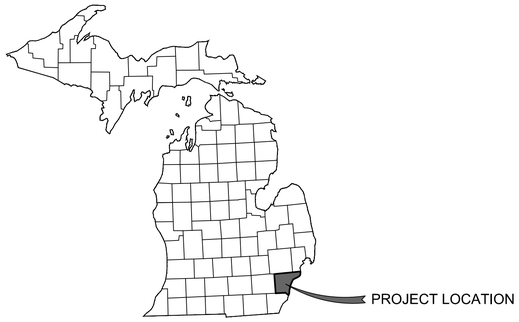


VICINITY MAP

BREWSTER WHEELER I LDHA, LLC
BREWSTER WHEELER II LDHA, LLC
BREWSTER WHEELER III LDHA, LLC
NEW HOUSING
631,651,671 ALFRED STREET
WAYNE COUNTY, MICHIGAN 48201

INDEX OF SHEETS

Property Address:
2900 St. Antoine Street
City of Detroit, Michigan 48201

Parcel Number:
0300316070

Property Description:

THE LAND SITUATED IN THE COUNTY OF WAYNE, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

LOTS 172 THROUGH 197 OF THE CRANE & WESSONS SUBDIVISION, AS RECORDED IN LIBER 1, PAGE 9 OF PLATS, WAYNE COUNTY RECORDS, ALSO NORTH ALFRED LOTS 1 THROUGH 7, SOUTH BREWSTER LOTS 1 THROUGH 7, NORTH BREWSTER LOTS 1 THROUGH 7, SOUTH WILKINS LOTS 1 THROUGH 7 AND VACATED BREWSTER AND ALLEYS ADJACENT C. MORAN FARM SUBDIVISION, AS RECORDED IN LIBER 1 PAGE 254 OF PLATS WAYNE COUNTY RECORDS.

Property Zoning:
PD - Planned Development District / Brush Park FBC

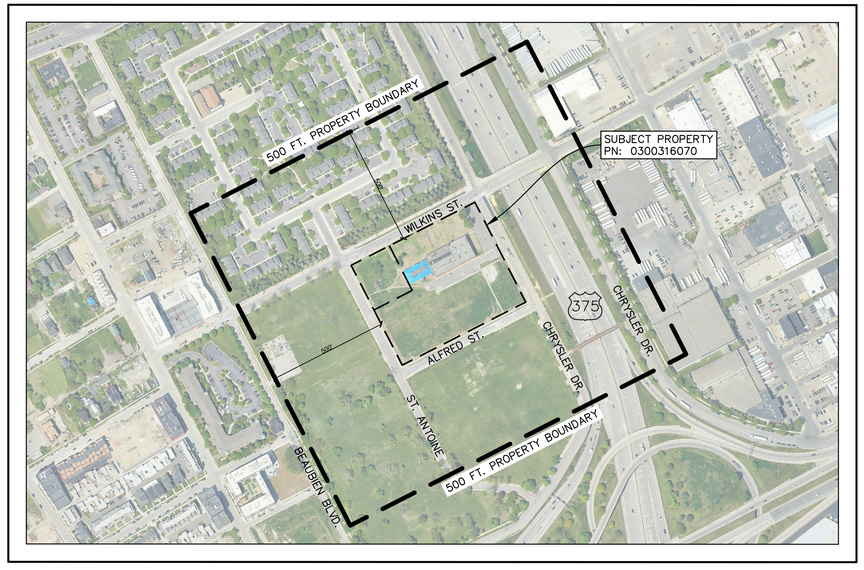
Setbacks:

Front: 10 ft. min., 20 ft. max.

Side: 5 ft.

Rear: 20 ft.

Maximum Allowable
Building Height: xx ft.



NEIGHBORHOOD MAP

NORTH

0 300 600
SCALE IN FEET

OWNER

BREWSTER WHEELER I LDHA, LLC
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
PHONE: 248-833-0552

BREWSTER WHEELER II LDHA, LLC
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
PHONE: 248-833-0552

BREWSTER WHEELER III LDHA, LLC
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
PHONE: 248-833-0552

811
Know what's below.
Call before you dig.

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BM "X"

BENCH MARKS:

BM 1 NAIL IN NORTH SIDE OF POWER POLE AT THE SOUTHWEST CORNER OF ALFRED STREET AND CHRYSLER DRIVE.
Elevation: 619.92 ft. (NAVD 88)

BM 2 ARROW ON HYDRANT NORTHWEST OF VEHICULAR APPROACH TO SITE.
Elevation: 622.09 ft. (NAVD 88)

BM 3 ARROW ON HYDRANT AT SOUTH CENTER OF PROPERTY NORTH OF ALFRED STREET.
Elevation: 621.87 ft. (NAVD 88)

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MICHIGAN
BRUCE A. CALLEN
No. 34172
LICENSED PROFESSIONAL ENGINEER

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

DATE OF PLAN: 08-01-25

ISSUANCES

90% CD'S	11-22-24
BUILDING PERMIT	12-06-24
SITE PLAN REVIEW RESPONSE #1	03-31-25
SITE PLAN REVIEW RESPONSE #2	08-01-25

REVISIONS

DESIGNED BY:

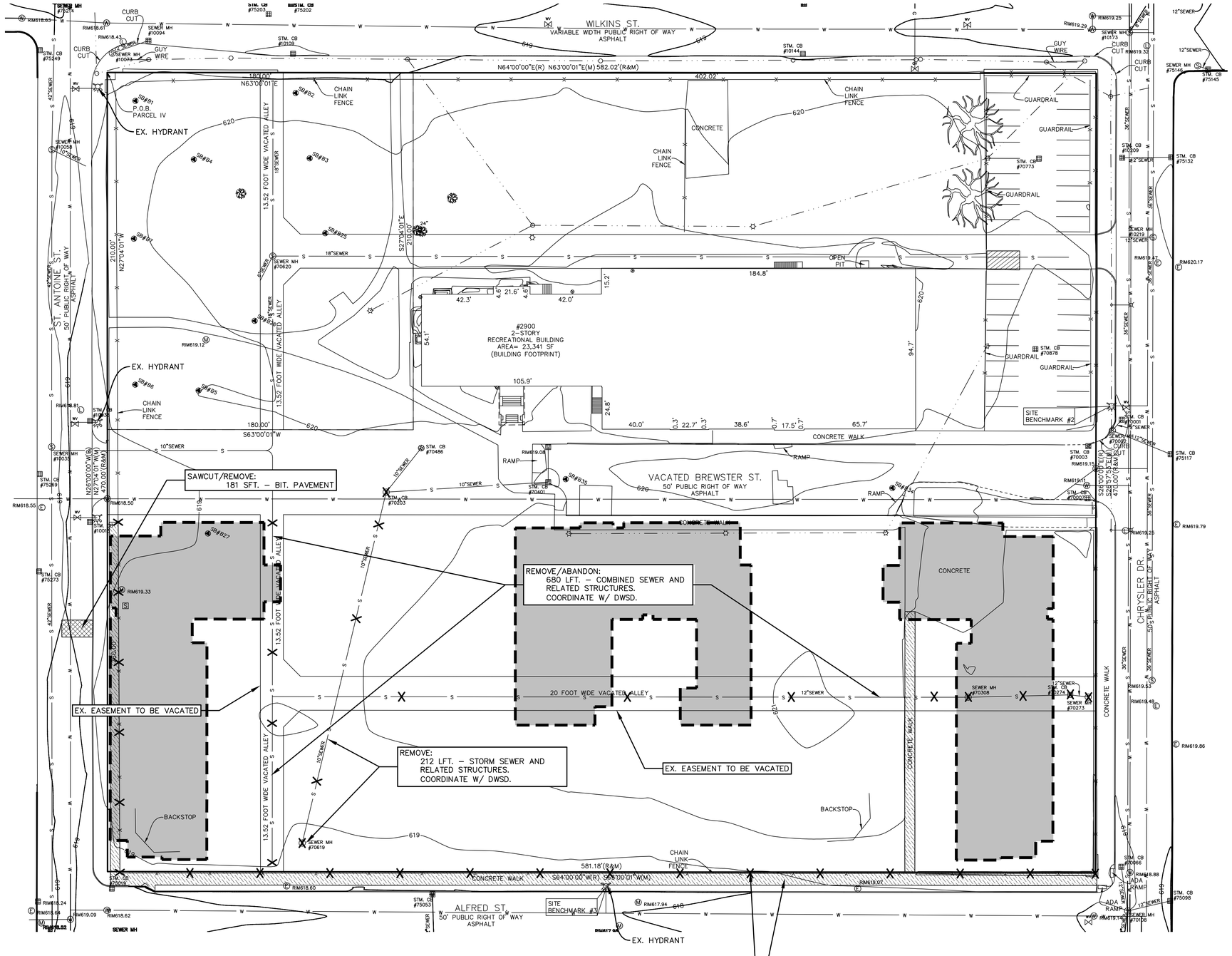
callen civil engineers

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

Drawn by J.W.C.
Engineer B.A.C. Check A.J.B.

Callen Engineering Project No.
023 - BREWSTER - PHASE 1-3

Sheet No.
CS



PUBLIC UTILITY REMOVALS QUANTITIES THIS SHEET			
ITEM DESCRIPTION	UNIT	QUANTITY	FINAL QUANTITY
COMBINED SEWER	LFT	680	
8 INCH STORM SEWER	LFT	212	
COMBINED SEWER STRUCTURE	EA	3	
STORM STRUCTURE	EA	2	

DEMOLITION NOTES

ALL MATERIAL THAT IS NOT SUITABLE AS BACKFILL AND MATERIALS THAT ARE EXCESS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH ALL. LOCAL, STATE, AND FEDERAL REGULATIONS.

ALL AREAS OF UNDERGROUND DEMOLITION; UTILITY LINE REMOVAL; AND UNDERGROUND TREE, STUMP, AND VEGETATION REMOVAL SHALL BE BACKFILLED.

BACKFILLING SHALL PROMPTLY FOLLOW UNDERGROUND DEMOLITION OR REMOVAL WORK AND SHALL CONTINUE AS THE DEMOLITION PROGRESSES.

CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR AND OBTAINING ALL NECESSARY DEMOLITION PERMITS AND PAYING FOR ANY ASSOCIATED PERMIT FEES.

NOTIFY ARCHITECT/ENGINEER OF ANY OTHER UNDERGROUND MATERIALS OR EQUIPMENT ENCOUNTERED DURING EXCAVATION NOT SPECIFICALLY NOTED ON THE DRAWING(S).

PRIVATE UTILITY REMOVAL - CONTRACTOR TO COORDINATE PRIVATE UTILITY (GAS, ELECTRIC, PHONE, CABLE, ETC.) REMOVAL WITH APPROPRIATE AUTHORITY. ALTHOUGH ALL PRIVATE UTILITY SERVICES MAY NOT BE SHOWN ON THIS DRAWING, CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF SERVICE AS NECESSARY.

PUBLIC UTILITY REMOVAL - CONTRACTOR TO COORDINATE PUBLIC UTILITY (WATER, SEWER, STORM) REMOVAL WITH APPROPRIATE UTILITY COMPANY. ALTHOUGH ALL PUBLIC UTILITY SERVICES MAY NOT BE SHOWN ON THIS DRAWING, CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF SERVICE AS NECESSARY.

WHERE CURBING OR PAVEMENT IS INDICATED TO BE REMOVED, IT SHALL BE SAWCUT FULL DEPTH. REMOVE TO THE NEAREST JOINT, IF THE JOINT IS WITHIN 3 FEET OF THE REMOVAL LINE. VERIFY REMOVAL LIMITS WITH ENGINEER PRIOR TO BEGINNING WORK.

Property Address:
2900 St. Antoine Street
City of Detroit, Michigan 48201

Parcel Number:
0300316070

Property Description:

THE LAND SITUATED IN THE COUNTY OF WAYNE, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

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Property Zoning:
PD - Planned Development District / Brush Park FBC

Setbacks:

Front: 10 ft. min., 20 ft. max.

Side: 5 ft.

Rear: 20 ft.

Maximum Allowable
Building Height: xx ft.

REMOVALS LEGEND

- PROPOSED BUILDING FOOTPRINT
- PAVEMENT REMOVAL AREA
- CONCRETE REMOVAL AREA
- X REMOVAL ITEM

PRELIMINARY - NOT FOR CONSTRUCTION

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Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	06-01-25
5.			

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

EXISTING CONDITIONS & REMOVALS PLAN

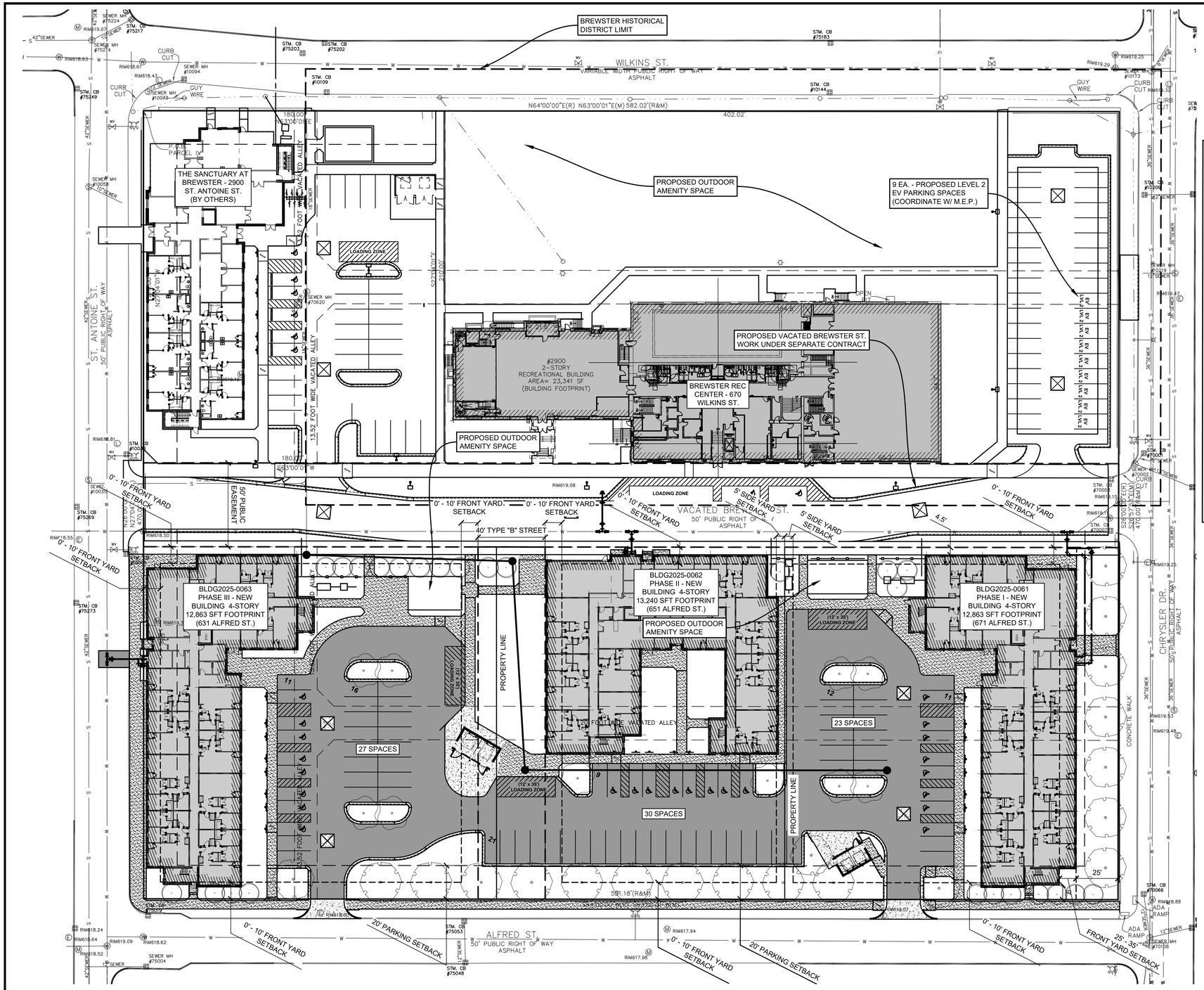
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C0.1



GENERAL NOTES

1. PROJECT INCLUDES CONSTRUCTION OF THREE (3) NEW FOUR (4) STORY RESIDENTIAL BUILDINGS WITH 159 TOTAL RESIDENTIAL UNITS. RELATED IMPROVEMENTS INCLUDE PARKING, LANDSCAPING, SIGNAGE, LIGHTING, UTILITIES, AND STORM WATER DRAINAGE FACILITIES.
2. THE DEVELOPMENT SHALL BE SERVED BY PUBLIC WATER MAIN AND PUBLIC SANITARY SEWER.
3. ACCESS TO THE DEVELOPMENT SHALL BE VIA. TWO (2) PROP. CURBCUTS ONTO ALFRED ST.
4. ALL WORK IN THE CITY RIGHTS-OF-WAY SHALL BE IN ACCORDANCE WITH CITY OF DETROIT DPW STANDARDS.
5. STORM WATER SHALL BE DETAINED ON SITE, MEETING THE REQUIREMENTS OF THE CITY OF DETROIT GUIDELINES FOR STORM WATER MANAGEMENT.
6. PARKING AND DRIVE AREAS SHALL BE PAVED WITH BITUMINOUS AND CONCRETE PAVEMENTS.
7. PARKING:
   MULTI-FAMILY DWELLING:
   REQUIRED: 0.75 PARKING SPACES PER DWELLING UNIT.

   DWELLING UNITS = 159 UNITS
   0.75 * 159 = 120 SPACES

   120 SPACES

   PROVIDED:

   TOTAL = 80 SPACES, INCLUDING TWENTY FOUR (24) BARRIER FREE SPACES.
8. ALL PAVEMENT MARKINGS AND SIGNS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE CURRENT EDITION OF THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
9. PROPOSED SITE LIGHTING SHALL BE A COMBINATION OF PROPOSED WALL & POLE-MOUNTED FIXTURES, DIRECTED TO INHIBIT LIGHTING BEYOND PROPERTY LIMITS, MEETING THE REQUIREMENTS OF APPLICABLE SECTIONS OF THE CITY OF DETROIT ZONING ORDINANCE.
10. LANDSCAPING AND SCREENING SHALL MEET THE INTENT OF THE CITY OF DETROIT ZONING ORDINANCE.
11. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT. THE WORK SHALL BE PERFORMED IN COMPLETE CONFORMANCE WITH THE CURRENT DWSD STANDARD SPECIFICATIONS AND DETAILS.
12. ALL DAMAGED PUBLIC SIDEWALKS ADJACENT TO THE PROPERTY SHALL BE REMOVED AND REPLACED IN ACCORDANCE WITH DPW STANDARDS.

PROPOSED FEATURES LEGEND

- NEW LIGHT DUTY CONCRETE SIDEWALK AREA
- NEW HMA PAVEMENT AREA
- NEW 8" HEAVY DUTY CONCRETE PAVEMENT AREA

NORTH
0 30 60
SCALE IN FEET

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

STATE OF MICHIGAN BRUCE A. CALLEN 61047392 LICENSED PROFESSIONAL ENGINEER

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DATE OF PLAN: 06-23-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

callen civil engineers

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	SITE CO'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	ADDENDUM #4	B.A.C.	06-23-25
6.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	

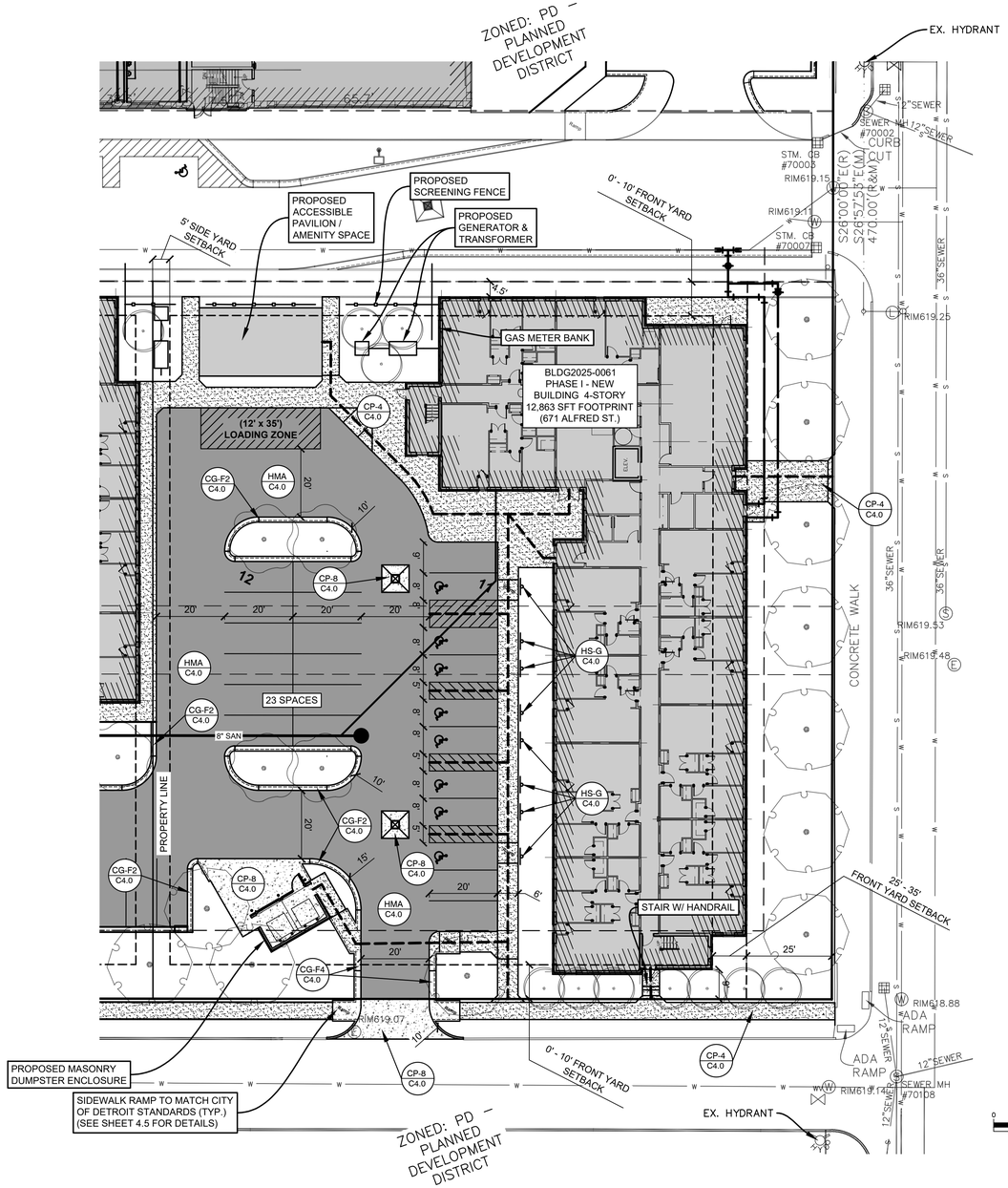
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

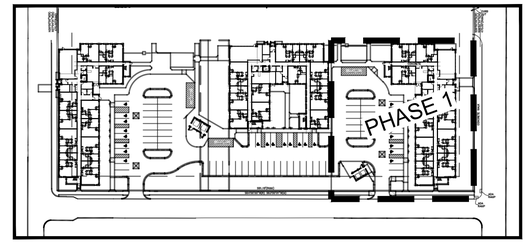
OVERALL SITE LAYOUT PLAN

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE JUN '25
SCALE	
DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C1.0





KEY MAP

PROPOSED FEATURES LEGEND

- NEW LIGHT DUTY CONCRETE SIDEWALK AREA
- NEW HMA PAVEMENT AREA
- NEW 8" HEAVY DUTY CONCRETE PAVEMENT AREA
- ACCESSIBLE ROUTE

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STATE OF MICHIGAN BRUCE A. CALLEN 21047392 LICENSED PROFESSIONAL ENGINEER

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:
Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

callen civil engineers

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
4.	BUILDING PERMIT	B.A.C.	12-06-24
5.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
6.	ADDENDUM #4	B.A.C.	06-23-25
7.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

BREWSTER I LDHA, LLC
671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

PHASE 1 SITE LAYOUT PLAN

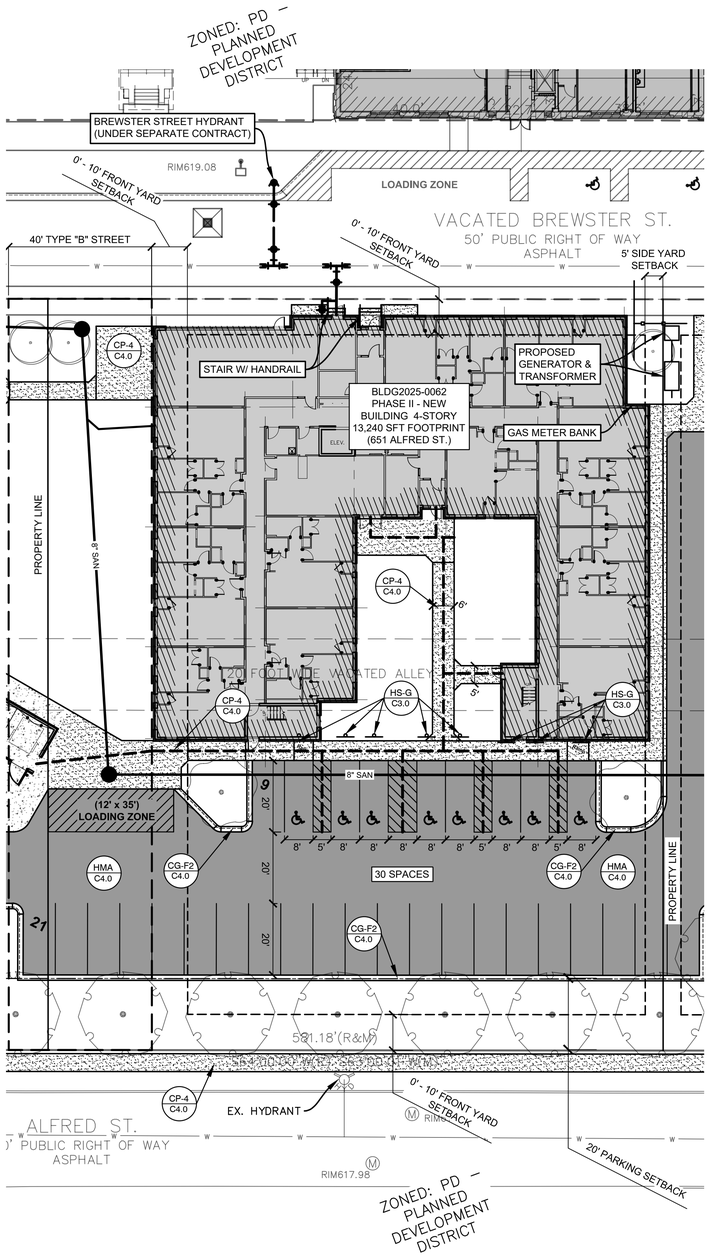
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

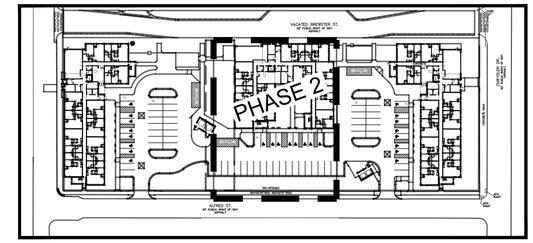
SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C1.1





KEY MAP

PROPOSED FEATURES LEGEND

- NEW LIGHT DUTY CONCRETE SIDEWALK AREA
- NEW HMA PAVEMENT AREA
- NEW 8" HEAVY DUTY CONCRETE PAVEMENT AREA
- ACCESSIBLE ROUTE

NORTH

0 20 40
SCALE IN FEET

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

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Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

STATE OF MICHIGAN BRUCE A. CALLEN LICENSED PROFESSIONAL ENGINEER 61047392

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DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
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T.616.414.5260
www.callenengineering.com

callen civil engineers

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
4.	BUILDING PERMIT	B.A.C.	12-06-24
5.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
6.	ADDENDUM #4	B.A.C.	06-23-25
7.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

BREWSTER II LDHA, LLC
651 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

PHASE 2 SITE LAYOUT PLAN

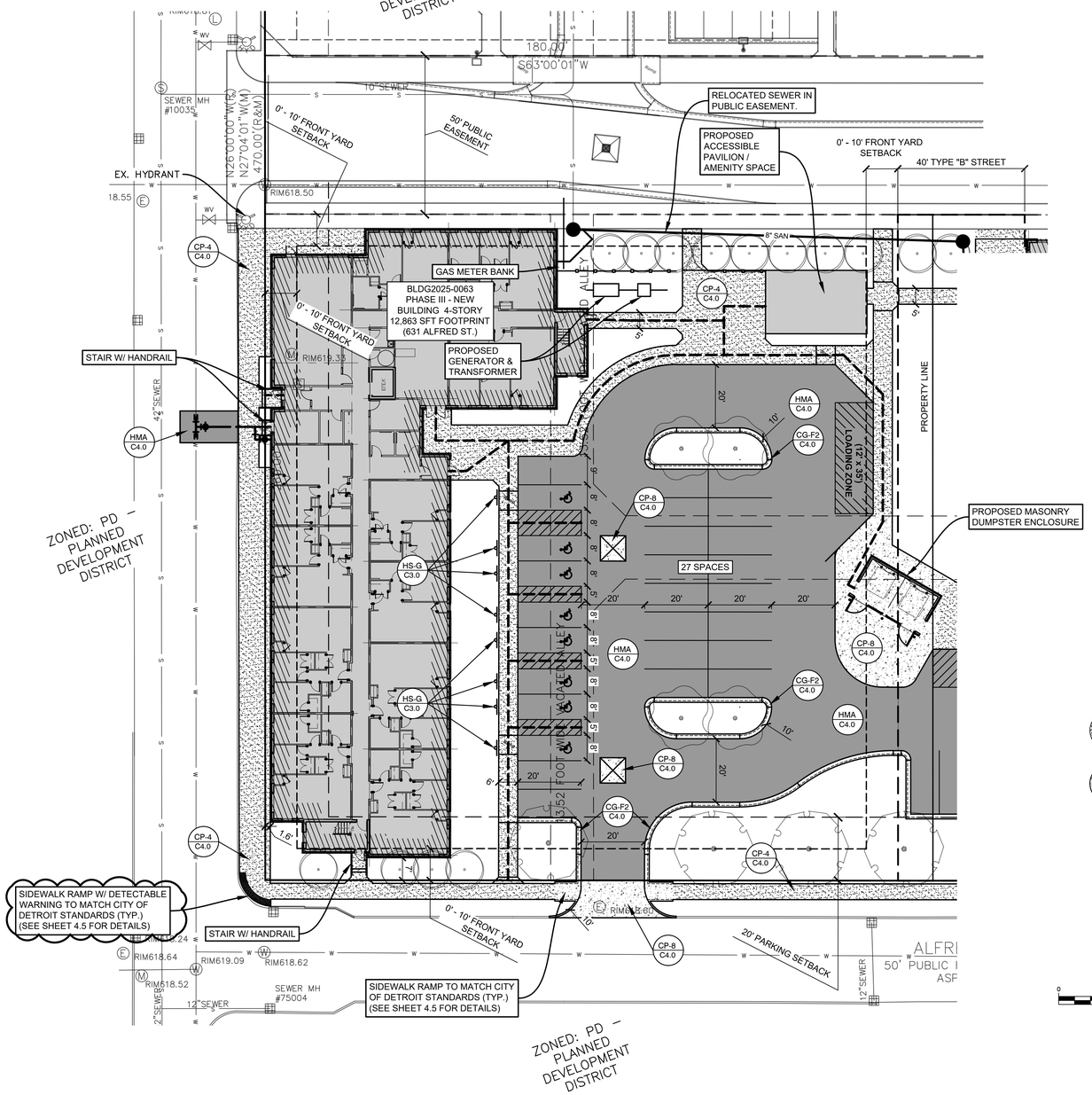
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

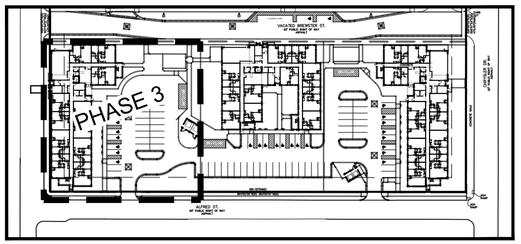
SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C1.2





KEY MAP

PROPOSED FEATURES LEGEND

- NEW LIGHT DUTY CONCRETE SIDEWALK AREA
- NEW HMA PAVEMENT AREA
- NEW 8" HEAVY DUTY CONCRETE PAVEMENT AREA
- ACCESSIBLE ROUTE

NORTH

0 20 40
SCALE IN FEET

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616–414–5260
email: bcallen@callenengineering.com

STATE OF MICHIGAN BRUCE A. CALLEN LICENSED PROFESSIONAL ENGINEER No. 1047392

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DATE OF PLAN: 08-01-25

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MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
4.	BUILDING PERMIT	B.A.C.	12–06–24
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6.	ADDENDUM #4	B.A.C.	06–23–25
7.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08–01–25

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

BREWSTER III LDHA, LLC
631 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

PHASE 3 SITE LAYOUT PLAN

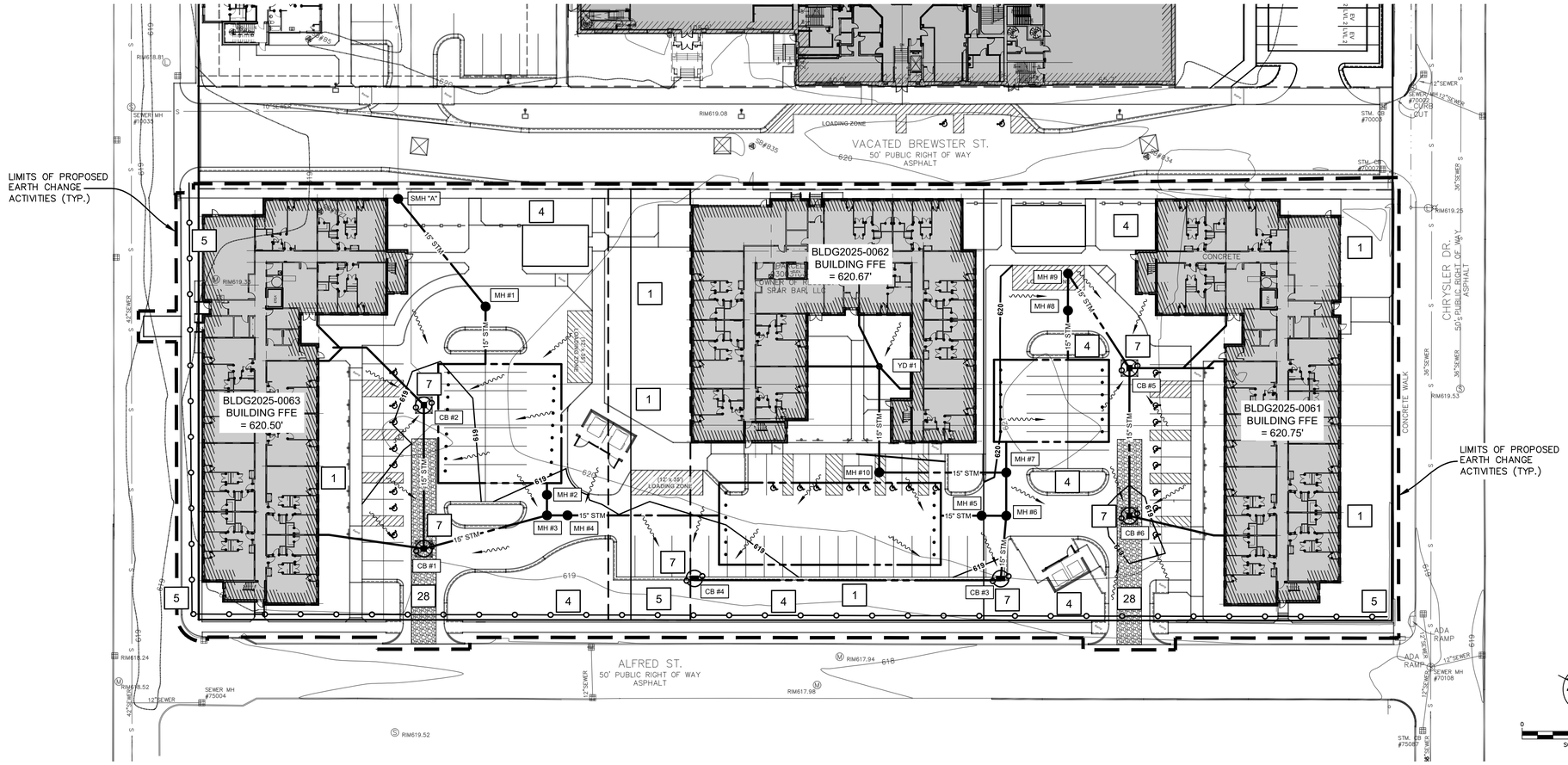
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C1.3



EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	Seeding		When bare soil is exposed, temporarily or permanently, to erosive forces from wind and or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	Mulch		On flat areas, slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive forces from wind or water.
4	Trees, Shrubs, Vines and Ground Cover		When bare soil or recently vegetated slopes are exposed to erosive forces from wind and/or water.
5	Perimeter Sediment Control Measures (Silt Fence, Straw Wattles, etc.)		As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets.
7	Storm Drain Inlet Protection		Around the entrance to a catch basin or an inlet that will capture runoff from an earth change activity.
28	Stone Construction Access		At locations where construction equipment will enter and exit the drain easement and tracking of soil is anticipated.

*SESC MEASURES SHALL COMPLY WITH MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SESC MANUAL SPECIFICATIONS

SESC NOTES

TOTAL DISTURBED AREA: 133,002 SFT (3.05 ACRES)

ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THE SITE PLAN MAY BE NECESSARY AS SITE WORK PROGRESSES. PERMITTEE IS RESPONSIBLE FOR ALL MEASURES NECESSARY TO PREVENT OFFSITE SEDIMENTATION.

GEOTEXTILE SILT FENCE AND ALL CATCH BASIN PROTECTION MEASURES SHALL BE PROPERLY PLACED AS SHOWN ON PLANS AND AS NEEDED TO RETAIN SOILS ONSITE. PERIODIC MAINTENANCE AND INSPECTION OF SESC MEASURES IS REQUIRED FOR PROPER EFFECTIVENESS.

STABILIZE SITE AS SOON AS POSSIBLE.

CONSTRUCTION IS ANTICIPATED TO BEGIN APRIL 2025 WITH SUBSTANTIAL SITEWORK COMPLETION NO LATER THAN NOV 2025.

SILT FENCE

DRAINAGE FLOW DIRECTION

PRELIMINARY - NOT FOR CONSTRUCTION

BENCH MARKS:

BM 1 NAIL IN NORTH SIDE OF POWER POLE AT THE SOUTHWEST CORNER OF ALFRED STREET AND CHRYSLER DRIVE.
Elevation: 619.92 ft. (NAVD 88)

BM 2 ARROW ON HYDRANT NORTHWEST OF VEHICULAR APPROACH TO SITE.
Elevation: 622.09 ft. (NAVD 88)

BM 3 ARROW ON HYDRANT AT SOUTH CENTER OF PROPERTY NORTH OF ALFRED STREET.
Elevation: 621.87 ft. (NAVD 88)

CONSTRUCTION SEQUENCE / PHASES OF EARTHWORK	Operation Time Schedule												
	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE.	X												
STRIP TOPSOIL AND BEGIN GRADING.	X	X											
CONSTRUCT UNDERGROUND UTILITIES.		X	X	X									
CONSTRUCT BUILDINGS.		X	X	X	X	X	X						
CONSTRUCT FLATWORK AND PAVEMENT AREAS.		X	X	X				X	X				
FINE GRADE LAWN AREAS, LANDSCAPE, MULCH, IRRIGATE								X	X				
STABILIZE SITE (TOPSOIL, SEED AND MULCH)								X	X				
REMOVE TEMP SESC CONTROLS													X

SUBSURFACE CONDITIONS

Contractor(s) shall familiarize themselves with the information and findings presented in the Geotechnical Evaluation Report prepared by SME dated Apr. 28, 2023.
SME Project No. 092556.00

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

STATE OF MICHIGAN BRUCE A. CALLEN LICENSED PROFESSIONAL ENGINEER No. 47392

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

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DATE OF PLAN: 08-01-25

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T.616.414.5260
www.callenengineering.com

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
2.	IFC	B.A.C.	11-22-24
3.	IFC CO'S	B.A.C.	12-06-24
4.	BUILDING PERMIT	B.A.C.	03-31-25
5.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	06-01-25
5.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

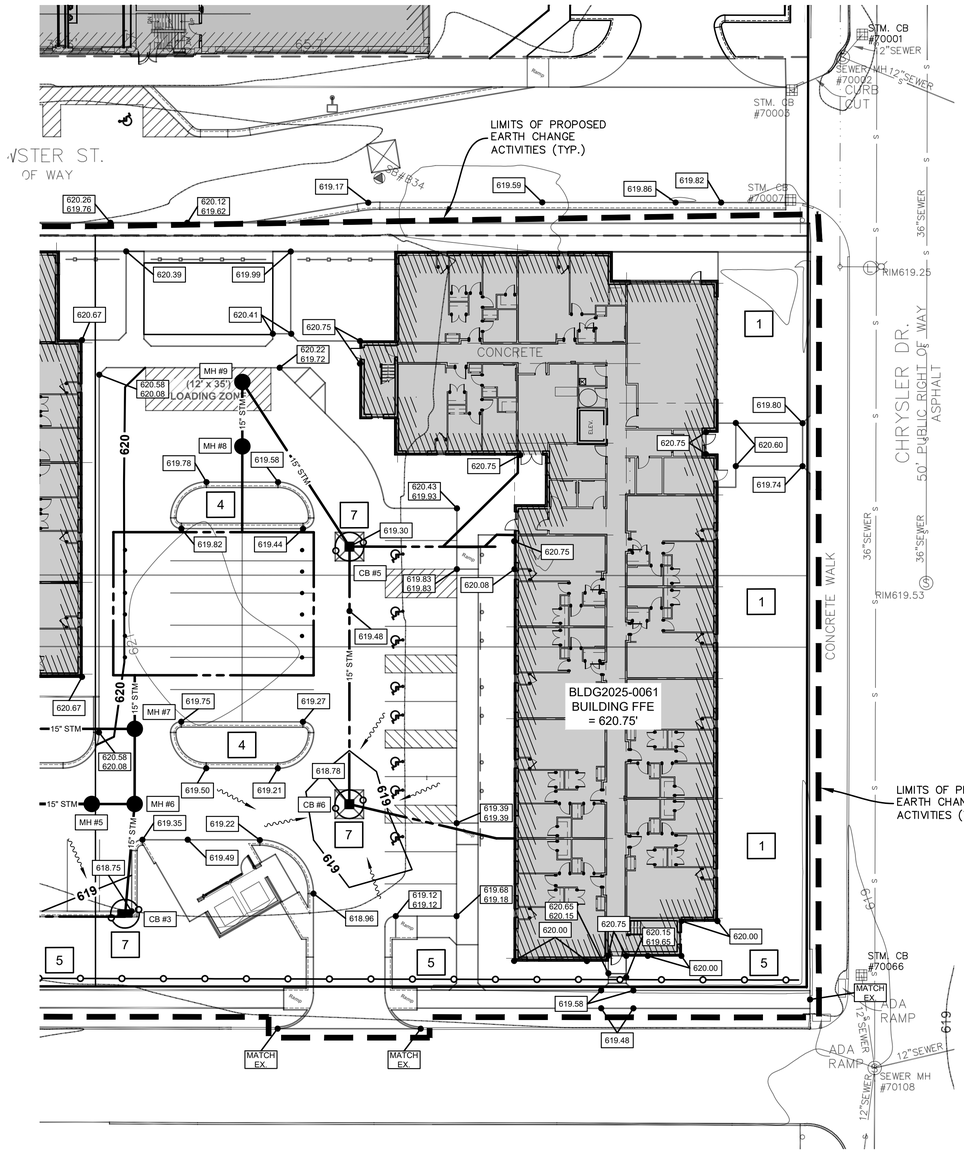
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

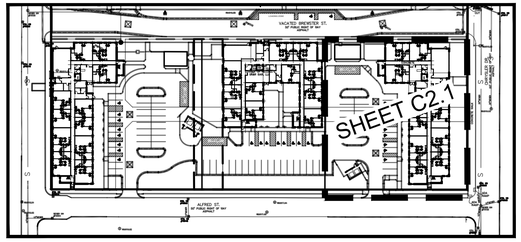
GRADING, DRAINAGE, AND SESC PLAN

DRAWN BY J.W.C.	DATE SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C2.0





KEY MAP

EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	Seeding		When bare soil is exposed, temporarily or permanently, to erosive forces from wind and or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	Mulch		On flat areas, slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive forces from wind or water.
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5	Perimeter Sediment Control Measures (Silt Fence, Straw Wattles, etc.)		As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets.
7	Storm Drain Inlet Protection		Around the entrance to a catch basin or an inlet that will capture runoff from an earth change activity.
28	Stone Construction Access		At locations where construction equipment will enter and exit the drain easement and tracking of soil is anticipated.

*SESC MEASURES SHALL COMPLY WITH MICHIGAN ASSOCIATION OF COUNTY DRAIN COMMISSIONERS SESC MANUAL SPECIFICATIONS

SILT FENCE | PROPOSED SPOT ELEVATION (XXX.XX) | DRAINAGE FLOW DIRECTION | EX. SPOT ELEVATION (XXX.XX)

BM "X"

BENCH MARKS:

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Elevation: 621.87 ft. (NAVD 88)

SUBSURFACE CONDITIONS

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SME Project No. 092556.00

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

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MICHIGAN BRUCE A. CALLEN LICENSED PROFESSIONAL ENGINEER 61047392

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

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DATE OF PLAN: 08-01-25

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callen civil engineers

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32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

BREWSTER I LDHA, LLC
671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

GRADING, DRAINAGE, AND SESC PLAN

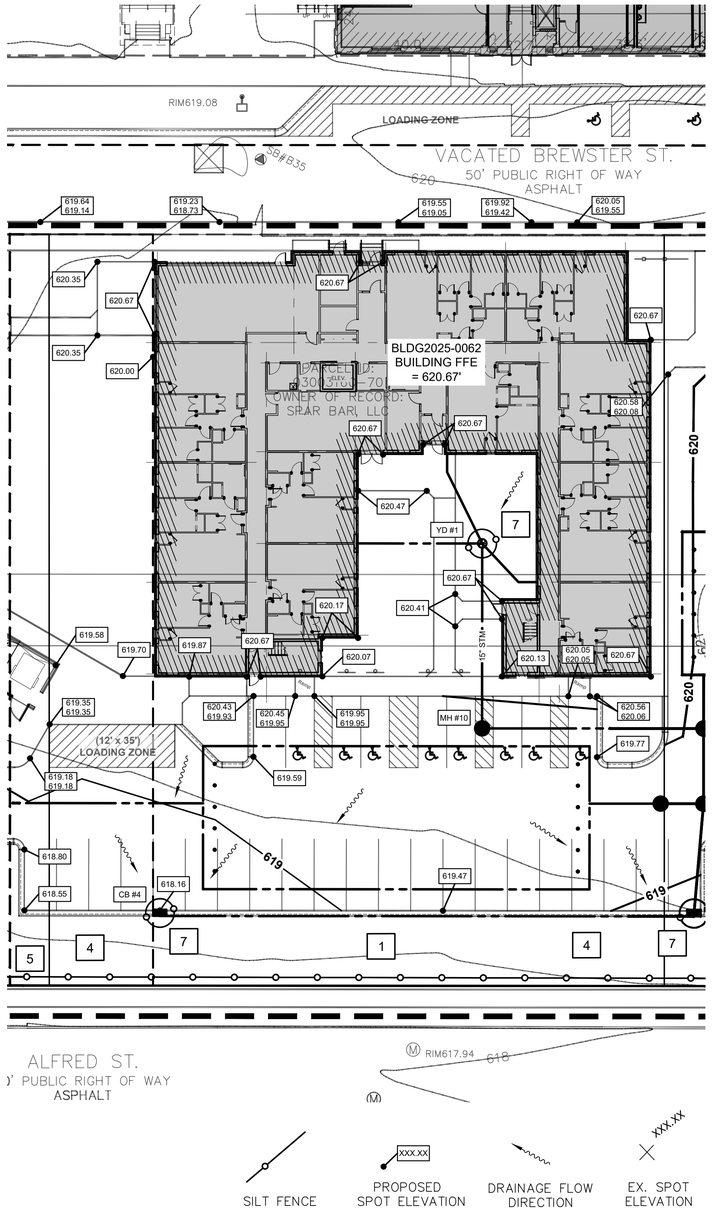
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

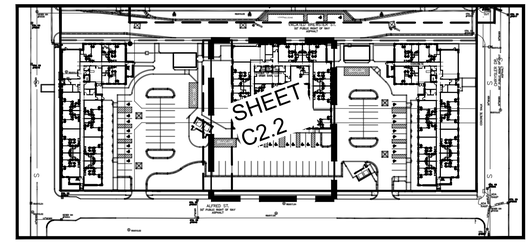
SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C2.1





KEY MAP

EROSION CONTROL MEASURES

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PRELIMINARY - NOT
FOR CONSTRUCTION

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SUBSURFACE CONDITIONS

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SME Project No. 092556.00

811
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STATE OF MICHIGAN
BRUCE A. CALLEN
LICENSED PROFESSIONAL ENGINEER
No. 47047392

Plan Prepared By:
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Tel: 616-414-5260
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DATE OF PLAN: 08-01-25

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248-833-0552

NO	ISSUANCE / REVISION	BY	DATE
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3	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4	SITE PLAN REVIEW RESPONSE #2	B.A.C.	06-01-25
5	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	------

BREWSTER II LDHA, LLC
651 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

GRADING, DRAINAGE, AND SESC PLAN

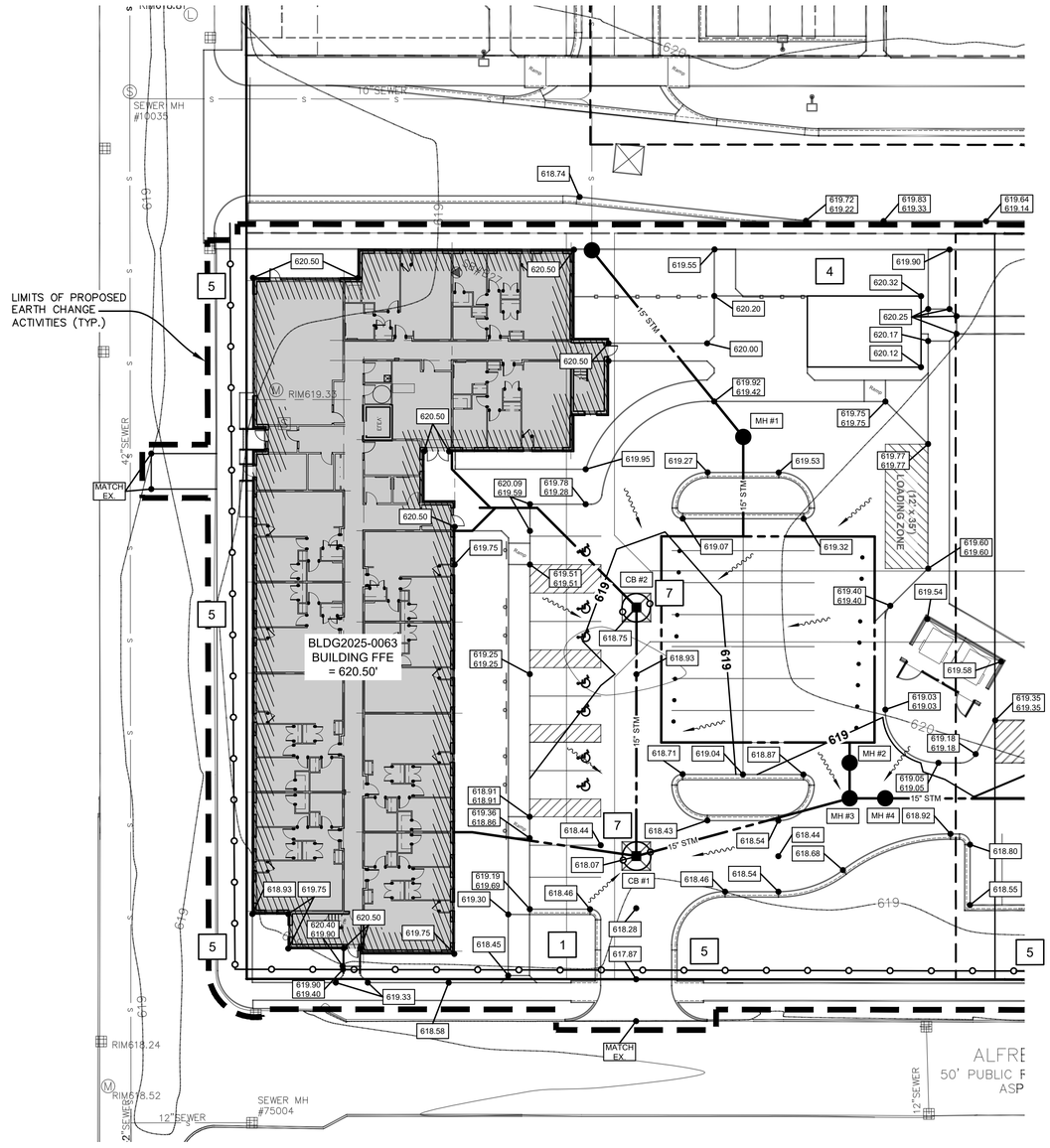
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

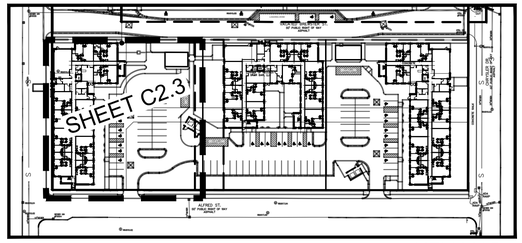
SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C2.2





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NORTH

0 20 40
SCALE IN FEET

SILT FENCE | PROPOSED SPOT ELEVATION (XXX.XX) | DRAINAGE FLOW DIRECTION | EX. SPOT ELEVATION (XXX.XX)

PRELIMINARY - NOT FOR CONSTRUCTION

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Plan Prepared By:

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Spring Lake, Michigan 49456

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callen civil engineers

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248-833-0552

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1	90% CD'S	B.A.C.	11-22-24
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5	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	

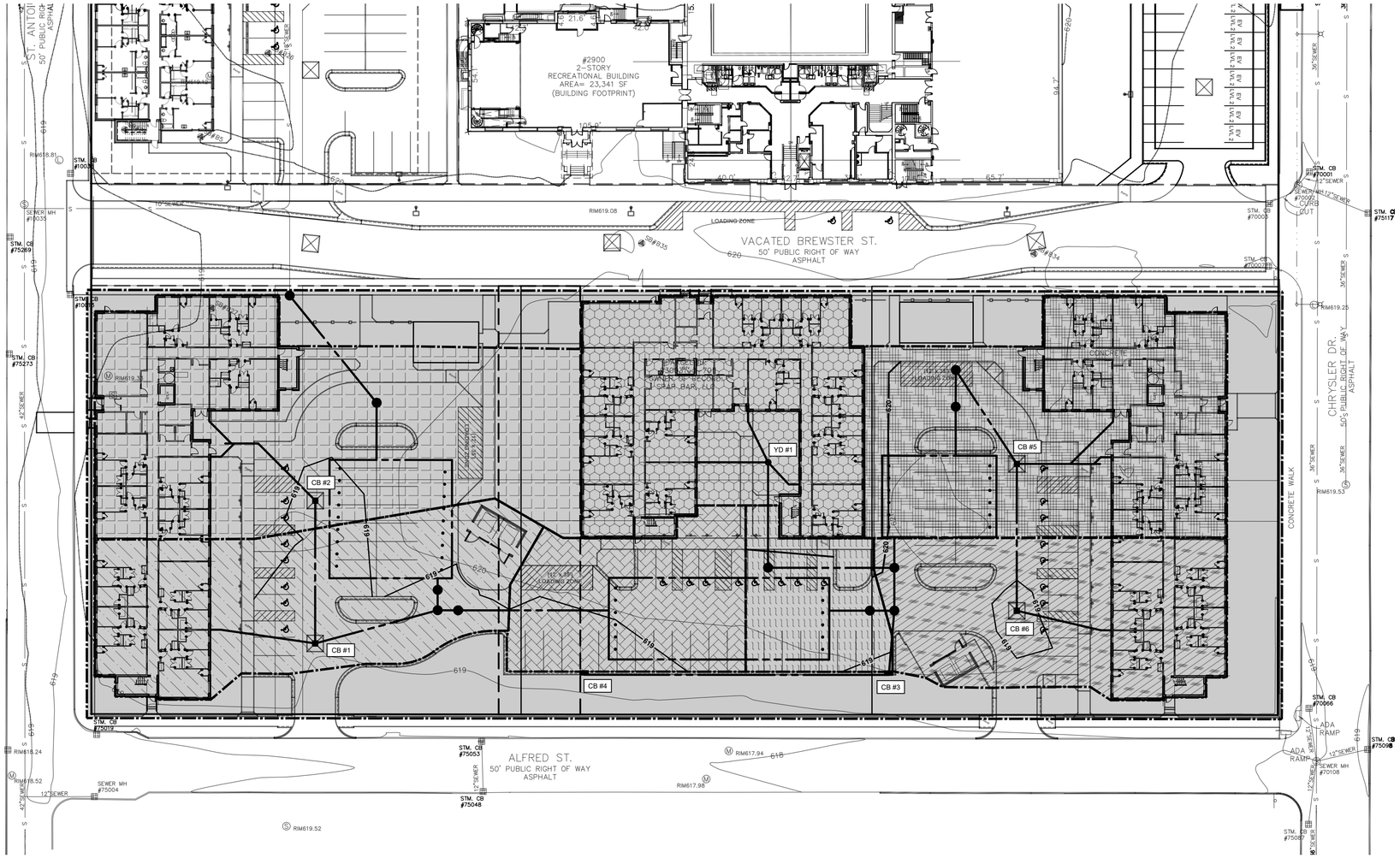
BREWSTER III LDHA, LLC
631 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

GRADING, DRAINAGE, AND SESC PLAN

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C2.3



CB#1 CONTRIBUTING AREA = 0.34 ACRES

CB#2 CONTRIBUTING AREA = 0.44 ACRES

CB#3 CONTRIBUTING AREA = 0.11 ACRES

CB#4 CONTRIBUTING AREA = 0.18 ACRES

CB#5 CONTRIBUTING AREA = 0.43 ACRES

CB#6 CONTRIBUTING AREA = 0.29 ACRES

YD#1 CONTRIBUTING AREA = 0.36 ACRES

CONTRIBUTING AREA TO PROPOSED STORM SYSTEM = 2.82 ACRES

PRELIMINARY - NOT FOR CONSTRUCTION

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STATE OF MICHIGAN BRUCE A. CALLEN LICENSED PROFESSIONAL ENGINEER 47047392

Plan Prepared By:

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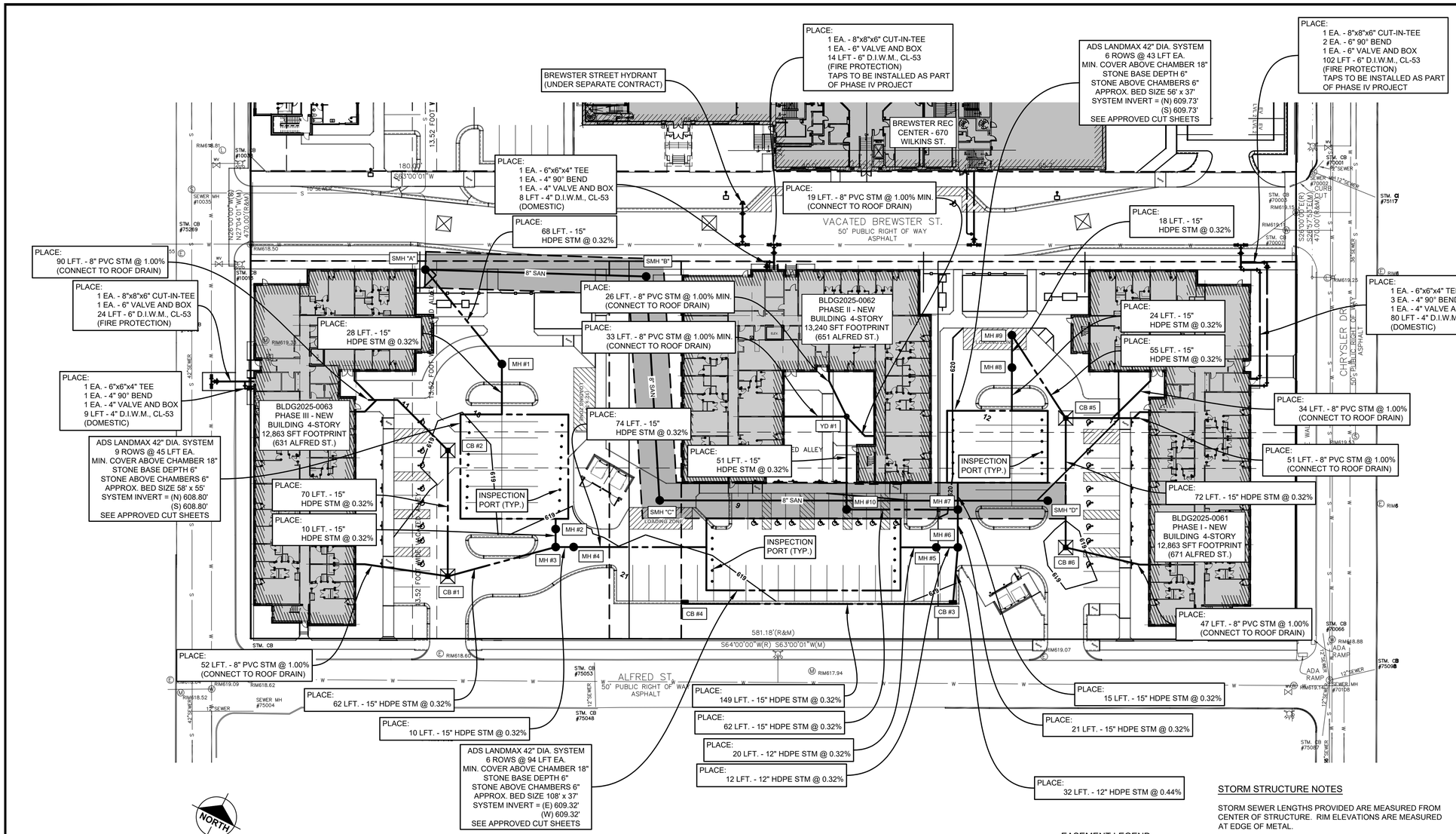
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

CONTRIBUTING AREA PLAN

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE	
DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C2.4



STORM STRUCTURE SCHEDULE
(THIS SHEET)

MH #1 (6' DIA W/ PARTITION WALL) RIM = 619.44 FT
(COVER: EJIW 1045 SERIES W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (NW) = 608.61 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 608.71 FT (SOLID WALL HDPE @ 0.32%)
TOP OF WALL = 612.30 FT
0.9" ORIFICE = 608.71 FT (BANKFULL / FLOOD CONTROL)

MH#2 (6' DIA - ADS BARRACUDA MAX S-6) RIM = 618.82 FT
(COVER: EJIW 1045 SERIES W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 608.82 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 608.82 FT (SOLID WALL HDPE @ 0.32%)

MH#3 (5' DIA) RIM = 618.74 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 608.85 FT (SOLID WALL HDPE @ 0.32%)
15" INV (E) = 608.95 FT (SOLID WALL HDPE @ 0.32%)
15" INV (SW) = 608.95 FT (SOLID WALL HDPE @ 0.32%)

MH#4 (6' DIA) RIM = 618.84 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (E) = 609.08 FT (SOLID WALL HDPE @ 0.32%)
15" INV (W) = 608.98 FT (SOLID WALL HDPE @ 0.32%)
WEIR WALL = 612.82 FT
0.8" ORIFICE = 609.08 FT (BANKFULL / FLOOD CONTROL)

MH#5 (6' DIA - ADS BARRACUDA MAX S-6) RIM = 619.55 FT
(COVER: EJIW 1045 SERIES W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (E) = 609.38 FT (SOLID WALL HDPE @ 0.32%)
15" INV (W) = 609.38 FT (SOLID WALL HDPE @ 0.32%)

MH#6 (5' DIA) RIM = 619.51 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 609.52 FT (SOLID WALL HDPE @ 0.32%)
15" INV (E) = 609.52 FT (SOLID WALL HDPE @ 0.32%)
15" INV (SW) = 609.42 FT (SOLID WALL HDPE @ 0.32%)

MH#7 (6' DIA) RIM = 619.94 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 609.68 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 609.58 FT (SOLID WALL HDPE @ 0.32%)
15" INV (W) = 609.68 FT (SOLID WALL HDPE @ 0.32%)
WEIR WALL = 613.19 FT
0.9" ORIFICE = 609.54 FT (BANKFULL / FLOOD CONTROL)

MH#8 (6' DIA - ADS BARRACUDA MAX S-6) RIM = 619.68 FT
(COVER: EJIW 1045 SERIES W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 609.81 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 609.81 FT (SOLID WALL HDPE @ 0.32%)

MH#9 (5' DIA) RIM = 619.78 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 609.97 FT (SOLID WALL HDPE @ 0.32%)
15" INV (E) = 609.87 FT (SOLID WALL HDPE @ 0.32%)

MH#10 (4' DIA) RIM = 619.94 FT
(COVER: EJIW 1045 W/ SOLID COVER OR A.E.)
EXTERNAL DROP MANHOLE
SEE DETAIL SHEET C4.4 (DETAIL 330561-6)
15" INV (N) = 609.98 FT (SOLID WALL HDPE @ 0.32%)
15" INV (E) = 609.88 FT (SOLID WALL HDPE @ 0.32%)

CB#1 (4' DIA) RIM = 618.07 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
15" INV (N) = 609.24 FT (SOLID WALL HDPE @ 0.32%)
15" INV (NE) = 609.14 FT (SOLID WALL HDPE @ 0.32%)
8" INV (W) = 609.24 FT (PVC STM @ 1.00%)

CB#2 (2' DIA) RIM = 618.75 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
8" INV (NW) = 609.46 FT (PVC STM @ 0.32%)
15" INV (S) = 609.46 FT (SOLID WALL HDPE @ 0.32%)

CB#3 (4' DIA) RIM = 618.75 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
15" INV (NW) = 609.62 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 609.72 FT (SOLID WALL HDPE @ 0.32%)

CB#4 (2' DIA) RIM = 618.16 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
15" INV (E) = 610.20 FT (SOLID WALL HDPE @ 0.32%)

CB#5 (4' DIA) RIM = 619.30 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
15" INV (NW) = 610.15 FT (SOLID WALL HDPE @ 0.32%)
15" INV (S) = 610.25 FT (SOLID WALL HDPE @ 0.32%)
8" INV (E) = 610.25 FT (PVC STM @ 1.00%)

CB#6 (2' DIA) RIM = 618.78 FT
(COVER: EJIW 1045 Z W/ M1 GRATE OR A.E.)
15" INV (N) = 610.48 FT (SOLID WALL HDPE @ 0.32%)
8" INV (E) = 610.48 FT (PVC STM @ 1.00%)

YD#1 (2' DIA) RIM = 619.55 FT
(COVER: EJIW 1045Z W/ TYPE 02 GRATE OR A.E.)
10" INV (S) = 610.14 FT (SOLID WALL HDPE @ 0.32%)
8" INV (NW) = 610.14 FT (PVC STM @ 1.00%)
8" INV (W) = 610.14 FT (PVC STM @ 1.00%)
8" INV (SE) = 610.14 FT (PVC STM @ 1.00%)

STORM STRUCTURE NOTES

STORM SEWER LENGTHS PROVIDED ARE MEASURED FROM CENTER OF STRUCTURE. RIM ELEVATIONS ARE MEASURED AT EDGE OF METAL.

STORM SEWER SHALL BE WATER-TIGHT, SOLID-WALL HDPE OR APPROVED EQUAL, UNLESS INDICATED ON THE PLANS.

MANHOLES AND CATCH BASINS SHALL BE IN ACCORDANCE WITH MDOT STANDARD SPECIFICATIONS. CATCH BASINS SHALL INCLUDE 2-FT SUMP.

ALL EXISTING CATCH BASINS TO REMAIN SHALL BE CLEANED AND INSPECTED TO VERIFY OPERABILITY.

CONNECTIONS TO MANHOLES SHALL BE MADE WITH A RESILIENT CONNECTOR FOR PIPE DIAMETERS 24 INCHES OR LESS.

MANHOLE RIM ELEVATIONS SHALL BE SET 1/4" BELOW PLAN GRADE.
CATCH BASIN RIM ELEVATIONS SHALL BE SET 1 3/16" BELOW PLAN GRADE.

ALL CURB DIMENSIONS ARE MEASURED FROM EDGE OF METAL.

THE CONTRACTOR SHALL EXPOSE AND VERIFY LOCATION AND DEPTH OF EXISTING UNDERGROUND UTILITIES PRIOR TO CONSTRUCTION. CONFLICTS IN GRADES SHALL BE REPORTED TO ENGINEER AND ADJUSTMENTS SHALL BE MADE AT NO ADDITIONAL COST TO OWNER.

EASEMENT LEGEND

20' SANITARY EASEMENT

PUBLIC UTILITY QUANTITIES THIS SHEET			
ITEM DESCRIPTION	UNIT	QUANTITY	FINAL QUANTITY
15 INCH STORM SEWER	LFT	789	
12 INCH STORM SEWER	LFT	64	
8 INCH PVC STORM SEWER	LFT	352	
6 FT STORM MANHOLE	EA	6	
5 FT STORM MANHOLE	EA	3	
4 FT STORM MANHOLE	EA	1	
4 FT CATCH BASIN	EA	3	
2 FT CATCH BASIN	EA	3	
2 FT YARD DRAIN	EA	1	
6 INCH D.I.W.M.	LFT	140	
4 INCH D.I.W.M.	LFT	97	
8 INCH SANITARY SEWER	LFT	463	
6 INCH SANITARY LATERAL	LFT	128	
4 FT SANITARY MANHOLE	EA	4	

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

Know what's below. Call before you dig.

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DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

NO.	ISSUANCE / REVISION	BY	DATE
1.	SITE PLAN REVIEW	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25
5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

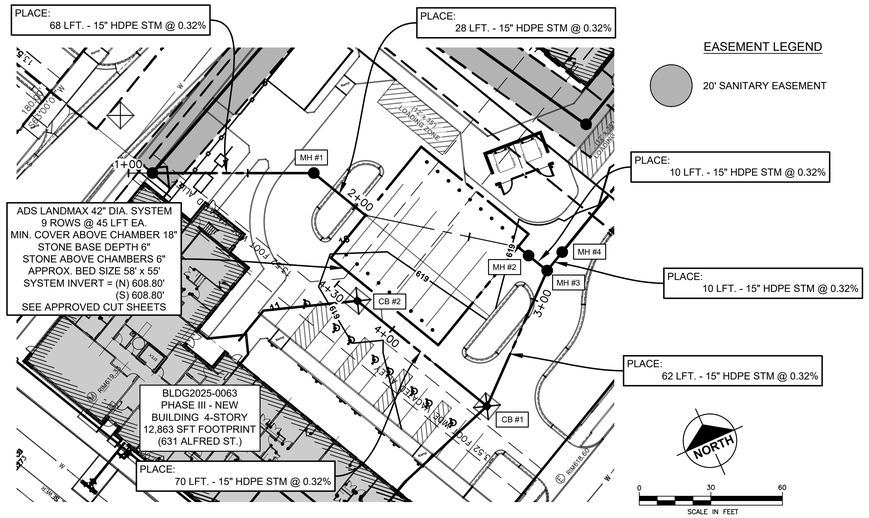
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

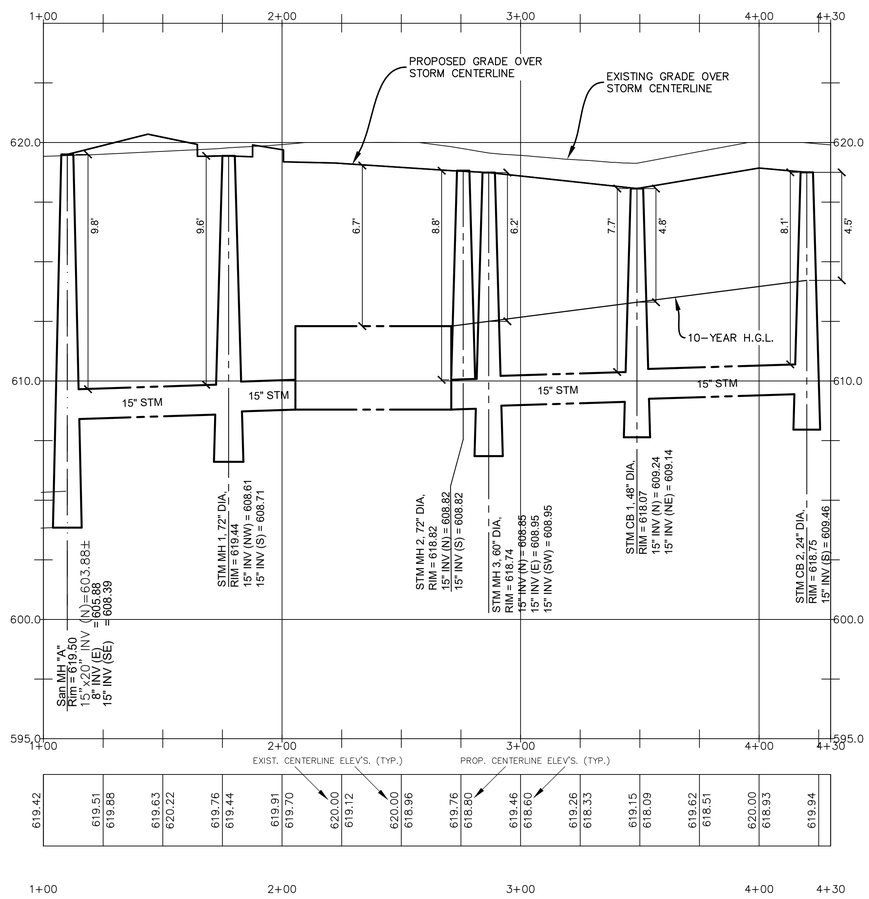
OVERALL SITE UTILITY PLAN

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25
SCALE	
DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C3.0





HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'

SUBSURFACE CONDITIONS

Contractor(s) shall familiarize themselves with the information and findings presented in the Geotechnical Evaluation Report prepared by SME dated Apr. 28, 2023.
SME Project No. 092556.00

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MICHIGAN
BRUCE A. CALLEN
No. 47047392
LICENSED PROFESSIONAL ENGINEER

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

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MHT HOUSING, INC.
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DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
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REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

STORM PLAN & PROFILE

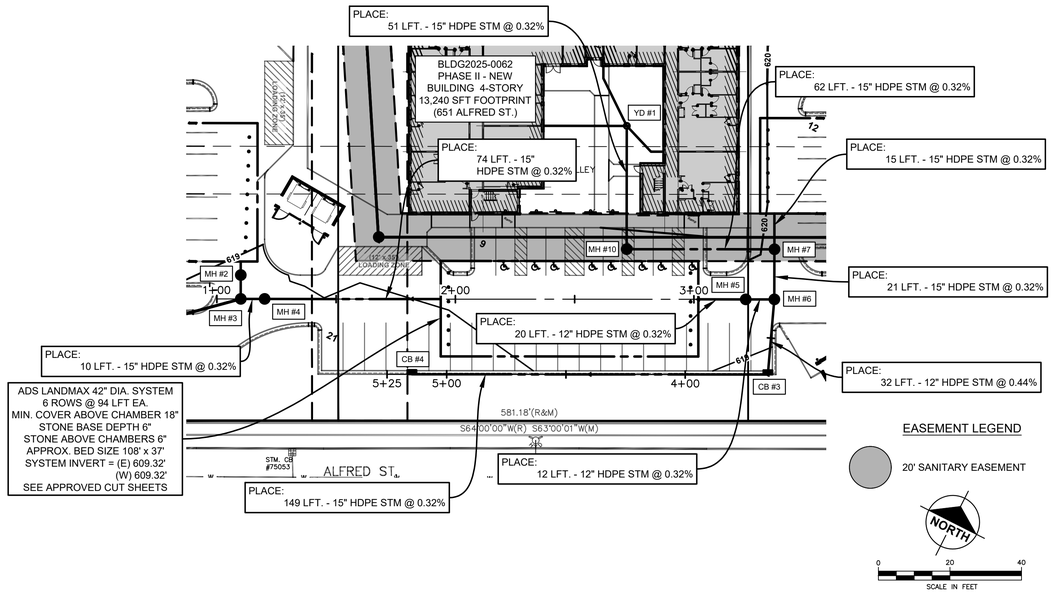
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25

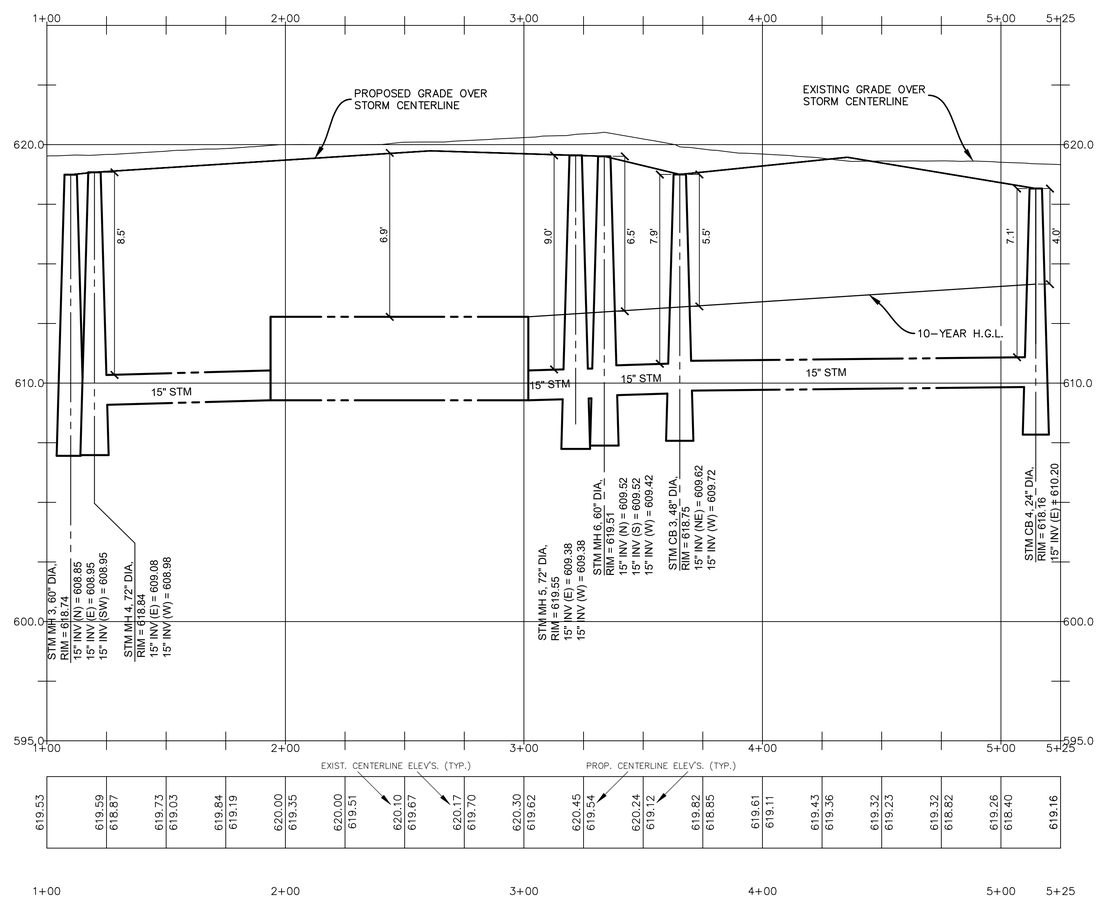
SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C3.1





HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'

SUBSURFACE CONDITIONS

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SME Project No. 092556.00

PRELIMINARY - NOT
FOR CONSTRUCTION

STATE OF MICHIGAN
BRUCE A. CALLEN
LICENSED PROFESSIONAL ENGINEER
No. 48104792

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

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email: bcallen@callenengineering.com

811
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DATE OF PLAN: 08-01-25

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callen
civil engineers

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
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248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
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REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

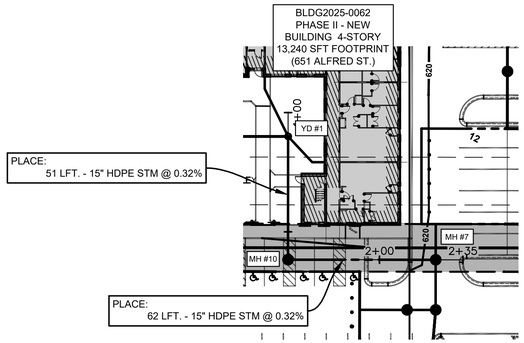
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

STORM PLAN & PROFILE

DRAWN BY J.W.C.	DATE SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING AS NOTED	PLOT SCALE 1:1

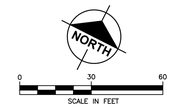
PROJECT 023 BREWSTER SANCTUARY

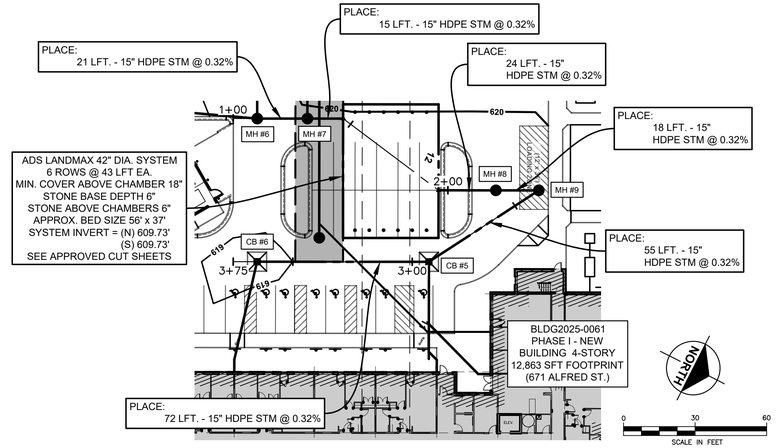
SHEET NO. C3.2

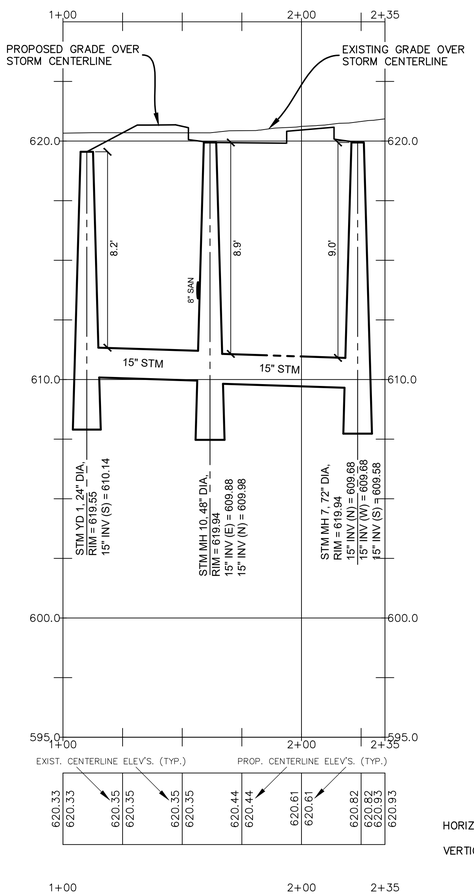


EASEMENT LEGEND

20' SANITARY EASEMENT

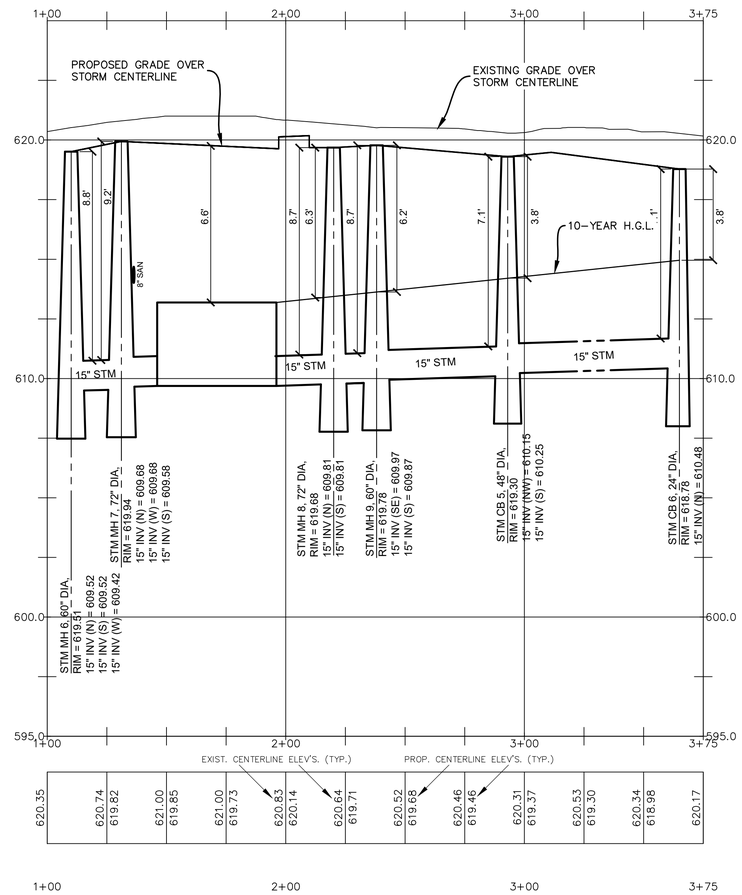






HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'



HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'

PRELIMINARY - NOT FOR CONSTRUCTION

SUBSURFACE CONDITIONS

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SME Project No. 092556.00

STATE OF MICHIGAN
BRUCE A. CALLEN
No. 47047392
LICENSED PROFESSIONAL ENGINEER

Plan Prepared By:

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callen civil engineers

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248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
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5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	

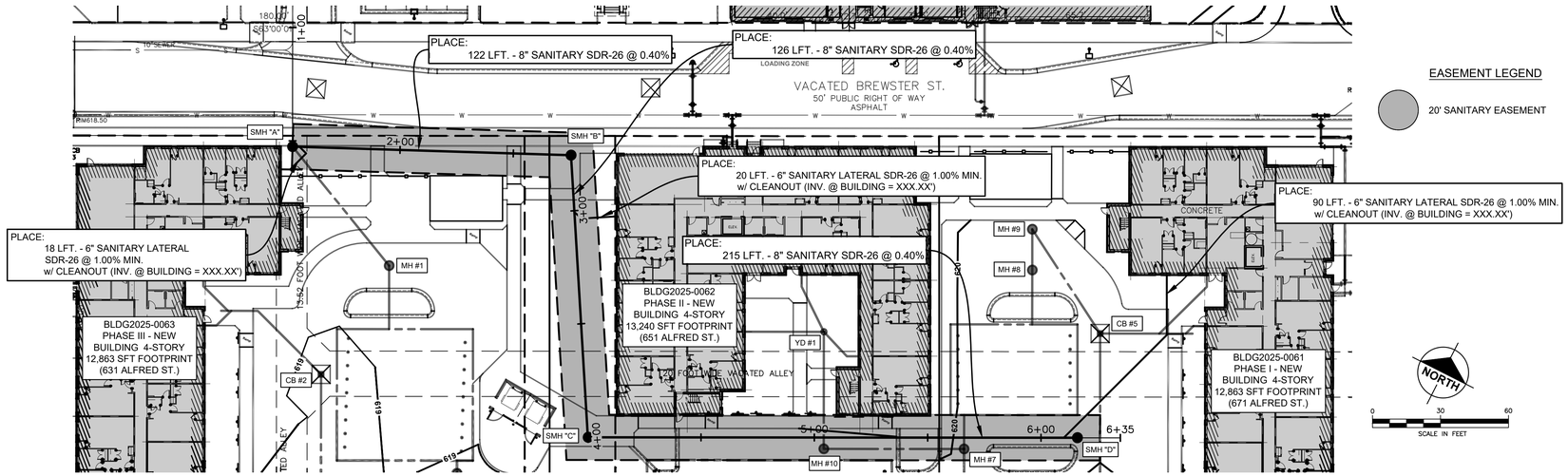
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

STORM PLAN & PROFILE

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C3.3



EASEMENT LEGEND

20' SANITARY EASEMENT

SANITARY SEWER NOTES

1. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. MAINTAIN MINIMUM 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION BETWEEN ALL WATERMAIN AND SEWER.
3. ALL INSTALLATION OF AND MATERIALS FOR COMBINED / SANITARY SEWER, LATERALS, AND CONNECTION THE EXISTING SANITARY SEWER SHALL BE IN ACCORDANCE WITH CITY OF DETROIT SPECIFICATIONS.

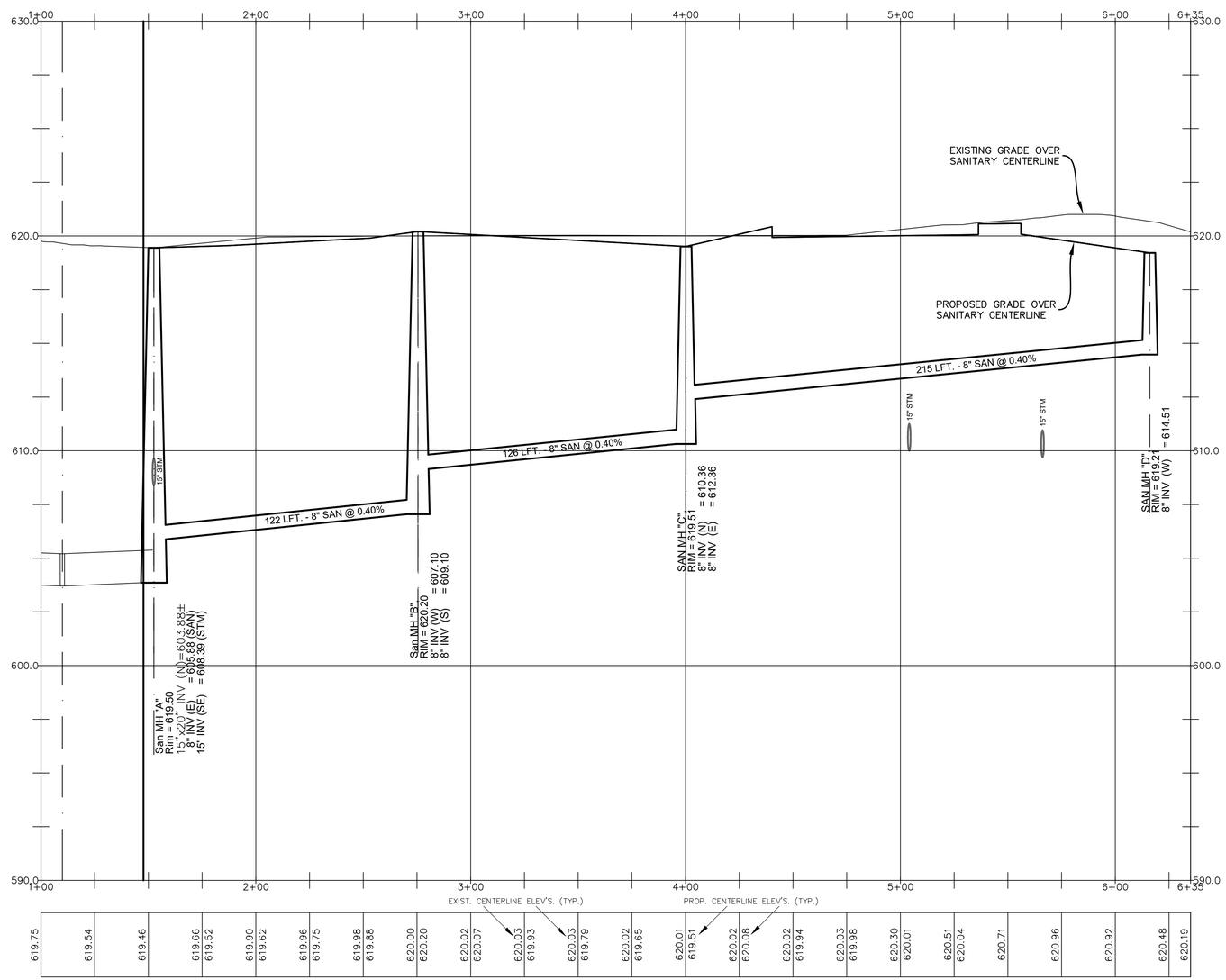
SANITARY STRUCTURE SCHEDULE
(THIS SHEET)

SMH "A" (4' DIA - EXTERNAL DROP) RIM = 620.00 FT (SOLID COVER)
12" INV (SW) = 610.65 FT (12" CS PVC SDR-26)
12" INV (NE) = 614.08 FT (12" HDPE STM)
6" INV (SE) = 615.31 FT (8" PVC SDR-26)

SMH "B" (4' DIA - EXTERNAL DROP) RIM = 620.20 FT (SOLID COVER)
8" INV (W) = 607.10 FT (8" PVC SDR-26)
8" INV (S) = 609.10 FT (8" PVC SDR-26)

SMH "C" (4' DIA - EXTERNAL DROP) RIM = 619.51 FT (SOLID COVER)
8" INV (W) = 610.36 FT (8" PVC SDR-26)
8" INV (S) = 612.36 FT (8" PVC SDR-26)

SMH "D" (4' DIA) RIM = 619.21 FT (SOLID COVER)
8" INV (W) = 614.51 FT (8" PVC SDR-26)



HORIZONTAL SCALE: 1"=30'

VERTICAL SCALE: 1"=3'

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
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Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

SUBSURFACE CONDITIONS

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SME Project No. 092556.00

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248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
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5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	

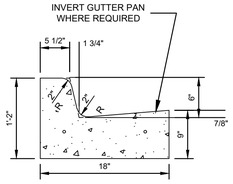
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

SANITARY PLAN & PROFILE

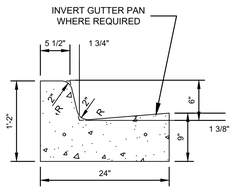
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C3.4

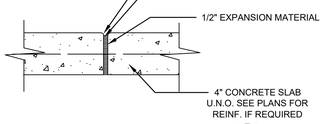


CONCRETE CURB & GUTTER — CG-F2
DETAIL F2, MODIFIED
NO SCALE

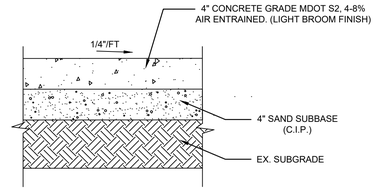


CONCRETE CURB & GUTTER — CG-F4
DETAIL F4, MODIFIED
NO SCALE

WALK CONTROL JOINT — SW-CJ
NO SCALE

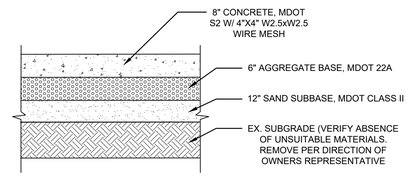


WALK EXPANSION JOINT — SW-EJ



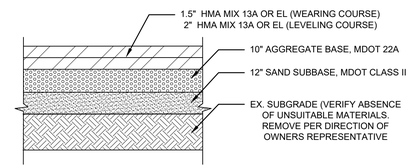
NOTE: 1) PROVIDE CONTROL JOINTS AT 5' O/C

CONCRETE SIDEWALK SECTION — CP-4
NO SCALE



NOTE: CONTRACTOR(S) SHALL FAMILIARIZE THEMSELVES WITH THE INFORMATION AND FINDINGS PRESENTED IN THE GEOTECHNICAL EVALUATION REPORT PREPARED BY SME DATED APRIL 28, 2023 SME PROJECT NO. 092556.00

8" CONCRETE PAVEMENT SECTION — CP-8
NO SCALE



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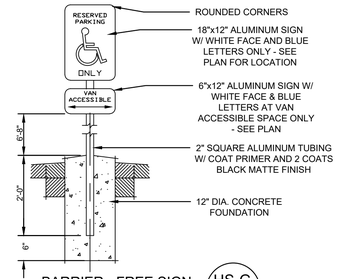
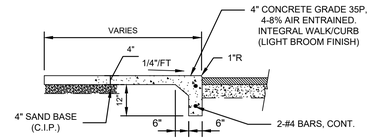
HMA PAVEMENT SECTION — HMA
NO SCALE

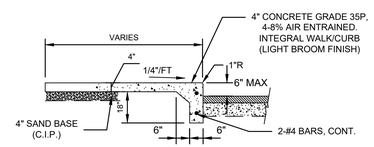


BARRIER - FREE SIGN — HS-G
NO SCALE



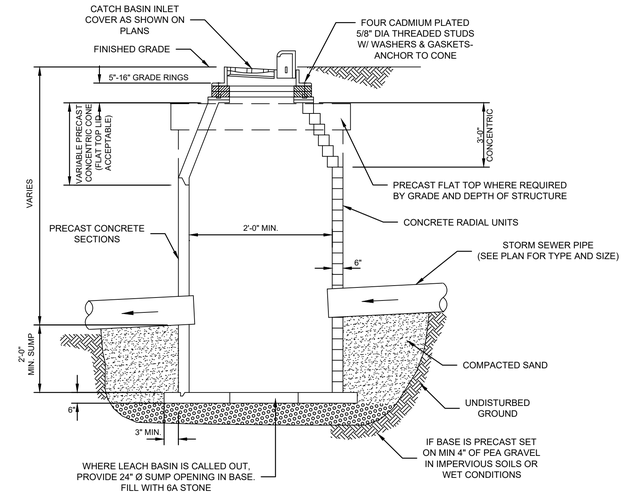
NOTE: 1) PROVIDE 3/8" EXPANSION JOINT WHERE WALK MEETS BUILDING
2) PROVIDE CONTROL JOINTS AT 6' O/C

CONCRETE SIDEWALK W/ FLUSH CURB — SW-2
NO SCALE

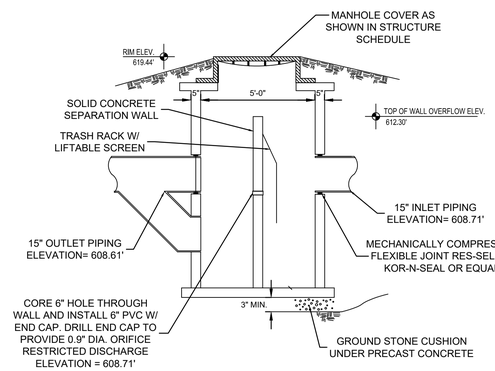


NOTE: 1) PROVIDE 3/8" EXPANSION JOINT WHERE WALK MEETS BUILDING
2) PROVIDE CONTROL JOINTS AT 6' O/C

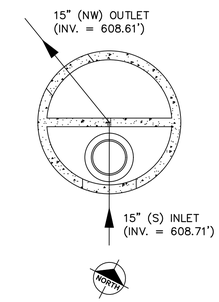
INTEGRAL WALK / CURB — SW-1
NO SCALE



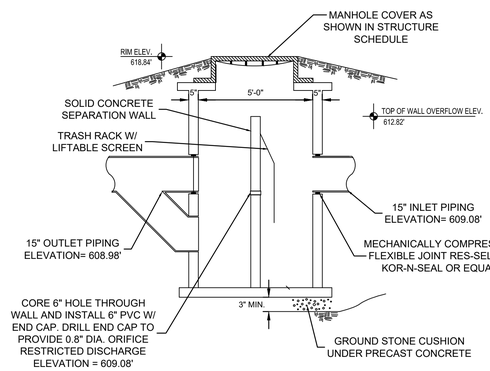
CATCH BASIN DETAIL
NO SCALE



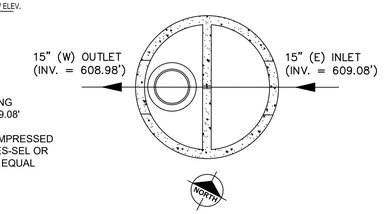
MANHOLE MH #1 SECTION VIEW
NO SCALE



MANHOLE MH #1 PLAN VIEW
NO SCALE

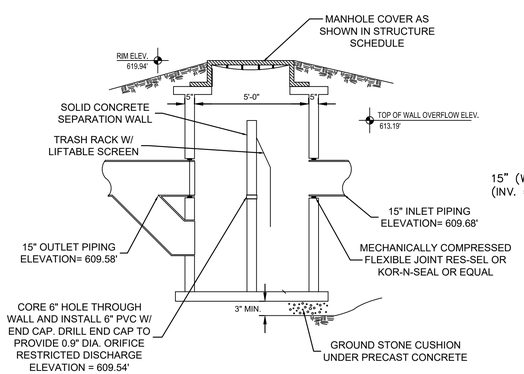


MANHOLE MH #4 SECTION VIEW
NO SCALE

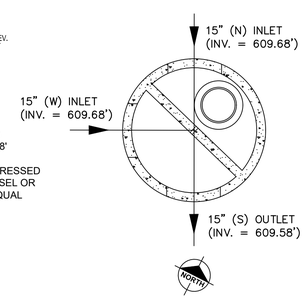


MANHOLE MH #4 PLAN VIEW
NO SCALE

PRELIMINARY - NOT
FOR CONSTRUCTION



MANHOLE MH #7 SECTION VIEW
NO SCALE



MANHOLE MH #7 PLAN VIEW
NO SCALE

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

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

STATE OF MICHIGAN
BRUCE
CALLEN
47392
LICENSED PROFESSIONAL ENGINEER

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

callen
civil engineers

THE SANCTUARY BREWSTER LDHA, LLC
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	06-01-25
5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

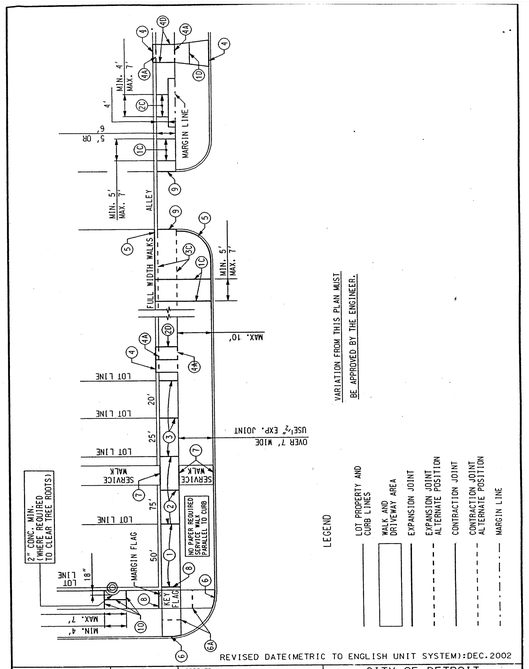
BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C4.0



VARIATION FROM THIS PLAN MUST BE APPROVED BY THE ENGINEER.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

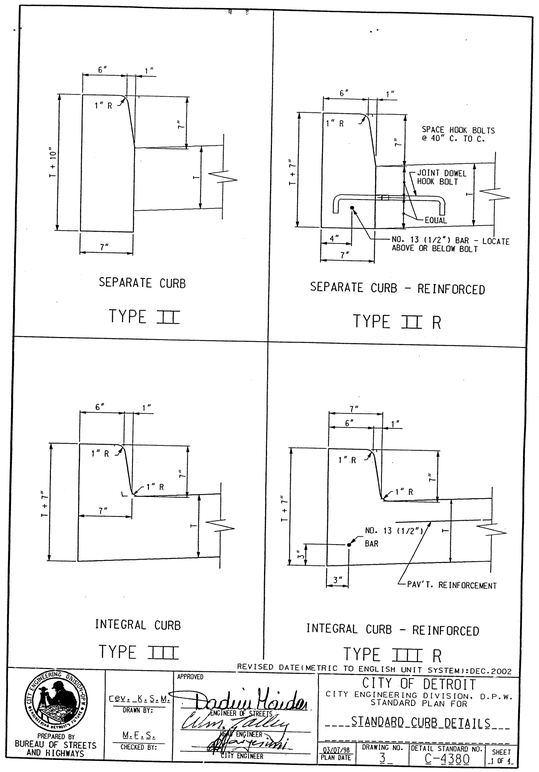
PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. — DRAWN BY:
M.F.S. — CHECKED BY:

APPROVED: ENGINEER OF STREETS; HEAD ENGINEER; CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
SIDEWALK JOINTING STANDARD

03/07/98 PLAN DATE	DRAWING NO. 9	DETAIL STANDARD NO. C-4462	SHEET 1 OF 2



REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

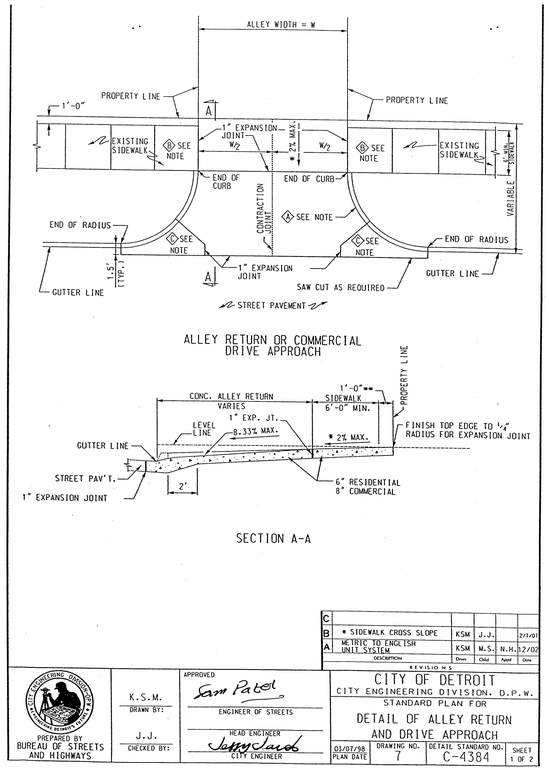
PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. — DRAWN BY:
M.F.S. — CHECKED BY:

APPROVED: ENGINEER OF STREETS; HEAD ENGINEER; CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/07/98 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET 1 OF 4



C				
B	* SIDEWALK CROSS SLOPE	KSM	J.J.	2/1/01
A	METRIC TO ENGLISH UNIT SYSTEM	KSM	M.S. N.H.	12/02
	DESCRIPTION	Dwn	Chkd Apvd	Date

REVISIONS

PREPARED BY BUREAU OF STREETS AND HIGHWAYS

K.S.M. — DRAWN BY:
J.J. — CHECKED BY:

APPROVED: ENGINEER OF STREETS; HEAD ENGINEER; CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
DETAIL OF ALLEY RETURN AND DRIVE APPROACH

03/07/98 PLAN DATE	DRAWING NO. 7	DETAIL STANDARD NO. C-4384	SHEET 1 OF 2

EXPANSION JOINTS

ALL EXPANSION JOINT PAPER SHALL EXTEND 1" BELOW THE BOTTOM OF THE THINNER OF ADJOINING PAVEMENT SECTIONS.

1. PLACE 1/2" PAPER EXPANSION JOINTS AT LOT LINES WHEN LOT LINES ARE BETWEEN 25' AND 50' APART.
2. PLACE ADDITIONAL 1/2" PAPER EXPANSION JOINTS SO THAT THE DISTANCE BETWEEN JOINTS DOES NOT EXCEED 15.2 m WHEN LOT LINES ARE OVER 15.240 m APART.
3. PLACE 1/2" PAPER EXPANSION JOINTS AT EVERY SECOND LOT LINE AND CONTRACTION JOINT AT INTERVENING LOT LINE WHEN LOT LINES ARE LESS THAN 25' APART.
4. PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE OR AT ALTERNATE POSITION (4A) AS SHOWN FOR DRIVEWAY.
5. PLACE 1" PAPER EXPANSION JOINTS AT CURB AND BUILDING OR PROPERTY LINE FOR FULL WIDTH SIDEWALK EXCEEDING 7' IN WIDTH.
6. PLACE 1" PAPER EXPANSION JOINTS AT CURB CIRCLES OR AT ALTERNATE POSITION (6A) AS SHOWN.
7. PLACE 1" PAPER EXPANSION JOINTS AT INTERSECTIONS OF SERVICE WALKS AND SIDEWALKS AND SERVICE WALKS AND CURBS.
8. PLACE 1" PAPER EXPANSION JOINTS AT MARGIN FLAGS AT CROSSWALKS.
9. PLACE 1" PAPER EXPANSION JOINTS AT ALLEY APRONS.
10. PLACE 1/2" PAPER EXPANSION JOINT BOTH SIDES OF SIDEWALK FLAG ABUTTING TREE AND ON CENTERLINE JOINT.

CONTRACTION JOINTS

1C. PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 5' NOR MORE THAN 7' ON WALKS 5' WIDE OR WIDER, INCLUDING FULL WIDTH WALKS.

2C. PLACE CONTRACTION JOINTS AT INTERVALS OF NOT LESS THAN 4' NOR MORE THAN 7' ON WALKS 4' WIDE.

3C. PLACE CONTRACTION JOINTS AT THE MARGIN LINE ON FULL WIDTH WALKS (OPTIONAL).

DRIVEWAYS

1D. PLACE CONTRACTION JOINTS IN DRIVEWAYS SO THAT NO SLAB WILL EXCEED THE DIMENSIONS OF 15' BY 15'.

2D. PLACE 1" PAPER EXPANSION JOINTS ON ALL SIDES OF COMMERCIAL DRIVES.

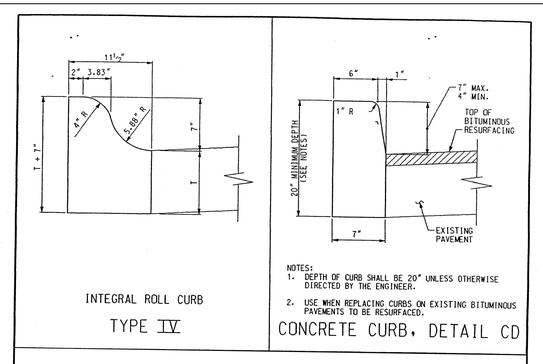
3D. PLACE CONSTRUCTION OR CONTRACTION JOINT ON CENTERLINE WHEN WIDTH OF DRIVEWAY EXCEEDS 15'

4D. PLACE 1/2" PAPER EXPANSION JOINTS ON BOTH SIDES OF RESIDENTIAL DRIVEWAYS. IF DRIVEWAY EDGE IS WITHIN 2' OF LOT LINE, PLACE THIS EXPANSION PAPER AT PROPERTY LINE.

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

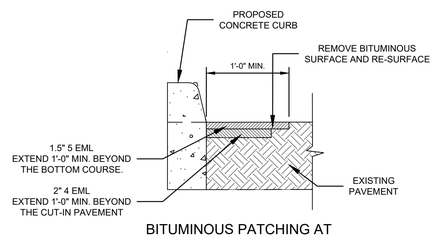
CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
SIDEWALK JOINTING STANDARD

03/07/98 PLAN DATE	DRAWING NO. 9	DETAIL STANDARD NO. C-4462	SHEET 2 OF 2



NOTES:
1. DEPTH OF CURB SHALL BE 20" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
2. USE WHEN REPLACING CURBS ON EXISTING BITUMINOUS PAVEMENTS TO BE RESURFACED.

CONCRETE CURB, DETAIL CD



BITUMINOUS PATCHING AT PROPOSED CURB EDGE

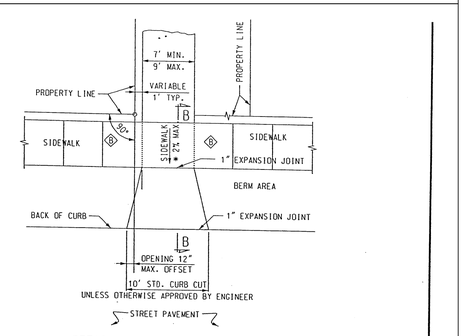
NO SCALE

NOTE:

THIS DETAIL SHALL BE USED AT LOCATIONS WHERE PROPOSED CURB IS CONSTRUCTED ADJACENT TO EXISTING BITUMINOUS PAVEMENT NOT TO BE RE-SURFACED.

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD CURB DETAILS

03/07/98 PLAN DATE	DRAWING NO. 3	DETAIL STANDARD NO. C-4380	SHEET 2 OF 4



NOTES:

IF ALLEY IS PAVED, CONSTRUCT RETURN WITH 1" EXPANSION JOINT ON PROPERTY LINE.

(A) RADIUS TO BE 10' UNLESS OTHERWISE SHOWN ON PAVING PLAN.

(B) SIDEWALK FLAGS ABUTTING ALLEY SHALL BE 6" THICK. SIDEWALK SHALL BE REPLACED FOR A SMOOTH TRANSITION AND TO ATTAIN A CROSS SLOPE OF 2% MAX. OR AS DIRECTED BY THE ENGINEER.

(C) KEY JOINT OR "B" JOINT IF REINFORCED PAVEMENT.

ALL DIMENSIONS ARE IN INCHES(") UNLESS OTHERWISE NOTED.

* SIDEWALK CROSS SLOPE SHALL BE 2% MAX. OR AS DIRECTED BY THE ENGINEER.

** THE SLOPE OF THE DRIVEWAY IN THE 1 FT. SPACE ADJACENT TO THE PROPERTY LINE MAY BE ALTERED UP TO 10% TO MEET EXISTING CONDITIONS.

C				
B	* SIDEWALK CROSS SLOPE	KSM	J.J.	2/1/01
A	Chgd. THICKNESS NOTE	KSM	N.H. W.T.	10/00
	DESCRIPTION	Dwn	Chkd Apvd	Date

REVISIONS

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
DETAIL OF ALLEY RETURN AND DRIVE APPROACH

03/07/98 PLAN DATE	DRAWING NO. 7	DETAIL STANDARD NO. C-4384	SHEET 2 OF 2

Know what's below. Call before you dig.

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

THE SANCTUARY BREWSTER LDHA, LLC
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

NO	ISSUANCE / REVISION	BY	DATE
1	90% CD'S	B.A.C.	11-15-24
2	BUILDING PERMIT	B.A.C.	12-06-24
3	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25
5	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

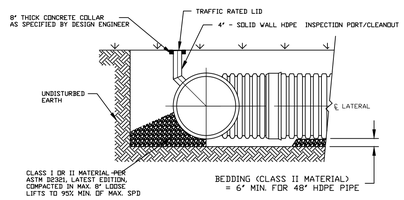
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER	DATE
B.A.C.	SEP '24
EDIT	DATE
J.W.C.	AUG '25

SCALE

DRAWING	PLOT SCALE
AS NOTED	1:1

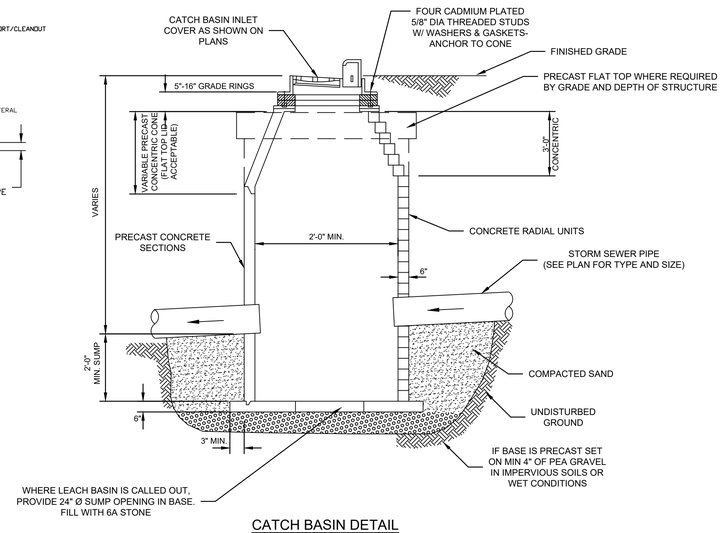
PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C4.1



INSPECTION PORT DETAIL

NO SCALE



CATCH BASIN DETAIL

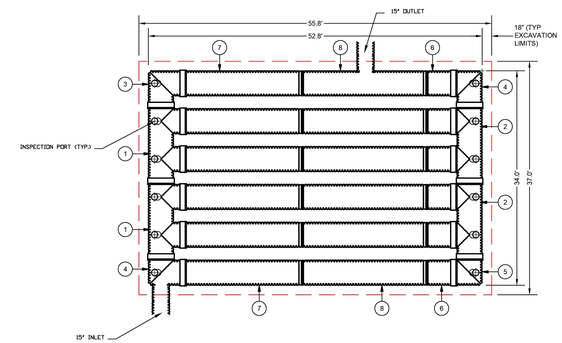
NO SCALE

ITEM	QTY	ALT. QTY	PART #	DESCRIPTION	STAN.	VENDOR	NOTE
1	2		4252AN65B	42" WT DOUBLE MANIFOLD TEE (BxBxBxG)	STAN	ADS	SEE DETAIL
2	2		4252AN65G	42" WT DOUBLE MANIFOLD TEE (GxGxGxB)	STAN	ADS	SEE DETAIL
3	1		4298AN65BB	42" WT MANIFOLD 90 DEG BEND (BxB)	STAN	ADS	SEE DETAIL
4	2		4298AN65BG	42" WT MANIFOLD 90 DEG BEND (BxG)	STAN	ADS	SEE DETAIL
5	1		4298AN65GG	42" WT MANIFOLD 90 DEG BEND (GxG)	STAN	ADS	SEE DETAIL
6	6 STICKS		STICK-1	42" N12 HWY WTIB,SOLID,20'	CUS	ADS	SEE DETAIL
7	6 STICKS		STICK-2	42" N12 HWY WTIB,SOLID,20'	CUS	ADS	SEE DETAIL
8	6 STICKS	119 LF	4265002IB8	42" N12 HWY WTIB,SOLID,20'	STAN	ADS	AS SHOWN
9	2 ROLLS	1000 SY	0601TG	601.15' X 300' (500 SY),(NTPEP SCAN),(20% OVERAGE)	STAN	ADS	SEE DETAIL
10	10276 CF	381 CY	NA	EXCAVATION	NA	NA	NOT SHOWN

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
- STUB SIZES AND INVERTS TO BE VERIFIED BY THE SITE DESIGN ENGINEER PRIOR TO FABRICATION.
- ADS RISERS ARE FABRICATED 36" (900 mm) FROM TOP OF PIPE TO TOP OF RISER DUE TO SHIPPING LIMITATIONS. ADDITIONAL PIPE AND COUPLERS CAN BE USED TO EXTEND THE RISERS TO GRADE.
- LAYOUT SHOWN DOES NOT INCLUDE ADDITIONAL PIPE & MANIFOLD NEEDED FOR PROPER PIPE INSERTION INTO STRUCTURES.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

STORAGE VOLUME PROVIDED THIS SYSTEM = 3,191 CFT



ADS GEOTEXTILE FABRIC

BREWSTER PHASE 1
DETROIT MI
DATE: 11/26/24 DRAWN: A.B.
PROJECT # CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

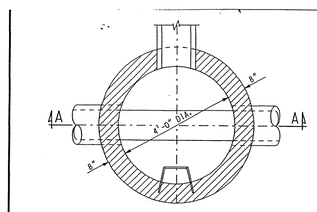
42" WT IB SOLID DETENTION SYSTEM
LandMax
Stormwater Management System

4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

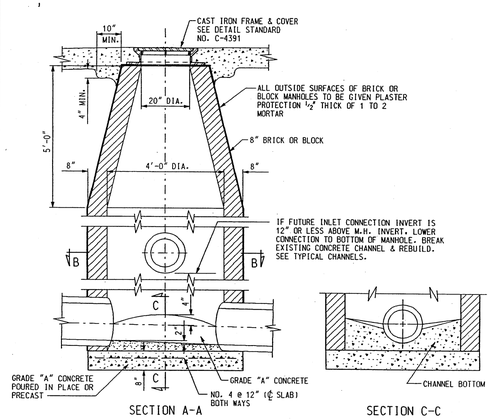
SCALE 0 10 20

THIS DRAWING WAS PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL ASSUME SOLE RESPONSIBILITY FOR THE ACCURACY AND ADEQUACY OF THE PROJECT DESIGN PARAMETERS AS SHOWN ON THIS DRAWING AND SHALL REVIEW AND ACCEPT THE DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PROJECT DESIGN MEETS ALL APPLICABLE CODES AND REGULATIONS.

SHEET
2 OF 6



PLAN VIEW AT B-B



SECTION A-A

SEWER MANHOLE

SECTION C-C

REVISED DATE(METRIC TO ENGLISH UNIT SYSTEM):DEC.2002

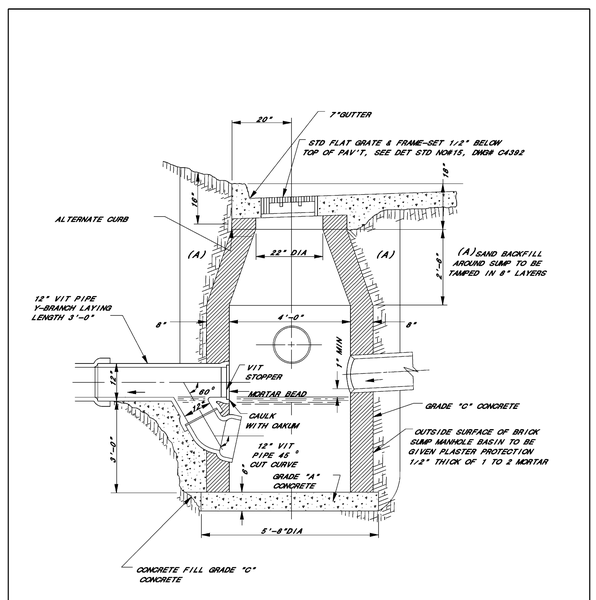
PREPARED BY BUREAU OF STREETS AND HIGHWAYS

rev. K.S.M. DRAWN BY:
M.F.S. CHECKED BY:

APPROVED
ENGINEER OF STREETS
HEAD ENGINEER
CITY ENGINEER

CITY OF DETROIT
CITY ENGINEERING DIVISION. D.P.W.
STANDARD PLAN FOR
STANDARD SEWER AND DROP MANHOLES

03/07/98	DRAWING NO.	DETAIL STANDARD NO.	SHEET
PLAN DATE	10	C-4387	1 OF 3



SECTION MAP	TOWN	RANGE	STATION	PORTION
O				
B				
A				

DESCRIPTOIN	DRW	CKD	APP	DATE

REVISIONS

DRAWN BY: A H BARAKA S-03
CHECKED BY: N LITVIN S-03
APPROVED:

MANHOLE BASIN WITH WYE BRANCH TRAP

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

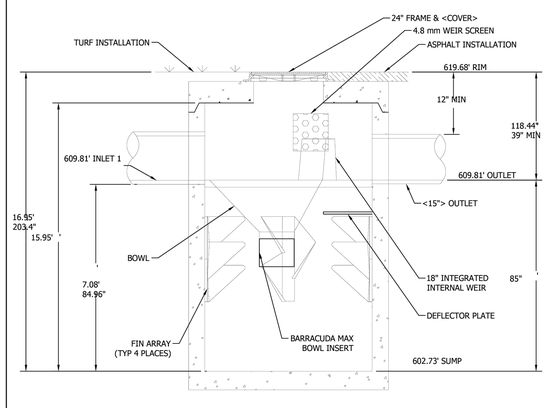
CONT
A- 20

BARRACUDA MAX S6	
UNIT ID	MH#8
PEAK FLOW RATE(CFS)	N/A
TREATMENT FLOW RATE (CFS)	0.63

PRODUCT SPECIFICATIONS

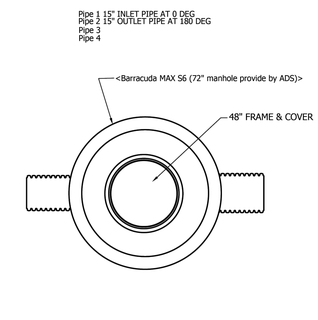
- THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW, IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
- THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 mg/L INFLUENT CONCENTRATION. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.

-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH d/50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.
-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL.



SECTION VIEW A-A

N.T.S.



PLAN VIEW

N.T.S.

BREWSTER PHASE 1
DETROIT MI
DATE: 11/26/24 DRAWN: XX
PROJECT # CHECKED: XX

DATE	DRW	CHK	DESCRIPTION

Barracuda Max
Stormwater Separator

4640 TRUEMAN BLVD
HILLIARD, OH 43026

SCALE 0 10 20

THIS DRAWING WAS PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL ASSUME SOLE RESPONSIBILITY FOR THE ACCURACY AND ADEQUACY OF THE PROJECT DESIGN PARAMETERS AS SHOWN ON THIS DRAWING AND SHALL REVIEW AND ACCEPT THE DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PROJECT DESIGN MEETS ALL APPLICABLE CODES AND REGULATIONS.

SHEET
2 OF 2

PRELIMINARY - NOT FOR CONSTRUCTION

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

STATE OF MICHIGAN BRUCE A. CALLEN 61047393 LICENSED PROFESSIONAL ENGINEER

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616–414–5260
email: bcallen@callenengineering.com

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
BINGHAM FARMS, MI 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	06-01-25
5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING	PLOT SCALE
AS NOTED	1:1

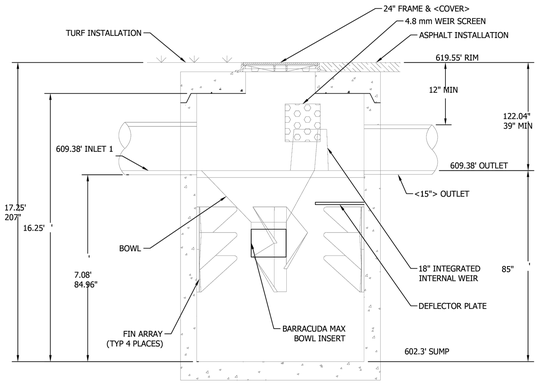
PROJECT 023 BREWSTER SANCTUARY

SHEET NO: C4.2

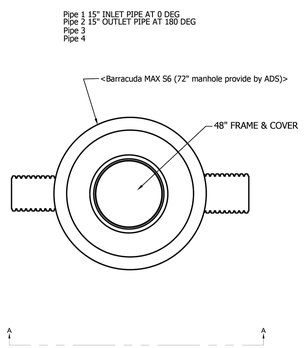
BARRACUDA MAX S6	
UNIT ID	MH#5
PEAK FLOW RATE (CFS)	N/A
TREATMENT FLOW RATE (CFS)	1.18

PRODUCT SPECIFICATIONS

- THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK
FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
- THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING OK-110 MEDIA GRADATION OR EQUIVALENT AND 300 mg/L INFLUENT CONCENTRATION. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.
-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH d/50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.
-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL.



SECTION VIEW A-A
N.T.S.



PLAN VIEW
N.T.S.

BREWSTER PHASE 2 | DETROIT-MI | DATE: 11/26/24 | DRAWN: | PROJECT #: | CHECKED: XX

DATE	DRAWN	CHKD	DESCRIPTION

Barracuda Max Stormwater Separator

ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

THIS DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED TO ADS UNDER THE DIRECTION OF THE SITE DESIGN ENGINEER OR OTHER PROJECT REPRESENTATIVE. THE SITE DESIGN ENGINEER SHALL REVIEW THIS DRAWING PRIOR TO CONSTRUCTION. IT IS THE ULTIMATE RESPONSIBILITY OF THE SITE DESIGN ENGINEER TO ENSURE THAT THE PRODUCT(S) DEPICTED HEREON MEET ALL APPLICABLE LAWS, REGULATIONS, AND PROJECT REQUIREMENTS.

SHEET 2 OF 2

BARRACUDA MAX S6	
UNIT ID	MH#2
PEAK FLOW RATE (CFS)	N/A
TREATMENT FLOW RATE (CFS)	1.83

PRODUCT SPECIFICATIONS

- THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK
FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
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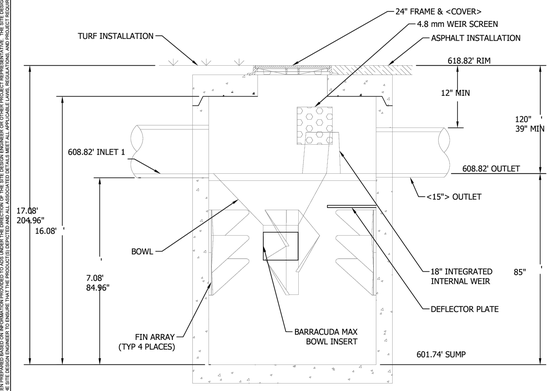
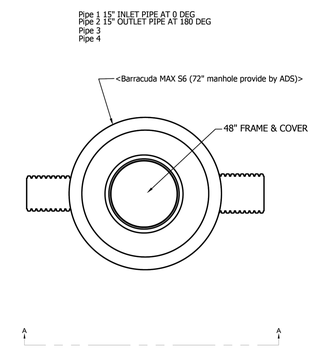
-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH d/50=75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.
-OR -
THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL.



SECTION VIEW A-A
N.T.S.



PLAN VIEW
N.T.S.

BREWSTER PHASE 3 | DETROIT-MI | DATE: 11/26/24 | DRAWN: | PROJECT #: | CHECKED: XX

DATE	DRAWN	CHKD	DESCRIPTION

Barracuda Max Stormwater Separator

ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

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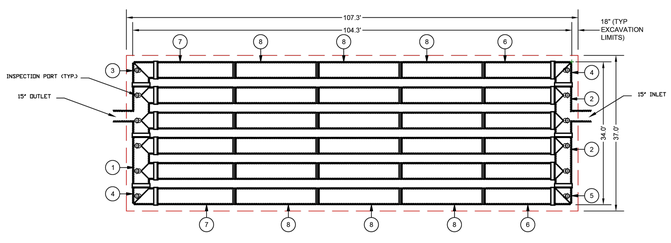
SHEET 2 OF 2

ITEM	QTY	ALT. QTY	PART #	DESCRIPTION	STAN	VENDOR	NOTE
1	2		4252AN65B	42" WT DOUBLE MANIFOLD TEE (BxBxBxG)	STAN	ADS	SEE DETAIL
2	2		4252AN65G	42" WT DOUBLE MANIFOLD TEE (GxGxGxB)	STAN	ADS	SEE DETAIL
3	1		4298AN65BB	42" WT MANIFOLD 90 DEG BEND (BxB)	STAN	ADS	SEE DETAIL
4	2		4298AN65BG	42" WT MANIFOLD 90 DEG BEND (BxG)	STAN	ADS	SEE DETAIL
5	1		4298AN65GG	42" WT MANIFOLD 90 DEG BEND (GxG)	STAN	ADS	SEE DETAIL
6	6 STICKS		STICK-1	42" N12 HWY WTB.SOLID 20'	CUS	ADS	SEE DETAIL
7	6 STICKS		STICK-2	42" N12 HWY WTB.SOLID 20'	CUS	ADS	SEE DETAIL
8	18 STICKS	355 LF	4265002IB	42" N12 HWY WTB.SOLID 20'	STAN	ADS	AS SHOWN
9	3 ROLLS	1500 SY	0601TG	601.15' X 300' (500 SY) (NTPEP SCAN) (20% OVERAGE)	STAN	ADS	SEE DETAIL
10	19741 CF	732 CY	NA	EXCAVATION	NA	NA	NOT SHOWN

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
- STUB SIZES AND INVERTS TO BE VERIFIED BY THE SITE DESIGN ENGINEER PRIOR TO FABRICATION.
- ADS RISERS ARE FABRICATED 36" (900 mm) FROM TOP OF PIPE TO TOP OF RISER DUE TO SHIPPING LIMITATIONS. ADDITIONAL PIPE AND COUPLERS CAN BE USED TO EXTEND THE RISERS TO GRADE.
- LAYOUT SHOWN DOES NOT INCLUDE ADDITIONAL PIPE & MANIFOLD NEEDED FOR PROPER PIPE INSERTION INTO STRUCTURES.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

STORAGE VOLUME PROVIDED THIS SYSTEM = 6,076 CFT



ADS GEOTEXTILE FABRIC

BREWSTER PHASE 2 | DETROIT | DATE: 11/25/2024 | DRAWN: AB | PROJECT #: | CHECKED: N/A

DATE	DRAW.	CHK.	DESCRIPTION

42" WT18 SOLID DETENTION SYSTEM **LandMax** Stormwater Management System

ADS 4640 TRUEMAN BLVD HILLIARD, OH 43026 1-800-733-7473

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SHEET 2 OF 6

ITEM	QTY	ALT. QTY	PART #	DESCRIPTION	STAN	VENDOR	NOTE
1	1		4251AN65B	42" WT SINGLE MANIFOLD TEE (GxBxB)	STAN	ADS	SEE DETAIL
2	1		4251AN65G	42" WT SINGLE MANIFOLD TEE (GxGxB)	STAN	ADS	SEE DETAIL
3	3		4252AN65B	42" WT DOUBLE MANIFOLD TEE (BxBxBxG)	STAN	ADS	SEE DETAIL
4	3		4252AN65G	42" WT DOUBLE MANIFOLD TEE (GxGxGxB)	STAN	ADS	SEE DETAIL
5	1		4298AN65BB	42" WT MANIFOLD 90 DEG BEND (BxB)	STAN	ADS	SEE DETAIL
6	2		4298AN65BG	42" WT MANIFOLD 90 DEG BEND (BxG)	STAN	ADS	SEE DETAIL
7	1		4298AN65GG	42" WT MANIFOLD 90 DEG BEND (GxG)	STAN	ADS	SEE DETAIL
8	9 STICKS		STICK-1	42" N12 HWY WTB.SOLID 20'	CUS	ADS	SEE DETAIL
9	9 STICKS		STICK-2	42" N12 HWY WTB.SOLID 20'	CUS	ADS	SEE DETAIL
10	9 STICKS	178 LF	4265002IB	42" N12 HWY WTB.SOLID 20'	STAN	ADS	AS SHOWN
11	2 ROLLS	1000 SY	0601TG	601.15' X 300' (500 SY) (NTPEP SCAN) (20% OVERAGE)	STAN	ADS	SEE DETAIL
12	15863 CF	588 CY	NA	EXCAVATION	NA	NA	NOT SHOWN

NOTES

- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE PIPE COVER REQUIREMENTS ARE MET.
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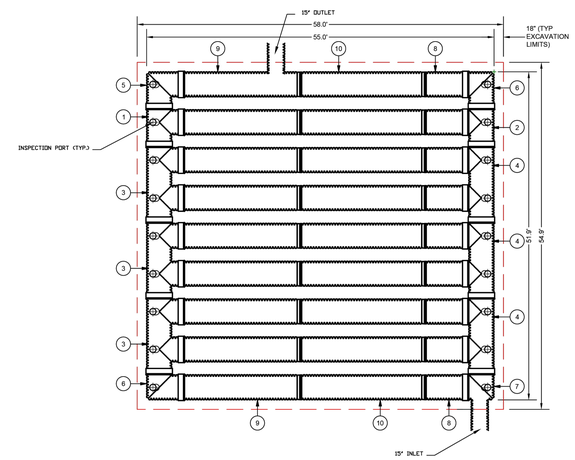
STORAGE VOLUME PROVIDED THIS SYSTEM = 4,996 CFT



ADS GEOTEXTILE FABRIC

BREWSTER PHASE 3 | DETROIT | DATE: 11/25/2024 | DRAWN: AB | PROJECT #: | CHECKED: N/A

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SHEET 2 OF 6

PRELIMINARY - NOT FOR CONSTRUCTION

Know what's below. Call before you dig.

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616–414–5260
email: bcallen@callenengineering.com

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DATE OF PLAN: 08-01-25

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BINGHAM FARMS, MI 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11–22–24
2.	BUILDING PERMIT	B.A.C.	12–06–24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03–31–25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	06–01–25
5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

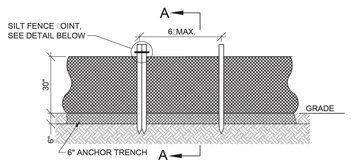
DRAWN BY	DATE
J.W.C.	SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25

SCALE

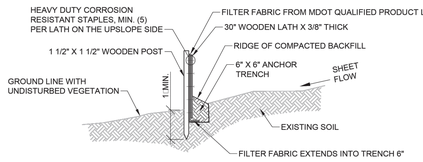
DRAWING	PLOT SCALE
AS NOTED	1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO: C4.3

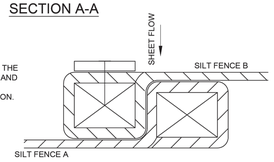


ELEVATION



SECTION A-A

GENERAL NOTE:
SILT FENCE MATERIAL SHALL MEET THE REQUIREMENTS IN SECTION 910.04 AND TABLE 910-1 IN MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.



NOTE:
FABRIC TO BE WRAPPED AROUND FENCE POST.

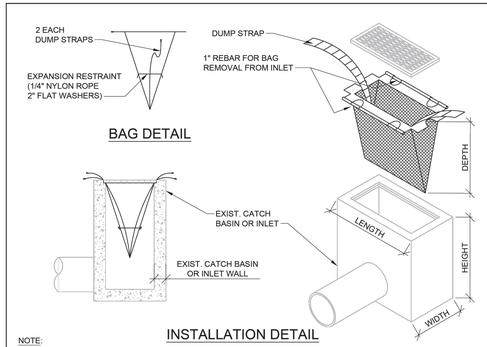
SILT FENCE JOINT - TOP VIEW

REV	DESCRIPTION	DATE
	REVISIONS	

EROSION CONTROL, SILT FENCE

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 09/2018	DWG. No. 015:13-02

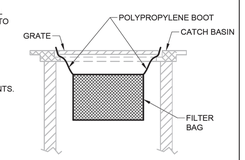


INSTALLATION DETAIL

NOTE:

TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. SEDIMENT FILTERS TO BE SIMILAR TO:

1. "SILTSACK" TYPE B, REGULAR FLOW, BY ACF ENVIRONMENTAL, INC.
2. "INLET PRO SEDIMENT BAG", STANDARD FLOW, WITH OPTIONAL FOAM DEFLECTOR BY HANES GEO COMPONENTS.
3. "DANDY CURB SACK" BY DANDY PRODUCTS, INC.
4. "BASIN BAG", REGULAR FLOW BY CSI GEOTURF, CLEAN FILTER AS NEEDED.



GENERAL NOTES

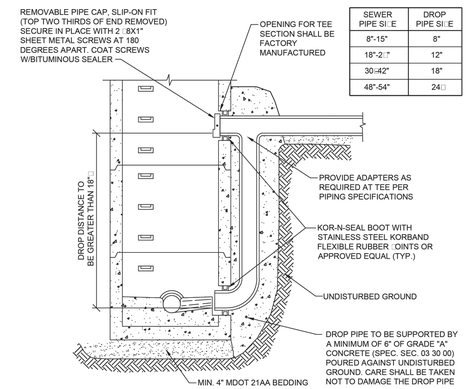
1. CONTRACTOR SHALL OBTAIN PERMISSION OF THE ENFORCING ROAD AGENCY BEFORE THIS TYPE OF CONTROL IS CONSTRUCTED IN THE ROAD RIGHT-OF-WAY.
2. CONTRACTOR SHALL KEEP CURBS GUTTER INLET FILTERS (AFTER PAVING) IN PLACE UNTIL ALL AREAS CONTRIBUTING TO THEM ARE STABILIZED WITH VEGETATION.
3. CONTRACTOR SHALL PERFORM WEEKLY INSPECTION AND MAINTENANCE TO ENSURE THAT THE CURB GUTTER INLET FILTER (AFTER PAVING) OPERATES EFFICIENTLY.

REV	DESCRIPTION	DATE
	REVISIONS	

INLET PROTECTION FABRIC DROP

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 09/2018	DWG. No. 015:13-05



SEWER PIPE SIZE	DROP PIPE SIZE
8"-15"	8"
18"-27"	12"
30"-42"	18"
48"-54"	24"

NOTES:

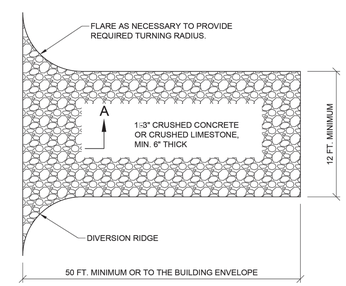
1. DROP PIPE LOCATION SHALL NOT INTERFERE WITH MANHOLE STEPS, OR STEPS AND CONE SHALL BE REPOSITIONED.
2. SEE STANDARD MANHOLE DRAWING FOR OTHER MANHOLE REQUIREMENTS.

REV	DESCRIPTION	DATE
1	UPDATED	06/2020
	REVISIONS	

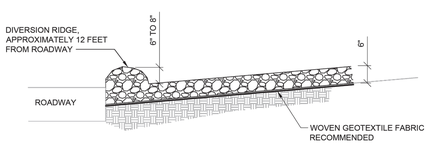
MANHOLE, EXTERIOR DROP

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 9/2018	DWG. No. 330561-06



PLAN VIEW



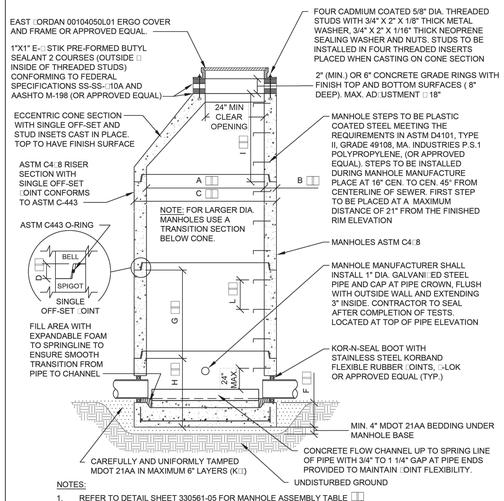
CROSS-SECTION A-A

REV	DESCRIPTION	DATE
	REVISIONS	

GRAVEL ACCESS APPROACH

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 09/2018	DWG. No. 015:13-0



NOTES:

1. REFER TO DETAIL SHEET 330561-05 FOR MANHOLE ASSEMBLY TABLE
2. PRECAST CONCRETE MANHOLE SECTIONS SHALL CONFORM TO ALL THE REQUIREMENTS OF "SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE RISERS AND TOPS" ASTM C-478 WITH SINGLE OFF-SET JOINT CONFORMS TO ASTM C-443.
3. EACH SECTION SHALL HAVE NOT MORE THAN TWO HOLES FOR HANDLING PURPOSES. THESE HOLES SHALL BE SATISFACTORILY PLUGGED WITH GROUT AFTER INSTALLATION.

REV	DESCRIPTION	DATE
1	UPDATED	06/2020
	REVISIONS	

STANDARD MANHOLE PRECAST

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 09/2018	DWG. No. 330561-02

PRELIMINARY - NOT FOR CONSTRUCTION

Know what's below. Call before you dig.

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

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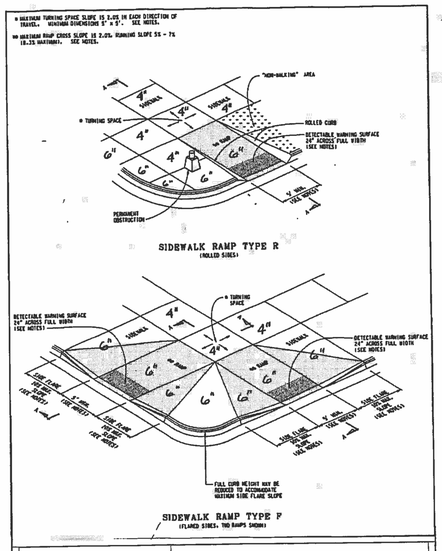
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

DRAWN BY J.W.C.	DATE SEP '24
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE DRAWING	PLOT SCALE
AS NOTED	1:1

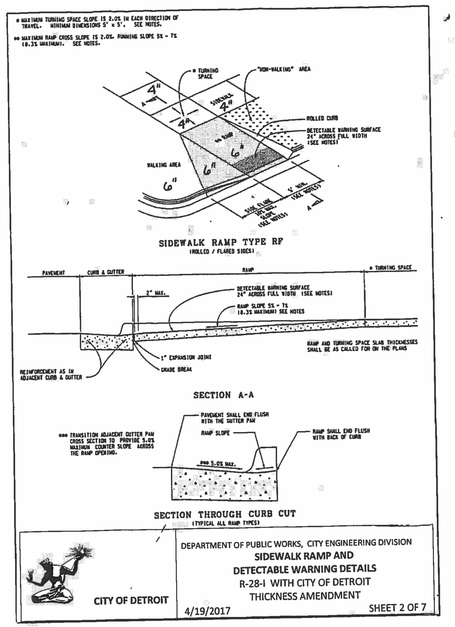
PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C4.4



CITY OF DETROIT

DEPARTMENT OF PUBLIC WORKS, CITY ENGINEERING DIVISION
SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS
R-28-I WITH CITY OF DETROIT
THICKNESS AMENDMENT
4/19/2017 SHEET 1 OF 7



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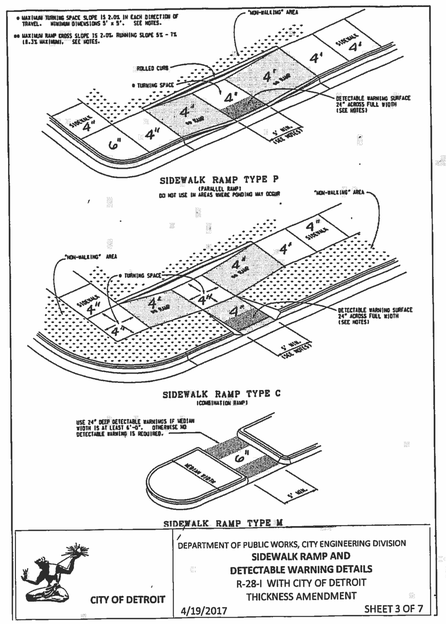

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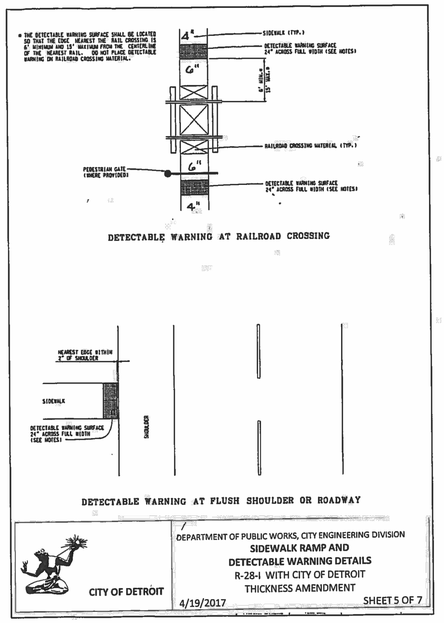

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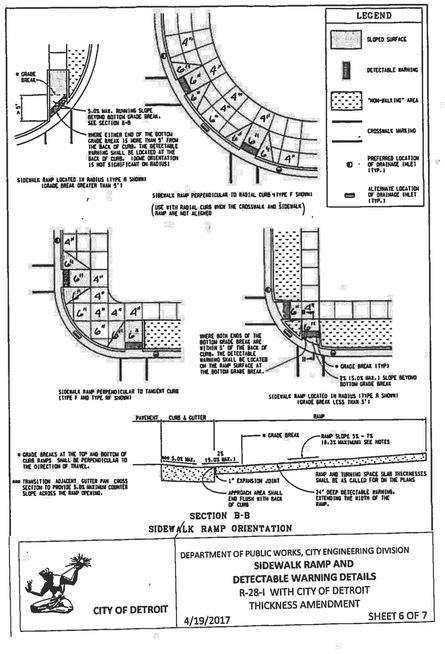

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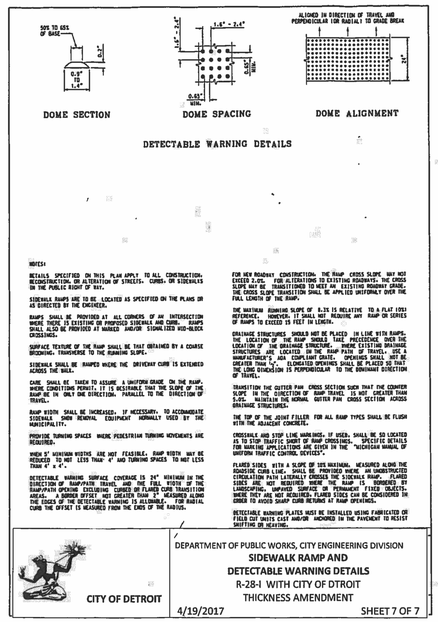

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THICKNESS AMENDMENT
4/19/2017 SHEET 7 OF 7

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MICHIGAN
BRUCE A. CALLEN
47047392
PROFESSIONAL ENGINEER

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616–414–5260
email: bcallen@callenengineering.com

811
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DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

callen civil engineers

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
BINGHAM FARMS, MI 48025
248-833-0552

NO.	ISSUANCE / REVISION	BY	DATE
1.	90% CD'S	B.A.C.	11-22-24
2.	BUILDING PERMIT	B.A.C.	12-06-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25
5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

X-SECTIONS, NOTES, AND DETAILS

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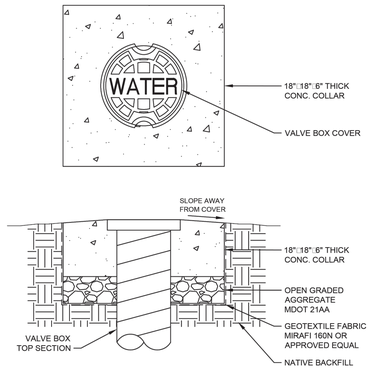
ENGINEER B.A.C.	DATE SEP '24
EDIT J.W.C.	DATE AUG '25
SCALE	
DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. C4.5



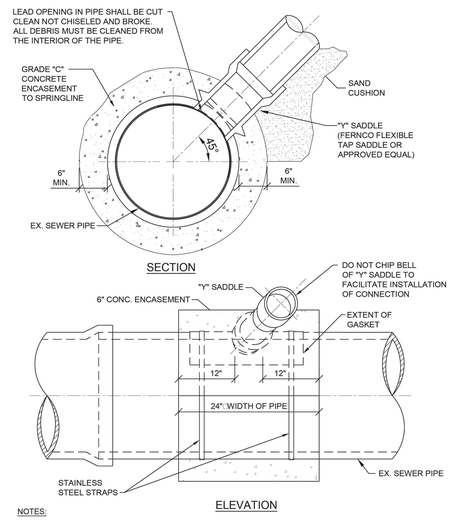
NOTE:
1. CLASS B CONCRETE, MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS □4,000 PSI.

REV	DESCRIPTION	DATE
	REVISIONS	

CONCRETE VALVE BOX COLLAR

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 5/2020	DWG. No. 331419-09



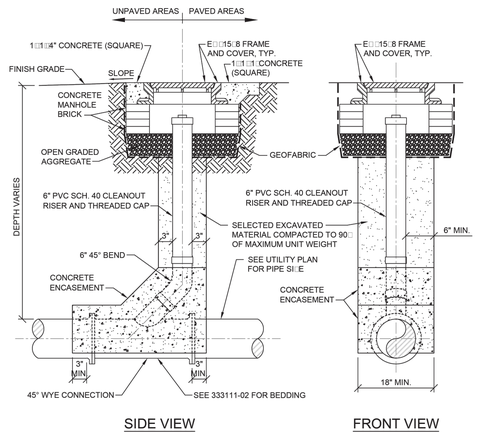
NOTES:
1. FOR SEWERS 18" OR LESS A "Y" SADDLE MAY BE USED IF THE OUTSIDE DIA. OF THE TAP IS LESS THAN ONE HALF THE DIA. OF THE SEWER BEING TAPPED.
2. PROVIDE EXTENSION CLAMPS FOR 15" SEWERS AND LARGER.
3. CONCRETE BELOW PIPE IS ONLY REQUIRED FOR 15" SEWERS AND LARGER WITH STRAPS.

REV	DESCRIPTION	DATE
1	UPDATED	06/2020
	REVISIONS	

CONNECTION, SADDLE TO LATERAL SEWER

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 09/2018	DWG. No. 333111-01



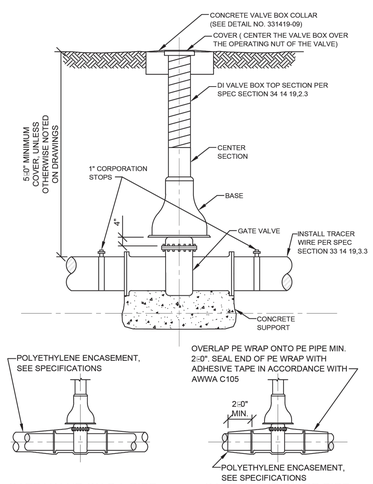
NOTES:
1. MINIMUM SEPARATION DISTANCE BETWEEN LATERALS: 5 FT
2. MINIMUM DEPTH OF COVER OVER PIPE: 2 FT

REV	DESCRIPTION	DATE
1	UPDATED	06/2020
	REVISIONS	

CLEANOUT

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 9/2018	DWG. No. 333111-03



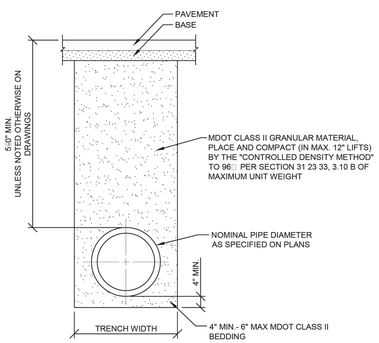
NOTES:
1. ALL MECHANICAL □OINTS REQUIRE RETAINER GLAND.
2. 12 INCH DIAMETER VALVES AND SMALLER SHALL BE TWO PIECE TYPE.
3. VALVES LARGER THAN 12 INCH DIAMETER SHALL BE THREE PIECE TYPE.
4. WRAP ALL BURIED VALVES, MECHANICAL □OINTS, AND □OINT RESTRAINT DEVICES WITH WAX TAPE IN ACCORDANCE WITH AWWA C21□. OVERWRAP WAX TAPE WITH ONE WRAP OF PE ENCASEMENT IN ACCORDANCE WITH AWWA C105. TIGHTLY TAPE THE PE WRAP TO SEAL ALL □OINTS AND FOLDS.

REV	DESCRIPTION	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
1	UPDATED	5/2020
	REVISIONS	

VALVE BOX INSTALLATION

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 1
DATE 9/2018	DWG. No. 331419-04



NOMINAL PIPE DIAMETER	MAXIMUM TRENCH WIDTH
LESS THAN 18"	30"
18" TO 24"	PIPE DIAMETER PLUS 18"
GREATER THAN 24"	PIPE DIAMETER PLUS 24"

NOTES:
1. NO EXTRA PAYMENT WILL BE MADE FOR BASE AND PAVEMENT RESTORATION ITEMS DUE TO ADDITIONAL EXCAVATION BEYOND THE MAXIMUM TRENCH WIDTH LISTED ABOVE.
2. REFER TO PAVEMENT RESTORATION DETAILS FOR BASE AND PAVEMENT WIDTH.
3. TRENCHING SHALL BE PER OSHA 29 CFR, SUBPART P AND SHALL BE PERFORMED TO MINIMI□E THE SURFACE DISRUPTION.

STANDARD TRENCH DETAIL FOR WATER MAIN UNDER ROAD BED, PARKING LOTS, SIDEWALKS, DRIVEWAYS, CURBS, GRAVEL ROADS AND ALLEYS

REV	DESCRIPTION	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-
1	UPDATED	5/2020
	REVISIONS	

UTILITY TRENCH, WATER MAIN

CITY OF DETROIT
WATER AND SEWERAGE DEPARTMENT
ENGINEERING DIVISION

SCALE NONE	SHEET 1 OF 3
DATE 9/2018	DWG. No. 312333-04

PRELIMINARY - NOT FOR CONSTRUCTION

STATE OF MICHIGAN
BRUCE A. CALLEN
No. 1047392
LICENSED PROFESSIONAL ENGINEER

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

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

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DATE OF PLAN: 08-01-25

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T.616.414.5260
www.callenengineering.com

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
BINGHAM FARMS, MI 48025
248-833-0552

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5.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	B.A.C.	/------/

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

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ENGINEER B.A.C.	DATE SEP '24
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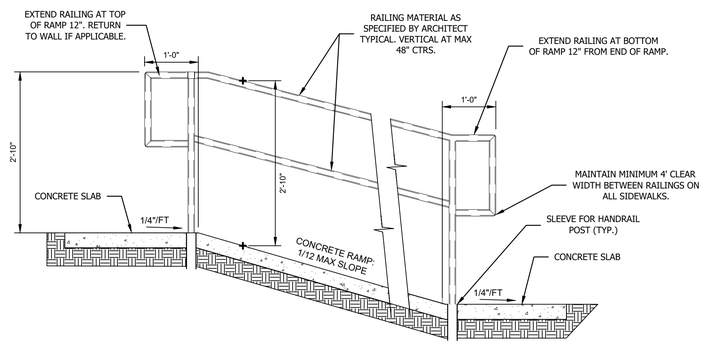
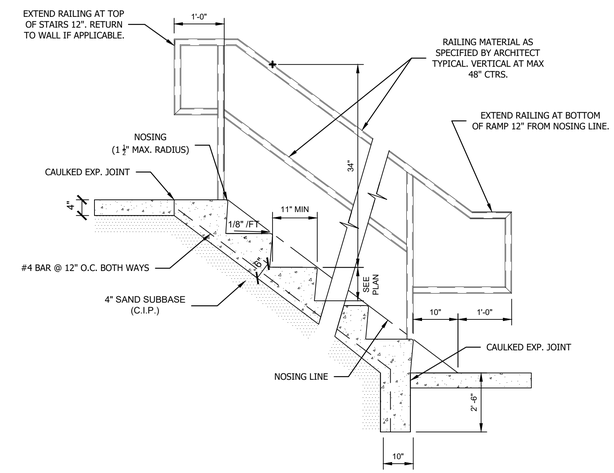
SHEET NO. C4.6	



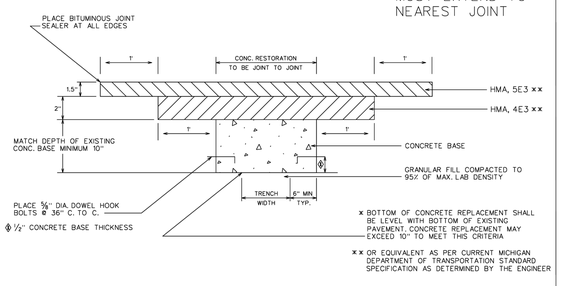
RAMP HANDRAIL DETAIL HC-HR
NO SCALE



CONCRETE STAIR DETAIL - UNIVERSAL DESIGN HC-CS
NO SCALE

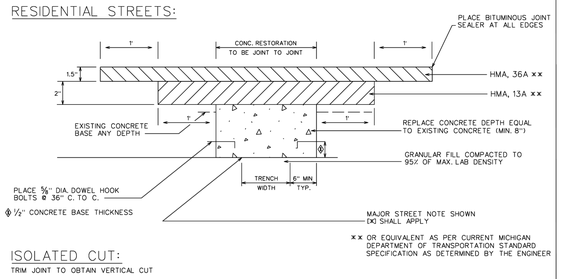
MAJOR STREETS:

NOTE: PAVEMENT CUTS MUST EXTEND TO NEAREST JOINT



EXCEPTION:
TO ABOVE 3" HMA REPLACEMENT. WHEN PAVEMENT REPLACEMENT IS 100 FEET FROM EITHER SIDE OF UNDERPASS, REPLACE 10" MIN CONCRETE BASE WITH TOP OF CONCRETE LEVEL WITH TOP OF EXISTING CONCRETE AND REPLACE HMA SECTION AS EXISTING

RESIDENTIAL STREETS:



ISOLATED CUT:
TRIM JOINT TO OBTAIN VERTICAL CUT

B					
A					
DESCRIPTION		DRWN	CHKD	APPD	DATE
REVISIONS					
DRAWN BY WLW	CHECKED KSM				
DATE 08/29/18	APPROVED SRB				

HMA SURFACE ON CONCRETE BASE UTILITY TRENCH CONSTRUCTION PAVEMENT RESTORATION

CITY OF DETROIT
CITY ENGINEERING DIVISION
SURVEY BUREAU
JOB NO.
DRWG. NO. 1 OF 2

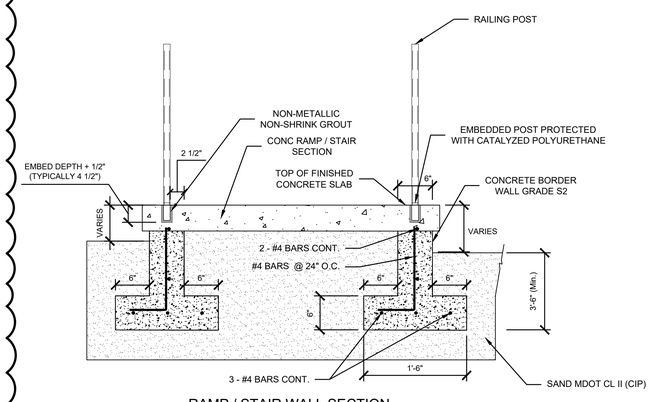
CITY OF DETROIT NOTES

1. MILL (REMOVE) HMA PAVEMENT WITHIN AND BEYOND THE AREA OF TRENCH PAVEMENT REMOVAL IN ORDER TO DETERMINE LOCATION OF UNDERLYING CONCRETE BASE PAVEMENT JOINTS. MILL MINIMUM TO 1' BEYOND NEAREST CONCRETE JOINTS.
2. EXTEND UTILITY TRENCH CONCRETE PAVEMENT REMOVAL TO ALL CONCRETE PAVEMENT JOINTS AND / OR CURBS ADJACENT TO THE TRENCH AREA. REMOVAL SHALL BE "JOINT TO JOINT".
3. CONCRETE PAVEMENT CUTS SHALL BE MINIMUM 3' WIDE.
4. ALL PAVEMENT CUTS SHALL BE MINIMUM 1' WIDER THAN TRENCH WIDTH.
5. ALL REMOVALS SHALL BE SAWCUT STRAIGHT AND SQUARE (90 DEGREES).
6. CONCRETE RESTORATION PAVEMENT SHALL BE MDOT P1 MIX (3,500 PSI).
7. RESTORED CONCRETE PAVEMENT SHALL MATCH THICKNESS OF EXISTING CONCRETE PAVEMENT IN CONFORMANCE WITH MDOT STANDARDS DETAIL R-44-F.
8. RESTORED CONCRETE SHALL BE ANCHORED TO EXISTING CONCRETE PAVEMENT IN CONFORMANCE WITH MDOT STANDARD DETAIL R-44-F
9. APPLY HMA TACK COAT PER MDOT STANDARD SPECIFICATIONS SECTION 904.
10. RESTORE HMA PAVEMENT 3½" TO MATCH EXISTING, IN 2 LIFTS:
    1ST LIFT - 2" MDOT HMA 4E3 (13A RESIDENTIAL), COMPACTED, EXTENDED 1' BEYOND BASE CONCRETE REPAIR.
    2ND LIFT - 1½" MDOT HMA 5E3 (36A RESIDENTIAL), COMPACTED, EXTENDED 1' BEYOND 1ST LIFT..
11. BITUMINOUS JOINT SEALER SHALL BE PLACED AT ALL FINISHED HMA JOINTS.
12. ALL DISTRUBED PAVEMENT MARKINGS AND OTHER ASSETS, INCLUDING BIKE LANE DELINEATORS, WILL HAVE TO BE REPLACED AT THE COST OF THE PERMIT HOLDER, AND SHALL CONFORM TO THE LATEST CED / TED STANDARDS.
13. FOR OTHER RELATED SPECIFICATIONS (BACKFILL COMPACTION, MATERIALS, ETC...), REFER TO DIVISION 15 OF THE STANDARD SPECIFICATIONS FOR PAVING AND RELATED CONSTRUCTION.
14. NOTIFY THE CITY OF DETROIT ENGINEERING DEPARTMENT 24 HOURS PRIOR TO STARTING CONSTRUCTION.
15. ANY OPEN EXCAVATIONS ARE TO BE STEEL PLATED. IF EXCAVATIONS ARE IN THE PAVEMENT, THE PLATES ARE TO BE SPIKED AND RAMPED WITH COLD PATCH. CONTACT THE CITY WITH LOCATION OF THE STEEL PLATE.
16. THE CITY OF DETROIT REQUIRES ALL CONCRETE WORK TO BE STAMPED WITH A CONTRACTORS IDENTIFICATION STAMP.

B					
A					
DESCRIPTION		DRWN	CHKD	APPD	DATE
REVISIONS					
DRAWN BY WLW	CHECKED KSM				
DATE 08/29/18	APPROVED SRB				

HMA SURFACE ON CONCRETE BASE UTILITY TRENCH CONSTRUCTION PAVEMENT RESTORATION

CITY OF DETROIT
CITY ENGINEERING DIVISION
SURVEY BUREAU
JOB NO.
DRWG. NO. 2 OF 2



RAMP / STAIR WALL SECTION
NO SCALE

PRELIMINARY - NOT FOR CONSTRUCTION

Plan Prepared By:

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Spring Lake, Michigan 49456

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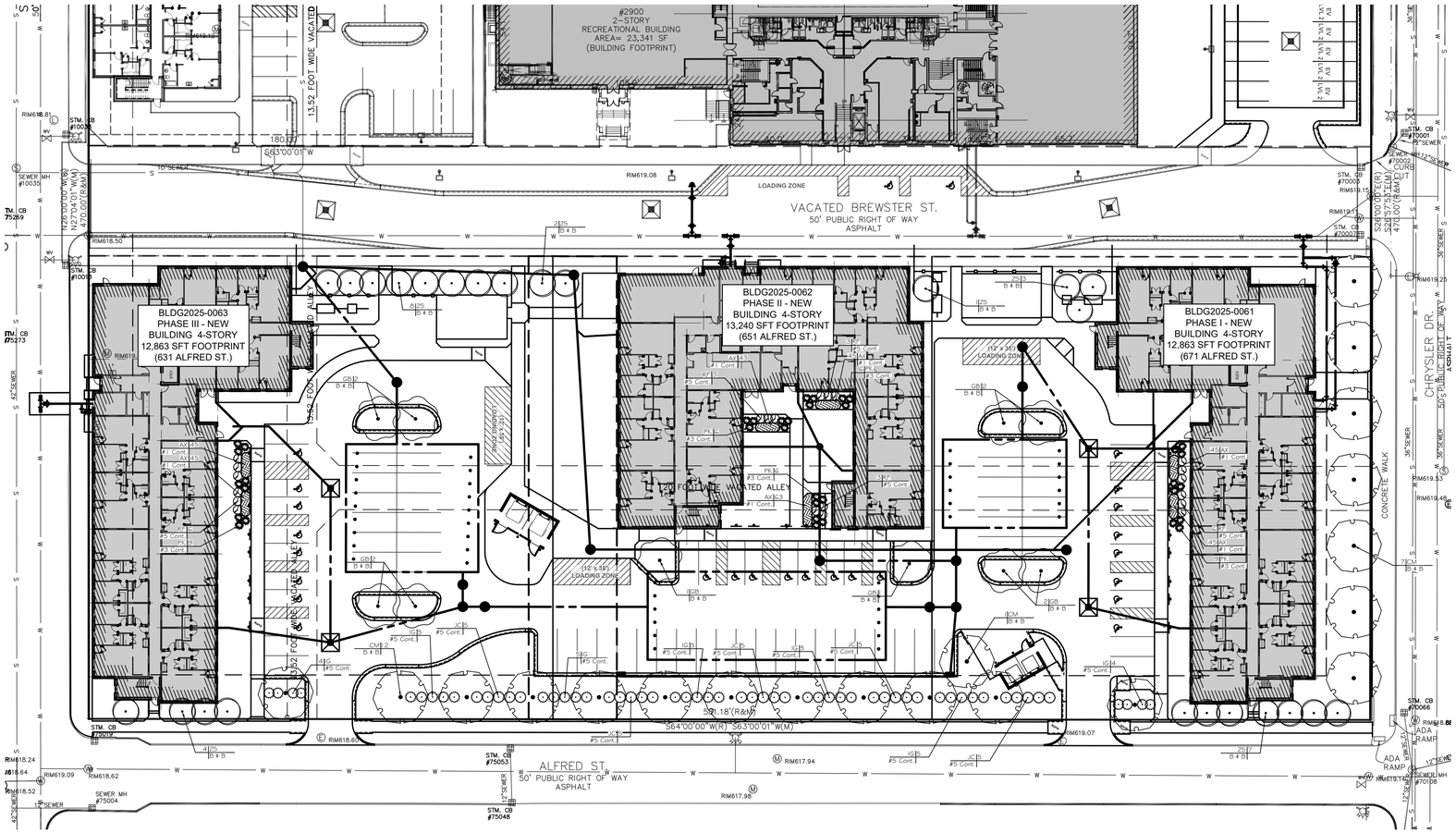


LANDSCAPE DATA

Off street parking areas

Required - 61-14-221 Right of Way Screening

Buffer strip with a minimum width of five feet between the off-street parking area and the right-of-way.

One tree shall be provided for each 30 lft. of buffer. 395 lft./30 = 13 trees

Vegetation, a berm, or masonry wall forming a continuous screen at least 30 inches, but not more than 36 inches, in height, shall be located within the landscape buffer.

Vegetative screening material that is designed to provide 75 percent opacity on a year-round basis.

Proposed

13 trees

Shrubs at least 30", but not more than 36".

Vegetative screening material that is designed to provide 75 percent opacity on a year-round basis.

Parking Lot

Required - 61-14-223 Interior Landscaping

25--100 spaces - 18 square feet of landscape area per parking space.

85 parking spaces x 18 sf. = 1530 sf.

The total number of trees required to be planted in the interior of an off-street parking area shall be calculated and provided at a rate of one shade tree for each 250 square feet or fraction thereof, of required interior landscaped area;

1530 sf. / 250 sf. = 7 trees

Each island shall include 1 shade tree.

Proposed

1687 sft. Landscape area.

One shade tree per 250 sft. = 7 trees

Each island includes 1 shade tree.

Landscaping in required setbacks.

Required - 50-14-362. - Landscaping of required setbacks.

Where certain land uses require a setback from a public street, at least one tree shall be provided for each 30 linear feet of lot width.

940 lft./ 30 lft. = 31 trees

Proposed 31 trees

Plant Size

Required - 61-14-205 Shrubs and Trees

Shrubs min. size equal to or greater than a number 3 container and have a min. ht. of 18" at time of planting.

Trees min. dia. Of 2" measured at 12" above root ball. Clear stem of at least 5'.

Proposed

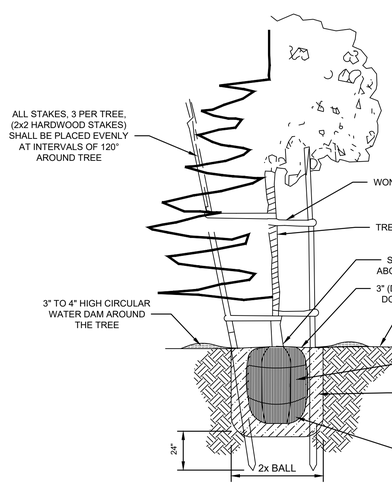
Complies

Required - 61-14-206 Ground Treatment

All unpaved areas are to be treated with groundcover, mulched areas, sod or seed lawns, or pavers.

Proposed

Complies



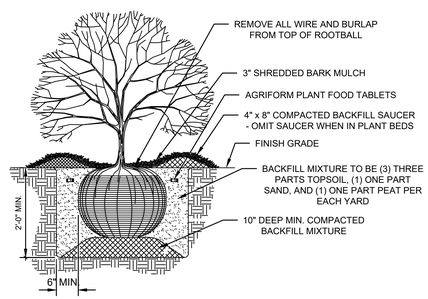
NOTES:

1. INSTALLATION INCLUDES REMOVAL OF STAKES ONE YEAR AFTER INSTALLATION
2. SHAPE SOIL SURFACE TO PROVIDE WATERING RING
3. ADJUST TREE TIES TO ALLOW ROOM FOR GROWTH DURING ESTABLISHMENT (ALLOW SLACK)
4. TREE PIT DEPTH SHALL EQUAL ROOTBALL DEPTH (MEASURE BEFORE DIGGING TO AVOID OVER EXCAVATION)

21 GRAM "AGRIFORM" PLANTING TABLETS AS FOLLOWS:
2 TABLETS PER 1 GAL. PLANT
3 TABLETS PER 5 GAL. PLANT
4 TABLETS PER 15 GAL. PLANT
LARGER PLANTS (2) TWO TABLETS PER 1/2" DIAM. OF TRUNK CALIPER

TYPICAL - TREE STAKING

NO SCALE



SHRUB INSTALLATION

NO SCALE

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	CAL		QTY
TREES						
	CM	Celtis x 'Magnifica' / Magnifica Common Hackberry	B & B	2.5"Cal		20
	GB	Ginkgo biloba 'Autumn Gold' / Autumn Gold Maidenhair Tree	B & B	2.5"Cal		10
	ZS	Zelkova serrata 'Musashino' / Musashino Japanese Zelkova	B & B	2.5"Cal		25
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	HEIGHT		QTY
SHRUBS						
	IG	Ilex glabra 'ILEXFARROWTRACEY' / Strongbox® Inkberry Holly	#5 Cont.	Min. 18" Ht.		33
	JC	Juniperus chinensis 'Parsoni' / Parsoni Juniper	#5 Cont.	Min. 18" Ht.		25
	PK	Pennisetum orientale 'Karley Rose' / Karley Rose Fountain Grass	#3 Cont.			36
	RF	Rhamnus frangula 'SMNRFBT' / Fine Line® Improved Buckthorn	#5 Cont.	Min. 5' - 6' Ht.		21
SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	SPACING	SPACING	QTY
GROUND COVERS						
	AX	Allium x 'Millenium' / Millenium Ornamental Onion	#1 Cont.		12" o.c.	331

PRELIMINARY - NOT FOR CONSTRUCTION

Know what's below. Call before you dig.

Plan Prepared By:

Bruce A. Callen, PE
Callen Engineering, Inc.
108 E. Savidge St.
Spring Lake, Michigan 49456

Tel: 616-414-5260
email: bcallen@callenengineering.com

For protection of underground utilities, the CONTRACTOR shall dial 1-800-482-7171 OR 811 a minimum of three working days, excluding Saturdays, Sundays and holidays, prior to excavation in the vicinity of utility lines. All "MISS DIG" participating members will thus be routinely notified. This does not relieve the CONTRACTOR of the responsibility of notifying the utility owners who may not be part of the "MISS DIG" alert system.

DATE OF PLAN: 08-01-25

Callen Engineering, Inc.
108 East Savidge Street
Spring Lake, MI 49456
T.616.414.5260
www.callenengineering.com

NO.	ISSUANCE / REVISION	BY	DATE
1.	BUILDING PERMIT	B.A.C.	12-06-24
2.	FOR PRICING & PERMITS	B.A.C.	12-20-24
3.	SITE PLAN REVIEW RESPONSE #1	B.A.C.	03-31-25
4.	SITE PLAN REVIEW RESPONSE #2	B.A.C.	08-01-25
6.	REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS		

MHT HOUSING, INC.
32500 TELEGRAPH ROAD, SUITE 100
DETROIT, MICHIGAN 48025
248-833-0552

BREWSTER PHASE 1-3
631,651,671 ALFRED STREET
DETROIT, MI 48201
WAYNE COUNTY, MICHIGAN

LANDSCAPE PLAN

DRAWN BY	DATE
J.W.C.	DEC '23
ENGINEER B.A.C.	DATE DEC '23
EDIT J.W.C.	DATE AUG '25
SCALE	
DRAWING AS NOTED	PLOT SCALE 1:1

PROJECT 023 BREWSTER SANCTUARY

SHEET NO. L1.0