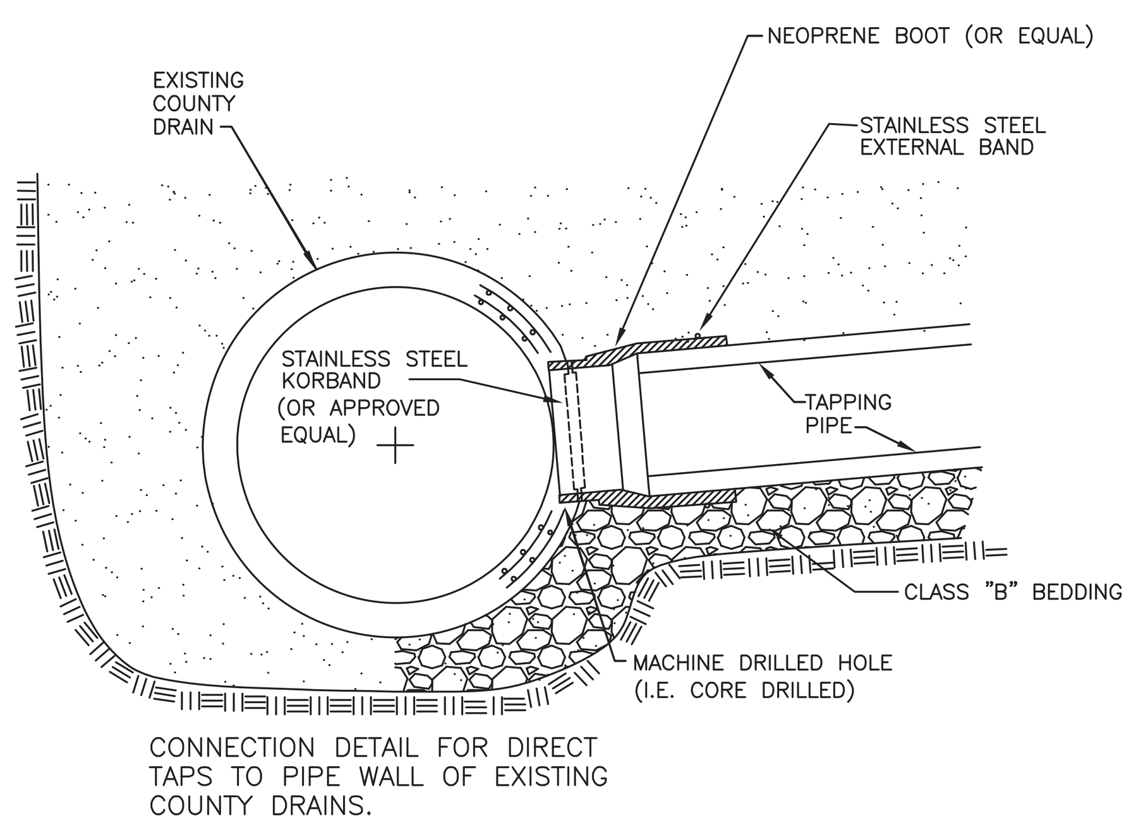
PRE-CAST TEE MANHOLE DETAIL

NO SCALE



STANDARD MANHOLE DETAILS

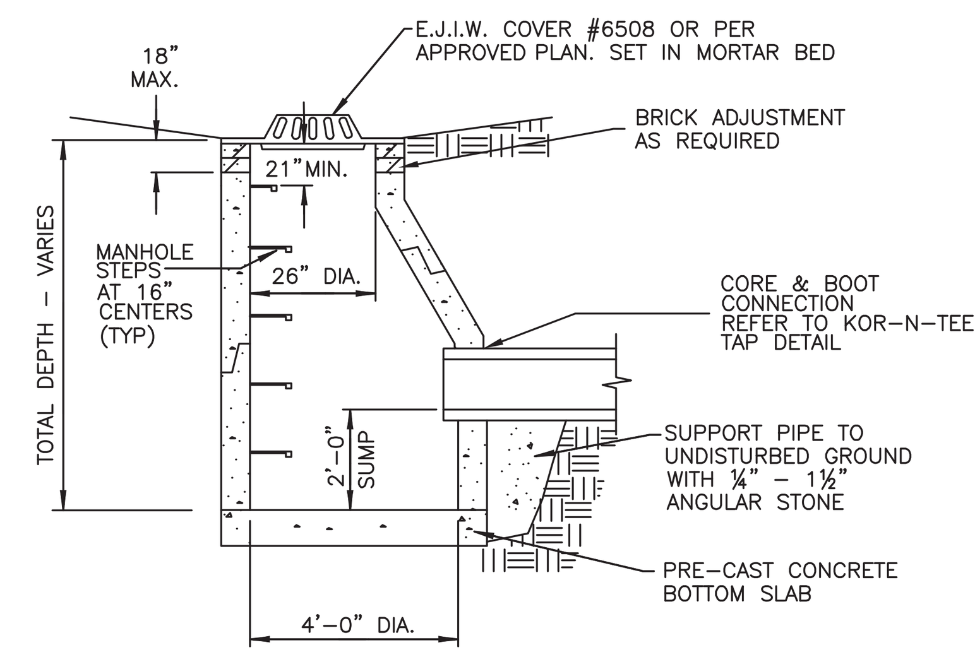
NO SCALE



KOR-N-TEE TAP (OR APPROVED EQUAL)

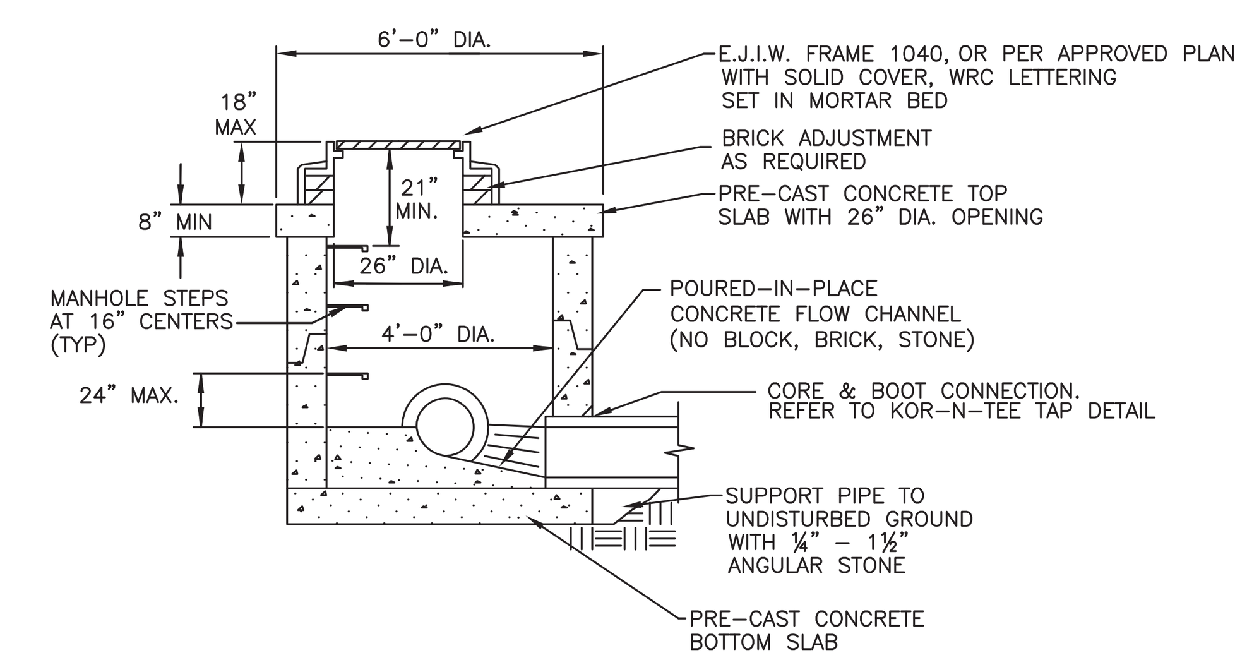
NO SCALE

* For non-concrete to concrete taps.
* Use link-seal, A-lock or approved equal for concrete to concrete taps.



PRE-CAST CATCH BASIN DETAIL

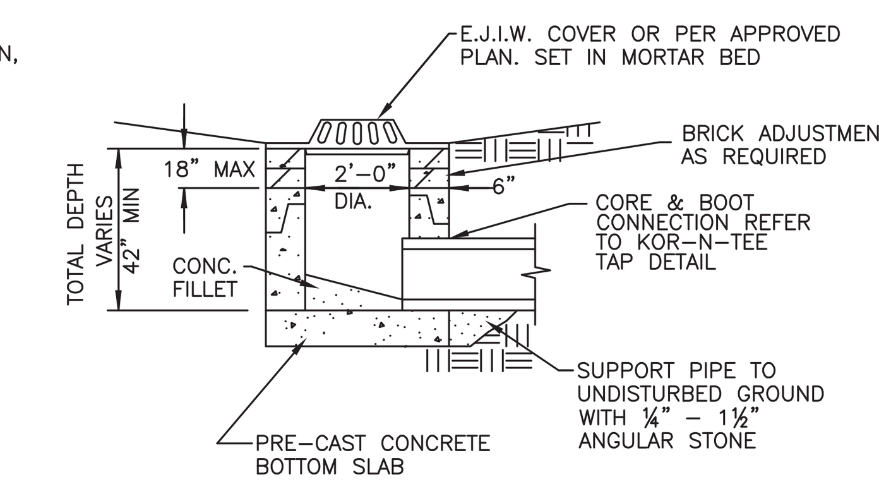
NO SCALE



PRE-CAST LOW HEAD MANHOLE DETAIL

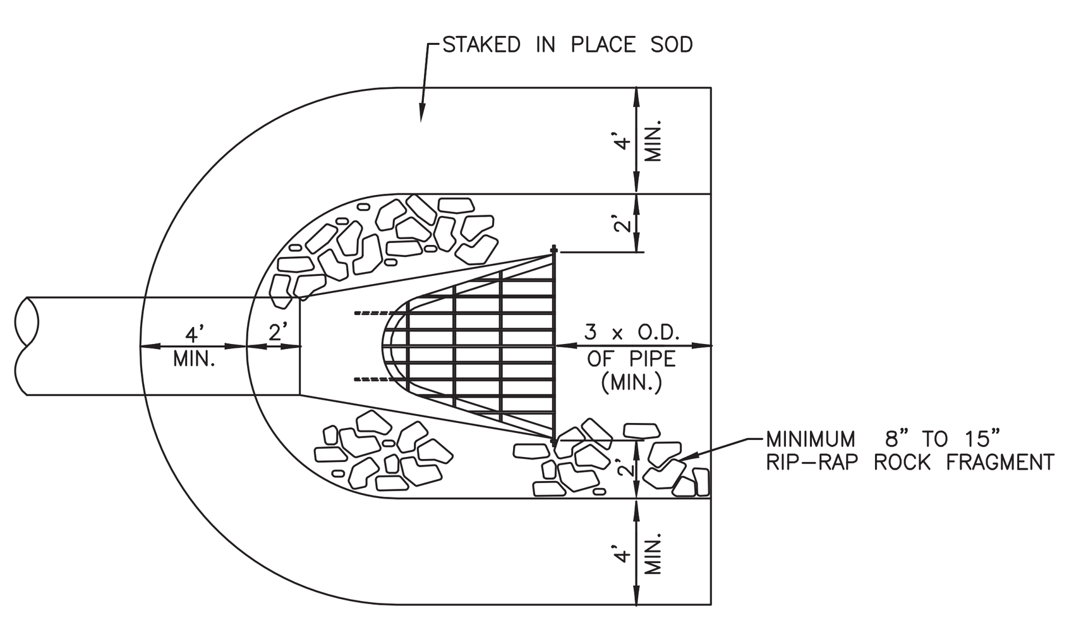
NO SCALE

(PRIOR APPROVAL ONLY)

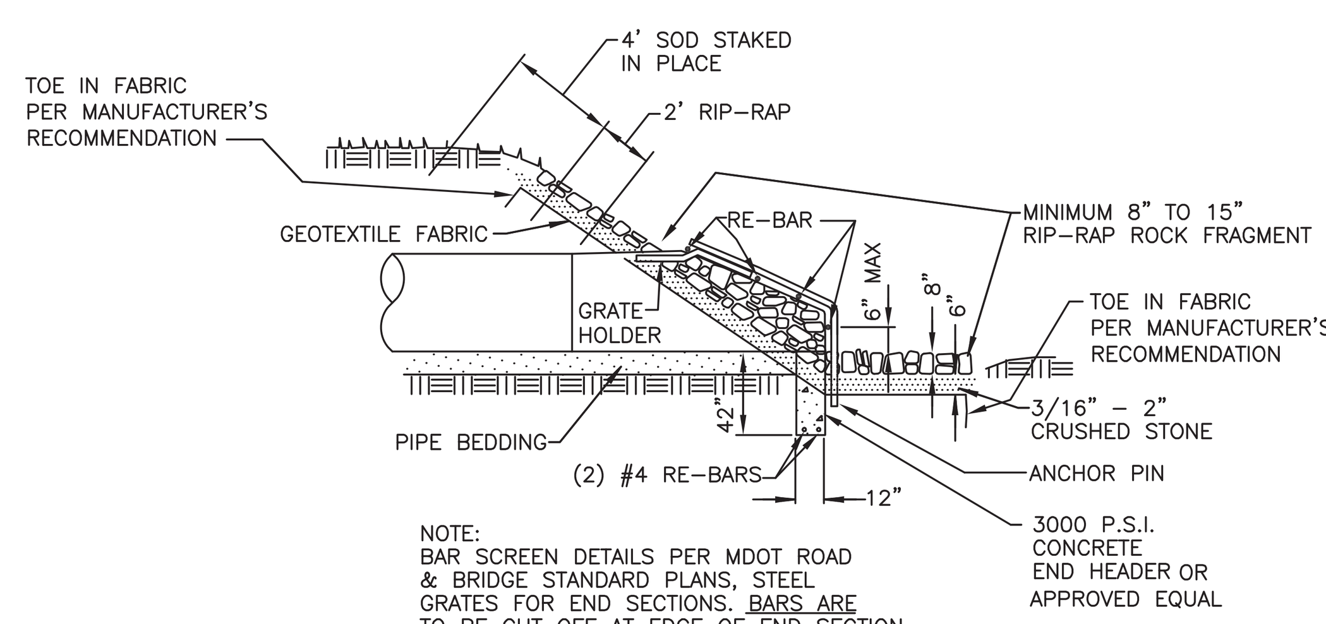


PRE-CAST INLET DETAIL

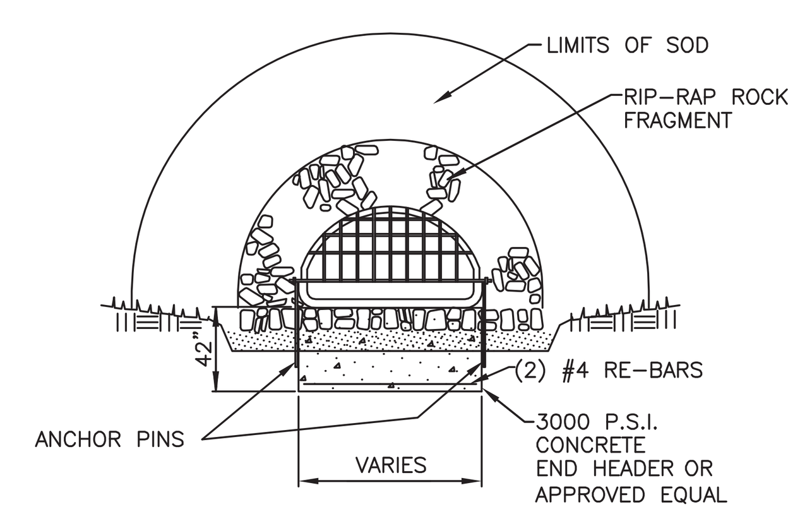
NO SCALE



PLAN VIEW



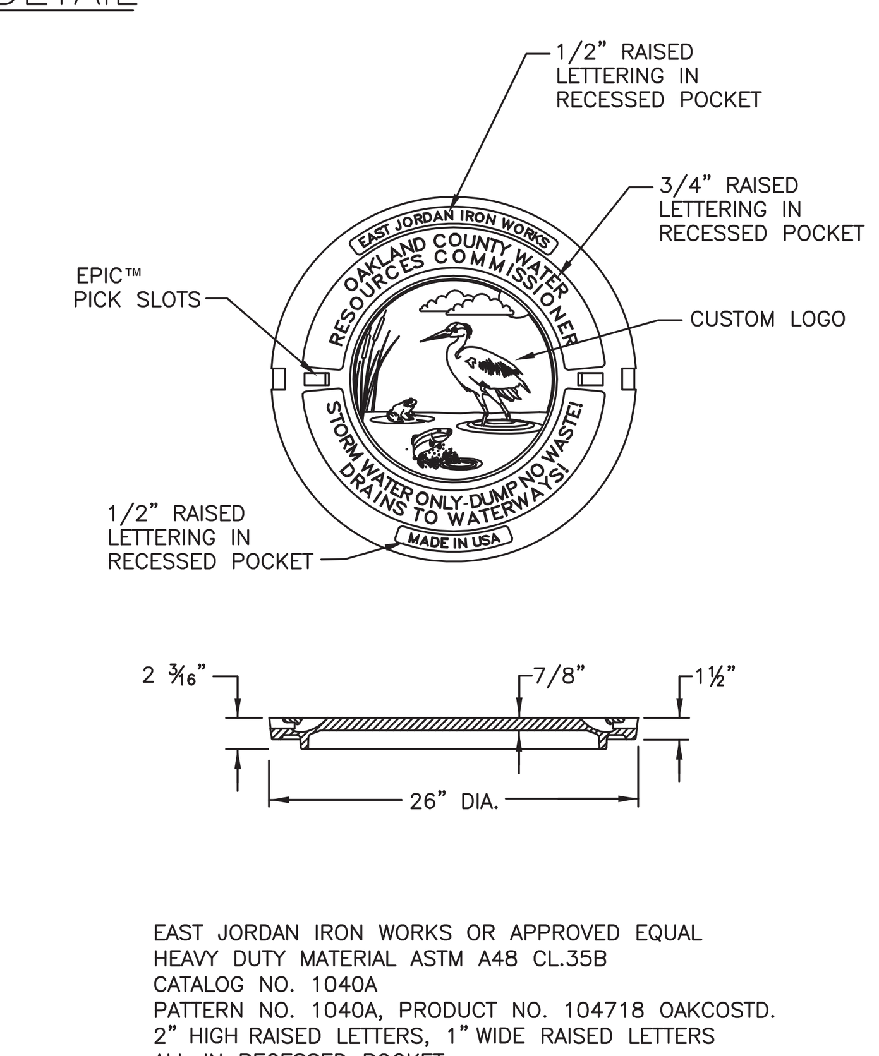
PROFILE VIEW



END VIEW

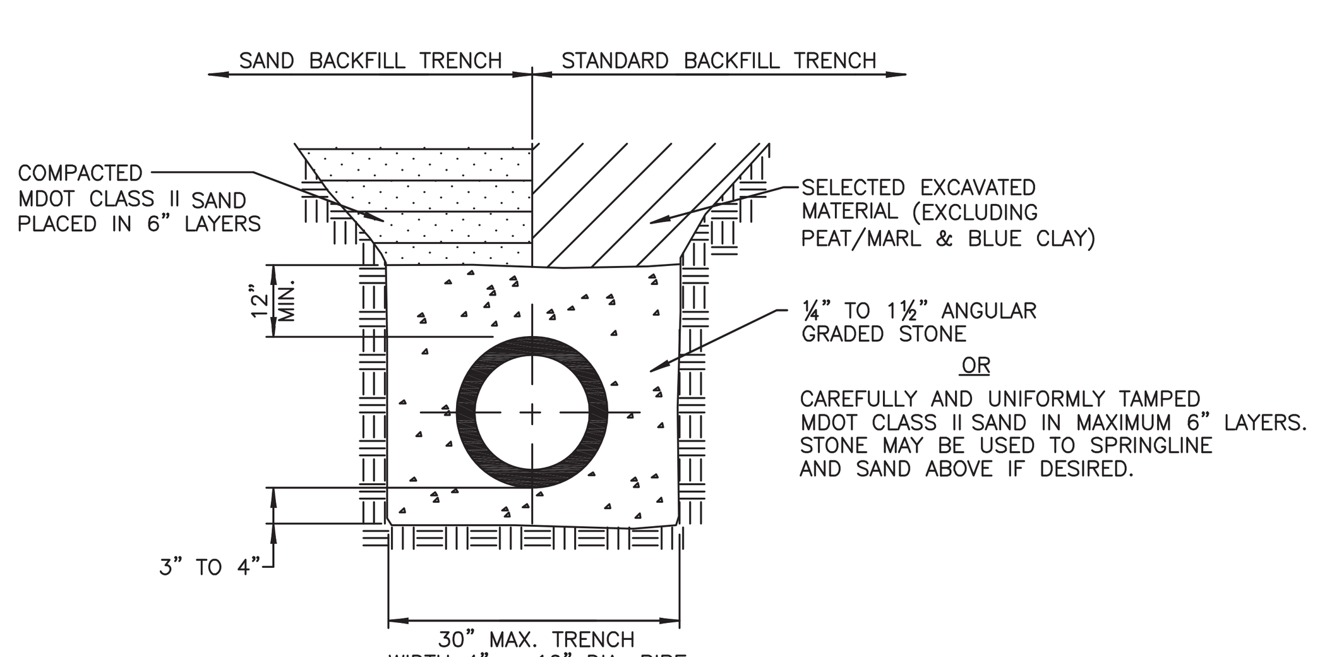
END SECTION AND BAR SCREEN DETAIL

NO SCALE



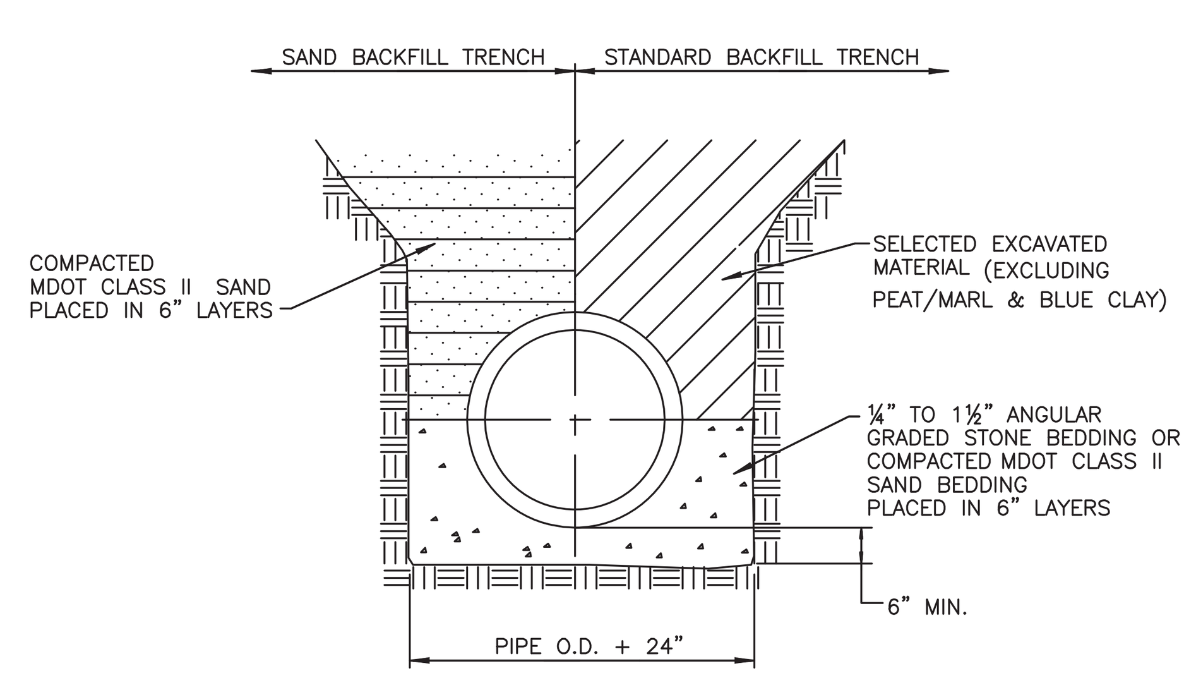
LETTERED MANHOLE COVER FOR WRC

NO SCALE



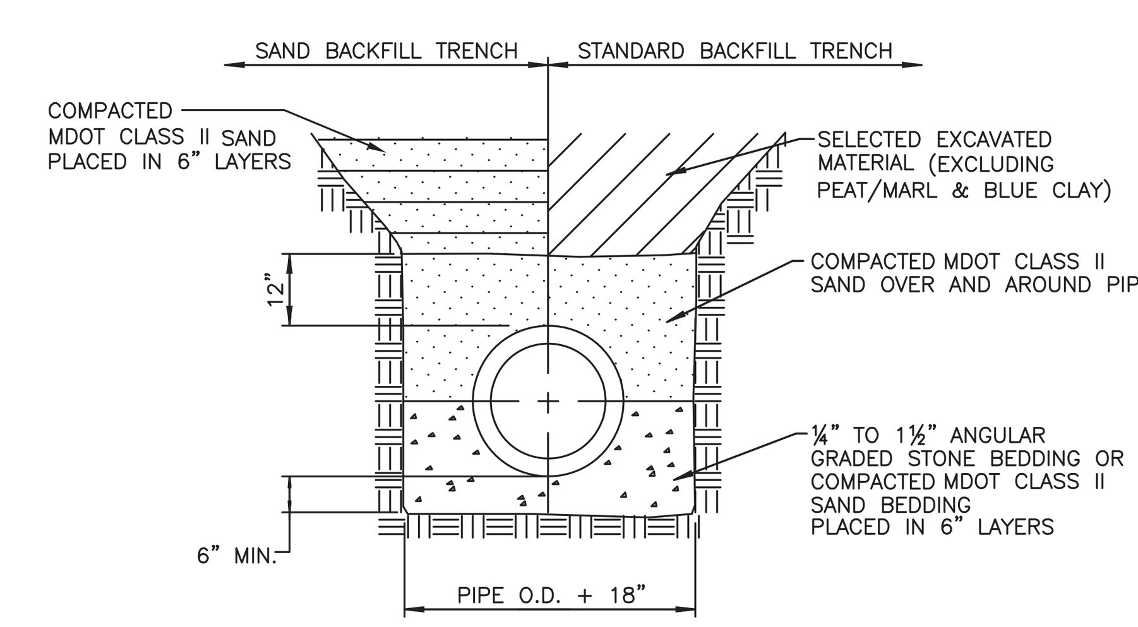
ABS (TRUSS AND SOLID WALL), PVC (TRUSS, SOLID WALL, A2000), ADS N-12 WT PIPE BEDDING DETAIL

NO SCALE



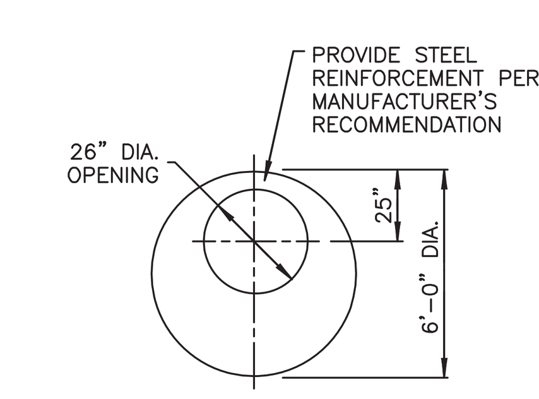
CLASS "B" BEDDING TRENCH DETAIL FOR 27" DIAMETER AND LARGER CONCRETE PIPE

NO SCALE



CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER CONCRETE PIPE

NO SCALE



PRECAST CONCRETE TOP SLAB DETAIL

GENERAL NOTES

1. Type and class of pipe shall be as specified on plans.
2. Class "B" bedding shall be used throughout, unless otherwise specified on the plan.
3. All end sections 18" and larger shall be provided with a bar screen unless otherwise approved.
4. Standard rip-rap shall be 8"–15" fragmented rock, heavy rip-rap shall be 16"–24" fragmented rock. (No Broken Concrete)
5. MANHOLE REQUIREMENTS:
   - All new catch basins, inlets, and manholes are to be manufactured to ASTM C-478 specifications.
   - All new catch basins, inlets, and manholes shall have WRC approved flexible, watertight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Pre cast manhole cone sections shall be WRC approved modified eccentric cone type.
   - Taps through manhole joints or cone sections are prohibited unless otherwise approved.
   - 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. Place at 16" centers 45° from centerline of sewer.
   - Cone section with modified groove tongue joints and with stud inserts cast in place. Top to have flush surface.
   - ASTM C-478 riser section with modified groove tongue joints.
   - Res-seal, link-seal, press wedge II, or kor-n-seal boot (with stainless steel korband) flexible rubber manhole joints. (or approved equal).
   - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
6. CONCRETE PIPE REQUIREMENTS:
   - Concrete pipe to be per ASTM C76 standards.
   - It will be required to TV all pipe 30 days after installation
   - The contractor shall provide reinforced concrete pipe as specified on the plans.
   - All reinforced concrete pipe shall have modified grooved tongue joints with o-ring type rubber gasket, per A.S.T.M. specifications C443.
   - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
7. SUMP PUMP LEAD REQUIREMENTS:
   - All sump pump leads connected to a County Drain pipe shall be pre-manufactured.
   - Sump pump leads connected to a manhole shall be cored and booted. Refer to Kor-N-Tee Tap Detail.
   - Sump pump mains and leads shall be ABS (truss and solid wall), PVC (truss, solid wall , A2000), ADS N-12 WT with premium joints.
   - Ends of all 4" sump pump leads shall be temporarily capped and their location staked, witnessed and recorded.
   - All sump pump leads to be taken to the property line, easement line or as indicated on the plan.
   - Sump pump mains must have a cleanout with a minimum inside diameter of 24" and be constructed at changes of alignment, ends of sump pump mains or as indicated on the plan.
8. RESTORATION REQUIREMENTS:

   All disturbed area within the County Drain right-of-way shall be restored as follows:
   - Under roads, sidewalks, driveways and parking areas, backfill material shall be placed loosely into trenches in six (6) inch layers with each layer compacted to not less than 95% of maximum dry density as determined by the ASTM D 1557 Compaction Standard (modified proctor compaction test). All other areas shall have each layer compacted to not less than 90% of maximum dry density.
   - Finish subgrade
   - Place 3" thickness clean topsoil acceptable to the engineer to attain finished grade. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, subbase materials, or other materials. It must consist of natural loam, sandy loam, silty loam or clay loam humus-bearing soil adapted to the sustenance of plant life. Topsoil must be neither excessively acidic nor excessively alkaline. It must be of mineral origin, exclusive of any peat or muck.
   - Apply seed and fertilizer as follows:*

Location	Seeding Requirements	Fertilizer Requirement
Slopes and Ditch, Banks, Etc.	M.D.O.T. "Roadside Mix" Turf Seed Mixture TGM (10% Kentucky Blue, 20% Perennial Rye, 30% Hard Fescue, 40% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
Other Areas	M.D.O.T. "Roadside Mix" Turf Seed Mixture THM (30% Kentucky Blue, 20% Perennial Rye, 50% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A

   * Sod is required in maintained lawn areas. Refer to WRC General Specifications for additional requirements and information.
   - apply straw or marsh hay mulch in an air-dry condition to all seeded areas over the surface to a uniform thickness at 2 tons/acre.
   - mulch shall be anchored in place with biodegradable netting, not larger than 1½" by 2" nor smaller than ½" by ½".
   - The contractor shall be responsible to insure the growth of all seeded areas, and shall re-seed as necessary to accomplish this.
9. The Storm Drain Notes and Details Sheet shall be a supplement to WRC Standards and Specifications, which are available on the WRC website (www.oakgov.com/water).

STORM DRAIN NOTES
AND
DETAILS

REVISION BLOCK

Data Source / Source Date: N/A

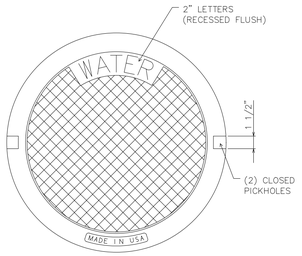
Rev. No.:	Rev. By:	Rev. Date:	Description:
1	lz	3/17/09	PROPOSED DETAIL CHANGES / NEW LOGO
2	lz	06/12/09	APPROVAL PER STANDARDS COMMITTEE
3	lz	03/29/10	REVISED MH COVER DETAIL
4	DS	04/27/10	REVISED GENERAL NOTES

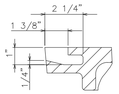
ORIG. DATE:	05/05/97
SCALE:	NONE
DESIGNED BY:	WRC
DRAWN BY:	Mapping

WRC WATER RESOURCES COMMISSIONER Jim Nash

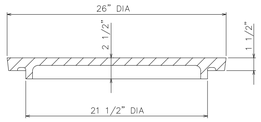
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST
WATERFORD, MICHIGAN
48328-1907

SHEET NO.: 1 of 1



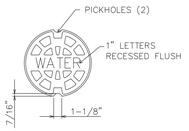


PICKHOLE DETAIL

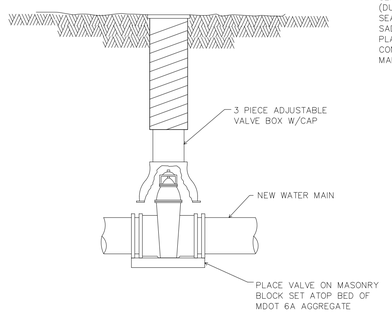


COVER SECTION

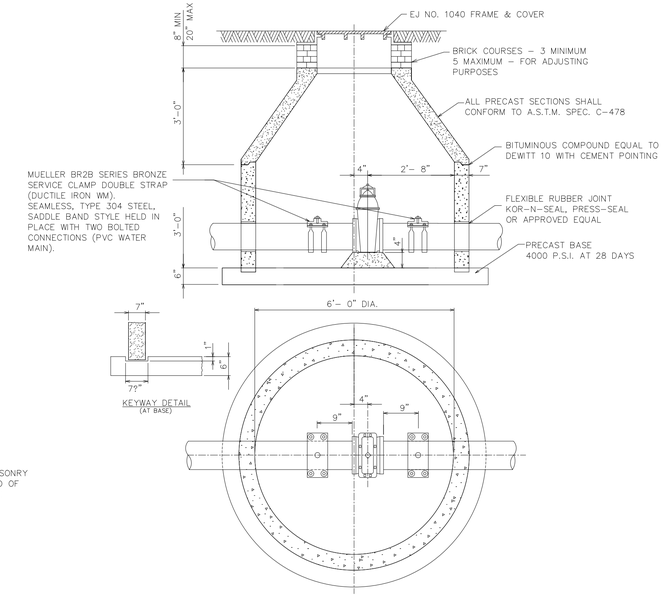
GATE WELL COVER



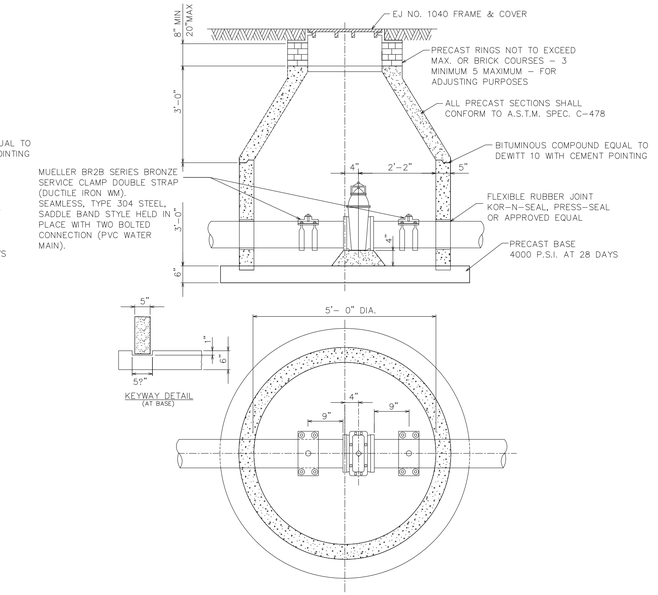
VALVE BOX COVER



GATE VALVE AND BOX
NO SCALE



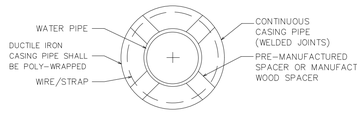
12" & 16" PRECAST
GATE & WELL DETAIL



8" PRECAST
GATE & WELL DETAIL

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

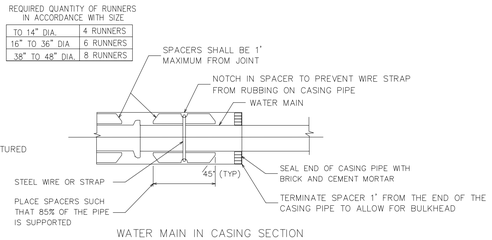
NOMINAL SIZE	MINIMUM WALL THICKNESS
8"– 42"	0.375
48"– 60"	0.500



SUPPORT FOR WATER MAIN
CONSTRUCTED IN CASING PIPE
SCALE 1"= 4'

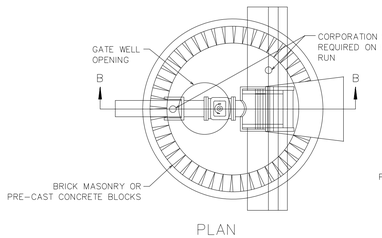
REQUIRED QUANTITY OF RUNNERS IN ACCORDANCE WITH SIZE

TO 14" DIA.	4 RUNNERS
16" TO 36" DIA.	6 RUNNERS
38" TO 48" DIA.	8 RUNNERS

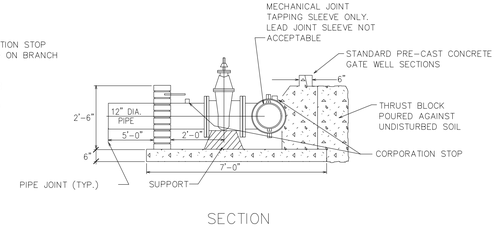


WATER MAIN IN CASING SECTION
SCALE 1"= 2'

WATER MAIN IN CASING DETAILS

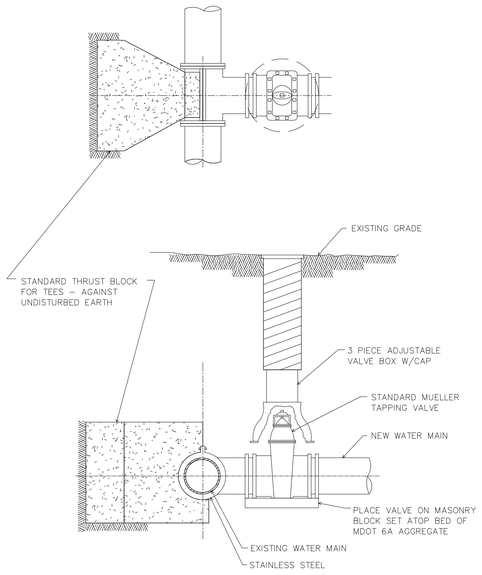


PLAN

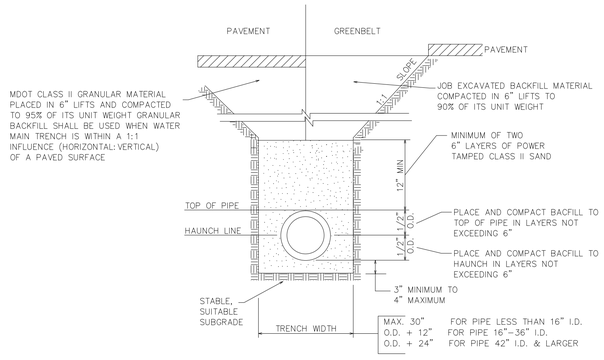


SECTION

TAPPING SLEEVE GATE VALVE & WELL DETAILS
NO SCALE



TAPPING SLEEVE & VALVE
W/VALVE BOX

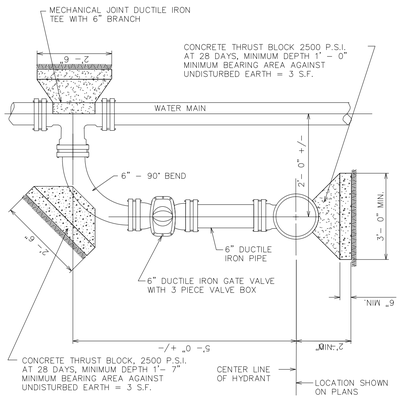


STANDARD BEDDING FOR WATER MAIN
NO SCALE

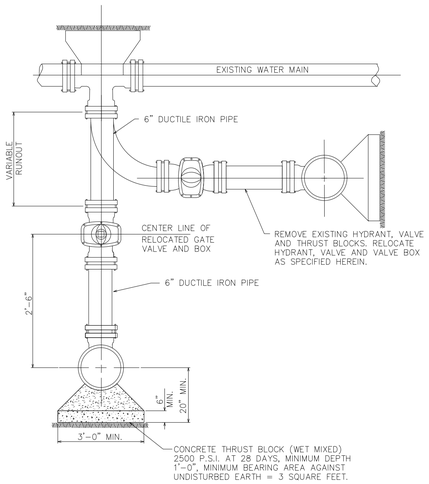
CITY OF SOUTHFIELD
PUBLIC SERVICES GROUP ENGINEERING DEPARTMENT

WATERMAIN DETAILS

DRAWN BY	SP	REVISIONS			
DESIGNED BY		No.	DESCRIPTION	DATE	BY
APPROVED BY	LS	1	SOUTHFIELD SPEC. UPDATES	05/22	ZJH
DATE	2014				
SC: HORZ. NTS VERT.					
SHEET 1 OF 4					
JOB No.					

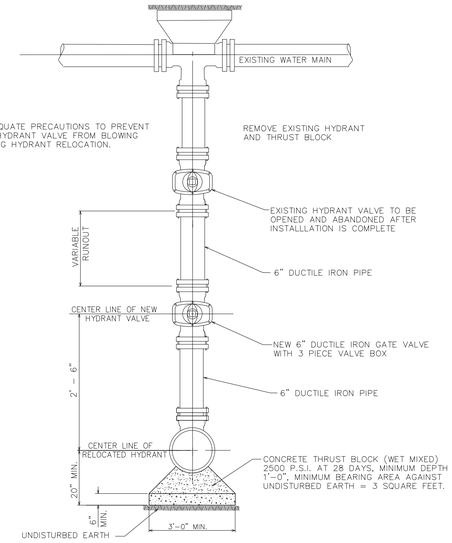


"L" HYDRANT CONNECTION



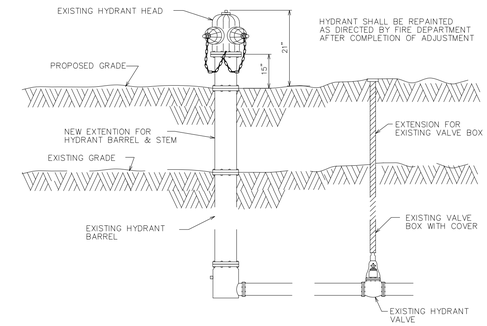
HYDRANT RELOCATION

NOTE: TRAVERSE CITY OF CITY OF DETROIT FIRE DEPARTMENT HYDRANTS SHALL BE REPLACED

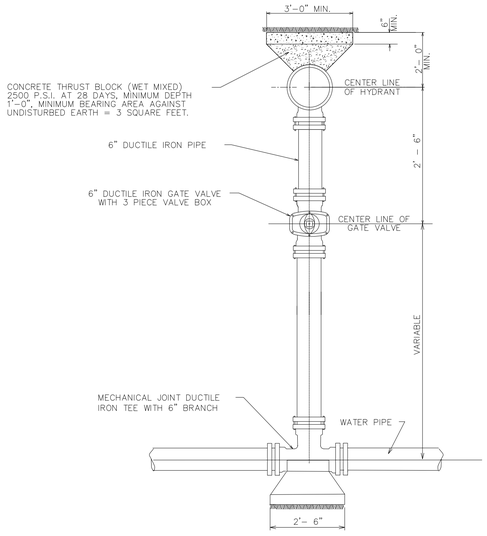


HYDRANT RELOCATION

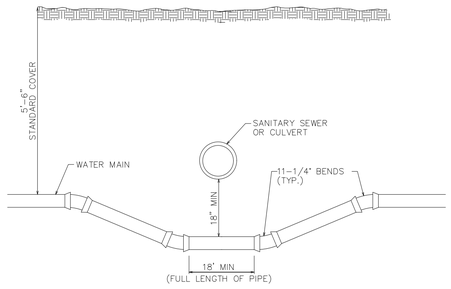
NOTE: TRAVERSE CITY OF CITY OF DETROIT FIRE DEPARTMENT HYDRANTS SHALL BE REPLACED



HYDRANT ADJUSTMENT

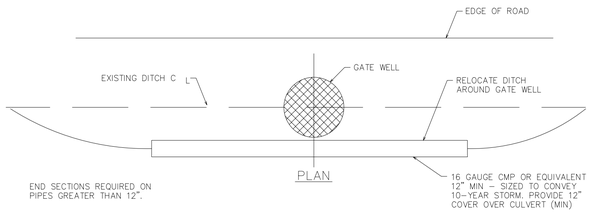


STRAIGHT HYDRANT CONNECTION



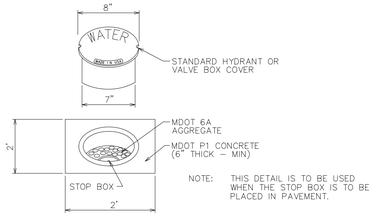
SEWER OR CULVERT CROSSING

NO SCALE

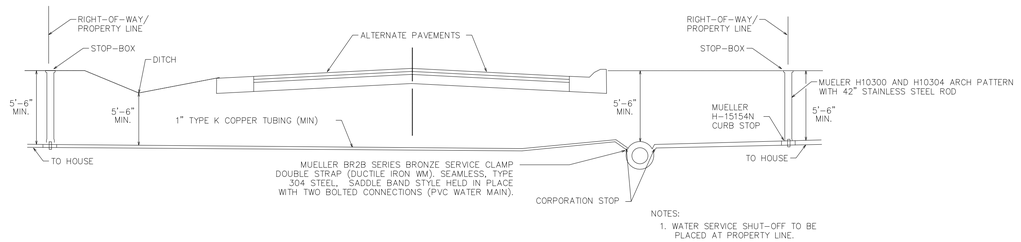


DITCH ENCLOSURE AT GATE WELL

NO SCALE

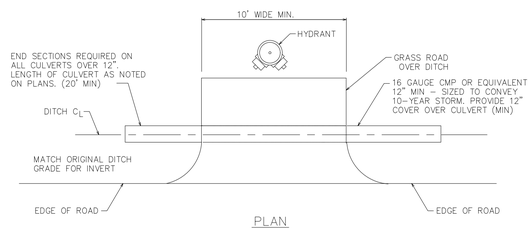


STOP BOX PROTECTION (PAVED AREAS)



TYPICAL PUBLIC ROAD WATER SERVICE CONNECTION

NO SCALE



DITCH ENCLOSURE AT HYDRANT

NO SCALE

CITY OF SOUTHFIELD

PUBLIC SERVICES GROUP ENGINEERING DEPARTMENT

WATERMAIN DETAILS

DRAWN BY	SP	REVISIONS			
DESIGNED BY		No.	DESCRIPTION	DATE	BY
APPROVED BY	LS	1	SOUTHFIELD SPEC. UPDATES	05/22	ZJH
DATE 2014					
SC: HORZ. NTS VERT.					
SHEET 2 OF 4					
JOB No.					

WATER MAIN NOTES

1. All water main construction shall have full–time inspection provided by or caused to be provided by the City of Southfield Engineering Department. Contractor shall contact the Engineering Department for inspection at least 48 hours prior to start of construction.
2. When it is necessary to shut down existing water mains, the contractor shall contact the City of Southfield Water and Sewer Department and shall cooperate with the City forces in closing the necessary gate valves and in notifying the affected residents and places of business.
3. All water mains shall be constructed with a minimum cover of five and a half (5.5) feet and a maximum of seven (7) feet below finished grade. Where water mains must dip to pass under other utilities, the sections which are deeper than normal shall be kept to a minimum length by the use of 11–1/4 degree bends,properly anchored or restrained.
4. Contractor shall use lengths of pipe and/or additional bends to accomplish horizontal and/or vertical deflections as indicated on the plan.
5. All water main under or within three (3) feet of existing or proposed pavement shall be back filled with MDOT granular material, Class II, mechanically tamped in 12–inch lifts to 95% compaction.
   If construction is within the Road Commission for Oakland County and/or Michigan Department of Transportation rights–of–way, permits shall be required from the respective agencies.
6. All new water main and services shall include tracer wire and test points at ground appurtenances, valves and hydrants. Tracer wire layout and installation shall be in accordance with the special detail sheet.
7. Please refer to the City of Southfield Water Main Specifications for additional requirements for construction, materials, etc..

GENERAL CONSTRUCTION NOTES

1. All construction shall conform to the current standards and specifications of the City of Southfield. A pre–construction meeting shall be held prior to start of construction and shall be scheduled by the City of Southfield Engineering Department at 248–796–4810.
2. The Standard Details and Specifications of the City of Southfield are incorporated as part of these plans.
3. Prior to any excavation, the Contractor shall contact " MISS DIG " (by dialing 811) forlocation of underground utilities and shall also notify representatives of other utilities located in the vicinity of the work. TheContractor shall make any necessary arrangements with utility companies for relocation of existing utilities, if required. Utility poles shall be properly supported, tunneled and/or temporarily relocated as required.
4. No City street shall be closed without prior permission from the City of Southfield. Forty–eight (48) hours prior to closing any City street, the Contractor shall notify the City Police, Fire and Streets and Highway Department. Traffic control, routing and signing shall be in accordance with the requirements of the City of Southfield and the Michigan Manual of Uniform Traffic Control Devices.
5. All property irons and monuments disturbed or destroyed by the Contractor's operation shall be replaced by a Registered Land Surveyor provided by or caused to be provided by the Contractor at the Contractor's expense.
6. Existing fences shall be removed and restored to their original condition or better.
7. Cost of protection of any removal and/or replacement of public and private utilities shall be borne by the Contractor
8. All necessary easements for public water mains shall be provided in the name of the City of Southfield of the water main prior to acceptance of the water distribution system for operation.

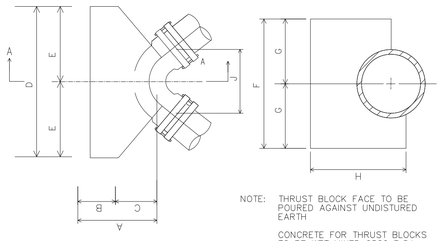
SIZE	TEE	END CAP	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	REDUCERS	VERT OFFSET
6"		36'	14'	6'	3'	2'	19'	
8"	*	47'	18'	8'	4'	2'	20'	*
12"		67'	25'	11'	5'	3'	36'	

*ENGINEER SHALL PROVIDE CALCULATIONS FOR SPECIFIC RESTRAINT SCENARIOS

PIPE RESTRAINT NOTES

1. THE ABOVE TABLE IS FOR INFORMATION ONLY. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING RESTRAINT SCHEDULES AND PROVIDING IT TO THE CITY OF SOUTHFIELD OR ITS REPRESENTATIVE FOR REVIEW.
2. THE VALUES PROVIDED REPRESENT RESTRAINT LENGTH IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FROM TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM IS INCLUDED.
3. REDUCER RESTRAINT LENGTH ASSUMES ONE STEP–DOWN IN SIZE.
4. THE ABOVE PIPE RESTRAINT WAS CALCULATED USING THE EBAA IRON RESTRAINT CALCULATOR ASSUMING THE FOLLOWING PARAMETERS:
   - 4.1. SOIL TYPE: CL GRAN. FILL
   - 4.2. SAFETY FACTOR: 1.5 TO 1
   - 4.3. TRENCH TYPE 4
   - 4.4. DEPTH OF BURY: 5 FEET
   - 4.5. TEST PRESSURE: 150 PSI

MECHANICAL RESTRAINT FOR PVC

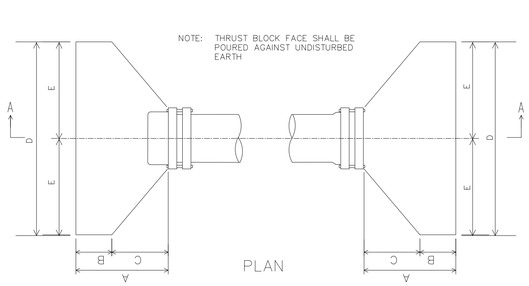


NOTE: THRUST BLOCK FACE TO BE POURED AGAINST UNDISTURED EARTH

CONCRETE FOR THRUST BLOCKS TO BE WET MIXED 2500 P.S.I.

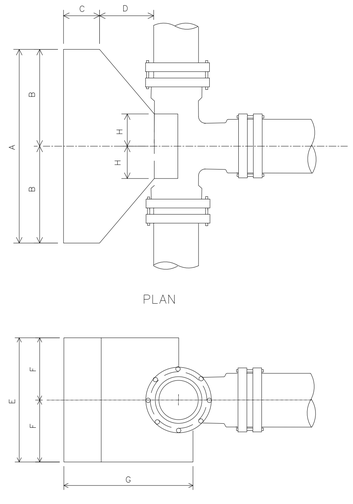
SIZE	ANGLE	A MIN.	B MIN.	C	D	E	F	G	H MIN.	J
6"	45°	1'–6"	0'–9"	0'–9"	1'–6"	0'–9"	1'–6"	0'–9"	1'–8"	0'–10"
6"	90°	1'–6"	0'–9"	0'–9"	2'–0"	1'–0"	2'–0"	1'–0"	1'–8"	0'–10"
8"	45°	1'–9"	0'–9"	1'–0"	2'–4"	1'–2"	2'–0"	1'–0"	1'–11"	1'–4"
8"	90°	1'–9"	0'–9"	1'–0"	3'–4"	1'–8"	2'–6"	1'–3"	1'–11"	1'–2"
12"	22–1/2°	1'–9"	0'–9"	1'–0"	2'–6"	1'–3"	2'–0"	1'–0"	2'–0"	1'–4"
12"	45°	2'–1"	0'–9"	1'–4"	3'–6"	1'–9"	2'–6"	1'–3"	2'–4"	1'–4"
12"	90°	2'–1"	0'–9"	1'–4"	5'–6"	2'–9"	3'–0"	1'–6"	2'–4"	1'–8"
16"	22–1/2°	2'–5"	1'–0"	1'–8"	3'–4"	1'–8"	2'–6"	1'–3"	3'–0"	1'–2"
16"	45°	2'–8"	1'–0"	1'–8"	5'–4"	2'–8"	3'–0"	1'–6"	3'–0"	1'–6"
16"	90°	2'–8"	1'–0"	1'–8"	6'–0"	3'–0"	5'–0"	2'–6"	3'–0"	1'–8"
24"	90°	4'–7"	1'–0"	3'–7"	10'–0"	5'–0"	7'–0"	3'–6"	5'–4"	2'–4"

CONCRETE THRUST BLOCK FOR BENDS



SIZE	A MIN.	B MIN.	C	D	E	F	G
8"	1'– 11"	0'– 9"	1'– 2"	3'– 0"	1'– 6"	2'– 0"	1'– 0"
12"	2'– 1"	0'– 9"	1'– 4"	4'– 0"	2'– 0"	3'– 0"	1'– 6"
16"	2'– 8"	1'– 0"	1'– 8"	5'– 0"	2'– 6"	4'– 0"	2'– 0"

CONCRETE THRUST BLOCK FOR ENDS



THRUST BLOCK FACE SHALL BE POURED AGAINST UNDISTURBED EARTH.

CONCRETE FOR THRUST BLOCKS TO BE WET MIXED 2500 P.S.I.

SCHEDULE OF THRUST BLOCK DIMENSIONS			
CODE	TEE SIZE 8"x8" 12"x8" 16"x8" 24"x8"	TEE SIZE 12"x12" 16"x12" 24"x12"	TEE SIZE 16"x16" 24"x16"
A	3'–0"	4'–0"	5'–0"
B	1'–6"	2'–0"	2'–6"
C	0'–9"	0'–9"	1'–0"
D	1'–0"	1'–4"	1'–8"
E	2'–0"	3'–0"	4'–0"
F	1'–0"	1'–6"	2'–0"
G 8"	2'–2"		
G 12"	2'–6"	2'–10"	
G 16"	2'–10"	3'–1"	3'–8"
G 24"	3'–5"	3'–7"	4'–2"
H 8"	0'–6"		
H 12"	0'–6"	0'–10"	
H 16"	0'–6"	0'–10"	1'–0"
H 24"	0'–6"	0'–10"	1'–0"

CONCRETE THRUST BLOCK FOR TEES

SIZE	ANGLE	A MIN.	B MIN.	C	D	E	F	G	H MIN.	J
6"	45°	1'–6"	0'–9"	0'–9"	1'–6"	0'–9"	1'–6"	0'–9"	1'–8"	0'–10"
6"	90°	1'–6"	0'–9"	0'–9"	2'–0"	1'–0"	2'–0"	1'–0"	1'–8"	0'–10"
8"	45°	1'–9"	0'–9"	1'–0"	2'–4"	1'–2"	2'–0"	1'–0"	1'–11"	1'–4"
8"	90°	1'–9"	0'–9"	1'–0"	3'–4"	1'–8"	2'–6"	1'–3"	1'–11"	1'–2"
12"	22–1/2°	1'–9"	0'–9"	1'–0"	2'–6"	1'–3"	2'–0"	1'–0"	2'–0"	1'–4"
12"	45°	2'–1"	0'–9"	1'–4"	3'–6"	1'–9"	2'–6"	1'–3"	2'–4"	1'–4"
12"	90°	2'–1"	0'–9"	1'–4"	5'–6"	2'–9"	3'–0"	1'–6"	2'–4"	1'–8"
16"	22–1/2°	2'–5"	1'–0"	1'–8"	3'–4"	1'–8"	2'–6"	1'–3"	3'–0"	1'–2"
16"	45°	2'–8"	1'–0"	1'–8"	5'–4"	2'–8"	3'–0"	1'–6"	3'–0"	1'–6"
16"	90°	2'–8"	1'–0"	1'–8"	6'–0"	3'–0"	5'–0"	2'–6"	3'–0"	1'–8"
24"	90°	4'–7"	1'–0"	3'–7"	10'–0"	5'–0"	7'–0"	3'–6"	5'–4"	2'–4"

*ENGINEER SHALL PROVIDE CALCULATIONS FOR SPECIFIC RESTRAINT SCENARIOS

PIPE RESTRAINT NOTES

1. THE ABOVE TABLE IS FOR INFORMATION ONLY. THE DESIGN ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING RESTRAINT SCHEDULES AND PROVIDING IT TO THE CITY OF SOUTHFIELD OR ITS REPRESENTATIVE FOR REVIEW.
2. THE VALUES PROVIDED REPRESENT RESTRAINT LENGTH IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FROM TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM IS INCLUDED.
3. REDUCER RESTRAINT LENGTH ASSUMES ONE STEP–DOWN IN SIZE.
4. THE ABOVE PIPE RESTRAINT WAS CALCULATED USING THE EBAA IRON RESTRAINT CALCULATOR ASSUMING THE FOLLOWING PARAMETERS:
   - 4.1. SOIL TYPE: CL GRAN. FILL
   - 4.2. SAFETY FACTOR: 1.5 TO 1
   - 4.3. TRENCH TYPE 4
   - 4.4. DEPTH OF BURY: 5 FEET
   - 4.5. TEST PRESSURE: 150 PSI

MECHANICAL RESTRAINT FOR POLY–WRAPPED DUCTILE IRON

CITY OF SOUTHFIELD

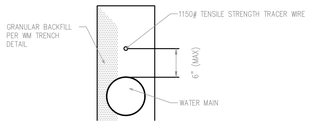
PUBLIC SERVICES GROUP ENGINEERING DEPARTMENT

WATERMAIN DETAILS

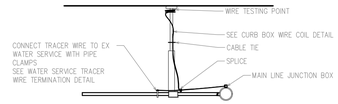
DRAWN BY	SP
DESIGNED BY	
APPROVED BY	LS
DATE	2014
SC: HORZ.	NTS
SC: VERT.	
SHEET	3 OF 4
JOB No.	

REVISIONS

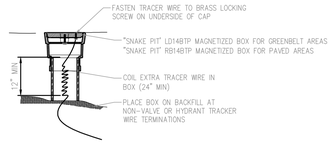
No.	DESCRIPTION	DATE	BY
1	SOUTHFIELD SPEC. UPDATES	05/22	ZJH



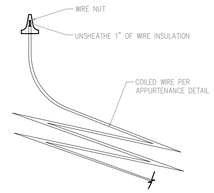
OPEN CUT MAIN LINE TRENCH
NO SCALE



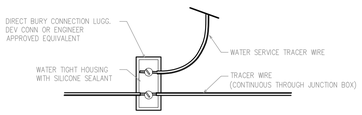
CURB STOP CONNECTION
NO SCALE



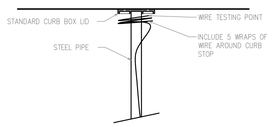
TRACER WIRE TEST POINT
NO SCALE



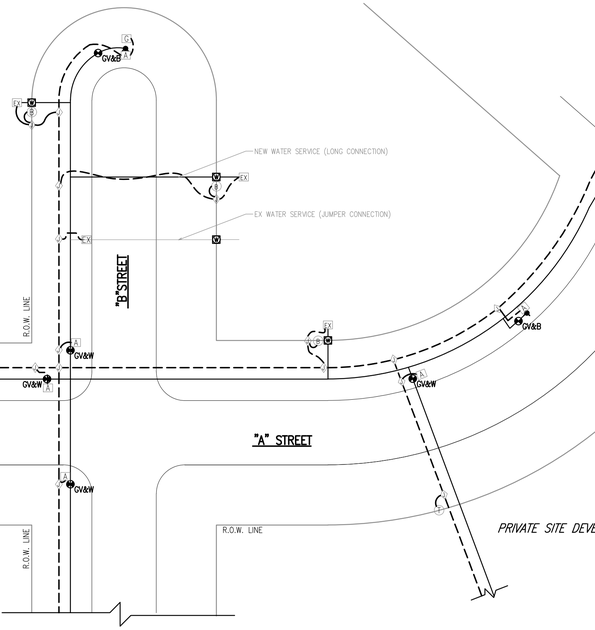
WIRE TESTING POINT
NO SCALE



MAIN LINE JUNCTION BOX
NO SCALE



CURB BOX WIRE COIL
NO SCALE



TRACER WIRE SYSTEM SCHEMATIC

KEY

WATER SYSTEM

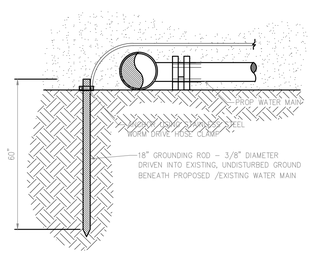
- GATE VALVE
- HYDRANT
- CURB BOX
- PROP WATER MAIN
- EX WATER SERVICE

TRACING WIRE SYSTEM

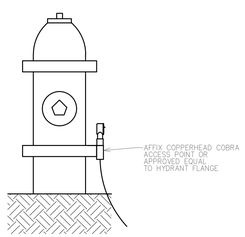
- JUNCTION
- CURB BOX WIRE COIL
- WATER SERVICE TERMINATION
- TEST POINT
- GROUNDING ROD TERMINATION
- ACCESS POINT
- TRACING WIRE

SPLICE CONNECTOR
NO SCALE

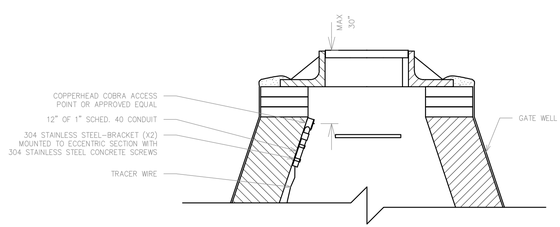
WATER SERVICE TERMINATION
NO SCALE



GROUNDING ROD TERMINATION
NO SCALE



HYDRANT TRACER WIRE ACCESS POINT
NO SCALE



GATE WELL TRACER WIRE ACCESS POINT
NO SCALE

CITY OF SOUTHFIELD
PUBLIC SERVICES GROUP ENGINEERING DEPARTMENT

WATERMAIN TRACER SYSTEM DETAILS

DRAWN BY	PD	REVISIONS		
DESIGNED BY		No.	DESCRIPTION	DATE BY
APPROVED BY	LS	1	ADD HYDRANT TEST POINT	01/17 LS
DATE 2014		2	SOUTHFIELD SPEC. UPDATES	05/22 ZJH
SC: HORZ. VERT. NTS				
SHEET 4 OF 4				
JOB No.				

NOTES AND SCHEDULES

Foundation Notes and Schedule

Prepare soil supporting foundations in accordance with recommendations in the geotechnical report

See notes on plan for required bearing capacity. shallow footings to bear on undisturbed soil or on compacted engineered fill. Notify SDI of any variation from anticipated bearing capacity for appropriate redesign or lowering of footing.

Bottom of all exterior footings must be 42" minimum below grade. If interior foundations are left exposed to freezing weather during construction, lower bottom of footing to 42" below grade. provide frost blocks at all exterior swing doors per detail FN-04. bottom of frost block to match bottom of adjacent footing. coordinate dimensions with architecture.

Provide 3" clear cover to bottom reinforcing and 2" clear cover to top reinforcing unless noted otherwise

See typical details for additional requirements

Footing Label Conventions: FS-24T(24")

footing type, see schedule

"T" indicates top bars are required

indicates the non-standard thickness of footing required at this location

label	dimensions			reinforcement
	width	length	min. thickness	
FS-36	36"	cont.	26"	(3) #5 bars continuous, top & bottom
MF-1	see plan	see plan	42"	#5 @ 12" o.c. each way, top & bottom

Slab-on-Grade Notes and Schedule

Place slabs on a 15 mil vapor barrier, on compacted granular fill. all subgrade below slab to be prepared in accordance with recommendations in the geotechnical report

Contractor shall submit control joint layout for architect's approval.

See achitectural for extents and dimensions of all slab depressions including areas depressed for special flooring or entry grating. Maintain slab thickness at depressed slab locations. Contractor to coordinate and provide all slab depressions, housekeeping pads, and pits required by the mep drawings

See slab typical details on S0.3 for more information.

label	total thickness	reinforcing	notes
SL-1	6"	6x6-W2.9xW2.9	typical, locate reinforcing in top half of slab

Mass Roof Deck Notes and Schedule

All roof deck to be G60 galvanized, minimum (G90 where permanently exposed to weather). Provide 3 span minimum.

Fasten steel deck units to structural supports using Hex washer head Tek screws or arc spot welds according to manufacturer's specifications and in conformance with the Steel Deck Institute's Specification section 4.4.

Weld & Fastener pattern:

- support fasteners:

  @ steel beams: HILTI X-ENP-19 - L15

- sidelap fasteners: #12 TEK screws

Provide arc spot welds (puddle welds) to supports shall have a diameter of 5/8" minimum, or an elongated weld of 3/8" minimum width and 3/4" minimum length. Weld metal shall penetrate all layers of deck material at end laps and have adequate fusion to the supporting members. Welding shall be done in accordance with the American Welding Society Standard "Specification for Welding Sheet Steel in Structures", AWS D1.3.

Provide 5/16" thick edge angle around entire perimeter of deck for edge support. splice perimeter angle according to typical detail ST-08.

Unless otherwise noted, all metal deck has been designed to be continuous over 3 spans minimum, and shall bear at least 2" on steel supports. For one or two span conditions, the contractor shall provide shoring as required, or furnish higher gage deck as required to support all the applicable loads. Contractor shall submit alternate for approval.

Provide reinforcing channels, standard closures, cant strips, sump pans, finish strips, pour stops and other accessories as required for a properly finished job, even if not specifically shown on the drawings. Provide bearing angles welded to columns to support metal deck as required.

Do not attach mechanical or ceiling hangers to metal deck deck. Attach hangers to structural members only. Any necessary supplemental unistrut or steel framign is to be esigned by a P.E. retained by the contractor, with sealed calcs and drawings

Coordinate size and locations of all mechanical openings with mechanical and architectural drawings

See typical deck details on S0.3 for additional requirements

label	depth & type	gage	sidelap fasteners	typical support fasteners unless noted otherwise	fastener graphic	@ building perimeter and drag trusses
MD-1	1-1/2" (type-B)	18	#12 TEK screw @ 12" o.c.	HILTI X-ENP-19 L15 pins 36/5 pattern		HILTI X-ENP-19 L15 pins @ 6" oc max

Steel Framing Notes

Where typical, or incomplete connections are shown on the design drawings, those details shall be used as a basis for connection design to be completed by the contractor. Alternate connections designed by the steel contractor will be provided if required design forces cannot be achieved by the typical or example connection, or if authorization to alter the detail is provided by the design engineer.

All fully tensioned A325 bolts shall have washers beneath the turned element. All fully tensioned A490 bolts shall have washers beneath both nut and head.

All welds shall be provided as shown in the structural details unless thicker weld is required due to material thicknesses. Weld sizes shall be increased as needed to meet the following minimum weld size requirements based on the smaller material thickness of the pieces of steel being welded together:

Minimum fillet weld size based on steel thickness (thinner of two connecting elements may be considered, increase weld size accordingly)

1/4" and under	1/8"
over 1/4" to 1/2"	3/16"
over 1/2" to 3/4"	1/4"
over 3/4"	5/16"

If penetrations through webs of steel beams will be required, contractor to notify engineer of record Contractor shall coordinate location, dimensions and quantity of all penetrations through floor slabs and roof deck with MEP and architectural drawings.

See architecture for miscellaneous and non-structural steel. See architectural drawings for fireproofing and intumescent paint requirements. Provide primer on steel members which is compatible with the various required coatings

Coordinate location and dimensions of all mechanical unit support framing and penetrations w/ mechanical. for support framing not called out on plan, provide frames according to ST-06 and ST-11.

All angles, W-sections, HSS-sections, and plates acting as lintels to support exterior masonry or stone to be galvanized. All interior lintels to be painted.

Fabrication

See AISC Specification M2.1-3 for fabrication requirements for thermal cutting and planing.

Welded construction shall comply with AISC Specification M2.4 and be performed in accordance with AWS D1.1/D1.1M as modified by provisions of AISC Specification J2.

Erection and surface preparation for field welds and slip-critical bolted connections shall comply with AISC Specification M3 & M4. Holes for bolted construction shall comply with AISC Specification M2.5.

Submittals

See "submittals" on sheet S0.1 for additional information.

Fabricator (or erector) shall submit shop drawings consistent with AISC Specification M1 for review by the EOR or EOR's designee, per AISC N3.1 and in acordance with the Code of Standard Practice Section 4.4, prior to fabrication. The documents itemized in AISC N3.2, including all material test data, mill certifications, weld prequalifiaction, and welding procedure specifications, shall be available for review upon request.

Quality Control / Quality Assurance

The authority having jurisdiction at its discretion may require additional QA/QC documentation and inspections.

The steel fabricator is responsible for meeting the quality control and assurance requirements of AISC Specification Section N5

Personnel responsible for quality control and quality assurance shall meet the minimum requirements of AISC Specification Section N4

CJP welds of flanges or plates 2" or greater require:

Steel that meets the Charpy V-notch Impact test requirements of AISC Specification Section A3

Connections

Where steel connections are not fully detailed on the design drawings (with all requirements for bolts, plates, welds, dimensions,etc., shown) connections shall be designed by the steel fabricator under the supervision of a P.E. licensed in the state that has jurisdiction over the project.

Where connection forces are indicated on the drawings, provide connections designed to resist the forces shown.

Where connection forces are not indicated on the drawings, provide connections designed to resist forces as follows:

For shear connections in non-composite members, design connections to resist 50% of the total allowable uniform load shown in table 3-6 of the AISC Manual of Steel Construction.

SUBMITTALS

SUBMITTALS

Stamping of shop drawings by SDI does not approve any alteration or deviation from the construction documents. If alterations, substitutions, and deviations from the construction documents are indicated by the contractor in shop drawings, they are not approved by sdi's stamp or submittal comments. Alterations, substitutions, and deviations should not be included in the shop drawings - they must be submitted as a separate document to SDI for review.

The following items related to the building structural system are to be submitted to the architect in accordance with the requirements of the project specifications:

1) Concrete mix designs and control joint locations

2) Concrete test results

3) Slab joint layout

4) Reinforcing bar shop drawings - footings, walls, piers, & slabs

5) Masonry vertical and horizontal reinforcing bar shop drawings including masonry dowel layout (foundation to wall dowels) provided by the mason to the foundation contractor prior to foundation installation

6) Masonry materials (block, grout, mortar)

7) Veneer ties
   - product information
   - sealed engineering calculations for all brick cavity conditions

8) Welder certifications for shop and field welders

9) Structural steel shop drawings
   - include design beam shear demand plus any specified axial load on beam piece sheets
   - include beam connection shear capacity (plus axial capacity if present) on beam piece sheets

10) Sharpy V-notch impact test results for steel members or plates 2" or greater in thickness that are CJP welded

11) Steel connections calculations
    (signed and sealed and submitted along with relevant shop drawings)

12) Stair shop drawings (signed and sealed)

13) Steel deck shop drawings

14) Engineered cold formed erection drawings:
    - cold formed wall framing (w/ signed and sealed calculations)
    - cold formed roof truss framing (w/ signed and sealed calculations)
    - interior cold formed framing referenced in "metal framing notes" (w/ signed and sealed calculations)
    - each formed truss bracing drawings, (w/ signed and sealed calculations)

15) Roof deck fastener product data

16) All inspection reports as pertaining to the items listed above

SPECIAL INSPECTION

STATEMENT of SPECIAL INSPECTIONS

The contractor shall coordinate owner-paid, independent inspections meeting all applicable requirements of IBC Chapter 17. For steel see also AISC 360 Chapter N, and for masonry see also ACI 530 Chatper 3.

All inspections shall be documented with written reports and a final report; submitted to the owner and copied to the architect, structural engineer, and building official. Reinspection of deficient work wil be required as necessary to confirm that corrections have been satisfactorily completed.

Continuous Inspection is to be understood as an inspector present during all hours of activity for the given operation, unless stated otherwise.

Periodic Inspection is to be understood as an inspector present sufficient to ensure regular and repeated evaluation, not less than daily, for the given operation, unless stated otherwise.

Soils

Continuous inspection of procedures during placement and compaction of engineered fills.

Periodic confirmation of sub-grade bearing capacities and excavation depths.

Concrete

Continuous testing of slump, air content, and temperature of concrete as well as collection and subsequent testing of cylinders. (Continuous being understood as daily for each mix type and not less than 50% of all batches/truckloads being tested.)

Periodic inspection of the placement of formwork, placement of reinforcing, and curing practices.

Masonry

Periodic inspection, of constructed geometry, voids prior to grouting, mortar joints, reinforcement, anchors, cold and hot weather practices, as well as observation, collection, and subsequent testing of grout prisms.)

Steel

Periodic inspection of completed bolted connnections, welded conections, deck attachments, stud attachments, and related field practices. (Periodic being understood as 10% of completed connections visually evaluated.)

Final inspection of project completeness.

One-time shop inspection of shop practices and welder certificates.

Cold Formed Metal Framing
In addition to the items listed below, all "Quality Assurance" inspection responsibilities listed on S0.1A must be performed by the special inspector. Quality Assurance inspection items that must be performed are listed in AISI 240 Section D.

Periodic special inspection is required for: welding operations of elements of the main windforce-resisting system (wall tracks, strap bracing, etc).

Periodic special inspection is required for screw attachment, bolting, anchoring and other fastening of elements of the main windforce-resisting system, including shear walls, braces, roof decking, collectors (drag struts, drag trusses, top plates of walls) and hold-downs.

Periodic special inspection is required for fastening of the following systems and components:
- Roof covering, roof deck and roof framing connections.
- Exterior wall covering and wall connections to roof and floor diaphragms and framing.

REFERENCES

All work shall conform to the requirements of the most recent version of the following referenced standards:

Building Code	2015 Michigan Building Code
Structural Loads	ASCE-7
Concrete	ACI 301 ACI 318: Building Code Requirements for Structural Concrete and Commentary ACI SP 66: ACI Detailing Manual Portland Cement Association "Design and Control of Concrete Mixtures"
Masonry	ACI 530/ASCE 5 ACI 530.1/ASCE 6
Brick	BIA "Technical Notes on Brick Construction"
Steel	AISC 360-10: Specification for Structural Steel Buildings
Welding	American Welding Society AWS D1.1/D1.1M
Steel Joists	Steel Joists Institute "Standard Specifications"
Metal Deck	Steel Deck Institute Specifications
Constuction Loads	ASCE 37 (unless noted otherwise) ASCE 7 (where adjacent to occupied or existing space)

STRUCTURAL LOADS

DESIGN LOADS
All loads are subject to modification per requirements of ASCE-7

Risk Category II

Roof Loading

Roof Live Load	20 psf
Snow Load	25 psf uniform + drifting

Snow

Ground snow	Pg = 25 psf
Importance factor	Is = 1.0
Exposure factor	Ce = 1.0
Thermal factor	Ct = 1.2
Flat roof uniform snow load	Pf = 25 psf

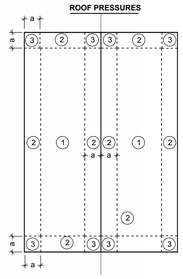
Seismic

Seismic importance factor	Ie = 1.0
Site classification of soil	D
1.0 second spectral response	S1 = 4.7%
0.2 second spectral response	Ss = 9.8%
Seismic design category	A
Seismic-resisting system	Ordinary reinforced masonry shear wall
Response modifica ``` ion factor	R = 2.0
Analysis procedure used	equivalent lateral force procedure

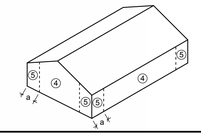
Wind

Basic wind speed	V = 115 mph
Exposure category	C

ROOF PRESSURES



WALL PRESSURES



COMPONENTS & CLADDING ULTIMATE (LRFD) WIND PRESSURES

Zone	Effective Area Per ASCE 7-10 CH 26 (square feet)	Ultimate Pressure (lbs per square foot)		
		positive	negative	overhang
1 (ROOF)	10	+ 17	-28	n/a
	20	+ 16	- 27	n/a
	50	+ 16	- 26	n/a
	100	+ 16	- 25	n/a
2 (ROOF)	10	+ 17	- 48	- 57
	20	+ 16	- 45	- 57
	50	+ 16	- 40	- 57
	100	+ 16	- 36	- 57
3 (ROOF)	10	+ 17	- 48	- 57
	20	+ 16	- 45	- 57
	50	+ 16	- 40	- 57
	100	+ 16	- 36	- 57
4 (WALL)	10	+ 31	- 33	n/a
	20	+ 29	- 32	n/a
	50	+ 27	- 30	n/a
	100	+ 26	- 29	n/a
5 (WALL)	10	+ 31	- 41	n/a
	20	+ 29	- 38	n/a
	50	+ 27	- 30	n/a
	100	+ 26	- 29	n/a

Positive and negative signs in the table above denote pressures active toward and away from building surfaces, respectively.

Parties using the above table are responsible for calculating the appropriate effective areas for use with their scope

Pressures shown are Ultimate LRFD forces per ASCE 7-10

a = 10% of least building width or 40% of mean roof height, whichever is smaller, but not less than 4% of least building width or 5 ft

MATERIALS

MATERIALS

SOIL:

Soil supporting foundations	1,500 psf minimum allowable brg. capacity

CONCRETE:

Foundations	4,000 psi at 28 days
Interior Slab on Grade	4,000 psi at 28 days
Exterior Slab on Grade	5,000 psi at 28 days, 0.4 max w/c ratio, 6% air-entrainment
Reinforcing bar	ASTM A615 (grade 60)
Welded wire fabric	ASTM A1064 flat sheets
Synthetic fiber reinforcing	ASTM C1116 (Tuf-Strand SF by Euclid or equal)

MASONRY:

CMU	ASTM C90 normal weight (net compressive strength f'm = 2500 psi, minimum unit strength = 3250 psi)
Brick (clay masonry)	ASTM C62 & C216 (net compressive strength = 1000 psi)
Rebar positioners	Corelock rebar positioner by Wire-Bond, No. 376 rebar positioner by Heckmann Building Products or #RB rebar positioner by Hohmann&Barnard, Inc. or equal
Rebar splice connectors	Spyra-Lox rebar lap-joint tie by Hohmann&Barnard, Inc. or equal
Mortar below grade	ASTM C270, Type M (mortar cement)
Mortar typical	ASTM C270, Type S (mortar cement)
Mortar brick	ASTM C270, Type N
Grout in CMU cores	ASTM C476 (3000 psi at 28 days)
Reinforcing bar	ASTM A615 (grade 60)
Tie Wire	ASTM A-82
Horizontal Joint Reinforcement	A-82, hot-dipped galvanized per ASTM A-153

STEEL:

Structural steel: W-shapes Channels, Angles, Plates HSS Round HSS Rectangular, Square Structural steel pipe	 ASTM A992 - Fy=50 ksi ASTM A36 - Fy=36 ksi ASTM A500 Type B - Fy = 42 ksi ASTM A500 Type B - Fy = 46 ksi ASTM A53 - Type E or S, grade B, Fy = 35 ksi
Structural steel bolts	ASTM A325-N
Washers	ASTM F436 hardened washer
Nuts	ASTM A563
Welding electrodes (E-70 series)	ASTM A233
Steel roof deck	ASTM A653-94 Structural Quality grade 33, G-60 galvanized
Grout below plates	Non-shrink, non-metallic (5000 psi)
Anchor bolts	ASTM F1554 threaded rods, 36 ksi uno
Screw Anchors	Hilti Kwik HUS-EZ
Adhesive for Anchors Into Concrete Into Masonry	 Hilti HIT-HY 200 Adhesive w/ SafeSet Hilti HIT-HY 270, HIT-SC sleeve if hollow

TRADE COORDINATION NOTES

TRADE COORDINATION NOTES

Means and methods: The structural documents depict a completed structure, and as such the structure does not have full structural integrity until it is completed. All judgments pertaining to procedures whereby the project is advanced through intermediate stages of partial completion shall be considered matters of means and methods, and shall be the responsibility of the contracting team.

Electronic files: Electronic structural drawing files, when requested by the contracting team, may be provided at the discretion of the engineer of record only after SDI has received the signed release form. When electronic files are provided they are provided for convenience only, their accuracy cannot be ensured, and nothing in them shall be construed to supercede requirements of construction documents or requirements dictated by field conditions.

Field measurements: Verification of field dimensions is the responsibility of the contracting team.

Protection from weather: During construction it is the contracting team's responsibility to appropriately protect structural elements from the damage due to weather. Footings subject to cold weather should be protected from freeezing by appropriate means that may include lowering the bottom of footings to an elevation below frost depth. For hot and cold weather concrete placement, follow recommendations of ACI 305 and 306.

Construction shoring and bracing: It is the contracting team's responsibility to provide adequate shoring and bracing during construction to account for all forces, including but not limited to forces from gravity, earth, wind, and unbalanced forces due to construction sequence.

Engineering of shoring and bracing: The design of shoring and bracing may require engineering. In those cases engineering shall be performed by a member of the contracting team; a licensed engineer, other than the engineer of record, and licensed in the state having jurisdiction over the project. Soil related loads are as specified in the project geotechnical report. When design loads and/or deflection criteria are not readily discernable by the contracting team, the engineer of record will provide them either in the construction documents or upon request. Loads related to construction activity are to be determined by the shoring engineer. Calculations sealed by the shoring and bracing engineer shall be provided to the engineer of record upon request. Structural members are not self-bracing and shall be shored and/or braced by the contractor as necessary until stabilized by virtue of completed connections. The temporary supports shall account for all forces, including but not limited to forces from gravity, earth, wind, and unbalanced forces due to construction sequence.

Underpinning: Where underpinning is required the contracting team shall devise means and methods whereby the work is to be completed including conformance to any requirements already specified in the construction documents. Engineering of underpinning shall be by a licensed geotechnical engineer.

Anchor bolt placement: Accurate placement of anchor bolts is the responsibility of the contracting team. Incorrectly placed bolts shall be repaired or replaced so as to maintain the original shear and tensile capacity of the intended anchor. Calculations prepared by a licensed engineer, other than the engineer of record, shall be provided confirming the capacity of the new anchor.

Loads hung from beams: Both permanent loads and construction loads, not specifically identified in the structural drawings, and attached to structural beams, shall be distributed to point loads of no more than 300 pounds each, and shall be distributed such that no more than 300 pounds hang in any five foot length of beam. Attachment shall be either to the flange of steel members or to the sides or webs of concrete members. Drilling of steel flanges will not be permitted. Damage to reinforcing of concrete beams will not be permitted.

Loads hung from cold formed roof trusses: Both permanent loads and construction loads, not specifically identified in the structural drawings, and attached to structural beams, shall be distributed to point loads of no more than:

- **160 pounds** hung in any four foot length of truss bottom chord

Attachments shall be made to truss chord members only. Connections to truss chords must be concentric (not impose any twist) and should be consistant with standard details published by the truss supplier. All hanging methods must be submitted to the truss supplier for approval. See MF-08 and MF-09 for MEP hanger concepts.

Loads hung from metal deck prohibited: Unless specified otherwise, metal deck alone is not suitable for supporting hung loads.

Supplemental framing for hung loads: Supplemental framing in the form of "Unistrut" or other framing members will be permitted as a means of distributing hung loads to structural elements when designed by a licensed engineer other than the engineer of record and when in conformance with the limitation listed above.

Note Regarding Existing slabs and structure - These allowances for loads on structural slabs do not apply to existing slabs and existing framing. The contractor shall retain a PE specializing in construction loading, shoring and sequencing in order to determine the capacity of any existing floor/roof/structure to support construction loads.

Delegated Design: All delegated design of members and connections including stair elements, ladders, railings, cold formed framing, cold fromed truss, truss bracing, etc not fully detailed on the structural drawings shall be designed by the supplier's registered engineer licensed in the state that has jurisdiction over the project. Delegated design elements shall be designed for all code required loads and load combinations including those specified in ASCE 7.

Foundation Excavation: Where areas and depths of unsuitable existing soil is present on the site the unsuitable soil can be removed and the bottom of footing lowered or the unsuitable soil can be removed and replaced with approved engineered fill.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

iDS Drawing Title

General Notes and Schedules

iDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S0.1

COLD FORMED ROOF TRUSS NOTES AND LOADING DIAGRAMS

Truss Designation

Gravity and axial load diagrams (service level forces)
All gravity and wind loads indicated are service level. Distributed loads should be converted to line loads by truss designer based on final truss tributary widths. See ASCE 7-10, section 2.3 for strength design load combinations, and section 2.4 for allowable stress design load combinations

OR indicates two different loading conditions that must be considered separately

M.E.P. trades must see S0.1 "Trade Coordination Notes" for the maximum hung MEP loads from truss chords

T1

(min 4 ft tribuary width should be assumed for all loading)

TOP CHORD LOADS

$W_{net\ wind\ uplift}$ = see C&C schedule

W_{wind} = see C&C schedule

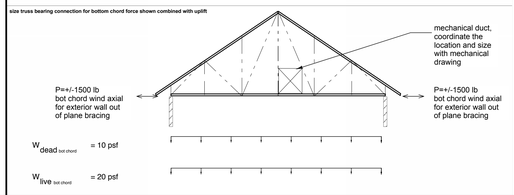
W_{snow} = 20 psf, uniform

$W_{snow\ -\ unbalanced}$

$W_{dead\ top\ chord}$ = 15 psf

size truss bearing connection for bottom chord force shown combined with uplift

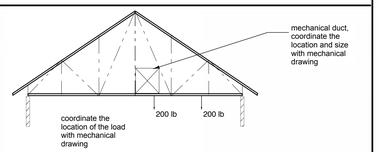
BOTTOM CHORD LOADS



$W_{dead\ bot\ chord}$ = 10 psf

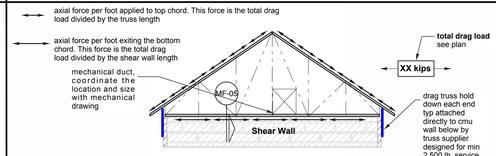
$W_{live\ bot\ chord}$ = 20 psf

T2



T2 requires all the design forces of truss T1, with addition of the loading above

DT1



DT1 requires all the design forces of truss T1, with the addition of the loading above

COLD FORMED ROOF TRUSS SUBMITTALS

Quality Control Documents to be Submitted

The component manufacturer, specialty engineer, and installer shall submit the following documents to the registered design professional and contractor for review prior to the installation of the cold-formed steel light-frame construction:

(a) Shop drawings, unless shop drawings have been furnished by others. Sealed by a registered professional engineer in the State of Michigan

(b) Installation drawings, unless installation drawings have been furnished by others. that include truss layouts, truss to bearing connections and details, bottom chord bracing, all temporary or erection bracing, all permanent bracing required for the design of the trusses, and hip, ridge, valley, and perimeter plans.

(c) Product data sheets, catalogue data or independent evaluation reports on cold-formed steel structural members, including material, corrosion protection, base steel thickness, and dimensions. Alternatively, material, corrosion protection, base steel thickness, and dimensions shall be shown on the installation drawings.

(d) Product data sheets, catalogue data or independent evaluation reports on connectors and mechanical fasteners.

(e) Sealed Structural Calculations by a registered professional engineer in the State of Michigan submitted for: roof trusses, temporary bracing, permanent bracing, truss to structure connections, truss to truss connections, valley set connections, cold formed walls, cold formed tracks, strap bracing, strap bracing connections, and drag strut connections.

Lateral Force-Resisting Systems Documents to be Submitted

For component assemblies, the component manufacturer shall submit the following additional documents, as applicable, to the registered design professional and contractor for approval prior to the installation of the cold-formed steel lateral force resisting system elements:

(a) Welding procedure specifications.

(b) Mechanical fastener installation procedures.

(c) Product data sheets, catalogue data or independent evaluation reports on hold-downs.

For other than component assemblies, the installer shall submit the following additional documents, as applicable, to the registered design professional and contractor for approval prior to the installation of the cold-formed steel lateral force-resisting system elements:

(a) Welding procedure specifications.

(b) Mechanical fastener installation procedures.

(c) Product data sheets, catalogue data or independent evaluation reports on hold-downs.

Available Documents

Unless required for submittal by the registered design professional, the following documents, as applicable and upon request, shall be made available by the component manufacturer or installer, as applicable, in electronic or printed form to the registered design professional and contractor for review prior to installation of the cold-formed steel light-frame construction:

(a) Manufacturer's installation instructions for connectors, hold-downs and mechanical fasteners.

(b) Manufacturer's product data sheets or catalog data for welding consumables, filler metals and fluxes that include the product, limitations of use, recommended or typical welding parameters, and storage and exposure requirements.

(c) Welding procedure specifications.

(d) Procedure qualification records for welding procedure specifications that are not prequalified in accordance with AWS D1.3, as applicable.

(e) Weldingpersonnelperformancequalificationrecordsandcontinuityrecords.

(f) Component manufacturer's and installer's written quality control program(s) that include material control procedures, inspection procedures, and nonconformance procedures.

(g) Component manufacturer's and installer's quality control inspector qualifications.

Quality Assurance Agency Documents

The agency responsible for quality assurance shall submit the following documents to the authority having jurisdiction, registered design professional and owner, as applicable:

(a) Quality assurance agency's written practices for the monitoring and control of the agency's operations. The written practice shall include:

- The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualification and certification of inspection personnel.

- The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.

(b) Qualifications of management designated for the project.

(c) Qualification records for inspectors designated for the project.

COLD FORMED FRAMING NOTES

Roof Truss General Notes

All cold formed steel roof trusses, truss connections, truss temporary bracing, truss permanent bracing, and truss valley sets + valley set connections(overbuilds) shall be designed by the supplier's registered professional engineer in the State of Michigan in accordance with AISI "Specification for the Design of Cold-Formed Steel Structural Memebrs" and the Cold Formed Steel Design Manual.

The roof trusss top and bottom chords shall be minimum 16 gage.

Verify all dimensions with architecture. Max roof truss spacing: 4'-0" oc. Space truss bracing evenly where possible. coordinate w/ mechanical

Design Criteria
Trusses and truss girders shall be designed for the dead loads live loads, snow loads, wind loads, and mechanical loads: shown on plan, shown in the truss loading diagrams and as shown in the structural details. If the speficied truss loading or other design criteria cannot be met, the design team and contruction team must be notifiied prior to submitting a bid for the work. All loads are concurrent unless indicated otherwise or approved by ASCE 7 load combinations.

See S0.1 for C&C wind load criteria on walls and roofs.

Limit truss vertical deflection due to total load to L/360 or 1.25" and deflection due to live/snow/rain load to the lesser of 1" or L/480. Stricter deflection limitations shall be followed if needed for MEP requirements or for suspended partitions, to be coordinated by contractor prior to joist design. As a minimum, where cold formed trusses support suspended partitions the joist manufacturer shall design the truss for a maximum live/snow load deflection of 1/2" or L/480

Limit total deflection of drag trusses to 1" absolute maximum

Concentrated Loads on Trusses

See truss load diagrams for required truss design concentated mep loads. The truss supplier shall confirm with the general contractor and the final mechanical drawings that heavy mechanical loads due to pipes or equipment do not exceed the truss design loads indicated. This process is should be expected and is necessary as the mechanical construction documents and equipment weights will not be set at the time of cold formed bid award. The GC/CM shall coordinate final mechanical equipment weights, dimensions and locations as well as hanging partition loads with the truss supplier prior to fabrication. Mechanical loads must be distributed such that the maximum point loads are not exceeded.

The truss designer shall provide truss reinforcing at point loads as needed to support concentrated loads.

Permanent and Temporary Truss Bracing

The truss supplier is responsible for engineering and detailing all temporary and permanent truss bracing. Truss bracing shall be designed to develop truss forces derived from : truss design loads indicated in the truss loading diagrams, truss loads on plan, and truss loads shown in the details. All truss loading should be assumed to be concurrent unless indicated otherwise or permitted by ASCE 7-10 load combinations. Truss bracing shall be designed for a minimum net uplift of 15 psf. See structural plans, details, and table below for additional wind loads apllied to the bottom chords.

Truss bracing should be spaced evenly where possible, avoiding MEP equipment and ductwork, and located at least 12" away from all roof openings- coordinate with mechanical and architectural. Bracing lines should align across the full building length/width.

Connections and Framed Openings

The truss manufacturer is responsible for all truss-truss, truss to red steel, and truss to bearing wall connections.. For trusses with axial force, the truss supplier is responsible for bottom chord connections to transfer the axial force into supporting elements. Required truss axial forces and transfer forces are indicated on plan or in the truss loading diagrams

Roof openings are to be coordinated between the truss supplier and the architectural/mechanical drawings. The truss supplier is responsible for framing roof openings.

All fasteners are to be installed per manufacturer's recommendaitons. Do not substitute fasteners without written permission from the component specialty engiener and SDI structures.

PAF (Powder Actuated Fastener) point must pentrate through full base steel thickness. Notify PAF manufacturer for instructions where full penetration is not achieved.

All welded connections are to be performed in accordance with the latest version of AWS D1.3-98 Specifications for Welding SHeet Steel in Structures. Consult AWS D19.0 Welding Zinc Coated Steel & ANSI Standard Z49.1 for information regarding safe welding procedures.

Minimum weld throat thickness (t) must match or exceed the base steel thickness of the thinnest connected part unless noted otherwise

In welding, the zinc coating on steel framing will be burned away, therefore a zinc rich paint must be applied to the weld area to provide corrosion resistance.

Power driven fastener systems, expansion anchor systems, masonry screw systems, & adhesive anchor system connections are based on literature for fastener requirements (e.g. spacing, edge distance, base meterial thickness, etc.) Alternate manufacturer's fasteners of comparable specifications and equal or greater capacity may be submitted for review and approval.

All tracks must be fastened to each stud with minimum #10f screw at each flange

Screwed Connections
Per AISI S200, all self-drilling tapping screws must be incompiance with ASTM C1513. Screw tensile and shear strengths must be detemrined in accorance with AISI S904.

For screws, a minimum of 1.5 x screw diameter clearance must be maintained from all edges of the steel members. A minimum of 3.0 x screw diameter on-center spacing must be maintained between adjacent screws.

Per AISI 200, all screws shall extend through the steel connection a minimum of three exposed threads and the screw shall penetrate the components without causing permanent separation between components.

All screws shall have a Hex style or Pan style head unless noted otherwise.

For steel-steel connections using a #10 screw or small, a maximum of 2500 rpm tool should be used. For #12 and 1/4" screws, the installation tool should have a maximum rpm of 1800.

Screws used must have equal or greater capacity than those published for Buildex TEK2 HWH

Screw shall have a minimum nominal shear stress of 42.85 ksi, and a minimum nominal tensile stress of 40.84 ksi.

Shear strength for #8, #10, #12 and 1/4" screws must be greater than or equal to 1000 lbs, 1400 lbs, 2000 lbs, and 2600 lbs respectively

Tension strength for #8, #10, #12 and 1/4" screws must be greater than or equal to 1545 lbs, 1936 lbs, 2778 lbs, and 4060 lbs respectively

The minimum head diameter for #8 screws is 1/4". The minimum head diameter for #10 and #12 screws is 3/8". The minimum head diameter for 1/4" screws is 1/2"

All screw body diameters should meet ANSI/ASME B18.6.4 and the table below:

screw nominal size	nominal screw diameter, d (inches)
No. 6	0.138"
No. 8	0.164"
No. 10	0.190"
No. 12	0.216"
1/4"	0.250"

COLD FORMED ROOF TRUSS QUALITY CONTROL AND QUALITY ASSURANCE

GENERAL

Quality control as specified below shall be provided by the component manufacturer and installer, as applicable.

Quality assurance as specified below shall be provided by the agency hired for special inspection. The Quality Assurance inspector (Special Inspector) must be experienced in cold formed framing construction. QA includes tasks designated on S0.1 and by IBC as "Special Inspection"

QUALITY CONTROL PROGRAMS

The component manufacturer shall establish and maintain quality control procedures and perform inspections to ensure that the work is in accordance with AISI S240 and the shop drawings.

The installer shall establish and maintain quality control procedures and perform inspections to ensure that the work is in accordance with AISI 240 and the construction documents.

Product identification shall comply with the requirements of AISI S240 and shall be monitored by the component manufacturer's and installer's quality control inspectors, as applicable.

Where part of a component assembly, the component manufacturer's quality control inspector shall perform inspections of the following items, as applicable:

(a) Cold-formed steel structural members and connectors in accordance with AISI S240 Section D6.5.

(b) Shop welding in accordance with AISI S240 Section D6.6.

(c) Mechanical fastening in accordance with AISI S240 Section D6.7.

The installer's quality control inspector shall perform inspections of the following, as applicable:

(a) Cold-formed steel structural members and connectors that are not part of a component assembly in accordance with Section D6.5.

(b) Field welding in accordance with AISI S240 Section D6.6.

(c) Mechanical fastening that is not part of a component assembly in accordance with AISI S240 Section D6.7.

(d) Installation of cold-formed steel light-frame construction in accordance with AISI S240 Section D6.8.

(e) Installation of cold-formed steel lateral force-resisting systems in accordance with AISI S240 Section D6.9.

(f) Damage to cold-formed steel structural members and connectors, including component assemblies damaged during or after delivery to the project.

INSPECTION PERSONNEL

Quality Control Inspector
A quality control inspector shall be designated as the person with overall responsibility for quality control. It is permitted to delegate specific quality control tasks to qualified personnel.

Quality control welding inspection personnel shall be qualified in accordance with the component manufacturer's or installer's quality control program, as applicable, and in accordance with one of the following:

(a) Associate Welding Inspector (AWI) or higher as defined in AWS B5.1.

(b) Qualified by training or experience, or both, in cold-formed steel light-frame construction component manufacturing, installation, inspection, or testing and competent to perform inspection of the work.

Quality control mechanical fastener inspection personnel shall be qualified in accordance with the installer's quality control program on the basis of training and experience in installation of similar fasteners and shall be competent to perform inspection of the work.

Quality Assurance Inspector

The approved quality assurance inspector shall be designated as the person with overall responsibility for quality assurance. The approved quality assurance inspector is permitted to delegate specific quality assurance tasks to qualified personnel.

Quality assurance welding inspection personnel shall be qualified in accordance with the quality assurance agency's written practice and with either of the following:

(a) Welding Inspector (WI) or higher as defined in AWS B5.1, except Associate Welding Inspectors (AWI) shall be permitted to be used under the direct supervision of WIs or higher who are on the premises and available when weld inspection is being conducted; or

(b) Qualified by training or experience, or both, in cold-formed steel light-frame construction installation, inspection or testing and competent to perform inspection of the work.

Quality assurance mechanical fastener inspection personnel shall be qualified in accordance with the quality assurance agency's written practice on the basis of training and experience in inspection of similar fasteners.

INSPECTION TASKS

General
Inspection tasks and documentation for quality control and quality assurance shall be in accordance with the tables in Sections D6.5, D6.6, D6.7, D6.8, and D6.9 of AISI S240. These tables specify distinct inspection tasks as follows:

(a) Observe. Observe shall mean to perform inspection of these items on an intermittent basis. Operations that do not interfere with the ability to perform inspection of these items need not be delayed pending these inspections. Frequency of observations shall be adequate to confirm that the work has been performed in accordance with the applicable documents.

(b) Perform. Perform shall mean to execute these tasks prior to final acceptance for each item or element.

(c) Document. Within the listed tasks, document shall mean the inspector shall prepare reports or other written documentation indicating that the work has or has not been performed in accordance with the construction documents.

Quality Control Inspection
Quality control inspection tasks shall be performed by the component manufacturer's or installer's quality control inspector, as applicable, in accordance with AISI S240 Sections D6.6 through D6.10. Tasks in the tables in AISI S240 Sections D6.5 through D6.9 listed for QC shall be those inspections performed by the quality control inspector to ensure that the work is performed in accordance with the construction documents.

Quality control inspection shall utilize the following, as applicable: construction documents, installation drawings, shop drawings, plans, specifications or referenced standards.

Quality Assurance Inspection
Quality assurance inspection of the component assemblies shall be made at the component manufacturer's plant. The quality assurance inspector shall schedule this work to minimize interruptions to the work of the component manufacturer.

Quality assurance inspection of the cold-formed steel light-frame construction shall be made at the project site. The contractor shall schedule this work with the quality assurance inspector and the installer to minimize interruptions to the work of the installer.

The quality assurance inspector shall review the materials test reports and certifications listed in AISI S240 Section D3.2 for compliance with the construction documents.

Quality assurance tasks shall be performed by the quality assurance inspector, in accordance with AISI S240 Sections D6.5 through D6.9. Tasks in the tables in AISI S240 Sections D6.5 through D6.9 listed for QA shall be those inspections performed by the quality assurance inspector to ensure that the work is performed in accordance with the construction documents.

Concurrent with the submittal of reports to the authority having jurisdiction, registered design professional and owner, as applicable, the quality assurance inspector shall submit to the contractor and the installer lists of nonconforming items.

Coordinated Inspection
Where a task is noted to be performed by both quality assurance and quality control, it is permitted to coordinate inspection function between the quality control inspector and quality assurance inspector so that the inspection functions are performed by only one party when approved in advance by the owner, registered design professional, and authority having jurisdiction.

Where quality assurance tasks are performed only by the quality control inspector, each inspection shall be documented in a report and the quality assurance inspector shall periodically review the work of the quality control inspector at an interval acceptable to the owner, registered design professional, and authority having jurisdiction.

Material Verification
The component manufacturer's quality control inspector shall perform inspections of the cold-formed steel structural members and connectors used in component assemblies to verify compliance with the details shown on the shop drawings.

The installer's quality control inspector shall perform inspections of the cold-formed steel structural members and connectors that are not part of a component assembly to verify compliance with the details shown on the installation drawings.

The quality assurance inspector shall perform verifications and inspections, as applicable, to verify compliance with the construction documents and this Standard.

Inspection tasks shall be in accordance with Tables AISI S240 D6.5-1 and D6.5-2.

DELEGATED ENGINEERING SCOPE

ITEMS REQUIRING DELEGATED ENGINEERING FOR MINIMUM FORCES SHOWN IN THESE DOCUMENTS

1. Design of cold-formed steel roof trusses

2. Design of cold-formed roof truss connections included truss-truss and truss to bearing connections

3. Design of truss temporary and permanent bracing. Truss bracing must include consideration of all truss bottom chord wind loads indicated in the drawings. All truss bracing forces should be assumed concurrent unless noted otherwise or permitted by ASCE 7 load combinations. All bracing must direct forces to shear wall lines

4. Design of truss overbuilds (valley sets) for vertical gravity and wind loading as well as overbuild connections to roof framing below

5. Design of drag truss connections where requested in the structural drawings.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

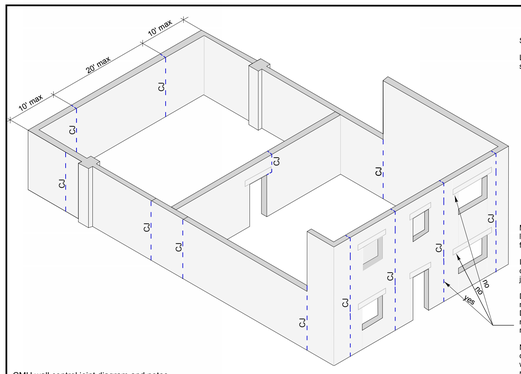
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Cold Formed Framing Notes, Schedules and Submittals

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S0.1A



CONTROL JOINT NOTES

See MS-03 for typical control joint detail

Locate control joints (CJ) as shown on plan, if not shown on plan provide control joint as follows:

- at 1-1/2 times the CMU wall height 20 ft on center max, whichever is smaller
- within 10 ft of corners
- on both sides of openings greater than 6'-0" wide
- at one side of opening less than 6'-0" wide
- changes in wall height
- on one side of doorways, locate CJ on latch side

Masonry contractor must submit control joint layout
for review and approval

If walls consist of different types of masonry units, consult NCMA TEK notes for possible additional joint requirements

Diagram is appropriate for masonry partition walls, masonry backup walls, or masonry bearing walls. Diagram is not intended to outline control joints in masonry veneer. See architectural drawings for required locations of veneer control joints

No CMU contol joints permitted at window jambs. control joints should be centered between windows or doorways unless shown otherwise on plan

CMU wall control joint diagram and notes
no scale typical detail MS-50

typical CMU wall elevation
no scale typical detail MS-51

for use at all cmu wall openings greater than 2 ft wide unless noted otherwise

typical jamb reinforcing at wall openings greater than 2 ft wide (doors, windows, louvers, duct openings, etc)
no scale typical detail MS-26

for use at the ends of all bond beam lintels

elevation at ends of bond beam lintels
no scale typical detail MS-25

MASONRY DETAILS

masonry veneer with CMU backup
no scale typical detail MS-15

for use with f'm = 2000 psi masonry and fy = 60 ksi (non-epoxy coated) reinforcing bars (case A: standard reinforcing in tension)

bar size	minimum lap length
#3	18"
#4	24"
#5	38"
#6	56"
#7	80"

Splices should be staggered within wall

note: updated 4-8-19

masonry reinforcing lap schedule (f'm=2000psi)
no scale typical detail MS-01

provide dowels into foundation to match vertical reinforcing bars. lap reinforcing per MS-01.

solid grout all cores

provide rebar positioners (such as CoreLock by Wire-Bond) at 16" vertically

rebar locations in CMU piers
no scale typical detail MS-23

solid grout all reinforced cores

provide rebar positioners (such as CoreLock by Wire-Bond) at 48" vertically

rebar locations in reinforced CMU
no scale typical detail MS-02

see framing plans for control joint locations

see MS-51 for required control joint locations not otherwise shown on plan

masonry control joints
no scale typical detail MS-03

keying of grout lift in CMU cores
no scale typical detail MS-04

bond beam
no scale typical detail MS-05

intersection of CMU walls at bond beam
no scale typical detail MS-06

note: galvanized mesh in place of strap anchors may besubmitted to SDI as a voluntary alternate. requested mesh locations will need to be reviewed and approved by SDI

intersection of CMU walls
no scale typical detail MS-07

additional reinforcing at corners and openings
no scale typical detail MS-08

MASONRY SCHEDULES

MASONRY WALL NOTES AND SCHEDULE

Control joints shall be provided in walls per detail MS-03 as shown on the plans or elevations. If not specified on the plans or elevations, then provide per MS-50.

See MS-02 for placement of rebar within the grouted cells.

Walls are to be assumed to be partially grouted with the spacing of the vertically grouted cores to match the spacing of the reinforcing noted in the schedule below. Fully grouted walls will be noted special where required.

label	wall width	vertical reinforcement		bond beams	notes
		size/spacing	position		
MW-P	8"	#4@32"	centered	none	all interior cmu walls unless noted otherwise. see S0.2 for top of wall bracing details
MW-8	8"	#5@32"	centered	8ft oc max	
MW-8B	8"	#5@32"	centered	4ft oc max	This wall does not have contorl joint

LINTEL NOTES AND SCHEDULES

All openings in masonry walls shall have a lintel placed over the opening. See architectural drawings for all locations, dimensions and elevations of doors, windows and wall openings. See MEP for all duct and utility penetrations through walls.

If an opening or lintel is not shown on the structural drawings, contractor shall provide a lintel per the following:

Lintels Unless Noted Otherwise
Loose Veneer Lintels: see schedule below

Openings in CMU block up to 4'-0": ML-1 or (2) L5x3-1/2"x3/8 (8 in CMU)
or (2) L5x5x3/8" (12 in CMU)

Openings in CMU block 4' to 10': ML-3 or W8x31 + 3/8 cap plate to match wall thickness

For openings larger than noted above, or if the opening is located below a beam, contact the architect for direction. provide bearing plates and 3/8" end plates at ends of all W-shape and HSS lintels. provide 3/4" dia. nelson D2L deformed bar anchors, 30" long, @ 16" o.c. along top of lintel as shown in MS-17.

Galvanizing

All shelf angles, lintels, plates and beams supporting within exterior walls shall be G-90 hot dip galvanized. After installation, touch up all members with galvanic paint to restore complete coverage.

Veneer Loose Lintel Schedule (use with masonry or stone veneers up to 4" thick)

lintel tag	description	graphic	bearing	clr opening	notes
LL-1	L4x4x3/8		8" min	up to 4'-0"	
LL-2	L6x4x3/8		8" min	up to 6'-0"	
LL-3	L7x4x1/2		8" min	up to 7'-0"	provide (3) layers of 9 gage galv. deformed ladder-type joint reinf. in full mortar beds, extend 24" past opening ea side
LL-4	L8x4x3/4		8" min	up to 9'-4"	

Brick must be lipped where angle is thicker than 3/8"

Steel Lintel Schedule (for use where indicated on plan or elevation)

lintel tag	description	graphic	bearing plate	notes
L-1	HSS8x8x3/8" + 3/8" plate		PL7x7x1/2"	
L-2	W8x24		PL7x7x1/2"	

see MS-17 and MS-24 for required deformed bar anchors.

all steel lintels to have (3) courses of 24" long ladder type 9 ga. joint reinf. at each end of lintel adjacent to opening

Masonry Lintel Schedule

lintel tag	grouted lintel depth	reinforcement	schematic section	use
ML-1	16"	(2) #5 bar, bottom		openings up to 4'-0" uno
ML-2	24"	(2) #5 bar, bottom		where tagged on plan or elevation
ML-3	full height of wall above opening	(2) #6 bar, bottom		openings up to 12 ft uno

Provide min 8" bearing each end

Extend lintel reinforcing 16" min. beyond each end of opening

Continuously solid grout full height of lintel (no cold joints permitted)

Reference detail MS-05 for typical bond beam lintel detail.

No bond beam reinforcing laps are permitted over openings

MASONRY NOTES

CMU WALL NOTES AND SCHEDULES

General

Masonry construction and materials shall conform to the more stringent provisions of chapter 21 of the 2015 Michigan Building Code and the requirements of "Specification for Masonry Structures (TMS602-13) published by the Masonry Society.

All work shall be laid true to a line, plumb and level in keeping with the tolerances defined in "Specifications for Masonry Structures (TMS602-13).

The contractor shall employ hot or cold weather construction practices defined in "Specifications for Masonry Structures (TMS602-13). No work shal be done subject to freezing temperatures or on a frozen substrate.

Masonry construction conformance with the construction documents shall be verified in accordance with IBC level 1 quality assurance by an ICC certified structural masonry special inspector.

Coordinate dimensions of all CMU block with architectural drawings. Verify top of CMU elevations with architecture.

All masonry shall be laid in a running bond unless specifically noted otherwise.

All grout shall be placed or supervised by a masonry certified in grout placement by the International Masonry Institute or approved alternate. Grout placement and consolidation shall conform with section 3.5 of the "Specifications for Masonry Structures (TMS602-13).

Provide ladder type horizontal joint reinforcing with preformed lapped corner reinforcing at 16" c/c vertically in all masonry walls (unless noted otherwise). Joint reinforcing shall be galvanized and have side wires of 9-gauge minimum conforming to ASTM A-82. Joint reinforcement shall be lapped a minimum of 8".

Masonry joints shall be fully filled for solid units and face shell bedded with head joint depth equal to the face shell or greater for hollow units unless otherwise noted.

Position vertical bars per MS-02 solid grout all reinforced cores and all cores below grade. in lieu of lapping reinforcing bars, reinforcing bar splice couplers can be provided that have a tensile capacity of 125% the tensile capacity of the reinforcing bar being spliced.

See typical detail MS-03 for control joints in masonry walls and detail MS-05 for bond beams. Continue vertical reinforcement through bond beams. See MS-51 for typical control joint diagram unless otherwise shown on plan.

All CMU door jambs, window jambs, and all CMU cores below beam or lintel bearing locations are to be solid grouted w/ (1) additional #5 vertical reinforcing bar.

Where masonry meets structural members subject to vertical deflection, provide allowance for vertical movement of L/240 of structural member.

Masonry walls are to be adequately braced during construction until floor and wall systems are complete. Design loads for temporary wall bracing at minimum shall be based on ASCE 37. Where masonry walls are constructed adjacent occupied spaces including but not limited to: existing buildings or pedestrian walkways, design loads for temporary wall bracing shall be taken from ASCE 7. Construction bracing shall be designed by the contractor and sealed by a PE licensed in the state that has jurisdiction over the project.

See details for bond beam locations. Bond beams shall continue for full length of walls unless noted otherwise, and have #4 corner bars (30"x30") lapping 24" with bond beam bars (see MS-06). Except for MW-P, Provide additional bond beams every 8' o.c. for the full height of all walls. See MS-05

See MS-50 for typical CMU wall elevation

Masonry Reinforcement

Detailing, bending and placement of steel reinforcement shall be in accordance with "Specification for Masonry Structures (TMS602-13).

All steel reinforcement shall be placed and supported as necessary to maintain proper position as defined in "Specification for Masonry Structures (TMS602-13).

All horizontal steel reinforcement shall be continuous around corners and lapped as shown in MS-06.

Where vertical steel reinforcement terminates at a bond beam, provide a standard 90 degree hook.

Bar Splicing (laps)

At base of all walls provide dowels to match and lap vertical wall reinforcing.

See MS-01 for required bar splice lengths.

Continuous vertical bars may be spliced where desired by contractor.

Horizontal bars in lintels must remain continuous and are not permitted to be spliced.

Horizontal bond beam reinforcing may be spliced where desired by contractor.

M.E.P. Openings

Submit all M.E.P. openings not specifically shown on the structural drawings for review and approvall - a lintel is required over all openings. See lintel schedule on this sheet for typical lintels that can be used for estimating purposes, final lintels must come from SDI.

Below grade M.E.P. penetrations should be located beneath doorways unless specicially approved be SDI. All penetrations below doors must have 4" clear spacing between.

Masonry Exposed to Weather and/or Corrosive Enviroments

Where structural masonry walls and/ or interior CMU partition walls are directly exposed to weather or corrosive enviroments, the following additional requirements apply:

1. The masonry unit and mortar shall be produced using an intergral water repellant (IWR) like RainBloc GP, or an approved alternative which meets ASTM E514 testing.
2. The exposed face of the masonry wall shall have a surface applied water repellant applied after construction directly to the exposed face of the masonry.

Examples of Exposed Walls or Corrosive Environments include:

- single wythe exterior walls
- indoor pools with exposed CMU
- garages, labs, or workshops with exposed CMU
- loading docks

A maintenence plan shall be put in place for the owner for the surface applied water repellant to be re-applied every 5-7 years for the life of the building.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
H. Baghi
Drawn By
H. Baghi
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

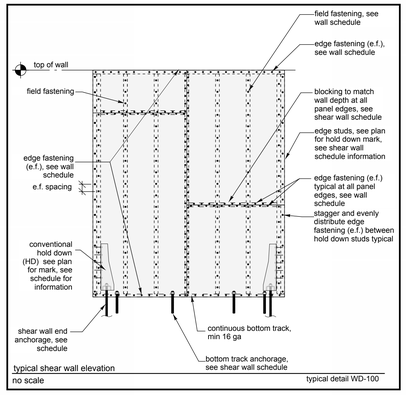
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

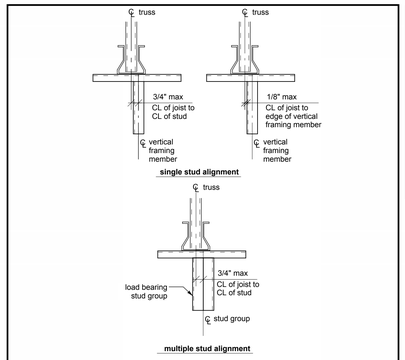
Masonry Typical Details

iDS Project Number
24140-1000
OCC Project Number
SF25-003

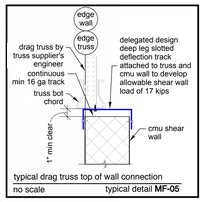
Drawing Number
S0.2



typical shear wall elevation
no scale — typical detail WD-100

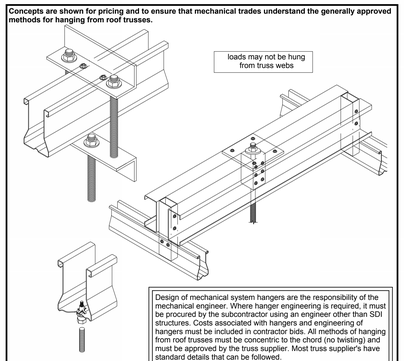


required roof truss installation tolerance
(no scale) — typical detail **MF-07**



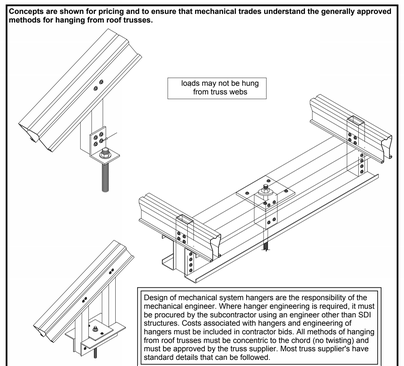
typical drag truss top of wall connection
no scale — typical detail **MF-05**

Concepts are shown for pricing and to ensure that mechanical trades understand the generally approved methods for hanging from roof trusses.



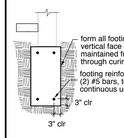
roof truss bottom chord approved MEP hanger concepts (DD)
(no scale) — typical detail **MF-08**

Concepts are shown for pricing and to ensure that mechanical trades understand the generally approved methods for hanging from roof trusses.



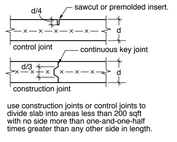
roof truss top chord approved MEP hanger concepts (DD)
(no scale) — typical detail **MF-09**

for use where approved by architect and soil conditions permit



trench footing
no scale — typical detail **FN-02**

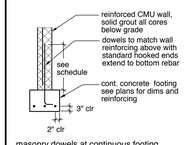
for use at slab on grade



use construction joints or control joints to divide slab into areas less than 200 sqft with no side more than one-and-one-half times greater than any other side in length.

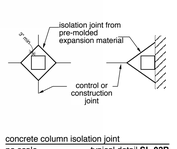
joints in slab on grade
no scale — typical detail **SL-01**

for use at continuous footing locations



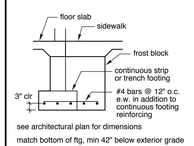
masonry dowels at continuous footing
no scale — typical detail **FN-03**

for use at column bearing below slab on grade



concrete column isolation joint
no scale — typical detail **SL-02B**

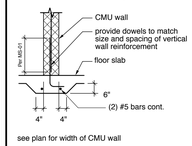
for use at exterior-outswing doors



see architectural plan for dimensions
match bottom of ftg, min 42" below exterior grade

frost block
no scale — typical detail **FN-04**

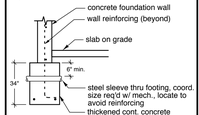
for use at new non-load bearing CMU locations



see plan for width of CMU wall

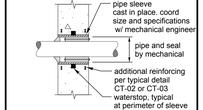
thickened slab under new CMU
no scale — typical detail **SL-03**

for use at mechanical penetrations through footing (maximum sleeve size = 10" diameter)



mechanical sleeve through thickened footing
no scale — typical detail **FN-08**

for use at electical or plumbing penetrations in walls



verify penetration size and location of penetrations with architect and mechanical/plumbing

sensitive mep penetrations in concrete walls
no scale — typical detail CT-04

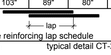
for use locating reinforcing bars in concrete structure (see ACI 7.7.1 for further info)

condition	concrete cover
cast against & perm. exposed to earth:	3"
exposed to earth or weather:	
#6 bar thru #18 bar	2"
#5 bars or smaller	1 1/2"
not exposed to weather or earth	
slabs/wall/joists: (#11 bars and smaller)	3/4"
beams/cl/mrs: (primary reinf/ ties/stirrups)	1 1/2"

typical clear cover for reinforcing bars (non-prestressed)
no scale — typical detail **CT-08**

for use with normal weight concrete and fy = 60 ksi (non-epoxy coated) reinforcing bars

bar size	f'c= 3000psi	f'c= 4000psi	f'c= 5000psi	f'c= 6000psi
#3	29"	25"	23"	21"
#4	38"	33"	30"	27"
#5	47"	41"	37"	34"
#6	57"	49"	44"	40"
#7	66"	57"	51"	47"
#8	75"	65"	58"	53"
#9	84"	73"	66"	60"
#10	94"	81"	73"	66"
#11	103"	89"	80"	73"



concrete reinforcing lap schedule
no scale — typical detail CT-20

for use with normal weight concrete and fy = 60 ksi (non-epoxy coated) reinforcing bars

bar size	f'c= 3000psi	f'c= 4000psi	f'c= 5000psi	f'c= 6000psi
#3	22"	19"	18"	16"
#4	29"	26"	23"	21"
#5	37"	32"	29"	26"
#6	44"	38"	34"	31"
#7	51"	44"	40"	36"
#8	58"	50"	45"	41"
#9	65"	56"	51"	46"
#10	72"	63"	56"	51"
#11	79"	69"	62"	56"

concrete reinforcing development length schedule
no scale — typical detail CT-21

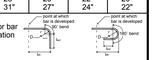
bar size	D	l_{ext} 180˚ hooks	l_{ext} 90˚ hooks
#3	2-1/4"	2-1/2"	4-1/2"
#4	3"	2-1/2"	6"
#5	3-3/4"	2-1/2"	7-1/2"
#6	4-1/2"	3"	9"
#7	5-1/4"	3-1/2"	10-1/2"
#8	6"	4"	12"
#9	9"	4-1/2"	13-1/2"
#10	10"	5"	15"
#11	11"	5-1/2"	16-1/2"

standard hooks schedule (l_{ext})
no scale — typical detail CT-22

for use with normal weight concrete and fy = 60 ksi (non-epoxy coated) reinforcing bars

bar size	f'c= 3000psi	f'c= 4000psi	f'c= 5000psi	f'c= 6000psi
#3	9"	8"	7"	7"
#4	12"	10"	9"	9"
#5	15"	13"	12"	11"
#6	17"	15"	14"	13"
#7	20"	18"	16"	15"
#8	23"	20"	18"	16"
#9	26"	22"	20"	18"
#10	28"	25"	22"	20"
#11	31"	27"	24"	22"

note:
see CT-22 for bar bend information



development of standard hooks in tension (l_{dt})
no scale — typical detail CT-23

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
H. Baghi
Drawn By
H. Baghi
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Typical Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S0.3

Foundation Plan Notes

Footing Label Conventions: **FS-24T(24")**

- footing type, see schedule
- "T" indicates additional top bars are required at this location
- indicates a non-standard thickness of footing required at this location

Slab on Grade
Typical top of slab elevation = 100'-0", u.n.o.
See architectural plans for areas with depressed or sloping slabs.

Slab on grade to be 6" thick, u.n.o.

Foundations
Typical top of footing elevation = 98'-8", u.n.o.

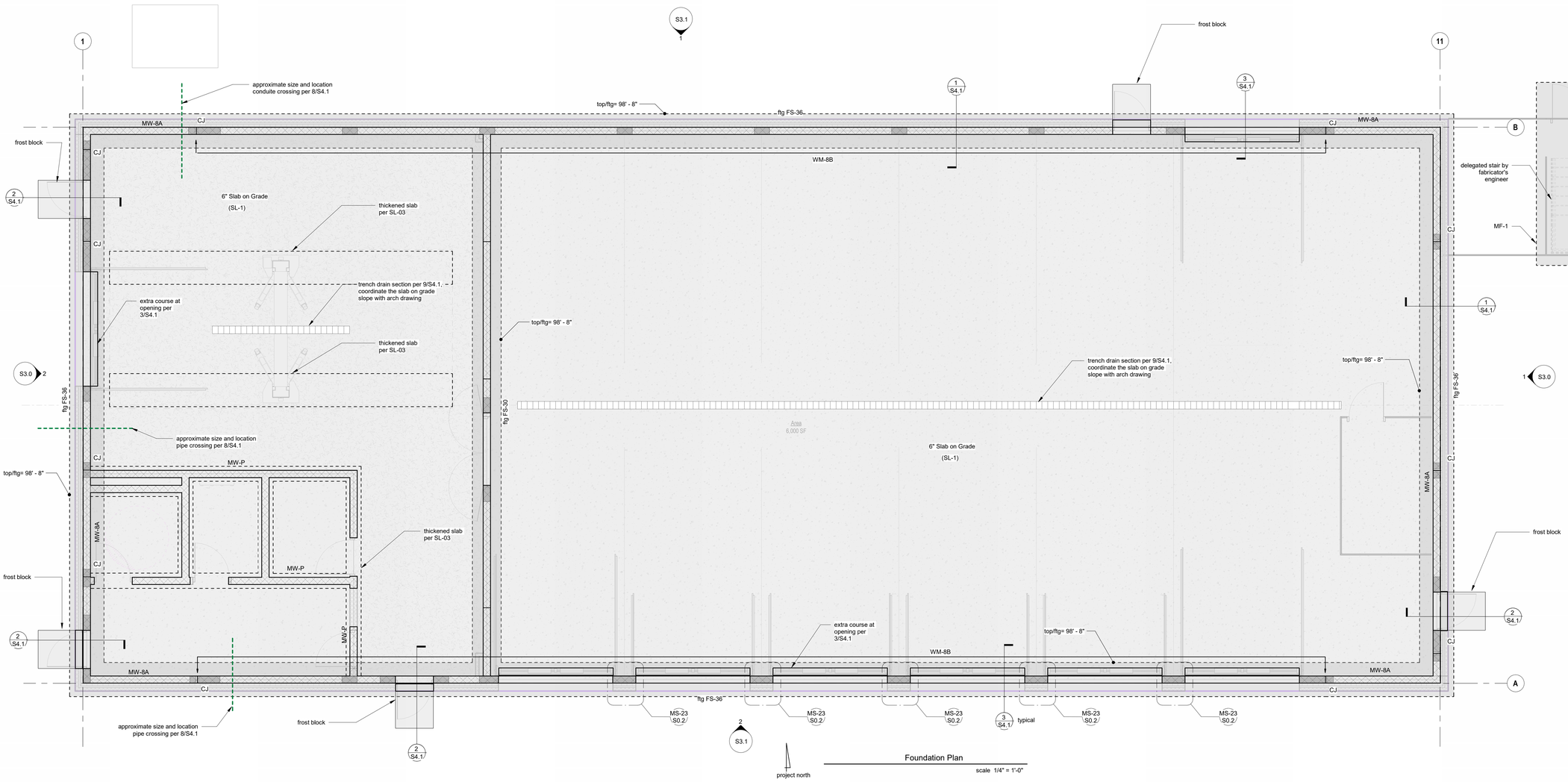
Place footings on soil compacted to a minimum of 1,500 psf allowable bearing capacity.

The bottom of all footings which will be exposed to freezing temperatures permanently or during construction shall be lowered to at least 42" below grade.

Provide a thickened slab below all interior cmu walls per SL-03/S0.3 unless a footing is shown. See architectural for cmu wall locations.

The top of all interior CMU walls must be laterally braced per 6/S5.1.

See **Slab on Grade Notes** and **Foundation Notes and Schedule** on S0.1 and typical details on S0.2 and project specifications for more information and requirements.



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
H. Baghi
Drawn By
H. Baghi
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Foundation Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S1.1

Structural Framing Plan Notes

General

see S0.1 and S0.1A trade coordination notes for maximum allowable hung loads from roof trusses.

Roof Deck

denotes span direction of deck

MD-1 indicates 1 1/2" metal roof deck

See **Metal Roof Deck Notes and Schedule** on S0.1 and typical details on S0.2/S0.3 and project specifications for more information and requirements.

Roof Truss

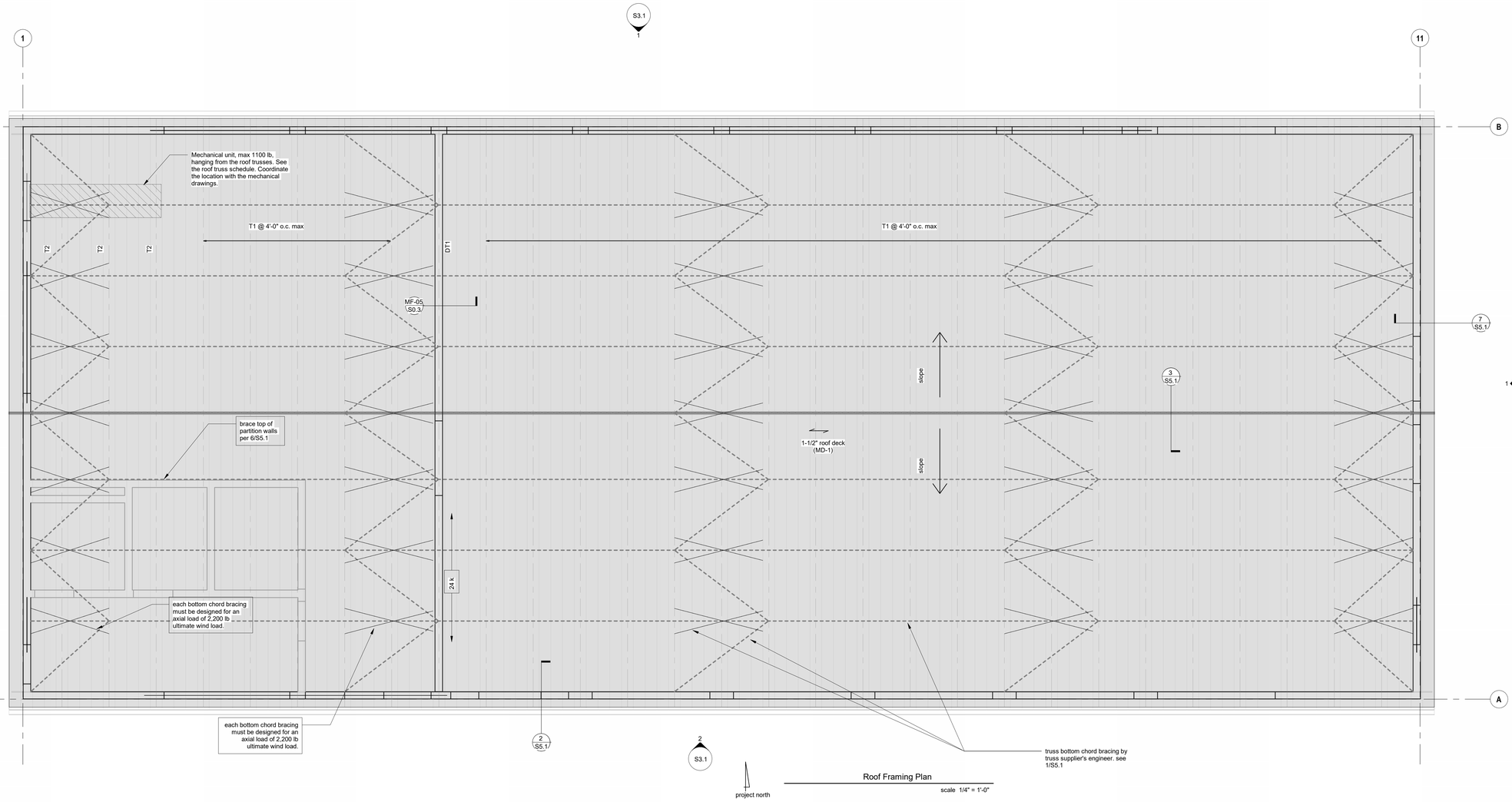
Denotes cold formed roof truss by cold formed truss suppliers registered professional engineer at 4'-0" oc max unless noted otherwise.

xx kips — Denotes roof truss design drag load, This force is at service load.

All trusses are T1 unless noted otherwise.

Roof Truss Bottom Chord Bracing

indicates delegated design roof truss bottom chord bracing by truss suppliers registered engineer. See 1/S5.1 for minimum truss bracing.



Roof Framing Plan

scale 1/4" = 1'-0"

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
H. Baghi
Drawn By
H. Baghi
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

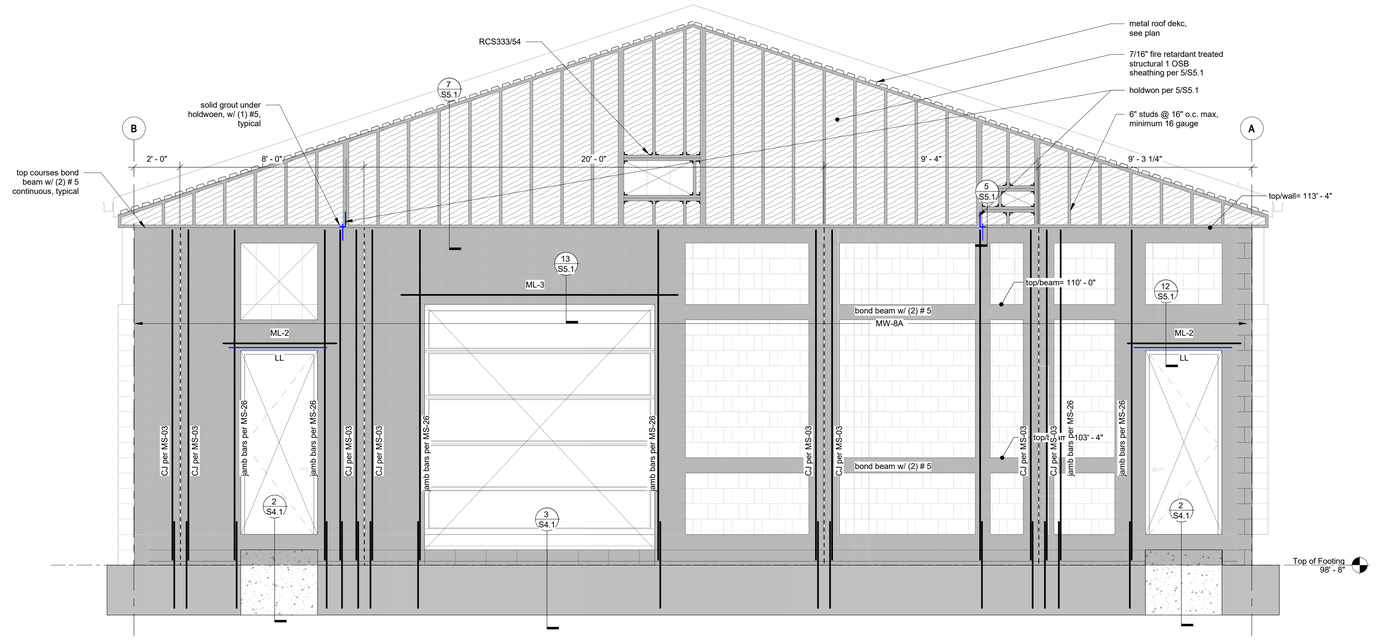
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Roof Framing Plan

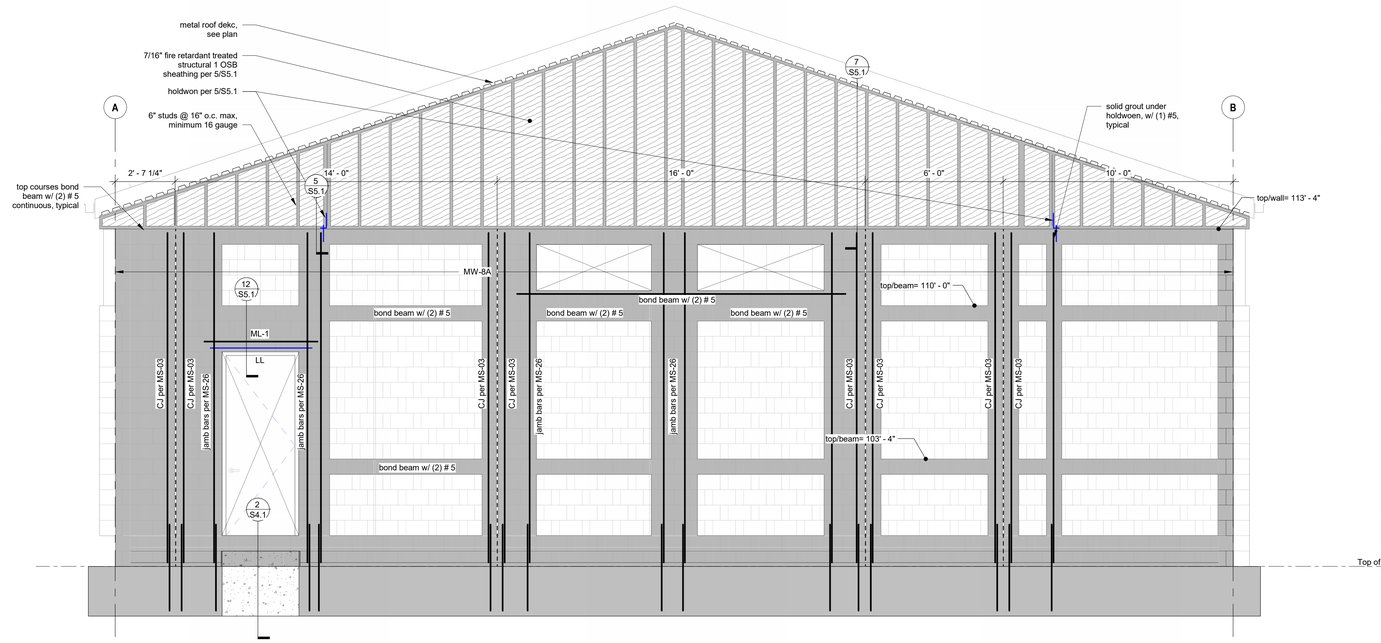
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S1.2



2 S3.0 South Elevation

3/8" = 1'-0"



1 S3.0 North Elevation

3/8" = 1'-0"

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

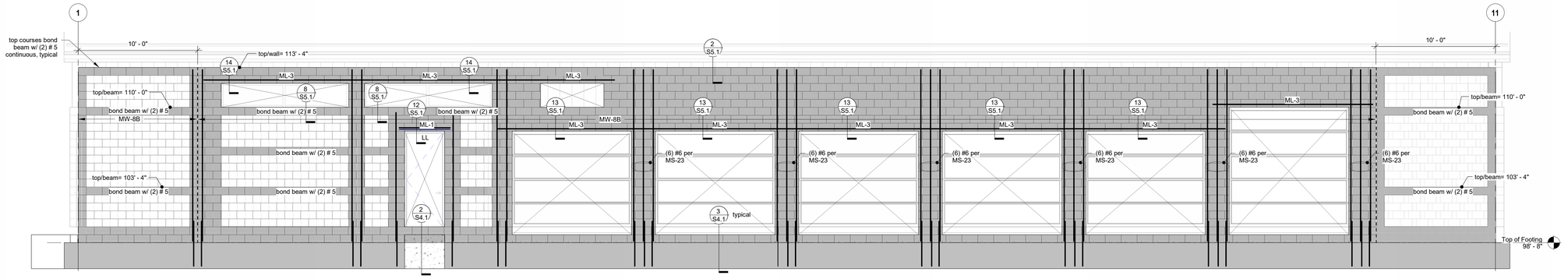
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Structural Elevations

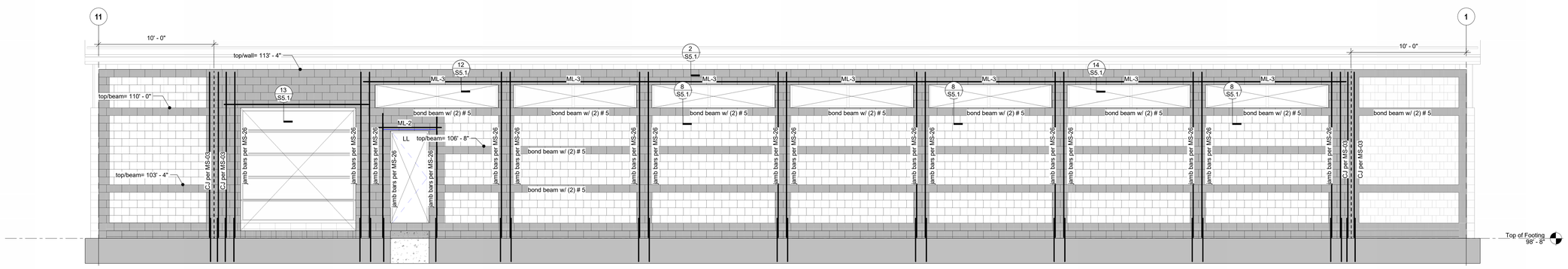
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S3.0



2 S3.1 East Elevation

1/4" = 1'-0"



1 S3.1 West Elevation

1/4" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Aproved	B. Sundberg
Drawing Scale	

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

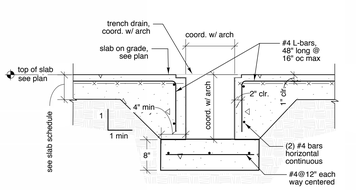
Structural Elevations

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S3.1

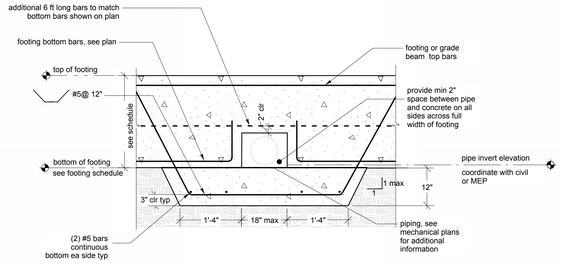
Foundation Section Notes:

1. See CT-08 for required concrete cover unless otherwise indicated
2. Lap continuous bars per CT-22

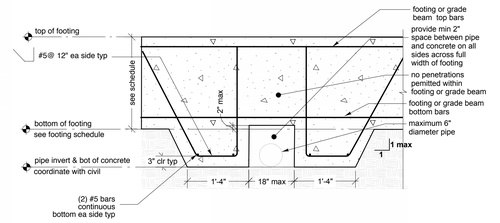


9 S4.1 trench drain sections — 3/4" = 1'-0"

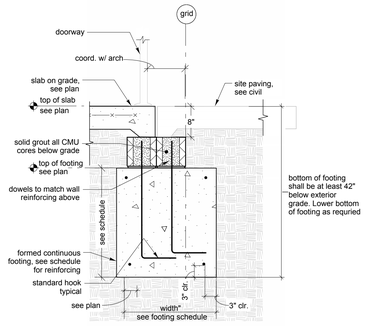
note: coordinate any additional requirements with trench drain details or cut sheet



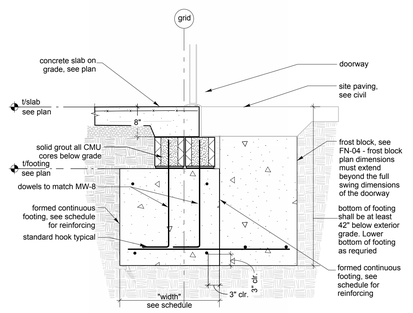
8 S4.1 typical pipe/conduit penetrating bottom of footing — 3/4" = 1'-0"



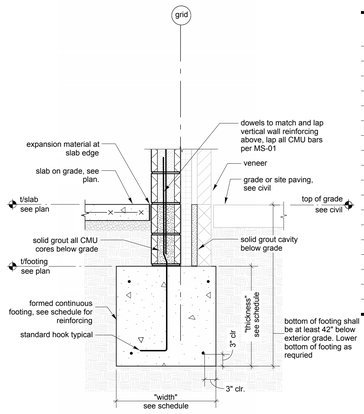
7 S4.1 typical pipe/conduit penetrating bottom of footing — 3/4" = 1'-0"



3 S4.1 3/4" = 1'-0"



2 S4.1 exterior doorway — 3/4" = 1'-0"



1 S4.1 3/4" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

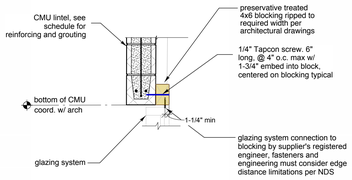
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

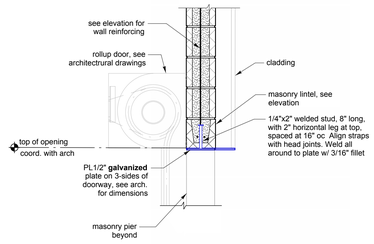
Structural Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

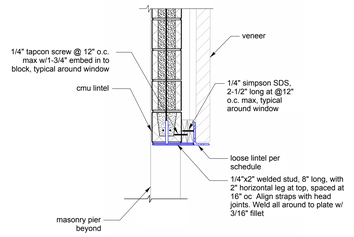
Drawing Number
S4.1



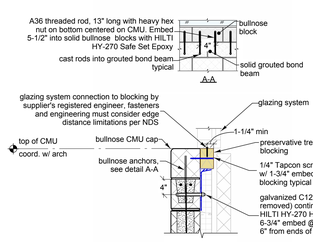
14 S5.1 — 3/4" = 1'-0"



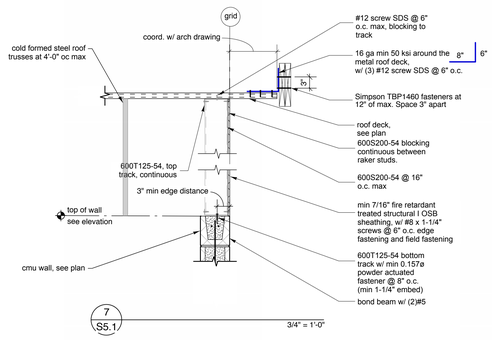
13 S5.1 — section at overhead rollup door — 3/4" = 1'-0"



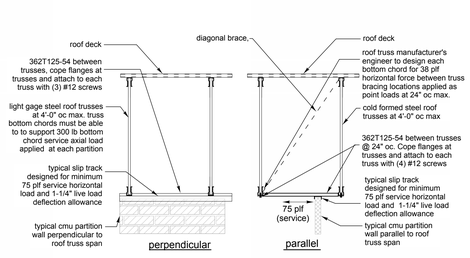
12 S5.1 — typical wall opening at small wall opening — 3/4" = 1'-0"



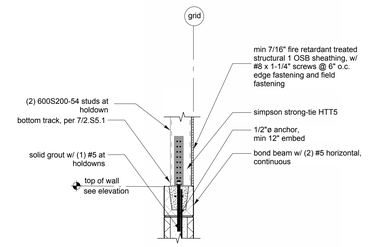
8 S5.1 — 3/4" = 1'-0"



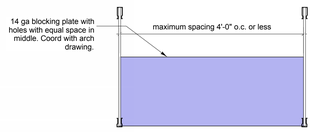
7 S5.1 — 3/4" = 1'-0"

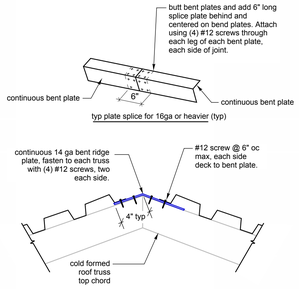


6 S5.1 — typical non-structural partition wall bracing details — 3/4" = 1'-0"



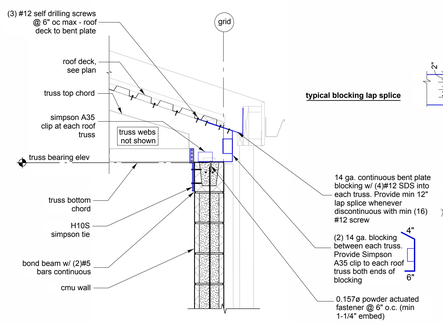
5 S5.1 — 3/4" = 1'-0"





note: provide similar detail at hip and valley conditions

3 S5.1 — typical ridge detail — 1-1/2" = 1'-0"



2 S5.1 — 3/4" = 1'-0"

1 continuous horizontal min 362S162-43 steel stud bracing for cold-formed steel truss bottom chord (space 8-0" oc max at bottom chord panel points) full length of building

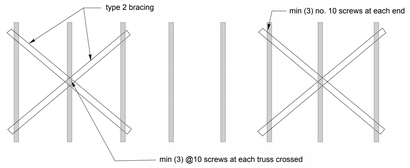
2 = min 362S162-43 steel stud vertical cross bracing of web members at each row of bottom chord bracing and repeat at 20'-0" oc max intervals

3 = min 362S162-43 steel stud bottom chord diagonal bracing. Locate at end of building and repeat at 28'-0" oc max intervals

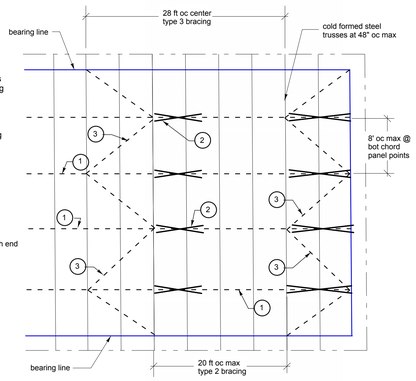
Lap all type 1 bottom chord braces over a minimum of (2) trusses

All connections should be made with minimum (3) self drilling screws

truss bracing notes



diagonal x-bracing at truss web members (elevation view)



minimum cold formed steel gable roof truss bracing diagram (plan view)

1 S5.1 — minimum cold formed steel truss bracing diagrams and notes — 3/4" = 1'-0"

notes:
1. The Truss manufacturer shall hire an engineer to design the complete bracing system and provide plans and details of bracing as part of shop drawing submittals. Truss bracing drawings and calculations must be signed and sealed.

2. All bottom chord bracing forces must be resolved into the roof diaphragm or bracing wall lines perpendicular to the truss span.

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	
Designer	
Project Architect / Engineer	H. Baghi
Drawn By	H. Baghi
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Structural Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
S5.1

ABBREVIATIONS

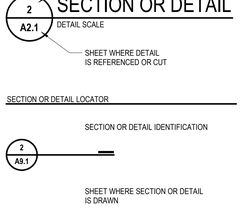
A	
AB	ABUSE RESISTANT
ABRSV	ABRASIVE
ACOUS	ACOUSTIC, ACOUSTICAL
ACT	ACOUSTICAL CEILING TILE
AC PNL	ACOUSTICAL PANEL
ACS PNL	ACCESS PANEL
ACU	AIR CONDITIONING UNIT
ADJ	ADJACENT, ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
ANOD	ANODIZED
APPROX	APPROXIMATELY
ARCH	ARCHITECT, ARCHITECTURAL
AUTO	AUTOMATIC
B	
BD	BOARD
BEV	BEVEL, BEVELED
BF	BARRIER FREE
BLDG	BUILDING
BLKG	BLOCKING
BN	BULLNOSE
BOTT	BOTTOM
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BUR	BUILT UP ROOFING SYSTEM
B/D	BOTTOM OF DECK
C	
CAB	CABINET
CB	CATCH BASIN
CBB	CEMENT BACKER BOARD
CC	COLOR CODE
CCT	CUBICLE CURTAIN TRACK
CEM PLAS	CEMENT PLASTER
CG	CORNER GUARD
CHBD	CHALKBOARD
CHKD PL	CHECKERED PLATE
CJ	CONTROL OR CONSTRUCTION JOINT
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
COMP	COMPACTED
COMPO	COMPOSITION
CONC	CONCRETE
CONF	CONFERENCE
CONN	CONNECT, CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUE, CONTINUOUS
CONTR	CONTRACTOR
CONV	CONVERTOR
CORR	CORRIDOR/CORRUGATED
COORD	COORDINATE
CPT	CARPET
CSWK	CASEWORK
CT	CERAMIC TILE
CSK	COUNTERSINK (SUNK)
CUH	CABINET UNIT HEATER
D	
D	DEPTH
DBL	DOUBLE
DWTR	DUMBWAITER
DT DR	DUTCH DOOR
DEMO	DEMOLISH, DEMOLITION
DEPR	DEPRESSED
DEPT	DEPARTMENT
DET	DETAIL
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIAG	DIAGONAL
DIFF	DIFFUSER
DIM	DIMENSION
DIR	DIRECTORY
DEFS	DIRECT APPLIED EXT FINISH SYSTEM
DMPF	DAMPPROOFING SYSTEM
DMT	DEMOUNTABLE
DN	DOWN
DR OPNG	DOOR OPENING
DR	DOOR
DWG	DRAWING
DT	DRAIN TILE
DWL	DOWEL
DWR	DRAWER
E	
EA	EACH
EF	EXHAUST FAN
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRIC, ELECTRICAL
ELEV	ELEVATOR
ENCL	ENCLOSURE
ENTR	ENTRANCE, ENTRY
ENTER.MAT	ENTRY MAT SYSTEM
EP	ELECTRICAL PANEL
EPT	EPOXY PAINT
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EWC	ELECTRICAL WATER COOLER
(E)	EXISTING FINISH/DOOR (PER SCHEDULE)
EXIST	EXISTING
EXP	EXPOSED
EXP BT	EXPANSION BOLT
EXP CONST	EXPOSED CONSTRUCTION
EXT	EXTERIOR
F	
FAC	FACTORY
FACP	FIRE ALARM CONTROL PANEL
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FDTN	FOUNDATION
FE	FIRE EXTINGUISHER
FEB	FIRE EXTINGUISHER AND BRACKET
FEC	FIRE EXTINGUISHER CABINET
FIN FLR	FINISH FLOOR
F (CONT)	
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FIN	FINISH, FINISHED
FLASH	FLASHING
FLR	FLOOR
FPRFG	FIREPROOFING
FR	FRAME
FRGM	FIRE RATED GLAZING MARKINGS
FRP	FIBERGLASS REINFORCED PANEL
FT	FEET, FOOT
FTG	FOOTING
FTR	FIN TUBE RADIATION
FVC	FIRE VALVE CABINET
FWC	FABRIC WALL COVERING
G	
GA	GAGE, GAUGE
GALV	GALVANIZED
GF CMU	GROUND FACE CONCRETE MASONRY...
GRFC	GLASS FIBER REINFORCED CONCRETE
GRFG	GLASS FIBER REINFORCED GYPSUM
GI	GALVANIZED IRON
GL	GLASS/GLAZED
GL CMU	GLAZED CONCRETE MASONRY UNIT
GR	GRADE
GRG	GLASS REINFORCED GYPSUM
GRL	GRILLE
GYP BD	GYPSUM BOARD
H	
H	HIGH, HEIGHT
HB	HOSE BIBB
HC	HOLLOW CORE
HDWD	HARDWOOD
HDWE	HARDWARE
HD/SLR	HARDENER SEALER
HM	HOLLOW METAL
HORIZ	HORIZONTAL, HORIZONTALLY
HORIZB	HORIZONTAL BLINDS
HP	HIGH POINT
HPC	HIGH PERFORMANCE COATING
HR	HOUR
I	
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
INCL	INCLUDE, INCLUDING
INFO	INFORMATION
IN	INCH, INCHES
INSUL	INSULATE, INSULATION
INT	INTERIOR
IR	IMPACT RESISTANT
IR GYP BD	IMPACT RESISTANT GYPSUM BOARD
J	
JC	JANITOR CLOSET
JT	JOINT
JST	JOIST
K	
KD	KNOCK DOWN
L	
L	LONG, LENGTH
LAB	LABORATORY
LAM	LAMINATE, LAMINATED
LAV	LAVATORY
LBL	LABEL
LBS	POUNDS
LF	LINEAR FOOT
LH	LEFT HAND
LHR	LEFT HAND REVERSE
LIMEST	LIMESTONE
LINO	LINOLEUM
LKR	LOCKER
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOUVER OPENING
LP	LOW POINT
LPRF	LIGHT PROOF
LT WT	LIGHT WEIGHT
LVT	LUXURY VINYL TILE
M	
MAINT	MAINTENANCE
MATL	MATERIAL
MAX	MAXIMUM
MCC	MULTI COLOR COATING
MDS	METAL DIVING STRIP
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MKBD	MARKERBOARD
MLDG	MOULDING
MO	MASONRY OPENING
MRT	MARBLE THRESHOLD
MTD	MOUNTED
MTL	METAL OR METALLIC
MT	METAL THRESHOLD
MTL PNL	METAL PANEL
MULL	MULLION
N	
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NRC	NOICE REDUCTION COEFFICIENT
NTS	NOT TO SCALE
O	
OC	ON CENTER
OD	OUTISDE DIAMETER
O/H	OVERHEAD
OPNG	OPENING
OPP HD	OPPOSITE HAND
ORN	ORNAMENTAL
OZ	OUNCE
P	
PA	PUBLIC ADDRESS
PAVERT	PAVER TILE
PBD	PARTICLEBOARD
P/C	PRECAST
PC	PIECE
PERF	PERFORATED
PERIM	PERIMETER
PH PNL	PORCELAIN ENAMEL
PLBG	PLUMBING
PLAS	PLASTER
P LAM	PLASTIC LAMINATED
PLYWD	PLYWOOD
POL	POLISH, POLISHED
POL...	POLISHED CONCRETE
POC	POROUS
PORC	PORCELAIN
PORC EN	PORCELAIN ENAMEL
PORC T	PORCELAIN TILE
PR	PAIR
PREFAB	PREFABRICATION
PRKG	PARKING
PS	PROJECTION SCREEN
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	PAINT
PTN	PARTITION
PVC	POLYVINYLCHLORIDE
PVF	POLYVINYL FLUORIDE COATING (KYNAR)
PVW	PROTECTIVE VINYL WALL COVERING
Q	
QT	QUARRY TILE
R	
R	RISER
RAD	RADIUS
RAF	RESILIENT ATHLETIC FLOORING
RC	RAIN CONDUCTOR
REF	REFER, REFERENCE
REFL	REFLECTED, RELECTIVE
REFRIG	REFRIGERATOR
REINF	REINFORCE, REINFORCEMENT, REINFORCING
REQD	REQUIRED
RESIL	RESILIENT
REV	REVISED, REVISION
RFG	ROOFING
R (CONT)	
RH	RIGHT HAND
RHR	RIGHT HAND REVERSE
RO	ROUGH OPENING
ROW	RIGHT OF WAY
RR	RAILROAD
RS	ROOF SUMP
RSD	ROLLER SHADE
RT	RUBBER TILE
S	
SC	SOLID CORE
SCHED	SCHEDULE
SCR	SHOWER CURTAIN ROD
SECT	SECTION
SF	SQUARE FEET (FOOT)
SGFT	STRUCTURAL GLAZED FACING TILE
SHIP	SHELF AND POLE
SIM	SIMILAR
SPEC	SPECIFICATION
SQ	SQUARE
SS	SERVICE SINK
STAG	STAGGERED
STC	SOUND TRANSMISSION CLASS
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
ST STL	STAINLESS STEEL
STN	STAIN
SURF	SURFACE
SUSP	SUSPEND, SUSPENSION
SYM	SYMBOL
SYMM	SYMMETRICAL
T	
T	TREAD
T & B	TOP AND BOTTOM
T & G	TONGUE AND GROOVE
TC	TOP OF COVER OR CURB
TEL	TELEPHONE
TEMP GL	TEMPERED GLASS
TERR	TERRAZZO
THK	THICK, THICKNESS
TKBD	TACKBOARD
TKSP	TACK STRIP
TOC	TOP OF COVER OR CURB
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TRANS	TRANSOM
TURF	INDOOR TURF
TV	TELEVISION
TYP	TYPICAL
U	
UC	UNDERCUT
UL	UNDERWRITERS LABORATORIES,INC.
UON	UNLESS OTHERWISE NOTED
V	
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL, VERTICALLY
VERTB	VERTICAL BLINDS
VEN...	VENEER PLASTER
VIF	VERIFY IN FIELD
VIT	VITREOUS
VR	VAPOR RETARDER
VRS	VINYL REDUCER STRIP
VTR	VENT THRU ROOF
VWC	VINYL WALL COVERING
W	
W	WIDE, WIDTH
WBR	WALL BUMPER RAIL
WC	WAINSCOTT
WI	WITH
WD	WOOD
WM	WIRE MESH
WO	WINDOW OPENING
W/O	WITHOUT
WP	WATERPROOF
WPF	WEATHERPROOF
WP	WORKING POINT
WSCT	WATERSTOP
WSTPG	WEATHERSTRIPPING
WTTPG	WATERSTOP
WWF	WELDED WIRE FABRIC
L	ANGLE
X	BY
℄	CENTERLINE
[	CHANNEL
°	DEGREE OR DEGREES
Ø	DIAMETER
'	FEET, FOOT
"	INCH, INCHES
#	NUMBER OR POUND
ℙ	PLATE
T	TEE

MATERIAL LEGEND

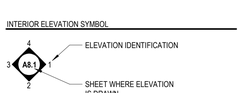
- SOIL
- GRANULAR FILL
- GRAVEL
- CONCRETE
- CONCRETE MASONRY UNIT
- BRICK
- GLAZED CMU
- STRUCTURAL GLAZED FACING TILE
- STONE
- MARBLE
- METALS
- FINISH WOOD
- PLYWOOD
- PREMOLDED EXPANSION JOINT OR COMPRESSIBLE FILLER STRIP
- GLASS OR PLASTIC GLAZING
- PLASTER OR GYPSUM BOARD
- CERAMIC OR QUARRY TILE
- TERRAZZO
- ACOUSTICAL PANEL OR ACOUSTICAL TILE
- BATT INSULATION
- RIGID INSULATION
- CAVITY WALL INSULATION
- ROOF INSULATION

SYMBOL LEGEND

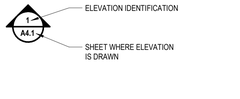
SECTION OR DETAIL TITLE



SECTION OR DETAIL LOCATOR

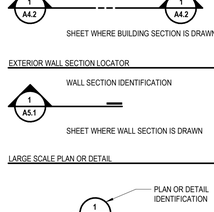


INTERIOR ELEVATION SYMBOL



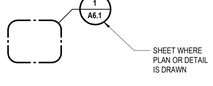
EXTERIOR ELEVATION SYMBOL

BUILDING SECTION LOCATOR



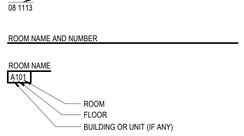
EXTERIOR WALL SECTION LOCATOR

LARGE SCALE PLAN OR DETAIL

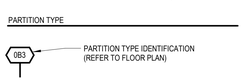


COLUMN DESIGNATION/CENTERLINE

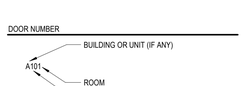
MATERIAL KEYNOTE



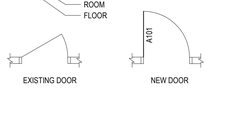
ROOM NAME AND NUMBER



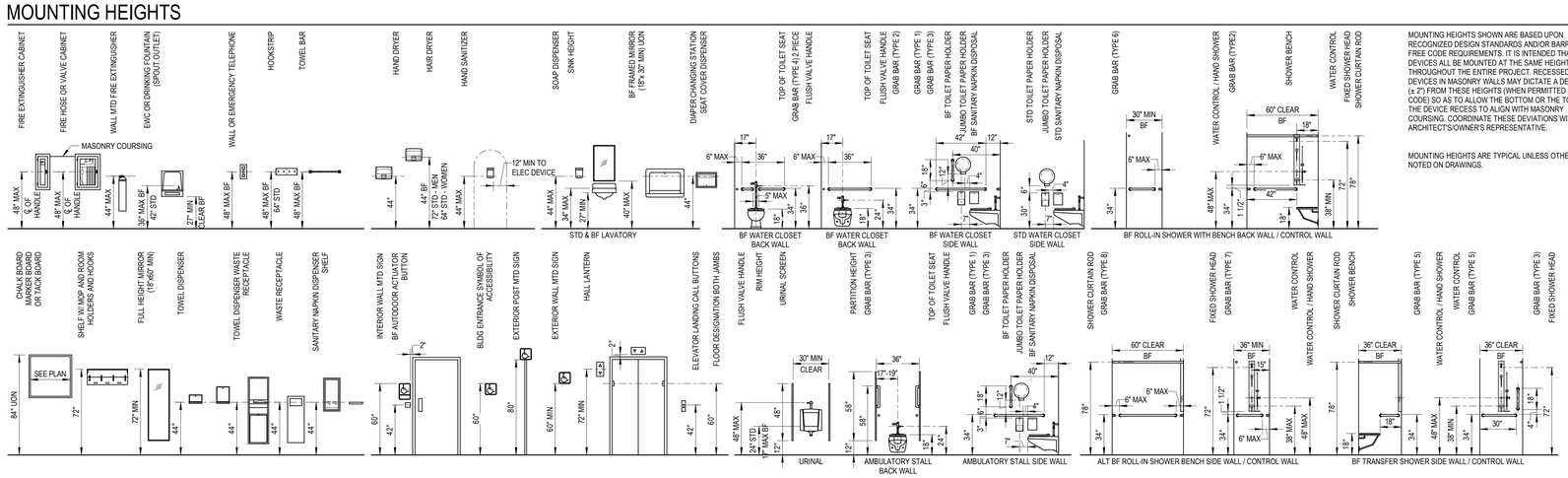
PARTITION TYPE



DOOR NUMBER



MOUNTING HEIGHTS



MOUNTING HEIGHTS SHOWN ARE BASED UPON RECOGNIZED DESIGN STANDARDS AND/OR BARRIER FREE CODE REQUIREMENTS. IT IS INTENDED THAT LIKE DEVICES ALL BE MOUNTED AT THE SAME HEIGHT THROUGHOUT THE ENTIRE PROJECT. RECESSED DEVICES IN MASONRY WALLS MAY DICTATE A DEVIATION (± 2") FROM THESE HEIGHTS (WHEN PERMITTED BY CODE) SO AS TO ALLOW THE BOTTOM OR THE TOP OF THE DEVICE RECESS TO ALIGN WITH MASONRY COURSING. COORDINATE THESE DEVIATIONS WITH THE ARCHITECT'S/OWNER'S REPRESENTATIVE.

MOUNTING HEIGHTS ARE TYPICAL UNLESS OTHERWISE NOTED ON DRAWINGS.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

THIS PROJECT MAY NOT UTILIZE ALL THE SYMBOLS, MATERIALS, ABBREVIATIONS AND STANDARD INFORMATION SHOWN ON THIS SHEET

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale
No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Architectural Reference Information

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
AR.0

LEGEND

LIFE SAFETY
NOTE: NOT ALL SYMBOLS MAY BE USED

EXIT
000/000 — EXIT CAPACITY / TABULAR OCCUPANT LOAD

1-HR FIRE-RATED PARTITION

2-HR FIRE-RATED PARTITION

3-HR FIRE-RATED PARTITION

SMOKE TIGHT PARTITION

1 HR FIRE RATED CEILING CONSTRUCTION

FE — 10.4413 FIRE EXTINGUISHER

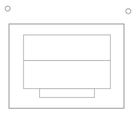
BUILDING INFORMATION

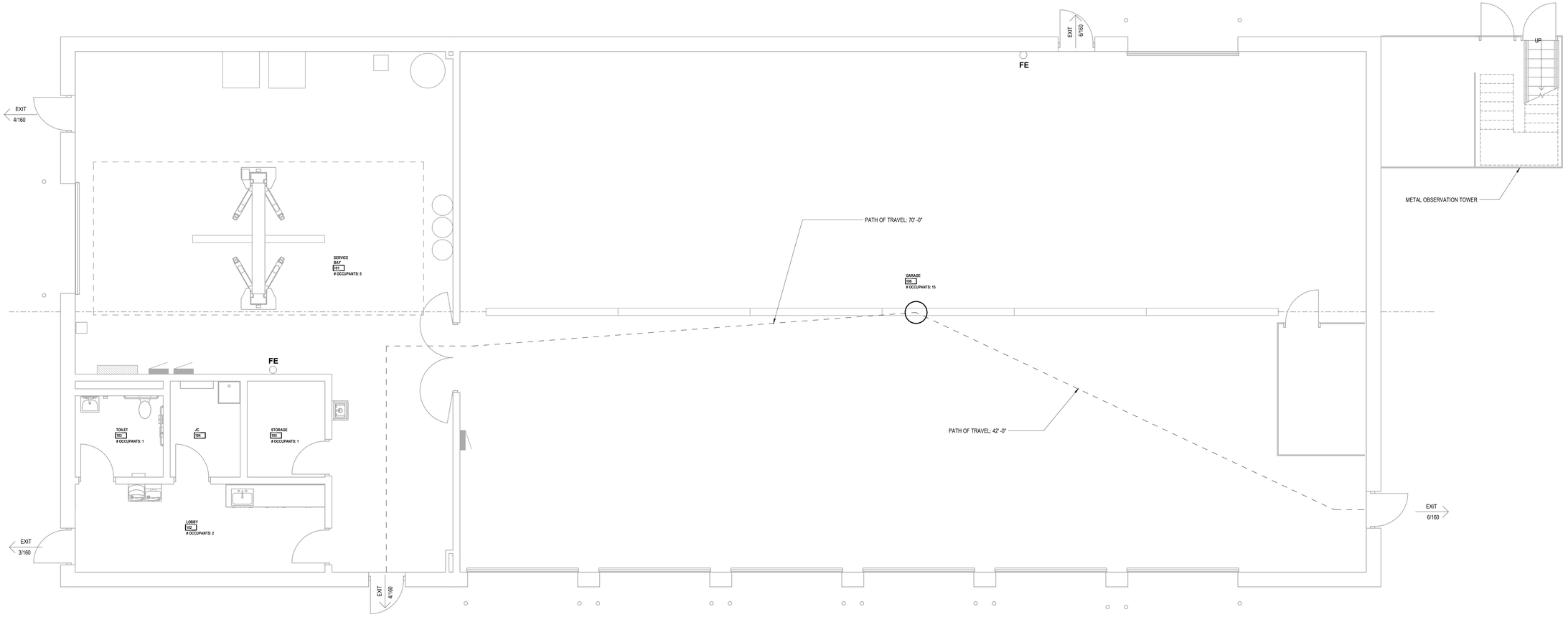
SINGLE USE AND OCCUPANCY

		MBC	NFPA
Type of Construction		IIB	--
Occupancy Group		S-1	--
Tabular Building Area (MBC Table 506.2) (At)	NS	6,000 SF/story	
	S (1 or M)	0 SF/story	
Frontage Increase (MBC Table 506.3.3)		0.00	
Allowable Area (Aa)	**Non-sprinklered**	**6,000 SF/story**	
	Fully Sprinklered	**0 SF/story**	

Project Floor Area	Existing	Proposed	Level 2 Alteration	Total
First Floor	0 SF	6,000 SF	0 SF	6,000 SF
Sub-total	0 SF	6,000 SF	0 SF	6,000 SF

	MBC	
Tabular Allowable Building Height (MBC Table 504.3)	55	Feet
Tabular Story Limitations (MBC Table 504.4)	2	Stories above grade plane
Project Building Height	**21**	**Feet**
Project Number of Stories above grade plane	**1**	**Stories above grade plane**





iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	K. Aalderink
Project Architect / Engineer	K. Reynolds
Drawn By	K. Reynolds
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	1/4" = 1'-0"

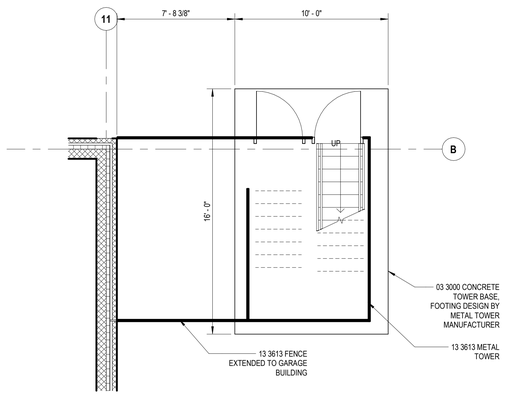
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

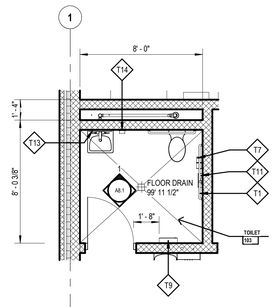
First Floor Composite Life Safety Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
LS0.1



3 A4.1 OBSERVATION TOWER
1/4" = 1'-0"



2 A2.1 RESTROOM PLAN
1/4" = 1'-0"

KEYNOTES

NEW WORK FLOOR PLAN
SHADED ITEMS HAVE BEEN REVISED FROM PREVIOUS
NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR

A1 05 5000 STEEL PIPE BOLLARD
A2 DOWNSPOUT - REFER TO MECHANICAL
A5 10 2213 10'-0" WIRE MESH PARTITION
A6 CHASE WALL TO 10'-0" AFF
A7 13 3613 OBSERVATION TOWER AND ENCLOSURE, REFER TO DETAIL 3/A2.1
A8 GARAGE EQUIPMENT, REFER TO MECH
A9 WATER METER, REFER TO MECH
A10 FROST BLOCK, REFER TO STRUCTURAL
A11 OIL SEPARATOR LID, REFER TO MECH.
A12 DRUM STORAGE, REFER TO MECH & ELEC FOR INFRSTRUCTURE.
A13 LOUVER LOCATION, REFER TO ARCHTECTURAL ELEVATIONS.
A14 10 4413 FIRE EXTINGUISHER

LEGEND

TOILET ACCESSORIES
SHADED ITEMS HAVE BEEN REVISED FROM PREVIOUS
NOTE: NOT ALL KEYNOTES MAY BE USED

REFER TO SPECIFICATION SECTION 10 2800 FOR ADDITIONAL INFORMATION ALL TOILET ACCESSORIES ARE CONTRACTOR FURNISHED AND INSTALLED UON
(OF/OI): OWNER FURNISHED/OWNER INSTALLED
(OF/CI): OWNER FURNISHED/CONTRACTOR INSTALLED
REFER TO DRAWING AR.0 FOR TYPICAL MOUNTING HEIGHTS

◇ LEGEND SYMBOL INDICATOR

T1 GRAB BAR SET 1 (1) GRAB BAR TYPE 1, (1) GRAB BAR TYPE 2, (1) GRAB BAR TYPE 3
T7 TOILET PAPER DISPENSER
T9 PAPER TOWEL DISPENSER AND WASTE RECEPTACLE
T11 SANITARY NAPKIN DISPOSAL
T13 MIRROR
T14 SOAP DISPENSER
T24 MOP RACK AND SHELF

GENERAL NOTES

NEW WORK PLAN

A. REFER TO SHEET A9.2 FOR DOOR SCHEDULE AND COLORS.

B. REFER TO SHEET A10.1 FOR FINISH SCHEDULE AND COLORS.

C. REFER TO LIFE SAFETY PLANS FOR PARTITION RATINGS.

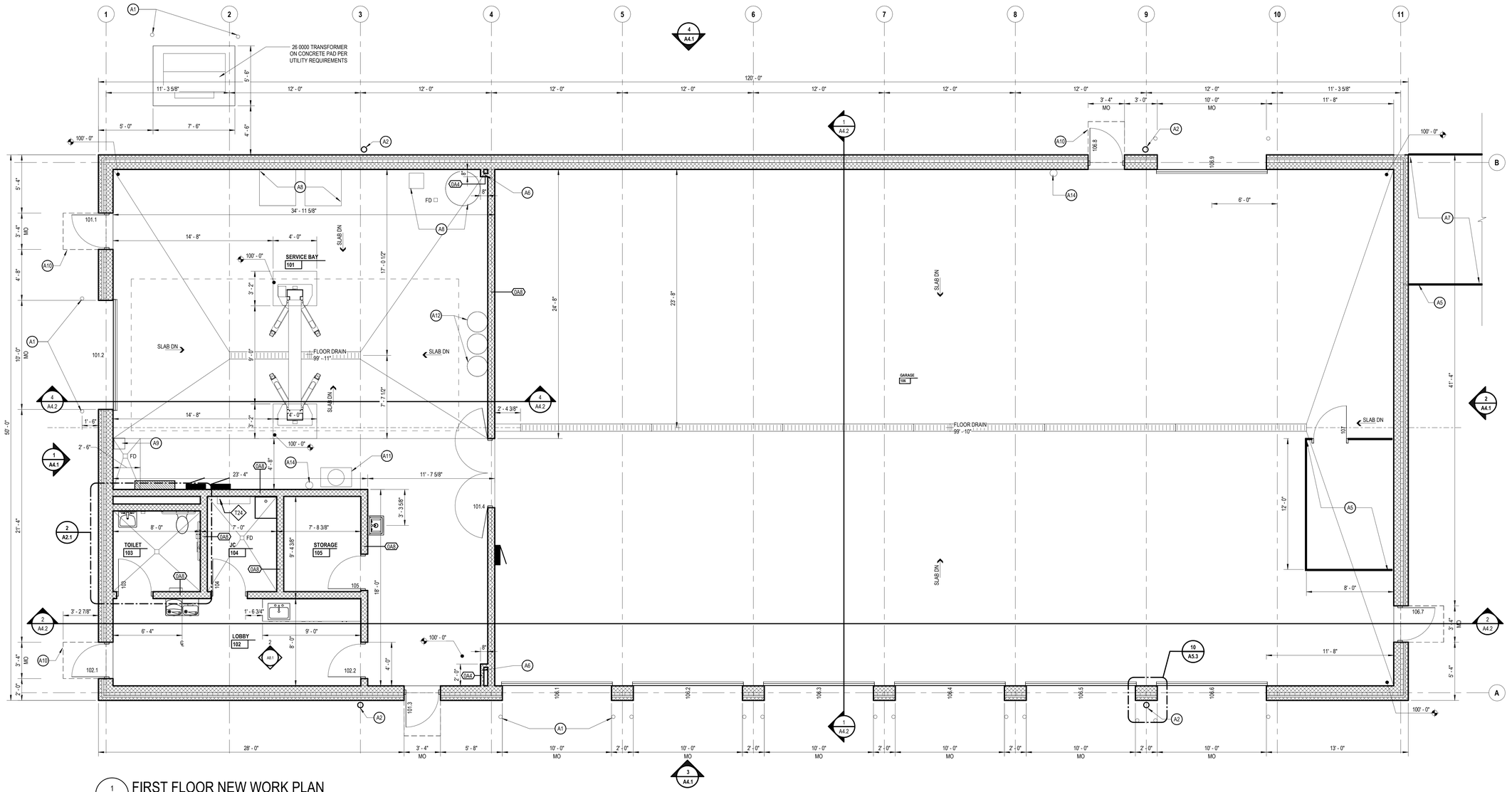
D. PROVIDE POSITIVE SLOPE TO ALL FLOOR DRAINS WHILE KEEPING FLOOR LEVEL AT WALL BASE.

E. COORDINATE SIZE AND LOCATION OF ALL ACCESS DOORS WITH TRADES REQUIRING SAME. QUANTITIES SHOWN DO NOT NECESSARILY REPRESENT ALL ACCESS DOORS REQUIRED FOR ACCESSIBILITY.

LEGEND

NEW WORK PLAN
NOTE: NOT ALL SYMBOLS MAY BE USED

EXISTING CONSTRUCTION
NEW CONSTRUCTION
(XXX) PARTITION TYPE - REFER TO PARTITION DETAILS SHEET A9.3
SHALL COMPLY WITH BARRIER FREE REQUIREMENTS
XXXX CASEWORK/ MILLWORK TAG
XXXX 10 1100 VISUAL DISPLAY SURFACE MK= MARKERBOARD, TK=TACKBOARD XXXX INDICATES BOARD SIZE
XXXX 12 3553 LABORATORY EQUIPMENT & 11 5313 LABORATORY FUME HOODS
W1.1 12 2413 ROLLER WINDOW SHADE
CORNER GUARD



1 A4.1 FIRST FLOOR NEW WORK PLAN
1/4" = 1'-0"

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®
Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	K. Reynolds
Drawn By	K. Reynolds
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	1/4" = 1'-0"

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor New Work Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A2.1

KEYNOTES

NEW WORK FLOOR PLAN
SHADED ITEMS HAVE BEEN REVISED FROM PREVIOUS
NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR

A1 05 5000 STEEL PIPE BOLLARD

A2 DOWNSPOUT - REFER TO MECHANICAL

A5 10 2213 10'-0" WIRE MESH PARTITION

A6 CHASE WALL TO 10'-0" AFF

A7 13 3613 OBSERVATION TOWER AND ENCLOSURE, REFER TO DETAIL 3/A2.1

A8 GARAGE EQUIPMENT, REFER TO MECH

A9 WATER METER, REFER TO MECH

A10 FROST BLOCK, REFER TO STRUCTURAL

A11 OIL SEPARATOR LID, REFER TO MECH.

A12 DRUM STORAGE, REFER TO MECH & ELEC FOR INFRSTRUCTURE.

A13 LOUVER LOCATION, REFER TO ARCHTECTURAL ELEVATIONS.

A14 10 4413 FIRE EXTINGUISHER

GENERAL NOTES

NEW WORK PLAN

A. REFER TO SHEET A9.2 FOR DOOR SCHEDULE AND COLORS.

B. REFER TO SHEET A10.1 FOR FINISH SCHEDULE AND COLORS.

C. REFER TO LIFE SAFETY PLANS FOR PARTITION RATINGS.

D. PROVIDE POSITIVE SLOPE TO ALL FLOOR DRAINS WHILE KEEPING FLOOR LEVEL AT WALL BASE.

E. COORDINATE SIZE AND LOCATION OF ALL ACCESS DOORS WITH TRADES REQUIRING SAME. QUANTITIES SHOWN DO NOT NECESSARILY REPRESENT ALL ACCESS DOORS REQUIRED FOR ACCESSIBILITY.

LEGEND

NEW WORK PLAN
NOTE: NOT ALL SYMBOLS MAY BE USED

EXISTING CONSTRUCTION

NEW CONSTRUCTION

XXX — PARTITION TYPE - REFER TO PARTITION DETAILS SHEET A9.3

SHALL COMPLY WITH BARRIER FREE REQUIREMENTS

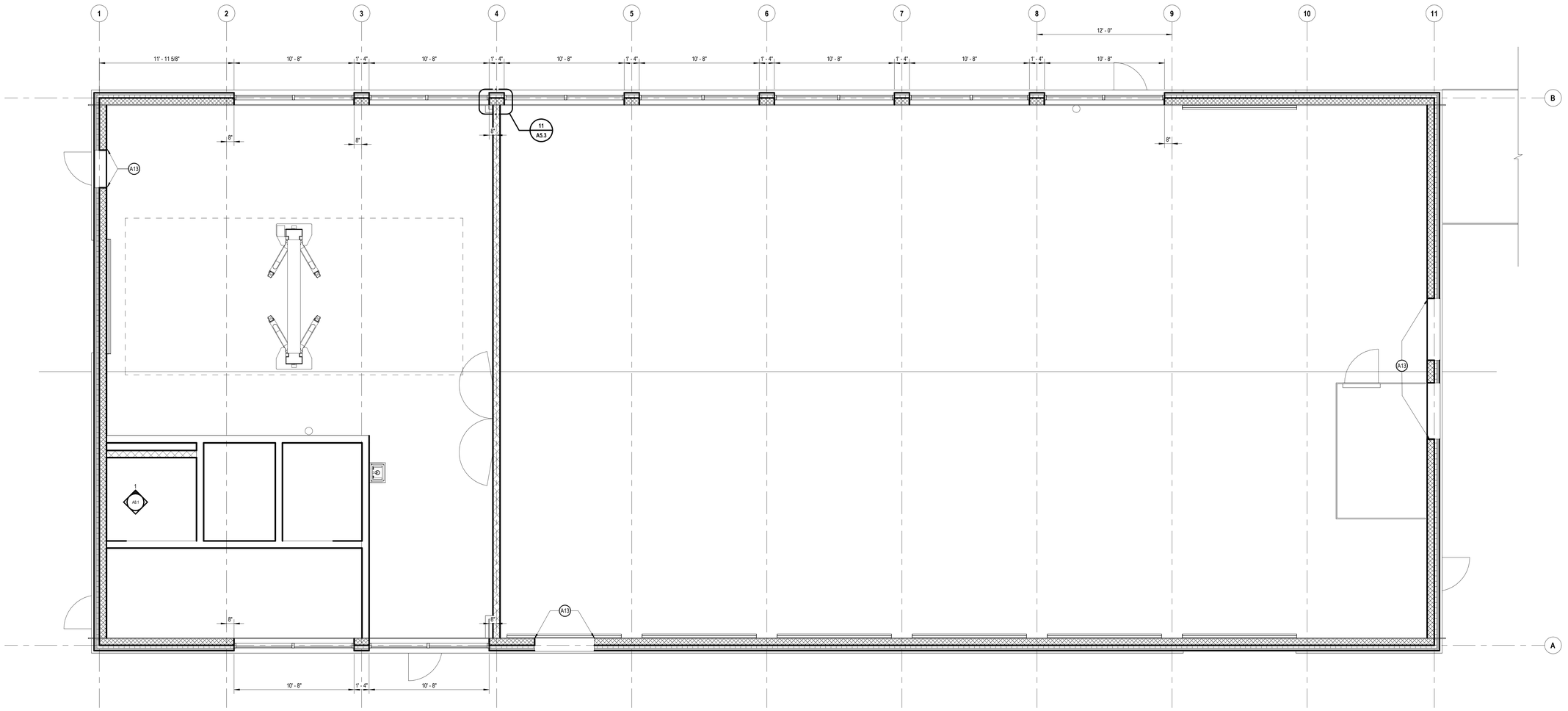
XXXX — CASEWORK/ MILLWORK TAG

XXXX — 10 1100 VISUAL DISPLAY SURFACE MK= MARKERBOARD, TK=TACKBOARD XXXX INDICATES BOARD SIZE

XXXX — 12 3553 LABORATORY EQUIPMENT & 11 5313 LABORATORY FUME HOODS

W1.1 — 12 2413 ROLLER WINDOW SHADE

CORNER GUARD



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale
1/4" = 1'-0"

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Clerestory Window Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A2.2

KEYNOTES

ROOF PLAN

SHADED ITEMS HAVE BEEN REVISED FROM PREVIOUS

NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR

R1 07 4113 STANDING SEAM METAL ROOFING SYSTEM ON 06 1000 COMPOSITE NAIL BASE INSULATED ROOF SHEATHING

R2 VENT THROUGH ROOF, RE: 1 /A5.4

R3 07 7100 METAL GUTTER

R4 07 7100 DOWNSPOUT

R5 07 7100 RIDGE VENT, REFER TO DETAIL 4/A5.4

R6 07 4113 SNOW GUARDS

GENERAL NOTES

ROOF PLAN

A. REFER TO SHEET A5.4 FOR TYPICAL ROOFING DETAILS.

B. COORDINATE SIZE AND LOCATION OF ALL EQUIPMENT SUPPORTS WITH INFORMATION PROVIDED BY THE APPROPRIATE EQUIPMENT MANUFACTURER AND TRADE CONTRACTORS.

C. REFER TO MECHANICAL AND ELECTRICAL DOCUMENTS FOR ALL PIPES, CURBS, VENTS, DUCTS, CONDUITS, LIGHTNING PROTECTION, AND OTHER FEATURES EXTENDING THROUGH THE ROOF SURFACES WHICH REQUIRE FLASHING AND COORDINATE SIZE AND LOCATION OF SAME.

D. PROVIDE POSITIVE SLOPE TO ALL ROOF DRAINS.

E. VERIFY EXACT LOCATIONS OF ROOFING CONTROL JOINTS (IF REQUIRED) WITH ROOFING MANUFACTURER.

LEGEND

NEW WORK PLAN

NOTE: NOT ALL SYMBOLS MAY BE USED

EXISTING CONSTRUCTION

NEW CONSTRUCTION

XXX — PARTITION TYPE - REFER TO PARTITION DETAILS SHEET A9.3

SHALL COMPLY WITH BARRIER FREE REQUIREMENTS

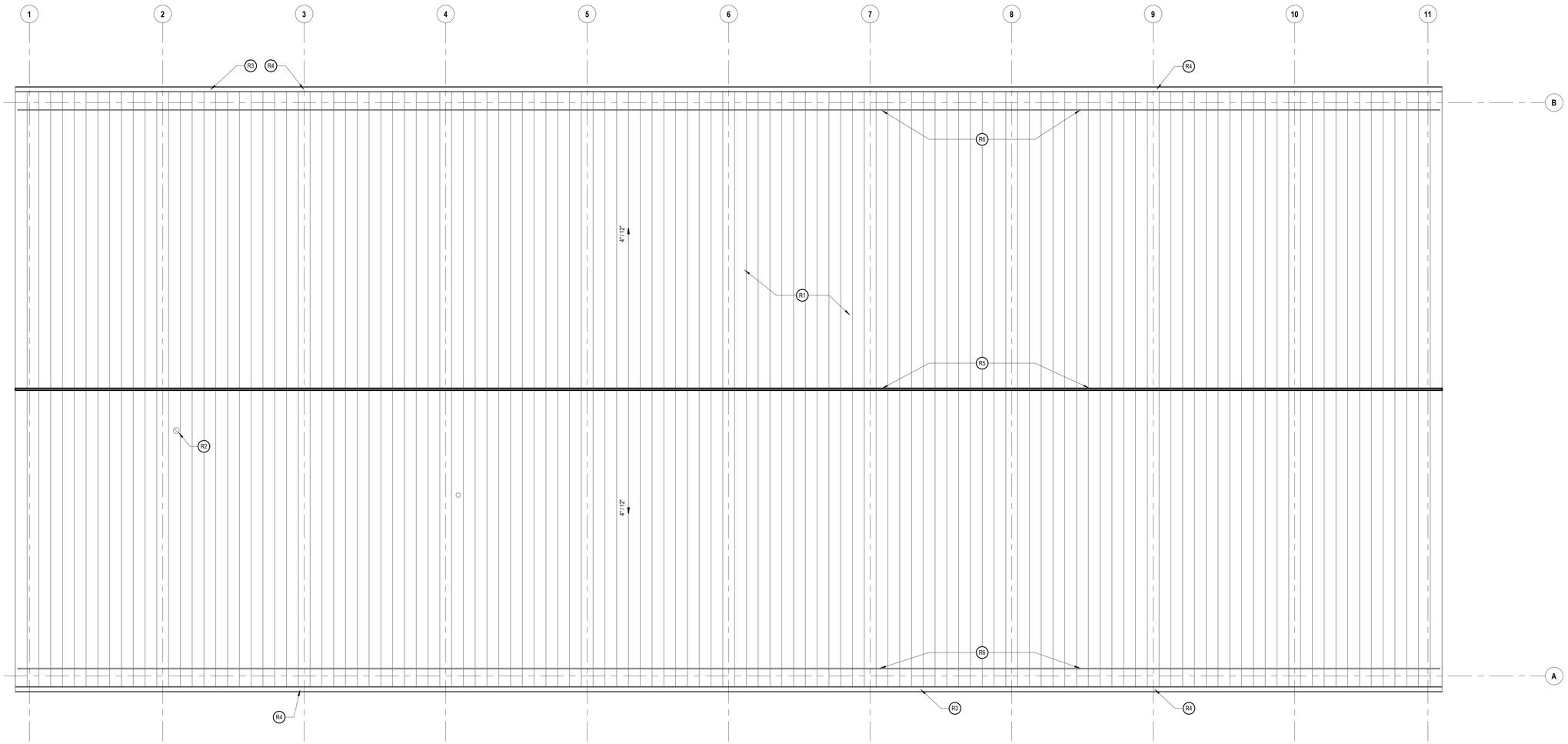
XXXX — CASEWORK/ MILLWORK TAG

XXXX — 10 1100 VISUAL DISPLAY SURFACE MK= MARKERBOARD, TK=TACKBOARD XXXX INDICATES BOARD SIZE

XXXX — 12 3553 LABORATORY EQUIPMENT & 11 5313 LABORATORY FUME HOODS

W1.1 — 12 2413 ROLLER WINDOW SHADE

CORNER GUARD



IDS

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator: V. Grant
Project Designer: Designer
Project Architect / Engineer: K. Reynolds
Drawn By: Author
Q.M. Review: C. Allick
Approved: B. Sundberg
Drawing Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Roof New Work Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A2.3

LEGEND

REFLECTED CEILING PLAN
NOTE: NOT ALL SYMBOLS MAY BE USED

- LAY-IN CEILING
- EXISTING LAY-IN CEILING
- GYPSUM BOARD CEILING
- ACOUSTIC METAL DECK
- RECESSED DOWNLIGHT
- RECESSED LINEAR LIGHT FIXTURE
- PENDANT LIGHT FIXTURE
- PENDANT LINEAR LIGHT FIXTURE
- LIGHT FIXTURES
- INDUSTRIAL LIGHT FIXTURE
- LINEAR RETURN DIFFUSER
- LINEAR SUPPLY DIFFUSER
- EXHAUST AIR DIFFUSER
- RETURN AIR REGISTER/GRILLS
- SUPPLY AIR REGISTER/GRILLS
- ACCESS PANEL (24X24 UON)
- RADIANT CEILING PANEL
- SPRINKLER HEAD
- SENSORS
- FIRE ALARM DEVICES
- SPEAKERS
- MICROPHONE
- EXIT SIGNS
- JUNCTION BOX
- RECEPTACLES
- WIRELESS ACCESS POINT
- CAMERA
- PROJECTOR
- FLAT PANEL MONITOR

GENERAL NOTES

REFLECTED CEILING PLAN

A. CEILING HEIGHT 9'-0" AFF UNLESS OTHERWISE NOTED.

B. ACOUSTICAL CEILING PANELS AND/OR TILES SHALL BE CENTERED WITHIN THE ROOM OR BORDER UNLESS OTHERWISE NOTED.

C. REFER TO FLOOR PLANS FOR PARTITION TYPE DESIGNATION.

D. COORDINATE CEILING SUSPENSION SYSTEMS WITH OTHER CEILING SPACE EQUIPMENT SUPPORTING DEVICES.

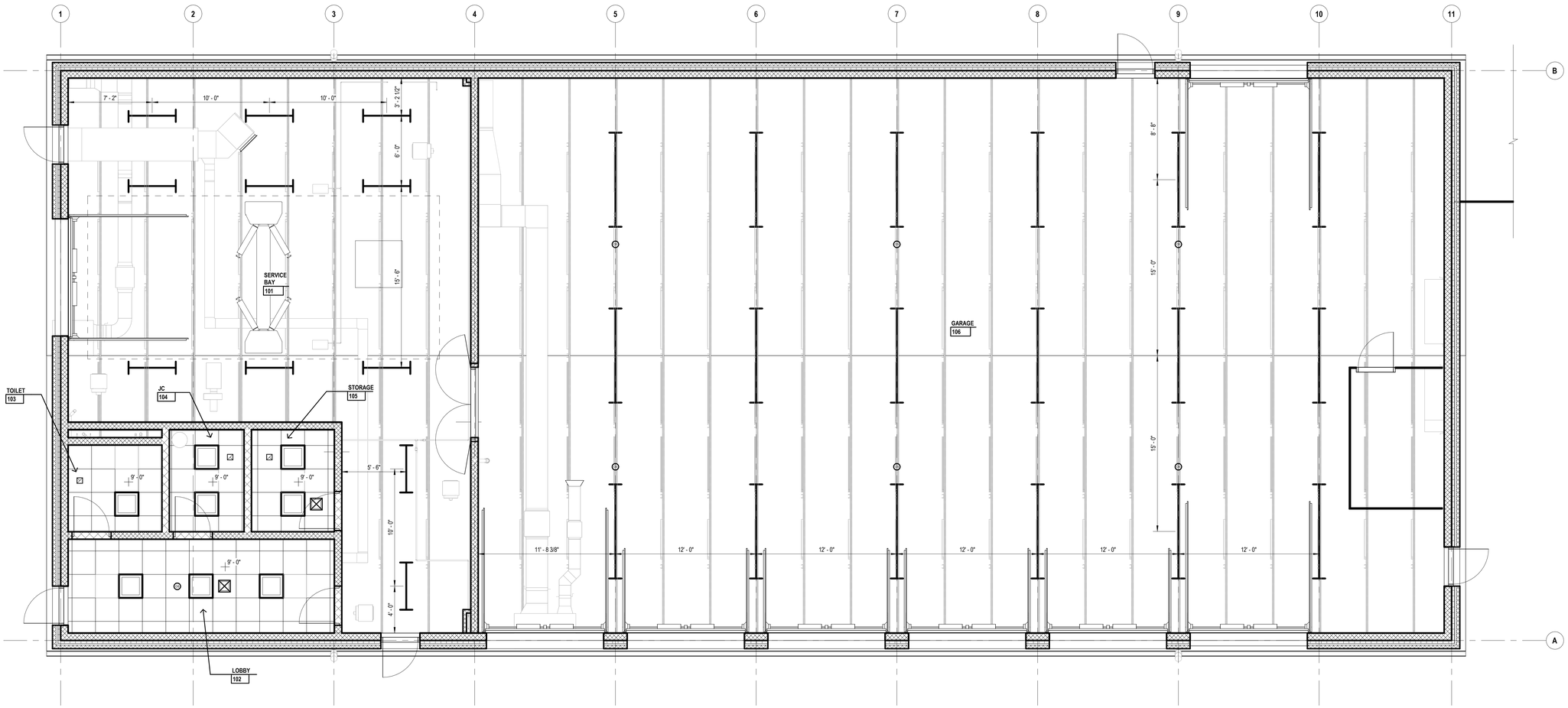
E. UNLESS OTHERWISE NOTED LOCATION OF ITEMS SHOWN IN AREAS WITHOUT FINISH CEILINGS IS APPROXIMATE. COORDINATE EXACT LOCATION BETWEEN TRADES.

F. COORDINATE SIZE AND LOCATION OF ALL ACCESS DOORS WITH TRADES REQUIRING SAME. QUANTITIES SHOWN DO NOT NECESSARILY REPRESENT ALL ACCESS DOORS REQUIRED FOR ACCESSIBILITY.

KEYNOTES

REFLECTED CEILING PLAN
SHADED ITEMS HAVE BEEN REVISED FROM PREVIOUS
NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR



iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator: V. Grant
Project Designer: Designer
Project Architect / Engineer: K. Reynolds
Drawn By: K. Reynolds
Q.M. Review: C. Allick
Approved: B. Sundberg
Drawing Scale: 1/4" = 1'-0"

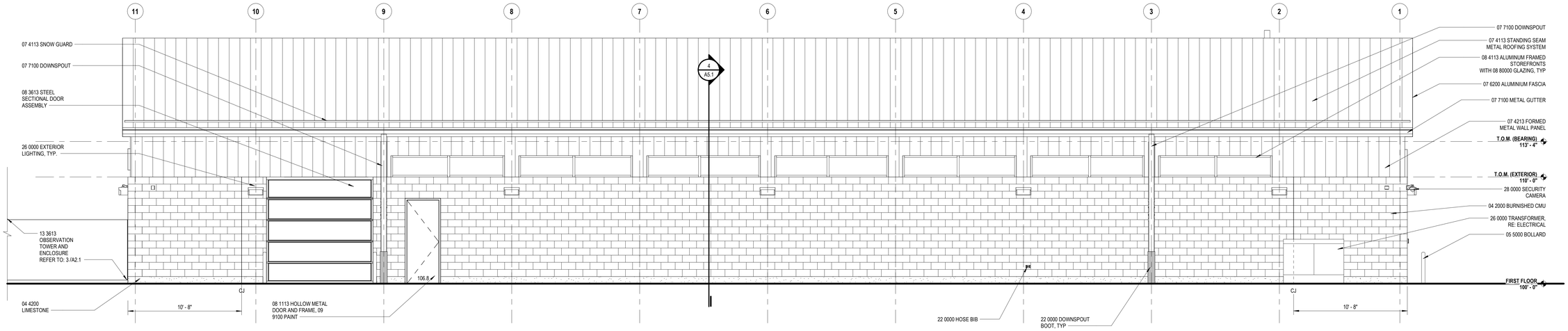
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

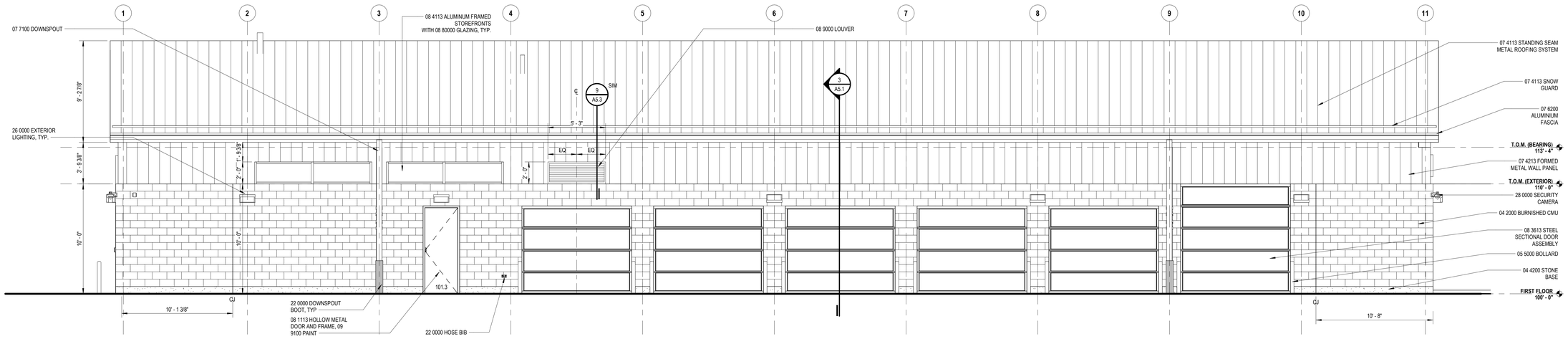
First Floor Reflected Ceiling Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

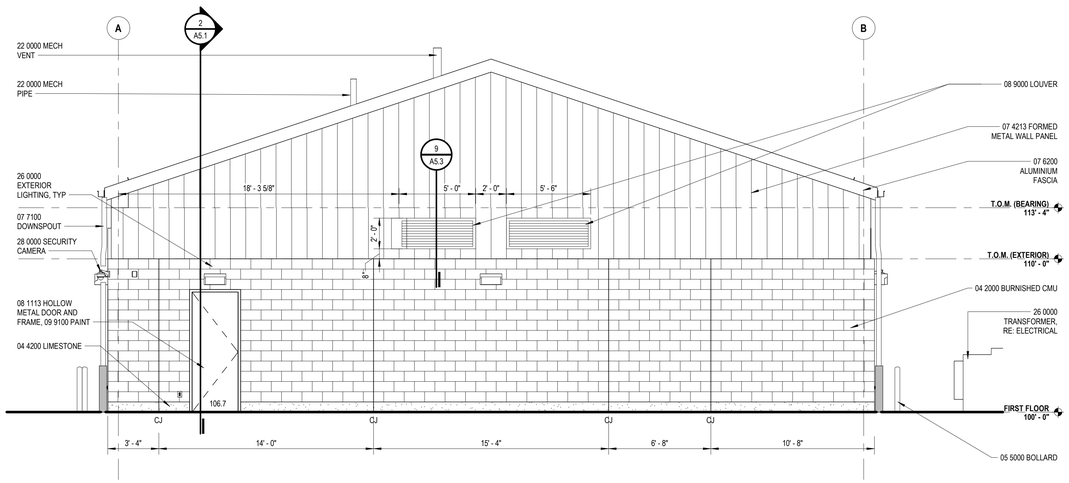
Drawing Number
A3.1



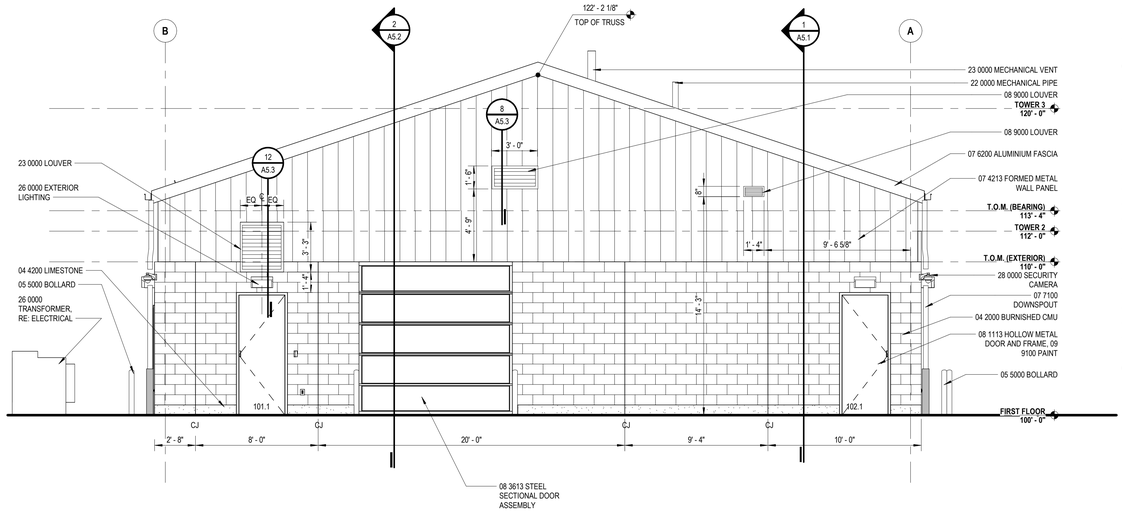
4 A2.1 WEST ELEVATION
1/4" = 1'-0"



3 A2.1 EAST ELEVATION
1/4" = 1'-0"



2 A2.1 NORTH ELEVATION
1/4" = 1'-0"



1 A2.1 SOUTH ELEVATION
1/4" = 1'-0"

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	K. Reynolds
Drawn By	K. Reynolds
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	As Noted

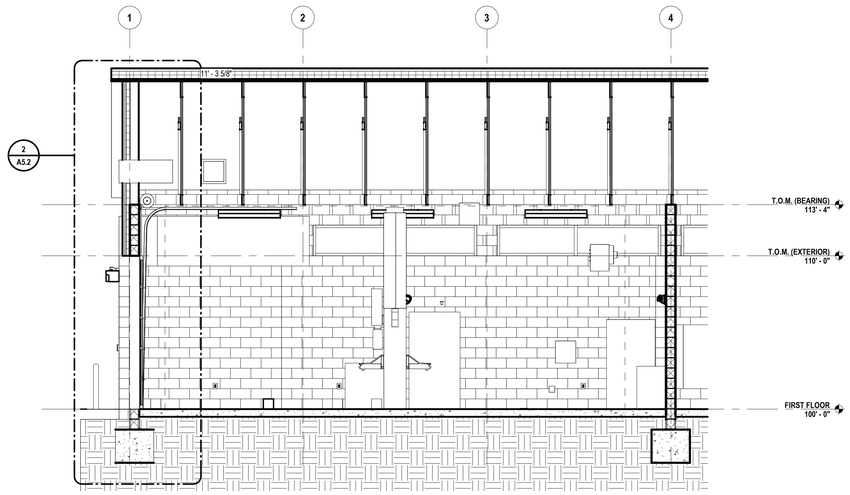
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

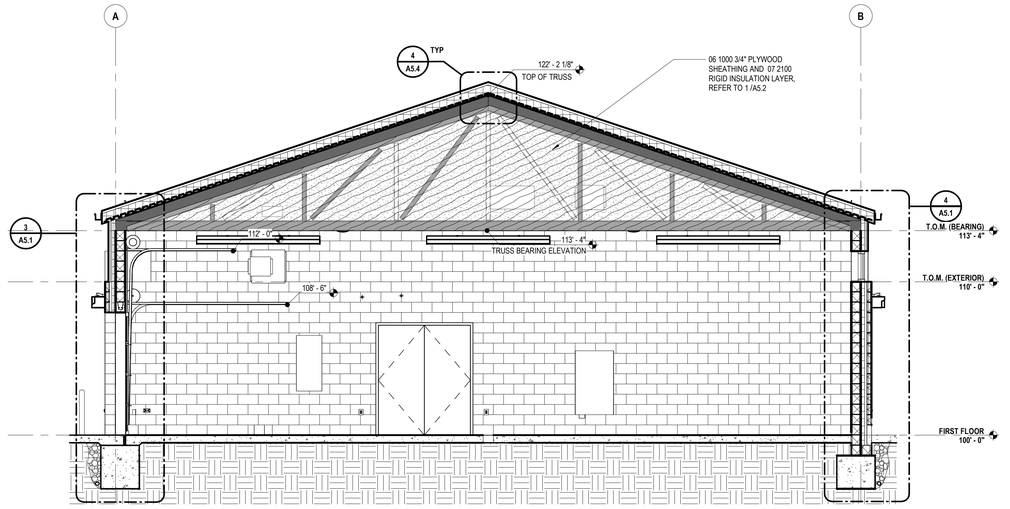
Exterior Elevations

IDS Project Number
24140-1000
OCC Project Number
SF25-003

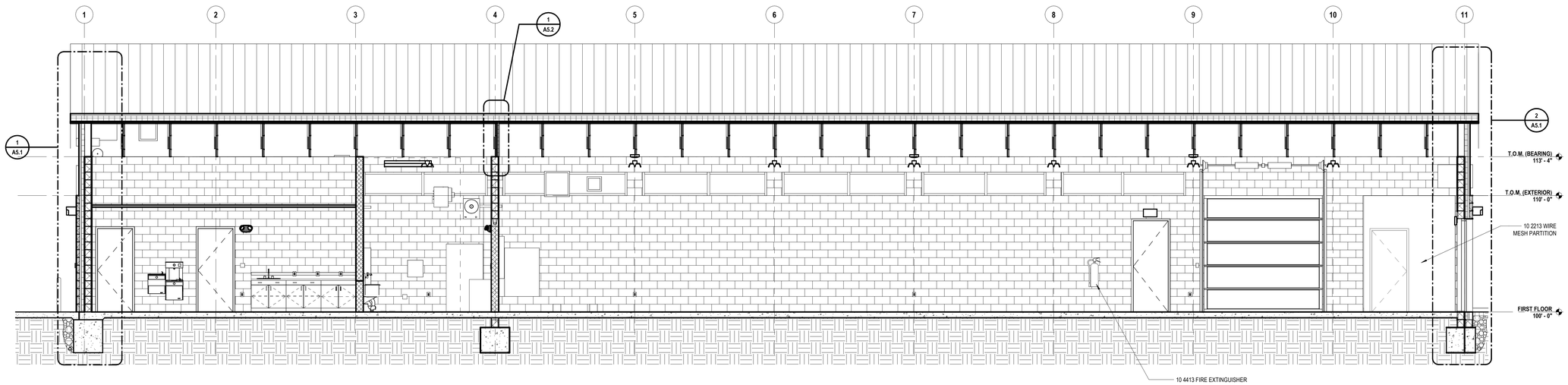
Drawing Number
A4.1



4 A2.1 BUILDING SECTION
1/4" = 1'-0"



1 A2.1 BUILDING SECTION
1/4" = 1'-0"



2 A2.1 BUILDING SECTION
1/4" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

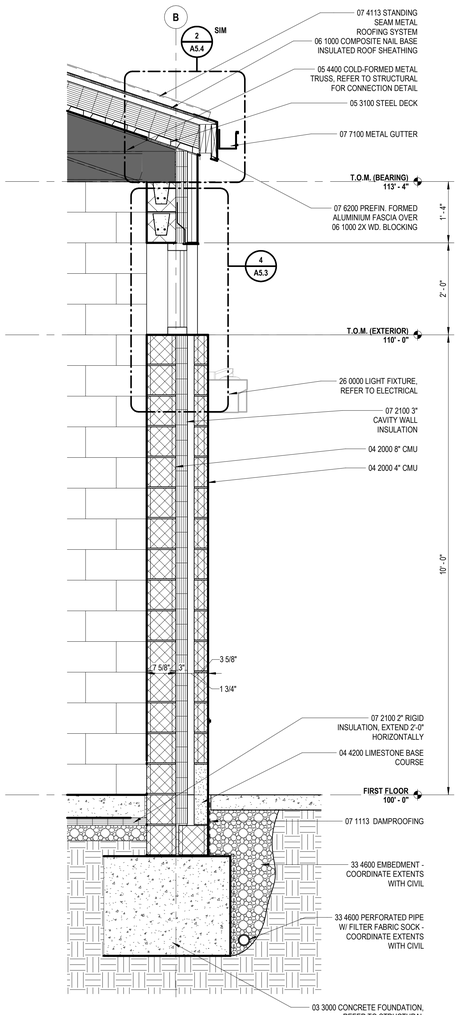
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

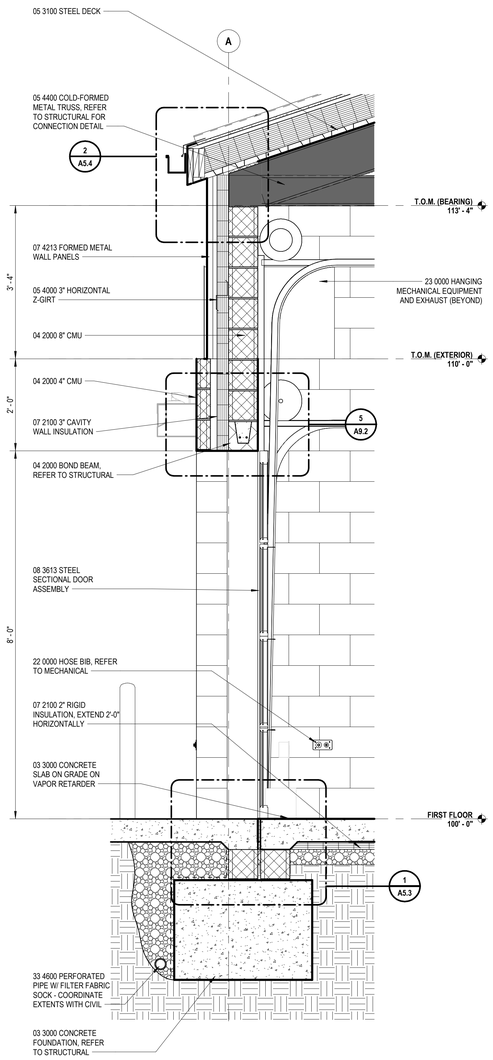
Building Sections

IDS Project Number
24140-1000
OCC Project Number
SF25-003

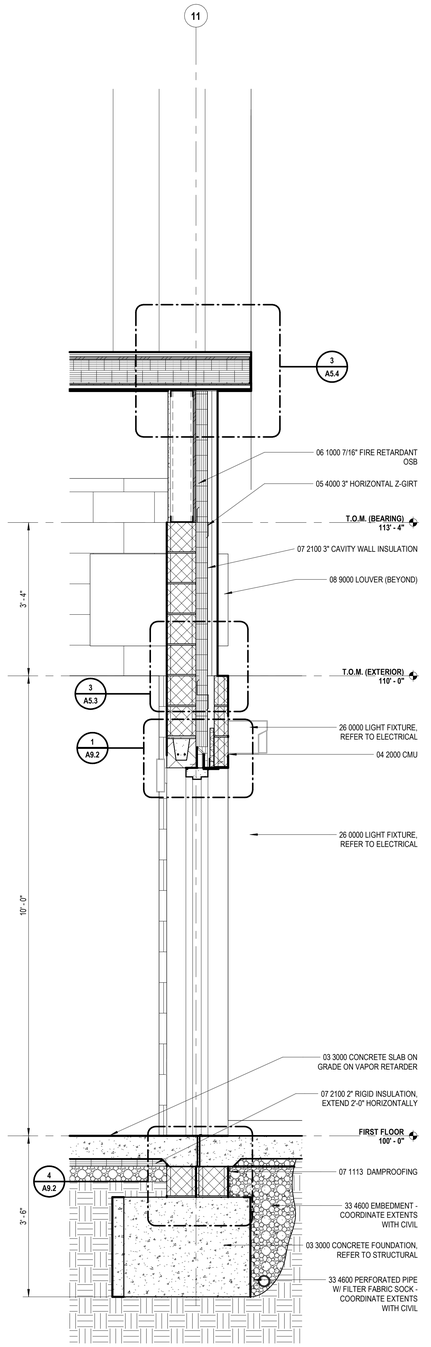
Drawing Number
A4.2



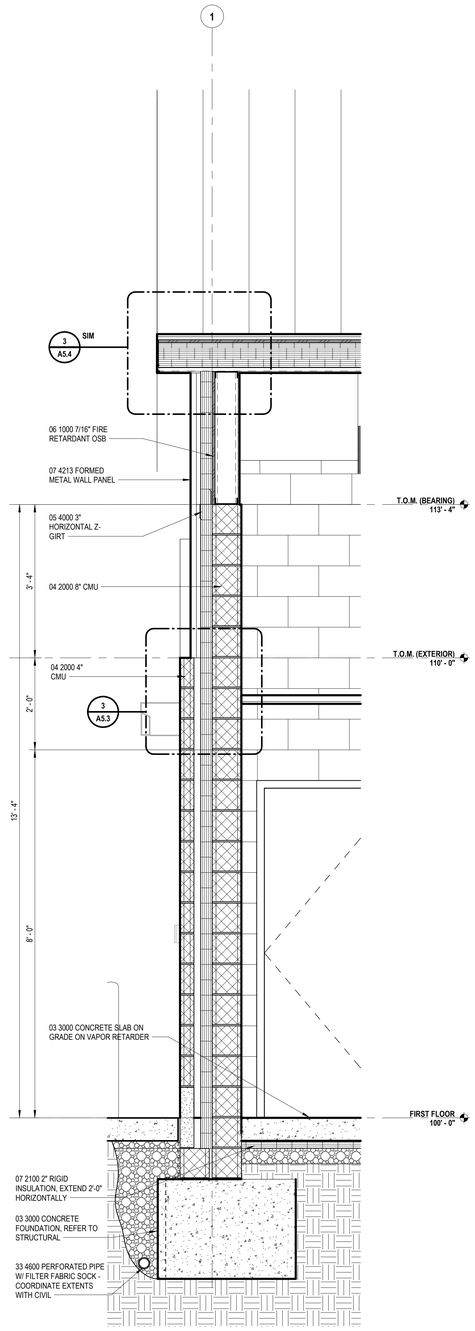
4 A4.1 WALL SECTION
3/4" = 1'-0"



3 A4.1 WALL SECTION
3/4" = 1'-0"



2 A4.1 WALL SECTION
3/4" = 1'-0"



1 A4.1 WALL SECTION
3/4" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

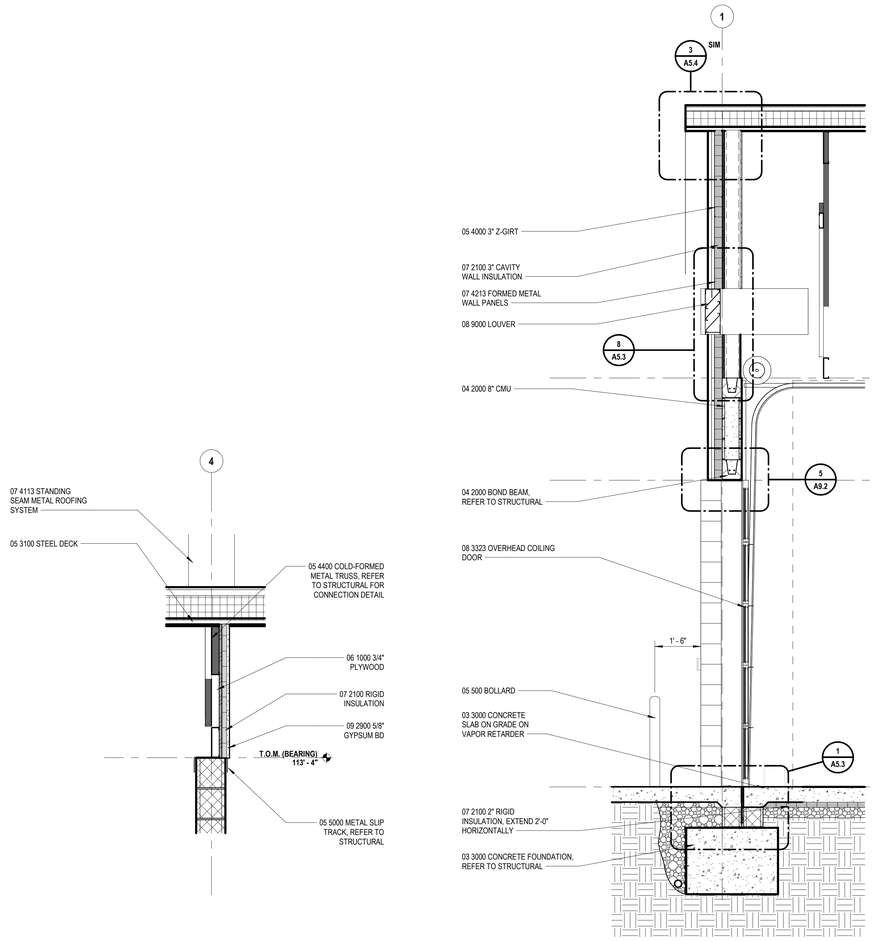
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Exterior Wall Sections and Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A5.1



2 A4.1 WALL SECTION
1/2" = 1'-0"

1 A4.2 GARAGE DIVIDER TRUSS
3/4" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

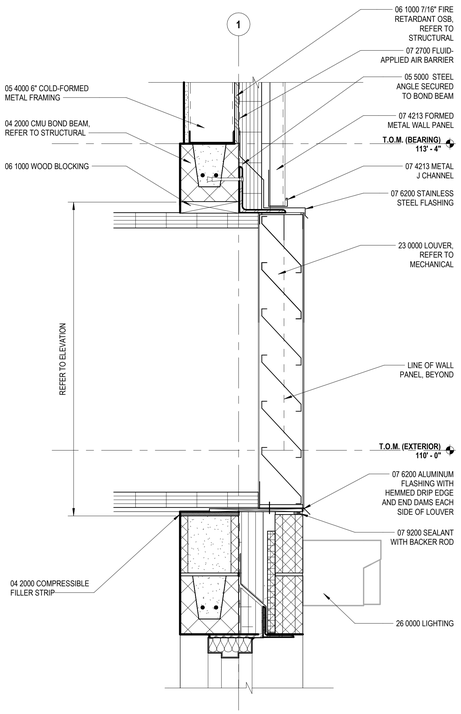
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

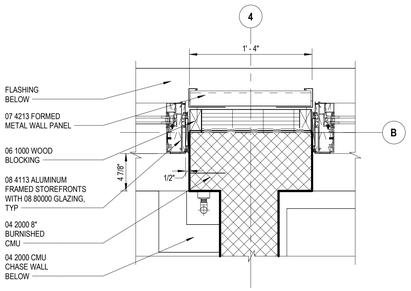
Exterior Wall Sections and Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

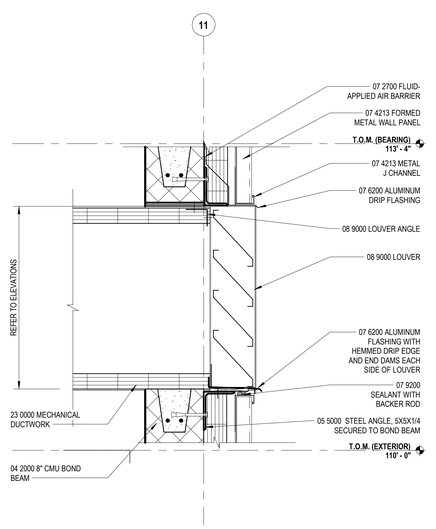
Drawing Number
A5.2



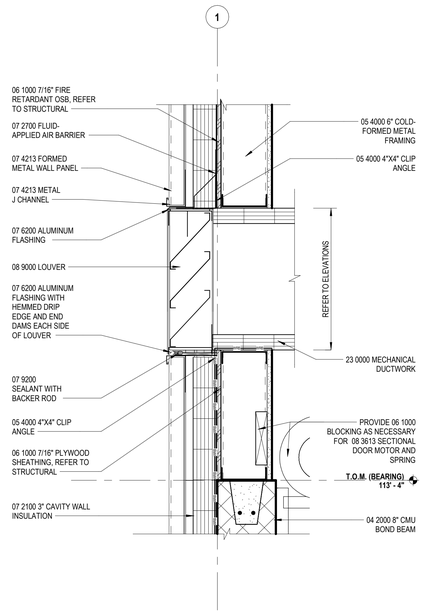
12 A4.1 LOUVER OVER DOOR
1 1/2" = 1'-0"



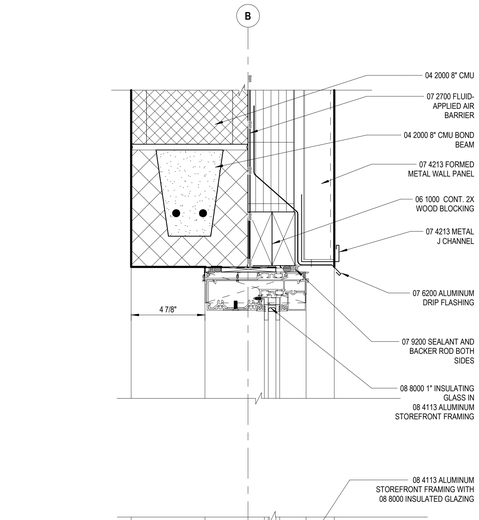
11 A2.2 CLERESTORY WINDOW JAMB DETAIL
1 1/2" = 1'-0"

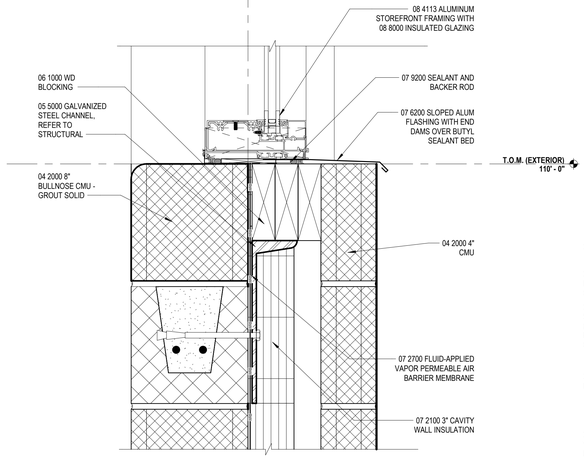


9 A4.1 LOUVER - CMU WALL
1 1/2" = 1'-0"

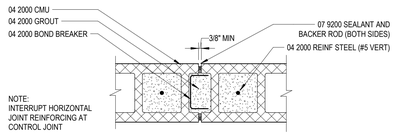


8 A4.1 LOUVER - STUD WALL
1 1/2" = 1'-0"

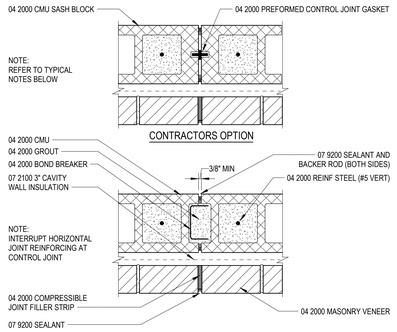




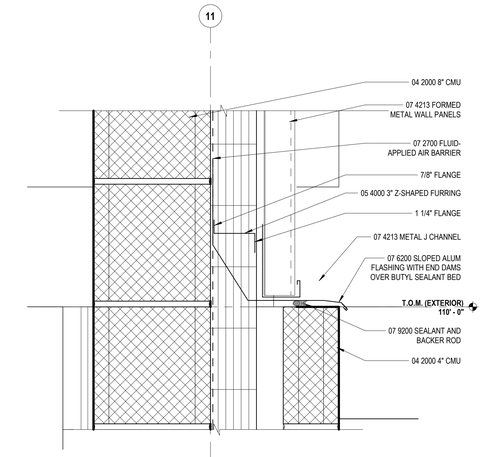
4 A5.1 CLERESTORY SECTION
3" = 1'-0"



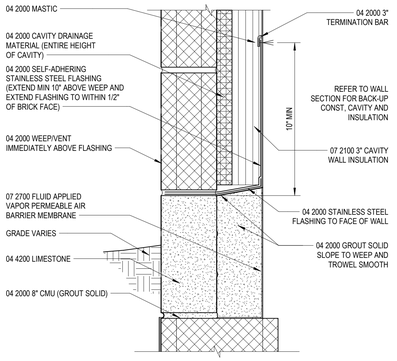
INTERIOR MASONRY WALL CONTROL/EXPANSION JOINT



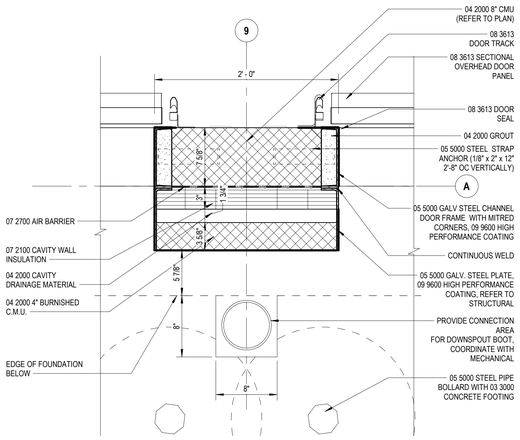
EXTERIOR MASONRY WALL CONTROL/EXPANSION JOINT



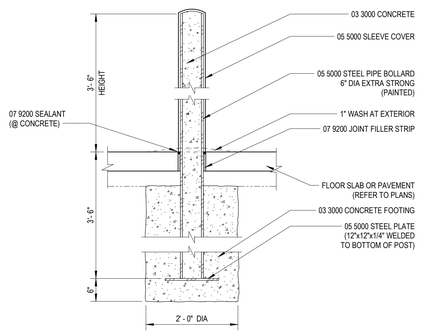
3 A5.1 CLADDING TRANSITION
3" = 1'-0"



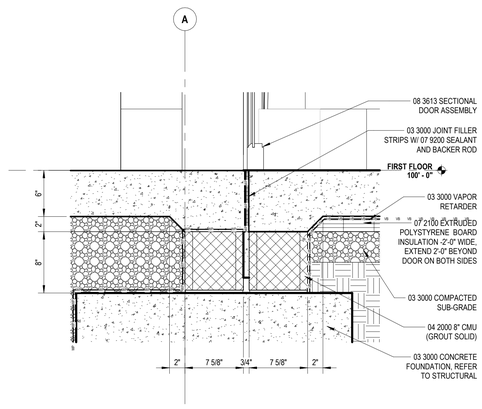
2 FLASHING @ GRADE
3" = 1'-0"



10 A2.1 OVERHEAD DOOR JAMB DETAIL
1 1/2" = 1'-0"



7 PIPE BOLLARD
3/4" = 1'-0"



1 A5.1 OVERHEAD DOOR SILL DETAIL
1 1/2" = 1'-0"

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

LEGEND

SECTION LINE TYPES

RM RM RM	07 5300 SINGLE-PLY MEMBRANE ROOFING SYSTEM
WRB WRB WRB	07 2700 FLUID-APPLIED AIR BARRIER
MB MB MB	07 2500 BUILDING WRAP WEATHER BARRIER
WP WP WP	07 1113 BITMINOUS DAMPPROOFING
VB VB VB	03 3000 VAPOR RETARDER

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	K. Reynolds
Drawn By	K. Reynolds
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	

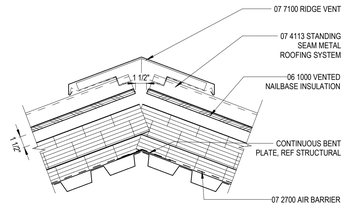
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

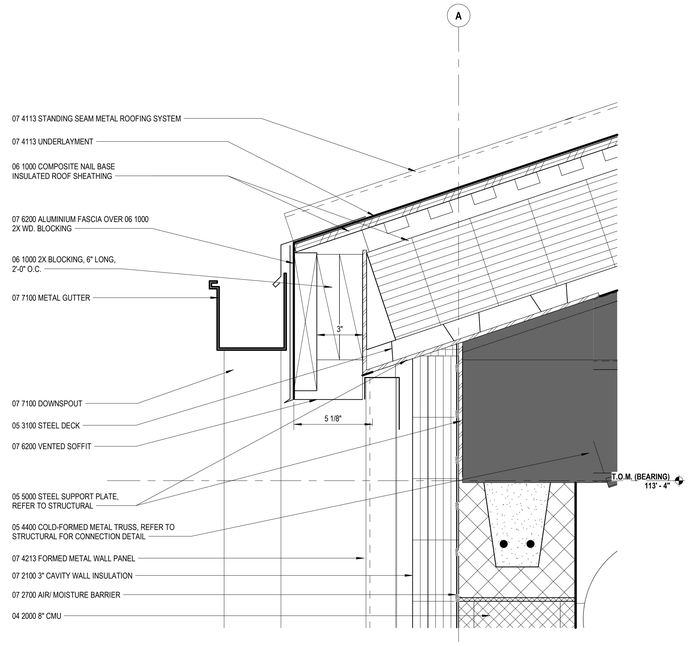
Exterior Wall Sections and Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

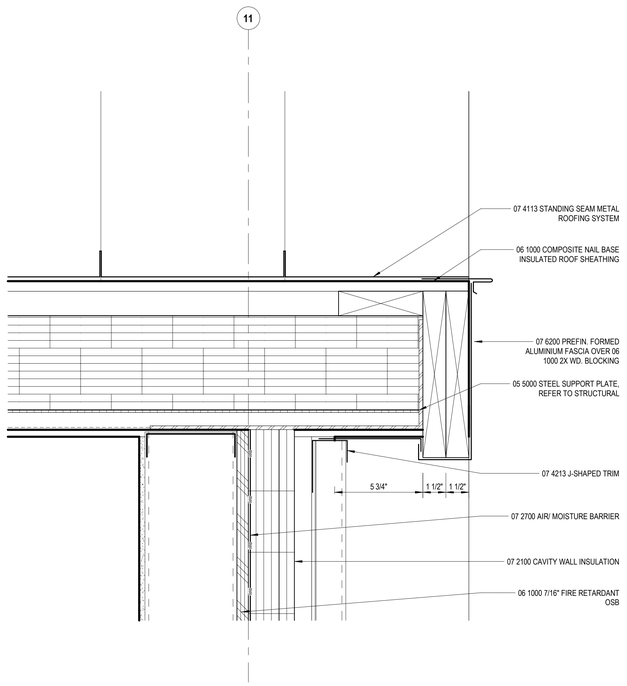
Drawing Number
A5.3



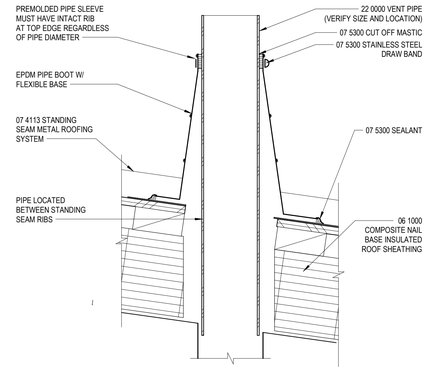
4 / A4.2 ROOF RIDGE VENT
1 1/2" = 1'-0"



2 / A5.1 STANDING SEAM METAL ROOF GUTTER
3" = 1'-0"



3 / A5.1 STANDING SEAM METAL RAKE DETAIL
3" = 1'-0"



1 / A2.3 TYPICAL VENT THRU ROOF
3" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

LEGEND

SECTION LINE TYPES

RM RM RM	07 5300 SINGLE-PLY MEMBRANE ROOFING SYSTEM
WRB WRB WRB	07 2700 FLUID-APPLIED AIR BARRIER
MB MB MB	07 2500 BUILDING WRAP WEATHER BARRIER
WP WP WP	07 1113 BITMINOUS DAMPPROOFING
VB VB VB	03 3000 VAPOR RETARDER

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	K. Reynolds
Drawn By	R. Phelps
Q.M. Review	C. Allick
Approved	B. Sundberg
Drawing Scale	As Noted

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Roof Sections and Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A5.4

GENERAL NOTES

INTERIOR ELEVATIONS

A. ALL DIMENSIONS ARE TO FACE OF GYP BOARD UON.

B. COORDINATE THE INTERFACING OF ALL TRADES WITH RESPECT TO DELIVERY AND INSTALLATION OF ALL FIXTURES AND EQUIPMENT

C. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS BEFORE INSTALLATION. CONSULT ARCHITECT WHEN ACTUAL FIELD CONDITIONS VARY FROM THOSE SHOWN ON CONSTRUCTION DOCUMENTS.

D. COORDINATE LOCATIONS OF ALL REQUIRED UTILITIES WITH THE TRADE PROVIDING THE SAME. REFER TO MECHANICAL AND ELECTRICAL SHEETS FOR ADDITIONAL INFORMATION.

E. FASTEN ALL TALL CASES TO THE ADJOINING WALL THROUGH THE BACK OR SIDE OF THE UNIT.

F. ALL COUNTERTOPS INSTALLED ALONG A WALL OR EQUIPMENT ARE TO HAVE 4" BACKSPLASH AND SIDE SPLASH UON.

G. FINISH ALL EXPOSED ENDS AND BACKS OF FREESTANDING CASEWORK/ MILLWORK.

H. PROVIDE LOCKS ON ALL CABINET DOORS AND DRAWERS UON. ALL LOCKS SHOULD BE KEYED ALIKE BY ROOM, PROVIDE MASTER KEYING.

I. REFER TO A10.1 ROOM FINISH SCHEDULE FOR COLORS AND FINISHES OF MATERIALS

J. REFER TO PLANS, SECTIONS AND DETAILS FOR CASEWORK DEPTH.

K. PROVIDE CABINET FILLERS AS NEEDED.

L. FURNITURE AND SPECIALTY EQUIPMENT BY OTHERS SHOWN FOR REFERENCE ONLY

M. FURNITURE SHOWN AT HALFTONE BY OWNER

N. PROVIDE PARTITION REINFORCEMENT AT LOCATIONS OF WALL MOUNTED EQUIPMENT. REFER TO DETAIL X/AX.X FOR TYPICAL REQUIREMENTS AT NEW CONSTRUCTION. CONDITIONS MAY VARY AT EXISTING PARTITIONS.

O. NOT ALL SIGN LOCATIONS ARE ELEVATED

P. COORDINATE LOCATIONS OF ALL REQUIRED UTILITY CONNECTIONS AND/OR REQUIREMENTS WITH THE TRADE PROVIDING THE SAME

LEGEND

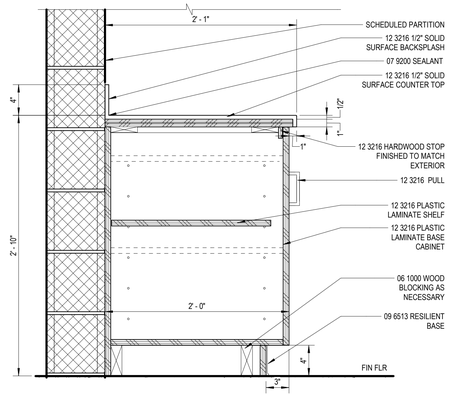
INTERIOR ELEVATIONS
NOTE: NOT ALL SYMBOLS MAY BE USED

XXXX — 06 4023 CASEWORK / MILLWORK TAG

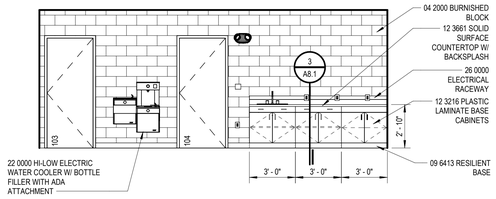
XXXX — 10 1100 VISUAL DISPLAY SURFACE MK= MARKERBOARD, TK=TACKBOARD XXXX INDICATES BOARD SIZE

XXXX — SPECIALTY EQUIPMENT BY OTHERS REFER TO FF&E OR TECHNOLOGY PACKAGES

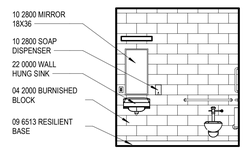
XX-XX — ACCENT MATERIAL, REFER TO COLOR CODES



3 / A8.1 — CASEWORK DETAIL
1 1/2" = 1'-0"



2 / A2.1 — LOBBY
1/4" = 1'-0"



1 / A2.1 — TOILET
1/4" = 1'-0"

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator: V. Grant
Project Designer: Designer
Project Architect / Engineer: K. Reynolds
Drawn By: K. Reynolds
Q.M. Review: C. Allick
Approved: B. Sundberg
Drawing Scale: As Noted

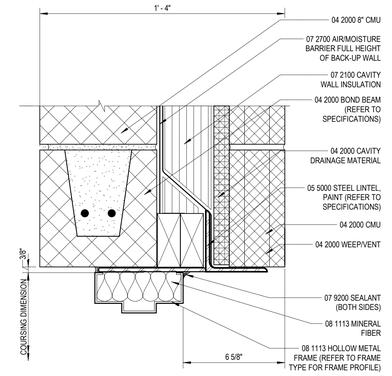
Issued for	Issue Date
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

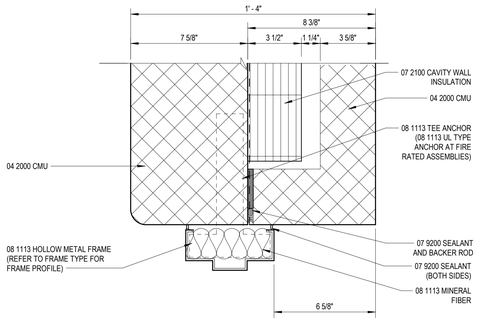
Interior Elevations and Details

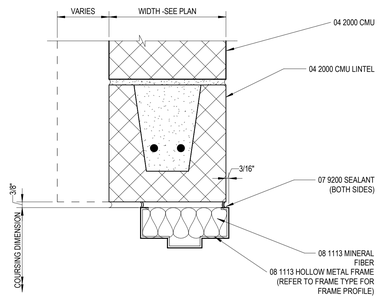
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A8.1

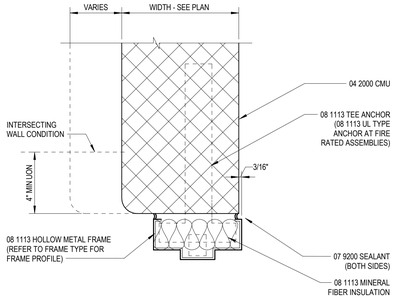


1 A5.1 **HEAD**
3" = 1'-0"

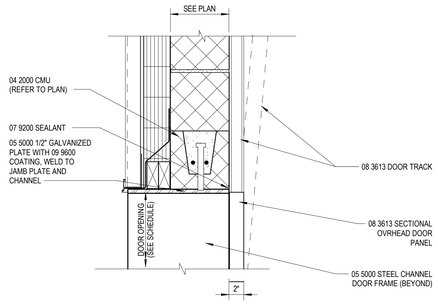




2 DR SCHDL **JAMB**
3" = 1'-0"

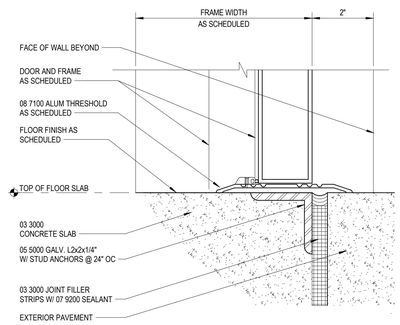


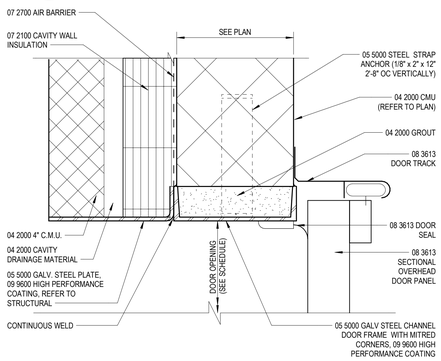
7 DR SCHDL **CMU HEAD DETAIL**
3" = 1'-0"



5 A5.1 **HEAD - SECTIONAL OVERHEAD DOOR**
1 1/2" = 1'-0"

3 DR SCHDL **JAMB**
3" = 1'-0"



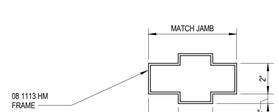


4 A5.1 **SILL**
6" = 1'-0"

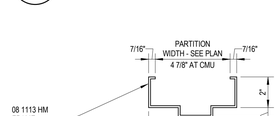
6 DR SCHDL **JAMB - SECTIONAL OVERHEAD DOOR**
3" = 1'-0"

DOOR SCHEDULE

DOOR NUMBER	SIZE				DOOR				FRAME				DETAILS			HARDWARE SET	DOOR ASSEMBLY RATING	WALL RATING	REMARKS
	WIDTH	LEAF 1	LEAF 2	HEIGHT	TYPE	MATERIAL	FINISH/ CC	FRGM	TYPE	MATERIAL	FINISH / CC	FRGM	HEAD	JAMB	SILL				
101.1	3' - 0"	3' - 0"		7' - 10"	F	HM	PT-02		A	HM	PT-02		1/A9.2	2/A9.2	4/A9.2	02			3
101.2	10' - 0"			10' - 0"	SDA	STL							5/A9.2	6/A9.2	1/A5.3				1, 2, 4
101.3	3' - 0"	3' - 0"		7' - 10"	F	HM	PT-02		A	HM	PT-02		1/A9.2	2/A9.2	4/A9.2	02			3
101.4	6' - 0"	3' - 0"	3' - 0"	7' - 2"	F	HM	PT-02		A	HM	PT-02		3/A9.2	3/A9.2		07			
102.1	3' - 0"	3' - 0"		7' - 10"	F	HM	PT-02		A	HM	PT-02		1/A9.2	2/A9.2	4/A9.2	02			
102.2	3' - 0"	3' - 0"		7' - 2"	F	HM	PT-02		A	HM	PT-02		3/A9.2	3/A9.2		05			
103	3' - 0"	3' - 0"		7' - 2"	F	HM	PT-02		A	HM	PT-02		3/A9.2	3/A9.2		08			
104	3' - 0"	3' - 0"		7' - 2"	F	HM	PT-02		A	HM	PT-02		3/A9.2	3/A9.2		06			
105	3' - 0"	3' - 0"		7' - 2"	F	HM	PT-02		A	HM	PT-02		3/A9.2	3/A9.2		06			
106.1	10' - 0"			8' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 6
106.2	10' - 0"			8' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 5
106.3	10' - 0"			8' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 5
106.4	10' - 0"			8' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 5
106.5	10' - 0"			8' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 5
106.6	10' - 0"			10' - 0"	SDA	STL							5/A9.2	11/A5.3	1/A5.3				1, 2, 5
106.7	3' - 0"	3' - 0"		7' - 10"	F	HM	PT-02		A	HM	PT-02		1/A9.2	2/A9.2	4/A9.2	04			3
106.8	3' - 0"	3' - 0"		7' - 10"	F	HM	PT-02		A	HM	PT-02		1/A9.2	2/A9.2	4/A9.2	04			3
106.9	10' - 0"			10' - 0"	SDA	STL							5/A9.2	6/A9.2	1/A5.3				1, 2, 5
107	3' - 0"	3' - 0"		7' - 0"	F	CHAIN LINK			A	CHAIN LINK									2



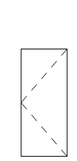
2 DR SCHED **FRAME - HM**
3" = 1'-0"

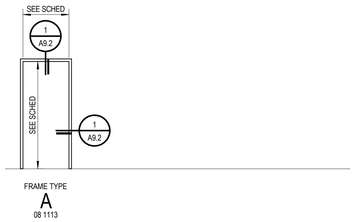


1 DR SCHED **FRAME - HM**
3" = 1'-0"

DOOR TYPES
1/4" = 1'-0"

NOTE: ALL GLASS TO BE 1/4" SAFETY GLASS EXCEPT USE FIRE RATED GLASS AT FIRE RATED DOORS, SIDELITES, ETC., UON





FRAME TYPES
1/4" = 1'-0"

NOTE: ALL GLASS TO BE 1/4" SAFETY GLASS EXCEPT USE FIRE RATED GLASS AT FIRE RATED DOORS, SIDELITES, ETC., UON

GENERAL NOTES

DOOR SCHEDULE

A. REFER TO THE DRAWINGS FOR DOOR LOCATIONS

B. "DOOR NUMBER" CORRESPONDS TO THE DOOR NUMBER INDICATED ON THE DRAWINGS. NOTE: AT EXISTING WALL OPENINGS, FIELD VERIFY SIZE OF DOORS AND FRAMES.

C. (DOOR) "SIZE" INDICATES THE NOMINAL WIDTH AND HEIGHT OF THE DOOR IN FEET AND INCHES. ALL DOORS ARE 1 3/4" THICK UNLESS OTHERWISE NOTED.

D. "DOOR AND FRAME TYPE/MATL/FINISH" INDICATES THE CODES FOR TYPE (INDICATED ON THE DRAWINGS), MATERIAL AND FINISH.

E. "CC" INDICATES THE COLOR CODE FOR FINISHES OF DOORS AND FRAMES, SEE "SCHEDULE - COLOR CODES".

F. "DETAILS HEAD- JAMB-SILL" INDICATES THE DETAIL NUMBER INDICATED ON THE DRAWINGS.

G. "HARDWARE SET" INDICATES HARDWARE SET NUMBERS SPECIFIED IN 08 7100 - DOOR HARDWARE.

H. "DOOR ASSEMBLY RATING" INDICATES THE MINIMUM FIRE RESISTANCE RATING FOR FIRE DOORS AND/OR SIDELITES.

I. "WALL RATING" INDICATES THE FIRE RESISTANCE RATING OF THE WALL CONTAINING THE DOOR.

J. "FRGM" INDICATES FIRE-RATED GLAZING MARKINGS.

K. "REMARKS" INDICATES ANY SPECIAL REQUIREMENTS FOR A DOOR AND FRAME - SEE "DOOR SCHEDULE - REMARKS".

REMARKS

DOOR SCHEDULE

1. POWER OPERATED DOOR PACKAGE DOOR ASSEMBLY (ALL HARDWARE BY DOOR MANUFACTURER)
2. DOOR AND HARDWARE TO BE PROVIDED BY MANUFACTURER
3. ACCESS CONTROL SYSTEM
4. TRACK INSTALL HEIGHT APPROX 13' - 4" AFF.
5. TRACK INSTALL HEIGHT APPROX 12' - 0" AFF.
6. TRACK INSTALL HEIGHT APPROX 8' - 6" AFF. (EQUIPMENT ABOVE)

FIRE-RATED GLAZING ASSEMBLIES MARKING

W	MEETS WALL ASSEMBLY CRITERIA
OH	MEETS FIRE WINDOW ASSEMBLY CRITERIA INCLUDING THE HOSE STREAM TEST
D	MEETS FIRE DOOR ASSEMBLY CRITERIA
H	MEETS FIRE DOOR ASSEMBLY "HOSE STREAM" TEST
T	MEETS 450 DEG F TEMPERATURE RISE CRITERIA FOR 30 MINUTES
NT	DOES NOT MEET 450 DEG F TEMPERATURE RISE CRITERIA FOR 30 MINUTES
XXX	TIME IN MINUTES OF THE FIRE RESISTANCE OR FIRE PROTECTION RATING OF THE GLAZING ASSEMBLY

ABBREVIATIONS

DOOR SCHEDULE

ALUM	ALUMINUM
ANOD	ANODIZED
CC	COLOR CODES
(E)	EXISTING
FBR	FIBERGLASS
FRP	FIBERGLASS REINFORCED PANEL
FAC	FACTORY
GL	GLASS
180	180 MINUTES (3 HOUR)
90	90 MINUTES (1 1/2 HOUR)
60	60 MINUTES (1HOUR)
45	45 MINUTES (3/4 HOUR)
20	20 MINUTES (1/3 HOUR)
HM	HOLLOW METAL
HDWE	HARDWARE
MATL	MATERIAL
P LAM	PLASTIC LAMINATE
PT	PAINT
PVF	POLYVINYL FLUORIDE COATING (KYNAR)
STN	STAIN
ST STL	STAINLESS STEEL
STL	STEEL
WD	WOOD
WM	WIRE MESH

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator: V. Grant
Project Designer: Designer
Project Architect / Engineer: K. Reynolds
Drawn By: K. Reynolds
Q.M. Review: C. Allick
Approved: B. Sundberg
Drawing Scale: As Noted

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Door Schedule and Details

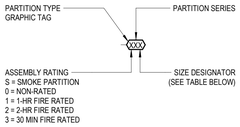
IDS Project Number: **24140-1000**
OCC Project Number: **SF25-003**

Drawing Number: **A9.2**

GENERAL NOTES

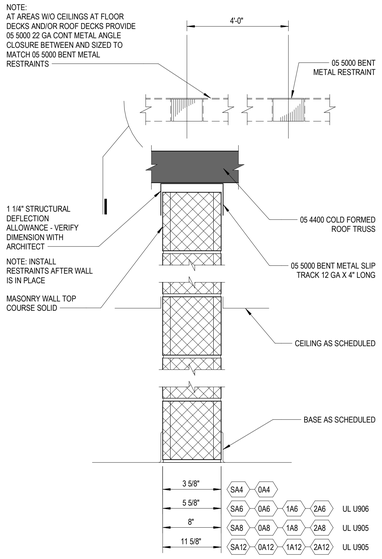
INTERIOR PARTITIONS

1. "WALL" AND "PARTITION" ARE USED TO DENOTE EITHER WALLS OR PARTITIONS INTERCHANGEABLY.
2. REFER TO SHEET AR.0 - ARCHITECTURAL REFERENCE INFORMATION FOR ABBREVIATIONS, SYMBOLS, AND GRAPHIC INDICATIONS.
3. REFER TO COMPOSITE LIFE SAFETY PLANS FOR PARTITION FIRE RATINGS.
4. REFER TO ROOM FINISH SCHEDULE FOR WALL FINISHES AND WALL BASE.



MATERIAL	DESIGNATION SIZE	ACTUAL SIZE	SPACING
MASONRY	4 6 8 12	3 5/8 " 5 5/8 " 7 5/8 " 11 5/8 "	N/A
STEEL STUDS	1 2 3 4 6	1 5/8 " 2 1/2 " 3 5/8 " 4" 6"	16" OC
FURRING	0 1 2 3	7/8 " 1 5/8 " 2 1/2 " 3 5/8 "	16" OC
SHAFTWALL C-H STUDS	2 4 6	2 1/2 " 4" 6"	24" OC

5. SUBSTITUTE 09 2900 - TILE BACKING BOARD AT LOCATIONS TO RECEIVE A TILE WALL FINISH.
6. ALL NON-LOAD BEARING METAL WALL FRAMING SHALL BE BASED ON TOTAL STUD HEIGHT. REFER TO SPECIFICATION SECTIONS 05 4000 - COLD-FORMED METAL FRAMING, 09 2116 - GYPSUM BOARD SHAFT WALL ASSEMBLIES AND 09 2216 - NON-STRUCTURAL METAL FRAMING FOR ADDITIONAL REQUIREMENTS.
7. WHERE ROOMS WITH DIFFERENT PARTITION REQUIREMENTS ARE ADJACENT, THE PARTITION WITH THE GREATER FIRE-RATING AND/OR STC SHALL BE USED BETWEEN THEM.
8. AT INTERSECTIONS OF DIS-SIMILAR PARTITON TYPES, THE HIGHEST RATED PARTITION IS TO RUN THROUGH THE INTERSECTION TO MAINTAIN ENCLOSURE. MAINTAIN RATING OF RATED PARTITION AT INTERSECTION WITH COLUMN ENCLOSURES BY EXTENDING RATED CLOSURE AS REQUIRED.
9. FIRE-RATED PARTITIONS SHALL BE CONSTRUCTED ACCORDING TO THE FIRE TEST INDICATED. NO SUBSTITUTIONS OF MATERIALS OR DEVIATIONS FROM CONSTRUCTION ARE ALLOWED. ADDITIONAL LAYERS MAY BE REQUIRED FOR ACOUSTICAL OR OTHER REASONS AND MUST BE EXECUTED AS SHOWN.
10. STC RATINGS ARE MINIMUM ACOUSTICAL PERFORMANCE REQUIREMENT. SPECIFIC ACOUSTICAL TESTS ARE GIVEN FOR REFERENCE ONLY. SOUND ATTENUATION BLANKET THICKNESS SHALL BE AS FOLLOWS:
    A. 1 1/2 " FOR PARTITIONS WITH 1 5/8 " AND 2 1/2 " STUDS (INCLUDING SHAFTWALLS).
    B. 3" FOR PARTITIONS WITH 3 5/8 ", 4" OR 6" STUDS.
    C. 3" FOR SHAFTWALLS WITH 4" OR 6" STUDS UNO.
    D. AS REQUIRED FOR FIRE RATING.
11. DETAILS ARE DIAGRAMMATIC - PRECISE REQUIREMENTS OF TESTS ASSEMBLIES SHALL GOVERN.



PARTITION SERIES 'A'

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
K. Reynolds
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale
No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Partition Types

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A9.3

SCHEDULE - ROOM FINISH

NUMBER	NAME	FLOOR	BASE	WALL	CEILING	REMARKS
101	SERVICE BAY	RF-01	B-01	BB-01	EXP-01	2
102	LOBBY	CONC-01	B-01	BB-01	AC-01	1
103	TOILET	CONC-01	B-01	BB-01	AC-01	
104	JC	CONC-01	B-01	BB-01	AC-01	
105	STORAGE	CONC-01	B-01	BB-01	AC-01	
106	GARAGE	CONC-01	B-01	BB-01	EXP-01	2

SCHEDULE - COLOR CODES

COLOR CODES	PRODUCT / MATERIAL	MANUFACTURER	PRODUCT NAME / NUMBER	COLOR NAME / NUMBER	SIZE	FINISH	NOTES
AC-01	ACOUSTICAL PANEL	USG	RADAR, HIGH NRC/CAC, SLT#22350	FLAT WHITE 050	2' X 2'	15/16 GRID	09 95113 ACOUSTICAL PANEL CEILING
B-01	BASE	ROPPE	STANDARD TOE BASE	CHARCOAL	4" H	RUBBER	09 6513 RESIL BASE
BB-01	BURNISHED BLOCK	GRAND BLANC	BURNISHED BLOCK	NIAGARA	8"	SEALED	04 2000 BURNISHED BLOCK
CONC-01	CONCRETE HRD/ SEALER	PROSCO	CONSOLIDECK			HARDNER/ SEALER/ WATER REPELLENT	07 1900 WATER REPELLENT INCLUDED, REF SPEC
E PT-01	EPOXY PAINT	SHERWIN WILLIAMS		RESERVED WHITE SW 7056		EPOXY	09 9600 HIGH PERFORMANCE COATING
PL-01	PLASTIC LAMINATE	FORMICA		SARUM TWILL/ 8827-58		MATTE	12 3216 PLAM CLAD CASEWORK
PT-01	PAINT	SHERWIN WILLIAMS		SMOKE EMBERS 1466			09 9100 GENERAL WALL PAINT/ GYP.BD. CEILINGS
PT-02	PAINT	SHERWIN WILLIAMS		NOTRE DAME CSP-570			09 9100 DOOR AND FRAMES
PT-03	PAINT	SHERWIN WILLIAMS		NOTRE DAME CSP-570			09 9100 EXPOSED CEILINGS
RF-01	RESINOUS FLOOR COATING	STONHARD	STONECLAD	PEWTER			09 6723 RESINOUS FLOORING
SS-01	SOLID SURFACE MATERIAL	CORIAN		ASH CONCRETE			06 4023 LOBBY COUNTERTOPS

GENERAL NOTES

ROOM FINISH SCHEDULE

* REFER TO ABBREVIATIONS LIST FOR MATERIAL CODE DESCRIPTIONS

A. "ROOM NUMBER AND ROOM NAME" CORRESPOND TO THE NUMBER AND NAMES INDICATED ON THE SHEETS.

B. "MATERIAL/FINISH" INDICATE THE SPECIFIC MATERIALS AND FINISHES TO BE USED TO CONSTRUCT AND FINISH THE FLOORS, BASE, WALLS AND CEILINGS.

C. "CC" INDICATES THE COLOR CODE FOR EACH MATERIAL AND/OR FINISH, REFER TO "COLOR CODES".

D. "REMARKS" INDICATES ANY SPECIAL REQUIREMENTS FOR THE MATERIAL AND FINISH IN A ROOM - SEE "ROOM FINISH SCHEDULE REMARKS".

E. "CEILING" IS THE MATERIAL AND FINISH AT THE UNDERSIDE OF THE FLOOR OR ROOF ABOVE. "SOFFFIT" IS THE MATERIAL AND FINISH AT THE UNDERSIDE OF THE STAIR RUN.

F. REFER TO A10 SERIES FOR FLOOR TILE PATTERNS AND MATERIALS.

G. REFER TO A8 SERIES FOR INTERIOR ELEVATIONS.

H. "E" PREFIX TO THE "PT" CODE REFER TO EPOXY PAINT MATERIAL (E PT-XX).

REMARKS

ROOM FINISH SCHEDULE

1. PL-01 PLASTIC LAMINATE BASE CABINETS WITH SS-01 COUNTERTOP
2. EXPOSED STUCTURE AND MEP INFRASTRUCTURE TO BE PAINTED EXP-01

GENERAL NOTES

FINISH PLAN

A. REFER TO ROOM FINISH SCHEDULE AND COLOR CODES FOR MORE INFORMATION.

LEGEND

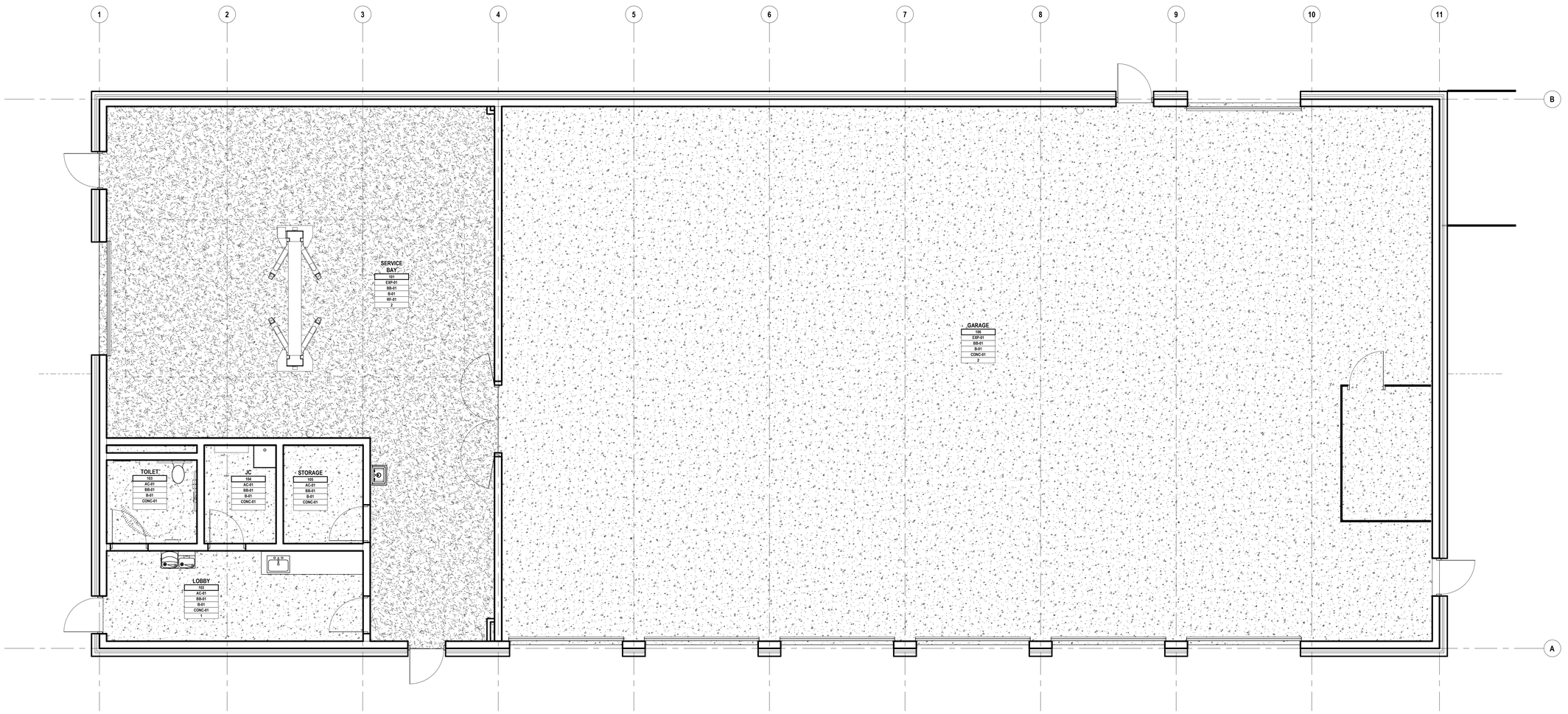
FINISH PLAN
NOTE: NOT ALL SYMBOLS MAY BE USED

- 03 3000 CONCRETE
- 09 6723 RESINOUS FLOORING
- X / X — FLOOR MATERIAL TRANSITION TAG; REFER TO A.XX FOR TRANSITION/ SILL DETAILS
- XX-XX — FLOOR COLOR CODE TAG - REFER TO ROOM FINISH SCHEDULE SHEET A9.1
- FLOORING INSTALLATION DIRECTION
- XX-XX — ACCENT MATERIAL, REFER TO COLOR CODES
- FLOORING INSTALLATION METHOD - ASHLAR
- FLOORING INSTALLATION METHOD - MONOLITHIC
- FLOORING INSTALLATION METHOD - QUARTER TURN
- FLOORING INSTALLATION METHOD - NON-DIRECTIONAL
- FLOORING INSTALLATION METHOD - HERINGBONE

ROOM NAME
ROOM #
Ceiling Finish
Wall Finish
Base Finish
Floor Finish
Comments

NOTE: FINISHES INDICATED IN ROOM FINISH TAGS ARE GENERAL OVERALL FINISHES FOR ROOM UNLESS OTHERWISE INDICATED BY NOTE, REMARK, DETAIL AND/OR ELEVATION

ROOM SPECIFIC FINISH REMARKS, REFER TO REMARKS LEGEND FOR ADDITIONAL INFORMATION



iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
Designer
Project Architect / Engineer
K. Reynolds
Drawn By
Author
Q.M. Review
C. Allick
Approved
B. Sundberg
Drawing Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Room Finish Schedule, Color Codes, First Floor Finish Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
A10.1

ABBREVIATIONS

A	
AAV	AIR ADMITTANCE VALVE
AC	AIR COMPRESSOR
ACU	AIR CONDITIONER
ACCU	AIR COOLED CONDENSING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFT	AIR FLOW TRANSMITTED
AHU	AIR HANDLING UNIT
APD	AIR PRESSURE DROP
AL	ACTIVE LENGTH
APPROX	APPROXIMATELY
ARCH	ARCHITECTURAL
AS	AIR/DIRT SEPARATOR
ASR	AUTOMATIC SPRINKLER RISER
B	
B	BOILER
BAS	BUILDING AUTOMATION SYSTEM
BBD	BOILER BLOWDOWN
BCU	BLOWER COIL UNIT
BF	BARRIER FREE
BFP	BOILER FEEDWATER PUMP
BHP	BRAKE HORSEPOWER
BP	BACKFLOW PREVENTER
BT	BUFFER TANK
BTU	BRITISH THERMAL UNIT
BWV	BACKWATER VALVE
C	
CA	COMPRESSED AIR
CD	COLD DECK
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CI	CAST IRON
CLG	CEILING
CO	CLEANOUT
COND	CONDENSATE (COOLING)
CONN	CONNECTION
CONT	CONTINUATION
CONTR	CONTRACTOR
CONV	CONVECTOR
CPU	CENTRAL PROCESSING UNIT
CR	CONDENSATE RETURN (STEAM)
CT	COOLING TOWER

C (CONT)	
CUH	CABINET UNIT HEATER
CV	CONTROL VALVE
CW	COLD WATER
D	
DB	DRY BULB
DBP	DOMESTIC WATER PRESSURE BOOSTER PUMP
DDC	DIRECT DIGITAL CONTROL
DEG	DEGREE
DN	DOWNSPOUT NOZZLE
DN	DAY/NIGHT
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DPR	DAMPER
DAT	DRIP & TRAP
DTC	DRAIN TILE CONNECTION
DWH	DOMESTIC WATER HEATER
DX	DIRECT EXPANSION
E	
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
ECUH	ELECTRIC CABINET UNIT HEATER
EDB	ENTERING DRY BULB
EEW	EMERGENCY EYE WASH
EEWS	EMERGENCY EYE WASH AND SHOWER
EF	EXHAUST FAN
EG	EXHAUST GRILLE
EHC	ELECTRICAL HEATING COIL
EIC	ELECTRICAL INFRARED HEATER
EJ	EXPANSION JOINT
ELEV	ELEVATION
ELEC	ELECTRICAL
EMCS	ENERGY MONITORING AND CONTROL SYSTEM
ENT	ENTERING
ERU	ENERGY RECOVERY UNIT
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EWB	ENTERING WET BULB
EWC	ELECTRICAL WATER COOLER
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
EXP	EXPANSION
(E)	EXISTING

F	
F	FAHRENHEIT
FA	FACE AREA
F & BD	FACE AND BYPASS DAMPER
FCU	FAN COIL UNIT
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHV	FIRE HOSE VALVE
FL	FIRE LINE
FLA	FULL LOAD AMPS
FMS	FLOW MEASUREMENT STATION
FPM	FEET PER MINUTE
FT	FOOT/FEET
F&T	FLOAT & THERMOSTATIC STEAM TRAP
FTR	FINNED TUBE RADIATION
FVC	FIRE VALVE CABINET
G	
GA	GAGE/GAUGE
GALV	GALVANIZED
GI	GREASE INTERCEPTOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
H	
HUMD	HUMIDIFIER
HB	HOSE BIBB
HD	HOT DECK
HO	HUB OUTLET
HOA	HAND-OFF-AUTO
HP	HORSEPOWER
HP STM	HIGH PRESSURE STEAM
HV	HEATING AND VENTILATION UNIT
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HX	HEAT EXCHANGER
I	
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IH	INTAKE HOOD
IW	INDIRECT WASTE

L	
LAT	LEAVING AIR TEMPERATURE
LAV	LAVATORY
LBS/HR	POUNDS PER HOUR
LD	LINEAR DIFFUSER
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LWT	LEAVING WATER TEMPERATURE
M	
MAT	MIXED AIR TEMPERATURE
MAU	MAKE UP AIR UNIT
MAV	MANUAL AIR VENT
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGV	MASTER GAS VALVE
MH	MANHOLE
MIN	MINIMUM
MS	MOTOR STARTER
MZ	MULTI-ZONE UNIT
N	
NC	NORMALLY CLOSED
NCR	NOISE CRITERION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
No.	NUMBER
NTS	NOT TO SCALE
O	
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OS&Y	OUTSIDE SCREW AND YOKE
OV	OUTLET VELOCITY
OST	OVERFLOW STORM

P	
P	PUMP
PA	PIPE ANCHOR
PAC	PACKAGED AIR CONDITIONING UNIT
PCR	PUMPED CONDENSATE RETURN
PD	PRESSURE DROP
PG	PIPE GUIDE
PLBG	PLUMBING
PSAN	PUMPED SANITARY
PSI	POUNDS PER SQUARE INCH - GAUGE
PRV	PRESSURE REDUCING VALVE
PVC	POLYVINYL CHLORIDE PLASTIC
R	
RA	RETURN AIR
RAD	RADIATOR
RG	RETURN AIR GRILLE
RCP	RADIANT CEILING PANEL
RH	RELATIVE HUMIDITY
RF	RETURN FAN
RLA	RELIEF AIR
RLH	RELIEF HOOD
RM	ROOM
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RR	RETURN REGISTER
RS	ROOF SUMP
RTU	ROOF TOP UNIT
S	
SA	SUPPLY AIR
SAN	SANITARY
SAT	SUPPLY AIR TEMPERATURE
SC	STEAM COIL
SD	SUPPLY DIFFUSER
SF	SUPPLY FAN
SG	SUPPLY AIR GRILLE
SHT	SHEET
SMP	SNOW MELT SYSTEM
SP	SUMP PUMP
SPECS	SPECIFICATIONS

S (CONT)	
SP HD	SPRINKLER HEAD
SPKR	SPRINKLER
SS	SERVICE SINK
SSF	SIDE STREAM FILTER
ST	STORM
STM	STEAM
SV	SOLENOID VALVE
T	
TC	TEMPERATURE CONTROL
TD	TRENCH DRAIN
TV	TURNING VANES
TW	TEMPERATURE WATER
TYP	TYPICAL
U	
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORY
UR	URINAL
UV	UNIT VENTILATOR
V	
V	VENT
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VI	VIBRATION ISOLATOR
VRF	VARIABLE REFRIGERANT FLOW
VS	VENT STACK
VSD	VARIABLE SPEED DRIVE
VTR	VENT THROUGH ROOF
W	
W	WASTE
W&V	WASTE AND VENT
WB	WET BULB
WC	WATER CLOSET
WCO	WALL CLEANOUT
WG	WATER GAUGE
WH	WALL HYDRANT
WS	WATER SOFTENER

SYMBOLS

FIRE DAMPER	
SMOKE DAMPER	
SMOKE DAMPER AND FIRE DAMPER	
VOLUME DAMPER WITH REMOTE OPERATOR	MH
FLEXIBLE DUCT	
CUH OR CONVECTOR (SURFACE)	
FINNED TUBE RADIATION	
TERMINAL VOLUME BOX (W/O HEATING COIL)	
TERMINAL VOLUME BOX (W/ HEATING COIL)	
FLEXIBLE PIPE CONNECTION	
#" / #"	INDICATES FLAT OVAL DUCT SIZE
#" x #"	INDICATES RECTANGULAR DUCT SIZE
#"Ø	INDICATES ROUND DUCT SIZE
ANGLE RELIEF VALVE	
ANGLED STOP CHECK VALVE	
BALANCE VALVE	
BUTTERFLY VALVE (SEE SPECIFICATION FOR TYPE)	
BALL, GAS, GATE, GLOBE, PLUG VALVE (SEE SPECIFICATION FOR TYPE)	
CHECK VALVE W/ ARROW INDICATING FLOW	
LINEAR STOP CHECK VALVE	
PRESSURE REDUCING VALVE	
PRESSURE RELIEF VALVE	
STRAINER	
UNION	
PIPE ANCHOR	
PIPE GUIDE / SLEEVE	
EXPANSION COMPENSATOR/EXPANSION JOINT	
SPRING HANGER	SH

FCO	FLOOR CLEANOUT
WCO	WALL CLEANOUT
M	WATER METER
MH	MANHOLE
FD	FLOOR DRAIN
CB	CATCH BASIN
	PENDANT SP HD (FLUSH MOUNTED TYPE)
	SIAMESE CONNECTION
	PRESSURE INDICATOR
	TEMPERATURE INDICATOR
	THERMOMETER
	MANUAL AIR VENT
	FLOW MEASURING DEVICE
FE	FLOW ELEMENT (ORIFICE PLATE)
	POINT OF NEW CONNECTION
	TO BE DEMOLISHED AND REMOVED
	PLUMBING RISER TAG
MGS	MASTER GAS SHUT-OFF VALVE
PRV	PRESSURE REDUCING STATION
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
F	FIRE PROTECTION PIPING
CW	DOMESTIC COLD WATER PIPING
SCW	DOMESTIC SOFTENED COLD WATER
HPCW	HIGH PRESSURE COLD WATER
HW	DOMESTIC HOT WATER PIPING
HWR	DOMESTIC HOT WATER RETURN PIPING
NPW	NON-POTABLE WATER PIPING
DW	DISTILLED WATER

RS/RL	REFRIGERANT SUCTION/LIQUID LINE SET
RO	REVERSE OSMOSIS WATER
DI	DEIONIZED WATER SUPPLY
TW	TEMPERED WATER
G	NATURAL GAS PIPING
G(EPS)	NATURAL GAS PIPING (EMERGENCY POWER SUPPLY)
NIT-OX	NITROUS OXIDE PIPING
O	OXYGEN PIPING
CA	COMPRESSED AIR
CA(#)	COMPRESSED AIR PIPING PRESSURE INDICATED
MA	MEDICAL AIR
CO2	CARBON DIOXIDE GAS
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
SAN	SANITARY SEWER
PSAN	PUMPED SANITARY SEWER
V	VENT PIPING
AV	ACID VENT PIPING
VAC	VACUUM PIPING
AW	ACID WASTE
ST	STORM SEWER
OST	OVERFLOW STORM
PST	PUMPED STORM WATER
DT	DRAIN TILE
CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHILLED WATER RETURN PIPING
CWS	CONDENSER WATER SUPPLY PIPING
CWR	CONDENSER WATER RETURN PIPING
PCR	PUMPED CONDENSATE RETURN PIPING

CR	CONDENSATE RETURN PIPING (GRAVITY)
PCWS	PROCESS COOLING WATER SUPPLY
PCWR	PROCESS COOLING WATER RETURN
COND	CONDENSATE DRAIN PIPING (COOLING)
HPCR	HIGH PRESSURE CONDENSATE RETURN PIPING
HWHS	HOT WATER HEATING SUPPLY PIPING
HWHR	HOT WATER HEATING RETURN PIPING
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
HTHWS	HIGH TEMPERATURE HOT WATER SUPPLY PIPING
HTHWR	HIGH TEMPERATURE HOT WATER RETURN PIPING
HRR	HEAT RECOVERY RETURN PIPING
HRS	HEAT RECOVERY SUPPLY PIPING
STM	LOW PRESSURE STEAM
STM(#)	STEAM PIPING PRESSURE INDICATED
STM V	STEAM RELIEF VENT
VRF	VRF SYSTEM REFRIGERANT PIPING
TI	TEMPERATURE INDICATOR GAUGE TYPE
DPI	DIFFERNTIAL PRESSURE GAUGE
H	HUMIDISTAT (ROOM)
CO	CARBON MONOXIDE SENSOR
H	HUMIDISTAT
T	THERMOSTAT
L	OCCUPANCY SENSOR - CEILING MOUNTED
L	OCCUPANCY SENSOR - WALL MOUNTED
PC	PHOTOELECTRIC SWITCH - CEILING MOUNTED
PC	PHOTOELECTRIC SWITCH - WALL MOUNTED
SP	STATIC PRESSURE SENSOR
C	CARBON DIOXIDE SENSOR - DUCT MOUNTED

H	HUMIDITY SENSOR - DUCT MOUNTED
T	THERMOSTAT WITH GUARD
T	TEMPERATURE SENSOR - DUCT MOUNTED AVERAGING ELEMENT
T	TEMPERATURE SENSOR W/ SUNSHIELD
T	TEMPERATURE SENSOR - DUCT MOUNTED RIGID ELEMENT
T	TEMPERATURE SENSOR - IMMERSION TYPE ELEMENT
P AD	AREA SMOKE DETECTOR
F SD	DUCT SMOKE DETECTOR
F	FIRE STAT - DUCT MOUNTED
FZ	FREEZE STAT - DUCT MOUNTED
FM	FLOW METER
AQ	AQUASTAT (STRAP ON)
AFS	AIR FLOW SENSOR
LPI	LOOP POWER INDICATOR
DN	DAY/NIGHT MAIN AIR SWITCH
	MANOMETER
CR	CONTROL RELAY
CS	CURRENT SWITCH
M	MOTORIZED DAMPER MOTOR
	DAMPER (PARALLEL BLADE)
	DAMPER (OPPOSED BLADE)
EP	ELECTRIC - PNEUMATIC RELAY
S/S	START STOP (MOTOR CONTROL)
R	RELAY (ELECTRICAL)
TT	TWIST TIMER
VC	VELOCITY CONTROLLER
	MOTOR DISCONNECT SWITCH
	MOTOR STARTER, W/O HOA SWITCH
	MOTOR STARTER, W/ HOA SWITCH

EGS	EMERGENCY GAS SHUT-OFF
ES	END SWITCH
FM	FLOW SWITCH - INLINE
DPS	DIFFERENTIAL PRESSURE SWITCH
PS	PRESSURE SWITCH
M	MAIN AIR SUPPLY (MECHANICAL CONTROLS)
	PNEUMATIC LINE
	SOLENOID VALVE
	PRESSURE GAUGE
	VALVE - TWO WAY PNEUMATIC CONTROLLED
	VALVE - THREE WAY PNEUMATIC CONTROLLED
	TWO WAY MOTORIZED VALVE
	THREE WAY MOTORIZED VALVE
AI	ANALOG INPUT
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
PT	PRESSURE TRANSMITTER
	ELECTRICAL LINE DESIGNATION ON CONTROL DIAGRAMS AND FLOOR PLANS
	ELECTRICAL LINE DESIGNATION ON WIRING DIAGRAMS (VOLTAGE AS NOTED)
	SWITCH
	FUSE
	TRANSFORMER
	THERMAL OVERLOAD
	RELAY CONTACT
	RELAY COIL
	SYSTEM OR EQUIPMENT GROUND

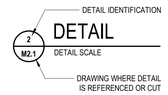
NOTATION METHODS

SD-A 10"Ø 350 CFM	SUPPLY DIFFUSER, TYPE 'A', 10" NECK, 350 CFM
SD-A 10"Ø 350 CFM	SUPPLY DIFFUSER (3-WAY)
RG-A 24" x " 350 CFM	RETURN GRILLE, TYPE 'A', 350 CFM
EG-A 24" x " 350 CFM	EXHAUST GRILLE, TYPE 'A', 350 CFM
SG-A 10"x10" 350 CFM	SUPPLY GRILLE, TYPE 'A', 350 CFM
LD-A / LD-R 10"Ø 350 CFM	LINEAR DIFFUSER, TYPE 'A' WITH FLEXIBLE DUCT CONNECTION (SEE PLANS FOR ARROWS INDICATING FLOW DIRECTION)
	BELL MOUTH AIR INLET AREA SHALL BE EQUAL TO 2' TIMES DUCT AREA
AHU 1	AIR HANDLING UNIT No. 1
EF 1	EXHAUST FAN No. 1
	SUPPLY AIR BRANCH CONNECTION SPIN-IN FITTING WITH VOLUME DAMPER
	RETURN AIR/EXHAUST AIR BRANCH CONNECTION WITH VOLUME DAMPER
SA 1	SOUND ATTENUATOR
FTR-A 5' - 0" AL 5.7 MBH 0.6 GPM	FINNED TUBE RADIATION TYPE 'A', 5'-0" ELEMENT, 5.7 TOTAL MBH (REFER TO EQUIPMENT SCHEDULES)
CUH A	CABINET UNIT HEATER, TYPE 'A'
CONV A	CONVECTOR, TYPE 'A'
VAV 2,1100 A	TERMINAL VARIABLE OR CONSTANT VOLUME BOX AHU OR RTU SERVIING THE VAV OR CAV. ROOM NUMBER. A,B,C, ETC. IF MULTIPLE COILS SERVE THE SAME SPACE (HEATING COIL, REFER TO EQUIPMENT SCHEDULES)
VAV 2,1100 A	TERMINAL VARIABLE OR CONSTANT VOLUME BOX AHU OR RTU SERVIING THE VAV OR CAV. ROOM NUMBER. A,B,C, ETC. IF MULTIPLE COILS SERVE THE SAME SPACE (NO HEATING COIL, REFER TO EQUIPMENT SCHEDULES)
RHC 1000 A	REHEAT COIL, ROOM NUMBER A,B,C, ETC. IF MULTIPLE COILS SERVE THE SAME SPACE (REFER TO EQUIPMENT SCHEDULES)
	POINT WHERE DEMOLITION ENDS/POINT OF NEW CONSTRUCTION
	NEW MECHANICAL
	EXISTING MECHANICAL

MECHANICAL DRAWING INDEX

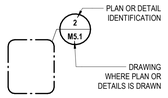
SYMBOL LEGEND

DETAIL SYMBOL



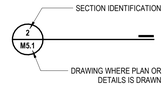
ELEVATION SYMBOL

PLAN OR DETAIL ENLARGEMENT

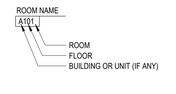


COLUMN CENTERLINE

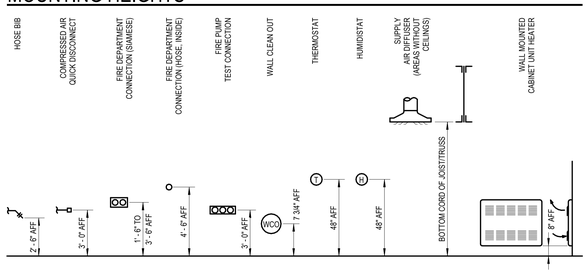
SECTION LOCATOR



ROOM NAME AND NUMBER



MOUNTING HEIGHTS



GENERAL NOTES

1. VERIFY ALL CONDITIONS IN FIELD BEFORE START OF CONSTRUCTION. NOTIFY ARCHITECT/ENGINEER OF DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL FIELD CONDITIONS.
2. COORDINATE ALL WORK WITH APPROPRIATE TRADES.
3. COORDINATE ANY REQUIRED SHUTDOWN OF SERVICES OR EQUIPMENT WITH OWNER'S REPRESENTATIVE.
4. PROVIDE ALL MISC. STEEL AND ITEMS REQUIRED FOR THE PROPER INSTALLATION OF ALL PIPE, SHEET METAL AND EQUIPMENT.
5. COORDINATE FLOOR, WALL & ROOF PENETRATIONS ETC. WITH ARCHITECTURAL TRADES.
6. INSTALL ALL DUCTWORK AS HIGH AS POSSIBLE IN AREA WITHOUT A CEILING UNLESS INDICATED OTHERWISE.
7. DUCT CONNECTED TO EQUIPMENT SHALL EQUAL EQUIPMENT CONNECTION SIZE UNLESS NOTED OTHERWISE.
8. MAXIMUM LENGTH ON FLEXIBLE DUCT SHALL BE 5'-0".
9. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT DIFFUSER LOCATIONS IN AREAS WITH A CEILING.
10. DO NOT RUN ANY PIPING OR DUCTWORK INTO AN ELECTRICAL ROOM THAT DOES NOT SERVE THAT ROOM.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

THIS PROJECT MAY NOT UTILIZE ALL THE SYMBOLS, MATERIALS, ABBREVIATIONS AND STANDARD INFORMATION SHOWN ON THIS SHEET.

Project Administrator	V. Grant
Project Designer	J. Taormina
Project Architect / Engineer	L. Ward
Drawn By	J. Taormina
Q.M. Review	T. Vercruysse
Approved	J. Schwartz
Drawing Scale	No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Mechanical Reference Information

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
MR.0

KEYNOTES

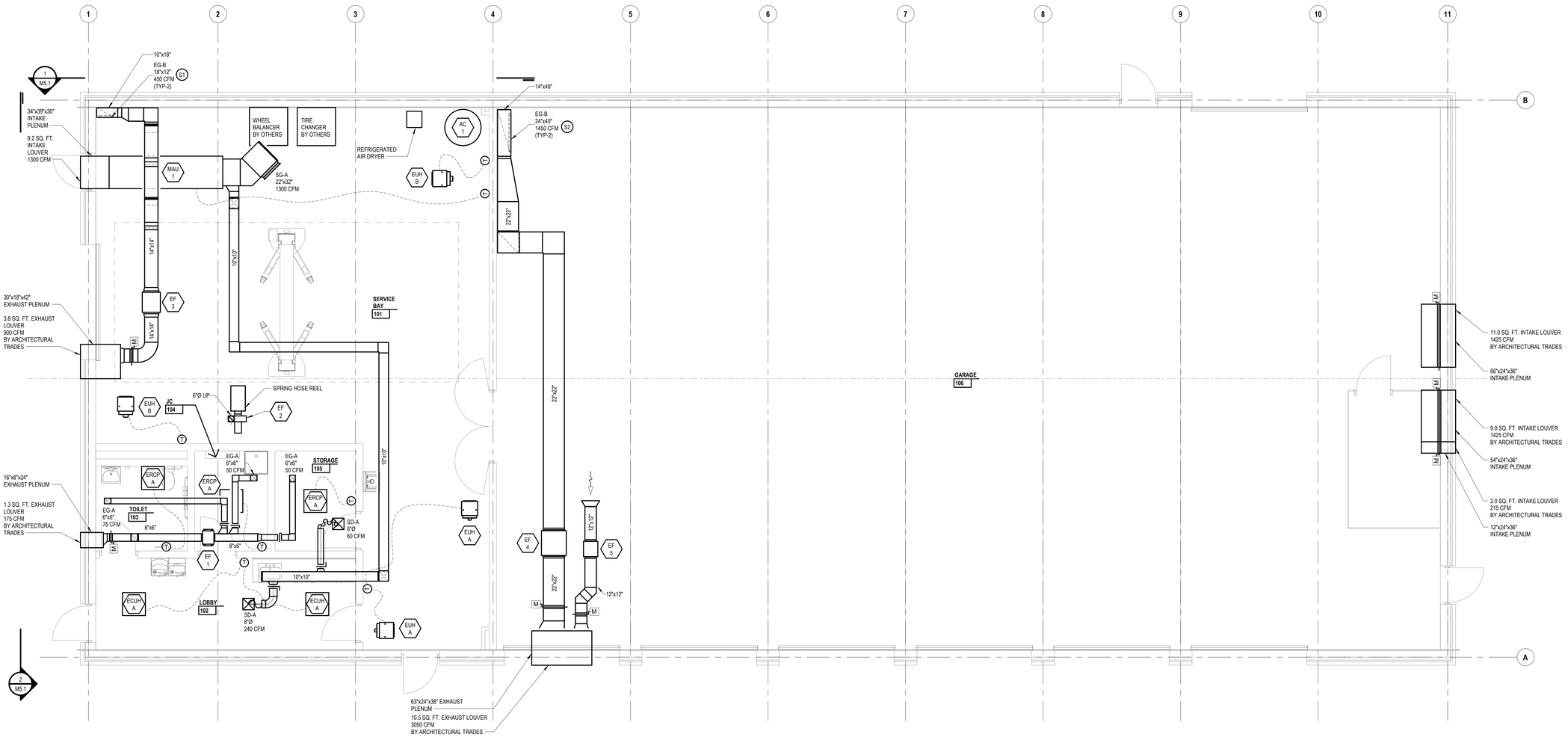
SHEET METAL

NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR

S1 TWO 18"x12" EXHAUST GRILLES MOUNTED AT APPROXIMATELYT 1'-6" ABOVE FINISHED FLOOR, AND 8'-0" ABOVE FINISHED FLOOR PER VERTICAL 10"x18" EXHAUST DUCT DROP.

S2 TWO 24"x40" EXHAUST GRILLES MOUNTED AT APPROXIMATELYT 1'-10" ABOVE FINISHED FLOOR, AND 4'-8" ABOVE FINISHED FLOOR PER VERTICAL 14"x48" EXHAUST DUCT DROP.



iDS

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
J. Taormina
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
1/4" = 1'-0"

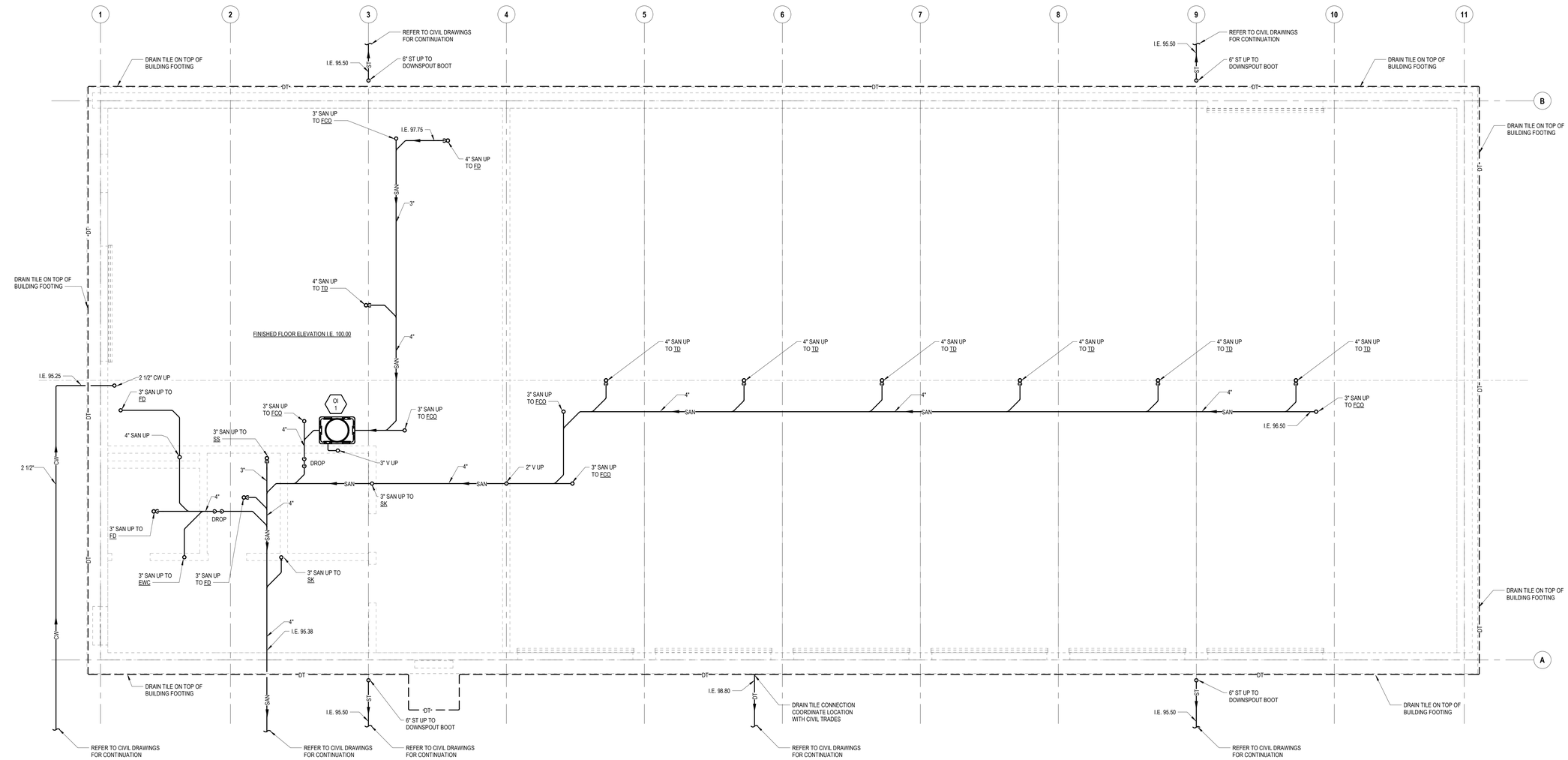
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor Sheet Metal Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M2.1



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
J. Taormina
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
1/4" = 1'-0"

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor Underground Plumbing Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M4.1U

KEYNOTES

PLUMBING

NOTE: NOT ALL KEYNOTES MAY BE USED

(#) LEGEND SYMBOL INDICATOR

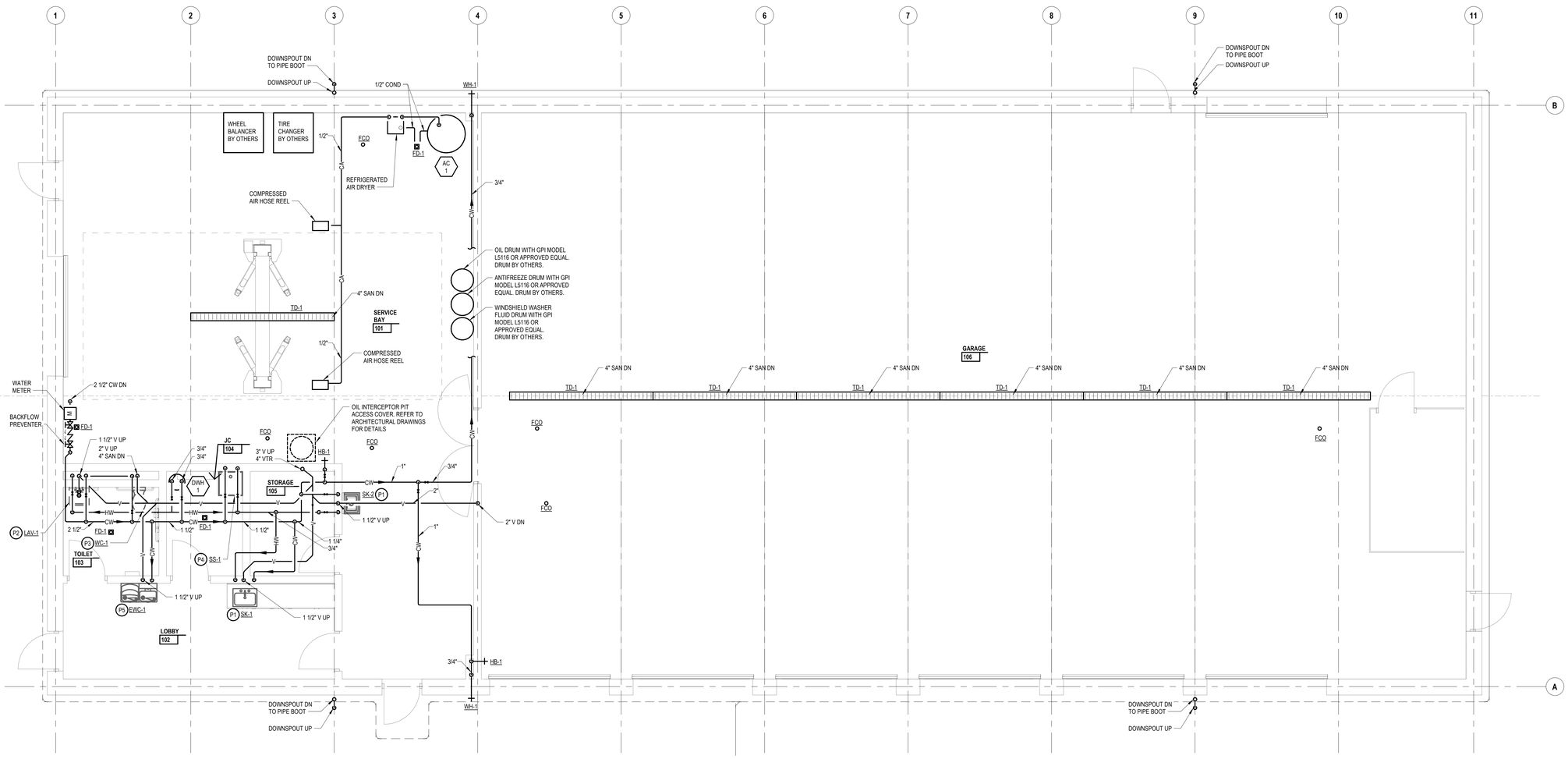
P1 3/4" COLD WATER AND 3/4" HOT WATER TO SINK. 1 1/2" SANITARY DOWN FROM SINK.

P2 3/4" COLD WATER AND 3/4" HOT WATER TO LAVATORY. 1 1/2" SANITARY DOWN FROM LAVATORY.

P3 1 1/2" COLD WATER AND 4" SANITARY TO WATER CLOSET.

P4 3/4" COLD WATER AND 3/4" HOT WATER TO SERVICE SINK. 3" SANITARY DOWN FROM SERVICE SINK.

P5 3/8" COLD WATER TO ELECTRIC WATER COOLER. 1 1/2" SANITARY DOWN FROM ELECTRIC WATER COOLER.



iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
J. Taormina
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
1/4" = 1'-0"

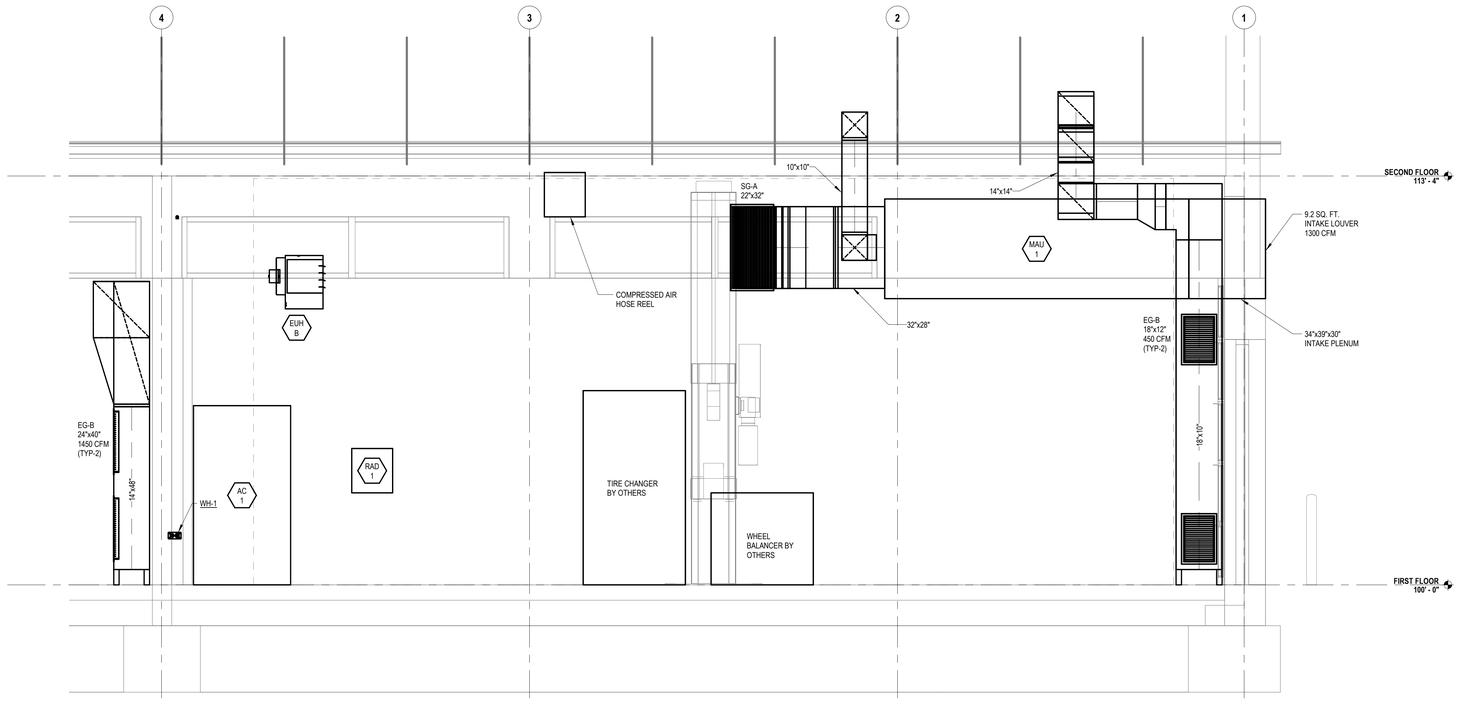
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor Plumbing Plan

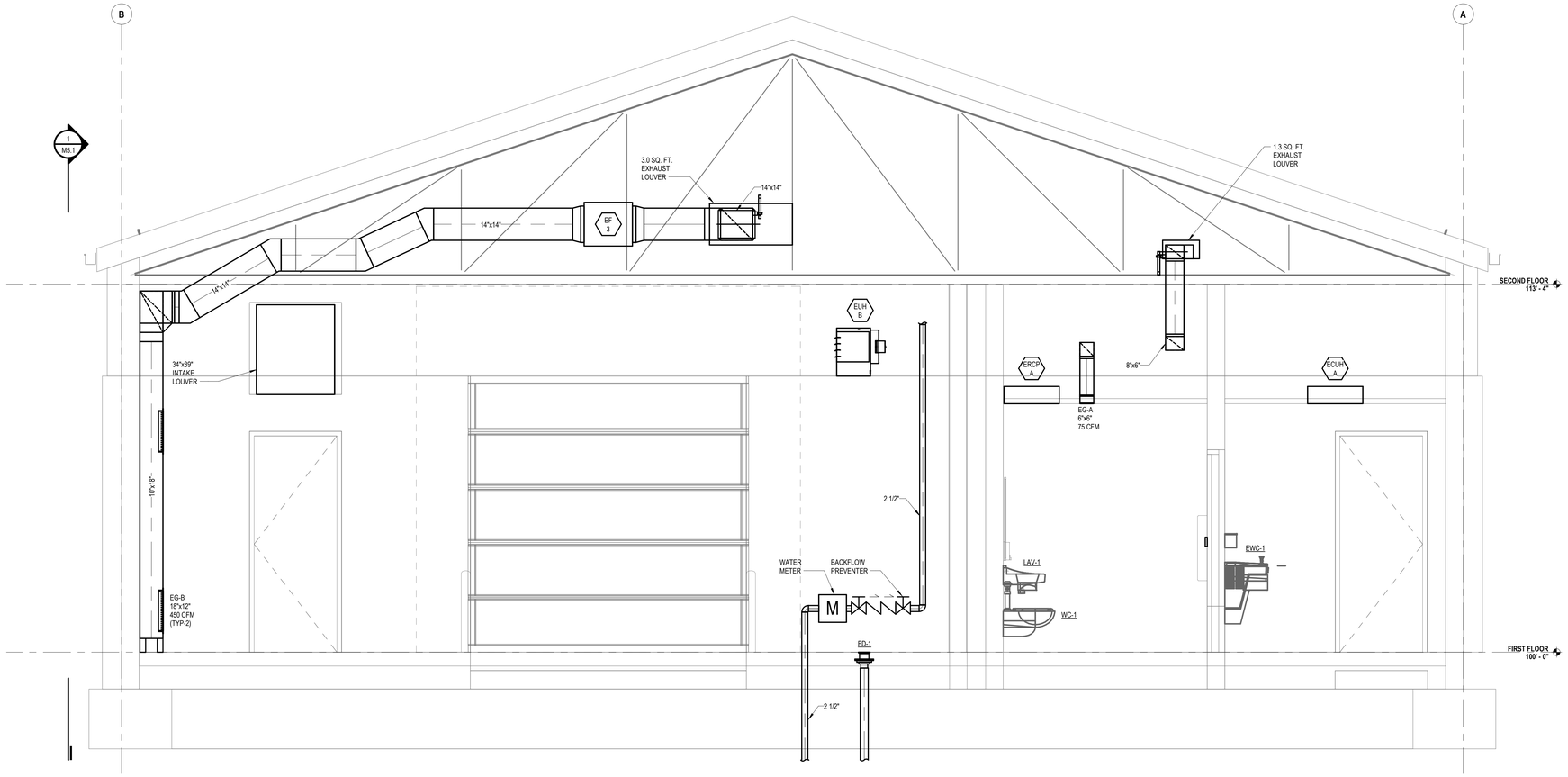
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M4.1



1 / M2.1 DRIVING PAD SECTION LOOKING SOUTH

1/2" = 1'-0"



2 / M2.1 DRIVING PAD SECTION LOOKING EAST

1/2" = 1'-0"

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
J. Taormina
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
As Noted

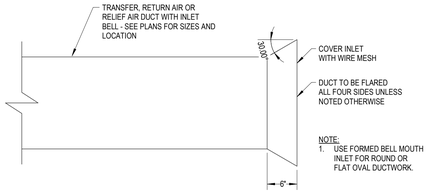
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Sections

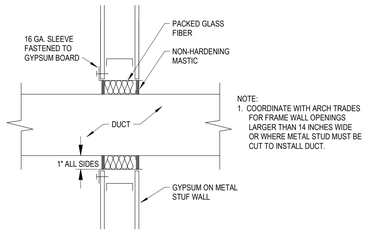
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M5.1



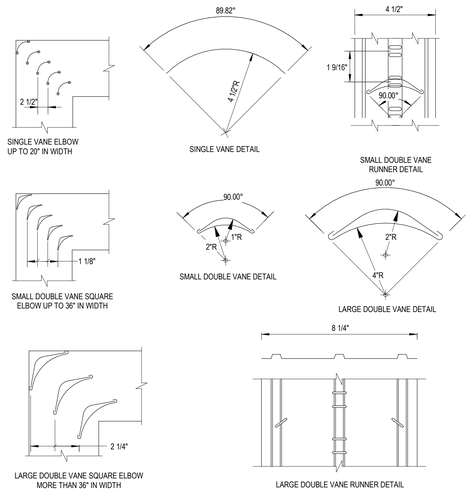
SHEET METAL FORMED INLET DETAIL

NO SCALE



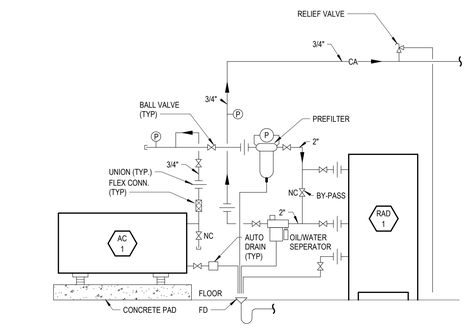
DUCT SEAL AT NON-RATED WALLS

NO SCALE



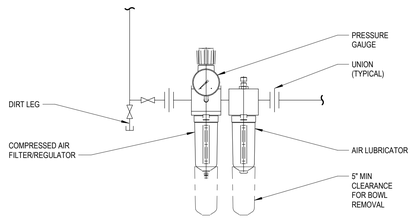
SQUARE AND RECTANGULAR ELBOWS - LOW VELOCITY

NO SCALE



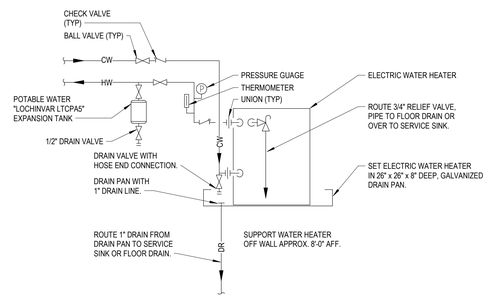
AIR COMPRESSOR PIPING DETAIL

NO SCALE



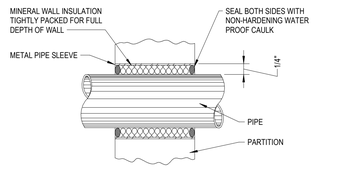
COMPRESSED AIR FILTER/LUBRICATOR DETAIL

NO SCALE

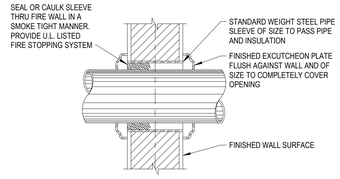


SHELF MOUNTED ELECTRIC WATER HEATER PIPING DIAGRAM

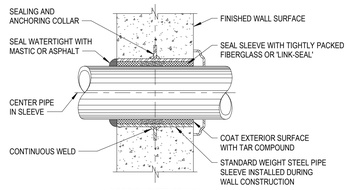
NO SCALE



PIPE PENETRATION THRU NON-FIRE RATED WALL



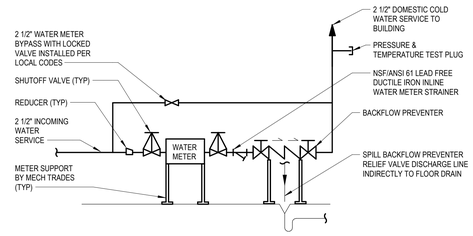
PIPE THRU FIRE RATED WALL OR FLOOR



PIPE THRU EXTERIOR WALL

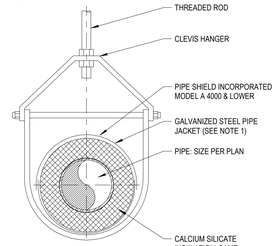
PIPE PENETRATIONS

NO SCALE



WATER METER DETAIL

NO SCALE



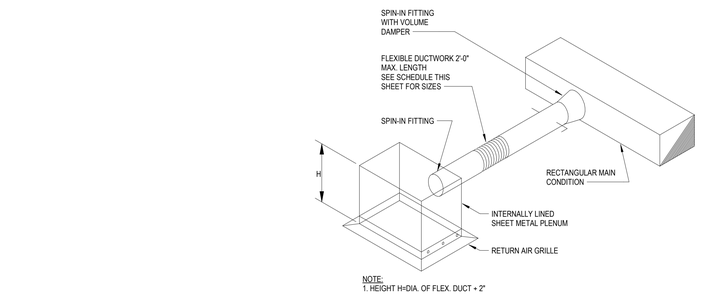
SINGLE PIPE SUPPORT (LESS THAN 4")

NO SCALE

NOTES:

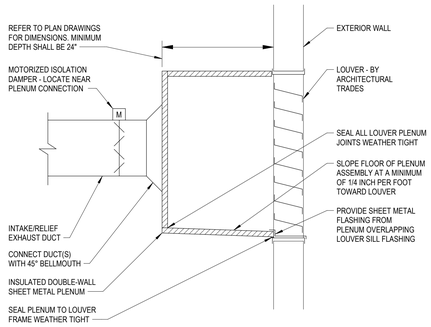
1. PROVIDE GALVANIZED SHEET METAL INSULATION JACKET AS FOLLOWS:

PIPE SIZE:	LENGTH:	GAUGE:
2" TO 4"	12"	18



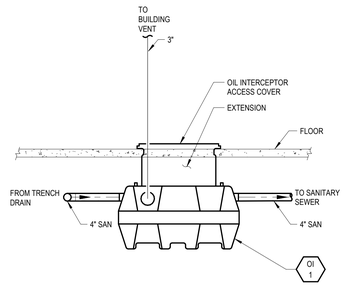
RETURN & EXHAUST AIR GRILLE BRANCH CONNECTION DETAIL

NO SCALE



INTAKE/RELIEF LOUVER PLENUM DETAIL

NO SCALE



OIL INTERCEPTOR PIPING DIAGRAM

NO SCALE

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	J. Taormina
Project Architect / Engineer	L. Ward
Drawn By	J. Taormina
Q.M. Review	T. Vercruysse
Approved	J. Schwartz
Drawing Scale	No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M6.1

OIL INTERCEPTOR SCHEDULE

MARK	SERVICE	INLET/ OUTLET (IN.)	CAPACITY			DIMENSIONS L x W x H (INCHES)	"STRIEM" MODEL No.	REMARKS
			FLOW (GPM)	WATER (GAL.)	OIL (GALLONS)			
OI-1	ROOM 101	4/4	50	57	14	37 x 28 x 31.5	OS-50-SS	

NOTES:
1. PROVIDE ALL UNITS WITH HIGH LEVEL ALARM AND FLOAT SWITCH.

ELECTRIC RADIANT CEILING PANEL SCHEDULE

MARK	CAPACITY		DIMENSIONS	ELECTRICAL DATA			"Q-MARK" MODEL No.	REMARKS
	WATTS	BTU/H	L x W x D (IN)	VOLT	PH	AMPS		
ERCP-A	375	1,280	24 x 24 x 1	208	1	20	CP378F	

NOTES:
1. REFER TO PLANS FOR QUANTITIES.
2. PROVIDE WITH BUILT-IN THERMOSTAT AND DISCONNECT.

WATER METER SCHEDULE

TYPE	ROOM LOCATION	SIZE	TYPE	REMARKS
BUILDING MAIN	SERVICE BAY 101	2"	TURBINE	

MAKE UP AIR UNIT WITH ELECTRIC REHEAT SCHEDULE

MARK	SERVICE	SUPPLY FAN									ELECTRICAL			WEIGHT (LBS.)	"GREENHECK" MODEL No.	REMARKS
		AIRFLOW (CFM)	EXT. S.P. (IN.WC.)	TOTAL S.P. (IN.WC.)	FAN RPM	MOTOR			CAPACITY (kW)	EAT (°F)	LAT (°F)	V/P/Hz	MCA	MOP (AMPS)			
						RPM	BHP	HP									
MAU-1	ROOM 101	1,300	0.50	0.66	1,725	1,725	0.28	1/2	36.8	-10	80	208/3/60	131.1	150	1025	MSX-P109-H12-MF	END DISCHARGE UNIT

NOTES:
1. PROVIDE WITH FACTORY MOUNTED & WIRED DISCONNECT.
2. PROVIDE WITH FACTORY MOUNTED & WIRED 20A GFI RECEPTACLE.

FAN SCHEDULE

MARK	LOCATION	AREA SERVED	DESIGN AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN. WG.)	FAN DATA			MOTOR DATA			ELECTRICAL V/P/HHZ	"GREENHECK" MODEL No.	REMARKS
					TYPE	DRIVE	FAN RPM	HP	BHP	RPM			
EF-1	JC 104	TOILET 103, JC 104, STORAGE 105	175	0.3	INLINE	DIRECT	988	0.03	0.03	988	115/1/60	CSP-A390-VG	
EF-3	SERVICE BAY 101	SERVICE BAY 101	900	0.2	INLINE	DIRECT	1,266	1/4	.07	1,266	115/1/60	SQ-9-M1-VG	
EF-4	GARAGE 106	GARAGE 106	200	0.2	INLINE	DIRECT	978	1/6	.02	978	115/1/60	SQ-90-VG	
EF-5	GARAGE 106	GARAGE 106	2,850	0.2	INLINE	DIRECT	1,057	3/4	0.39	1,057	208/1/60	SQ-160-VG	

NOTES:
1. PROVIDE ALL FANS WITH FACTORY MOUNTED AND WIRED DISCONNECT.

AIR COMPRESSOR SCHEDULE

MARK	SIMPLEX/ DUPLEX	TYPE	DELIVERY PRESSURE PSIG	NOMINAL CAPACITY SCFM	PUMP(S)								"INGERSOLL RAND" MODEL No.	REMARKS
					SCFM	HP	RPM	VOLT	PHASE	LENGTH (IN.)	DIAMETER (IN.)	GALLONS		
AC-1	SIMPLEX	OIL-LESS RECIPROCATING	24	175	24	7.5	1775	208	3	46	24	80	2475	

NOTES:
1. PROVIDE INGERSOLL RAND MODEL D54IN REFRIGERATED AIR DRYER WITH PRE AND AFTER FILTERS.
2. TANK TO INCLUDE PRESSURE GAUGE, SAFETY RELIEF VALVE AND TIMER DISPLAY.

ELECTRIC DOMESTIC HOT WATER HEATER SCHEDULE

MARK	SERVICE	AREA SERVED	WATER				ELECTRICAL		OPER. WEIGHT (LBS.)	DIMENSIONS DIA. x H (IN.)	"LOCHINVAR" MODEL No.	REMARKS
			VOLUME (GAL.)	EWT (°F)	LWT (°F)	GPH 80°F RISE	V/P/Hz	WATTS				
DWH-1	DOMESTIC HOT WATER	TOILET 103, JC 104, ROOM 101	20	40	120	13	208/1/60	2500	235	16" x 32"	JET-20 SJF	

VEHICLE EXHAUST FAN SCHEDULE

MARK	LOCATION	DESIGN AIRFLOW (CFM)	EXTERNAL STATIC PRESSURE (IN. WG.)	FAN DATA			MOTOR DATA			ELECTRICAL V/P/HHZ	"FUME-A-VENT" MODEL No.	REMARKS
				TYPE	DRIVE	FAN RPM	HP	BHP	RPM			
EF-2	ROOM 101	450	1.0	SISW	DIRECT	3,450	0.5	0.35	3450	208/3/60	HRF-05-3	

NOTES:
1. PROVIDE ALL FANS WITH FACTORY MOUNTED AND WIRED DISCONNECT.
2. PROVIDE END CONNECTION CLAMP.
3. PROVIDE CONNECTED HOSE REEL WITH 25' OF 4" HOSE.

GRILLE, REGISTER AND DIFFUSER SCHEDULE

MARK	CORE STYLE	BORDER FRAME TYPE	MODULE SIZE	FINISH	ACCESSORY	CONSTRUCTION	"PRICE" MODEL No.	REMARKS
SG-A	LOUVER	NOTE 2	REFER TO PLANS	BRUSHED	NONE	ALUMINUM	152	NOTE 3
SD-A	PLAQUE	NOTE 1	12"x12"	WHITE	NONE	STEEL	SPD	
EG-A	PERFORATED	NOTE 1	6"x6"	WHITE	NONE	ALUMINUM	80	
EG-B	LOUVER	SURFACE MOUNT	REFER TO PLANS	WHITE	NONE	STEEL	91	NOTE 3

NOTES:
1. COORDINATE MOUNTING FRAMES WITH REFLECTED CEILING PLANS.
2. ALL WALL AND DUCT MOUNTED GRILLES SHALL HAVE COUNTER-SUNK SCREWS.
3. FRONT BLADES PARALLEL TO SHORT DIMENSION.

ELECTRIC CABINET UNIT HEATER SCHEDULE

MARK	CAPACITY		DIMENSIONS		ELECTRICAL DATA			"BERKO" MODEL No.	REMARKS
	WATTS	BTU/H	L (IN)	W x D (IN)	VOLT	PH	AMPS		
ECUH-A	3,600	12,287	19-1/8	15-3/8 x 7-1/2	208	1	17.3	QFF4804	CEILING MTD.

NOTES:
1. REFER TO PLANS FOR QUANTITIES.
2. PROVIDE WITH BUILT-IN THERMOSTAT AND DISCONNECT.

ELECTRIC UNIT HEATER SCHEDULE

MARK	CAPACITY		AIR FLOW (CFM)	TEMP RISE (°F)	ELECTRICAL DATA			"MODINE" MODEL No.	REMARKS
	KW	MBH			VOLT	PH	AMPS		
EUH-A	5.0	17.1	380	42	208	3	13.9	HER-50	
EUH-B	15.0	51.2	830	57	208	3	41.6	HER-150	

NOTES:
1. REFER TO PLANS FOR QUANTITIES.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
J. Taormina
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
No Scale

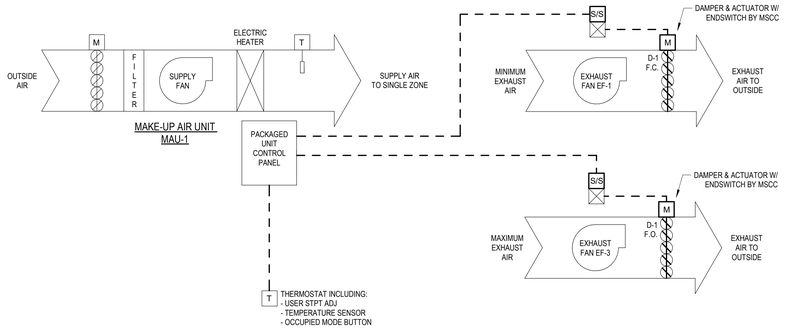
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Schedules

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M7.1



SERVICE BAY (101) VENTILATION SYSTEM CONTROL DIAGRAM

NOTES
1. UNIT SHALL BE PROVIDED WITH PACKAGED DDC CONTROLS BY THE UNIT MANUFACTURER. THE MECHANICAL SYSTEMS CONTROLS CONTRACTOR (MSCC) SHALL FIELD INSTALL, WIRE, AND TERMINATE IN THE PACKAGED UNIT CONTROLLER, ANY APPLICABLE SENSORS OR CONTROLS DEVICES AS NECESSARY PER THE UNIT MANUFACTURER'S REQUIREMENTS FOR A COMPLETE SYSTEM.

SEQUENCE OF OPERATION

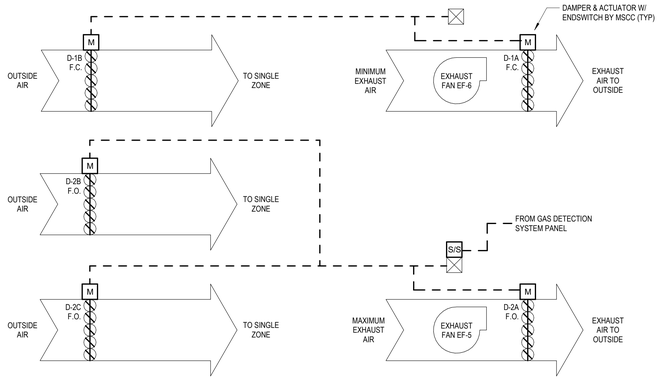
GENERAL NOTES
1. THE VEHICLE BAY VENTILATION SYSTEM INCLUDES MAKE-UP AIR UNIT (MAU-1), AND EXHAUST FANS (EF-1 & EF-3).

OCCUPIED MODE
1. MAU-1, EF-1 AND EF-3 SHALL START.
2. UPON A DEMAND FOR HEATING, THE MAU-1 HEATER SHALL BE ENABLED AND SHALL MODULATE TO MAINTAIN THE SPACE THERMOSTAT TEMPERATURE SETPOINT.
3. IF THE MAU-1 SUPPLY AIR TEMPERATURE FALLS BELOW 40°F (ADJ), MAU-1 AND EF-4 SHALL DEACTIVATE.

SUPPLY & EXHAUST FANS
1. WHEN IN OCCUPIED MODE, THE SUPPLY FAN(S) SHALL START AND SHALL OPERATE AT A CONSTANT SPEED.
2. THE EXHAUST FAN(S) SHALL BE ELECTRICALLY INTERLOCKED WITH MAU-1 AND SHALL START WHEN THE SUPPLY FAN STARTS.
3. WHEN THE EXHAUST FAN(S) IS ENABLED, THE ISOLATION DAMPER SHALL OPEN. ONCE THE DAMPER ENDSWITCH VERIFIES THE DAMPER HAS OPENED, THE FAN SHALL START.

UNOCCUPIED MODE
1. MAU-1, EF-1 AND EF-3 SHALL DEACTIVATE.

EXHAUST FAN EF-1 & EF-3 WIRING DETAIL

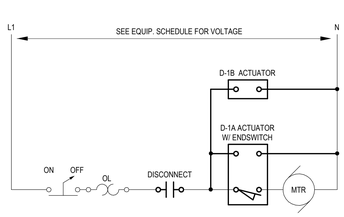


GARAGE (106) VENTILATION SYSTEM CONTROL DIAGRAM

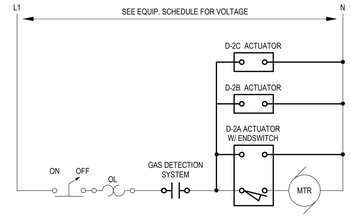
NOTES
1. MSCC SHALL COORDINATE WITH THE GAS DETECTION SYSTEM SUPPLIER AS NECESSARY FOR PROPER ALARM COORDINATION AND VENTILATION SYSTEM OPERATION.

SEQUENCE OF OPERATION
1. EF-6 SHALL BE SET TO ACTIVATE AND DEACTIVATE BY MANUAL DISCONNECT.
2. WHEN THE FAN IS ENABLED, THE ISOLATION DAMPER SHALL OPEN. ONCE THE DAMPER ENDSWITCH VERIFIES THE DAMPER HAS OPENED, THE FAN SHALL START.

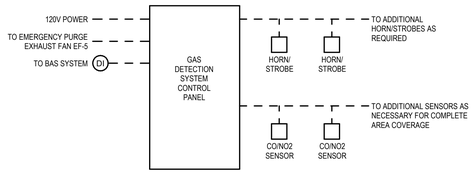
PURGE MODE
1. PURGE MODE SHALL BE ENABLED VIA HARDWIRED INTERLOCK WITH THE SPACE GAS DETECTION SYSTEM.
2. WHEN THE GAS DETECTION SYSTEM IS IN ALARM, THE SYSTEM SHALL OPERATE AS FOLLOWS VIA HARDWIRED SAFETY INTERLOCKS:
   A. EF-5 SHALL START
   B. EF-6 SHALL START



EXHAUST FAN EF-6 WIRING DETAIL



EXHAUST FAN EF-5 WIRING DETAIL



GAS DETECTION SYSTEM CONTROL DIAGRAM

NOTES

1. THE CONTROLS CONTRACTOR SHALL BE RESPONSIBILE TO REVIEW THE SPACE AND DESIGNS, AND TO PROVIDE AND INSTALL A GAS DETECTION SYSTEM IN ACCORDANCE WITH APPLICABLE CODES, INCLUDING DEDICATED ELECTRICAL CIRCUIT, POWER SUPPLY, AND ALL ACCESSORIES AS NECESSARY FOR A COMPLETE SYSTEM.
2. SYSTEM SHALL BE PROVIDED WITH AUXILIARY CONTACTS AS INDICATED FOR AUXILIARY SYSTEM CONNECTIONS.
3. CONTROLS CONTRACTOR SHALL DETERMINE FINAL REQUIRED QUANTITY AND LOCATION OF SPACE CO/NO2 SENSORS IN COORDINATION WITH THE GAS DETECTION SYSTEM VENDOR.
4. PROVIDE GAS DETIECTION SYSTEMS FOR THE FOLLOWING SPACES.
   1. GARAGE (106)

SEQUENCE OF OPERATION

1. WHEN AN ALARM CONDITION IS PRESENT:
   A. THE LOCAL STROBE(S) AND HORN(S) SHALL ACTIVATE.
   B. THE INTERLOCKED EXHAUST FAN SHALL START.
   C. THE BUILDING AUTOMATION SYSTEM SHALL GENERATE AN ALARM.

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	J. Taormina
Project Architect / Engineer	L. Ward
Drawn By	K. Maupin
Q.M. Review	T. Vercruysse
Approved	J. Schwartz
Drawing Scale	No Scale

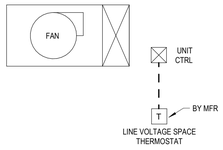
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Temperature Controls

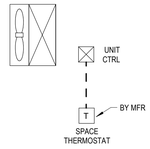
IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M8.1



CABINET UNIT HEATER CONTROL DIAGRAM

SEQUENCE OF OPERATION
1. THE UNIT HEATER FAN AND HEATING ELEMENT SHALL CYCLE TO MAINTAIN THE THERMOSTAT TEMPERATURE SETPOINT.



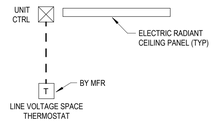
ELECTRIC UNIT HEATER CONTROL DIAGRAM

SEQUENCE OF OPERATION
1. THE UNIT HEATER FAN AND HEATING ELEMENT SHALL CYCLE TO MAINTAIN THE THERMOSTAT TEMPERATURE SETPOINT.

SPACE TEMPERATURE SENSOR DIAGRAM

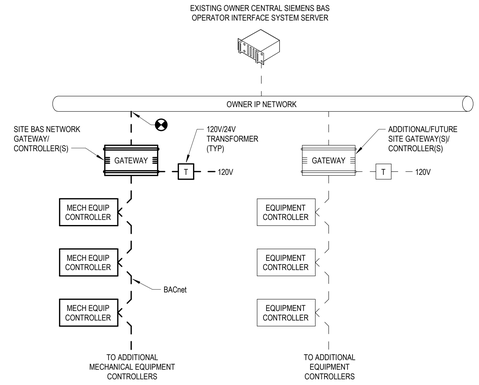
NOTES
1. PROVIDE SPACE TEMPERATURE SENSORS FOR THE FOLLOWING SPACES.
   1. TOILET 103
   2. LOBBY 102
   3. SERVICE BAY 101

SEQUENCE OF OPERATION
1. THE BAS SHALL GENERATE AN ALARM IF THE SPACE TEMPERATURE FALLS BELOW 50°F (ADJ).



ELECTRIC RADIANT CEILING PANEL 1-STAGE CONTROL DIAGRAM

SEQUENCE OF OPERATION
1. ELECTRIC RADIANT CEILING PANEL HEAT SHALL BE CYCLED TO MAINTAIN THE THERMOSTAT TEMPERATURE SETPOINT.



BUILDING AUTOMATION SYSTEM NETWORK RISER DIAGRAM

NOTES
1. THE MECHANICAL SYSTEMS CONTROLS CONTRACTOR (MSCC) SHALL PROVIDE A NEW BUILDING AUTOMATION SYSTEM (BAS) CONTROLLER/GATEWAY DEVICE OR DEVICES, POWER SUPPLIES, AND NEMA 1 ENCLOSURES AS NECESSARY TO INTEGRATE ALL FIELD DEVICES AND DEVICE NETWORKS TO THE OWNER CENTRAL BAS OPERATOR INTERFACE SYSTEM (OIS) SERVER.
2. MSCC SHALL PROVIDE ETHERNET IP DATA CONNECTION(S) AND LOCATE DEVICE(S) AS NECESSARY IN COORDINATION WITH THE ELECTRICAL/TECHNOLOGY CONTRACTOR AND THE OWNER.

IDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
J. Taormina
Project Architect / Engineer
L. Ward
Drawn By
K. Maupin
Q.M. Review
T. Vercruysse
Approved
J. Schwartz
Drawing Scale
No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Temperature Controls

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
M8.2

ABBREVIATIONS

A	
A	AMPERES
AC	ALTERNATING CURRENT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
ALT	ALTERNATE
AP	AMPERE PLUG
ARCH	ARCHITECT, ARCHITECTURAL
AS	AMPERE SENSOR
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO/VISUAL
AWG	AMERICAN WIRE GAUGE
B	
BAS	BUILDING AUTOMATION SYSTEM
BLDG	BUILDING
BOT	BOTTOM
BSMT	BASEMENT
C	
C	COMMUNICATIONS
CAB	CABINET
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA
CKT	CIRCUIT
CLG	CEILING
COMP	COMPUTER
CP	CONTROL PANEL
CT	CABLE TRAY
CUH	CABINET UNIT HEATER
CZ	CONTROL ZONE
D	
DA	DIGITALLY ADDRESSABLE
DC	DIRECT CURRENT
DDC	DIRECT DIGITAL CONTROL
DEMO	DEMOLISH, DEMOLITION
DEPT	DEPARTMENT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DP	DISTRIBUTION PANEL
DT	DUAL TECHNOLOGY
DWG	DRAWING
E	
EA	EACH
EC	ELECTRICAL CONTRACTOR
EDH	ELECTRIC DUCT HEATER
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EP	ELECTRIC PNEUMATIC SWITCH
EPT	ELECTRIC POWER TRANSDUCER
EQUIP	EQUIPMENT
EUH	ELECTRIC UNIT HEATER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST	EXISTING
EXT	EXTERIOR
F	
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FCU	FAN COIL UNIT
FLA	FULL LOAD AMPS
FLR	FLOOR
FT	FOOT/FEET
FU	FUSE
FVR	FULL VOLTAGE REVERSING
FVNR	FULL VOLTAGE NON-REVERSING
FOC	FIBER OPTIC COMMUNICATIONS
G	
GA	GAGE/GAUGE
GT	GAME TIMER/CLOCK
GC	GENERAL CONTRACTOR
GFCI/GFI	GROUND FAULT CIRCUIT INTERRUPTER
GRD	GROUND
GYP BD	GYPSUM BOARD
H	
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND/AUTO/OFF
HP	HORSEPOWER
HTR	HEATER
HV	HEATING AND VENTILATION UNIT
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
I	
IAC	INTERLOCKED ARMORED CABLE
IDF	INTERMEDIATE DISTRIBUTION FRAME
IN	INCHES
ITS	INTEGRATED TECHNOLOGY SYSTEMS
IR	INFRARED
J	
JB	JUNCTION BOX
JC	JANITORS CLOSET
K	
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
L	
LAN	LOCAL AREA NETWORK
LCP	LIGHTING CONTROL PANEL
LCS	LIGHTING CONTROL SYSTEM
LP	LIGHTING PANEL
LRA	LOCKED ROTOR AMPS
LTG	LIGHTING
LTS/LTG	LONG TIME/SHORT TIME INSTANTANEOUS/GROUNDING
M	
MAX	MAXIMUM
MB	MARKERBOARD
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOD	MODULATOR
MTD	MOUNTED
MTG	MOUNTING
N	
NACP	NOTIFICATION APPLIANCE CONTROL PANEL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON-FUSED
NIC	NOT-IN-CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
O	
OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
OFE	OWNER FURNISHED EQUIPMENT
OS	OCCUPANCY SENSOR
OFS	OFFICE OF FIRE SAFETY
P	
PA	PUBLIC ADDRESS
PB	PULLBOX
PC	PHOTOCELL
PDZ	PRIMARY DAYLIGHT HARVESTING ZONE
PE	PNEUMATIC ELECTRIC SWITCH
PH	PHASE
PIR	PASSIVE INFRARED
PL	PILOT LIGHT
POS	POINT OF SALE
PP	POWER PANEL
PT	POKE-THROUGH
PTD	POWER TRANSFER DEVICE
PVC	POLYVINYL CHLORIDE
R	
R	RELOCATE OR RELOCATED ITEM
RAF	RETURN AIR FAN
RCP	REFLECTED CEILING PLAN
REQD	REQUIRED
RF	RADIO FREQUENCY
RGS	RIGID GALVANIZED STEEL
RMS	ROOT MEAN SQUARE
RP	RECEPTACLE PANEL
S	
SAF	SUPPLY AIR FAN
SCCR	SHORT CIRCUIT CURRENT RATING
SD	SMOKE DETECTOR
SDZ	SECONDARY DAYLIGHT HARVESTING ZONE
SF	SQUARE FEET
SPD	SURGE PROTECTIVE DEVICE
SPECS	SPECIFICATIONS
SPKR	SPEAKER
SS	SURGE SUPPRESSION
ST	SHUNT TRIP
STD	STANDARD
SUB	SUBSTATION
SW	SWITCH
SWGR	SWITCHGEAR
T	
TC	TIME CLOCK
TEL	TELEPHONE
TELECOM	TELECOMMUNICATIONS
TERM	TERMINAL
TKBD	TACKBOARD
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BACKBOARD
TTC	TELEPHONE TERMINAL CABINET
TU	TERMINAL UNIT
TV	TELEVISION
U	
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBLE POWER SUPPLY
USB	UNIVERSAL SERIAL BUS
UV	ULTRAVIOLET
V	
VSD	VARIABLE SPEED DRIVE
VIF	VERIFY IN FIELD
VP	VAPOR PROOF
W	
W	WIRELESS
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WG	WIRE GUARD
W	WIRELESS
WP	WEATHER PROOF
X	
XP	EXPLOSION PROOF
MISC	
3R	NEMA 3R
4X	NEMA 4X
X	BY
°	DEGREES
Ø	DIAMETER
'	FOOT, FEET
"	INCH, INCHES

SYMBOL LEGEND

DETAIL SYMBOL
DETAIL IDENTIFICATION
DETAIL
2 / E2.1
DETAIL SCALE
DRAWING WHERE DETAIL IS REFERENCED OR CUT

ELEVATION SYMBOL
ELEVATION NUMBER
4 / 3 / E9.1 / 1 / 2
DRAWING WHERE ELEVATION IS DRAWN

PLAN OR DETAIL ENLARGEMENT
PLAN OR DETAIL IDENTIFICATION
2 / E9.1
DRAWING WHERE PLAN OR DETAILS IS DRAWN

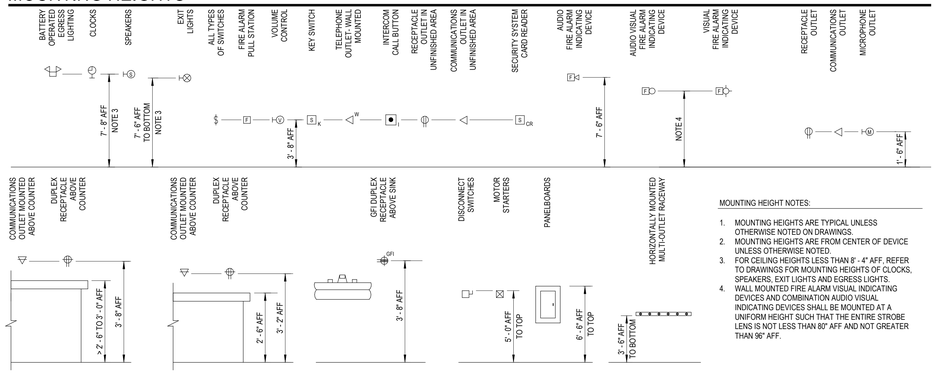
COLUMN CENTERLINE
1

EXISTING
1
NEW

SECTION LOCATOR
SECTION IDENTIFICATION
2 / E9.1
DRAWING WHERE PLAN OR DETAIL IS DRAWN

ROOM NAME AND NUMBER
ROOM NAME
A101
ROOM
FLOOR
BUILDING OR UNIT (IF ANY)

MOUNTING HEIGHTS



MOUNTING HEIGHT NOTES:

1. MOUNTING HEIGHTS ARE TYPICAL UNLESS OTHERWISE NOTED ON DRAWINGS.
2. MOUNTING HEIGHTS ARE FROM CENTER OF DEVICE UNLESS OTHERWISE NOTED.
3. FOR CEILING HEIGHTS LESS THAN 8' - 4" AFF, REFER TO DRAWINGS FOR MOUNTING HEIGHTS OF CLOCKS, SPEAKERS, EXIT LIGHTS AND EGRESS LIGHTS.
4. WALL MOUNTED FIRE ALARM VISUAL INDICATING DEVICES AND COMBINATION AUDIO VISUAL INDICATING DEVICES SHALL BE MOUNTED AT A UNIFORM HEIGHT SUCH THAT THE ENTIRE STROBE LENS IS NOT LESS THAN 80" AFF AND NOT GREATER THAN 96" AFF.

SYMBOLS (LETTERS (X) INDICATE TYPE , TYPICAL)

LIGHTING

- LIGHTING FIXTURE; RECESSED OR SURFACE MOUNTED
- LIGHTING FIXTURE; RECESSED OR SURFACE MOUNTED ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- LIGHTING FIXTURE; PENDANT MOUNTED
- LIGHTING FIXTURE; PENDANT MOUNTED ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- STRIP LIGHTING FIXTURE
- STRIP LIGHTING FIXTURE ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- LIGHTING FIXTURE; RECESSED AIMABLE OR WALL WASH
- LIGHTING FIXTURE; RECESSED OR PENDANT MTD
- LIGHTING FIXTURE; RECESSED OR PENDANT MTD ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- LIGHTING FIXTURE; SURFACE MOUNTED
- LIGHTING FIXTURE; SURFACE MOUNTED ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- TRACK LIGHTING
- LIGHTING FIXTURE; WALL MOUNTED
- LIGHTING FIXTURE; WALL MOUNTED ON NIGHT LIGHT OR EMERGENCY CIRCUIT
- LIGHTING FIXTURE; UNDERCABINET MOUNTED
- LIGHTING FIXTURE; COVE MOUNTED
- EXIT SIGN LIGHTING FIXTURE; FACES INDICATED BY SHADING, DIRECTIONAL ARROWS AS INDICATED - CEILING OR PENDANT MOUNTED
- EXIT SIGN LIGHTING FIXTURE; FACES INDICATED BY SHADING, DIRECTIONAL ARROWS AS INDICATED - WALL MOUNTED, END OR BACK
- COMBO EXIT SIGN LIGHTING FIXTURE AND EMERGENCY LIGHTING UNIT; FACES INDICATED BY SHADING, DIRECTIONAL ARROWS AS INDICATED - CEILING OR PENDANT MOUNTED
- COMBO EXIT SIGN LIGHTING FIXTURE AND EMERGENCY LIGHTING UNIT; FACES INDICATED BY SHADING, DIRECTIONAL ARROWS AS INDICATED - WALL MOUNTED, END OR BACK
- CEILING MOUNTED SELF-CONTAINED EMERGENCY LIGHTING UNIT
- WALL MOUNTED SELF-CONTAINED EMERGENCY LIGHTING UNIT
- POLE MOUNTED AREA LIGHTING FIXTURE; QUANTITY OF LUMINARIES AS INDICATED
- SITE LIGHTING; BOLLARD
- POST TOP POLE MOUNTED AREA LIGHTING FIXTURE
- SITE LIGHTING FIXTURE; ADJUSTABLE FLOOD

- LINE VOLTAGE SINGLE POLE SWITCH
- LINE VOLTAGE DOUBLE POLE SWITCH
- LINE VOLTAGE THREE WAY SWITCH
- LINE VOLTAGE FOUR WAY SWITCH
- LINE VOLTAGE KEY OPERATED SWITCH
- LINE VOLTAGE 'WALL BOX' DIMMER SWITCH
- LINE VOLTAGE WALL SWITCH OCCUPANCY SENSOR WITH ON/OFF PUSHBUTTONS
- LINE VOLTAGE WALL SWITCH OCCUPANCY SENSOR WITH ON/OFF & DIMMING PUSHBUTTONS
- LINE VOLTAGE WALL SWITCH OCCUPANCY SENSOR WITH 2 ZONE ON/OFF PUSHBUTTONS
- LINE VOLTAGE SWITCH WITH PILOT LIGHT
- LINE VOLTAGE SWITCH WITH TIMER
- LINE VOLTAGE SINGLE POLE SWITCHES FOR DUAL LEVEL LIGHTING CONTROL
- LINE VOLTAGE THREE WAY SWITCHES FOR DUAL LEVEL LIGHTING CONTROL
- LOW VOLTAGE PUSHBUTTON STATION LV - 1 ZONE ON/OFF
- LVD - 1 ZONE ON/OFF & DIMMING LV2 - 2 ZONE ON/OFF
- LV2D - 2 ZONE ON/OFF & DIMMING W - LOW VOLTAGE WIRELESS
- CEILING MOUNTED OCCUPANCY SENSOR
- WALL MOUNTED OCCUPANCY SENSOR
- CEILING MOUNTED LINE VOLTAGE OCCUPANCY SENSOR
- WALL MOUNTED LINE VOLTAGE OCCUPANCY SENSOR
- LIGHTING CONTACTOR
- TIME SWITCH
- LIGHTING CONTROL PANEL
- PHOTOELECTRIC SWITCH \ PHOTOCELL - CEILING MOUNTED
- PHOTOELECTRIC SWITCH \ PHOTOCELL - WALL MOUNTED
- BRANCH CIRCUIT EMERGENCY LIGHTING TRANSFER SWITCH
- LIGHTING CONTROL PRESET STATION OR TOUCHSCREEN

POWER

- SINGLE RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET FLUSH MOUNTED IN CEILING
- DEAD-FRONT GROUND FAULT CIRCUIT INTERRUPTER (PROTECTION OF DOWNSTREAM CONNECTED DEVICES)
- DEAD-FRONT GROUND FAULT CIRCUIT INTERRUPTER MOUNTED ABOVE COUNTER (PROTECTION OF DOWNSTREAM CONNECTED DEVICES)

- POWER FLOOR BOX
- DUPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER
- DUPLEX RECEPTACLE OUTLET WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER PROTECTION
- DUPLEX RECEPTACLE OUTLET CONNECTED TO UPSTREAM GROUND FAULT CIRCUIT INTERRUPTER PROTECTION DEVICE
- DUPLEX RECEPTACLE OUTLET WITH INTEGRAL SURGE SUPPRESSION
- DUPLEX RECEPTACLE OUTLET CONNECTED TO UPSTREAM SURGE SUPPRESSION DEVICE
- DUPLEX RECEPTACLE OUTLET SPLIT WIRED
- DUPLEX RECEPTACLE OUTLET WITH ISOLATED GROUND
- QUAD RECEPTACLE OUTLET
- QUAD RECEPTACLE OUTLET MOUNTED ABOVE COUNTER
- QUAD RECEPTACLE OUTLET WITH ONE (1) INTEGRAL SURGE SUPPRESSION TYPE RECEPTACLE AND ONE (1) SURGE SUPPRESSION PROTECTED RECEPTACLE
- SPECIAL RECEPTACLE AS INDICATED
- POWER/COMMUNICATIONS POLE
- SPECIAL POWER CONNECTION
- CORD DROP
- CORD REEL
- POKE THROUGH ASSEMBLY
- JUNCTION BOX - CEILING MOUNTED
- JUNCTION BOX - WALL MOUNTED
- PUSHBUTTON STATION - EMERGENCY POWER SHUTDOWN
- HORIZONTALLY MOUNTED MULTI-OUTLET RACEWAY
- VERTICALLY MOUNTED MULTI-OUTLET RACEWAY
- BUS DUCT
- EQUIPMENT MOUNTING BACKBOARD
- PANELBOARD (250V AND LESS)
- PANELBOARD (GREATER THAN 250V)
- DISTRIBUTION OR POWER PANELBOARD
- SINGLE PHASE MOTOR
- THREE PHASE MOTOR
- MAGNETIC MOTOR STARTER
- COMBINATION MAGNETIC MOTOR STARTER & FUSED DISCONNECT SWITCH - SWITCH SIZE / FUSE SIZE

- NON-FUSED DISCONNECT SWITCH -SWITCH SIZE
- FUSED DISCONNECT SWITCH -SWITCH SIZE/FUSE SIZE
- ENCLOSED CIRCUIT BREAKER -CB RATING
- VARIABLE SPEED DRIVE
- MAGNETIC CONTACTOR
- MANUAL MOTOR STARTER
- HORSEPOWER RATED SWITCH
- PACKAGED EQUIPMENT WITH INTEGRALLY MOUNTED PREWIRED CONTROL PANEL
- FURNISHED AS INTEGRAL PART OF EQUIPMENT, OR AS INDICATED TRANSFORMER
- GROUND ROD
- LIGHTNING PROTECTION AIR TERMINAL
- GROUND BUS BAR AS INDICATED

AUXILIARY SYSTEMS

- CEILING MOUNTED SINGLE FACED CLOCK
- CEILING MOUNTED DOUBLE FACED CLOCK
- WALL MOUNTED SINGLE FACED CLOCK
- WALL MOUNTED DOUBLE FACED CLOCK
- COMBINATION WALL MOUNTED SPEAKER/CLOCK
- CEILING MOUNTED COMBINATION SPEAKER/CLOCK
- WALL MOUNTED DIGITAL CLOCK
- CEILING MOUNTED SPEAKER
- CEILING MOUNTED SPEAKER CLUSTER
- WALL MOUNTED SPEAKER
- CEILING MOUNTED MICROPHONE OUTLET
- WALL MOUNTED MICROPHONE OUTLET
- WALL MOUNTED AUXILIARY OUTLET
- WALL MOUNTED VOLUME CONTROL
- WALL MOUNTED BELL
- WALL MOUNTED CHIME
- WALL MOUNTED HORN SPEAKER
- CEILING MOUNTED HORN SPEAKER
- SECURITY SYSTEM CARD READER
- SECURITY SYSTEM DOOR CONTACT
- SECURITY SYSTEM ELECTRIC STRIKE
- SECURITY SYSTEM ELECTRIFIED HARDWARE
- SECURITY SYSTEM LOCKDOWN READER/BUTTON
- SECURITY SYSTEM KEY SWITCH
- SECURITY SYSTEM MOTION DETECTOR
- CEILING MOUNTED SECURITY CAMERA
- WALL MOUNTED SECURITY CAMERA
- FIRE ALARM PULL STATION
- WALL MOUNTED A/V FIRE ALARM INDICATING DEVICE
- CEILING MOUNTED A/V FIRE ALARM INDICATING DEVICE
- WALL MOUNTED VISUAL FIRE ALARM INDICATING DEVICE
- CEILING MOUNTED VISUAL FIRE ALARM INDICATING DEVICE
- WALL MOUNTED AUDIO FIRE ALARM INDICATING DEVICE
- CEILING MOUNTED AUDIO FIRE ALARM INDICATING DEVICE
- WALL MOUNTED VISUAL EMERGENCY MASS NOTIFICATION INDICATING DEVICE
- CEILING MOUNTED VISUAL EMERGENCY MASS NOTIFICATION INDICATING DEVICE
- WALL MOUNTED AREA SMOKE DETECTOR
- CEILING MOUNTED AREA SMOKE DETECTOR
- CEILING MOUNTED COMBINATION AREA SMOKE & CARBON MONOXIDE DETECTOR
- WALL MOUNTED TEMPERATURE DETECTOR
- CEILING MOUNTED TEMPERATURE DETECTOR
- DUCT SMOKE DETECTOR
- WALL MOUNTED MAGNETIC DOOR HOLDER/RELEASE
- WATER FLOW SWITCH
- TAMPER SWITCH
- MONITOR MODULE
- CONTROL MODULE
- FIRE FIGHTER TELEPHONE JACK
- FIRE ALARM CONTROL PANEL
- FIRE SUPPRESSION SYSTEM CONTROL PANEL
- FIRE ALARM REMOTE ANNUNCIATOR PANEL
- SINGLE BED STATION - NURSE CALL
- DOUBLE BED STATION - NURSE CALL
- BATHROOM STATION - NURSE CALL
- BATHROOM STATION PULL CORD - NURSE CALL
- CODE BLUE PUSHBUTTON - NURSE CALL
- NURSE CALL DUTY STATION
- NURSE CALL EMERGENCY STATION
- NURSE CALL MASTER STATION
- NURSE CALL POWER SUPPLY
- NURSE CALL STAFF STATION
- NURSE CALL WALL MOUNTED DOME LIGHT
- NURSE CALL CEILING MOUNTED DOME LIGHT
- NURSE CALL WALL MOUNTED DOME LIGHT WITH CODE BLUE
- NURSE CALL CEILING MOUNTED DOME LIGHT WITH CODE BLUE
- WALL MOUNTED COMMUNICATIONS OUTLET
- WALL MOUNTED COMMUNICATIONS OUTLET MOUNTED ABOVE COUNTER
- CEILING MOUNTED COMMUNICATIONS OUTLET
- COMMUNICATIONS FLOOR BOX
- POWER & COMMUNICATIONS FLOOR BOX
- INTERCOM CALL BUTTON
- INTERCOM CALL BUTTON WITH PRIVACY

ONE-LINE

- ANALOG AMPERE\VOLT METER
- ANALOG ENERGY USAGE METER
- DIGITAL MULTI-FUNCTION METER
- KIRK KEY INTERLOCK
- CIRCUIT BREAKER
- SWITCH
- FUSE
- TRANSFORMER
- TRANSFER SWITCH
- THERMAL OVERLOAD
- CONTACTS
- INDICATES WIRE SIZE AND CONDUIT SIZE
- DRAWOUT CIRCUIT BREAKER
- AIR-MAG / VACUUM CIRCUIT BREAKER
- ENGINE GENERATOR

- SYSTEM OR EQUIPMENT GROUND

MISC

- EXOTHERMIC WELD OR BRAZED CONNECTION
- CONDUIT IN OR BELOW FLOOR SLAB OR BELOW GRADE
- RACEWAY TURNED UP
- RACEWAY TURNED DOWN
- HAZARDOUS LOCATION CONDUIT SEALING FITTING
- CABLE TRAY
- UNDERFLOOR DUCT - POWER
- UNDERFLOOR HEADER DUCT - POWER
- UNDERFLOOR DUCT - COMM
- UNDERFLOOR HEADER DUCT - COMM

SITE

- FLUSH IN-GRADE HAND HOLE
- UNDERGROUND ELECTRICAL
- UNDERGROUND COMMUNICATIONS
- UNDERGROUND FIBER OPTIC COMMUNICATIONS
- UNDERGROUND LIGHTING
- EMERGENCY "CODE BLUE" BOLLARD

ELECTRICAL DRAWING INDEX

PROJECT GENERAL NOTES

1. ALL ITEMS SHOWN HATCHED SHALL BE DISCONNECTED AND REMOVED. LIGHT LINE WEIGHT INDICATES EXISTING ITEMS TO REMAIN. HEAVY LINE WEIGHT INDICATES NEW ITEMS.
2. PROVIDE A DEDICATED NEUTRAL CONDUCTOR WITHIN THE RACEWAY ALONG WITH THE PHASE CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS.
3. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAY ALONG WITH THE PHASE CONDUCTORS FOR ALL FEEDERS AND BRANCH CIRCUITS.
4. ALL 120 VOLT, 20 AMPERE BRANCH CIRCUITS EXCEEDING 100'-0" IN LENGTH SHALL BE INSTALLED USING #10 AWG CONDUCTORS UNLESS OTHERWISE NOTED.
5. WHERE CONDUITS PENETRATE FIRE WALLS, THE WALLS SHALL BE SEALED TO EQUAL OR GREATER THAN THE ORIGINAL FIRE RATING OF THE WALL.
6. PVC CONDUIT BELOW BUILDING FLOOR SLAB SHALL BE INSTALLED WITH 6" OF SAND BETWEEN TOP OF CONDUIT AND BOTTOM OF SLAB. CONDUIT SHALL TRANSITION TO RIGID STEEL CONDUIT BEFORE ENTERING SLAB. CONDUITS PENETRATING THE SLAB SHALL BE RIGID STEEL CONDUIT AT HEIGHTS LESS THAN 18" ABOVE FINISHED FLOOR.
7. PROVIDE #10 AWG WIRING (MINIMUM) FOR ALL LIGHTING BRANCH CIRCUITS SERVING EXTERIOR BUILDING MOUNTED LIGHTING FIXTURES.
8. CONNECT BATTERY POWERED EXIT SIGNS AND EMERGENCY BATTERY UNITS "EBUs" TO THE SAME BRANCH CIRCUIT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECT AHEAD OF ANY LOCAL SWITCH.
9. ALL ELECTRICAL DEVICES AND ASSOCIATED OUTLET BOXES SHALL BE FLUSH MOUNTED UNLESS NOTED OTHERWISE. ALL CONDUIT AND WIRING SHALL BE CONCEALED. SURFACE METAL RACEWAY SHALL BE PERMITTED ONLY WHERE NOTED.
10. MOUNTING HEIGHT OF RECESSED JUNCTION OR OUTLET BOXES IN BLOCK OR BRICK MAY BE ADJUSTED TO THE NEAREST HORIZONTAL COURSING AS LONG AS THE SPECIFIED MOUNTING HEIGHT IS NOT EXCEEDED. COVER PLATE TO CONCEAL GROUT LINE.
11. CONNECT BATTERY POWERED EXIT SIGNS AND EMERGENCY BATTERY UNITS "EBUs" TO THE SAME BRANCH CIRCUIT SERVING THE NORMAL LIGHTING IN THE AREA AND CONNECT AHEAD OF ANY LOCAL SWITCH.
12. ALL WORK AND EQUIPMENT SHALL COMPLY WITH THE NEC INCLUDING ANY MODIFICATIONS BY THE LOCAL JURISDICTION. THE MEANS AND METHODS USED BY THIS CONTRACTOR SHALL CONFORM TO NEC SECTION 110.3.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

THIS PROJECT MAY NOT UTILIZE ALL THE SYMBOLS, MATERIALS, ABBREVIATIONS AND STANDARDS INFORMATION SHOWN ON THIS SHEET

Project Administrator	V. Grant
Project Designer	R. Killips
Project Architect / Engineer	R. Killips
Drawn By	W. Jaynes
Q.M. Review	T. Carron / S. Tyburski
Approved	M. Nowicki
Drawing Scale	No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Electrical Reference Information

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
ER.0

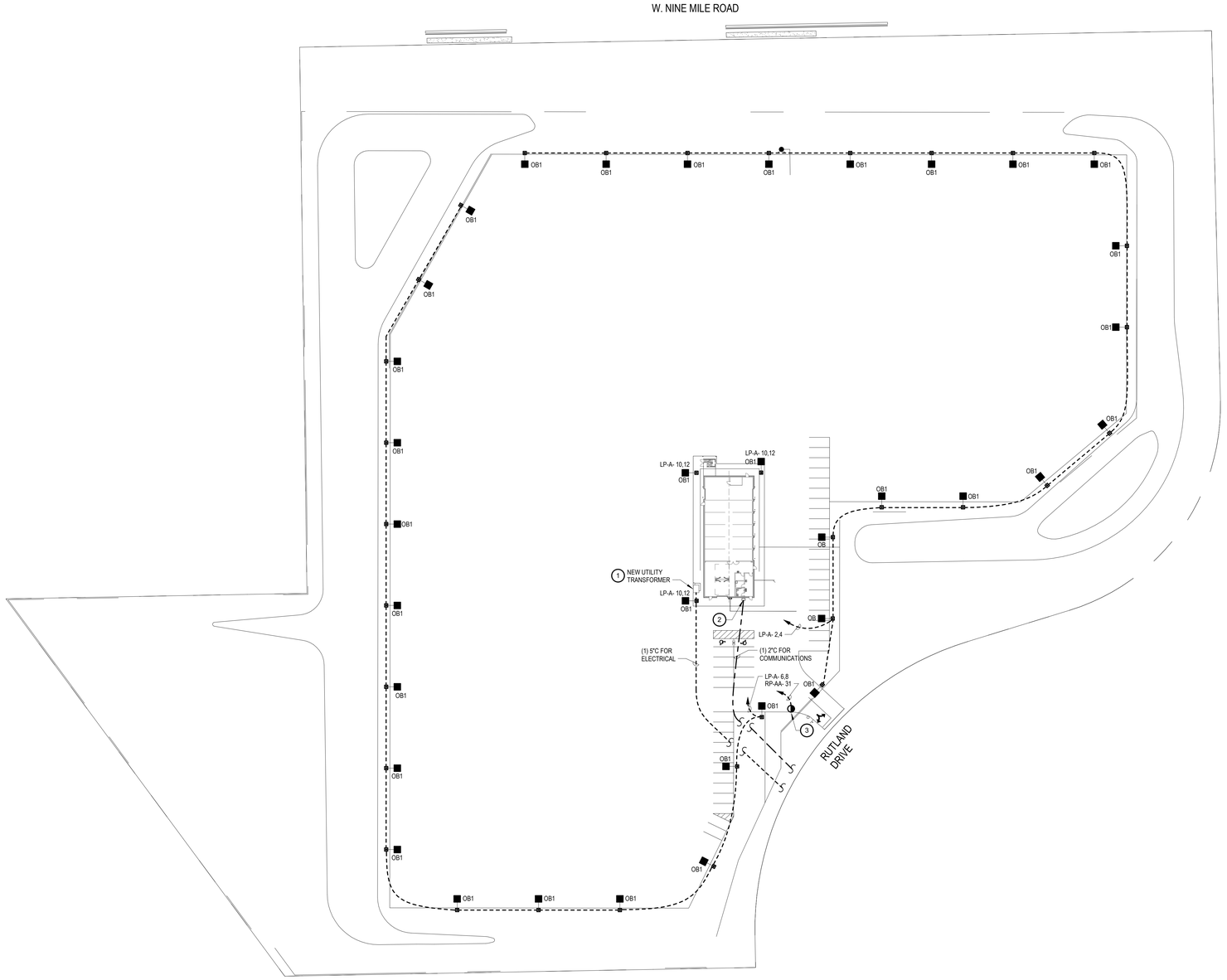
GENERAL NOTES

SITE

1. ALL CONDUITS SHALL BE 42" BELOW GRADE.
2. ALL UNDERGROUND SITE LIGHTING CONDUITS SHALL BE SCHEDULE 40 PVC 1 1/4"C UNLESS OTHERWISE NOTED.
3. PROVIDE CONTINUOUS YELLOW MARKER TAPE OVER ALL BELOW GRADE CONDUITS. REFER TO DETAILS ON DRAWING E7.1.
4. WHERE PVC ELECTRIC CONDUITS ARE PERMITTED, "ELLS" AND CONDUITS WITHIN 5' - 0" OF FOUNDATION WALLS AND UNDER ROADWAYS SHALL BE RGS. VERTICAL POLE RISES SHALL BE RGS.
5. INSTALL SITE LIGHTING POLE FOUNDATIONS WITH 36" BETWEEN FACE OF CURB OR EDGE OF ASPHALT AND FACE OF FOUNDATION.
6. HANDHOLES ON SITE LIGHTING POLES SHALL BE INSTALLED ON OPPOSITE SIDE OF PARKING LOT, DRIVING COURSE, OR DRIVEWAYS.
7. ALL SITE LIGHTING PHASE, NEUTRAL AND GROUND CONDUCTORS SHALL BE #8 AWG.
8. UNDERGROUND DTE ENERGY CONDUITS SHALL BE 5" SCHEDULE 40 PVC.

KEY NOTES

1. VERIFY WITH DTE ENERGY THE EXACT LOCATION OF SERVICE FEED.
2. COMMUNICATIONS HAND HOLE AT SOUTH END OF BUILDING. REFER TO DRAWING E3.1 FOR LOCATION.
3. POWER TO MOTORIZED ENTRY GATE. COORDINATE EXACT REQUIREMENTS WITH GATE PROVIDER.



iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	R. Killips
Project Architect / Engineer	R. Killips
Drawn By	W. Jaynes
Q.M. Review	T. Carron / S. Tyburski
Approved	M. Nowicki
Drawing Scale	1" = 50'

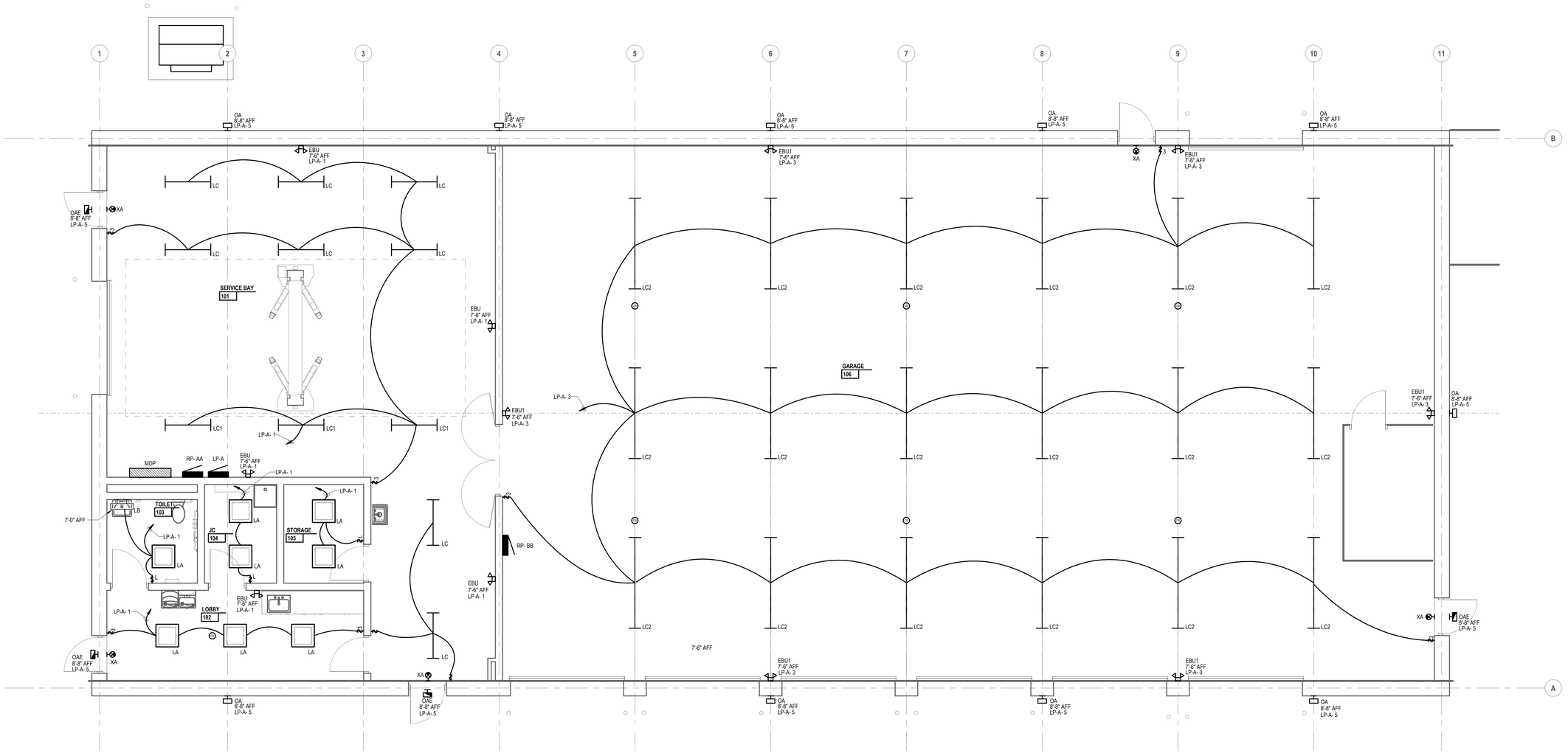
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Electrical Site Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
ES.1



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology

1441 west long lake, suite 200
troy, michigan 48098

5211 cascade road SE, suite 300
grand rapids, michigan 49546

248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	R. Killips
Project Architect / Engineer	R. Killips
Drawn By	W. Jaynes
Q.M. Review	T. Carron / S. Tyburski
Approved	M. Nowicki
Drawing Scale	1/4" = 1'-0"

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor Lighting Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

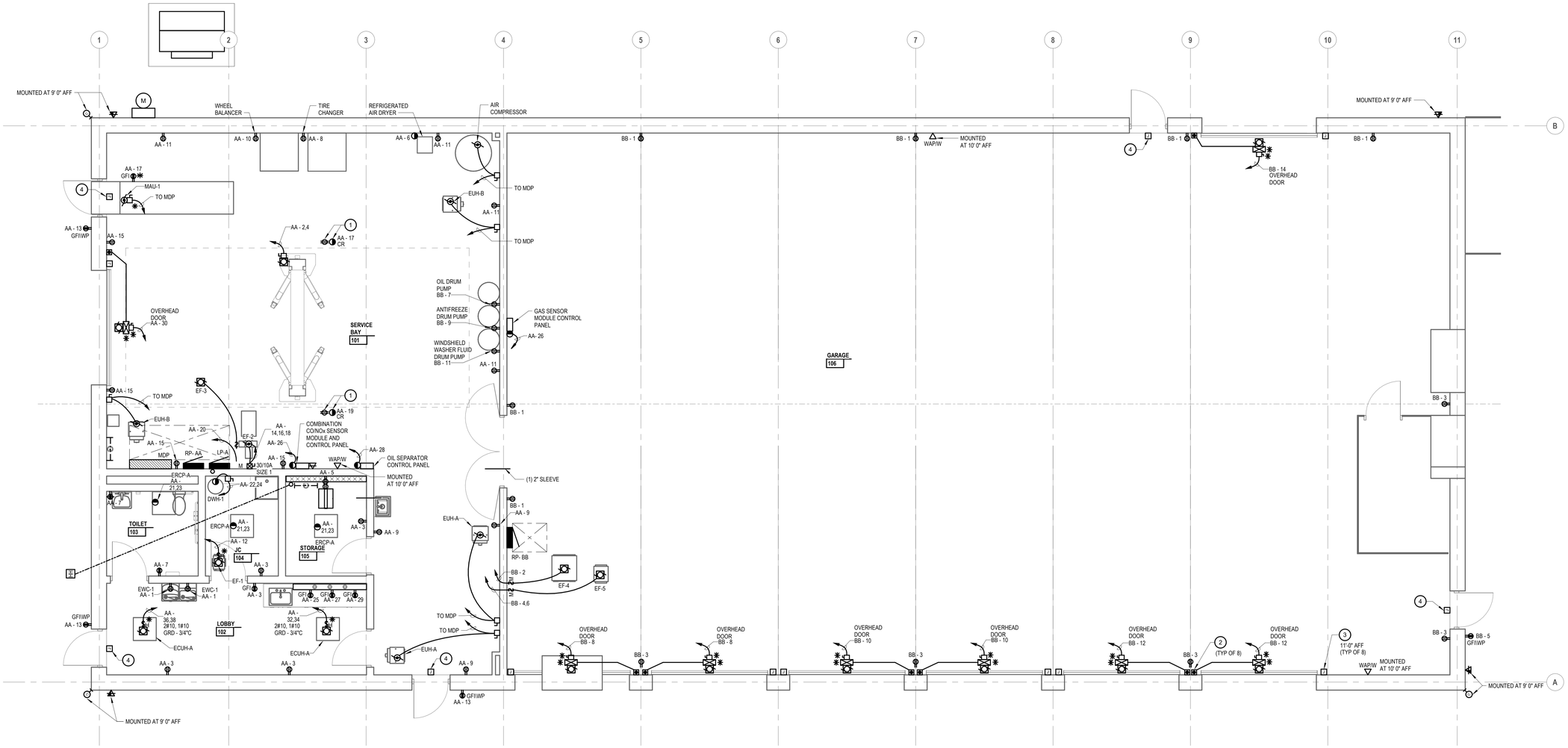
Drawing Number
E2.1

GENERAL NOTES

1. ALL RECEPTACLES WITHIN SERVICE BAY 101 AND GARAGE 106 SHALL BE MOUNTED AT 48" AFF

KEY NOTES

1. PROVIDE HEAVY DUTY, YELLOW INDUSTRIAL CORD REEL WITH BLACK PORTABLE OUTLET BOX GFCI MODULE AND TWO (2) 20A DUPLEX RECEPTACLES, UL TYPE 1, 35FT., #12/3 SJO, 20A, 125 VAC, HUBBELL HBL5512GFF220M1Y OR ENGINEER APPROVED EQUAL.
2. SURFACE MOUNTED DOOR CONTROL STATION FURNISHED BY DOOR SUPPLIER, WIRED AND INSTALLED BY CONTACTOR.
3. COORDINATE IN FLOOR DOOR CONTACT INFRASTRUCTURE, CONDUIT AND BOX REQUIREMENTS WITH TECHNOLOGY DRAWINGS. REFER TO DOOR DETAIL ON T7.2.
4. COORDINATE DOOR SECURITY INFRASTRUCTURE, CONDUIT AND BOX REQUIREMENTS WITH TECHNOLOGY DRAWINGS. REFER TO DOOR DETAILS ON T7.2.



INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator	V. Grant
Project Designer	Designer
Project Architect / Engineer	R. Killips
Drawn By	Author
Q.M. Review	T. Carron / S. Tyburski
Approved	M. Nowicki
Drawing Scale	1/4" = 1'-0"

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

First Floor Power Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
E3.1

PANELBOARD SCHEDULE — LP-A

100 AMPS MLO

S...	CKT.	LOAD	CB	A		B		C		CB	LOAD	CKT.	S...
	1	Lighting: SB 101, Stor 105, JC 104, Lobby 102,...	20	846	869					20	Site Lighting Poles: North and East	2	
	3	Lighting: Garage 106	20			920	869					4	
	5	Lighting: Exterior Wall Mounted Fixtures	20					168	767	20	Site Lighting Poles: South and West	6	
	7	Spare	20	0	767							8	
	9	Spare	20			0	153			20	Site Lighting Poles: Building	10	
	11	Spare	20					0	153			12	
	13	Spare	20	0	0					20	Spare	14	
	15	Spare	20			0	0			20	Spare	16	
	17	Spare	20					0	0	20	Spare	18	
	19	Space	--	--	--					--	Space	20	
	21	Space	--			--	--			--	Space	22	
	23	Space	--					--	--	--	Space	24	
	25	Space	--	--	--					--	Space	26	
	27	Space	--			--	--			--	Space	28	
	29	Space	--					--	--	--	Space	30	
	31	Space	--	--	--					--	Space	32	
	33	Space	--			--	--			--	Space	34	
	35	Space	--					--	--	--	Space	36	
	37	Space	--	--	--					--	Space	38	
	39	Space	--			--	--			--	Space	40	
	41	Space	--					--	--	--	Space	42	

Panel Information		Symbols		Load Classification	Total Connected Load
Volts:	208/120 Wye	Note: All Symbols May Not Be Used		Equipment	0 VA
Mounting:	Surface	*	PROVIDE LOCK ON ATTACHMENT	Kitchen Equipment	0 VA
A.I.C. (RMS Symmetrical):	22,000	#	PROVIDE SWD RATED BREAKER	Lighting	5510 VA
Phase:	3	@	PROVIDE AFCI TYPE BREAKER	Receptacle	0 VA
Wire:	4	+	PROVIDE GFCI TYPE BREAKER		
Hertz:	60				

PHASE A CONNECTED LOAD:	2481 VA
PHASE B CONNECTED LOAD:	1942 VA
PHASE C CONNECTED LOAD:	1088 VA
TOTAL CONNECTED LOAD:	**5510 VA**
TOTAL ESTIMATED DEMAND LOAD:	**5510 VA**
TOTAL ESTIMATED DEMAND AMPS:	**15.3 A**

PANELBOARD SCHEDULE — RP - AA

150 AMPS MLO

S...	CKT.	LOAD	CB	A		B		C		CB	LOAD	CKT.	S...
+	1	Electric Water Cooler Receptacles: Lobby 102	20	600	1414					20	Vehicle Hoist: Service Bay 101	2	
	3	Receptacles: Lobby 102, JC 104, Storage 105	20			900	1414					4	
	5	IT Rack: Storage 105	20					360	720	20	Refrigerated Dryer: Service Bay 101	6	
	7	Receptacles: Lobby 102, Toilet 103	20	360	1500					20	Wheel Clamp Tire Changer: Service Bay 101	8	
	9	Receptacles: Service Bay 101	20			540	300			20	Wheel Balancer: Service Bay 101	10	
	11	Receptacles: Service Bay 101	20					720	180	15	EF-1: JC 104	12	
	13	Receptacles: Outdoor	20	540	63					15	EF-2: Service Bay 101	14	
	15	Receptacles: Service Bay 101	20			720	63					16	
	17	Cord Reel: Service Bay 101	20					1180	63			18	
	19	Cord Reel: Service Bay 101	20	1000	252					20	EF-3: Service Bay 101	20	
	21	ERCP-A Units: Toilet103 , JC 104, Storage 105	20			563	1250			20	DWH-1: JC 104	22	
	23							563	1250			24	
	25	Receptacle Space 6	20	180	1000					20	Gas Separator Control Panels: Garage, Service....	26	
	27	Receptacle Space 6	20			180	500			20	Oil Sensor Control Panel: Service Bay 101	28	
	29	Receptacle Space 6	20					180	250	20	Overhead Door: Service Bay 101	30	
	31	Gate Operator: Entrance	20	500	1800					25	ECUH-A North: Lobby 102	32	
	33	Spare	20			0	1800					34	
	35	Spare	20					0	1800	25	ECUH-A South: Lobby 102	36	
	37	Spare	20	0	1800							38	
	39	Space	--			--	--			--	Space	40	
	41	Space	--					--	--	--	Space	42	

Panel Information		Symbols		Load Classification	Total Connected Load
Volts:	208/120 Wye	Note: All Symbols May Not Be Used		Equipment	17244 VA
Mounting:	Surface	*	PROVIDE LOCK ON ATTACHMENT	Kitchen Equipment	0 VA
A.I.C. (RMS Symmetrical):	22,000	#	PROVIDE SWD RATED BREAKER	Lighting	0 VA
Phase:	3	@	PROVIDE AFCI TYPE BREAKER	Receptacle	9260 VA
Wire:	4	+	PROVIDE GFCI TYPE BREAKER		
Hertz:	60				

PHASE A CONNECTED LOAD:	11009 VA
PHASE B CONNECTED LOAD:	8230 VA
PHASE C CONNECTED LOAD:	7265 VA
TOTAL CONNECTED LOAD:	**26504 VA**
TOTAL ESTIMATED DEMAND LOAD:	**26504 VA**
TOTAL ESTIMATED DEMAND AMPS:	**73.6 A**

PANELBOARD SCHEDULE — RP - BB

150 AMPS MLO

S...	CKT.	LOAD	CB	A		B		C		CB	LOAD	CKT.	S...
	1	Receptacles: Garage 106	20	1080	100					15	EF-4: Garage 106	2	
	3	Receptacles: Garage 106	20			900	790			15	EF-5: Garage 106	4	
	5	Receptacle: Outdoor	20					180	790			6	
	7	Oil Drum Pump: Service Bay 101	20	900	500					20	Overhead Doors: Garage 106	8	
	9	Antifreeze Drum Pump: Service Bay 101	20			900	500			20	Overhead Doors: Garage 106	10	
	11	Windshield Fluid Drum Pump: Service Bay 101	20					900	500	20	Overhead Doors: Garage 106	12	
	13	Spare	20	0	250					20	Overhead Door: Garage 106	14	
	15	Spare	20			0	0			20	Spare	16	
	17	Spare	20					0	0	20	Spare	18	
	19	Spare	20	0	--					--	Space	20	
	21	Spare	20			0	--			--	Space	22	
	23	Spare	20					0	--	--	Space	24	
	25	Space	--	--	--					--	Space	26	
	27	Space	--			--	--			--	Space	28	
	29	Space	--					--	--	--	Space	30	
	31	Space	--	--	--					--	Space	32	
	33	Space	--			--	--			--	Space	34	
	35	Space	--					--	--	--	Space	36	
	37	Space	--	--	--					--	Space	38	
	39	Space	--			--	--			--	Space	40	
	41	Space	--					--	--	--	Space	42	

Panel Information		Symbols		Load Classification	Total Connected Load
Volts:	208/120 Wye	Note: All Symbols May Not Be Used		Equipment	3431 VA
Mounting:	Surface	*	PROVIDE LOCK ON ATTACHMENT	Kitchen Equipment	0 VA
A.I.C. (RMS Symmetrical):	22,000	#	PROVIDE SWD RATED BREAKER	Lighting	0 VA
Phase:	3	@	PROVIDE AFCI TYPE BREAKER	Receptacle	4860 VA
Wire:	4	+	PROVIDE GFCI TYPE BREAKER		
Hertz:	60				

PHASE A CONNECTED LOAD:	2830 VA
PHASE B CONNECTED LOAD:	3090 VA
PHASE C CONNECTED LOAD:	2370 VA
TOTAL CONNECTED LOAD:	**8291 VA**
TOTAL ESTIMATED DEMAND LOAD:	**8291 VA**
TOTAL ESTIMATED DEMAND AMPS:	**23.0 A**

CONDUIT AND WIRE SCHEDULE

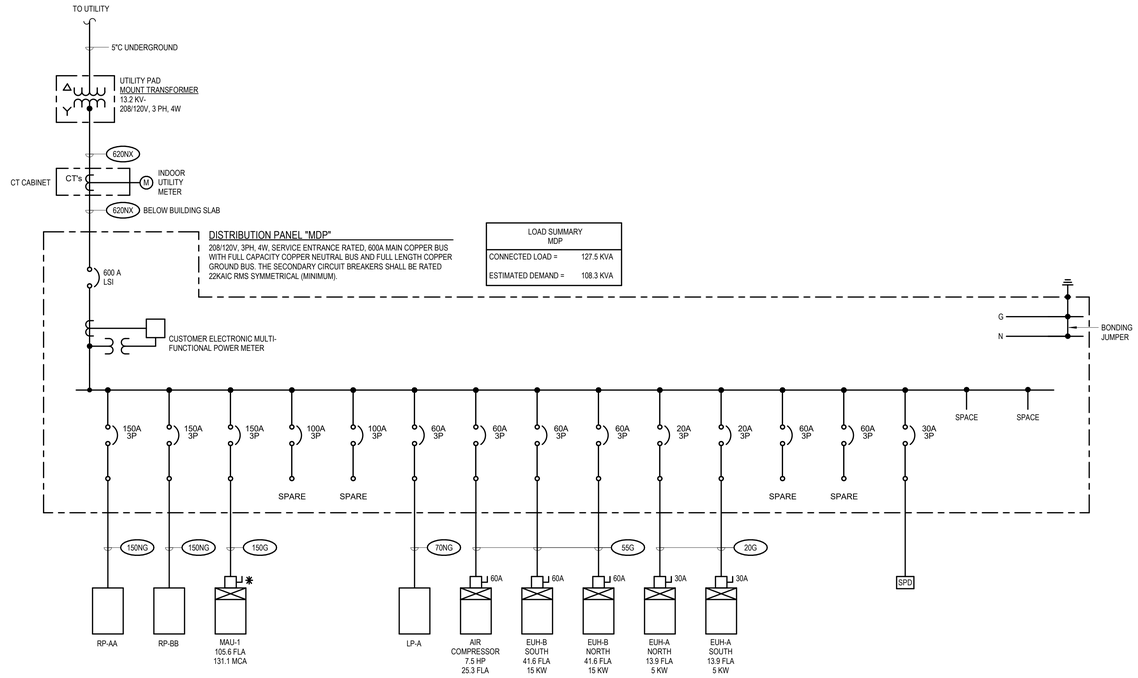
WIRE TEMP.	COPPER CONDUCTORS			
	3 PHASE, 3 WIRE WITH GROUND		3 PHASE, 4 WIRE WITH GROUND	
	TAG	FILL	TAG	FILL
60°C	20G	3#12, 1#12 GRD - 3/4"C	20NG	4#12, 1#12 GRD - 3/4"C
	30G	3#10, 1#10 GRD - 3/4"C	30NG	4#10, 1#10 GRD - 3/4"C
	40G	3#8, 1#10 GRD - 3/4"C	40NG	4#8, 1#10 GRD - 1"C
	55G	3#6, 1#10 GRD - 1"C	55NG	4#6, 1#10 GRD - 1 1/4"C
	70G	3#4, 1#8 GRD - 1 1/4"C	70NG	4#4, 1#8 GRD - 1 1/4"C
	85G	3#3, 1#8 GRD - 1 1/4"C	85NG	4#3, 1#8 GRD - 1 1/4"C
	95G	3#2, 1#8 GRD - 1 1/4"C	95NG	4#2, 1#8 GRD - 1 1/2"C
	110G	3#1, 1#6 GRD - 1 1/2"C	110NG	4#1, 1#6 GRD - 2"C
75°C	150G	3#1/0, 1#6 GRD - 1 1/2"C	150NG	4#1/0, 1#6 GRD - 2"C
	175G	3#2/0, 1#6 GRD - 2"C	175NG	4#2/0, 1#6 GRD - 2"C
	200G	3#3/0, 1#6 GRD - 2"C	200NG	4#3/0, 1#6 GRD - 2 1/2"C
	230G	3#4/0, 1#4 GRD - 2"C	230NG	4#4/0, 1#4 GRD - 2 1/2"C
	255G	3#250 KCMIL, 1#4 GRD - 2"C	255NG	4#250 KCMIL, 1#4 GRD - 2 1/2"C
	310G	3#350 KCMIL, 1#3 GRD - 2 1/2"C	310NG	4#350 KCMIL, 1#3 GRD - 3"C
	380G	3#500 KCMIL, 1#3 GRD - 3"C	380NG	4#500 KCMIL, 1#3 GRD - 3 1/2"C
	420G	3#600 KCMIL, 1#3 GRD - 3"C	420NG	4#600 KCMIL, 1#3 GRD - 3 1/2"C
	460G	2(@3#4/0, 1#2 GRD - 2"C]	460NG	2(@4#4/0, 1#2 GRD - 2 1/2"C]
	510G	2(@3#250 KCMIL, 1#2 GRD - 2 1/2"C]	510NG	2(@4#250 KCMIL, 1#2 GRD - 2 1/2"C]
	620G	2(@3#350 KCMIL, 1#1 GRD - 2 1/2"C]	620NG	2(@4#350 KCMIL, 1#1 GRD - 3"C]
	760G	2(@3#500 KCMIL, 1#1/0 GRD - 3"C]	760NG	2(@4#500 KCMIL, 1#1/0 GRD - 3 1/2"C]
	800G	2(@3#600 KCMIL, 1#1/0 GRD - 3"C]	800NG	2(@4#600 KCMIL, 1#1/0 GRD - 3 1/2"C]
	1000G	3(@3#500 KCMIL, 1#2/0 GRD - 3"C]	1000NG	3(@4#500 KCMIL, 1#2/0 GRD - 3 1/2"C]
	1200G	3(@3#600 KCMIL, 1#3/0 GRD - 3 1/2"C]	1200NG	3(@4#600 KCMIL, 1#3/0 GRD - 3 1/2"C]
	1600G	4(@3#600 KCMIL, 1#4/0 GRD - 3 1/2"C]	1600NG	4(@4#600 KCMIL, 1#4/0 GRD - 3 1/2"C]
	2000G	5(@3#600 KCMIL, 1#250 KCMIL GRD - 3 1/2"C]	2000NG	5(@4#600 KCMIL, 1#250 KCMIL GRD - 4"C]

NOTES:

1. GROUND WIRES SHOWN IN CONDUIT AND WIRE SCHEDULE ARE EQUIPMENT GROUNDING CONDUCTORS SIZED PER 2023 NEC 250.122, AND GROUND WIRES SHOWN IN TRANSFORMER SECONDARY WIRE SCHEDULE ARE SUPPLY-SIDE BONDING JUMPERS SIZED PER 2023 NEC 250.30(A)(2); ALL OTHER GROUND WIRES, INCLUDING GROUNDING ELECTRODE CONDUCTORS, MAIN BONDING JUMPERS, AND SYSTEM BONDING JUMPERS, SHALL BE SIZED PER 2023 NEC.
2. CONDUIT FILL IS BASED ON THHN, THWN, THWN-2, XHHW, AND XHHW-2 CONDUCTOR INSULATION TYPES AND EMT, IMC, RMC, FMC, LFMC, AND PVC SCHEDULE 40 CONDUIT TYPES; ALL OTHER CONDUCTORS AND CONDUIT TYPES SHALL BE SIZED PER 2023 NEC.
3. CONDUCTOR AMPACITY IS BASED ON TEMPERATURE RATING INDICATED AND 2023 NEC TABLE 310.16.

TRANSFORMER SECONDARY WIRE SCHEDULE

	COPPER CONDUCTORS				WIRE TEMP.
	208/120V, 3 PHASE, 4 WIRE WITH SUPPLY-SIDE BONDING JUMPER				
XMFR KVA	OCP	TAG	FILL		
15	60A	70NX	4#4, 1#8 GRD - 1 1/4"C		60°C
30	100A	110NX	4#1, 1#6 GRD - 2"C		
45	175A	175NX	4#2/0, 1#4 GRD - 2"C		75°C
75	250A	255NX	4#250 KCMIL, 1#2 GRD - 2 1/2"C		
	300A	310NX	4#350 KCMIL, 1#2 GRD - 3"C		
112.5	400A	420NX	4#600 KCMIL, 1#1/0 GRD - 3 1/2"C		
150	400A	420NX	4#600 KCMIL, 1#1/0 GRD - 3 1/2"C		
	600A	620NX	2(@4#350 KCMIL, 1#2 GRD - 3"C]		
225	600A	620NX	2(@4#350 KCMIL, 1#2 GRD - 3"C]		
	800A	800NX	2(@4#600 KCMIL, 1#1/0 GRD - 3 1/2"C]		
300	800A	800NX	2(@4#600 KCMIL, 1#1/0 GRD - 3 1/2"C]		
	1000A	1000NX	3(@4#500 KCMIL, 1#1/0 GRD - 3 1/2"C]		



iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator	V. Grant
Project Designer	R. Killips
Project Architect / Engineer	R. Killips
Drawn By	W. Jaynes
Q.M. Review	T. Carron / S. Tyburski
Approved	M. Nowicki
Drawing Scale	No Scale

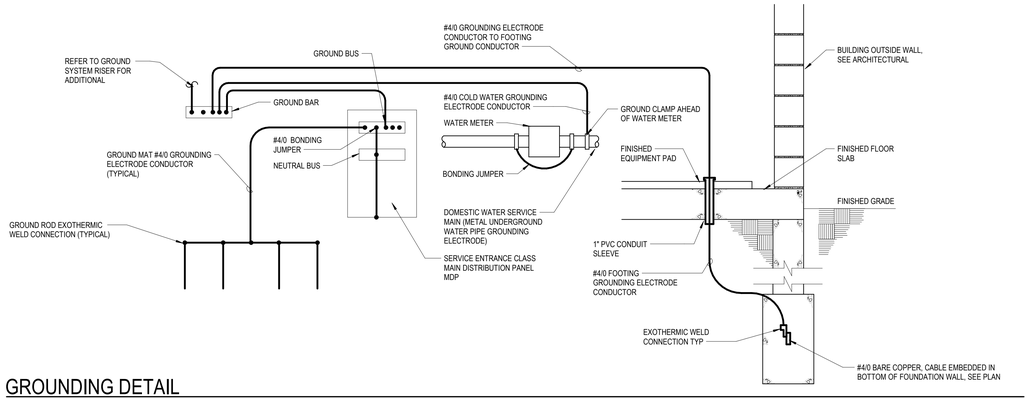
Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

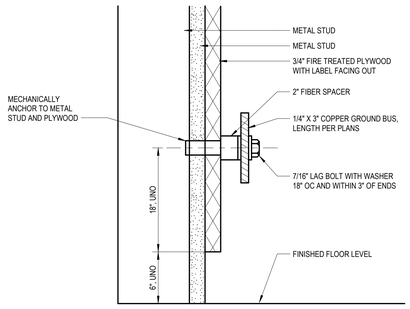
New Work One Line Diagram and Panelboard Schedules

IDS Project Number
24140-1000
OCC Project Number
SF25-003

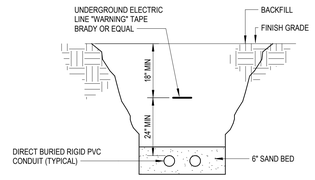
Drawing Number
E5.1



GROUNDING DETAIL

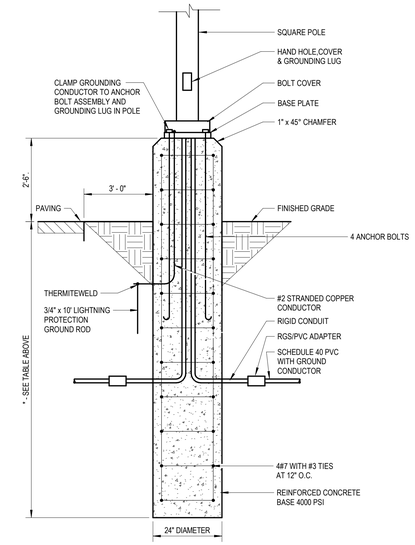


TELECOMMUNICATIONS GROUND BUS MOUNTING DETAIL

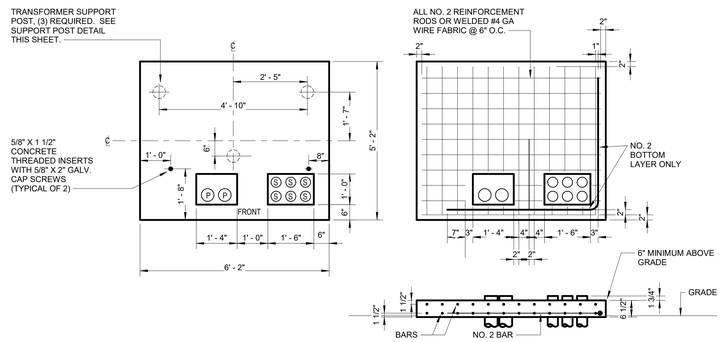


TYPICAL DIRECT BURIED CONDUIT INSTALLATION SECTION

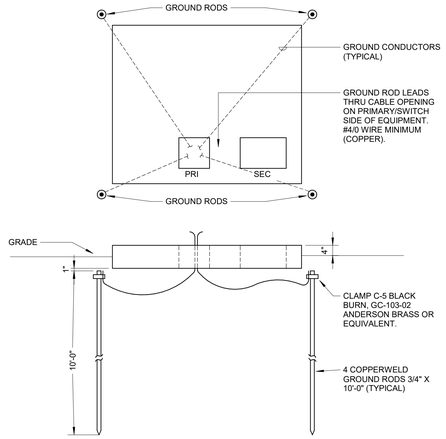
POLE BASE DEPTH
5'-0" FOR POLES 0-10'
6'-0" FOR POLES 11'-25'
7'-0" FOR POLES 26'-35'
VERIFY FOR POLES ABOVE 35'



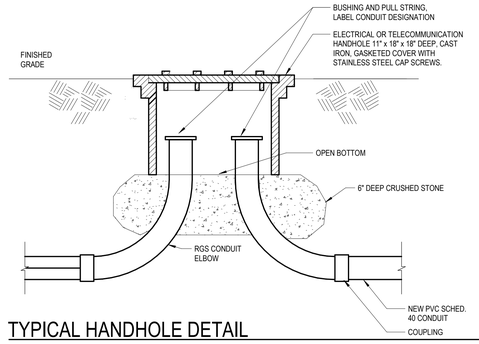
LIGHTING FIXTURE POLE BASE - ROUND - PAVED AREAS



UTILITY COMPANY TRANSFOMER PAD DETAIL



UTILITY COMPANY TRANSFORMER PAD GROUNDING DETAIL



TYPICAL HANDHOLE DETAIL

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
R. Killips
Project Architect / Engineer
R. Killips
Drawn By
W. Jaynes
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
No Scale

Issued for	Issue Date
Owner Review	02-13-2025
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
E7.1

LIGHTING FIXTURE SCHEDULE

LA — 2' x 2' RECESSED LED BACK-LIT FLAT PANEL WITH: 4000 NOMINAL LUMEN PACKAGE, 3" MAXIMUM THICKNESS, POST-PAINTED GALVANIZED STEEL HOUSING, WHITE PAINTED ALUMINUM FRAME CONSTRUCTION, FACTORY INSTALLED DIE-FORMED DRIVER BOX ACCESSIBLE ABOVE, SATIN WHITE LENS; 100 LPW MIN EFFICACY, INTEGRAL SURGE PROTECTION, DRIVER DISCONNECT, L70 PROJECTED LIFE OF >90K HOURS AT 25 DEGREES CELCIUS AMBIENT TEMPERATURE, MVOLT 120-277V REPLACEABLE POWER SUPPLY WITH FLICKER FREE 10% MINIMUM DIMMING, T-BAR CLIPS FOR INSTALLATION IN A LAY-IN CEILING, DLC LISTED AND UL DAMP LOCATION LISTING.

MANUFACTURER: ACUITY LITHONIA LIGHTING: CPX 2X2 SERIES
ELITE LIGHTING; FPL-BL SERIES
METALUX: 22CGTX SERIES
SIGNIFY: FLUXPANEL LED SERIES

LIGHT SOURCE: MIN. 80 CRI, 3,669 DELIVERED LUMENS, 3500K CCT

INPUT WATTS: 30.1

LB — 3.88" WIDE, 4" DEEP, 24 3/4" LONG, SURFACE MOUNTED LINEAR LED WALL SCONCE WITH: HORIZONTAL MOUNTING; VANDEL RESISTANT HARDWARE. DIE-CAST END CAPS; INTEGRAL MULTI-VOLT LED DRIVER, EXTRUDED ALUMIMUM SIDE RAILS; MATTE WHITE FINISH; WHITE HIGH IMPACT ACRYLIC LENS AND DAMP LOCATION LISTING.

MANUFACTURER: VISA: RAVEN CV1822 SERIES
KURTZON: VL-A-1-20 SERIES
LC DOANE: RW32-LED SERIES
OCL: ELEMENT EL1 LED SERIES

LIGHT SOURCE: MIN 80 CRI, 1,400 LUMENS, 3500K CCT

INPUT WATTS: 13.0

LC — 4'-0" LONG (NOMINAL), 4" WIDE MAX., CHAIN MOUNTED, INDUSTRIAL LED STRIP FIXTURE WITH: DIFFUSE ACRYLIC SNAP-IN FLAT DROP LENS; REFLECTOR; 22-GAUGE COLD ROLLED STEEL HOUSING WITH END CAPS; POST-PAINTED HIGH-GLOSS WHITE BAKED ENAMEL FINISH; RUST RESISTANT; CHAIN HANGERS; INTEGRAL 0-10V DIMMABLE (TO 10%) ELECTRONIC POWER SUPPLY WITH OVERLOAD AND SHORT CIRCUIT PROTECTION; INTEGRAL DRIVER DISCONNECT; RATED -20°C/TO 40°C; DAMP LOCATION LISTED; 120 VOLT OPERATION.

MANUFACTURER: CURRENT: MPS SERIES
DAY-BRITE BY SIGNIFY: FSS4 SERIES
LITHONIA: CLX SERIES
METALUX: SNX SERIES

LIGHT SOURCE: MIN. 80 CRI, 7,000 LUMENS, 3500K CCT

INPUT WATTS: 49.5

LC1 — SAME AS TYPE "LC" EXCEPT HIGH EFFICIENCY AND WITH HIGHER LUMEN OUTPUT.

MANUFACTURER: CURRENT: MPS SERIES
DAY-BRITE BY SIGNIFY: FSS SERIES
LITHONIA: CLX SERIES
METALUX: SNX SERIES

LIGHT SOURCE: MIN. 80 CRI, 10,000 LUMENS, 3500K CCT

INPUT WATTS: 65.3

LC2 — SAME AS TYPE "LC" EXCEPT 8'-0" LONG WITH HIGHER LUMEN OUTPUT.

MANUFACTURER: CURRENT: MPS SERIES
DAY-BRITE BY SIGNIFY: FSS SERIES
LITHONIA: CLX SERIES
METALUX: SNX SERIES

LIGHT SOURCE: MIN. 80 CRI, 8,000 LUMENS, 3500K CCT

INPUT WATTS: 51.4

XA — UNIVERSAL MOUNT LED EMERGENCY EXIT LUMINAIRE WITH: SINGLE FACE, DIE-CAST ALUMINUM FRAME, BACK PLATE AND MOUNTING CANOPY, WHITE DIE-CAST ALUMINUM (HOUSING), DIE-CAST ALUMINUM WHITE FACE; RED STENCIL STYLE LETTERS; DIRECTIONAL ARROWS AS INDICATED ON PLAN; LED LAMPS WITH DIFFUSE POLYCARBONATE LENS; SEALED MAINTENANCE FREE NICKEL CADMIUM BATTERY; LOW VOLTAGE DISCONNECT; SOLID STATE/FULLY AUTOMATIC AND CURRENT LIMITED CHARGER; BOTTOM MOUNTED TEST-SWITCH/PILOT LIGHT; BROWNOUT PROTECTION; FILTERED POWER SUPPLY TO PROTECT LED'S FROM SURGES, AND FULL SELF-DIAGNOSTICS; DUAL 120/277 VOLT NORMAL OPERATION AND UL LISTED.

MANUFACTURER: CLORIDE: 46L SERIES
CURRENT: DUAL-LITE SE SERIES
LITHONIA: LE SERIES
LSI INDUSTRIES: EXC SERIES
SURE-LITES: CX SERIES

SOURCE: FURNISHED WITH FIXTURE

INPUT WATTS: 1.2W (SINGLE FACE)

EBU — SURFACE MOUNTED LED EMERGENCY EXIT LUMINAIRE WITH: WHITE HIGH-IMPACT COMPACT THERMOPLASTIC HOUSING, INTERAL TEST SWITCH/PILOT LIGHT, TWO (2) FULLY ADJUSTABLE LED LAMP HEADS, DUAL-VOLTAGE (120/277V) POWER SUPPLY, FULLY AUTOMATIC CURRENT LIMITING CHARGING SYSTEM, SHORT-CIRCUIT PROTECTION, SEALED MAINTENANCE-FREE NI-CAD OR NIMH BATTERIES DELIVERING 90 MINUTES OF LAMP RUN TIME, LOW-VOLTAGE DISCONNECT, SELF-DIAGNOSTIC, 10°C TO 40°C OPERATING TEMPERATURE RANGE AND UL DAMP LOCATION LISTING. FIXTURE MANUFACTURER IS RESPONSIBLE FOR VERIFYING QUANTITY OF UNITS REQUIRED TO PROVIE CODE-COMPLIANT EMERGENCY LIGHT LEVELS ALONG PATH OF EGRESS WHERE UNITS ARE SHOWN ON PLAN.

MANUFACTURER: LITHONIA: ELM4L SERIES, TWO (2) 6.6W LAMPS
DUAL-LITE: EVHC SERIES, TWO (2) 6.0W LAMPS
SURE-LITES: SEL50 SERIES, TWO (2) 6.0W LAMPS
CHLORIDE; CLU3 SERIES

SOURCE: TWO (2) 6.0W (MINIMUM) LED LAMP HEADS
FURNISHED WITH FIXTURE

INPUT WATTS: 3.15

EBU1 — SURFACE MOUNTED, EMERGENCY EXIT LUMINAIRE WITH: GRAY HIGH-IMPACT COMPACT THERMOPLASTIC HOUSING, INTEGRAL TEST SWITCH/PILOT LIGHT, TWO (2) FULLY ADJUSTABLE LED LAMP HEADS, DUAL-VOLTAGE (120/277V) POWER SUPPLY, FULLY AUTOMATIC CURRENT LIMITING CHARGING SYSTEM, SHORT-CIRCUIT PROTECTION, LITHIUM IRON-PHOSPHATE BATTERIES DELIVERING 90 MINUTES OF LAMP RUN TIME, LOW-VOLTAGE DISCONNECT, SELF-DIAGNOSTIC, COLD WEATHER, -30°C TO 50°C OPERATING TEMPERATURE RANGE AND UL DAMP LOCATION LISTING. FIXTURE MANUFACTURER IS RESPONSIBLE FOR VERIFYING QUANTITY OF UNITS REQUIRED TO PROVIDE CODE-COMPLIANT EMERGENCY LIGHT LEVELS ALONG PATCH OF EGRESS WHERE UNITS ARE SHOWN ON PLAN.

MANUFACTURER: LITHONIA; INDL SERIES, TWO (2) 5.3W LAMPS
DUAL-LITE; DYN SERIES, TWO (2) 6W LAMPS

SOURCE: TWO (2) 5.3W (MINIMUM) LED LAMP HEADS
FURNISHED WITH FIXTURE

INPUT WATTS: 12.84

OA — 17" WIDE (NOMINAL) TRAPEZOIDAL EXTERIOR ARCHITECTURAL WALL MOUNTED LED LIGHTING FIXTURE WITH: SINGLE PIECE DIE-CAST ALUMINUM HOUSING AND HEAT SINK, GASKETED DIE-CAST ALUMINUM DOOR FRAME, VISUAL COMFORT FORWARD THROW DISTRIBUTION; TEMPERED GLASS LENS; POWDER COATED BLACK FINISH, INTEGRAL IN-LINE FUSING EXTERNAL TO THE DRIVER, INTEGRAL SURGE PROTECTION, INTEGRAL DRIVER DISCONNECT, IP65 WET LOCATION LISTING, -30°C TO 40°C AMBIENT TEMPERATURE RATING, DARK-SKY FRIENDLY, DLC QUALIFIED, LED POWER SUPPLY WIRED FOR 120V OPERATION. FIXTURE SHALL BE PROVIDED WITH INTEGRAL MOTION SENSOR OPTIMIZED FOR INDICATED MOUNTING HEIGHTS TO DIM FIXTURE TO 37% UPON LACK OF MOTION.

MANUFACTURER: ACUITY LITHONIA: WST LED SERIES
CURRENT: GEOPAK TRP1 SERIES
GARDCO BY SIGNIFY: 101L SERIES
RAYON LIGHTING: 7632LED 10 SERIES

LIGHT SOURCE: MIN. 80 CRI, 1,529 DELIVERED LUMENS, 3000K CCT

MAX INPUT WATTS: 12.0

OAE — SAME AS FIXTURE TYPE "OA" EXCEPT WITH AN INTEGRAL UL924 LISTED EMERGENCY POWER SUPPLY PROVIDING 875 LUMENS AT 7 WATTS, CONTINUOUSLY FOR 90 MINUTES. BATTERY PACK SHALL BE RATED FOR USE IN -20°C TO 40°C.

MANUFACTURER: ACUITY LITHONIA: WST LED SERIES
CURRENT: GEOPAK TRP1 SERIES
GARDCO BY SIGNIFY: 101L SERIES
RAYON LIGHTING: 7632LED 10 SERIES

LIGHT SOURCE: MIN. 80 CRI, 1,529 DELIVERED LUMENS, 3000K CCT

MAX INPUT WATTS: 12.0

OB — POLE MOUNTED PARKING LOT SINGLE LED LUMINAIRE WITH: LOW PROFILE DIE-CAST ALUMINUM WEATHER-TIGHT HOUSING; PRECISION MOLDED ACRYLIC LENS ASSEMBLIES WITH AUTOMOTIVE FRONT ROW DISTRIBUTION; EXTERNAL GLARE SHIELD; CORROSION-RESISTANT TGIC THERMOSET POWDER COAT BLACK FINISH; HOUSING IS IP65 RATED, WITH LOW 0.95 SG. FT. EPA, RATED FOR -40°C MIN. AMBIENT; FIELD REPLACEABLE CLASS 1 ELECTRONIC DRIVERS. EASY SERVICEABLE 10kV SURGE PROTECTION; ROUND POLE MOUNTING; NLIGHT AIR GENERATION 2 ENABLED CONTROLS WITH NETWORK, HIGH/LOW, MOTION/AMBIENT SENSOR FOR DIMMING OPERATION; 208V OPERATION.

MANUFACTURER: LITHONIA LIGHTING: DSX1 LED SERIES

SOURCE MINIMUM 70 CRI, 14,093 DELIVERED LUMENS, 3000K CCT

MAX INPUT WATTS: 102.1

OB1 — SAME AS FIXTURE TYPE "OB" EXCEPT WITH FORWARD THROW MEDIUM DISTRIBUTION.

MANUFACTURER: LITHONIA LIGHTING: DSX1 LED SERIES

SOURCE MINIMUM 70 CRI, 13,496 DELIVERED LUMENS, 3000K CCT

MAX INPUT WATTS: 102.2

P1 — 22'-6" ROUND TAPERED STEEL POLE WITH: 0.120" WALL THICKNESS; BLACK POWDER COAT FINISH; WATER-RESISTANT FUSING AT HAND HOLE, HAND HOLE LOCATED ON THE OPPOSITE SIDE OF THE LUMINAIRE; GROUNDING TERMINAL; SQUARE METAL BASE COVER (BLACK FINISH); STAINLESS STEEL MOUNTING SCREWS; ANCHOR BOLTS AND DESIGNED TO WITHSTAND 90 MPH SUSTAINED WIND VELOCITY.

MANUFACTURER: ACUITY LITHONIA LIGHTING: RTS SERIES
GENERAL STRUCTURES INC: CPS SERIES
CURRENT LIGHTING: RTS-H SERIES

LC2 — 8' WIDE, 8' LONG, PENDANT MOUNTED, HIGH ABUSE LUMINAIRE WITH: MARINE GRADE ALUMINUM HOUSING; DIE CAST END CAPS; INTEGRAL GASKET CHANNELS AND GASKETING; MATTE LIGHT GRAY FINISH; PEARLESCENT, HIGH IMPACT POLYCARBONATE LENS WITH SMOOTH EXTERIOR AND LINEAR PRISMATIC INTERIOR SECURED WITH TAMPER-RESISTANT FASTENERS; UL LISTED FOR DAMP LOCATION; ROUNDED END CAPS; 0-10V DIMMABLE ELECTRONIC POWER SUPPLY WITH OVERLOAD AND SHORT CIRCUIT PROTECTION; INTEGRAL DRIVER DISCONNECT; RATED -30°C/TO 40°C; 120 VOLT OPERATION.

MANUFACTURER: FAIL-SAFE; HVL8 SERIES
KENALL; MLHA8 SERIES
NEW STAR: VICAN SERIES
LC DOANE; VSA SERIES

LAMPS: MIN 80 CRI, 9,516 DELIVERED LUMENS, 3500K CCT

INPUT WATTS: 49

ALTERNATE No.1

LIGHTING CONTROL SCHEMES

GENERAL

1. DIGITAL INTERIOR AND EXTERIOR HYBRID (WIRED AND WIRELESS) LIGHTING CONTROL SYSTEM WITH PROGRAMMABLE ASTRONOMICAL TIME SCHEDULE (7 DAYS AND HOLIDAYS), PIR AND DUAL TECHNOLOGY (DT) OCCUPANCY SENSORS, PHOTOCELLS, DIMMERS, WIRELESS ANTENNAE(S), WIRELESSLY CONTROLLED AREA LIGHTING FIXTURES AND SWITCHING RELAYS (POWER PACKS, ROOM CONTROLLERS, ETC.); INTERIOR DEVICES ARE CONNECTED BY ***GREEN*** CATS CABLING FOR A COMPLETE, FULLY PROGRAMMABLE (LOCALLY OR REMOTE) SYSTEM. REFER TO SPECIFICATION FOR ACCEPTABLE MANUFACTURERS AND ADDITIONAL REQUIREMENTS.
2. SYSTEM IS FULLY NETWORKED WITH CENTRAL SYSTEM CONTROLLER UNLESS OTHERWISE NOTED.
3. ALL LIGHTING CONTROL SYSTEM SWITCHING RELAYS SHALL BE LOCATED IN AN ACCESSIBLE SPACE. WHERE POSSIBLE, LOCATE WITHIN CORRIDOR CEILING SPACE OUTSIDE ROOM SERVED. REFER TO REFLECTED CEILING PLANS FOR ACCESS PANEL LOCATIONS. IN EXPOSED CEILING AREAS, LOCATE CONTROLLERS ABOVE ADJACENT ACCESSIBLE CEILING OR CONCEALED WITHIN ENCLOSURE NO LOWER THAN THE UNDERSIDE OF STRUCTURE.
4. THE SCHEDULE FOR THE LIGHTING CONTROLS SYSTEM SHALL BE DETERMINED AND FINAL PROGRAMMED WITH THE ASSISTANCE OF THE SYSTEM MANUFACTURERS REPRESENTATIVE. THE BASIC CONTROLS SETUP AND INITIAL SEQUENCE OF OPERATIONS SHALL BE AS INDICATED WITHIN THE SPECIFICATION AND AS NOTED ON DRAWINGS.
5. WHERE OCCUPANCY SENSORS ARE SHOWN ON PLAN, OCCUPANCY SENSORS SHALL PROVIDE 100% FULL COVERAGE OF THE ROOM OR SPACE FOR SMALL MOTIONS (STATIONARY WORK), LARGE MOTIONS (WALKING), OR A COMBINATION OF BOTH BASED ON THE FUNCTION OF THE ROOM OR SPACE AS DETERMINED BY THE PRODUCT MANUFACTURER AND/OR VENDOR AND APPROVED BY THE ARCHITECT/ENGINEER. QUANTITIES SHOWN ON PLAN ARE FOR REFERENCE ONLY. FINAL LOCATIONS (ADHERING TO PLACEMENT GUIDELINES), QUANTITIES AND SENSOR TECHNOLOGY (DT, PIR, ETC.) SHALL BE DETERMINED BY PRODUCT MANUFACTURER AND/OR VENDOR AND APPROVED BY THE ARCHITECT/ENGINEER.
6. ALL LUMINAIRES SPECIFIED WITH DIMMING CAPABLE POWER SUPPLIES, DRIVERS OR BALLASTS SHALL BE WIRED AND CONNECTED TO DIMMING CAPABLE SWITCHING RELAYS FOR COMPLETE DIMMING CONTROL AND PROGRAMMING BY THE MASTER CONTROLS REGARDLESS OF WHETHER MANUAL USER CONTROLS ARE SPECIFIED WITH ON/OFF CONTROL OR ON/OFF/DIMMING CONTROL; LIGHT OUTPUT TRIMMING OF LUMINAIRES WILL BE PART OF THE LIGHTING CONTROLS SYSTEM COMMISSIONING.
7. WALL SWITCH OCCUPANCY SENSOR IS A STAND-ALONE DEVICE WHICH IS NOT CONNECTED TO THE NETWORKED LIGHTING CONTROL SYSTEM. WALL SWITCH HAS MANUAL ON/OFF CONTROL, DUAL TECHNOLOGY OCCUPANCY SENSOR, AND WHERE INDICATED, 0-10V DIMMER FOR MANUAL DIMMING CONTROL OF ALL LIGHTS IN THE ROOM.
8. ALL OCCUPANCY SENSORS INCLUDING WALL SWITCH OCCUPANCY SENSORS SHALL BE PROVIDED WITH AN ISOLATED RELAY (INTEGRAL OR REMOTE) FOR USE BY MECHANICAL CONTROLS CONTRACTOR.
9. LOW-VOLTAGE LIGHTING CONTROLS CABLES SHALL BE IN CONDUIT WHERE INSTALLED IN EXPOSED CEILING AREAS, IN WALLS AND ABOVE INACCESSIBLE CEILINGS. LOW-VOLTAGE LIGHTING CONTROLS CABLES INSTALLED ABOVE ACCESSIBLE CEILINGS SHALL BE SUPPORTED WITH J-HOOKS, BRIDAL RINGS OR CABLE TRAYS; ALL PENETRATIONS THROUGH WALL CONSTRUCTION SHALL BE THROUGH CONDUIT SLEEVES.
10. ALL AUTOMATIC DIMMING TRANSITIONS SHALL OCCUR OVER A 3 SECOND FADE UP OR DOWN.

INTERIOR LIGHTING CONTROLS

AUTOMATED TIMECLOCK OPERATIONS;
- NORMAL OCCUPIED HOURS;
  1. 7:00 AM TO 11:00 PM, MONDAY THRU FRIDAY
  2. 7:00 AM TO 11:00 PM, SATURDAY & SUNDAY
- AT THE START OF OCCUPIED HOURS, ALL CONTROL ZONES MOVE TO DESIGNATED SEQUENCE.

LOBBY & SERVICE BAY
OCCUPIED HOURS;
- ALL NORMAL LIGHTING ON TO 100%.
- UPON LOSS OF OCCUPANCY DETECTION (15 MIN TIME), ALL LIGHTING DIMS TO 50%.
- UPON DETECTION OF OCCUPANCY, ALL LIGHTING TRANSITIONS TO 100%.

UNOCCUPIED HOURS:
- MANUAL STATIONS OVERRIDE TIMECLOCK.
- OCCUPANCY SENSORS OPERATE IN VACANCY MODE (15 MIN TIME).

GARAGE
OCCUPIED HOURS;
- ALL NORMAL LIGHTING ON TO 100%.
- UPON LOSS OF OCCUPANCY DETECTION (15 MIN TIME), ALL LIGHTING DIMS TO 25%.
- UPON DETECTION OF OCCUPANCY, ALL LIGHTING TRANSITIONS TO 100%.

UNOCCUPIED HOURS;
- MANUAL STATIONS OVERRIDE TIMECLOCK.
- OCCUPANCY SENSORS OPERATE IN VACANCY MODE (15 MIN TIME).

TOILET, JC & STORAGE ROOMS

- LINE VOLTAGE WALL SWITCH SENSOR IN VACANCY MODE SET TO 15 MINS.

SERVICE BAY

- MANUAL ON/OFF.

EXTERIOR LIGHTING CONTROLS

NEW EXTERIOR LIGHTING CIRCUITS ARE ENABLED/DISABLED BY TIME CLOCK AT;
1. 5:00 PM TO 9AM, MONDAY THRU FRIDAY
2. 5:00 PM TO 9AM, SATURDAY & SUNDAY

BUILDING MOUNTED EXTERIOR LIGHTING (S1)
- ALL LIGHTING FIXTURES TURN ON WITH CENTRAL TIME CLOCK AT DESIGNATED TIME.
- ALL LIGHTING FIXTURES DIM VIA FIXTURE MOUNTED MOTION SENSOR WHEN NO MOTION IS DETECTED (REFER TO LIGHTING FIXTURE SCHEDULE).
- ALL LIGHTING FIXTURES RAISE TO FULL BRIGHTNESS WHEN MOTION IS DETECTED ON FIXTURE MOUNTED MOTION SENSOR.
- ALL LIGHTING FIXTURES TURN OFF WITH SUFFICIENT DAYLIGHT VIA BUILDING MOUNTED PHOTOCELL.

EXTERIOR AREA LIGHTING (PARKING LOT AND DRIVING COURSE (S2)
- ALL LIGHTING FIXTURES ARE PROVIDED WITH EMBEDDED WIRELESS MOTION SENSOR AND PHOTOCELL. EMBEDDED PHOTOCELL IS DISABLED.
- REFER TO SITE LIGHTING PLAN FOR LIGHTING CONTROLS SYSTEM PROGRAMMED ZONES. ALL LUMINAIRES IN EACH ZONE SHALL OPERATE IN TANDEM FOR ALL ON/OFF AND DIMMING OPERATIONS (TIME CLOCK, MOTION SENSOR, PHOTOCELL, ETC.
- ALL LIGHTING TURNS ON WITH CENTRAL TIME CLOCK AT DESIGNATED TIME.
- ALL LIGHTING FIXTURES IN ASSOCIATED ZONE SHALL DIM VIA 0-10V CONTROL SIGNAL FROM WIRELESS EMBEDDED MOTION SENSOR(S) WHEN NO MOTION IS DETECTED (REFER TO LIGHTING FIXTURE SCHEDULE) WITHIN THE AFOREMENTIONED ZONE.
- ALL LIGHTING FIXTURES IN ASSOCIATED ZONE SHALL RAISE TO FULL BRIGHTNESS WHEN MOTION IS DETECTED ON ANY FIXTURE MOUNTED MOTION SENSOR WITHIN AFOREMENTIONED ZONE.
- ALL FIXTURES TURN OFF WITH SUFFICIENT DAYLIGHT VIA BUILDING MOUNTED PHOTOCELL.

LIGHTING GENERAL NOTES

1. REFER TO SPECIFICATION FOR ADDITIONAL LIGHTING SYSTEM REQUIREMENTS (WARRANTY, SPARE PARTS, ETC.)
2. ALL LIGHTING FIXTURES SHALL BE PROVIDED WITH POWER SUPPLIES MANUFACTURED BY ELDOLED, PHILIPS, MEANWELL, LUTRON OR OSRAM. COMPLETE POWER SUPPLY PRODUCT DATA SHALL BE SUBMITTED WITH EACH LIGHT FIXTURE TYPE AT THE TIME OF PROJECT SUBMITTALS.
3. LIGHTING FIXTURE PRODUCTS SHALL NOT BE PACKAGE PRICED WITH LIGHTING CONTROLS SYSTEMS.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
R. Killips
Project Architect / Engineer
R. Killips
Drawn By
W. Jaynes
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
No Scale

Issued for	Issue Date
Quality Management Review	03-13-2025
Bids	04-03-2025

IDS Drawing Title

Lighting Fixture Schedule and Lighting Control Schemes

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
E8.1

ABBREVIATIONS

A

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
ALS	ASSISTED LISTENING SYSTEM
ALT	ALTERNATE
ANT	ANTENNA
ARCH	ARCHITECT, ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AV	AUDIO / VISUAL
AWG	AMERICAN WIRE GAUGE

B

BLDG	BUILDING
BE	BUILDING ENTRANCE
BOT	BOTTOM
BSMT	BASEMENT
BTU	BRITISH THERMAL UNITS

C

CAB	CABINET
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCP	CLASSROOM CONTROL PANEL
CCTV	CLOSED CIRCUIT TELEVISION
CHBD	CHALKBOARD
CKT	CIRCUIT
CLG	CEILING
COMP	COMPUTER
CPU	CENTRAL PROCESSING UNIT
CP	CONTROL PANEL
CT	CABLE TRAY

D

D	DATA
DA	DIGITALLY ADDRESSABLE
DC	DIRECT CURRENT
DEMO	DEMOLISH, DEMOLITION
DEMOD	DEMODULATOR
DEPT	DEPARTMENT
DHE	DISTRICT HEADEND
DIA	DIAMETER
DMARC	DMARCATION POINT
DN	DOWN
DP	DISTTRIBUTION PANEL
DVD	DIGITAL VERSATILE DISCT
DWG	DRAWING

E

EA	EACH
EC	ELECTRICAL CONTRACTOR
ELEC	ELECTRICAL
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EPT	ELECTRIC POWER TRANSDUCER
EQUIP	EQUIPMENT
ET	ETHERNET
EXIST	EXISTING

F

FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATING PANEL
FACP	FIRE ALARM CONTROL PANEL
FB	FLOOR BOX
FIB	FIBER OPTIC
FLR	FLOOR
FT	FOOT/FEET

G

GA	GAGE/GAUGE
GFI	GROUND FAULT INTERRUPTER
GFCI	GROUND FAULT CIRCUITINTERRUPTER
GRD	GROUND
GP BD	GYPSUM BOARD

H

HD	HIGH DEFINITION TV
HH	HAND HOLE
HP	HORSEPOWER
HRN	HORN
HTR	HEATER
HVAC	HEATING, VENTILATION AND AIR CONDITIONING
HW	HARD WIRED

I

IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GRAND
I/O	INPUT / OUTPUT
IN	INCHES
IP	INTERNET PROTOCAL
IR	INFRARED

J

JB	JUNCTION BOX
JC	JANITORS CLOSET

K

K	KILOHERTZ
KHZ	KILOHERTZ
KVA	KILOVOLT AMPERE
KVM	KEYBOARD / VIDEO / MOUSE
KW	KILOWATT

L

LAN	LOCAL AREA NETWORK
LAR	LINE ARRAY SPEAKER
LCD	LIQUID CRYSTAL DISPLAY
LCP	LIGHTING CONTROL PANEL
LED	LIGHT EMMITTING DIODE
LP	LIGHTING PANEL
LTG	LIGHTING

M

MAX	MAXIMUM
MC	MASTER CLOCK
MDF	MAIN DISTRIBUTION FRAME
MECH	MECHANICAL
MH	MOUNTING HEIGHT
MIC	MICROPHONE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MODULATOR
MON	MONITOR
MTD	MOUNTED
MTG	MOUNTING

N

NC	NORMALLY CLOSED
NIC	NOT-IN-CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE

O

OC	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR...
OFE	OWNER FURNISHED EQUIPMENT
OS	OCCUPANCY SENSOR

P

PA	PUBLIC ADDRESS
PB	PULLBOX
PH	PHASE
PIR	PASSIVE INFRARED
PNL	PANEL
POS	POINT OF SALE
PROJ	PROJECTOR
PT	POKE THROUGH
PTZ	PAN / TILT / ZOOM
PVC	POLYVINYL CHLORIDE

R

R	RELOCATE OR RELOCATED ITEM
REQD	REQUIRED
RF	RADIO FREQUENCY
RGS	RIGID GALVANIZED STEEL
RX	RECEIVER

S

SCRN	PROJECTOR SCREEN
SD	SMOKE DETECTOR
SF	SQUARE FEET
SPECS	SPECIFICATIONS
SPKR	SPEAKER
SS	SURGE SUPPRESSION
STD	STANDARD
SW	SWITCH

T

TC	TIME CLOCK
TEL	TELEPHONE
TELECOM	TELECOMMUNICATIONS
TERM	TERMINAL
TKBD	TACKBOARD
TR	TAMPER RESISTANT
TTB	TELEPHONE TERMINAL BACKBOARD
TTC	TELEPHONE TERMINAL CABINET
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TX	TRANSMITTER
TYP	TYPICAL

U

UL	UNDERWRITERS LABORATORIES, INC.
UON	UNLESS OTHERWISE NOTED
UPS	UNINTERRUPTIBAL POWER SUPPLY
USB	UNIVERSAL SERIAL BUS

V

V	VOICE
VC	VOLUME CONTROL
VCR	VIDEO CASSETTE RECORDER
VIF	VERIFY IN FIELD
VOIP	VOICE OVER INTERNET PROTOCOL

W

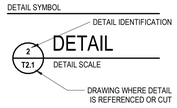
W	WIRELESS
WAN	WIDE AREA NETWORK
WAP	WIRELESS ACCESS POINT
WB	WHITEBOARD
WG	WIRE GUARD
WLAN	WIRELESS LOCAL AREA NETWORK
WP	WEATHER PROOF

MISC

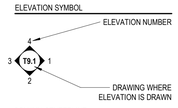
3R	NEMA 3R
4X	NEMA 4X
X	BY
℄ OR C	CENTERLINE
"	DEGREES
'	FOOT, FEET
"	INCH, INCHES
#	NUMBER
PH	PHASE
%	PERCENT, PERCENTAGE

SYMBOL LEGEND

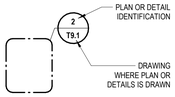
DETAIL SYMBOL



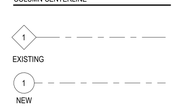
ELEVATION SYMBOL



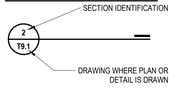
PLAN OR DETAIL ENLARGEMENT



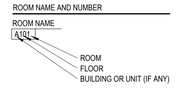
COLUMN CENTERLINE



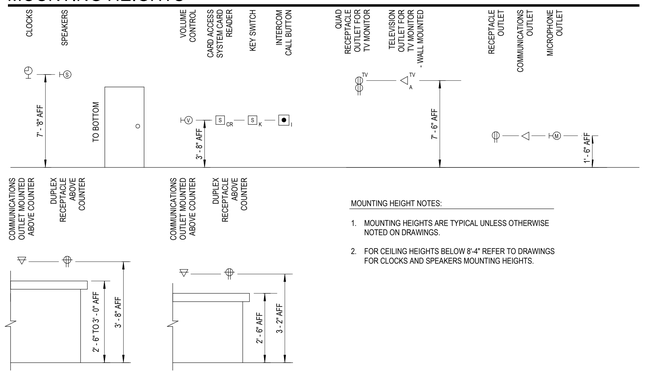
SECTION LOCATOR



ROOM NAME AND NUMBER



MOUNTING HEIGHTS



MOUNTING HEIGHT NOTES:

1. MOUNTING HEIGHTS ARE TYPICAL UNLESS OTHERWISE NOTED ON DRAWINGS.
2. FOR CEILING HEIGHTS BELOW 8'-4" REFER TO DRAWINGS FOR CLOCKS AND SPEAKERS MOUNTING HEIGHTS.

SYMBOLS (LETTERS (X) INDICATE TYPE, TYPICAL. SEE ABBREVIATIONS ABOVE)

POWER

- SINGLE RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET
- DUPLEX RECEPTACLE OUTLET FLUSH MOUNTED IN CEILING
- FLUSH MOUNTED POWER ONLY FLOOR BOX
- DUPLEX RECEPTACLE OUTLET MOUNTED ABOVE COUNTER
- DUPLEX RECEPTACLE OUTLET WITH INTEGRAL GROUND FAULT PROTECTION
- DUPLEX RECEPTACLE OUTLET CONNECTED TO UPSTREAM GROUND FAULT PROTECTION DEVICE
- DUPLEX RECEPTACLE OUTLET WITH INTEGRAL SURGE SUPPRESSION
- DUPLEX RECEPTACLE OUTLET CONNECTED TO UPSTREAM SURGE SUPPRESSION DEVICE
- DUPLEX RECEPTACLE OUTLET SPLIT WIRED
- DUPLEX RECEPTACLE OUTLET WITH ISOLATED GROUND
- QUAD RECEPTACLE OUTLET
- QUAD RECEPTACLE OUTLET MOUNTED ABOVE COUNTER
- QUAD RECEPTACLE OUTLET WITH ONE (1) INTEGRAL SURGE SUPPRESSION TYPE RECEPTACLE AND ONE (1) SURGE SUPPRESSION PROTECTED RECEPTACLE
- SPECIAL RECEPTACLE AS INDICATED
- POWER/COMMUNICATIONS POLE
- SPECIAL POWER CONNECTION
- CORD DROP
- POKE THROUGH ASSEMBLY LETTERS INDICATE TYPE (TYP)
- JUNCTION BOX - CEILING MOUNTED
- JUNCTION BOX - WALL MOUNTED
- PUSHBUTTON STATION - EMERGENCY POWER SHUTDOWN
- INTERCOM CALL BUTTON
- INTERCOM CALL BUTTON WITH PRIVACY
- HORIZONTALLY MOUNTED MULTI-OUTLET RACEWAY
- VERTICALLY MOUNTED MULTI-OUTLET RACEWAY
- BUS DUCT
- EQUIPMENT MOUNTING BACKBOARD
- 208/120V PANELBOARD
- 480/277V PANELBOARD
- DISTRIBUTION OR POWER PANELBOARD
- SINGLE PHASE MOTOR
- THREE PHASE MOTOR
- MAGNETIC MOTOR STARTER
- COMBINATION MAGNETIC MOTOR STARTER -SWITCH SIZE / FUSE SIZE
- NON-FUSED DISCONNECT SWITCH -SWITCH SIZE
- FUSED DISCONNECT SWITCH -SWITCH SIZE/FUSE SIZE
- ENCLOSED CIRCUIT BREAKER -CB RATING
- MAGNETIC CONTRACTOR
- MANUAL MOTOR STARTER
- HORSEPOWER RATED SWITCH
- PACKAGED EQUIPMENT WITH INTEGRALLY MOUNTED PREWIRED CONTROL PANEL
- FURNISHED AS INTEGRAL PART OF EQUIPMENT
- TRANSFORMER
- GROUND ROD
- LIGHTNING PROTECTION AIR TERMINAL
- GROUND BUS BAR AS INDICATED

AUXILIARY

- CEILING MOUNTED SINGLE FACED CLOCK
- CEILING MOUNTED DOUBLE FACED CLOCK
- WALL MOUNTED SINGLE FACED CLOCK
- WALL MOUNTED DOUBLE FACED CLOCK
- COMBINATION WALL MOUNTED SPEAKER/CLOCK
- CEILING MOUNTED COMBINATION SPEAKER/CLOCK
- WALL MOUNTED DIGITAL CLOCK
- CEILING MOUNTED SPEAKER
- BIDIRECTIONAL WALL MOUNTED SPEAKER
- BIDIRECTIONAL CEILING MOUNTED SPEAKER
- CEILING MOUNTED SPEAKER CLUSTER
- WALL MOUNTED SPEAKER
- CEILING MOUNTED MICROPHONE OUTLET
- WALL MOUNTED MICROPHONE OUTLET
- WALL MOUNTED VOLUME CONTROL
- WALL MOUNTED BELL
- WALL MOUNTED CHIME
- WALL MOUNTED HORN SPEAKER
- CEILING MOUNTED HORN SPEAKER
- SECURITY SYSTEM ELECTRIFIED HARDWARE
- SECURITY SYSTEM CARD READER
- SECURITY SYSTEM DOOR CONTACT
- SECURITY SYSTEM KEY SWITCH
- SECURITY SYSTEM OVERHEAD DOOR CONTACT
- CEILING MOUNTED SECURITY CAMERA -ARROWS INDICATE FIELD OF VIEW
- WALL MOUNTED SECURITY CAMERA -ARROWS INDICATE FIELD OF VIEW
- FIRE ALARM CONTROL PANEL
- FIRE SUPRESSION SYSTEM CONTROL PANEL
- FIRE ALARM REMOTE ANNUNCIATOR PANEL
- SINGLE BED STATION - NURSE CALL
- DOUBLE BED STATION - NURSE CALL
- BATHROOM STATION - NURSE CALL
- BATHROOM STATION PULL CORD - NURSE CALL
- CODE BLUE PUSHBUTTON - NURSE CALL
- NURSE CALL DUTY STATION
- NURSE CALL EMERGENCY STATION
- NURSE CALL MASTER STATION
- NURSE CALL POWER SUPPLY
- NURSE CALL STAFF STATION
- NURSE CALL WALL MOUNTED DOME LIGHT
- NURSE CALL CEILING MOUNTED DOME LIGHT
- NURSE CALL WALL MOUNTED DOME LIGHT WITH CODE BLUE
- NURSE CALL CEILING MOUNTED DOME LIGHT WITH CODE BLUE
- WALL MOUNTED COMMUNICATIONS OUTLET -LETTER INDICATES FACEPLATE TYPE
- ABOVE COUNTER COMMUNICATIONS OUTLET -LETTER INDICATES FACEPLATE TYPE
- CEILING MOUNTED COMMUNICATIONS OUTLET -LETTER INDICATES FACEPLATE TYPE
- COMMUNICATIONS FLOORBOX -LETTER INDICATES FACEPLATE TYPE
- MULTI-SYSTEM FLOORBOX -LETTER INDICATES FACEPLATE TYPE
- WALL MOUNTED PROJECTION SYSTEM
- CEILING MOUNTED PROJECTION SYSTEM
- SHORT THROW PROJECTION SYSTEM

ONE-LINE

- SYSTEM OR EQUIPMENT GROUND
- EXOTHERMIC WELD OR BRAZED CONNECTION
- CONDUIT IN OR BELOW FLOOR SLAB OR BELOW GRADE
- RACEWAY TURNED UP
- RACEWAY TURNED DOWN
- CABLE TRAY
- UNDERFLOOR DUCT - POWER
- UNDERFLOOR HEADER DUCT - POWER
- UNDERFLOOR DUCT - COMM
- UNDERFLOOR HEADER DUCT - COMM

SITE

- FLUSH IN-GRADE HAND HOLE
- UNDERGROUND ELECTRICAL
- UNDERGOUND COMMUNICATIONS
- UNDERGROUND FIBER OPTIC COMMUNICATIONS
- UNDERGROUND LIGHTING

TECHNOLOGY DRAWING INDEX

GENERAL NOTES

1. LIGHT LINE WEIGHT INDICATES EXISTING EQUIPMENT TO REMAIN OR EQUIPMENT PROVIDED BY OTHERS. HEAVY LINE WEIGHT INDICATES NEW EQUIPMENT.
2. NETWORK DEVICE PLATES AND THE CABLING FOR THESE PLATES SHALL BE PROVIDED BY TECHNOLOGY CONTRACTOR.
3. TECHNOLOGY CONTRACTOR SHALL COORDINATE DEVICE OUTLET LOCATIONS WITH THE ARCHITECTURAL AND CASEWORK DRAWINGS PRIOR TO ROUGH-IN. REPORT ANY CONFLICTS TO THE CONSTRUCTION MANAGER (CM) FOR RESOLUTION.
4. TECHNOLOGY CONTRACTOR SHALL COORDINATE CLOSET ROOM EQUIPMENT / DEVICE LOCATIONS WITH THE GENERAL TRADES.
5. TECHNOLOGY CONTRACTOR SHALL NOT PLACE ANY DISTRIBUTION CABLING ALONGSIDE POWER LINES, OR SHARE THE SAME CONDUIT, CHANNEL, OR SLEEVE WITH ANY ELECTRICAL APPARATUS.
6. ALL CABLES SHALL BE INSTALLED IN "J" HOOKS, CONDUITS, CABLE TRAYS, OR AN APPROVED RACEWAY SYSTEM. WHERE CABLE TRAYS ARE NOT AVAILABLE, HORIZONTAL CABLES SHALL BE SUPPORTED EVERY FIVE (5) FEET WITH "J" HOOKS SUFFICIENT IN SIZE TO HANDLE ALL BUNDLED CABLES WHILE MINIMIZING CRUSHING. IF CABLE SLACK EXCEEDS TWELVE (12) INCHES BETWEEN SUPPORTS, ADDITIONAL SUPPORTS SHALL BE INSTALLED TO TAKE UP SLACK AND RELIEVE CABLE STRESS. ALL CABLES SHALL BE RUN PARALLEL AND PERPENDICULAR TO BUILDING STEEL. ALL COMMUNICATIONS CABLES SHALL BE LOCATED AND FASTENED TO GUARANTEE THAT THERE SHALL BE NO INTERFERENCE FROM MAGNETIC FIELDS GENERATED BY FIXTURE BALLASTS, MOTORS, OR SIMILAR ELECTRICAL LOADS.
7. INSTALL ALL CABLES MAINTAINING CABLE MANUFACTURES RADIUS OF CURVATURE AND PROTECT AT BENDS AND CORNERS. MAINTAIN MINIMUM BEND RADIUS AND TENSION LIMITATIONS, AS SPECIFIED BY EIA / TIA FOR ALL COMMUNICATION CABLES.
8. LOOSELY BUNDLE CABLES WITH VELCRO TIES SUITABLE FOR PLENUM ENVIRONMENTS, EVERY TWENTY (20) FEET.
9. UPON COMPLETION OF CABLE INSTALLATION, TECHNOLOGY CONTRACTOR SHALL ENSURE THAT ALL CABLES ARE FREE FROM ANY PHYSICAL DAMAGE, INCLUDING TWISTS, KNOTS, SHARP BENDS, GUTS, GOUGES, OR ANY OTHER ANOMALIES.
10. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL EXTENT OF WORK. TECHNOLOGY CONTRACTOR SHALL PROVIDE ALL INCIDENTAL MATERIALS AND LABOR FOR A COMPLETE, FULLY FUNCTIONAL SYSTEM AND VERIFYING FIELD RACEWAYS.
11. NOTIFY THE CONSTRUCTION MANAGER (CM) OF ANY CONFLICTS BETWEEN EQUIPMENT SUBMITTALS AND TECHNOLOGY DRAWINGS.
12. ALL WORK AND EQUIPMENT SHALL CONFORM TO NEC. THE MEANS AND METHODS USED BY TECHNOLOGY CONTRACTOR SHALL CONFORM TO NEC SECTION 110-3.
13. SURVEILLANCE CAMERA AND WIRELESS ACCESS POINT LOCATIONS, AS INDICATED ARE FOR NETWORK CABLING ONLY.
14. WIRELESS ACCESS POINTS ARE PROVIDED BY THE OWNER AND SHALL BE INSTALLED BY THIS CONTRACTOR. THIS CONTRACTOR IS RESPONSIBLE FOR FURNISHING TWO (2) 15-FOOT PATCH CABLES FOR EACH WIRELESS ACCESS POINT.
15. SURVEILLANCE CAMERAS ARE PROVIDED AND INSTALLED BY OTHERS.
16. SLEEVE LOCATIONS SHOWN ARE SLEEVES TO BE PROVIDED AND INSTALLED BY OTHERS. IF ADDITIONAL SLEEVES ARE REQUIRED FOR CABLE ROUTING, THOSE SLEEVES SHALL BE PROVIDED AND INSTALLED BY THIS CONTRACTOR.
17. ALL SLEEVES, WHETHER USED BY TECHNOLOGY CONTRACTOR(S) OR NOT, SHALL BE FIRE STOPPED, ACCORDING TO CODE.
18. THE OWNER IS RESPONSIBLE TO PROVIDE WAN CONNECTIVITY TO THE NEW DRIVING PAD, THROUGH A 3RD PARTY SERVICE.

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

THIS PROJECT MAY NOT UTILIZE ALL THE SYMBOLS, MATERIALS, ABBREVIATIONS AND STANDARDS INFORMATION SHOWN ON THIS SHEET

Project Administrator
V. Grant
Project Designer
T. Horner / R. Boegehold
Project Architect / Engineer
R. Killips
Drawn By
T. Horner / R. Boegehold
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
No Scale

Issued for	Issue Date
Bids	04-03-2025

IDS Drawing Title

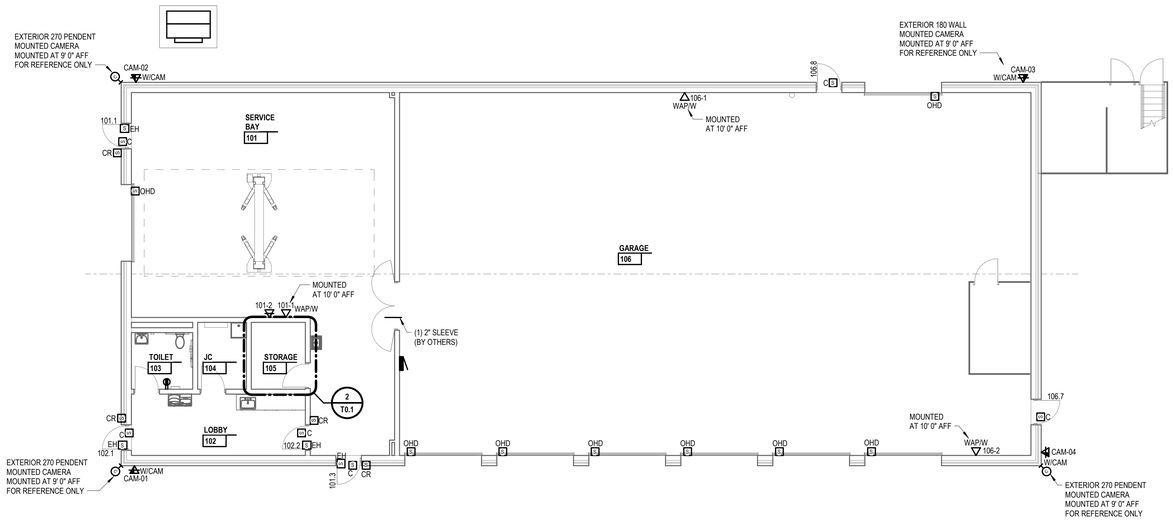
Technology Reference Information

IDS Project Number
24140-1000
OCC Project Number
SF25-003

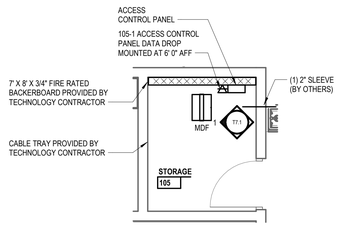
Drawing Number
TR.0

GENERAL NOTES

1. FOR TECHNOLOGY DETAILS SEE T7.1 & T7.2.



1 FIRST FLOOR TECHNOLOGY PLAN
1/8" = 1'-0"



2 T0.1 STORAGE (105) ENLARGED TECHNOLOGY PLAN
1/4" = 1'-0"

iDS
INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

NORTH

Project Administrator
V. Grant
Project Designer
T. Horner / R. Boegehold
Project Architect / Engineer
R. Killips
Drawn By
T. Horner / R. Boegehold
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
As Noted

Issued for	Issue Date
Bids	04-03-2025

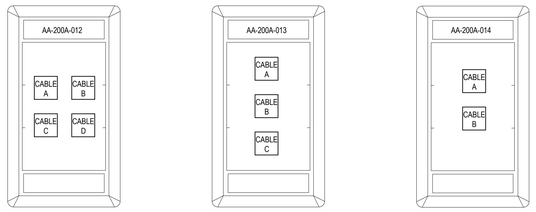
IDS Drawing Title

Technology Composite Floor Plan

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
T0.1

SAMPLE: BUILDING A
TECHNOLOGY CABINET ROOM A-200A



ROOM A221 ROOM A201 ROOM A228

NOTES:
1. TYPICAL COLOR IS GRAY. MATCH SPECIFIC COLOR PER BUILDING.
2. ALL JACKS COLORS WILL BE GRAY
3. ONLY MACHINE PRINTED LABELS.
4. BRADY - ID PAL (OR EQUIVALENT)
5. 3/8TH BLACK ON WHITE, VINYL SIZE 14 FONT
6. AS BUILT DRAWINGS SHALL NOTE THE FACEPLATE LABEL SCHEME

7 OAKLAND COMMUNITY COLLEGE TYPICAL TECHNOLOGY LABELING
Not To Scale

DATA DEVICE SCHEDULE

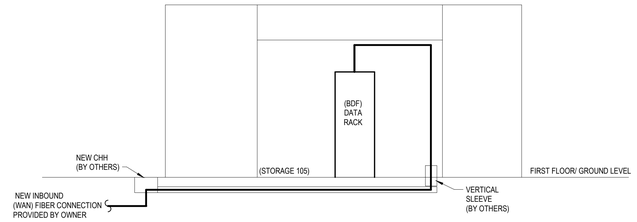
DROP ID	SOURCE TR	DESCRIPTION	DATA RACK ID	CATEGORY 6A CABLE COUNT	FACEPLATE TYPE
101-2	BDF	WALL DROP	1	4	A
105-1	BDF	ACCESS CONTROL DROP	1	1	S
CAM-01	BDF	EXTERIOR PENDANT MOUNTED CAMERA DROP	1	1	S
CAM-02	BDF	EXTERIOR PENDANT MOUNTED CAMERA DROP	1	1	S
CAM-03	BDF	EXTERIOR WALL MOUNTED CAMERA DROP	1	1	S
CAM-04	BDF	EXTERIOR PENDANT MOUNTED CAMERA DROP	1	1	S

NOTE: SEE T7.2 FOR FACEPLATE DETAILS.

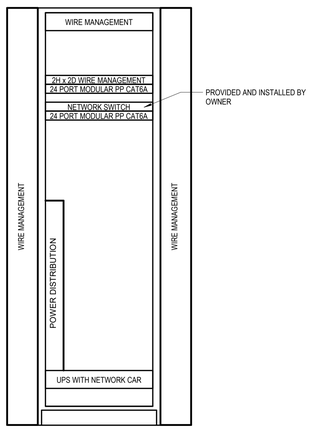
WAP DEVICE SCHEDULE

DROP ID	SOURCE TR	DESCRIPTION	DATA RACK ID	CATEGORY 6A CABLE COUNT	FACEPLATE TYPE
101-1	BDF	WALL MOUNTED WAP	1	2	W
106-1	BDF	WALL MOUNTED WAP	1	2	W
106-2	BDF	WALL MOUNTED WAP	1	2	W

NOTE: SEE T7.2 FOR WAP DETAILS.



5 TELECOM CONDUIT RISER DIAGRAM - SOUTHFIELD CREST DRIVING PAD
Not To Scale



1 T0.1 STORAGE (105) NEW RELAY RACK DETAIL (BDF)
Not To Scale

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
T. Horner / R. Boegehold
Project Architect / Engineer
R. Killips
Drawn By
T. Horner / R. Boegehold
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
As Noted

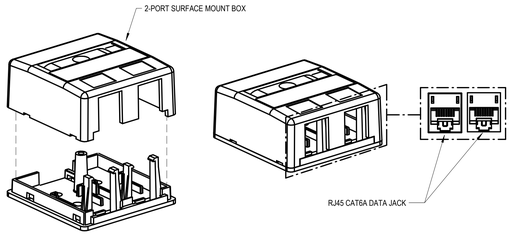
Issued for	Issue Date
Bids	04-03-2025

IDS Drawing Title

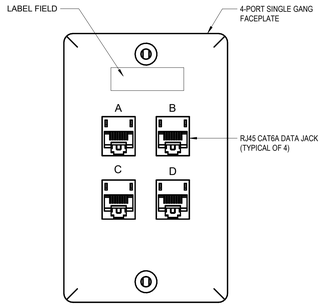
Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

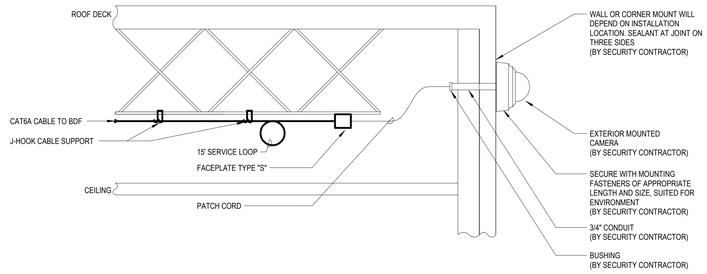
Drawing Number
T7.1



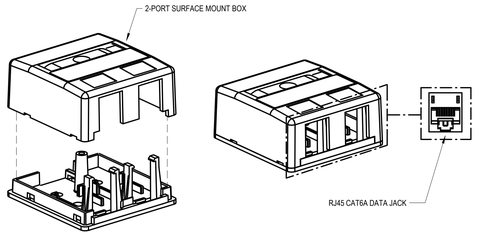
6 FACEPLATE TYPE "W"
Not To Scale



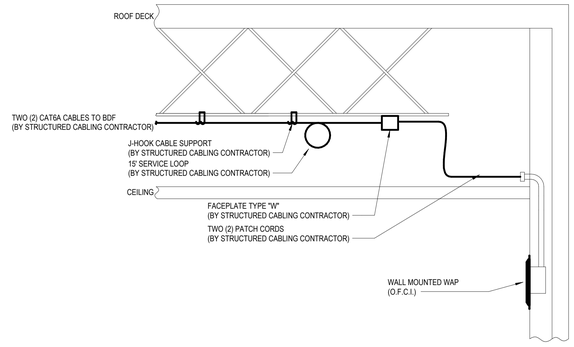
4 FACEPLATE TYPE "A"
Not To Scale



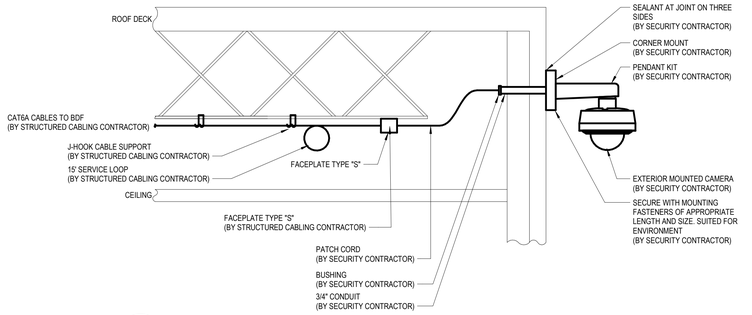
3 EXTERIOR WALL MOUNTED CAMERA DETAIL
Not To Scale



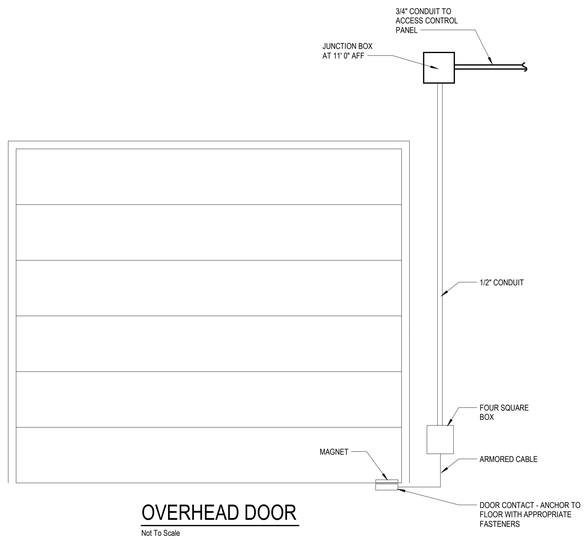
5 FACEPLATE TYPE "S "
Not To Scale



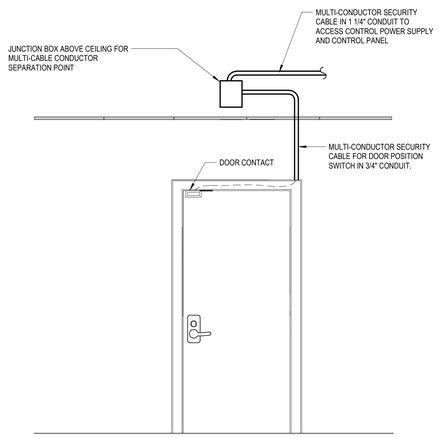
8 WALL MOUNTED WAP DETAIL
Not To Scale



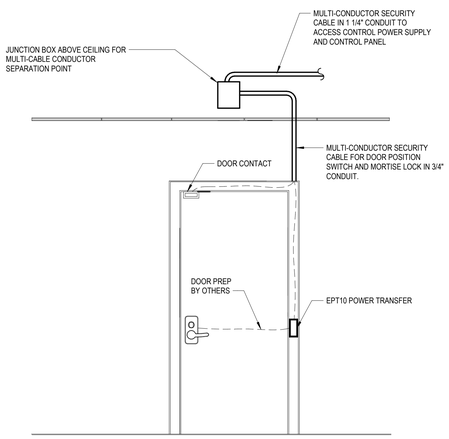
7 EXTERIOR WALL MOUNTED CAMERA DETAIL
Not To Scale



OVERHEAD DOOR
Not To Scale



2 SINGLE DOOR MONITORED ONLY
Not To Scale



1 SINGLE ACCESS CONTROL DOOR
Not To Scale

INTEGRATED design SOLUTIONS
architecture engineering interiors & technology
1441 west long lake, suite 200
troy, michigan 48098
5211 cascade road SE, suite 300
grand rapids, michigan 49546
248.823.2100
www.ids-michigan.com

CONSTRUCTION MANAGER
BARTON MALOW
26500 American Drive
Southfield, MI 48034
248.436.5000
www.bartonmalow.com

STRUCTURAL ENGINEER
STRUCTURAL DESIGN INCORPORATED
375 E LIBERTY ST
ANN ARBOR, MICHIGAN 48104
734.231.6091
www.sdistructures.com

CIVIL ENGINEER
ANDERSON, ECKSTEIN & WESTRICK, INC.
51301 Schoenherr Road
Shelby Township, MI 48315-2733
586.726.1234
www.aewinc.com

Project Title

OAKLAND COMMUNITY COLLEGE®

Oakland Community College

Southfield Campus Driving Pad

22322 Rutland Dr.
Southfield, MI 48075-4793

Key Plan

Project Administrator
V. Grant
Project Designer
T. Horner / R. Boegehold
Project Architect / Engineer
R. Killips
Drawn By
T. Horner / R. Boegehold
Q.M. Review
T. Carron / S. Tyburski
Approved
M. Nowicki
Drawing Scale
As Noted

Issued for	Issue Date
Bids	04-03-2025

IDS Drawing Title

Details

IDS Project Number
24140-1000
OCC Project Number
SF25-003

Drawing Number
T7.2