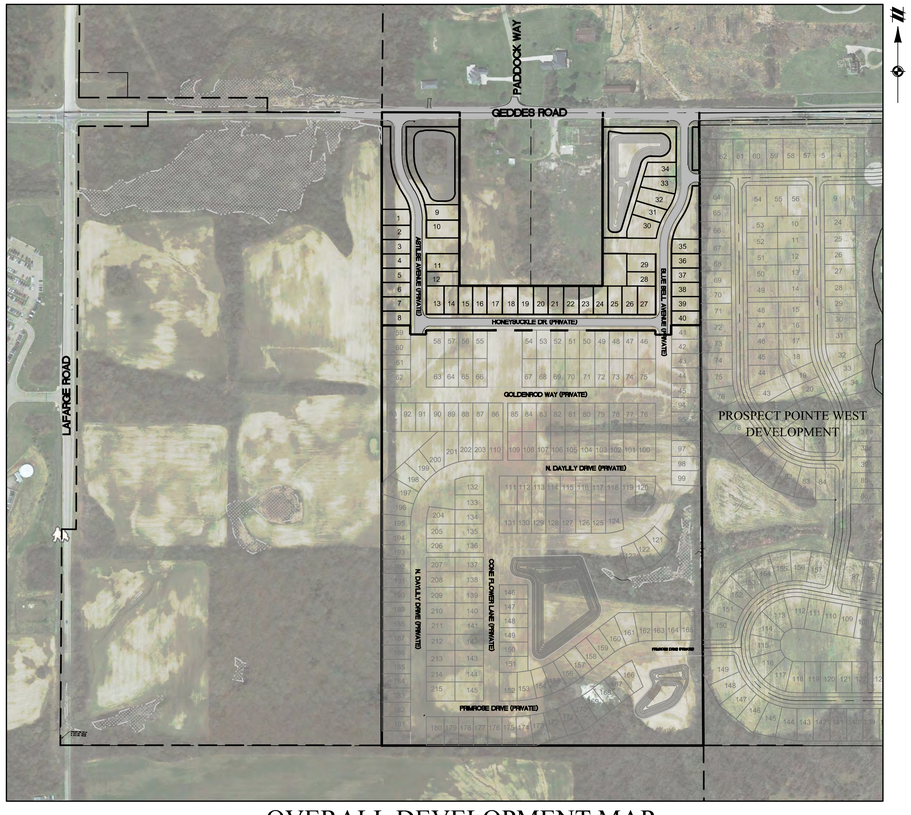
THE MEADOWS

AT HAWTHORNE MILL

A SINGLE FAMILY DEVELOPMENT

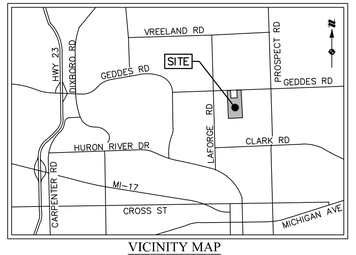
SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN

FINAL SITE PLANS - PHASE 1



OVERALL DEVELOPMENT MAP

SCALE: 1" = 300'



VICINITY MAP
NOT TO SCALE

PROJECT CONTACTS

OWNER/DEVELOPER / APPLICANT
EYDE COMPANY
2947 EYDE PARKWAY, SUITE 200
EAST LANSING, MICHIGAN 48823
CONTACT: SAMUAL EYDE
PHONE: (517) 351-2480

CIVIL ENGINEER
ATWELL, LLC
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MICHIGAN 48076
CONTACT: JARED KIME
PHONE: (248) 447-2000

LEGAL DESCRIPTION

EXHIBIT "A" PROPERTY DESCRIPTION PER COMMITMENT FOR TITLE INSURANCE ISSUED BY WFG NATIONAL TITLE INSURANCE COMPANY, ISSUING AGENT: DIVERSIFIED NATIONAL TITLE AGENCY, LLC, COMMITMENT NUMBER: 19-4464, COMMITMENT DATE: 12/11/2019:

PROPERTY 17:
A PART OF THE NORTHWEST 114 OF SECTION 33, TOWN 2 SOUTH, RANGE 7 EAST, SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NORTH 1/4 CORNER OF SAID SECTION 33 FOR A POINT OF BEGINNING; THENCE SOUTH 00 DEGREES 19 MINUTES 48 SECONDS EAST 2659.09 FEET ALONG THE NORTH AND SOUTH 1/4 LINE TO THE CENTER OF SAID SECTION 33; THENCE NORTH 89 DEGREES 55 MINUTES 54 SECONDS WEST 1344. 77 FEET ALONG THE EAST AND WEST 1/4 LINE OF SAID SECTION 33; THENCE NORTH 00 DEGREES 01 MINUTE 27 SECONDS WEST 2657.44 FEET ALONG THE WEST LINE OF THE EAST 112 OF THE NORTHWEST 114 TO THE NORTH LINE OF SAID SECTION 33; THENCE EAST 326.30 FEET ALONG THE NORTH LINE OF SAID SECTION 33; THENCE SOUTH 00 DEGREES 00 MINUTES 29 SECONDS EAST 725.92 FEET; THENCE NORTH 89 DEGREES 59 MINUTES 45 SECONDS EAST 599.99 FEET; THENCE NORTH 00 DEGREES 00 MINUTES 10 SECONDS WEST 725.88 FEET (PREVIOUSLY RECORDED NORTH 726.00 FEET) TO THE NORTH LINE OF SAID SECTION 33; THENCE EAST 404.20 FEET ALONG THE NORTH LINE OF SAID SECTION 33 TO THE POINT OF BEGINNING.

ALSO DESCRIBED BY SURVEY AS FOLLOWS:
BEGINNING AT THE NORTH 114 CORNER OF SECTION 33, TOWN 2 SOUTH, RANGE 7 EAST, SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN; THENCE SOUTH 02 DEGREES 42 MINUTES 24 SECONDS EAST 2652.38 FEET (RECORDED AS SOUTH OO DEGREES 19 MINUTES 48 SECONDS EAST 2659.09 FEET) ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION; THENCE SOUTH 87 DEGREES 41 MINUTES 15 SECONDS WEST 1348.00 FEET (RECORDED AS SOUTH 89 DEGREES 55 MINUTES 54 SECONDS WEST 1344. 77 FEET) ALONG THE EASTWEST 114 LINE OF SAID SECTION 33; THENCE NORTH 02 DEGREES 19 MINUTES 48 SECONDS WEST 2654.07 FEET (RECORDED AS NORTH 00 DEGREES 01 MINUTE 27 SECONDS WEST 2657.44 FEET) ALONG THE WEST LINE OF THE EAST 112 OF THE NORTHWEST 114 OF SAID SECTION 33; THENCE NORTH 87 DEGREES 45 MINUTES 47 SECONDS EAST 326.37 FEET (RECORDED AS EAST 326.30 FEET) ALONG THE NORTH LINE OF SAID SECTION 33 AND THE CENTERLINE OF GEDDES ROAD (66.00 FEET WIDE); THENCE SOUTH 02 DEGREES 14 MINUTES 13 SECONDS EAST 726.00 FEET (RECORDED AS SOUTH OO DEGREES 00 MINUTES 29 SECONDS EAST 725.92 FEET); THENCE NORTH 87 DEGREES 45 MINUTES 47 SECONDS EAST 600.00 FEET (RECORDED AS NORTH 89 DEGREES 59 MINUTES 45 SECONDS EAST 599.99 FEET); THENCE NORTH 02 DEGREES 14 MINUTES 13 SECONDS WEST 726.00 FEET (RECORDED AS NORTH 00 DEGREES 00 MINUTES 10 SECONDS WEST 725.88 FEET); THENCE NORTH 87 DEGREES 45 MINUTES 47 SECONDS EAST 404.20 FEET (RECORDED AS EAST) ALONG THE NORTH SECTION LINE OF SAID SECTION 33 AND THE CENTERLINE OF SAID GEDDES ROAD TO THE POINT OF BEGINNING.

PROJECT NARRATIVE

THE MEADOWS AT HAWTHORNE MILL IS A PROPOSED RESIDENTIAL SITE CONDOMINIUM CONSISTING OF 215 SINGLE FAMILY HOMES ON APPROXIMATELY 71 ACRES OF LAND. THIS PARCEL OF LAND WAS PREVIOUSLY APPROVED FOR A VERY SIMILAR RESIDENTIAL DEVELOPMENT IN 2004 BUT CONSTRUCTION NEVER COMMENCED BECAUSE OF THE RECESSION AND ALL OF THE PREVIOUS ENTITLEMENTS AND PERMITS HAVE SINCE EXPIRED. EYDE DEVELOPMENT, A MICHIGAN FAMILY OWNED DEVELOPMENT COMPANY, IS AIMING TO COMMENCE CONSTRUCTION ON THE MEADOWS IN THE SPRING OF 2022. THE SITE IS BEING DESIGNED WITH PRIVATE ROADS THAT WILL PROVIDE MULTIPLE ACCESS POINTS TO GEDDES ROAD, CONNECT TO THE CURRENTLY PROPOSED PROSPECT POINTE WEST DEVELOPMENT AND PROVIDE STUBS FOR FUTURE DEVELOPMENT TO THE SOUTH AND WEST.

THE SITE CONTAINS NATURAL FEATURES WITH TWO EGLE REGULATED STREAM BEDS AND 0.82 ACRES OF REGULATED WETLANDS, OF WHICH 0.49 ACRES ARE PROPOSED TO BE PRESERVED AS PART OF THE DEVELOPMENT. 17.09 ACRES OF OPEN SPACE IS PROPOSED THAT INCLUDE PRESERVATION OF 155 REGULATED TREES. A PASSIVE TRAIL SYSTEM IS DESIGNED TO MEANDER THROUGHOUT THE NATURAL OPEN AREAS AND CONNECT INTO THE DEVELOPMENTS SIDEWALK SYSTEM AS WELL AS 4 POCKET PARKS LOCATED THROUGHOUT THE DEVELOPMENT.

THE PROPOSED DEVELOPMENT WILL BE SERVICED WITH PUBLIC UTILITIES. SEWER WILL CONNECT FROM LEFORGE ROAD AND THE PROSPECT POINTE DEVELOPMENT AND WATER WILL BE LOOPED THROUGHOUT THE DEVELOPMENT FROM GEDDES ROAD. STORMWATER MANAGEMENT WILL BE HANDLED WITH 4 PROPOSED DETENTION PONDS LOCATED THROUGHOUT THE DEVELOPMENT.

SITE DATA

GROSS AREA:	71.57 ACRES
GEDDES ROAD ROW:	0.55 ACRES
NET AREA:	71.02 ACRES
EXISTING ZONING:	PC (PLANNED COMMUNITY)
PROPOSED ZONING:	PC (PLANNED COMMUNITY)
ADJACENT ZONING:	
SOUTH	PC (PLANNED COMMUNITY)
NORTH	A2 (AGRICULTURAL DISTRICT)
WEST	PM (PLANNED MANUFACTURING DISTRICT)
EAST	R4 (SINGLE FAMILY RESIDENTIAL DISTRICT)
NUMBER OF PROPOSED LOTS:	40 LOTS (215 LOTS TOTAL)
PROPOSED DENSITY (GROSS):	3.00
PROPOSED DENSITY (NET):	3.03
MIN. LOT AREA PER DWELLING UNIT:	60' x 120' = 7,200 SF (TYPICAL)
MINIMUM LOT WIDTH:	60'
LOT SETBACKS:	
FRONT	25'
SIDE	6' MIN. (16' TOTAL)
REAR	35'
PROPOSED GENERAL COMMON ELEMENT (G.C.E.):	17.09 ACRES
WETLAND IMPACTS:	
REGULATED	0.44 ACRES
NON-REGULATED	0.36 ACRES

PAVING (On-Site)	Quantity	Unit
Bituminous Surface Course (1.5")	8,630	S.Y.
Bituminous Leveling Course (1.5")	8,630	S.Y.
Bituminous Base Course (2")	8,630	S.Y.
10" 21AA Aggregate Base	8,630	S.Y.
6" Continuous Edge Underdrain	5,725	L.F.
Concrete Curb & Gutter	5,725	L.F.
5'-8' Wide Concrete Sidewalk (4" conc.)	21,980	S.F.

PAVING (Geddes Road R.O.W)	Quantity	Unit
Asphalt Surface Mill and Overlay (1.5")	7,471	S.Y.
Bituminous Surface Course (1.5")	1,292	S.Y.
Bituminous Leveling Course (1.5")	1,292	S.Y.
MDOT 4E1 Bituminous Base Course (3")	1,292	S.Y.
10" 21AA Aggregate Base	1,292	S.Y.
Concrete Curb & Gutter (MDOT B2)	210	L.F.
6" Continuous Edge Underdrain	210	L.F.
4' Wide Gravel Shoulder	1,925	S.Y.
3" Asphalt Driveway	142	S.Y.
Concrete Spillway (4" Conc.)	200	S.F.
Concrete Sidewalk and Ramp (4" Conc.)	6,102	S.F.

STORM SEWER	Quantity	Unit
4" Sump Lead PVC	800	L.F.
12" RCP Storm Sewer	1,739	L.F.
15" RCP Storm Sewer	1,163	L.F.
18" RCP Storm Sewer	318	L.F.
21" RCP Storm Sewer	403	L.F.
24" RCP Storm Sewer	1,003	L.F.
12" CMP Storm Sewer	199	L.F.
12" Concrete Flared End Section	1	EA.
15" Concrete Flared End Section	4	EA.
18" Concrete Flared End Section	2	EA.
21" Concrete Flared End Section	1	EA.
24" Concrete Flared End Section	1	EA.
12" CMP Flared End Section	8	EA.
4' Diameter CB/MH	41	EA.
5' Diameter CB/MH	2	EA.
4' Diameter Outlet Control Structures	5	EA.

WATER MAIN	Quantity	Unit
8" D.I.P. CL. 54 Water Main	2,449	L.F.
Hydrant Assembly	6	EA.
8" Gate Valve and Well	4	EA.
8x16 TS&V and Well	2	EA.
1" Copper Water Lead	2,765	L.F.

SANITARY	Quantity	Unit
8" PVC SDR 26 Pipe	1,017	L.F.
8" PVC TRUSS Pipe	185	L.F.
10" PVC SDR 26	1,600	L.F.
10" PVC TRUSS	3,557	L.F.
4' Sanitary Manhole	32	EA.
6" PVC SDR 26 Leads	2,647	L.F.

SHEET LIST

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
COVER SHEET

DATE
OCT. 12, 2023

REVISIONS

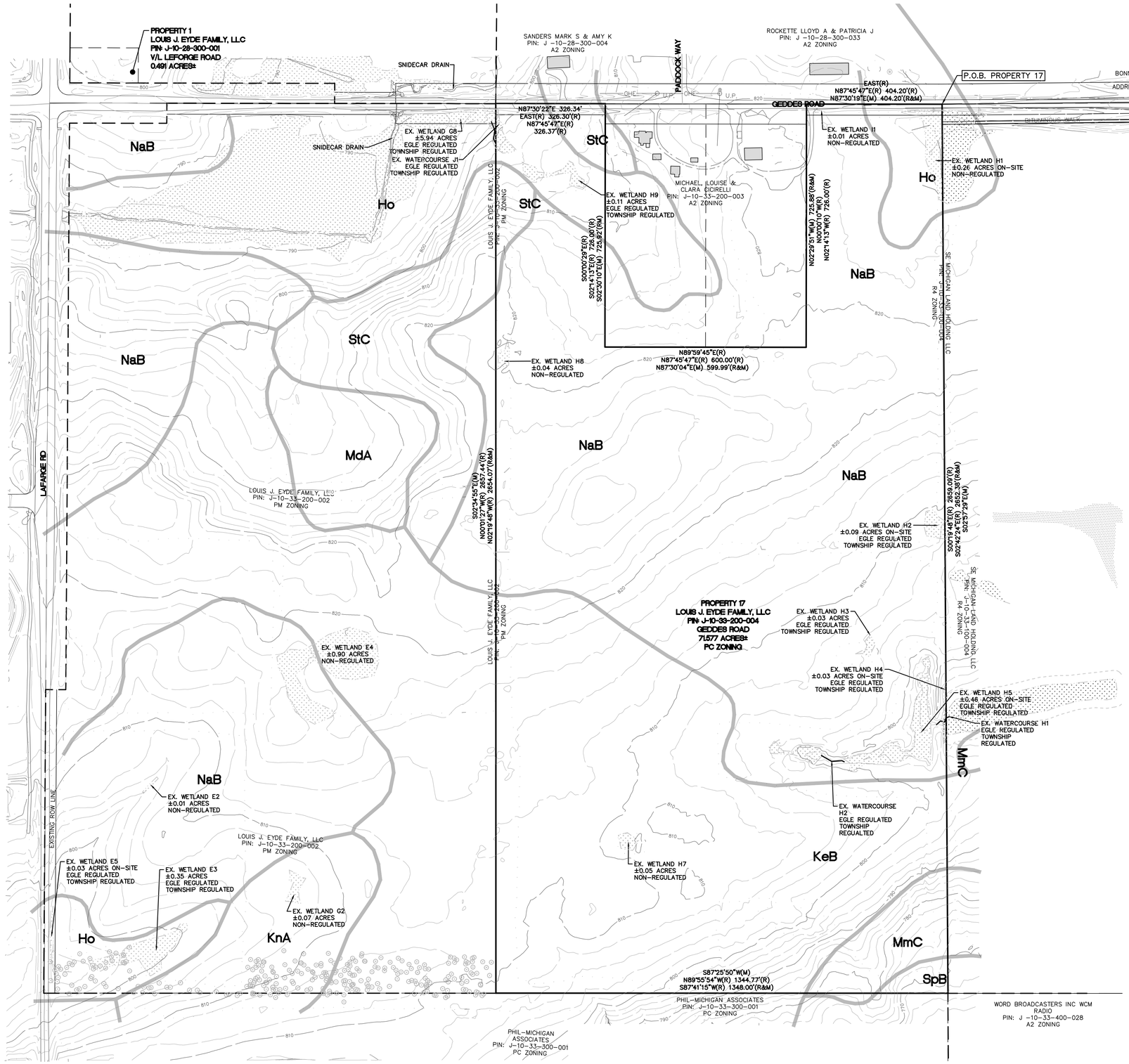
NA	NA	NA
	N/A	

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 1

AMMAR KALASHO
ENGINEER
No. 56902
LICENSED PROFESSIONAL ENGINEER
STATE OF MICHIGAN

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-01-CV.DWG 10/10/2023 3:34 PM MATTHEW MYERS

CAD FILE: 19004443FSP-01-CV.DWG



SOIL INFORMATION

HO	HOYTVILLE SILTY CLAY LOAM
KeB	KENDALLVILLE LOAM, 2 TO 6 PERCENT SLOPES
MmC	MIAMI LOAM, 6 TO 12 PERCENT SLOPES
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
SpB	SPINKS LOAMY SAND, 0 TO 6 PERCENT SLOPES
StC	ST. CLAIR CLAY LOAM, 6 TO 12 PERCENT SLOPES
KnA	KIBBIE FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES3
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
MdA	MATHERTON SANDY LOAM, 0 TO 4 PERCENT SLOPES

NOTE:
ALL SOILS INFORMATION HAS BEEN SUPPLIED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.

NOTES:

1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAD83), SOUTH ZONE, GROUND DISTANCES, INTERNATIONAL FEET. MEASURED BEARINGS AS SHOWN DIFFER FROM RECORD TITLE BEARINGS.
5. PROJECT VERTICAL DATUM IS NAVD 88.
6. THE SITE SHOWN HEREON IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) ACCORDING TO MAP NUMBERS 26161C0267E, 26161C0269E, 26161C0288E & 26161C0290E OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE APRIL 3, 2012.
7. SEE SHEET 9 FOR NATURAL FEATURES NARRATIVE AND GROUNDWATER RECHARGE AREAS DESCRIPTION.
7. GUARANTEE CANNOT BE MADE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.

SCHEDULE B, PART II EXCEPTIONS PER COMMITMENT FOR TITLE INSURANCE ISSUED BY WFG NATIONAL TITLE INSURANCE COMPANY, ISSUING AGENT: DIVERSIFIED NATIONAL TITLE AGENCY, LLC, COMMITMENT NUMBER: 19-4464, COMMITMENT DATE: 12/11/2019:

25. AFFIDAVIT OF QUALIFIED AGRICULTURAL PROPERTY, SET FORTH IN LIBER 4892, PAGE 194, AS TO PARCEL 17. (COVERS SUBJECT PROPERTY.)
26. FARMLAND DEVELOPMENT RIGHTS AGREEMENT, SET FORTH IN LIBER 4960, PAGE 907, AS TO PARCEL 17. (COVERS SUBJECT PROPERTY.)
27. RIGHT OF WAY IN FAVOR OF MICHIGAN BELL TELEPHONE COMPANY AND THE COVENANTS, CONDITIONS AND RESTRICTIONS CONTAINED IN INSTRUMENT RECORDED IN LIBER 1772, PAGE 343, AS TO PARCEL 17. (COVERS SUBJECT PROPERTY AND ADDITIONAL LAND, RIGHT OF WAY AS SHOWN HEREON.)

SITE BENCHMARKS:

BM #1: ARROW ON FIRE HYDRANT IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 275'± WEST OF NORTHEAST PROPERTY CORNER
ELEVATION: 819.71 (NAVD88)

BM #2: NORTHEAST CORNER OF HEADWALL IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 285'± WEST OF NORTHWEST PROPERTY CORNER
ELEVATION: 794.21 (NAVD88)

Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
OVERALL EXISTING CONDITIONS

DATE
OCT. 12, 2023

REVISIONS

0 75 150
SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 2

CAD FILE: 19004443SP-02-OEC.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-02-OEC.DWG 10/10/2023 3:35 PM MATTHEW MYERS

SEE BELOW / LEFT FOR CONTINUATION

SEE BELOW / RIGHT FOR CONTINUATION

SEE ABOVE / LEFT FOR CONTINUATION

SEE ABOVE / RIGHT FOR CONTINUATION

SEE SHEET 4 FOR CONTINUATION

KEY MAP
NOT TO SCALE

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
EXISTING CONDITIONS & DEMOLITION PLAN

DATE
OCT. 12, 2023

REVISIONS

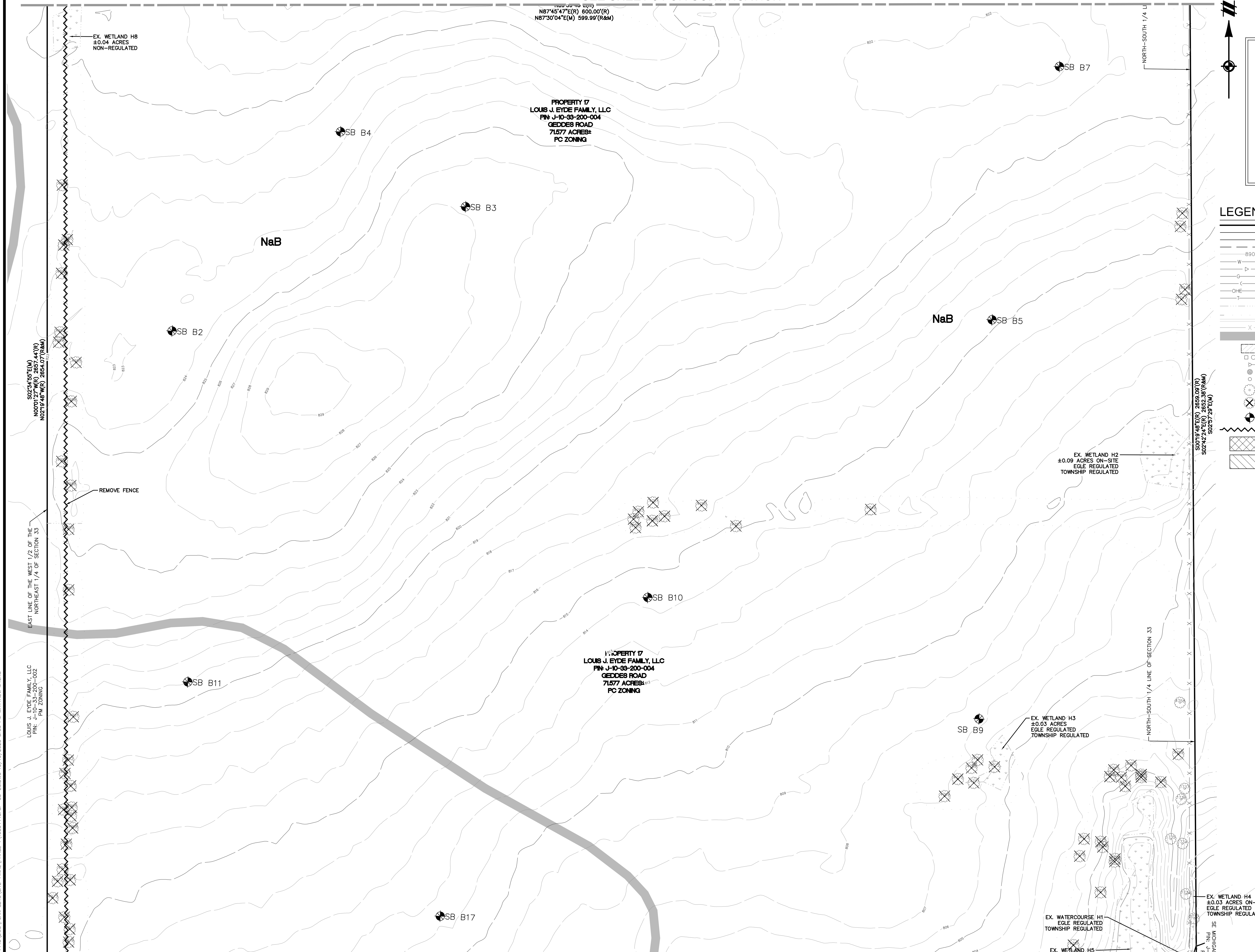
SCALE: 1" = 50 FEET

DRAWN BY:	KS
CHECKED BY:	AK
P.M.:	J. KIME
JOB #:	19004443
FILE CODE:	–
SHEET NO.	3

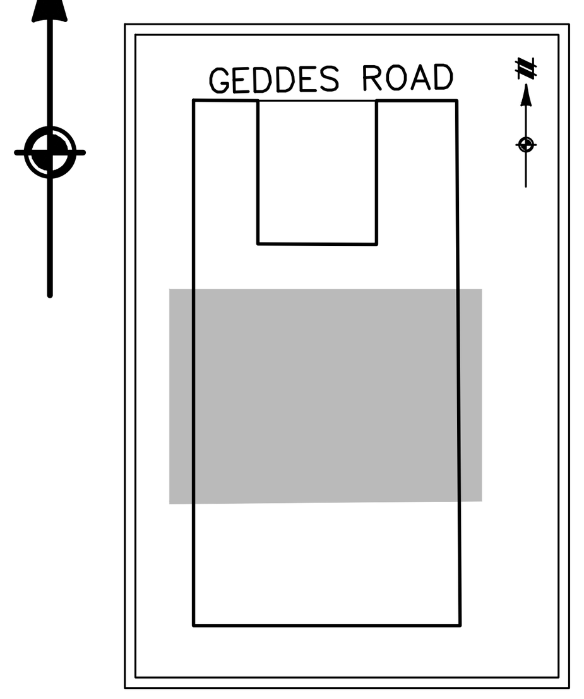
CAD FILE: I:\19004443\SP-03-EC.DWG

K:\A\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-03-EC.DWG 10/10/2023 3:36 PM MATTHEW MYERS

SEE SHEET 3 FOR CONTINUATION



SEE SHEET 5 FOR CONTINUATION



KEY MAP
NOT TO SCALE

LEGEND

- BOUNDARY LINE
- EXISTING EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EX. CONTOUR (890)
- EX. WATER MAIN (W)
- EX. SANITARY
- EX. GAS (G)
- EX. STORM (C)
- EX. OVERHEAD ELECTRICAL LINE (OHE)
- EX. TELEPHONE LINE (T)
- EX. WETLAND
- EX. TREE LINE
- EX. CURB AND GUTTER
- EX. FENCE (X)
- EX. SOIL DELINEATION
- EX. BUILDING
- EX. CATCH BASIN/INLET/CULVERT
- EX. HYDRANT
- EX. VALVE
- EX. SANITARY SEWER
- EX. TREE
- EX. TREE TO BE REMOVED
- SOIL BORING LOCATION
- TO BE REMOVED
- DRIVE/PAVEMENT– TO BE REMOVED
- BUILDING/HOUSE– TO BE REMOVED

SITE BENCHMARKS:

BM #1: ARROW ON FIRE HYDRANT IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 275'± WEST OF NORTHEAST PROPERTY CORNER
ELEVATION: 819.71 (NAVD88)

BM #2: NORTHEAST CORNER OF HEADWALL IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 285'± WEST OF NORTHWEST PROPERTY CORNER
ELEVATION: 794.21 (NAVD88)

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

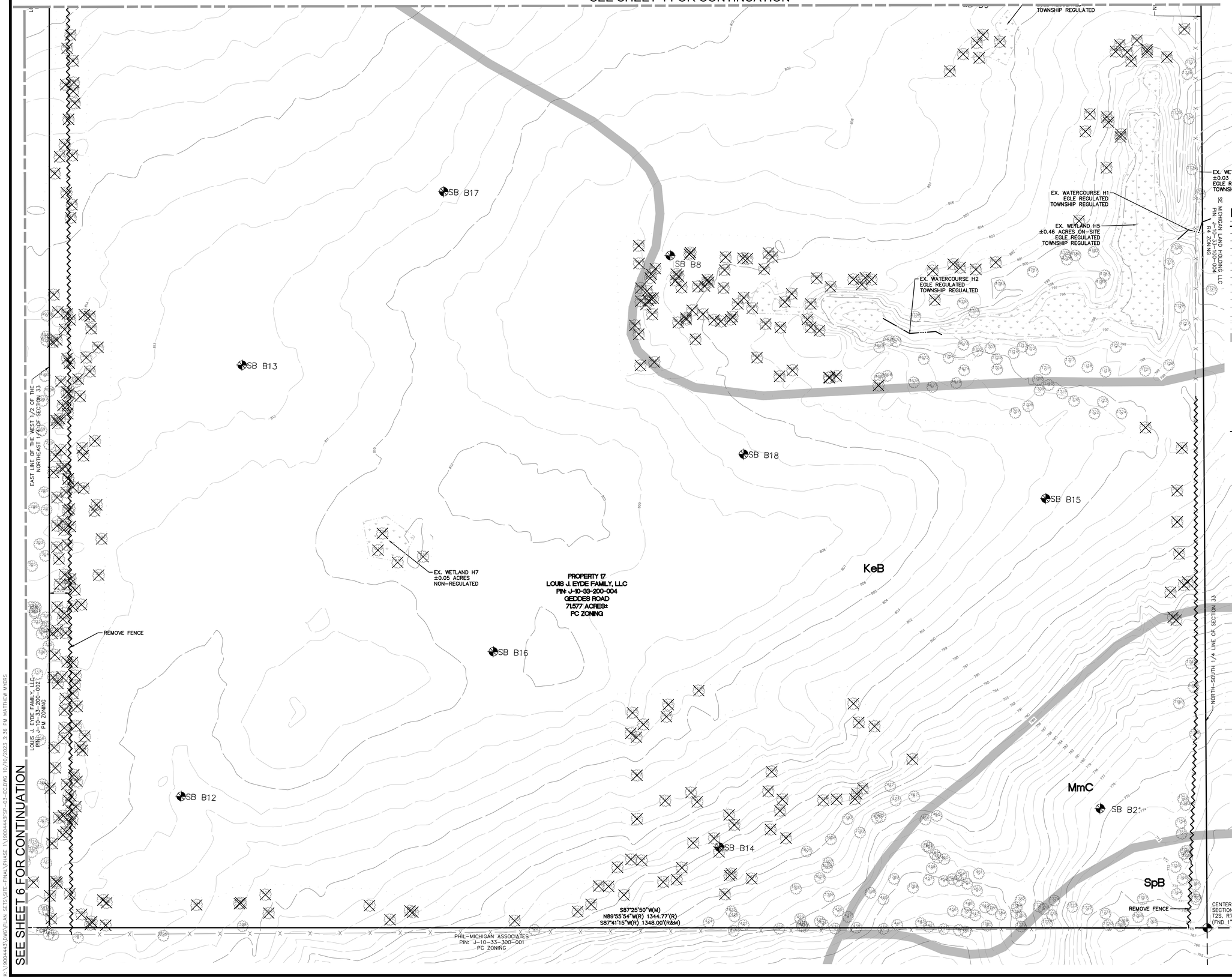
EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
EXISTING CONDITIONS & DEMOLITION PLAN

DATE
OCT. 12, 2023

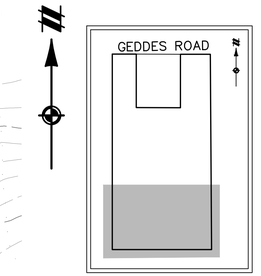
REVISIONS

SCALE: 1" = 50 FEET (0, 25, 50)
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 4

SEE SHEET 4 FOR CONTINUATION



SEE SHEET 6 FOR CONTINUATION



LEGEND

- BOUNDARY LINE
- EXISTING EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- 890 EX. CONTOUR
- W EX. WATER MAIN
- EX. SANITARY
- G EX. GAS
- C EX. STORM
- OHE EX. OVERHEAD ELECTRICAL LINE
- T EX. TELEPHONE LINE
- EX. WETLAND
- EX. TREE LINE
- EX. CURB AND GUTTER
- X EX. FENCE
- EX. SOIL DELINEATION
- EX. BUILDING
- EX. CATCH BASIN/INLET/CULVERT
- EX. HYDRANT
- EX. VALVE
- EX. SANITARY SEWER
- EX. TREE
- EX. TREE TO BE REMOVED
- SOIL BORING LOCATION
- TO BE REMOVED
- DRIVE/PAVEMENT– TO BE REMOVED
- BUILDING/HOUSE– TO BE REMOVED

SITE BENCHMARKS:

BM #1: ARROW ON FIRE HYDRANT IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 275'± WEST OF NORTHEAST PROPERTY CORNER
ELEVATION: 819.71 (NAVD88)

BM #2: NORTHEAST CORNER OF HEADWALL IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 285'± WEST OF NORTHWEST PROPERTY CORNER
ELEVATION: 794.21 (NAVD88)

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
EXISTING CONDITIONS & DEMOLITION PLAN

DATE
OCT. 12, 2023

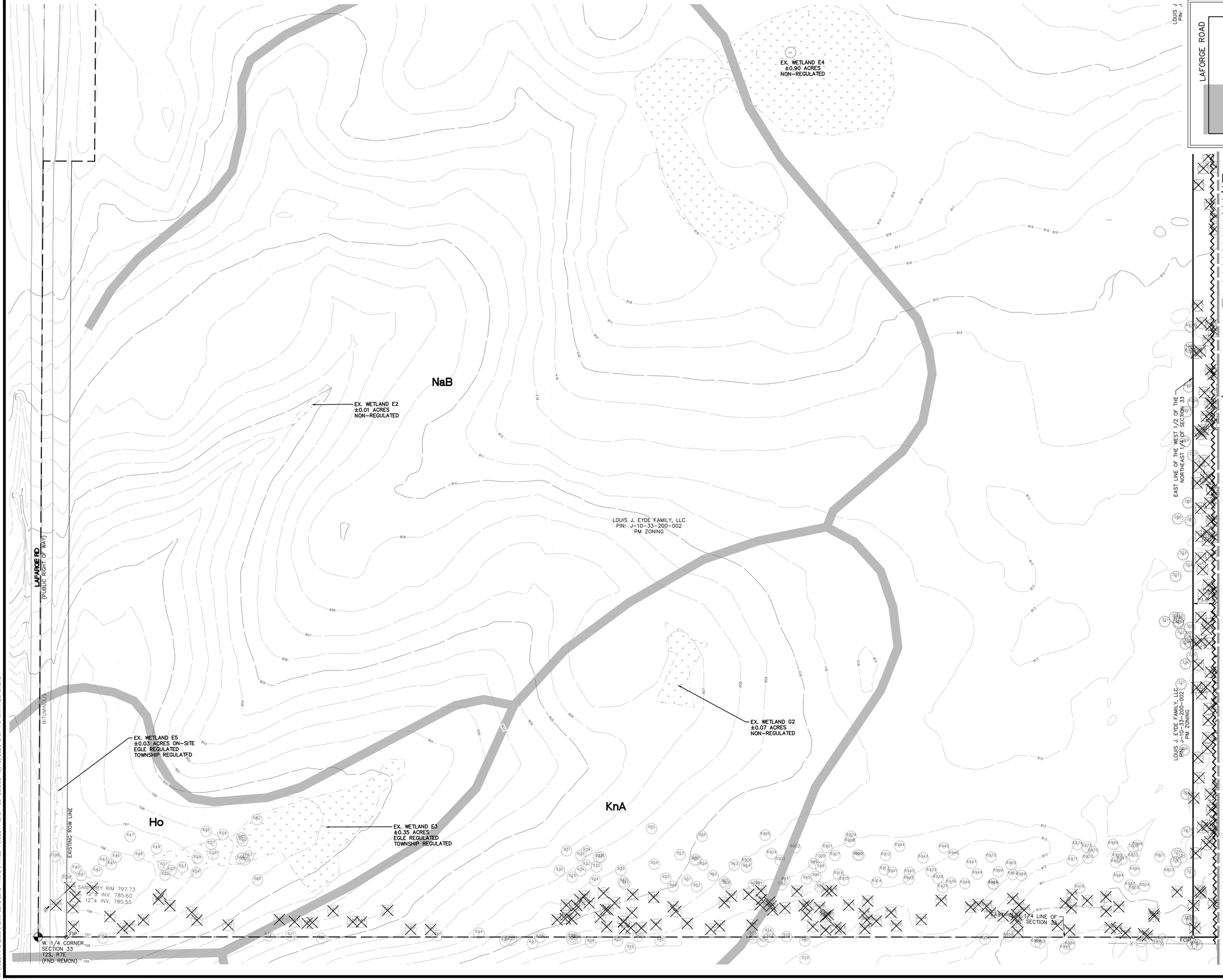
REVISIONS

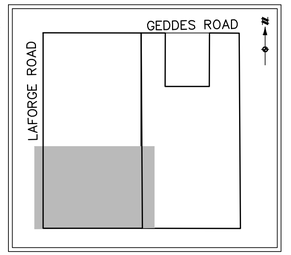
0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 5

K:\19004443\DWG\PLAN SETS\SITE_FINAL\PHASE 1\19004443FSP-03-ECD.DWG 10/10/2023 3:36 PM MATTHEW MYERS

CAD FILE: 19004443FSP-03-ECD.DWG





KEY MAP
NOT TO SCALE

LEGEND

- BOUNDARY LINE
- EXISTING EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EX. CONTOUR
- EX. WATER MAIN
- EX. SANITARY
- EX. GAS
- EX. STORM
- EX. OVERHEAD ELECTRICAL LINE
- EX. TELEPHONE LINE
- EX. WETLAND
- EX. TREE LINE
- EX. CURB AND GUTTER
- EX. FENCE
- EX. SOIL DELINEATION
- EX. BUILDING
- EX. CATCH BASIN/INLET/CULVERT
- EX. HYDRANT
- EX. VALVE
- EX. SANITARY SEWER
- EX. TREE
- EX. TREE TO BE REMOVED
- SOIL BORING LOCATION
- TO BE REMOVED
- DRIVE/PAVEMENT– TO BE REMOVED
- BUILDING/HOUSE– TO BE REMOVED

SITE BENCHMARKS:

BM #1: ARROW ON FIRE HYDRANT IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 275'± WEST OF NORTHEAST PROPERTY CORNER
ELEVATION: 819.71 (NAVD88)

BM #2: NORTHEAST CORNER OF HEADWALL IN SOUTH RIGHT OF WAY OF GEDDES ROAD, 285'± WEST OF NORTHWEST PROPERTY CORNER
ELEVATION: 794.21 (NAVD88)

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
EXISTING CONDITIONS & DEMOLITION PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 6

CAD FILE: 19004443SP-03-EC.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-03-EC.DWG 10/10/2023 3:37 PM MATTHEW MYERS

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
260	Red Oak	*Quercus rubra*	12.5	Good				Y
261	American Basswood	*Tilia americana*	16.5	Good				Y
262	Red Oak	*Quercus rubra*	22	Good	Y			Y
263	Bitternut Hickory	*Carya cordiformis*	10	Good				Y
264	Red Oak	*Quercus rubra*	9	Good				Y
265	American Basswood	*Tilia americana*	13	Good				Y
266	Bitternut Hickory	*Carya cordiformis*	13	Good				Y
267	Red Oak	*Quercus rubra*	22.5	Good	Y			Y
268	Bitternut Hickory	*Carya cordiformis*	9	Good				Y
269	Bitternut Hickory	*Carya cordiformis*	10.5	Good				
270	Bitternut Hickory	*Carya cordiformis*	8.5	Good				
271	Bitternut Hickory	*Carya cordiformis*	11	Good				Y
272	Red Oak	*Quercus rubra*	14	Good				Y
273	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
274	American Basswood	*Tilia americana*	9	Good				Y
275	Black Walnut	*Juglans nigra*	16	Good				Y
276	Black Walnut	*Juglans nigra*	19	Good	Y			Y
277	Bitternut Hickory	*Carya cordiformis*	8	Good				Y
278	American Basswood	*Tilia americana*	17.5	Good				Y
279	Bitternut Hickory	*Carya cordiformis*	10	Good				Y
280	Bitternut Hickory	*Carya cordiformis*	11	Good				Y
281	Red Oak	*Quercus rubra*	12	Good				Y
282	Black Walnut	*Juglans nigra*	9	Good				Y
283	Bitternut Hickory	*Carya cordiformis*	14	Good				Y
284	American Basswood	*Tilia americana*	12	Good				Y
285	Bitternut Hickory	*Carya cordiformis*	21	Good	Y			
286	Bitternut Hickory	*Carya cordiformis*	10.5	Good				
287	Black Cherry	*Prunus serotina*	10.5	Good				
288	Bitternut Hickory	*Carya cordiformis*	12.5	Good				Y
289	Bitternut Hickory	*Carya cordiformis*	8	Good				Y
290	American Elm	*Ulmus americana*	8.5	Good				Y
291	Siberian Elm	*Ulmus pumila*	11	Good				Y
292	American Basswood	*Tilia americana*	21	Good	Y			Y
293	Bitternut Hickory	*Carya cordiformis*	9	Good				Y
294	Bitternut Hickory	*Carya cordiformis*	8	Good				Y
295	Red Oak	*Quercus rubra*	17	Good	Y			Y
296	Eastern Cottonwood	*Populus deltoides*	14	Good		Y	Y	Y
297	Red Oak	*Quercus rubra*	21	Good	Y			Y
301	Bitternut Hickory	*Carya cordiformis*	12	Good				Y
302	Red Oak	*Quercus rubra*	18.5	Good	Y			Y
303	Shagbark Hickory	*Carya ovata*	19	Good	Y			
304	Bitternut Hickory	*Carya cordiformis*	9.5	Good				
305	American Basswood	*Tilia americana*	10	Good				
306	Black Walnut	*Juglans nigra*	16.5	Good				Y
307	Bitternut Hickory	*Carya cordiformis*	10	Good				Y
308	Red Oak	*Quercus rubra*	20	Good	Y			Y
309	White Oak	*Quercus alba*	11	Good				Y
310	American Elm	*Ulmus americana*	8	Good				Y
311	Red Oak	*Quercus rubra*	22.5	Good	Y			Y
312	American Basswood	*Tilia americana*	9	Good				Y
313	Red Oak	*Quercus rubra*	18	Good	Y			Y
314	Pignut Hickory	*Carya glabra*	9	Good				Y
315	American Basswood	*Tilia americana*	13	Good				Y
316	American Basswood	*Tilia americana*	16	Fair				
317	American Basswood	*Tilia americana*	12	Fair				
318	American Basswood	*Tilia americana*	9	Good				
319	Red Oak	*Quercus rubra*	10	Good				
320	Red Oak	*Quercus rubra*	8.5	Good				
321	American Basswood	*Tilia americana*	12	Good				
322	Bitternut Hickory	*Carya cordiformis*	18	Good	Y			
323	Shagbark Hickory	*Carya ovata*	16	Good	Y			
324	American Basswood	*Tilia americana*	9.5	Good				
325	American Basswood	*Tilia americana*	8	Good				
326	American Basswood	*Tilia americana*	10	Good				Y
327	Black Walnut	*Juglans nigra*	12	Good				Y
328	Black Walnut	*Juglans nigra*	16	Good				Y
329	Red Oak	*Quercus rubra*	19	Good	Y			Y
330	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
331	Eastern Cottonwood	*Populus deltoides*	12	Good		Y	Y	Y
332	Eastern Cottonwood	*Populus deltoides*	13.5	Good		Y	Y	Y
333	American Elm	*Ulmus americana*	18	Good	Y			Y
334	American Basswood	*Tilia americana*	12	Good				Y
335	American Basswood	*Tilia americana*	12	Good				
336	American Basswood	*Tilia americana*	13.5	Good				
337	Bitternut Hickory	*Carya cordiformis*	13	Good				
338	American Basswood	*Tilia americana*	12	Good				Y
339	Shagbark Hickory	*Carya ovata*	8	Good				Y
340	Red Oak	*Quercus rubra*	16	Good	Y			Y
341	Red Oak	*Quercus rubra*	14	Good				Y
342	Red Oak	*Quercus rubra*	14	Good				Y
343	Red Oak	*Quercus rubra*	14	Good				Y
344	Red Oak	*Quercus rubra*	13	Good				Y
345	Bitternut Hickory	*Carya cordiformis*	13	Good				Y
346	White Oak	*Quercus alba*	19	Good	Y			Y
347	Bitternut Hickory	*Carya cordiformis*	12	Good				Y
348	Bitternut Hickory	*Carya cordiformis*	8.5	Good				Y
349	Red Oak	*Quercus rubra*	18.5	Good	Y			Y
350	American Basswood	*Tilia americana*	10.5	Good				Y
351	Red Oak	*Quercus rubra*	19	Good	Y			Y
352	Eastern Cottonwood	*Populus deltoides*	19	Good		Y	Y	Y
353	American Basswood	*Tilia americana*	8.5	Good				Y
354	American Basswood	*Tilia americana*	8.5	Good				Y
355	Red Oak	*Quercus rubra*	17	Good	Y			Y
356	Shagbark Hickory	*Carya ovata*	17.5	Good	Y			
357	American Basswood	*Tilia americana*	8.5	Good				Y
358	Shagbark Hickory	*Carya ovata*	10	Fair				Y
359	Red Oak	*Quercus rubra*	12	Good				Y
360	American Basswood	*Tilia americana*	15	Good				Y
361	Red Oak	*Quercus rubra*	9.5	Good				Y
362	Red Oak	*Quercus rubra*	16.5	Good	Y			Y
363	Red Oak	*Quercus rubra*	10	Good				Y
364	Black Cherry	*Prunus serotina*	13.5	Good				Y
365	Pignut Hickory	*Carya glabra*	14	Good				Y
366	Red Oak	*Quercus rubra*	11	Good				
367	Red Oak	*Quercus rubra*	21.5	Good	Y			
368	Red Oak	*Quercus rubra*	20	Good	Y			Y
369	Bitternut Hickory	*Carya cordiformis*	20	Good	Y			Y
370	Red Oak	*Quercus rubra*	9	Good				Y
371	Red Oak	*Quercus rubra*	13.5	Good				Y
372	Red Oak	*Quercus rubra*	19	Good	Y			Y
373	American Basswood	*Tilia americana*	13	Good				Y
374	American Basswood	*Tilia americana*	18	Good	Y			Y
375	Red Oak	*Quercus rubra*	24	Good	Y			
376	Red Oak	*Quercus rubra*	9	Good				
377	American Basswood	*Tilia americana*	8.5	Good				
378	Bitternut Hickory	*Carya cordiformis*	10.5	Good				Y
379	Red Oak	*Quercus rubra*	13.5	Good				Y
380	Black Cherry	*Prunus serotina*	12	Good				Y
381	Red Oak	*Quercus rubra*	10	Good				
382	American Basswood	*Tilia americana*	9.5	Good				Y
383	Pignut Hickory	*Carya glabra*	20	Good	Y			
384	Bitternut Hickory	*Carya cordiformis*	13.5	Good				
385	Black Cherry	*Prunus serotina*	11.5	Good				
386	Bitternut Hickory	*Carya cordiformis*	8.5	Good				Y
387	Black Walnut	*Juglans nigra*	11.5	Good				

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
388	Black Walnut	*Juglans nigra*	17	Good				Y
389	Black Walnut	*Juglans nigra*	19	Good	Y			Y
390	Red Oak	*Quercus rubra*	13	Good				Y
391	Bitternut Hickory	*Carya cordiformis*	8	Good				Y
392	Black Walnut	*Juglans nigra*	8	Good				Y
393	Bitternut Hickory	*Carya cordiformis*	10	Good				Y
394	Siberian Elm	*Ulmus pumila*	9	Good				Y
395	Black Walnut	*Juglans nigra*	11.5	Good				
396	Eastern Cottonwood	*Populus deltoides*	21	Good		Y	Y	Y
397	Siberian Elm	*Ulmus pumila*	8	Good				Y
398	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	
399	Common Buckthorn	*Rhamnus cathartica*	10	Good		Y	Y	Y
400	Siberian Elm	*Ulmus pumila*	11	Good				Y
401	Eastern Cottonwood	*Populus deltoides*	22	Good		Y	Y	Y
402	Eastern Cottonwood	*Populus deltoides*	21	Poor		Y	Y	Y
403	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	Y
404	Box Elder Maple	*Acer negundo*	10.5	Fair		Y	Y	Y
405	Red Oak	*Quercus rubra*	9	Good				Y
406	Red Oak	*Quercus rubra*	8	Good				
407	Red Oak	*Quercus rubra*	21	Good	Y			Y
408	Eastern Cottonwood	*Populus deltoides*	17.5	Good		Y	Y	Y
409	Siberian Elm	*Ulmus pumila*	14	Good				Y
410	Eastern Cottonwood	*Populus deltoides*	22	Good		Y	Y	Y
411	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
412	Siberian Elm	*Ulmus pumila*	10	Good				Y
413	Common Buckthorn	*Rhamnus cathartica*	8	Good		Y	Y	Y
414	Green Ash	*Fraxinus pennsylvanica*	8.5	Poor			Y	Y
415	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
416	Red Cedar	*Juniperus virginiana*	6.5	Good		Y	Y	Y
417	Green Ash	*Fraxinus pennsylvanica*	12	Fair				Y
418	Apple	*Malus spp.*	8	Good				Y
419	Red Cedar	*Juniperus virginiana*	8	Good		Y	Y	Y
420	Red Cedar	*Juniperus virginiana*	5.5	Good		Y	Y	Y
421	Green Ash	*Fraxinus pennsylvanica*	9	Good				Y
422	Green Ash	*Fraxinus pennsylvanica*	8.5	Good				Y
423	Green Ash	*Fraxinus pennsylvanica*	8.5	Good				Y
424	Box Elder Maple	*Acer negundo*	14	Fair		Y	Y	
425	Shagbark Hickory	*Carya ovata*	8	Good				
426	Shagbark Hickory	*Carya ovata*	11	Good				
427	Shagbark Hickory	*Carya ovata*	11	Good				
428	Pignut Hickory	*Carya glabra*	14	Good				
429	Shagbark Hickory	*Carya ovata*	10.5	Good				
430	Shagbark Hickory	*Carya ovata*	8	Good				
431	Shagbark Hickory	*Carya ovata*	9	Good				
432	Black Cherry	*Prunus serotina*	17	Good				
433	Shagbark Hickory	*Carya ovata*	9	Good				
434	Shagbark Hickory	*Carya ovata*	11	Good				
435	Shagbark Hickory	*Carya ovata*	9.5	Good				
436	Shagbark Hickory	*Carya ovata*	9	Good				
437	Black Cherry	*Prunus serotina*	12	Good				
438	Bitternut Hickory	*Carya cordiformis*	28	Good	Y			
439	Shagbark Hickory	*Carya ovata*	26	Good	Y			
440	Bitternut Hickory	*Carya cordiformis*	26	Good	Y			
441	Shagbark Hickory	*Carya ovata*	29	Good	Y			
442	Black Cherry	*Prunus serotina*	14	Good				
443	Black Cherry	*Prunus serotina*	11	Good				
444	American Elm	*Ulmus americana*	14	Good				
445	Black Cherry	*Prunus serotina*	11.5	Good				
446	Shagbark Hickory	*Carya ovata*	10	Good				
447	American Elm	*Ulmus americana*	18	Good	Y			
448	Bitternut Hickory	*Carya cordiformis*	9	Good				
449	Bitternut Hickory	*Carya cordiformis*	9	Good				
450	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	
451	Eastern Cottonwood	*Populus deltoides*	15	Good		Y	Y	
452	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
453	White Mulberry	*Morus alba*	9	Good				
454	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
455	White Mulberry	*Morus alba*	20	Good				
456	Bitternut Hickory	*Carya cordiformis*	9	Good				
457	Black Cherry	*Prunus serotina*	12	Good				
458	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	
459	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	
460	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
461	Box Elder Maple	*Acer negundo*	14	Good		Y	Y	
462	Box Elder Maple	*Acer negundo*	17	Good		Y	Y	
463	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	
464	White Mulberry	*Morus alba*	13	Good				
465	Black Walnut	*Juglans nigra*	9	Good				
466	Black Walnut	*Juglans nigra*	9	Good				
467	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	
468	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
469	Red Cedar	*Juniperus virginiana*	4	Good		Y	Y	Y
470	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
471	Box Elder Maple	*Acer negundo*	18	Good		Y	Y	Y
472	White Mulberry	*Morus alba*	10	Good				
473	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	
474	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
475	Box Elder Maple	*Acer negundo*	22	Poor		Y	Y	
1601	Hawthorn	*Crataegus spp.*	10	Good				Y
1602	Black Cherry	*Prunus serotina*	12	Good				Y
1603	Red Cedar	*Juniperus virginiana*	3.5	Good		Y	Y	Y
1604	Green Ash	*Fraxinus pennsylvanica*	8	Poor			Y	Y
1605	Black Cherry	*Prunus serotina*	13	Good				
1606	Green Ash	*Fraxinus pennsylvanica*	8	Good				
1607	Hawthorn	*Crataegus spp.*	8	Good				
1608	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	
1609	Black Cherry	*Prunus serotina*	12	Good				
1610	Green Ash	*Fraxinus pennsylvanica*	13	Good				
1611	Green Ash	*Fraxinus pennsylvanica*	12	Good				Y
1612	Hawthorn	*Crataegus spp.*	12.5	Good				
1613	Green Ash	*Fraxinus pennsylvanica*	10	Good				Y
1614	Red Cedar	*Juniperus virginiana*	4.5	Good		Y	Y	Y
1615	Green Ash	*Fraxinus pennsylvanica*	8	Good				Y
1616	Red Cedar	*Juniperus virginiana*	3.5	Good		Y	Y	Y
1617	Hawthorn	*Crataegus spp.*	11	Good				Y
1618	Red Cedar	*Juniperus virginiana*	3	Good		Y	Y	Y
1619	Eastern Cottonwood	*Populus deltoides*	33.5	Good	Y	Y	Y	Y
1620	White Mulberry	*Morus alba*	12	Good				Y
1621	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
1622	White Mulberry	*Morus alba*	19	Good				Y
1623	Box Elder Maple	*Acer negundo*	19	Poor		Y	Y	Y
1624	Box Elder Maple	*Acer negundo*	11	Poor		Y	Y	Y
1625	Hawthorn	*Crataegus spp.*	9.5	Fair				Y
1626	Box Elder Maple	*Acer negundo*	9	Fair		Y	Y	Y
1701	White Mulberry	*Morus alba*	11.5	Fair				
1702	Box Elder Maple	*Acer negundo*	8	Fair		Y	Y	
1703	Box Elder Maple	*Acer negundo*	10.5	Fair		Y	Y	
1704	Black Willow	*Salix nigra*	14.5	Good				
1705	Box Elder Maple	*Acer negundo*	8	Fair		Y	Y	
1706	White Mulberry	*Morus alba*	11.5	Good				
1707	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
1708	Eastern Cottonwood	*Populus deltoides*	19	Good		Y	Y	
1709	Black Willow	*Salix nigra*	11	Fair				
1710	Black Willow	*Salix nigra*	11	Fair				
1711	Apple	*Malus spp.*	10.5	Good				

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
1712	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
1713	Box Elder Maple	*Acer negundo*	8	Fair		Y	Y	
1714	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
1715	Black Cherry	*Prunus serotina*	9	Good				
1716	Sugar Maple	*Acer saccharum*	9	Good				
1717	Eastern Cottonwood	*Populus deltoides*	13.5	Good		Y	Y	
1718	Eastern Cottonwood	*Populus deltoides*	24	Good	Y	Y	Y	
1719	Eastern Cottonwood	*Populus deltoides*	17	Good		Y	Y	
1720	Red Oak	*Quercus rubra*	8.5	Poor			Y	
1721	Black Willow	*Salix nigra*	9	Good				
1722	American Elm	*Ulmus americana*	8	Good				
1723	Red Cedar	*Juniperus virginiana*	5	Good		Y	Y	
1724	Apple	*Malus spp.*	9	Good				
1725	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
1726	Eastern Cottonwood	*Populus deltoides*	18.5	Good		Y	Y	
1727	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	
1728	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	
1729	Black Willow	*Salix nigra*	37	Poor	Y		Y	
1730	American Elm	*Ulmus americana*	11.5	Fair				
1731	American Elm	*Ulmus americana*	8	Fair				
1732	Green Ash	*Fraxinus pennsylvanica*	10.5	Fair				
1733	Green Ash	*Fraxinus pennsylvanica*	11.5	Good				
1734	Box Elder Maple	*Acer negundo*	23	Good		Y	Y	
1735	Black Willow	*Salix nigra*	18	Good				
1736	Black Cherry	*Prunus serotina*	8.5	Good				
1737	Black Cherry	*Prunus serotina*	10	Good				
1738	Black Willow	*Salix nigra*	12	Good				Y
1739	Green Ash	*Fraxinus pennsylvanica*	9	Good				Y
1740	Common Buckthorn	*Rhamnus cathartica*	10.5	Good		Y	Y	Y
1741	Black Walnut	*Juglans nigra*	9	Good				Y
1742	Hawthorn	*Crataegus spp.*	13	Good				Y
1743	White Mulberry	*Morus alba*	33.5	Good	Y			Y
1744	Black Cherry	*Prunus serotina*	8	Fair				Y
1745	Bitternut Hickory	*Carya cordiformis*	10	Good				Y
1746	Black Cherry	*Prunus serotina*	9	Good				Y
1747	Siberian Elm	*Ulmus pumila*	8.5	Good				Y
1748	Black Walnut	*Juglans nigra*	25	Good	Y			
1749	Black Walnut	*Juglans nigra*	22	Good	Y			
1750	Black Walnut	*Juglans nigra*	8	Good				
1751	Black Walnut	*Juglans nigra*	25	Good	Y			
1752	Black Walnut	*Juglans nigra*	9	Good				
1753	White Mulberry	*Morus alba*	20	Good				
1754	Black Walnut	*Juglans nigra*	27	Good	Y			
1755	Bitternut Hickory	*Carya cordiformis*	9	Good				
1756	Black Walnut	*Juglans nigra*	8	Good				
1757	Black Walnut	*Juglans nigra*	22	Good	Y			
1758	Black Walnut	*Juglans nigra*	10	Good				
1759	Black Walnut	*Juglans nigra*	9.5	Good				Y
1760	Black Walnut	*Juglans nigra*	15	Good				Y
1761	Black Walnut	*Juglans nigra*	19	Good	Y			Y
1762	Black Walnut	*Juglans nigra*	19	Good	Y			
1763	Black Walnut	*Juglans nigra*	24	Good	Y			
1764	Black Walnut	*Juglans nigra*	16	Good				
1765	Black Walnut	*Juglans nigra*	23.5	Good	Y			
1766	Bitternut Hickory	*Carya cordiformis*	23.5	Good	Y			
1767	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
1768	American Elm	*Ulmus americana*	14	Good				
1769	Black Walnut	*Juglans nigra*	23	Good	Y			
1770	Black Walnut	*Juglans nigra*	11.5	Good				
1771	American Elm	*Ulmus americana*	8	Good				
1772	Black Walnut	*Juglans nigra*	18	Good	Y			
1773	Red Oak	*Quercus rubra*	15.5	Good				
1774	Black Walnut	*Juglans nigra*	19.5	Good	Y			
1775	Black Walnut	*Juglans nigra*	20	Good	Y			
1776	Red Oak	*Quercus rubra*	10	Good				
1777	Bitternut Hickory	*Carya cordiformis*	12	Good				
1778	Bitternut Hickory	*Carya cordiformis*	12.5	Good				
1779	Black Cherry	*Prunus serotina*	12	Good				
1780	Red Oak	*Quercus rubra*	10	Good				
1781	Bitternut Hickory	*Carya cordiformis*	13	Good				
1782	Bitternut Hickory	*Carya cordiformis*	14.5	Good				
1783	Bitternut Hickory	*Carya cordiformis*	13.5	Good				
1784	Black Cherry	*Prunus serotina*	12	Poor			Y	
1785	Black Cherry	*Prunus serotina*	15	Good				
1786	Bitternut Hickory	*Carya cordiformis*	10	Good				
1787	Red Oak	*Quercus rubra*	11	Good				
1788	White Mulberry	*Morus alba*	23	Fair				
1789	Shagbark Hickory	*Carya ovata*	11	Good				
1790	Shagbark Hickory	*Carya ovata*	12	Good				
1791	Shagbark Hickory	*Carya ovata*	9	Good				
1792	Black Cherry	*Prunus serotina*	16	Good				
1793	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	
1794	Black Cherry	*Prunus serotina*	9.5	Good				Y
1795	Hawthorn	*Crataegus spp.*	8	Good				Y
1796	Box Elder Maple	*Acer negundo*	9	Fair		Y	Y	Y
1797	Box Elder Maple	*Acer negundo*	17	Good		Y	Y	Y
1798	Hawthorn	*Crataegus spp.*	5	Good				Y
1799	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
1800	Red Cedar	*Juniperus virginiana*	8.5	Good		Y	Y	Y
4601	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	Y
4602	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4603	Box Elder Maple	*Acer negundo*	12	Poor		Y	Y	Y
4604	Black Cherry	*Prunus serotina*	9.5	Good				Y
4605	Box Elder Maple	*Acer negundo*	16.5	Fair		Y	Y	Y
4606	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4607	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4608	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4609	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4610	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4611	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4612	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4613	White Mulberry	*Morus alba*	12	Good				Y
4614	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4615	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4616	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4617	White Mulberry	*Morus alba*	12.5	Good				Y
4618	Box Elder Maple	*Acer negundo*	24.5	Fair	Y	Y	Y	Y
4619	American Elm	*Ulmus americana*	18	Good	Y			Y
4620	Box Elder Maple	*Acer negundo*	19	Good		Y	Y	Y
4621	Box Elder Maple	*Acer negundo*	18	Good		Y	Y	Y
4622	Box Elder Maple	*Acer negundo*	14	Good		Y	Y	Y
4623	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	Y
4624	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
4625	Black Cherry	*Prunus serotina*	11	Good				Y
4626	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4627	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4628	Box Elder Maple	*Acer negundo*	16	Good		Y	Y	Y
4629	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4630	Box Elder Maple	*Acer negundo*	14	Good		Y	Y	Y
4631	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4632	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4633	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4634	Box Elder Maple	*Acer negundo*	11	Poor		Y	Y	Y
4635	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
4636	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
4637	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4638	Box Elder Maple	*Acer negundo*	9	Poor		Y	Y	Y
4639	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4640	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4641	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4642	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4643	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4644	Green Ash	*Fraxinus pennsylvanica*	8	Good				Y
4645	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4646	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
4647	Box Elder Maple	*Acer negundo*	20	Good		Y	Y	Y
4648	Box Elder Maple	*Acer negundo*	14	Poor		Y	Y	Y
4649	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4650	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4651	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	Y
4652	White Mulberry	*Morus alba*	20	Good				Y
4653	Box Elder Maple	*Acer negundo*	19	Good		Y	Y	Y
4654	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
4655	Box Elder Maple	*Acer negundo*	14	Good		Y	Y	Y
4656	Black Cherry	*Prunus serotina*	10	Good				Y
4657	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4658	White Mulberry	*Morus alba*	8	Good				Y
4659	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4660	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4661	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4662	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4663	Common Buckthorn	*Rhamnus cathartica*	8	Good		Y	Y	Y
4664	Box Elder Maple	*Acer negundo*	20	Good		Y	Y	Y
4665	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4666	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	
4667	Box Elder Maple	*Acer negundo*	9	Fair		Y	Y	Y
4668	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	
4669	American Elm	*Ulmus americana*	10	Good				
4670	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	
4671	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
4672	Box Elder Maple	*Acer negundo*	14.5	Good		Y	Y	
4673	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
4674	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
4675	Black Willow	*Salix nigra*	31	Good	Y			
4676	Black Willow	*Salix nigra*	9.5	Good				
4677	Black Willow	*Salix nigra*	9	Good				
4678	Black Walnut	*Juglans nigra*	19	Good	Y			
4679	American Elm	*Ulmus americana*	8	Good				
4680	Green Ash	*Fraxinus pennsylvanica*	8.5	Fair				Y
4681	Eastern Cottonwood	*Populus deltoides*	13.5	Good		Y	Y	Y
4682	Eastern Cottonwood	*Populus deltoides*	15	Good		Y	Y	Y
4683	Green Ash	*Fraxinus pennsylvanica*	8	Good				Y
4684	White Mulberry	*Morus alba*	12	Good				Y
4685	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4686	White Mulberry	*Morus alba*	11	Good				Y
4687	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4688	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4689	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4690	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4691	Box Elder Maple	*Acer negundo*	11.5	Good		Y	Y	Y
4692	Box Elder Maple	*Acer negundo*	8.5	Fair		Y	Y	Y
4693	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
4694	Eastern Cottonwood	*Populus deltoides*	32	Good	Y	Y	Y	Y
4695	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y
4696	Green Ash	*Fraxinus pennsylvanica*	9	Good				Y
4697	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4698	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4699	American Elm	*Ulmus americana*	8.5	Good				Y
4700	Red Cedar	*Juniperus virginiana*	8.5	Good		Y	Y	Y
4735	American Elm	*Ulmus americana*	8.5	Good				Y
4736	Eastern Cottonwood	*Populus deltoides*	11	Good		Y	Y	Y
4737	Black Willow	*Salix nigra*	11	Good				Y
4738	Black Willow	*Salix nigra*	9	Good				Y
4739	Apple	*Malus spp.*	8.5	Good				
4740	Eastern Cottonwood	*Populus deltoides*	32	Good	Y	Y	Y	Y
4741	Apple	*Malus spp.*	10	Good				
4742	White Mulberry	*Morus alba*	16.5	Fair				
4743	Siberian Elm	*Ulmus pumila*	15	Good				Y
4744	Black Cherry	*Prunus serotina*	9	Good				Y
4745	Black Cherry	*Prunus serotina*	23.5	Fair	Y			Y
4746	Box Elder Maple	*Acer negundo*	16	Good		Y	Y	Y
4747	Apple	*Malus spp.*	10	Poor			Y	Y
4748	Black Cherry	*Prunus serotina*	15	Good				Y
4749	Box Elder Maple	*Acer negundo*	21	Fair		Y	Y	Y
4750	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4751	Box Elder Maple	*Acer negundo*	16	Fair		Y	Y	Y
4752	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4753	White Mulberry	*Morus alba*	15	Good				Y
4754	White Mulberry	*Morus alba*	16	Good				Y
4755	White Mulberry	*Morus alba*	10	Good				Y
4756	White Mulberry	*Morus alba*	16	Good				Y
4757	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4758	American Elm	*Ulmus americana*	12	Good				Y
4759	Apple	*Malus spp.*	9	Good				Y
4760	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4761	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4762	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
4763	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4764	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
4765	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4766	Black Willow	*Salix nigra*	8	Good				Y
4767	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4768	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4769	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4770	Black Willow	*Salix nigra*	8	Poor			Y	Y
4771	Black Willow	*Salix nigra*	12	Good				Y
4772	Box Elder Maple	*Acer negundo*	8.5	Good		Y	Y	Y
4773	Box Elder Maple	*Acer negundo*	9	Fair		Y	Y	Y
4774	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	Y
4775	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4776	Siberian Elm	*Ulmus pumila*	14	Good				Y
4777	Siberian Elm	*Ulmus pumila*	8	Good				Y
4778	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	Y
4779	Eastern Cottonwood	*Populus deltoides*	9	Good		Y	Y	Y
4780	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	
4781	Black Willow	*Salix nigra*	8.5	Good				Y
4782	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	
4783	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
4784	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
4785	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	
4786	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	
4787	Apple	*Malus spp.*	18	Good				
4788	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	Y
4789	Apple	*Malus spp.*	23	Good				
4790	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	
4791	Apple	*Malus spp.*	11	Good				
4792	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4793	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4794	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4795	Box Elder Maple	*Acer negundo*	10.5	Good		Y	Y	Y

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
4796	Apple	*Malus spp.*	10	Good				Y
4797	Eastern Cottonwood	*Populus deltoides*	32	Good	Y	Y	Y	Y
4798	Box Elder Maple	*Acer negundo*	17	Good		Y	Y	
4799	Box Elder Maple	*Acer negundo*	13	Poor		Y	Y	Y
4800	Box Elder Maple	*Acer negundo*	9.5	Fair		Y	Y	Y
4901	American Elm	*Ulmus americana*	9.5	Good				Y
4902	American Elm	*Ulmus americana*	10	Good				Y
4903	American Elm	*Ulmus americana*	8	Good				Y
4904	American Elm	*Ulmus americana*	8	Poor			Y	Y
4905	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4906	Box Elder Maple	*Acer negundo*	13	Good		Y	Y	Y
4907	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	Y
4908	Box Elder Maple	*Acer negundo*	12.5	Good		Y	Y	Y
4909	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4910	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4911	Box Elder Maple	*Acer negundo*	11	Fair		Y	Y	Y
4912	Box Elder Maple	*Acer negundo*	9.5	Good		Y	Y	Y
4913	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	Y
4914	Box Elder Maple	*Acer negundo*	11	Good		Y	Y	Y
4915	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4916	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	Y
4917	Black Cherry	*Prunus serotina*	12	Good				Y
4918	Black Cherry	*Prunus serotina*	12.5	Good				Y
4919	American Elm	*Ulmus americana*	8	Good				Y
4920	Black Cherry	*Prunus serotina*	14	Good				Y
4921	Box Elder Maple	*Acer negundo*	17	Good		Y	Y	Y
4922	Black Cherry	*Prunus serotina*	10	Good				Y
4923	American Elm	*Ulmus americana*	10.5	Good				Y
4924	Box Elder Maple	*Acer negundo*	10	Fair		Y	Y	Y
4925	Box Elder Maple	*Acer negundo*	17	Good		Y	Y	Y
4926	Black Walnut	*Juglans nigra*	12	Good				Y
4927	Box Elder Maple	*Acer negundo*	15	Fair		Y	Y	Y
4928	Box Elder Maple	*Acer negundo*	18	Good		Y	Y	Y
4929	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4930	Eastern Cottonwood	*Populus deltoides*	18	Good		Y	Y	Y
4931	Black Willow	*Salix nigra*	9.5	Good				Y
4932	Black Willow	*Salix nigra*	16	Good				Y
4933	Eastern Cottonwood	*Populus deltoides*	24	Good	Y	Y	Y	Y
4934	Black Walnut	*Juglans nigra*	12	Good				Y
4935	Apple	*Malus spp.*	8.5	Good				
4936	Black Cherry	*Prunus serotina*	17	Good				Y
4937	Black Cherry	*Prunus serotina*	13	Good				Y
4938	Black Cherry	*Prunus serotina*	9	Good				Y
4939	Black Cherry	*Prunus serotina*	11	Poor			Y	Y
4940	Black Cherry	*Prunus serotina*	17.5	Good				Y
4941	Black Cherry	*Prunus serotina*	9	Good				Y
4942	Black Cherry	*Prunus serotina*	13	Good				Y
4943	Black Cherry	*Prunus serotina*	11	Good				Y
4944	Black Cherry	*Prunus serotina*	11	Good				Y
4945	Green Ash	*Fraxinus pennsylvanica*	10.5	Good				Y
4946	Green Ash	*Fraxinus pennsylvanica*	8	Poor			Y	Y
4947	Box Elder Maple	*Acer negundo*	8	Poor		Y	Y	Y
4948	Box Elder Maple	*Acer negundo*	8.5	Poor		Y	Y	Y
4949	Black Cherry	*Prunus serotina*	14	Good				Y
4950	Box Elder Maple	*Acer negundo*	14.5	Fair		Y	Y	Y
4951	Common Buckthorn	*Rhamnus cathartica*	10.5	Good		Y	Y	Y
4952	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4953	Black Cherry	*Prunus serotina*	8	Good				Y
4954	Box Elder Maple	*Acer negundo*	8.5	Fair		Y	Y	Y
4955	Box Elder Maple	*Acer negundo*	10	Good		Y	Y	Y
4956	Apple	*Malus spp.*	8.5	Good				Y
4957	Apple	*Malus spp.*	10	Good				Y
4958	Siberian Elm	*Ulmus pumila*	9	Good				Y
4959	American Elm	*Ulmus americana*	12	Poor			Y	Y
4960	Apple	*Malus spp.*	10	Good				Y
4961	Siberian Elm	*Ulmus pumila*	13	Good				Y
4962	Black Walnut	*Juglans nigra*	12.5	Good				Y
4963	Black Walnut	*Juglans nigra*	8	Good				Y
4964	Black Walnut	*Juglans nigra*	11	Good				Y
4965	Black Walnut	*Juglans nigra*	8	Good				Y
4966	Black Walnut	*Juglans nigra*	10.5	Good				Y
4967	Black Walnut	*Juglans nigra*	8	Good				Y
4968	Black Walnut	*Juglans nigra*	10	Good				Y
4969	Black Walnut	*Juglans nigra*	8	Good				Y
4970	Black Walnut	*Juglans nigra*	11	Good				Y
4971	Black Walnut	*Juglans nigra*	9	Good				Y
4972	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
4973	American Elm	*Ulmus americana*	9	Good				Y
4974	Black Walnut	*Juglans nigra*	11	Good				Y
4975	Black Walnut	*Juglans nigra*	12.5	Good				Y
4976	Black Walnut	*Juglans nigra*	28.5	Good	Y			Y
4977	Shagbark Hickory	*Carya ovata*	9.5	Good				Y
4978	Bitternut Hickory	*Carya cordiformis*	15.5	Good				
4979	Bitternut Hickory	*Carya cordiformis*	8	Good				Y
4980	Red Oak	*Quercus rubra*	8	Good				Y
4981	Black Walnut	*Juglans nigra*	12	Good				Y
4982	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4983	Red Oak	*Quercus rubra*	15	Good				Y
4984	American Basswood	*Tilia americana*	15.5	Good				
4985	American Basswood	*Tilia americana*	9	Good				
4986	Red Oak	*Quercus rubra*	20	Good	Y			Y
4987	Red Oak	*Quercus rubra*	16	Good	Y			Y
4988	Red Oak	*Quercus rubra*	24.5	Good	Y			Y
4989	Black Walnut	*Juglans nigra*	8	Good				Y
4990	Box Elder Maple	*Acer negundo*	8	Good		Y	Y	Y
4991	Bitternut Hickory	*Carya cordiformis*	19	Good	Y			Y
4992	Black Walnut	*Juglans nigra*	8	Good				Y
4993	Bitternut Hickory	*Carya cordiformis*	13	Good				Y
4994	American Elm	*Ulmus americana*	8	Good				Y
4995	Bitternut Hickory	*Carya cordiformis*	16	Good	Y			
4996	Bitternut Hickory	*Carya cordiformis*	15	Good				
4997	American Basswood	*Tilia americana*	10	Good				
4998	American Basswood	*Tilia americana*	9.5	Good				Y
4999	American Basswood	*Tilia americana*	13.5	Good				Y
5000	American Basswood	*Tilia americana*	10	Good				Y

ONSITE TREE REMOVAL/REPLACEMENT CALCULATION

REGUALTED 8"-12" TREES REMOVED	**138** :	**138**	REPLACEMENT TREES REQUIRED
REGUALTED 12.1"-16" TREES REMOVED	**43** :	**129**	REPLACEMENT TREES REQUIRED
REGUALTED 16.1" & GREATER TREES REMOVED	**8** :	**48**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF PROTECTED REGULATED TREES REMOVED	**189** :	**315**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF LANDMARK TREES REMOVED	**33**		
TOTAL LANDMARK DBH REMOVED (INCHES)	**663.5** :	**664**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF REPLACEMENT TREES		**979**	TREES
TOTAL NUMBER OF REGULATED TREES ONSITE	372		
TOTAL NUMBER OF REGULATED TREES REMOVED	222		
TOTAL NUMBER OF REGULATED TREES PRESERVED	150		
PERCENTAGE OF REGULATED TREES PRESERVED	40%		

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
ONSITE TREE LIST

DATE
OCT. 12, 2023

REVISIONS

NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 7

CAD FILE: 19004443FSP-04-TL.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-04-TL.DWG 10/10/2023 3:37 PM MATTHEW MYERS

OFFSITE TREE LIST (Atwell Project #19004443)

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
639	Box Elder Maple	*Acer negundo*	9.5	Fair		Y	Y	Y
640	Black Walnut	*Juglans nigra*	19.5	Good	Y			
641	Box Elder Maple	*Acer negundo*	12	Good		Y	Y	
642	American Elm	*Ulmus americana*	9	Good				
643	American Elm	*Ulmus americana*	13	Good				
644	Black Walnut	*Juglans nigra*	15.5	Good				Y
645	Box Elder Maple	*Acer negundo*	15	Good		Y	Y	
646	Black Walnut	*Juglans nigra*	9	Good				
647	Eastern Cottonwood	*Populus deltoides*	11	Good		Y	Y	
648	Eastern Cottonwood	*Populus deltoides*	10	Good		Y	Y	
649	Eastern Cottonwood	*Populus deltoides*	8	Poor		Y	Y	
650	Black Willow	*Salix nigra*	14	Good				
651	Black Willow	*Salix nigra*	18	Good				
652	Black Willow	*Salix nigra*	9.5	Poor			Y	
653	Black Willow	*Salix nigra*	34	Good	Y			
654	Siberian Elm	*Ulmus pumila*	12.5	Good				
655	Black Willow	*Salix nigra*	16	Good				
656	Black Willow	*Salix nigra*	18	Good				
657	Black Willow	*Salix nigra*	13	Fair				
658	Black Willow	*Salix nigra*	13.5	Good				
659	Eastern Cottonwood	*Populus deltoides*	36.5	Good	Y	Y	Y	
660	Eastern Cottonwood	*Populus deltoides*	20	Good		Y	Y	
661	Black Willow	*Salix nigra*	17	Fair				
662	Black Willow	*Salix nigra*	17	Fair				
663	Black Willow	*Salix nigra*	19.5	Good				
664	Black Willow	*Salix nigra*	10	Good				
665	Black Willow	*Salix nigra*	13	Good				
666	Black Willow	*Juglans nigra*	13	Good				
667	Black Walnut	*Juglans nigra*	10.5	Good				Y
668	Box Elder Maple	*Acer negundo*	16.5	Good		Y	Y	
669	American Elm	*Ulmus americana*	10	Good				Y
670	Black Cherry	*Prunus serotina*	9.5	Dead				Y
670	Red Oak	*Quercus rubra*	8	Good				Y
671	Black Cherry	*Prunus serotina*	9.5	Dead				
672	Black Cherry	*Prunus serotina*	17	Fair				
673	Box Elder Maple	*Acer negundo*	8.5	Poor		Y	Y	Y
674	American Elm	*Ulmus americana*	11.5	Good				Y
675	Black Walnut	*Juglans nigra*	21	Good	Y			Y
676	Box Elder Maple	*Acer negundo*	9	Good		Y	Y	Y
677	Green Ash	*Fraxinus pennsylvanica*	8	Dead				Y
678	American Elm	*Ulmus americana*	10	Good				Y
679	Black Cherry	*Prunus serotina*	20	Dead	Y			Y
680	Black Walnut	*Juglans nigra*	18.5	Good	Y			Y
681	Black Walnut	*Juglans nigra*	11.5	Good				Y
682	Black Walnut	*Juglans nigra*	18	Good	Y			Y
683	Black Walnut	*Juglans nigra*	17	Good				
684	Hackberry	*Celtis occidentalis*	8.5	Good				Y
685	Black Walnut	*Juglans nigra*	8	Good				Y
686	Black Walnut	*Juglans nigra*	9	Good				Y
687	Bur Oak	*Quercus macrocarpa*	8	Good				Y
688	Black Walnut	*Juglans nigra*	11.5	Good				Y
689	Pignut Hickory	*Carya glabra*	10	Good				Y
690	Black Walnut	*Juglans nigra*	9	Good				Y
691	Black Walnut	*Juglans nigra*	8.5	Good				
692	Box Elder Maple	*Acer negundo*	11.5	Dead		Y	Y	Y
693	Black Cherry	*Prunus serotina*	44	Good	Y			Y
694	Black Walnut	*Juglans nigra*	21	Good	Y			
695	Black Walnut	*Juglans nigra*	23.5	Good	Y			
696	Black Walnut	*Juglans nigra*	30	Good	Y			
697	Hackberry	*Celtis occidentalis*	12	Good				
698	Hackberry	*Celtis occidentalis*	11.5	Good				
699	Pignut Hickory	*Carya glabra*	9	Good				
901	Black Walnut	*Juglans nigra*	17	Good				Y
902	Red Oak	*Quercus rubra*	10	Good				Y
903	Red Oak	*Quercus rubra*	11.5	Good				Y
904	American Elm	*Ulmus americana*	9	Good				Y
905	Bur Oak	*Quercus macrocarpa*	13.5	Good				Y
906	Red Oak	*Quercus rubra*	8.5	Good				
907	Red Oak	*Quercus rubra*	12	Good				
908	Hackberry	*Celtis occidentalis*	8.5	Good				
909	Red Oak	*Quercus rubra*	17.5	Good	Y			Y
910	Red Oak	*Quercus rubra*	13	Good				Y
911	Red Oak	*Quercus rubra*	12	Good				Y
912	Red Oak	*Quercus rubra*	24.5	Good	Y			Y
913	Black Walnut	*Juglans nigra*	19	Good	Y			Y
914	Red Oak	*Quercus rubra*	16	Good	Y			Y
915	Red Oak	*Quercus rubra*	10	Good				Y
916	Bitternut Hickory	*Carya cordiformes*	8	Good				Y
917	Red Oak	*Quercus rubra*	16	Good	Y			Y
918	Red Oak	*Quercus rubra*	15	Good				Y
919	Red Oak	*Quercus rubra*	13	Good				
920	Red Oak	*Quercus rubra*	13.5	Good				Y
921	Red Oak	*Quercus rubra*	13.5	Good				
922	Black Walnut	*Juglans nigra*	10	Good				
923	Red Oak	*Quercus rubra*	10.5	Good				Y
924	Red Oak	*Quercus rubra*	24	Good	Y			
925	Red Oak	*Quercus rubra*	17.5	Good	Y			Y
926	Red Oak	*Quercus rubra*	10.5	Good				Y
927	Red Oak	*Quercus rubra*	20	Good	Y			Y
928	Bur Oak	*Quercus macrocarpa*	8	Good				Y
929	Red Oak	*Quercus rubra*	22.5	Good	Y			
930	Red Oak	*Quercus rubra*	17.5	Good	Y			
931	Bur Oak	*Quercus macrocarpa*	28	Good	Y			
932	Red Oak	*Quercus rubra*	10.5	Good				
933	Red Oak	*Quercus rubra*	15	Good				
934	Red Oak	*Quercus rubra*	12	Good				
935	Red Oak	*Quercus rubra*	20.5	Good	Y			
936	Red Oak	*Quercus rubra*	10	Good				
937	Red Oak	*Quercus rubra*	16.5	Good	Y			
938	Red Oak	*Quercus rubra*	8.5	Good				
939	Red Oak	*Quercus rubra*	17	Good	Y			
940	American Elm	*Ulmus americana*	11	Good				
941	American Elm	*Ulmus americana*	10.5	Good				
942	Red Oak	*Quercus rubra*	9.5	Good				Y
943	Red Oak	*Quercus rubra*	20	Good	Y			Y
944	Red Oak	*Quercus rubra*	13.5	Good				Y
945	Red Oak	*Quercus rubra*	10	Good				
946	Red Oak	*Quercus rubra*	20	Good	Y			Y
947	Red Oak	*Quercus rubra*	20	Good	Y			Y
948	Red Oak	*Quercus rubra*	8	Good				Y
949	Pignut Hickory	*Carya glabra*	13.5	Good				
950	Red Oak	*Quercus rubra*	9.5	Good				
951	Red Oak	*Quercus rubra*	13	Good				
952	Pignut Hickory	*Carya glabra*	11.5	Good				
953	Red Oak	*Quercus rubra*	12	Good				
954	Red Oak	*Quercus rubra*	8.5	Good				
955	Red Oak	*Quercus rubra*	13.5	Good				
956	American Basswood	*Tilia americana*	15.5	Good				
957	Pignut Hickory	*Carya glabra*	8	Good				
958	Red Oak	*Quercus rubra*	11	Good				
959	Red Oak	*Quercus rubra*	8.5	Fair				
960	Pignut Hickory	*Carya glabra*	9.5	Good				
961	Black Cherry	*Prunus serotina*	8	Good				
962	Pignut Hickory	*Carya glabra*	9.5	Good				Y
963	Red Oak	*Quercus rubra*	15	Good				

OFFSITE TREE LIST (Atwell Project #19004443)

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
964	Black Cherry	*Prunus serotina*	10	Good				
965	Red Oak	*Quercus rubra*	13	Good				
966	Red Oak	*Quercus rubra*	10	Good				Y
967	Red Oak	*Quercus rubra*	27.5	Good	Y			Y
968	Red Oak	*Quercus rubra*	14	Good				
969	Red Oak	*Quercus rubra*	11.5	Good				Y
970	Black Walnut	*Juglans nigra*	15	Good				Y
971	Black Walnut	*Juglans nigra*	8.5	Good				Y
972	Pignut Hickory	*Carya glabra*	8.5	Good				
973	Red Oak	*Quercus rubra*	13	Good				
974	Red Oak	*Quercus rubra*	10.5	Good				
975	Red Oak	*Quercus rubra*	13	Good				
976	Pignut Hickory	*Carya glabra*	9.5	Good				Y
977	Black Walnut	*Juglans nigra*	22.5	Good	Y			
978	Shagbark Hickory	*Carya ovata*	14.5	Good				
979	Black Walnut	*Juglans nigra*	17	Good				
980	Black Walnut	*Juglans nigra*	21	Good	Y			
981	Red Oak	*Quercus rubra*	13	Good				Y
982	Red Oak	*Quercus rubra*	11	Good				Y
983	Red Oak	*Quercus rubra*	13	Good				Y
984	Red Oak	*Quercus rubra*	14.5	Good				Y
985	Red Oak	*Quercus rubra*	11	Good				Y
986	Red Oak	*Quercus rubra*	16	Good	Y			Y
987	Red Oak	*Quercus rubra*	9.5	Good				Y
988	Red Oak	*Quercus rubra*	10.5	Good				Y
989	Red Oak	*Quercus rubra*	14.5	Good				Y
990	Red Oak	*Quercus rubra*	12.5	Good				Y
991	Red Oak	*Quercus rubra*	15	Good				
992	Pignut Hickory	*Carya glabra*	11	Good				
993	Pignut Hickory	*Carya glabra*	9	Good				Y
994	Red Oak	*Quercus rubra*	10.5	Good				
995	Red Oak	*Quercus rubra*	11.5	Good				
996	Red Oak	*Quercus rubra*	13	Good				
997	Red Oak	*Quercus rubra*	15	Good				
998	Red Oak	*Quercus rubra*	12.5	Good				
999	Pignut Hickory	*Carya glabra*	13	Good				
1000	Slippery Elm	*Ulmus rubra*	14.5	Good				
2197	Box Elder Maple	*Acer negundo*	12	Fair		Y	Y	Y
2198	Box Elder Maple	*Acer negundo*	16	Good		Y	Y	
2199	Black Walnut	*Juglans nigra*	24.5	Good	Y			
2200	Peachleaf Willow	*Salix amygdaloides*	23.5	Fair				Y
6801	Red Oak	*Quercus rubra*	16	Good	Y			
6802	Black Cherry	*Prunus serotina*	12.5	Dead				
6803	Red Oak	*Quercus rubra*	10	Good				
6804	Black Walnut	*Juglans nigra*	11	Good				
6805	Shagbark Hickory	*Carya ovata*	21	Good	Y			
6806	Red Oak	*Quercus rubra*	22	Good	Y			Y
6807	Red Oak	*Quercus rubra*	8	Good				Y
6808	Red Oak	*Quercus rubra*	17	Good	Y			Y
6809	Pignut Hickory	*Carya glabra*	14	Good				
6810	Black Cherry	*Prunus serotina*	10.5	Dead				
6811	Red Oak	*Quercus rubra*	24.5	Good	Y			
6812	Pignut Hickory	*Carya glabra*	20	Good	Y			Y
6813	Black Cherry	*Prunus serotina*	8	Good				Y
6814	Shagbark Hickory	*Carya ovata*	23	Good	Y			Y
6901	American Elm	*Ulmus americana*	13	Good				
6902	Red Oak	*Quercus rubra*	12.5	Good				
6903	Red Oak	*Quercus rubra*	11.5	Good				
6904	Black Cherry	*Prunus serotina*	12.5	Good				
6905	Red Oak	*Quercus rubra*	12	Good				
6906	Black Cherry	*Prunus serotina*	8.5	Good				
6907	Black Cherry	*Prunus serotina*	10	Good				
6908	Black Cherry	*Prunus serotina*	9	Good				
6909	Black Cherry	*Prunus serotina*	12.5	Good				
6910	Pignut Hickory	*Carya glabra*	10	Good				
6911	Pignut Hickory	*Carya glabra*	11	Good				
6912	Black Cherry	*Prunus serotina*	9	Good				
6913	Pignut Hickory	*Carya glabra*	11.5	Good				
6914	Red Oak	*Quercus rubra*	13	Good				
6915	Red Oak	*Quercus rubra*	9	Good				
6916	Red Oak	*Quercus rubra*	12.5	Good				
6917	Pignut Hickory	*Carya glabra*	9.5	Good				Y
6918	Red Oak	*Quercus rubra*	10	Good				Y
6919	Red Oak	*Quercus rubra*	16	Good	Y			Y
6920	Red Oak	*Quercus rubra*	11.5	Good				Y
6921	Pignut Hickory	*Carya glabra*	9.5	Good				Y
6922	Pignut Hickory	*Carya glabra*	9	Good				Y
6923	Black Walnut	*Juglans nigra*	20	Good	Y			Y
6924	Red Oak	*Quercus rubra*	16	Good	Y			Y
6925	Red Oak	*Quercus rubra*	14.5	Good				Y
6926	Red Oak	*Quercus rubra*	16.5	Good	Y			Y
6927	Red Oak	*Quercus rubra*	20	Good	Y			Y
6928	Black Walnut	*Juglans nigra*	12	Good				Y
6929	Red Oak	*Quercus rubra*	16.5	Good	Y			Y
6930	Red Oak	*Quercus rubra*	8	Good				Y
6931	Red Oak	*Quercus rubra*	8	Good				Y
6932	Slippery Elm	*Ulmus rubra*	11	Good				Y
6933	Pignut Hickory	*Carya glabra*	8	Good				Y
6934	Shagbark Hickory	*Carya ovata*	21	Good	Y			Y
6935	Shagbark Hickory	*Carya ovata*	24	Good	Y			Y
6936	Shagbark Hickory	*Carya ovata*	16.5	Good	Y			
6937	Black Cherry	*Prunus serotina*	11	Good				
6938	Black Cherry	*Prunus serotina*	9.5	Good				
6939	Red Oak	*Quercus rubra*	13	Good				
6940	American Elm	*Ulmus americana*	9	Good				
6941	Black Cherry	*Prunus serotina*	9	Good				
6942	American Elm	*Ulmus americana*	12.5	Good				
6943	Red Oak	*Quercus rubra*	15	Good				
6944	American Basswood	*Tilia americana*	10	Good				
6945	Red Oak	*Quercus rubra*	16.5	Good	Y			
6946	Red Oak	*Quercus rubra*	16.5	Good	Y			
6947	American Basswood	*Tilia americana*	8	Good				
6948	Slippery Elm	*Ulmus rubra*	9	Good				
6949	Black Cherry	*Prunus serotina*	8.5	Good				
6950	Black Cherry	*Prunus serotina*	11	Good				Y
6951	Red Oak	*Quercus rubra*	32	Good	Y			Y
6952	Pignut Hickory	*Carya glabra*	13	Good				Y
6953	Pignut Hickory	*Carya glabra*	12.5	Good				Y
6954	Red Oak	*Quercus rubra*	12.5	Good				
6955	Red Oak	*Quercus rubra*	13.5	Good				Y
6956	Red Oak	*Quercus rubra*	9.5	Good				
6957	Red Oak	*Quercus rubra*	8	Good				Y
6958	Pignut Hickory	*Carya glabra*	12	Good				Y
6959	Black Cherry	*Prunus serotina*	10	Good				Y
6960	Black Cherry	*Prunus serotina*	8.5	Good				Y
6961	American Elm	*Ulmus americana*	10.5	Good				Y
6962	Black Cherry	*Prunus serotina*	12	Good				Y
6963	Shagbark Hickory	*Carya ovata*	13	Good				Y
6964	American Basswood	*Tilia americana*	17	Good				
6965	Black Cherry	*Prunus serotina*	12.5	Good				
6966	Black Cherry	*Prunus serotina*	8.5	Dead				
6967	Black Cherry	*Prunus serotina*	14.5	Good				
6968	Black Cherry	*Prunus serotina*	11	Good				
6969	Black Cherry	*Prunus serotina*	10	Good				
6970	American Basswood	*Tilia americana*	13.5	Good				

OFFSITE TREE LIST (Atwell Project #19004443)

TAG #	COMMON NAME	SCIENTIFIC NAME	DBH (INCHES)	CONDITION	LANDMARK	INVASIVE	EXEMPT	REMOVE?
6971	Slippery Elm	*Ulmus rubra*	8	Good				
6972	American Basswood	*Tilia americana*	11.5	Good				
6973	Pignut Hickory	*Carya glabra*	20	Good	Y			
6974	Black Cherry	*Prunus serotina*	9	Good				
6975	Red Oak	*Quercus rubra*	9	Good				
6976	Red Oak	*Quercus rubra*	19	Good	Y			
6977	Pignut Hickory	*Carya glabra*	9.5	Good				Y
6978	Pignut Hickory	*Carya glabra*	8.5	Good				Y
6979	Black Cherry	*Prunus serotina*	8.5	Good				Y
6980	Red Oak	*Quercus rubra*	19	Good	Y			Y
6981	Pignut Hickory	*Carya glabra*	14.5	Good				Y
6982	American Elm	*Ulmus americana*	9	Good				Y
6983	Pignut Hickory	*Carya glabra*	8	Good				
6984	Red Oak	*Quercus rubra*	13.5	Good				
6985	Red Oak	*Quercus rubra*	13.5	Good				
6986	Red Oak	*Quercus rubra*	44.5	Good	Y			
6987	Red Oak	*Quercus rubra*	15	Good				Y
6988	Pignut Hickory	*Carya glabra*	8.5	Good				Y
6989	Black Cherry	*Prunus serotina*	8.5	Good				Y
6990	Black Cherry	*Prunus serotina*	8	Good				Y
6991	Red Oak	*Quercus rubra*	10	Good				Y
6992	American Basswood	*Tilia americana*	12	Good				
6993	Shagbark Hickory	*Carya ovata*	13	Good				
6994	American Basswood	*Tilia americana*	9	Good				
6995	Black Cherry	*Prunus serotina*	8.5	Good				
6996	Pignut Hickory	*Carya glabra*	18	Good	Y			
6997	Black Cherry	*Prunus serotina*	13.5	Good				
6998	Shagbark Hickory	*Carya ovata*	16	Good	Y			
6999	Red Oak	*Quercus rubra*	10.5	Good				
7000	Black Cherry	*Prunus serotina*	8.5	Good				

OFFSITE TREE REMOVAL/REPLACEMENT CALCULATION

REGUALTED 8"-12" TREES REMOVED	**63** :	**63**	REPLACEMENT TREES REQUIRED
REGUALTED 12.1"-16" TREES REMOVED	**19** :	**57**	REPLACEMENT TREES REQUIRED
REGUALTED 16.1" & GREATER TREES REMOVED	**2** :	**12**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF PROTECTED REGULATED TREES REMOVED	**84** :	**132**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF LANDMARK TREES REMOVED	**31**		
TOTAL LANDMARK DBH REMOVED (INCHES)	**638.5** :	**639**	REPLACEMENT TREES REQUIRED
TOTAL NUMBER OF REPLACEMENT TREES		**771**	TREES
TOTAL NUMBER OF REGULATED TREES ONSITE	265		
TOTAL NUMBER OF REGULATED TREES REMOVED	115		
TOTAL NUMBER OF REGULATED TREES PRESERVED	150		
PERCENTAGE OF REGULATED TREES PRESERVED	57%		

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
OFFSITE TREE LIST

DATE
OCT. 12, 2023

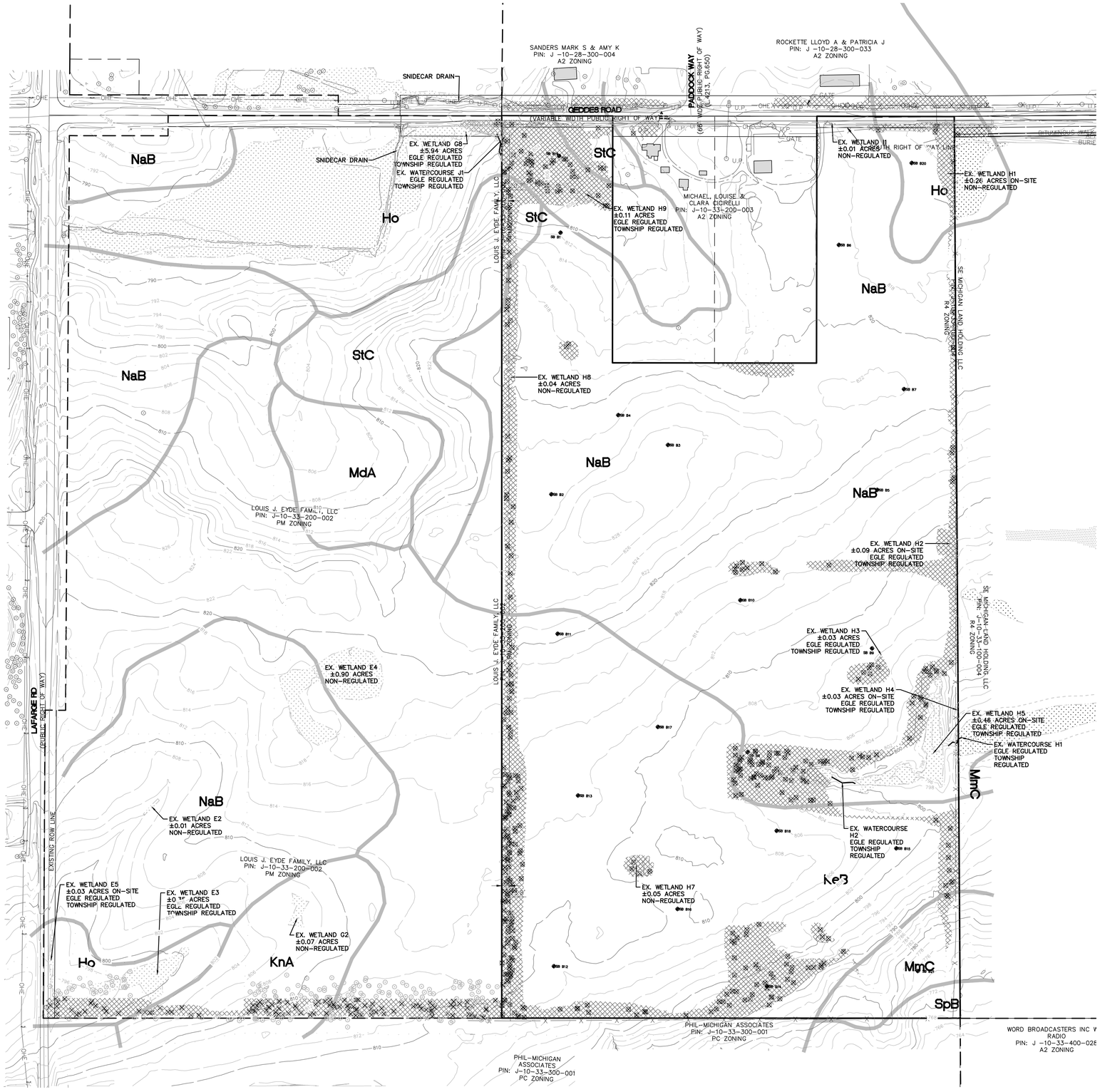
REVISIONS

NA	NA	NA
N/A		

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 8

CAD FILE: 19004443PSP-04-TL.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-04-TL.DWG 10/10/2023 3:37 PM MATTHEW MYERS



LEGEND

- BOUNDARY LINE
- EXISTING EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EX. CONTOUR
- EX. WATER MAIN
- EX. SANITARY
- EX. GAS
- EX. STORM
- EX. OVERHEAD ELECTRICAL LINE
- EX. TELEPHONE LINE
- EX. WETLAND
- EX. TREE LINE
- EX. CURB AND GUTTER
- EX. FENCE
- EX. BUILDING
- EX. CATCH BASIN/INLET/CULVERT
- EX. HYDRANT
- EX. VALVE
- EX. SANITARY SEWER
- TO BE REMOVED/IMPACTED

SOIL INFORMATION

Ho	HOYTVILLE SILTY CLAY LOAM
KeB	KENDALLVILLE LOAM, 2 TO 6 PERCENT SLOPES
MmC	MIAMI LOAM, 6 TO 12 PERCENT SLOPES
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
SpB	SPINKS LOAMY SAND, 0 TO 6 PERCENT SLOPES
StC	ST. CLAIR CLAY LOAM, 6 TO 12 PERCENT SLOPES
KnA	KIBBIE FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES3
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
MdA	MATHERTON SANDY LOAM, 0 TO 4 PERCENT SLOPES

NOTE:
ALL SOILS INFORMATION HAS BEEN SUPPLIED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.

NATURAL FEATURES NARRATIVE

NATURAL FEATURES ON THE SITE CONSIST OF STREAM BEDS, WETLAND, TREES, SLOPES AND AGRICULTURAL FIELD. TWO EGLE REGULATED STREAM BEDS AND 0.82 ACRES OF REGULATED WETLANDS EXIST ON THE SITE, OF WHICH 0.49 ACRES ARE PROPOSED TO BE PRESERVED AS PART OF THE DEVELOPMENT.

BASED ON THE GEOTECHNICAL INVESTIGATION REPORT, PREPARED BY TESTING ENGINEERS AND CONSULTANTS, INC. AND DATED JANUARY 3, 2005, THE TOP SOIL IS BROWN TO DARK BROWN CLAYEY TOPSOIL. FILL WAS FOUND ONSITE AND CONSISTS MOSTLY OF CLAY WITH TRACES OF ORGANICS. THE UNDERLYING NATIVE SOILS CONSIST PRIMARILY OF LAYERS OF SOFT TO HARD CLAY WITH SOME SILT AND TRACES OF GRAVEL.

THERE ARE THREE MAIN HIGH POINTS ON THE SITE, ONE IS IN THE MIDDLE PORTION AND THE TWO OTHERS ARE ON THE FAR SOUTH SIDE, THE TOPOGRAPHY GENERALLY SLOPES TOWARD THE WETLANDS SWALES IN THE LOWER HALF AND THE UPPER NORTHWEST CORNER OF THE PROPERTY. THERE IS APPROXIMATELY 30–40 FEET OF TOPOGRAPHIC RELIEF WITHIN THE SITE. THERE ARE STEEP SLOPES ON THE SITE IN THE SOUTHERN PORTION RANGING FROM 10%–13%.

TREES ON THE SITE ALTHOUGH IN GOOD CONDITION, ARE NOT NECESSARILY HIGH QUALITY WITH RESPECT TO SPECIES. THE TREES EXIST LARGELY IN HEDGE ROWS AND SCATTERED CLUSTERS. THE PREDOMINANT SPECIES ARE ELM, BOXELDER, POPLAR, & WALNUT WITH A MAJORITY RANGING IN SIZE FROM APPROXIMATELY 8"–15".

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
NATURAL FEATURES PLAN

DATE
OCT. 12, 2023

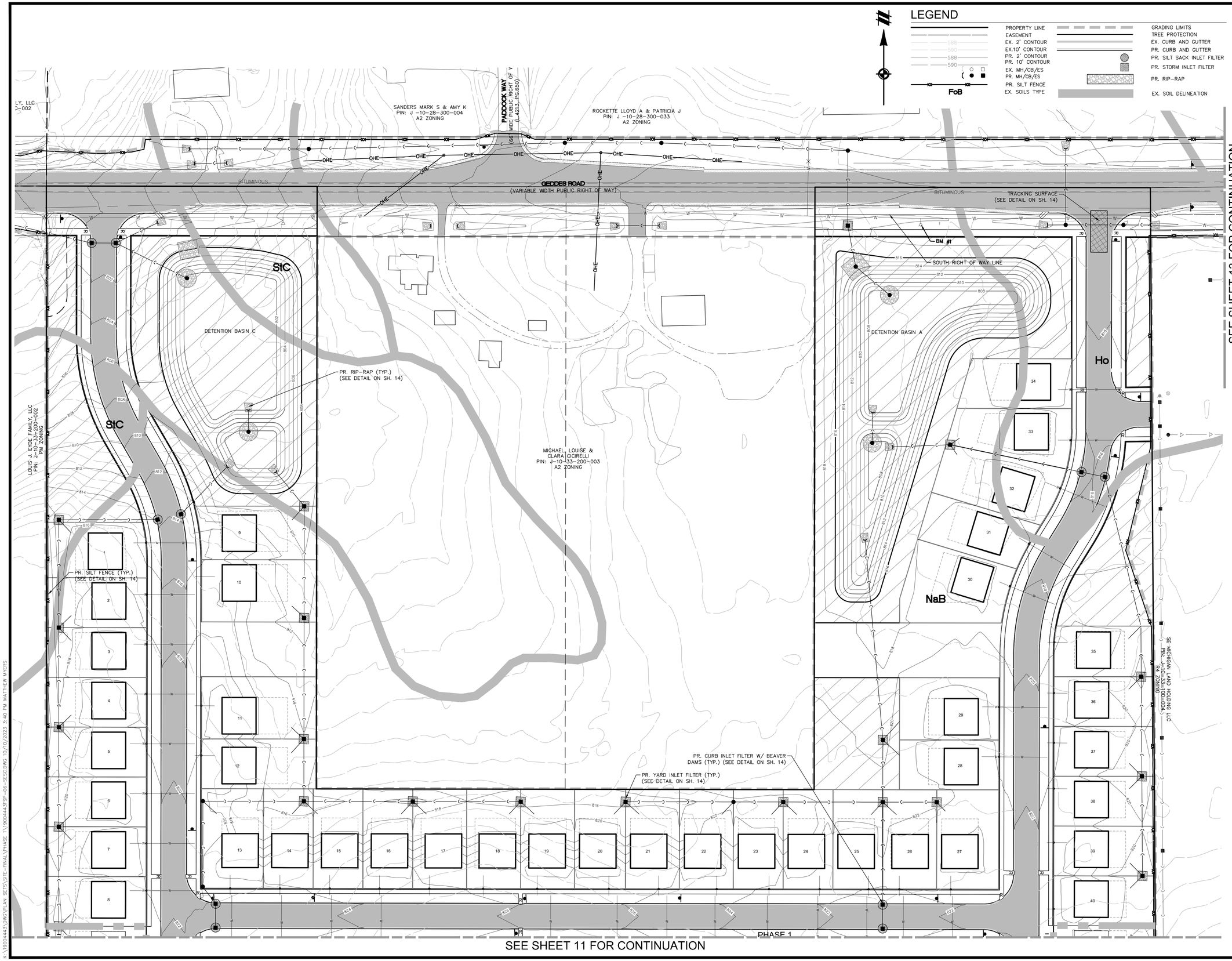
REVISIONS

SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 9

CAD FILE: I:\19004443\SP-05-NF.DWG

I:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-05-NF.DWG 10/10/2023 3:37 PM MATTHEW MYERS



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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SOIL EROSION & SEDIMENTATION CONTROL PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 10

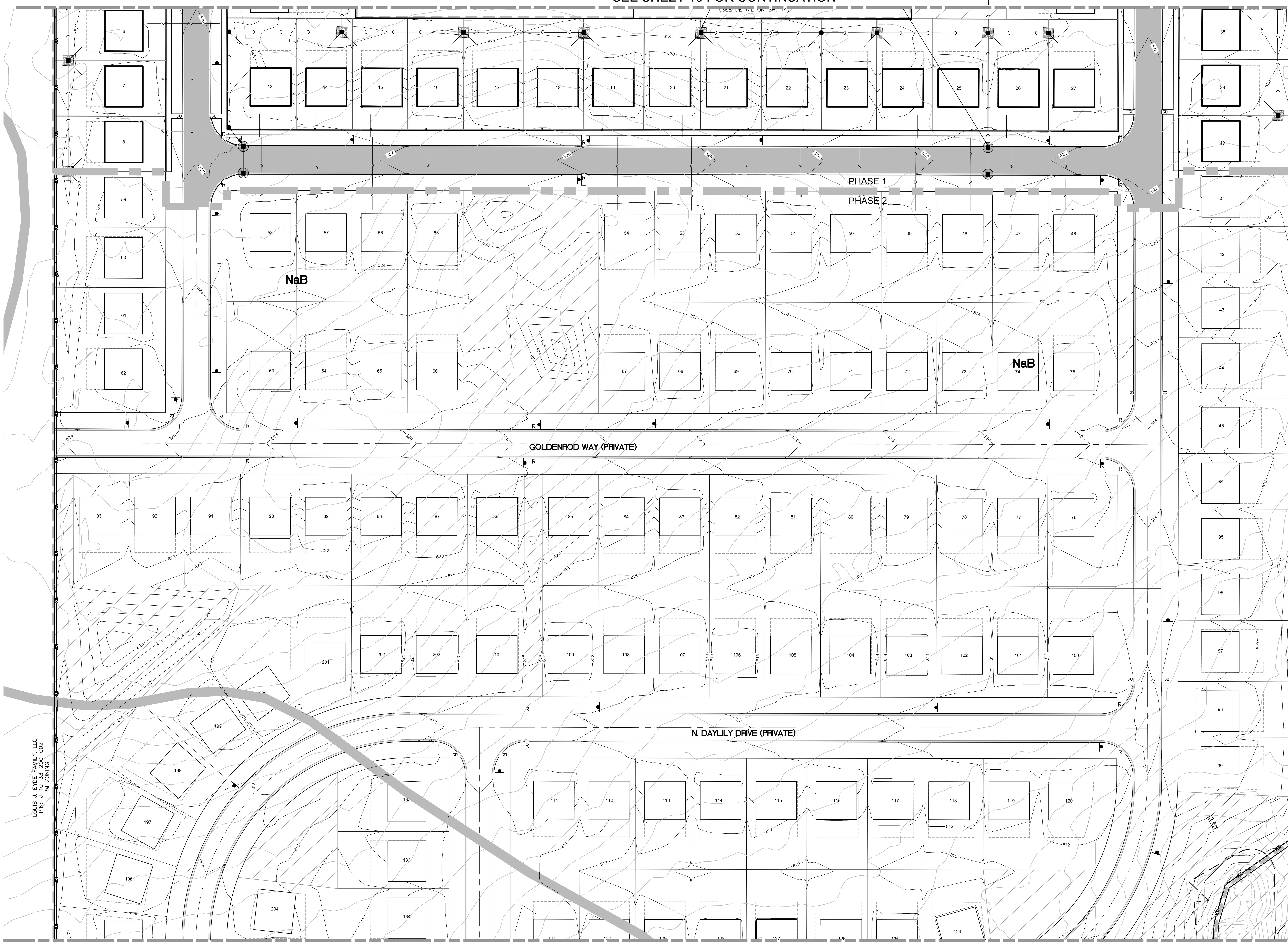
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-06-SESC.DWG 10/10/2023 3:40 PM MATTHEW MYERS

CAD FILE: 19004443FSP-06-SESC.DWG

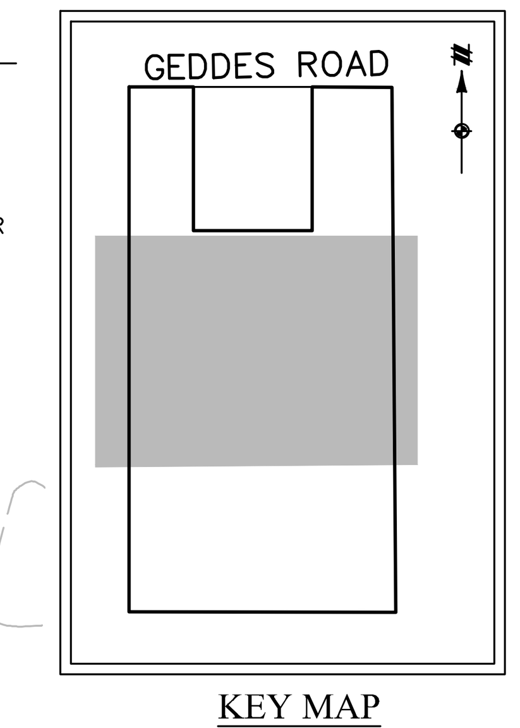
LEGEND

PROPERTY LINE		GRADING LIMITS	
EASEMENT		TREE PROTECTION	
EX. 2' CONTOUR	588	EX. CURB AND GUTTER	
EX.10' CONTOUR	590	PR. CURB AND GUTTER	
PR. 2' CONTOUR	588	PR. SILT SACK INLET FILTER	●
PR. 10' CONTOUR	590	PR. STORM INLET FILTER	■
EX. MH/CB/ES	(○ □	PR. RIP-RAP	▨
PR. MH/CB/ES	(● ■		
PR. SILT FENCE			
EX. SOILS TYPE	FoB	EX. SOIL DELINEATION	

SEE SHEET 10 FOR CONTINUATION



SEE SHEET 12 FOR CONTINUATION



KEY MAP
NOT TO SCALE

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SOIL EROSION & SEDIMENTATION CONTROL PLAN

DATE
OCT. 12, 2023

REVISIONS

0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 11

CAD FILE: 19004443FSP-06-SESC.DWG
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-06-SESC.DWG 10/10/2023 3:41 PM MATTHEW MYERS

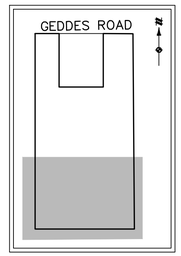
SEE SHEET 11 FOR CONTINUATION

SEE SHEET 13 FOR CONTINUATION

LEGEND

PROPERTY LINE	GRADING LIMITS
EASEMENT	TREE PROTECTION
EX. 2' CONTOUR	EX. CURB AND GUTTER
EX.10' CONTOUR	PR. CURB AND GUTTER
PR. 2' CONTOUR	PR. SILT SACK INLET FILTER
PR. 10' CONTOUR	PR. STORM INLET FILTER
EX. MH/CB/ES	
PR. MH/CB/ES	PR. RIP-RAP
PR. SILT FENCE	
EX. SOILS TYPE	EX. SOIL DELINEATION

FoB



KEY MAP
NOT TO SCALE

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SOIL EROSION & SEDIMENTATION CONTROL PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 12

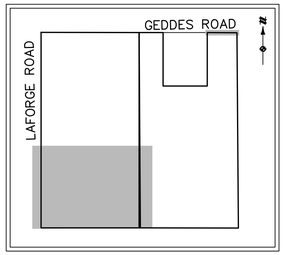
CAD FILE: 19004443SP-08-SESC.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-08-SESC.DWG 10/10/2023 3:41 PM MATHEW MYERS

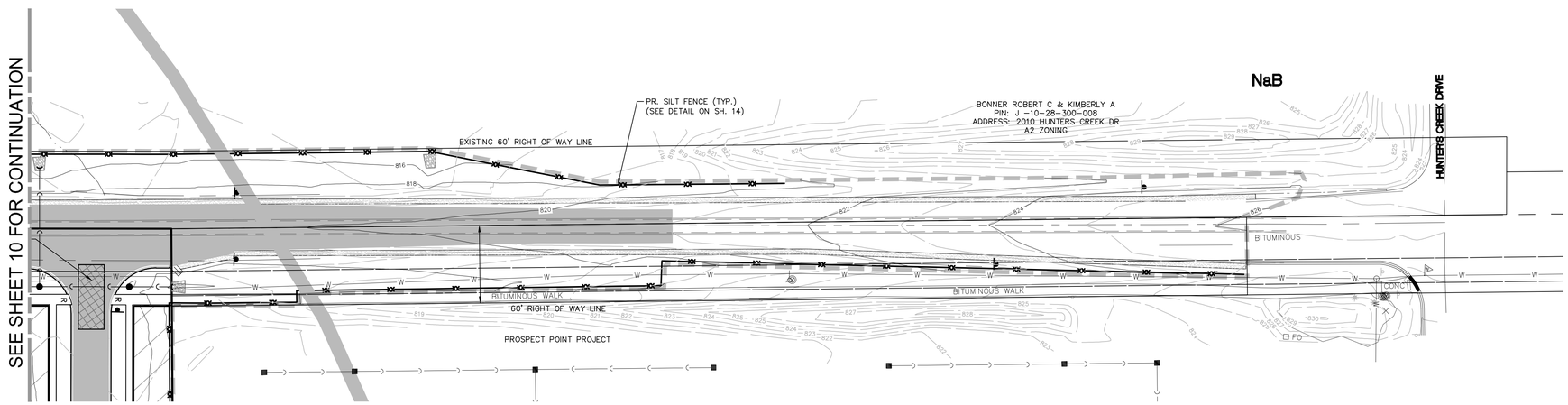
LEGEND

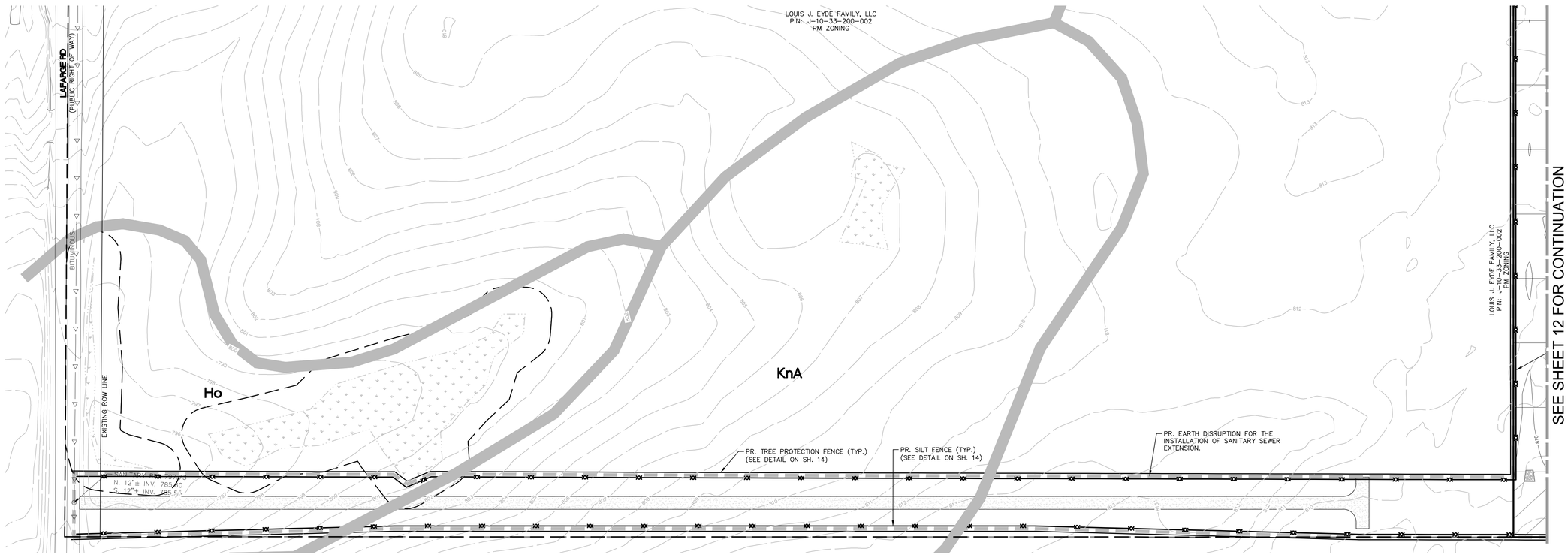
PROPERTY LINE	GRADING LIMITS
EASEMENT	TREE PROTECTION
EX. 2' CONTOUR	EX. CURB AND GUTTER
EX.10' CONTOUR	PR. CURB AND GUTTER
PR. 2' CONTOUR	PR. SILT SACK INLET FILTER
PR. 10' CONTOUR	PR. STORM INLET FILTER
EX. MH/CB/ES	
PR. MH/CB/ES	PR. RIP-RAP
PR. SILT FENCE	
EX. SOILS TYPE	EX. SOIL DELINEATION

FoB



KEY MAP
NOT TO SCALE





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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SOIL EROSION & SEDIMENTATION CONTROL PLAN

DATE
OCT. 12, 2023

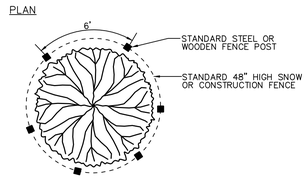
REVISIONS

0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 13

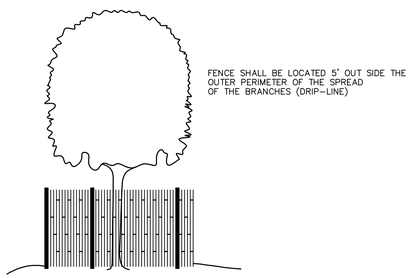
CAD FILE: 19004443SP-06-SESC.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-06-SESC.DWG 10/10/2023 3:41 PM MATTHEW MYERS

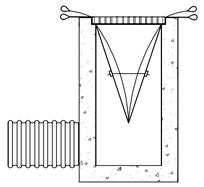


TREE PROTECTION NOTES:

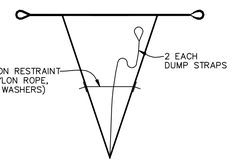
1. ALL TREES TO BE REMOVED WILL BE IDENTIFIED BY RED FLAGGING.
2. TREE PROTECTION FENCING IS TO BE ERECTED PRIOR TO ANY EARTHWORK OR CONSTRUCTION AND IS TO REMAIN IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
3. ALL DEBRIS, FILL, EQUIPMENT OR MATERIAL IS TO BE KEPT CLEAR OF AREA WITHIN PROTECTIVE FENCE. NO CLEANING OF EQUIPMENT,OR MATERIAL OR STORAGE OR DISPOSAL OF ANY MATERIAL WITHIN THE DRIP LINE OF ANY TREES TO BE SAVED.



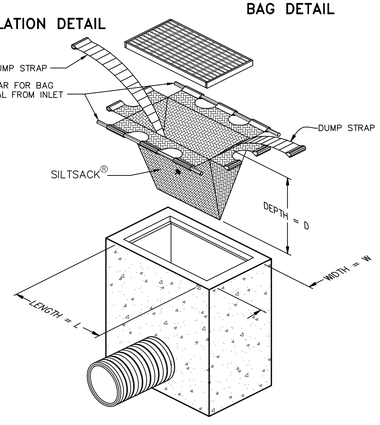
TREE PROTECTION FENCE DETAIL
NO SCALE



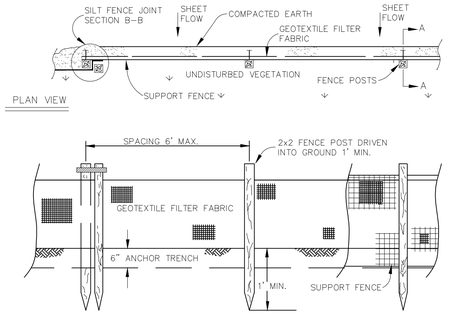
INSTALLATION DETAIL



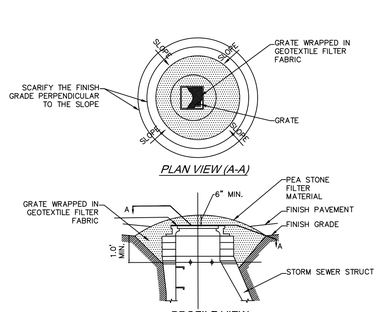
BAG DETAIL



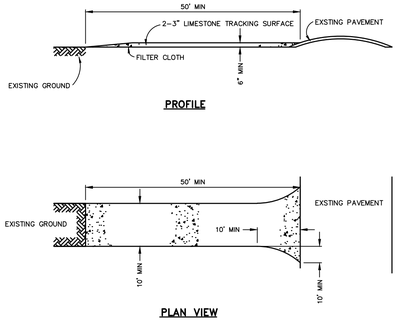
SILTSACK DETAIL
NO SCALE



SILTFENCE DETAIL
NO SCALE



LOW POINT INLET FILTER
NO SCALE

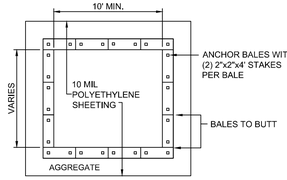


TRACKING SURFACE
NO SCALE

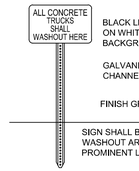
SITE INFORMATION

SITE LOCATION: NORTHEAST 1/4 OF SECTION 33, SUPERIOR TOWNSHIP, MICHIGAN.

1. ULTIMATE RECEIVING WATER: HURON RIVER, VIA SUPERIOR DRAIN NO. 1 AND SNIDECAR DRAIN.
2. APPROXIMATE AREA OF DISTURBANCE: **74± ACRES**
3. THIS PROJECT IS WITHIN 500 FEET OF A WATERBODY OR WATERCOURSE



PLAN



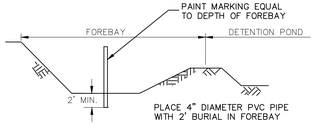
WASHOUT SIGN

TYPICAL SECTION

NOTES:

1. CONTAINMENT MUST BE STRUCTURALLY SOUND AND LEAK FREE AND CONTAIN ALL LIQUID WASTES.
2. CONTAINMENT DEVICES MUST BE OF SUFFICIENT QUANTITY OR VOLUME TO COMPLETELY CONTAIN THE LIQUID WASTES GENERATED.
3. WASHOUT MUST BE CLEANED OR NEW FACILITIES CONSTRUCTED AND READY TO USE ONCE ASHOUT IS 75% FULL.
4. WASHOUT AREA(S) SHALL BE INSTALLED IN A LOCATION EASILY ACCESSIBLE BY CONCRETE TRUCKS.
5. ONE OR MORE AREAS MAY BE INSTALLED ON THE CONSTRUCTION SITE AND MAY BE RELOCATED AS CONSTRUCTION PROGRESSES.
6. AT LEAST WEEKLY REMOVE ACCUMULATION OF SAND AND AGGREGATE AND DISPOSE OF PROPERLY.

CONCRETE WASHOUT AREA
NO SCALE



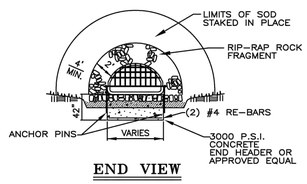
SEDIMENT FOREBAY MARKER DETAIL
NO SCALE

SOIL INFORMATION

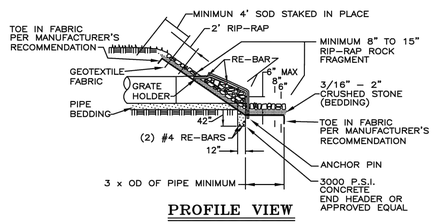
HO	HOYTVILLE SILTY CLAY LOAM
KeB	KENDALLVILLE LOAM, 2 TO 6 PERCENT SLOPES
MmC	MIAMI LOAM, 6 TO 12 PERCENT SLOPES
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
SpB	SPINKS LOAMY SAND, 0 TO 6 PERCENT SLOPES
StC	ST. CLAIR CLAY LOAM, 6 TO 12 PERCENT SLOPES
KnA	KIBBIE FINE SANDY LOAM, 0 TO 4 PERCENT SLOPES3
NaB	NAPPANEE SILTY CLAY LOAM, 2 TO 6 PERCENT SLOPES
MdA	MATHERTON SANDY LOAM, 0 TO 4 PERCENT SLOPES

NOTE:
ALL SOILS INFORMATION HAS BEEN SUPPLIED BY THE U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.

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



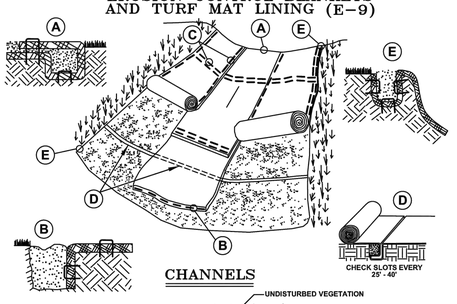
END VIEW



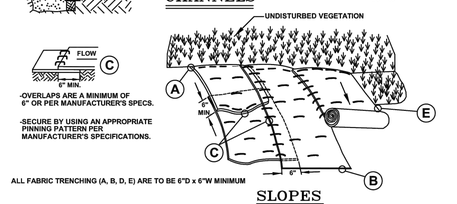
PROFILE VIEW

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

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



CHANNELS



SLOPES

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

Maintenance Tasks and Schedule (during construction) (To be performed by developer/contractor)

Tasks	Components: Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Castings	Channels	Outflow Control Structures	Rip-Rap	Storm Detention Areas	Wetlands	Emergency Overflow	Schedule
Inspect for sediment accumulation	*	*			*	*	*			Weekly
Removal of sediment accumulation	*	*			*		*	*		As needed* and prior to turnover
Inspect for floatables and debris	*	*	*	*	*		*	*	*	Quarterly
Cleaning of floatables and debris	*	*	*	*	*		*	*	*	Quarterly and at turnover
Inspection for erosion				*	*	*	*	*	*	Weekly
Reestablish permanent vegetation on eroded slopes				*			*	*	*	As needed* and prior to turnover
Replacement of gravel jackets					*					As needed*
Mowing				*			*		*	0 to 2 times per yr.
Inspect structural elements during wet weather and compare as-built plans (by a professional engineer reporting to the Developer)	*			*	*	*	*	*	*	Annually and at turnover
Make adjustments or replacements as determined by pre-turnover inspection	*			*	*	*	*	*	*	As needed*

* "as needed" means when sediment has accumulated to a maximum of one foot depth.

Maintenance Tasks and Schedule (following construction) (To be performed by owner or owner's representative)

Tasks	Components: Streets	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Castings	Channels	Outflow Control Structures	Filtration Basins	Storm Detention Areas	Wetlands	Woodlands	Emergency Overflow	Schedule	Annual Cost
Inspect for sediment accumulation		*	*			*	*	*	*			Annually	$300.00
Removal of sediment accumulation		*	*			*	*	*				Every 5-10 yrs as needed	$1,000.00
Inspect for floatables and debris		*	*	*	*	*	*	*	*		*	Annually	$200.00
Cleaning of floatables and debris		*	*	*	*	*	*	*	*		*	Annually	$400.00
Inspection for erosion					*	*	*	*	*		*	Annually	$500.00
Inspect wetlands and woodlands for invasive species. Remove or treat as needed									*	*		Annually (removal or treatment every 3-5 years as needed)	$800.00
Reestablish permanent vegetation on eroded slopes					*		*	*	*		*	As needed	$500.00
Replacement of gravel jackets						*						Every 3-5 yrs as needed	$700.00
Clean streets	*											Semi-annually	$400.00
Mowing	*				*		*	*			*	0 to 2 times per yr.	$400.00
Inspect structural elements during wet weather and compare as-built plans (by a professional engineer reporting to the condominium association)						*						Annually	$400.00
Make adjustments or replacements as determined by wet weather inspection		*			*	*	*	*	*		*	As needed	$500.00
Keep records of all inspections and maintenance activities and report to condominium association		*			*	*	*	*	*		*	Annually	
Keep records of all costs for inspections, maintenance and repairs. Report to condominium association		*	*	*	*	*	*	*	*	*	*	Annually	
Condominium association reviews cost effectiveness of the preventative maintenance program and makes necessary adjustments		*	*	*	*	*	*	*	*	*	*	Annually	
Condominium association to have a professional engineer carry out emergency inspections upon identification of severe problems.		*	*	*	*	*	*	*	*	*	*	As needed	$200.00
													$6,200.00

The Condominium Association will assess its members to pay for all maintenance activities on an annual basis

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

1. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT.
2. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHALL BE KEPT TO THE SHORTEST PERIOD OF TIME.
3. TEMPORARY VEGETATION AND/OR MULCHING SHALL BE BE USED TO PROTECT CRITICAL AREAS EXPOSED DURING DEVELOPMENT.
4. THE PERMANENT FINAL VEGETATION AND STRUCTURES SHALL BE INSTALLED AS SOON AS PRACTICAL IN DEVELOPMENT.
5. THE DEVELOPMENT PLAN SHOULD BE FITTED TO THE TOPOGRAPHY AND SOIL SO AS TO CREATE THE LEAST SOIL EROSION POTENTIAL.
6. REFER TO WASHTENAW COUNTY STANDARD DETAILS OF THE SESC BMP MEASURES AS THEY CORRESPOND WITH THIS PLAN.
7. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWNSHIP AND THE WASHTENAW COUNTY DRAIN COMMISSIONER.
8. THE CONTRACTOR SHALL MAKE DAILY INSPECTIONS TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
9. EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
10. EROSION AND ANY SEDIMENTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
11. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
12. A WATER TRUCK SHALL BE AVAILABLE TO WATER DOWN THE SITE ON A DAILY BASIS FOR DUST CONTROL.
13. ALL MUD/DIRT TRACKED ONTO EXISTING CITY/COUNTY ROADS FROM THIS SITE, DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR/BUILDER, AS DIRECTED BY THE TOWNSHIP. MUD MAT DAILY MAINTENANCE WILL INCLUDE THE ADDITION OF EXTRA LAYERS OF STONE AS NECESSARY.
14. DURING CONSTRUCTION OF THE STORM SEWER SYSTEM, STRAW BALES, STONE FILTERS OR OTHER APPROVED MEANS, WILL PROTECT THE ENDS OF ALL OPEN PIPES.
15. PROMPTLY UPON THE BACKFILLING OF STORM STRUCTURES, INLET FILTERS WILL BE PLACED AROUND THE STRUCTURE PER DETAILS.
16. WITHIN FIVE (5) DAYS AFTER COMPLETION OF PAVING, A 16-FOOT STRIP AROUND PAVED AREAS SHALL BE PROTECTED FROM SOIL EROSION BY AN APPROVED METHOD CONSISTENT WITH THE GROWING SEASON.
17. ANY REMAINING DENUDED AREA SHALL BE SEEDED AND MULCHED WITHIN 5 DAYS AFTER COMPLETION OF FINAL GRADING. SEED MIX AND APPLICATION RATES SHALL BE PER MDOT CLASS A SEED.
18. SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED ON A DAILY BASIS TO ENSURE PROPER FUNCTIONING. SEDIMENT DEPOSIT MUST BE REMOVED WHEN ACCUMULATION REACHES 1/3 TO 1/2 OF THE HEIGHT OF THE SILT FENCE AND SHOULD BE REMOVED AFTER EACH STORM EVENT. FABRIC SHALL BE REPLACED PROMPTLY IF IT DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEABLE LIFE.
19. THAT ALL EROSION CONTROL MEASURES ARE INSTALLED IN ACCORDANCE WITH THE FOLLOWING SEQUENCE OF CONSTRUCTION
    - 19.1. INSTALL SILT FENCE/STRAW BERMS AS SHOWN ON PLANS.
    - 19.2. STRIP AND STOCKPILE TOPSOIL AND GRADE SITE.
    - 19.3. INSTALL ON-SITE AND OFF-SITE STORM SEWER SYSTEMS COMPLETE, IMMEDIATELY INSTALL STONE FILTERS ON ALL PIPE INLETS AND CATCH BASINS AND ESTABLISH VEGETATION ON ALL DITCHES, SWALES, AND DISTURBED AREAS.
    - 19.4. INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRICITY, AND TELEPHONE)
    - 19.5. INSTALL PAVEMENT COMPLETE REPAIR AND/OR REPLACE STONE FILTERS AS REQUIRED.
    - 19.6. FINISH GRADE, REDISTRIBUTE TOPSOIL, ESTABLISH VEGETATION AND/OR LANDSCAPE ALL DISTURBED AREAS.
    - 19.7. CLEAN PAVEMENT, WALKS, CULVERTS, WATERCOURSES, AND STORM SEWER SYSTEMS OF ALL SEDIMENT IN CONJUNCTION WITH THE REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES. REESTABLISHED VEGETATION AS NECESSARY.
20. SHOULD DEWATERING BE NECESSARY, DISCHARGE SHALL BE ROUTED THROUGH A SEDIMENT FOREBAY, FILTER BAG OVER A WELL VEGETATED AREA OR OTHER APPROVED FILTERING MECHANISM PRIOR TO BEING DISCHARGED FROM THE SITE. DISCHARGE MUST BE LIMITED TO A NON-EROSIVE VELOCITY.
21. SOIL EROSION WILL BE CONTROLLED DURING AND AFTER CONSTRUCTION TO PROTECT ADJACENT PROPERTIES OR FACILITIES.
22. EROSION CONTROL BLANKET/MATTING SHALL BE INSTALLED ON SLOPES AT OR NEAR MAXIMUM ALLOWABLE GRADE AND AS NEEDED TO EFFECTIVELY ESTABLISH BOTH TEMPORARY AND PERMANENT VEGETATIVE COVER.

SOIL EROSION CONSTRUCTION SEQUENCE

1. NOTIFY SOIL EROSION OFFICE 48 HOURS BEFORE WORK IS TO BEGIN.
2. PRIOR TO CONSTRUCTION, INSTALL TEMPORARY STONE ACCESS DRIVES AT ENTRANCE, PERIMETER SILT FENCE, SNOW FENCE, AND EROSION CONTROL MEASURES ON EXISTING STORM INLETS AS DESIGNATED ON THE SESC PLAN.
3. INSTALL UNDERGROUND UTILITIES (I.E. SANITARY, STORM, AND WATER MAIN.). INSTALL INLET FILTER PROTECTION ON PROPOSED STORM SEWER STRUCTURES.
4. PAVING ACTIVITIES. REMOVE STONE ACCESS DRIVE WHEN COMPLETE.
5. INSTALL PUBLIC UTILITIES (ELECTRIC, TELEPHONE, AND CABLE T.V.).
6. FINAL GRADING AND INSTALLATION OF LANDSCAPING. ESTABLISH PERMANENT VEGETATION FOR REMAINING DISTURBED AREAS.
7. CLEAN OUT STORM SEWER SYSTEM. CLEAN OUT SEDIMENT AND RESTORE SEDIMENT FOREBAY AND DETENTION POND TO DESIGN SPECIFICATIONS.
8. CALL SOIL EROSION OFFICE FOR FINAL INSPECTION. REMOVE TEMPORARY SOIL EROSION MEASURES UPON APPROVAL.

NOTE: NO WORK WITHIN REGULATED WETLANDS UNTIL EGLE PERMIT IS ISSUED.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

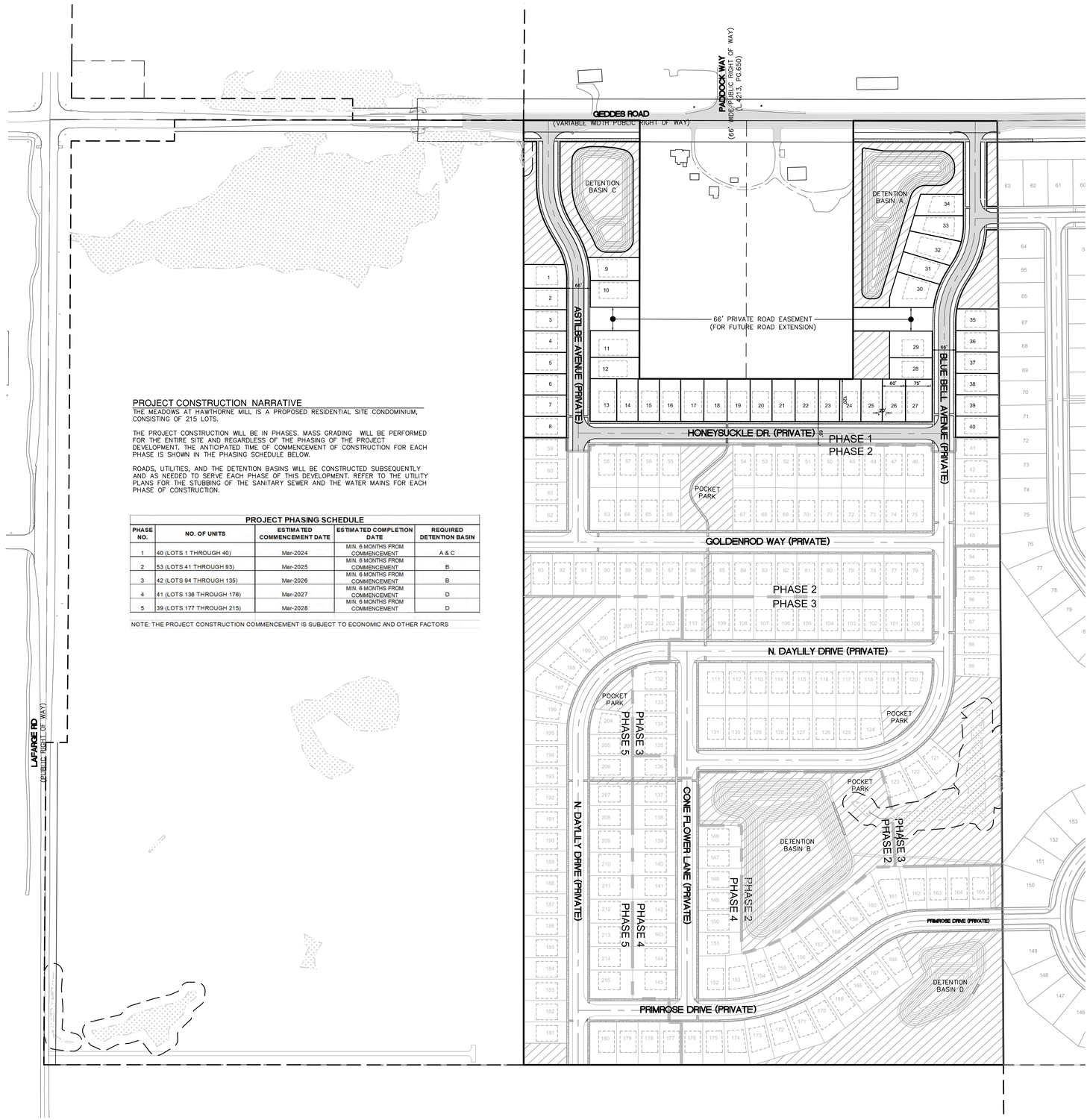
EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
SOIL EROSION & SEDIMENTATION CONTROL DETAILS

DATE
OCT. 12, 2023

REVISIONS
NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 14

CAD FILE: 19004437SP-07-SESC-DT.DWG



PROJECT CONSTRUCTION NARRATIVE

THE MEADOWS AT HAWTHORNE MILL IS A PROPOSED RESIDENTIAL SITE CONDOMINIUM, CONSISTING OF 215 LOTS.

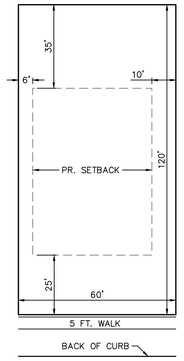
THE PROJECT CONSTRUCTION WILL BE IN PHASES. MASS GRADING WILL BE PERFORMED FOR THE ENTIRE SITE AND REGARDLESS OF THE PHASING OF THE PROJECT DEVELOPMENT. THE ANTICIPATED TIME OF COMMENCEMENT OF CONSTRUCTION FOR EACH PHASE IS SHOWN IN THE PHASING SCHEDULE BELOW.

ROADS, UTILITIES, AND THE DETENTION BASINS WILL BE CONSTRUCTED SUBSEQUENTLY AND AS NEEDED TO SERVE EACH PHASE OF THIS DEVELOPMENT. REFER TO THE UTILITY PLANS FOR THE STUBBING OF THE SANITARY SEWER AND THE WATER MAINS FOR EACH PHASE OF CONSTRUCTION.

PROJECT PHASING SCHEDULE

PHASE NO.	NO. OF UNITS	ESTIMATED COMMENCEMENT DATE	ESTIMATED COMPLETION DATE	REQUIRED DETENTION BASIN
1	40 (LOTS 1 THROUGH 40)	Mar-2024	MIN. 6 MONTHS FROM COMMENCEMENT	A & C
2	53 (LOTS 41 THROUGH 93)	Mar-2025	MIN. 6 MONTHS FROM COMMENCEMENT	B
3	42 (LOTS 94 THROUGH 135)	Mar-2026	MIN. 6 MONTHS FROM COMMENCEMENT	B
4	41 (LOTS 136 THROUGH 176)	Mar-2027	MIN. 6 MONTHS FROM COMMENCEMENT	D
5	39 (LOTS 177 THROUGH 215)	Mar-2028	MIN. 6 MONTHS FROM COMMENCEMENT	D

NOTE: THE PROJECT CONSTRUCTION COMMENCEMENT IS SUBJECT TO ECONOMIC AND OTHER FACTORS



TYPICAL 60' LOT DETAIL
N.T.S.

LEGEND

- BOUNDARY LINE
- EXIST. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EXIST. SETBACK
- EXIST. CURB AND GUTTER
- EXIST. BUILDING
- EXIST. WETLAND BUFFER
- PROP. SETBACK
- PROP. LOT LINE
- PROP. ROAD CENTERLINE
- PROP. BACK OF CURB
- PROP. WALK
- PROP. ASPH.
- GENERAL COMMENT ELEMENT
- EXISTING WETLAND
- PROP. PHASE LINE

SITE DATA

GROSS AREA:	71.57 ACRES
GEDDES ROAD ROW:	0.55 ACRES
NET AREA:	71.02 ACRES
EXISTING ZONING:	PC (PLANNED COMMUNITY)
PROPOSED ZONING:	PC (PLANNED COMMUNITY)
ADJACENT ZONING:	
SOUTH	PC (PLANNED COMMUNITY)
NORTH	A2 (AGRICULTURAL DISTRICT)
WEST	PM (PLANNED MANUFACTURING DISTRICT)
EAST	R4 (SINGLE FAMILY RESIDENTIAL DISTRICT)
NUMBER OF PROPOSED LOTS:	215 LOTS
PROPOSED DENSITY (GROSS):	3.00
PROPOSED DENSITY (NET):	3.03
MIN. LOT AREA PER DWELLING UNIT:	60' x 120' = 7,200 SF (TYPICAL)
MINIMUM LOT WIDTH:	60'
LOT SETBACKS:	
FRONT	25'
SIDE	6' MIN. (16' TOTAL)
REAR	35'
PROPOSED GENERAL COMMON ELEMENT (G.C.E.):	17.09 ACRES
WETLAND IMPACTS:	
REGULATED	0.44 ACRES
NON-REGULATED	0.36 ACRES

Parcel Table	
Parcel #	Area (S.F.)
1	8,006
2	7,259
3	7,254
4	7,248
5	7,243
6	7,237
7	7,232
8	7,226
9	9,129
10	10,399
11	10,400
12	8,320
13	9,000
14	7,200
15	7,200
16	7,200
17	7,800
18	7,800
19	7,800
20	7,367
21	7,800
22	7,800
23	7,200

Parcel Table	
Parcel #	Area (S.F.)
24	7,200
25	7,200
26	7,800
27	9,000
28	7,200
29	9,000
30	10,628
31	7,647
32	9,719
33	8,430
34	7,739
35	7,286
36	7,227
37	7,256
38	7,285
39	7,314
40	7,343
41	7,372
42	7,400
43	7,429
44	8,081
45	7,489
46	9,000

Parcel Table	
Parcel #	Area (S.F.)
47	7,200
48	7,200
49	7,200
50	7,800
51	7,200
52	7,200
53	7,200
54	7,200
55	7,200
56	7,200
57	7,200
58	9,000
59	7,221
60	7,817
61	7,210
62	9,004
63	9,000
64	7,200
65	7,200
66	7,200
67	7,200
68	7,200
69	7,200

Parcel Table	
Parcel #	Area (S.F.)
70	7,200
71	7,800
72	7,200
73	7,200
74	7,200
75	9,000
76	9,000
77	7,200
78	7,200
79	7,200
80	7,800
81	7,200
82	7,200
83	7,200
84	7,200
85	7,200
86	7,367
87	7,800
88	7,200
89	7,200
90	7,200
91	7,200
92	7,200

Parcel Table	
Parcel #	Area (S.F.)
93	7,200
94	7,518
95	7,547
96	7,576
97	8,367
98	7,637
99	7,887
100	9,000
101	7,200
102	7,200
103	7,200
104	7,800
105	7,200
106	7,200
107	7,200
108	7,200
109	7,200
110	7,367
111	9,027
112	7,200
113	7,200
114	7,200
115	7,800

Parcel Table	
Parcel #	Area (S.F.)
116	7,865
117	7,200
118	7,800
119	7,200
120	9,362
121	8,081
122	8,389
123	8,081
124	8,082
125	7,200
126	7,865
127	7,800
128	7,200
129	7,200
130	7,200
131	9,006
132	9,147
133	7,400
134	7,200
135	7,200
136	7,200
137	7,200
138	7,920

Parcel Table	
Parcel #	Area (S.F.)
139	7,800
140	7,920
141	7,920
142	8,090
143	7,920
144	7,920
145	9,600
146	7,200
147	7,200
148	7,200
149	7,200
150	7,200
151	7,828
152	9,018
153	8,385
154	7,221
155	7,221
156	7,265
157	7,200
158	7,200
159	7,408
160	8,516
161	9,163

Parcel Table	
Parcel #	Area (S.F.)
162	8,028
163	7,200
164	7,200
165	7,200
166	7,401
167	7,800
168	7,200
169	7,549
170	8,059
171	7,964
172	8,322
173	7,958
174	7,837
175	7,322
176	7,202
177	7,201
178	7,320
179	7,319
180	8,998
181	7,200
182	7,200
183	7,200
184	7,200

Parcel Table	
Parcel #	Area (S.F.)
185	7,200
186	7,200
187	7,200
188	7,200
189	7,200
190	7,200
191	7,200
192	7,200
193	7,200
194	7,200
195	7,637
196	8,799
197	10,307
198	8,843
199	8,145
200	11,477
201	8,256
202	7,358
203	7,800
204	7,734
205	7,200
206	7,200
207	7,200

Parcel Table	
Parcel #	Area (S.F.)
208	7,920
209	7,800
210	7,920
211	7,920
212	8,090
213	7,920
214	7,920
215	9,600

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
OVERALL LAYOUT PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 15

CAD FILE: 19004443SP-08-OL.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-08-OL.DWG 10/10/2023 4:49 PM MATTHEW MYERS

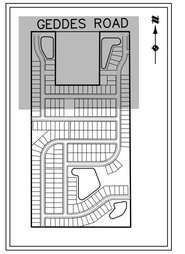
ASTILBE AVE. - HONEYSUCKLE DR. - BLUE BELL AVE.

ALIGNMENT LINE TABLE				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L2	179.52	S2° 29' 55.60"E	(N 283363.71, E 13326001.10)	(N 283184.35E 13326008.92)
L3	45.34	S32° 44' 26.17"E	(N 283069.99, E 13326045.24)	(N 283031.85E 13326069.77)
L4	734.62	S2° 29' 55.60"E	(N 282917.48, E 13326106.09)	(N 282183.56E 13326138.12)
L5	291.44	S2° 29' 55.60"E	(N 283416.00, E 13327199.33)	(N 283124.83E 13327212.04)
L6	33.96	S29° 13' 02.00"W	(N 283002.53, E 13327182.99)	(N 282972.90E 13327166.42)
L7	984.84	S2° 29' 55.60"E	(N 282850.60, E 13327137.38)	(N 281866.69E 13327180.31)
L9	1027.39	N87° 30' 04.40"E	(N 282489.27, E 13326124.78)	(N 282534.06E 13327151.19)

ALIGNMENT CURVE TABLE									
CURVE #	RADIUS	LENGTH	DELTA	CHD. BEARING	CHORD LENGTH	POINT OF CURVE	POINT OF TAGENCY	POINT OF INTERSECTION	DEGREE OF CURVE
C2	230.00'	121.40'	30°14'31"	S17°37'11"E	119.99'	(N 283184.35, E 13326008.92)	(N 283069.99,E 13326045.24)	(N 283122.26, E 13326011.63)	24.91°
C3	230.00'	121.40'	30°14'31"	S17°37'11"E	119.99'	(N 283031.85, E 13326069.77)	(N 282917.48,E 13326106.09)	(N 282979.57, E 13326103.38)	24.91°
C5	230.00'	127.32'	31°42'58"	S13°21'33"W	125.70'	(N 282972.90, E 13327166.42)	(N 282850.60,E 13327137.38)	(N 282915.87, E 13327134.53)	24.91°
C4	230.00'	127.32'	31°42'58"	S13°21'33"W	125.70'	(N 283124.83, E 13327212.04)	(N 283002.53,E 13327182.99)	(N 283059.56, E 13327214.89)	24.91°

LEGEND

- BOUNDARY LINE
- EX. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EX. SETBACK
- EX. TREE LINE
- EX. CURB AND GUTTER
- EX. WETLAND BUFFER
- PR. SETBACK
- PR. LOT LINE
- PR. ROAD CENTERLINE
- PR. BACK OF CURB
- PR. PHASE LINE
- PR. CONCRETE WALK
- PR. ASPH.
- GENERAL COMMON ELEMENT
- NATURE PATH
- EXISTING WETLAND
- GARAGE/DRIVEWAY LOCATION



KEY MAP
NOT TO SCALE

SANDERS MARK S & AMY K
PIN: J -10-28-300-004
A2 ZONING

PADDC
(66' WIDE PUBLI
L-4213

ROCKETTE LLOYD A & PATRICIA J
PIN: J -10-28-300-033
A2 ZONING

EXISTING 60' RIGHT OF WAY LINE

GEDDES ROAD
(VARIABLE WIDTH PUBLIC RIGHT OF WAY)

25' WETLAND SETBACK

EXISTING RIGHT OF WAY LINE

PROPOSED 60' RIGHT OF WAY LINE

EX. WATERCOURSE J1
EGLE REGULATED
TOWNSHIP REGULATED

EX. WETLAND GB
±5.94 ACRES
EGLE REGULATED
TOWNSHIP REGULATED

DETENTION BASIN C

DETENTION BASIN A

LOUIS J. EYDE FAMILY, LLC
PIN: J-10-33-200-002
PM ZONING

MICHAEL, LOUISE & CLARA CICIRELLI
PIN: J-10-33-200-003
A2 ZONING

SE MICHIGAN LAND HOLDING LTC
PIN: J-10-33-100-004
PM ZONING

ASTILBE AVENUE (PRIVATE)

BLUE BELL AVENUE (PRIVATE)

HONEYSUCKLE DR. (PRIVATE)

PROPOSED 66' WIDE PRIVATE ROAD EASEMENT
(FOR FUTURE ROAD EXTENSION)

PHASE 1

PHASE 2

SEE SHEET 17 FOR CONTINUATION

SIGN LEGEND

- (A) W11A-2 PEDESTRIAN CROSSING SIGN
- (B) R1-1 STOP SIGN
- (C) D3-1 STREET NAME SIGN
- (D) "NO PARKING-FIRE LANE" SIGN

NOTES

1. REFER TO SHEET 54 FOR ALL ON-SITE RAMP DETAILS, ON-SITE SIDEWALK AND NATURE PATH DETAILS, ONSITE CURB DETAIL, AND OFF-SITE SANITARY SEWER MAINTENANCE ACCESS PATH.
2. REFER TO SHEETS 23 THRU 28 FOR PLANS AND DETAILS FOR WORK WITHIN THE GEDDES RD RIGHT OF WAY.

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
LAYOUT PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 16

CAD FILE: 19004443FSP-09-LDWG

K:\A\19004443\DWG\PLAN SETS\SITE - FINAL\PHASE 1\19004443FSP-09-LDWG 10/10/2023 3:43 PM MATTHEW MYERS

ASTILBE AVE. - HONEYSUCKLE DR. - BLUE BELL AVE. GOLDENROD WAY - N. DAYLILY DR.

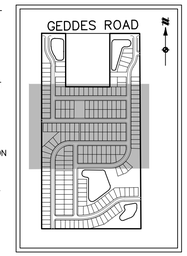
ALIGNMENT LINE TABLE				
LINE #	LENGTH	DIRECTION	START POINT	END POINT
L4	734.62	S2° 29' 55.60"E	(N 282917.48, E 13326106.09)	(N 282183.56E 13326138.12)
L7	984.84	S2° 29' 55.60"E	(N 282850.60, E 13327137.38)	(N 281866.69E 13327180.31)
L9	1027.39	N87° 30' 04.40"E	(N 282489.27, E 13326124.78)	(N 282534.06E 13327151.19)
L10	1180.39	N87° 30' 04.40"E	(N 282176.89, E 13325985.26)	(N 282228.35E 13327164.53)
L12	796.61	S87° 30' 04.40"W	(N 281922.64, E 13327177.87)	(N 281887.91E 13326382.02)

ALIGNMENT CURVE TABLE									
CURVE #	RADUIS	LENGTH	DELTA	CHD. BEARING	CHORD LENGTH	POINT OF CURVE	POINT OF TAGENCY	POINT OF INTERSECTION	DEGREE OF CURVE
C6	250.00'	392.70'	90°00'00"	S42°30'04"W	353.55'	(N 281866.69, E 13327180.31)	(N 281606.03,E 13326941.45)	(N 281616.93, E 13327191.21)	22.92°
C7	230.00'	361.62'	90°04'59"	S42°27'35"W	325.51'	(N 281887.91, E 13326382.02)	(N 281647.77,E 13326162.28)	(N 281877.87, E 13326151.90)	24.91°

SEE SHEET 16 FOR CONTINUATION

LEGEND

- BOUNDARY LINE
- EX. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EX. SETBACK
- EX. TREE LINE
- EX. CURB AND GUTTER
- EX. WETLAND BUFFER
- PR. SETBACK
- PR. LOT LINE
- PR. ROAD CENTERLINE
- PR. BACK OF CURB
- PR. PHASE LINE
- PR. CONCRETE WALK
- PR. ASPH.
- GENERAL COMMON ELEMENT
- NATURE PATH
- EXISTING WETLAND
- GARAGE/DRIVEWAY LOCATION



KEY MAP
NOT TO SCALE

SIGN LEGEND

- (A) W11A-2 PEDESTRIAN CROSSING SIGN
- (B) R1-1 STOP SIGN
- (C) D3-1 STREET NAME SIGN
- (D) "NO PARKING-FIRE LANE" SIGN

NOTES

1. REFER TO SHEET 54 FOR ALL ON-SITE RAMP DETAILS, ON-SITE SIDEWALK AND NATURE PATH DETAILS, ONSITE CURB DETAIL, AND OFF-SITE SANITARY SEWER MAINTENANCE ACCESS PATH.
2. REFER TO SHEETS 23 THRU 28 FOR PLANS AND DETAILS FOR WORK WITHIN THE GEDDES RD RIGHT OF WAY.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
LAYOUT PLAN

DATE
OCT. 12, 2023

REVISIONS

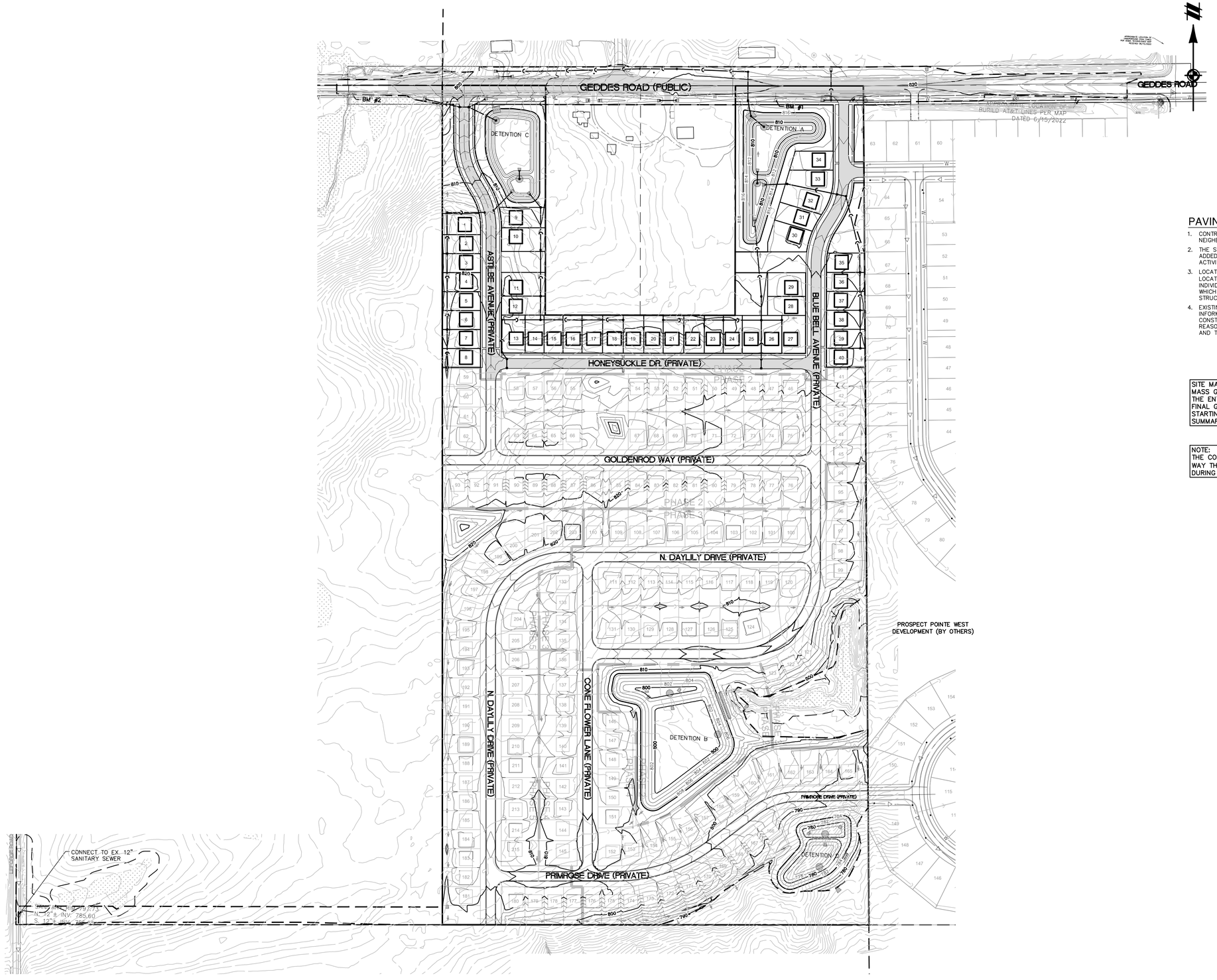
SCALE: 1" = 50 FEET

DRAWN BY:	KS
CHECKED BY:	AK
P.M.:	J. KIME
JOB #:	19004443
FILE CODE:	–
SHEET NO.	17

CAD FILE: 19004443SP-09-L.DWG

LOUIS J. EYDE FAMILY, LLC
PIN: J--10--33--200--002
PM ZONING

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-09-L.DWG 10/10/2023 3:43 PM MATTHEW MYERS



LEGEND

- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPERTY LINE
- GRADING LIMITS
- EXISTING MANHOLE / CATCH BASIN
- PROPOSED MANHOLE / CATCH BASIN
- EXISTING WETLAND
- PROPOSED ASPHALT

PAVING & GRADING NOTES:

1. CONTRACTOR SHALL ENSURE NO ADVERSE IMPACTS WILL OCCUR TO NEIGHBORING PROPERTIES DURING AND AFTER COMPLETION OF CONSTRUCTION.
2. THE STORM WATER MANAGEMENT BASINS SHALL BE EXCAVATED, TOP SOIL ADDED, SEEDED, MULCHED AND TACKED PRIOR TO MAJOR EARTH DISRUPTION ACTIVITIES.
3. LOCATION OF DRIVEWAYS, AS SHOWN, IS APPROXIMATE. SPECIFIC DRIVE LOCATIONS/CONFIGURATIONS TO BE DETERMINED AND SUBMITTED WITH INDIVIDUAL LOT PLOT PLANS. EFFORTS WILL BE MADE TO AVOID LAYOUTS WHICH WOULD PLACE UTILITY STRUCTURES IN DRIVES BUT MAY OCCUR IF STRUCTURES ARE PROTECTED WITH A CONCRETE APRON.
4. EXISTING TREES ARE LOCATED ON THE PLAN PER THE BEST AVAILABLE INFORMATION. IF VARIATIONS IN LOCATION ARE DISCOVERED DURING CONSTRUCTION, THE ENGINEER IS TO BE NOTIFIED OF VARIATION AND REASONABLE EFFORT TO BE MADE TO FOLLOW THE INTENT OF THE GRADING AND TREE PRESERVATION SHOWN ON THIS SHEET.

SITE MASS GRADING NOTE:
MASS GRADING WILL BE DONE AS A SINGLE OPERATION FOR THE ENTIRE SITE FOR THIS MULTI-PHASE DEVELOPMENT. FINAL GRADING AND DEVELOPMENT WILL OCCUR IN PHASES STARTING WITH PHASE 1. REFER TO SHEET 15 FOR PHASING SUMMARY AND NARRATIVE.

NOTE:
THE CONTRACTOR SHALL PERFORM MASS GRADING IN SUCH A WAY THAT INSURE'S ADEQUATE COVER OVER THE UTILITIES DURING AND AFTER THE CONSTRUCTION OF EACH PHASE.

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
OVERALL GRADING PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 18

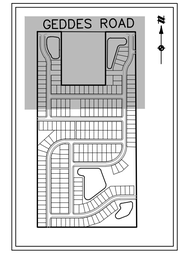
CAD FILE: 19004443FSP-10-GG.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-10-GG.DWG 10/10/2023 4:54 PM MATTHEW MYERS

LEGEND

- PR. 1' CONTOUR
- PR. 5' CONTOUR
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- PROPERTY LINE
- GRADING LIMITS
- EX. MANHOLE / CATCH BASIN
- PR. MANHOLE / CATCH BASIN
- EX. HYDRANT
- PR. HYDRANT
- EX. GATE VALVE & WELL
- PR. GATE VALVE & WELL
- EX. WATER MAIN MANHOLE
- PR. SANITARY SEWER MANHOLE
- EX. SANITARY SEWER MANHOLE
- EX. WETLAND
- PR. ASPHALT
- PR. CONCRETE
- PR. EMERGENCY OVERFLOW ROUTE
- PR. DRIVEWAY

SPOT GRADE DESIGNATIONS
FG = FINISH GRADE
DBL = DROP BRICK LEDGE
VO= VIEWOUT
WO = WALKOUT
RIM = RIM GRADE/FLOW LINE
HP = HIGH POINT
TC = TOP OF CURB
TW = TOP OF WALK
T/WALL= TOP OF WALL
B/WALL= BOTTOM OF WALL



KEY MAP
NOT TO SCALE

GEDDES ROAD (VARIABLE WIDTH PUBLIC RIGHT OF WAY)

ASTILBE AVENUE (PRIVATE)

HONEYSUCKLE DR. (PRIVATE)

BLUE BELL AVENUE (PRIVATE)

SOUTH RIGHT OF WAY LINE

HYDRANT TO BE CONSTRUCTED WITH THE PROSPECT POINT WEST DEVELOPMENT

SEE SHEET 20 FOR CONTINUATION

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GRADING PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 19

CAD FILE: 19004443SP-11-G.DWG

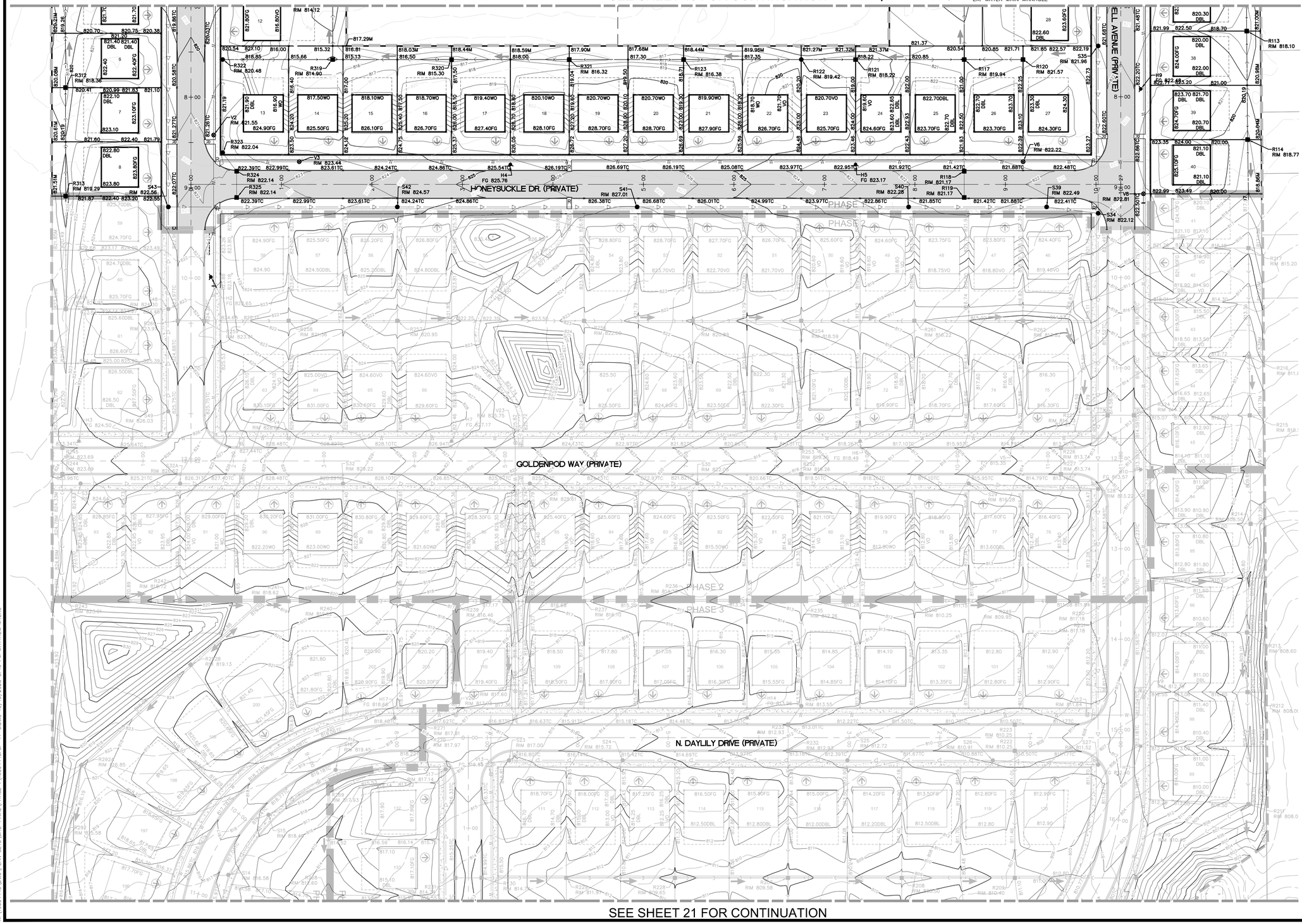
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-11-G.DWG 10/10/2023 3:46 PM MATTHEW MYERS

LEGEND

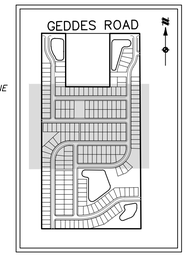
- PR. 1' CONTOUR
- PR. 5' CONTOUR
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- PROPERTY LINE
- GRADING LIMITS
- EX. MANHOLE / CATCH BASIN
- PR. MANHOLE / CATCH BASIN
- EX. HYDRANT
- PR. HYDRANT
- EX. GATE VALVE & WELL
- PR. GATE VALVE & WELL
- EX. WATER MAIN MANHOLE
- PR. SANITARY SEWER MANHOLE
- EX. SANITARY SEWER MANHOLE
- EX. WETLAND
- PR. ASPHALT
- PR. CONCRETE
- PR. EMERGENCY OVERFLOW ROUTE
- PR. DRIVEWAY

SPOT GRADE DESIGNATIONS
FG = FINISH GRADE
DBL = DROP BRICK LEDGE
VO= VIEWOUT
WO = WALKOUT
RIM = RIM GRADE/FLOW LINE
HP = HIGH POINT
TC = TOP OF CURB
TW = TOP OF WALK
T/WALL= TOP OF WALL
B/WALL= BOTTOM OF WALL

SEE SHEET 19 FOR CONTINUATION



SEE SHEET 21 FOR CONTINUATION



KEY MAP
NOT TO SCALE

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GRADING PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 20

CAD FILE: 19004443SP-11-G.DWG

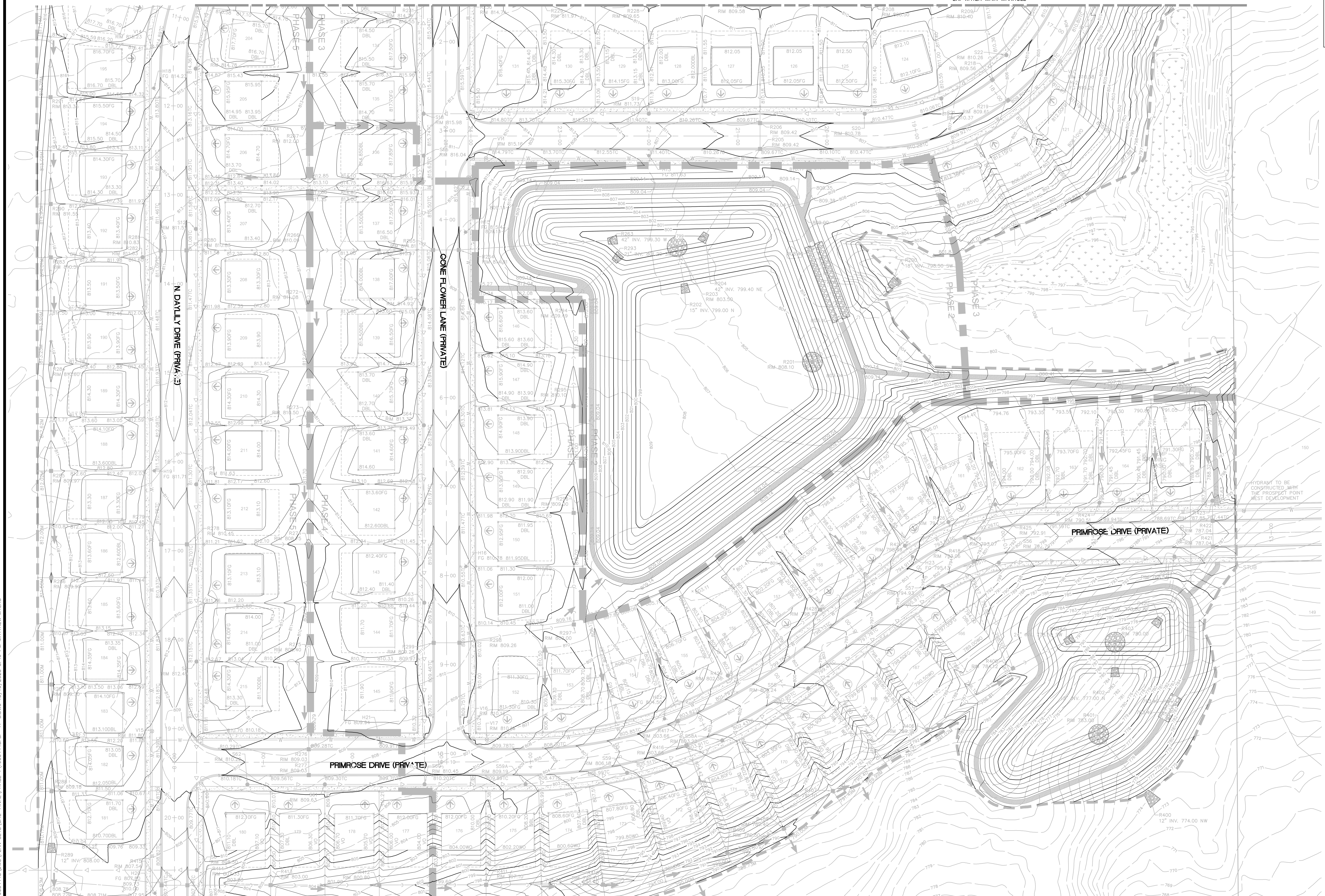
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-11-G.DWG, 10/10/2023 3:46 PM, MATTHEW MYERS

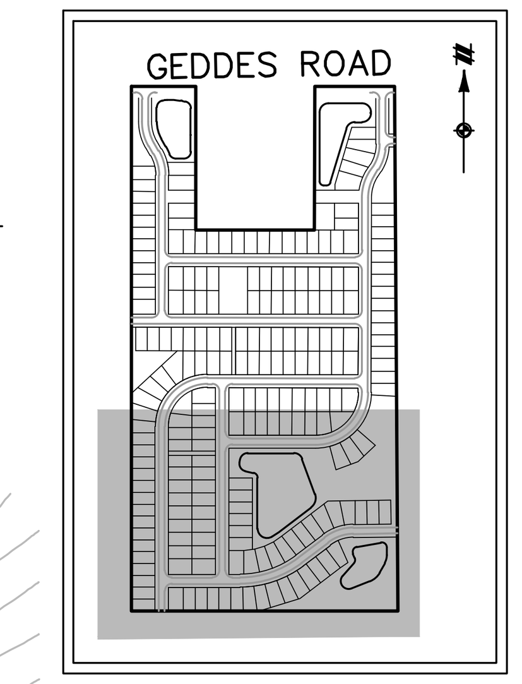
LEGEND

588	PR. 1' CONTOUR
590	PR. 5' CONTOUR
588	EX. 1' CONTOUR
590	EX. 5' CONTOUR
	PROPERTY LINE
	GRADING LIMITS
	EX. MANHOLE / CATCH BASIN
	PR. MANHOLE / CATCH BASIN
	EX. HYDRANT
	PR. HYDRANT
	EX. GATE VALVE & WELL
	PR. GATE VALVE & WELL
	EX. WATER MAIN MANHOLE
	PR. SANITARY SEWER MANHOLE
	EX. SANITARY SEWER MANHOLE
	EX. WETLAND
	PR. ASPHALT
	PR. CONCRETE
	PR. EMERGENCY OVERFLOW ROUTE
	PR. DRIVEWAY

SPOT GRADE DESIGNATIONS
FG = FINISH GRADE
DBL = DROP BRICK LEDGE
VO = VIEWOUT
WO = WALKOUT
RIM = RIM GRADE/FLOW LINE
HP = HIGH POINT
TC = TOP OF CURB
TW = TOP OF WALK
T/WALL = TOP OF WALL
B/WALL = BOTTOM OF WALL

SEE SHEET 20 FOR CONTINUATION





KEY MAP
NOT TO SCALE

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GRADING PLAN

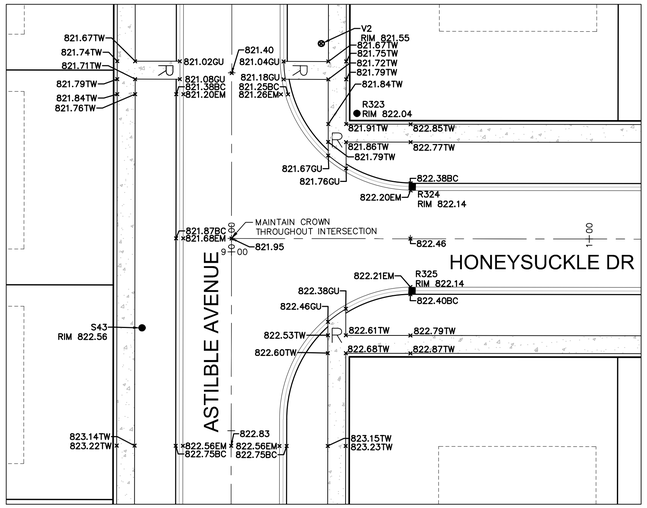
DATE OCT. 12, 2023

REVISIONS

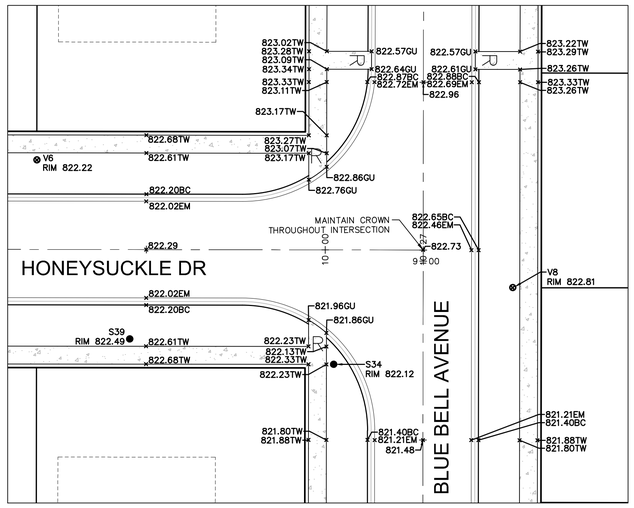
SCALE: 1" = 50 FEET (0 25 50)
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 21

CAD FILE: 19004443FSP-11-G.DWG

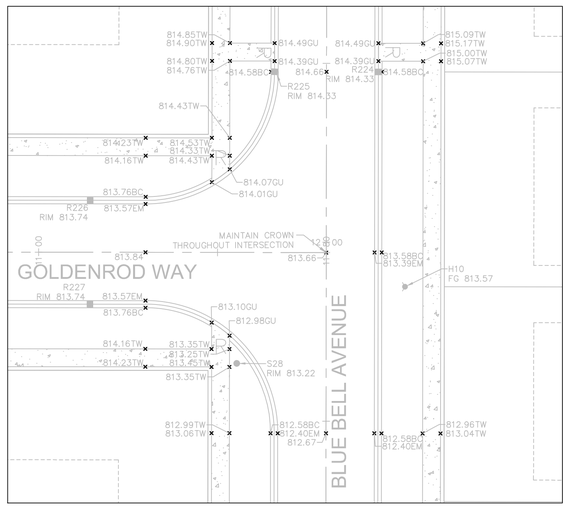
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-11-G.DWG 10/10/2023 3:46 PM MATTHEW MYERS



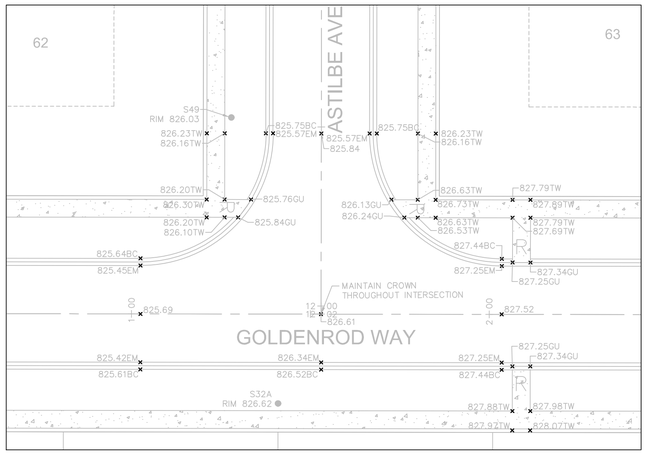
HONEYSUCKLE DR & ASTILBE AVENUE



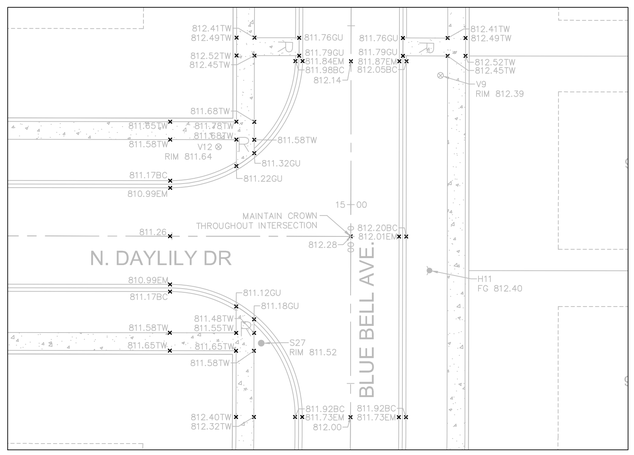
HONEYSUCKLE DR & BLUE BELL AVENUE



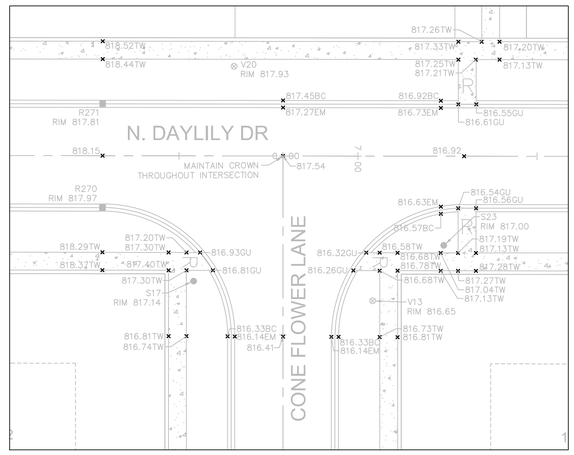
GOLDENROD WAY & BLUE BELL AVENUE



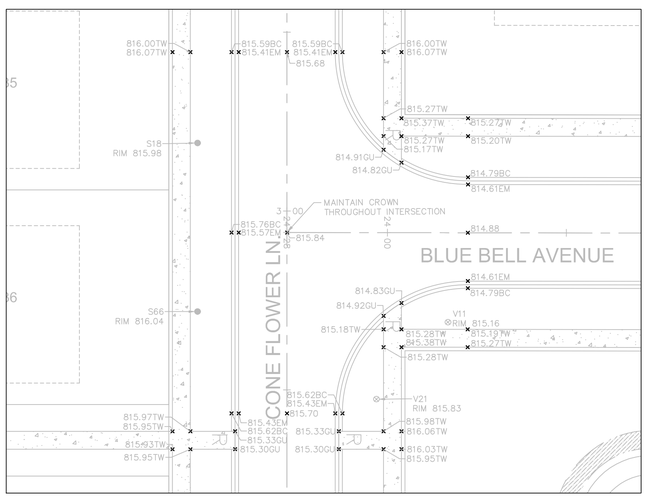
GOLDENROD WAY & ASTILBE AVENUE



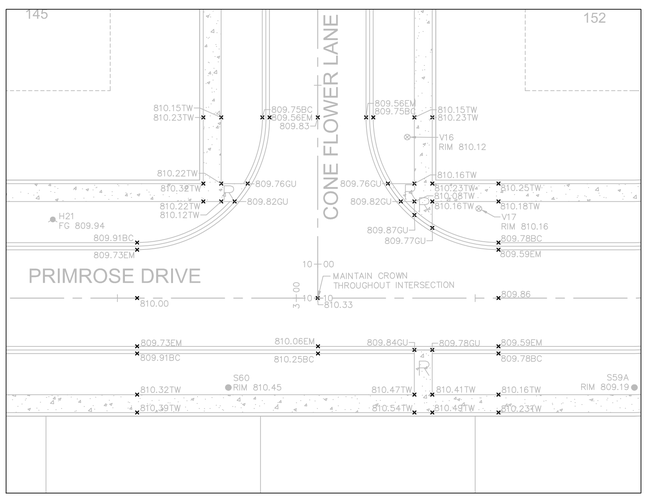
BLUE BELL AVENUE & N. DAYLILY DR



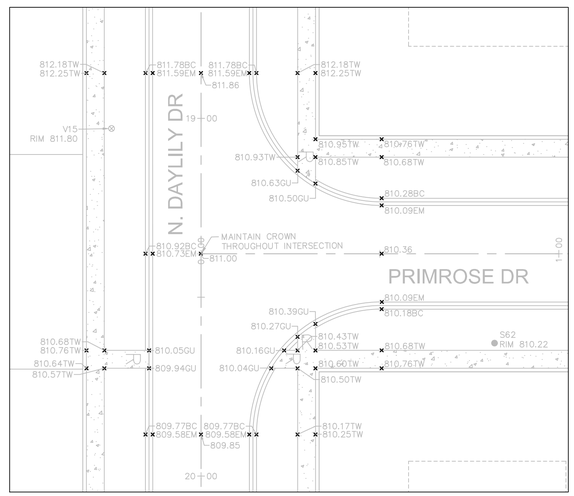
N. DAYLILY DR & CONE FLOWER LANE



CONE FLOWER LANE & BLUE BELL AVENUE



CONE FLOWER LANE & PRIMROSE DR



N. DAYLILY DR & PRIMROSE DR

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
INTERSECTION PLAN

DATE
OCT. 12, 2023

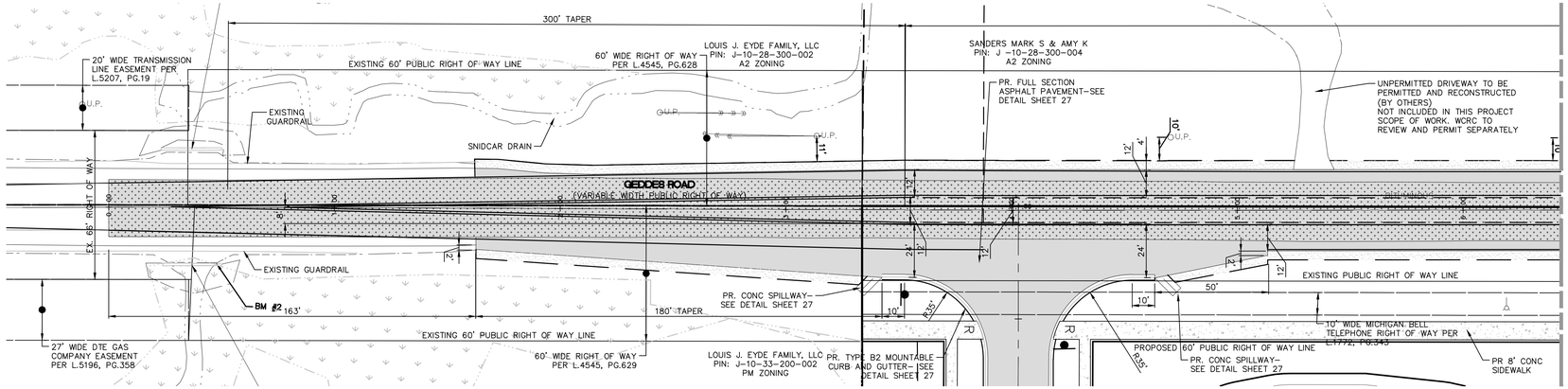
REVISIONS

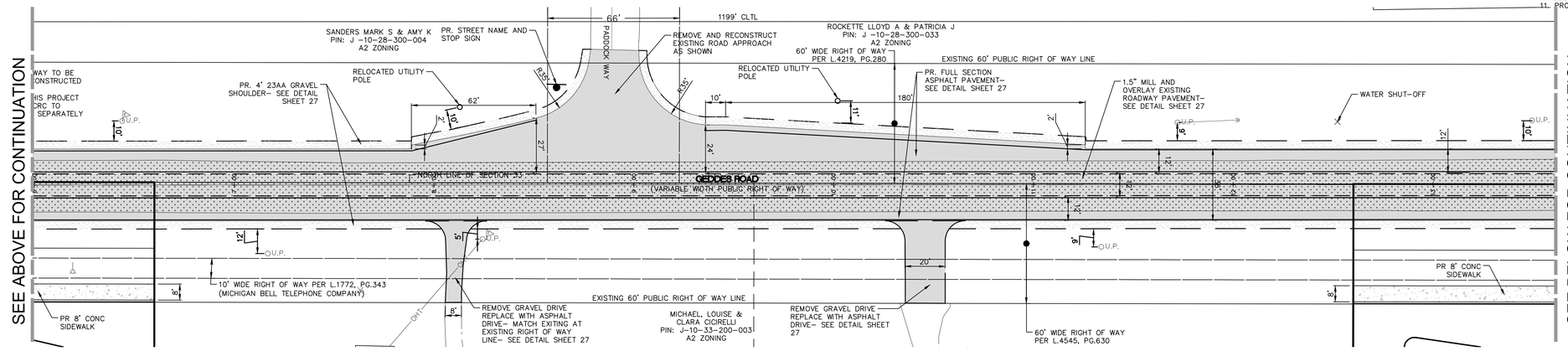
SCALE: 1" = 20 FEET

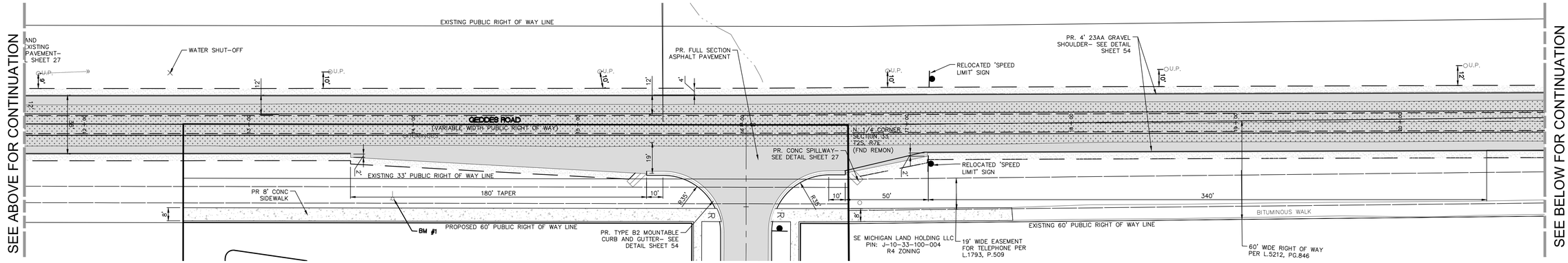
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 22

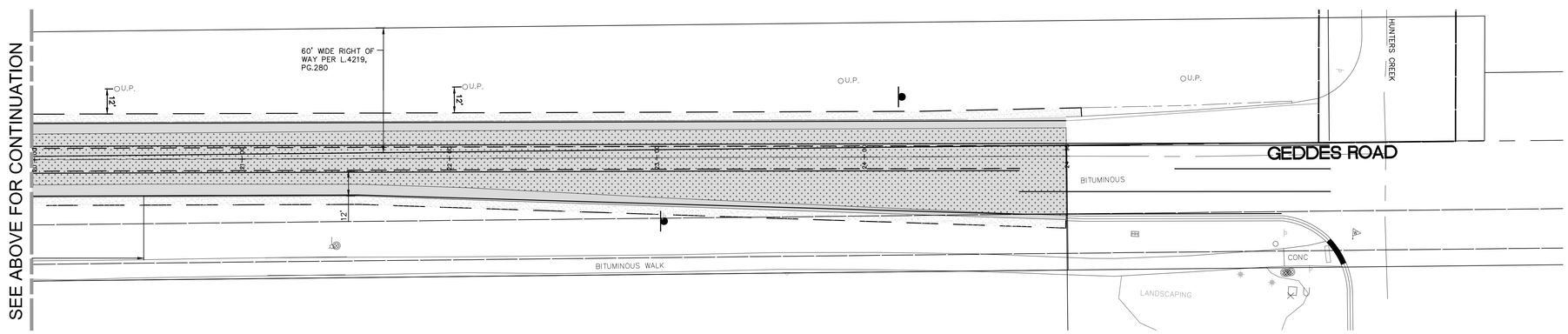
CAD FILE: 19004443PSP-28-INT.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-28-INT.DWG 10/10/2023 3:48 PM MATTHEW MYERS









LEGEND

- BOUNDARY LINE
- EXIST. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EXIST. CURB AND GUTTER
- PROP. LOT LINE
- PROP. ROAD CENTERLINE
- PROP. BACK OF CURB
- PROP. WALK
- PROP. GRAVEL
- PROP. ASPH.
- MILL AND OVERLAY
- EXISTING WETLAND

NOTES:
1. ALL SIDEWALK RAMPS MUST BE MDOT DETAIL R-28. SEE DETAIL ON SHEET 28.
2. PAVEMENT MARKINGS SHALL BE RECESSED WET REFLECTIVE POLYUREA OR APPROVED ALTERNATE WATERBORNE PAINT.
3. REFER TO SHEET 42 AND 43 FOR STORM SEWER PLAN AND PROFILES IN GEDDES ROAD RIGHT OF WAY.
4. REFER TO SHEETS 29, 31, AND 33 FOR THE WATER MAIN CONNECTIONS IN GEDDES ROAD RIGHT OF WAY.
5. GEDDES ROAD TO REMAIN OPEN DURING THE PLACEMENT OF PIPES BY USING FLAGGING OPERATION.
6. THE FRAME AND COVER OF STRUCTURE R11 WITHIN THE R.O.W. SHALL BE EJIW 1040Z, TYPE N COVER.
7. DESIGN SPEED = POSTED SPEED LIMIT = 50 MPH.
8. CONFLICTING UTILITIES IN THE RIGHT OF WAY OF GEDDES ROAD MUST BE RELOCATED PRIOR TO COMMENCEMENT OF PAVING THE ROADWAY.
9. CONTRACTOR SHALL CONTACT WCRC 48 HOURS PRIOR TO COMMENCING PAVEMENT REMOVAL.
10. IMPROVEMENTS WITHIN THE RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
11. PROPOSED OR RELOCATED SIGNS AND POSTS SHALL BE NEW.

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
GEDDES RD. R.O.W. IMPROVEMENTS
LAYOUT PLAN

DATE
OCT. 12, 2023

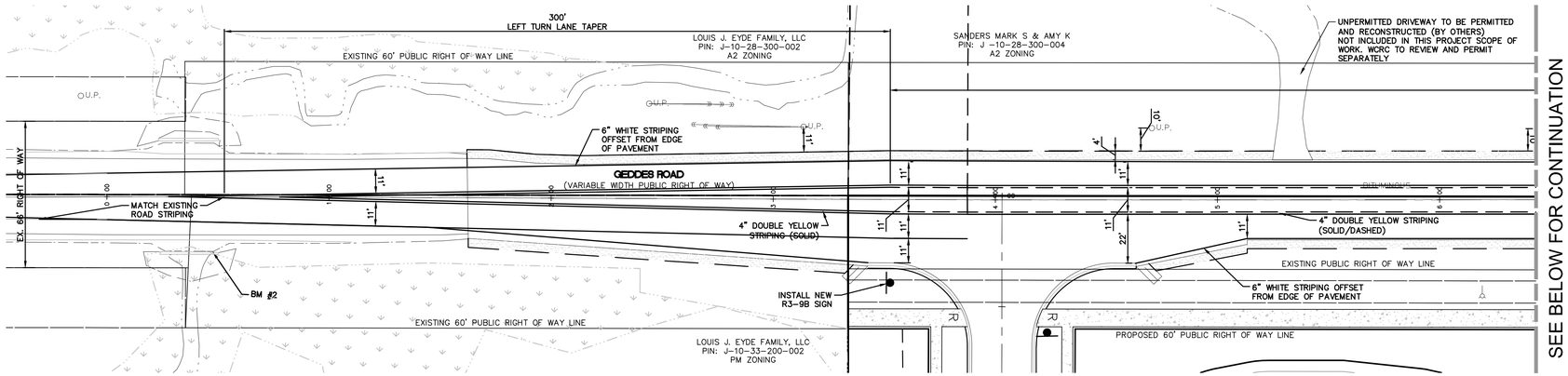
REVISIONS

SCALE: 1" = 30 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 23

CAD FILE: 19004443SP-26-ENT.DWG

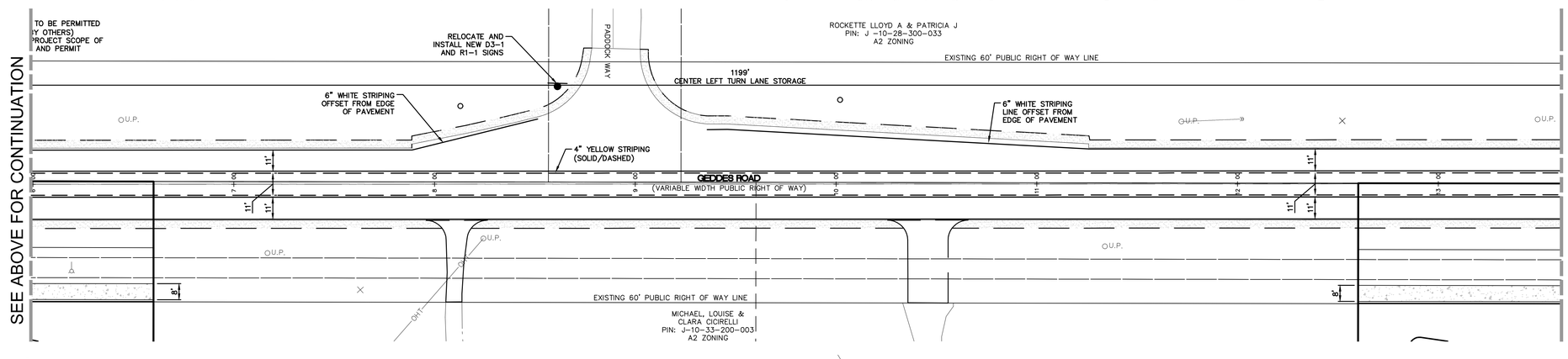
K:\19004443\DWG\PLAN SETS\SITE_FINAL\PHASE 1\19004443SP-26-ENT.DWG 10/10/2023 3:49 PM MATTHEW MYERS

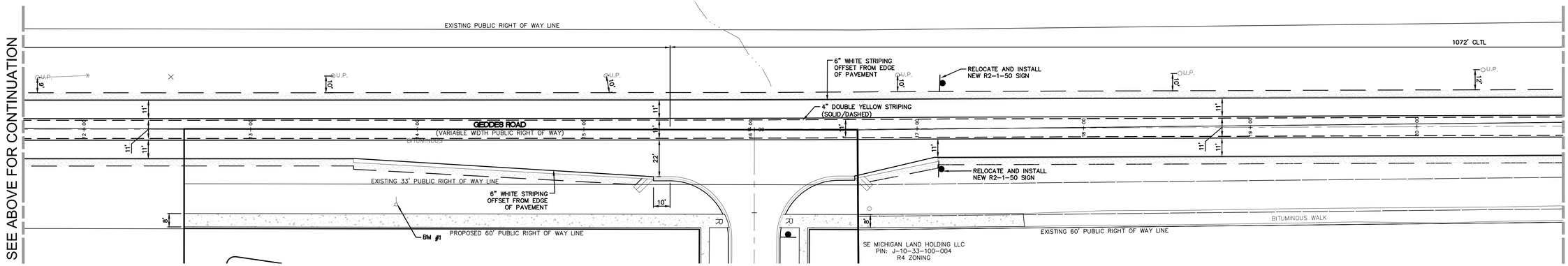


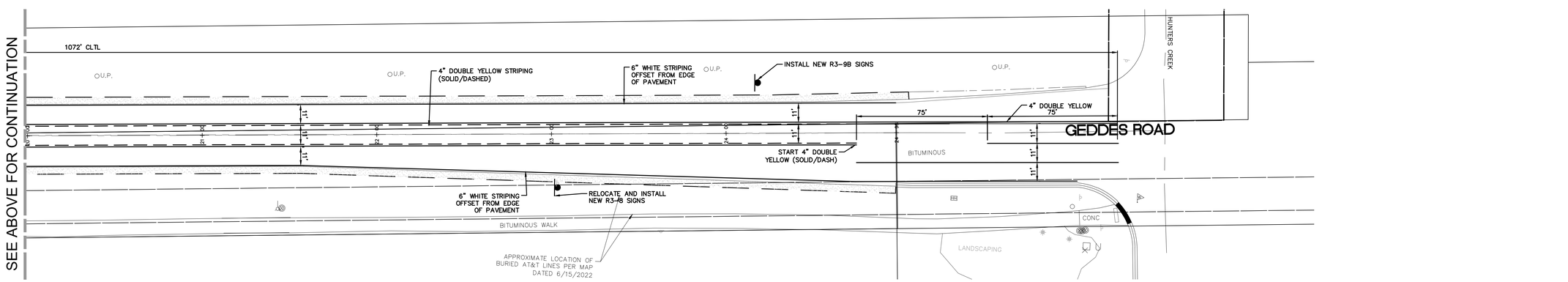
LEGEND

- BOUNDARY LINE
- EXIST. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EXIST. CURB AND GUTTER
- PROP. LOT LINE
- PROP. ROAD CENTERLINE
- PROP. BACK OF CURB
- PROP. WALK
- PROP. GRAVEL
- PROP. ASPH.
- MILL AND OVERLAY

NOTES:
1. IMPROVEMENTS WITHIN THE RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD).
2. PROPOSED OR RELOCATED SIGNS AND POSTS SHALL BE NEW.







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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GEDDES RD R.O.W. IMPROVEMENTS
STRIPING AND SIGNAGE PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 30 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 24

CAD FILE: 19004443SP-26-ENT.DWG

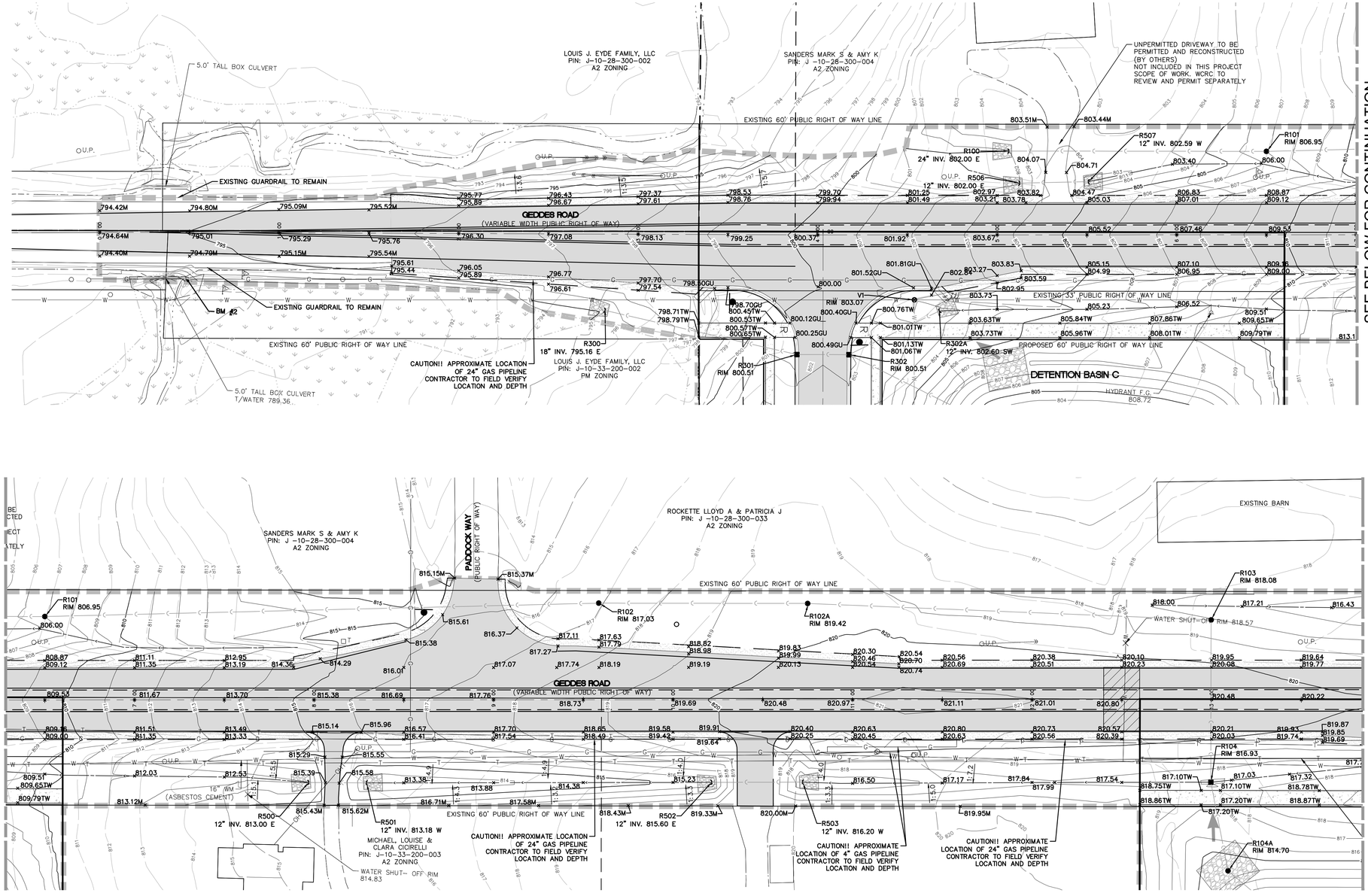
K:\19004443\DWG\PLAN SETS\SITE, FINAL\PHASE 1\19004443SP-26-ENT.DWG 10/10/2023 3:49 PM MATTHEW MYERS

NOTES:
1. REFER TO SHEET 27 FOR GEDDES ROAD CROSS SECTION & TYPE 'M' APPROACH DETAIL
2. ALL SIDEWALK RAMPS MUST BE MDOT DETAIL R-28. SEE DETAIL ON SHEET 28.
3. PAVEMENT STRIPING SHALL BE WATERBORNE PAINT.
4. REFER TO SHEET 42 AND 43 FOR STORM SEWER PLAN AND PROFILES IN GEDDES ROAD RIGHT OF WAY.
5. REFER TO SHEET 29, 31, AND 33 FOR THE WATER MAIN CONNECTIONS IN GEDDES ROAD RIGHT OF WAY.
6. GEDDES ROAD TO REMAIN OPEN DURING THE PLACEMENT OF PIPES BY USING FLAGGING OPERATION.
7. THE FRAME AND COVER OF STRUCTURE R11 WITHIN THE R.O.W. SHALL BE EJIW 1040Z, TYPE N COVER.
8. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF THE GAS LINES AND THE AT&T LINES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

LEGEND

- PR. 1' CONTOUR
- PR. 5' CONTOUR
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- PROPERTY LINE
- GRADING LIMITS
- EX. MANHOLE / CATCH BASIN
- PR. MANHOLE / CATCH BASIN
- EX. HYDRANT
- PR. HYDRANT
- EX. GATE VALVE & WELL
- PR. GATE VALVE & WELL
- EX. WATER MAIN MANHOLE
- PR. SANITARY SEWER MANHOL
- EX. SANITARY SEWER MANHOL
- EX. WETLAND
- PR. ASPHALT
- PR. CONCRETE
- PR. GRAVEL
- PR. TRENCHING LIMITS

SPOT GRADE DESIGNATIONS
FG = FINISH GRADE
DBL = DROP BRICK LEDGE
VO= VIEWOUT
WO = WALKOUT
RIM = RIM GRADE/FLOW LINE
HP = HIGH POINT
TC = TOP OF CURB
TW = TOP OF WALK
T/WALL= TOP OF WALL
B/WALL= BOTTOM OF WALL



ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GEDDES RD. R.O.W. IMPROVEMENTS
GRADING PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 30 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 25

CAD FILE: I:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-27-ENT-G.DWG 10/10/2023 5:06 PM MATTHEW MYERS

CAD FILE: 19004443PSP-27-ENT-G.DWG

NOTES:
1. REFER TO SHEET 27 FOR GEDDES ROAD CROSS SECTION & TYPE 'M' APPROACH DETAIL
2. ALL SIDEWALK RAMPS MUST BE MDOT DETAIL R-28. SEE DETAIL ON SHEET 28.
3. PAVEMENT STRIPING SHALL BE WATERBORNE PAINT.
4. REFER TO SHEET 42 AND 43 FOR STORM SEWER PLAN AND PROFILES IN GEDDES ROAD RIGHT OF WAY.
5. REFER TO SHEET 29, 31, AND 33 FOR THE WATER MAIN CONNECTIONS IN GEDDES ROAD RIGHT OF WAY.
6. GEDDES ROAD TO REMAIN OPEN DURING THE PLACEMENT OF PIPES BY USING FLAGGING OPERATION.
7. THE FRAME AND COVER OF STRUCTURE R11 WITHIN THE R.O.W. SHALL BE EJW 1040Z, TYPE N COVER.
8. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF THE GAS LINES AND THE AT&T LINES PRIOR TO COMMENCEMENT OF CONSTRUCTION.

LEGEND

- PR. 1' CONTOUR
- PR. 5' CONTOUR
- EX. 1' CONTOUR
- EX. 5' CONTOUR
- PROPERTY LINE
- GRADING LIMITS
- EX. MANHOLE / CATCH BASIN
- PR. MANHOLE / CATCH BASIN
- EX. HYDRANT
- PR. HYDRANT
- EX. GATE VALVE & WELL
- PR. GATE VALVE & WELL
- EX. WATER MAIN MANHOLE
- PR. SANITARY SEWER MANHOL
- EX. SANITARY SEWER MANHOL
- EX. WETLAND
- PR. ASPHALT
- PR. CONCRETE
- PR. GRAVEL
- PR. TRENCHING LIMITS

SPOT GRADE DESIGNATIONS
FG = FINISH GRADE
DBL = DROP BRICK LEDGE
VO= VIEWOUT
WO = WALKOUT
RIM = RIM GRADE/FLOW LINE
HP = HIGH POINT
TC = TOP OF CURB
TW = TOP OF WALK
T/WALL= TOP OF WALL
B/WALL= BOTTOM OF WALL

SEE SHEET 25 FOR CONTINUATION

EXISTING BARN
R103 RIM 818.08
EXISTING PUBLIC RIGHT OF WAY LINE
15" INV. 814.82 S
R150
WATER SHUT OFF RIM 818.57
U.P.
GEDDES ROAD
(VARIABLE WIDTH PUBLIC RIGHT OF WAY)
BITUMINOUS
R104 RIM 816.93
EXISTING PUBLIC RIGHT OF WAY LINE
R151 RIM 820.00
R152 RIM 820.50
N. 1/4 CORNER
SECTION 33
T2S, R7E
(END REMON)
V7 RIM 817.63
R153
15" INV. 815.72 W
WATER RIM 816.33
SE MICHIGAN LAND HOLDING LLC
PIN: J-10-33-100-004
R4 ZONING
19' WIDE EASEMENT FOR TELEPHONE PER L.1793, P.509
PROPOSED 60' PUBLIC RIGHT OF WAY LINE
R154
12" INV. 817.30 E
HYDRANT F.G. 817.68
BM #1
DETENTION BASIN A
SOUTH RIGHT OF WAY LINE
R104A RIM 814.70
EXISTING 60' PUBLIC RIGHT OF WAY LINE
R504
12" INV. 814.40 S
CAUTION!! APPROXIMATE LOCATION OF 4" GAS PIPELINE PER DTE GAS COMPANY MAP DATED JUNE 07, 2022 & MISS DIG MARKINGS CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH
60' WIDE RIGHT OF WAY PER L.5212, PG.846
BITUMINOUS WALK
HYDRANT F.G. 821.37

SEE BELOW FOR CONTINUATION

SEE ABOVE FOR CONTINUATION

BONNER ROBERT C & KIMBERLY A
PIN: J-10-28-300-008
ADDRESS: 2010 HUNTERS CREEK DR
A2 ZONING
EXISTING 60' PUBLIC RIGHT OF WAY LINE
HUNTERS CREEK
(PUBLIC RIGHT OF WAY)
BITUMINOUS
HYDRANT F.G. 821.37
BITUMINOUS WALK
EXISTING 60' PUBLIC RIGHT OF WAY LINE
CAUTION!! APPROXIMATE LOCATION OF 24" TRANSMISSION MAIN PIPELINE PER DTE GAS COMPANY MAP DATED JUNE 07, 2022 & MISS DIG MARKINGS CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH
APPROXIMATE LOCATION OF BURIED AT&T LINES PER MAP DATED 6/15/2022 CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF AT&T LINES
CAUTION!! APPROXIMATE LOCATION OF 4" GAS PIPELINE PER DTE GAS COMPANY MAP DATED JUNE 07, 2022 & MISS DIG MARKINGS CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH
LANDSCAPING
CONC
WATER RIM 825.90
T/S. PIPE 819.55
T/E-W PIPE 819.70
FILLED WITH WATER
SHUT OFF RIM 827.41

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
GEDDES RD R.O.W. IMPROVEMENTS
GRADING PLAN

DATE
OCT. 12, 2023

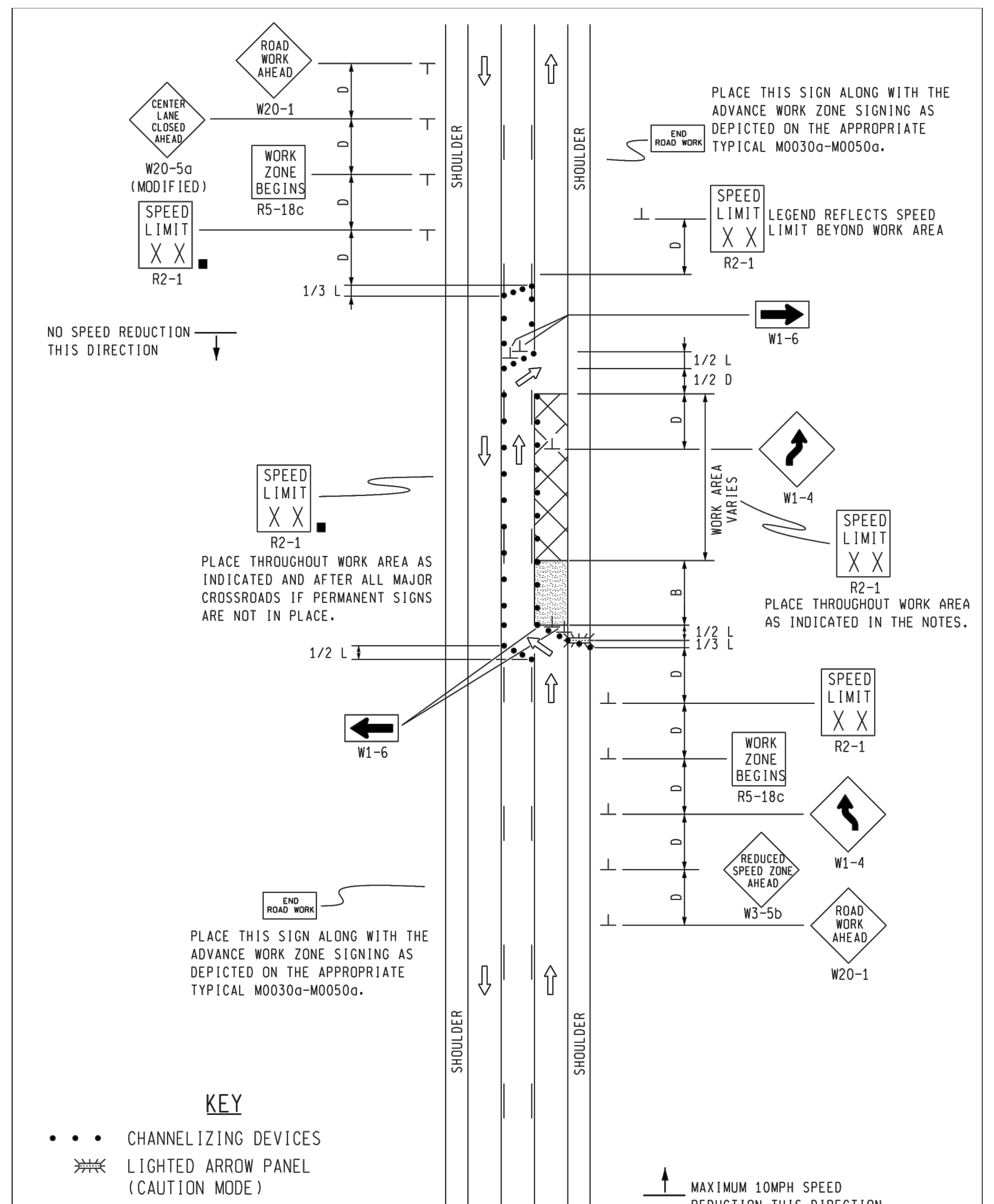
REVISIONS

SCALE: 1" = 30 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 26

CAD FILE: 19004443SP-27-ENT-G.DWG

K:\19004443\DWG\PLAN SETS\SITE_FINAL\PHASE 1\19004443SP-27-ENT-G.DWG 10/10/2023 5:05 PM MATTHEW MYERS



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

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFLTO AND SHIFTING ONE THROUGH LANE INTO THE CLFLTO USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

DRAWN BY: CON:AE:DJF — OCTOBER 2011 — M0232a — SHEET 1 OF 2
CHECKED BY: BMM:CRB — PLAN DATE:
FILE: PW: RD/T&S/Typicals/Signs/MT/MT NonFwy/M0232a REV. 10/18/2011

NOT TO SCALE

NOTES

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

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

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

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

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

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

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

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

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

16A. ADDITIONAL SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED SHALL BE PLACED AFTER EACH MAJOR CROSSROAD THAT INTERSECTS THE WORK AREA WHERE THE REDUCED SPEED IS IN EFFECT, AND AT INTERVALS ALONG THE ROADWAY SUCH THAT NO SPEED LIMIT SIGNS REFLECTING THE REDUCED SPEED ARE MORE THAN TWO MILES APART.

16B. WHEN REDUCED SPEED LIMITS ARE UTILIZED IN THE WORK AREA, ADDITIONAL SPEED LIMIT SIGNS RETURNING TRAFFIC TO ITS NORMAL SPEED SHALL BE PLACED BEYOND THE LIMITS OF THE REDUCED SPEED AS INDICATED.

16E. WHEN EXISTING SPEED LIMITS ARE REDUCED MORE THAN 10 MPH, THE SPEED LIMIT SHALL BE STEPPED DOWN IN NO MORE THAN 10 MPH INCREMENTS.

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

SIGN SIZES

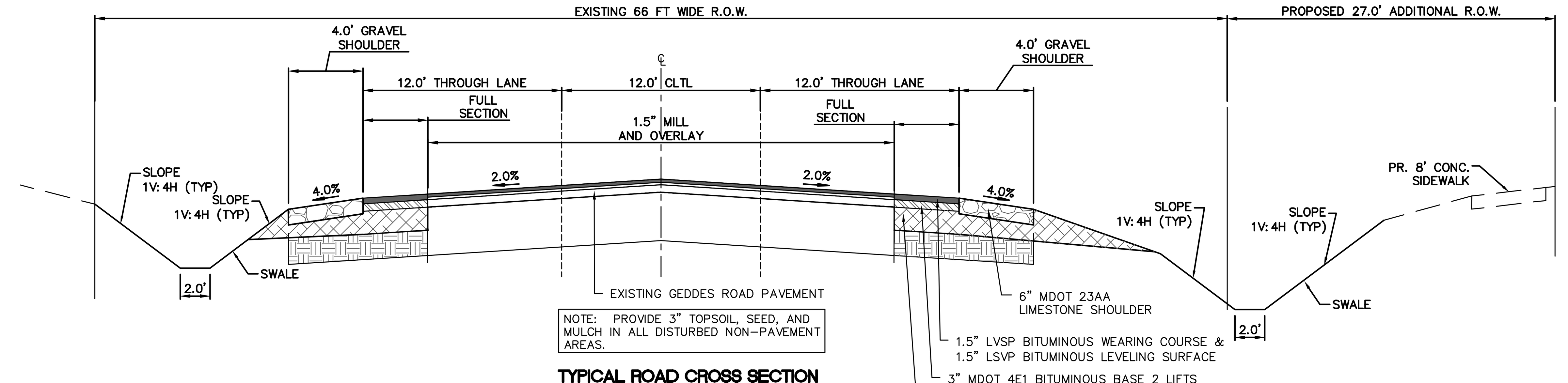
DIAMOND WARNING	- 48" x 48"
W1-6 WARNING	- 48" x 24"
RECTANGULAR REGULATORY	- 48" x 60"
R5-18c REGULATORY	- 48" x 48"

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

TYPICAL TEMPORARY TRAFFIC CONTROL FOR CLOSING ONE LANE OF A THREE LANE ROADWAY WITH CLFLTO AND SHIFTING ONE THROUGH LANE INTO THE CLFLTO USING A SINGLE STEP DOWN IN SPEED LIMIT IN ONE DIRECTION ONLY

DRAWN BY: CON:AE:DJF — OCTOBER 2011 — M0232a — SHEET 2 OF 2
CHECKED BY: BMM:CRB — PLAN DATE:
FILE: PW: RD/T&S/Typicals/Signs/MT/MT NonFwy/M0232a REV. 10/18/2011

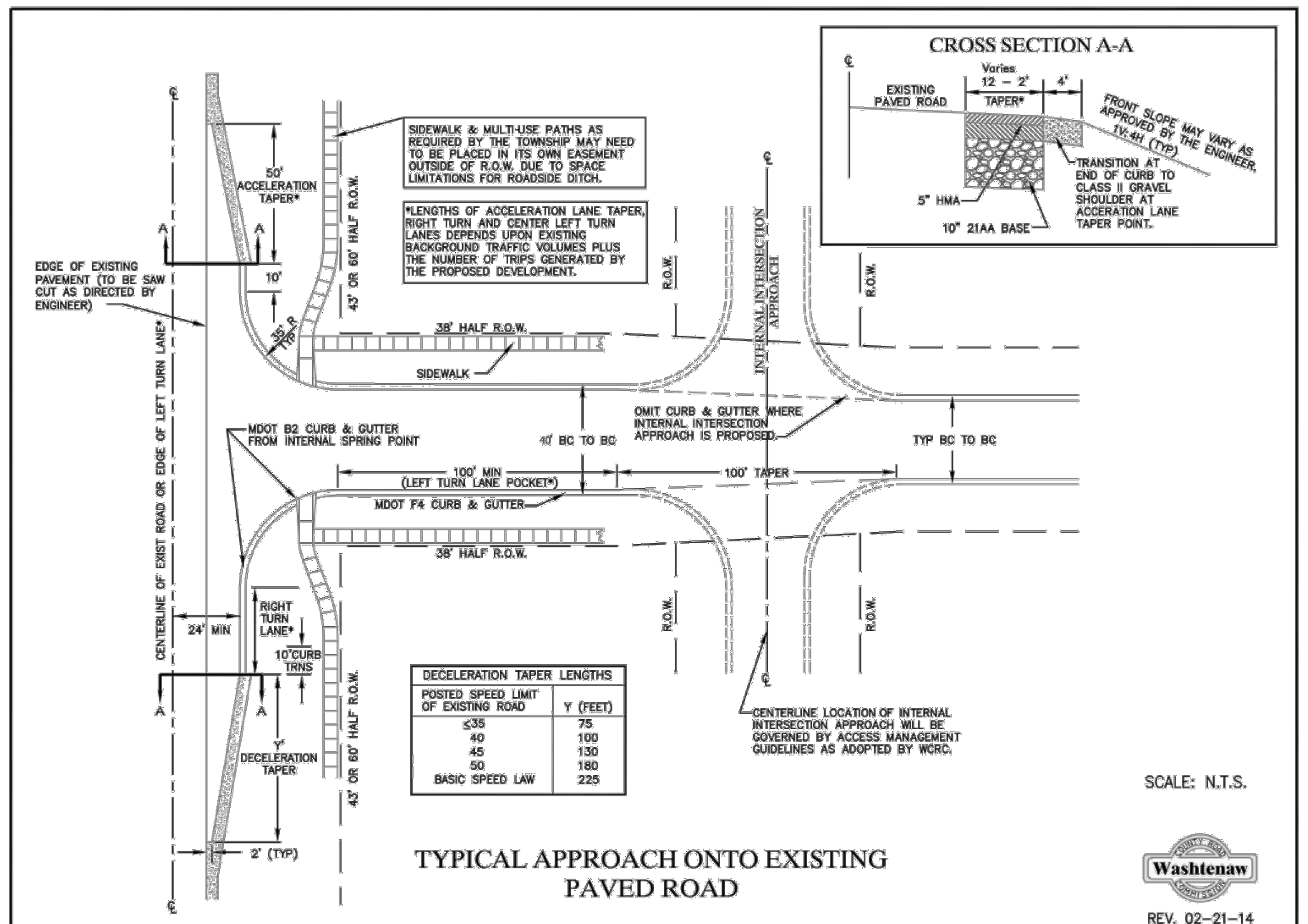
NOT TO SCALE



NOTE: PROVIDE 3" TOPSOIL, SEED, AND MULCH IN ALL DISTURBED NON-PAVEMENT AREAS.

TYPICAL ROAD CROSS SECTION
(01 + 63 TO 24 + 97)
NO SCALE

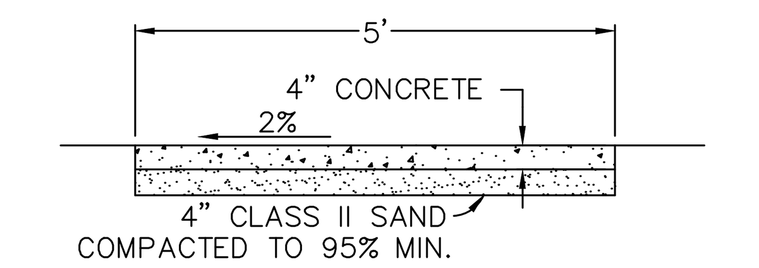
NOTE:
FOR TAPERS AND LANE WIDING INFORMATION AT APPROACHES, REFER TO PLAN SHEET 24



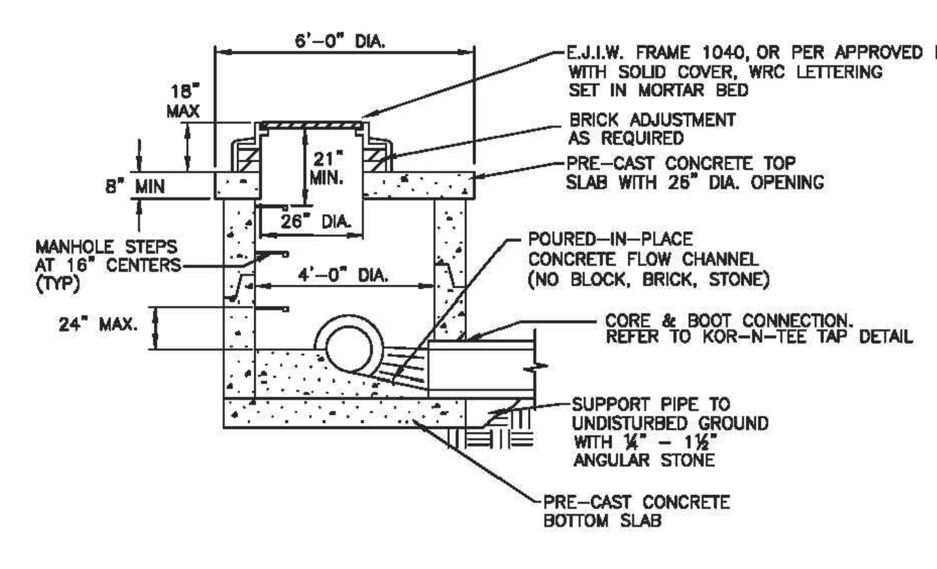
DECELERATION TAPER LENGTHS	
POSTED SPEED LIMIT OF EXISTING ROAD	Y (FEET)
≤35	75
40	100
45	130
50	180
BASIC SPEED LAW	225

TYPICAL APPROACH ONTO EXISTING PAVED ROAD

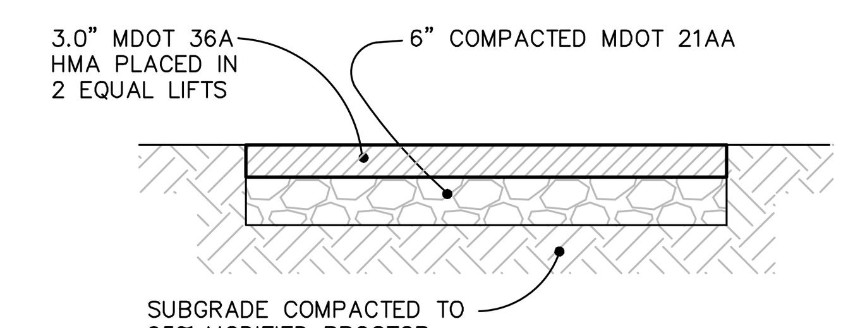
Figure 9: Typical Residential Approach Onto Existing Paved Road



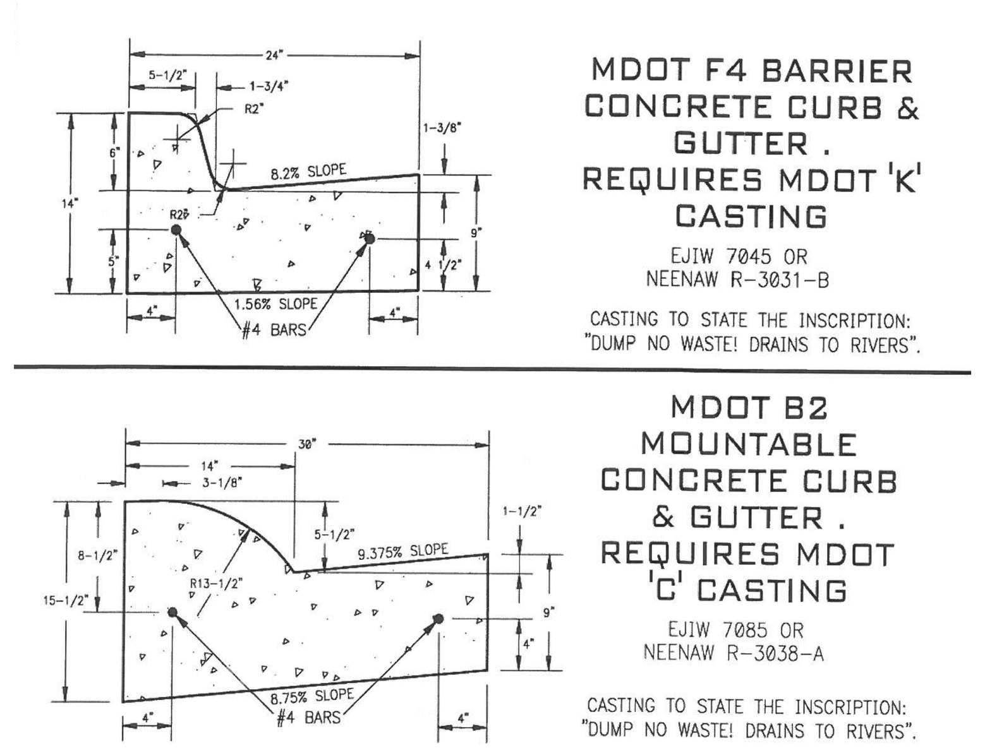
CONCRETE SIDEWALK DETAIL
NO SCALE



PRE-CAST LOW HEAD MANHOLE DETAIL
NO SCALE
(PRIOR APPROVAL ONLY)



RESIDENTIAL DRIVEWAY PAVEMENT DETAIL
(DRIVEWAYS ON GEDDES ROAD)
NO SCALE



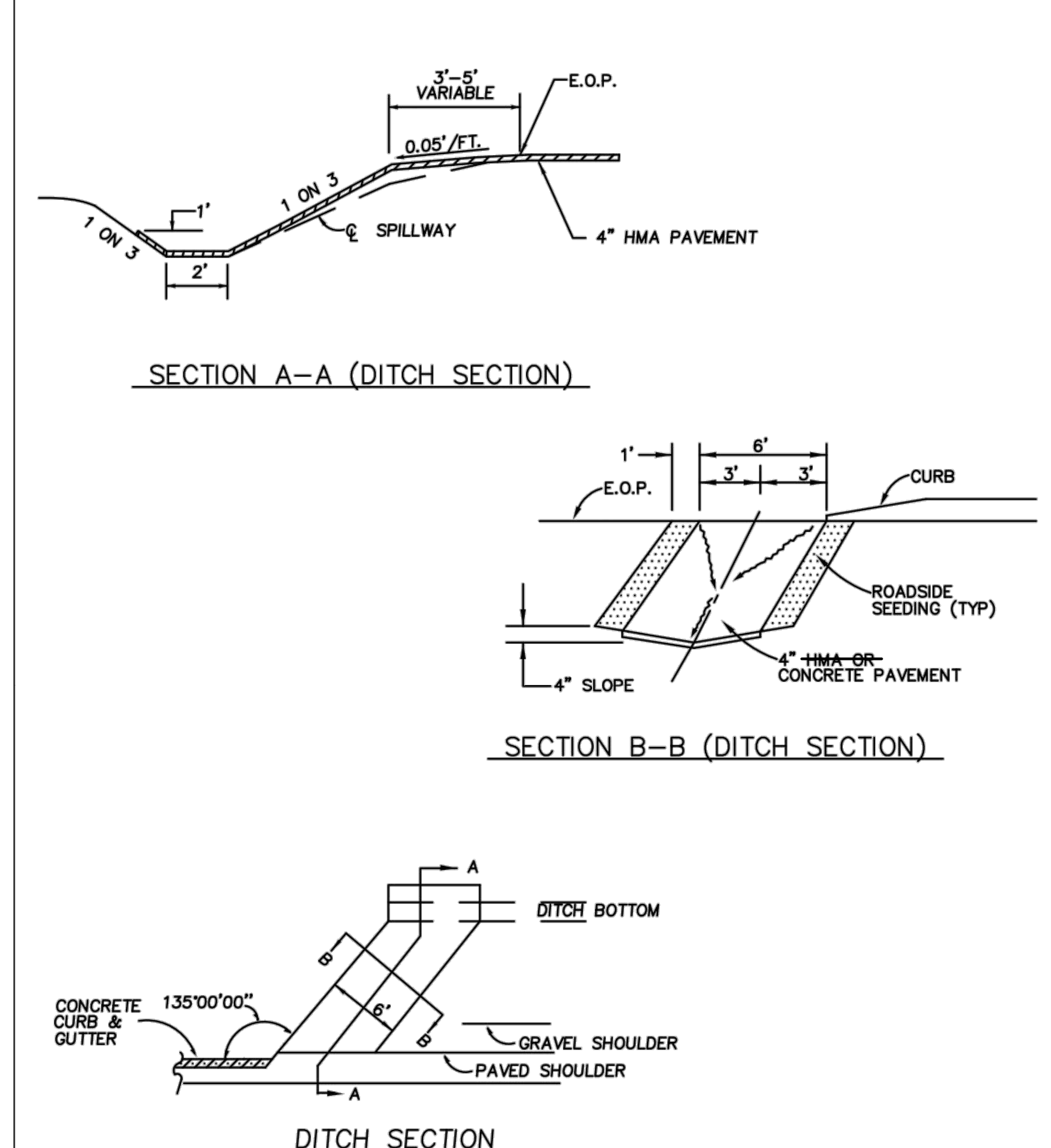
1) JOINTS SHALL BE PLACED AT RIGHT ANGLES TO THE EDGE OF CONCRETE CURB & GUTTER.

HOT MIX ASPHALT (HMA) PAVING
2) PLACE 1" FIBER JOINT FILLER AT 400' MAXIMUM INTERVALS.
3) PLACE 1" FIBER JOINT FILLER AT SPRING POINTS OR INTERSECTING STREETS.
4) PLACE 1" FIBER JOINT FILLER IN ADJACENT CONTRACTION JOINTS EACH SIDE OF INLETS AND CATCH BASINS.
5) PLACE CONTRACTION JOINTS AT 10' INTERVALS.

PORTLAND CEMENT CONCRETE (PCC) PAVING:
6) PLACE 1" FIBER JOINT FILLER OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT.
7) PLACE 1/2" FIBER JOINT FILLER IN ADJACENT CONTRACTION JOINTS ON EACH SIDE OF INLETS AND CATCH BASINS.
8) PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN THE PAVEMENT.
9) B2 CURB & GUTTER SHALL BE USED FOR ALL ENTRANCES TO THE EXISTING ROAD, AND END AT THE INTERNAL SPRING POINT.

TYPICAL CURB & GUTTER CROSS-SECTION DETAILS & NOTES

COUNTY ROAD WASHTENAW COMMISSION
REV: 03-14-04
SCALE: N.T.S.



CONCRETE SPILLWAY DETAIL
NO SCALE

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
GEDDES RD. R.O.W. IMPROVEMENTS
DETAILS

DATE OCT. 12, 2023

REVISIONS

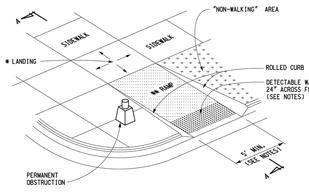
NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: -
SHEET NO. 27

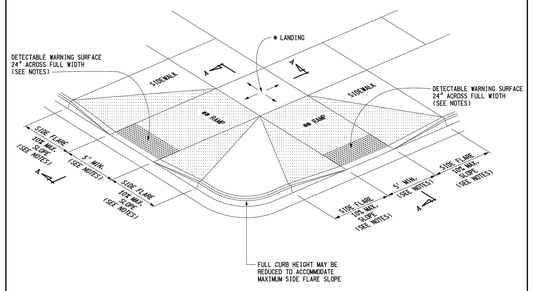
CAD FILE: 19004443FSP-26-ENT.DWG

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAX(MUM). SEE NOTES.



CURB RAMP TYPE R
(ROLLED SIDES)



CURB RAMP TYPE F
(FLARED SIDES, TWO RAMPS SHOWN)

DEPARTMENT DIRECTOR
Paul C. Ajegba

APPROVED BY: _____ DIRECTOR, BUREAU OF FIELD SERVICES

APPROVED BY: _____ DIRECTOR, BUREAU OF DEVELOPMENT

PREPARED BY DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: K.K.P.

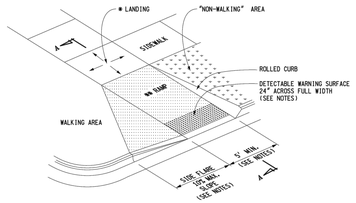
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

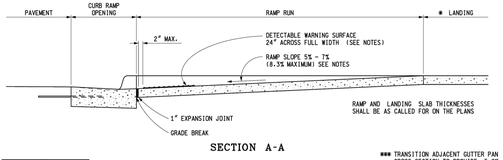
F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 1 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



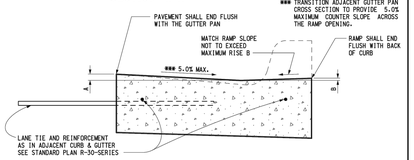
CURB RAMP TYPE RF
(ROLLED / FLARED SIDES)



SECTION A-A

CURB TYPE	MAXIMUM RISE (INCHES) A	B
B1	3/8	1
B2	5/8	1
B3	7/8	1
D1	3/8	1
D2	5/8	1
D3	7/8	1
C1	1/2	1/2
C2	1/2	1/2
C3	3/4	1/2
C4	3/4	1/2
C5	1	1/2
C6	1	1/2
F1	1/2	1/2
F2	1/2	1/2
F3	3/4	1/2
F4	3/4	1/2
F5	1	1/2
F6	1	1/2

FOR CURB TYPES SEE STANDARD PLAN R-30-SERIES



SECTION THROUGH CURB RAMP OPENING
(TYPICAL ALL RAMP TYPES)

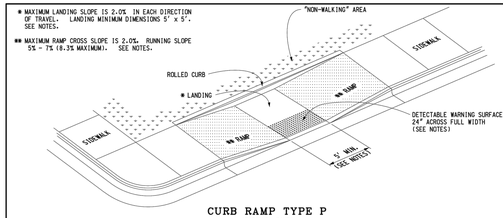
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

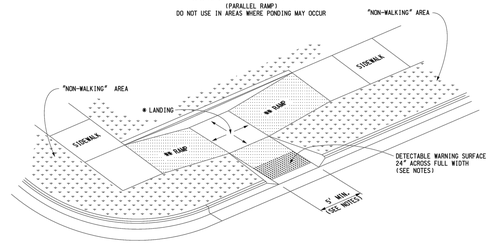
F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 2 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

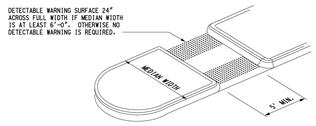
** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAX(MUM). SEE NOTES.



CURB RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



CURB RAMP TYPE C
(COMBINATION RAMP)



CURB RAMP TYPE M
(MEDIAN ISLAND)

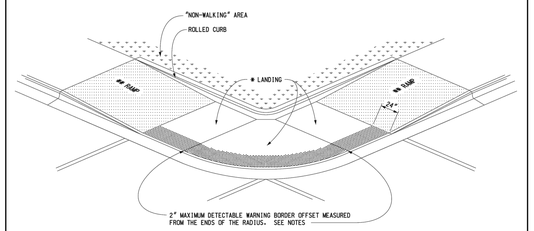
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

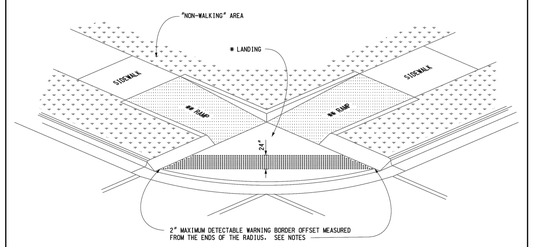
F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 3 OF 7

* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAX(MUM). SEE NOTES.



(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

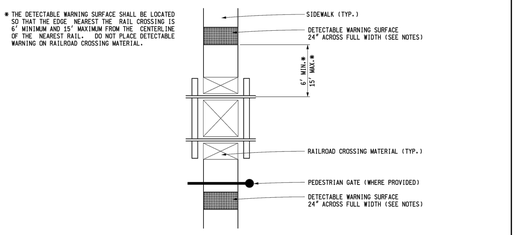
CURB RAMP TYPE D
(DEPRESSED CORNER)
USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

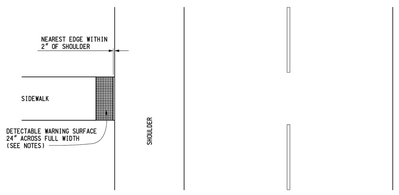
CURB RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 4 OF 7

* THE DETECTABLE WARNING SURFACE SHALL BE LOCATED SO THAT THE EDGE NEAREST THE RAIL CROSSING IS 6' MINIMUM AND 15' MAXIMUM FROM THE CENTERLINE OF THE NEAREST RAIL. DO NOT PLACE DETECTABLE WARNING ON RAILROAD CROSSING MATERIAL.



DETECTABLE WARNING AT RAILROAD CROSSING

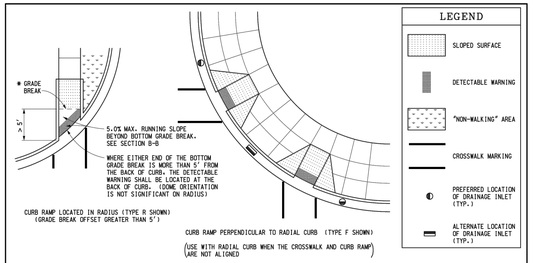


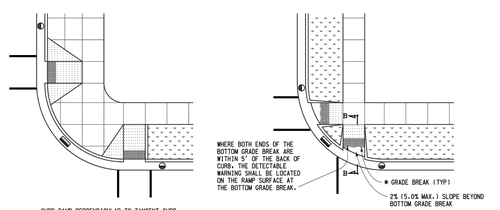
DETECTABLE WARNING AT FLUSH SHOULDER OR ROADWAY

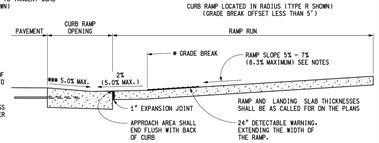
MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 5 OF 7







* GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMPS SHALL BE PERPENDICULAR TO THE DIRECTION OF TRAVEL.

*** TRANSITION ADJACENT GUTTER PAN CROSS SECTION TO PROVIDE 5.0% MAXIMUM COUNTER SLOPE ACROSS THE RAMP OPENING.

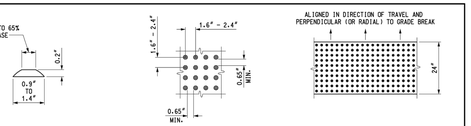
SEE SHEET 2 FOR CURB RAMP OPENING DETAILS.

SECTION B-B
CURB RAMP ORIENTATION

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 6 OF 7



DOME SECTION | DOME SPACING | DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

CURB RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMPS WITH A RUNNING SLOPE ≤5% DO NOT REQUIRE A TOP LANDING, HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN ½". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE CURB RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

CURB RAMP AND DETECTABLE WARNING DETAILS

F.H.W.A. APPROVAL	5-8-2020 PLAN DATE	R-28-J	SHEET 7 OF 7

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
GEDDES RD. MDOT DETAILS

DATE
OCT. 12, 2023

REVISIONS

NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 28

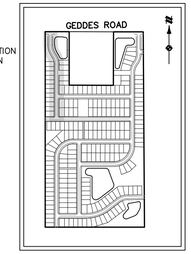
CAD FILE: 19004443SP-28-ENTD.DWG

NOTE:
WHERE THE WATER MAIN PASSES A STORM STRUCTURE WITH LESS THAN 10' OF HORIZONTAL SEPARATION, A FULL STICK OF PIPE SHALL BE INSTALLED (CENTERED AT THE STRUCTURE) TO LOCATE THE WATER MAIN JOINTS 10' AWAY FROM THE STRUCTURE.

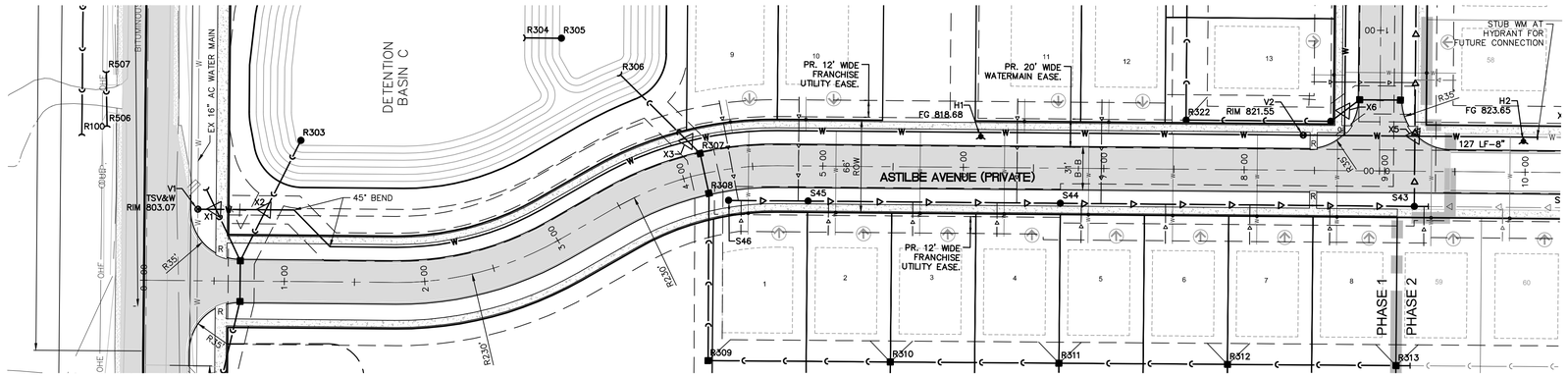
NOTE:
ACCORDING TO UTILITIES DEPARTMENT RECORDS THE EXISTING GEDDES ROAD WATER MAIN IS A 16"AC (ASBESTOS CEMENT) PIPE.

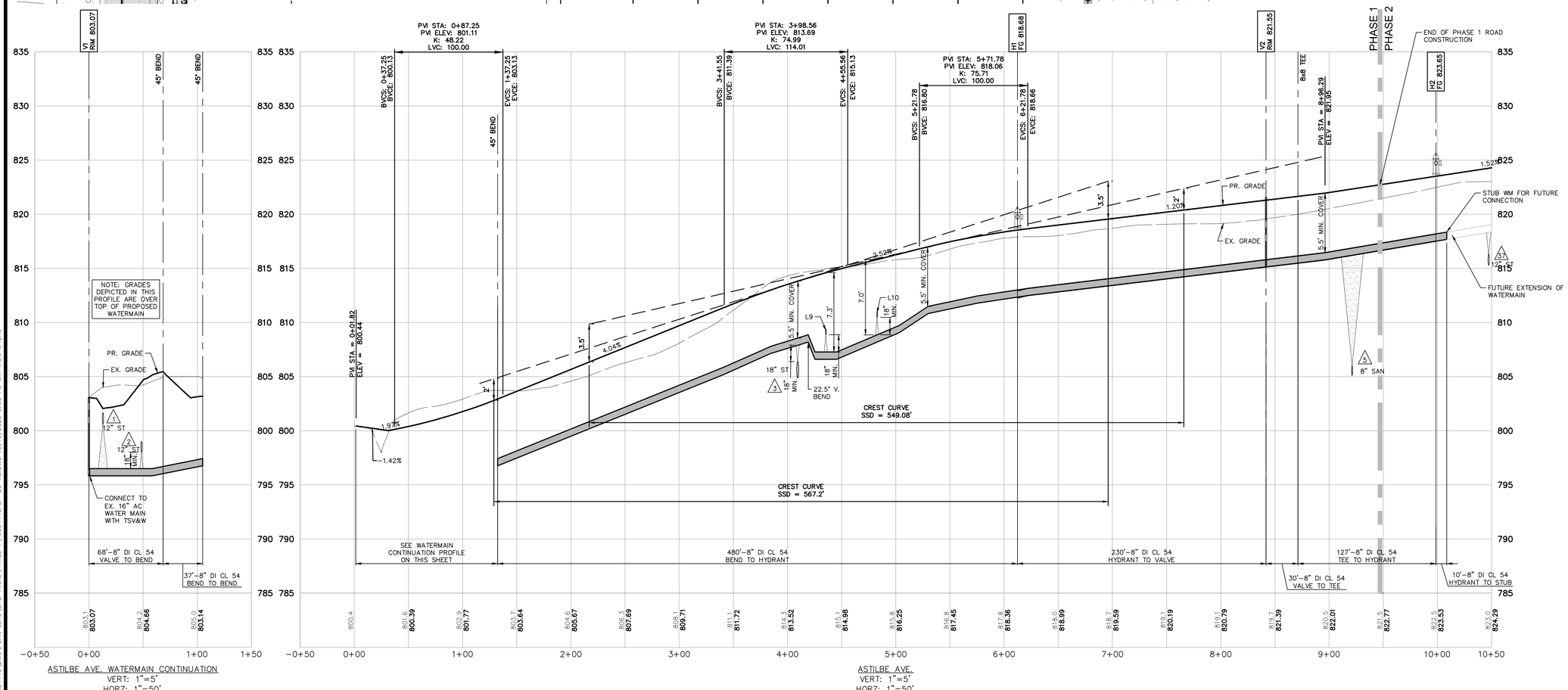
LEGEND

- PROPERTY LINE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING MANHOLE/CATCH BASIN/END SECTION
- PROPOSED MANHOLE/CATCH BASIN/END SECTION
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED WATER MAIN LEAD
- EXISTING HYDRANT
- PROPOSED HYDRANT
- EXISTING GATE VALVE & WELL
- PROPOSED GATE VALVE & WELL
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LEAD
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- 100 YEAR FLOODPLAIN
- EXISTING WETLAND
- PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)
- UTILITY CROSSING



KEY MAP
NOT TO SCALE





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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
ROAD & WATERMAIN
PLAN & PROFILE –
ASTILBE AVE.

DATE
OCT. 12, 2023

REVISIONS

0 25 50
SCALE: 1" = 50 FEET

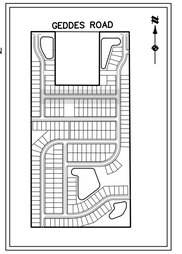
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 29

CAD FILE: 19004443SP-23-RD.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-23-RD.DWG 10/10/2023 3:53 PM MATTHEW MYERS

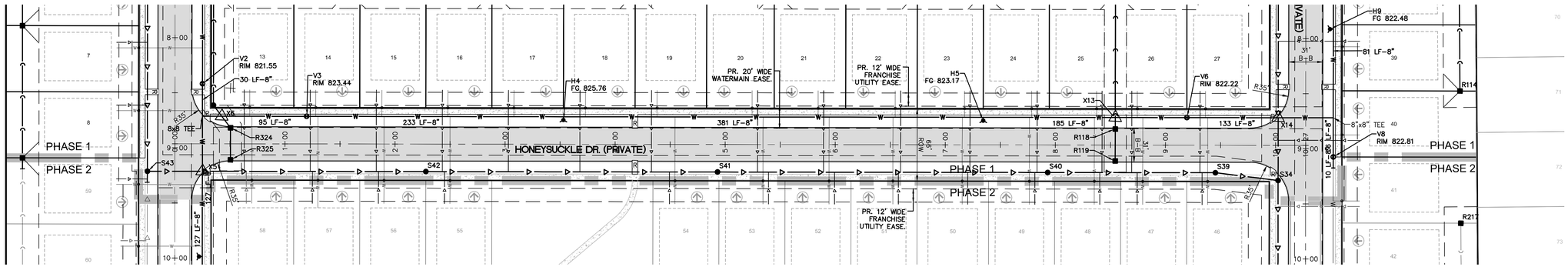
LEGEND

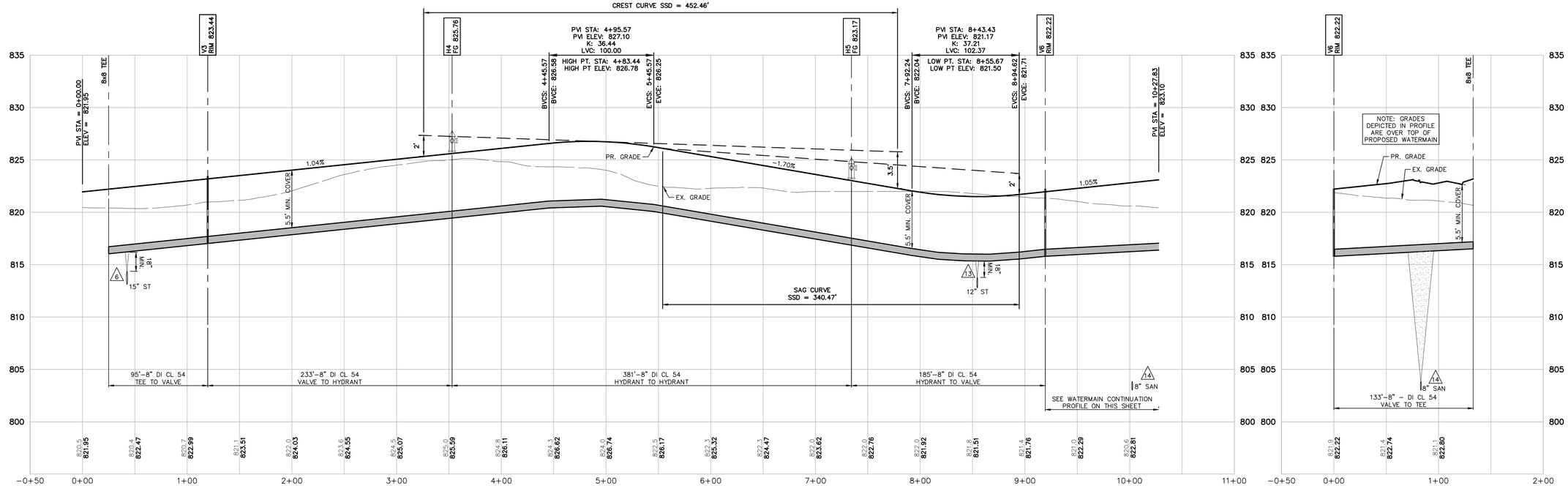
PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN
EXISTING WETLAND
PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)
UTILITY CROSSING



KEY MAP
NOT TO SCALE

NOTE:
WHERE THE WATER MAIN PASSES A STORM STRUCTURE WITH LESS THAN 10' OF HORIZONTAL SEPARATION, A FULL STICK OF PIPE SHALL BE INSTALLED (CENTERED AT THE STRUCTURE) TO LOCATE THE WATER MAIN JOINTS 10' AWAY FROM THE STRUCTURE.





ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
ROAD & WATERMAIN PLAN & PROFILE – HONEYSUCKLE DR.

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 30

CAD FILE: 19004443SP-23-RD.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-23-RD.DWG 10/10/2023 3:54 PM MATTHEW MYERS

LEGEND

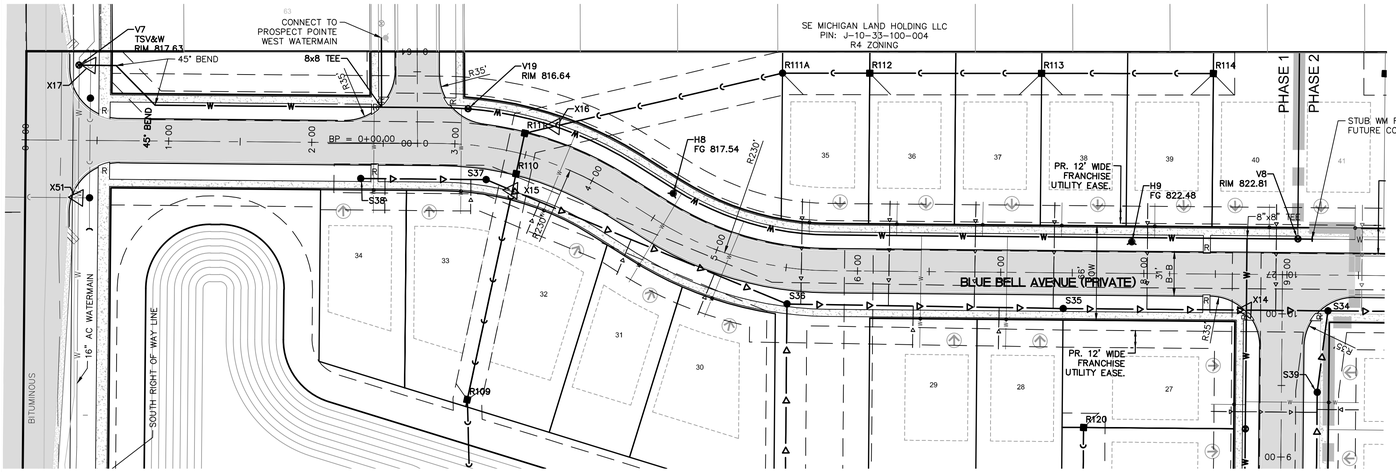
PROPERTY LINE
EX. STORM SEWER
PR. STORM SEWER
EX. MH/CB/ES
PR. MH/CB/ES
EX. WATER MAIN
PR. WATER MAIN
EX. HYDRANT
PR. HYDRANT
EX. GATE VALVE & WELL
PR. GATE VALVE & WELL
EX. SAN. SEWER
PR. SAN. SEWER
EX. SAN. SEWER MANHOLE
PR. SAN. SEWER MANHOLE
PR. COMPACTED GRANULAR MATERIAL (C.G.M)
UTILITY CROSSING
GARAGE/DRIVEWAY

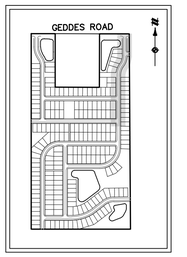
NOTE: SEE SH. 49 FOR UTILITY CROSSING INFORMATION.

EXISTING GRADE — 850.00 — PROFILE GRID ELEVATION
PROPOSED GRADE AT C/L OF ROAD
17+00 — ROAD STATION

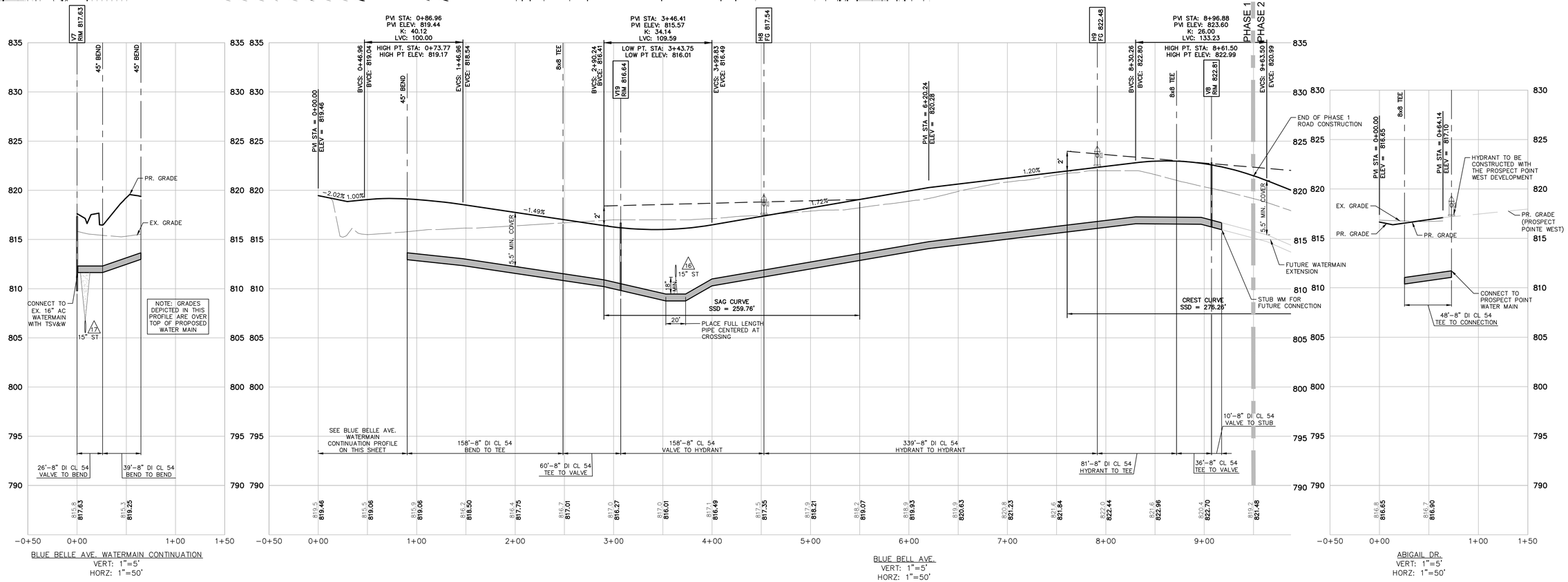
NOTE:
ACCORDING TO UTILITIES DEPARTMENT RECORDS THE EXISTING GEDDES ROAD WATER MAIN IS A 16"AC (ASBESTOS CEMENT) PIPE.

NOTE:
WHERE THE WATER MAIN PASSES A STORM STRUCTURE WITH LESS THAN 10' OF HORIZONTAL SEPARATION, A FULL STICK OF PIPE SHALL BE INSTALLED (CENTERED AT THE STRUCTURE) TO LOCATE THE WATER MAIN JOINTS 10' AWAY FROM THE STRUCTURE.





KEY MAP
NOT TO SCALE



ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
ROAD & WATERMAIN
PLAN & PROFILE – BLUE BELL AVE.

DATE
OCT. 12, 2023

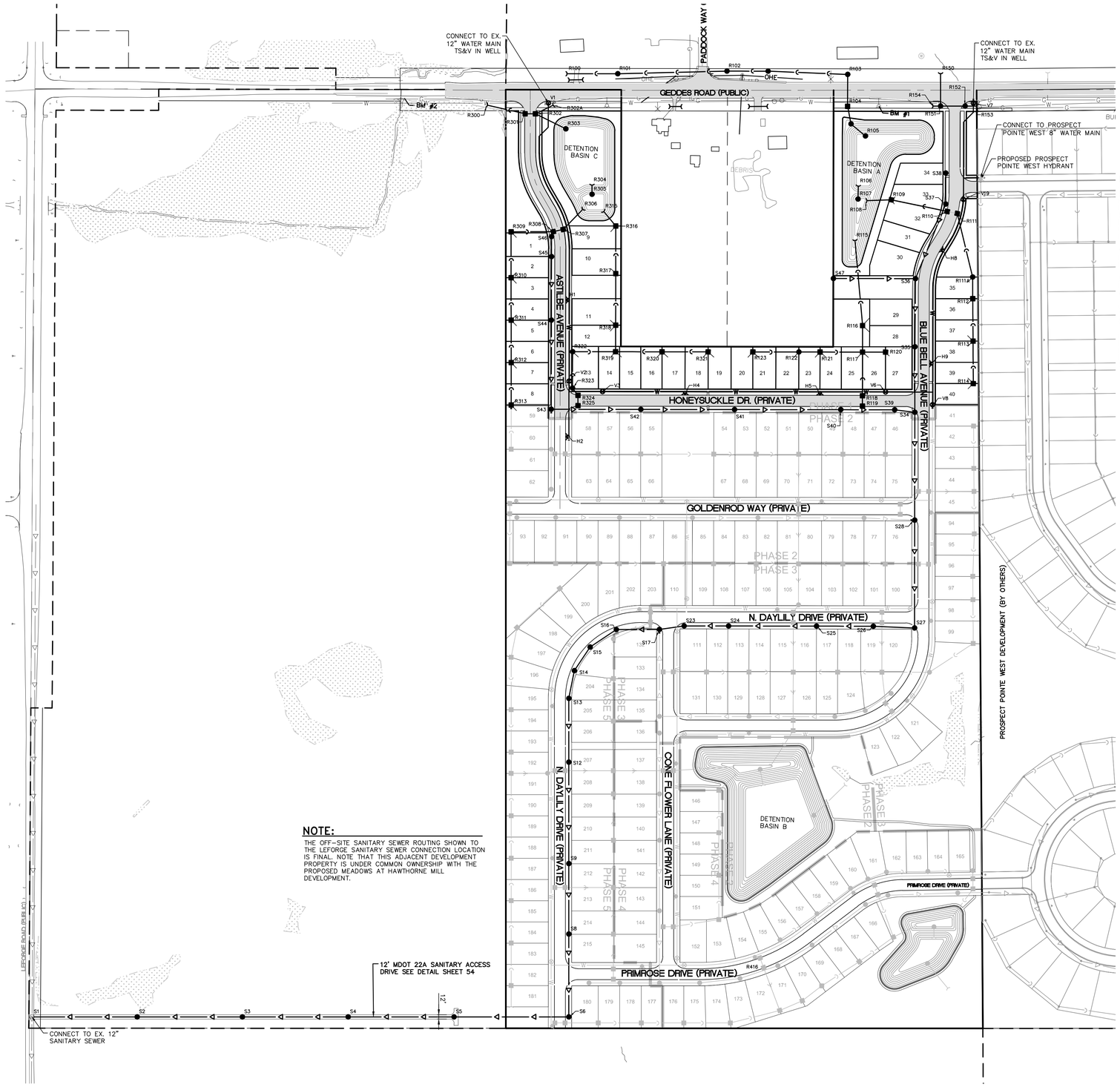
REVISIONS

0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 31

CAD FILE: 190044.3PSP-23-RD.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\190044.3PSP-23-RD.DWG 10/10/2023 5:09 PM MATTHEW MYERS



NOTE:
ACCORDING TO UTILITIES DEPARTMENT RECORDS THE EXISTING GEDDES ROAD WATER MAIN IS A 16" AC (ASBESTOS CEMENT) PIPE.

LEGEND

- PROPERTY LINE
- EX. STORM SEWER
- PR. STORM SEWER
- EX. WATER MAIN
- PR. WATER MAIN
- EX. SANITARY SEWER
- PR. SANITARY SEWER
- PR. EASEMENT
- EX. WETLAND

UTILITY NARRATIVE

SEWER: THE SITE WILL BE SERVICED WITH PUBLIC SANITARY SEWER VIA CONNECTION POINTS TO TWO SEPARATE SEWER DISTRICTS. SOME CAPACITY REMAINS IN THE PROSPECT POINTE PUMP STATION FOR SANITARY SEWER. THE SOUTHERN-MOST UNITS WILL BE SERVICED BY A CONNECTION THROUGH PROSPECT POINTE WEST TO MAKE USE OF THIS REMAINING CAPACITY. IT IS ANTICIPATED THAT UP TO 49 UNITS CAN BE ACCOMMODATED IN THE AVAILABLE CAPACITY. ALL UNITS NOT SERVICED THROUGH PROSPECT POINTE WILL BE SERVICED BY CONNECTING TO EXISTING SEWER IN LEFORGE ROAD.

WATER: THE SITE WILL BE SERVICED WITH PUBLIC WATER BY CONNECTING TO AN EXISTING 12" MAIN IN GEDDES ROAD ROW AS WELL AS CONNECTING INTO TWO 8" MAINS FROM PROSPECT POINTE WEST.

STORMWATER: ATWELL HAS COORDINATED WITH THE WASHTENAW COUNTY WATER RESOURCE COMMISSION RELATED TO PRELIMINARY DESIGN REQUIREMENTS AND SOILS ANALYSIS. THIS IS DISCUSSED IN MORE DETAIL ON SHEET 46.

UTILITY PHASING: DURING THE INITIAL PHASE, ALL UTILITIES NEEDED TO SERVICE LOTS 1-40 SHALL BE INSTALLED ALONG WITH THE TWO NORTH DETENTION BASINS AND OUTLETS TO THE SNIDECAR DRAIN. THE SANITARY SEWER WILL BE EXTENDED THOUGH THE ADJACENT PARCEL OUT TO LEFORGE ROAD AND WATER MAIN WILL CONNECT TO THE EXISTING 16" MAIN ALONG GEDDES AS WELL AS THE NORTHERN CONNECTION TO THE 8" MAIN IN PROSPECT POINTE TO ENSURE A LOOPING SYSTEM. THE LATER PHASES OF THE DEVELOPMENT WILL ADD ADDITIONAL STORMWATER BASINS THAT FOLLOW EXISTING DRAINAGE PATTERNS TO THE SUPERIOR NO. 1 DRAIN. WATER AND SANITARY SEWER SERVICE WILL BE EXTENDED AS REQUIRED FROM THE PREVIOUS PHASES.

NOTE:
THE STORM SEWER AND SURFACE DRAINAGE EASEMENTS AND THE DETENTION BASIN EASEMENT/BUFFER WILL BE GRANTED TO THE WASHTENAW COUNTY WATER RESOURCES COMMISSION (WCWRC) AND THE MEADOWS AT HAWTHORNE MILL ASSOCIATION.

NOTE:
THE PATH FOR THE OFFSITE SANITARY SEWER NEEDS TO SUPPORT A FULL LOADED VECTOR TRUCK. THE TRENCH BACKFILL, EITHER NATIVE MATERIAL OR IMPORTED GRANULAR FILL NEEDS TO BE COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT TO SUPPORT THIS EQUIPMENT

NOTES

1. ALL UTILITIES SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
2. CONTRACTOR SHALL COORDINATE SCHEDULING AND PROCEDURES WITH THE AUTHORITY HAVING JURISDICTION PRIOR TO PERFORMING THE PROPOSED CONNECTIONS TO THE EXISTING WATER MAIN.
3. 10' HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN WATER MAINS AND SEWERS.
4. A MINIMUM VERTICAL SEPERATION OF 18" SHALL BE MAINTAINTED BETWEEN CROSSING UTILITES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
5. ALL PROPOSED STORM SEWER SHALL BE RCP CL-IV UNLESS OTHERWISE NOTED.
6. ALL STORM STRUCTURES RECEIVING STORM RUNOFF, EXCEPT FOR 2 FOOT DIAMETER INLETS, ARE TO HAVE 2-FOOT SUMPS PER SUPERIOR TOWNSHIP STANDARDS.
7. LOW HEAD (FLAT TOP) STRUCTURES SHALL BE PROVIDED FOR THE STORM STRUCTURES WITH LESS THAN FOUR FEET OF COVER.
8. ALL WATER MAIN SHALL BE DUCTILE IRON CL-54 AS APPROVED. WATER LEADS SHALL BE 1" TYPE K COPPER, UNLESS OTHERWISE APPROVED. ALL GATE VALVES EXCEPT HYDRANT SHUTOFFS SHALL BE INSTALLED IN WELLS.
9. ALL SANITARY LEADS SHALL BE 6" PVC SDR 23.5 LAID AT 1% MINIMUM SLOPE.
10. ALL SANITARY SEWER PIPE SHALL BE PVC SDR 26 TO 20 FEET DEPTH PVC TRUSS PIPE FOR SANITARY SEWER DEEPER THAN 20 FEET FROM FINISH GRADE.
11. THE MINIMUM COVER OF SANITARY SEWERS 4'.
12. TRAFFIC CONTROL TO BE PROVIDED IN ACCORDANCE WITH THE MMUTCD & COUNTY ROAD COMMISSION.
13. MDOT CLASS II SAND BACKFILL IS REQUIRED FOR ALL UTILITY BACKFILL UNDER OR WITHIN A 1:1 INFLUENCE OF PROPOSED ROADWAYS.
14. ALL STORM SEWER SHALL BE PLACED IN 20' WIDE DRAINAGE EASEMENTS. CROSS LOT AND REAR LOT SWALES WILL BE PLACE IN 30' WIDE DRAINAGE EASEMENTS.
15. ALL SANITARY SEWER WILL BE PLACED IN EASEMENTS. WIDER EASEMENTS HAVE BEEN PROVIDED FOR MAINTENANCE ACCESS ON DEEP SANITARY SEWERS.
16. ALL WATER MAIN WILL BE PLACED IN A MINIMUM 20' WIDE EASEMENTS.
17. AT THIS TIME, LOTS **1, 9,** AND **10** ARE ANTICIPATED TO BE SERVICED BY HUNG PLUMBING.
18. STOP BOXES SHALL BE INSTALLED AT THE R.O.W. LINE (AT 1 FT. BEHIND THE SIDEWALK).
19. WATER LEADS TO ROW LINE SHALL BE INSTALLED BY THE CONTRACTOR FROM THE WATER MAIN AND AFTER WATER MAIN TESTING ACCEPTANCE.
20. SUMP LEADS SHALL BE PVC PIPE AT 1% MINIMUM SLOPE.
21. GATE WELL AND FRAME SHALL BE EJ 1040 WITH TYPE 'C' COVER OR APPROVED EQUAL. COVERS SHALL BE SAT WITH THE SUPERIOR TOWNSHIP LOGO AND THE WORDS 'SUPERIOR TOWNSHIP-WATER' IN RAISED LETTERS SPACED IN FROM THE PERIPHERY OF THE COVER.
22. STORM MANHOLE COVERS AND FRAMES SHALL BE EJ 1040 WITH TYPE 'C' COVER OR APPROVED EQUAL.
23. STORM YARD INLETS COVERS AND FRAMES SHALL BE EJ M.D.O.T BEHIVE WITH TYPE "N" COVER OR APPROVED EQUAL.
24. CATCH BASINS COVERS AND FRAMES SHALL BE EJ 7065 OR EQUAL WHEN IN PAVEMENT EDGE OR GUTTER LINE.
25. SANITARY SEWER MANHOLE COVERS AND FRAMES SHALL BE EJ 1040 WITH TYPE "A" COVER OR APPROVED EQUAL. COVERS SHALL BE CAST WITH THE SUPERIOR TOWNSHIP LOGO AND THE WORDS, "SUPERIOR TOWNSHIP-SANITARY" IN RAISED LETTERS SPACED IN FROM THE PERIPHERY OF THE COVER.

NOTE:
THE OFF-SITE SANITARY SEWER ROUTING SHOWN TO THE LEFORGE SANITARY SEWER CONNECTION LOCATION IS FINAL. NOTE THAT THIS ADJACENT DEVELOPMENT PROPERTY IS UNDER COMMON OWNERSHIP WITH THE PROPOSED MEADOWS AT HAWTHORNE MILL DEVELOPMENT.

SANITARY SEWER BASIS OF DESIGN - PROSPECT POINTE SERVICE AREA

Total No. of Single Family Lots:		45 Lots	
No. of Users per Lot:		3.5 Persons	
Total Expected Population Served:		158 Persons	
Average Daily Flow (per capita):		100 G.P.D.	
Peaking Factor:	18+√(POP/1000) = 4+√(POP/1000)	4.18	
Average Flow:	POP * 100 =	**15,800 G.P.D.**	
	=	11.0 G.P.M.	
	=	0.024 C.F.S.	
Peak Flow:	15,800 * 4.18 =	**66,101 G.P.D.**	
	=	45.9 G.P.M.	
	=	0.102 C.F.S.	
Pipe Capacity:	8 in. diameter	A=	0.349 sf
	0.40% slope	R=	0.167 ft
	0.013 Manning's 'n'		
	Manning's Capacity =	0.766 C.F.S.	
	Velocity Flowing Full =	2.20 F.P.S.	

Prospect Pointe Pump Station Sewer Flows Summary

6/9/2020

Existing Flows to date:

	Acres	REUs	Population	Base Flow GPD	CFS	GPM	Peak Flow GPD	CFS	GPM	Peak Factor (total service area)
Fairfax		41	143.5	14350	0.02	9.97	55522.35	0.09	38.56	3.87
PP I		86	301	30100	0.05	20.90	116461.51	0.18	80.88	3.87
PP II		94	329	32900	0.05	22.85	127295.14	0.20	88.40	3.87
Totals		221	773.5	77350	0.12	53.72	299279.00	0.46	207.83	3.87

Existing Pump Sta. capacity 382 GPM or 0.85 cfs

Proposed Future Flows:

	Acres	REU's	Population	Base Flow GPD	CFS	GPM	Peak Flow GPD	CFS	GPM	Peak Factor (total service area)
Fairfax		41	143.5	14350	0.02	9.97	52860.51	0.08	36.71	3.68
PP I		86	301	30100	0.05	20.90	110878.14	0.17	77.00	3.68
PP II		94	329	32900	0.05	22.85	121192.38	0.19	84.16	3.68
PP West (Future)		157	549.5	54950	0.09	38.16	202417.07	0.31	140.57	3.68
Meadows		45	157.5	15750	0.02	10.94	58017.63	0.09	40.29	3.68
Totals		423	1480.5	148050	0.23	102.81	545365.73	0.84	378.73	3.68

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
OVERALL UTILITY PLAN

DATE
OCT. 12, 2023

REVISIONS

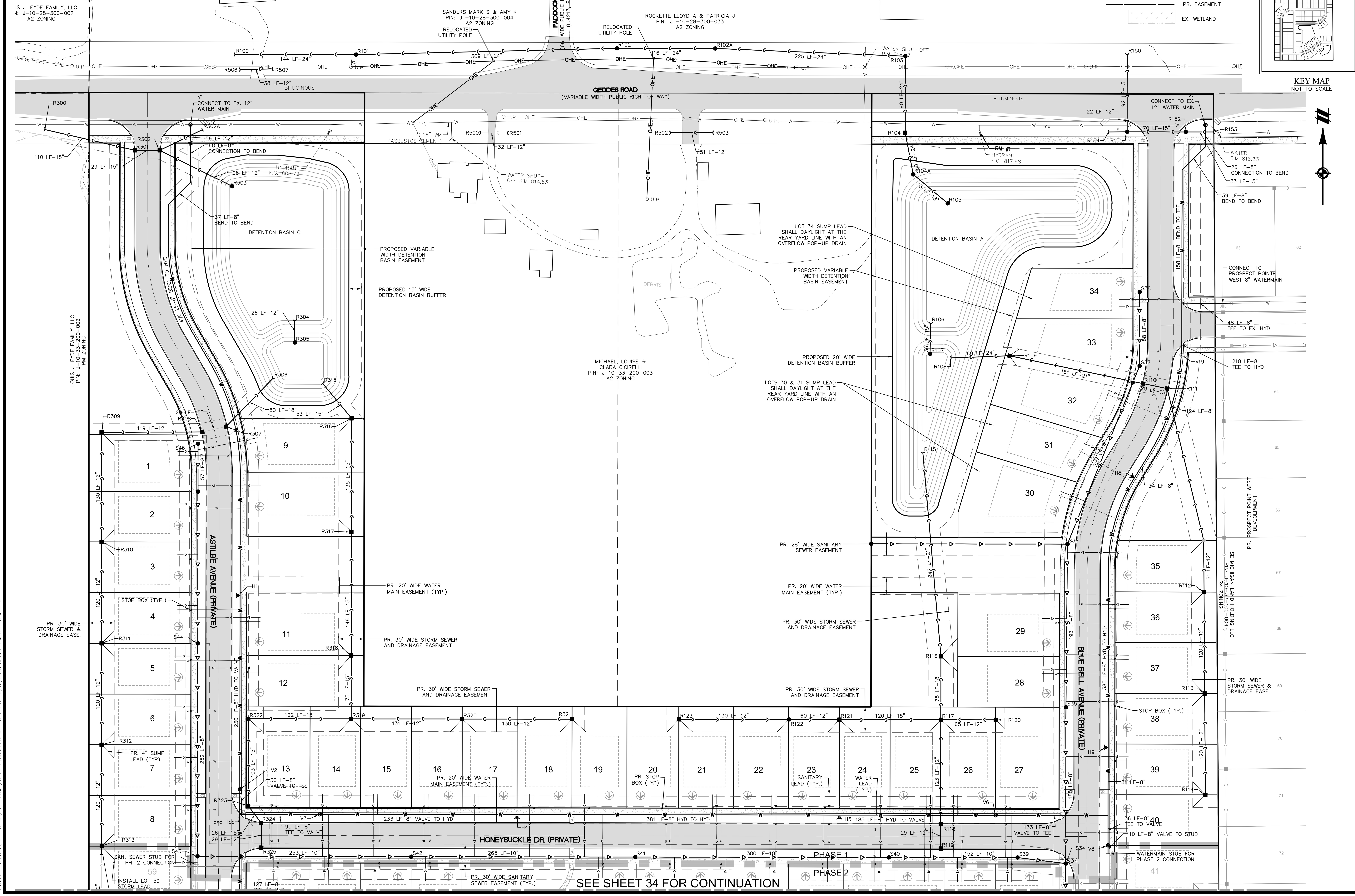
0 75 150
SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: -
SHEET NO. 32

CAD FILE: 19004443\SP-12-OU.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-12-OU.DWG 10/10/2023 3:55 PM MATTHEW MYERS

NOTE:
1. ACCORDING TO UTILITIES DEPARTMENT RECORDS THE EXISTING GEDDES ROAD WATER MAIN IS A 16"AC (ASBESTOS CEMENT) PIPE.
2. SANITARY LEADS FOR LOTS ON THE SOUTH SIDE OF HONEYSUCKLE DRIVE SHOULD BE INSTALLED IN PHASE 1. ALL OTHER LOTS OUTSIDE OF PHASE 1 SHALL HAVE ONLY THEIR WYES AND RISERS INSTALLED DURING PHASE 1 CONSTRUCTION.
3. WATER LEADS TO ROW LINE SHALL BE INSTALLED BY THE CONTRACTOR FROM THE WATER MAIN AND AFTER WATER MAIN TESTING ACCEPTANCE.
4. LOTS 30, 31, & 34 SUMP LEADS SHALL DAYLIGHT AT THE REAR LOT LINE WITH AN OVERFLOW POP-UP DRAIN.



SEE SHEET 34 FOR CONTINUATION

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
UTILITY PLAN

DATE OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: -
SHEET NO. 33

NOTE:
1. SANITARY LEADS FOR LOTS ON THE SOUTH SIDE OF HONEYSUCKLE DRIVE SHOULD BE INSTALLED IN PHASE 1. ALL OTHER LOTS OUTSIDE OF PHASE 1 SHALL HAVE ONLY THEIR WYES AND RISERS INSTALLED DURING PHASE 1.
2. WATER LEADS TO ROW LINE SHALL BE INSTALLED BY THE CONTRACTOR FROM THE WATER MAIN AND AFTER WATER MAIN TESTING ACCEPTANCE.

LEGEND

- PROPERTY LINE
- EX. STORM SEWER
- PR. STORM SEWER
- EX. WATER MAIN
- PR. WATER MAIN
- EX. SANITARY SEWER
- PR. SANITARY SEWER
- PR. EASEMENT
- EX. WETLAND

GEDDES ROAD

KEY MAP
NOT TO SCALE

SEE SHEET 33 FOR CONTINUATION

HONEYSUCKLE DR. (PRIVATE)
GOLDENROD WAY (PRIVATE)
N. DAYLILY DRIVE (PRIVATE)
PHASE 1
PHASE 2
PHASE 3
PHASE 5
59 (1)
PR. PROSPECT POINT WEST DEVELOPMENT
LOUIS J. EYDE FAMILY, LLC
PIN: J-10-33-200-002
PW ZONING
SE MICHI PIN:

SEE SHEET 35 FOR CONTINUATION

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
UTILITY PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY:	KS
CHECKED BY:	AK
P.M.:	J. KIME
JOB #:	19004443
FILE CODE:	–
SHEET NO.	34

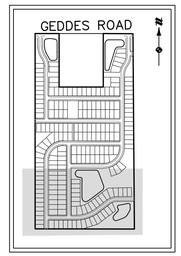
CAD FILE: 19004435P-13-UDWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004435P-13-UDWG 10/10/2023 3:56 PM MATTHEW MYERS

NOTE:
1. SANITARY LEADS FOR LOTS ON THE SOUTH SIDE OF HONEYSUCKLE DRIVE SHOULD BE INSTALLED IN PHASE 1. ALL OTHER LOTS OUTSIDE OF PHASE 1 SHALL HAVE ONLY THEIR WYES AND RISERS INSTALLED DURING PHASE 1 CONSTRUCTION.
2. WATER LEADS TO ROW LINE SHALL BE INSTALLED BY THE CONTRACTOR FROM THE WATER MAIN AND AFTER WATER MAIN TESTING ACCEPTANCE.

LEGEND

- PROPERTY LINE
- EX. STORM SEWER
- PR. STORM SEWER
- EX. WATER MAIN
- PR. WATER MAIN
- EX. SANITARY SEWER
- PR. SANITARY SEWER
- PR. EASEMENT
- EX. WETLAND



KEY MAP
NOT TO SCALE

SEE SHEET 34 FOR CONTINUATION

SEE SH. 36 FOR OFFSITE SANITARY SEWER

PHIL-MICHIGAN ASSOCIATES
PIN: J-10-33-300-001

LOUIS J. EYDE FAMILY, LLC
PIN: J-10-33-200-002
PM ZONING

SE MICHIGAN LAND HOLDING LLC
PIN: J-10-33-100-004
R4 ZONING

WORD BROADCASTERS INC

PROSPECT POINTE WEST WATER MAIN

PROPOSED PROSPECT POINT SANITARY SEWER

PR. PROSPECT POINT WEST DEVELOPMENT

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
UTILITY PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY:	KS
CHECKED BY:	AK
P.M.:	J. KIME
JOB #:	19004443
FILE CODE:	–
SHEET NO.	35

CAD FILE: 19004443SP-13-UDWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-13-UDWG 10/10/2023 3:57 PM MATTHEW MYERS

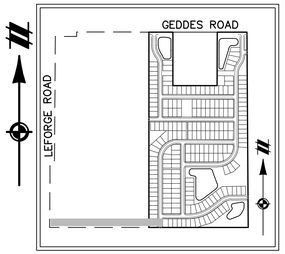
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

EXISTING WETLAND

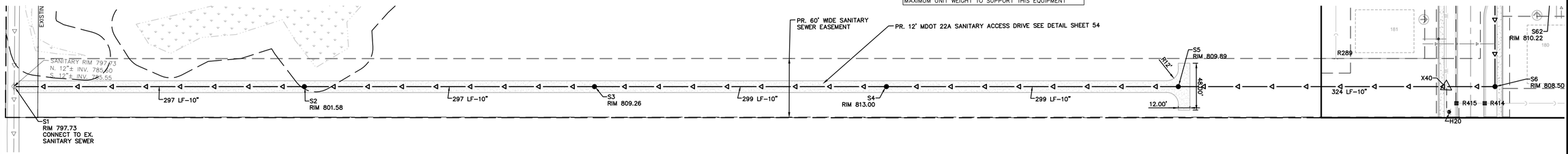
PROPOSED COMPACTED
GRANULAR MATERIAL (C.G.M)

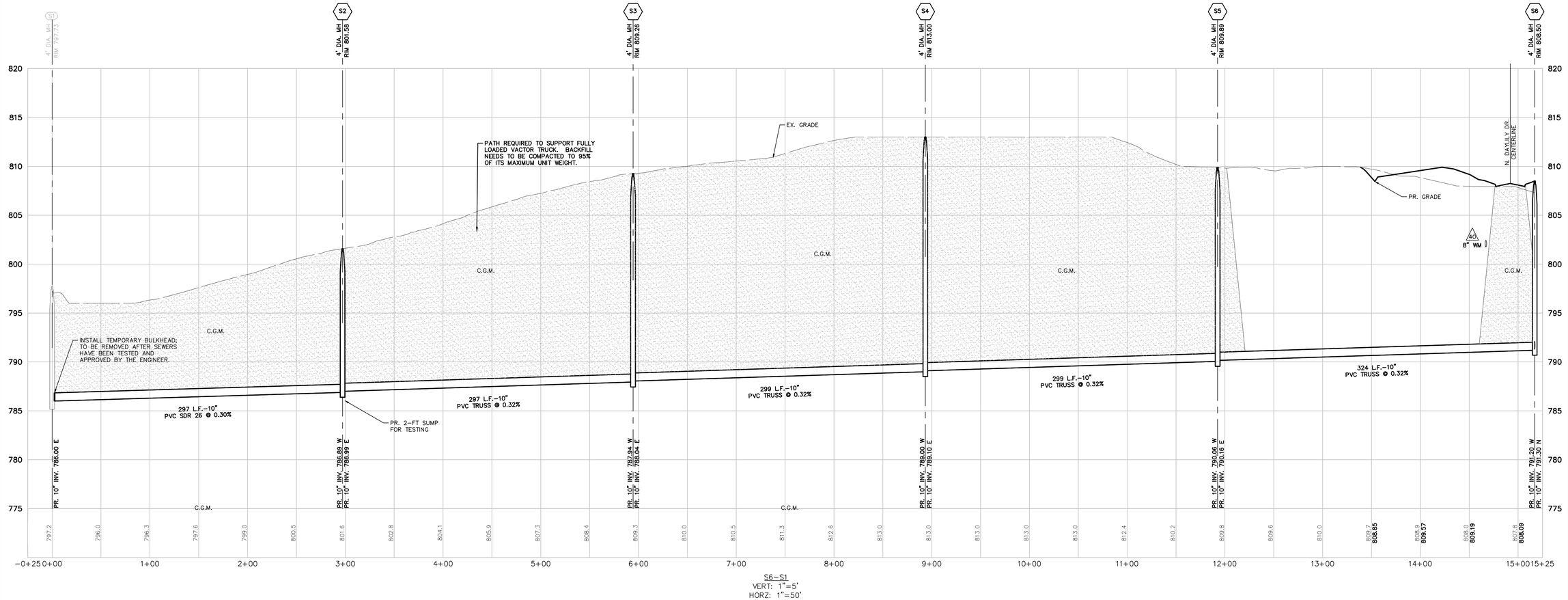
UTILITY CROSSING



KEY MAP
NOT TO SCALE

NOTE:
THE PATH FOR THE OFFSITE SANITARY SEWER NEEDS TO SUPPORT A FULL LOADED VECTOR TRUCK. THE TRENCH BACKFILL, EITHER NATIVE MATERIAL OR IMPORTED GRANULAR FILL NEEDS TO BE COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT TO SUPPORT THIS EQUIPMENT





S6-S1
VERT: 1"=5'
HORZ: 1"=50'

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
OFFSITE SANITARY SEWER
PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 36

CAD FILE: 19004443SP-22-S.DWG

K:\19004443\DWG\PLAN SETS\SITE_FINAL\PHASE 1\19004443SP-22-S.DWG 10/10/2023 3:58 PM MATTHEW MYERS

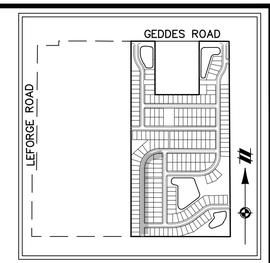
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

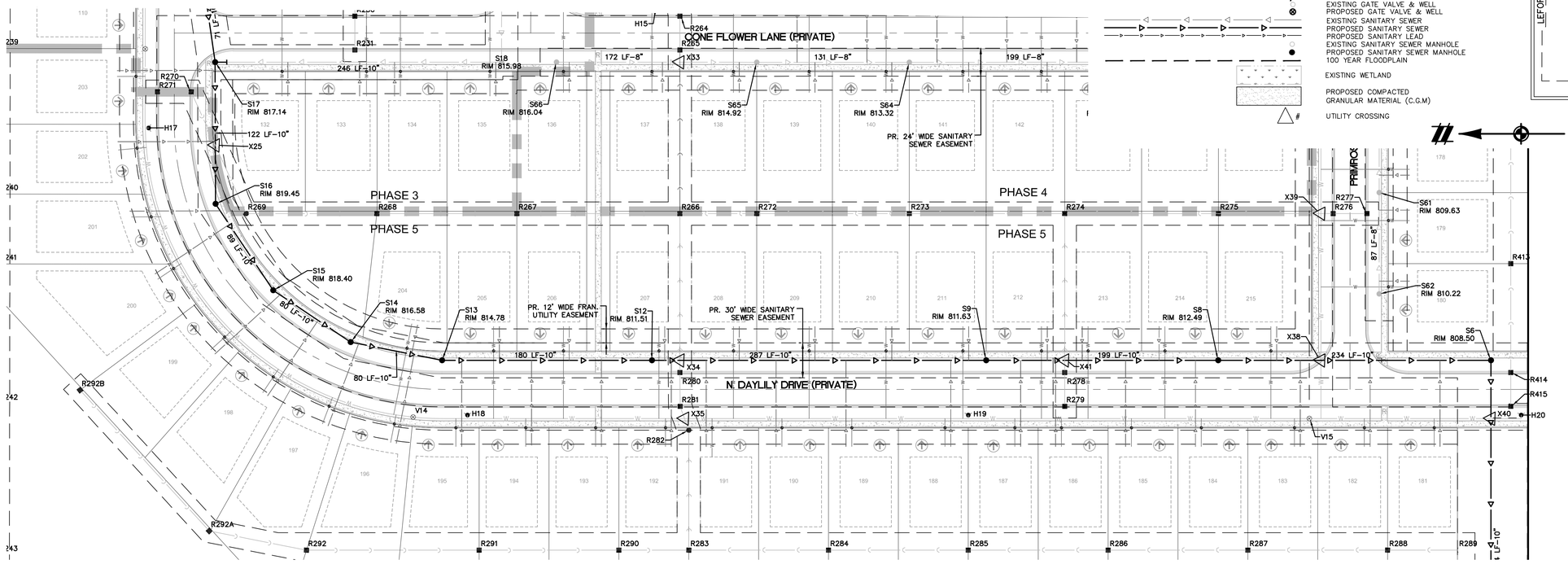
EXISTING WETLAND

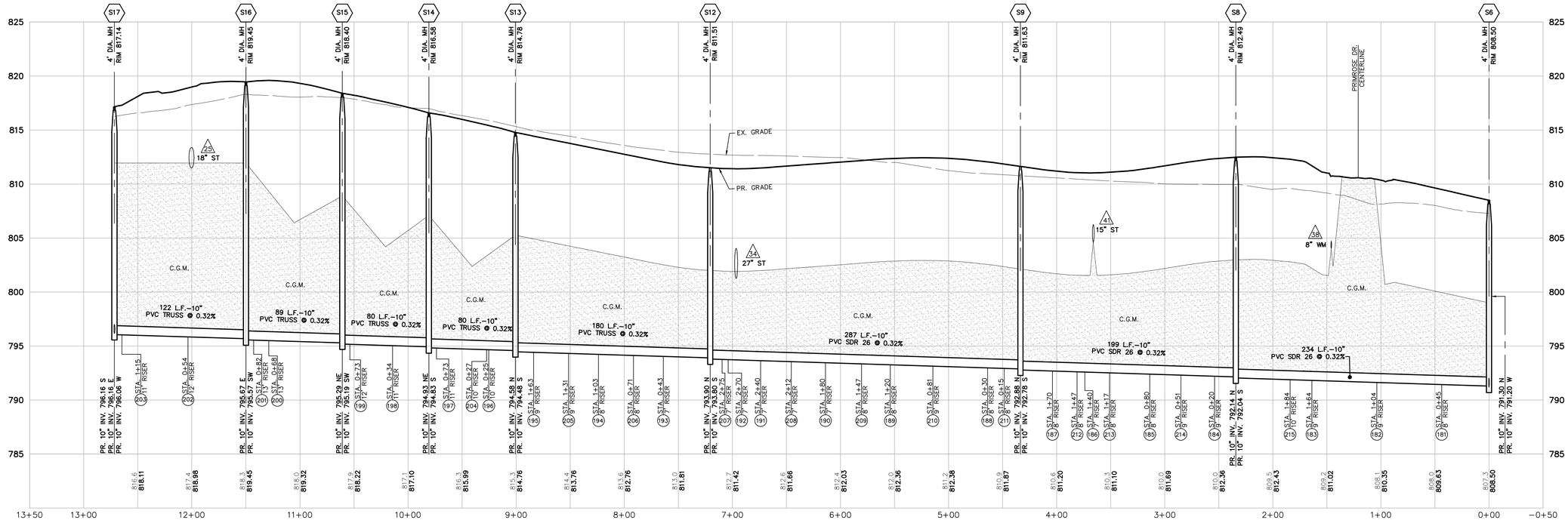
PROPOSED COMPACTED
GRANULAR MATERIAL (C.G.M)

UTILITY CROSSING



KEY MAP
NOT TO SCALE





S17–S6
VERT: 1"=5'
HORZ: 1"=50'

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SANITARY SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 37

CAD FILE: 19004443PSP-22-S.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-22-S.DWG 10/10/2023 3:58 PM MATTHEW MYERS

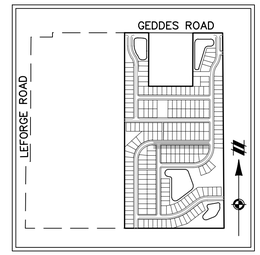
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

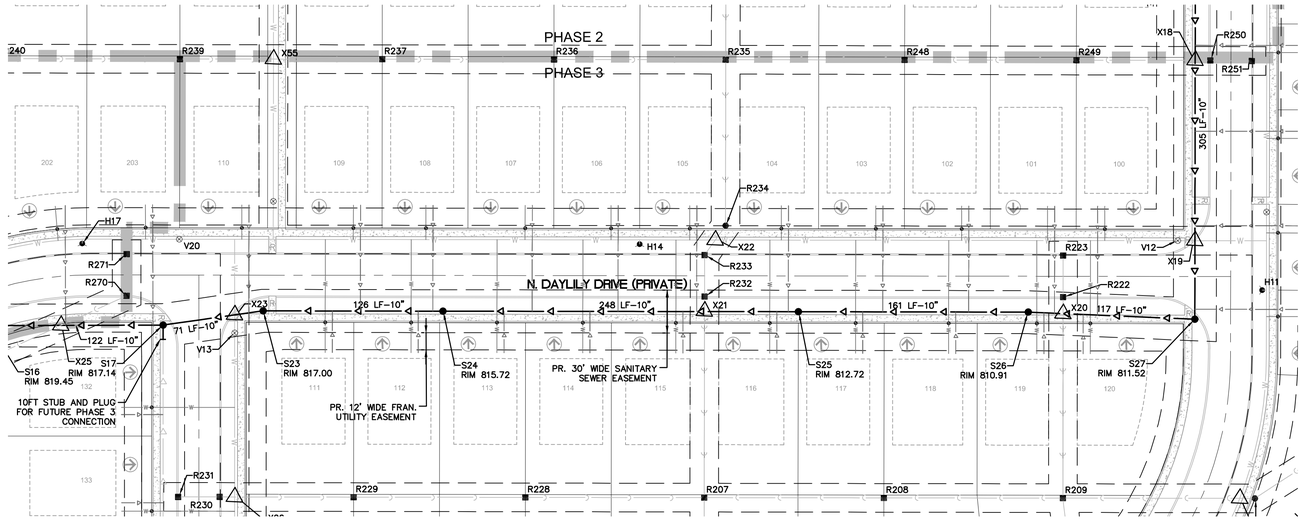
EXISTING WETLAND

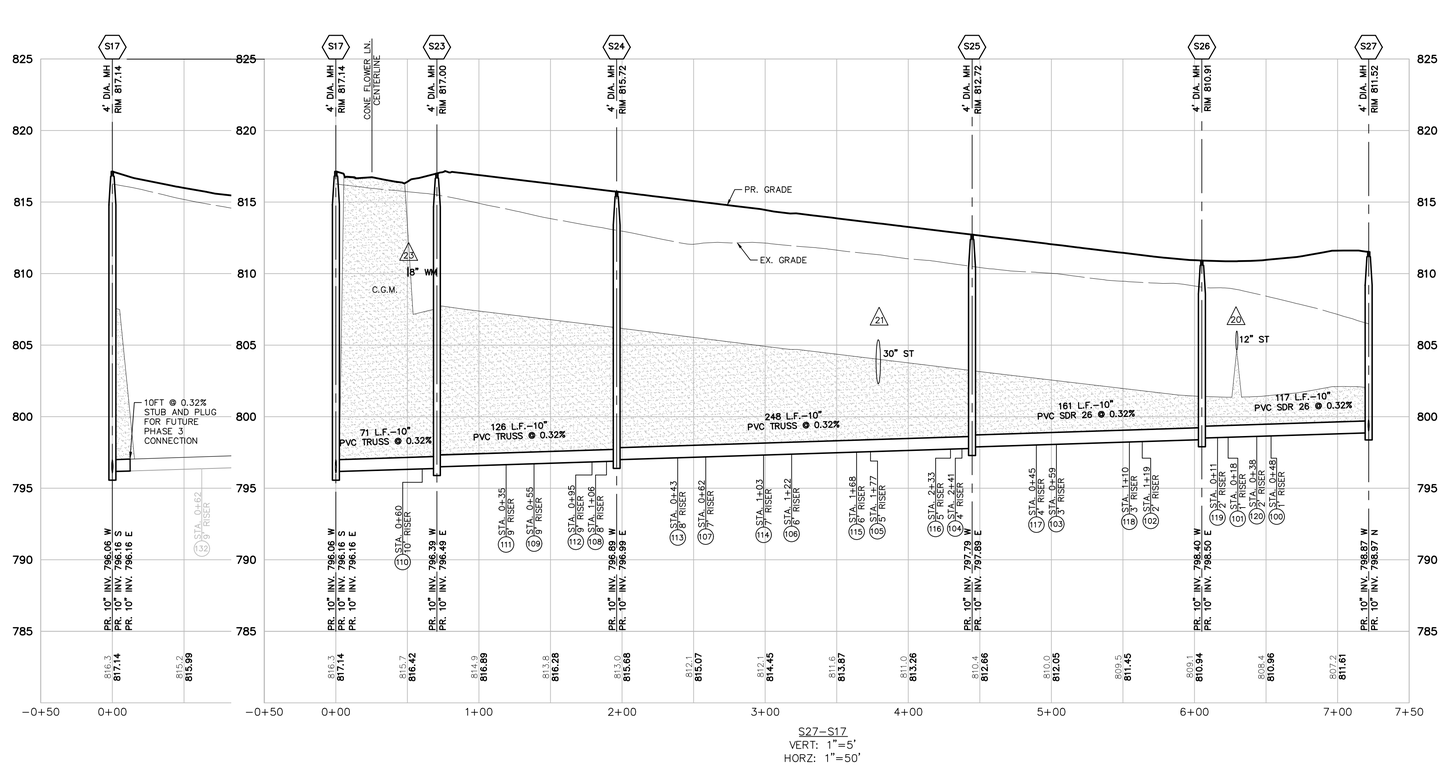
PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)

UTILITY CROSSING



KEY MAP
NOT TO SCALE





S27–S17
VERT: 1"=5'
HORZ: 1"=50'

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SANITARY SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 38

CAD FILE: 19004443PSP-22-S.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-22-S.DWG 10/10/2023 3:59 PM MATTHEW MYERS

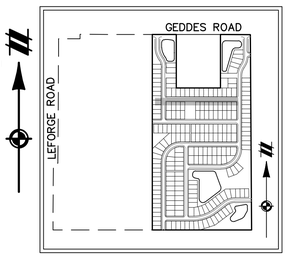
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

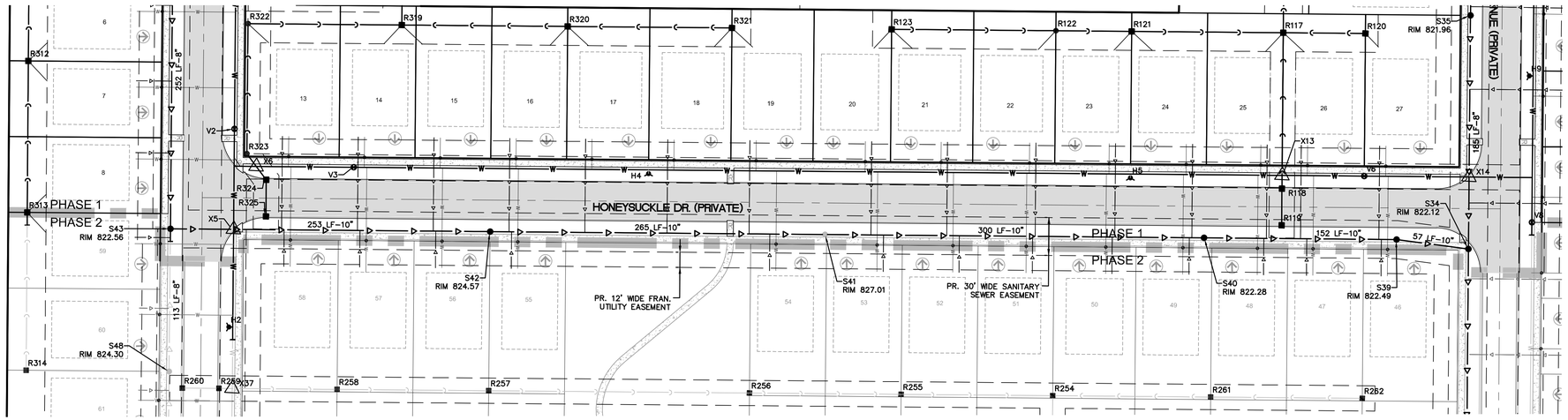
EXISTING WETLAND

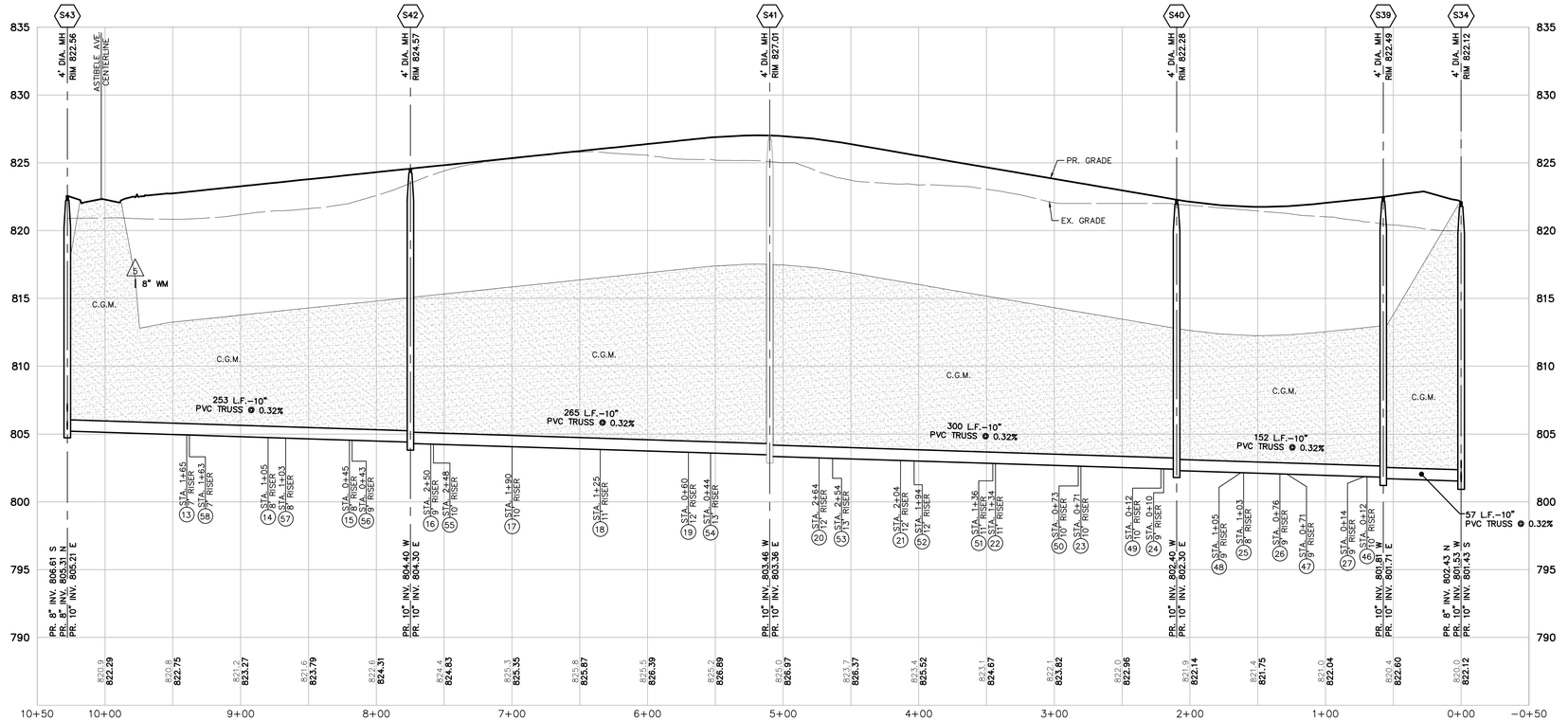
PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)

UTILITY CROSSING



KEY MAP
NOT TO SCALE





S43–S34
VERT: 1"=5'
HORZ: 1"=50'

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL

FINAL SITE PLANS – PHASE 1

SANITARY SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 39

CAD FILE: 19004443PSP-22-SLDWG

K:\19004443\DWG\PLAN SETS\SITE-FINALPHASE 1\19004443PSP-22-SLDWG, 10/10/2023 3:49 PM, MATHEW MYERS

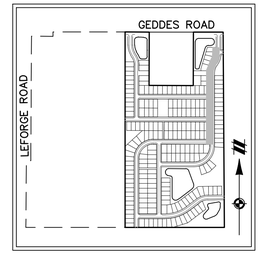
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

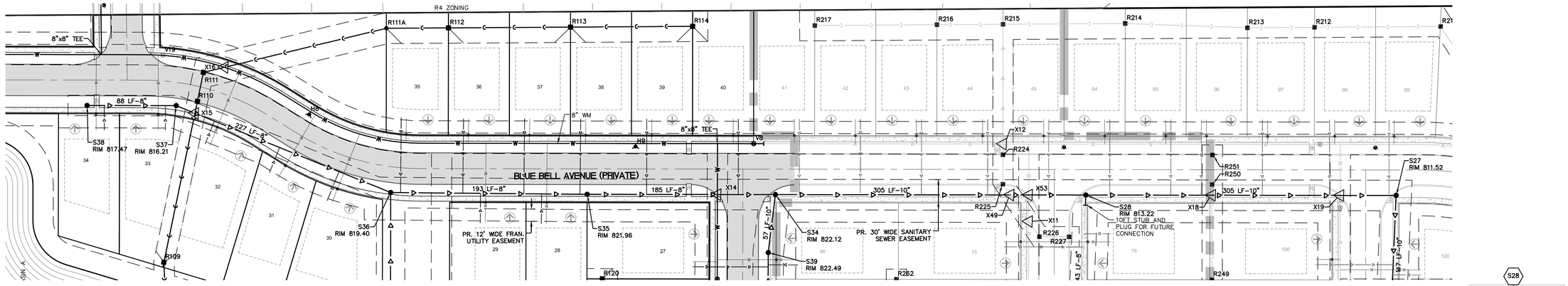
EXISTING WETLAND

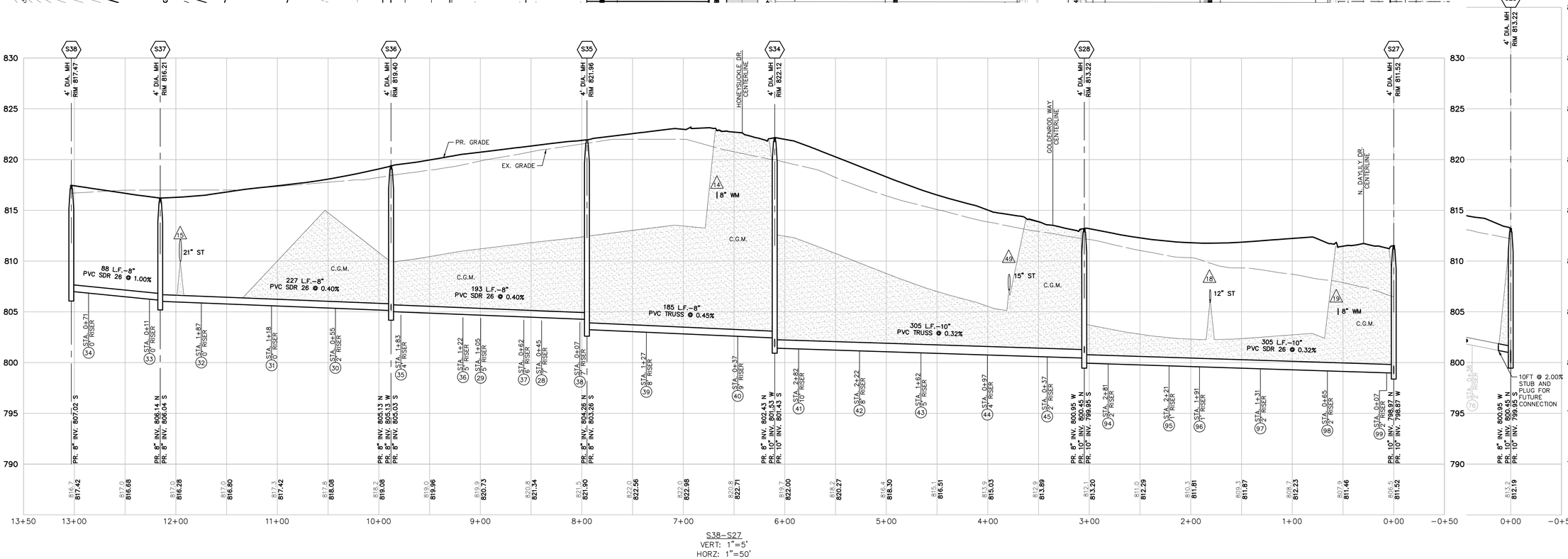
PROPOSED COMPACTED
GRANULAR MATERIAL (C.G.M)

UTILITY CROSSING



KEY MAP
NOT TO SCALE





S38–S27
VERT: 1"=5'
HORZ: 1"=50'

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SANITARY SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

0 25 50
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 40

CAD FILE: I:\19004443\SP-22-S.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-22-S.DWG 10/10/2023 3:59 PM MATTHEW MYERS

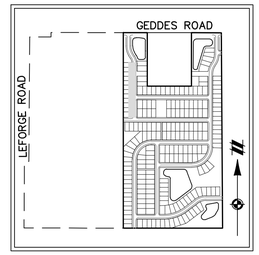
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN

EXISTING WETLAND

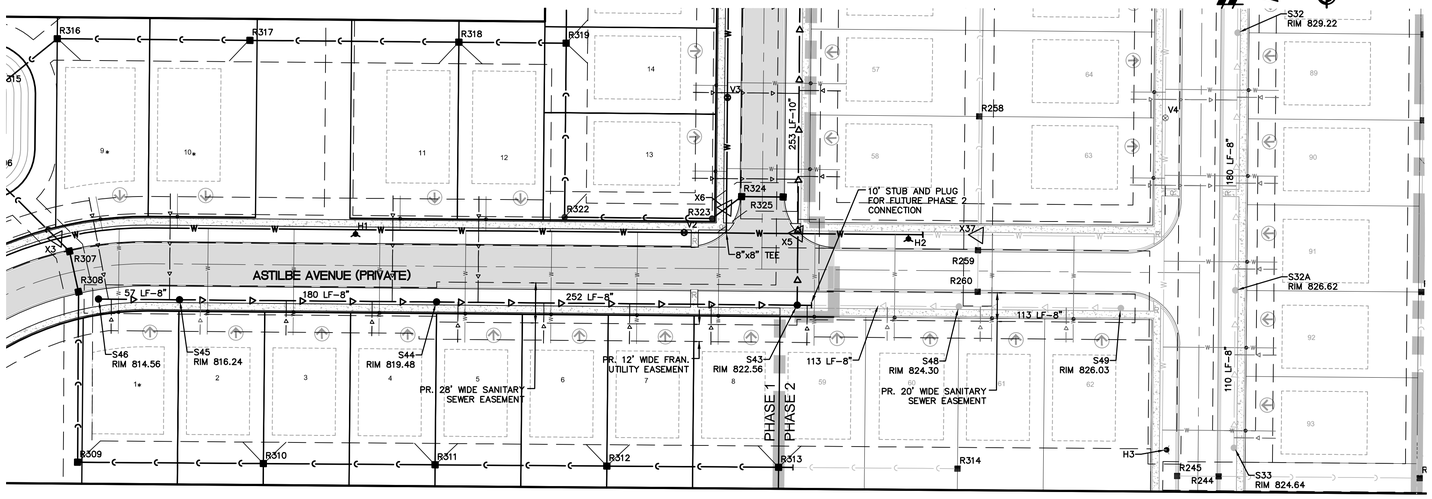
PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)

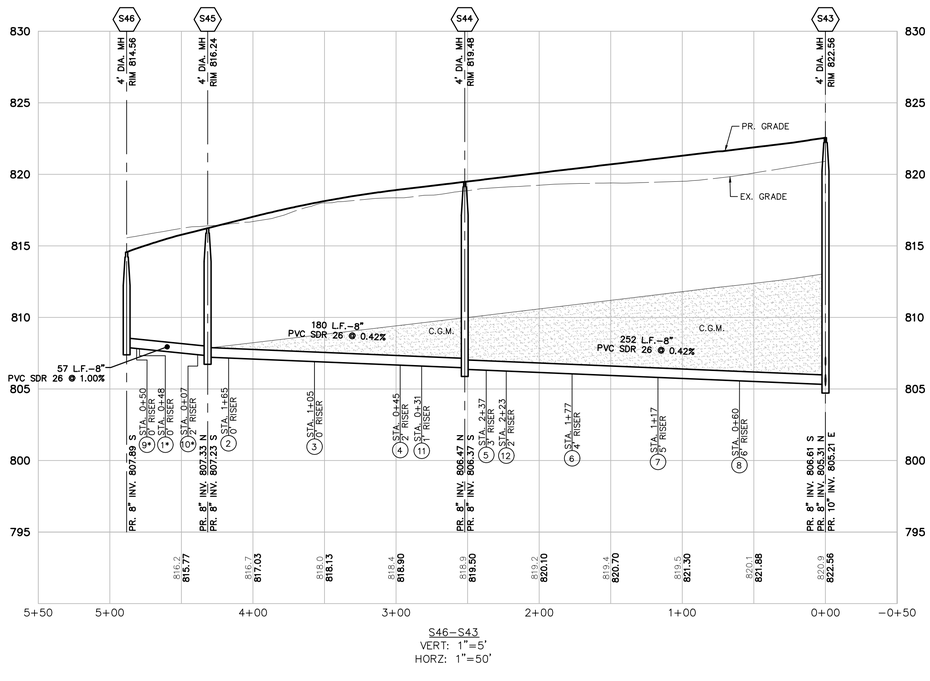
UTILITY CROSSING



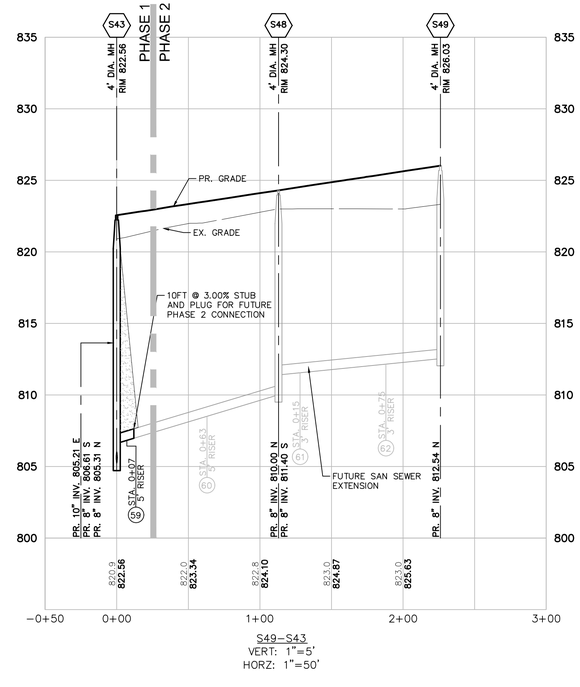
KEY MAP
NOT TO SCALE

NOTE: THE "*" ANNOTATION WITHIN THE LOT # INDICATES HUNG PLUMBING





S46–S43
VERT: 1"=5'
HORZ: 1"=50'



S49–S43
VERT: 1"=5'
HORZ: 1"=50'

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
SANITARY SEWER PLAN
& PROFILE

DATE
OCT. 12, 2023

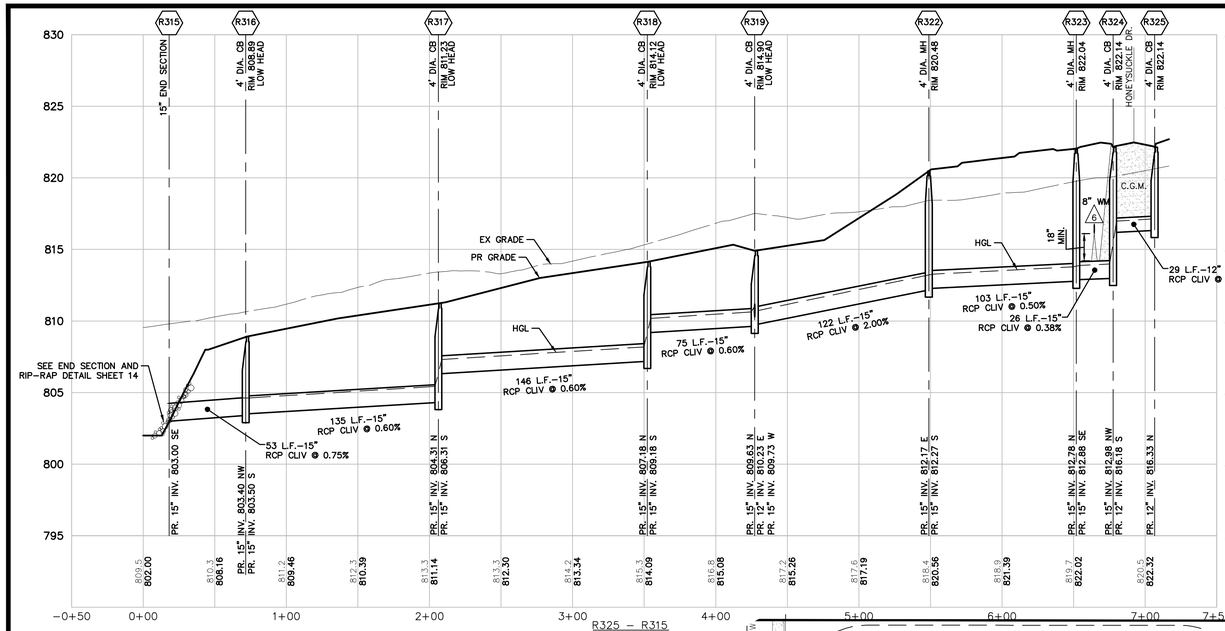
REVISIONS

SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 41

CAD FILE: 19004443PSP-22-S.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-22-S.DWG 10/10/2023 4:19 PM MATTHEW MYERS



811
Know what's below.
Call before you dig.
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
STORM SEWER PLAN & PROFILE

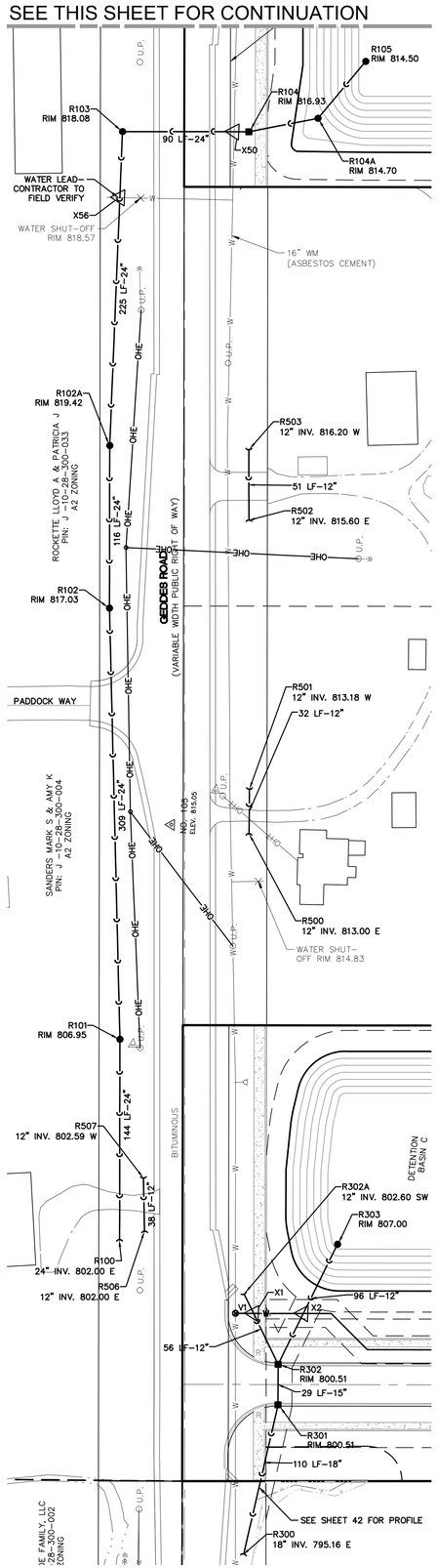
DATE
OCT. 12, 2023

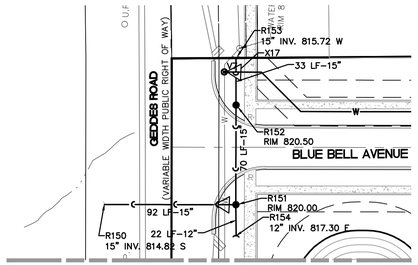
REVISIONS

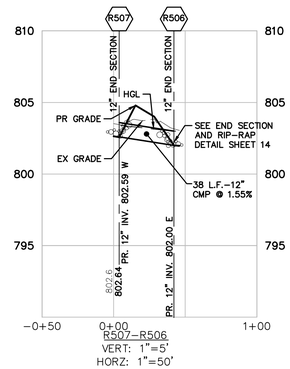
SCALE: 1" = 50 FEET

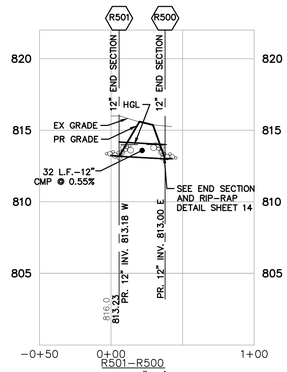
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 42

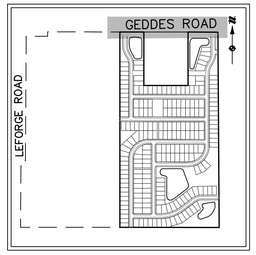
CAD FILE: 19004443SP-24-R.DWG
K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-24-R.DWG 10/10/2023 4:01 PM MATTHEW MYERS







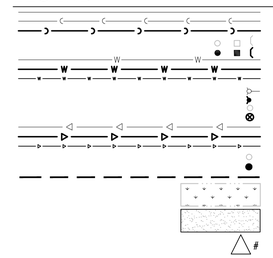




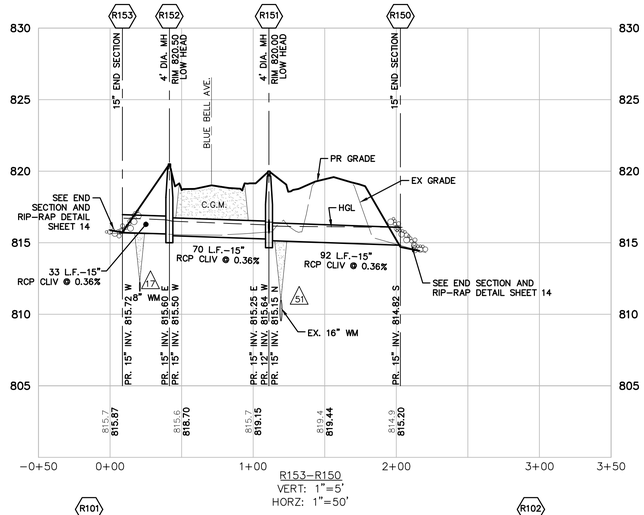
KEY MAP
NOT TO SCALE

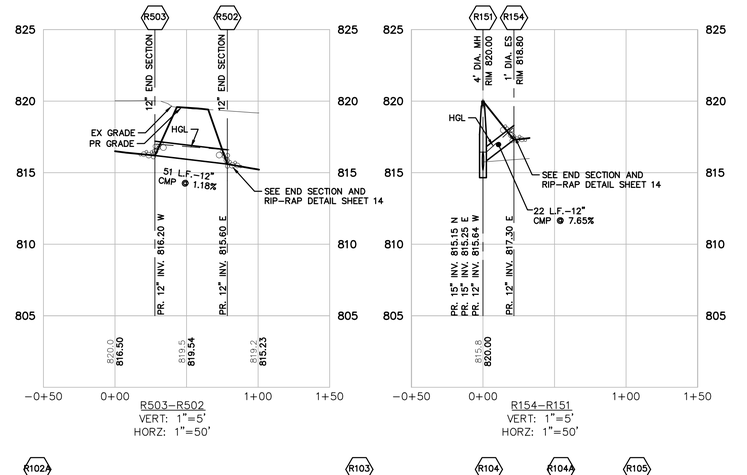
NOTE:
ALL STORM SEWER STRUCTURES RECEIVING STORM RUNOFF, EXCEPT FOR 2' DIAMETER INLETS, SHOULD HAVE 2-FOOT SUMPS PER SUPERIOR TOWNSHIP STANDARDS.

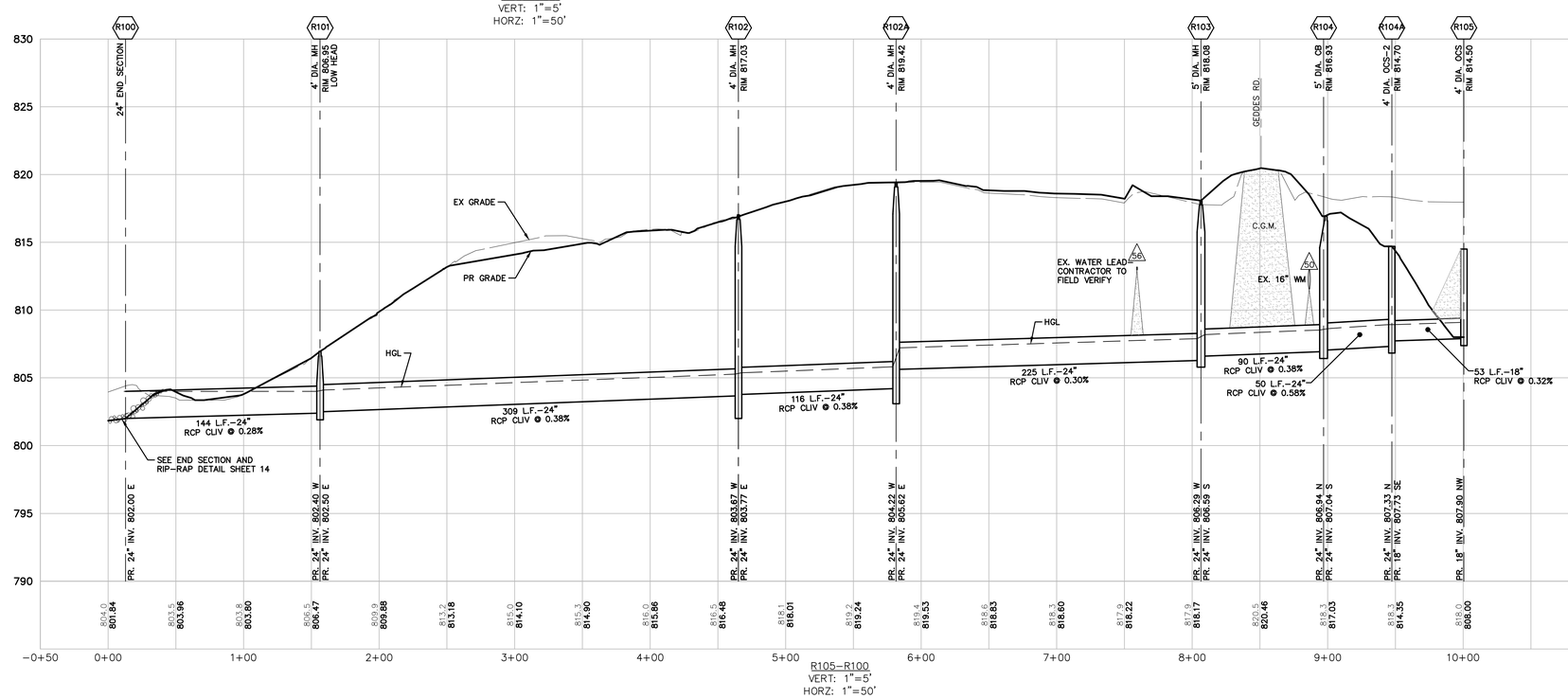
LEGEND



- PROPERTY LINE
- EXISTING STORM SEWER
- PROPOSED STORM SEWER
- EXISTING MANHOLE/CATCH BASIN/END SECTION
- PROPOSED MANHOLE/CATCH BASIN/END SECTION
- EXISTING WATER MAIN
- PROPOSED WATER MAIN
- PROPOSED WATER MAIN LEAD
- EXISTING HYDRANT
- PROPOSED HYDRANT
- EXISTING GATE VALVE & WELL
- PROPOSED GATE VALVE & WELL
- EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY LEAD
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- 100 YEAR FLOODPLAIN
- EXISTING WETLAND
- PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)
- UTILITY CROSSING







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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS - PHASE 1
STORM SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

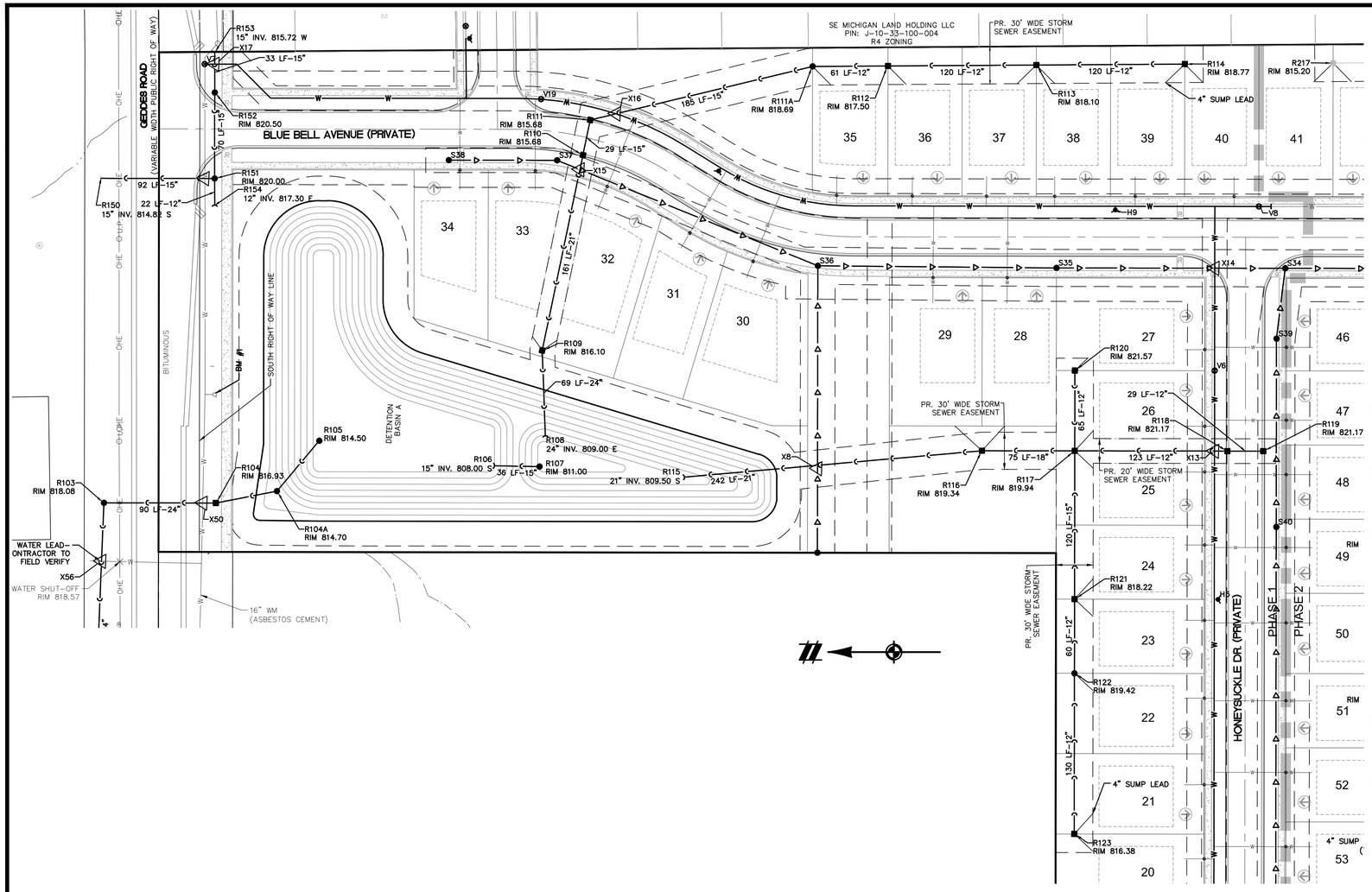
REVISIONS

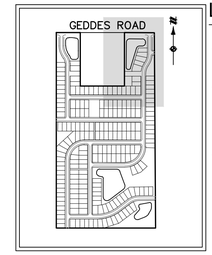
SCALE: 1" = 50 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 43

CAD FILE: I:\19004443\SP-24-R.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-24-R.DWG 10/10/2023 4:01 PM MATTHEW MYERS

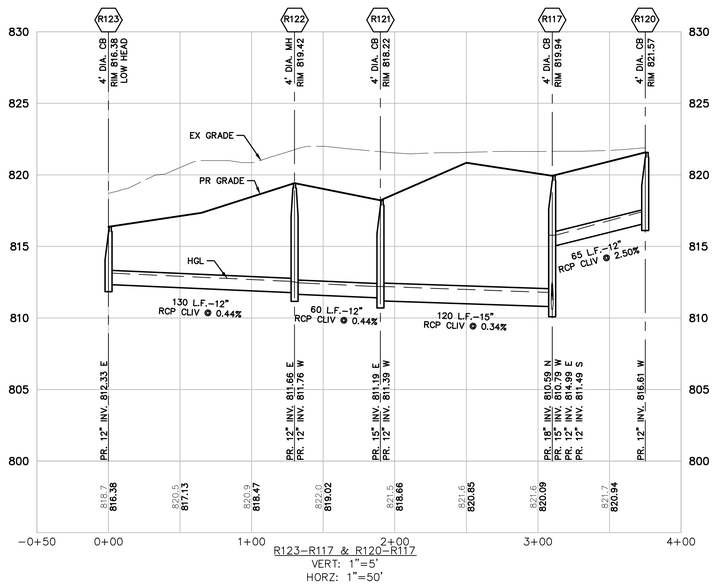


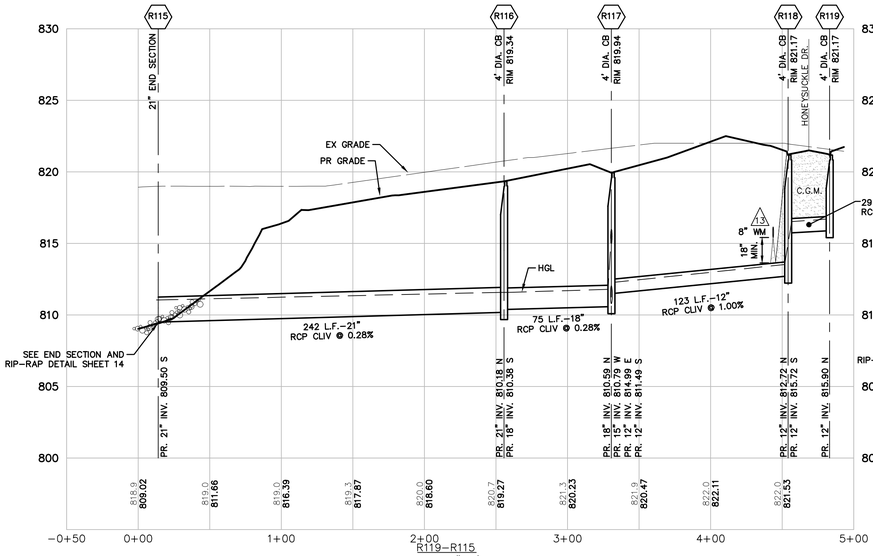


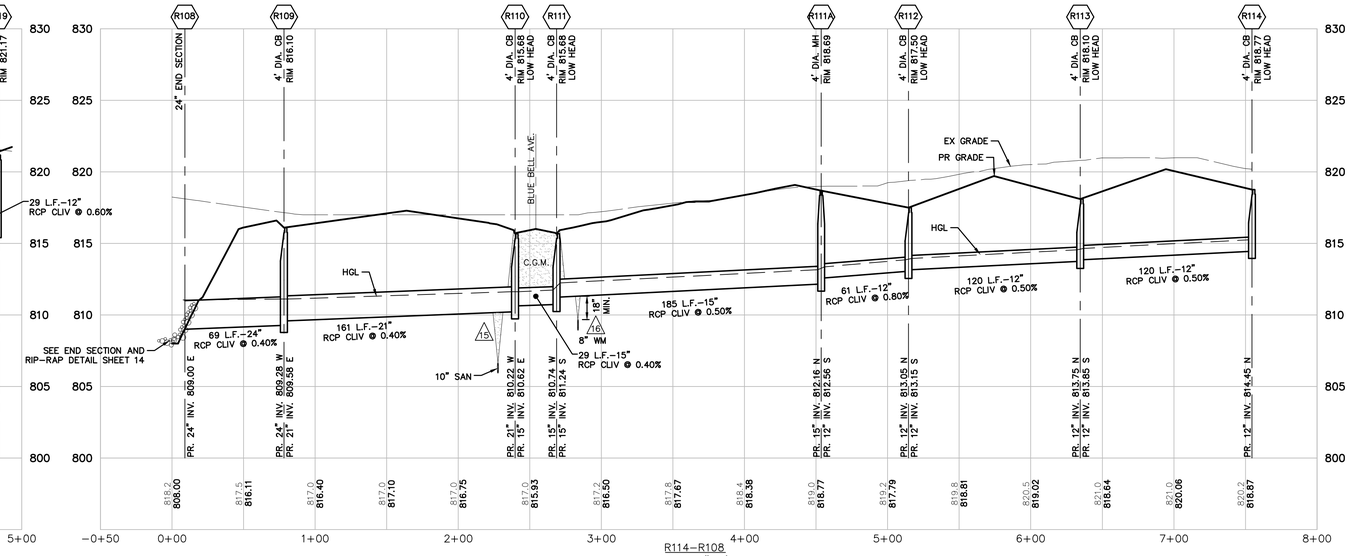
LEGEND

PROPERTY LINE
EXISTING STORM SEWER
PROPOSED STORM SEWER
EXISTING MANHOLE/CATCH BASIN/END SECTION
PROPOSED MANHOLE/CATCH BASIN/END SECTION
EXISTING WATER MAIN
PROPOSED WATER MAIN
PROPOSED WATER MAIN LEAD
EXISTING HYDRANT
PROPOSED HYDRANT
EXISTING GATE VALVE & WELL
PROPOSED GATE VALVE & WELL
EXISTING SANITARY SEWER
PROPOSED SANITARY SEWER
PROPOSED SANITARY LEAD
EXISTING SANITARY SEWER MANHOLE
PROPOSED SANITARY SEWER MANHOLE
100 YEAR FLOODPLAIN
EXISTING WETLAND
PROPOSED COMPACTED GRANULAR MATERIAL (C.G.M)
UTILITY CROSSING

NOTE:
ALL STORM SEWER STRUCTURES RECEIVING STORM RUNOFF, EXCEPT FOR 2' DIAMETER INLETS, SHOULD HAVE 2-FOOT SUMPS PER SUPERIOR TOWNSHIP STANDARDS.







ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
STORM SEWER PLAN & PROFILE

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 44

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-24-R.DWG 10/10/2023 4:02 PM MATTHEW MYERS

CAD FILE: 19004443FSP-24-R.DWG

LEGEND

PROPERTY LINE
PROPOSED STORM SEWER
PROPOSED MANHOLE/CATCH BASIN/END SECTION
PROPOSED DRAINAGE AREA

BLUE BELL AVENUE (PRIVATE)
HONEYSUCKLE DR (PRIVATE)
GOLDENROD WAY (PRIVATE)
N. DAILEY DRIVE (PRIVATE)
CONE FLOWER LANE (PRIVATE)
ROSE DRIVE (PRIVATE)
ASTILBE AVENUE (PRIVATE)
GEDDES ROAD (PUBLIC)

BASIN A 4.26 AC.
BASIN B 3.15 AC.
BASIN C 1.57 AC.
OFFSITE-BYPASS 7.60 AC.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
DETENTION TRIBUTARY DRAINAGE AREA PLAN

DATE
OCT. 12, 2023

REVISIONS

0 50 100
SCALE: 1" = 100 FEET

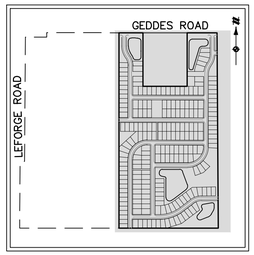
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 45

CAD FILE: 19004443SP-14-DA.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-14-DA.DWG 10/10/2023 4:04 PM MATTHEW MYERS

NOTES

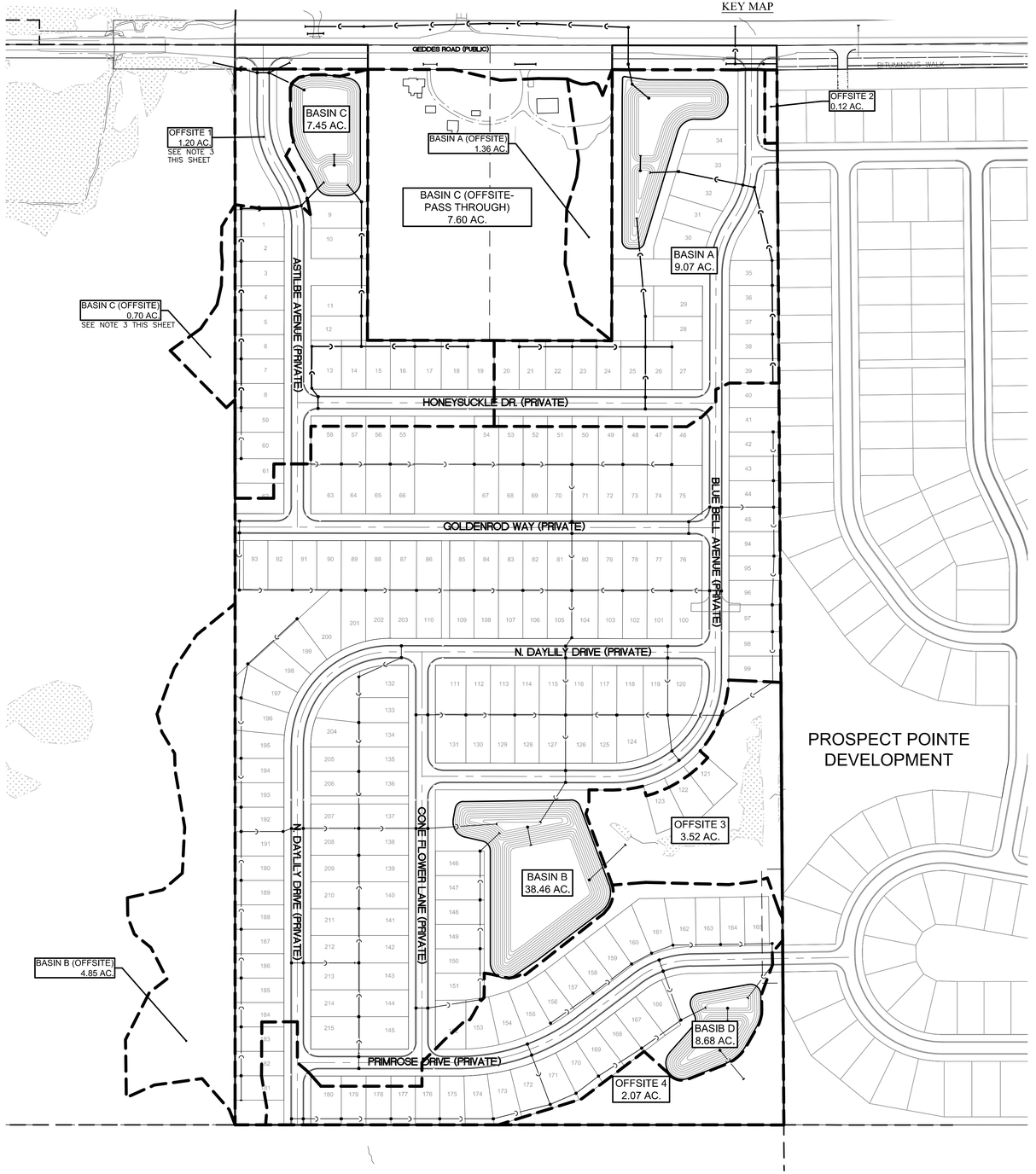
1. TEST PITS FOR SOIL INFILTRATION TESTING WERE PERFORMED IN MAY, 2020. OF THE TWELVE TEST LOCATIONS, ONLY TP-10 CONTAINED SOILS SUITABLE FOR INFILTRATION TESTING. DUE TO THE SHALLOW DEPTH OF THE CLAYEY SAND/GRAVEL LAYER AND RELATIVELY HIGH ELEVATION OF THIS TEST LOCATION IN RELATION TO THE SURROUNDING SITE AREAS, IT WAS DETERMINED THAT THIS LOCATION WAS NOT VIABLE TO SERVE THE INFILTRATION REQUIREMENTS OF THE SITE. THEREFORE, THE PROPOSED BASINS HAVE BEEN DESIGNED WITH A TWENTY PERCENT (20%) VOLUME PENALTY, IN ACCORDANCE WITH WCWRC RULES.
2. THE DETENTION BASIN OUTLETS WILL ULTIMATELY DISCHARGE TO THE SNIDECAR DRAIN AND THE SUPERIOR NO. 1 DRAIN, WHICH FLOW SOUTH AND ULTIMATELY DISCHARGES INTO THE HURON RIVER, APPROXIMATELY 1.5 MILES SOUTHWEST OF THE PROJECT.
3. OFFSITE 1 DRAINAGE AREA IS TO DRAIN UNDETAINED DUE TO ROADWAY BEING AT OR BELOW THE POND ELEVATIONS
4. AN EGLE PERMIT HAS BEEN ISSUED FOR THE REGULATED WETLAND IMPACTS.



KEY MAP

LEGEND

PROPERTY LINE
PROPOSED STORM SEWER
PROPOSED MANHOLE/CATCH BASIN/END SECTION
PROPOSED DRAINAGE AREA



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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
DETENTION TRIBUTARY
DRAINAGE AREA PLAN

DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 46

CAD FILE: 19004443SP-15-DET-DA.DWG

K:\19004443\DWG\PLAN SETS\SITE - FINAL\PHASE 1\19004443SP-15-DET-DA.DWG 10/11/2023 10:18 AM MATTHEW MYERS

DETENTION BASIN A

Project: The Meadows at Hawthorne Mill — Date: 10/10/2023
Location: Superior Township — By: Atwell
Description: Detention Basin A

W1 Determining Post-Development Cover Types, Areas, Curve Numbers and runoff coefficients

Total Contributing Drainage Area = 10.43 Acres
Total Site Area = 9.19 Acres

Rational Method Variables

Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coef	(c)(Area)
Paved Parking Lots, roofs, driveways	D	116,580	2.68	0.95	110,751
Water Surfaces	D	49,000	1.12	1.00	49,000
Developed Open Space, Good Condition	D	229,509	5.27	0.45	103,279
Off-site Contributing Area	D	59,242	1.36	0.45	26,659

Total - Sum (c)(Area) = 289,689
Area Total (sf)= 454,331
Weighted C-Sum(c)(Area)/Sum(ac) or Sum(sf)= **0.64**

NRCS Variables

Pervious Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN)(Area)
Developed Open Space, Good Condition	D	229,509	5.27	80	18,360,736
Off-site Contributing Area	D	59,242	1.36	80	4,739,328
			0.00		0

Total - Sum (CN)(Area) = 23,100,064
Area Total (sf)= 288,751
Weighted CN-Sum(CN)(Area)/Sum(ac) or Sum(sf)= **80**

NRCS Variables

Impervious Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN)(Area)
Paved Parking Lots, roofs, driveways	D	116,580	2.68	98	11,424,840
Impervious, Ponds	D	49,000	1.12	98	4,802,000
			0.00		0

Total - Sum (CN)(Area) = 16,226,840
Area Total - Sum(ac) of Sum(sf)= 165,580
Weighted CN-Sum(CN)(Area)/Sum(ac) or Sum(sf)= **98**

W2 First Flush Runoff Calculations (Vff)

A.	Vff = (1") (1/12) (43560/1) (C) AC =		**24,231**	cf

W3 Predevelopment Bankfull Runoff Calculations (Vbf-pre)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Pervious Cover CN *(Good Cover Woods or Meadows)*	CN =	78	
C.	S = (1000/CN)-10	S =	2.82	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	0.69	in
E.	Pervious Cover Area	Area =	454,331	sf
F.	$V_{bf\text{-}pre}$ = Q(1/12)Area	$V_{bf\text{-}pre}$ =	**26,214**	cf

W4 Pervious Cover Post-development Bankfull Runoff Calculations (Vbf-per-post)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Pervious Cover CN	CN =	80	
C.	S = (1000/CN)-10	S =	2.50	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	0.79	in
E.	Pervious Cover Area	Area =	288,751	sf
F.	$V_{bf\text{-}per\text{-}post}$ = Q(1/12)Area	$V_{bf\text{-}per\text{-}post}$ =	**18,932**	cf

W5 Impervious Cover Post-development Bankfull Runoff Calculations (Vbf-imp-post)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Impervious Cover CN	CN =	98	
C.	S = (1000/CN)-10	S =	0.20	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	2.12	in
E.	Pervious Cover Area	Area =	165,580	sf
F.	$V_{bf\text{-}imp\text{-}post}$ = Q(1/12)Area	$V_{bf\text{-}imp\text{-}post}$ =	**29,276**	cf

W6 Pervious Cover Post-development 100-year Storm Runoff Calculations (V100-per-post)

A.	100 year storm event	P =	5.11	in
B.	Pervious Cover CN	CN =	80	
C.	S = (1000/CN)-10	S =	2.50	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	2.99	in
E.	Pervious Cover Area	Area =	288,751	sf
F.	$V_{100\text{-}imp\text{-}post}$ = Q(1/12)Area	$V_{100\text{-}imp\text{-}post}$ =	**71,924**	cf

W7 Impervious Cover Post-development 100-year Storm Runoff Calculations (V100-imp-post)

A.	100 year storm event	P =	5.11	in
B.	Pervious Cover CN	CN =	98	
C.	S = (1000/CN)-10	S =	0.20	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	4.87	in
E.	Pervious Cover Area	Area =	165,580	sf
F.	$V_{100\text{-}imp\text{-}post}$ = Q(1/12)Area	$V_{100\text{-}imp\text{-}post}$ =	**67,239**	cf

W8 Determine Time of Concentration (Tc-hrs)

User specified; assume 30 minutes
Total Time of Concentration (hrs) = 0.50

W9 Runoff Summary & Onsite Infiltration Requirement

A. Runoff Summary from Previous Worksheets

V_{ff} = **24,231** cf*
$V_{bf\text{-}pre}$ = 26,214 cf
$V_{bf\text{-}per\text{-}post}$ = 18,932 cf — **Total BF Volume ($V_{bf\text{-}post}$)**
$V_{bf\text{-}imp\text{-}post}$ = 29,276 cf — 48,208 cf

$V_{100\text{-}per\text{-}post}$ = 71,924 cf — **Total 100-year Volume (V_{100})**
$V_{100\text{-}imp\text{-}post}$ = 67,239 cf — 139,163 cf

B. Determine Onsite Infiltration Requirement

$V_{bf\text{-}post}$ = 48,208 cf
$V_{bf\text{-}pre}$ = 26,214 cf
Bankfull Volume Difference = **21,993** cf*

Onsite Infiltration Requirement (V_{inf}) = **24,231** cf

W10 Detention / Retention Requirement

A.	$Q_o = 238.6\,(T_c)$ ^ -0.82	421.23	cfs/in-mi^2
B.	Total Site Area	10.43	ac
C.	$Q_{100} = Q_{100\text{-}per} + Q_{100\text{-}imp}$	7.86	in
D.	Peak Flow (PF) = (Q_o·Q_{100}·A)/640	53.970	cfs
E.	Delta = PF - 0.15A	52.406	cfs
F.	V_{det} = (Delta/PF) x V_{100} - V_{inf}*	**135,129**	cf

* V_{inf} refers to total infiltration provided per worksheet W11

W11 Determine Applicable BMPs and Associated Volume Credits

Proposed BMP	Average Area (ft²)	Storage Depth (ft)	Storage Volume (ft³)	Ave. Design Infil. Rate (in/hr)*	Infil. During Storm (ft³)	Total Volume Reduction (ft³)

Total Volume Reduction Credit by Proposed Structural BMPs (Vinf) = **0** cf

W13 Infiltration / Detention Summary

Total Infiltration Required per WCWRC Rules:	24,231	cf
Total Infiltration Provided:	0	cf
Difference:	(24,231)	cf
% Deficiency:	100.0%	
Pro-Rated 20% Detention Penalty:	**20.0%**	
Total Detention Required	135,129	cf
Total Detention Required including Penalty, if applicable	**162,155**	cf

Basin Stage-Storage Summary:

Elev.	Area	Avg. Area	Depth	Volume
817.2	63,000	59,000	1.2	315,300
816.0	55,000	52,000	1.0	244,500
815.0	49,000	45,750	1.0	192,500
814.0	42,500	39,750	1.0	146,750
813.0	37,000	34,500	1.0	107,000
812.0	32,000	26,000	1.0	72,500
811.0	20,000	18,500	1.0	46,500
810.0	17,000	15,500	1.0	28,000
809.0	14,000	12,500	1.0	12,500
808.0	11,000	11,000		0

Total Volume Provided: **192,500** cf
Vff Elev.= 809.76
Vbf Elev.= 811.07
Vprovided Elev.= 814.34
1' Freeboard= 815.34 — Actual= **817.20**

Forebay Sizing

Required Volume (Vfb)=0.05*V100 — **6,958** cf

Forebay Stage-Storage Summary:

Elev.	Area	Avg. Area	Depth	Volume
811.00	5,600	4,650	1.0	8,825
810.00	3,700	2,900	1.0	4,175
809.00	2,100	1,500	0.85	1,275
808.15	900			

Vfb Elev.= **810.96**

Outlet Control Structure Sizing

1. Standpipe outlet holes sizing - "first flush" runoff
(First Flush discharge should be released in 24 hours)

Qff = Vff / 24 hrs / 3600 sec	Qff=	0.280	cfs	
hff(ave) = 2/3 x (Xff - Xo)	hff(ave) =	1.171	ft	
Aff(required) = Qff / 0.62 x sqrt(2*32.2*h)	A(required) =	0.052	sf	
Selected Orifice Diameter =		**1.25**	in	
Area of each orifice =		0.0085	sf	
Number of orifice holes required =		**6**	holes at elev.	**808.00**

Check First Flush discharge release time

Aff(actual) =	0.0511	ft²	
Qff = A x 0.62 x sqrt(2*32.2*h) =	0.2753	cfs	
Tff = Vff / (Qff x 3600)	**24.4**	hrs	O.K.

2. Standpipe outlet holes sizing - "Bankfull flood" discharge
(Bankfull Volume must be detained between 36 and 48 hours)
Check release from first flush holes only

hbf(ave) = 2/3 x (Xbf - Xo)	hbf(ave) =	2.044	ft
Qbf = A x 0.62 x sqrt(2*32.2*h) =	Qbf =	0.364	cfs
Tbf = Vbf / (Qbf x 3600) =	Tbf =	**36.8**	hrs

3. Standpipe outlet holes sizing - "100-yr flood" discharge

Q100 = Qa	Q100 =	1.565	cfs	
Release from above holes				
hff = (X100-Xo)	hff =	6.34	ft	
hbf = (X100-Xff)	hbf =	4.58	ft	
Q = A x 0.62 x sqrt(64.4*hff) + A x 0.62 x sqrt(64.4*hbf) =		0.640	cfs	
Remaining flow =	Q100-Q=	0.924	cfs	
h100 = 2/3 * (Z100-Zo)	= 2/3 * 6.337	4.224	ft	
A = Q100 /(.62 x sqrt(2*32.2*h100))	A(required) =	0.090	sf	
Selected Orifice Diameter =		**2**	in	
Area of each orifice =		0.0218	sf	
Number of orifice holes required=		**4**	holes at elev.	**811.07**
Reduce No. of Holes for 72hr Detenetion Time, Use		**4**	holes at elev.	**811.07**

Check allowable flow rate has not been exceeded

(Qff+Qbf)+0.62*#orif*A100*sqrt(64.4*(x100-xbf) < Qallow — 1.061 cfs — **O.K.**

Calculate that the 100-year storm discharges within 72 hours

h all ave = (2/3)(X 100 -X bf)+(X bf -X bot)*	5.246	ft
*Q all = 0.62 * # ff orif * A ff orif * sqrt(64.4*h all)*	0.583	cfs
h bf ave =(2/3)(X 100-Xbf)+(X bf -X ff)*	3.490	ft
Qbf +100 = (0.62)*(#bf orif)*(Abf orif)*sqrt(64.4*hbf ave)	0	cfs
h100 ave = (2/3) *(X100-Xbf)	2.181	ft
Q100 ave = (0.62*#100 orif*A100 orif)*sqrt(64.4*h100ave)	0.641	cfs
Vrem = V100-Vbf	113,948	cf
T100 = Tbf + (Vrem/(Qall+Qbf+100+Q100ave))	**62.68**	hr — **O.K.**

4. Riser Outlet Pipe Design
Outlet pipe designed to handle the 100-year restricted flow

100-year restricted flow =	Q =	0.92	cfs
Choose outflow pipe diameter =	d =	**18**	in
Choose outflow pipe slope =	S =	**0.32**	%
Assume roughness factor	n =	0.013	
Flow velocity at 100-yr restricted flow (Mannings) =	V =	3.36	fps
Design Pipe Capacity =	=	5.94	cfs

Basin Overflow Weir

Drainage Area, A =	10.43	ac	
C-Factor (C) =	0.64		
Time of Conc. (T) =	30.00	min	
Intensity (I)	5.00	in/hr	I = 275/(T+25)
Peak Flow to basin(Q) =	33.38	cfs	C x I x A
Weir Coef (C)=	3.367		
Weir Elevation=	**814.7**		
Height of Weir (H) =	2.5		
Min. Length of Weir (B) =	**2.5**	ft	
L = Q/(C x H^(3/2))			

Forebay Standpipe outlet holes sizing
Discharge should be released from Forebay in 24 hours

Qfb = Vfb / 24 hrs / 3600 sec	Qfb=	0.081	cfs	
hfb(ave) = 2/3 x (Xfb - Xo)	hfb(ave) =	1.87	ft	
Afb(required) = Qff / 0.62 x sqrt(2*32.2*h)	A(required) =	0.012	sf	
Selected Orifice Diameter =		**1**	in	
Area of each orifice =		0.005	sf	
Number of orifice holes required =		**2**	holes at elev.	**808.15**

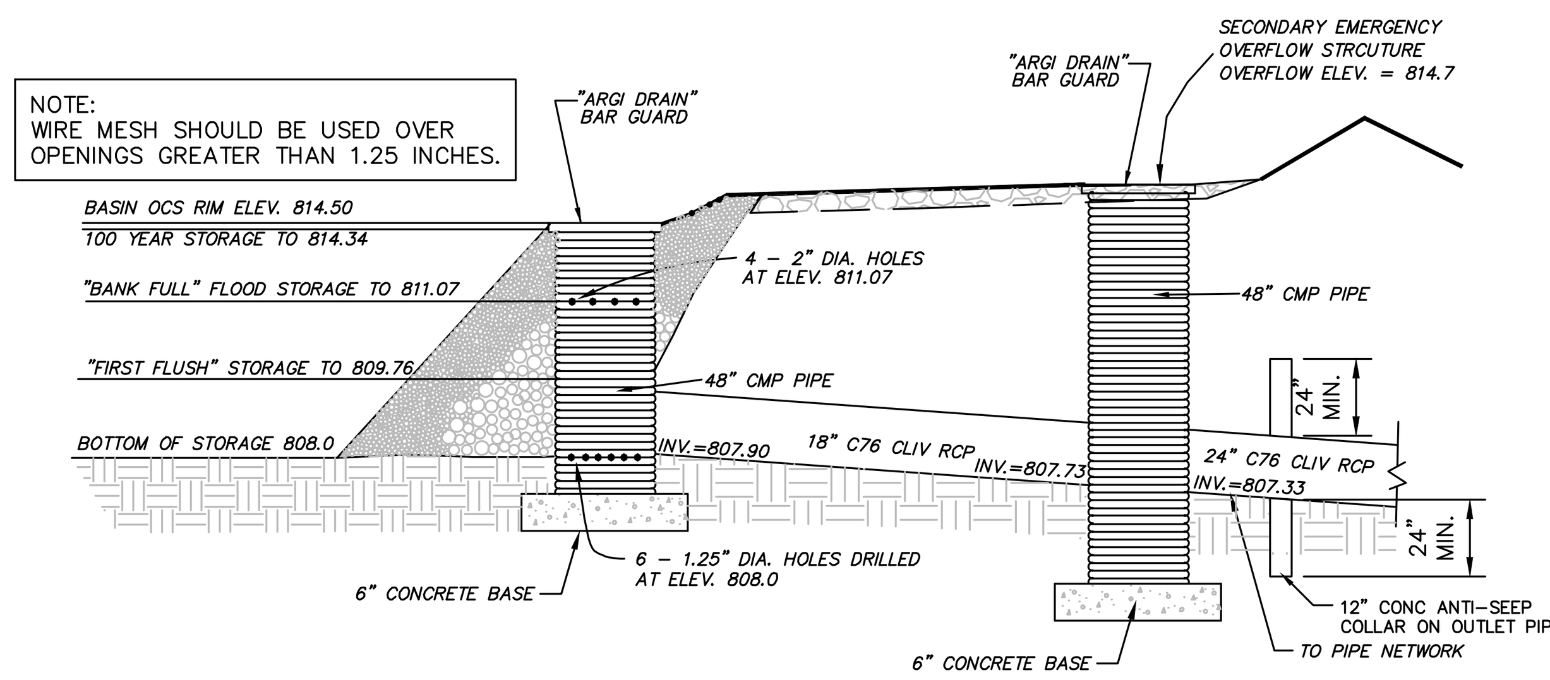
Check discharge release time

Afb(actual) =	0.0109	ft²	
Qfb = A x 0.62 x sqrt(2*32.2*h) =	0.0743	cfs	
Tfb = Vfb / (Qff x 3600)	**26.0**	hrs	O.K.

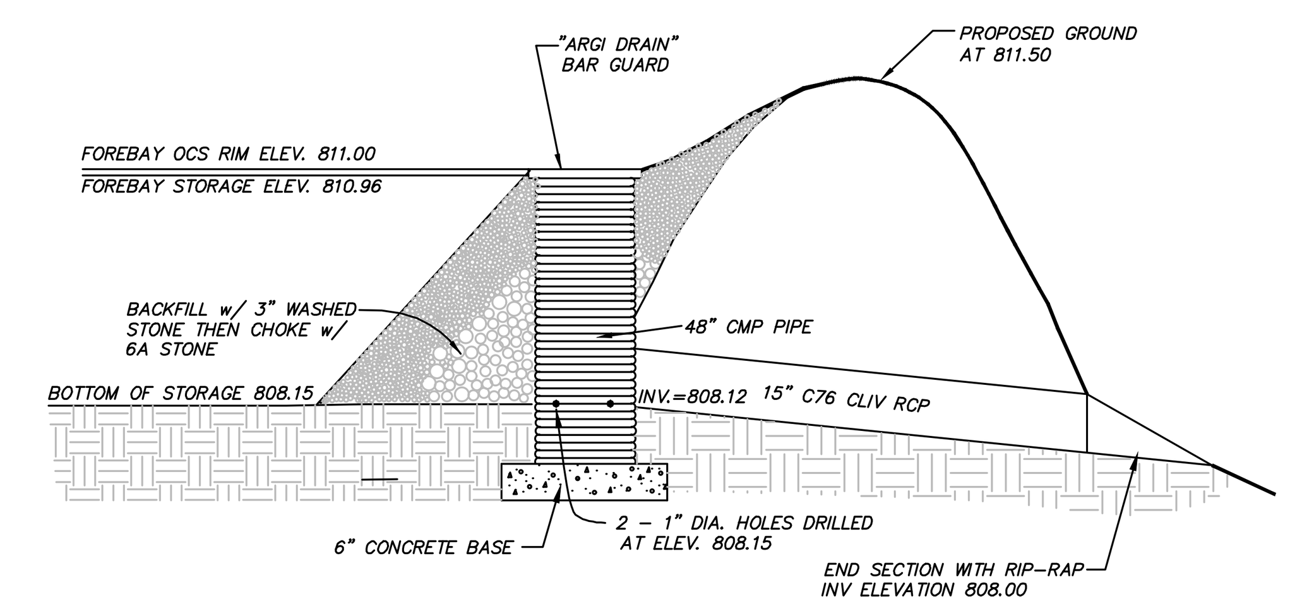
NOTE:
A. MOWING IS ONLY ALLOWED TWICE PER YEAR WITHIN THE STORM WATER FEATURES.
B. AT THE TIME OF PLANT AND SEED DELIVERY, A WCWRC LANDSCAPE REVIEWER MUST BE PRESENT. THE QUANTITY AND SPECIES DELIVERED WILL BE REVIEWED ON SITE. CONTACT CATIE WYTYCHAK AT WYTYCHAKC@EWASHTENAW.ORG TO COORDINATE.

NOTE:
- A SECONDARY OVERFLOW STRUCTURE IS PROVIDED INSTEAD OF A GROUND OVERFLOW PATH DUE TO SITE CONDITIONS.
- OUTLET PIPE HAS BEEN UPSIZED TO 24" ALL THE WAY TO THE LAST DOWNSTREAM PIPE TO PROVIDE BETTER CAPACITY DURING OVERFLOW CONDITIONS. REFER TO SHEET 43 FOR OUTLET STORM SEWER PROFILE.

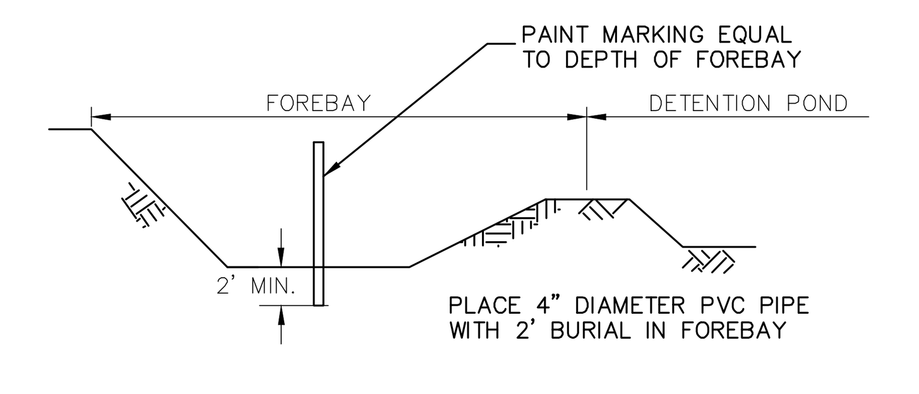
NOTE:
WIRE MESH SHOULD BE USED OVER OPENINGS GREATER THAN 1.25 INCHES.



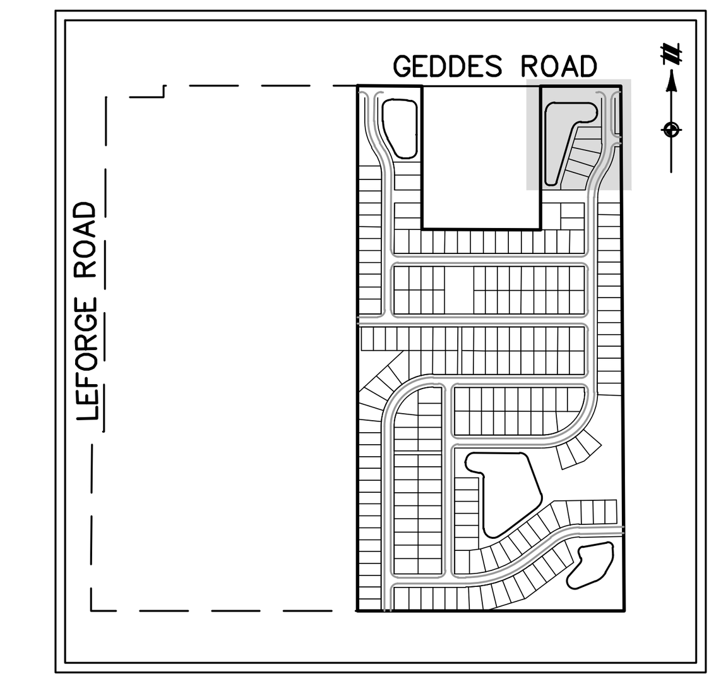
DETENTION BASIN – OUTLET DETAIL
NO SCALE



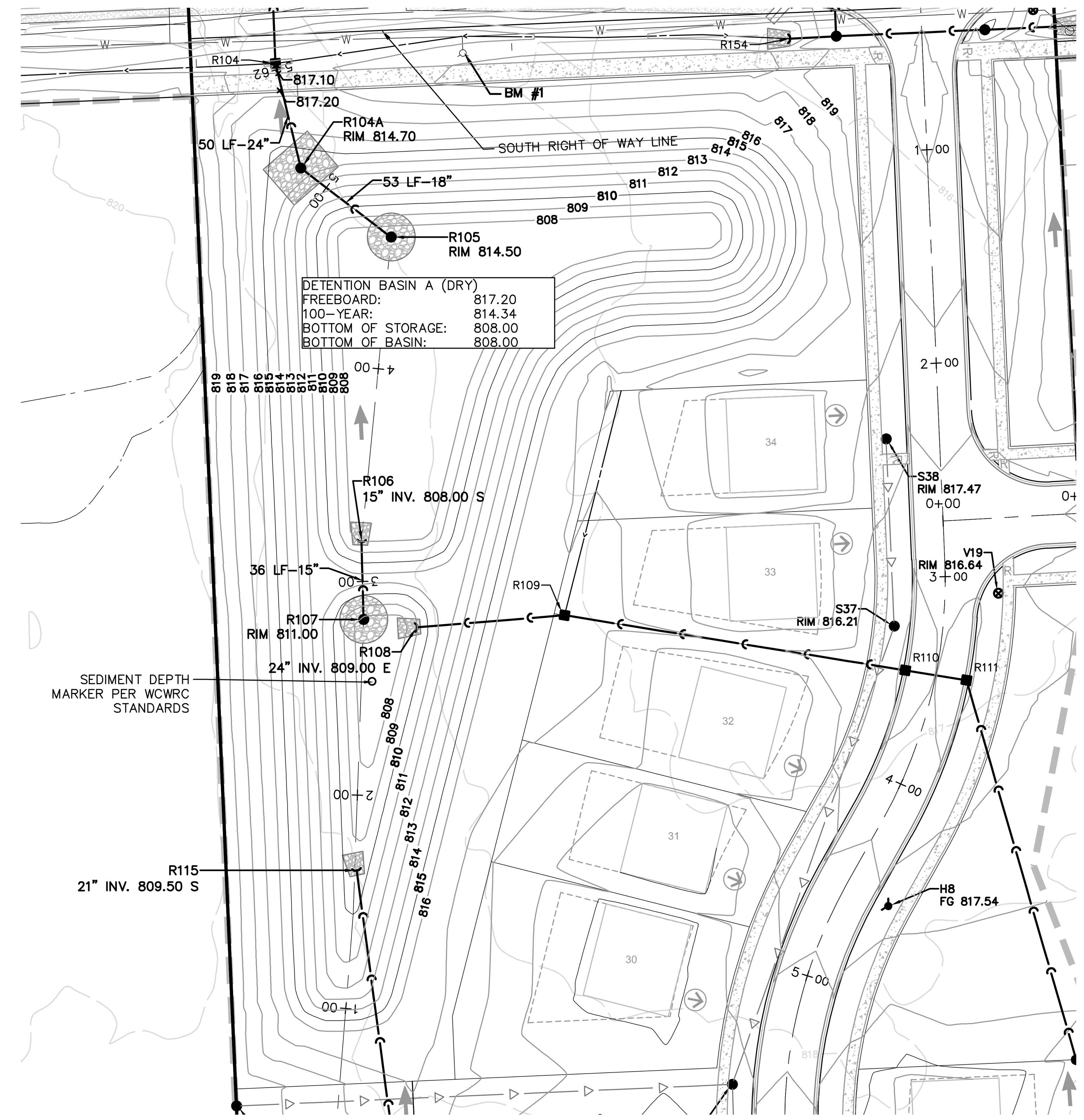
DETENTION BASIN – SEDIMENT FOREBAY OUTLET DETAIL
NO SCALE

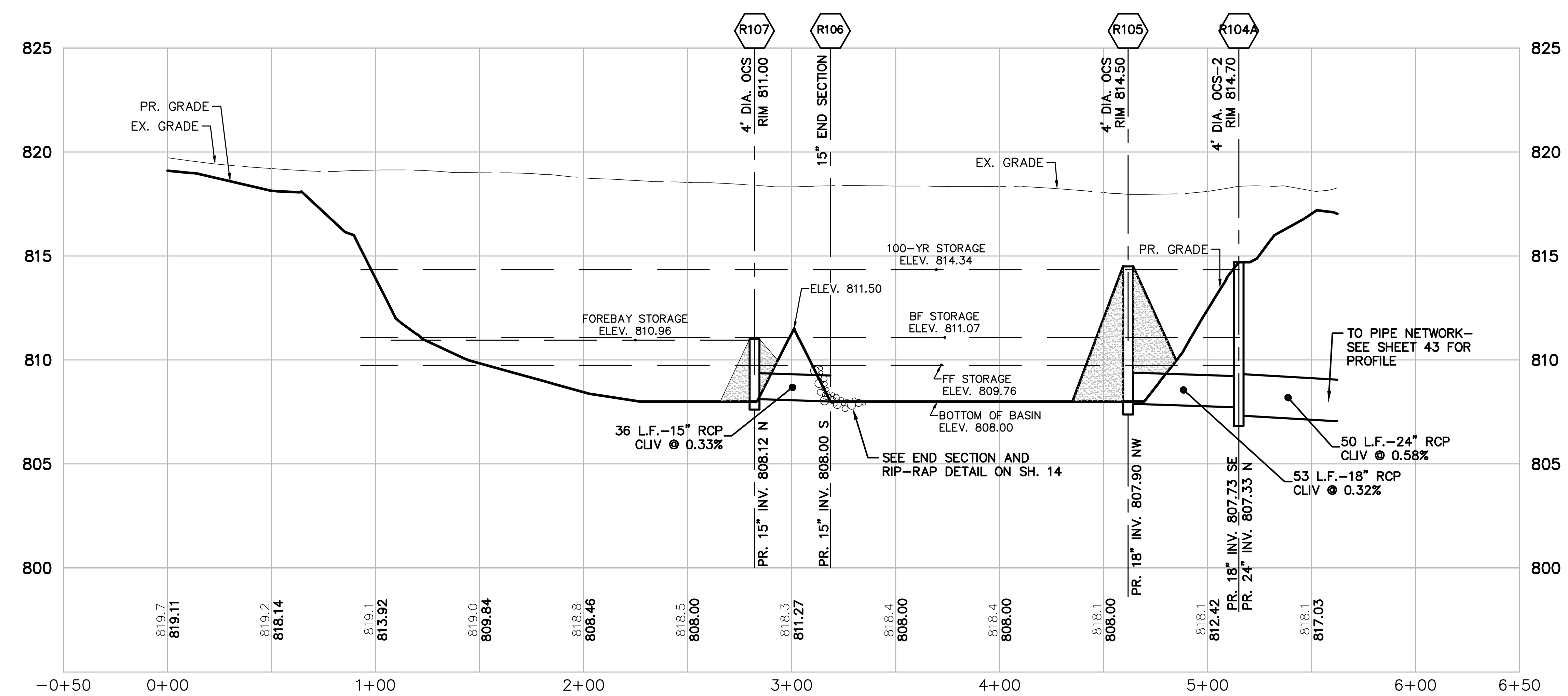


SEDIMENT FOREBAY MARKER DETAIL
NO SCALE



KEY MAP





DETENTION BASIN A
VERT: 1"=5'
HORZ: 1"=50'

Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
DETENTION BASIN PLAN – BASIN A

DATE OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 47

CAD FILE: 19004443FSP-17-DET.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-17-DET.DWG 10/10/2023 4:07 PM MATTHEW MYERS

DETENTION BASIN C

Project: The Meadows at Hawthorne Mill — Date: 10/10/2023
Location: Superior Township — By: Atwell
Description: Detention Basin C

W1 Determining Post-Development Cover Types, Areas, Curve Numbers and runoff coefficients

Total Contributing Drainage Area = 8.15 Acres
Total Site Area = 8.65 Acres

Rational Method Variables

Cover Type	Soil Type	Area (sf)	Area (ac)	Runoff Coef	(c)(Area)
Paved Parking Lots, roofs, driveways	D	114,435	2.63	0.95	108,713
Water Surfaces	D	39,000	0.90	1.00	39,000
Developed Open Space, Good Condition	D	171,087	3.93	0.45	76,989
Off-site Contributing Area	D	30,492	0.70	0.45	13,721
				Total - Sum (c)(Area) =	238,424
				Area Total (sf)=	355,014
				Weighted C-Sum(c)(Area)/Sum(ac) or Sum(sf)=	**0.67**

NRCS Variables

Pervious Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN)(Area)
Developed Open Space, Good Condition	D	171,087	3.93	80	13,686,960
Off-site Contributing Area	D	30,492	0.70	80	2,439,360
			0.00		0
Total - Sum (CN)(Area) =					16,126,320
Area Total (sf)=					201,579
Weighted CN-Sum(CN)(Area)/Sum(ac) or Sum(sf)=					**80**

NRCS Variables

Impervious Cover Type	Soil Type	Area (sf)	Area (ac)	Curve Number	(CN)(Area)
Paved Parking Lots, roofs, driveways	D	114,435	2.63	98	11,214,630
Impervious, Ponds	D	39,000	0.90	98	3,822,000
			0.00		0
Total - Sum (CN)(Area) =					15,036,630
Area Total - Sum(ac) of Sum(sf)=					153,435
Weighted CN-Sum(CN)(Area)/Sum(ac) or Sum(sf)=					**98**

W2 First Flush Runoff Calculations (Vff)

A.	Vff = (1") (1/12) (43560/1) (C) AC =		**19,822**	cf

W3 Predevelopment Bankfull Runoff Calculations (Vbf-pre)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Pervious Cover CN *(Good Cover Woods or Meadows)*	CN =	78	
C.	S = (1000/CN)-10	S =	2.82	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	0.69	in
E.	Pervious Cover Area	Area =	355,014	sf
F.	V_{bf-pre} = Q(1/12)Area	V_{bf-pre} =	**20,484**	cf

W4 Pervious Cover Post-development Bankfull Runoff Calculations (Vbf-per-post)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Pervious Cover CN	CN =	80	
C.	S = (1000/CN)-10	S =	2.50	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	0.79	in
E.	Pervious Cover Area	Area =	201,579	sf
F.	$V_{bf-per-post}$ = Q(1/12)Area	$V_{bf-per-post}$ =	**13,217**	cf

W5 Impervious Cover Post-development Bankfull Runoff Calculations (Vbf-imp-post)

A.	2 year/24 hour storm event	P =	2.35	in
B.	Impervious Cover CN	CN =	98	
C.	S = (1000/CN)-10	S =	0.20	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	2.12	in
E.	Pervious Cover Area	Area =	153,435	sf
F.	$V_{bf-imp-post}$ = Q(1/12)Area	$V_{bf-imp-post}$ =	**27,128**	cf

W6 Pervious Cover Post-development 100-year Storm Runoff Calculations (V100-per-post)

A.	100 year storm event	P =	5.11	in
B.	Pervious Cover CN	CN =	80	
C.	S = (1000/CN)-10	S =	2.50	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	2.99	in
E.	Pervious Cover Area	Area =	201,579	sf
F.	$V_{100-imp-post}$ = Q(1/12)Area	$V_{100-imp-post}$ =	**50,211**	cf

W7 Impervious Cover Post-development 100-year Storm Runoff Calculations (V100-imp-post)

A.	100 year storm event	P =	5.11	in
B.	Pervious Cover CN	CN =	98	
C.	S = (1000/CN)-10	S =	0.20	in
D.	Q = (P-0.2S)^2/(P+0.8S)	Q =	4.87	in
E.	Pervious Cover Area	Area =	153,435	sf
F.	$V_{100-imp-post}$ = Q(1/12)Area	$V_{100-imp-post}$ =	**62,307**	cf

W8 Determine Time of Concentration (Tc-hrs)

User specified; assume 30 minutes
Total Time of Concentration (hrs) = 0.50

W9 Runoff Summary & Onsite Infiltration Requirement

A. Runoff Summary from Previous Worksheets

V_{ff} =	**19,822**	cf*		
V_{bf-pre} =	20,484	cf		
$V_{bf-per-post}$ =	13,217	cf	**Total BF Volume ($V_{bf-post}$)**	
$V_{bf-imp-post}$ =	27,128	cf	40,345	cf
$V_{100-per-post}$ =	50,211	cf	**Total 100-year Volume (V_{100})**	
$V_{100-imp-post}$ =	62,307	cf	112,518	cf

B. Determine Onsite Infiltration Requirement

$V_{bf-post}$ =	40,345	cf
V_{bf-pre} =	20,484	cf
Bankfull Volume Difference =	**19,861**	cf*

Onsite Infiltration Requirement (V_{inf}) = **19,861** cf

W10 Detention / Retention Requirement

A.	Q_p = 238.6 (T_c) ^ -0.82	421.23	cfs/in-mi^2
B.	Total Site Area	8.15	ac
C.	$Q_{100} = Q_{100-per} + Q_{100-imp}$	7.86	in
D.	Peak Flow (PF) = ($Q_p \cdot Q_{100} \cdot$A)/640	42.172	cfs
E.	Delta = PF - 0.15A	40.950	cfs
F.	V_{det} = (Delta/PF) x V_{100} - V_{inf}*	**109,256**	cf

* V_{inf} refers to total infiltration provided per worksheet W11

W11 Determine Applicable BMPs and Associated Volume Credits

Proposed BMP	Average Area (ft²)	Storage Depth (ft)	Storage Volume (ft³)	Ave. Design Infil. Rate (in/hr)*	Infil. During Storm (ft³)	Total Volume Reduction (ft³)

Total Volume Reduction Credit by Proposed Structural BMPs (Vinf) = **0** cf

W13 Infiltration / Detention Summary

Total Infiltration Required per WCWRC Rules:	19,861	cf
Total Infiltration Provided:	0	cf
Difference:	(19,861)	cf
% Deficiency:	100.0%	
Pro-Rated 20% Detention Penalty:	**20.0%**	
Total Detention Required	109,256	cf
Total Detention Required including Penalty, if applicable	**131,108**	cf

Basin Stage-Storage Summary:

Elev.	Area	Avg. Area	Depth	Volume
808.0	43,000	41,000	1.0	177,800
807.0	39,000	37,150	1.0	136,800
806.0	35,300	33,400	1.0	99,650
805.0	31,500	27,000	1.0	66,250
804.0	22,500	21,000	1.0	39,250
803.0	19,500	18,250	1.0	18,250
802.0	17,000	17,000		0

Total Storage VolumeVolume Provided: **136,800** cf
Vff Elev.= 803.07
Vbf Elev.= 804.04
Vprovided Elev.= 806.85
1' Freeboard= 807.85 — Actual= **808.00**

Forebay Sizing

Required Volume (Vfb)=0.05*V100 — **5,626** cf

Forebay Stage-Storage Summary:

Elev.	Area	Avg. Area	Depth	Volume
804.00	4,500	3,950	1.0	6,415
803.00	3,400	2,900	0.9	2,465
802.15	2,400			

Vfb Elev.= **803.80**

Outlet Control Structure Sizing

1. Standpipe outlet holes sizing - "first flush" runoff
(First Flush discharge should be released in 24 hours)

Qff = Vff / 24 hrs / 3600 sec	Qff=	0.229	cfs	
hff(ave) = 2/3 x (Xff - Xo)	hff(ave) =	0.717	ft	
Aff(required) = Qff / 0.62 x sqrt(2*32.2*h)	A(required) =	0.054	sf	
Selected Orifice Diameter =		**1.25**	in	
Area of each orifice =		0.009	sf	
Number of orifice holes required =		**6**	holes at elev.	802.00

Check First Flush discharge release time

Aff(actual) =	0.0511	ft²	
Qff = A x 0.62 x sqrt(2*32.2*h) =	0.2154	cfs	
Tff = Vff / (Qff x 3600)	**25.6**	hrs	O.K.

2. Standpipe outlet holes sizing - "Bankfull flood" discharge
(Bankfull Volume must be detained between 36 and 48 hours)
Check release from first flush holes only

hbf(ave) = 2/3 x (Xbf - Xo)	hbf(ave) =	1.360	ft
Qbf = A x 0.62 x sqrt(2*32.2*h) =	Qbf =	0.297	cfs
Tbf = Vbf / (Qbf x 3600) =	Tbf =	**37.8**	hrs

3. Standpipe outlet holes sizing - "100-yr flood" discharge

Q100 = Qa	Q100 =	1.223	cfs	
Release from above holes				
hff = (X100-Xo)	hff =	4.85	ft	
hbf = (X100-Xff)	hbf =	3.77	ft	
Q = A x 0.62 x sqrt(64.4*hff) + A x 0.62 x sqrt(64.4*hbf) =		0.560	cfs	
Remaining flow =	Q100-Q=	0.662	cfs	
h100 = 2/3 * (Z100-Zo)	= 2/3 * 4.847	3.231	ft	
A = Q100 /(.62 x sqrt(2*32.2*h100))	A(required) =	0.074	sf	
Selected Orifice Diameter =		**3.5**	in	
Area of each orifice =		0.0668	sf	
Number of orifice holes required=		**1**	holes at elev.	804.04
Reduce No. of Holes for 72hr Detenetion Time, Use		**1**	holes at elev.	804.04

Check allowable flow rate has not been exceeded

(Qff+Qbf)+0.62*#orif*A100*sqrt(64.4*(x100-xbf) < Qallow — 1.099 cfs — **O.K.**

Calculate that the 100-year storm discharges within 72 hours

h all ave = (2/3)(X100 -X bf)+(X bf -X bot)*	3.911	ft	
*Q all = 0.62 * # ff orif * A ff orif * sqrt(64.4*h all)*	0.503	cfs	
h bf ave =(2/3)(X 100-Xbf)+(X bf -X ff)*	2.837	ft	
Qbf +100 = (0.62)*(#bf orif)*(Abf orif)*sqrt(64.4*hbf ave)	0	cfs	
h100 ave = (2/3) *(X100-Xbf)	1.871	ft	
Q100 ave = (0.62*#100 orif*A100 orif)*sqrt(64.4*h100ave)	0.455	cfs	
Vrem = V100-Vbf	90,763	cf	
T100 = Tbf + (Vrem/(Qall+Qbf+100+Q100ave))	**64.09**	hr	**O.K.**

4. Riser Outlet Pipe Design
Outlet pipe designed to handle the 100-year restricted flow

100-year restricted flow =	Q =	0.66	cfs
Choose outflow pipe diameter =	d =	**12**	in
Choose outflow pipe slope =	S =	**4.7**	%
Assume roughness factor	n =	0.024	(CMP)
Flow velocity at 100-yr restricted flow (Mannings) =	V =	5.33	fps
Design Pipe Capacity =	=	4.19	cfs

Basin Overflow Weir

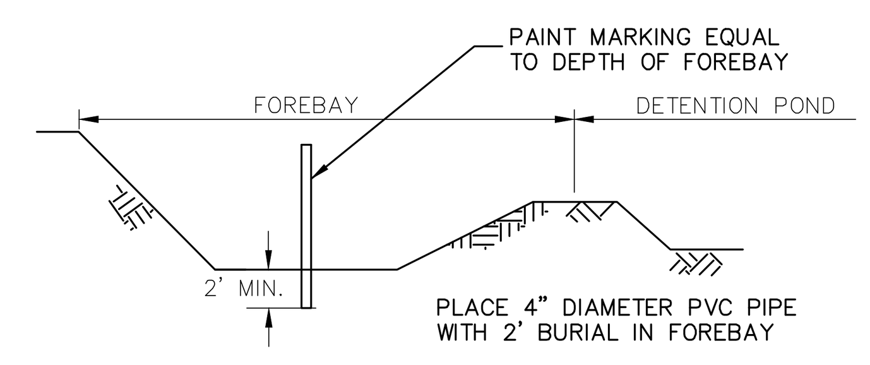
Drainage Area, A =	8.15	ac	
C-Factor (C) =	0.67		
Time of Conc. (T) =	30.00	min	
Intensity (I)	5.00	in/hr	I = 275/(T+25)
Peak Flow to basin(Q) =	27.30	cfs	C x I x A
Weir Coef (C)=	3.367		
Weir Elevation=	**807.2**		
Height of Weir (H) =	0.8		
Min. Length of Weir (B) =	**11.3**	ft	
L = Q/(C x H^(3/2))			

Forebay Standpipe outlet holes sizing
Discharge should be released from Forebay in 24 hours

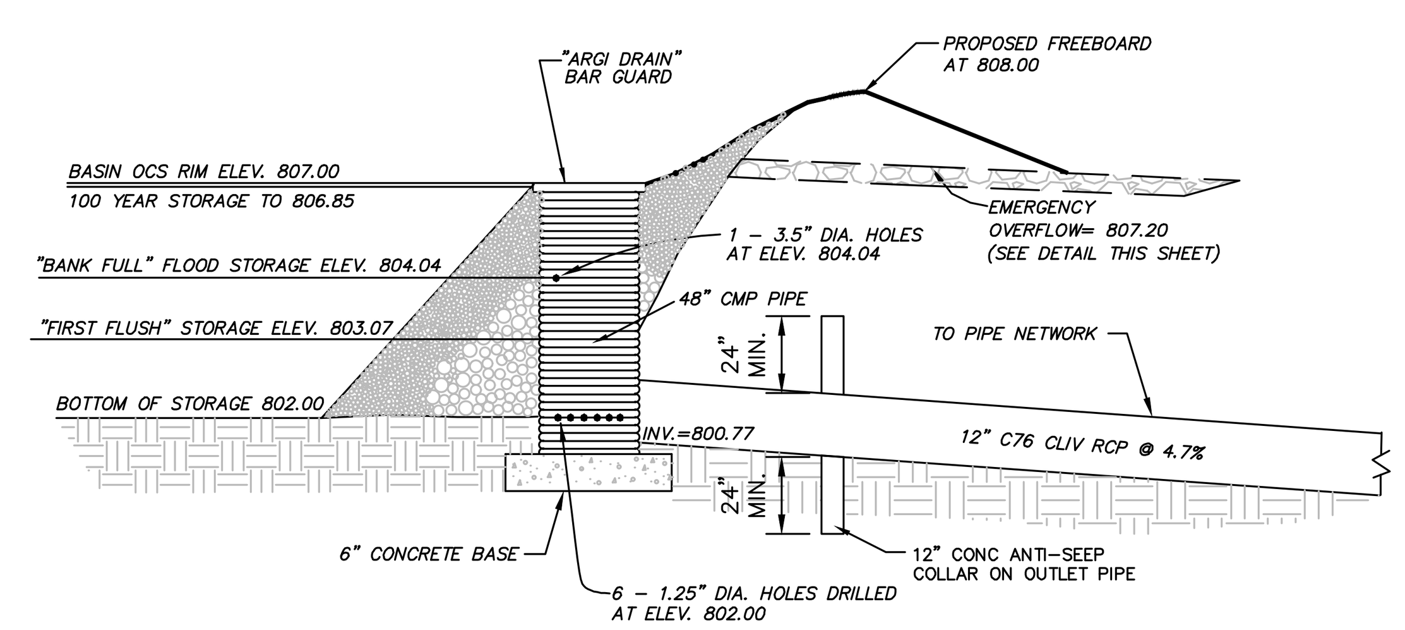
Qfb = Vfb / 24 hrs / 3600 sec	Qfb=	0.065	cfs	
hfb(ave) = 2/3 x (Xfb - Xo)	hfb(ave) =	1.10	ft	
Afb(required) = Qff / 0.62 x sqrt(2*32.2*h)	A(required) =	0.012	sf	
Selected Orifice Diameter =		**0.75**	in	
Area of each orifice =		0.003	sf	
Number of orifice holes required =		**4**	holes at elev.	802.15

Check discharge release time

Afb(actual) =	0.0123	ft²	
Qfb = A x 0.62 x sqrt(2*32.2*h) =	0.0640	cfs	
Tfb = Vfb / (Qff x 3600)	**24.4**	hrs	O.K.

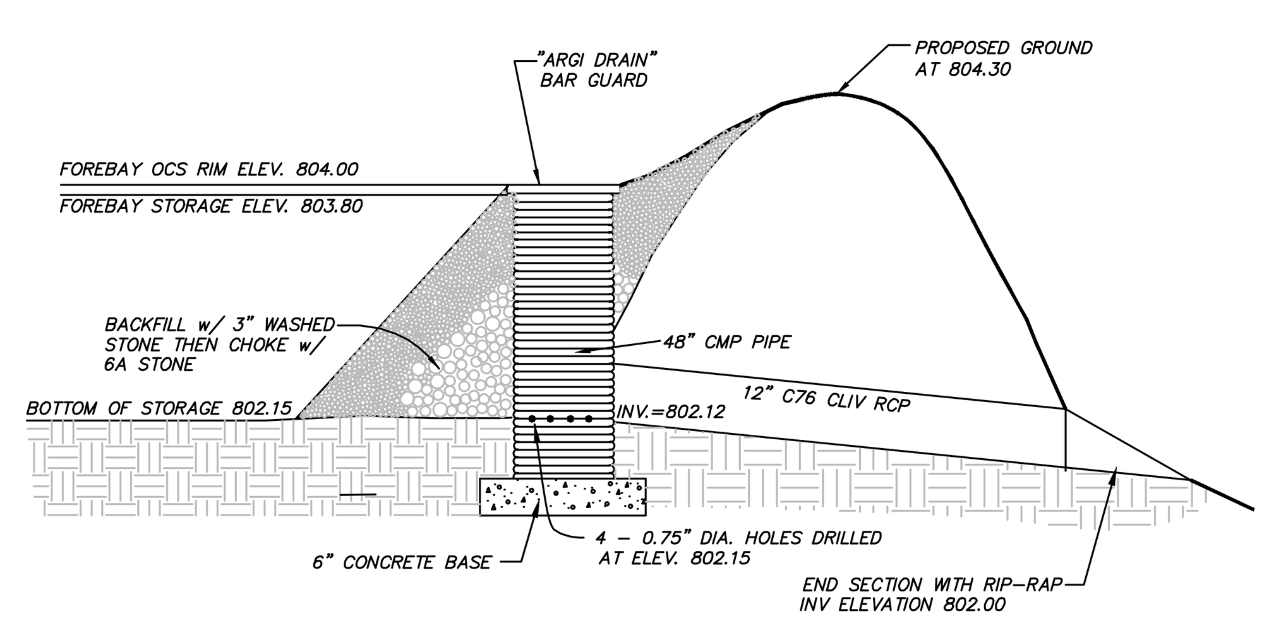


SEDIMENT FOREBAY MARKER DETAIL
NO SCALE

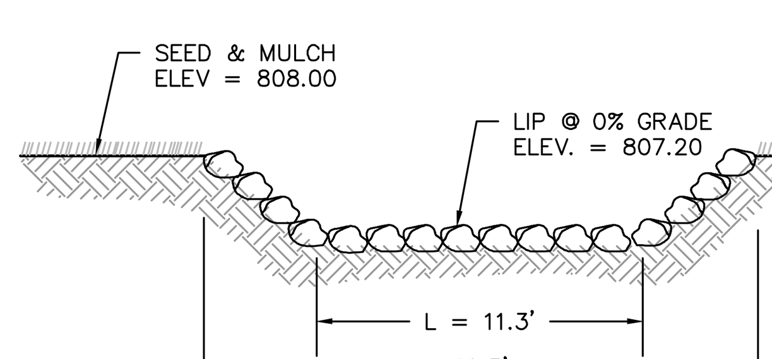


DETENTION BASIN – OUTLET DETAIL
NO SCALE

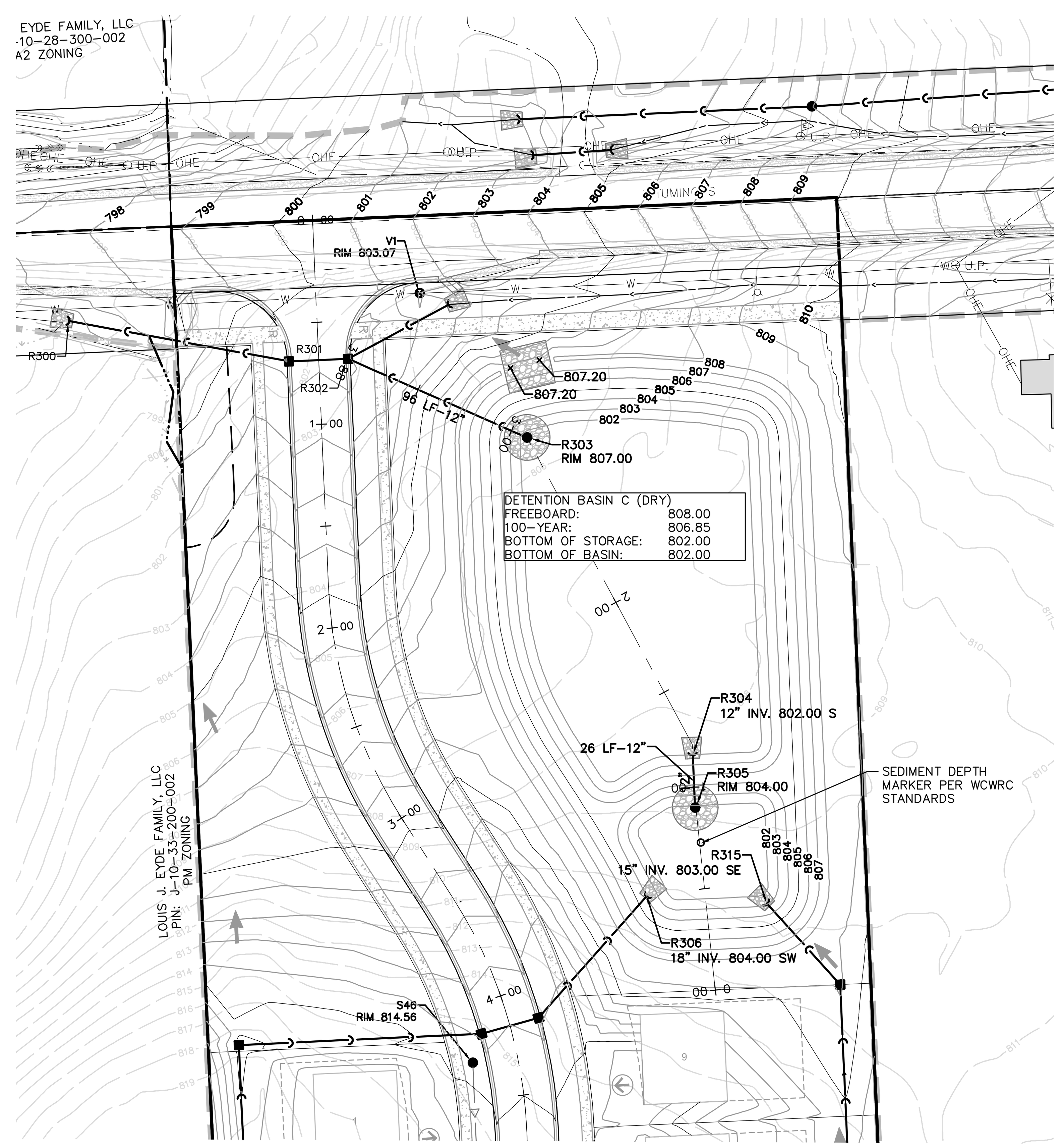
NOTE:
WIRE MESH SHOULD BE USED OVER OPENINGS GREATER THAN 1.25 INCHES.

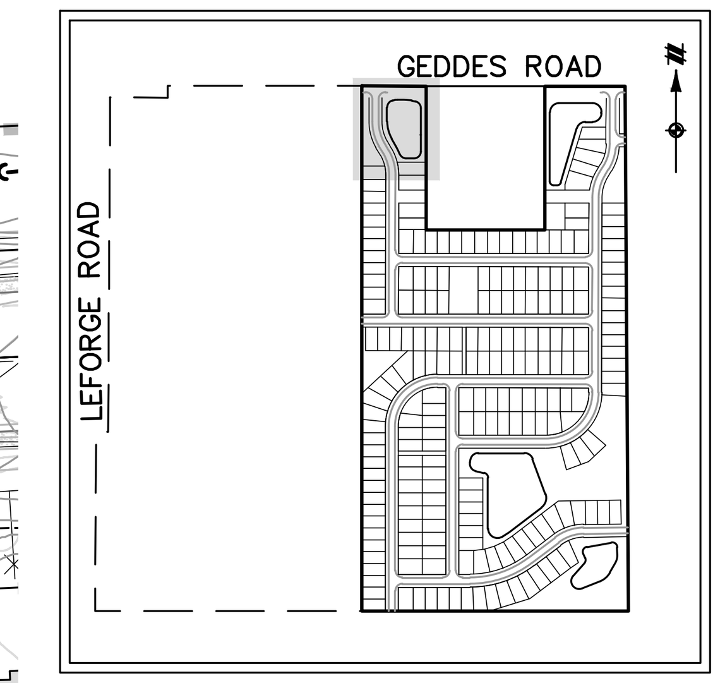


DETENTION BASIN – SEDIMENT FOREBAY OUTLET DETAIL
NO SCALE



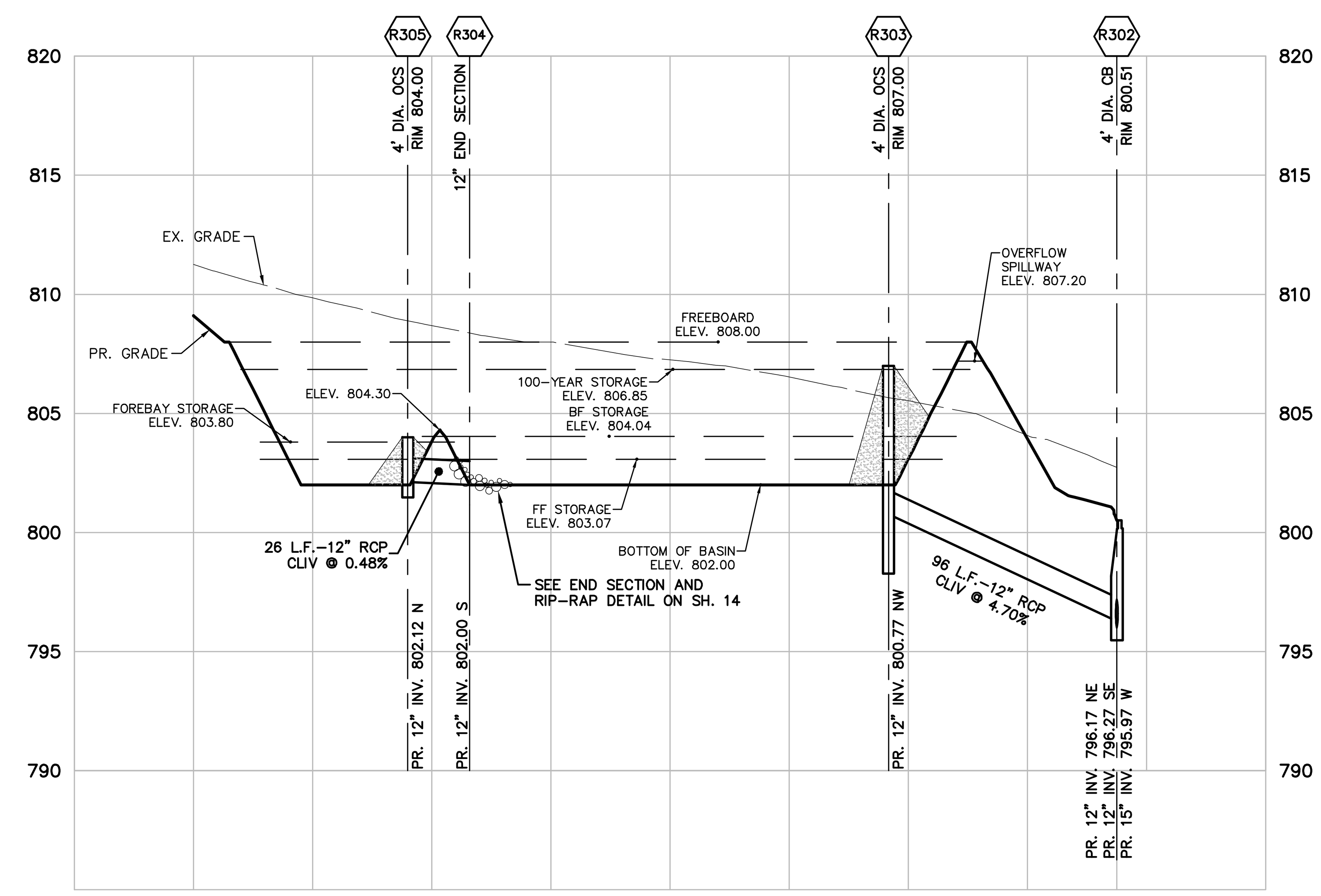
EMERGENCY OVERFLOW SPILLWAY
NO SCALE





KEY MAP

NOTE:
A. MOWING IS ONLY ALLOWED TWICE PER YEAR WITHIN THE STORM WATER FEATURES.
B. AT THE TIME OF PLANT AND SEED DELIVERY, A WCWRC LANDSCAPE REVIEWER MUST BE PRESENT. THE QUANTITY AND SPECIES DELIVERED WILL BE REVIEWED ON SITE. CONTACT CATIE WYTYCHAK AT WYTYCHAKC@WASHTENAW.ORG TO COORDINATE.



DETENTION BASIN C
VERT: 1"=5'
HORZ: 1"=50'

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
DETENTION BASIN PLAN – BASIN C

DATE OCT. 12, 2023

REVISIONS

SCALE: 1" = 50 FEET
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 48

CAD FILE: 19004443FSP-17-DET.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-17-DET.DWG 10/10/2023 4:07 PM MATTHEW MYERS

STORM SEWER CONVEYANCE CALCULATIONS

ON-SITE STORM SEWER CONVEYANCE SYSTEM DESIGN

Project: Meadows at Hawthorne Mill Community: Superior Township
Date: May 27, 2022 County: Washtenaw
Revision:

I = B/(T+D)^E B = 151.8 D = 19.9 E = 1
C = 0.013 RCP 0.024 CMP
T = 20 (min.)

PHASE 1 STORM SEWER

FROM MH INPUT	TO MH	INCRE-MENT ACRES (A)	C	EQUIV. AREA 100% ACRES CA	TOTAL AREA 100% ACRES SUM CA	T TIME (MIN.)	I (IN PER HOUR)	Q=CIA C.F.S. FLOW	CAPAC-ITY OF SEWER (C.F.S.)	DIAM. OF PIPE (IN.)	LENGTH OF LINE (FT.)	SLOPE OF PIPE (%)	MIN HG BASED ON "Q" (%)	VEL. FLOW FULL (FT./SEC.)	TIME OF FLOW (MIN.)	H.G.L. ELEV. UPPER END	H.G.L. ELEV. LOWER END	GROUND ELEV. UPPER END	GROUND ELEV. LOWER END	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END
R114	R113	0.13	0.47	0.06	0.06	20.00	3.80	0.24	2.52	12	120	0.50	0.00	3.2	0.6	815.25	814.65	818.77	818.10	814.45	813.85
R113	R112	0.26	0.47	0.12	0.19	20.60	3.75	0.70	2.52	12	120	0.50	0.04	3.2	0.6	814.55	813.95	818.10	817.50	813.75	813.15
R112	R111A	0.25	0.48	0.12	0.31	21.20	3.69	1.14	3.19	12	61	0.80	0.10	4.1	0.3	813.85	813.36	817.50	818.69	813.05	812.56
R111A	R111	0.00	0.00	0.00	0.31	21.50	3.67	1.14	4.57	15	185	0.50	0.03	3.7	0.8	813.16	812.24	818.69	815.68	812.16	811.24
R111	R110	1.24	0.52	0.65	0.95	22.30	3.60	3.43	4.09	15	29	0.40	0.28	3.3	0.1	811.74	811.62	815.68	815.68	810.74	810.62
R110	R109	1.34	0.63	0.85	1.80	22.40	3.59	6.45	10.02	21	161	0.40	0.17	4.2	0.6	811.62	811.11	815.68	816.10	810.22	809.58
R109	R108	0.31	0.33	0.10	1.90	23.00	3.54	6.72	14.31	24	69	0.40	0.09	4.6	0.3	811.11	811.05	816.10	811.75	809.28	809.00
R123	R122	0.28	0.45	0.13	0.13	20.00	3.80	0.49	2.36	12	130	0.44	0.02	3.0	0.7	813.13	812.56	816.38	819.42	812.33	811.76
R122	R121	0.00	0.00	0.00	0.13	20.70	3.74	0.49	2.36	12	60	0.44	0.02	3.0	0.3	812.46	812.19	819.42	818.22	811.66	811.39
R121	R117	0.26	0.47	0.12	0.25	21.00	3.71	0.94	3.77	15	120	0.34	0.02	3.1	0.7	812.19	811.79	818.22	819.94	811.19	810.79
R117	R116	0.29	0.45	0.13	1.30	21.70	3.65	4.76	5.56	18	75	0.28	0.21	3.1	0.4	811.79	811.58	819.94	819.34	810.59	810.38
R116	R115	0.24	0.31	0.08	1.38	22.10	3.61	4.98	8.38	21	242	0.28	0.10	3.5	1.2	811.58	811.05	819.34	811.98	810.18	809.50
R119	R118	0.68	0.63	0.43	0.43	20.00	3.80	1.64	2.76	12	29	0.60	0.21	3.5	0.1	816.70	816.52	821.17	821.17	815.90	815.72
R118	R117	0.70	0.65	0.45	0.88	20.10	3.80	3.34	3.56	12	123	1.00	0.88	4.5	0.5	813.52	812.29	821.17	819.94	812.72	811.49
R120	R117	0.11	0.39	0.04	0.04	20.00	3.80	0.16	5.63	12	65	2.50	0.00	7.2	0.2	817.41	815.79	821.57	819.94	816.61	814.99
R105	R104A	0.00	0.00	0.00	0.00	20.00	3.80	0.00	5.94	18	53	0.32	0.00	3.4	0.3	809.10	808.93	814.50	814.70	807.90	807.73
R104A	R104	0.00	0.00	0.00	0.00	20.30	3.78	0.00	17.23	24	50	0.58	0.00	5.5	0.2	808.93	808.64	814.70	816.93	807.33	807.04
R104	R103	0.27	0.49	0.13	0.13	20.50	3.76	0.49	13.94	24	90	0.38	0.00	4.4	0.3	808.54	808.19	816.93	818.08	806.94	806.59
R103	R102A	0.00	0.00	0.00	0.13	20.80	3.73	0.49	12.39	24	225	0.30	0.00	3.9	1.0	807.89	807.22	818.08	819.42	806.29	805.62
R102A	R102	0.00	0.00	0.00	0.13	21.80	3.64	0.49	13.94	24	116	0.38	0.00	4.4	0.4	805.82	805.37	819.42	817.03	804.22	803.77
R102	R101	0.00	0.00	0.00	0.13	22.20	3.61	0.49	13.94	24	309	0.38	0.00	4.4	1.2	805.27	804.10	817.03	806.95	803.67	802.50
R101	R100	0.00	0.00	0.00	0.13	23.40	3.51	0.49	11.97	24	144	0.28	0.00	3.8	0.6	804.00	804.00	806.95	804.75	802.40	802.00
R153	R152	1.14	0.39	0.44	0.44	20.00	3.80	1.67	3.88	15	33	0.36	0.07	3.2	0.2	816.72	816.60	817.66	820.50	815.72	815.60
R152	R151	0.00	0.00	0.00	0.44	20.20	3.79	1.67	3.88	15	70	0.36	0.07	3.2	0.4	816.50	816.25	820.50	820.00	815.50	815.25
R151	R150	0.00	0.00	0.00	0.53	20.60	3.75	1.99	3.88	15	92	0.36	0.09	3.2	0.5	816.16	816.07	820.00	816.76	815.15	814.82
R154	R151	0.19	0.49	0.09	0.09	20.00	3.80	0.35	5.34	12	22	7.65	0.01	6.8	0.1	818.10	816.44	818.80	820.00	817.30	815.64
R260	R259	0.17	0.69	0.12	0.12	20.00	3.80	0.44	2.52	12	29	0.50	0.02	3.2	0.2	817.09	816.95	823.91	823.91	816.29	816.15
R259	R258	0.33	0.61	0.20	0.32	20.20	3.79	1.21	2.52	12	93	0.50	0.11	3.2	0.5	815.95	815.48	823.91	821.36	815.15	814.68
R258	R257	0.51	0.48	0.24	0.56	20.70	3.74	2.10	2.47	12	120	0.48	0.35	3.1	0.6	815.38	814.80	821.36	820.95	814.58	814.00
R257	R256	0.98	0.38	0.38	0.94	21.30	3.68	3.46	4.48	15	206	0.48	0.29	3.6	0.9	814.60	813.61	820.95	822.60	813.60	812.61
R256	R255	0.19	0.27	0.05	0.99	22.20	3.61	3.56	4.57	15	120	0.50	0.30	3.7	0.5	813.11	812.51	822.60	820.89	812.11	811.51
R255	R254	0.52	0.47	0.25	1.24	22.70	3.56	4.40	4.57	15	120	0.50	0.46	3.7	0.5	811.51	810.91	820.89	818.59	810.51	809.91
R254	R253	0.52	0.47	0.25	2.10	23.20	3.52	7.39	8.14	18	141	0.60	0.50	4.6	0.5	809.41	808.57	818.59	819.26	808.21	807.37
R253	R252	0.67	0.76	0.51	2.61	23.70	3.48	9.08	9.40	18	29	0.80	0.75	5.3	0.1	808.47	808.24	819.26	819.26	807.27	807.04
R252	R235	0.68	0.84	0.57	3.18	23.80	3.47	11.04	12.39	27	140	0.16	0.13	3.1	0.8	805.89	805.66	819.26	812.26	804.09	803.86
R235	R234	0.44	0.41	0.18	5.62	24.60	3.41	19.17	19.59	27	116	0.40	0.38	4.9	0.4	805.56	805.10	812.26	813.55	803.76	803.30
R234	R233	0.00	0.00	0.00	5.62	25.00	3.38	19.17	20.54	27	25	0.44	0.38	5.2	0.1	805.00	804.89	813.55	812.93	803.20	803.09
R233	R232	0.87	0.68	0.59	6.21	25.10	3.37	20.94	23.18	27	29	0.56	0.46	5.8	0.1	804.79	804.63	812.93	812.93	802.99	802.83
R232	R207	0.50	0.81	0.41	6.62	25.20	3.37	22.27	23.20	30	141	0.32	0.29	4.7	0.5	804.63	804.18	812.93	809.58	802.63	802.18
R207	R206	0.48	0.40	0.19	11.32	25.70	3.33	37.68	38.89	36	136	0.34	0.32	5.5	0.4	803.98	803.51	809.58	809.42	801.58	801.11
R206	R205	0.74	0.70	0.52	11.84	26.10	3.30	39.08	40.02	36	29	0.36	0.34	5.7	0.1	803.06	802.96	809.42	809.42	800.41	800.31
R205	R204	0.35	0.67	0.24	12.08	26.20	3.29	39.77	42.68	42	115	0.18	0.16	4.4	0.4	802.96	802.78	809.42	803.78	799.61	799.40
R262	R261	0.55	0.44	0.24	0.24	20.00	3.80	0.92	3.88	15	120	0.36	0.02	3.2	0.6	810.39	809.96	813.82	816.22	809.39	808.96
R261	R254	0.81	0.47	0.38	0.62	20.60	3.75	2.31	3.88	15	125	0.36	0.13	3.2	0.7	809.86	809.41	816.22	818.59	808.86	808.41
R245	R244	0.13	0.55	0.07	0.07	20.00	3.80	0.28	2.52	12	29	0.50	0.01	3.2	0.2	820.05	819.91	823.69	823.69	819.25	819.11
R244	R243	0.41	0.62	0.25	0.33	20.20	3.79	1.24	3.56	12	140	1.00	0.12	4.5	0.5	819.71	818.30	823.69	823.01	818.91	817.50
R243	R242	0.00	0.00	0.00	0.33	20.70	3.74	1.24	5.04	12	130	2.00	0.12	6.4	0.3	817.45	814.85	823.01	818.72	816.65	814.05
R242	R241	0.60	0.39	0.24	0.57	21.00	3.71	2.10	2.39	12	120	0.45	0.35	3.0	0.7	814.75	814.21	818.72	818.62	813.95	813.41
R241	R240	0.48	0.38	0.18	0.75	21.70	3.65	2.73	2.87	12	60	0.65	0.59	3.7	0.3	814.11	813.72	818.62	819.52	813.31	812.92
R240	R239	0.00	0.00	0.00	0.75	22.00	3.62	2.73	2.87	12	125	0.65	0.59	3.7	0.6	812.82	812.01	819.52	816.46	812.02	811.21
R239	R237	0.73	0.41	0.30	1.05	22.60	3.57	3.74	3.88	15	141	0.36	0.34	3.2	0.7	811.01	810.50	816.46	816.10	810.01	809.50
R237	R236	0.27	0.44	0.12	1.16	23.30	3.51	4.09	7.91	15	120	1.50	0.40	6.5	0.3	810.40	808.60	816.10	814.30	809.40	807.60
R236	R235	0.44	0.41	0.18	1.35	23.60	3.49	4.70	8.42	15	120	1.70	0.53	6.9	0.3	808.50	806.46	814.30	812.26	807.50	805.46
R251	R250	0.41	0.64	0.26	0.26	20.00	3.80	0.99	2.76	12	29	0.60	0.08	3.5	0.1	807.18	807.01	811.18	811.18	806.38	806.21
R250	R249	0.30	0.59	0.18	0.44	20.10	3.80	1.66	2.76	12	93	0.60	0.22	3.5	0.4	806.91	806.34	811.18	809.95	806.11	805.54
R249	R248	0.46	0.41	0.19	0.63	20.50	3.76	2.36	3.88	15	120	0.36	0.13	3.2	0.6	806.34	805.91	809.95	810.25	805.34	804.91
R248	R235	0.68	0.42	0.29	0.91	21.10	3.70	3.38	5.56	18	125	0.28	0.10	3.1	0.7	805.91	805.56	810.25	812.26	804.71	804.36
R217	R216	0.27	0.47	0.13	0.13	20.00	3.80	0.48	5.63	12	120	2.50	0.02	7.2	0.3	811.04	808.04	815.20	811.85	810.24	807.24
R216	R215	0.27	0.46	0.13	0.25	20.30	3.78	0.95	4.78	12	65	1.80	0.07	6.1	0.2	807.44	806.27	811.85	810.55	806.64	805.47
R215	R214	0.15	0.45	0.07	1.39	20.50	3.76	5.23	9.40	18	120	0.80	0.25	5.3	0.4	806.27	805.31	810.55	808.50	805.07	804.11
R214	R213	0.41	0.46	0.19	1.58	20.90	3.72	5.89	7.43	21	120	0.22	0.14	3.1	0.6	805.31	805.05	808.50	808.60	803.91	803.65
R213	R212	0.21	0.46	0.10	1.68	21.50	3.67	6.16	7.43	21	66	0.22	0.15	3.1	0.4	804.95	804.81	808.60	808.00	803.55	803.41
R212	R211	0.22	0.44	0.10	1.78	21.90	3.63	6.46	7.43	21	124	0.22	0.17	3.1	0.7	804.71	804.45	808.00	808.00	803.31	803.03
R211	R210	0.14	0.46	0.06	1.84	22.60	3.57	6.58	13.14	27	148	0.18	0.05	3.3	0.7	804.45	804.39	808.00	810.40	802.63	802.37
R210	R209	0.00	0.00	0.00	1.84	23.30	3.51	6.58	11.99	27	134	0.15	0.05	3.0	0.7	804.39	804.33	810.40	810.40	802.37	802.16
R209	R208	0.23	0.37	0.09	3.22	24.00	3.46	11.14	11.99	27	125	0.15	0.13	3.0	0.7	804.33	804.16	810.40	808.50	802.16	801.98
R208	R207	0.71	0.44	0.31	3.53	24.70	3.40	12.01	12.39	27	126	0.16	0.15	3.1	0.7	804.16	803.98	808.50	809.58	801.98	801.78
R227	R226	0.38	0.65	0.25	0.25	20.00	3.80	0.94	3.82	12	29	1.15	0.07	4.9	0.1	809.18	808.85	813.74	813.74	808.38	808.05
R226	R225	0.39	0.93	0.37	0.62	20.10	3.80	2.34	6.93	15	63	1.15	0.13	5.6	0.2	808.85	808.13	813.74	814.33	807.85	807.13
R225	R224	0.30	0.65	0.20	0.81	20.30	3.78	3.08	6.93	15	29	1.15	0.23	5.6	0.1	808.03	807.69	814.33	814.33	807.03	806.69
R224	R215	0.41	0.64	0.26	1.08	20.40	3.77	4.05	5.25	18	128	0.25	0.15	3.0	0.7	806.69	806.37	814.33	810.55	805.49	805.17
R219	R218	0.48	0.64	0.30	0.30	20.00	3.80	1.16	6.30	18	29	0.36	0.01	3.6	0.1	804.36	804.36	809.61	809.56	803.10	802.99
R218	R209	0.38	0.65	0.24	0.55	20.10	3.80	2.08	5.36	18	88	0.26	0.04	3.0	0.5	804.36	804.33	809.56	810.40	802.99	802.76
R223	R222	0.66	0.70	0.46	0.46	20.00	3.80	1.75	2.52	12	29	0.50	0.24	3.2	0.2	805.87	805.73	810.25	810.25	805.07	804.93
R222	R209	0.45	0.63	0.29	0.75	20.20	3.79	2.83	3.38	12	141	0.90	0.63	4.3	0.5	805.73	804.46	810.25	810.40	804.93	803.66
R231	R230	0.37	0.94	0.34	0.34	20.00	3.80	1.31	3.56	12	29	1.00	0.13	4.5	0.1	810.24	809.95	814.74	814.74	809.44	809.15
R230	R229	0.28	0.56	0.16	0.50	20.10	3.80	1.90	5.04	12	94	2.00	0.29	6.4	0.2	809.85	807.98	814.74	811.97	809.05	807.18
R229	R228	0.26	0.47	0.12	0.62	20.30	3.78	2.36	4.36	12	120	1.50	0.44	5.6	0.4	807.88	806.08	811.97	809.65	807.08	805.28
R228	R207	0.77	0.47	0.36	0.98	20.70	3.74	3.67	3.90	12	125	1.20	1.06	5.0	0.4	805.48	803.98	809.65	809.58	804.68	803.18
R289	R288	0.30	0.31	0.09	0.09	20.00	3.80	0.35	7.35	12	60	4.26	0.01	9.4	0.1	808.80	806.24	809.66	809.18	808.00	805.44
R288	R287	1.19	0.26	0.31	0.41	20.10	3.80	1.54	2.42	12	120	0.46	0.19	3.1	0.6	806.14	805.59	809.18	809.70	805.34	804.79
R287	R286	0.48	0.29	0.14	0.54	20.70	3.74	2.03	2.42	12	120	0.46	0.32	3.1	0.6	805.49	804.94	809.70	809.90	804.69	804.14
R286	R285	0.95	0.27	0.26	0.80	21.30	3.68	2.94	3.77	15	120	0.34	0.21	3.1	0.7	804.94	804.53	809.90	809.97	803.94	803.53
R285	R284	0.58	0.28	0.16	0.96	22.00	3.62	3.48	5.56	18	120	0.28	0.11	3.1	0.6	804.53	804.19	809.97	810.60	803.33	802.99
R284	R283	0.55	0.28	0.15	1.12	22.60	3.57	3.98	10.12	24	120	0.20	0.03	3.2	0.6	804.19	803.95	810.60	810.51	802.59	802.35
R283	R282	0.57	0.28	0.16	2.03	23.20	3.52	7.16	10.12	24	103	0.20	0.10	3.2	0.5	803.85	803.65	810.51	811.63	802.25	802.05
R282	R281	0.00	0.00	0.00	2.03	23.70	3.48	7.16	10.12	24	22	0.20	0.10	3.2	0.1	803.60	803.58	811.63	810.83	801.95	801.90
R281	R280	1.48	0.69	1.02	3.05	23.80	3.47	10.59	13.14	27	29	0.18	0.12	3.3	0.1	803.58	803.55	810.83	810.83	801.70	801.65
R280	R266	0.97	0.68	0.66	3.71	23.90	3.47	12.84	13.85	27	137	0.20	0.17	3.5	0.7	803.55	803.31	810.83	810.09	801.55	801.28
R266	R265	0.51	0.39	0.20	6.46	24.60	3.41	22.04	25.94	30	141	0.40	0.29	5.3	0.4	803.31	802.91	810.09	814.81	801.08	800.52
R265	R264	0.48	0.64	0.31	6.77	25.00	3.38	22.88	26.68	36	29	0.16	0.12	3.8	0.1	802.91	802.87	814.81	814.81	800.12	800.07
R264	R263	0.37	0.66	0.25	7.01	25.10	3.37	23.66	40.24	42	169	0.16	0.06	4.2	0.7	802.87	802.78	814.81	803.68	799.57	799.30
R292B	R292A	0.11	0.32	0.03	0.03	20.00	3.80	0.13	4.06	12	164	1.30	0.00	5.2	0.5	815.06	812.93	819.13	816.85	814.26	812.13
R292A	R292	0.42	0.28	0.12	0.15	20.50	3.76	0.58	4.06	12	85	1.30	0.03	5.2	0.3	812.83	811.72	816.85	815.58	812.03	810.92
R292	R291	0.60	0.30	0.18	0.33	20.80	3.73	1.24	4.06	12	148	1.30	0.12	5.2	0.5	811.42	809.49	815.58	813.35	810.62	808.69
R291	R290	0.48	0.29	0.14	0.47	21.30	3.68	1.73	4.06	12	120	1.30	0.24	5.2	0.4	809.29	807.73	813.35	811.55	808.49	806.93
R290	R283	1.07	0.27	0.29	0.76	21.70	3.65	2.76	4.06	12	60	1.30	0.60	5.2	0.2	807.53	806.75	811.55	810.51	806.73	805.95
R277	R276	0.36	0.63	0.22	0.22	20.00	3.80	0.86	2.47	12	29	0.48	0.06	3.1	0.2	805.40	805.26	809.03	809.03	804.60	804.46
R276	R275	0.31	0.53	0.17	0.39	20.20	3.79	1.48	2.47	12	99	0.48	0.17	3.1	0.5	805.16	804.68	809.03	808.40	804.36	803.88
R275	R274	0.48	0.43	0.21	0.60	20.70	3.74	2.23	3.98	15	132	0.38	0.12	3.2	0.7	804.68	804.22	808.40	808.75	803.68	803.18
R274	R273	0.40	0.36	0.14	1.49	21.40	3.68	5.49	5.56	18	133	0.28	0.27	3.1	0.7	804.22	803.86	808.75	810.50	802.98	802.61
R273	R272	0.48	0.40	0.19	1.68	22.10	3.61	6.09	6.30	18	131	0.36	0.34	3.6	0.6	803.86	803.42	810.50	811.08	802.51	802.04
R272	R266	0.24	0.41	0.10	1.78	22.70	3.56	6.35	7.76	21	66	0.24	0.16	3.2	0.3	803.42	803.31	811.08	810.09	801.84	801.68
R279	R278	0.58	0.71	0.41	0.41	20.00	3.80	1.55	2.42	12	29	0.46	0.19	3.1	0.2	806.00	805.87	810.45	810.45	805.20	805.07
R278	R274	0.54	0.64	0.34	0.75	20.20	3.79	2.84	4.57	15	137	0.50	0.19	3.7	0.6	805.87	805.18	810.45	808.75	804.87	804.18

R271	R270	0.25	0.69	0.17	0.17	20.00	3.80	0.65	2.76	12	29	0.60	0.03	3.5	0.1	813.41	813.24	817.81	817.97	812.61	812.44
R270	R269	0.08	0.74	0.06	0.23	20.10	3.80	0.88	7.43	18	115	0.50	0.01	4.2	0.5	813.14	812.56	817.97	817.93	811.94	811.36
R269	R268	0.00	0.00	0.00	0.23	20.60	3.75	0.88	14.09	18	112	1.80	0.01	8.0	0.2	810.76	808.74	817.93	812.60	809.56	807.54
R268	R267	0.74	0.41	0.30	0.53	20.80	3.73	1.98	5.94	18	120	0.32	0.04	3.4	0.6	808.54	808.16	812.60	812.00	807.34	806.96
R267	R266	0.53	0.45	0.24	0.77	21.40	3.68	2.84	17.36	21	140	1.20	0.03	7.2	0.3	807.36	805.68	812.00	810.09	805.96	804.28
R299	R298	0.56	0.67	0.37	0.37	20.00	3.80	1.43	2.52	12	29	0.50	0.16	3.2	0.2	805.48	805.34	809.26	809.26	804.68	804.54
R298	R297	0.41	0.58	0.24	0.61	20.20	3.79	2.32	2.52	12	130	0.50	0.42	3.2	0.7	805.24	804.58	809.26	809.00	804.44	803.78
R297	R296	0.25	0.43	0.11	0.72	20.90	3.72	2.67	4.09	15	125	0.40	0.17	3.3	0.6	804.48	803.98	809.00	809.00	803.48	802.98
R296	R295	0.26	0.47	0.12	0.84	21.50	3.67	3.08	3.98	15	120	0.38	0.23	3.2	0.6	803.88	803.43	809.00	810.10	802.88	802.43
R295	R294	0.26	0.47	0.12	0.96	22.10	3.61	3.49	6.12	18	120	0.34	0.11	3.5	0.6	803.33	802.92	810.10	809.49	802.13	801.72
R294	R293	0.13	0.47	0.06	1.03	22.70	3.56	3.66	9.24	21	64	0.34	0.05	3.8	0.3	802.82	802.78	809.49	803.68	801.42	801.20
R314	R313	0.40	0.47	0.19	0.19	20.00	3.80	0.71	2.52	12	125	0.50	0.04	3.2	0.6	816.22	815.59	820.95	819.29	815.42	814.79
R313	R312	0.26	0.47	0.12	0.31	20.60	3.75	1.16	2.52	12	120	0.50	0.11	3.2	0.6	815.49	814.89	819.29	818.36	814.69	814.09
R312	R311	0.56	0.30	0.17	0.48	21.20	3.69	1.77	2.52	12	120	0.50	0.25	3.2	0.6	814.79	814.19	818.36	818.36	813.99	813.39
R311	R310	0.39	0.29	0.11	0.59	21.80	3.64	2.16	2.98	12	120	0.70	0.37	3.8	0.5	813.89	813.05	818.36	816.56	813.09	812.25
R310	R309	0.14	0.31	0.04	0.64	22.30	3.60	2.29	3.19	12	130	0.80	0.41	4.1	0.5	812.25	811.21	816.56	814.61	811.45	810.41
R309	R308	0.28	0.32	0.09	0.73	22.80	3.56	2.58	2.76	12	119	0.60	0.53	3.5	0.6	810.91	810.20	814.61	813.67	810.11	809.40
R308	R307	1.08	0.72	0.78	1.51	23.40	3.51	5.29	5.40	15	29	0.70	0.67	4.4	0.1	809.20	809.00	813.67	813.67	808.20	808.00
R307	R306	0.80	0.57	0.45	1.96	23.50	3.50	6.86	10.50	18	80	1.00	0.43	5.9	0.2	806.00	805.50	813.67	806.21	804.80	804.00
R325	R324	0.57	0.60	0.34	0.34	20.00	3.80	1.30	2.52	12	29	0.50	0.13	3.2	0.2	817.13	816.98	822.14	822.14	816.33	816.18
R324	R323	0.58	0.63	0.37	0.71	20.20	3.79	2.69	3.98	15	26	0.38	0.17	3.2	0.1	813.98	813.88	822.14	822.04	812.98	812.88
R323	R322	0.00	0.00	0.00	0.71	20.30	3.78	2.69	4.57	15	103	0.50	0.17	3.7	0.5	813.78	813.27	822.04	820.48	812.78	812.27
R322	R319	0.00	0.00	0.00	0.71	20.80	3.73	2.69	9.14	15	122	2.00	0.17	7.4	0.3	813.17	810.73	820.48	814.90	812.17	809.73
R319	R318	0.39	0.44	0.17	1.20	21.10	3.70	4.44	5.00	15	75	0.60	0.47	4.1	0.3	810.63	810.18	814.90	814.12	809.63	809.18
R318	R317	0.14	0.42	0.06	1.26	21.40	3.68	4.62	5.00	15	146	0.60	0.51	4.1	0.6	808.18	807.31	814.12	811.23	807.18	806.31
R317	R316	0.37	0.33	0.12	1.38	22.00	3.62	4.99	5.00	15	135	0.60	0.60	4.1	0.5	805.43	804.63	811.23	808.89	804.31	803.50
R316	R315	0.33	0.41	0.14	1.51	22.50	3.58	5.42	5.59	15	53	0.75	0.70	4.6	0.2	804.63	804.25	808.89	804.94	803.40	803.00
R321	R320	0.42	0.46	0.19	0.19	20.00	3.80	0.73	2.76	12	130	0.60	0.04	3.5	0.6	812.70	811.92	816.32	815.30	811.90	811.12
R320	R319	0.27	0.46	0.13	0.32	20.60	3.75	1.19	2.76	12	131	0.60	0.11	3.5	0.6	811.82	811.03	815.30	814.90	811.02	810.23
R303	R302	0.00	0.00	0.00	0.00	20.00	3.80	0.00	4.18	12	96	4.70	0.00	5.3	0.3	801.57	797.07	807.00	800.51	800.77	796.27
R302	R301	0.27	0.73	0.20	0.77	20.30	3.78	2.90	4.79	15	29	0.55	0.20	3.9	0.1	796.97	796.81	800.51	800.51	795.97	795.81
R301	R300	0.46	0.52	0.24	1.00	20.40	3.77	3.79	5.94	18	110	0.32	0.13	3.4	0.5	796.80	796.66	800.51	797.37	795.51	795.16
R302A	R302	1.27	0.45	0.57	0.57	20.00	3.80	2.17	6.54	12	56	11.50	0.37	8.3	0.1	803.40	796.97	804.11	800.51	802.60	796.17
R415	R414	0.00	0.00	0.00	0.00	20.00	3.80	0.00	2.76	12	29	0.60	0.00	3.5	0.1	802.33	802.15	807.54	807.53	801.53	801.35
R414	R413	0.73	0.38	0.27	0.27	20.10	3.80	1.03	5.04	12	94	2.00	0.08	6.4	0.2	800.65	798.78	807.53	803.00	799.85	797.98
R413	R412	0.14	0.46	0.06	0.34	20.30	3.78	1.27	5.04	12	122	2.00	0.13	6.4	0.3	798.38	795.94	803.00	800.80	797.58	795.14
R412	R411	0.27	0.47	0.12	0.46	20.60	3.75	1.72	6.07	12	120	2.90	0.23	7.7	0.3	795.54	792.06	800.80	797.10	794.74	791.26
R411	R410	0.26	0.47	0.12	0.58	20.90	3.72	2.17	6.17	12	131	3.00	0.37	7.9	0.3	791.26	787.32	797.10	790.70	790.46	786.52
R410	R409	0.43	0.45	0.19	0.78	21.20	3.69	2.87	3.19	12	144	0.80	0.65	4.1	0.6	787.12	785.97	790.70	789.50	786.32	785.17
R409	R408	0.23	0.44	0.10	1.42	21.80	3.64	5.18	6.30	18	69	0.36	0.24	3.6	0.3	785.97	785.72	789.50	789.40	784.77	784.52
R408	R407	0.23	0.44	0.10	1.52	22.10	3.61	5.51	5.75	18	69	0.30	0.27	3.3	0.4	785.62	785.41	789.40	791.10	784.42	784.21
R407	R406	0.00	0.00	0.00	1.52	22.50	3.58	5.51	8.79	18	126	0.70	0.27	5.0	0.4	785.31	784.43	791.10	789.10	784.11	783.23
R406	R405	0.27	0.46	0.13	1.65	22.90	3.55	5.85	16.61	18	119	2.50	0.31	9.4	0.2	783.43	780.64	789.10	784.12	782.23	779.26
R405	R404	0.25	0.48	0.12	2.91	23.10	3.53	10.28	11.08	24	67	0.24	0.21	3.5	0.3	780.64	780.50	784.12	781.25	778.66	778.50
R417	R416	0.51	0.61	0.31	0.31	20.00	3.80	1.17	3.38	12	29	0.90	0.11	4.3	0.1	798.51	798.25	803.66	803.66	797.71	797.45
R416	R409	0.38	0.64	0.24	0.55	20.10	3.80	2.07	7.13	12	130	4.00	0.34	9.1	0.2	791.25	786.07	803.66	789.50	790.45	785.27
R419	R418	1.69	0.48	0.82	0.82	20.00	3.80	3.11	3.56	12	29	1.00	0.76	4.5	0.1	788.67	788.38	793.07	793.06	787.87	787.58
R418	R405	0.50	0.64	0.32	1.14	20.10	3.80	4.33	7.13	12	128	4.00	1.48	9.1	0.2	785.48	780.64	793.06	784.12	784.68	779.56
R429	R428	0.00	0.00	0.00	0.00	20.00	3.80	0.00	1.71	8	128	2.00	0.00	4.9	0.4	797.90	795.35	802.36	798.70	797.37	794.81
R428	R427	0.00	0.00	0.00	0.00	20.40	3.77	0.00	1.71	8	119	2.00	0.00	4.9	0.4	794.55	792.17	798.70	795.49	794.01	791.64
R427	R426	0.00	0.00	0.00	0.00	20.80	3.73	0.00	1.71	8	56	2.00	0.00	4.9	0.2	791.97	790.86	795.49	794.16	791.44	790.32
R426	R425	0.00	0.00	0.00	0.00	21.00	3.71	0.00	1.71	8	56	2.00	0.00	4.9	0.2	790.76	789.63	794.16	792.91	790.22	789.10
R425	R424	0.00	0.00	0.00	0.00	21.20	3.69	0.00	1.71	8	117	2.00	0.00	4.9	0.4	789.53	787.19	792.91	790.51	789.00	786.66
R424	R423	0.00	0.00	0.00	0.00	21.60	3.66	0.00	1.71	8	127	2.00	0.00	4.9	0.4	786.99	784.45	790.51	787.85	786.46	783.92
R423	R422	0.00	0.00	0.00	0.00	22.00	3.62	0.00	1.71	8	23	2.00	0.00	4.9	0.1	784.05	783.60	787.85	787.04	783.52	783.07
R422	R421	1.41	0.46	0.65	0.65	22.10	3.61	2.34	3.56	12	29	1.00	0.43	4.5	0.1	782.60	782.31	787.04	787.04	781.80	781.51
R421	R420	0.20	0.68	0.14	0.79	22.20	3.61	2.84	3.19	12	102	0.80	0.63	4.1	0.4	780.14	779.50	787.04	780.17	779.31	778.50

UTILITY CROSSING TABLE

12 "	ST	B/P=	800.65	8 "	WM	T/P=	796.56	4.09	
12 "	ST	B/P=	798.01	8 "	WM	T/P=	796.51	1.50	DIP WATER MAIN
18 "	ST	T/P=	806.38	8 "	WM	B/P=	807.90	1.52	
10 "	SAN	T/P=	805.95	8 "	WM	B/P=	816.29	10.35	
15 "	ST	T/P=	814.37	8 "	WM	B/P=	816.21	1.84	
8 "	SAN	T/P=	806.54	21 "	ST	B/P=	809.57	3.03	
27 "	ST	T/P=	806.59	8 "	SAN	B/P=	807.33	0.74	STONE CRADEL
15 "	ST	B/P=	807.45	8 "	WM	T/P=	805.95	1.50	DIP WATER MAIN
18 "	ST	T/P=	807.18	8 "	WM	B/P=	808.72	1.54	
12 "	ST	T/P=	813.78	8 "	WM	B/P=	815.59	1.80	
8 "	SAN	T/P=	803.41	8 "	WM	B/P=	816.69	13.28	
8 "	SAN	T/P=	806.69	21 "	ST	B/P=	809.95	3.26	
15 "	ST	B/P=	811.16	8 "	WM	T/P=	809.66	1.50	DIP WATER MAIN
15 "	ST	B/P=	815.50	8 "	WM	T/P=	811.64	3.85	
10 "	SAN	T/P=	800.44	12 "	ST	B/P=	805.88	5.43	
10 "	SAN	T/P=	800.04	8 "	WM	B/P=	805.20	5.16	
10 "	SAN	T/P=	799.47	12 "	ST	B/P=	804.66	5.19	
10 "	SAN	T/P=	798.47	30 "	ST	B/P=	802.30	3.83	
27 "	ST	T/P=	805.67	8 "	WM	B/P=	807.26	1.59	
10 "	SAN	T/P=	797.18	8 "	WM	B/P=	810.29	13.11	
10 "	SAN	T/P=	796.73	18 "	ST	B/P=	811.48	14.75	
12 "	ST	B/P=	808.67	8 "	WM	T/P=	807.17	1.50	DIP WATER MAIN
10 "	SAN	T/P=	798.10	8 "	WM	B/P=	808.78	10.68	
10 "	SAN	T/P=	799.25	36 "	ST	B/P=	800.81	1.56	
8 "	SAN	T/P=	800.28	18 "	ST	B/P=	802.74	2.47	
27 "	ST	B/P=	802.08	8 "	WM	T/P=	800.58	1.50	DIP WATER MAIN
42 "	ST	T/P=	803.46	8 "	WM	B/P=	804.36	0.90	CONC. CRADLE - INSTALL WM AT 5' DEPTH
42 "	ST	T/P=	803.43	8 "	WM	B/P=	809.23	5.80	
8 "	SAN	B/P=	804.88	30 "	ST	T/P=	803.35	1.53	
10 "	SAN	T/P=	794.63	27 "	ST	B/P=	801.26	6.63	
24 "	ST	T/P=	804.18	8 "	WM	B/P=	805.75	1.57	INSTALL WM AT 5' DEPTH
12 "	ST	B/P=	804.22	8 "	WM	T/P=	802.72	1.50	DIP WATER MAIN
12 "	ST	T/P=	816.26	8 "	WM	B/P=	818.33	2.07	
10 "	SAN	T/P=	792.65	8 "	WM	B/P=	804.55	11.90	
12 "	ST	B/P=	804.14	8 "	WM	T/P=	802.64	1.50	DIP WATER MAIN
10 "	SAN	T/P=	791.93	8 "	WM	B/P=	802.33	10.40	
10 "	SAN	T/P=	793.46	15 "	ST	B/P=	804.63	11.17	
8 "	SAN	B/P=	792.80	12 "	ST	T/P=	791.31	1.49	
8 "	SAN	T/P=	780.21	12 "	ST	B/P=	784.02	3.81	
8 "	SAN	T/P=	773.11	12 "	ST	B/P=	778.86	5.75	
8 "	ST	B/P=	783.14	8 "	WM	T/P=	781.57	1.57	INSTALL WM AT 6' DEPTH
18 "	ST	T/P=	809.14	8 "	WM	B/P=	813.67	4.53	
10 "	SAN	T/P=	801.52	15 "	ST	B/P=	807.09	5.57	
24 "	ST	T/P=	809.14	16 "	WM	B/P=	811.67	2.52	
15 "	ST	B/P=	814.93	16 "	WM	T/P=	813.43	1.50	
8 "	SAN	T/P=	796.01	8 "	WM	B/P=	803.66	7.65	
10 "	SAN	T/P=	801.52	8 "	WM	B/P=	807.94	6.42	
8 "	SAN	T/P=	810.84	8 "	WM	B/P=	819.18	8.34	
15 "	ST	T/P=	811.21	8 "	WM	B/P=	812.83	1.62	
24 "	ST	T/P=	808.40	2 "	WM	B/P=	813.40	4.99	

NOTE:
NO BMP'S ARE PROPOSED AS PART OF THIS DEVELOPMENT

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
CALCULATIONS & TABLES

DATE
OCT. 12, 2023

REVISIONS

NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 49

CAD FILE: 19004443FSP-25-CALCS.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-25-CALCS.DWG 10/10/2023 4:07 PM MATTHEW MYERS

SANITARY LEAD CROSSING TABLE

SEE WATERMAIN PROFILES FOR WATERMAIN DIPPING AT L9 AND L10 LEADS CROSSING

	CROSSING PIPE 1				CROSSING PIPE 2				Clearance
L9	8 "	WM	T/P=	807.50	6 "	SAN	B/P=	809.10	1.60
L10	8 "	WM	T/P=	809.06	6 "	SAN	B/P=	810.70	1.64
L11	8 "	WM	B/P=	812.93	6 "	SAN	T/P=	809.50	3.43
L12	8 "	WM	B/P=	813.65	6 "	SAN	T/P=	810.15	3.50
L13	8 "	WM	B/P=	816.68	6 "	SAN	T/P=	813.83	2.85
L14	8 "	WM	B/P=	817.31	6 "	SAN	T/P=	814.64	2.67
L15	8 "	WM	B/P=	817.93	6 "	SAN	T/P=	814.45	3.48
L16	8 "	WM	B/P=	818.56	6 "	SAN	T/P=	815.16	3.41
L17	8 "	WM	B/P=	819.18	6 "	SAN	T/P=	815.96	3.22
L18	8 "	WM	B/P=	819.85	6 "	SAN	T/P=	816.76	3.10
L19	8 "	WM	B/P=	820.53	6 "	SAN	T/P=	817.55	2.98
L20	8 "	WM	B/P=	820.56	6 "	SAN	T/P=	817.14	3.42
L21	8 "	WM	B/P=	819.58	6 "	SAN	T/P=	816.95	2.63
L22	8 "	WM	B/P=	818.39	6 "	SAN	T/P=	815.72	2.67
L23	8 "	WM	B/P=	817.31	6 "	SAN	T/P=	814.52	2.79
L24	8 "	WM	B/P=	816.27	6 "	SAN	T/P=	813.33	2.95
L25	8 "	WM	B/P=	815.62	6 "	SAN	T/P=	812.04	3.58
L26	8 "	WM	B/P=	815.61	6 "	SAN	T/P=	812.95	2.66
L27	8 "	WM	B/P=	816.17	6 "	SAN	T/P=	812.75	3.42
L35	8 "	WM	B/P=	813.28	6 "	SAN	T/P=	810.89	2.40
L36	8 "	WM	B/P=	814.38	6 "	SAN	T/P=	811.64	2.75
L37	8 "	WM	B/P=	815.10	6 "	SAN	T/P=	812.40	2.70
L38	8 "	WM	B/P=	818.76	6 "	SAN	T/P=	813.19	5.58
L39	8 "	WM	B/P=	816.54	6 "	SAN	T/P=	812.89	3.65
L40	8 "	WM	B/P=	816.84	6 "	SAN	T/P=	813.49	3.35
L41	8 "	WM	B/P=	815.47	6 "	SAN	T/P=	813.25	2.22
L42	8 "	WM	B/P=	813.15	6 "	SAN	T/P=	811.04	2.11
L43	8 "	WM	B/P=	810.87	6 "	SAN	T/P=	807.87	3.01
L44	8 "	WM	B/P=	809.02	6 "	SAN	T/P=	806.66	2.37
L63	8 "	WM	B/P=	821.68	6 "	SAN	T/P=	818.31	3.38
L64	8 "	WM	B/P=	822.84	6 "	SAN	T/P=	820.07	2.78
L65	8 "	WM	B/P=	822.51	6 "	SAN	T/P=	819.59	2.92
L66	8 "	WM	B/P=	821.30	6 "	SAN	T/P=	818.34	2.97
L67	8 "	WM	B/P=	817.38	6 "	SAN	T/P=	814.42	2.96
L68	8 "	WM	B/P=	816.23	6 "	SAN	T/P=	813.18	3.05
L69	8 "	WM	B/P=	815.08	6 "	SAN	T/P=	811.38	3.70
L70	8 "	WM	B/P=	813.92	6 "	SAN	T/P=	810.48	3.44
L71	8 "	WM	B/P=	812.67	6 "	SAN	T/P=	809.51	3.17
L72	8 "	WM	B/P=	811.52	6 "	SAN	T/P=	807.61	3.92
L73	8 "	WM	B/P=	810.36	6 "	SAN	T/P=	806.71	3.66
L74	8 "	WM	B/P=	809.24	6 "	SAN	T/P=	805.83	3.41
L75	8 "	WM	B/P=	808.34	6 "	SAN	T/P=	804.91	3.43
L94	8 "	WM	B/P=	806.66	6 "	SAN	T/P=	803.77	2.89
L95	8 "	WM	B/P=	805.52	6 "	SAN	T/P=	802.58	2.94
L96	8 "	WM	B/P=	805.16	6 "	SAN	T/P=	802.49	2.68
L97	8 "	WM	B/P=	805.31	6 "	SAN	T/P=	803.29	2.02
L98	8 "	WM	B/P=	806.09	6 "	SAN	T/P=	803.08	3.01
L99	8 "	WM	B/P=	806.14	6 "	SAN	T/P=	802.90	3.25
L100	8 "	WM	B/P=	804.75	6 "	SAN	T/P=	801.58	3.18
L101	8 "	WM	B/P=	804.67	6 "	SAN	T/P=	801.47	3.20
L102	8 "	WM	B/P=	805.11	6 "	SAN	T/P=	802.17	2.94
L103	8 "	WM	B/P=	805.84	6 "	SAN	T/P=	802.98	2.87
L104	8 "	WM	B/P=	806.64	6 "	SAN	T/P=	803.66	2.98
L105	8 "	WM	B/P=	807.35	6 "	SAN	T/P=	804.48	2.88
L106	8 "	WM	B/P=	808.08	6 "	SAN	T/P=	805.28	2.80
L107	8 "	WM	B/P=	808.80	6 "	SAN	T/P=	806.09	2.71
L108	8 "	WM	B/P=	809.64	6 "	SAN	T/P=	806.73	2.92
L109	8 "	WM	B/P=	810.25	6 "	SAN	T/P=	807.57	2.69
L110	8 "	WM	B/P=	811.17	6 "	SAN	T/P=	808.29	2.89
L121	8 "	WM	B/P=	803.11	6 "	SAN	T/P=	801.53	1.58
L122	8 "	WM	B/P=	803.11	6 "	SAN	T/P=	801.37	1.75
L123	8 "	WM	B/P=	803.62	6 "	SAN	T/P=	801.02	2.61
L146	8 "	WM	B/P=	808.44	6 "	SAN	T/P=	804.76	3.68
L147	8 "	WM	B/P=	807.69	6 "	SAN	T/P=	804.16	3.53
L148	8 "	WM	B/P=	806.78	6 "	SAN	T/P=	803.66	3.12
L149	8 "	WM	B/P=	805.86	6 "	SAN	T/P=	803.33	2.53
L150	8 "	WM	B/P=	804.94	6 "	SAN	T/P=	802.00	2.94
L151	8 "	WM	B/P=	803.96	6 "	SAN	T/P=	800.64	3.33
L152	8 "	WM	B/P=	802.78	6 "	SAN	T/P=	798.32	4.46
L153	8 "	WM	B/P=	800.54	6 "	SAN	T/P=	796.62	3.93
L154	8 "	WM	B/P=	798.52	6 "	SAN	T/P=	794.88	3.64
L155	8 "	WM	B/P=	796.36	6 "	SAN	T/P=	793.52	2.84
L156	8 "	WM	B/P=	794.47	6 "	SAN	T/P=	791.58	2.90
L157	8 "	WM	B/P=	792.71	6 "	SAN	T/P=	789.53	3.19
L158	8 "	WM	B/P=	791.06	6 "	SAN	T/P=	787.73	3.34
L159	8 "	WM	B/P=	789.40	6 "	SAN	T/P=	785.93	3.48
L160	8 "	WM	B/P=	788.13	6 "	SAN	T/P=	784.93	3.21
L161	8 "	WM	B/P=	786.81	6 "	SAN	T/P=	783.98	2.84
L162	8 "	WM	B/P=	785.67	6 "	SAN	T/P=	782.46	3.22
L163	8 "	WM	B/P=	784.42	6 "	SAN	T/P=	781.85	2.58
L164	8 "	WM	B/P=	783.16	6 "	SAN	T/P=	780.24	2.93
L165	8 "	WM	B/P=	781.91	6 "	SAN	T/P=	778.96	2.95
L181	8 "	WM	B/P=	803.32	6 "	SAN	T/P=	801.34	1.99
L182	8 "	WM	B/P=	804.67	6 "	SAN	T/P=	802.53	2.15
L183	8 "	WM	B/P=	805.80	6 "	SAN	T/P=	802.72	3.08
L184	8 "	WM	B/P=	806.16	6 "	SAN	T/P=	803.11	3.06
L185	8 "	WM	B/P=	805.30	6 "	SAN	T/P=	802.30	3.00
L186	8 "	WM	B/P=	804.87	6 "	SAN	T/P=	801.49	3.38
L187	8 "	WM	B/P=	805.06	6 "	SAN	T/P=	802.59	2.48
L188	8 "	WM	B/P=	805.88	6 "	SAN	T/P=	802.88	3.00
L189	8 "	WM	B/P=	806.18	6 "	SAN	T/P=	803.17	3.02
L190	8 "	WM	B/P=	805.76	6 "	SAN	T/P=	802.36	3.40
L191	8 "	WM	B/P=	805.32	6 "	SAN	T/P=	802.55	2.77
L192	8 "	WM	B/P=	805.26	6 "	SAN	T/P=	802.65	2.62
L193	8 "	WM	B/P=	805.87	6 "	SAN	T/P=	802.94	2.93
L194	8 "	WM	B/P=	807.07	6 "	SAN	T/P=	804.12	2.95
L195	8 "	WM	B/P=	808.27	6 "	SAN	T/P=	805.32	2.95
L196	8 "	WM	B/P=	809.23	6 "	SAN	T/P=	806.59	2.64
L197	8 "	WM	B/P=	810.26	6 "	SAN	T/P=	807.72	2.54
L198	8 "	WM	B/P=	811.21	6 "	SAN	T/P=	807.98	3.23
L199	8 "	WM	B/P=	812.15	6 "	SAN	T/P=	809.08	3.07
L200	8 "	WM	B/P=	813.32	6 "	SAN	T/P=	810.43	2.89
L201	8 "	WM	B/P=	813.30	6 "	SAN	T/P=	810.48	2.82
L202	8 "	WM	B/P=	812.73	6 "	SAN	T/P=	809.85	2.89
L203	8 "	WM	B/P=	811.99	6 "	SAN	T/P=	809.05	2.95
L156	8 "	ST	B/P=	796.22	6 "	SAN	T/P=	791.73	4.49
L157	8 "	ST	B/P=	794.98	6 "	SAN	T/P=	789.66	5.32
L158	8 "	ST	B/P=	792.98	6 "	SAN	T/P=	787.85	5.12
L159	8 "	ST	B/P=	791.78	6 "	SAN	T/P=	786.05	5.73
L160	8 "	ST	B/P=	790.48	6 "	SAN	T/P=	785.04	5.44
L161	8 "	ST	B/P=	789.26	6 "	SAN	T/P=	784.12	5.15
L162	8 "	ST	B/P=	788.02	6 "	SAN	T/P=	782.58	5.44
L163	8 "	ST	B/P=	786.82	6 "	SAN	T/P=	781.97	4.85
L164	8 "	ST	B/P=	785.42	6 "	SAN	T/P=	780.36	5.06
L165	8 "	ST	B/P=	784.22	6 "	SAN	T/P=	779.08	5.13

SANITARY LEAD TABLE

Lot #	Lead Invert at Main	Lead Length (LF)	Lead Slope (%)	Lead Dia. (in)	Lot F.G. Elev.	Riser Height (FT)	Stub Invert Elev.
* L1	808.63	24	1.04%	6	817.55	0	808.88
L2	808.00	24	1.04%	6	819.55	0	808.25
L3	807.74	24	1.04%	6	820.00	0	807.99
L4	807.49	24	1.04%	6	821.00	2	809.74
L5	807.14	28	1.04%	6	821.70	3	810.43
L6	806.89	28	1.04%	6	822.40	4	811.18
L7	806.64	28	1.04%	6	823.10	5	811.93
L8	806.40	28	1.04%	6	823.80	6	812.69
* L9	808.65	72	1.04%	6	817.00	0	809.40
* L10	808.23	74	1.04%	6	818.20	2	811.00
L11	807.43	74	1.04%	6	821.10	1	809.20
L12	807.08	74	1.04%	6	821.80	2	809.85
L13	805.76	74	1.04%	6	824.90	7	813.53
L14	805.57	74	1.04%	6	825.50	8	814.34
L15	805.38	74	1.04%	6	826.10	8	814.15
L16	805.09	74	1.04%	6	826.70	9	814.86
L17	804.89	74	1.04%	6	827.40	10	815.66
L18	804.69	74	1.04%	6	828.10	11	816.46
L19	804.48	74	1.04%	6	828.70	12	817.25
L20	804.07	74	1.04%	6	828.70	12	816.84
L21	803.88	74	1.04%	6	827.90	12	816.65
L22	803.65	74	1.04%	6	826.70	11	815.42
L23	803.45	74	1.04%	6	825.70	10	814.22
L24	803.26	74	1.04%	6	824.60	9	813.03
L25	802.97	74	1.04%	6	823.70	8	811.74
L26	802.88	74	1.04%	6	823.70	9	812.65
L27	802.68	74	1.04%	6	824.30	9	812.45
L28	805.27	29	1.04%	6	823.60	7	812.57
L29	805.51	29	1.04%	6	822.80	5	810.81
L30	806.18	31	1.04%	6	820.20	2	808.50
L31	806.43	26	1.04%	6	820.00	0	806.71
L32	806.71	24	1.04%	6	818.90	0	806.96
L33	807.08	24	1.04%	6	818.55	0	807.33
L34	807.68	24	1.04%	6	819.30	0	807.93
L35	805.82	74	1.04%	6	821.70	4	810.59
L36	805.58	73	1.04%	6	822.50	5	811.34
L37	805.34	74	1.04%	6	823.30	6	812.10
L38	805.12	74	1.04%	6	824.00	7	812.89
L39	803.82	74	1.04%	6	824.70	8	812.59
L40	803.42	74	1.04%	6	825.10	9	813.19
L41	802.18	74	1.04%	6	824.10	10	812.95
L42	801.99	72	1.04%	6	821.90	8	810.74
L43	801.80	74	1.04%	6	819.50	5	807.57
L44	801.59	74	1.04%	6	817.65	4	806.36
L45	801.40	74	1.04%	6	816.10	2	804.17
L46	802.68	29	1.04%	6	824.40	10	812.98
L47	802.87	29	1.04%	6	823.80	9	812.17
L48	802.98	29	1.04%	6	823.75	9	812.28
L49	803.26	29	1.04%	6	824.60	10	813.57
L50	803.46	29	1.04%	6	825.60	10	813.76
L51	803.66	29	1.04%	6	826.70	11	814.96
L52	803.85	29	1.04%	6	827.70	12	816.15
L53	804.04	29	1.04%	6	828.70	13	817.34
L54	804.43	29	1.04%	6	828.80	13	817.73
L55	805.08	29	1.04%	6	826.80	10	815.38
L56	805.37	29	1.04%	6	826.20	9	814.67
L57	805.56	29	1.04%	6	825.50	8	813.87
L58	805.76	29	1.04%	6	824.90	7	813.06
L59	807.65	28	1.04%	6	824.70	5	812.95
L60	809.34	23	1.04%	6	825.70	5	814.58
L61	812.38	24	1.04%	6	826.60	3	815.63
L62	812.98	24	1.04%	6	827.50	3	816.23
L63	812.24	74	1.04%	6	830.10	5	818.01
L64	812.00	74	1.04%	6	831.00	7	819.77
L65	811.52	74	1.04%	6	830.60	7	819.29
L66	811.27	74	1.04%	6	829.60	6	818.04
L67	810.35	74	1.04%	6	825.50	3	814.12
L68	810.11	74	1.04%	6	824.60	2	812.88
L69	809.31	74	1.04%	6	823.50	1	811.08
L70	808.41	74	1.04%	6	822.30	1	810.18
L71	807.44	74	1.04%	6	821.10	1	809.21
L72	806.54	74	1.04%	6	819.90	0	807.31
L73	805.64	74	1.04%	6	818.70	0	806.41
L74	803.74	76	1.04%	6	817.60	1	805.53
L75	802.80	78	1.04%	6	816.30	1	804.61
L76	802.54	26	1.04%	6	816.40	2	804.81
L77	803.78	26	1.04%	6	817.60	2	806.05
L78	805.67	26	1.04%	6	818.80	0	805.94
L79	806.57	26	1.04%	6	819.90	1	807.84
L80	807.47	26	1.04%	6	821.10	1	808.74
L81	808.44	26	1.04%	6	822.30	1	809.71
L82	809.34	26	1.04%	6	823.50	2	811.61
L83	810.12	26	1.04%	6	824.60	3	813.39
L84	810.36	26	1.04%	6	825.60	3	813.63
L85	810.60	26	1.04%	6	825.40	3	813.87
L86	811.02	29	1.04%	6	828.30	5	816.32
L87	811.28	29	1.04%	6	829.60	6	817.58
L88	811.53	29	1.04%	6	830.80	7	818.83
L89	811.99	29	1.04%	6	831.00	7	819.29
L90	812.23	29	1.04%	6	830.20	6	818.53
L91	812.47	29	1.04%	6	829.00	5	817.77
L92	813.08	29	1.04%	6	827.95	3	816.38
L93	813.66	29	1.04%	6	824.85	0	813.96
L94	800.70	74	1.04%	6	814.90	2	803.47
L95	800.51	74	1.04%	6	813.80	1	802.28
L96	800.42	74	1.04%	6	813.80	1	802.19
L97	800.22	74	1.04%	6	814.00	2	802.99
L98	800.01	74	1.04%	6	814.40	2	802.78
L99	799.83	74	1.04%	6	814.00	2	802.60
L100	799.49	76	1.04%	6	812.90	1	801.28
L101	799.39	75	1.04%	6	812.80	1	801.17
L102	799.10	74	1.04%	6	813.35	2	801.87
L103	798.91	74	1.04%	6	814.10	3	802.68
L104	798.59	74	1.04%	6	814.85	4	803.36
L105	798.41	74	1.04%	6	815.55	5	804.18
L106	798.21	74	1.04%	6	816.30	6	804.98
L107	798.02	74	1.04%	6	817.05	7	805.79
L108	797.66	74	1.04%	6	817.80	8	806.43
L109	797.50	74	1.04%	6	818.50	9	807.27
L110	797.19	77	1.04%	6	819.40	10	807.99
L111	797.43	29	1.04%	6	818.70	9	806.74
L112	797.63	29	1.04%	6	818.00	9	806.93
L113	797.96	29	1.04%	6	817.25	8	806.26
L114	798.15	29	1.04%	6	816.50	7	805.45
L115	798.36	29	1.04%	6	815.80	6	804.66
L116	798.57	29	1.04%	6	815.00	5	803.87
L117	798.86	29	1.04%	6	814.20	4	803.16
L118	799.07	29	1.04%	6	813.50	3	802.37
L119	799.37	29	1.04%	6	812.80	2	801.66
L120	799.45	27	1.04%	6	812.90	2	801.74
L121	800.44	76	1.04%	6	812.00	0	801.24
L122	800.29	78	1.04%	6	812.15	0	801.07
L123	799.93	76	1.04%	6	812.35	0	800.72
L124	799.91	26	1.04%	6	812.10	0	800.18
L125	799.45	28	1.04%	6	812.50	1	800.74
L126	799.24	28	1.04%	6	812.05	1	800.53
L127	799.14	27	1.04%	6	812.05	1	800.43
L128	798.93	28	1.04%	6	813.00	2	801.23
L129	798.64	28	1.04%	6	814.15	4	802.93
L130	798.45	28	1.04%	6	815.30	5	803.74
L131	798.26	28	1.04%	6	816.40	6	804.55
L132	797.19	29	1.04%	6	817.90	9	806.50
L133	797.39	29	1.04%	6	817.10	8	805.69
L134	797.49	29	1.04%	6	817.50	8	805.79
L135	797.77	29	1.04%	6	817.70	8	806.07
L136	806.74	26	1.04%	6	817.85	0	807.01
L137	805.94	26	1.04%	6	817.50	0	806.21
L138	805.28	26	1.04%	6	817.00	0	805.55
L139	803.53	26	1.04%	6	816.50	1	804.80
L140	802.87	26	1.04%	6	815.70	1	804.14
L141	801.44	26	1.04%	6	814.60	2	803.71
L142	801.07	26	1.04%	6	813.60	1	802.34
L143	800.71	26	1.04%	6	812.40	0	800.98
L144	799.35	26	1.04%	6	811.70	0	799.62
L145	799.18	26	1.04%	6	811.90	0	799.45
L146	803.69	74	1.04%	6	815.60	0	804.46
L147	803.09	74	1.04%	6	814.90	0	803.86
L148	801.59	74	1.04%	6	814.90	1	803.36
L149	801.26	74	1.04%	6	813.90	1	803.03
L150	800.93	74	1.04%	6	812.95	0	801.70
L151	799.57	74	1.04%	6	812.00	0	800.34
L152	796.26	73	1.04%	6	811.30	1	798.02
L153	795.57	72	1.04%	6	809.70	0	796.32
L154	793.84	71	1.04%	6	807.15	0	794.58
L155	791.47	78	1.04%	6	805.10	1	793.28
L156	789.52	79	1.04%	6	803.20	1	791.34
L157	786.46	80	1.04%	6	801.20	2	789.29
L158	784.66	80	1.04%	6	799.50	2	787.49
L159	782.86	80	1.04%	6	797.90	2	785.69
L160	780.84	82	1.04%	6	796.60	3	784.69
L161	779.90	80	1.04%	6	795.20	3	783.74
L162	778.36	83	1.04%	6	794.00	3	782.22
L163	777.76	82	1.04%	6	792.70	3	781.61
L164	777.16	81	1.04%	6	791.45	2	780.00
L165	774.89	80	1.04%	6	790.30	3	778.72
L166	780.89	28	1.04%	6	797.00	4	785.18
L167	784.11	26	1.04%	6	798.50	2	786.38
L168	786.06	26	1.04%	6	799.80	2	788.33
L169	787.74	26	1.04%	6	801.90	2	790.01
L170	790.55	26	1.04%	6	803.30	0	790.82
L171	792.12	27	1.04%	6	804.80	0	792.40
L172	793.81	26	1.04%	6	806.40	0	794.08
L173	794.29	28	1.04%	6	807.80	1	795.58
L174	795.87	26	1.04%	6	808.60	0	796.14
L175	796.32	27	1.04%	6	810.20	1	797.60
L176	797.02	26	1.04%	6	812.00	2	799.29
L177	798.35	26	1.04%	6	812.00	1	799.62
L178	799.27	26	1.04%	6	811.70	0	799.54
L179	799.67	26	1.04%	6	811.30	0	799.94
L180	800.28	26	1.04%	6	812.10	0	800.55
L181	792.27	74	1.04%	6	812.70	8	801.03
L182	792.46	74	1.04%	6	814.05	9	802.23
L183	792.65	74	1.04%	6	814.10	9	802.42
L184	793.04	74	1.04%	6	814.35	9	802.81
L185	793.23	74	1.04%	6	813.60	8	802.00
L186	793.42	74	1.04%	6	812.60	7	801.19
L187	793.52	74	1.04%	6	813.30	8	802.29
L188	793.81	74	1.04%	6	814.10	8	802.58
L189	794.10	74	1.04%	6	814.30	8	802.87
L190	794.29	74	1.04%	6	813.90	7	802.06
L191	794.48	74	1.04%	6	813.50	7	802.25
L192	794.58	74	1.04%	6	813.40	7	802.35
L193	794.87	74	1.04%	6	814.30	7	802.64
L194	795.06	73	1.04%	6	815.50	8	803.82
L195	795.25	74	1.04%	6	816.70	9	805.02
L196	795.49	78	1.04%	6	817.70	10	806.29
L197	795.64	75	1.04%	6	818.65	11	807.42
L198	795.87	78	1.04%	6	819.65	11	807.68
L199	796.00	75	1.04%	6	820.65	12	808.78
L200	796.34	77	1.04%	6	821.45	13	810.13
L201	796.38	78	1.04%	6	821.80	13	810.19
L202	796.68	84	1.04%	6	820.90	12	809.55
L203	796.87	84	1.04%	6	820.20	11	808.75
L204	795.49	26	1.04%	6	817.70	10	805.76
L205	795.15	29	1.04%	6	815.95	9	804.45
L206	794.96	29	1.04%	6	814.70	8	803.26
L207	794.59	29	1.04%	6	813.40	7	801.89
L208	794.39	29	1.04%	6	813.30	7	801.69
L209	794.18	29	1.04%	6	813.90	8	802.48
L210	793.97	29	1.04%	6	814.30	9	803.27
L211	793.76	29	1.04%	6	814.00	8	802.06
L212	793.44	29	1.04%	6	813.10	8	801.75
L213	793.35	29	1.04%	6	813.10	8	801.65
L214	793.14	29	1.04%	6	814.00	9	802.44
L215	792.71	29	1.04%	6	814.30	10	803.02

NOTE: THE * ANNOTATION BY THE LOT # INDICATES HUNG PLUMBING

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
CALCULATIONS & TABLES

DATE
OCT. 12, 2023

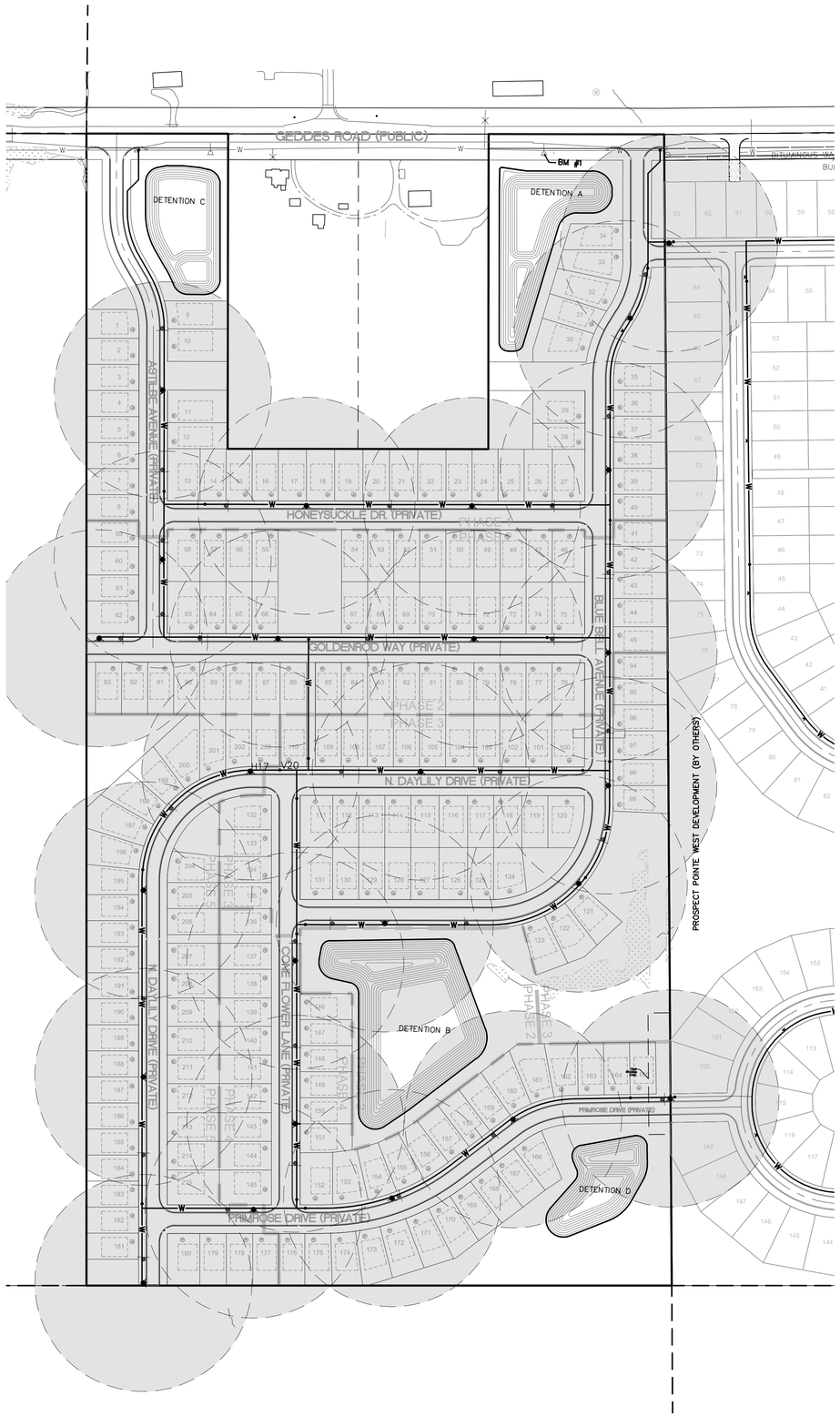
REVISIONS

NA NA NA
N/A

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 50

CAD FILE: 19004443FSP-25-CALCS.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443FSP-25-CALCS.DWG 10/10/2023 4:08 PM MATTHEW MYERS



LEGEND

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- 250' RADIUS HYDRANT COVERAGE (TYP.)
- PROPOSED PAVEMENT
- PROPOSED HYDRANT
- 'NO PARKING – FIRE LANE' SIGN

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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
FIRE PROTECTION PLAN

DATE
OCT. 12, 2023

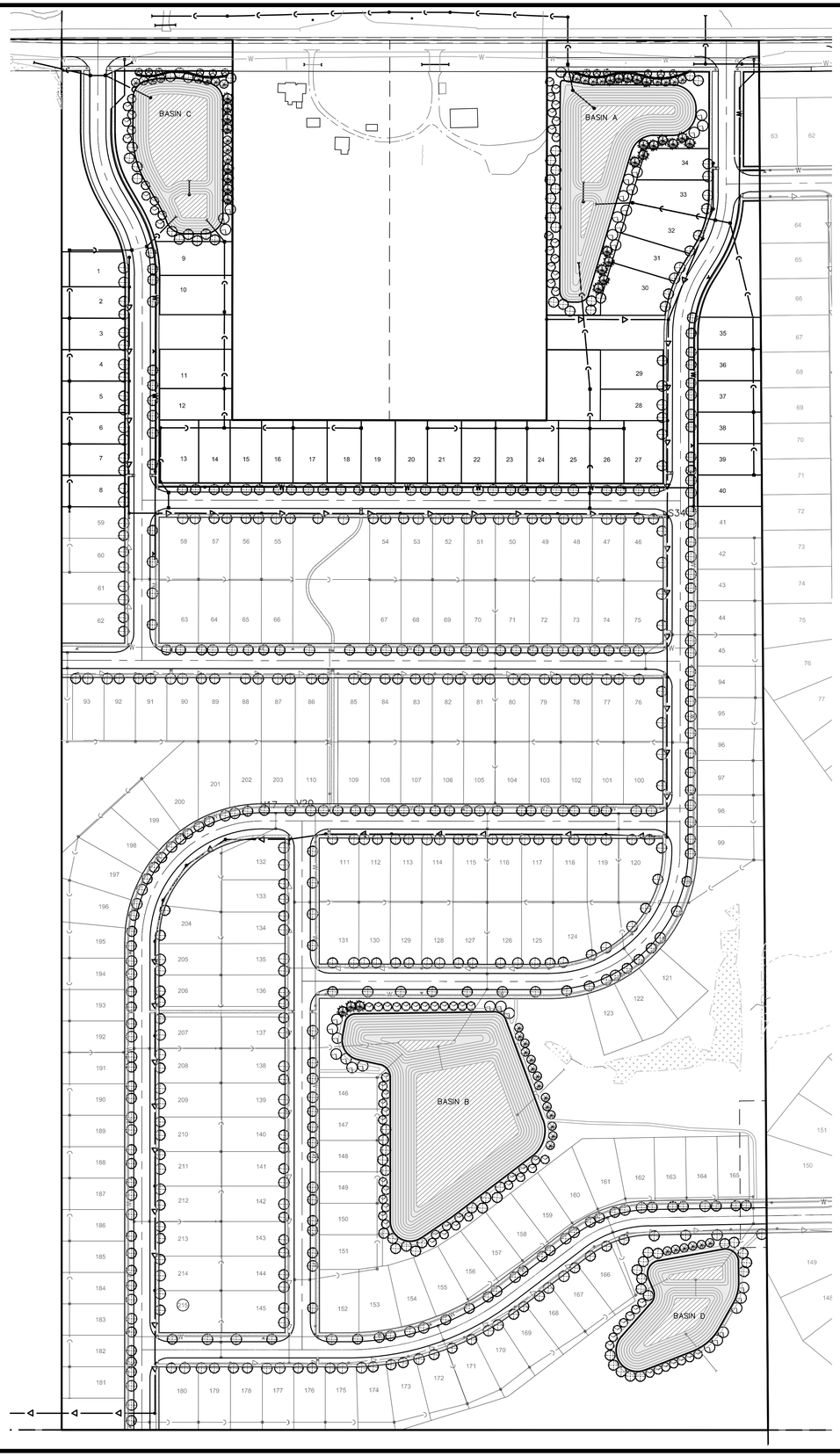
REVISIONS

0 75 150
SCALE: 1" = 150 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 51

CAD FILE: 19004443SP-19-FP.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-19-FP.DWG 10/10/2023 4:08 PM MATTHEW MYERS



STORMWATER SEED MIX

Botanical Name	Common Name	PLS Oz/Acre
Permanent Grasses/Sedges		
Bolboschoenus luviatilis	River Bulrush	0.25
Carex cristatella	Crested Oval Sedge	2.00
Carex lurida	Bottlebrush Sedge	3.00
Carex vulpinoidea	Brown Fox Sedge	6.00
Elymus virginicus	Virginia Wild Rye	13.50
Glyceria striata	Fowl Manna Grass	1.25
Juncus effusus	Common Rush	2.00
Leersia oryzoides	Rice Cut Grass	1.00
Panicum virgatum	Switch Grass	2.00
Schoenoplectus tabernaemontani	Softstem Bulrush	3.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	1.00
	Total	**37.00**
Temporary Cover		
Avena sativa	Common Oat	360.00
Lolium multiflorum	Annual Rye	100.00
	Total	**460.00**
Forbs		
Alisma spp.	Water Plantain Mix	4.25
Asclepias incarnata	Swamp Milkweed	1.50
Bidens spp.	Bidens Mix	2.00
Helenium autumnale	Sneezeweed	7.00
Iris virginica	Blue Flag	4.00
Lycopus americanus	Common Water Horehound	0.25
Mimulus ringens	Monkey Flower	1.00
Oligoneuron riddellii	Riddell's Goldenrod	0.50
Penthorum sedoides	Ditch Stonecrop	0.50
Polygonum erectum	Erect Knotweed	4.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Rudbeckia triloba	Brown-Eyed Susan	1.50
Sagittaria latifolia	Common Arrowhead	1.00
Senna hebecarpa	Wild Senna	1.00
Symphyotrichum novae-angliae	New England Aster	1.50
Thalictrum dasycarpum	Purple Meadow Rue	2.00
	Total	**28.00**

STORMWATER SEED MIX BY NATIVESCAPES

TOTAL AREA	3.72 ACRES (162,000 SF)
APPLICATION RATE	37 LBS PER ACRE
REQUIRED STORMWATER SEED MIX	138 LBS

WET MEADOW PLANT LIST

QTY	BOTANICAL NAME	COMMON NAME	SPACING	CONTAINER
2760	AGASTACHE NEPETOIDES	YELLOW GIANT HYSSOP	24" O.C.	2" POT OR CELLS
2760	ASCLEPIAS INCARNATA	SWAMP MILKWEED	24" O.C.	2" POT OR CELLS
2760	CAREX GRAYI	GRAY'S SEDGE	24" O.C.	2" POT OR CELLS
2760	DOELLINGERIA UMBELLATA	FLAT-TOP WHITE ASTER	24" O.C.	2" POT OR CELLS
2760	EUPATORIUM PERFOLIATUM	BONESET	24" O.C.	2" POT OR CELLS
2760	EUTROCHIUM MACULATUM	JOE-PYE WEED	24" O.C.	2" POT OR CELLS
2760	HELENIUM AUTUMNALE	SNEEZEWEED	24" O.C.	2" POT OR CELLS

*NOTE: WET MEADOW AREA 77,300 SF

LEGEND

- PROPERTY LINE
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- PROPOSED TREE
- PROPOSED WET MEADOW
- PR. STORMWATER SEED MIX

OVERALL LANDSCAPE REQUIREMENTS

1. STREET TREES:
   - REQUIREMENT: 2 PER LOT OR A MAXIMUM OF 60' ON CENTER
   - REQUIRED: 2 X 215 = 430 TREES
   - PROVIDED: 482 TREES
2. GREENBELT BUFFER:
   - 1 TREE AND 3 SHRUBS PER 15' OF GREENBELT LENGTH.
   - MIN. WIDTH = 10'
   - MIN. 3' HIGH BERM
   - SITE REQUIREMENT:
     - GEDDES RD BUFFER (WEST) = (260LF/15) = 18 TREES AND 54 SHRUBS
     - GEDDES RD BUFFER (EAST) = (338LF/15) = 23 TREES AND 69 SHRUBS
   - PROVIDED:
     - GEDDES RD BUFFER (WEST) = 18 TREES AND 54 SHRUBS
     - GEDDES RD BUFFER (EAST) = 23 TREES AND 69 SHRUBS
3. WOODLAND REPLACEMENT:
   - REQUIRED ONSITE REPLACEMENT TREES = 979 TREES
   - REQUIRED OFFSITE REPLACEMENT TREES = 771 TREES
   - TOTAL REQUIRED REPLACEMENT TREES = 1,750 TREES
   - REPLACEMENT TREES PROVIDED = (482 + 199) 681 TREES
   - PAYMENT INTO TREE FUND = (1,750 – 681) 1,069 TREES

OVERALL PLANTING SCHEDULE STREET TREES

TAG	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	NOTES
AR	96	ACER RUBRUM 'AUTUMN BLAZE'	AUTUMN BLAZE RED MAPLE	2.5" CAL.		B & B
GT	97	GLEDITISIA TRIACANTHOS V. INERMIS	THORNLESS HONEY LOCUST	2.5" CAL.		B & B
LT	87	LIRIODENDRON TULIPIFERA	TULIP TREE	2.5" CAL.		B & B
QP	103	QUERCUS PALUSTRIS	PIN OAK	2.5" CAL.		B & B
TC	99	TTILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2.5" CAL.		B & B
TOTAL	482					

OVERALL PLANTING SCHEDULE BUFFERS & OPEN SPACE

DECIDUOUS & EVERGREEN TREES

TAG	QTY.	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	NOTES
AS	8	ACER SACCHARUM 'LEGACY'	LEGACY SUGAR MAPLE	2.5"		B & B
BN	80	BETULA NIGRA	MULTI-STEM RIVER BIRCH		10'–12'	B & B
MS	12	MALUS 'SPRING SNOW'	SPRING SNOW CRAB APPLE	2.0"		B & B
PA	29	PICEA ABIES	NORWAY SPRUCE		6'–8'	B & B
PG	39	PICEA GLAUCA	WHITE SPRUCE		6'–8'	B & B
QR	31	QUERCUS RUBRA	RED OAK	2.5"		B & B
TOTAL	199					

SHRUBS

TAG	QTY.	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	NOTES
HB	32	HYDRANGEA P. 'LIMELIGHT'	LIMELIGHT HYDRANGEA		30"	CONT.
SJ	91	SPIRAEA JAPONICA 'GOLDFLAME'	GOLDFLAME JAPANESE SPIRAEA		30"	CONT.
TOTAL	123					

LANDSCAPE NOTES

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES.
2. LANDSCAPING OPERATIONS, INCLUDING PLANTING OF TREES AND SHRUBS, SHALL NOT DAMAGE ANY UTILITY OR INTERRUPT ANY UTILITY SERVICE, AND SHALL NOT DAMAGE OR CREATE A NUISANCE AFFECTING ADJACENT PROPERTY, PUBLIC STREETS, OR SIDEWALKS.
3. PLANT AND GRASS MATERIALS SHALL BE INSTALLED ACCORDING TO GENERALLY ACCEPTED PLANTING PROCEDURES.
4. ALL DISTURBED AREAS THAT ARE NOT SPECIFIED WITH OTHER PLANTING, PAVING OR SEED MIXTURES SHALL BE PLANTED WITH A STANDARD PERMANENT GRASS SEED MIXTURE TO INDUSTRY STANDARDS.
5. LANDSCAPING MATERIALS THAT ARE UNSIGHTLY, DEAD, DYING, OR THAT BECOME UNHEALTHY BECAUSE OF DAMAGE, NEGLECT, DRAINAGE PROBLEMS, DISEASE, INSECT INFESTATION, OR OTHER CAUSES SHALL BE REPLACED WITHIN ONE YEAR, OR THE NEXT PLANTING PERIOD, WHICHEVER OCCURS FIRST. REPLACEMENT MATERIALS SHALL MEET ALL STANDARDS OF THE ORIGINAL INSTALLATION.
6. ALL LANDSCAPED AREAS SHALL BE PROVIDED WITH AN ADEQUATE WATER SUPPLY. IF AUTOMATIC IRRIGATION IS PROVIDED, IT MUST HAVE A RAIN SENSOR TO SHUT OFF SO AS NOT TO SATURATE INFILTRATION BASINS.
7. THE PROPERTY OWNER (OR ANY APPLICABLE OWNER'S ASSOCIATION) SHALL BE RESPONSIBLE TO ENSURE THE PROPER CARE AND MAINTENANCE OF LANDSCAPE AREAS, INCLUDING KEEPING ALL LANDSCAPE MATERIALS IN A HEALTHY AND GROWING STATE. ALL LANDSCAPE ELEMENTS SUCH AS, BUT NOT LIMITED TO, FENCES, SCREENS, WALLS, OR LIGHTING SHALL BE KEPT IN GOOD REPAIR.
8. TOPSOIL REMOVED DURING CONSTRUCTION SHALL BE STOCKPILED IN AN APPROPRIATE MANNER TO PREVENT EROSION, AND SHALL BE REDISTRIBUTED ON RE-GRADED SURFACES TO BE LANDSCAPED, TO PROVIDE A MINIMUM OF FOUR INCHES OF EVEN COVER. THE TOPSOIL SHALL THEN BE PERMANENTLY STABILIZED BY GRASS, GROUND COVER, OR OTHER PLANTINGS.
9. NO PLANT MATERIAL SHALL BE PLANTED CLOSER THAN 4 FEET FROM ANY PROPERTY LINE.
10. REMOVE ALL TWINE, WIRE, NURSERY GUARDS, TAGS AND INORGANIC MATERIAL FROM ROOT BALL. PEEL BACK THE BURLAP FROM EARTH BALLS AND REMOVE ANY BURLAP, TWINE OR WIRE AROUND THE TRUNK FLARE AND ABOVE.
11. ALL PLANTING AREAS ARE TO BE EXCAVATED OF ALL BUILDING / CONSTRUCTION AND FILL MATERIALS AND BACKFILLED WITH GOOD MEDIUM TEXTURED PLANTING SOIL. SEEDING AREAS ARE TO BE TREATED WITH 4" OF NEW TOPSOIL AND ROTOTILLED OR OTHERWISE SCARIFIED TO BREAK UP COMPACTION AT LEAST 8" BELOW THE TOPSOIL.
12. TOPSOIL SHALL BE SCREENED AND SUITABLE FOR GROWING VEGETATION AND MEET AT A MINIMUM ASTM D-5268 AND MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
13. RECOMMENDED PLANTING DATES ARE MARCH 15 TO JUNE 15 AND SEPTEMBER 15 TO NOVEMBER 15.
14. ALL DISTURBED SOIL IN STORMWATER SYSTEMS MUST BE PLANTED WITH PERENNIAL PLANTINGS TO PROVIDE FOR PERMANENT SOIL STABILIZATION AS CALLED FOR IN THE SOIL EROSION CONTROL PERMIT.
15. WITHIN AREAS ABOVE THE INFILTRATION STORAGE ELEVATION OF THE PROPOSED DETENTION BASIN, SEEDING AND/OR LIVE PLANTINGS ARE ALLOWED. ONLY NATIVE SEEDS (AS DEFINED BY MICHIGAN FLORA, MICHIGANFLORA.NET) ARE ALLOWED FOR PERMANENT SOIL STABILIZATION. ANNUAL SEEDS ARE ALLOWED IN AN AMOUNT NECESSARY TO TEMPORARILY STABILIZE THE LIMITS OF DISTURBANCE.
16. BELOW THE INFILTRATION STORAGE ELEVATION WITHIN THE DETENTION BASIN, LIVE PLANTINGS MUST COVER THE ENTIRE AREA. THE INFILTRATION STORAGE ELEVATION SHOULD BE NOTED ON THE DETAILS. NATIVE PLANTS ARE PREFERRED. CULTIVARS AND NON-NATIVE PERENNIALS ARE ALLOWABLE IF APPROVED BY WCWRC. PLANTS LISTED ON THE WCWRC PAIN GARDEN PLANT LIST ARE ACCEPTABLE. INVASIVE SPECIES ARE NOT ALLOWED (SEE THE CITY OF ANN ARBOR'S INVASIVE SPECIES LIST).
    - A. PLANTINGS SHOULD BE LOCALLY ADAPTED AND APPROPRIATE TO HYDRIC CONDITIONS PROPOSED. FOR MORE INFORMATION ON INDIVIDUAL SPECIES, SEE "PLANTS FOR STORMWATER DESIGN: SPECIES SELECTION FOR THE UPPER MIDWEST" BY DANIEL SHAW & RUSTY SCHMIDT.
    - B. PLANTINGS SHOULD BE SPACED ACCORDING TO EACH SPECIES SIZE AND GROWTH POTENTIAL TO ALLOW FOR SUFFICIENT COVERAGE AS REQUIRED BY THE SOIL EROSION PERMIT.
17. PLANTING SOILS MUST BE AMENDED WITH A COMPOSTED ORGANIC MATERIAL. SOILS MUST BE FREE OF CONSTRUCTION DEBRIS AND SUBSOILS. A RECOMMENDED SOIL BLEND INCLUDES 20 TO 30 PERCENT COMPOST.
18. AT THE TIME OF PLANT AND SEED DELIVERY, A WCWRC LANDSCAPE REVIEWER MUST BE PRESENT. THE QUANTITY AND SPECIES DELIVERED WILL BE REVIEWED ON SITE. CONTACT CATIE WYTYCHAK AT WYTYCHAKC@WASHTENAW.ORG OR (734) 222-6813 TO COORDINATE.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33 TOWN 2 SOUTH, RANGE 7 EAST SUPERIOR TOWNSHIP WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY

THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
OVERALL LANDSCAPE PLAN

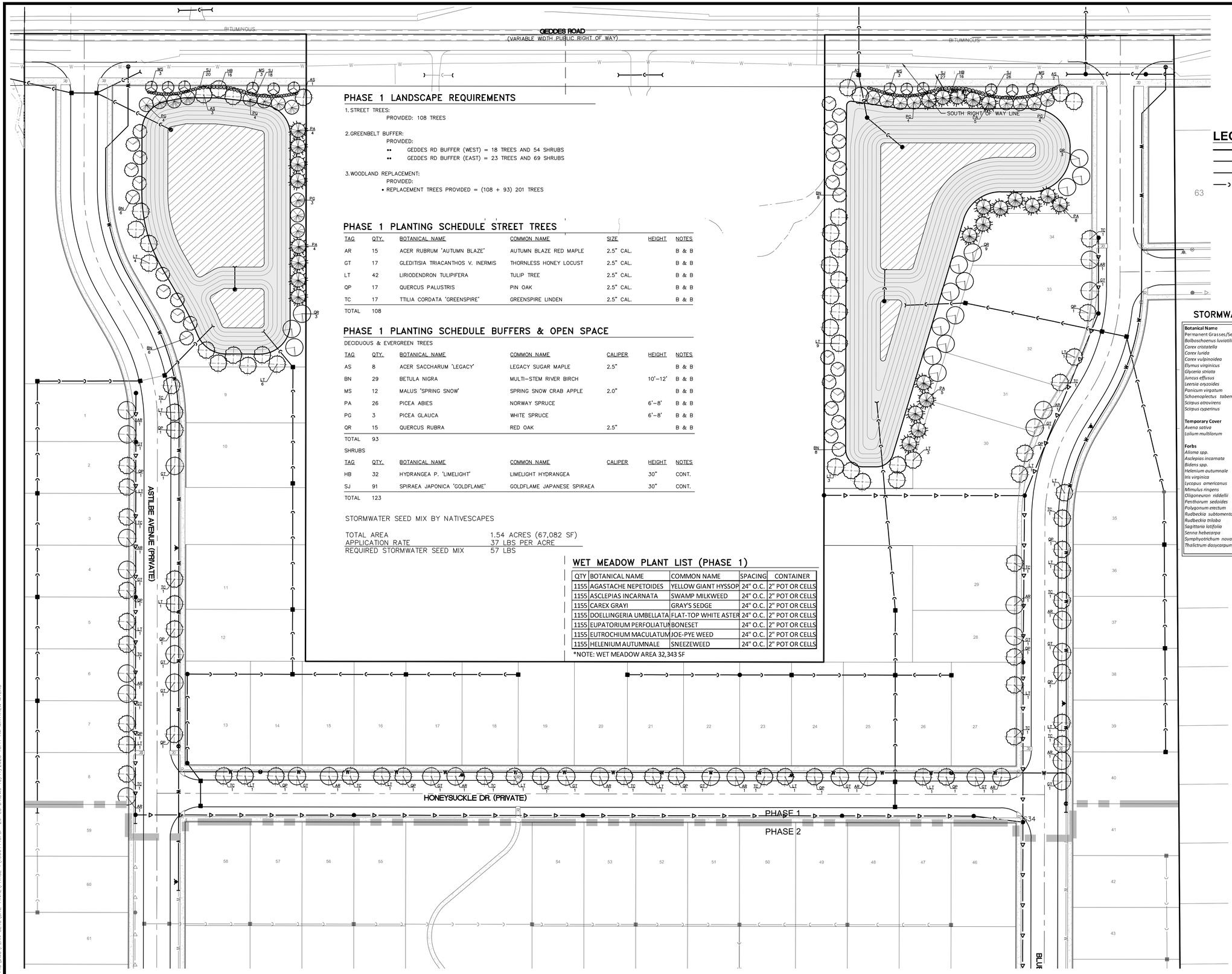
DATE
OCT. 12, 2023

REVISIONS

SCALE: 1" = 120 FEET (0, 60, 120)
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 52

CAD FILE: 19004443SP-20-LS.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443SP-20-LS.DWG 10/10/2023 4:09 PM MATTHEW MYERS



PHASE 1 LANDSCAPE REQUIREMENTS

1. STREET TREES:
   PROVIDED: 108 TREES

2. GREENBELT BUFFER:
   PROVIDED:
   - GEDDES RD BUFFER (WEST) = 18 TREES AND 54 SHRUBS
   - GEDDES RD BUFFER (EAST) = 23 TREES AND 69 SHRUBS

3. WOODLAND REPLACEMENT:
   PROVIDED:
   - REPLACEMENT TREES PROVIDED = (108 + 93) 201 TREES

PHASE 1 PLANTING SCHEDULE STREET TREES

TAG	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	HEIGHT	NOTES
AR	15	ACER RUBRUM 'AUTUMN BLAZE'	AUTUMN BLAZE RED MAPLE	2.5" CAL.		B & B
GT	17	GLEDITISIA TRIACANTHOS V. INERMIS	THORNLESS HONEY LOCUST	2.5" CAL.		B & B
LT	42	LIRIODENDRON TULIPIFERA	TULIP TREE	2.5" CAL.		B & B
QP	17	QUERCUS PALUSTRIS	PIN OAK	2.5" CAL.		B & B
TC	17	TTILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2.5" CAL.		B & B
TOTAL	108					

PHASE 1 PLANTING SCHEDULE BUFFERS & OPEN SPACE

DECIDUOUS & EVERGREEN TREES

TAG	QTY.	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	NOTES
AS	8	ACER SACCHARUM 'LEGACY'	LEGACY SUGAR MAPLE	2.5"		B & B
BN	29	BETULA NIGRA	MULTI-STEM RIVER BIRCH		10'-12'	B & B
MS	12	MALUS 'SPRING SNOW'	SPRING SNOW CRAB APPLE	2.0"		B & B
PA	26	PICEA ABIES	NORWAY SPRUCE		6'-8'	B & B
PG	3	PICEA GLAUCA	WHITE SPRUCE		6'-8'	B & B
QR	15	QUERCUS RUBRA	RED OAK	2.5"		B & B
TOTAL	93					

SHRUBS

TAG	QTY.	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	NOTES
HB	32	HYDRANGEA P. 'LIMELIGHT'	LIMELIGHT HYDRANGEA		30"	CONT.
SJ	91	SPIRAEA JAPONICA 'GOLDFLAME'	GOLDFLAME JAPANESE SPIRAEA		30"	CONT.
TOTAL	123					

STORMWATER SEED MIX BY NATIVESCAPES

TOTAL AREA	1.54 ACRES (67,082 SF)
APPLICATION RATE	37 LBS PER ACRE
REQUIRED STORMWATER SEED MIX	57 LBS

WET MEADOW PLANT LIST (PHASE 1)

QTY	BOTANICAL NAME	COMMON NAME	SPACING	CONTAINER
1155	AGASTACHE NEPETOIDES	YELLOW GIANT HYSSOP	24" O.C.	2" POT OR CELLS
1155	ASCLEPIAS INCARNATA	SWAMP MILKWEED	24" O.C.	2" POT OR CELLS
1155	CAREX GRAYI	GRAY'S SEDGE	24" O.C.	2" POT OR CELLS
1155	DOELLINGERIA UMBELLATA	FLAT-TOP WHITE ASTER	24" O.C.	2" POT OR CELLS
1155	EUPATORIUM PERFOLIATUM	BONESET	24" O.C.	2" POT OR CELLS
1155	EUTROCHIUM MACULATUM	JOE-PYE WEED	24" O.C.	2" POT OR CELLS
1155	HELENIUM AUTUMNALE	SNEEZEWEED	24" O.C.	2" POT OR CELLS

*NOTE: WET MEADOW AREA 32,343 SF

LEGEND

- PROPERTY LINE
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- PROPOSED TREE
- PROPOSED WET MEADOW
- PR. STORMWATER SEED MIX

STORMWATER SEED MIX

Botanical Name	Common Name	PLS Oz/Acre
Permanent Grasses/Sedges		
Bolboschoenus luviatilis	River Bulrush	0.25
Carex cristatella	Crested Oval Sedge	2.00
Carex lurida	Bottlebrush Sedge	3.00
Carex vulpinoidea	Brown Fox Sedge	6.00
Elymus virginicus	Virginia Wild Rye	13.50
Glyceria striata	Fowl Manna Grass	1.25
Juncus effusus	Common Rush	2.00
Leersia onyzoides	Rice Cut Grass	1.00
Panicum virgatum	Switch Grass	2.00
Schoenoplectus tabernaemontani	Softstem Bulrush	3.00
Scirpus atrovirens	Dark Green Rush	2.00
Scirpus cyperinus	Wool Grass	1.00
	Total	**37.00**
Temporary Cover		
Avena sativa	Common Oat	360.00
Lolium multilorum	Annual Rye	100.00
	Total	**460.00**
Forbs		
Alisma spp.	Water Plantain Mix	4.25
Asclepias incarnata	Swamp Milkweed	1.50
Bidens spp.	Bidens Mix	2.00
Helenium autumnale	Sneezeweed	2.00
Iris virginica	Blue Flag	4.00
Lycopus americanus	Common Water Horehound	0.25
Mimulus ringens	Monkey Flower	1.00
Oligoneuron riddellii	Riddell's Goldenrod	0.50
Penthorum sedoides	Ditch Stonecrop	0.50
Polygonum erectum	Erect Knotweed	4.00
Rudbeckia subtomentosa	Sweet Black-Eyed Susan	1.00
Rudbeckia triloba	Brown-Eyed Susan	1.50
Sagittaria latifolia	Common Arrowhead	1.00
Senna hebecarpa	Wild Senna	1.00
Symphyotrichum novae-angliae	New England Aster	1.50
Thalictrum dasycarpum	Purple Meadow Rue	2.00
	Total	**28.00**

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33 TOWN 2 SOUTH, RANGE 7 EAST SUPERIOR TOWNSHIP WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
LANDSCAPE PLAN

DATE
OCT. 12, 2023

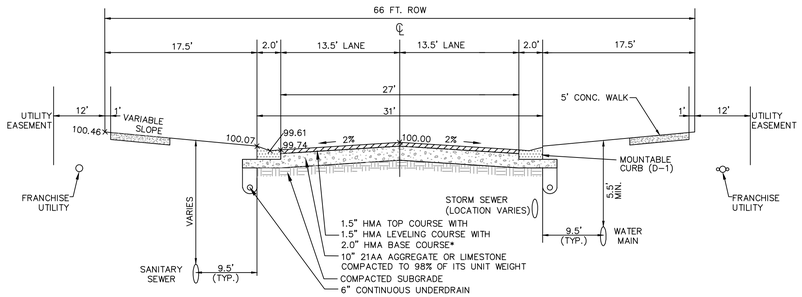
REVISIONS

0 60 120
SCALE: 1" = 120 FEET

DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 53

CAD FILE: 19004443FSP-29-LS DTDWG

K:\19004443\DWG\PLAN SET\SITE-FINAL\PHASE 1\19004443FSP-29-LS DTDWG 10/11/2023 10:11 AM MATTHEW MYERS



TYPICAL RESIDENTIAL ROADWAYS CORRIDOR CROSS SECTION(PRIVATE)

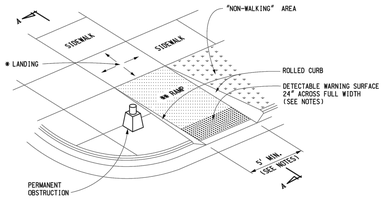
NOT TO SCALE

* NOTES:
1. REFER TO CURRENTLY APPROVED WCRC HMA MIX DESIGNS AND BINDER REQUIREMENTS PRIOR TO CONSTRUCTION.
2. ALL PROPOSED UTILITIES SHALL BE WITHIN THE RIGHT-OF-WAY OR WITHIN AN EASEMENT OUTSIDE OF THE RIGHT-OF-WAY.

ASSUMED SECTION:
1.5" LVSP WEARING COURSE WITH 3% MAX AIR VOIDS
1.5" LVSP LEVELING COURSE
2" 4E1 BASE COURSE
ALL HMA SHALL LIMIT RAP TO 25%

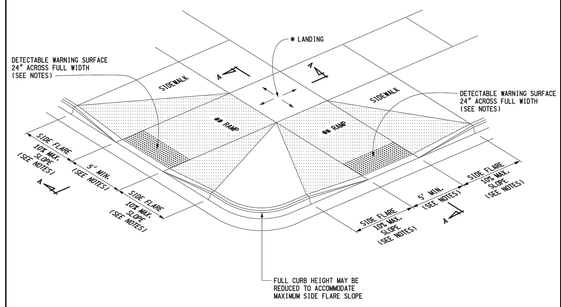
* MAXIMUM LANDING SLOPE IS 2.0% IN EACH DIRECTION OF TRAVEL. LANDING MINIMUM DIMENSIONS 5' x 5'. SEE NOTES.

** MAXIMUM RAMP CROSS SLOPE IS 2.0%. RUNNING SLOPE 5% - 7% (8.3% MAXIMUM). SEE NOTES.



SIDEWALK RAMP TYPE R

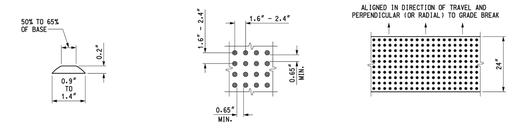
(ROLLED SIDES)



SIDEWALK RAMP TYPE F

(FLARED SIDES, TWO RAMPS SHOWN)

MDOT Michigan Department of Transportation	DEPARTMENT DIRECTOR Paul C. Ajegba	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR		
PREPARED BY DESIGN DIVISION	APPROVED BY: DIRECTOR, BUREAU OF FIELD SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS		
DRAWN BY: R.L.T.	APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT	F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 1 OF 7
CHECKED BY: M.K.P.				



DOME SECTION | DOME SPACING | DOME ALIGNMENT

DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMPS ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMPS SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMPS SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP, WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMPS WITH A RUNNING SLOPE ≤5% DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURRED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMPS TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMPS. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN ½". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

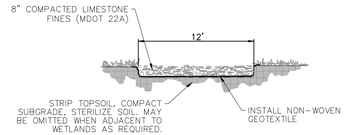
THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS, WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

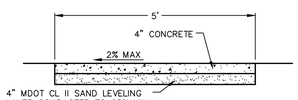
DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR				
SIDEWALK RAMP AND DETECTABLE WARNING DETAILS				
F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 7 OF 7	



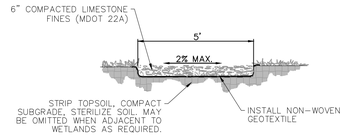
SANITARY SEWER TEMPORARY MAINTENANCE ACCESS DRIVE

NOT TO SCALE



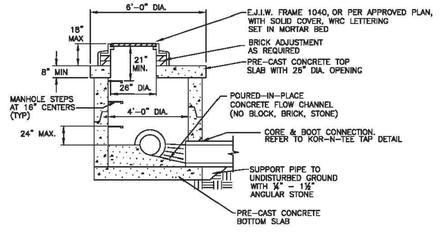
CONCRETE SIDEWALK SECTION

NOT TO SCALE



GRAVEL NATURE PATH CROSS SECTION

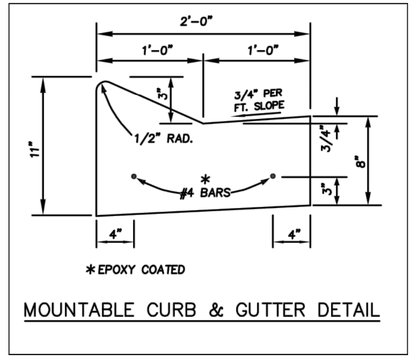
NOT TO SCALE



PRE-CAST LOW HEAD MANHOLE DETAIL

NO SCALE

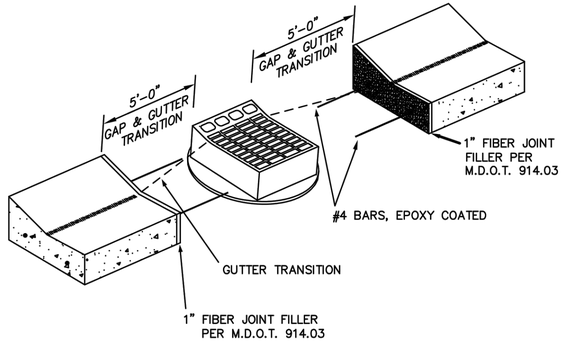
(PRIOR APPROVAL ONLY)



MOUNTABLE CURB & GUTTER DETAIL

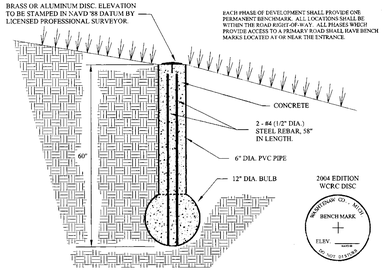
MOUNTABLE CURB & GUTTER DETAIL (ONSITE ONLY)

NO SCALE



CURB & GUTTER GAP & TRANSITION DETAIL

NO SCALE



SUBDIVISION BENCHMARK DETAIL

NO SCALE

Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com
TWO TOWNE SQUARE, SUITE 700
SOUTHFIELD, MI 48076
248.447.2000

SECTION 33
TOWN 2 SOUTH, RANGE 7 EAST
SUPERIOR TOWNSHIP
WASHTENAW COUNTY, MICHIGAN

EYDE COMPANY
THE MEADOWS AT HAWTHORNE MILL
FINAL SITE PLANS – PHASE 1
DETAILS

DATE
OCT. 12, 2023

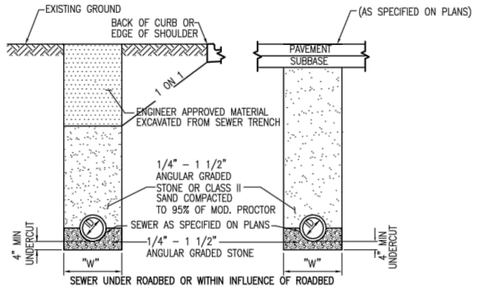
REVISIONS

NA NA NA
N/A

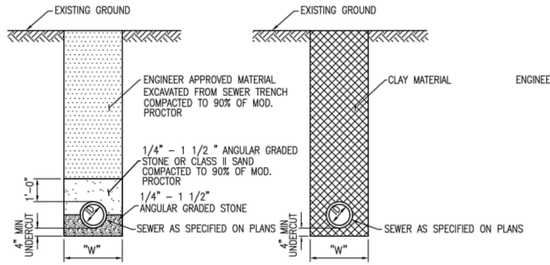
DRAWN BY: KS
CHECKED BY: AK
P.M.: J. KIME
JOB #: 19004443
FILE CODE: –
SHEET NO. 54

CAD FILE: 19004443PSP-21-DT.DWG

K:\19004443\DWG\PLAN SETS\SITE-FINAL\PHASE 1\19004443PSP-21-DT.DWG 10/10/2023 4:10 PM MATTHEW MYERS

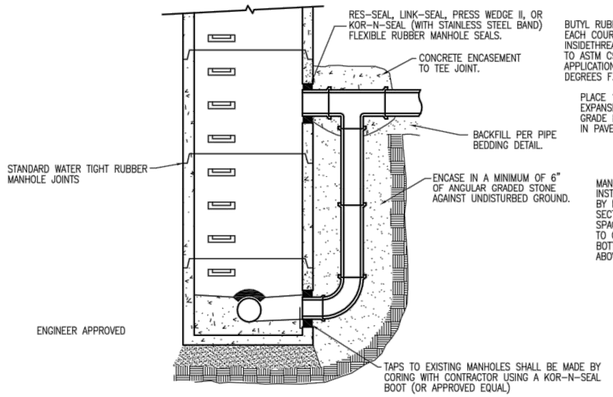


PLASTIC PIPE TRENCH DETAIL A



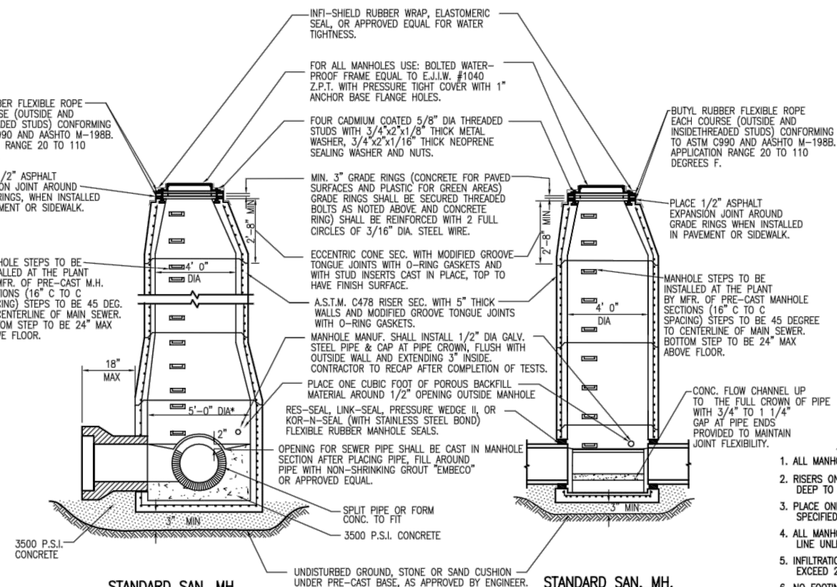
PLASTIC PIPE TRENCH DETAIL B

PLASTIC PIPE CLAY BACKFILL TRENCH DETAIL



EXTERNAL DROP CONECTION
(HYDROGEN SULFIDE PROTECTION)

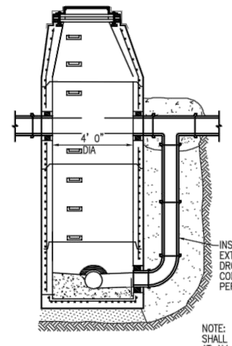
DIA OF SEWER	DIA OF DROP CONNECTION
8" & 10"	8"
12",15" & 18"	12"
21",24" & 30"	18"
36" & 42"	24"



STANDARD SAN. MH.
FOR SEWERS 24" THRU 42"

* MANHOLE DIAMETER TO MEET MANUFACTURERS REQUIREMENTS FOR BOTH STRAIGHT THRU & RIGHT ANGLE INSTALLATION

STANDARD SAN. MH.
FOR SEWERS 8" THRU 21"



NOTE: SANITARY FLOW SHALL BE MAINTAINED AT ALL TIMES.

SANITARY MH. BUILT OVER EX SANITARY LINE
(SAME AS STANDARD SAN MH EXCEPT AS INDICATED HERE)
(HYDROGEN SULFIDE PROTECTION)

SANITARY SEWER CONSTRUCTION NOTES

1. ALL MANHOLE RIMS SHALL BE SET TO GRADE AS FURNISHED BY THE ENGINEER.
2. RISERS ON SANITARY SEWERS SHALL BE INSTALLED WHERE SEWER ARE OVER 10' DEEP TO A DEPTH OF 10'.
3. PLACE ONE 6" WYE FOR EACH LOT ON SANITARY SEWERS UNLESS OTHERWISE SPECIFIED.
4. ALL MANHOLES SHALL USE ECCENTRIC CONES PLACED TOWARD THE PROPERTY LINE UNLESS OTHERWISE NOTED.
5. INFILTRATION FOR ANY SECTION OF SEWERS BETWEEN MANHOLES SHALL NOT EXCEED 200 GALLONS PER INCH IN DIAMETER PER MILE OF SEWER PER 24 HRS.
6. NO FOOTING OR ROOF DRAINS SHALL BE CONNECTED TO THE PROPOSED SEWER.
7. DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED 6 FEET.
8. NO CONNECTION RECEIVING STORM WATER, SURFACE WATER, OF GROUND WATER SHALL BE MADE TO SANITARY SEWERS.
9. ALL SEWERS SHALL BE SUBJECT TO TELEVISION INSPECTION AND AIR INFILTRATION OR EXFILTRATION TESTS, OR A COMBINATION OF SAME WITHIN 30 DAY OF BACKFILL, PRIOR TO ACCEPTANCE. ALL SEWERS OVER 24" DIAMETER SHALL BE SUBJECTED TO INFILTRATION TESTS. ALL SEWERS OF 24" DIAMETER OR SMALLER, WHERE THE GROUND WATER LEVEL ABOVE THE TOP OF THE SEWER IS OVER 2 FEET, SHALL BE SUBJECTED TO INFILTRATION TESTS. ALL SEWERS OF 24" DIAMETER OR LESS, WHERE THE GROUND WATER LEVEL ABOVE THE TOP OF THE SEWER IS 2 FEET OR LESS, SHALL BE SUBJECTED TO AIR TESTS OR EXFILTRATION TESTS.
10. ALL SEWER SYSTEM CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS OF THE AGENCY OR AGENCIES HAVING JURISDICTION OF THE SEWER SYSTEM AND CONSTRUCTION AREA.
11. ALL SEWERS SHALL BE TELEVISED, WITH TEST RESULTS APPROVED BY THE TOWNSHIP UTILITY DEPARTMENT PRIOR TO PLACING THE SEWER IN SERVICE.
12. NO SEWER SHALL BE CONSTRUCTED LESS THAN 8" IN DIAMETER.
13. ALL STUBS SHALL HAVE A WATER AND AIR TIGHT BULKHEAD.
14. ALL ELEVATIONS ARE BASED ON NAVD 88 (ORIGINAL)
15. THE MINIMUM DIAMETER OF MANHOLES SHALL BE 48 INCHES, LARGER DIAMETERS ARE PREFERABLE FOR LARGER DIAMETER SEWERS. A MINIMUM ACCESS DIAMETER OF 22 INCHES SHALL BE PROVIDED.
16. CONTRACTOR SHALL PERFORM 9 POINT MANDREL TESTING PER SECTION 3, OPEN CUT SEWERS OF THE SPECIFICATIONS.
17. SANITARY SEWER SHALL BE COMPOSITE ABS OR PVC TRUSS PIPE CONFORMING TO REQUIREMENTS OF ASTM D–2680 OR, PVC PIPE CONFORMING TO ASTM D–3034 (SDR 26) MAY BE USED WHERE DEPTH IS LESS THAN 15'.
18. JOINTS FOR PLASTIC PIPE SHALL BE PUSH–ON TYPE OR IN SPECIAL APPLICATIONS ,SOLVENT JOINTS, WHERE SPECIFIED, SHALL CONFORM TO ASTM D–3112 AND F–477. SOLVENT–CEMENTED JOINTS, WHERE SPECIFIED, SHALL CONFROM TO ASTM D–2855.
19. JOINTS ON TRUSS PIPE SHALL CONSIST OF ABS PLASTIC COUPLINGS CHEMICALLY CEMENTED TO THE ENDS OF THE PIPE BEING CONNECTED. SOLVENTS AND METHODS USED IN MAKING THE CHEMICAL BOND SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS, AND THE INSTALLATION TECHNIQUE SHALL CONFORM TO ASTM D – 2321, OR LATEST REVISION.
20. MANHOLE STEPS TO BE PLASTIC COATED MEETING THE REQUIREMENTS IN ASTM D2146, TYPE II, GRADE 49108, M.A. INDUSTRIES P.S.I. POLYPROPYLENE, OR E.J.I.W. 8502.
21. A VIDEOTAPE (WITH LOG AND LEAD LOCATIONS) SHALL BE SUBMITTED AND APPROVED BY THE TOWNSHIP PRIOR TO THE FINAL ACCEPTANCE. SAID VIDEOTAPE SHALL BE PERFORMED PRIOR TO FINAL ACCEPTANCE OF THE SYSTEM.
22. PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800–482–7171) A MINIMUM OF 3D DAYS AFTER DAYS AFTER COMPLETION OF BACKFILL FOR THE LOCATION F UNDER GROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES.
23. MINIMUM DEPTH TO TOP OF PIPE SHALL BE 4 FEET.
24. THE MAXIMUM DEPTH TO INVERT OF ANY SANITARY SEWER SHALL NOT EXCEED THE DEPTH RECOMMENDED BY THE MANUFACTURER FOR EACH SIZE AND CLASS AND PIPE.
25. INLET AND OUTLET PIPES SHALL BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATERTIGHT CONNECTION THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL TO TAKE PLACE.
26. A BENCH SHALL BE PROVIDED ON EACH SIDE OF ANY MANHOLE CHANNEL WHEN THE PIPE DIAMETER IS LESS THAN THE MANHOLE DIAMETER. THE BENCH SHOULD BE SLOPED NO LESS THAN 1/2 INCH PER FOOT. NO LATERAL SEWER, SERVICE CONNECTION, OR DROP MANHOLE PIPE SHALL DISCHARGE ONTO THE SURFACE OF THE BENCH.
27. WHERE WORK IS TO BE PERFORMED IN THE VICINITY OF A SUPERIOR TOWNSHIP MAIN, CONTRACTOR SHALL NOTIFY THE SUPERIOR TOWNSHIP UTILITY DEPARTMENT AT (734) 480–5500 AT LEAST 3 WORKING DAYS PRIOR TO START OF CONSTRUCTION AS WELL AS TOWNSHIP ENGINEER TO SCHEDULE INSPECTION.
28. AN ELASTOMERIC SEAL OR RUBBER WRAP SHALL BE PLACED AROUND EACH MANHOLE FRAME AND CONE SECTION FOR WATER TIGHTNESS.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

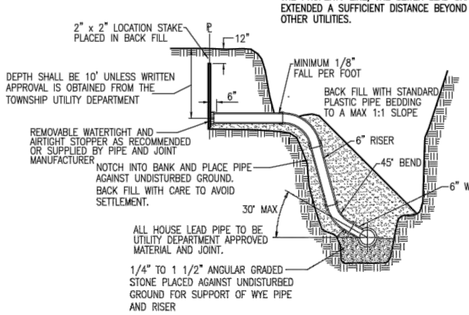
I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
"W" TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72	78
"W" TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0	11.5

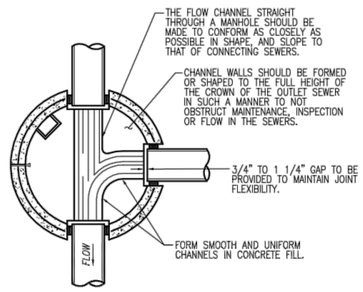
I.D. PIPE SIZE (INCHES)	84	90	96	102	108
"W" TRENCH WIDTH (FEET)	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1' EACH SIDE OF THE TRENCH (6' MINIMUM).

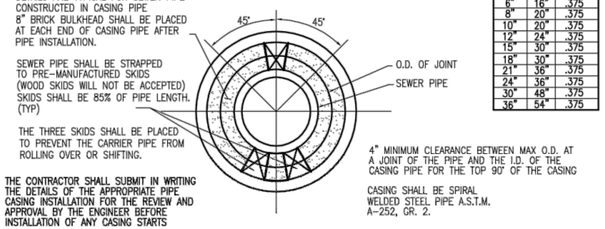
NOTE:
IN THE EVENT THAT OTHER UTILITIES ARE TO BE INSTALLED IN THE EASEMENT ADJACENT TO THE THE PROPERTY LINE, THE SEWER LEAD SHALL BE EXTENDED A SUFFICIENT DISTANCE BEYOND THE OTHER UTILITIES.



HOUSE LEAD DETAIL



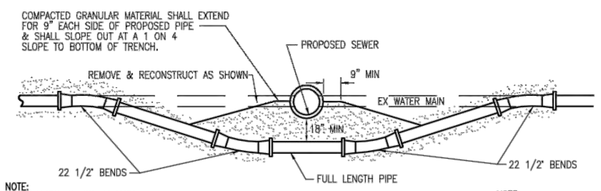
CHANNEL DETAIL



DETAILS ARE TYPICAL FOR SEWER PIPE CONSTRUCTED IN CASING PIPE
8" BRICK BULKHEAD SHALL BE PLACED AT EACH END OF CASING PIPE AFTER PIPE INSTALLATION.
SEWER PIPE SHALL BE STRAPPED TO PRE–MANUFACTURED SKIDS (WOOD SKIDS WILL NOT BE ACCEPTED) SKIDS SHALL BE 85% OF PIPE LENGTH. (TYP)
THE THREE SKIDS SHALL BE PLACED TO PREVENT THE CARRIER PIPE FROM ROLLING OVER OR SHIFTING.
THE CONTRACTOR SHALL SUBMIT IN WRITING THE DETAILS OF THE APPROPRIATE PIPE CASING INSTALLATION FOR THE REVIEW AND APPROVAL BY THE ENGINEER BEFORE INSTALLATION OF ANY CASING STARTS

DIA OF SEWER	MIN (I.D.) "A"	ROAD CROSSING MIN "B"
6"	16"	.375
8"	20"	.375
10"	20"	.375
12"	24"	.375
15"	30"	.375
18"	30"	.375
21"	36"	.375
24"	36"	.375
30"	48"	.375
36"	54"	.375

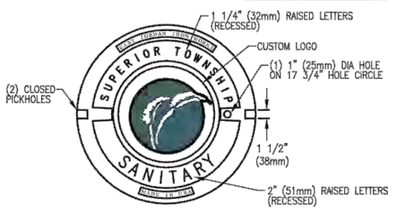
PIPE BARREL SUPPORT FOR SANITARY SEWER CONSTRUCTED IN CASING PIPE



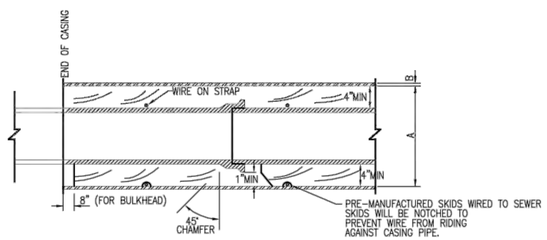
NOTE:
FOR BEDDING OF WATER MAIN SEE STANDARD SAND ENCASEMENT DETAIL "B" THIS SHEET.

NOTE:
FOR ANCHORAGE DETAILS AT BENDS SEE WATER DETAIL SHEET.– W.D.1

RELOCATION OF WATER MAIN, SANITARY OR STORM



STANDARD COVER & FRAME



STANDARD CASING SECTION

DRAWING PATH: S:\CVT\Superior Twp\Standards\CADD\sanitary\Superiorsan01.dwg Dec 20, 2011 - 4:39pm

OHM
WWW.OHM-ADVISORS.COM
34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

DATE OCT 2003 | CADD DK | ENG/ARCH DLB/GJGL | PROJ MGR | SECTION | TOWN | RANGE | CLIENT CHARTER TOWNSHIP OF SUPERIOR | REVISIONS:

COUNTY WASHTENAW | CITY/TWP/VILLAGE CHARTER TOWNSHIP OF SUPERIOR | SCALE H: NTS V: N/A | JOB # 000-00-0000 | HORIZ DATUM N/A | VERT DATUM N/A | REVISIONS:

CHARTER TOWNSHIP OF SUPERIOR
STANDARD SANITARY DETAILS

SHEET 55 1 OF 2

SANITARY SEWER ACCEPTANCE TESTS

GENERAL

ALL SANITARY SEWERS SHALL BE SUBJECTED TO INFILTRATION, EXFILTRATION OR LOW PRESSURE AIR TESTS, OR A COMBINATION THEREOF PRIOR TO FINAL ACCEPTANCE BY THE TOWNSHIP. IN ADDITION, ALL PVC AND ABS PLASTIC SEWERS SHALL BE SUBJECTED TO DEFLECTION TESTING BY MEANS OF A NINE–POINT MANDREL DEFLECTION TEST.

THE TOWNSHIP'S INSPECTOR SHALL BE PRESENT FOR ALL TESTING OPERATIONS. IF TESTING IS TO BE DONE BY THE CONTRACTOR, ONLY PROPERLY TRAINED PERSONNEL SHALL BE ALLOWED TO PERFORM THE TESTING WORK. IF TESTING IS TO BE DONE BY MUNICIPAL AGENCY WORK FORCES, THEN THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH THE INSPECTOR IN ORDER TO SCHEDULE THE TESTING.

IN THE EVENT THAT THE SEWER PIPE FAILS ANY OF THE REQUIRED TESTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING THE PIPE AND REPEATING THE TEST UNTIL ACCEPTABLE RESULTS ARE ACHIEVED.
THE METHOD OF TESTING AND MEASUREMENT SHALL BE APPROVED BY THE TOWNSHIP. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND LABOR FOR MAKING THE TESTS.

INFILTRATION TEST

ALL SANITARY SEWERS THAT ARE OVER TWENTY–FOUR (24) INCHES IN DIAMETER SHALL BE SUBJECTED TO AN INFILTRATION TEST. ALSO, ALL SANITARY SEWERS THAT ARE TWENTY–FOUR (24) INCHES IN DIAMETER AND SMALLER AND WHERE THE GROUND WATER LEVEL IS MORE THAN TWO (2) FEET ABOVE THE TOP OF THE SEWER SHALL BE SUBJECTED TO AN INFILTRATION TEST.

THE INFILTRATION RATE FOR ALL SANITARY SEWERS SHALL NOT EXCEED A MAXIMUM OF TWO HUNDRED (200) GALLONS PER INCH DIAMETER PER MILE OF SEWER PER TWENTY–FOUR (24) HOURS.

LOW PRESSURE AIR TEST

ALL SANITARY SEWERS THAT ARE TWENTY–FOUR (24) INCHES IN DIAMETER OR SMALLER AND WHERE THE GROUND WATER LEVEL IS TWO (2) FEET OR LESS ABOVE THE TOP OF THE SEWER SHALL BE SUBJECTED TO A LOW PRESSURE AIR TEST.

THE PROCEDURE FOR AIR TESTING OF SEWERS SHALL BE AS FOLLOWS:

THE SEWER LINE SHALL BE TESTED IN INCREMENTS BETWEEN MANHOLES. THE LINE SHALL BE CLEANED AND PLUGGED AT EACH MANHOLE. SUCH PLUGS SHALL BE DESIGNED TO HOLD AGAINST THE TEST PRESSURE AND SHALL PROVIDE AN AIRTIGHT SEAL. ONE OF THE PLUGS SHALL HAVE AN ORIFICE THROUGH WHICH AIR CAN BE INTRODUCED INTO THE SEWER. AN AIR SUPPLY LINE SHALL BE CONNECTED TO THE ORIFICE. THE SUPPLY LINE SHALL BE FITTED WITH SUITABLE CONTROL VALVES AND A PRESSURE GAUGE FOR CONTINUALLY MEASURING THE AIR PRESSURE IN THE SEWER. THE PRESSURE GAUGE SHALL HAVE A MINIMUM DIAMETER OF THREE AND ONE–HALF (3–1/2) INCHES AND A RANGE OF 0 – 10 PSIG. THE GAUGE SHALL HAVE MINIMUM DIVISIONS OF 0–10 PSIG AND ACCURACY OF PLUS OR MINUS (+/–) 0.04 PSIG.

THE SEWER SHALL BE PRESSURIZED TO 4 PSIG GREATER THAN THE GREATEST BACK PRESSURE CAUSED BY GROUND WATER OVER THE TOP OF THE SEWER PIPE. AT LEAST TWO (2) MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE BETWEEN THREE AND ONE HALF (3.5) AND FOUR (4) PSIG. IF NECESSARY, AIR SHALL BE ADDED TO THE SEWER TO MAINTAIN A PRESSURE OF 3.5 PSIG OR GREATER.

AFTER THE STABILIZATION PERIOD, THE AIR SUPPLY CONTROL VALVE SHALL BE CLOSED SO THAT NO MORE AIR WILL ENTER THE SEWER. THE SEWER AIR PRESSURE SHALL BE NOTED AND TIMING FOR THE TEST BEGUN. THE TEST SHALL NOT BEGIN IF THE AIR PRESSURE IS LESS THAN THREE AND ONE HALF (3.5) PSIG, OR SUCH OTHER PRESSURE AS IS NECESSARY TO COMPENSATE FOR GROUND WATER LEVEL.

THE TIME REQUIRED FOR THE AIR PRESSURE TO DECREASE ONE (1.0) PSIG DURING THE TEST SHALL NOT BE LESS THAN THE TIME SHOWN IN THE FOLLOWING AIR TEST TABLES. THE CONTRACTOR SHALL USE THE APPROPRIATE TEST TABLE BASED UPON THE SEWER PIPE MATERIAL.

AIR TEST TABLE FOR VITRIFIED CLAY AND CONCRETE PIPE

	SPECIFICATION TIME (MIN:SEC) REQUIRED FOR PRESSURE DROP FROM 3–1/2 TO 2–1/2 PSIG WHEN TESTING ONE PIPE DIAMETER ONLY PIPE DIAMETER, INCHES														
LENGTH OF LINE, FEET	4	6	8	10	12	15	18	21	24	27	30	33	36	39	42
25	0:04	0:10	0:18	0:22	0:27	0:32	0:36	0:45	0:54	1:03	1:12	1:21	1:30	1:39	1:50
50	0:09	0:21	0:36	0:45	0:54	1:03	1:12	1:30	1:48	2:06	2:42	2:42	3:00	3:18	3:39
75	0:14	0:32	0:54	1:08	1:21	1:34	1:48	2:15	2:42	3:09	3:36	4:03	4:30	4:57	5:29
100	0:18	0:42	1:12	1:30	1:48	2:06	2:24	3:00	3:36	4:12	4:48	5:24	6:00	6:36	7:18
125	0:22	0:52	1:30	1:52	2:15	2:38	3:00	3:45	4:30	5:15	6:00	6:45	7:30	8:15	9:08
150	0:27	1:03	1:48	2:15	2:42	3:09	3:36	4:30	5:24	6:18	7:12	8:06	9:00	9:54	10:57
175	0:32	1:14	2:06	2:38	3:09	3:40	4:12	5:15	6:18	7:21	8:24	9:27	10:30	11:33	12:47
200	0:36	1:24	2:24	3:00	3:36	4:12	4:48	6:00	7:12	8:24	9:36	10:48	12:00	13:12	14:36
225	0:40	1:34	2:42	3:22	4:03	4:44	5:24	6:45	8:06	9:27	10:48	12:09	13:30	14:51	16:26
250	0:45	1:45	3:00	3:45	4:30	5:15	6:00	7:30	9:00	10:30	12:00	13:30	15:00	16:30	18:16
275	0:50	1:56	3:18	4:08	4:57	5:46	6:36	8:15	9:54	11:33	13:12	14:51	16:30	18:09	20:06
300	0:54	2:06	3:36	4:30	5:24	6:18	7:12	9:00	10:48	12:36	14:24	16:12	18:00	19:48	21:54
350	1:03	2:27	4:12	5:15	6:18	7:21	8:24	10:30	12:36	14:42	16:48	18:54	21:00	23:06	25:33
400	1:12	2:48	4:48	6:00	7:12	8:24	9:36	12:00	14:24	16:48	19:12	21:36	24:00	26:24	29:12
450	1:21	3:09	5:24	6:45	8:06	9:27	10:48	13:30	16:12	18:54	21:36	24:18	27:00	29:42	32:51
500	1:30	3:30	6:00	7:30	9:00	10:30	12:00	15:00	18:00	21:00	24:00	27:00	30:00	33:00	36:30

NOTE: THIS TABLE IS TAKEN FROM THE NATIONAL CLAY PIPE INSTITUTE (NCPI) TABLES WHICH ARE BASED UPON ASTM C828 "TEST METHOD FOR LOW PRESSURE AIR TEST FOR VITRIFIED CLAY PIPE LINES" AND ASTM C924 "STANDARD PRACTICE FOR TESTING CONCRETE PIPE SEWER LINES BY LOW PRESSURE AIR TEST METHOD."

AIR TEST TABLE FOR PVC AND ABS PIPE
MINIMUM SPECIFIED TIME REQUIRED FOR A 1.0 PSIG PRESSURE DROP
FOR SIZE AND LENGTH OF PIPE INDICATED FOR Q=0.0015*

THE MINIMUM HOLDING TIME FOR THE PRESSURE TO DROP FROM 3.5 TO 2.5 PSIG (GREATER THAN ADDED GROUND WATER PRESSURE) SHALL NOT BE LESS THAN THAT GIVEN IN THE FOLLOWING TABLE FOR EACH TESTED RUN OF SEWER BETWEEN MANHOLES:

NOTE: AIR TESTING SHOULD NOT BE USED IF THE AIR PRESSURE REQUIRED FOR THE TEST EXCEEDS 9 PSIG.

PIPE DIAMETER INCHES	MINIMUM TIME MINUTES	LENGTH FOR MINIMUM TIME, FT.	TIME FOR LONGER LENGTH, S	SPECIFICATION TIME FOR LENGTH (L) SHOWN, MINUTES							
				100 FT	150 FT	200 FT	250 FT	300 FT	350 FT	400 FT	450 FT
4	3:46	597	0.380 L	3:46	3:46	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	0.854 L	5:40	5:40	5:40	5:40	5:40	5:40	5:42	6:24
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52	10:08	11:24
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51	15:49	17:48
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
21	19:50	114	10.470 L	19:50	26:10	34.54	43:37	52:21	61:00	69:48	78:31
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46	91:10	102:33
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32			
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50			
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16			
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50			

NOTE: THIS TABLE IS TAKEN FROM ASTM F1417 "STANDARD TEST METHOD FOR INSTALLATION AND ACCEPTANCE OF PLASTIC GRAVITY SEWER LINES USING LOW PRESSURE AIR TEST." ASTM F1417 CONFORMS TO UNI–BELL "RECOMMENDED PRACTICE FOR LOW PRESSURE AIR TESTING OF INSTALLED SEWER PIPE" (UNI–B–6–98)

* Q IS THE ALLOWABLE LEAKAGE RATE IN CUBIC FEET/MINUTE/SQUARE FOOT OF INSIDE SURFACE AREA OF PIPE

EXFILTRATION TEST

EXFILTRATION OR LEAKAGE FROM THE SEWER LINE CAN BE MEASURED BY RECORDING THE WATER LEVEL DROP OVER A GIVEN PERIOD OF TIME IN A STANDPIPE PLACED AND CONNECTED IN THE UPSTREAM MANHOLE. THE MEASURED DROP IN THE TIME PERIOD CAN BE CONVERTED BY CALCULATIONS TO THE LEAKAGE RATE IN TERMS OF GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY.

EXFILTRATION TESTS MAY BE SUBSTITUTED FOR LOW PRESSURE AIR TESTS WHERE APPROVED BY THE TOWNSHIP ENGINEER. EXFILTRATION TESTS WILL NOT BE ALLOWED WHERE THE EXTERNAL WATER PRESSURE EXCEEDS FOUR (4) FEET.

FOR THE PURPOSE OF EXFILTRATION TESTING, THE INTERNAL WATER LEVEL SHALL BE EQUAL TO THE EXTERNAL WATER LEVEL PLUS FOUR (4) FEET AS MEASURED FROM THE TOP OF THE HIGHEST PIPE IN THE SYSTEM BEING TESTED. THIS COULD BE EITHER A HOUSE LEAD OR A LATERAL. HOWEVER, THE MAXIMUM TOTAL HEIGHT OF WATER ABOVE THE INVERT OF THE PIPE AT THE LOWER END SHALL NOT EXCEED SIXTEEN (16) FEET. A PROSPECTIVE TEST THAT WOULD EXCEED THIS SIXTEEN (16) FOOT LIMIT SHOULD NOT BE TAKEN. THE LINE UNDER CONSTRUCTION CAN BE BROKEN DOWN INTO SMALLER SECTIONS SUCH THAT THE MAXIMUM HEAD OF SIXTEEN (16) FEET WILL NOT BE EXCEEDED.

THE MAXIMUM EXFILTRATION RATE SHALL BE THE SAME AS THAT PERMITTED FOR THE INFILTRATION TEST. THE EXFILTRATION TEST PROCEDURE IS SUMMARIZED AS FOLLOWS:

1) ALL SERVICE LATERALS, STUBS AND FITTINGS INTO THE SEWER LINE(S) BEING TESTED SHOULD BE PROPERLY CAPPED OR PLUGGED, AND CAREFULLY BRACED TO RESIST THE THRUST ACTIONS DEVELOPED BY THE INTERNAL WATER PRESSURE. IN PREPARING THE BLOCKING OF PLUGS OR END CAPS, IT IS EXTREMELY IMPORTANT TO RECOGNIZE THAT THE FIVE (5) TO TEN (10) FEET OF HEAD IN THE STANDPIPE WILL EXERT CONSIDERABLE THRUST AGAINST THE PLUGS OR CAPS.

2) A PLUG IS INSERTED AND TIGHTENED IN THE INLET PIPE OF THE DOWNSTREAM MANHOLE TO WHICH THE WATER SUPPLY CONNECTION IS MADE FOR FILLING THE PIPE.

3) THE UPPER MANHOLE IS PLUGGED AND SECURELY TIGHTENED FOR CONNECTION TO THE STANDPIPE. THE STANDPIPE IS THEN PLACED IN THIS MANHOLE AND CONNECTED TO THE TAPPED PLUG. THE STANDPIPE MUST BE CAPABLE OF HANDLING FROM FIVE (5) TO TEN (10) FEET OF WATER HEAD TO DETERMINE THE TIGHTNESS AND SOUNDNESS OF THE SEWER LINE, AS SPECIFIED AND DIRECTED BY THE ENGINEER.

4) WATER IS INTRODUCED INTO THE LINE AT THE DOWNSTREAM (LOWER) MANHOLE UNTIL THE STANDPIPE IN THE UPSTREAM MANHOLE HAS BEEN COMPLETELY FILLED. BY FILLING THE LINE FROM THE LOWEST LEVEL, THE AIR IN THE LINE IS EASILY PUSHED AHEAD AND, FINALLY DISPELLED THROUGH THE STANDPIPE AT THE UPPER END OF THE TEST SECTION. CARE SHOULD BE TAKEN TO MINIMIZE ENTRAPPED AIR THAT WILL GIVE DISTORTED TEST RESULTS. THE RATE OF DROP IN THE STANDPIPE MAY BE QUITE RAPID UNTIL THE AIR HAS BEEN EXPELLED.

5) AFTER FILLING WITH WATER, THE LINE MUST BE ALLOWED TO STAND FOR AT LEAST FOUR (4) HOURS BEFORE BEGINNING THE TEST. DURING THIS TIME SOME WATER ABSORPTION INTO THE MANHOLE STRUCTURES AND SEWER PIPE WILL TAKE PLACE. AFTER THE WATER ABSORPTION HAS STABILIZED, THE WATER LEVEL IN THE STANDPIPE IS CHECKED AND WATER ADDED IF NECESSARY.

6) THE TEST IS NOW READY TO BEGIN. THE DROP IN THE STANDPIPE IS MEASURED AND RECORDED OVER A FIFTEEN (15) MINUTE PERIOD. TO VERIFY THE FIRST RESULTS, A SECOND FIFTEEN (15) MINUTE TEST IS SUGGESTED. THIS WILL ALSO VERIFY WHETHER A STABLE CONDITION EXISTS IN THE LINE.

7) THE MEASURED DROPS IN THE STANDPIPE ARE CONVERTED TO LEAKAGE IN TERMS OF GALLONS PER INCH DIAMETER PER MILE PER DAY.

8) ANOTHER COMMONLY USED METHOD OF CONDUCTING WATER EXFILTRATION TESTING IS TO UTILIZE THE MANHOLE IN LIEU OF A STANDPIPE. THE TEST PROCEDURE IS EXACTLY AS OUTLINED FOR USING THE STANDPIPE. HOWEVER, SINCE THE MANHOLE IS LARGER IN DIAMETER THAN THE STANDPIPE, THIS METHOD NORMALLY REQUIRES A MINIMUM TWO (2) HOUR TEST PERIOD IN ORDER TO BE ABLE TO RECORD A MEASURABLE WATER LEVEL DROP. MANHOLE LEAKAGE MUST ALSO BE CONSIDERED IN THE LEAKAGE RATE AND TEST RESULTS.

9) CAUTION SHOULD BE TAKEN ABOUT CONDUCTING EXFILTRATION TESTS ON SEWER LINES LAID ON STEEP GRADES. CONSIDERATION MUST BE GIVEN TO THE DOWNSTREAM PORTION OF THE SYSTEM TO PREVENT EXCESSIVE PRESSURES IN THESE LOWER LINES. FOR THESE INSTALLATIONS AND WHERE THE UPSTREAM MANHOLES ARE VERY DEEP, IT IS NOT ADVISABLE TO FILL THE STANDPIPE OR MANHOLE TO THE TOP WHEN PERFORMING THE TEST.

DEFLECTION TEST FOR PLASTIC PIPE

DEFLECTION GAUGE (MANDREL): MANDREL TESTING SHALL TAKE PLACE TO ENSURE THE FLEXIBLE PIPE HAS BEEN PROPERLY BEDDED AND BACK–FILLED. THE DEFLECTION TEST MUST BE CONDUCTED NO LESS THAN 30 DAYS AFTER INSTALLATION OF THE FINAL BACKFILL. THE MAXIMUM ALLOWABLE DEFLECTION IS 5 PERCENT. INSTALLATION SHALL CONFORM TO ASTM 2321–89. A NINE–ARM (POINT) MANDREL SHALL BE USED. CHERNE FIXED STEEL DEFLECTION OR APPROVED EQUAL.

VIDEOTAPING

AS A MEANS OF INSURING THAT PIPE LAYING WAS PROPERLY DONE AND THAT ALL JOINTS ARE IN A "HOME" POSITION, THE CONTRACTOR SHALL PROVIDE VIDEOTAPING OF ALL OF THE PIPE LAID THAT IS THIRTY–SIX (36) INCHES IN DIAMETER AND SMALLER. THIS VIDEOTAPING SHALL BE DONE NO SOONER THAN THIRTY (30) DAYS AFTER COMPLETION OF BACKFILL. THE CONTRACTOR SHALL PROVIDE FORTY–EIGHT (48) HOURS NOTICE TO THE TOWNSHIP PRIOR TO VIDEOTAPING SO THAT A REPRESENTATIVE MAY BE PRESENT. A SATISFACTORY REVIEW OF THE VIDEOTAPE BY THE TOWNSHIP SHALL BE A CONDITION FOR SEWER ACCEPTANCE BY THE TOWNSHIP. TYPICAL ITEMS TO BE REVIEWED ON THE VIDEOTAPE WILL INCLUDE PIPE DEFLECTION, PIPE SETTLEMENT, LEAD CONNECTIONS, JOINTS AND PIPE CLEANLINESS. IF THE VIDEOTAPE REVIEW REVEALS UNSATISFACTORY CONDITIONS, THE CONTRACTOR SHALL CORRECT THE CONDITIONS AND SHALL RE–VIDEOTAPE THE AFFECTED PIPE SECTIONS FOR REVIEW BY THE TOWNSHIP.

DRAWING PATH: S:\CVTS\Superior\Twp\Standards\CADD\sanitary\SuperiorSan02.dwg Dec 20, 2011 - 4:34pm

OHM

WWW.OHM-ADVISORS.COM

34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

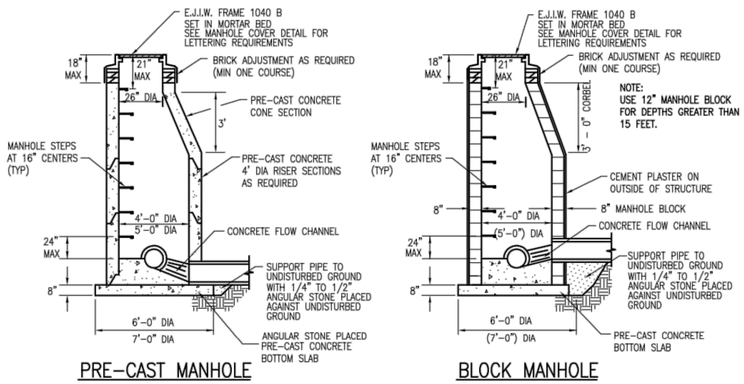
DATE OCT 2003 | CADD DK | ENG / ARCH DLG/JGL | PROJ MGR | SECTION | TOWN | RANGE | CLIENT CHARTER TOWNSHIP OF SUPERIOR | REVISIONS: | REVISIONS:

SCALE H: NTS V: N/A | HORIZ DATUM N/A | VERT DATUM N/A | JOB # 000-00-0000

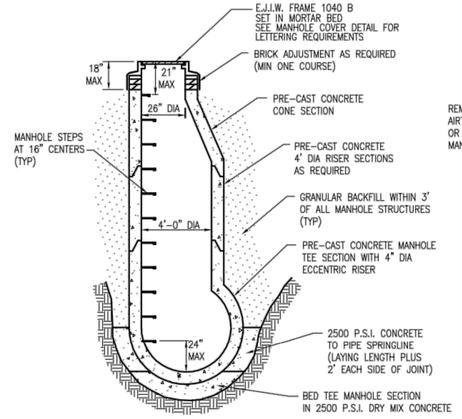
CITY/VILLAGE/TOWNSHIP CHARTER TOWNSHIP OF SUPERIOR | COUNTY WASHTENAW

CHARTER TOWNSHIP OF SUPERIOR
STANDARD SANITARY DETAILS

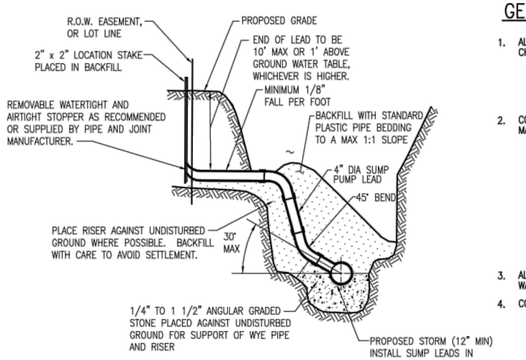
SHEET 56 2 OF 2



STANDARD MANHOLE DETAILS



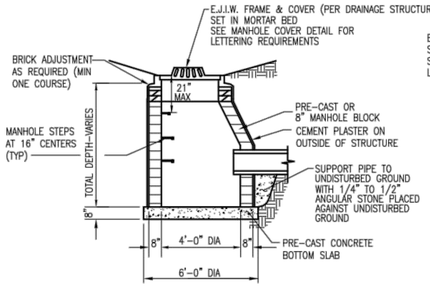
PRE-CAST TEE MANHOLE DETAIL



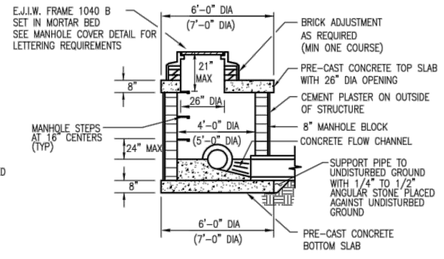
HOUSE LEAD DETAIL FOR 4" DIA PLASTIC SUMP PUMP LEADS

GENERAL NOTES FOR STORM SEWER CONSTRUCTION

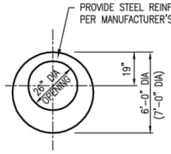
1. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CHARTER TOWNSHIP OF SUPERIOR.
   A. TYPE AND CLASS OF PIPE SHALL BE AS SPECIFIED ON PLANS.
   B. SAND BEDDING SHALL BE USED THROUGHOUT, UNLESS OTHERWISE SPECIFIED ON THE PLAN.
   C. ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
2. CONTRACTOR SHALL CONSTRUCT MANHOLES WITH PRECAST REINFORCED CONCRETE IN LIEU OF CONCRETE, BRICK AND BLOCK MANHOLES IN ACCORDANCE WITH THE FOLLOWING CONDITIONS:
   A. NO OPENINGS SHALL BE MADE IN PRECAST UNITS WHICH WOULD LEAVE LESS THAN 12" OF UNDISTURBED PRECAST STRUCTURE WALL BETWEEN PIPES (AS MEASURED BETWEEN OUTSIDE PIPE WALLS) OR WOULD REMOVE MORE THAN 40% OF THE CIRCUMFERENCE ALONG ANY HORIZONTAL PLANE.
   B. STRUCTURES FOR SEWERS LARGER THAN 18", OR THOSE NOT MEETING THE OPENING REQUIREMENTS, MAY BE BUILT OF BLOCK OR BRICK UP TO A MINIMUM OF 8" ABOVE THE TOP OF SEWER, WITH PRECAST UNITS BEING USED ABOVE THIS POINT. WHERE PRECAST UNITS REST ON THE BLOCK OR BRICK, THE GROOVE IN THE PRECAST UNIT SHALL BE FILLED WITH MORTAR.
   C. OPENINGS FOR THE OUTLET SEWER SHALL BE PRECAST WITH A DIAMETER OF 3 INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE OUTLET PIPE. ALL OTHER OPENINGS SHALL BE MADE IN THE FIELD AFTER THE MANHOLE HAS BEEN CONSTRUCTED.
3. ALL VERTICAL OPENINGS IN CONCRETE BLOCK STRUCTURE WALLS SHALL BE COMPLETELY FILLED WITH MORTAR. ALL VERTICAL WALL JOINTS SHALL BE CEMENT POINTED.
4. CONCRETE PIPE REQUIREMENTS:
   A. THE CONTRACTOR SHALL PROVIDE REINFORCED CONCRETE PIPE AS SPECIFIED ON THE PLANS.
   B. ALL ROUND REINFORCED CONCRETE PIPE SHALL HAVE MODIFIED GROOVE TONGUE JOINTS WITH O-RING TYPE RUBBER GASKET, PER A.S.T.M. SPECIFICATIONS C443. ALL ELLIPTICAL CONCRETE PIPE SHALL HAVE GROOVE TONGUE JOINTS WITH BITUMINOUS (DEWITT #10) JOINT MATERIAL AND INSIDE MORTAR POINTING. ELLIPTICAL CONCRETE PIPE JOINTS SHALL ALSO BE WRAPPED PER A.S.T.M. SPECIFICATION C877 FOR EXTERNAL SEALING BANDS FOR NON-CIRCULAR CONCRETE PIPE.
   C. THE INSIDE JOINT OF PIPE SIZES OVER 27" DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
   D. WHERE UNSTABLE GROUND CONDITIONS ARE ENCOUNTERED, STONE BEDDING SHALL BE USED AS DIRECTED BY THE ENGINEER IN ORDER TO PROVIDE A STABLE FOUNDATION FOR PIPE AND MANHOLES.
   E. ALL PIPES ENTERING OR LEAVING A MANHOLE SHALL BE ADEQUATELY SUPPORTED WITH 1/4" TO 1/2" ANGULAR GRADED STONE FILL FROM UNDISTURBED EARTH TO SPRINGLINE OR WITH APPROVED CRUSHED AGGREGATE.



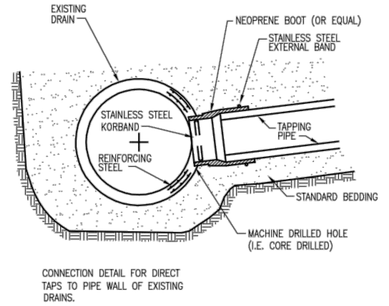
CATCH BASIN DETAIL



LOW HEAD MANHOLE AND CATCH BASIN DETAIL



PRE-CAST CONCRETE TOP SLAB DETAIL, 8" THICK

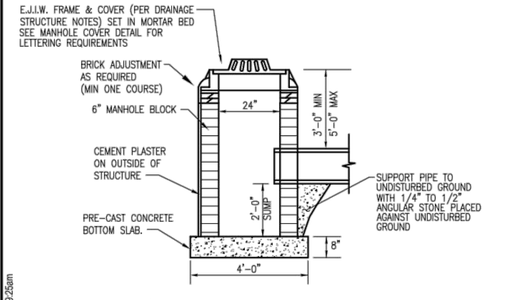


CONNECTION DETAIL FOR DIRECT TAPS TO PIPE WALL OF EXISTING DRAINS.

KOR-N-TEE TAP FOR CONCRETE PIPE

DRAINAGE STRUCTURE REQUIREMENTS:

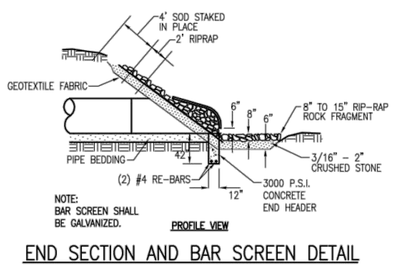
1. ALL STRUCTURE(S) SHALL BE 4' IN DIAMETER UNLESS OTHERWISE INDICATED ON CONSTRUCTION DRAWINGS. 2' DIAMETER CATCH BASINS AND INLETS SHALL BE USED ONLY WITH PRIOR TOWNSHIP APPROVAL.
2. MANHOLE STEPS SHALL BE STEEL, ENCASED WITH POLYPROPYLENE PLASTIC OR APPROVED EQUIVALENT TO M.A. INDUSTRIES, INC., PS-1 FOR BRICK, OR PS-1B FOR BLOCK, EAST JORDAN IRON WORKS 8503 (OR APPROVED EQUAL). MANHOLE STEPS AT 16" CENTERS.
3. CATCH BASIN STEPS SHALL BE EAST JORDAN IRON WORKS 8502 PLASTIC COATED (OR APPROVED EQUAL).
4. MANHOLE COVERS AND FRAMES SHALL BE EAST JORDAN IRON WORKS 1040, TYPE "B" COVER OR AS PER CONSTRUCTION DRAWINGS.
5. CATCH BASIN AND INLET FRAME AND COVER SHALL BE:
   A. EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH STRAIGHT FACE CURB AND GUTTER (OR AS APPROVED EQUAL).
   B. EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH MOUNTABLE CURB AND GUTTER AND INTEGRAL CURB AND GUTTER (OR AS APPROVED EQUAL).
   C. EAST JORDAN IRON WORKS 1040, TYPE "02" COVER (BEEHIVE) TO BE USED ON OPEN DITCHES AND SWALES, REAR YARD CATCH BASIN (OR AS APPROVED EQUAL). IF WITHIN 8' OF ROAD, TYPE "N" COVER (LOW BEEHIVE) SHALL BE USED.
   D. FRAMES SHALL BE SET IN FULL BED OF MORTAR AND THE SIDE SHALL BE OVERLAPPED TO PREVENT LEAKAGE.
6. A PROPER CHANNEL SHALL BE CONSTRUCTED WITHIN THE EXISTING MANHOLE OR OTHER STRUCTURE AT WHICH THE CONNECTION IS TO BE MADE TO DIRECT THE FLOW TO THE EXISTING OUTLET IN A MANNER WHICH WILL TEND TO CREATE THE LEAST AMOUNT OF TURBULENCE. THE CHANNEL SHALL BE CONSTRUCTED TO THE SAME SIZE AS THE INSIDE DIAMETER OF THE EXISTING PIPES, AND SHALL BE BUILT TO HEIGHT OF 1/3 THE EXISTING PIPE DIAMETER WITH A MINIMUM OF 2% SLOPE ON THE BENCHES.
7. STANDARD BRICK ADJUSTMENT: MINIMUM OF ONE COURSE AND A MAXIMUM OF 5 COURSES OF BRICK.
   A. ALL BRICKS AND BLOCKS USED FOR ADJUSTMENT SHALL BE CONCRETE.
   B. BLOCK USED FOR STANDARD CATCH BASINS AND MANHOLES SHALL BE 8" (FOR 0'-15' DEEP) AND 12" (FOR 15'-25' DEEP). BLOCK USED FOR 2' DIAMETER INLETS AND CATCH BASINS SHALL BE 6".
   C. PRECAST REINFORCED CONCRETE SECTION AS MINIMUM SHALL CONFORM TO A.S.T.M. C-478.
   D. CONCRETE BASE FOR MANHOLE, CATCH BASIN, AND INLET SHALL BE MDOT GRADE 30P (MIN), 8" THICK, 3000 PSI.
8. PLASTER ALL OUTSIDE MASONRY SURFACES WITH 1:2 1/2 MASONRY CEMENT (TYPE II) 1/2" THICK.
9. WHEN TAPPING INTO AN EXISTING STRUCTURE A BRICK COLLAR SHALL BE PLACED 12" THICK AROUND THE PIPE AND EXTENDED 12" BEYOND THE OPENING. IF PRE-CAST SECTION IS TAPPED, BEND MESH AND USE AS REINFORCEMENT WITH BRICK COLLAR.
10. ALL PRECAST RISER(S) SHALL BE PLACED IN A FULL BED OR MORTAR. ALL JOINTS & LIFTHOLES SHALL BE POINTED UP WITH MORTAR ON THE OUTSIDE AND INSIDE.
11. HINGED BAR GRATES WILL BE REQUIRED FOR HEADWALLS PER W.C.D.C. AND/OR MDOT STANDARDS, WHICHEVER IS STRICTER.
    A. ALL VERTICAL AND HORIZONTAL BARS SHALL BE TACK-WELDED TO THE ANGLE FRAME.
    B. THE BAR GRATE SCREEN SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IS COMPLETE.



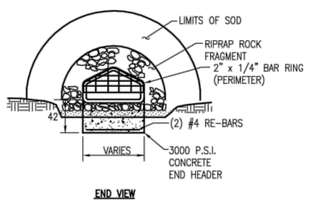
2' DIA CATCH BASIN DETAIL

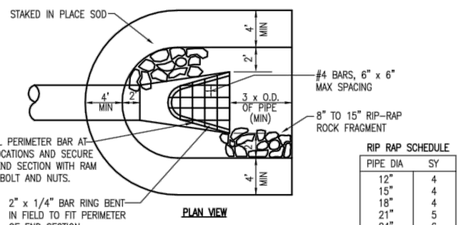
NOT TO SCALE

(NOTE: 2' DIA CATCH BASIN SHALL NOT BE USED UNLESS PRIOR APPROVAL IS OBTAINED FROM TOWNSHIP ENGINEER.)



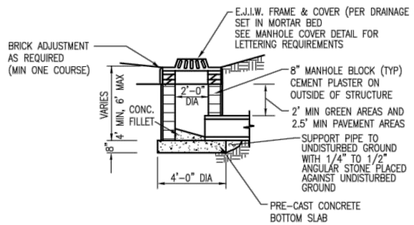
END SECTION AND BAR SCREEN DETAIL





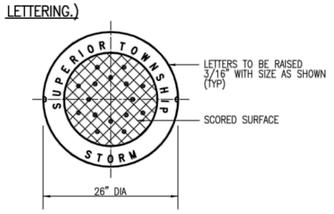
RIP RAP SCHEDULE	
PIPE DIA	SY
12"	4
15"	4
18"	4
21"	5
24"	6
27"	7
30"	8
36"	10
42"	12
48"	14

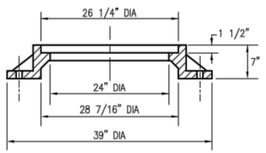
(NOTE: MINIMUM REQUIREMENTS FOR RIP-RAP MATERIAL SHALL MEET MDOT SPECIFICATION 8.19.02.)



2' DIA INLET DETAIL

(NOTE: LETTERING SHALL BE USED ONLY FOR PUBLIC STORM SYSTEM. ALL OTHERS SHALL HAVE NO LETTERING.)





CAST IRON MANHOLE COVER E.J.I.W. 1040

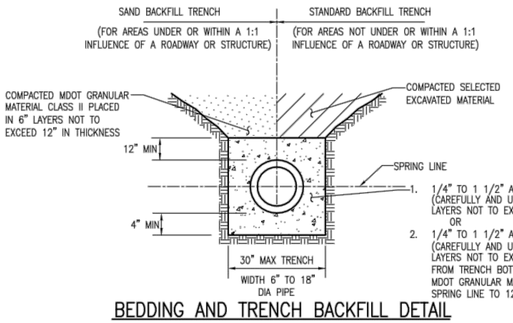
OHM
WWW.OHM-ADVISORS.COM
34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

DATE: OCT 2003 | CADD: DK | ENG / ARCH: DLG/LGL | PROJ MGR | SECTION | TOWN | RANGE | CLIENT: CHARTER TOWNSHIP OF SUPERIOR | REVISIONS: | VERT DATUM: N/A | HORIZ DATUM: N/A | SCALE: H: NTS V: N/A | JOB #: 000-00-0000 | REVISIONS: | COUNTY: WASHTENAW | CITY/VILLAGE/TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR

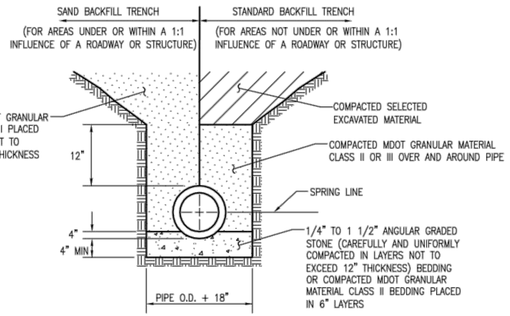
CHARTER TOWNSHIP OF SUPERIOR STANDARD STORM SEWER DETAILS

SHEET 57 1 OF 2

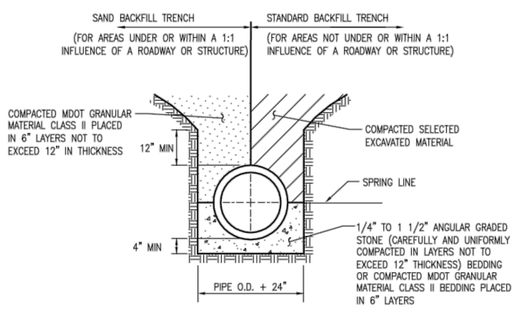
DRAWING PATH: S:\CVT\Superior\wp\Standards\CADD\STORM\SuperiorStm01.dwg May 27, 2010 - 9:25am



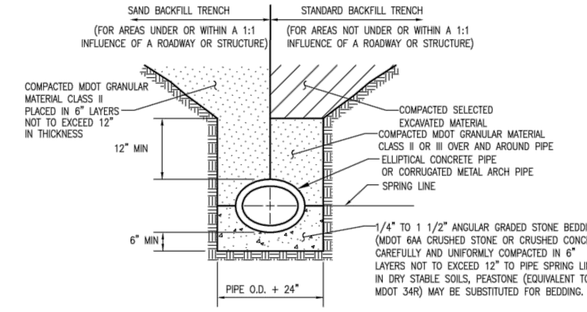
BEDDING AND TRENCH BACKFILL DETAIL FOR 18" DIAMETER AND SMALLER PIPE (PVC SOLID WALL, AND TRUSS PIPE)



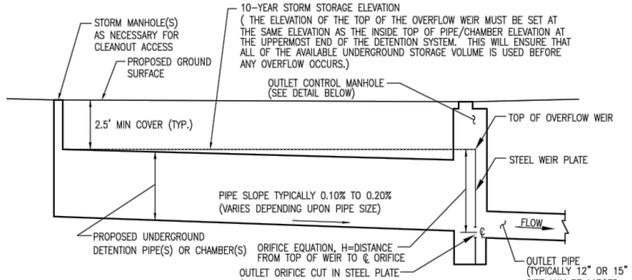
BEDDING AND TRENCH BACKFILL DETAIL FOR 24" DIAMETER AND SMALLER PIPE



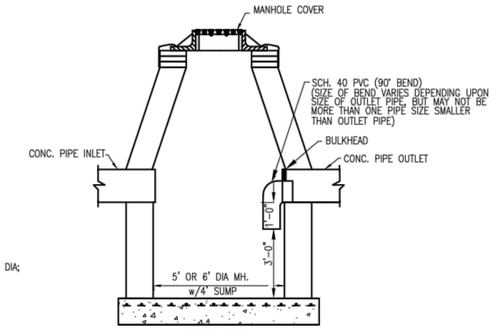
BEDDING AND TRENCH BACKFILL DETAIL FOR 27" DIAMETER AND LARGER PIPE



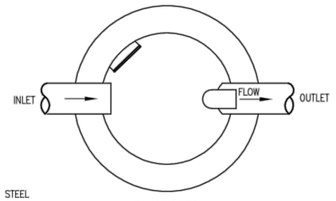
BEDDING AND TRENCH BACKFILL DETAIL FOR ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL ARCH PIPE



DETENTION SYSTEM PROFILE



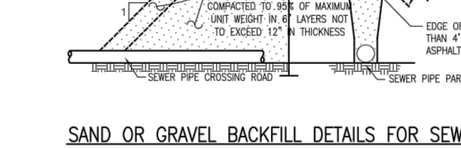
SIDE VIEW



PLAN VIEW

OIL/GAS SEPARATOR PLACEMENT DETAIL FOR 18" DIAMETER AND SMALLER OUTLET PIPE

(FOR OUTLET PIPES LARGER THAN 18" IN DIAMETER, AN ALTERNATE DESIGN MUST BE APPROVED BY THE TOWNSHIP ENGINEER)



SAND OR GRAVEL BACKFILL DETAILS FOR SEWERS UNDER CONCRETE OR ASPHALT PAVEMENTS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS

GENERAL NOTES FOR STORM SEWER CONSTRUCTION

1. PIPE BEDDING AND BACKFILLING:

   BEDDING SHALL EXTEND A MINIMUM OF 4" BELOW PIPE, UNLESS OTHERWISE NOTED ON CONSTRUCTION PLANS. BEDDING SHALL BE UNIFORM IN GRADE. HOWEVER, IF THE EXISTING NATIVE SOILS MEET THE REQUIREMENTS FOR MDOT GRANULAR MATERIAL CLASS II (MINIMUM 4" THICK), THEN STORM STORM SEWER MAY BE LAID DIRECTLY ON COMPACTED NATIVE SUBGRADE SOILS.

   BACKFILL SHALL BE COMPACTED ABOVE PIPE OR AS INDICATED ON CONSTRUCTION DRAWINGS. TRENCH BACKFILL SHALL BE OF A SUITABLE MATERIAL AND SHALL BE FREE OF ANY ORGANIC MATERIALS AND ROCKS LARGER THAN 3" IN SIZE. BACKFILL SHALL BE RAMPED INTO TRENCH AND COMPACTED WITH A SMALL DOZER OR OTHER, APPROVED METHODS. WHERE TRENCH IS WITHIN A 1:1 INFLUENCE OF STREETS, ALLEYS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS, SAND BACKFILL SHALL BE USED WHICH SHALL CONSIST OF MDOT GRANULAR MATERIAL CLASS II OR III COMPACTED IN 6" LAYERS NOT TO EXCEED 12" TO A DENSITY OF 95% AS DETERMINED BY AASHTO T99. ALL BACKFILL PLACED WITHIN A 1:1 INFLUENCE OF STRUCTURES SHALL BE APPROVED SAND, PLACED IN 1' LAYERS AND COMPACTED. NO FROZEN MATERIAL SHALL BE BURIED MORE THAN 4' BELOW THE FINAL ELEVATION OF THE GROUND.

   TRENCHES WHICH ARE TO BE LEFT OPEN OVERNIGHT SHALL BE ENCLOSED WITH SUITABLE FENCING AND LIGHTED BARRICADES, UNLESS OTHERWISE APPROVED BY THE TOWNSHIP.

2. SUMP PUMP LEAD REQUIREMENTS:

   ALL SUMP PUMP LEADS CONNECTED TO A DRAIN SHALL BE PRE-MANUFACTURED.

   SUMP PUMP MAINS AND LEADS SHALL BE A SDR 35, NON-PERFORATED, SOLID WALL, PVC, ARMCO TRUSS PIPE, OR APPROVED EQUAL, WITH PREMIUM JOINTS.

   TAPS TO 12" STORM SEWER SHALL BE MADE WITH A FERNCO EZ TAP OR APPROVED EQUAL. TAPS TO OTHER SIZE STORM SEWER SHALL BE MADE WITH A ROMAC SADDLE, KOR-N-TEE LATERAL CONNECTOR FOR CONCRETE PIPE, OR APPROVED EQUAL.

   ENDS OF ALL 4" SUMP PUMP LEADS SHALL BE TEMPORARILY CAPPED AND THEIR LOCATION STAKED, WITNESSED AND RECORDED.

   ALL SUMP PUMP LEADS TO BE TAKEN TO THE PROPERTY LINE, EASEMENT LINE OR AS INDICATED ON THE PLAN.

   SUMP PUMP CLEANOUTS SHALL BE A MINIMUM INSIDE DIAMETER OF 24" AND BE CONSTRUCTED AT CHANGES OF ALIGNMENT, ENDS OF SUMP PUMP MAINS OR AS INDICATED ON THE PLAN.

3. RESTORATION REQUIREMENTS:

   ALL DISTURBED AREAS WITHIN THE RIGHT-OF-WAY SHALL BE RESTORED AS FOLLOWS, UNLESS OTHERWISE NOTED ON CONSTRUCTION DRAWINGS:

   FINISH GRADE

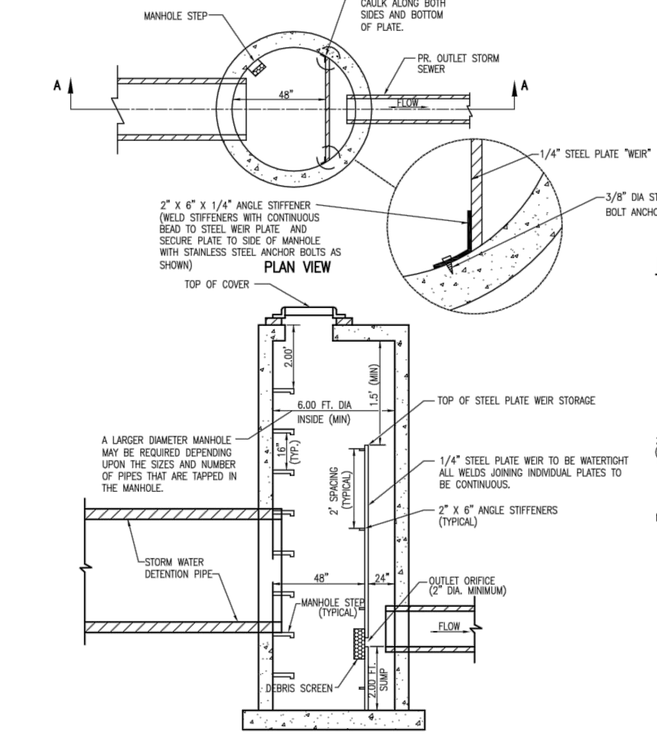
   PLACE 3" THICKNESS OF "QUALITY" TOPSOIL ACCEPTABLE TO THE ENGINEER.

   APPLY SOD OR SEED AND FERTILIZER AS FOLLOWS:

	LOCATION	SODDING/ SEEDING REQUIREMENTS	FERTILIZER REQUIREMENT
SEED AND FERTILIZER	SLOPES & DITCH BANKS, ETC.	MDOT "ROADSIDE" MIX (50% PERENNIAL RYE, 15% KENTUCKY BLUE, 35% RED FESCUE) APPLIED AT 100 LBS/ACRE	240 LBS/ACRE OF CHEMICAL FERTILIZER NUTRIENTS IN EQUAL PROPORTIONS OF NITROGEN, PHOSPHORIC ACID AND POTASH. (MUST BE A SLOW-RELEASE FERTILIZATION)
	OTHER AREAS	MDOT "CLASS A" MIX (30% PERENNIAL RYE, 30% KENTUCKY BLUE, 40% RED FESCUE) APPLIED AT 100 LBS/ACRE	240 LBS/ACRE OF CHEMICAL FERTILIZER NUTRIENTS IN EQUAL PROPORTIONS OF NITROGEN, PHOSPHORIC ACID AND POTASH. (MUST BE A SLOW-RELEASE FERTILIZATION)
SOD	DITCH BOTTOMS, SLOPES EXCEEDING 3:1, AND AT STRUCTURES	3" TOPSOIL WITH CLASS A SOD	

   APPLY STRAW MULCH AT THE RATE OF 2-3 BALES/1000 SQUARE FEET.

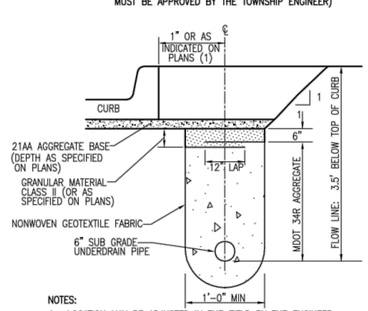
   THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THE GROWTH OF ALL SEEDED AREAS, AND SHALL RE-SEED AS NECESSARY TO ACCOMPLISH THIS.



SECTION A-A

6 FT. DIA OUTLET MANHOLE

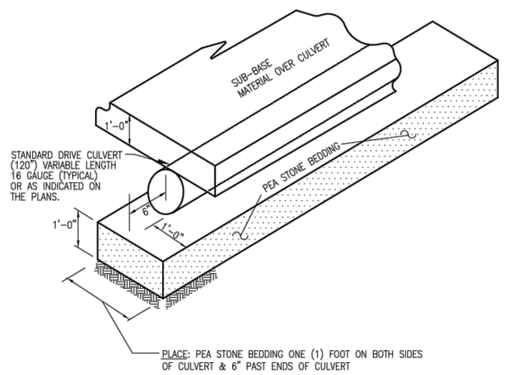
TYPICAL UNDERGROUND DETENTION AND OUTLET MANHOLE DETAILS



NOTES:

1. LOCATION MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
2. ALL UNDERDRAIN SHALL BE APPROVED PLASTIC PIPE. METAL PIPE SHALL NOT BE USED.
3. ALL UNDERDRAIN SHALL OUTLET TO DRAINAGE STRUCTURE.
4. UNDERDRAIN CONNECTIONS (AT LOW POINTS) SHALL BE MADE AS CLOSE TO THE STRUCTURE INVERT AS PRACTICAL, WITH A SPIRAL WRAP OF THE STRUCTURE USED TO MAKE THE TRANSITION FROM THE REQUIRED FLOW LINE DEPTH TO STRUCTURE INVERT.

SUBGRADE UNDERDRAIN, 6"



DRIVE CULVERT BEDDING DETAIL

DRAWING PATH: S:\CVT\Superior\wp\Standards\CAD\STORM\SuperiorStm02.dwg May 27, 2010 - 9:26am

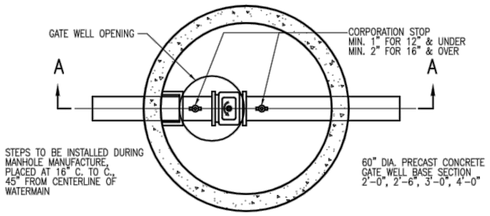
OHM
WWW.OHM-ADVISORS.COM
34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

COUNTY: WASHTENAW
CITY/VILLAGE/TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
SCALE: H. NTS V. N/A
JOB #: 000-00-0000
HORIZ DATUM: N/A
VERT DATUM: N/A
REVISIONS:

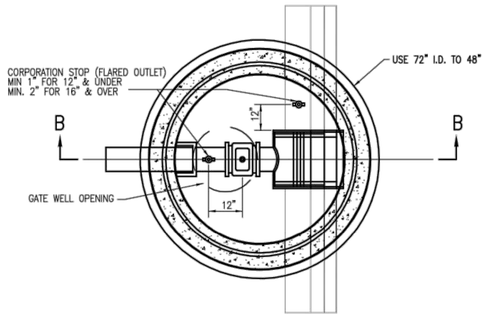
CLIENT: CHARTER TOWNSHIP OF SUPERIOR
TOWN / RANGE / SECTION / PROJ MGR / ENG / ARCH: DLG/JGL / CADD: DK / DATE: OCT 2003
REVISIONS:

CHARTER TOWNSHIP OF SUPERIOR
STANDARD STORM SEWER DETAILS

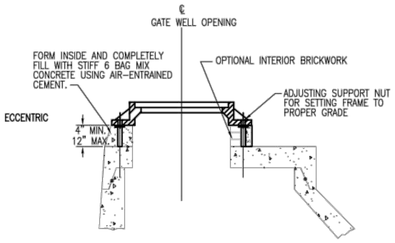
SHEET 58 2 OF 2



PLAN GATE WELL TYPICAL

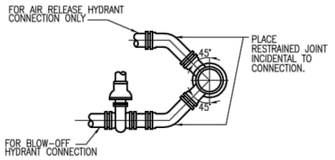


TAPPING SLEEVE VALVE & WELL TYPICAL

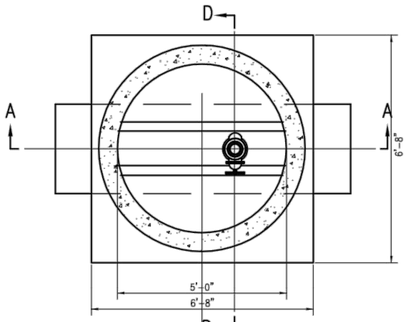


GATE WELL TOPS WITHIN PAVEMENT AREAS

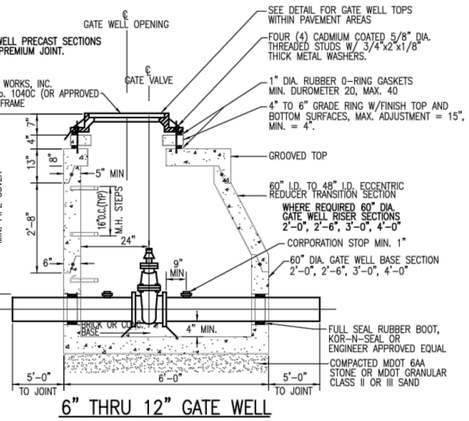
RUBBER 'O' RINGS SHALL NOT BE USED IN PAVEMENT



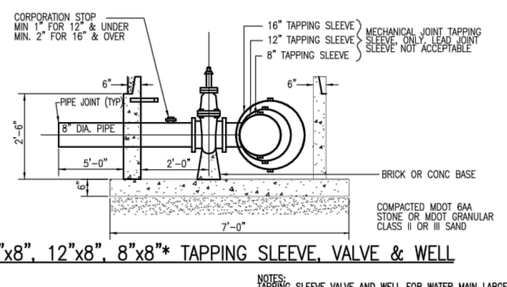
AIR RELEASE AND BLOW-OFF CONNECTION



NOTES:
ALL AIR RELEASE WELLS SHALL BE PRECAST STRUCTURES.
ALL AIR RELEASE VALVES SHALL BE AUTOMATIC.



6" THRU 12" GATE WELL

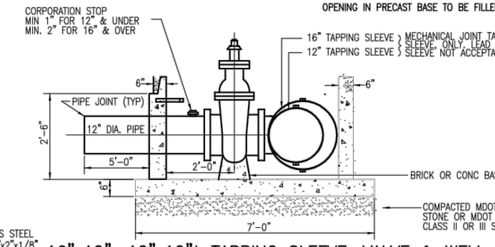


16"x8", 12"x8", 8"x8"* TAPPING SLEEVE, VALVE & WELL

NOTES:
TAPPING SLEEVE VALVE AND WELL FOR WATER MAIN LARGER THAN 16" DIAMETER SHALL BE PER Y.C.U.A AND D.W.S.D. STANDARDS, AND MUST BE SHOWN ON THE PLANS.

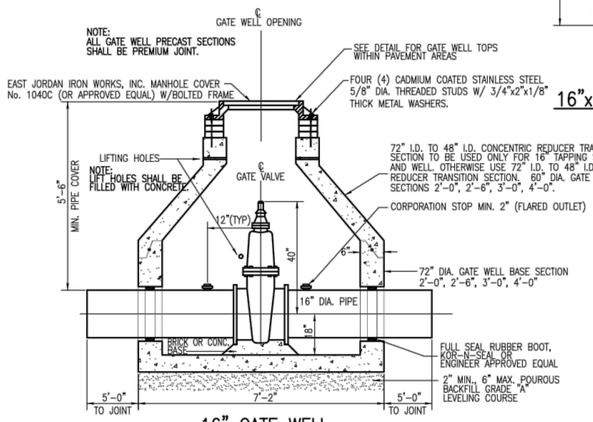
*USE OF 8"x8" TAPPING SLEEVE VALVE AND WELL MUST BE APPROVED BY SUPERIOR TOWNSHIP

OPENING IN PRECAST BASE TO BE FILLED WITH BRICK.

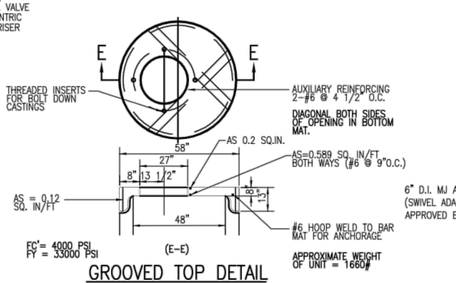


16"x12", 12"x12"* TAPPING SLEEVE, VALVE & WELL

*NOTE:
USE OF 12"x12" TAPPING SLEEVE VALVE AND WELL MUST BE APPROVED BY SUPERIOR TOWNSHIP D.P.W.

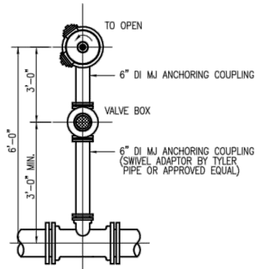


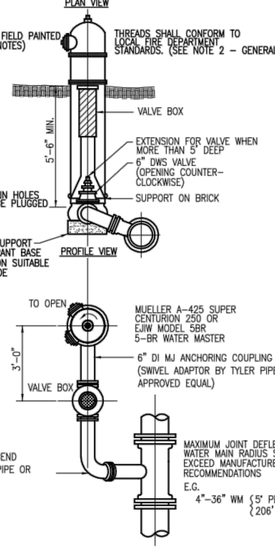
16" GATE WELL



GROOVED TOP DETAIL

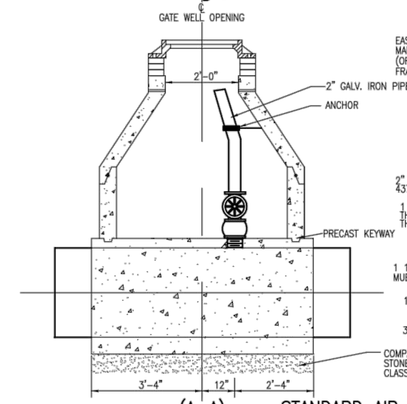
NOTE:
AS=CROSS-SECTION AREA OF REINFORCING STEEL, IN SQUARE INCHES PER FOOT.



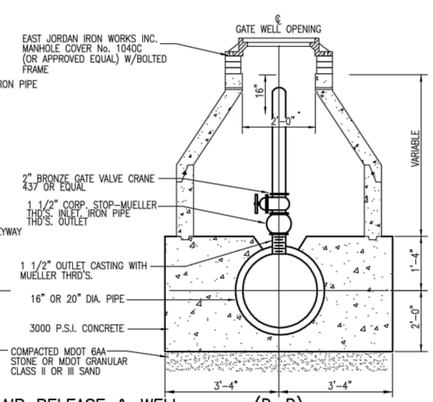


DETAIL OF HYDRANT SETTINGS

NOTE:
ALL HYDRANTS TO BE FULLY RESTRAINED BY MECHANICAL JOINTS APPROVED BY TOWNSHIP ENGINEER.



(A-A)



(D-D)

STANDARD AIR RELEASE & WELL FOR 16" & 20" WATER MAIN

WATER MAIN NOTES

1. All construction procedures and materials used on all water main projects shall conform to Ypsilanti Community Utilities Authority (Y.C.U.A), Detroit Water System Department (D.W.S.D.), and The Charter Township of Superior current Standards and Specifications.
2. All hydrants shall be Mueller A-425-Super-Centurion 250 or E.J.I.W. 5-BR Water Master and shall conform to AWWA current standards and shall have a 5 1/4" valve opening which closes with the water pressure. Hydrants shall be traffic style with breakable flange and coupling. Hydrants shall have a swivel flange to allow bonnet to be turned 360 degrees without removing the bonnet, and barrel flanges shall be integrally cast with the barrel. Inlet shoe shall have a bronze valve seat, which can be removed without digging. Inlet connection shall be 6" mechanical joint, ASA-A21-11. Stem threads shall be sealed with double "O" rings and shall be permanently lubricated with all weather grease. Hose connections: Two (2) 4 1/2" pumper nozzles facing the centerline of the road unless otherwise directed by the Township. Pumper connections shall have: National Standard Threads on one pumper connection (4 1/2" I.D., 4 threads per inch, 5.389 minor dia., 5.761 major dia., 5.586 pitch dia.) and Storz Fitting on the other pumper connection (RLS Manufacturing). Operating Nut: (1) 1 1/2" P-F pentagon, open left. Drain holes in hydrant shall be plugged and watertight. Hydrants shall be painted red above the ground and black below. All hydrants shall be constructed with companion valve in a three piece piece adjustable cast iron valve box.
3. All water mains shall be ductile iron as per the following specification. Ductile iron pipe shall be ANSI 1-A21.51 (AWWA-C151) std, wall thickness, cement lined with bituminous seal coat Class 54 for sizes 6" through 16" Class 55 for 24" pipe, pipe sizes larger than 24" in nominal diameter shall meet all the requirements of the current AWWA C100 for ductile iron pipe.
4. Gate Valves shall be iron body, fully bronze mounted, E.J.I.W. resilient wedge, non-rising stem, opening counterclockwise with 2" square operating nut conforming to Y.C.U.A. and D.W.S.D. specifications. All gate valves with operating nuts at a distance greater than 5' below ground surface shall be provided with an extension stem. The length of the extension shall be such that it will be within 5' of ground surface when an extension stem is used. It shall be held in place by two extension stem guide assemblies. Each assembly shall be comprised of a "J" bracket and "L" bracket supplied by E.J.I.W. The stem guides shall be located opposite from each other, and shall be suitably fastened to the wall of the gate well. In addition, a "stop" shall be welded to the extension stem in a location that will prevent the extension stem from slipping off the operating nut. Details of extension stem and method of installation shall be approved by the engineer prior to installation. All precast concrete gate well sections shall be manufactured to conform with ASTM C478, standard specifications for precast reinforced concrete manhole sections, except wall thickness, shall be shown on these details. All joints for precast concrete gate well sections shall be "modified grooved tongue" with gasket manufactured to conform with ASTM C443, standard specification for joints for circular concrete sewer and culvert pipe rubber gaskets. All gate well covers shall be E.J.I.W. #1040C with bolted frame and have words "Superior Township Water Main and Logo" in raised letters on the frame cover, or approved equal.
5. Tapping sleeve shall be mechanical joint with DWS Mechanical Joint Tapping Gate Valve. Lead joint sleeves shall not be used.
6. No installation of water main is to be attempted without Township's inspector being present. Unless otherwise specified on plans, top of all water mains shall be 5.5 ft. below existing or proposed road centerline, or 5.5 ft. below existing or proposed ground, whichever results in lower elevation. An 18" minimum vertical clearance between storm or sanitary sewer shall be maintained.
7. Three (3) working days before you dig, dial MISS DIG at 1-800-482-7171.
8. All required cross connection devices shall be installed as required by the local plumbing inspector and in accordance with the standards of the Michigan Department of Public Health.
9. The design engineer shall furnish Superior Township with mylar "Record" water main plans along with a computer disk using the most recent release of AutoCAD, upon job completion. Plans shall locate all water mains, hydrants and gate valves and wells.
10. Where work is to be performed in the vicinity of a Superior Township main, contractor shall notify the Superior Township Utility Deprtment at (734) 480-5500 at least 3 working days prior to start of construction as well as township engineer to schedule inspection.
11. All pipe and all pipe fittings shall be made in the U.S.A.
12. All bolts on all flanged and mechanical joint fittings shall be domestic origin high strength, low alloy COR-BLUE steel bolts or approved equal. These bolts shall meet the current provisions of American National Standard ANSI/AWWA C111/A21.11-90 for rubber gasket joints for ductile iron pressure pipes and fittings. Bolt manufacturer's certificate of compliance must accompany each shipment.
13. BACKFILL NOTE: Under road surfaces, pavement, sidewalk, curb, driveways and where the edge of the trench is within 3 (three) feet of the pavement or as called for on the plans, the trench depth shall be 4 (four) inches lower than the proposed water main elevation. The trench width shall be the outside diameter plus 16 (sixteen) inches for pipe diameters up to 36 (thirty-six) inches and larger. The trench shall be backfilled by placing granular material by the "controlled Density Method" or other means having approval of the engineer and compacting it to 95 (ninety-five) percent of its maximum unit weight.
14. "Mega Lugs," "Field Lock Gaskets," or a mechanical joint restraint system shall be used instead of concrete thrust blocks for joint restraint.
15. All bolts used in securing fittings to the water main shall be "COR-BLUE" bolts or approved equal.
16. All buried bolts, nuts and washers shall be "COR-BLUE" or equivalent and poly-wrapped.
17. Like size to like size tapping sleeves shall not be used with transite pipe.
18. Where water main is located under pavement, the Township shall not be responsible for repairing pavement within the easement in the event that maintenance or repairs to the water main become necessary.
19. Mechanical and slip-on joints for ductile iron shall be in accordance with AWWA C111 (ANSI A21.11)
20. All fire hydrant joints shall be totally restrained by use of "Mega Lugs" or other approved restrained joint.
21. Fittings for ductile iron pipe shall be ductile iron or cast iron and shall meet requirements of AWWA C110 (ANSI A21.10) or AWWA C153 (ANSI A21.53). Ductile iron fittings shall be rated for 350 psi, pipe 24" diameter and less and 250 psi for pipe sizes over 24" diameter, except that ductile iron flanged fitting shall be rated for 250 psi for all pipe diameters.
22. Manhole steps shall be steel encased with polypropylene plastic or approved equivalent to M.A. Industries, Inc., PS-1 for brick, or PS-1B for block, East Jordan Iron Works 8502 (or approved equal). Manhole steps at 16" centers.
23. Maximum joint deflection and water main radius shall not exceed manufacturer recommendations (e.g. 4"-36" WM - 5° per 20' or 206' radius).

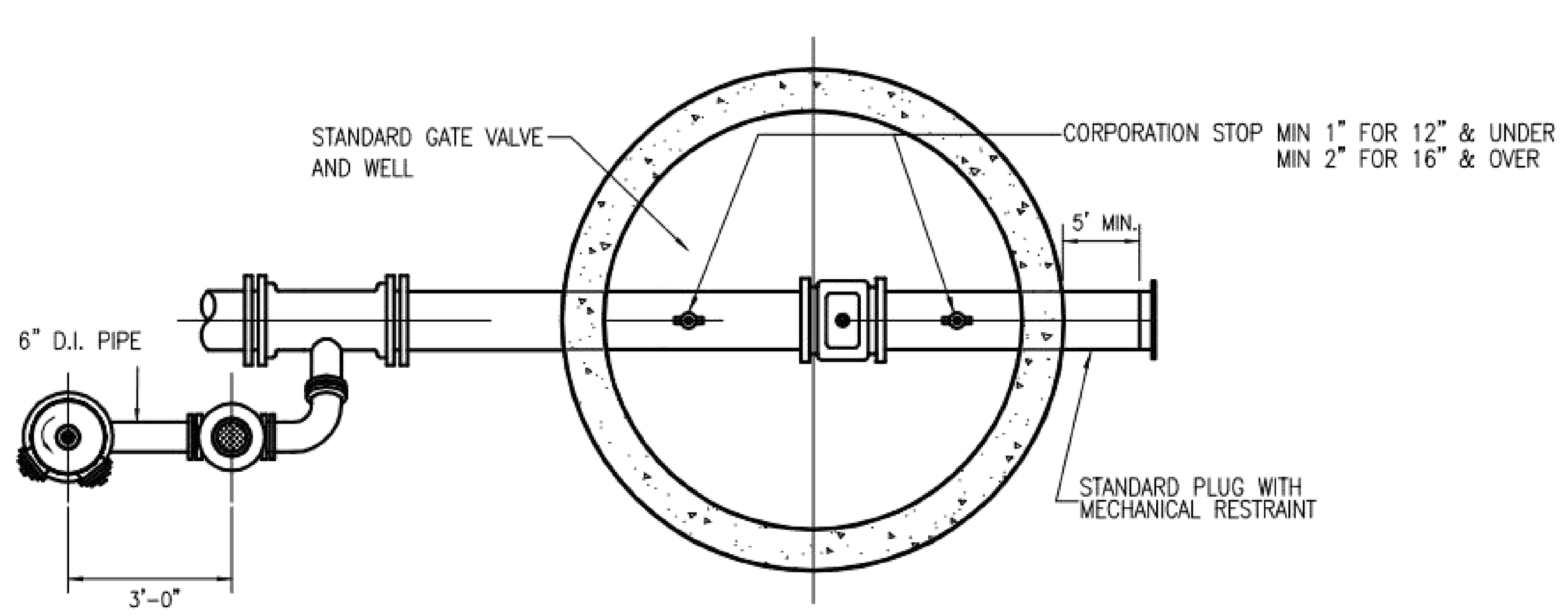
DRAWING PATH: S:\CVT\Superior Twp\Standards\CADD\watermain\SuperiorWM01.dwg May 27, 2010 - 9:18am

OHM
WWW.OHM-ADVISORS.COM
34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

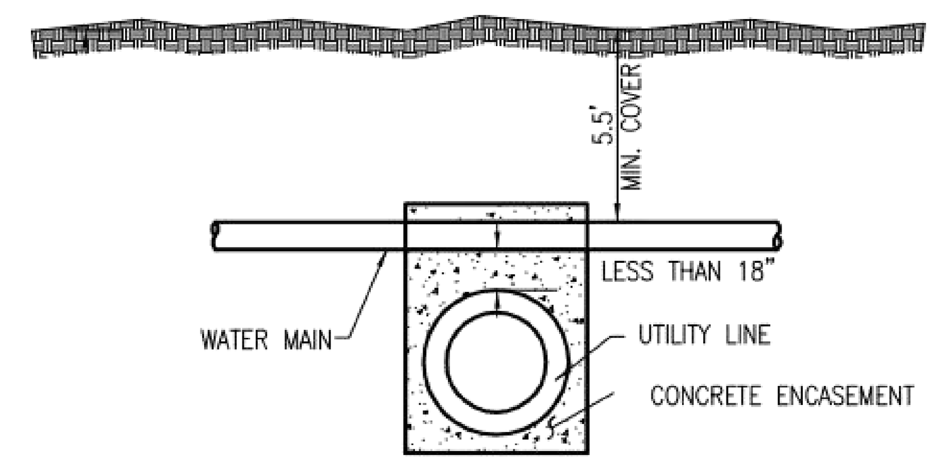
CLIENT: CHARTER TOWNSHIP OF SUPERIOR
JOB # 000-00-0000
SCALE: H. NTS V. N/A
HORIZ DATUM N/A
VERT DATUM N/A
CITY/VILLAGE/TOWNSHIP: CHARTER TOWNSHIP OF SUPERIOR
COUNTY: WASHTENAW
TOWN
RANGE
SECTION
PROJ MGR
ENG / ARCH DLG/LGL
CADD DK
DATE OCT 2003
REVISIONS:

CHARTER TOWNSHIP OF SUPERIOR
STANDARD WATER MAIN DETAILS

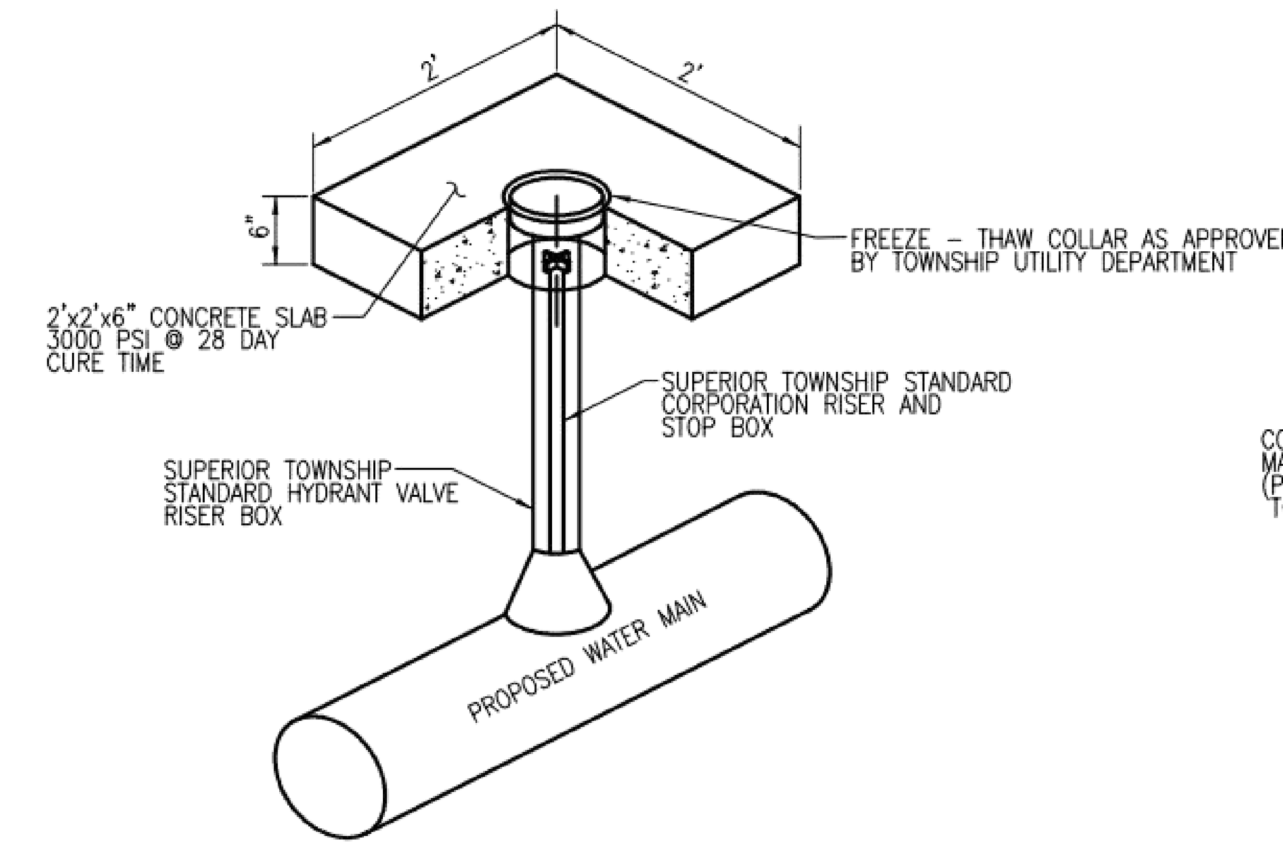
SHEET 59 1 OF 2



END OF WATER LINE ASSEMBLY FOR WATER MAINS



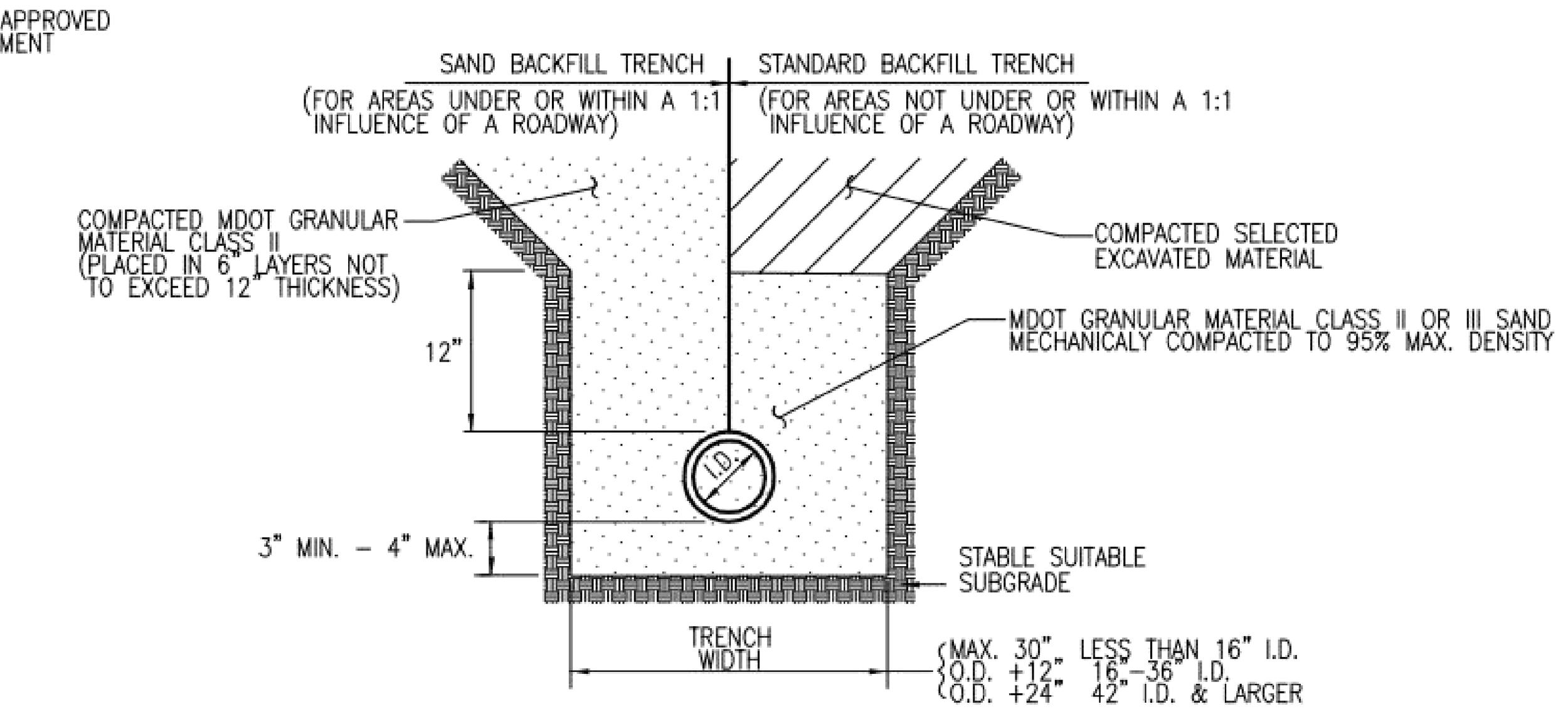
UTILITY CROSSING WITH LESS THAN 18" CLEARANCE


2'
2'
6"
2'x2'x6" CONCRETE SLAB 3000 PSI @ 28 DAY CURE TIME
FREEZE – THAW COLLAR AS APPROVED BY TOWNSHIP UTILITY DEPARTMENT
SUPERIOR TOWNSHIP STANDARD CORPORATION RISER AND STOP BOX
SUPERIOR TOWNSHIP STANDARD HYDRANT VALVE RISER BOX
PROPOSED WATER MAIN

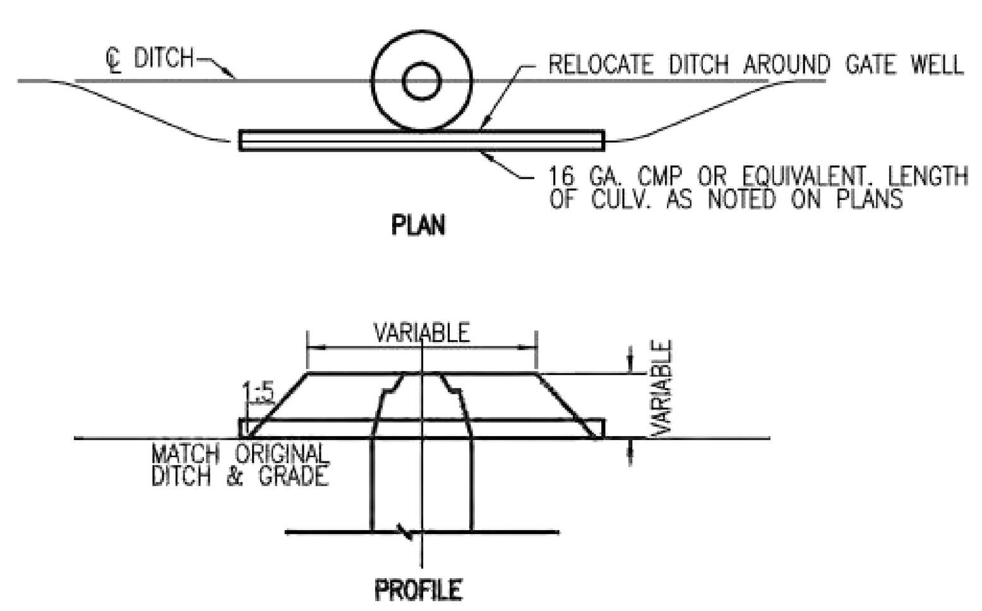
STOP BOX IN PAVEMENT

WATER STOP BOX REQUIREMENTS

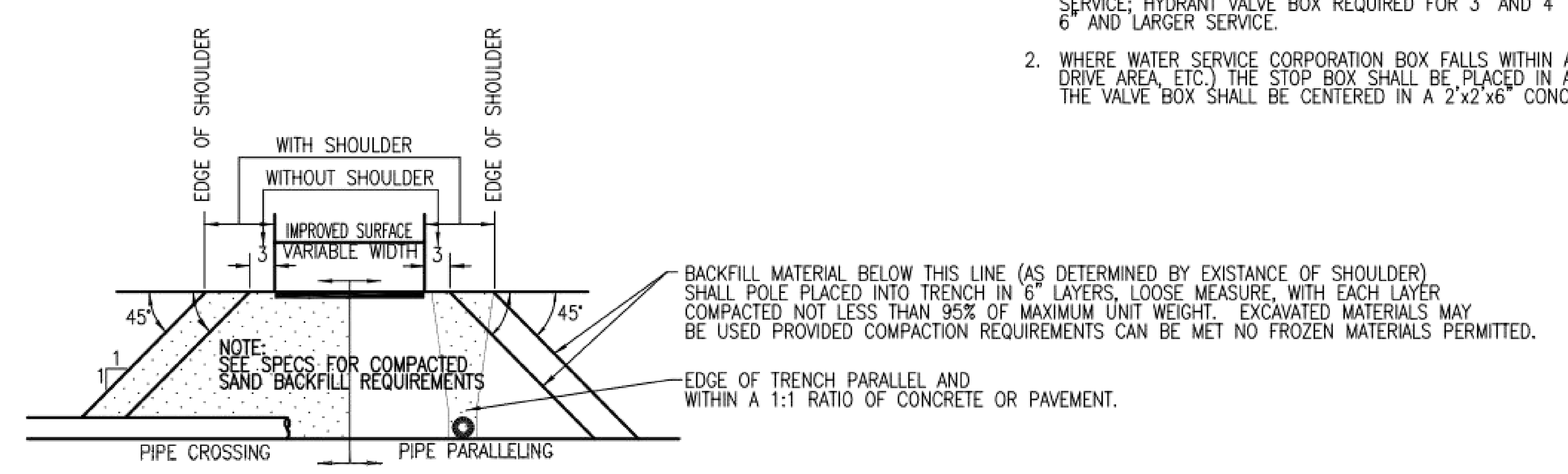
1. TWO HOLE ARCH PATTERN (ERIE PATTERN) TYPE WITH 1" UPPER AND 5' EXTENDED LENGTH WITH 42" ROD (FORD STOP BOX PART NO. EA1-50-40-4ZR OR APPROVED EQUAL); SMALL BOX REQUIRED FOR 3/4" AND 1" SERVICE; LARGE BOX REQUIRED FOR 1-1/2" AND 2" SERVICE; HYDRANT VALVE BOX REQUIRED FOR 3" AND 4" SERVICE; GATE WELL REQUIRED FOR 6" AND LARGER SERVICE.
2. WHERE WATER SERVICE CORPORATION BOX FALLS WITHIN A PAVED AREA (PARKING LOT, SERVICE DRIVE AREA, ETC.) THE STOP BOX SHALL BE PLACED IN A STANDARD HYDRANT VALVE BOX. THE VALVE BOX SHALL BE CENTERED IN A 2'x2'x6" CONCRETE SLAB.


SAND BACKFILL TRENCH
(FOR AREAS UNDER OR WITHIN A 1:1 INFLUENCE OF A ROADWAY)
STANDARD BACKFILL TRENCH
(FOR AREAS NOT UNDER OR WITHIN A 1:1 INFLUENCE OF A ROADWAY)
COMPACTED MDOT GRANULAR MATERIAL CLASS II (PLACED IN 6" LAYERS NOT TO EXCEED 12" THICKNESS)
COMPACTED SELECTED EXCAVATED MATERIAL
MDOT GRANULAR MATERIAL CLASS II OR III SAND MECHANICALY COMPACTED TO 95% MAX. DENSITY
12"
I.D.
3" MIN. – 4" MAX.
STABLE SUITABLE SUBGRADE
TRENCH WIDTH
MAX. 30", LESS THAN 16" I.D.
O.D. +12" 16"-36" I.D.
O.D. +24" 42" I.D. & LARGER

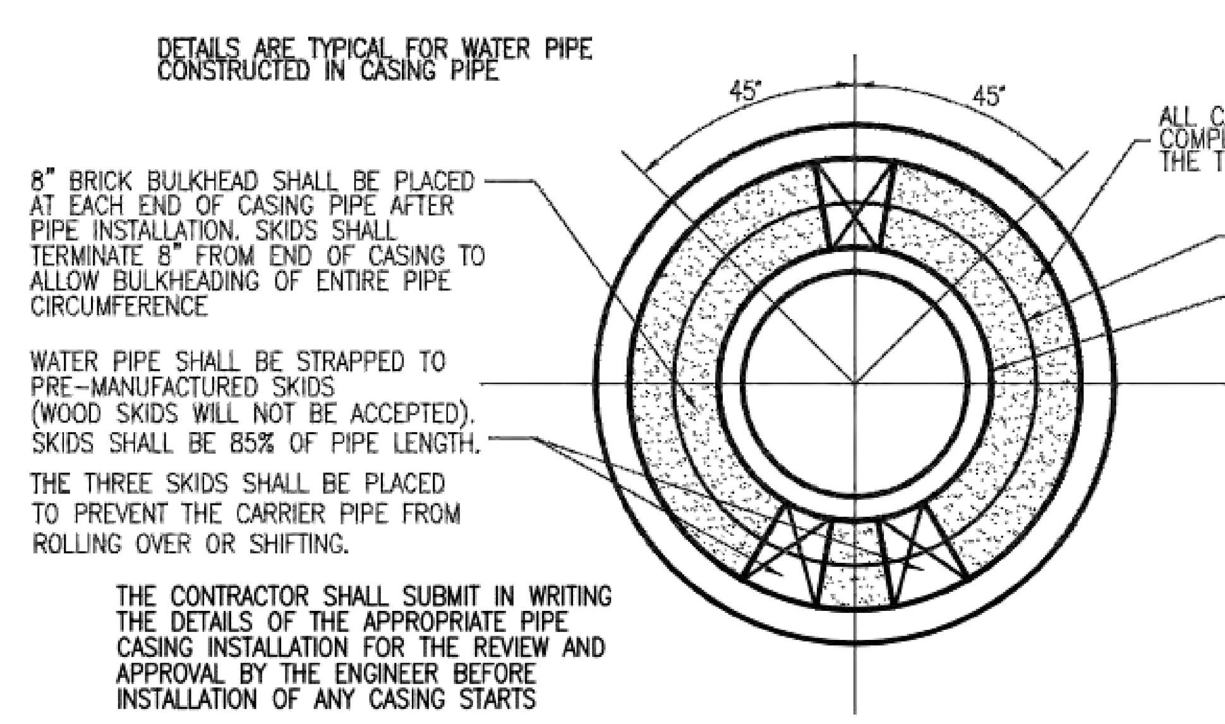
STANDARD BEDDING AND TRENCH BACKFILL DETAIL FOR WATER MAIN



DITCH ENCLOSURE AT GATE WELL


EDGE OF SHOULDER
EDGE OF SHOULDER
WITH SHOULDER
WITHOUT SHOULDER
IMPROVED SURFACE VARIABLE WIDTH
3
3
45°
45°
1
1
NOTE: SEE SPECS FOR COMPACTED SAND BACKFILL REQUIREMENTS
PIPE CROSSING
PIPE PARALLELING
BACKFILL MATERIAL BELOW THIS LINE (AS DETERMINED BY EXISTANCE OF SHOULDER) SHALL POLE PLACED INTO TRENCH IN 6" LAYERS, LOOSE MEASURE, WITH EACH LAYER COMPACTED NOT LESS THAN 95% OF MAXIMUM UNIT WEIGHT. EXCAVATED MATERIALS MAY BE USED PROVIDED COMPACTION REQUIREMENTS CAN BE MET NO FROZEN MATERIALS PERMITTED.
EDGE OF TRENCH PARALLEL AND WITHIN A 1:1 RATIO OF CONCRETE OR PAVEMENT.

BACKFILL IN THE AREA OF STREETS, ALLEYS SIDEWALKS, DRIVES & PARKING LOTS


DETAILS ARE TYPICAL FOR WATER PIPE CONSTRUCTED IN CASING PIPE
45°
45°
8" BRICK BULKHEAD SHALL BE PLACED AT EACH END OF CASING PIPE AFTER PIPE INSTALLATION. SKIDS SHALL TERMINATE 8" FROM END OF CASING TO ALLOW BULKHEADING OF ENTIRE PIPE CIRCUMFERENCE
WATER PIPE SHALL BE STRAPPED TO PRE-MANUFACTURED SKIDS (WOOD SKIDS WILL NOT BE ACCEPTED). SKIDS SHALL BE 85% OF PIPE LENGTH.
THE THREE SKIDS SHALL BE PLACED TO PREVENT THE CARRIER PIPE FROM ROLLING OVER OR SHIFTING.
THE CONTRACTOR SHALL SUBMIT IN WRITING THE DETAILS OF THE APPROPRIATE PIPE CASING INSTALLATION FOR THE REVIEW AND APPROVAL BY THE ENGINEER BEFORE INSTALLATION OF ANY CASING STARTS
ALL CASING PIPES SHALL BE GROUTED WHEN COMPLETE UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP UTILITY DEPARTMENT.
O.D. OF WATER MAIN JOINT
WATER MAIN (CARRIER PIPE)

DIA. OF WATER MAIN	MIN. (I.D.) "A"	ROAD CROSSING MIN. "B"	RAILROAD CROSSING MIN. "B"
6"	16"	.375	.312
8"	16"	.375	.375
12"	20"	.375	.438
16"	24"	.375	.500
20"	30"	.375	.500
24"	36"	.375	.500

A=INSIDE DIAMETER
B=WALL THICKNESS

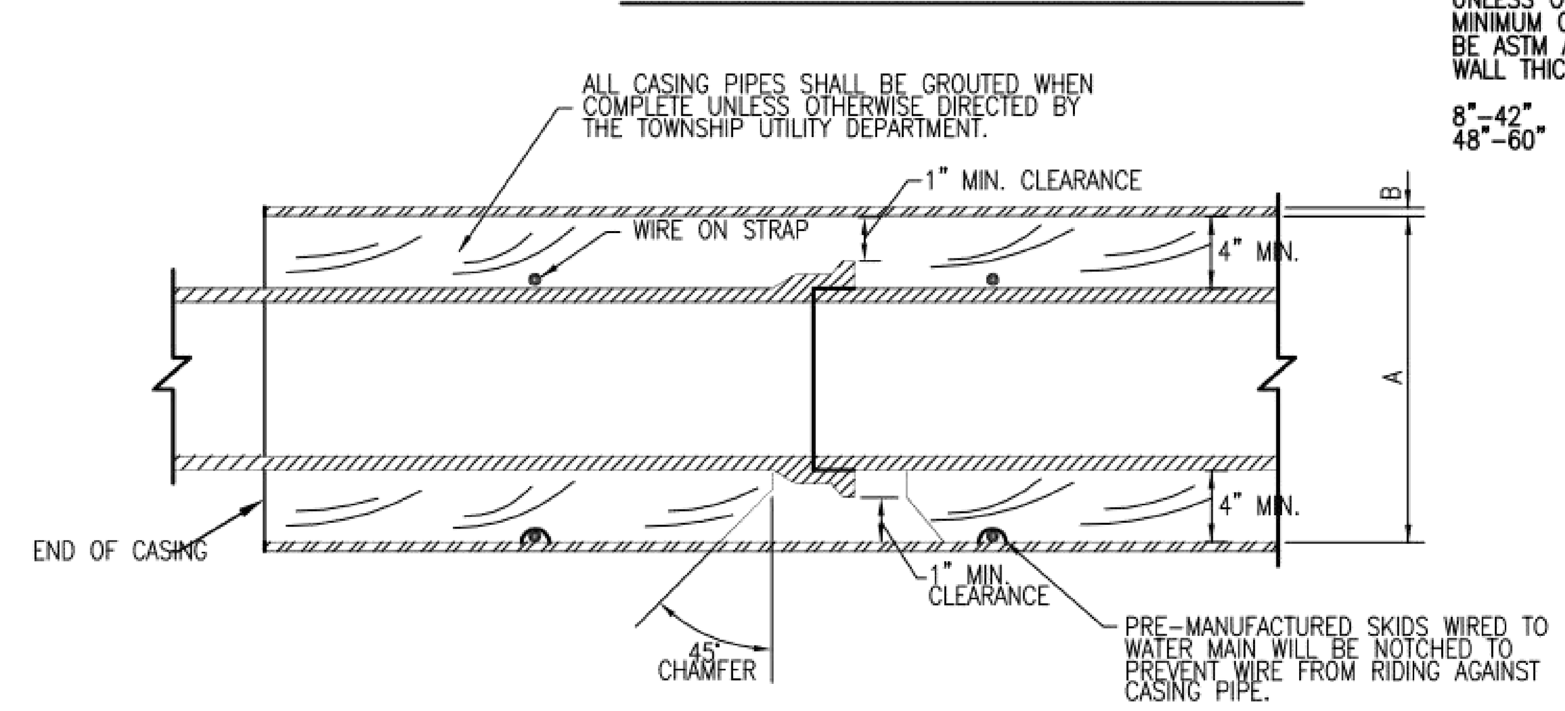
4" MINIMUM CLEARANCE BETWEEN MAX. O.D. AT A JOINT OF THE PIPE AND THE I.D. OF THE CASING PIPE FOR THE TOP 90° OF THE CASING

PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING PIPE

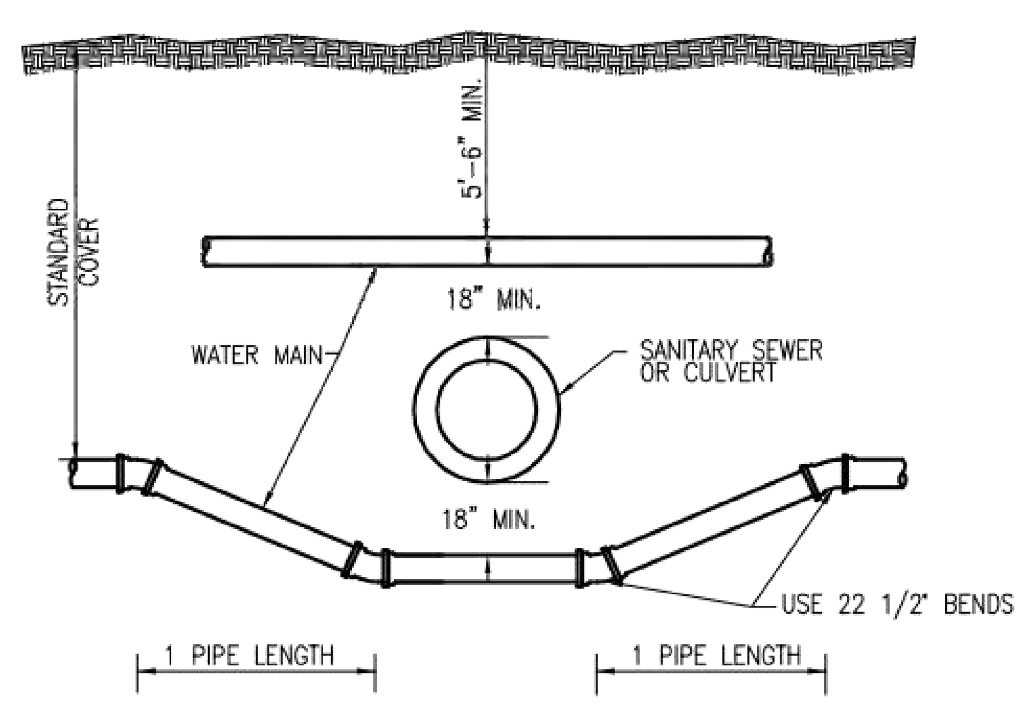
CASING SHALL BE SPIRAL WELDED STEEL PIPE A.S.T.M. A-252, GR. 2.

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

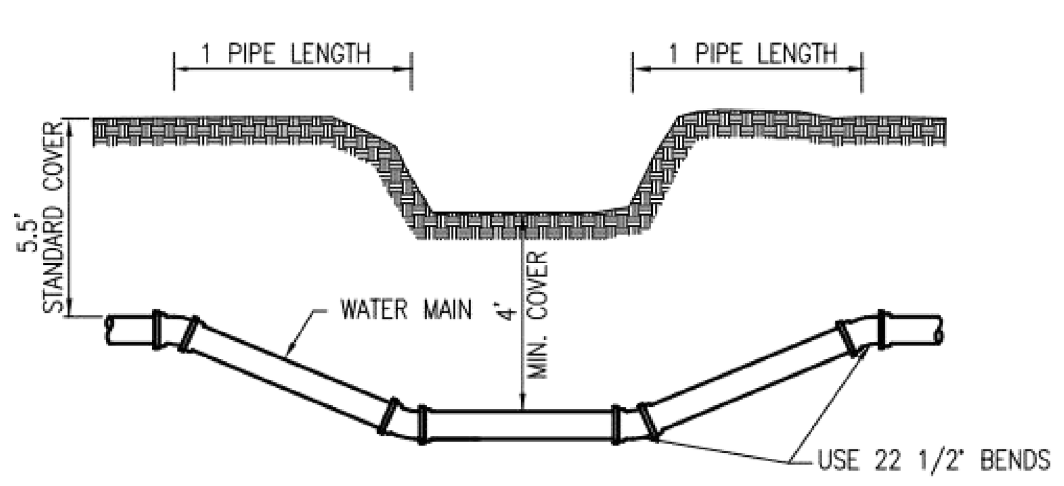
8"-42" 0.375
48"-60" 0.500


ALL CASING PIPES SHALL BE GROUTED WHEN COMPLETE UNLESS OTHERWISE DIRECTED BY THE TOWNSHIP UTILITY DEPARTMENT.
1" MIN. CLEARANCE
WIRE ON STRAP
4" MIN.
B
A
4" MIN.
END OF CASING
45° CHAMFER
1" MIN. CLEARANCE
PRE-MANUFACTURED SKIDS WIRED TO WATER MAIN WILL BE NOTCHED TO PREVENT WIRE FROM RIDING AGAINST CASING PIPE.

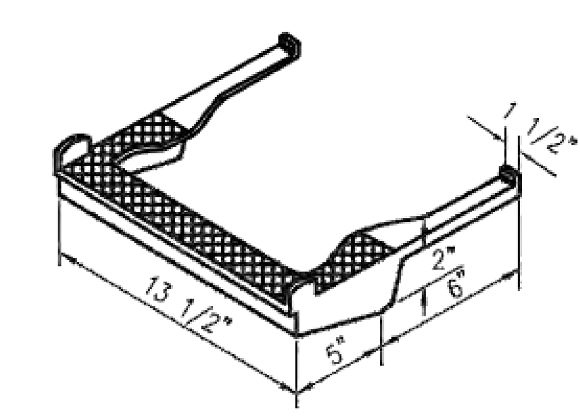
STANDARD CASING SECTION



SEWER OR CULVERT CROSSING

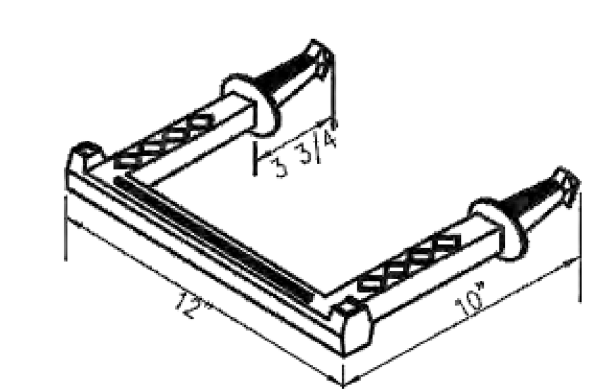


DITCH OR STREAM CROSSING



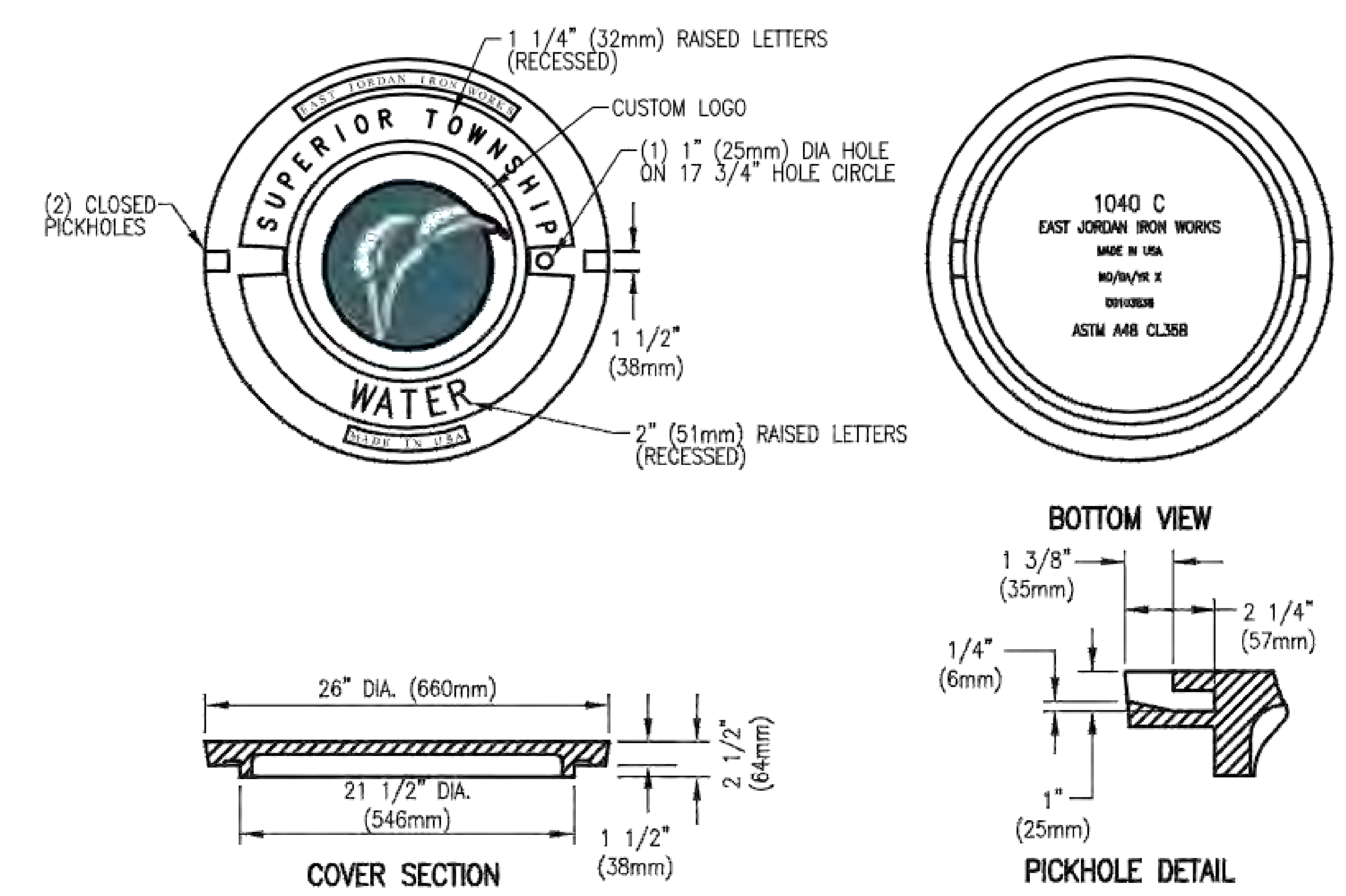
E.J.I.W. 8502

OR

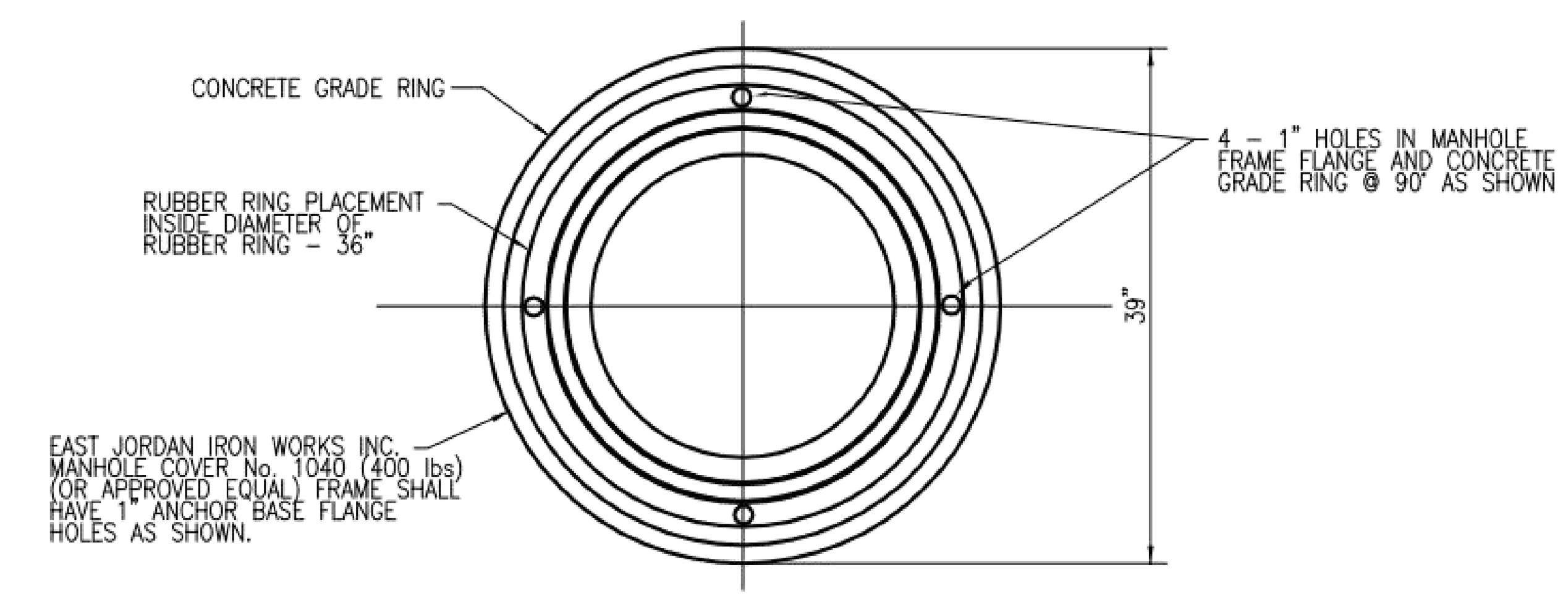


STANDARD MANHOLE STEP

M.A. PSI-375


1 1/4" (32mm) RAISED LETTERS (RECESSED)
CUSTOM LOGO
(1) 1" (25mm) DIA HOLE ON 17 3/4" HOLE CIRCLE
(2) CLOSED PICKHOLES
EAST JORDAN IRON WORKS
SUPERIOR TOWNSHIP
WATER
MADE IN USA
1 1/2" (38mm)
2" (51mm) RAISED LETTERS (RECESSED)
1040 C
EAST JORDAN IRON WORKS
MADE IN USA
BOTTOM VIEW
26" DIA. (660mm)
21 1/2" DIA. (546mm)
2 1/2" (64mm)
1 1/2" (38mm)
COVER SECTION
1 3/8" (35mm)
2 1/4" (57mm)
1/4" (6mm)
1" (25mm)
PICKHOLE DETAIL

STANDARD COVER & FRAME


CONCRETE GRADE RING
RUBBER RING PLACEMENT INSIDE DIAMETER OF RUBBER RING – 36"
EAST JORDAN IRON WORKS INC. MANHOLE COVER No. 1040 (400 lbs) (OR APPROVED EQUAL) FRAME SHALL HAVE 1" ANCHOR BASE FLANGE HOLES AS SHOWN.
4 – 1" HOLES IN MANHOLE FRAME FLANGE AND CONCRETE GRADE RING @ 90° AS SHOWN
39"

CAST IRON GATE WELL COVER AND GRADE RING

DRAWING PATH: S:\CVT\SuperiorTwp\Standards\CADD\watermain\SuperiorWM02.dwg May 27, 2010 - 9:23am

OHM

VERT DATUM N/A | HORIZ DATUM N/A | SCALE H: NTS V: N/A | JOB # 000-00-0000

CITY/VILLAGE/TOWNSHIP CHARTER TOWNSHIP OF SUPERIOR

COUNTY WASHTENAW

RANGE | TOWN | SECTION | PROJ MGR | ENG / ARCH DLG/JGL | CADD DK | DATE OCT 2003

CLIENT: CHARTER TOWNSHIP OF SUPERIOR

REVISIONS:

REVISIONS:

REVISIONS:

WWW.OHM-ADVISORS.COM

34000 Plymouth Road | Livonia, MI 48150 | P (734) 522-6711 | F (734) 522-6427

CHARTER TOWNSHIP OF SUPERIOR
STANDARD WATER MAIN DETAILS

SHEET