

# KINSLEY

## A SINGLE FAMILY DEVELOPMENT

### SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN

# FINAL SITE PLAN

#### PROJECT CONTACTS

**DEVELOPER / APPLICANT**  
 DIVERSE REAL ESTATE LLC  
 13001 23 MILE ROAD, SUITE 200  
 SHELBY TWP, MICHIGAN 48315  
 CONTACT: JOE KLEE  
 PHONE: (248) 721-2072

**CIVIL ENGINEER**  
 ATWELL, LLC  
 311 NORTH MAIN STREET  
 ANN ARBOR, MICHIGAN 48104  
 CONTACT: MATT BUSH, P.E.  
 PHONE: (810) 923-6878

#### SITE DATA

GROSS SITE AREA: 47 ACRES  
 PROPOSED ROW: 3.99 ACRES  
 EXCLUDED PARKS AREA: 7.61 ACRES  
 NET SITE AREA: 35.40 ACRES

EXISTING ZONING: R2 - SINGLE FAMILY RESIDENTIAL (APPROVED JUNE 2022)  
 PROPOSED ZONING: R2 - SINGLE FAMILY RESIDENTIAL  
 PROPOSED USE: SINGLE FAMILY RESIDENTIAL SITE

NUMBER OF PROP. LOTS TOTAL: 21  
 PROPOSED DENSITY (GROSS): 0.45  
 PROPOSED DENSITY (NET): 0.59

LOT AREA PER DWELLING UNIT: 43,560 SF (MIN)  
 MINIMUM LOT WIDTH: 150'

LOT SETBACKS:  
 FRONT- 50'  
 SIDE- 15' MIN. (50' TOTAL)  
 REAR- 50'

PROPOSED LOT COVERAGE: MAX 25%

PROPOSED GENERAL COMMON ELEMENT (G.C.E.): 10.58 ACRES

WETLAND IMPACTS:  
 REGULATED: 0.0 ACRES  
 NON-REGULATED: 0.0 ACRES

\*FIRE DEPARTMENT NOTE: ROADWAYS AND BRIDGES TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING 80,000 POUNDS

#### LEGAL DESCRIPTION

EXHIBIT "A" DESCRIPTION PER ALTA COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY, ISSUING AGENT: ATA NATIONAL TITLE GROUP, LLC, ISSUING OFFICE FILE NUMBER: 81-21796648-GCM, COMMITMENT DATE: JULY 30, 2021:

THE LAND REFERRED TO IN THIS COMMITMENT IS DESCRIBED AS FOLLOWS: TOWNSHIP OF SUPERIOR, COUNTY OF WASHTENAW, STATE OF MICHIGAN

PARCEL 1  
 TRACT A  
 COMMENCING AT THE SOUTH 1/4 CORNER OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST, SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN; THENCE NORTH 00 DEGREES 58 MINUTES 12 SECONDS EAST ALONG THE NORTH AND SOUTH 1/4 LINE 933.09 FEET TO A POINT IN THE CENTER OF FLEMING CREEK; SAID POINT BEING THE POINT OF BEGINNING; THENCE CONTINUING NORTH 00 DEGREES 58 MINUTES 12 SECONDS ALONG SAID NORTH AND SOUTH 1/4 LINE 378.14 FEET TO A POINT ON THE CENTERLINE OF PLYMOUTH ROAD; THENCE NORTH 73 DEGREES 32 MINUTES 14 SECONDS EAST ALONG SAID CENTERLINE 332.78 FEET; THENCE SOUTH 01 DEGREES 02 MINUTES 14 SECONDS WEST 411.82 FEET TO A POINT IN THE CENTER OF FLEMING CREEK; THENCE SOUTH 79 DEGREES 12 MINUTES 25 SECONDS WEST 323.81 FEET TO THE POINT OF BEGINNING.

TRACT B  
 COMMENCING AT THE SOUTH 1/4 CORNER OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST, SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN; THENCE NORTH 00 DEGREES 58 MINUTES 12 SECONDS EAST ALONG THE NORTH AND SOUTH 1/4 LINE 1252.41 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF M-14 EXPRESSWAY; THENCE SOUTH 88 DEGREES 26 MINUTES 20 SECONDS EAST ALONG SAID RIGHT OF WAY LINE 565.80 FEET; THENCE CONTINUING ALONG SAID RIGHT OF WAY LINE 789.28 FEET ALONG THE ARC OF A 3716.72 FOOT RADIUS CIRCULAR CURVE CONCAVE SOUTHWESTERLY THROUGH A CENTRAL ANGLE OF 12 DEGREES 10 MINUTES 02 SECONDS, HAVING A CHORD WHICH BEARS SOUTH 82 DEGREES 21 MINUTES 19 SECONDS EAST 787.79 FEET TO A POINT ON THE EAST LINE OF THE WEST 1/2 OF THE SOUTHEAST 1/4 OF SAID SECTION 8; THENCE SOUTH 00 DEGREES 40 MINUTES 14 SECONDS WEST ALONG SAID EAST LINE 731.45 FEET TO A POINT ON THE CENTERLINE OF PLYMOUTH ROAD; THENCE SOUTH 73 DEGREES 32 MINUTES 14 SECONDS WEST ALONG SAID CENTERLINE 1417.16 FEET TO THE POINT OF BEGINNING.

TRACT C  
 COMMENCING AT THE SOUTH 1/4 CORNER OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST, SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN; THENCE NORTH 00 DEGREES 58 MINUTES 12 SECONDS EAST ALONG THE NORTH AND SOUTH 1/4 LINE 1311.23 FEET TO A POINT ON THE CENTERLINE OF PLYMOUTH ROAD; THENCE NORTH 73 DEGREES 32 MINUTES 14 SECONDS EAST ALONG SAID CENTERLINE 572.78 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING NORTH 73 DEGREES 32 MINUTES 14 SECONDS EAST ALONG SAID CENTERLINE 1163.76 FEET TO A POINT ON THE CENTERLINE OF PLYMOUTH ROAD OVER FLEMING CREEK; THENCE ALONG THE BOUNDARY LINE BETWEEN THE LAND OF HANRY TO THE NORTH AND GALPIN TO THE SOUTH IN THE FOLLOWING COURSES: SOUTH 28 DEGREES 03 MINUTES 30 SECONDS WEST 21.00 FEET; SOUTH 16 DEGREES 26 MINUTES 00 SECONDS WEST 115.27 FEET TO A POINT ON THE NORTHWESTERLY BANK OF FLEMING CREEK; SOUTH 46 DEGREES 37 MINUTES 30 SECONDS WEST 145.29 FEET TO A POINT ON THE SOUTHERLY BANK OF SAID CREEK; SOUTH 52 DEGREES 16 MINUTES 00 SECONDS WEST 172.87 FEET TO A POINT IN THE CENTER OF SAID CREEK; SOUTH 54 DEGREES 59 MINUTES 00 SECONDS WEST 159.72 FEET TO A POINT IN THE CENTER OF SAID CREEK; SOUTH 63 DEGREES 32 MINUTES 00 SECONDS WEST 119.48 FEET TO A POINT IN THE CENTER OF SAID CREEK; SOUTH 71 DEGREES 54 MINUTES 00 SECONDS WEST 127.92 FEET TO A POINT IN THE CENTER OF SAID CREEK; SOUTH 63 DEGREES 02 MINUTES 00 SECONDS WEST 285.51 FEET TO A POINT IN THE CENTER OF SAID CREEK; SOUTH 66 DEGREES 26 MINUTES 30 SECONDS WEST 258.24 FEET TO POINT ON THE NORTHERLY BANK OF SAID CREEK; THENCE NORTH 02 DEGREES 36 MINUTES 24 SECONDS EAST 424.34 FEET TO THE POINT OF BEGINNING.

PARCEL 2  
 TRACT A  
 ALL THAT PART OF THE NORTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST LYING NORTH OF PLYMOUTH ROAD, NORTHWESTERLY OF THE CENTERLINE OF FLEMING CREEK AND WESTERLY OF A LINE BEARING SOUTH 24 DEGREES 32 MINUTES EAST FROM A POINT ON THE EAST AND WEST 1/4 LINE LOCATED 724.89 FEET WEST OF THE EAST 1/4 CORNER OF SAID SECTION 8; EXCEPT

TRACT B  
 THAT PART OF TRACT "A" LYING NORTH OF A LINE 103 FEET SOUTH OF, MEASURED AT RIGHT ANGLES AND PARALLEL WITH, THE REFERENCE LINE OF EASTBOUND ROADWAY OF LIMITED ACCESS HIGHWAY M-14, TOGETHER WITH ALL RIGHT OF INGRESS AND EGRESS, IF ANY THERE BE, TO, FROM AND BETWEEN THE HIGHWAY ON TRACT "B" AND THE REMAINDER OF TRACT "A"; THE REFERENCE LINE OF EASTBOUND ROADWAY IS DESCRIBED AS FOLLOWS: BEGINNING 2609.83 FEET SOUTH 2 DEGREES 37 MINUTES 29 SECONDS EAST ALONG SECTION LINE FROM NORTHWEST CORNER AND 62.82 FEET NORTHERLY FROM WEST 1/4 CORNER OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST; THENCE NORTH 88 DEGREES 57 MINUTES 38 SECONDS EAST 3180.88 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A CENTRAL ANGLE OF 17 DEGREES 25 MINUTES 12 SECONDS AND A RADIUS OF 3819.72 FEET; THENCE SOUTHEAST ALONG THE ARC OF SAID CURVE 1161.33 FEET TO ITS POINT OF TANGENT; THENCE SOUTH 73 DEGREES 37 MINUTES 10 SECONDS EAST 898.97 FEET TO A POINT OF ENDING IN CENTERLINE OF PLYMOUTH ROAD, SAID POINT OF ENDING LYING 459.16 FEET SOUTH 02 DEGREES 07 MINUTES 17 SECONDS EAST; THENCE 151.11 FEET SOUTH 61 DEGREES 32 MINUTES 20 SECONDS WEST FROM EAST 1/4 CORNER OF SECTION 8, TOWN 2 SOUTH, RANGE 7 EAST, TOWNSHIP OF SUPERIOR, WASHTENAW COUNTY, MICHIGAN.

SCHEDULE B, PART II EXCEPTIONS PER ALTA COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY, ISSUING AGENT: ATA NATIONAL TITLE GROUP, LLC, ISSUING OFFICE FILE NUMBER: 81-21796648-GCM, COMMITMENT DATE: JULY 30, 2021:

8. EASEMENT GRANTED TO THE DETROIT EDISON COMPANY FOR CONSTRUCTION, OPERATION AND MAINTENANCE OF ELECTRIC LIGHT AND POWER LINES, INCLUDING THE TRIMMING OF TREES ALONG SAID LINES, AS DISCLOSED BY AGREEMENT RECORDED IN LIBER 1 OF GRANTS, PAGE 106, WASHTENAW COUNTY RECORDS.  
 RESPONSE: COVERS A PORTION OF SUBJECT PROPERTY AND ADDITIONAL LAND, EASEMENT AS SHOWN HEREON, NO WIDTH DEFINED, APPEARS TO BE BLANKET IN NATURE.
9. RELEASE OF RIGHT OF WAY TO THE STATE OF MICHIGAN FOR HIGHWAY PURPOSES RECORDED IN LIBER 266, PAGE 574, WASHTENAW COUNTY RECORDS.  
 RESPONSE: AS SHOWN HEREON.
10. TERMS, CONDITIONS AND PROVISIONS CONTAINED IN AGREEMENT RECORDED IN LIBER 1058, PAGE 381, WASHTENAW COUNTY RECORDS.  
 RESPONSE: AS SHOWN HEREON.
11. TERMS, CONDITIONS AND PROVISIONS CONTAINED IN, AND EASEMENT(S) CREATED BY, DECLARATION OF TAKING RECORDED IN LIBER 1417, PAGE 840, WASHTENAW COUNTY RECORDS.  
 RESPONSE: TRACT "A" COVERS PARCEL 1 TRACT B, RIGHT OF WAY TAKING AND EASEMENT AS SHOWN HEREON.
12. TERMS, CONDITIONS AND PROVISIONS CONTAINED IN MEMORANDUM OF LICENSE RECORDED IN LIBER 5399, PAGE 760, WASHTENAW COUNTY RECORDS.  
 RESPONSE: COVERS A PORTION OF SUBJECT PROPERTY AND ADDITIONAL LAND, EASEMENT AS SHOWN HEREON.



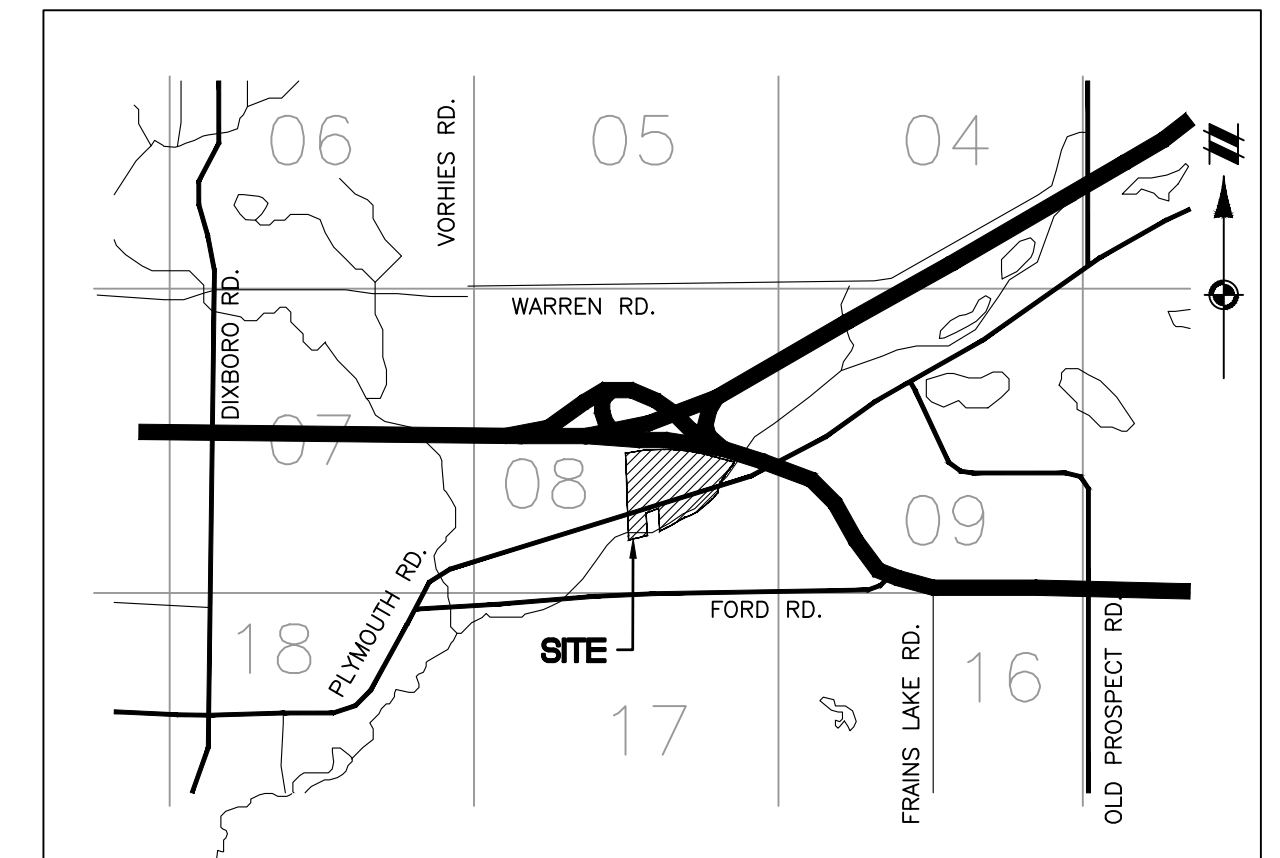
OVERALL DEVELOPMENT MAP  
 SCALE: 1" = 150 FEET

#### PERMITS/APPROVALS REQUIRED STATUS

WASHTENAW COUNTY ROAD COMMISSION	IN PROCESS
WASHTENAW COUNTY WATER RESOURCES COMMISSIONER'S OFFICE	IN PROCESS
WASHTENAW COUNTY HEALTH DEPARTMENT	IN PROCESS
SUPERIOR TOWNSHIP ENGINEERING	IN PROCESS
SUPERIOR TOWNSHIP PLANNING	IN PROCESS
SUPERIOR TOWNSHIP UTILITIES	IN PROCESS
SUPERIOR TOWNSHIP SOIL EROSION & SOIL CONTROL	IN PROCESS
EGLLE WETLANDS	IN PROCESS

#### PROJECT NARRATIVE

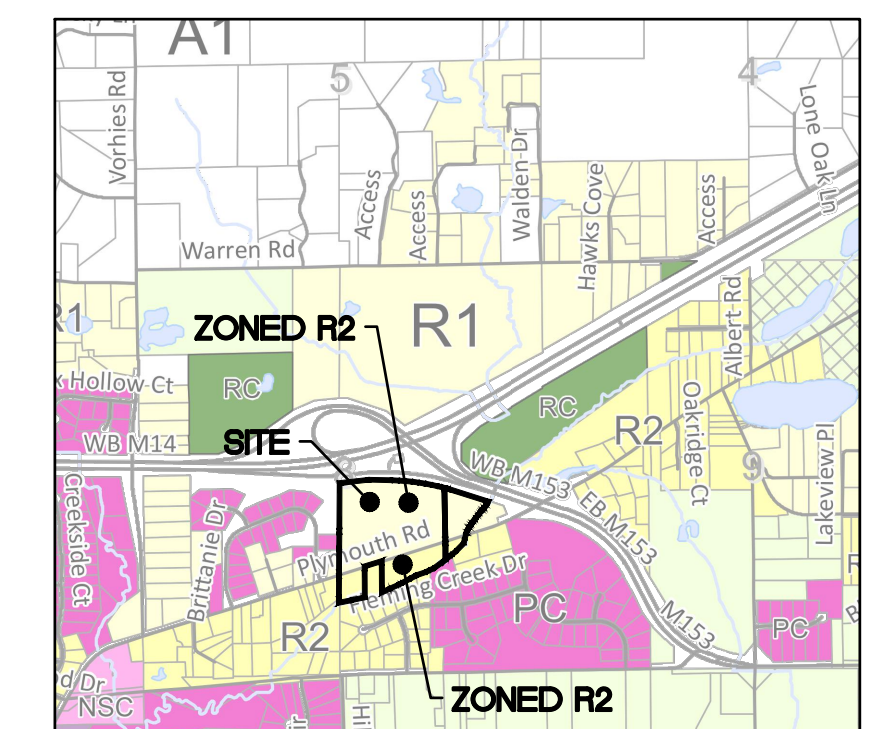
KINSLEY IS LOCATED ON THE NORTH SIDE OF PLYMOUTH ROAD, JUST WEST OF FORD ROAD AND SOUTH OF M-14 IN SUPERIOR TOWNSHIP. THE SITE IS APPROXIMATELY 47 ACRES AND IS ZONED R-2, SINGLE FAMILY RESIDENTIAL. THE APPLICANT IS PROPOSING TO DEVELOP THE PARCEL AS A 21 UNIT SITE CONDOMINIUM. PORTIONS OF THE EXISTING PARCEL ARE TO BE EXCLUDED FROM THIS SITE CONDOMINIUM AS NOTED. THE PROPOSED LOTS HAVE A MINIMUM WIDTH OF 150' AND MINIMUM LOT SIZE OF 43,560 SQUARE FEET (1.0 ACRES). THE HOMES WILL RANGE FROM 2,700 TO 6,200 SQUARE FEET WITH SALES PRICES STARTING IN THE HIGH \$60,000S. THE DEVELOPMENT WILL BE CONSTRUCTED IN A SINGLE PHASE. KINSLEY WILL CONTAIN PRIVATE ROADS AND WILL CONTAIN PRIVATE WELLS AND SEPTIC SYSTEMS. SITE DEVELOPMENT IS ANTICIPATED TO BEGIN IN 2023, WITH VERTICAL CONSTRUCTION BEGINNING IN 2024 AND CONSTRUCTION COMPLETING IN 2026.



VICINITY MAP  
 1" = 20,000 FEET

#### SHEET INDEX

- 01 COVER SHEET
- 02 OVERALL EXISTING CONDITIONS
- 03 EXISTING CONDITIONS AREA 1
- 04 EXISTING CONDITIONS AREA 2
- 05 EXISTING CONDITIONS AREA 3
- 06 EXISTING CONDITIONS AREA 4
- 07 NATURAL FEATURES PLAN
- 08 OVERALL LAYOUT PLAN
- 09 LAYOUT PLAN AREA 1
- 10 LAYOUT PLAN AREA 2
- 11 LAYOUT PLAN AREA 3
- 12 LAYOUT PLAN AREA 4
- 13 SOIL EROSION & SEDIMENTATION CONTROL PLAN
- 14 OVERALL GRADING PLAN
- 15 GRADING PLAN AREA 1
- 16 GRADING PLAN AREA 2
- 17 GRADING PLAN AREA 3
- 18 GRADING PLAN AREA 4
- 19 OVERALL UTILITY PLAN
- 20 UTILITY PLAN AREA 1
- 21 UTILITY PLAN AREA 2
- 22 UTILITY PLAN AREA 3
- 23 UTILITY PLAN AREA 4
- 24 ROAD PLAN & PROFILE STA.0+00 TO 11+50
- 25 ROAD PLAN & PROFILE STA. 11+50 TO 21+58
- 26 DRY HYDRANT PLAN AND PROFILE
- 27 STORM SEWER PLAN & PROFILE 1
- 28 STORM SEWER PLAN & PROFILE 2
- 29 STORM SEWER PLAN & PROFILE 3
- 30 STORM SEWER PLAN & PROFILE 4
- 31 STORM SEWER CONVEYANCE CALCS
- 32 DRAINAGE AREA PLAN
- 33 DETENTION BASIN
- 34 FRONTAGE PLAN
- 35 TREE LIST
- 36 STANDARD DETAILS
- 37 SOIL EROSION & SEDIMENTATION CONTROL DETAILS
- 38 SOIL BORINGS & TEST PIT LOGS
- 39 SUPERIOR TOWNSHIP STORM DETAILS 1
- 40 SUPERIOR TOWNSHIP STORM DETAILS 2
- 41 ARCHITECTURALS
- L-1 LANDSCAPE PLAN
- L-2 GREENBELT PLAN
- L-3 DETENTION POND
- L-4 LANDSCAPE DETAILS



ZONING MAP



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 OCCURRED 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.

COPYRIGHT © 2023 ATWELL, LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL, LLC.



SECTION 08  
 TOWN 02 NORTH, RANGE 07 EAST  
 SUPERIOR TOWNSHIP  
 WASHTENAW COUNTY, MICHIGAN

CLIENT  
 LOMBARDO HOMES  
 KINSLEY DEVELOPMENT  
 FINAL SITE PLAN  
 COVER SHEET

DATE  
 APRIL 18, 2023

5/30/23 PER WCWR  
 7/11/23 PER TWP  
 8/10/23 PER WCH/WCRC/WCRC  
 10/27/23 PER WCH/WCRC  
 11/30/23 PER WCRC  
 1/12/24 PER WCWR

REVISIONS

SCALE 0 AS NOTED  
 DR. SK CH. MC  
 P.M. MC  
 BOOK ---  
 JOB 21002863  
 SHEET NO. 01





Know what's below.

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 AGREE 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.

COPYRIGHT © 2024 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000



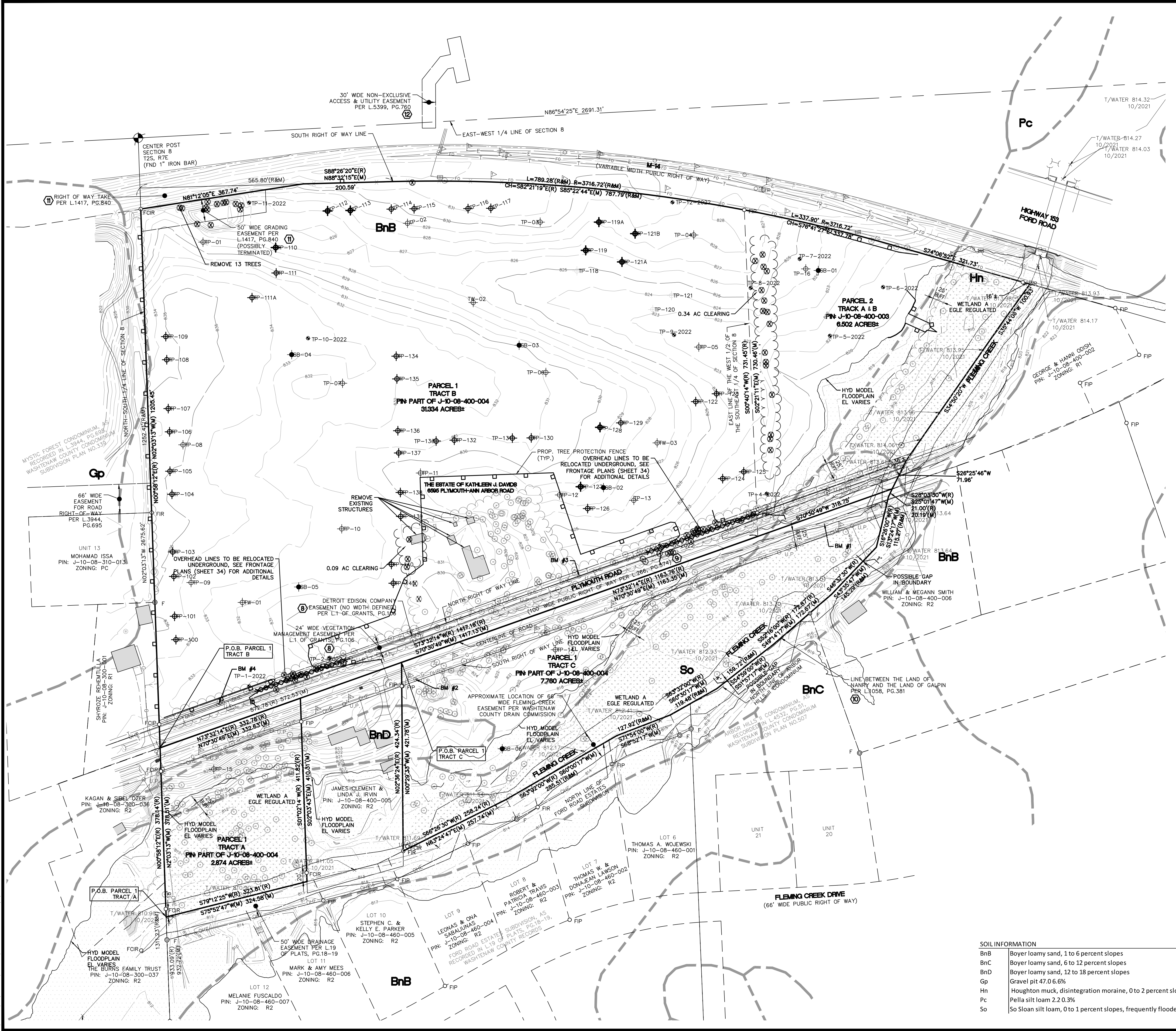
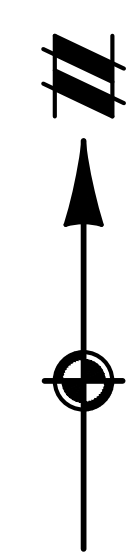
SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN

DATE  
APRIL 18, 2023

REVISIONS	DATE	DESCRIPTION
5/30/23	PER WCRC	
7/11/23	PER TWP	
8/10/23	PER WCD/WCRC	
10/27/23	PER WCD/WCRC	
11/30/23	PER WCD	
1/12/24	PER WCRC	

SCALE 0 50 100  
1" = 100 FEET  
DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO. 02



**NOTE**  
1. SEE SHEET 38 FOR SOIL BORING & TEST PIT LOGS

LEGEND	
	BOUNDARY LINE
	EXISTING EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING CURB AND GUTTER
	EXISTING FENCE
	EXISTING BUILDING
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	EXISTING STRUCTURE
	EXISTING WALL
	EXISTING WATER MAIN
	EXISTING SANITARY
	EXISTING GAS
	EXISTING STORM
	EXISTING OVERHEAD ELECTRICAL LINE
	EXISTING OVERHEAD TELEPHONE LINE
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	EXIST. UNSPECIFIED UTILITY
	EXISTING FLOODPLAIN
	EXISTING SOILS LIMIT
	EXISTING SOILS TYPE
	EXISTING SOIL BORING
	TEST PIT LOCATION (NOVEMBER 2021)
	TEST PIT LOCATION (SEPTEMBER 2022)
	EXISTING TEST WELL
	TEST PIT LOCATION - NOT GOOD
	PROP. TREE PROTECTION FENCE

SOIL INFORMATION	
BnB	Boyer loamy sand, 1 to 6 percent slopes
BnC	Boyer loamy sand, 6 to 12 percent slopes
BnD	Boyer loamy sand, 12 to 18 percent slopes
Gp	Gravel pit 47.0 6.6%
Hn	Houghton muck, disintegration moraine, 0 to 2 percent slopes
Pc	Pella silt loam 2.2 0.3%
So	So Sloan silt loam, 0 to 1 percent slopes, frequently flooded





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

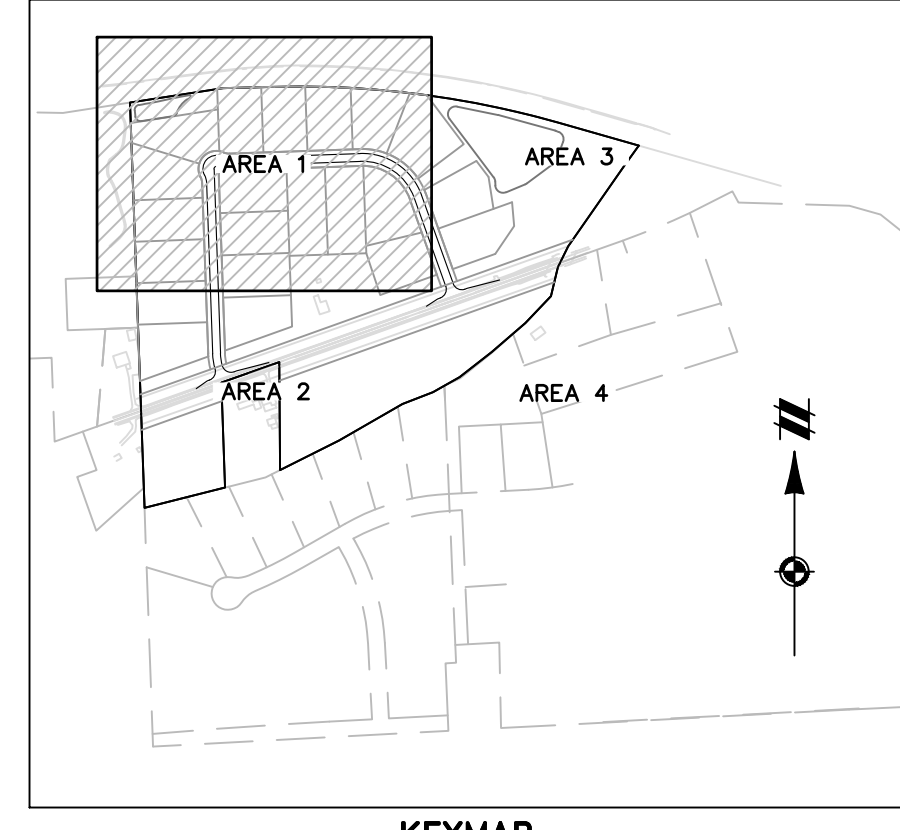


SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
EXISTING CONDITIONS AREA 1

DATE	DESCRIPTION
APRIL 18, 2023	
5/30/23	PER WCRC
7/11/23	PER TWP
8/10/23	PER WCHD/WCRC
10/27/23	PER WCHD/WCRC
11/30/23	PER WCRC
1/12/24	PER WCRC

REVISIONS	
SCALE	0 25 50
	1" = 50 FEET
DR.	SK CH. MC
P.M.	MC
BOOK	--
JOB	21002863
SHEET NO.	03



KEYMAP  
SCALE: 1" = 750 FEET

**BENCHMARK NOTES:**

- BM #1: SET MAG NAIL ON TOP OF WESTERLY MOST GUARDRAIL POST ON SOUTH SIDE OF PLYMOUTH ROAD  
ELEVATION: 821.64 (NAVD88)
- BM #2: FOUND BENCHMITE IN NORTH FACE OF UTILITY POLE IN SOUTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 827.67 (NAVD88)
- BM #3: SET MAG NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 825.47 (NAVD88)
- BM #4: SET PK NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 833.44 (NAVD88)

**SURVEY NOTES:**

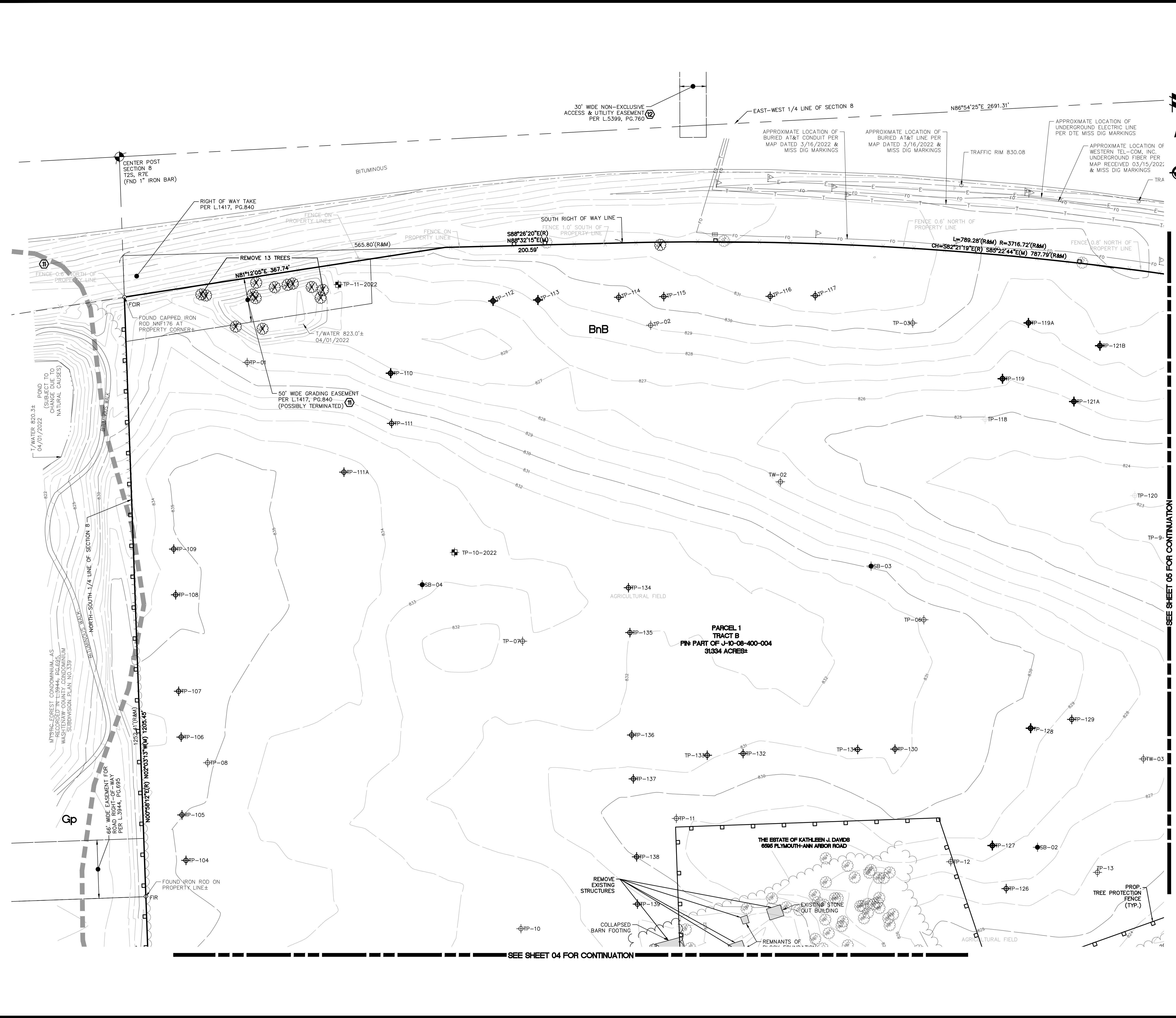
- BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAD83), SOUTH ZONE, GROUND DISTANCES, INTERNATIONAL FEET. MEASURED BEARINGS DIFFER FROM TITLE. VERTICAL DATUM IS BASED ON NAVD88.
  - THE SITE SHOWN HEREON IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED) ACCORDING TO MAP NUMBER 26161C0260E OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE APRIL 3, 2012.
  - WATER MAIN, STORM SEWER, SANITARY SEWER AND FRANCHISE UTILITY STRUCTURES HAVE BEEN FIELD LOCATED WHERE VISIBLE. UTILITY AND AS-BUILT MAPS HAVE BEEN REQUESTED AND SOME MAPS HAVE BEEN RECEIVED AT DATE OF THIS SURVEY. FRANCHISE UTILITY MAPS HAVE BEEN REQUESTED FROM THE APPROPRIATE FRANCHISE COMPANIES, BUT NOT ALL MAPS HAVE BEEN RECEIVED AT DATE OF SURVEY.
- NOTE: THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.
- NOTE TO THE CLIENT, INSURER, AND LENDER - SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.6.IV. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.

**LEGEND**

	BOUNDARY LINE
	EXISTING EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXISTING SETBACK
	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING CURB AND GUTTER
	EXISTING FENCE
	EXISTING BUILDING
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	EXISTING WATER MAIN
	EXISTING SANITARY
	EXISTING GAS
	EXISTING STORM
	EXISTING OVERHEAD ELECTRICAL LINE
	EXISTING OVERHEAD TELEPHONE LINE
	EXISTING CULVERT
	EXISTING CATCH BASIN/INLET
	EXISTING HYDRANT
	EXISTING VALVE
	EXISTING SANITARY SEWER
	EXISTING UNSPECIFIED UTILITY
	EXISTING SIGN
	EXISTING LIGHT POLE
	EXISTING EDGE OF WATER
	EXISTING FLOODPLAIN
	EXISTING SOIL BORING
	TEST PIT LOCATION (NOVEMBER 2021)
	TEST PIT LOCATION (SEPTEMBER 2022)
	EXISTING TEST WELL
	TEST PIT LOCATION - NOT GOOD
	SOILS BOUNDARY
	SOILS TEXT
	PROP. TREE PROTECTION FENCE

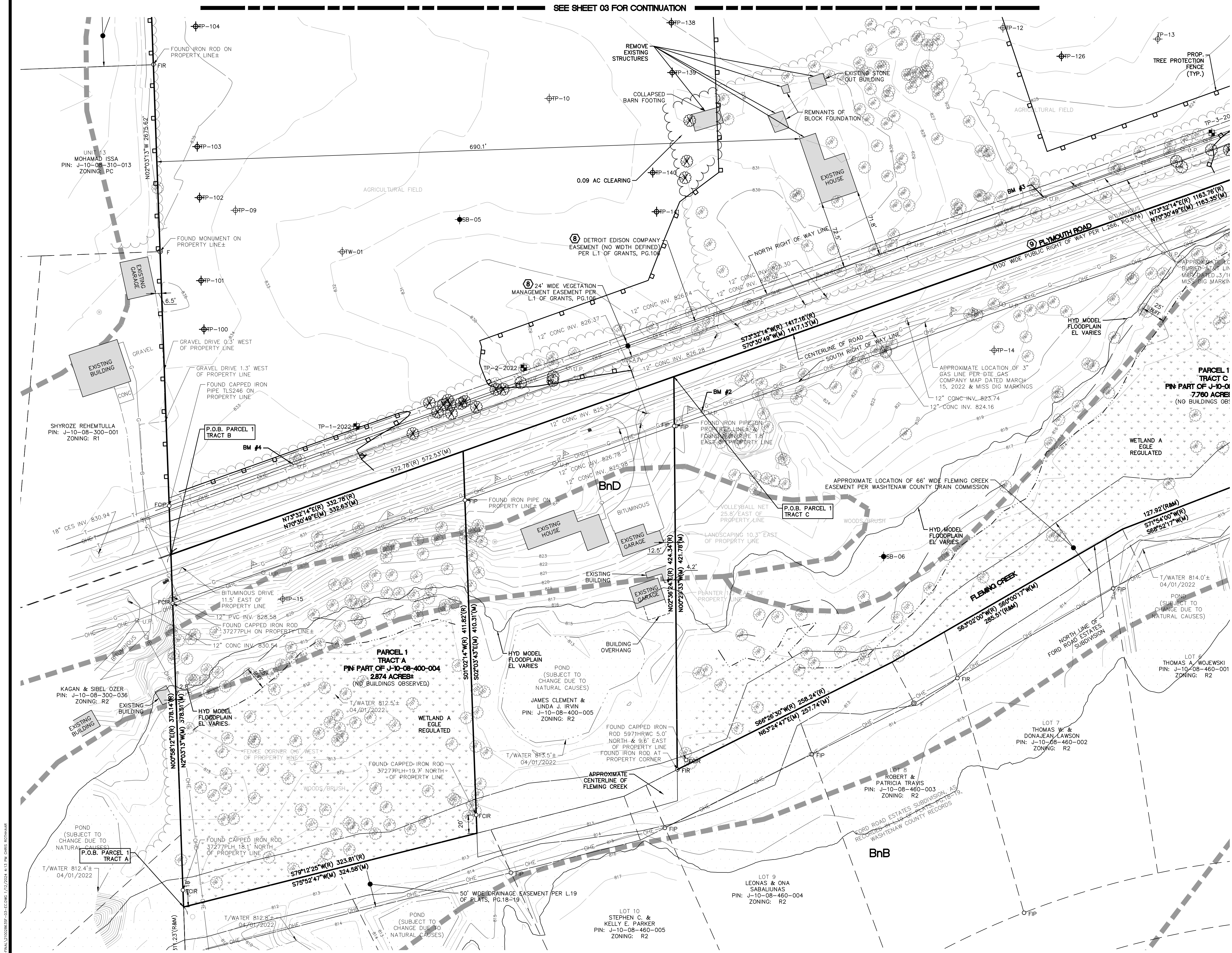
SEE SHEET 08 FOR CONTINUATION

SEE SHEET 04 FOR CONTINUATION



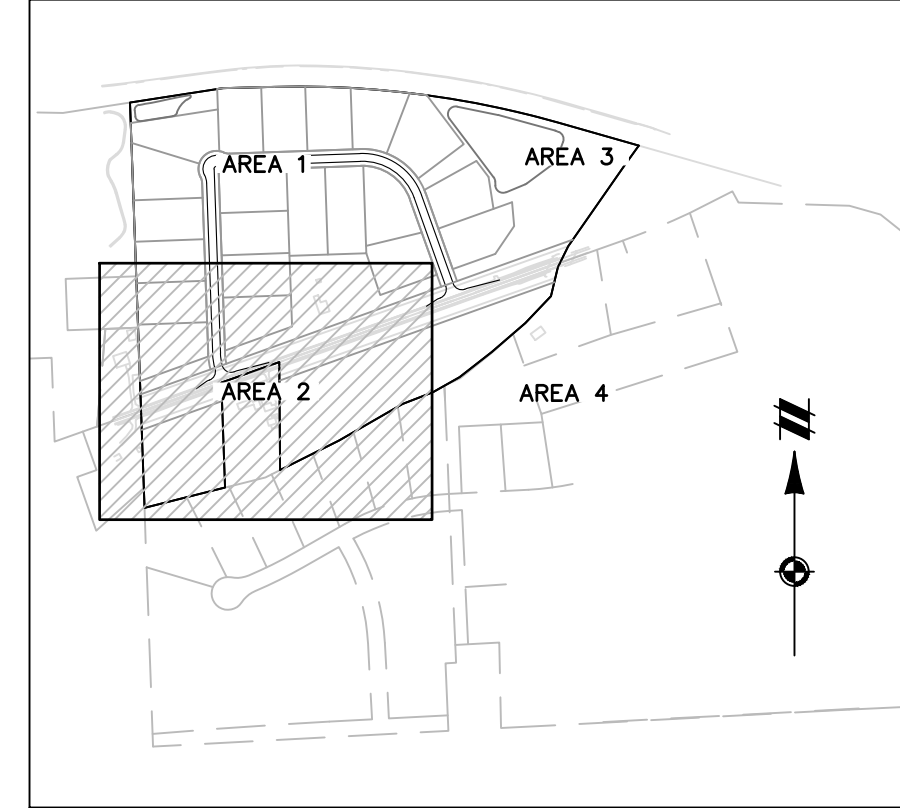
K:\21002863\PLAN\SET\UTIL-FINAL\21002863-03-EC-236-177/2024-4-13-PM-DMS-HOTHAM





SEE SHEET 03 FOR CONTINUATION

SEE SHEET 06 FOR CONTINUATION



**KEYMAP**  
SCALE: 1" = 750 FEET

**BENCHMARK NOTES:**

- BM #1: SET MAG NAIL ON TOP OF WESTERLY MOST GUARDRAIL POST ON SOUTH SIDE OF PLYMOUTH ROAD ELEVATION: 821.64 (NAVD88)
- BM #2: FOUND BENCHITE IN NORTH FACE OF UTILITY POLE IN SOUTH RIGHT OF WAY OF PLYMOUTH ROAD ELEVATION: 827.67 (NAVD88)
- BM #3: SET MAG NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD ELEVATION: 825.47 (NAVD88)
- BM #4: SET PK NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD ELEVATION: 833.44 (NAVD88)

**SURVEY NOTES:**

1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (MAD83), SOUTH ZONE. GROUND DISTANCES, INTERNATIONAL FEET. MEASURED BEARINGS DIFFER FROM TITLE. VERTICAL DATUM IS BASED ON NAVD88.
2. THE SITE SHOWN HEREON IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED) ACCORDING TO MAP NUMBER 26161C0260E OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE APRIL 3, 2012.
3. WATER MAIN, STORM SEWER, SANITARY SEWER AND FRANCHISE UTILITY STRUCTURES HAVE BEEN FIELD LOCATED WHERE VISIBLE. UTILITY AND AS-BUILT MAPS HAVE BEEN REQUESTED AND SOME MAPS HAVE BEEN RECEIVED AT DATE OF THIS SURVEY. FRANCHISE UTILITY MAPS HAVE BEEN REQUESTED FROM THE APPROPRIATE FRANCHISE COMPANIES, BUT NOT ALL MAPS HAVE BEEN RECEIVED AT DATE OF SURVEY.

NOTE: THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.

NOTE TO THE CLIENT, INSURER, AND LENDER - SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.6.IV. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.

**LEGEND**

	BOUNDARY LINE
	EXISTING EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXISTING SETBACK
	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING CURB AND GUTTER
	EXISTING FENCE
	EXISTING BUILDING
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	EXISTING WATER MAIN
	EXISTING SANITARY
	EXISTING GAS
	EXISTING STORM
	EXISTING OVERHEAD ELECTRICAL LINE
	EXISTING OVERHEAD TELEPHONE LINE
	EXISTING CULVERT
	EXISTING CATCH BASIN/INLET
	EXISTING HYDRANT
	EXISTING SANITARY SEWER
	EXISTING UNSPECIFIED UTILITY
	EXISTING SIGN
	EXISTING LIGHT POLE
	EXISTING EDGE OF WATER
	EXISTING FLOODPLAIN
	EXISTING SOIL BORING
	TEST PIT LOCATION (NOVEMBER 2021)
	TEST PIT LOCATION (SEPTEMBER 2022)
	EXISTING TEST WELL
	TEST PIT LOCATION - NOT GOOD
	SOILS BOUNDARY
	SOILS TEXT
	PROP. TREE PROTECTION FENCE

**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
www.atwell-group.com  
866.850.4200  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4060

SECTION 08	TOWN 02 NORTH, RANGE 07 EAST	SUPERIOR TOWNSHIP	WASHTEWAW COUNTY, MICHIGAN												
CLIENT	LOMBARDO HOMES	KINSLEY DEVELOPMENT	FINAL SITE PLAN												
DATE	APRIL 18, 2023														
REVISIONS	<table border="0" style="width: 100%;"> <tr> <td>5/30/23</td> <td>PER WCRC</td> </tr> <tr> <td>7/11/23</td> <td>PER TWP</td> </tr> <tr> <td>8/10/23</td> <td>PER WCD/WCRC</td> </tr> <tr> <td>10/27/23</td> <td>PER WCD/WCRC</td> </tr> <tr> <td>11/30/23</td> <td>PER WCRC</td> </tr> <tr> <td>1/12/24</td> <td>PER WCRC</td> </tr> </table>			5/30/23	PER WCRC	7/11/23	PER TWP	8/10/23	PER WCD/WCRC	10/27/23	PER WCD/WCRC	11/30/23	PER WCRC	1/12/24	PER WCRC
5/30/23	PER WCRC														
7/11/23	PER TWP														
8/10/23	PER WCD/WCRC														
10/27/23	PER WCD/WCRC														
11/30/23	PER WCRC														
1/12/24	PER WCRC														
SCALE	<p>1" = 50 FEET</p>														
DR.	SK CH MC														
P.M. MC															
BOOK	---														
JOB	21002863														
SHEET NO.	04														





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



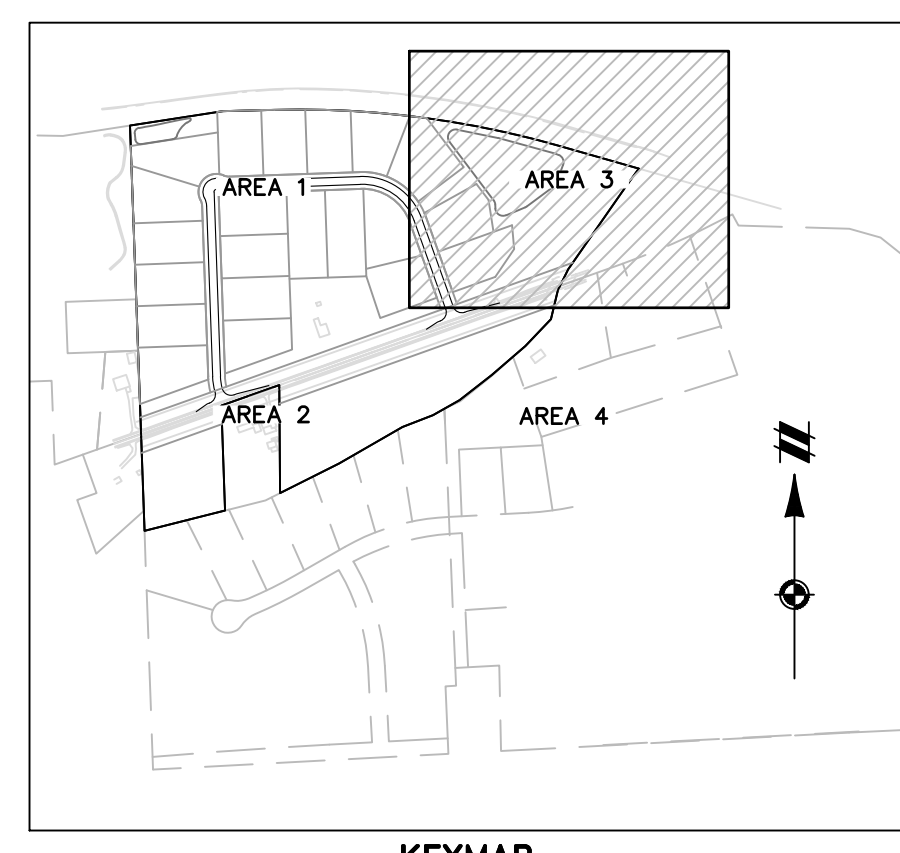
SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
EXISTING CONDITIONS AREA 3

DATE  
APRIL 18, 2023

5/30/23	PER WCRC
7/11/23	PER TWP
8/10/23	PER WCD/WCRC/WCRC
10/27/23	PER WCD/WCRC
11/30/23	PER WCRC
1/12/24	PER WCRC

REVISIONS	
SCALE	0 25 50
	1" = 50 FEET
DR.	SK CH. MC
P.M.	MC
BOOK	--
JOB	21002863
SHEET NO.	05



KEYMAP  
SCALE: 1" = 750 FEET

**BENCHMARK NOTES:**

- BM #1: SET MAG NAIL ON TOP OF WESTERLY MOST GUARDRAIL POST ON SOUTH SIDE OF PLYMOUTH ROAD  
ELEVATION: 821.64 (NAVD88)
- BM #2: FOUND BENCHITE IN NORTH FACE OF UTILITY POLE IN SOUTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 827.67 (NAVD88)
- BM #3: SET MAG NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 825.47 (NAVD88)
- BM #4: SET PK NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD  
ELEVATION: 833.44 (NAVD88)

**SURVEY NOTES:**

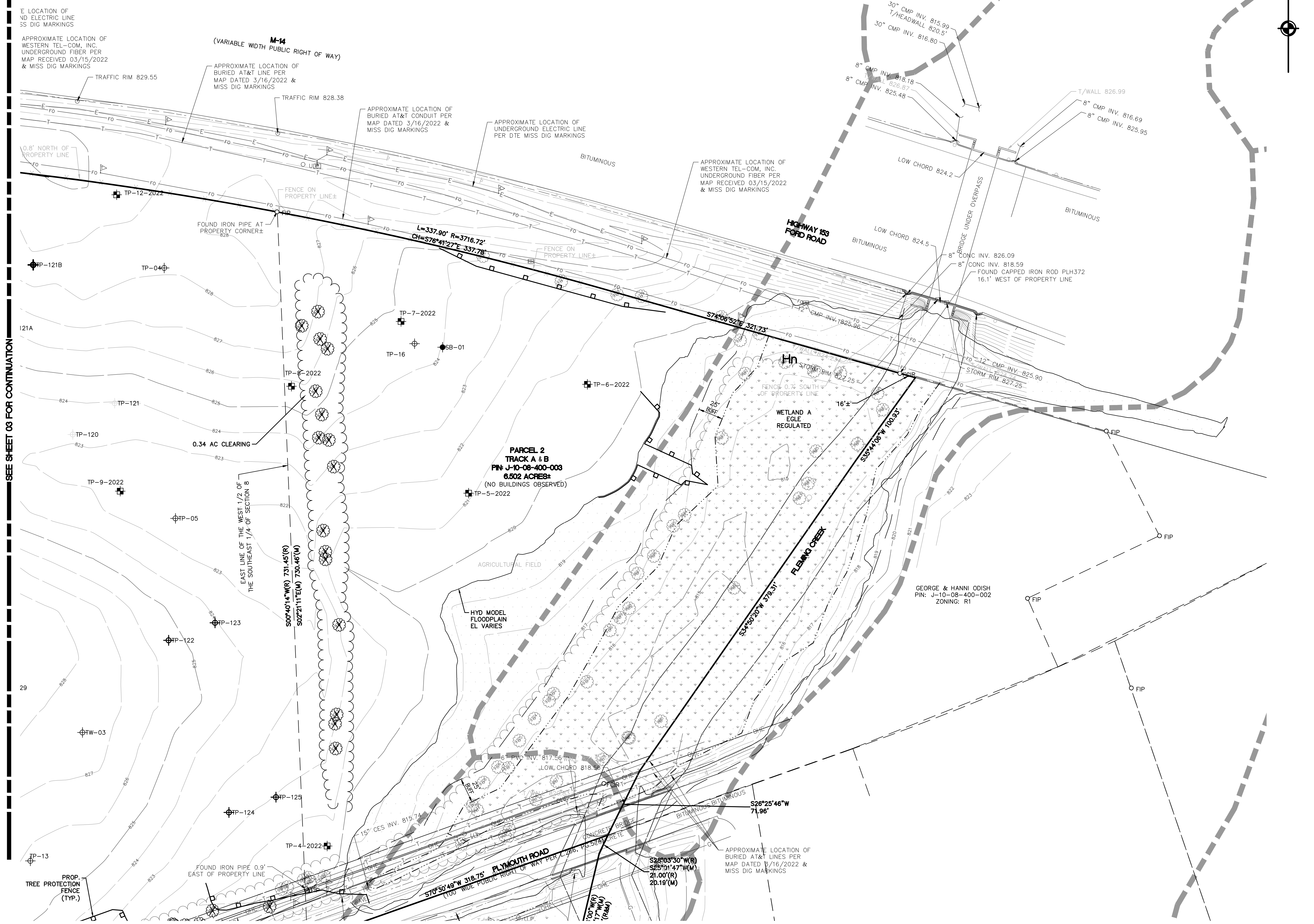
- BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAD83), SOUTH ZONE, GROUND DISTANCES, INTERNATIONAL FEET. MEASURED BEARINGS DIFFER FROM TITLE. VERTICAL DATUM IS BASED ON NAVD88.
- THE SITE SHOWN HEREON IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED) ACCORDING TO MAP NUMBER 26181C0260E OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE APRIL 3, 2012.
- WATER MAIN, STORM SEWER, SANITARY SEWER AND FRANCHISE UTILITY STRUCTURES HAVE BEEN FIELD LOCATED WHERE VISIBLE. UTILITY AND AS-BUILT MAPS HAVE BEEN REQUESTED AND SOME MAPS HAVE BEEN RECEIVED AT DATE OF THIS SURVEY. FRANCHISE UTILITY MAPS HAVE BEEN REQUESTED FROM THE APPROPRIATE FRANCHISE COMPANIES, BUT NOT ALL MAPS HAVE BEEN RECEIVED AT DATE OF SURVEY.

NOTE: THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.

NOTE TO THE CLIENT, INSURER, AND LENDER - SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.I.V. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.

**LEGEND**

	BOUNDARY LINE
	EXISTING EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXISTING SETBACK
	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING CURB AND GUTTER
	EXISTING FENCE
	EXISTING BUILDING
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	EXISTING WATER MAIN
	EXISTING SANITARY
	EXISTING GAS
	EXISTING STORM
	EXISTING OVERHEAD ELECTRICAL LINE
	EXISTING OVERHEAD TELEPHONE LINE
	EXISTING CULVERT
	EXISTING CATCH BASIN/INLET
	EXISTING HYDRANT
	EXISTING VALVE
	EXISTING SANITARY SEWER
	EXISTING UNSPECIFIED UTILITY
	EXISTING SIGN
	EXISTING LIGHT POLE
	EXISTING EDGE OF WATER
	EXISTING FLOODPLAIN
	EXISTING SOIL BORING
	TEST PIT LOCATION (NOVEMBER 2021)
	TEST PIT LOCATION (SEPTEMBER 2022)
	EXISTING TEST WELL
	TEST PIT LOCATION - NOT GOOD
	SOILS BOUNDARY
	SOILS TEXT
	PROP. TREE PROTECTION FENCE



SEE SHEET 03 FOR CONTINUATION

SEE SHEET 06 FOR CONTINUATION

K:\VTD\811\2023\PLAN SET\UTIL-FINAL\21002863-05-EC-236-1/27/2023-4.13 PM.DWG (R) (M)





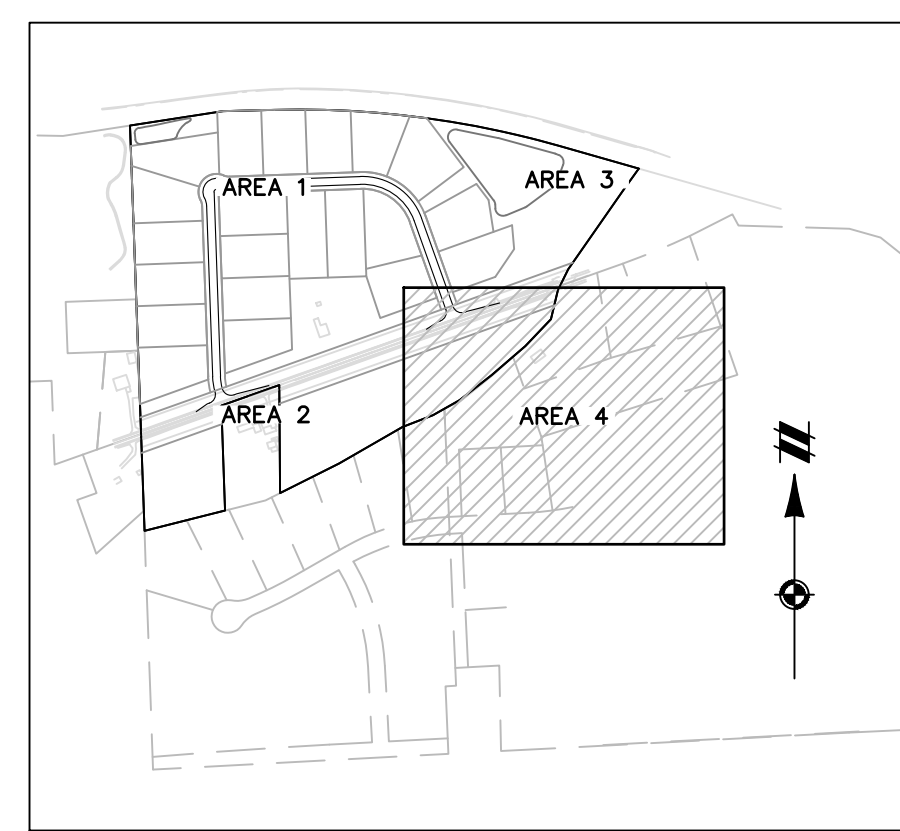
Know what's below.  
Call before you dig.

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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734-994-4600  
866.850.4200



KEYMAP  
SCALE: 1" = 750 FEET

**BENCHMARK NOTES:**

- BM #1: SET MAG NAIL ON TOP OF WESTERLY MOST GUARDRAIL POST ON SOUTH SIDE OF PLYMOUTH ROAD. ELEVATION: 821.64 (NAVD88)
- BM #2: FOUND BENCHMARK IN NORTH FACE OF UTILITY POLE IN SOUTH RIGHT OF WAY OF PLYMOUTH ROAD. ELEVATION: 827.67 (NAVD88)
- BM #3: SET MAG NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD. ELEVATION: 825.47 (NAVD88)
- BM #4: SET PK NAIL IN EAST FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF PLYMOUTH ROAD. ELEVATION: 833.44 (NAVD88)

**SURVEY NOTES:**

- BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAVD88), SOUTH ZONE. GROUND DISTANCES, INTERNATIONAL FEET, MEASURED BEARINGS DIFFER FROM TITLE. VERTICAL DATUM IS BASED ON NAVD88.
- THE SITE SHOWN HEREON IS LOCATED WITHIN ZONE X (AREAS DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND ZONE A (NO BASE FLOOD ELEVATIONS DETERMINED) ACCORDING TO MAP NUMBER 26161C0260E OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE APRIL 3, 2012.
- WATER MAIN, STORM SEWER, SANITARY SEWER AND FRANCHISE UTILITY STRUCTURES HAVE BEEN FIELD LOCATED WHERE VISIBLE. UTILITY AND AS-BUILT MAPS HAVE BEEN REQUESTED AND SOME MAPS HAVE BEEN RECEIVED AT DATE OF THIS SURVEY. FRANCHISE UTILITY MAPS HAVE BEEN REQUESTED FROM THE APPROPRIATE FRANCHISE COMPANIES, BUT NOT ALL MAPS HAVE BEEN RECEIVED AT DATE OF SURVEY.

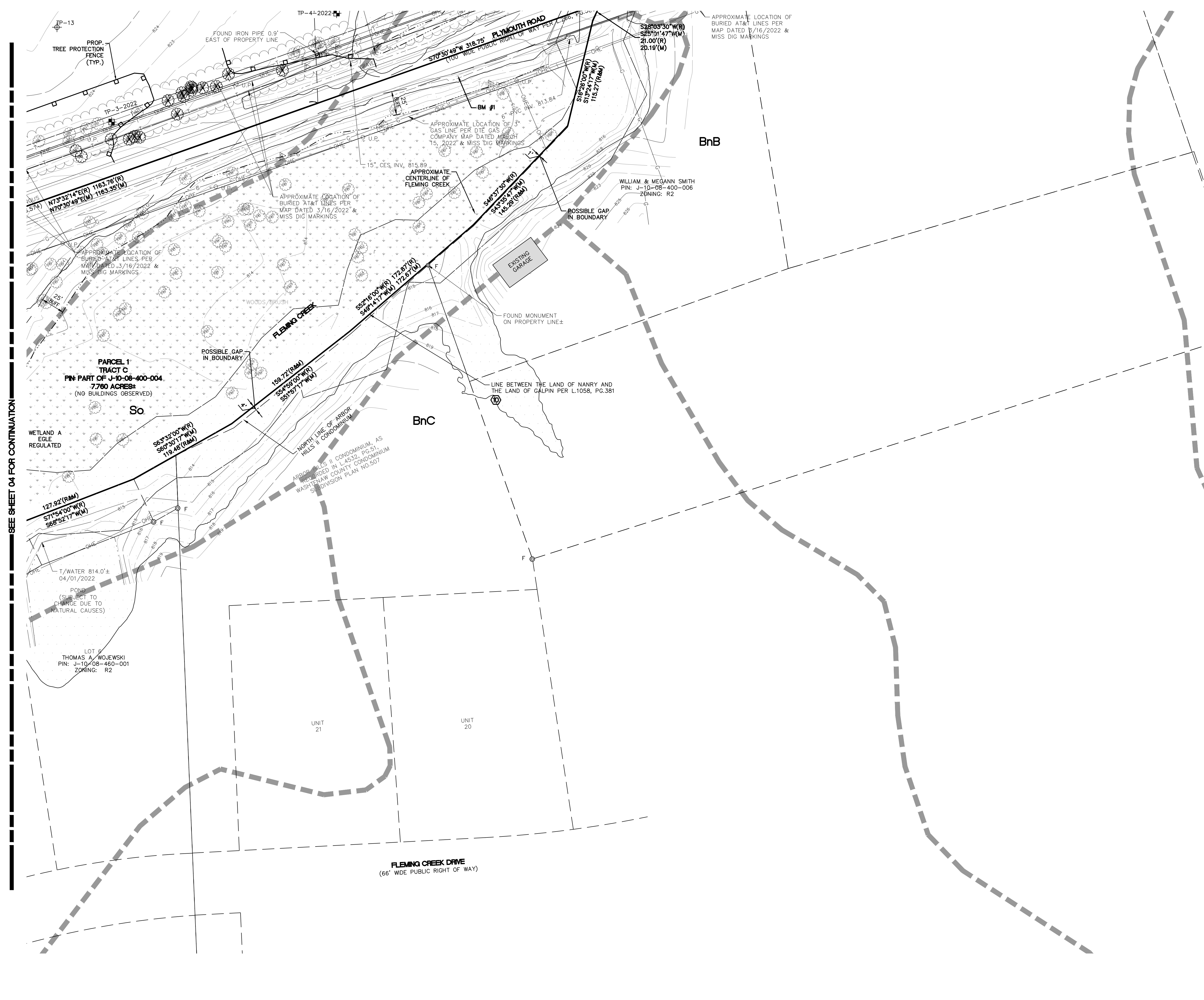
NOTE: THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED.  
NOTE TO THE CLIENT, INSURER, AND LENDER - SOURCE INFORMATION FROM PLANS AND MARKINGS WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.I.V. TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, IN WHICH CASE THE SURVEYOR SHALL NOTE ON THE PLAT OR MAP HOW THIS AFFECTED THE SURVEYOR'S ASSESSMENT OF THE LOCATION OF THE UTILITIES. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION AND/OR A PRIVATE UTILITY LOCATE REQUEST MAY BE NECESSARY.

**LEGEND**

	BOUNDARY LINE
	EXISTING EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXISTING SETBACK
	EXISTING CONTOUR
	EXISTING TREE LINE
	EXISTING CURB AND GUTTER
	EXISTING FENCE
	EXISTING BUILDING
	EXISTING WETLAND
	EXISTING WETLAND BUFFER
	EXISTING WATER MAIN
	EXISTING SANITARY
	EXISTING GAS
	EXISTING STORM
	EXISTING OVERHEAD ELECTRICAL LINE
	EXISTING OVERHEAD TELEPHONE LINE
	EXISTING CULVERT
	EXISTING CATCH BASIN/INLET
	EXISTING VALVE
	EXISTING HYDRANT
	EXISTING SANITARY SEWER
	EXISTING UNSPECIFIED UTILITY
	EXISTING SIGN
	EXISTING LIGHT POLE
	EXISTING EDGE OF WATER
	EXISTING FLOODPLAIN
	EXISTING SOIL BORING
	TEST PIT LOCATION (NOVEMBER 2021)
	TEST PIT LOCATION (SEPTEMBER 2022)
	EXISTING TEST WELL
	TEST PIT LOCATION - NOT GOOD
	SOILS BOUNDARY
	SOILS TEXT
	PROP. TREE PROTECTION FENCE

SEE SHEET 04 FOR CONTINUATION

SEE SHEET 05 FOR CONTINUATION



CLIENT: LOMBARDO HOMES  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

PROJECT: KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
EXISTING CONDITIONS AREA 4

DATE: APRIL 18, 2023

5/30/23	PER WCWRC
7/11/23	PER TWP
8/10/23	PER WCHD/WCRC/WCRC
10/27/23	PER WCHD/WCRC
11/30/23	PER WCRC
1/12/24	PER WCWRC

REVISIONS	
SCALE	0 25 50
1" = 50 FEET	
DR.	SK CH. MC
P.M.	MC
BOOK	--
JOB	21002863
SHEET NO.	06

K:\VTD\2023\KINSLEY\KINSLEY\_FINAL\21002863.dwg (17/2/2023 4:13 PM) DMS: BODHMAN





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000

### NATURAL FEATURES NOTE

NATURAL FEATURES ON THE SITE CONSIST OF WETLAND, TREES, SLOPES AND AGRICULTURAL FIELD. WITH TWO MAIN HIGH POINTS ON THE SITE, ONE IN THE NORTHWEST PORTION AND THE SECOND SOUTHWEST, THE TOPOGRAPHY GENERALLY SLOPES NORTHEAST TO SOUTHWEST TOWARD THE FLEMING CREEK IN THE LOWER THIRD OF THE PROPERTY. THERE IS APPROXIMATELY 20 FEET OF TOPOGRAPHIC RELIEF ACROSS THE SITE. THE SITE IS RELATIVELY FLAT WITH THE STEEPEST SLOPE AT ROUGHLY 8%.

THERE ARE 2 WETLANDS ON THE SITE. THE LARGE CONTIGUOUS RIVERINE WETLAND (A) RUNNING WEST TO EAST ALONG FLEMING CREEK ALONG THE SOUTH (IN THE WEST) AND NORTH (IN THE EAST) SIDES OF PLYMOUTH ROAD, CROSSING AT THE APPROXIMATE SPLIT OF PARCELS 1 AND 2. WETLAND B IS A FORESTED SCRUB SHRUB WETLAND AND IS LOCATED IN THE SOUTH CENTER OF PARCEL 1 ON THE EXISTING HOME SITE THAT IS TO REMAIN. THE ON SITE DETENTION BASIN IS PROPOSED TO OUTLET UPSTREAM OF WETLAND A.

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 AND BOXELDER RANGING FROM 6"-57" WITH THE VAST MAJORITY IN THE 7"-17" RANGE.

### SOIL INFORMATION

- BnB Boyer loamy sand, 1 to 6 percent slopes
- BnC Boyer loamy sand, 6 to 12 percent slopes
- BnD Boyer loamy sand, 12 to 18 percent slopes
- Gp Gravel pit 47.0 6.6%
- Hn Houghton muck, disintegration moraine, 0 to 2 percent slopes
- Pc Pella silt loam 2.2 0.3%
- So So Sloan silt loam, 0 to 1 percent slopes, frequently flooded

### WETLAND NOTE

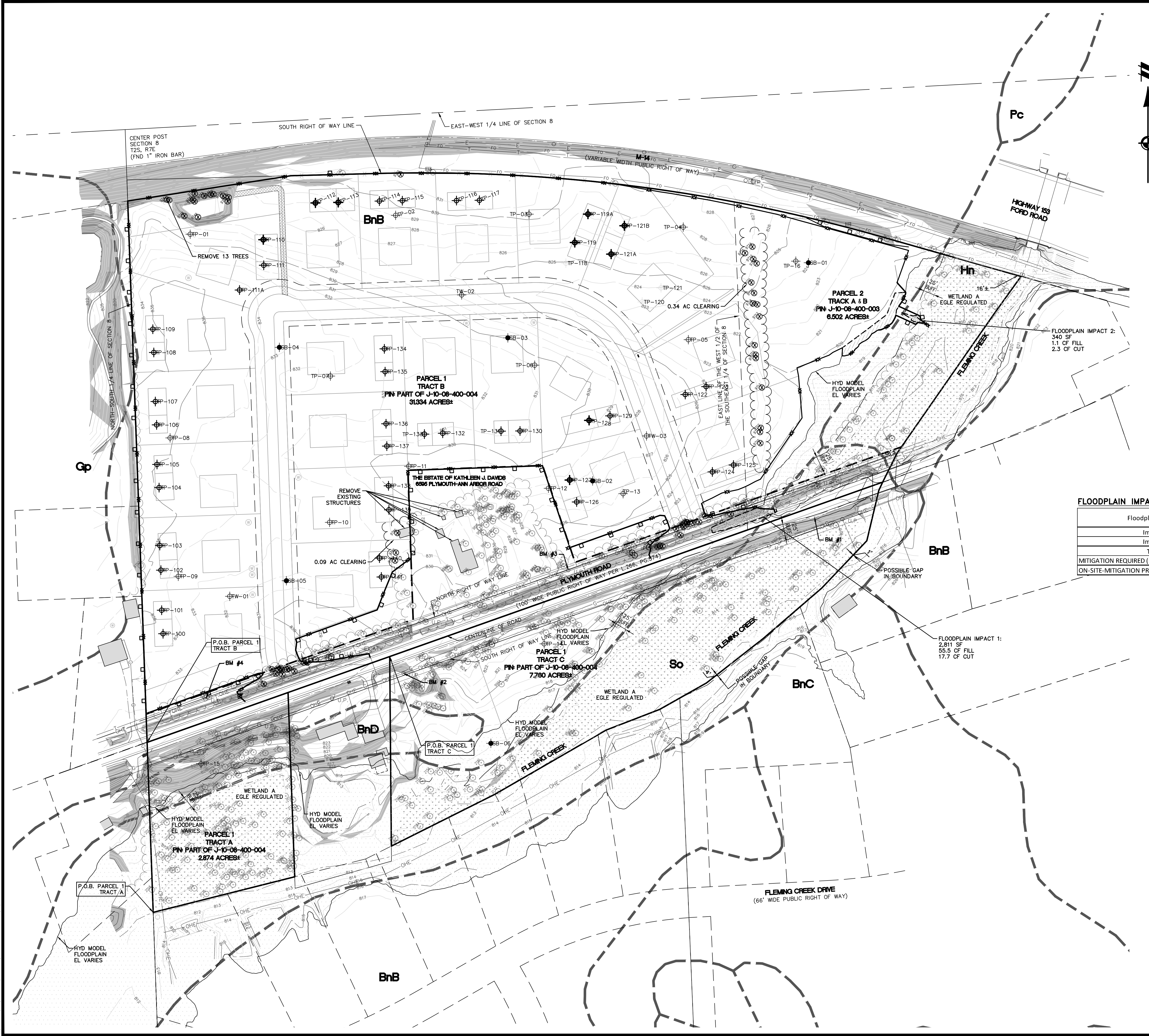
THERE ARE REGULATED WETLANDS ONSITE BUT THERE ARE NO PROPOSED IMPACTS WITHIN THE BOUNDARIES.

### FLOODPLAIN IMPACTS AND MITIGATION SUMMARY

Floodplain Impacts	Estimated Floodplain Fill (CY)	Estimated Floodplain Cut (CY)	Estimated Net Impact Volume (cubic yards)
Impact 1	55.5	17.7	38 FILL
Impact 2	1.1	2.3	1 CUT
<b>Total</b>	<b>57</b>	<b>20</b>	<b>37 FILL</b>
MITIGATION REQUIRED (1" TOTAL FLOODPLAIN FILL)	-	-	37 CF OF MITIGATION
ON-SITE MITIGATION PROVIDED	-	-	62 CF

### LEGEND

- BOUNDARY LINE
- EXISTING EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EXISTING SETBACK
- EXISTING CONTOUR
- EXISTING TREE LINE
- EXISTING CURB AND GUTTER
- EXISTING FENCE
- EXISTING BUILDING
- EXISTING WETLAND
- EXIST. WETLAND BUFFER
- EXISTING WATER MAIN
- EXISTING SANITARY
- EXISTING GAS
- EXISTING STORM
- EXISTING OVERHEAD ELECTRICAL LINE
- EXISTING OVERHEAD TELEPHONE LINE
- EXIST. CULVERT
- EXIST. CATCH BASIN/INLET
- EXIST. HYDRANT
- EXIST. VALVE
- EXIST. SANITARY SEWER
- EXIST. UNSPECIFIED UTILITY
- EXIST. SIGN
- EXIST. LIGHT POLE
- EXISTING EDGE OF WATER
- EXISTING TEST PIT LOCATION
- SOILS BOUNDARY
- SOILS TEXT
- 25%+ SLOPES
- 12%-25% SLOPES
- FLOOD PLAN
- EXISTING WETLAND
- FLOOD PLAN IMPACT AREA
- FLOOD PLAN MITIGATION AREA
- PROP. SILT FENCE
- PROP. TREE PROTECTION FENCE



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
NATURAL FEATURES PLAN

DATE  
APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS

SCALE 0 50 100  
1" = 100 FEET

DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO. 07





Know what's below.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE CONTRACTOR. 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.

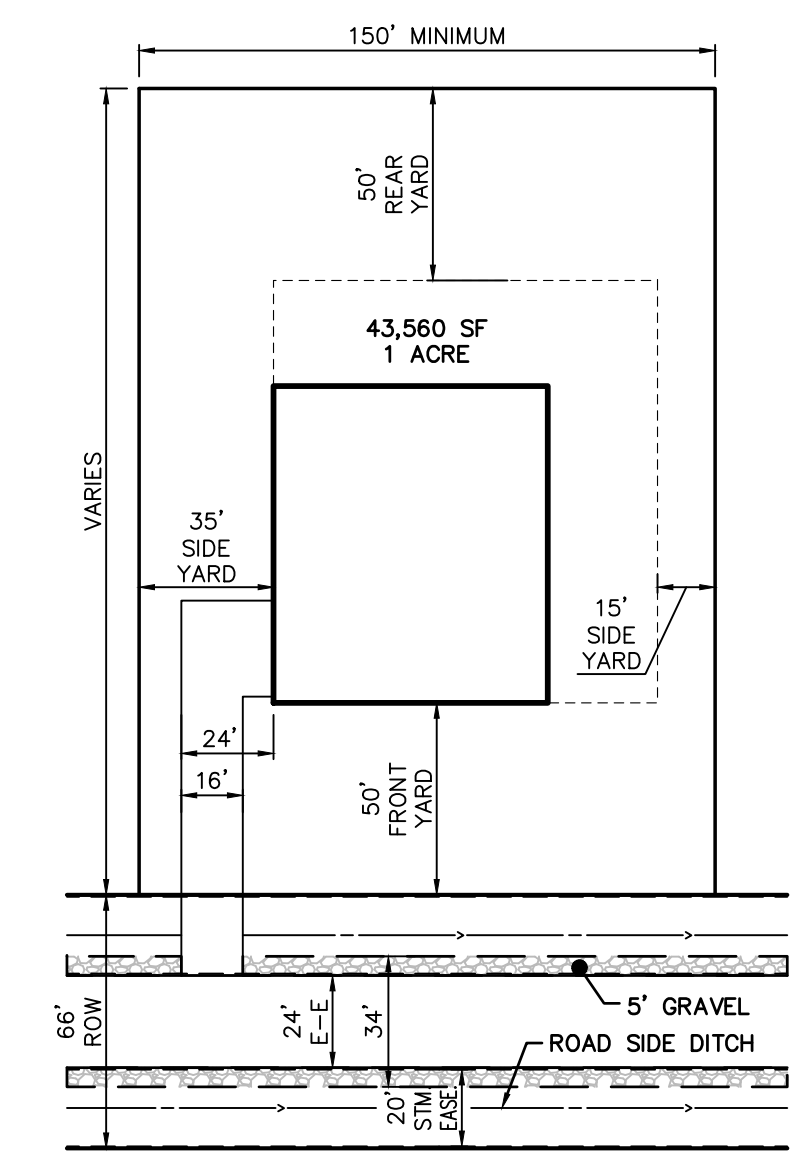
COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
OVERALL LAYOUT PLAN

DATE  
APRIL 18, 2023  
5/30/23 PER WCWRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCWR  
10/27/23 PER WCHD/WCWR  
11/30/23 PER WCRC  
1/12/24 PER WCWRC  
REVISIONS  
SCALE 0 50 100  
1" = 100 FEET  
DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 08



UNIT DETAIL  
SCALE: 1" = 50 FEET

LOT NO.	AREA	FRONTAGE
1	48566.67	153'
2	43795.96	162'
3	43808.00	162'
4	43820.03	162'
5	47485.38	150'
6	49769.54	150'
7	43837.13	172'
8	43678.30	172'
9	43620.12	177'
10	43579.06	153'
11	55514.66	185'
12	43596.12	169'
13	45718.01	174'
14	44934.40	187'
15	48406.47	285'
16	51220.43	150'
17	51208.03	150'
18	43742.07	165'
19	43724.90	165'
20	43725.64	165'
21	44604.36	194'

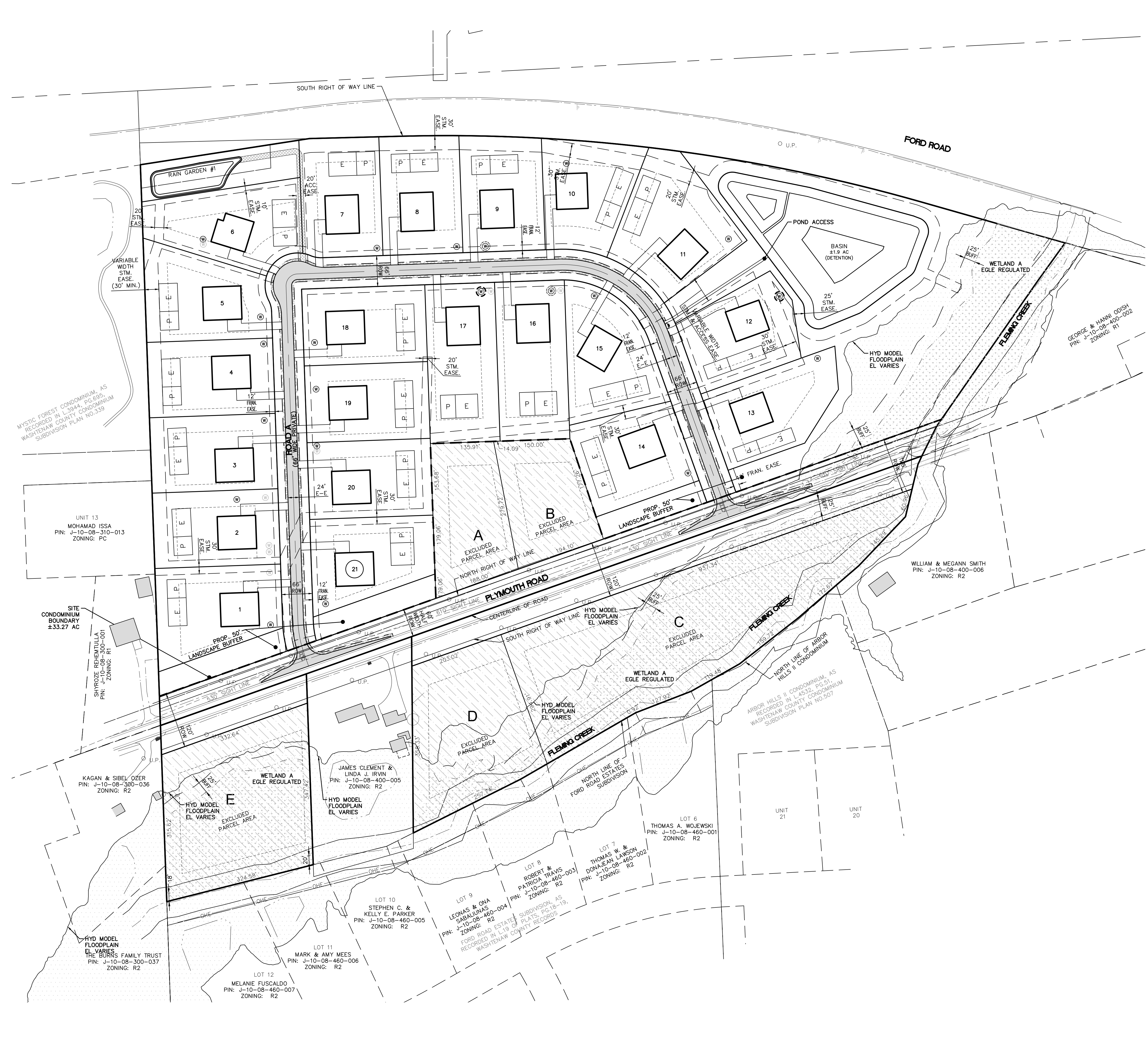
LOT NO.	AREA	FRONTAGE
A	48613.56	180'
B	44721.51	188'
C	186812.20	905'
D	82214.95	220'
E	105222.60	332'

### LAYOUT NOTES

- THE DEVELOPMENT WILL CONTAIN PRIVATE ROADS. THE PROPOSED CONNECTION WILL BE COORDINATED WITH THE WASHTENAW COUNTY ROAD COMMISSION.
- NO ON-STREET PARKING IS PROPOSED. UNIT GARAGE AND DRIVEWAY PARKING EXCEEDS CITY PARKING REQUIREMENTS. NO PARKING SIGNAGE TO BE PLACED IN AREAS OF ROAD CURVE RADI LESS THAN 230'.
- ALL ON-SITE SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE MMUTCD.
- BUILDING SIZES SHOWN ARE FOR REPRESENTATIVE PURPOSES AND ARE SUBJECT TO CHANGE DURING PLOT PLAN CREATION.
- SEE SHEET 36 FOR OPEN SPACE EXHIBIT.
- SEE SHEET 36 FOR FIRE TRUCK PATH EXHIBIT
- NO OUTDOOR STREET LIGHTING IS PROPOSED ONSITE.

### LEGEND

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	PROP. SETBACK
	PROP. LOT LINE
	PROP. ROAD CENTERLINE
	PROP. BACK OF CURB
	PROP. ASPH.
	PROP. DETENTION
	PROP. EASEMENT
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL
	DRY/ABANDONED WELL
	PROP. SEPTIC FIELD
	P = PRIMARY
	E = EXPANSION
	PROP. CONDOMINIUM BOUNDARY
	EXCLUDED PARCEL AREA
	EXISTING FLOODPLAIN



K:\V\21002863\PLAN SET\21002863-08-08.dwg 1/27/2024 4:13 PM DWG: 801444M













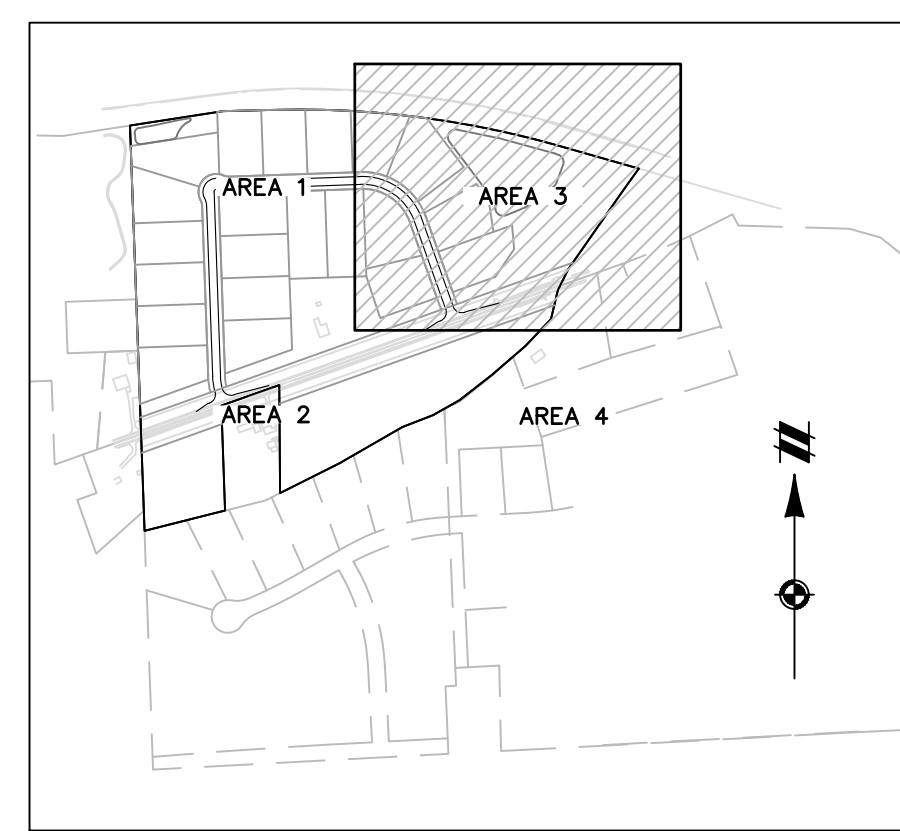
Know what's below.  
Call before you dig.

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.

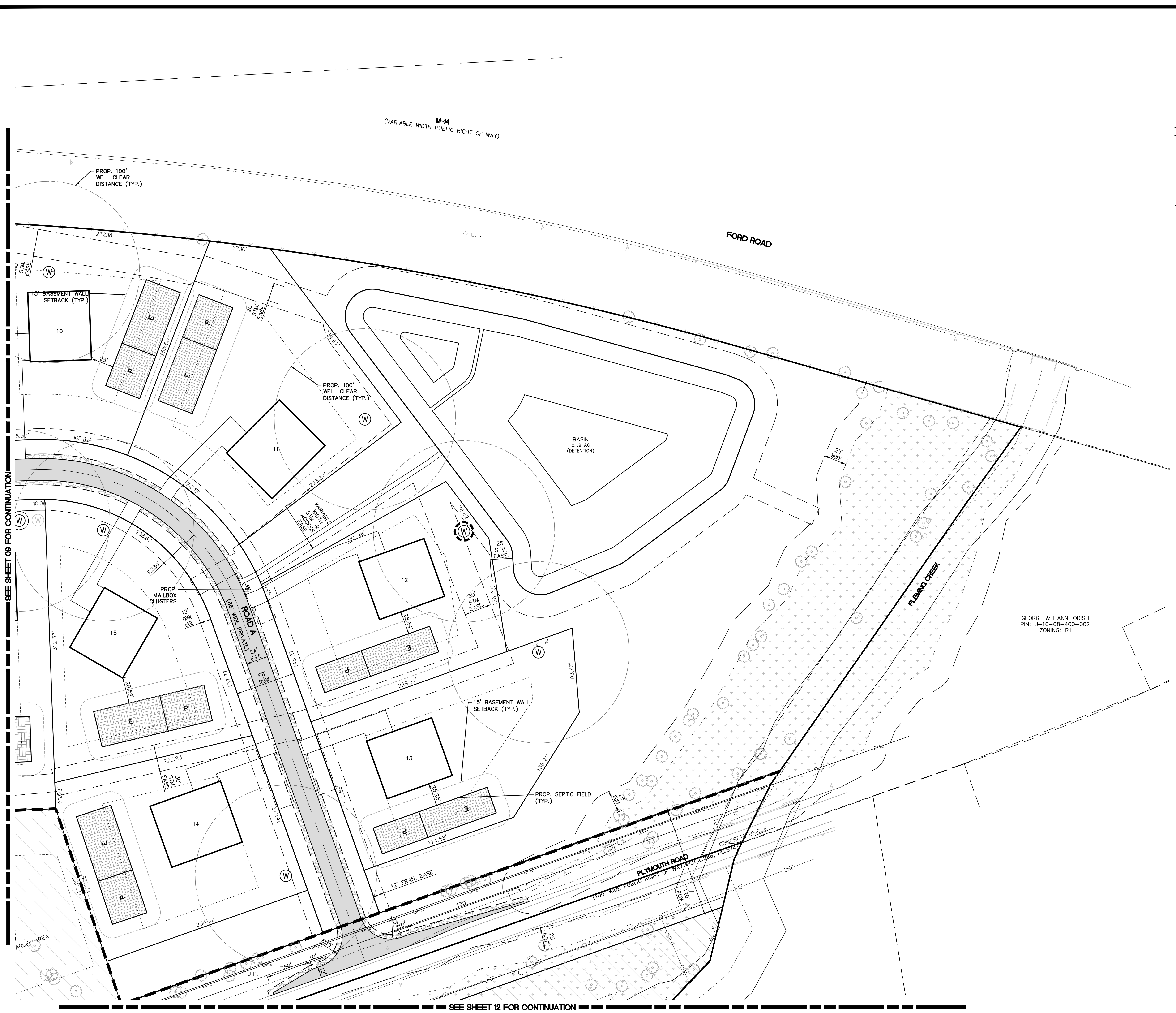
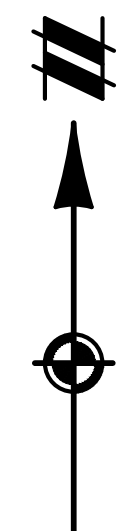
NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000



KEYMAP  
SCALE: 1" = 750 FEET



SEE SHEET 09 FOR CONTINUATION

SEE SHEET 12 FOR CONTINUATION

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	PROP. SETBACK
	PROP. LOT LINE
	PROP. ROAD CENTERLINE
	PROP. BACK OF CURB
	PROP. ASPH.
	PROP. GRAVEL
	PROP. DETENTION
	PROP. EASEMENT
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL
	DRY/ABANDONED WELL
	PROP. SEPTIC FIELD
	P = PRIMARY
	E = EXPANSION
	PROP. CONDOMINIUM BOUNDARY

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
LAYOUT PLAN AREA 3

DATE: APRIL 18, 2023

5/30/23 PER WCWRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCWC  
10/27/23 PER WCHD/WCWC  
11/30/23 PER WCRC  
1/12/24 PER WCWRC

REVISIONS  
SCALE 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
P.M. MC  
BOOK ---  
JOB 21002863  
SHEET NO.





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
LAYOUT PLAN AREA 4

DATE  
APRIL 18, 2023

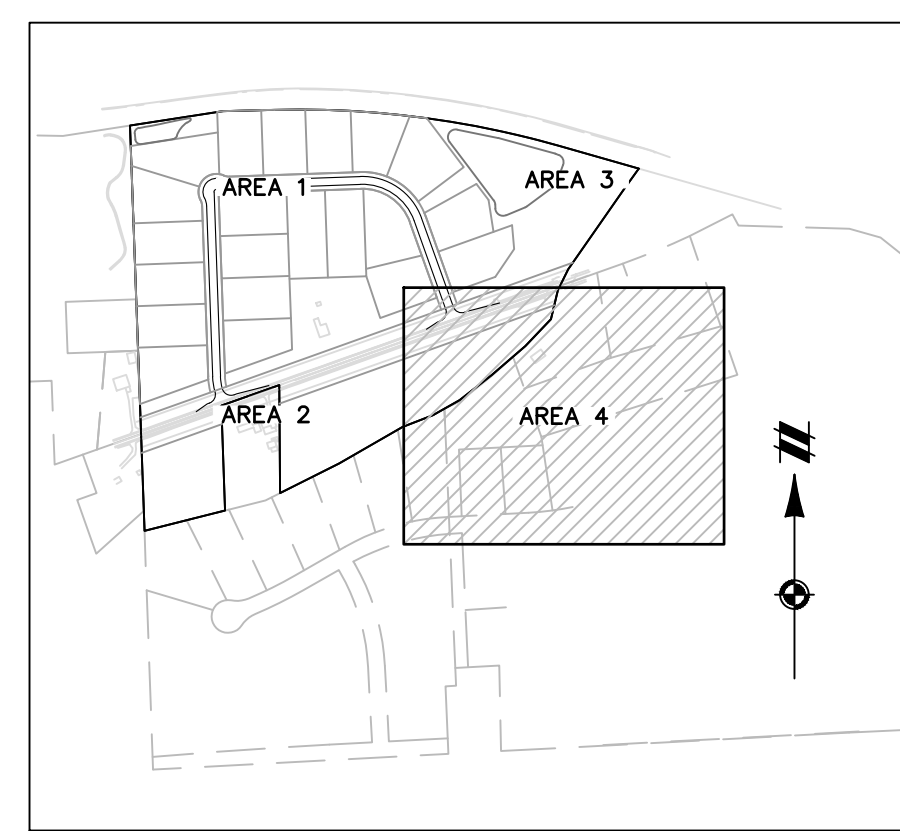
5/30/23 PER WCWRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCWRC

REVISIONS

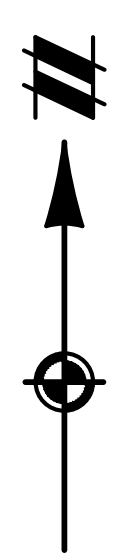
NO.	DATE	DESCRIPTION
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		

SCALE 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO.



KEYMAP  
SCALE: 1" = 750 FEET



SEE SHEET 11 FOR CONTINUATION

SEE SHEET 10 FOR CONTINUATION



WILLIAM & MEGANN SMITH  
PIN: J-10-08-400-006  
ZONING: R2

LOT 6  
THOMAS A. WOJEWSKI  
PIN: J-10-08-460-001  
ZONING: R2

UNIT 21

UNIT 20

FLEMING CREEK DRIVE  
(66' WIDE PUBLIC RIGHT OF WAY)

LINE BETWEEN THE LAND OF NARRY AND  
THE LAND OF GALPIN PER L.1058, PG.381

FLEMING CREEK  
NORTH LINE OF ARBOR  
HILLS II CONDOMINIUM

EXCLUDED PARCEL AREA  
C

12' FRAM. EASE

PLYMOUTH ROAD  
(100' WIDE PUBLIC RIGHT OF WAY PER L.266, PG.381)

LEGEND

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	PROP. SETBACK
	PROP. LOT LINE
	PROP. ROAD CENTERLINE
	PROP. BACK OF CURB
	PROP. ASPH.
	PROP. GRAVEL
	PROP. DETENTION
	PROP. EASEMENT
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL
	DRY/ABANDONED WELL
	PROP. SEPTIC FIELD
	P = PRIMARY
	E = EXPANSION
	PROP. CONDOMINIUM BOUNDARY

K:\21002863\PLAN SET\21002863-FINAL\21002863-FINAL.dwg 1/27/2024 4:14 PM CHRS BETHUNAR





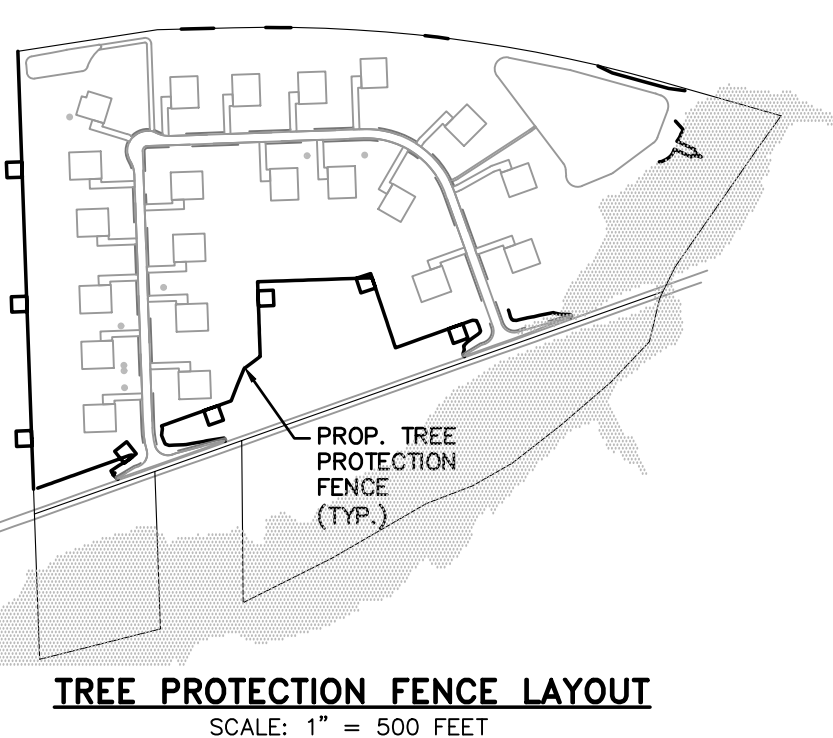
**SOIL EROSION AND SEDIMENTATION CONTROL NOTES:**

1. THE CONDOMINIUM ASSOCIATION SHALL BE FIRST IN LINE OF RESPONSIBILITY FOR MAINTAINING ALL OF ROAD STORM SEWERS AND DETENTION BASINS.
2. A CHAPTER 18 DRAINAGE DISTRICT WILL BE ESTABLISHED FOR THE ENTIRE PROJECT GIVING THE WCRC STATUTORY AUTHORITY FOR ULTIMATE RESPONSIBILITY.
3. SILT SACKS TO BE USED FOR ALL EXISTING AND PROPOSED CATCH BASINS. BEAVER DAMS ARE TO BE USED IN ADDITION TO SILT SACKS FOR ALL CURB-STYLE CATCH BASINS. STORM SEWER CATCH BASINS ARE TO BE PROTECTED WITH THE FOLLOWING PRODUCT OR APPROVED EQUAL:
  - 3.1. REGULAR FLOW SILT SACK (FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF).
  - 3.2. HI-FLOW SILT SACK (FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF).
  - 3.3. OIL-ABSORBANT SILT SACK (FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS).
4. DETENTION BASINS SHALL BE SEEDDED AND STABILIZED IMMEDIATELY UPON ACHIEVING FINAL GRADE AND FOLLOWING WCRC APPROVED SPECIFICATIONS.
5. RESTORATION AND STABILIZATION OF ALL DISTURBED AREAS, INCLUDING PLACEMENT OF TOPSOIL, SOIL, SEED, FERTILIZER AND MULCH AND/OR SOD SHALL BE COMPLETED WITHIN FIVE (5) DAYS OF THE COMPLETION OF FINAL GRADE.
6. IF SOIL STOCKPILING IS NECESSARY AND/OR CREATED, SILT FENCE SHALL BE INSTALLED AND MAINTAINED AROUND THE PERIMETER OF THE STOCKPILE IF THE STOCKPILE WILL BE ON-SITE FOR AN EXTENDED PERIOD OF TIME.
7. EROSION CONTROL BLANKET TO BE UTILIZED ON ALL DISTURBED SLOPES WITH A FINISHED GRADE STEEPER THAN 4:1.
8. THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT.
9. WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHALL BE KEPT TO THE SHORTEST PERIOD OF TIME.
10. TEMPORARY VEGETATION AND/OR MULCHING SHALL BE USED TO PROTECT CRITICAL AREAS EXPOSED DURING DEVELOPMENT.
11. THE PERMANENT FINAL VEGETATION AND STRUCTURES SHALL BE INSTALLED AS SOON AS PRACTICAL IN DEVELOPMENT.
12. ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWNSHIP AND THE WASHTENAW COUNTY DRAIN COMMISSIONER.
13. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR. PERIODIC INSPECTIONS MAY BE MADE BY THE OWNER/PROJECT ENGINEER/TOWNSHIP TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES. ANY NECESSARY CORRECTIONS SHALL BE MADE WITHOUT DELAY BY THE ON-SITE RESPONSIBLE INDIVIDUAL.
14. 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.
15. 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.
16. A WATER TRUCK SHALL BE AVAILABLE TO WATER DOWN THE SITE ON A DAILY BASIS FOR DUST CONTROL.
17. ALL MUD/DIRT TRACKED ONTO EXISTING 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.
18. DURING CONSTRUCTION OF THE STORM SEWER SYSTEM, STRAW BALES, STONE FILTERS OR OTHER APPROVED MEANS, WILL PROTECT THE ENDS OF ALL OPEN PIPES.
19. PROMPTLY UPON THE BACKFILLING OF STORM STRUCTURES, INLET FILTERS WILL BE PLACED AROUND THE STRUCTURE PER DETAILS.
20. ANY REMAINING DENuded AREA SHALL BE SEEDDED AND MULCHED WITHIN 5 DAYS AFTER COMPLETION OF FINAL GRADING. SEED MIX AND APPLICATION RATES SHALL BE PER MDOT CLASS A SED.
21. 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.
22. SOIL EROSION WILL BE CONTROLLED DURING AND AFTER CONSTRUCTION TO PROTECT ADJACENT PROPERTIES OR FACILITIES.
23. ALL EXISTING AND PROPOSED CULVERTS AND STORM PIPES ALONG ANN ARBOR-SALINE ROAD MUST BE KEPT FREE OF SEDIMENT.
24. SEED AND STABILIZE DETENTION BASINS IMMEDIATELY UPON ACHIEVING FINAL GRADE, AND FOLLOW WASHTENAW COUNTY WATER RESOURCE COMMISSION (WCRC) APPROVED SPECIFICATIONS.
25. STEEP SLOPES THAT DO NOT TAKE UPON INITIAL SEEDING MUST BE RE-SEEDDED AND STABILIZED WITH EROSION CONTROL BLANKET.
26. WHERE EXCAVATION HAS BEEN THROUGH LAWN AREAS, THE CONTRACTOR SHALL RESTORE THE DISTURBED AREA BY PLACING TOPSOIL AND SEEDING OR SODDING OVER THE FINAL BACKFILL MATERIAL.
27. IF DEWATERING IS NECESSARY, A DEWATERING PLAN MUST BE SUBMITTED PRIOR TO CONSTRUCTION.
28. THE CONTRACTOR SHALL IMPLEMENT AND MAINTAIN THE SOIL EROSION CONTROL MEASURES AS SHOWN ON THE SESC PLANS AT ALL TIMES DURING CONSTRUCTION ON THIS PROJECT. ANY MODIFICATIONS OR ADDITIONS TO THE SOIL EROSION CONTROL MEASURE DUE TO CONSTRUCTION OR CHANGED CONDITIONS, SHALL BE COMPLIED WITH AS REQUIRED OR DIRECTED BY THE OWNER, PROJECT ENGINEER, OR SUPERIOR TOWNSHIP.
29. ALL SOIL EROSION AND SEDIMENTATION CONTROL WORK SHALL CONFORM TO THE PERMIT REQUIREMENTS OF SUPERIOR TOWNSHIP AND THE LAWS OF THE STATE OF MICHIGAN.
30. AN NPDES CONSTRUCTION ACTIVITY PERMIT IS REQUIRED FOR ALL SITES GREATER THAN FIVE (5) ACRES.
31. CONSTRUCTION OPERATIONS SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS, AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING OPERATIONS.
32. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND REMOVAL OF SOME UPON AUTHORIZED COMPLETION OF PROJECT. COMPLETION OF PROJECT WILL NOT BE AUTHORIZED UNTIL ALL SITE WORK, HOME BUILDING, ROAD WORK, AND UTILITY CONSTRUCTION IS COMPLETE AND ALL SOILS ARE STABILIZED.
34. THE CONTRACTOR SHALL NOT GRADE IN EXISTING WETLAND OR CONSERVATION AREAS TO BE PROTECTED. SILT FENCE SHALL BE INSTALLED AND MAINTAINED ADJACENT TO EXISTING WETLAND AND CONSERVATION AREAS TO PREVENT GRADING, EROSION, AND SEDIMENTATION INTO THEM.
35. TREE PROTECTION FENCING MUST REMAIN INTACT UNTIL RESTORATION OF THE SITE IS COMPLETE.
36. SEED OR SOD IN ACCORDANCE WITH PROJECT SPECIFICATIONS.
37. ALL AREAS OF DISTURBED EARTH THAT ARE NOT TO BE PAVED OR SODDED SHALL HAVE 4 INCHES OF TOPSOIL, SEED, FERTILIZER AND MULCH.
38. IMMEDIATELY AFTER SEEDING, MULCH ALL SEEDDED AREAS WITH UNWEATHERED SMALL GRAIN STRAW (PREFERABLY WHEAT) OR HAY SPREAD, SPREAD UNIFORMLY AT THE RATE OF 1-1/2 TO 2 TONS OR 100 POUNDS (2 TO 3 BALES) PER 1,000 SQUARE FOOT. THIS MULCH SHOULD BE ANCHORED WITH A DISC-TYPE MULCH-ANCHORING TOOL.
39. ANY DISTURBED AREA NOT PAVED, SEEDDED OR MULCHED, SODDED OR BUILT UPON ON OR AFTER NOVEMBER 15TH, IS TO BE MULCHED IN THE MANNER AS SPECIFIED ABOVE, IN ORDER TO PROVIDE SOIL EROSION PROTECTION DURING THE WINTER AND EARLY SPRING.
40. ALL EROSION AND SEDIMENTATION CONTROL PREVENTION PROCEDURES AND STRUCTURES ARE TO COMPLY WITH THE STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENTATION CONTROL FOR THE WASHTENAW COUNTY SOIL CONSERVATION DISTRICT.
41. DURING CONSTRUCTION, ALL ROADS SHALL BE PROTECTED FROM UNVEGETATED AREAS WASHING ONTO ROAD SURFACES BY PLACEMENT OF SILT FENCE BEHIND CURB OR A 10-FOOT WIDE STRAW MULCH BANK BEHIND THE CURB OR OTHER APPROVED METHOD AND/OR AS SHOWN ON THE PLANS.
42. DURING CONSTRUCTION OF ANY PORTION OF THE PROJECT, ROADS SHALL BE MAINTAINED FREE OF DIRT, SILT, AND CONSTRUCTION.
43. AT THE TIME OF PLANT AND SEED DELIVERY, A WCRC LANDSCAPE REVIEWER MUST BE PRESENT. THE QUANTITY AND SPECIES DELIVERED WILL BE REVIEWED ON SITE. CONTACT CATIE WYTYCHAK AT WYTYCHAK@WASHTENAW.ORG OR (734) 222-6813 TO COORDINATE.

**SITE INFORMATION**

SITE LOCATION: SECTION 08, T.2S., R.7E., SUPERIOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN  
 ULTIMATE RECEIVING WATER: FLEMING CREEK  
 1. SITE SOILS INFORMATION: PER THE NATIONAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL SURVEY, WASHTENAW COUNTY, MICHIGAN.  
 2. APPROXIMATE AREA OF DISTURBANCE: ±30.0 ACRES  
 3. A PRE-CONSTRUCTION MEETING WITH THE CONTRACTOR AND WASHTENAW COUNTY SOIL EROSION OFFICE WILL BE REQUIRED PRIOR TO CONSTRUCTION ACTIVITIES.

LEGEND			
	BOUNDARY LINE		EXIST. UNSPECIFIED UTILITY
	EXIST. EASEMENT		EXIST. CULVERT
	SECTION LINE		EXIST. CATCH BASIN/INLET
	BOUNDARY/PROPERTY LINE		PROP. SETBACK
	EXIST. SETBACK		PROP. EDGE OF ASPHALT
	EXIST. CONTOUR		PROP. LOT LINE
	EXIST. CURB AND GUTTER		PROP. DETENTION
	EXIST. BUILDING		PROP. EASEMENT
	EXISTING WETLAND		PROP. CONTOUR
	EXIST. WETLAND BUFFER		GRADING LIMITS
	EXIST. OVERHEAD ELEC. LINE		PROP. STORM SEWER
	EXIST. OVERHEAD TELE. LINE		PROP. CULVERT
	EXIST. CABLE LINE		PROP. CATCH BASIN/INLET
	EXIST. UNSPECIFIED UTILITIES		PROP. BUILDING
	EXIST. GAS		PROP. EROSION FILTER
	EXIST. STORM		PROP. TREE PROTECTION FENCE
			PROP. SILT FENCE



**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

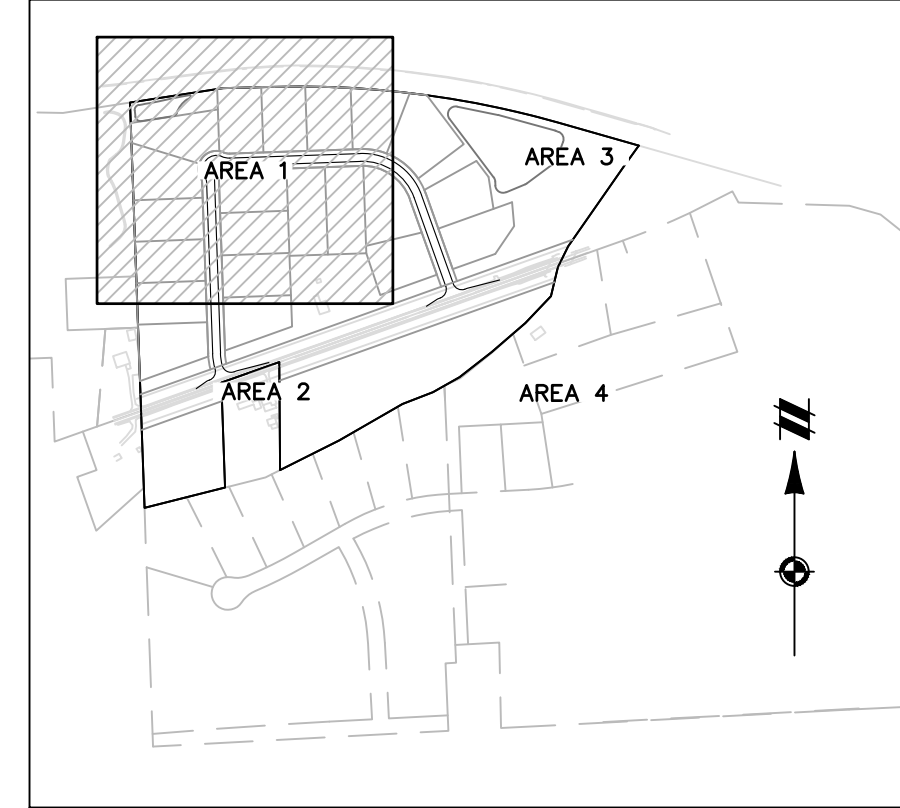
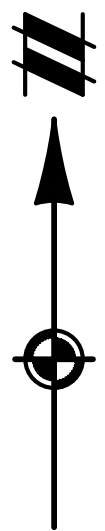
**ATWELL**  
 866.850.4200 www.atwell-group.com  
 311 N. MAIN ST.  
 ANN ARBOR, MI 48104  
 734.994.4600

SECTION 08	TOWN 02 NORTH, RANGE 07 EAST	SUPERIOR TOWNSHIP	WASHTENAW COUNTY, MICHIGAN																								
CLIENT	LOMBARDO HOMES	KINSLEY DEVELOPMENT	FINAL SITE PLAN																								
DATE	APRIL 18, 2023																										
REVISIONS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">5/30/23</td> <td style="width: 20%;">PER WCRC</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>7/11/23</td> <td>PER TWP</td> <td></td> <td></td> </tr> <tr> <td>8/10/23</td> <td>PER WCHD/WCRC/WCRC</td> <td></td> <td></td> </tr> <tr> <td>10/27/23</td> <td>PER WCHD/WCRC</td> <td></td> <td></td> </tr> <tr> <td>11/30/23</td> <td>PER WCRC</td> <td></td> <td></td> </tr> <tr> <td>1/12/24</td> <td>PER WCRC</td> <td></td> <td></td> </tr> </table>			5/30/23	PER WCRC			7/11/23	PER TWP			8/10/23	PER WCHD/WCRC/WCRC			10/27/23	PER WCHD/WCRC			11/30/23	PER WCRC			1/12/24	PER WCRC		
5/30/23	PER WCRC																										
7/11/23	PER TWP																										
8/10/23	PER WCHD/WCRC/WCRC																										
10/27/23	PER WCHD/WCRC																										
11/30/23	PER WCRC																										
1/12/24	PER WCRC																										
SCALE	0 50 100 1" = 100 FEET																										
DR.	SK CH. MC																										
P.M. MC																											
BOOK																											
JOB	21002863																										
SHEET NO.	13																										









KEYMAP  
SCALE: 1" = 750 FEET

SEE SHEET 7 FOR CONTINUATION

SEE SHEET 16 FOR CONTINUATION

**NOTES:**

- REFER TO SHEET 36 FOR DRIVEWAY CULVERT DETAIL.
- BASEMENT FLOOR ELEVATION BASED ON A 7'10" BASEMENT WALL HEIGHT.

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. SILT FENCE
	PROP. TREE PROTECTION FENCE
	PROP. EASEMENT
	PROP. CONTOUR
	PROP. GRADING LIMITS
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SEPTIC
	PROP. WELL

**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.

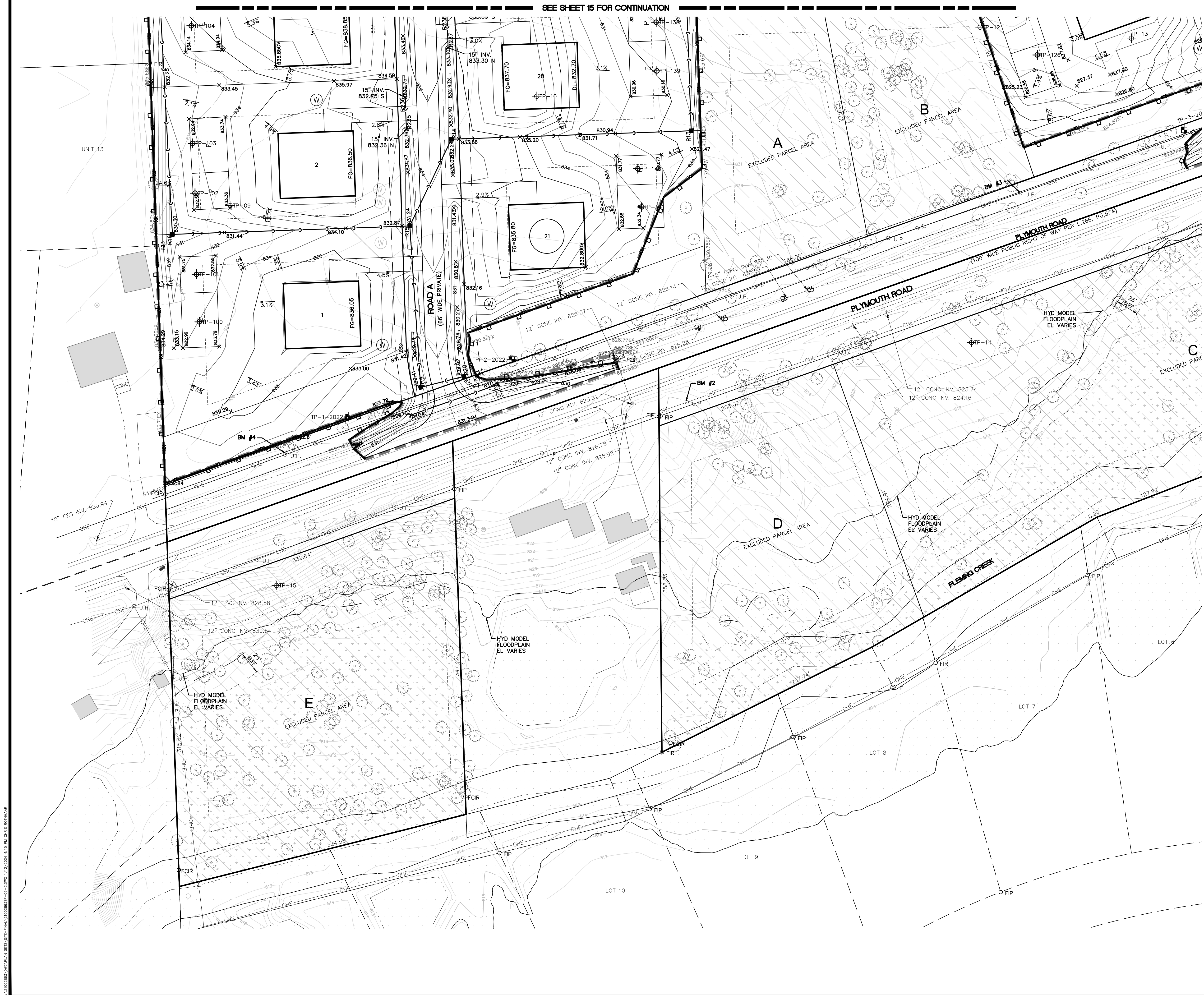
NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4060

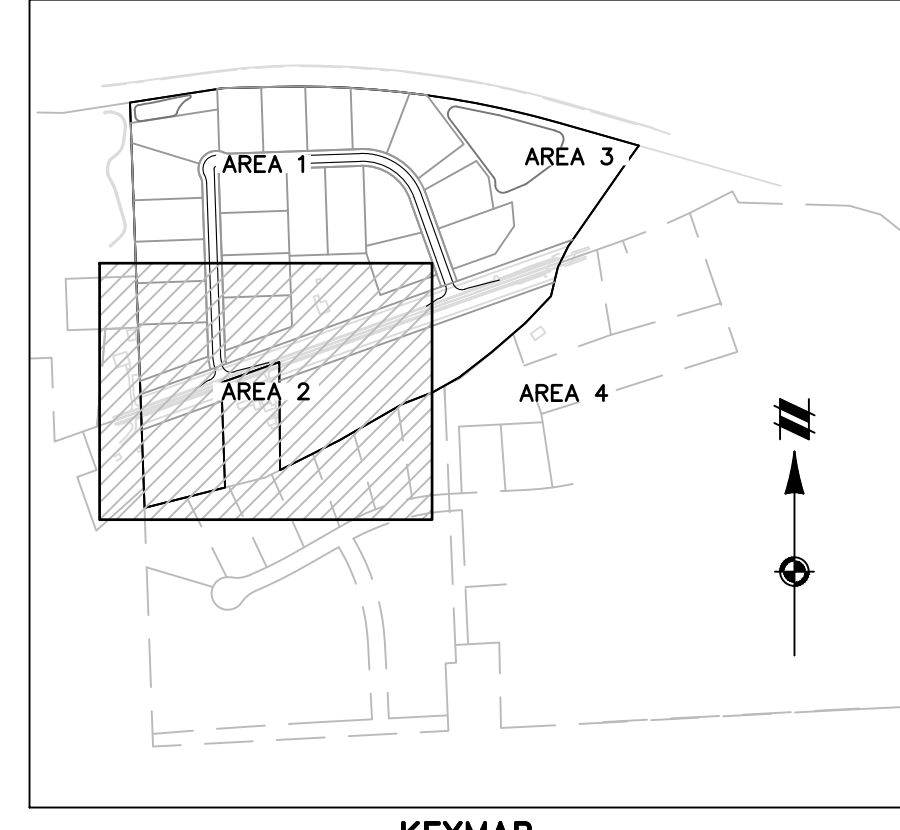
SECTION 08	TOWN 02 NORTH, RANGE 07 EAST	SUPERIOR TOWNSHIP
CLIENT	LOMBARDO HOMES KINSLEY DEVELOPMENT	GRADING PLAN AREA 1
DATE	APRIL 18, 2023	
5/30/23	PER WCRC	
7/11/23	PER TWP	
8/10/23	PER WCD/WCRC/WCRC	
10/27/23	PER WCD/WCRC	
11/30/23	PER WCRC	
1/12/24	PER WCRC	
REVISIONS		
SCALE	0 25 50 1" = 50 FEET	
DR.	SK	CH. MC
BOOK	---	
JOB	21002863	
SHEET NO.	15	





SEE SHEET 15 FOR CONTINUATION

SEE SHEET 18 FOR CONTINUATION



KEYMAP  
SCALE: 1" = 750 FEET

**NOTES:**

- REFER TO SHEET 36 FOR DRIVEWAY CULVERT DETAIL.
- BASEMENT FLOOR ELEVATION BASED ON A 7'10" BASEMENT WALL HEIGHT.

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. SILT FENCE
	PROP. TREE PROTECTION FENCE
	PROP. EASEMENT
	PROP. CONTOUR
	PROP. GRADING LIMITS
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SEPTIC
	PROP. WELL

**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 CONTRACTOR. 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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000

---

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

---

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
GRADING PLAN AREA 2

---

DATE: APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

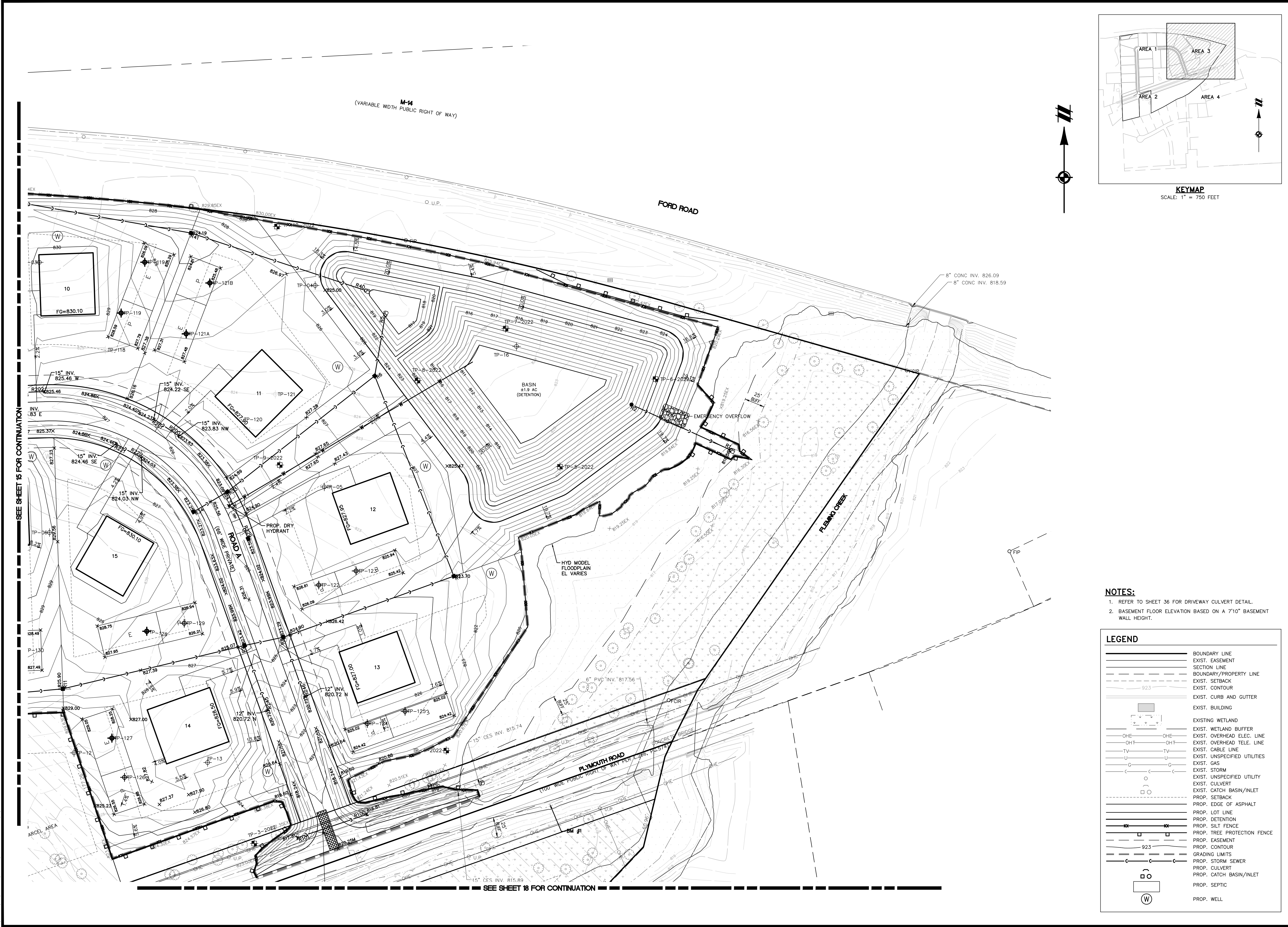
---

REVISIONS

SCALE: 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO. 16





**KEYMAP**  
SCALE: 1" = 750 FEET

**NOTES:**  
1. REFER TO SHEET 36 FOR DRIVEWAY CULVERT DETAIL.  
2. BASEMENT FLOOR ELEVATION BASED ON A 7'10" BASEMENT WALL HEIGHT.

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. SILT FENCE
	PROP. TREE PROTECTION FENCE
	PROP. EASEMENT
	PROP. CONTOUR
	PROP. STORM SEWER
	PROP. CATCH BASIN/INLET
	PROP. SEPTIC
	PROP. WELL

**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000

SECTION 08	CLIENT
TOWN 02 NORTH, RANGE 07 EAST	LOMBARDO HOMES
SUPERIOR TOWNSHIP	KINSLEY DEVELOPMENT
WASHTENAW COUNTY, MICHIGAN	FINAL SITE PLAN
	GRADING PLAN AREA 3
DATE	APRIL 18, 2023
5/30/23 PER WCRC	
7/11/23 PER TWP	
8/10/23 PER WCD/WCRC/WCRC	
10/27/23 PER WCD/WCRC	
11/30/23 PER WCRC	
1/12/24 PER WCRC	
REVISIONS	
SCALE 0 25 50	
1" = 50 FEET	
DR. SK CH. MC	
BOOK --	
JOB 21002863	
SHEET NO.	17

SEE SHEET 18 FOR CONTINUATION

SEE SHEET 18 FOR CONTINUATION

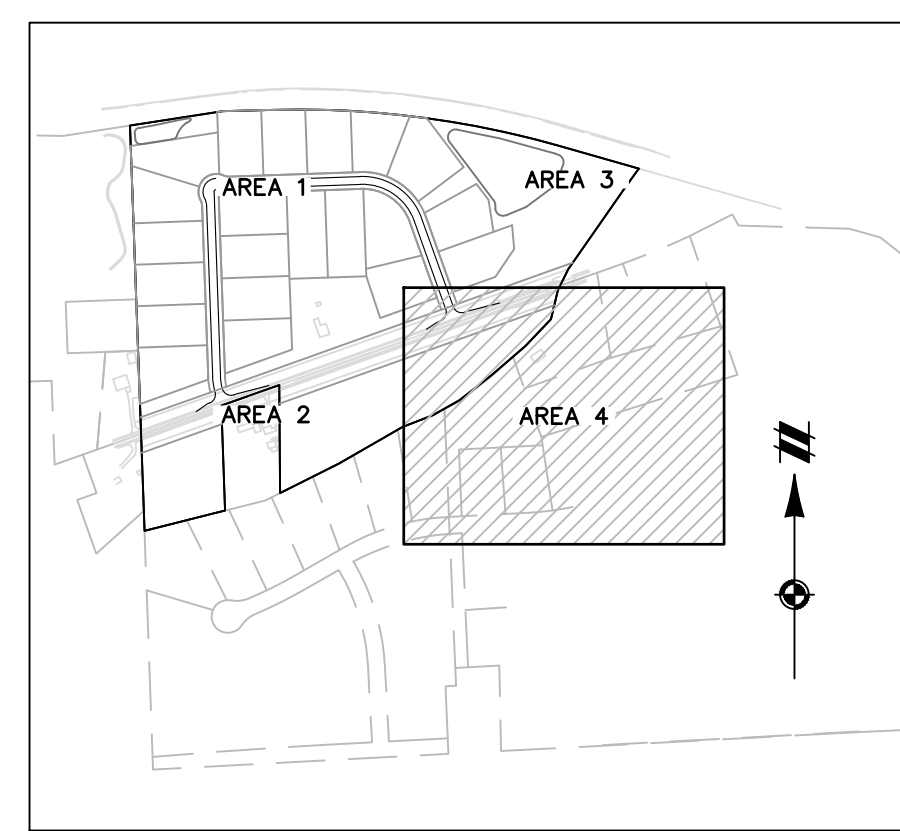
K:\VTD\2023\172\172023-172\172023-172.PW.DWG: 8/15/2023 4:15 PM DWG: 8/15/2023





SEE SHEET 16 FOR CONTINUATION

SEE SHEET 17 FOR CONTINUATION



KEYMAP  
SCALE: 1" = 750 FEET

**NOTES:**

1. REFER TO SHEET 36 FOR DRIVEWAY CULVERT DETAIL.
2. BASEMENT FLOOR ELEVATION BASED ON A 7'10" BASEMENT WALL HEIGHT.

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. SILT FENCE
	PROP. TREE PROTECTION FENCE
	PROP. EASEMENT
	PROP. CONTOUR
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SEPTIC
	PROP. WELL

**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 AGREE 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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08	
TOWN 02 NORTH, RANGE 07 EAST	
SUPERIOR TOWNSHIP	
WASHTENAW COUNTY, MICHIGAN	

CLIENT: LOMBARDO HOMES

KINSLEY DEVELOPMENT

FINAL SITE PLAN

GRADING PLAN AREA 4

DATE	APRIL 18, 2023
5/30/23	PER WCWRC
7/11/23	PER TWP
8/10/23	PER WCHD/WCRC
10/27/23	PER WCHD/WCRC
11/30/23	PER WCRC
1/12/24	PER WCWRC

REVISIONS	
SCALE	0 25 50
1" = 50 FEET	
DR. SK	CH. MC
P.M. MC	
BOOK	--
JOB	21002863
SHEET NO.	18





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTEENAW COUNTY, MICHIGAN

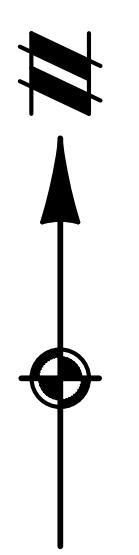
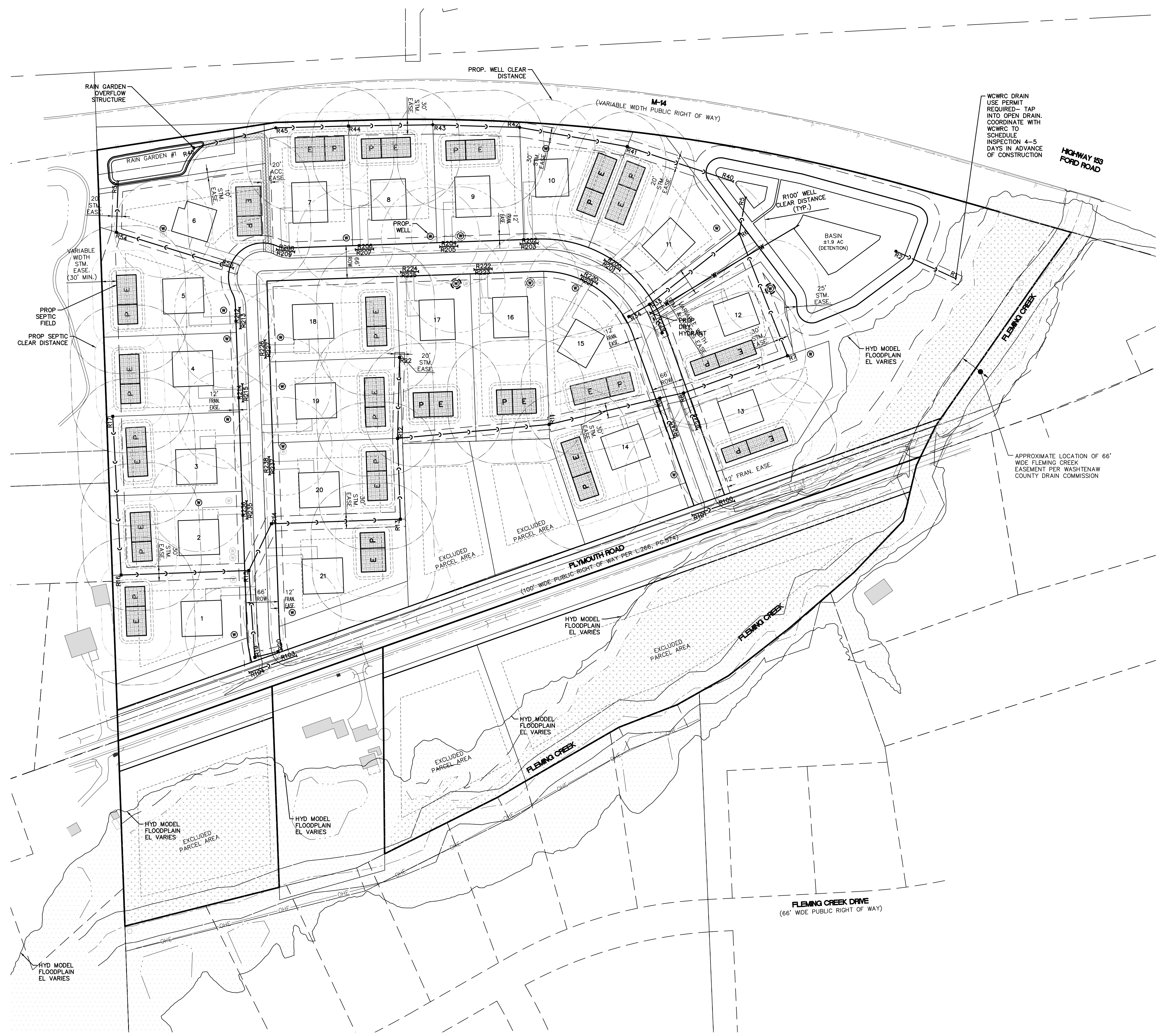
CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
OVERALL UTILITY PLAN

DATE  
APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS

SCALE	0	50	100
1" = 100 FEET			
DR.	SK	CH.	MC
BOOK	---		
JOB	21002863		
SHEET NO.	19		



**UTILITY NARRATIVE**  
ALL STORM SEWER, BMP'S AND DETENTION BASIN WILL BE INSTALLED DURING MASS GRADING OF THE SITE. SEPTIC TANKS AND FIELDS AND WELLS WILL BE INSTALLED DURING INDIVIDUAL HOME CONSTRUCTION.

**NOTES**  
1. ALL STORM SEWER SHALL BE PLACED IN MINIMUM 20' WIDE DRAINAGE EASEMENTS.  
2. WCRC DRAIN USE PERMIT REQUIRED - TAP INTO OPEN DRAIN. COORDINATE WITH WCRC TO SCHEDULE INSPECTION 4-5 DAYS IN ADVANCE OF CONSTRUCTION.

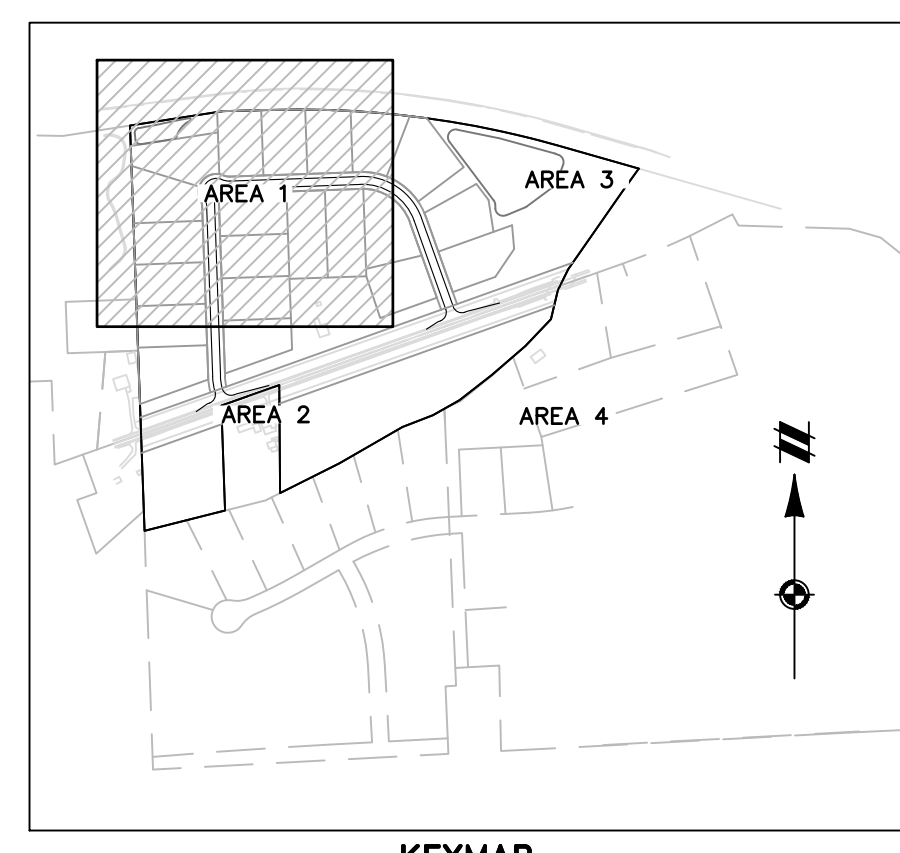
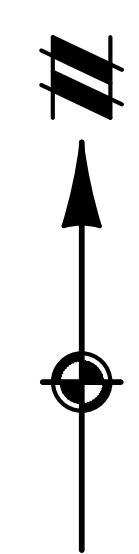
**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. EASEMENT
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SCH 40 WATER MAIN
	PROP. DRY HYDRANT
	PROP. SEPTIC
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL

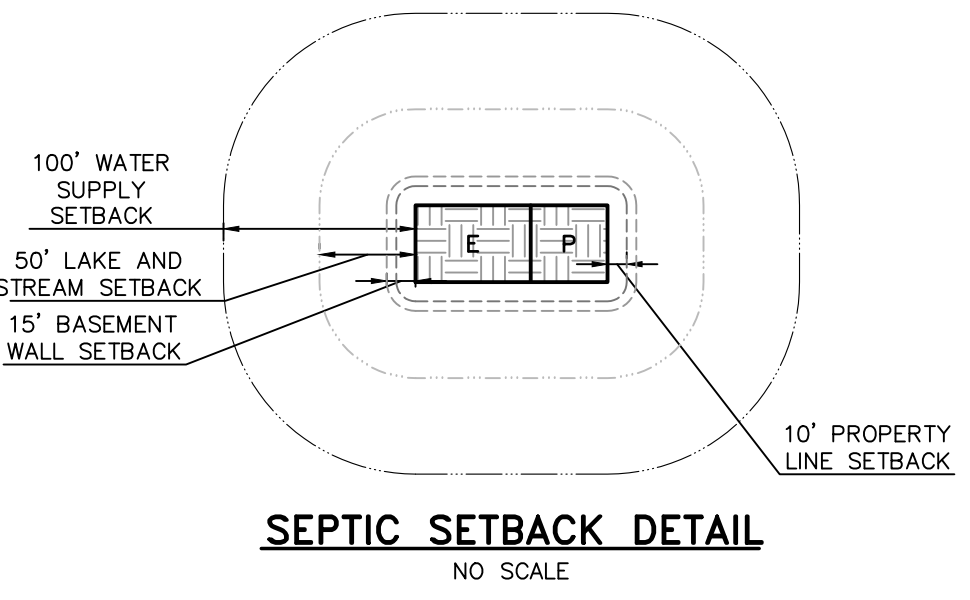
K:\UTILITY\UTILITY PLAN SET\UTILITY\_FINAL\21002863\_01-01.dwg 1/27/2024 4:16 PM DWG: BOWMAN



K:\UTILITY\21002863\PLAN SET\UTILITY\_FINAL\21002863-01-10.DWG 1/17/2024 4:18 PM CHMS B011144



KEYMAP  
SCALE: 1" = 750 FEET



SEPTIC SETBACK DETAIL  
NO SCALE

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. EASEMENT
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SCH 40 WATER MAIN
	PROP. DRY HYDRANT
	PROP. SEPTIC
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL

SEE SHEET 22 FOR CONTINUATION

SEE SHEET 21 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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
UTILITY PLAN AREA 1

DATE  
APRIL 18, 2023

5/30/23 PER WCWR  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCWR

REVISIONS

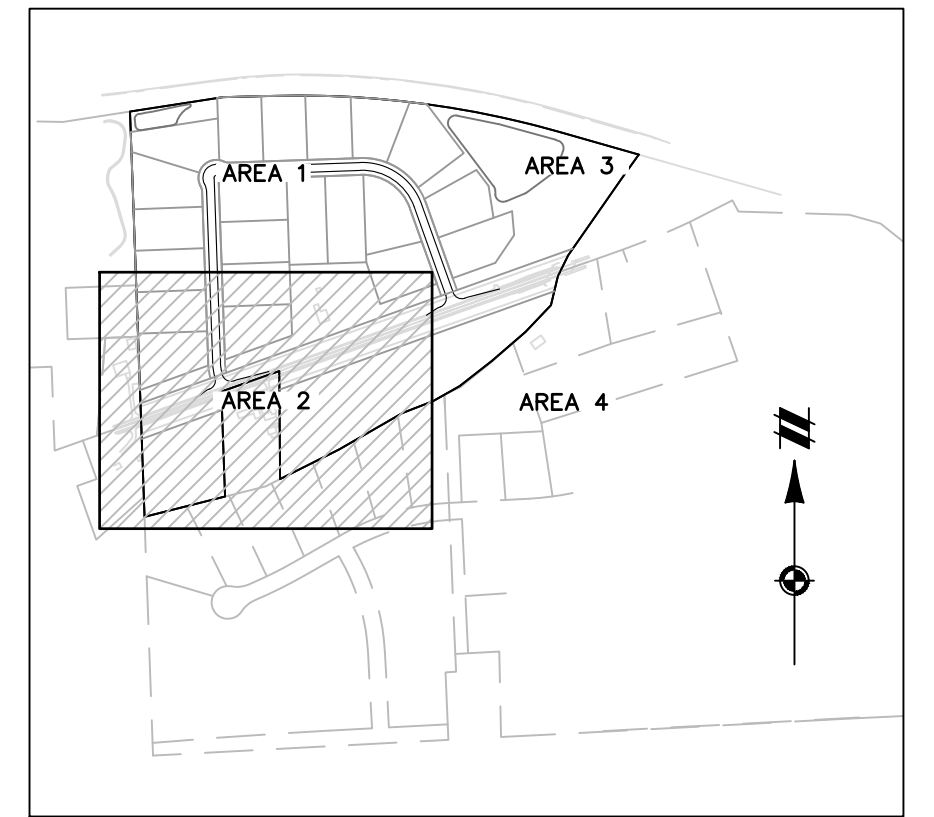
SCALE 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
P.M. MC  
BOOK ---  
JOB 21002863  
SHEET NO. 20

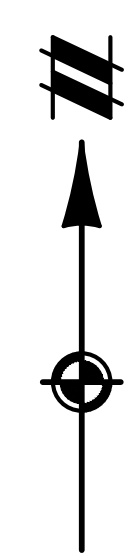
**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000



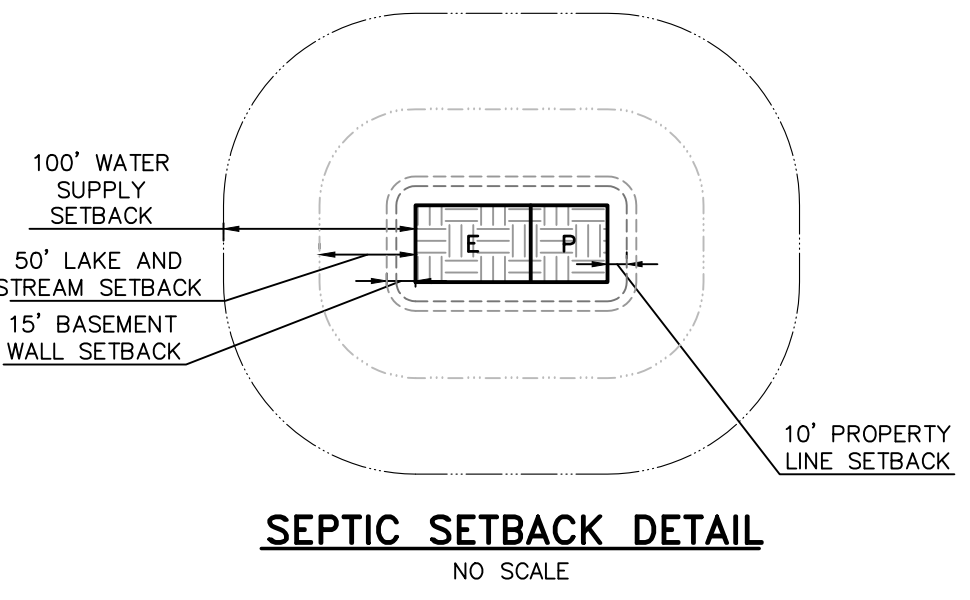
SEE SHEET 20 FOR CONTINUATION



KEYMAP  
SCALE: 1" = 750 FEET



SEE SHEET 20 FOR CONTINUATION



SEPTIC SETBACK DETAIL  
NO SCALE

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. EASEMENT
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SCH 40 WATER MAIN
	PROP. DRY HYDRANT
	PROP. SEPTIC
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL

**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 AGREE 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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08	TOWN 02 NORTH, RANGE 07 EAST	CLIENT	LOMBARDO HOMES
		PROJECT	KINSLEY DEVELOPMENT
		TOWNSHIP	FINAL SITE PLAN
		COUNTY	UTILITY PLAN AREA 2
		DATE	APRIL 18, 2023
		DATE	5/30/23 PER WCRC
		DATE	7/11/23 PER TWP
		DATE	8/10/23 PER WCHD/WCRC
		DATE	10/27/23 PER WCHD/WCRC
		DATE	11/30/23 PER WCRC
		DATE	1/12/24 PER WCRC
		REVISIONS	
		SCALE	0 25 50 1" = 50 FEET
		DR.	SK CH. MC
		P.M.	MC
		BOOK	---
		JOB	21002863
		SHEET NO.	21





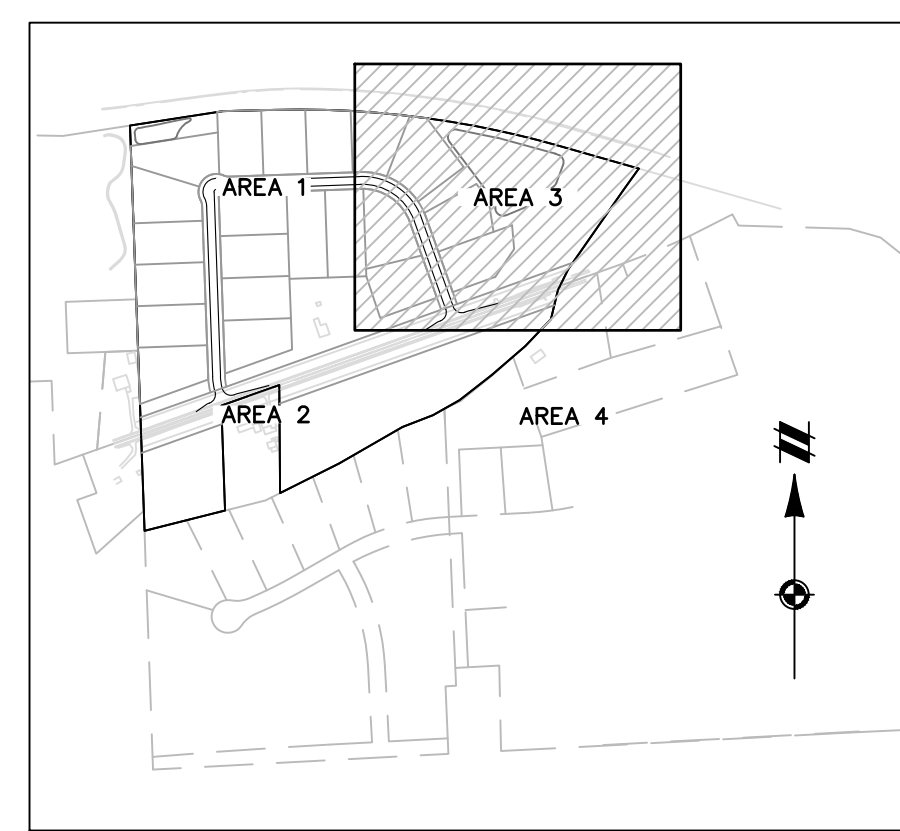
Know what's below.  
Call before you dig.

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.

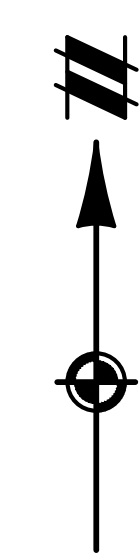
NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
www.atwell-group.com  
866.850.4200  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



KEYMAP  
SCALE: 1" = 750 FEET



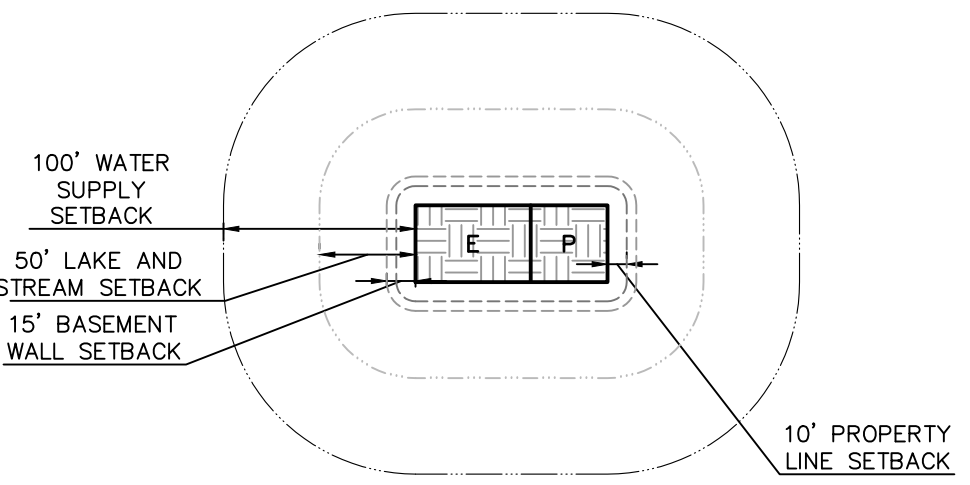
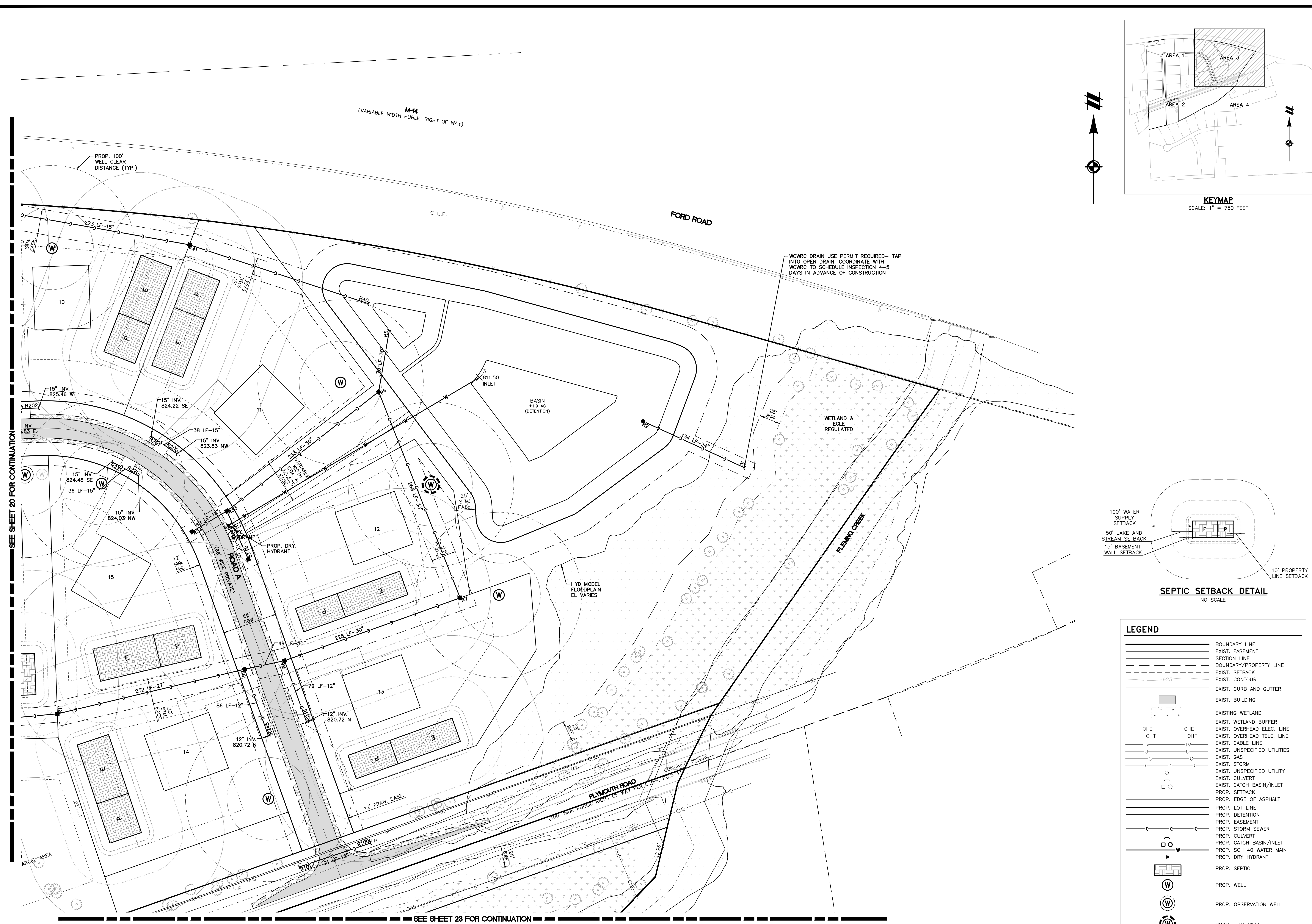
SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
UTILITY PLAN AREA 3

DATE  
APRIL 18, 2023

5/30/23 PER WCWR  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCWR

REVISIONS  
SCALE 0 25 50  
1" = 50 FEET  
DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO.  
**22**



SEPTIC SETBACK DETAIL  
NO SCALE

LEGEND

---	BOUNDARY LINE
---	EXIST. EASEMENT
---	SECTION LINE
---	BOUNDARY/PROPERTY LINE
---	EXIST. SETBACK
---	EXIST. CONTOUR
---	EXIST. CURB AND GUTTER
---	EXIST. BUILDING
---	EXISTING WETLAND
---	EXIST. WETLAND BUFFER
---	EXIST. OVERHEAD ELEC. LINE
---	EXIST. OVERHEAD TELE. LINE
---	EXIST. CABLE LINE
---	EXIST. UNSPECIFIED UTILITIES
---	EXIST. GAS
---	EXIST. STORM
---	EXIST. UNSPECIFIED UTILITY
---	EXIST. CULVERT
---	EXIST. CATCH BASIN/INLET
---	PROP. SETBACK
---	PROP. EDGE OF ASPHALT
---	PROP. DETENTION
---	PROP. STORM SEWER
---	PROP. CULVERT
---	PROP. CATCH BASIN/INLET
---	PROP. SCH 40 WATER MAIN
---	PROP. DRY HYDRANT
---	PROP. SEPTIC
---	PROP. WELL
---	PROP. OBSERVATION WELL
---	PROP. TEST WELL

SEE SHEET 20 FOR CONTINUATION

SEE SHEET 23 FOR CONTINUATION

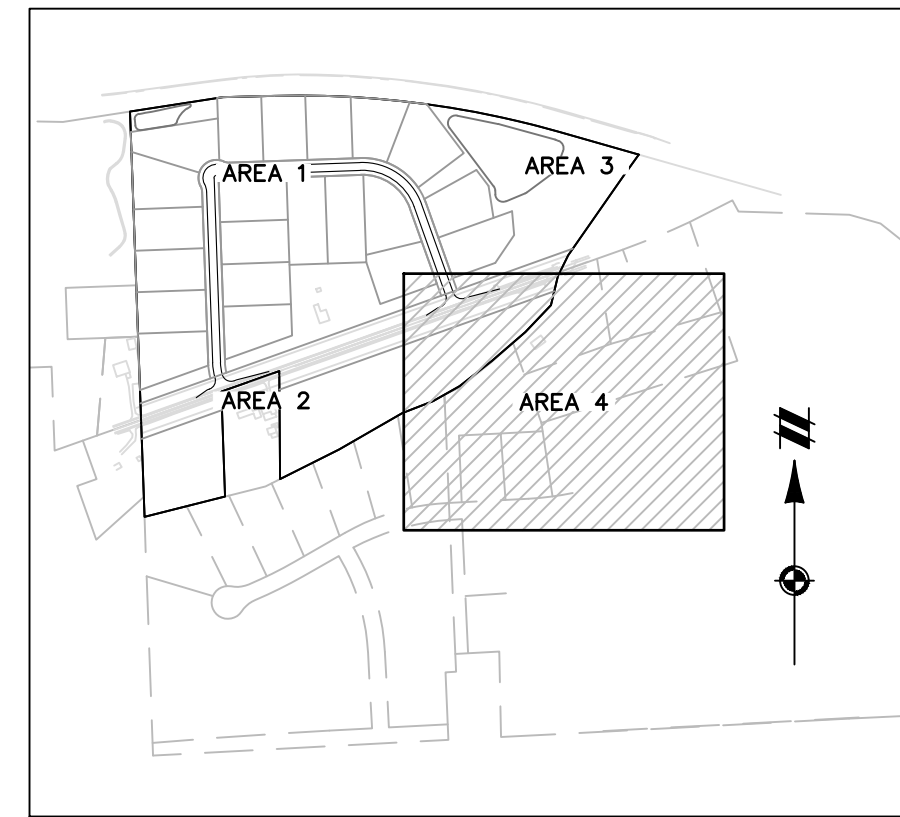
K:\VTD\21002863\PLAN SET\UTILITY\_FINAL\21002863-07-UTILITY.DWG 1/27/2024 4:18 PM CHMS 30714448



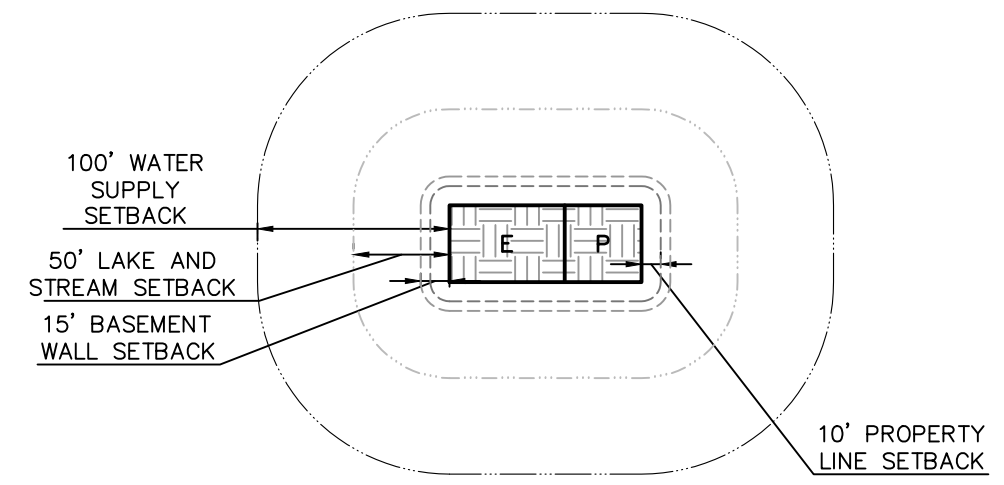


SEE SHEET 21 FOR CONTINUATION

SEE SHEET 22 FOR CONTINUATION



KEYMAP  
SCALE: 1" = 750 FEET



SEPTIC SETBACK DETAIL  
NO SCALE

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. EASEMENT
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SCH 40 WATER MAIN
	PROP. DRY HYDRANT
	PROP. SEPTIC
	PROP. WELL
	PROP. OBSERVATION WELL
	PROP. TEST WELL

**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 CONTRACTOR. 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.

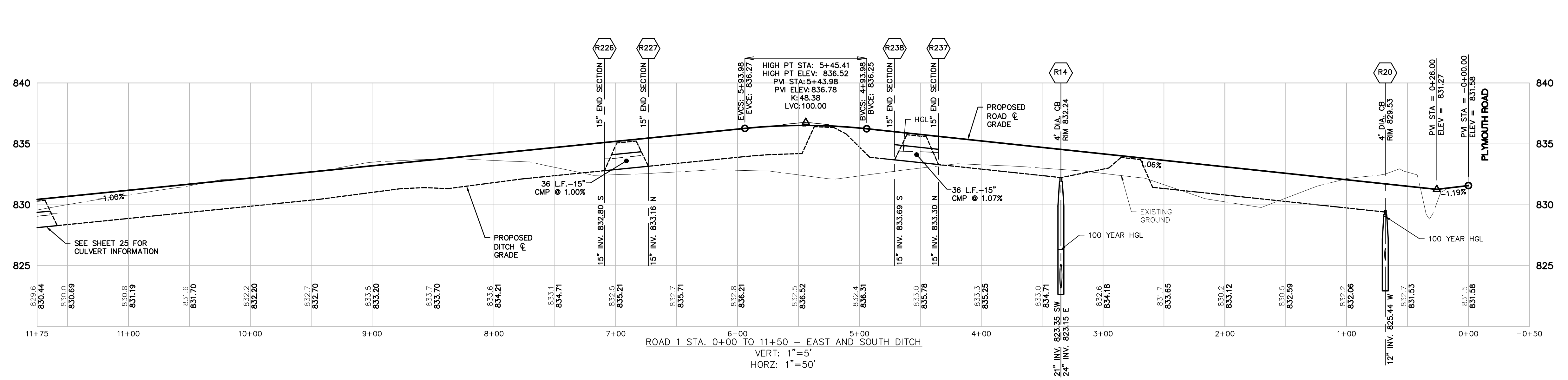
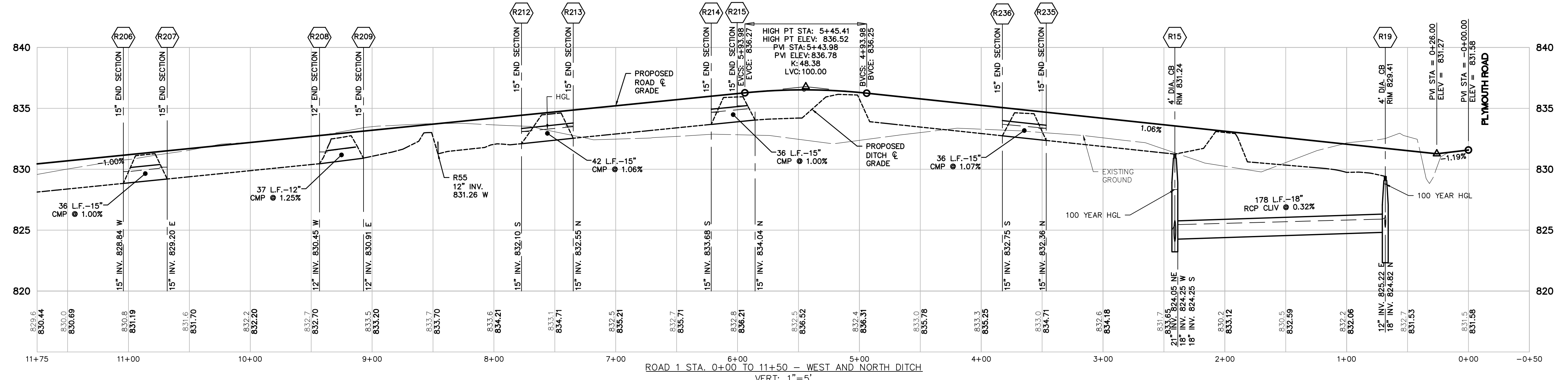
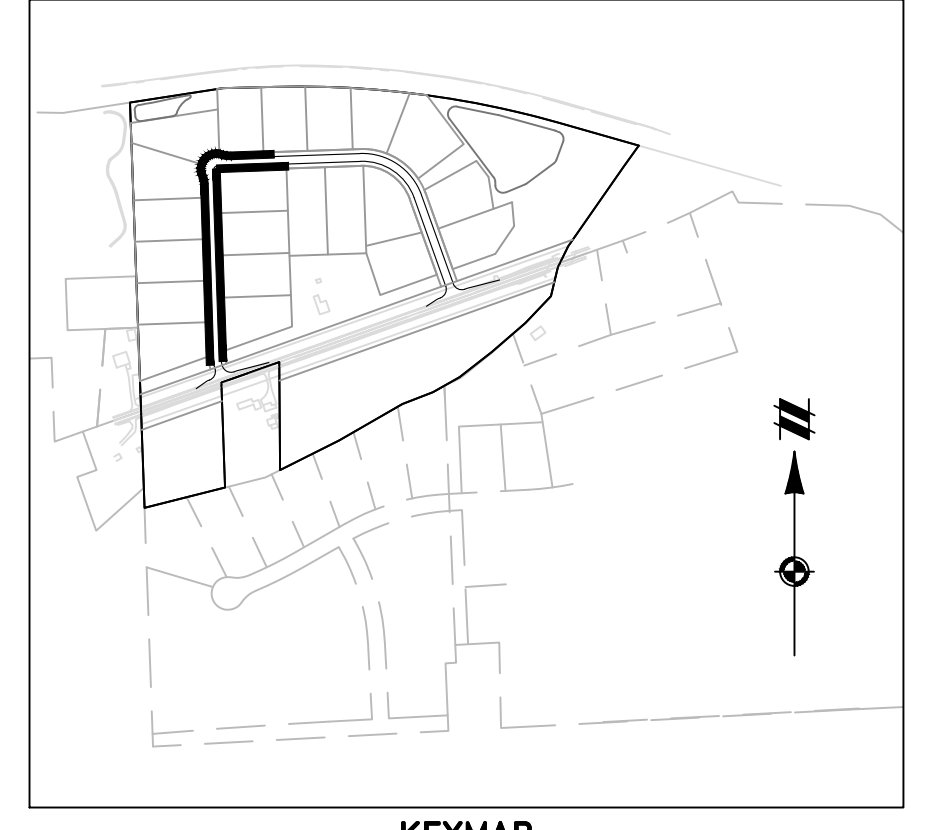
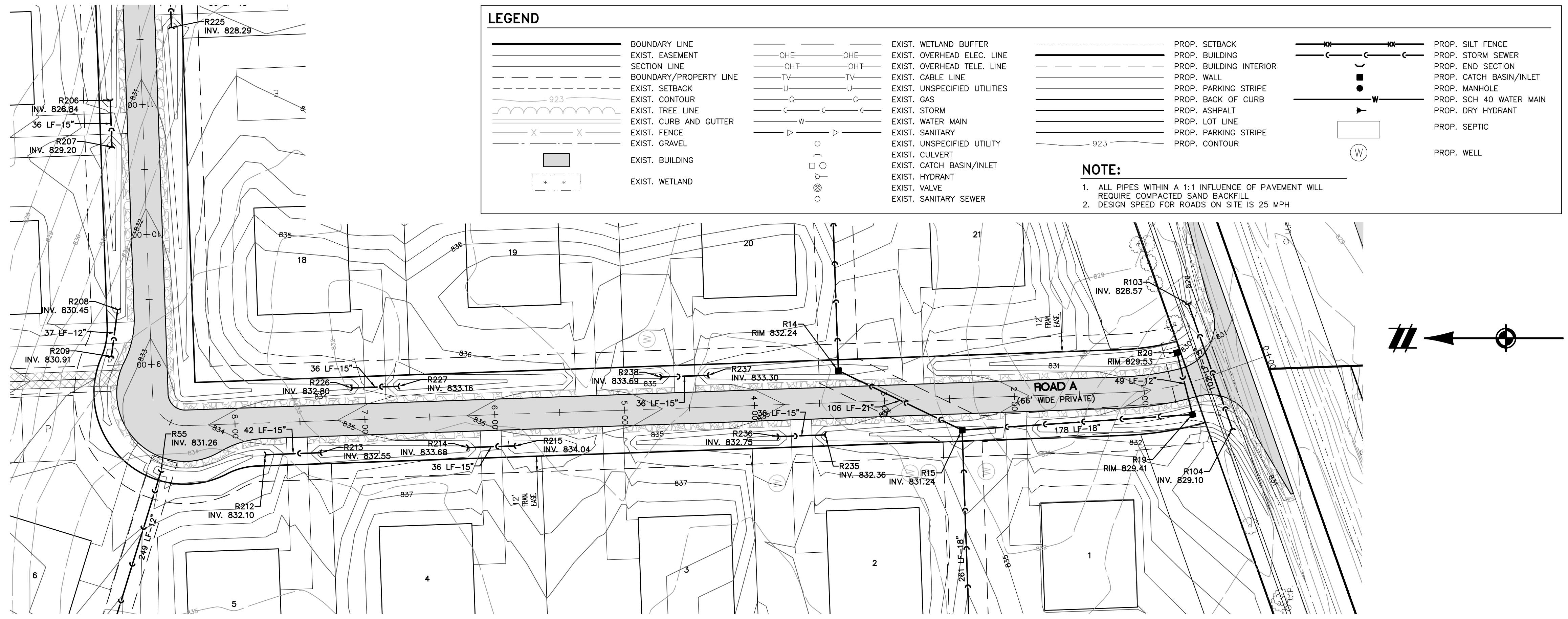
NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OR OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08	TOWN 02 NORTH, RANGE 07 EAST	SUPERIOR TOWNSHIP
CLIENT	LOMBARDO HOMES	WASHTENAW COUNTY, MICHIGAN
DATE	APRIL 18, 2023	
PROJECT	KINSLEY DEVELOPMENT FINAL SITE PLAN	
REVISIONS	UTILITY PLAN AREA 4	
SCALE	0 25 50 1" = 50 FEET	
DR.	SK	CH. MC
P.M.	MC	
BOOK	--	
JOB	21002863	
SHEET NO.	23	





**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
ROAD PLAN & PROFILE  
STA. 0+00 TO 11+50

DATE: APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS

SCALE: 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 24



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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

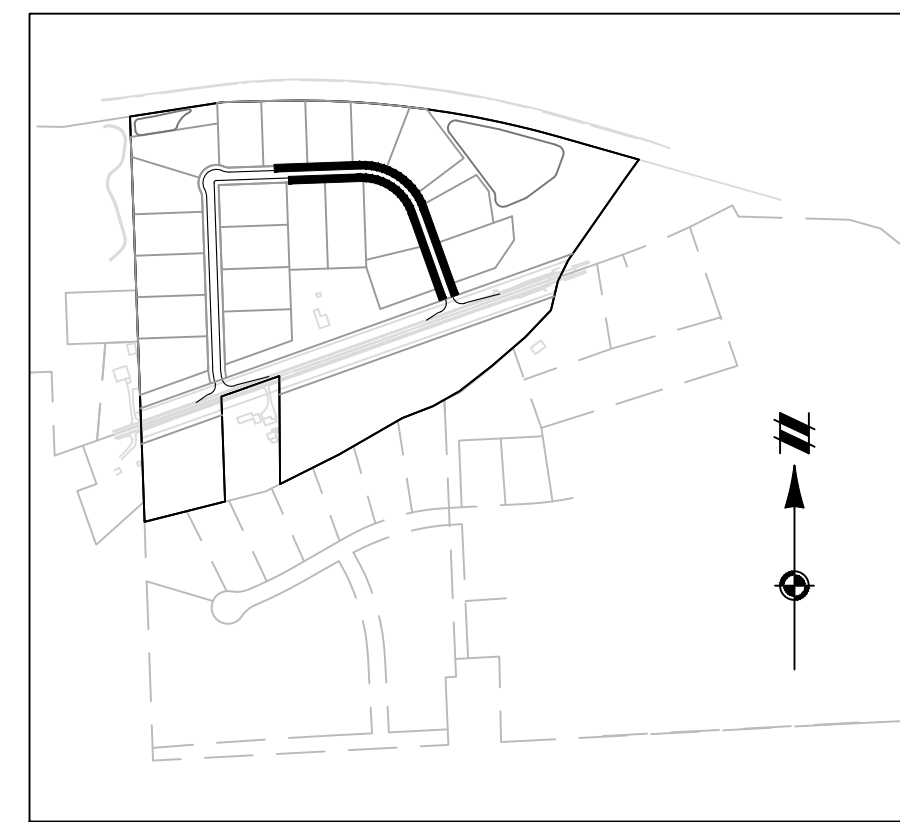
CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
ROAD PLAN & PROFILE  
STA. 11+50 TO 21+58

DATE  
APRIL 18, 2023

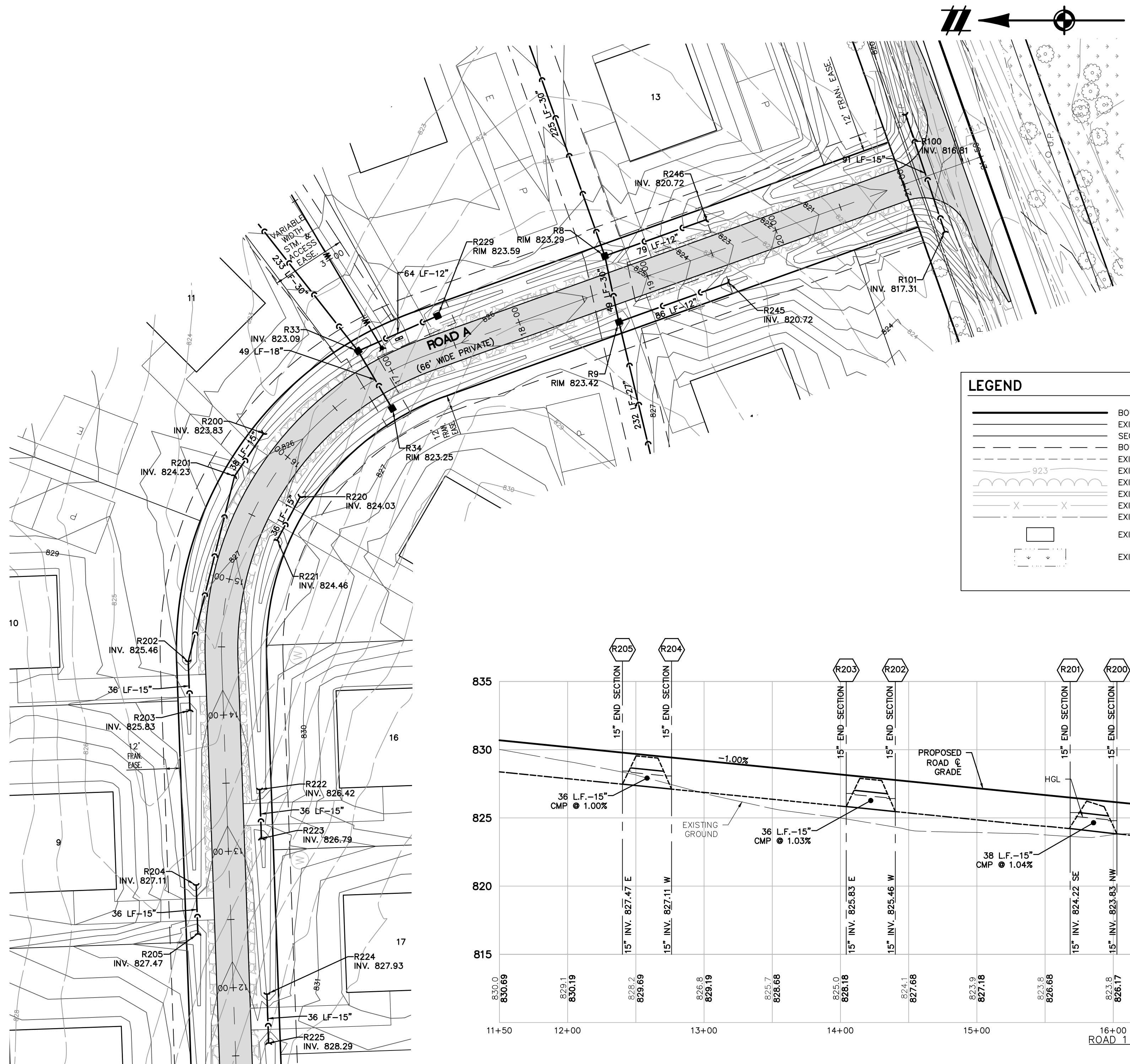
5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS  
SCALE 0 25 50  
1" = 50 FEET

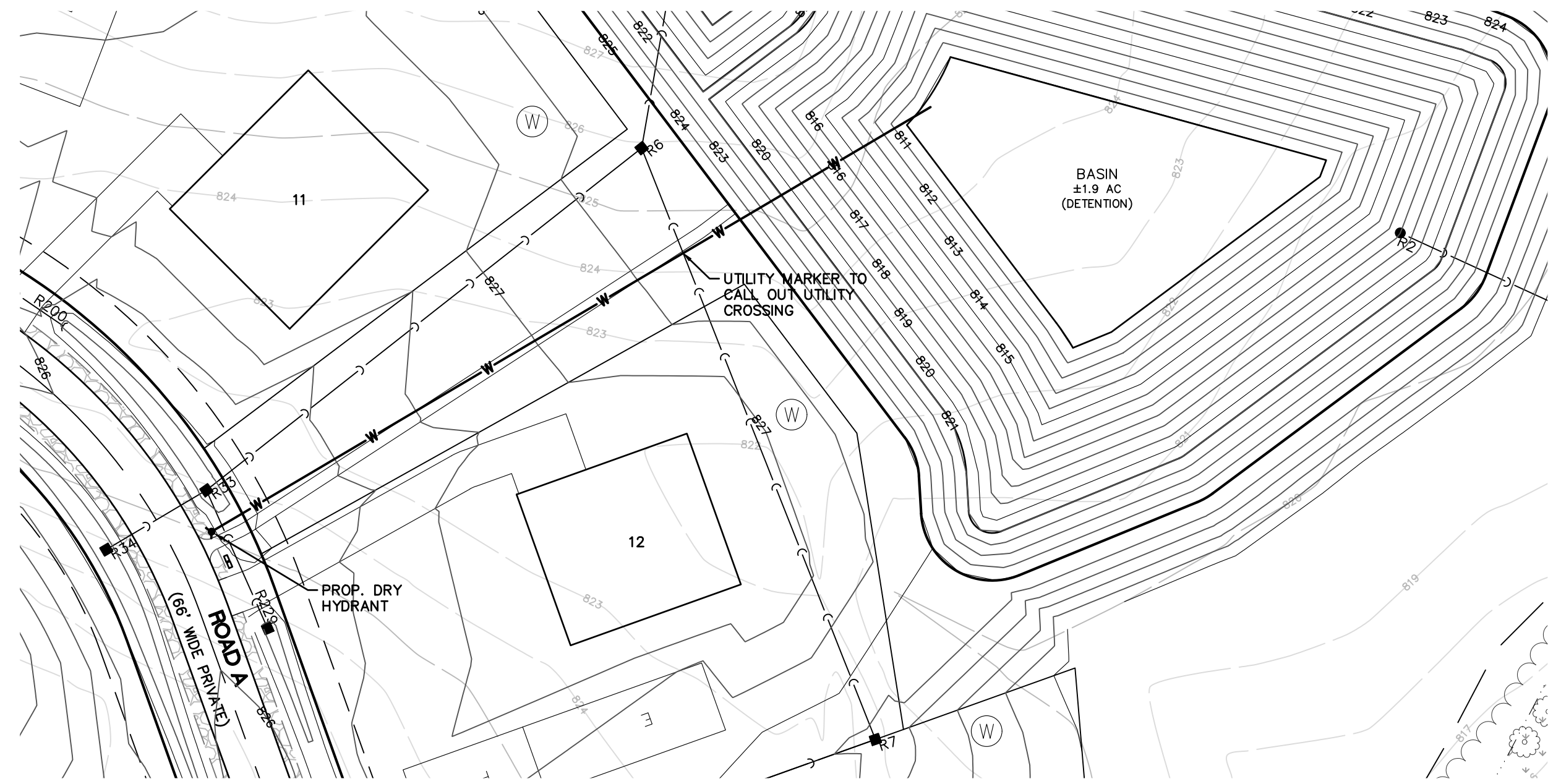
DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 25



KEYMAP  
SCALE: 1" = 750 FEET







**DRY HYDRANT STORAGE CALCULATIONS**  
Superior Township, Washtenaw County  
Kinley

**Required Storage Volume**

No. of Lots	=	21 Lots
Required Storage (gal) (10,000*(2,000*No. Lots))	=	52,000 gal
Required Storage (cf) Gal/7.48	=	6,952 cf

**Provided Storage Volume**

Elev.	Area	Avg. Area	Height	Volume
811.5	14,450	15,075	1	- cf
812.0	15,700	17,075	1	7,538 cf
813.0	18,450	19,938	1	24,613 cf
814.0	21,425	23,000	1	44,550 cf
815.0	24,575	28,038	1	67,550 cf
816.0	31,500	33,375	1	95,588 cf
817.0	35,250			128,963 cf

**Provided Storage (gal)**  
CF\*7.48 = **964,640 gal**

**HEAD LOSS CALCULATION**

Hydrant Elevation	824.7 ft
Inlet Elevation	811.5 ft
Static Head	13.2 ft

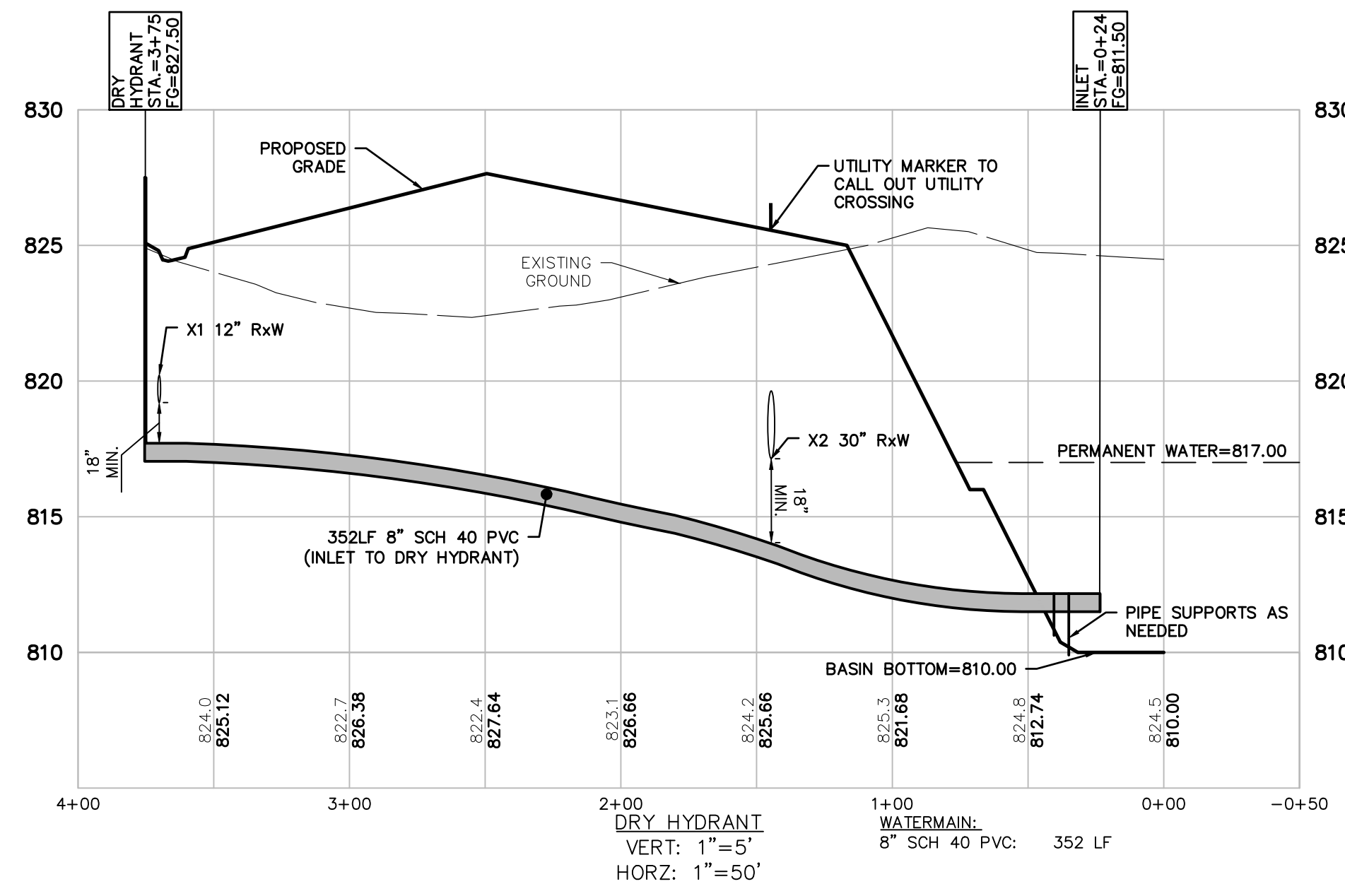
Calculate Equivalent Length from Pond to Hydrant

Fitting Type	Quantity	Equivalent Length	Total
Pipe (c=120)	325	1	325
Strainer	1	100	100
Reducer	1	20	20
			445

Fitting Type	Quantity	Equivalent Length	Total
Pipe (c=120)	13.2	1	13.2
90 degree elbow	1	10	10
			23.2

Friction Loss Flow - gpm	Head loss - Feet/100 Ft		
	8"	6"	Total
250	0.120	0.444	0.6
300	0.167	0.624	0.9
500	0.416	1.64	2.2
1000	1.55	6.23	8.3
1200	2.2	8.87	11.8
1500	3.38	13.7	18.2

TDH at 500 gpm 15.4 FT



**DRY HYDRANT RECORD OF INSPECTION**

- KEEP AN UP TO DATE RECORD OF CONDITIONS ASSOCIATED WITH EACH DRY HYDRANT.
- DEPTH OF WATER: APPROXIMATE LEVEL (IN FEET) FROM SURFACE TO STRAINER. BACK FLUSH: ACCOMPLISHED AS PER DEPARTMENT STANDARD OPERATING PROCEDURE (TIME OF YEAR, TYPE OF STRAINER END, STEEPNESS OF BANK, TYPE OF WATER SOURCE, ETC.).
- GALLONS PER MINUTE FLOW: DETERMINED BASED ON DEPARTMENT STANDARD OPERATING PROCEDURE (FILL-UP OR TANKER, USE OF DELUGE GUN, ATTACH HOSE WITH PRESSURE GAGE, ETC.).
- WEED CONTROL: SAME TYPE CLEANUP AS AROUND PRESSURIZED HYDRANTS. THE STANDARD OPERATING PROCEDURE WILL DETERMINE WHO IS RESPONSIBLE FOR CLEANUP.
- ROAD ACCESS: NOTE ANY UNUSUAL ACCESS CONDITION: ROAD, SURFACE, DRAINAGE, TREE LIMBS, GATES, LOCKS.
- REMARKS: COMMENTS LISTED BELOW ARE GENERAL. SPECIFY LOCAL CONDITIONS THAT DEPARTMENT STANDARD OPERATING PROCEDURE MAY REQUIRE.
  - CHECK END CAP CONDITION, LOCKING PROCEDURE THREADS.
  - IDENTIFY PUMPING UNIT PERFORMING THE INSPECTION. ALSO IDENTIFY ANY OTHER EQUIPMENT USED.
  - SHOW THE TIME REQUIRED TO PRIME AND BEGIN DRAFT.
  - IDENTIFY THE TYPE AND THREAD OF SECTION HOSE USED OR OTHER TYPE CONNECTION TO CONNECT WITH DRY HYDRANT.
  - STATE THE PROTECTION AND OTHER SUPPORT CONDITION FOR EACH DRY HYDRANT SUCH AS HEAD WITH END CAP OR STRAINER PORTION UNDER WATER. (CAN BE ACCOMPLISHED LATER, IF NOT INITIALLY PLANNED.)
  - IDENTIFY ANY PROVISIONS FOR THE PROTECTION FOR THE UNDERWATER PORTION OF EACH DRY HYDRANT IN STREAMS WHERE RAPIDLY FLOWING WATER DICTATES THE NEED FOR SUCH PROTECTION. (CAN BE ACCOMPLISHED LATER, IF NOT INITIALLY PLANNED.)
  - RECORD THE CONDITION OF THE WATER: MUDDY, SCUM, DEBRIS, ETC.
  - STATE WHETHER EROSION IS OCCURRING.

**DRY HYDRANT TESTING AND MAINTENANCE**

THE HOMEOWNERS ASSOCIATION SHALL COORDINATE TESTING AND MAINTENANCE WITH THE FIRE DEPARTMENT.

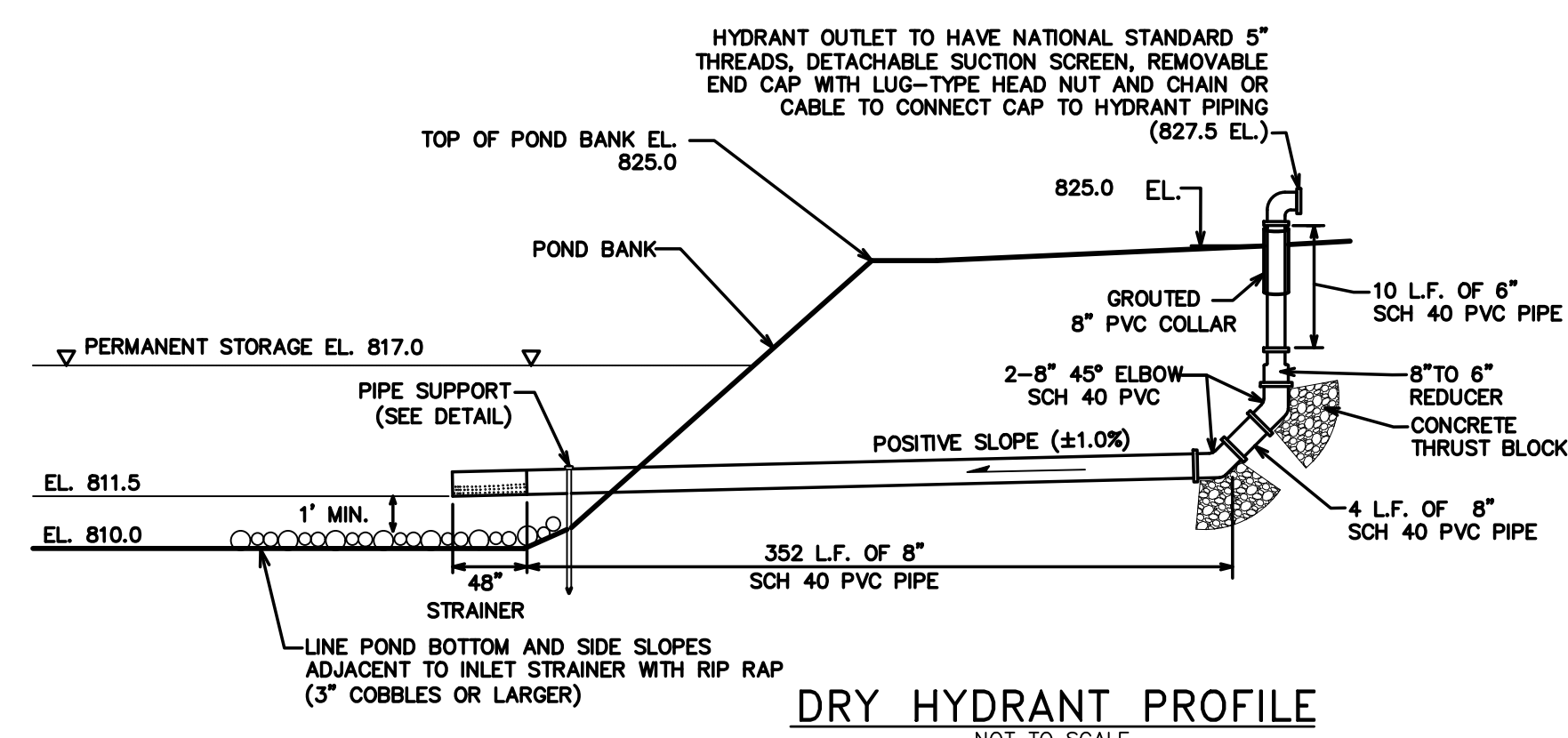
DRY HYDRANTS AND PONDS SHOULD BE CHECKED SEMI-ANNUALLY. CHECKING AND TESTING BY ACTUAL DRAFTING SHOULD BE A PART OF FIRE DEPARTMENT TRAINING AND DRILLS.

FREQUENT CLEANING OF THE PONDS MAY BE NEEDED TO REMOVE DEBRIS, DREDGING OR EXCAVATION OF SILT, AND PROTECTION FROM EROSION. THE HYDRANTS SHOULD BE TESTED AT LEAST ONCE A YEAR WITH A PUMPER.

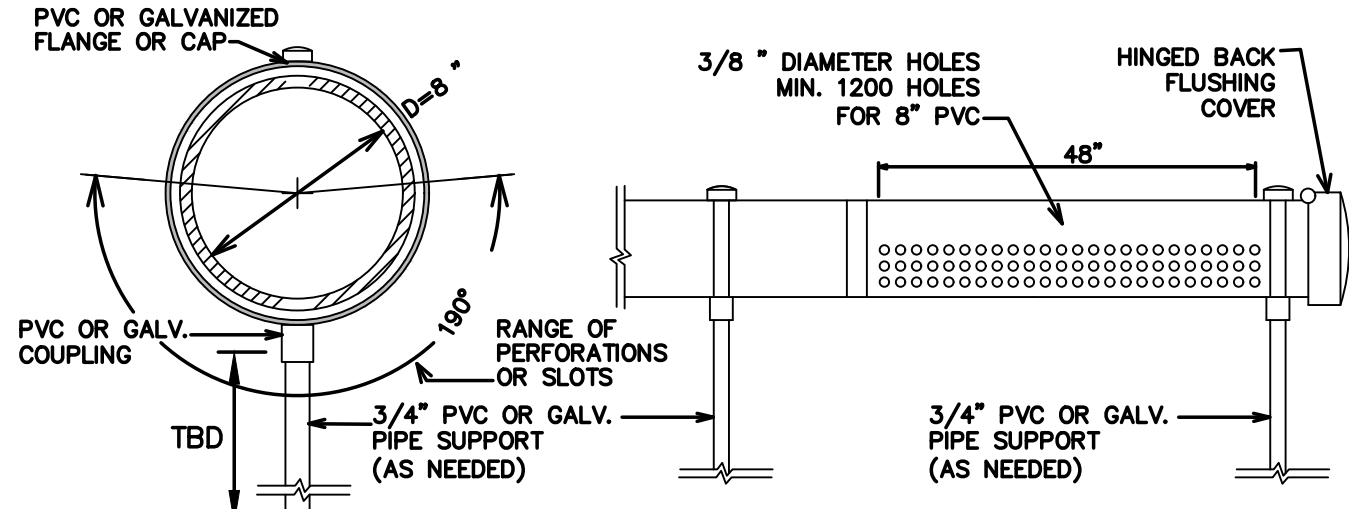
BACK FLUSHING, FOLLOWED BY A PUMPER TEST AT A MAXIMUM DESIGNED FLOW RATE, WITH RECORDS KEPT OF EACH TEST, IS DESIRED. TESTS OF THIS KIND WILL NOT ONLY VERIFY PROPER CONDITION BUT ALSO KEEP THE LINE AND STRAINER CLEAR OF SILT AND THE WATER SUPPLY AVAILABLE FOR ANY FIRE EMERGENCY.

THE POND SHOULD BE FREE OF AQUATIC GROWTH. IT MAY BE NECESSARY TO DRAIN THE POND TO CONTROL THIS GROWTH. CONSULT WITH COOPERATIVE EXTENSION SERVICE OR USDA OFFICE FOR ASSISTANCE IN WEED CONTROL.

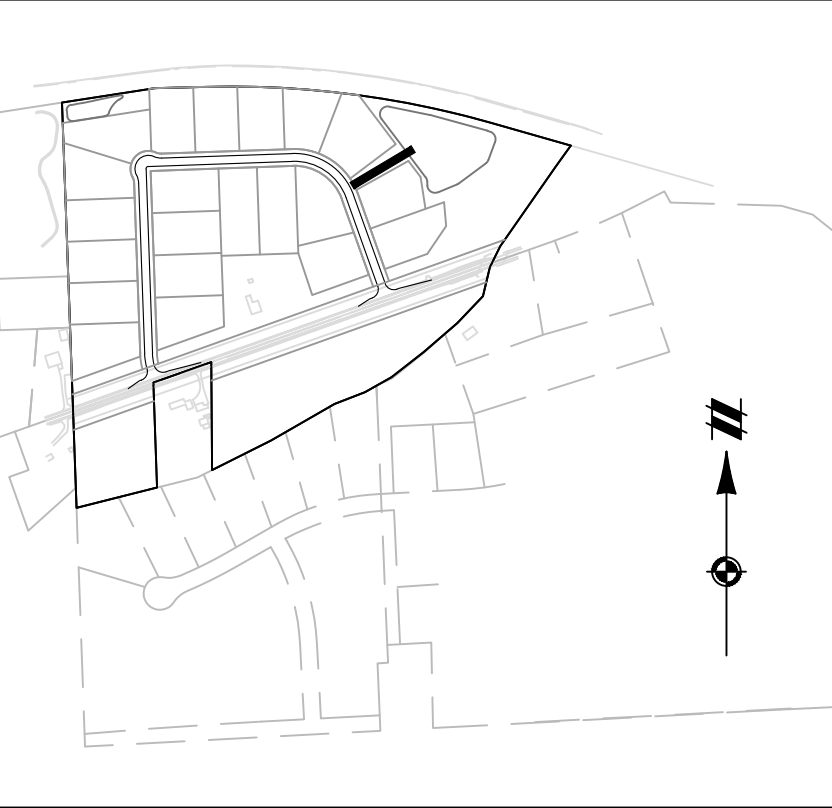
A RECORD OF INSPECTION SHOULD BE MAINTAINED FOR EACH HYDRANT.



**DRY HYDRANT PROFILE**  
NOT TO SCALE



**INTAKE STRAINER AND PIPE SUPPORT DETAILS**  
NOT TO SCALE



**KEYMAP**  
SCALE: 1" = 750 FEET

**UTILITY CROSSING TABLE**

X1	12" ST. B/P	819.21	8" W.M. T/P	817.71
X2	30" ST. B/P	817.11	8" W.M. T/P	814.85

**NOTE:**

ALL PIPES WITHIN A 1:1 INFLUENCE OF PAVEMENT WILL REQUIRE COMPACTED SAND BACKFILL

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM SEWER
	EXIST. WATER MAIN
	EXIST. SANITARY
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	PROP. SETBACK
	PROP. BUILDING
	PROP. BUILDING INTERIOR
	PROP. WALL
	PROP. PARKING STRIPE
	PROP. BACK OF CURB
	PROP. ASPHALT
	PROP. LOT LINE
	PROP. PARKING STRIPE
	PROP. CONTOUR
	PROP. SILT FENCE
	PROP. STORM SEWER
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. MANHOLE
	PROP. SEPTIC
	PROP. WELL

**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINLEY DEVELOPMENT  
FINAL SITE PLAN  
DRY HYDRANT PLAN AND PROFILE

DATE: APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS

SCALE: 0 25 50  
1" = 50 FEET

DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO. 26



**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 [www.atwell-group.com](http://www.atwell-group.com)  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4000



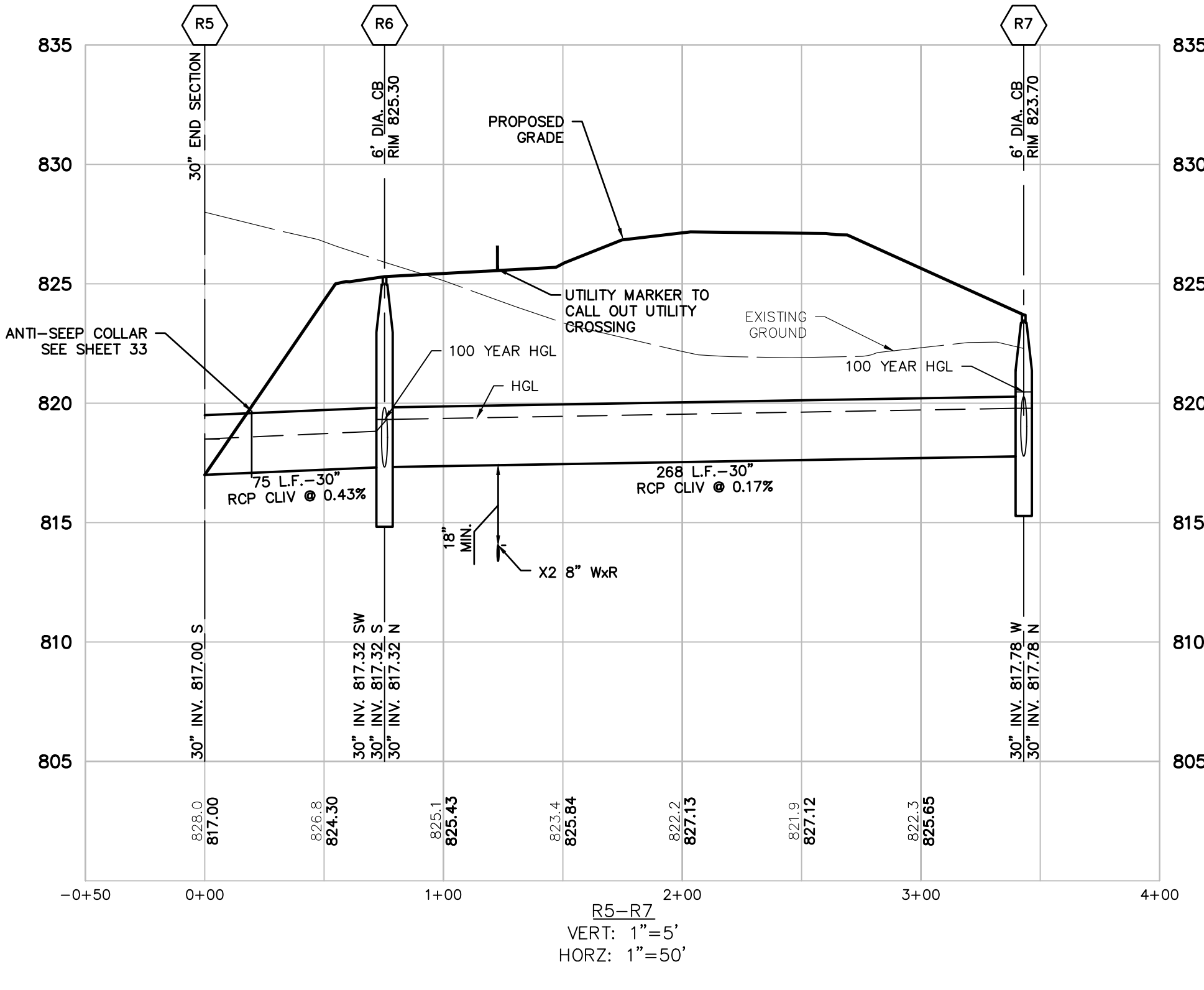
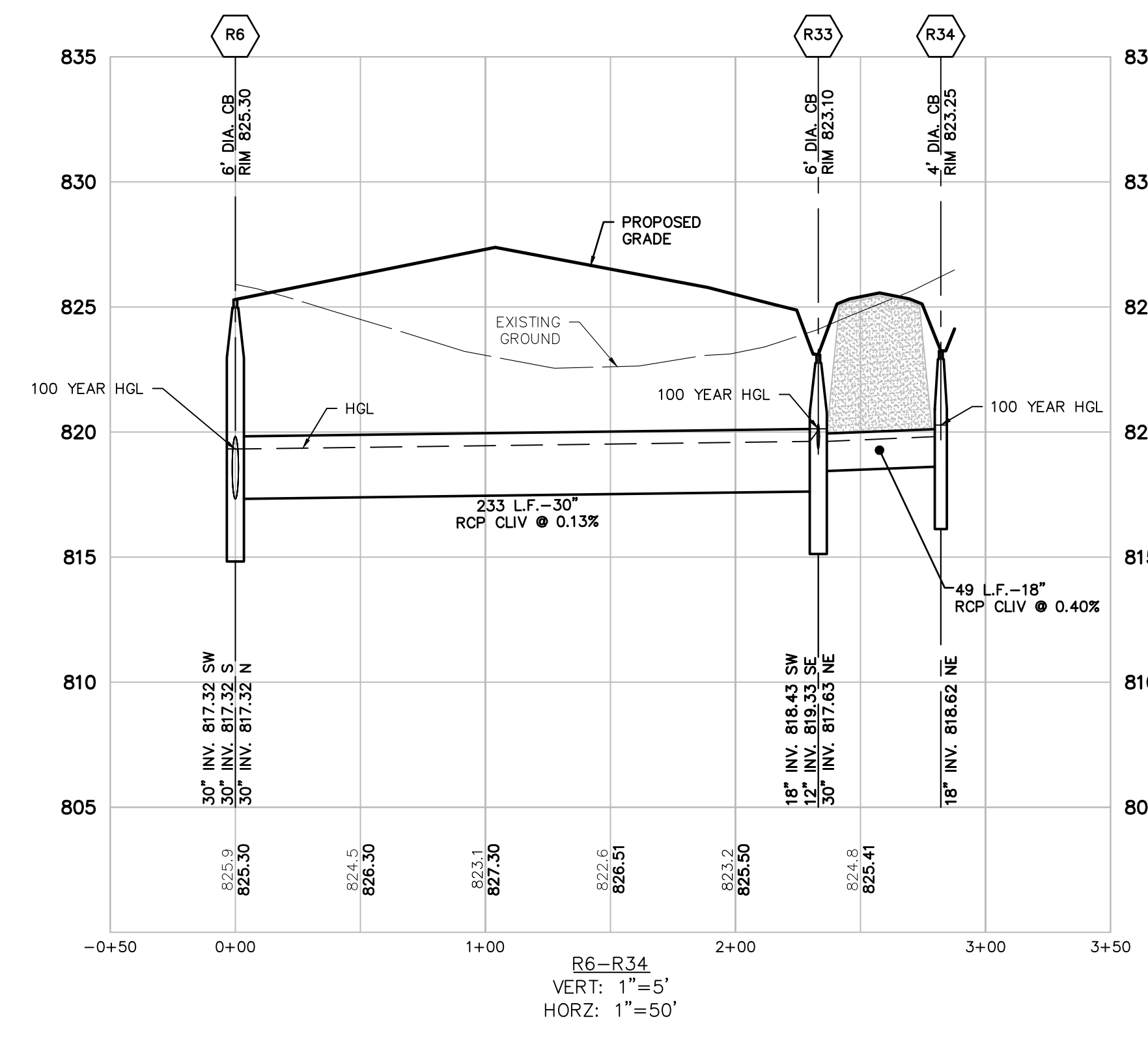
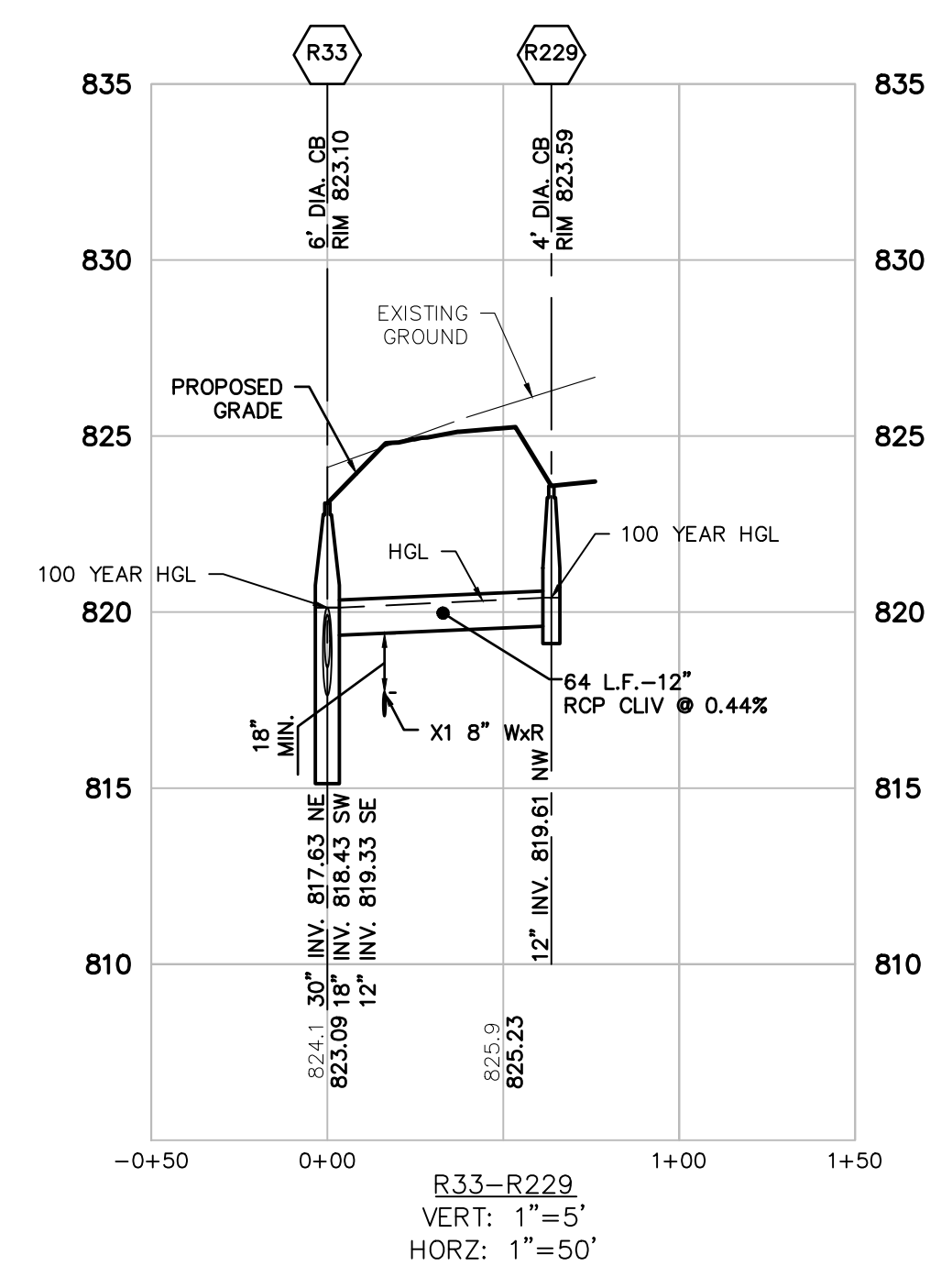
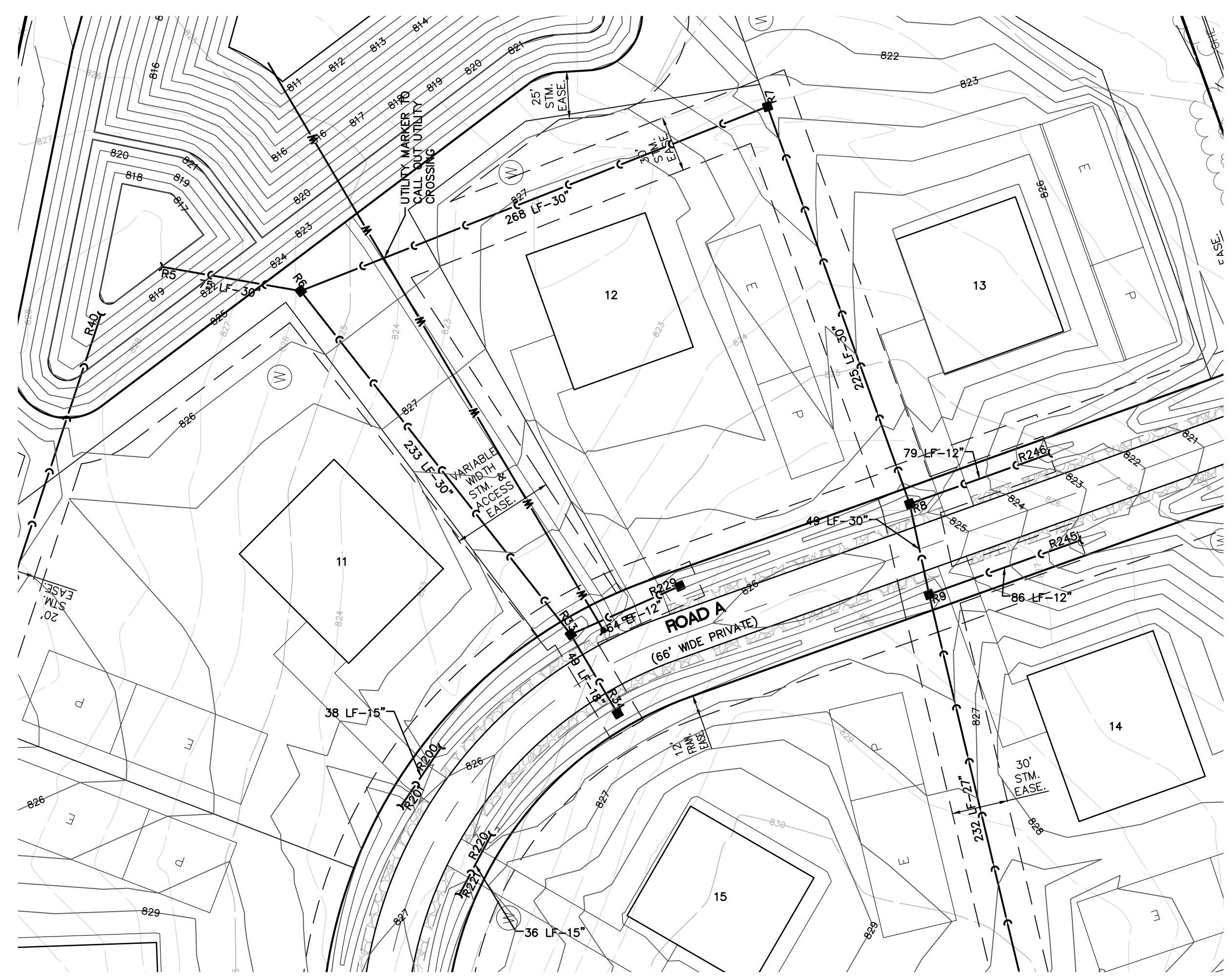
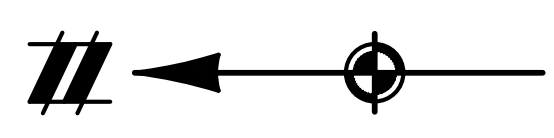
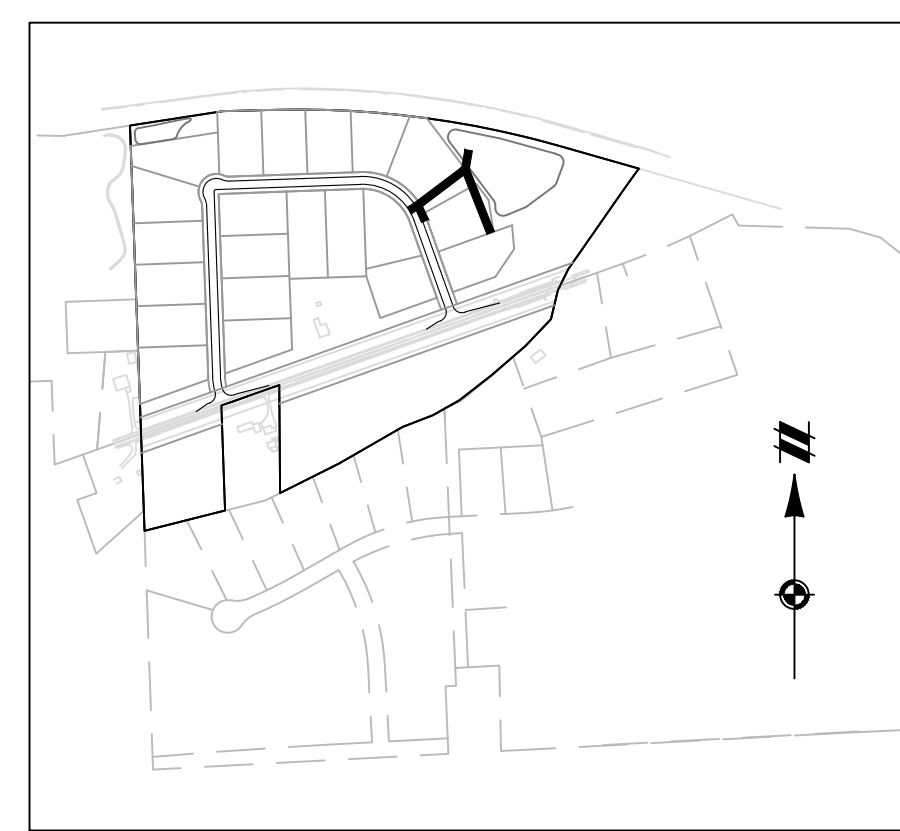
SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
STORM SEWER PLAN & PROFILE 1

DATE  
**APRIL 18, 2023**

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS	
0	SCALE
1	1" = 50 FEET
DR.	SK CH MC
BOOK	--
JOB	21002863
SHEET NO.	27



**UTILITY CROSSING TABLE**

X1	12" ST. B/P	819.21	8" W.M. T/P	817.71
X2	30" ST. B/P	817.11	8" W.M. T/P	814.05

**NOTE:**  
ALL PIPES WITHIN A 1:1 INFLUENCE OF PAVEMENT WILL REQUIRE COMPACTED SAND BACKFILL

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. WATER MAIN
	EXIST. SANITARY
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	PROP. SETBACK
	PROP. BUILDING
	PROP. BUILDING INTERIOR
	PROP. WALL
	PROP. PARKING STRIPE
	PROP. BACK OF CURB
	PROP. ASPHALT
	PROP. LOT LINE
	PROP. PARKING STRIPE
	PROP. CONTOUR
	PROP. SILT FENCE
	PROP. STORM SEWER
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. MANHOLE
	PROP. SEPTIC
	PROP. WELL





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



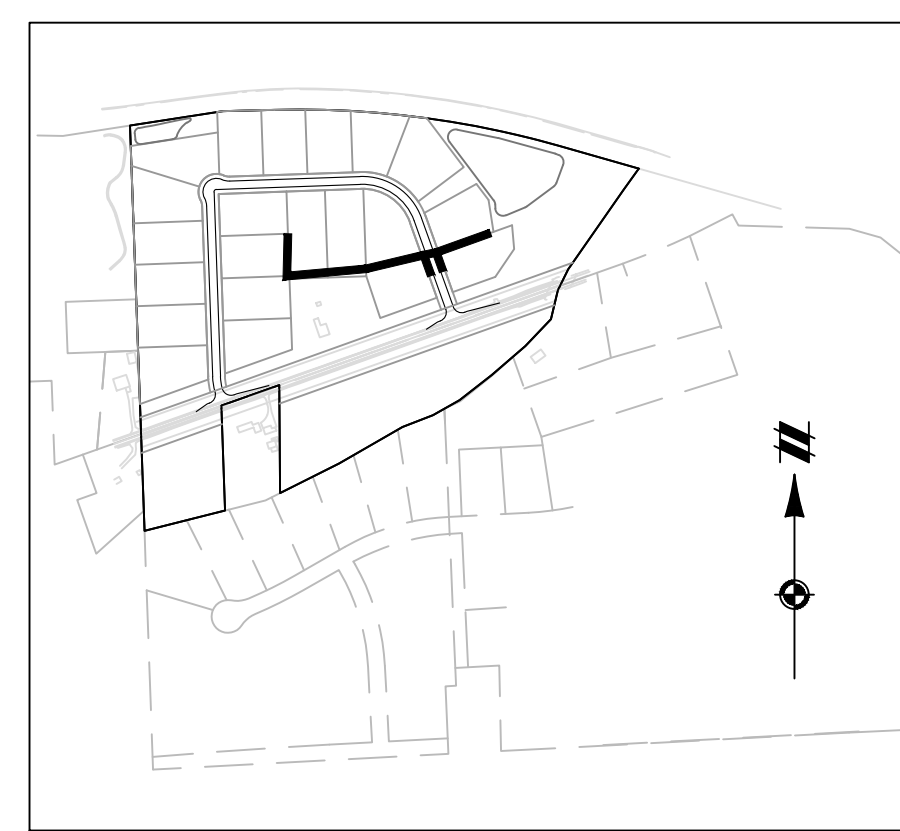
SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
**LOMBARDO HOMES**  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
STORM SEWER PLAN & PROFILE 2

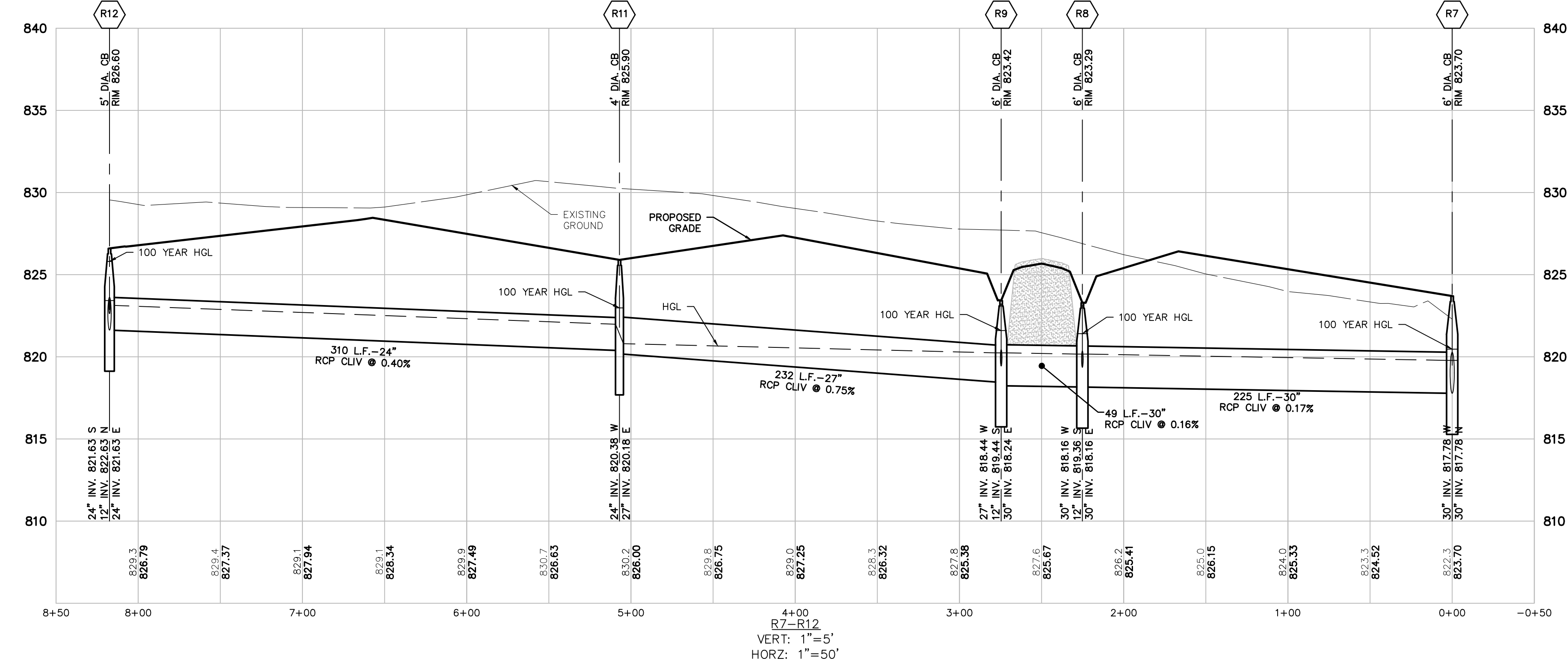
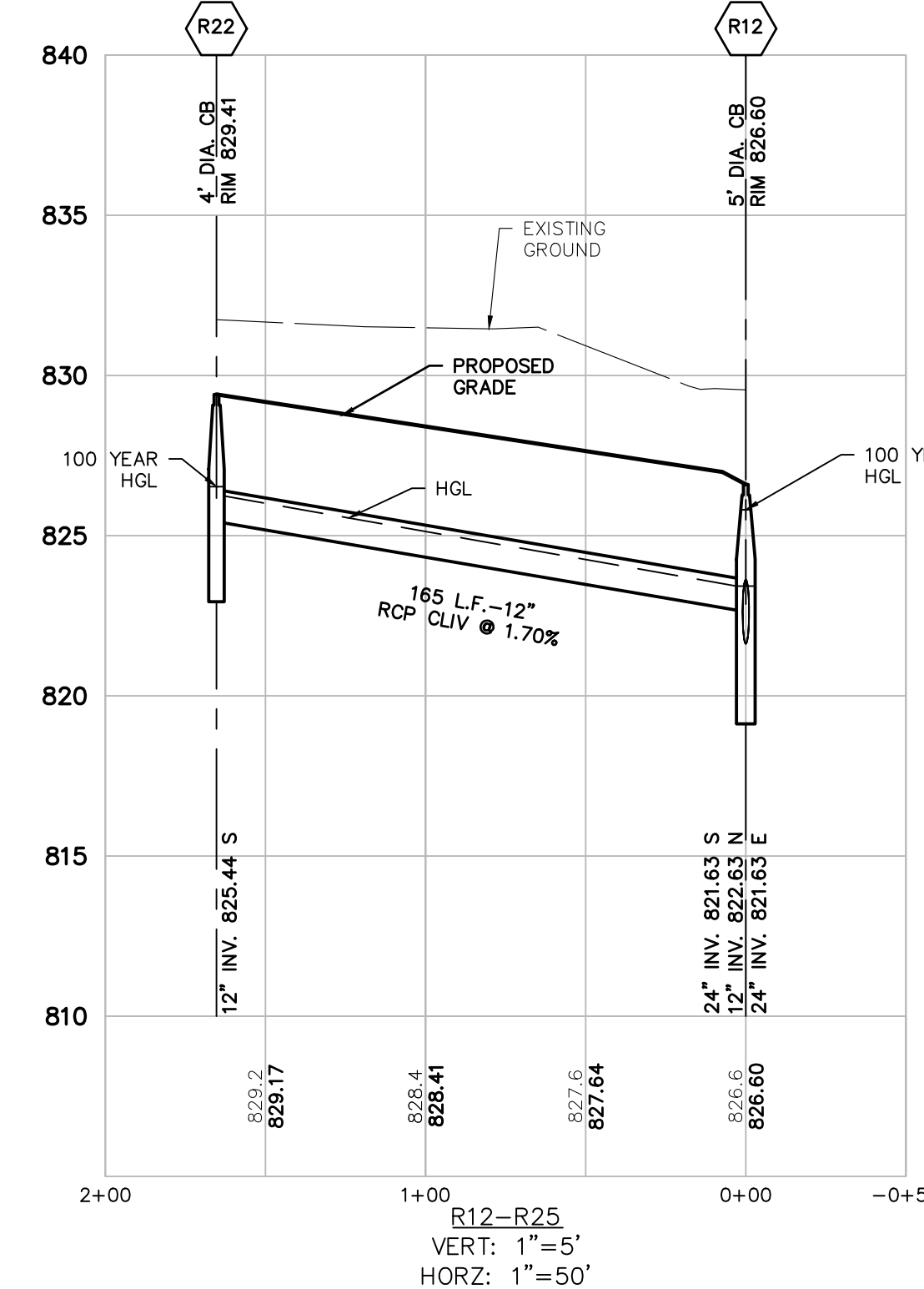
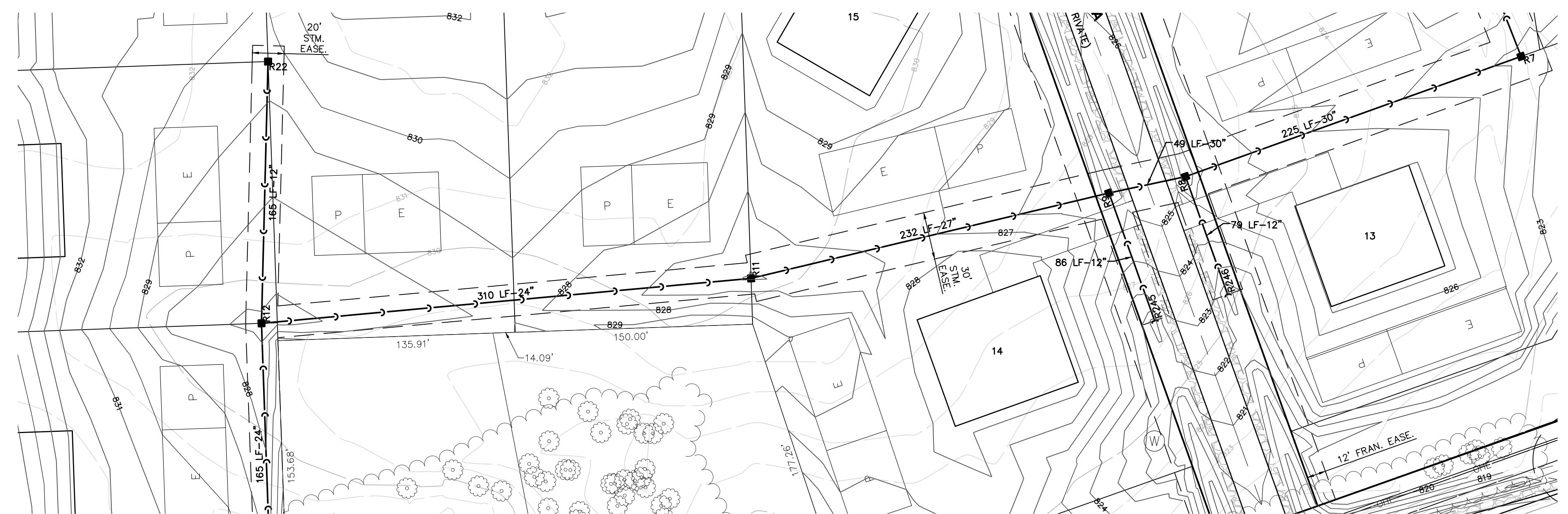
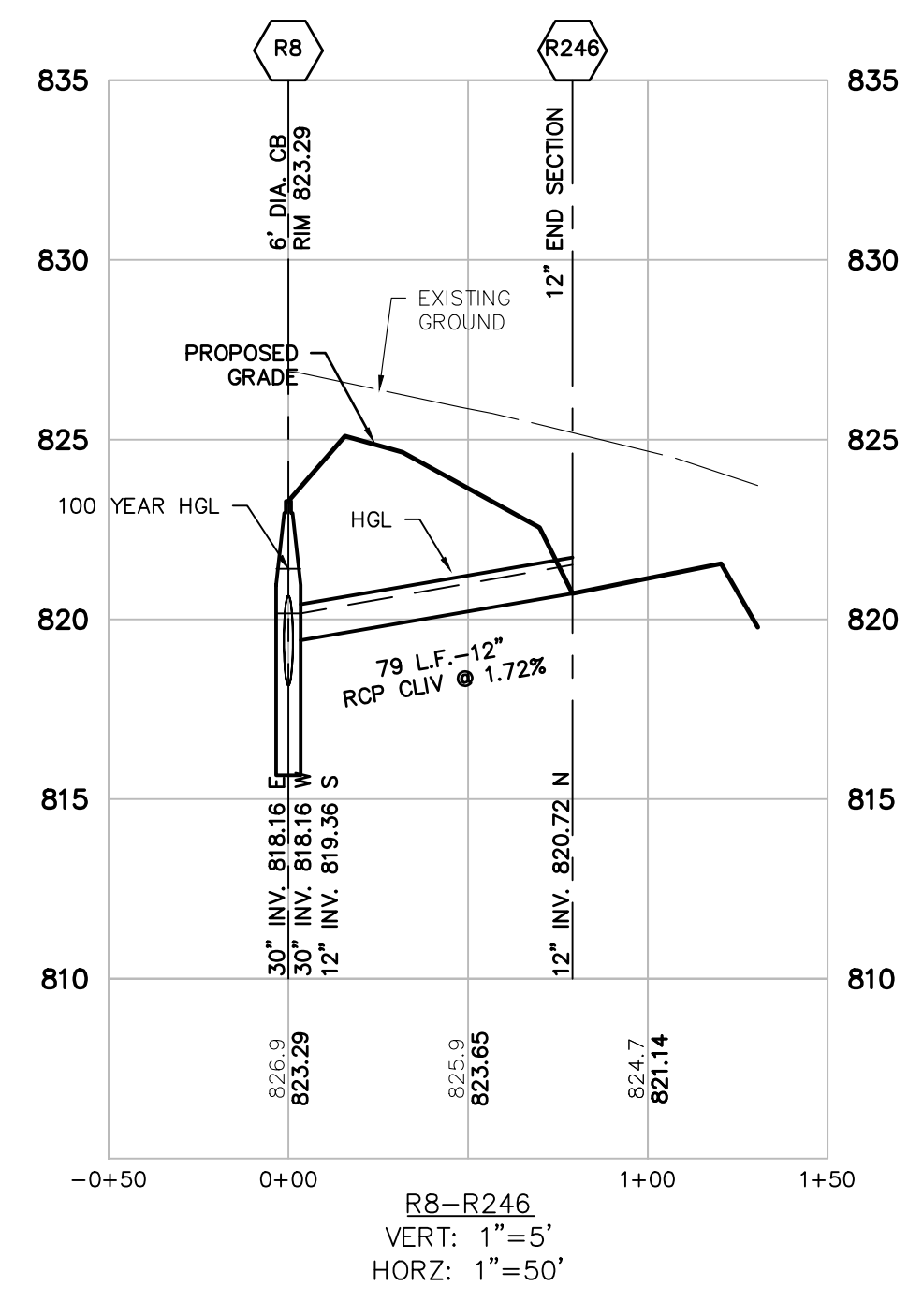
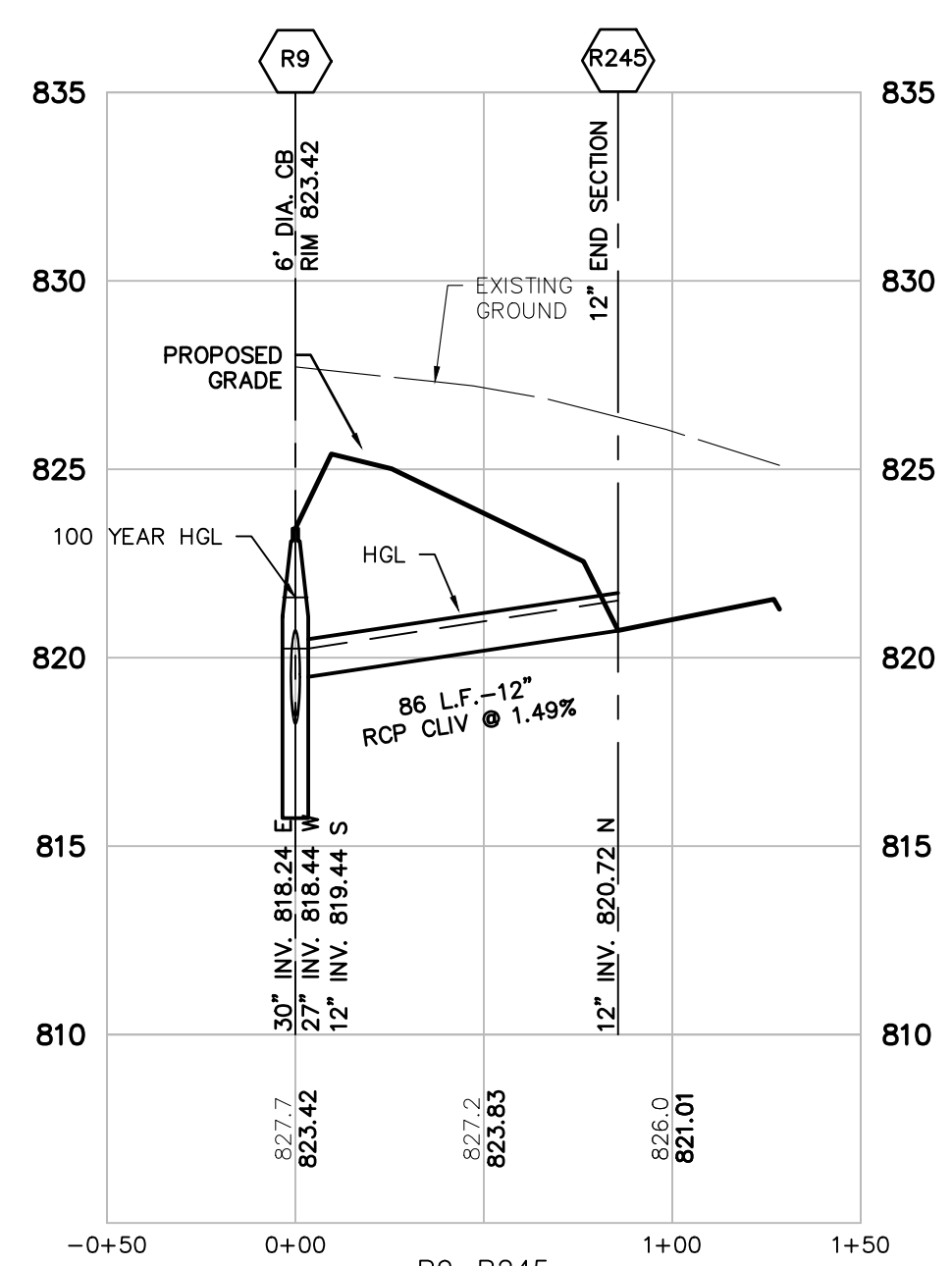
DATE  
APRIL 18, 2023

5/30/23	PER WCRC
7/11/23	PER TWP
8/10/23	PER WCHD/WCRC/WCRC
10/27/23	PER WCHD/WCRC
11/30/23	PER WCRC
1/12/24	PER WCRC

REVISIONS	
SCALE	0 25 50
1" = 50 FEET	
DR.	SK CH MC
P.M.	MC
BOOK	--
JOB	21002863
SHEET NO.	28



KEYMAP  
SCALE: 1" = 750 FEET

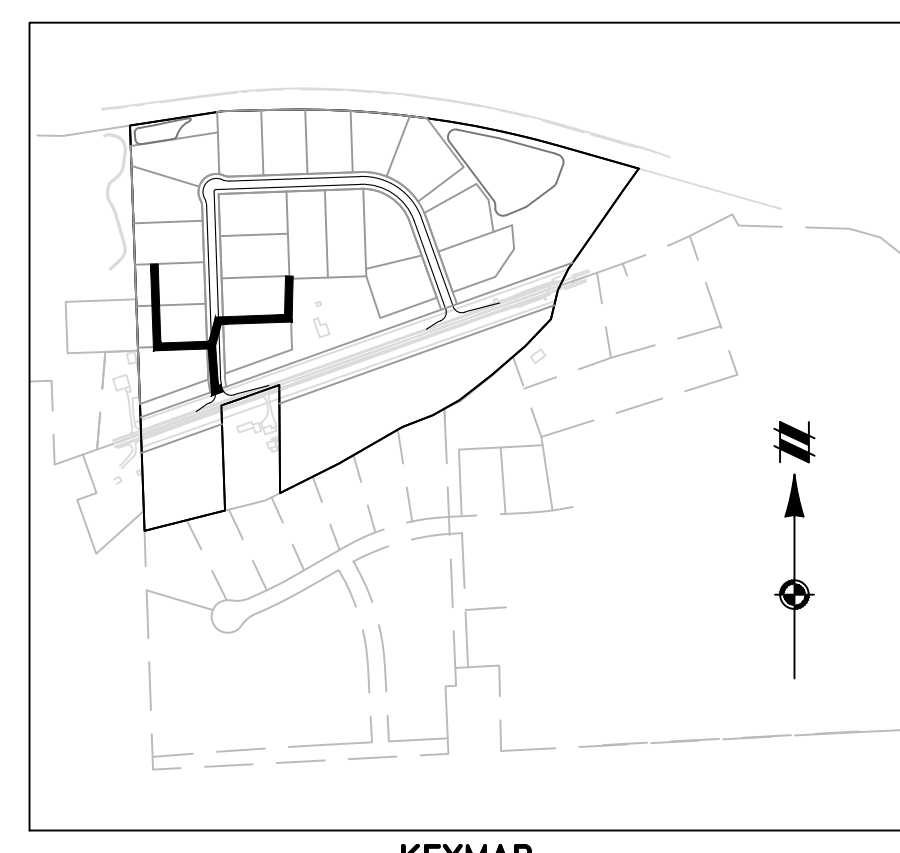
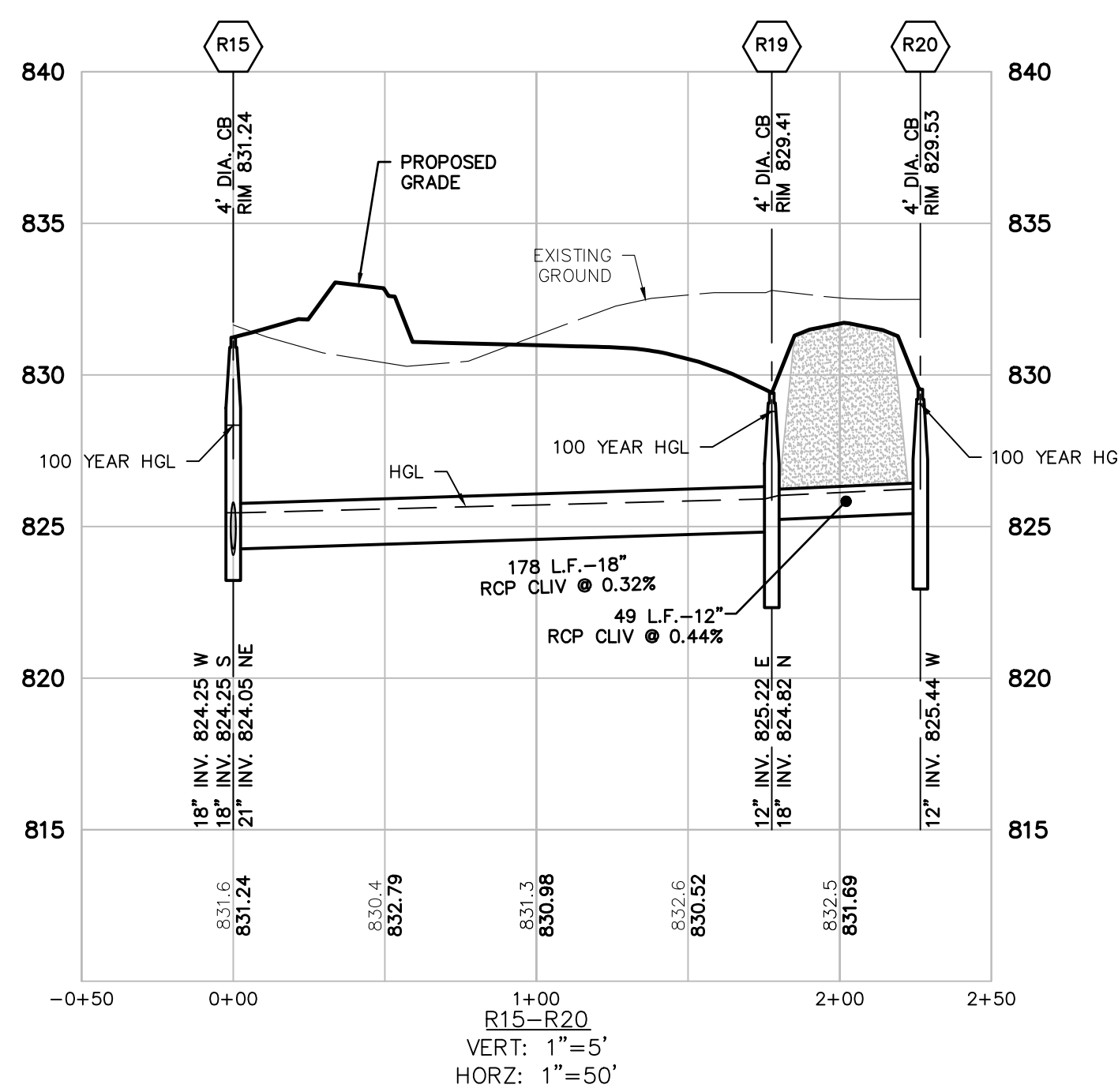


NOTE:  
ALL PIPES WITHIN A 1:1 INFLUENCE OF PAVEMENT WILL REQUIRE COMPACTED SAND BACKFILL

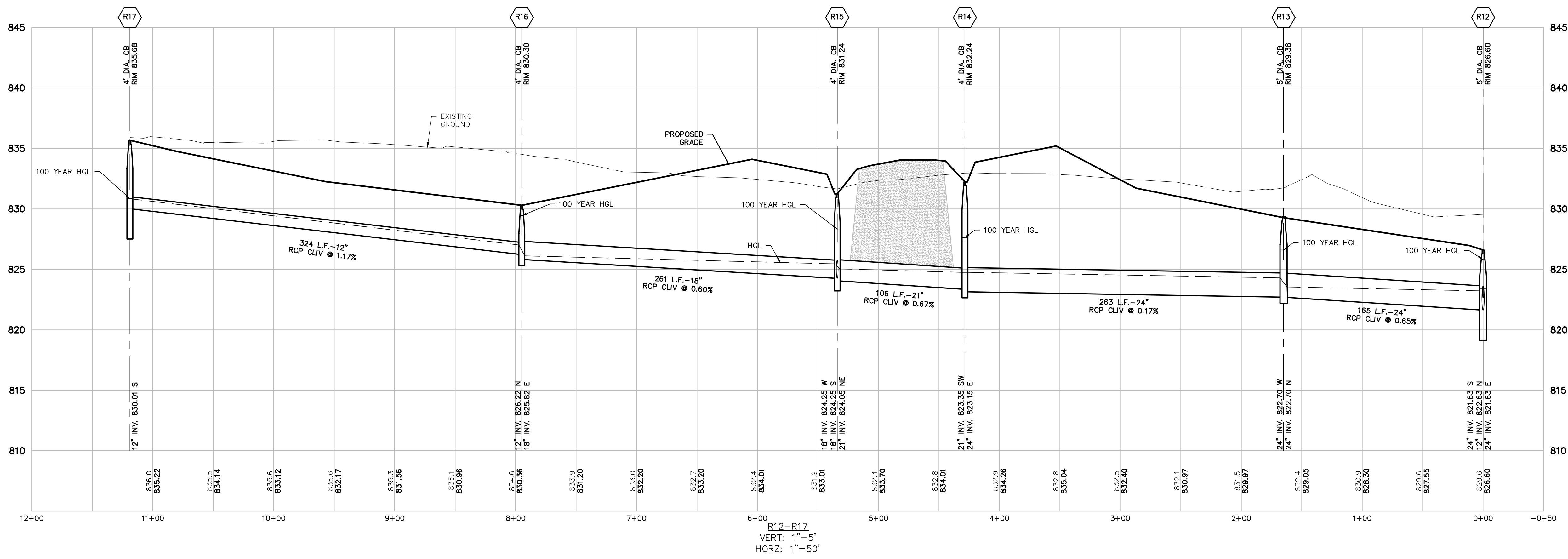
LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. WATER MAIN
	EXIST. SANITARY
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	PROP. SETBACK
	PROP. BUILDING
	PROP. BUILDING INTERIOR
	PROP. WALL
	PROP. PARKING STRIPE
	PROP. BACK OF CURB
	PROP. ASPHALT
	PROP. LOT LINE
	PROP. PARKING STRIPE
	PROP. CONTOUR
	PROP. SILT FENCE
	PROP. STORM SEWER
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. MANHOLE
	PROP. SEPTIC
	PROP. WELL

K:\VTD\2023\04\KINSLEY\DWG\SS\SS-21002863-13.dwg 1/27/2024 4:18 PM CHRIS WIRTHMAN





KEYMAP  
SCALE: 1" = 750 FEET



**NOTE:**  
ALL PIPES WITHIN A 1:1 INFLUENCE OF PAVEMENT WILL REQUIRE COMPACTED SAND BACKFILL

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. WATER MAIN
	EXIST. SANITARY
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	PROP. SETBACK
	PROP. BUILDING
	PROP. BUILDING INTERIOR
	PROP. WALL
	PROP. PARKING STRIPE
	PROP. BACK OF CURB
	PROP. ASPHALT
	PROP. LOT LINE
	PROP. PARKING STRIPE
	PROP. CONTOUR
	PROP. SILT FENCE
	PROP. STORM SEWER
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. MANHOLE
	PROP. SEPTIC
	PROP. WELL

**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4060

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
STORM SEWER PLAN & PROFILE 3

DATE: APRIL 18, 2023

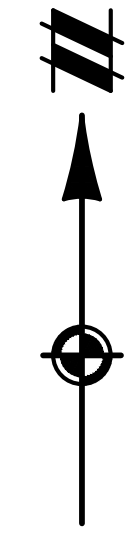
5/30/23 PER WCWRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC/WCWR  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCWRC

REVISIONS

SCALE: 0 25 50  
1" = 50 FEET

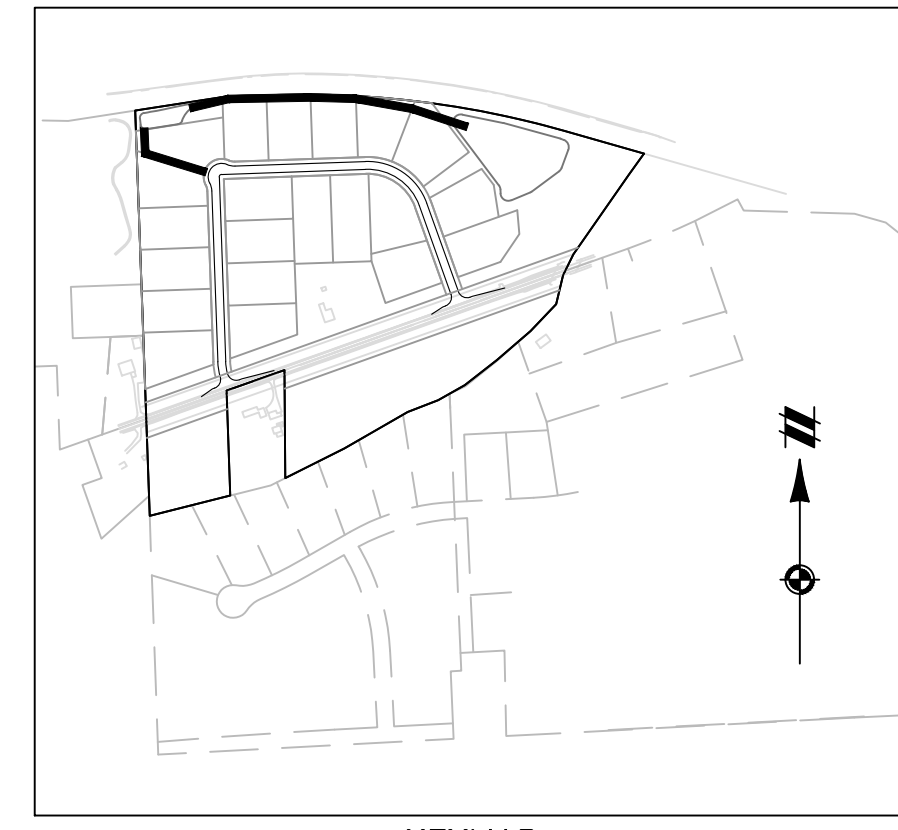
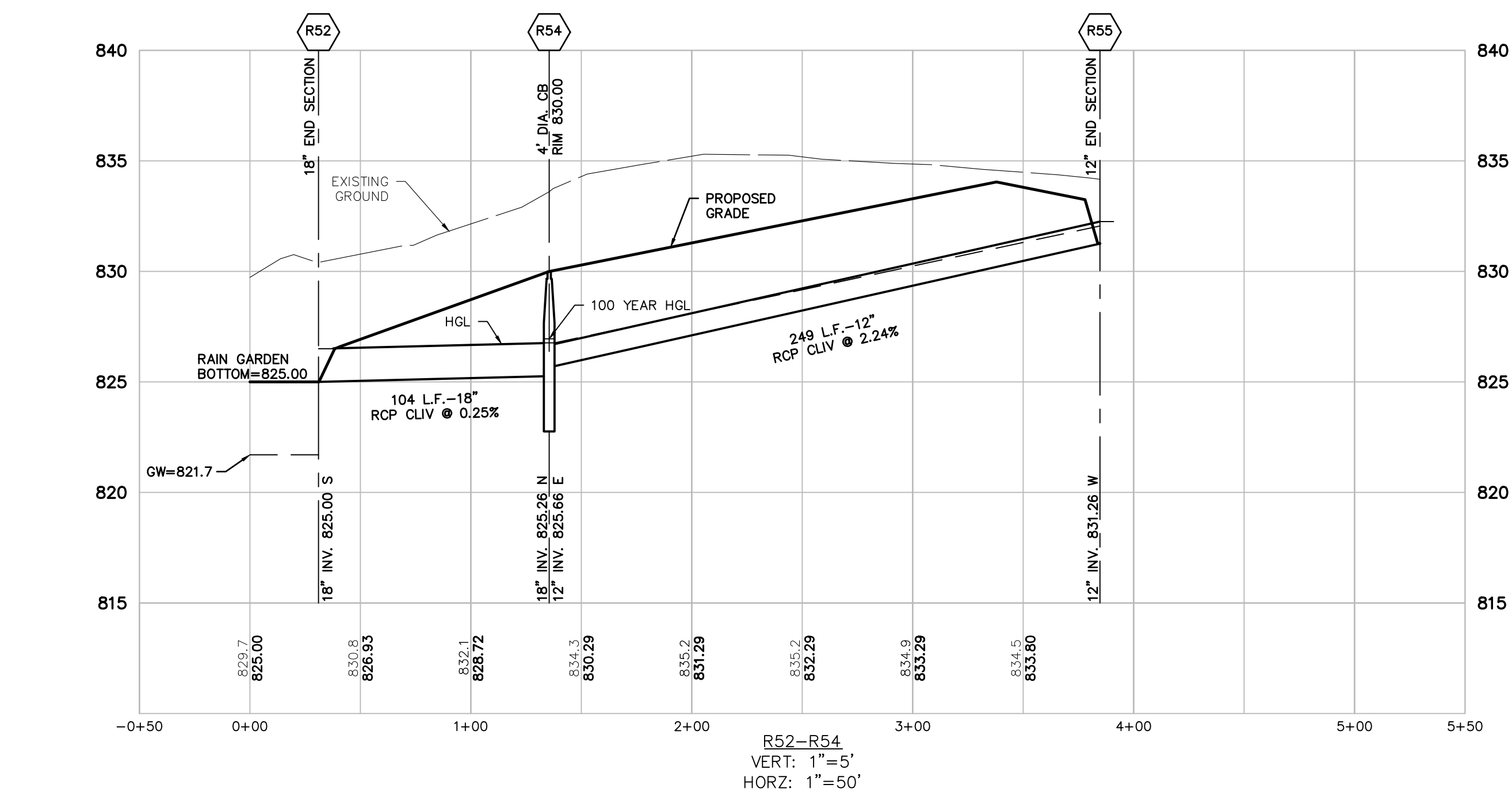
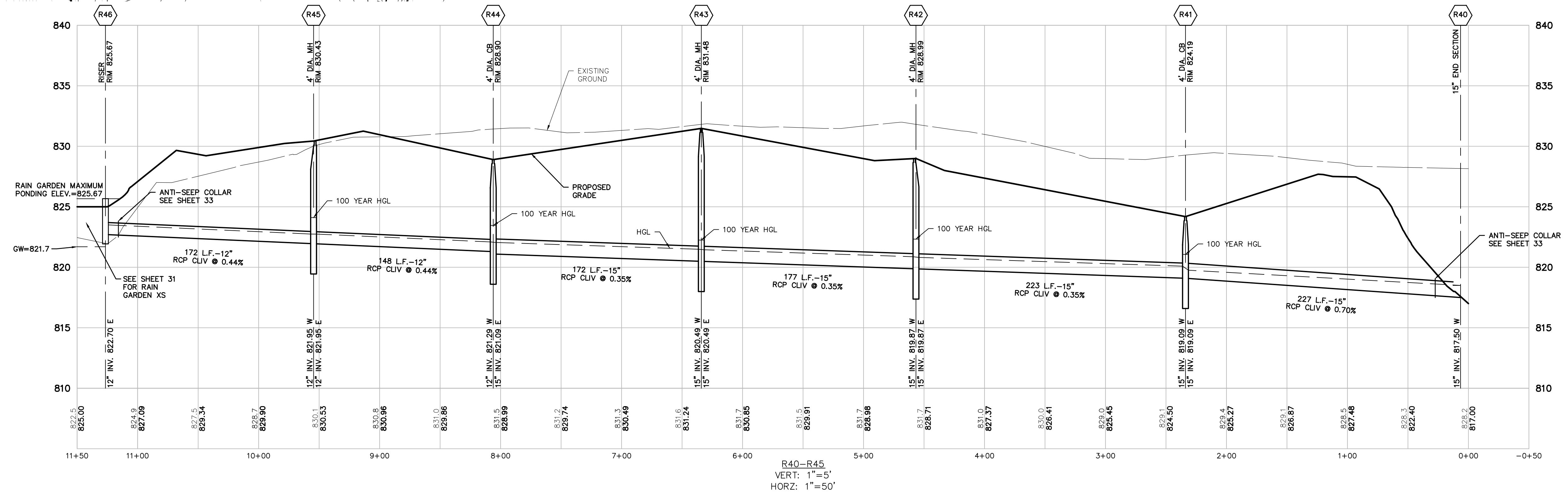
DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 29





**NOTE:**  
ALL PIPES WITHIN A 1:1 INFLUENCE OF PAVEMENT WILL REQUIRE COMPACTED SAND BACKFILL

LEGEND	
	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. TREE LINE
	EXIST. CURB AND GUTTER
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. WATER MAIN
	EXIST. SANITARY
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	EXIST. HYDRANT
	EXIST. VALVE
	EXIST. SANITARY SEWER
	PROP. SETBACK
	PROP. BUILDING
	PROP. BUILDING INTERIOR
	PROP. WALL
	PROP. PARKING STRIPE
	PROP. BACK OF CURB
	PROP. ASPHALT
	PROP. LOT LINE
	PROP. PARKING STRIPE
	PROP. CONTOUR
	PROP. SILT FENCE
	PROP. STORM SEWER
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. MANHOLE
	PROP. SEPTIC
	PROP. WELL



CLIENT: LOMBARDO HOMES  
TOWN 02 NORTH, RANGE 07 EAST  
SECTION 08  
SUPERIOR TOWNSHIP  
WASHENAW COUNTY, MICHIGAN

DATE: APRIL 18, 2023

5/30/23	PER WCRC
7/11/23	PER TWP
8/10/23	PER WCH/WCRC
10/27/23	PER WCH/WCRC
11/30/23	PER WCRC
1/12/24	PER WCRC

REVISIONS

SCALE	0	25	50
	1" = 50 FEET		
DR.	SK	CH.	MC
BOOK	---		
JOB	21002863		
SHEET NO.	30		



**RAIN GARDEN**

**W1** Determine Post-Development Cover Types, Areas, Curve Numbers and runoff coefficients  
Total Contributing Drainage Area = 4.82 Acres

**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 =	61	
C	S = (1000/CN) * 10	S =	6.39	in
D	Q = (P-0.25)/(S+0.85)	Q =	1.44	in
E	PerVIOUS Cover Area	Area =	222,236	sf
F	V <sub>100-year</sub> = Q(11/2)Area	V <sub>100-year</sub> =	26,887	cf

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

A	100 year storm event	P =	5.11	in
B	Impervious Cover CN	CN =	98	
C	S = (1000/CN) * 10	S =	0.20	in
D	Q = (P-0.25)/(S+0.85)	Q =	4.87	in
E	Impervious Cover Area	Area =	45,335	sf
F	V <sub>100-year</sub> = Q(11/2)Area	V <sub>100-year</sub> =	18,410	cf

**W8** Determine Time of Concentration (T<sub>con</sub>)  
User specified, assume 20 minutes  
Total Time of Concentration (hrs) = 0.33

**W9** Runoff Summary & Onsite Infiltration Requirement

V <sub>100-year</sub> *	26,887 cf	Total 100-year Volume (V <sub>100</sub> )	44,997 cf
V <sub>100-year</sub> **	18,410 cf		

**W11** Determine Applicable BMPs and Associated Volume Credits

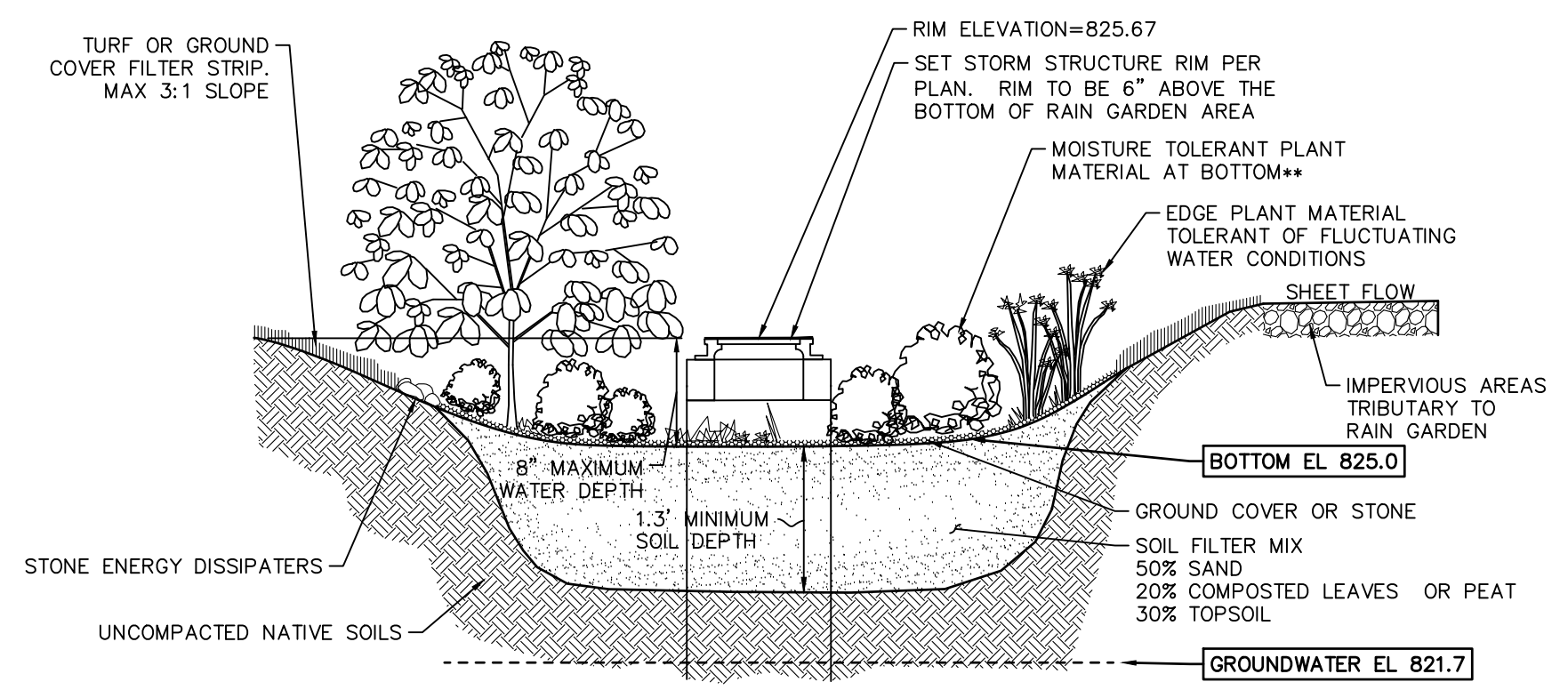
Proposed BMP	Area (ft <sup>2</sup> )	Storage Depth (ft)	Storage Volume (ft <sup>3</sup> ) (30% Voids in soil storage)	Area Design Infil. Rate (in/yr)	Infil. During Storm (ft)	Potential Volume Reduction (ft <sup>3</sup> )	Actual Reduction (ft <sup>3</sup> )		
Rain Garden	7,500	1.30	0.67	2,925	5,025	10	37,500	46,450	44,997

\* Per Geotechnical Investigation by McDaniel & Associates. Includes a factor of safety of 2.  
\*\* Minimum of the calculated potential reduction and the 100-year storm volume over the tributary area. See W11A.

Total Volume Reduction Credit by Proposed Structural BMPs (V<sub>100</sub>) = 44,997 cf

**W11A** Infiltration Loading Rates and Storage Volume Drawdown Times

Proposed BMP	100-yr Contributing Runoff (cf)	Tributary Area (sf)	Overall Loading Rate	Imperv. Area (sf)	Impervious Loading Ratio	Drawdown Time (hrs)
R1: Infiltration Basin (7P-10)	44,997	209,959	28.0	45,335	6.0	0.80



\*\* SWALE SEED MIX, PER JF NEW NURSERY - WALKERTON, ID (574) 586-3400, OR EQUAL. THE SEED MIX CONTAINS NATIVE PLANTS THAT WILL HELP FILTER POLLUTANTS FROM YARD AND ROAD RUNOFF. THE MIX CAN BE USED IN YARD AREAS THAT RETAIN WATER FOR SOME TIME AFTER A RAIN EVENT. THE SEED MIX CONTAINS NATIVE GRASS, SEDGES AND FORB SPECIES INCLUDING BIG BLUE STERN, BRISTLY SEDGE, PORCUPINE SEDGE, BROWN FOX SEDGE, CANADA WILD RYE, FOWL MANNA GRASS, SWITCH GRASS, DARK GREEN RUSH, WOOL GRASS, WATER PLANTAIN, SWAMP MILKWEED, NEASTER, TALL COREOPSIS, SPOTTED JOE-PYE WEED, BLUE FLAG IRIS, MARSH MORNING STAR, CAROLINA FLOWER, BLUE LOBELIA, ARROWHEAD, ROUGH GOLDENROD, BLUE VERVAIN, GOLDEN ALEXANDERS AND TEMPORARY COVER OF SEED OATS, SEEDING RATE: 26.44 LBS. PER ACRE.

**CONVEYANCE CALCULATIONS**

$I = B/(T+D)^E$      $B = 175.0$      $D = 25.0$      $E = 1$   
 $C = \text{varies}$      $T_{min} = 15$      $n = 0.013$      $V_{min} = 3.0$     \* = Check Rim-HGL clearance  
 FOR CONCRETE PIPES  
 FOR SWALES (VEGETATED)  
 FOR CMP

FROM STRUCT INPUT	TO STRUCT	A TRIB AREA (AC)	C RUNOFF COEFF	Ax C EQUIV AREA	CA DESIGN SUM Ax C	T TIME CONC. (MIN)	I INTEN-SITY (IN/HR)	Q FLOW CAxI (CFS)	Qc PIPE CAPAC. (CFS)	D PIPE DIAM. (IN)	L PIPE LENGTH (FT)	S PIPE SLOPE (%)	HGq MIN HG for Q (%)	HGv MIN HG for V <sub>min</sub> (%) (SEWER)	HG HGL SLOPE (%)	Vf FULL VELL. (FPS)	Tf TIME FLOW (MIN)	H.G.L. ELEV. UPPER END	H.G.L. ELEV. LOWER END	RIM/GROUND ELEV. UPPER END	RIM/GROUND ELEV. LOWER END	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	
DETECTION 1																								
SEWER	R17	R16	0.29	0.59	0.17	0.17	15.0	4.38	0.74	3.85	12	324	1.17	0.04	0.44	0.44	4.9	1.1	830.81	827.02	835.68	830.30	830.01	826.22
SEWER	R16	R15	2.24	0.38	0.85	1.02	16.1	4.26	4.34	8.14	18	261	0.60	0.17	0.25	0.25	4.6	0.9	826.12	825.45	830.30	831.24	825.82	824.25
SEWER	R15	R14	0.32	0.57	0.18	1.97	17.0	4.17	8.21	12.97	21	106	0.67	0.27	0.21	0.27	5.4	0.3	825.04	824.76	831.24	832.24	824.05	823.35
SEWER	R14	R13	0.35	0.47	0.17	2.19	17.3	4.14	9.06	9.33	24	263	0.17	0.16	0.17	0.17	3.0	1.5	824.76	824.30	832.24	829.38	823.15	822.70
SEWER	R13	R12	0.79	0.38	0.30	2.49	18.8	4.00	9.95	18.24	24	165	0.65	0.19	0.17	0.19	5.8	0.5	823.54	823.23	829.38	826.60	822.70	821.63
SEWER	R12	R11	2.04	0.36	0.74	3.48	19.3	3.95	13.75	14.31	24	310	0.40	0.37	0.17	0.37	4.6	1.1	823.13	821.98	826.60	825.90	821.63	820.38
SEWER	R11	R9	1.36	0.34	0.46	3.94	20.4	3.85	15.19	26.82	27	232	0.75	0.24	0.15	0.24	6.7	0.6	820.80	820.24	825.90	823.82	820.18	818.44
SEWER	R9	R8	0.36	0.40	0.14	4.25	21.0	3.80	16.17	16.41	30	49	0.16	0.16	0.13	0.16	3.3	0.2	820.24	820.17	823.82	823.67	818.24	818.16
SEWER	R8	R7	0.16	0.39	0.06	4.45	21.2	3.79	16.86	16.91	30	225	0.17	0.17	0.13	0.17	3.4	1.1	820.17	819.79	823.67	823.70	818.16	817.78
SEWER	R7	R6	0.40	0.39	0.16	4.61	22.3	3.70	17.06	17.06	30	268	0.17	0.17	0.13	0.17	3.4	1.3	819.79	819.32	823.70	825.30	817.78	817.32
SEWER	R6	R5	0.32	0.46	0.15	7.50	23.6	3.60	27.01	27.01	30	75	0.43	0.43	0.13	0.43	5.5	0.2	818.63	818.50	825.30	816.08	817.32	817.00
SEWER	R20	R19	0.70	0.53	0.37	0.37	15.0	4.38	1.62	2.36	12	49	0.44	0.21	0.44	0.44	3.0	0.3	826.24	826.02	829.40	829.41	825.44	825.22
SEWER	R19	R15	0.68	0.39	0.27	0.64	15.3	4.34	2.78	5.94	18	178	0.32	0.07	0.25	0.25	3.4	0.9	825.91	825.45	829.41	831.24	824.82	824.25
SEWER	R22	R12	0.69	0.37	0.25	0.25	15.0	4.38	1.09	4.65	12	165	1.70	0.09	0.44	0.44	5.9	0.5	826.24	823.43	829.41	826.60	825.44	822.63
SEWER	R34	R33	0.52	0.48	0.25	1.49	15.0	4.38	6.52	6.64	18	49	0.40	0.39	0.25	0.39	3.8	0.2	819.82	819.63	823.13	823.10	818.62	818.43
SEWER	R33	R6	0.41	0.38	0.16	2.74	15.2	4.35	11.93	14.79	30	233	0.13	0.08	0.13	0.13	3.0	1.3	819.62	819.32	823.10	825.30	817.63	817.32
SEWER	R229	R33	0.33	0.47	0.16	0.16	15.0	4.38	0.70	2.36	12	64	0.44	0.04	0.44	0.44	3.0	0.4	820.41	820.13	823.59	823.10	819.61	819.33
CULVERT	R236	R235	0.26	0.51	0.13	0.13	15.0	4.38	0.57	3.96	15	36	1.07	0.01	0.93	0.93	3.2	0.2	833.69	833.36	832.75	829.13	832.75	832.36
SWALE	R235	R15	0.00	0.00	0.00	0.13	15.2	4.35	0.57	3.37	15	106	1.06	0.01	-	0.01	2.7	0.6	833.36	833.24	832.36	831.24	832.36	831.24
CULVERT	R238	R237	0.13	0.41	0.05	0.05	15.0	4.38	0.22	3.95	15	36	1.07	0.00	0.32	0.32	3.2	0.2	834.42	834.30	833.69	830.23	833.69	833.30
SWALE	R237	R14	0.00	0.00	0.00	0.05	15.2	4.35	0.22	3.37	15	100	1.06	0.00	-	0.00	2.7	0.6	834.30	833.24	833.30	832.24	833.30	832.24
SEWER	R245	R9	0.34	0.52	0.17	0.17	15.0	4.38	0.74	4.35	12	86	1.49	0.04	0.44	0.44	5.5	0.3	821.52	820.24	820.72	823.82	820.72	819.44
SEWER	R246	R8	0.26	0.53	0.14	0.14	15.0	4.38	0.61	4.67	12	79	1.72	0.03	0.44	0.44	6.0	0.2	821.52	820.17	820.72	823.67	820.72	819.36
CULVERT	R227	R226	0.35	0.54	0.19	0.19	15.0	4.38	0.83	3.82	15	36	1.00	0.02	0.93	0.93	3.1	0.2	834.14	833.80	833.16	832.80	833.16	832.80
SWALE	R226	R225	0.00	0.00	0.00	0.19	15.2	4.35	0.83	3.43	15	411	1.10	0.02	-	0.02	2.8	2.5	833.80	829.29	832.80	828.29	832.80	828.29
CULVERT	R225	R224	0.98	0.50	0.49	0.68	17.7	4.10	2.79	3.82	15	36	1.00	0.19	0.93	0.93	3.1	0.2	829.26	828.93	828.29	827.93	828.29	827.93
SWALE	R224	R223	0.00	0.00	0.00	0.68	17.9	4.08	2.79	3.27	15	114	1.00	0.19	-	0.19	2.7	0.7	828.00	827.79	827.93	826.79	827.93	826.79
CULVERT	R223	R222	0.54	0.47	0.25	0.93	18.6	4.01	3.73	3.86	15	36	1.02	0.33	0.93	0.93	3.1	0.2	827.76	827.42	826.79	826.42	826.79	826.42
SWALE	R222	R221	0.00	0.00	0.00	0.93	18.8	4.00	3.73	3.73	15	183	1.07	0.33	-	0.33	2.8	1.1	827.42	825.46	826.42	824.46	826.42	824.46
CULVERT	R221	R220	0.62	0.50	0.31	1.24	19.9	3.90	4.83	4.83	15	36	1.20	0.56	0.93	0.93	3.4	0.2	825.36	825.03	824.46	824.03	824.46	824.03
SWALE	R220	R34	0.00	0.00	0.00	1.24	20.1	3.88	4.83	5.29	18	91	0.99	0.21	-	0.21	3.0	0.5	824.52	824.33	824.03	823.13	824.03	823.13
CULVERT	R209	R208	0.18	0.49	0.09	0.09	15.0	4.38	0.39	2.35	12	37	1.25	0.01	1.25	1.25	3.0	0.2	831.91	831.45	830.91	830.45	830.91	830.45
SWALE	R208	R207	0.00	0.00	0.00	0.09	15.0	4.35	0.39	3.27	15	125	1.00	0.00	-	0.00	2.7	0.8	831.45	830.20	830.45	829.20	830.45	829.20
CULVERT	R207	R206	0.32	0.48	0.16	0.25	16.0	4.27	1.07	3.82	15	36	1.00	0.03	0.93	0.93	3.1	0.2	830.18	829.84	829.20	828.84	829.20	828.84
SWALE	R206	R205	0.00	0.00	0.00	0.25	16.2	4.25	1.07	3.29	15	136	1.01	0.03	-	0.03	2.7	0.8	829.84	828.47	828.84	827.47	828.84	827.47
CULVERT	R205	R204	0.59	0.42	0.25	0.50	17.0	4.17	2.08	3.82	15	36	1.00	0.10	0.93	0.93	3.1	0.2	828.44	828.11	827.47	827.11	827.47	827.11
SWALE	R204	R203	0.00	0.00	0.00	0.50	17.2	4.15	2.08	3.27	15	128	1.00	0.10	-	0.10	2.7	0.8	828.11	826.83	827.11	825.83	827.11	825.83
CULVERT	R203	R202	0.59	0.42	0.25	0.75	18.0	4.07	3.05	3.87	15	36	1.03	0.22	0.93	0.93	3.2	0.2	826.79	826.46	825.83	825.46	825.83	825.46
SWALE	R202	R201	0.00	0.00	0.00	0.75	18.2	4.05	3.05	4.99	18	140	0.88	0.08	-	0.08	2.8	0.8	825.54	825.43	825.46	824.23	825.46	824.23
CULVERT	R201	R200	0.40	0.46	0.18	0.93	19.0	3.98	3.70	3.89	15	38	1.04	0.33	0.93	0.93	3.2	0.2	825.18	824.83	824.23	823.83	824.23	823.83
SWALE	R200	R33	0.00	0.00	0.00	0.93	19.2	3.96	3.70	4.91	18	86	0.85	0.12	-	0.12	2.8	0.5	824.40	824.30	823.83	823.10	823.83	823.10
CULVERT	R215	R214	0.21	0.39	0.08	0.08	15.0	4.38	0.35	3.82	15	36	1.00	0.00	0.93	0.93	3.1	0.2	835.01	83				





Know what's below. Call before you dig.

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND SHOULD NOT BE USED FOR ANY PURPOSES WITHOUT THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY 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 RESPONSIBLE FOR ASSUMING ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4060



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
DRAINAGE AREA PLAN

DATE  
APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS  
SCALE 0 50 100  
1" = 100 FEET

DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO. 32

**STORM WATER MANAGEMENT NARRATIVE:**  
THE SITE IS PREDOMINANTLY OPEN FIELDS WITH A LARGE WETLAND COMPLEX IN THE EAST. THE TERRAIN GENERALLY FALLS FROM THE WEST TO EAST TOWARDS THE WETLAND COMPLEX AND FLEMING CREEK. FLEMING CREEK FLOWS SOUTH TOWARDS THE HURON RIVER.  
**EXISTING STORM MANAGEMENT FACILITIES:**  
THE STORM WATER RUNOFF FROM THE SITE DRAINS VIA OVERLAND FLOW TO FLEMING CREEK. THIS DRAIN FLOWS SOUTH APPROXIMATELY 4 MILES TO JOIN THE HURON RIVER.  
REFER TO THE EXISTING CONDITIONS PLAN FOR ADDITIONAL DETAILS.  
**PROPOSED STORM DRAINAGE SYSTEM DESIGN:**  
IN CONJUNCTION WITH THE DEVELOPMENT OF THE SITE, THE STORM WATER MANAGEMENT FACILITY IMPROVEMENTS ARE TO COMPLY WITH THE RULES OF THE WASHTENAW COUNTY WATER RESOURCE COMMISSIONER (WCRC). THE PROPOSED STORM WATER RUNOFF WILL BE COLLECTED AND CONVEYED VIA STORM SEWER TO AN ON-SITE DETENTION BASIN. THIS BASIN IS SIZED USING THE WCRC STANDARDS TO DETAIN FOR A 100-YEAR STORM EVENT AND PROVIDE AT LEAST 1 FOOT OF FREEBOARD. A FLOW RESTRICTOR WILL BE PROVIDED BY A PERFORATED RISER OUTLET STRUCTURE IN ORDER TO REGULATE THE RATE OF DISCHARGE AT OR BELOW THE ALLOWABLE BANK FULL AND 100-YEAR RATES. STONE WALL FORE-BAYS WILL BE PROVIDED WITHIN THE BASIN TO PROMOTE SETTLING OF SUSPENDED SOLIDS AND SEDIMENT FOR THE MORE FREQUENT FIRST FLUSH RAIN EVENTS.  
A RAIN GARDEN IS PROPOSED IN THE NORTHWEST CORNER OF THE SITE. THIS ADDITIONAL BMP TREATMENT WILL HELP FILTER SUSPENDED SOLIDS AND PROMOTE INFILTRATION OF STORM WATER. THE SOIL MEDIUM WILL PROMOTE FILTERING OF POLLUTANTS AND PROVIDE SOME ADDITIONAL STORAGE AND INFILTRATION OF STORM WATER RUNOFF.

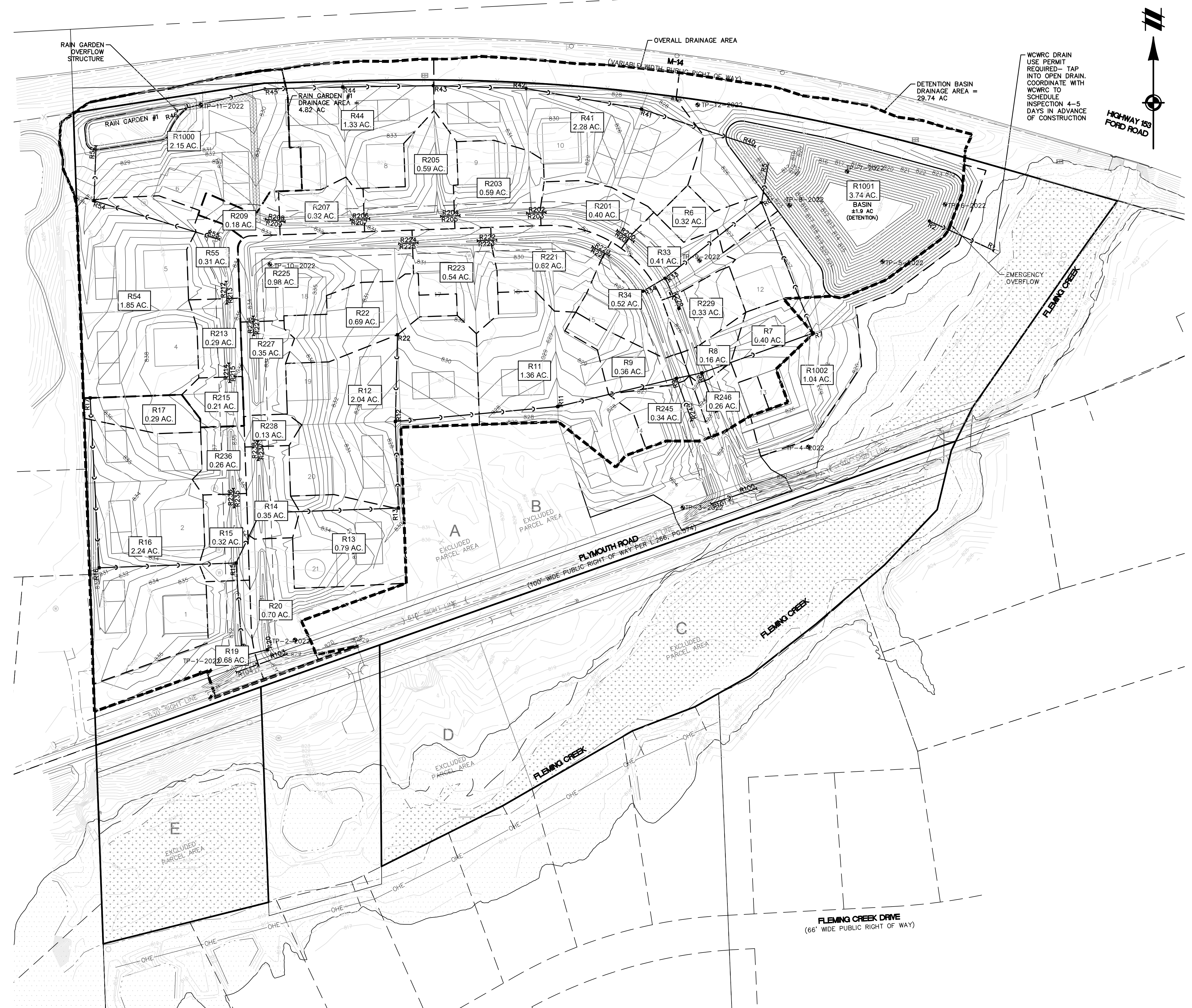
- DRAINAGE/STORMWATER NOTES**
1. THE TOTAL REQUIRED DETENTION HAS BEEN DETERMINED IN ACCORDANCE WITH THE WASHTENAW COUNTY WATER RESOURCES COMMISSIONER RULES AND GUIDELINES.
  2. BASED ON THE SOIL INVESTIGATION PARTS OF THE SITE ARE SUITABLE FOR INFILTRATION. RAIN GARDEN INFILTRATION BMP IS PROPOSED TO MEET THE REQUIRED INFILTRATION VOLUME.
  3. THE REMAINING REQUIRED DETENTION SHALL BE PROVIDED WITHIN A DETENTION BASIN ON-SITE.
  4. THE PROPOSED DETENTION BASIN OUTLET TO THE EXISTING ON-SITE WETLAND.
  5. ROOF DRAINAGE SHALL BE DIRECTED TO THE STORM SEWER WATER MANAGEMENT SYSTEM.
  6. SEE ENGINEERS CERTIFICATE OF OUTLET FOR PRE-POST ANALYSIS OF STORMWATER DISCHARGE FROM SITE.

**SOIL INFILTRATION TEST RESULTS**

Test Pit I.D.	Soil Description	Sand Layer Depth	Test Depth	Measured Infiltration Rate (in/hr)	Design Infiltration Rate (in/hr)	Groundwater elevation
10-2021	Moist brown gravelly fine to coarse sand with traces of silt and occasional clay lenses	39"-176"	46"	67.69	10	815.9
11-2021	Moist brown fine sand with traces of silt and gravel	37"-8"	4	30.71	10	821.7

**LEGEND**

	BOUNDARY LINE
	EXIST. EASEMENT
	SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. EASEMENT
	PROP. CONTOUR
	GRADING LIMITS
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. SEPTIC
	PROP. WELL



K:\VTD\2023\LOMBARDO HOMES\KINSLEY DEVELOPMENT\FINAL\21002863.DWG 1/27/2024 4:18 PM DWG: MCH/AMM



### DETENTION CALCULATIONS

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

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Runoff Coef. (C)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	0.20	1.066
Water Surface	43,560	1.00	1.00	0.95	95,070
Developed Open Space, Good Condition	B	1,039,721	23.41	0.30	305,916
Developed Open Space, Good Condition	C	0	0.00	0.35	0
Developed Open Space, Good Condition	D	0	0.00	0.45	0
<b>Total</b> - Sum (C)(Area) =		1,045,881			307,052
<b>Area Total</b> (A) =		1,326,293			
<b>Weighted C</b> (Sum(C)(Area)/Sum(A)) =					<b>0.44</b>

**W2** First Flush Runoff Calculations (V<sub>f</sub>)

V<sub>f</sub> = (V<sub>r</sub> / (V<sub>r</sub> + 4.5662)) (C) A C

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Developed Open Space, Good Condition	B	1,039,721	23.41	61	62,203,063
Developed Open Space, Good Condition	C	0	0.00	74	0
Developed Open Space, Good Condition	D	0	0.00	80	0
<b>Total</b> - Sum (C)(Area) =		1,039,721			62,203,063
<b>Area Total</b> - Sum(A) =		1,039,721			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>61</b>

**W3** First Flush Runoff Calculations (V<sub>f</sub>)

V<sub>f</sub> = (V<sub>r</sub> / (V<sub>r</sub> + 4.5662)) (C) A C

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W4** First Flush Runoff Calculations (V<sub>f</sub>)

V<sub>f</sub> = (V<sub>r</sub> / (V<sub>r</sub> + 4.5662)) (C) A C

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W5** 100-Year Storm Runoff Calculations (V<sub>100</sub>)

V<sub>100</sub> = (0.462) (C) (A) (CN) (P) (I) (L) (S) (F) (T) (U) (V) (W) (X) (Y) (Z)

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W6** 100-Year Storm Runoff Calculations (V<sub>100</sub>)

V<sub>100</sub> = (0.462) (C) (A) (CN) (P) (I) (L) (S) (F) (T) (U) (V) (W) (X) (Y) (Z)

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W7** 100-Year Storm Runoff Calculations (V<sub>100</sub>)

V<sub>100</sub> = (0.462) (C) (A) (CN) (P) (I) (L) (S) (F) (T) (U) (V) (W) (X) (Y) (Z)

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W8** Determine Time of Concentration (T<sub>c</sub>)

User specified; use 25 minutes from storm sewer catalog

Time of Concentration = **0.42** hr

**W9** Rainfall Summary & Detention Requirement

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W10** Detention / Retention Requirement

Q<sub>p</sub> = 2.48 (I) (L) (S) (F) (T) (U) (V) (W) (X) (Y) (Z)

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**W11** Determine Applicable BMPs and Associated Volume Credits: N/A (assume no infiltration)

Proposed BMP	Area (ft <sup>2</sup> )	Storage Depth (ft)	Storage Volume (ft <sup>3</sup> )	Ave. Design Storm (in)	Runoff Rate (in/hr)	Runoff Volume (ft <sup>3</sup> )	Potential Reduction (ft <sup>3</sup> )
Rain Garden 1	7,710	1.3	10,023	5.06	10	30,560	46,723

**W13** Infiltration / Detention Summary

Post-Development Cover Type	Soil Type	Area (A) (ac)	Area (a) (ac)	Curve Number (CN)	(C)(Area)
Furrowed Perennial, well-drained	23200	5.33	0.98	22	117,060
Water Surface	43,560	1.00	1.00	98	426,888
Developed Open Space, Good Condition	C	0	0.00		
Developed Open Space, Good Condition	D	0	0.00		
<b>Total</b> - Sum (C)(Area) =		1,326,293			543,948
<b>Area Total</b> - Sum(A) =		1,326,293			
<b>Weighted CN</b> - Sum(C)(Area)/Sum(A) =					<b>26</b>

**DET** Detention Basin Summary

Elevation	Surface Area (SF)	Depth (ft)	Forebay Only Volume (CF)	Detention Basin Only Volume (CF)	Cumulative Volume (CF)	First Flush Vol (CF)	Bank Full Vol (CF)	100-Year Vol (CF)
830	10,828	6.0	-	0	0	0	-	-
828	13,200	1.0	13,200	13,200	13,200	-	-	-
827	13,728	1.0	26,928	26,928	30,128	-	-	-
826	16,478	1.0	43,406	43,406	73,534	-	-	-
824	21,408	1.0	64,814	64,814	138,348	-	-	-
823	24,978	1.0	79,802	79,802	218,150	-	-	-
820	27,826	1.0	95,628	95,628	313,778	-	-	-
818	31,500	6.0	189,000	189,000	502,778	-	-	-
816	35,290	1.0	217,780	217,780	720,558	-	-	-
815	39,400	1.0	257,180	257,180	977,738	-	-	-
814	43,830	1.0	300,990	300,990	1,278,728	-	-	-
813	48,580	1.0	349,570	349,570	1,628,298	-	-	-
812	53,650	1.0	403,120	403,120	2,031,418	-	-	-
811	59,040	1.0	462,120	462,120	2,493,538	-	-	-
810	64,750	1.0	526,570	526,570	3,020,108	-	-	-
809	70,880	1.0	596,490	596,490	3,616,598	-	-	-
808	77,430	1.0	671,920	671,920	4,293,518	-	-	-
807	84,500	1.0	752,870	752,870	5,046,388	-	-	-
806	92,100	1.0	839,370	839,370	5,885,758	-	-	-
805	100,230	1.0	931,600	931,600	6,817,358	-	-	-

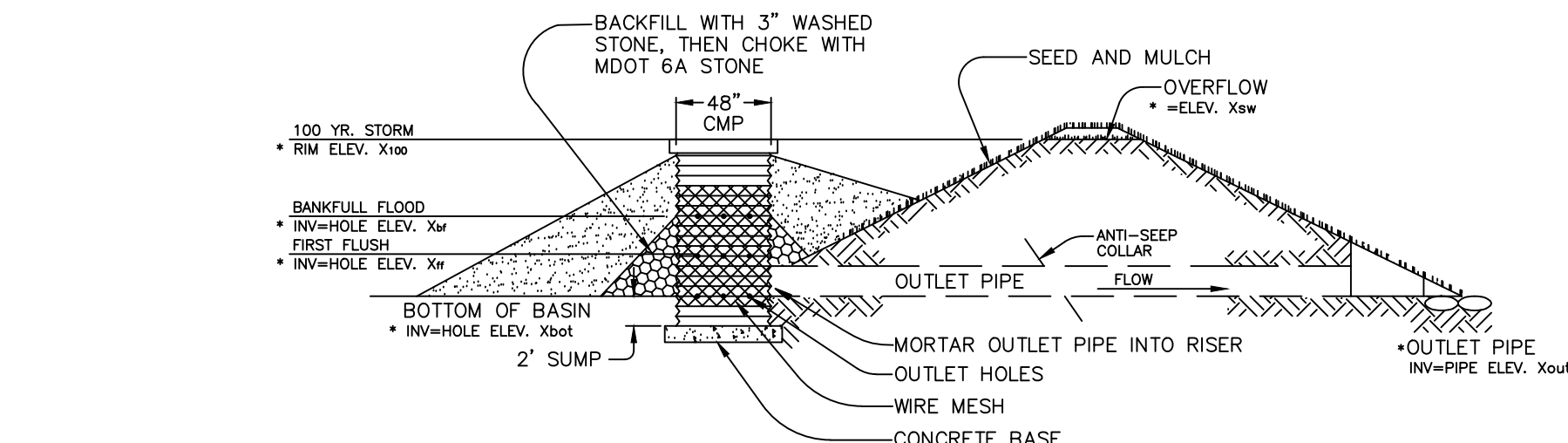
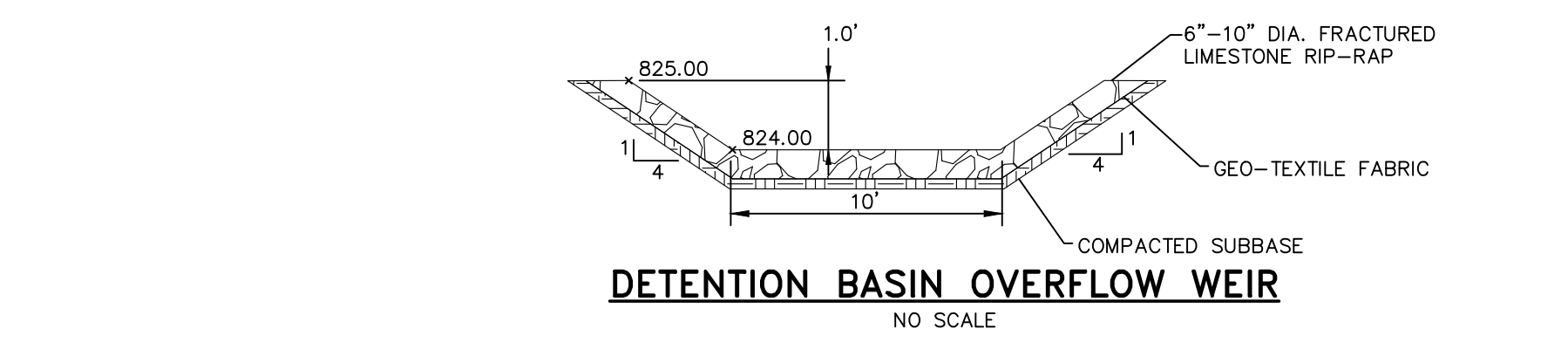
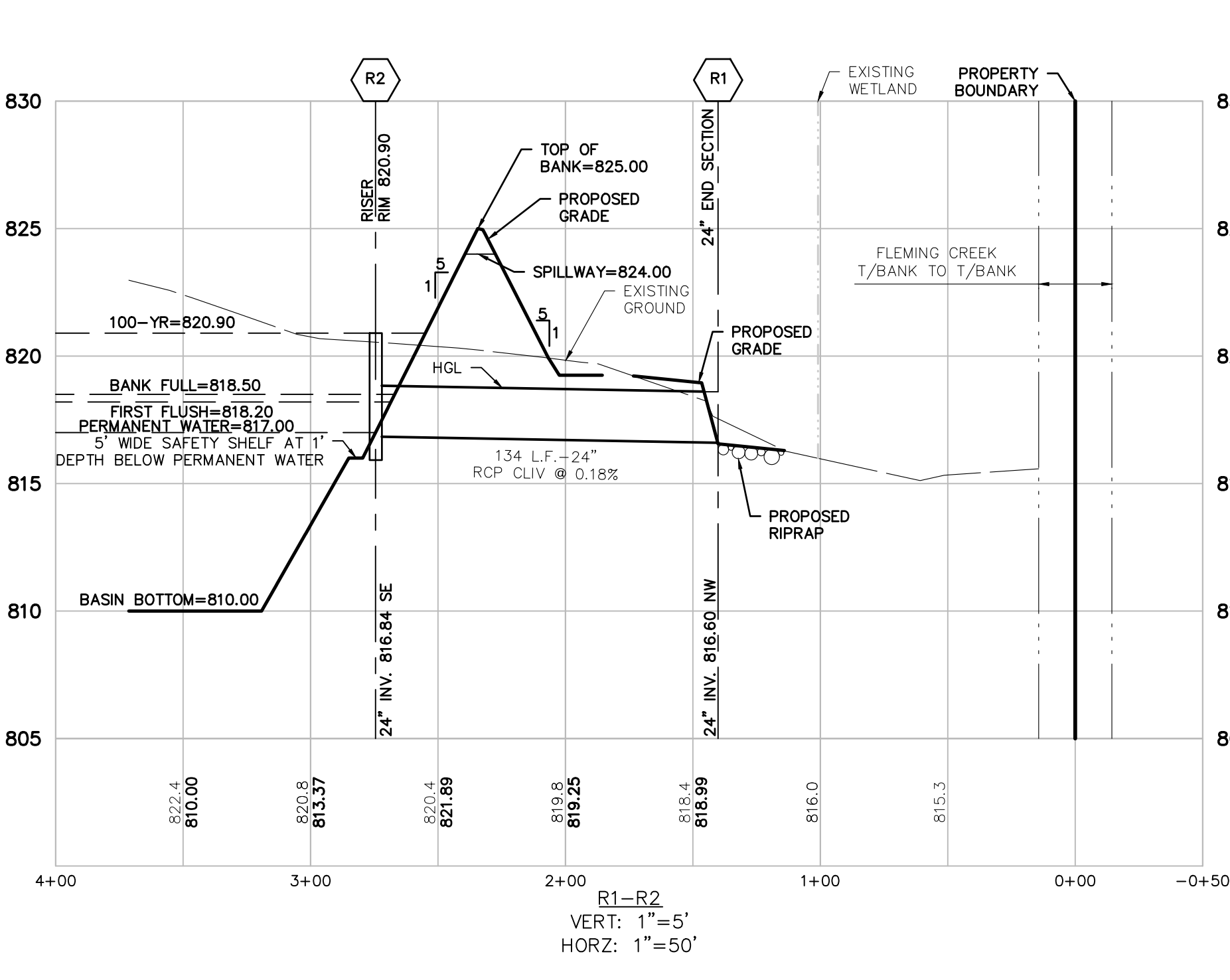
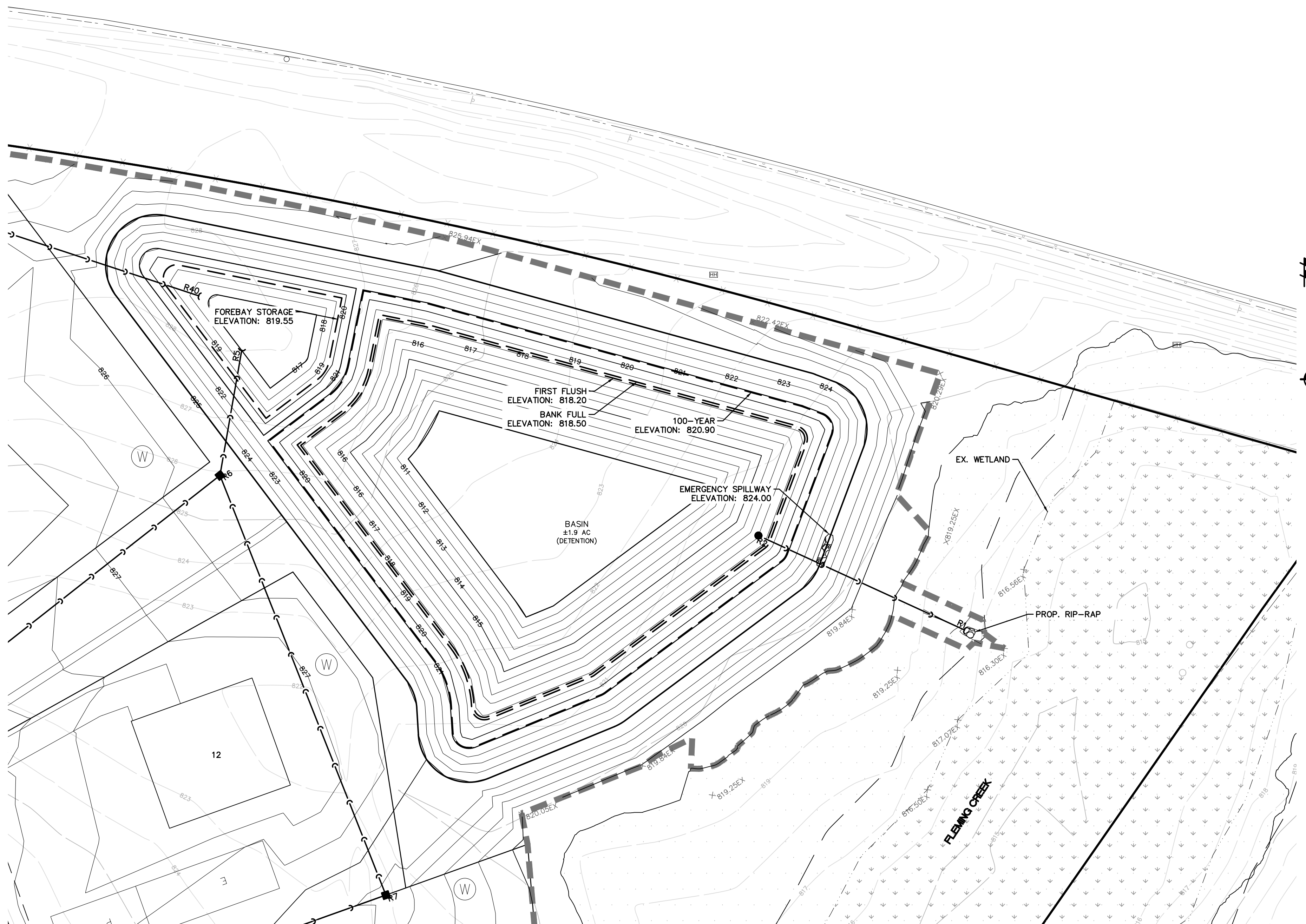
**FOREBAY** Forebay Summary

Required Volume (V<sub>100</sub>) = 0.05 V<sub>100</sub>

Forebay Geometry	Surface Area (SF)	Depth (ft)	Incremental Volume (CF)	Cumulative Volume (CF)	Sta. Forebay
817	1,960	0	0	0	9.205
816	3,078	1.0	3,078	3,078	8.795
815	4,468	1.0	6,546	9,624	8.385
814	6,136	1.0	10,760	20,384	7.975
813	7,978	1.0	15,410	35,794	7.565
812	10,000	1.0	20,790	56,584	7.155

**EXISTING CN CALCULATION**

Soil Class	Acres	CN	CN <sub>adj</sub>
A	29.74	58	1725
B	0.00	71	0
C	0.00	78	0
D	0.00	78	0
<b>Total</b>	<b>29.74</b>	<b>68</b>	<b>1725</b>



OUTLET INVERT (Xout)	INVERT AT RISER	DESIGN FLOOD WSE (X100)	FIRST FLUSH DISCHARGE		BANK FULL DISCHARGE		DESIGN FLOOD DISCHARGE		TOP OF STAND PIPE ELEVATION (X100)	POND CREST ELEVATION	EMERGENCY SPILLWAY ELEVATION (Xsw)		
			INV.	ORIFICE DIA.	# OF HOLES	INV.	ORIFICE DIA.	# OF HOLES				INV.	ORIFICE DIA.
816.60	816.84	820.90	817.00	2.00	4	N/A	N/A	N/A	818.50	13	820.90	825	824.00

**OUTLET** Outlet Control Structure Sizing

1. Standard outlet holes using "First Flush" runoff

First Flush discharge release time = 24 hours

Q<sub>100</sub> = 1,170 cfs

Q<sub>15</sub> = 1,170 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Area of each orifice = 0.025 ft<sup>2</sup>

Number of orifices holes provided = 163 holes at elev. 817.00

2. Standard outlet holes using "Bankfull Flood" discharge

Bankfull Flood discharge release time = 24 hours

Q<sub>100</sub> = 1,170 cfs

Q<sub>15</sub> = 1,170 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Area of each orifice = 0.025 ft<sup>2</sup>

Number of orifices holes provided = 163 holes at elev. 817.00

3. Standard outlet holes using "100-yr Flood" discharge

100-yr Flood discharge release time = 24 hours

Q<sub>100</sub> = 1,170 cfs

Q<sub>15</sub> = 1,170 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Q<sub>15</sub> / (12 x 24) = 4.06 cfs

Area of each orifice = 0.025 ft<sup>2</sup>

Number of orifices holes provided = 163 holes at elev. 817.00

4. Basin Outlet Pipe Design

Outlet pipe designed to handle the 100-yr restricted flow

Choose outlet pipe diameter = 36\"/>

5. Basin Overflow Weir (design to convey 100-yr unrestricted flow)

Drainage Area = 29.74 ac

Crest Elevation = 824.00

Time of Conc. (T<sub>c</sub>) = 0.42 hr

Intensity (I) = 4.31 in/hr (1.75(10<sup>2-0.25</sup>))

Design flow (Q) = 273.6 cfs per storm sewer catalog

Weir Coefficient (C<sub>w</sub>) = 3.87

Bottom of Weir (min. 0.50 ft above 2300') = 823.5

Top of Weir = 823.5

Height of Weir (H) = 0.50 ft

Min. length of Weir (L<sub>w</sub> = Q<sup>1.67</sup> / H<sup>1.67</sup>) = 12.83 ft



**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 AGREE 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.

**COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.**

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTEENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN

DATE  
APRIL 18, 2023

5/30/23 PER WCRCR  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRCR  
10/27/23 PER WCHD/WCRCR  
11/30/23 PER WCRC  
1/12/24 PER WCRCR

REVISIONS

SCALE 0 20 40  
1" = 40 FEET

DR. SK CH. MC  
BOOK --  
JOB 21002863  
SHEET NO.

33



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 AGREE 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.

COPYRIGHT © 2024 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994-4060

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
FRONTAGE PLAN

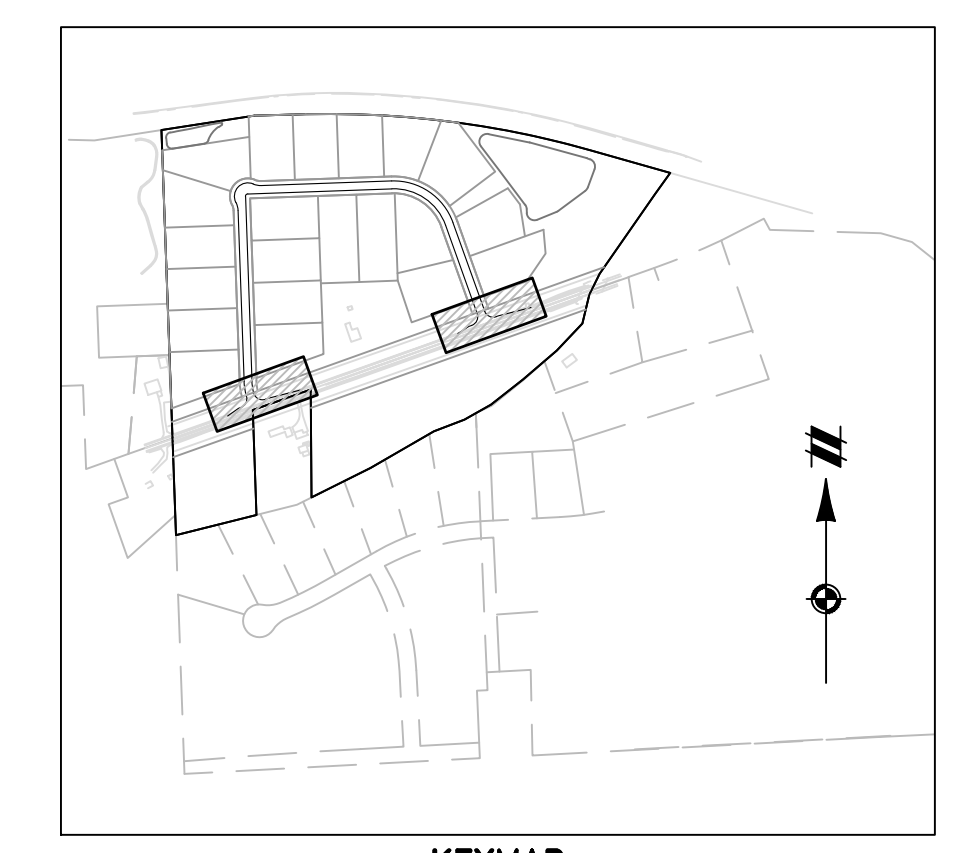
DATE  
APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCD/WCRC/WCRC  
10/27/23 PER WCD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

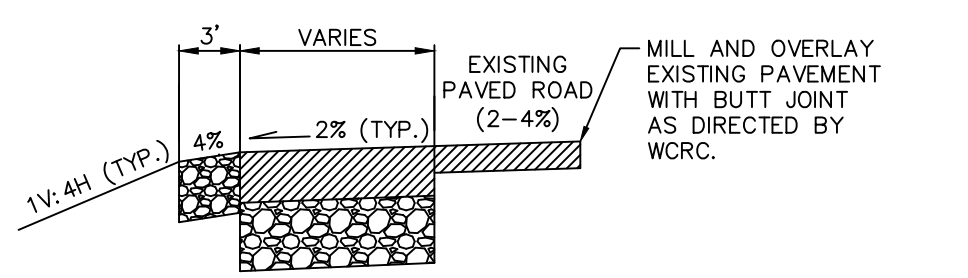
REVISIONS

SCALE 0 10 20  
1" = 20 FEET

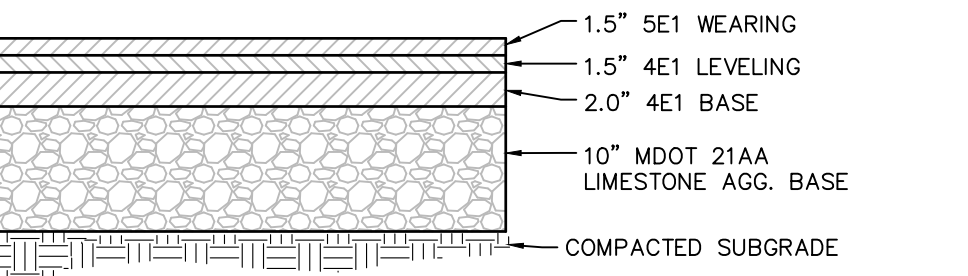
DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 34



**KEYMAP**  
SCALE: 1" = 750 FEET



**CROSS-SECTION A-A**  
TYPICAL WIDENING PAVEMENT  
NOT TO SCALE



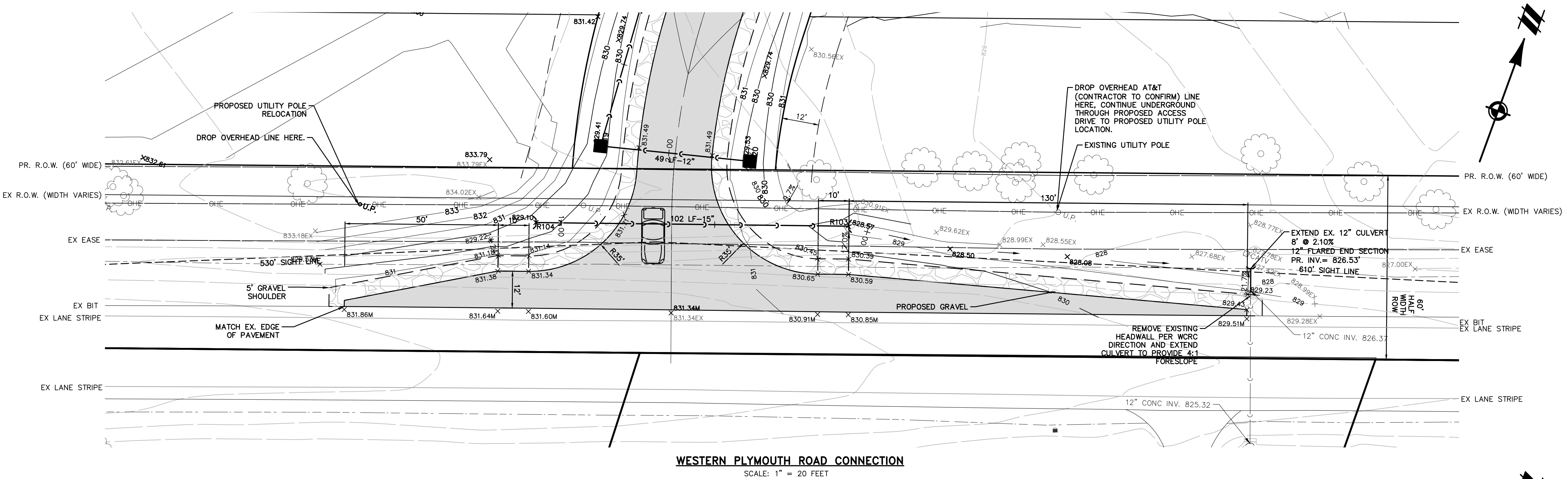
**ASPHALT PAVING SECTION**  
(FOR USE IN WCRC ROW)  
NOT TO SCALE

- NOTES**
1. IMPROVEMENTS WITHIN THE PLYMOUTH ROAD RIGHT OF WAY SHALL BE IN COMPLIANCE WITH AND PERMITTED BY THE WASHTENAW COUNTY ROAD COMMISSION (WCRC).
  2. SITE DISTANCE AT THE PROPOSED SITE DRIVEWAYS IS IN ACCORDANCE WITH AASHTO AND WCRC REQUIREMENTS. REFER TO SITE DISTANCE ANALYSIS SHOWN ON SHEET 08.
  3. REFER TO THE TRAFFIC IMPACT STUDY PREPARED BY FISHBEEK FOR ADDITIONAL DETAILS.

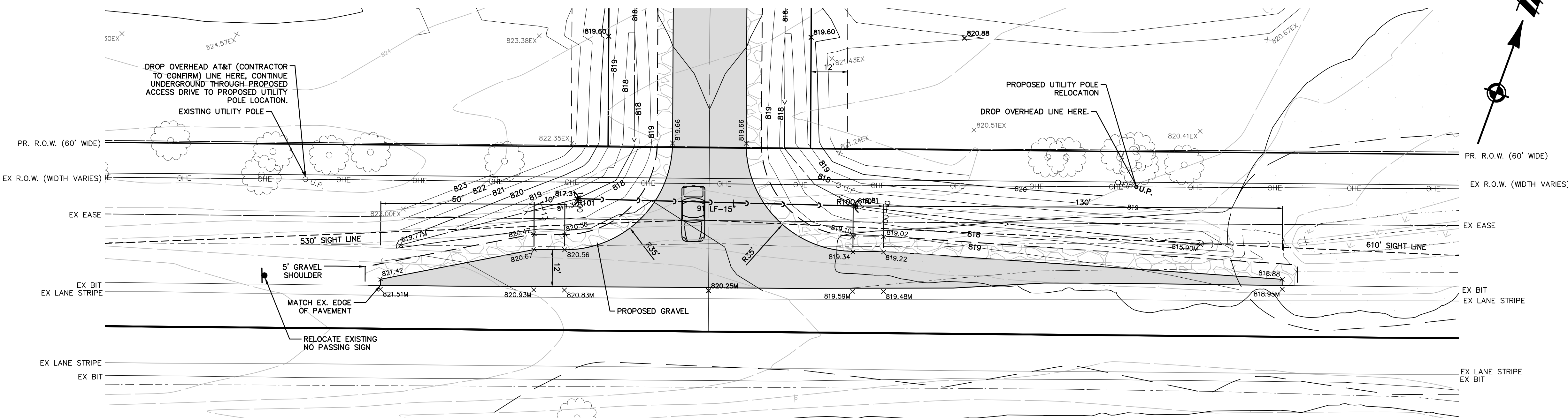
- GENERAL NOTES**
1. ANY DAMAGE TO THE PUBLIC ROAD DURING THE CONSTRUCTION OF THE PROJECT SHALL REQUIRE AT A MINIMUM THE CONTRACTOR TO MILL OFF THE ENTIRE TRAVEL LANE OF WHERE THE DAMAGE OCCURRED AND RESURFACE THE ROADWAY'S 1.5-INCHES HMA TOP COURSE AT THE DIRECTION OF THE WCRC.

**LEGEND**

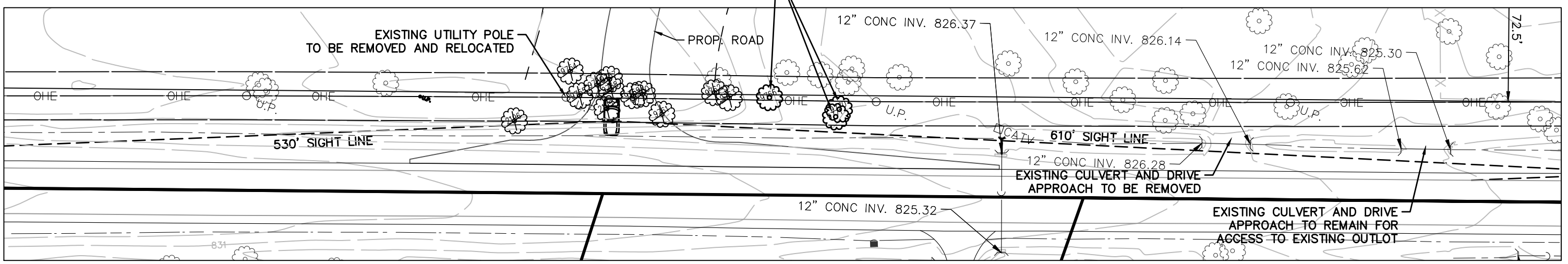
	BOUNDARY LINE
	EXIST. EASEMENT SECTION LINE
	BOUNDARY/PROPERTY LINE
	EXIST. SETBACK
	EXIST. CONTOUR
	EXIST. CURB AND GUTTER
	EXIST. BUILDING
	EXISTING WETLAND
	EXIST. WETLAND BUFFER
	EXIST. OVERHEAD ELEC. LINE
	EXIST. OVERHEAD TELE. LINE
	EXIST. CABLE LINE
	EXIST. UNSPECIFIED UTILITIES
	EXIST. GAS
	EXIST. STORM
	EXIST. UNSPECIFIED UTILITY
	EXIST. CULVERT
	EXIST. CATCH BASIN/INLET
	PROP. SETBACK
	PROP. EDGE OF ASPHALT
	PROP. LOT LINE
	PROP. DETENTION
	PROP. EASEMENT
	PROP. CONTOUR
	GRADING LIMITS
	PROP. STORM SEWER
	PROP. CULVERT
	PROP. CATCH BASIN/INLET
	PROP. WELL



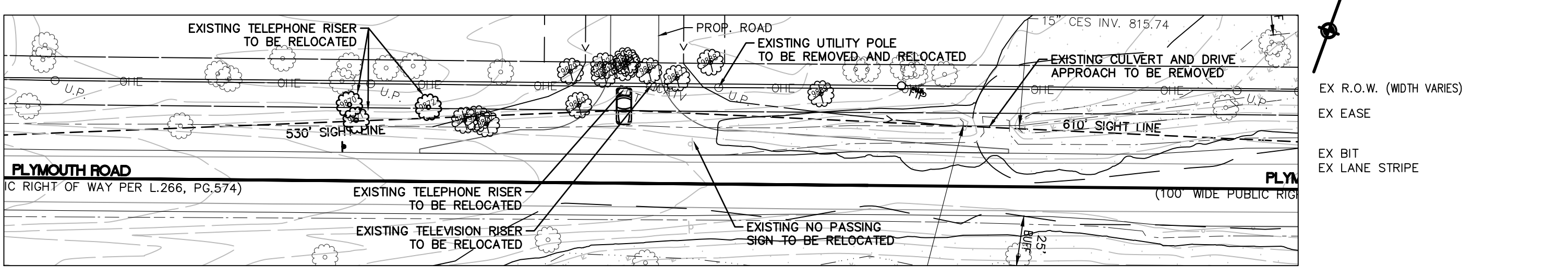
**WESTERN PLYMOUTH ROAD CONNECTION**  
SCALE: 1" = 20 FEET



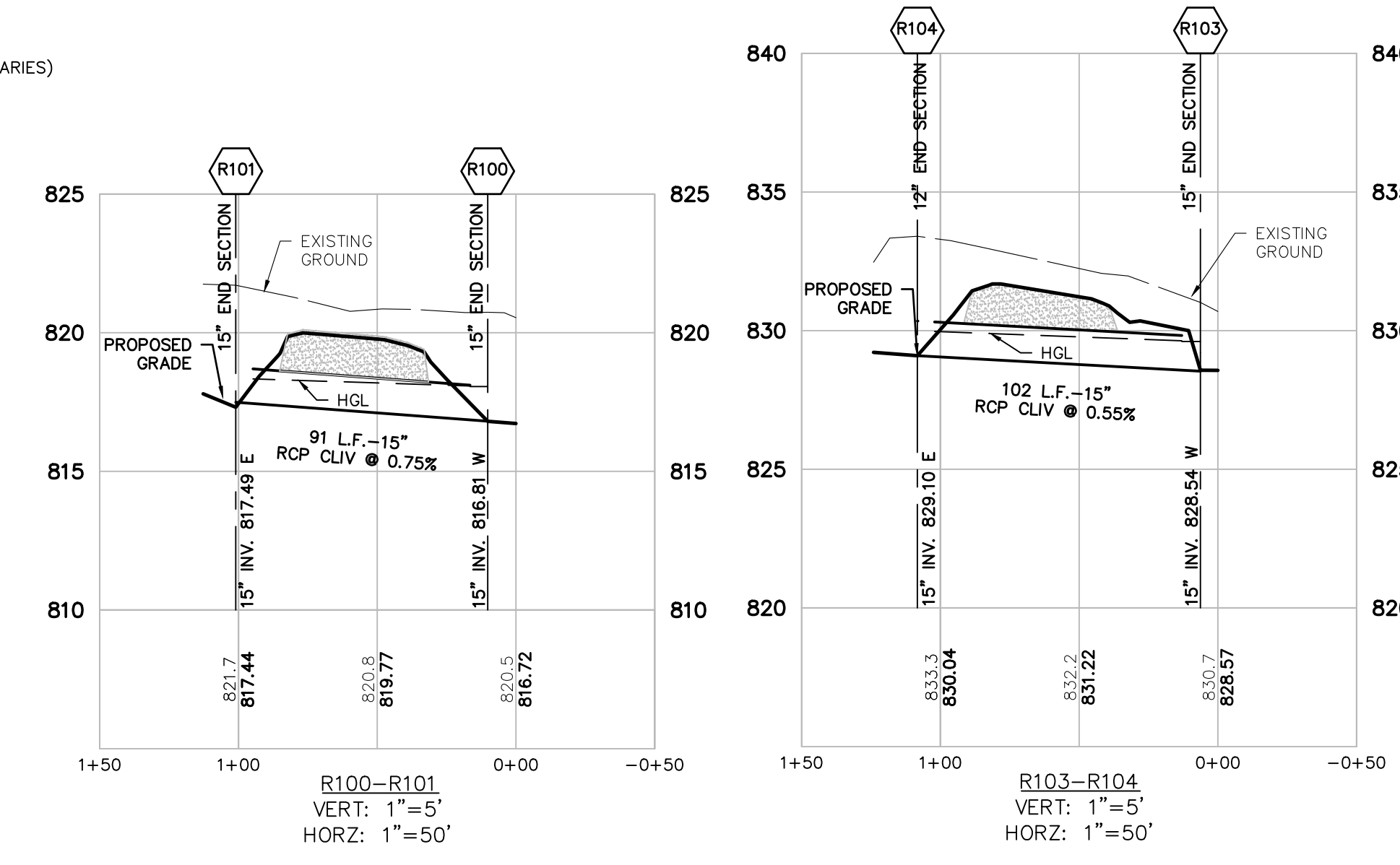
**EASTERN PLYMOUTH ROAD CONNECTION**  
SCALE: 1" = 20 FEET



**WESTERN PLYMOUTH EXISTING CONDITIONS & DEMO PLAN**  
SCALE: 1" = 50 FEET



**EASTERN PLYMOUTH EXISTING CONDITIONS & DEMO PLAN**  
SCALE: 1" = 50 FEET





210002863 - 6595 Plymouth Road - Tree Table												
Tree Tag #	Data Code	Scientific Name	Common Name	DBH (Inches)	Condition	Comments	Regulated	Landmark Tree	To Be Removed	Replacement Required?		
2901	ACNE	Acer negundo	Bowlder	9	Fair	Vines	Yes	No	No	No		
2902	ACSA	Acer saccharum	Sugar Maple	10	Good		Yes	No	No	No		
2903	RCPA	Rubus pedunculosus	Black Locust	15	Poor	Four Trunk (7) 14.5, 13, 11, 9, 8, 7, 6, 5, 4, 3, 2, 1	Yes	No	No	No		
2904	ACSA	Acer saccharum	Sugar Maple	4	Good		Yes	No	No	No		
2905	ACSA	Acer saccharum	Sugar Maple	16	Good		Yes	Yes	No	No		
2906	PCPO	Prunus pennsylvanica	Common Pear	10	Good		Yes	No	No	No		
2907	PCPO	Prunus pennsylvanica	Common Pear	10	Good		Yes	No	No	No		
2908	PCPO	Prunus pennsylvanica	Common Pear	8	Good		Yes	No	No	No		
2909	PCPO	Prunus pennsylvanica	Common Pear	10	Good		Yes	No	No	No		
2910	ACNE	Acer negundo	Bowlder	24	Good		Yes	No	No	No		
2911	ACNE	Acer negundo	Bowlder	10.5	Good		Yes	No	No	No		
2912	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2913	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2914	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2915	ACNE	Acer negundo	Bowlder	10.5	Good		Yes	No	No	No		
2916	ACNE	Acer negundo	Bowlder	18	Good		Yes	No	No	No		
2917	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2918	PRSE	Prunus serotina	Black Cherry	12	Good	41: 7.5, 7, 6.5	Yes	No	No	No		
2919	ACNE	Acer negundo	Bowlder	14.5	Fair	Leaning	Yes	No	No	No		
2920	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2921	MASPP	Malus sp.	Apple/Crabapple	10	Good	Three Trunk (7) 8, 5	Yes	No	No	No		
2922	ACNE	Acer negundo	Bowlder	11	Fair	Two Trunk (7) 10	Yes	No	No	No		
2923	ACNE	Acer negundo	Bowlder	17.5	Good		Yes	No	No	No		
2924	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2925	ACNE	Acer negundo	Bowlder	9	Fair	Vines	Yes	No	No	No		
2926	ACNE	Acer negundo	Bowlder	9	Fair	Vines	Yes	No	No	No		
2927	ACNE	Acer negundo	Bowlder	14	Good		Yes	No	No	No		
2928	ACNE	Acer negundo	Bowlder	11.5	Good	21: 10	Yes	No	No	No		
2929	ACNE	Acer negundo	Bowlder	11.5	Good		Yes	No	No	No		
2930	ACNE	Acer negundo	Bowlder	11.5	Good		Yes	No	No	No		
2931	PCPO	Prunus pennsylvanica	Common Pear	10.5	Good		Yes	No	No	No		
2932	ACSA	Acer saccharum	Sugar Maple	21	Good		Yes	Yes	No	No		
2933	PRSE	Prunus serotina	Black Cherry	21	Good		Yes	Yes	No	No		
2934	ACNE	Acer negundo	Bowlder	18	Poor	Dead Branches	No	No	No	No		
2935	LEAM	Ulmus americana	American Elm	12	Good	Dead Branches	No	No	No	No		
2936	MOAL	Malus alba	White Mulberry	9	Fair	Dead Branches	No	No	No	No		
2937	ACNE	Acer negundo	Bowlder	12.5	Good		Yes	No	No	No		
2938	ACNE	Acer negundo	Bowlder	12.5	Good		Yes	No	No	No		
2939	ACNE	Acer negundo	Bowlder	8.5	Fair		Yes	No	No	No		
2940	MASPP	Malus sp.	Apple/Crabapple	6.5	Fair	21: 8, Vines	Yes	No	No	No		
2941	ACNE	Acer negundo	Bowlder	12	Good	21: 8	Yes	No	No	No		
2942	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2943	PRSE	Prunus serotina	Black Cherry	12	Good	40ft Tall	Yes	No	No	No		
2944	PRSE	Prunus serotina	Black Cherry	8	Good	30ft Tall	Yes	No	No	No		
2945	PRSE	Prunus serotina	Black Cherry	10	Good	30ft Tall	Yes	No	No	No		
2946	PRSE	Prunus serotina	Black Cherry	16	Good	50ft Tall	Yes	No	No	No		
2947	PRSE	Prunus serotina	Black Cherry	5	Good	25ft Tall	Yes	No	No	No		
2948	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2949	ACNE	Acer negundo	Bowlder	9.5	Good		Yes	No	No	No		
2950	LEAM	Ulmus americana	American Elm	8	Good		Yes	No	No	No		
2951	ACNE	Acer negundo	Bowlder	10.5	Good	21: 6.5	Yes	No	No	No		
2952	ACNE	Acer negundo	Bowlder	9.5	Good		Yes	No	No	No		
2953	ACNE	Acer negundo	Bowlder	8	Fair	Leaning	Yes	No	No	No		
2954	ACNE	Acer negundo	Bowlder	8	Good		Yes	No	No	No		
2955	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2956	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2957	PCPO	Prunus pennsylvanica	Common Pear	11	Good		Yes	No	No	No		
2958	ACNE	Acer negundo	Bowlder	13	Good		Yes	No	No	No		
2959	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2960	LEAM	Ulmus americana	American Elm	9.5	Good		Yes	No	No	No		
2961	PCPO	Prunus pennsylvanica	Common Pear	13	Good		Yes	No	No	No		
2962	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2963	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2964	ACNE	Acer negundo	Bowlder	12	Good	Dead Branches	No	No	No	No		
2965	SANI	Salix nigra	Black Willow	10	Poor	Dead Branches	No	No	No	No		
2966	ACNE	Acer negundo	Bowlder	13	Good		Yes	No	No	No		
2967	ACNE	Acer negundo	Bowlder	13	Good		Yes	No	No	No		
2968	ACNE	Acer negundo	Bowlder	4	Good		Yes	No	No	No		
2969	ACNE	Acer negundo	Bowlder	13.5	Good		Yes	No	No	No		
2970	ACNE	Acer negundo	Bowlder	8	Good		Yes	No	No	No		
2971	ACNE	Acer negundo	Bowlder	14	Poor	41: 3, 3, 2, fallen	Yes	No	No	No		
2972	ACNE	Acer negundo	Bowlder	12	Good	21: 6	Yes	No	No	No		
2973	ACNE	Acer negundo	Bowlder	12	Good	30ft Tall	Yes	No	No	No		
2974	ACNE	Acer negundo	Bowlder	12	Good	30ft Tall	Yes	No	No	No		
2975	ACNE	Acer negundo	Bowlder	16	Good	50ft Tall	Yes	No	No	No		
2976	ACNE	Acer negundo	Bowlder	15	Good		Yes	No	No	No		
2977	ACNE	Acer negundo	Bowlder	5	Good	25ft Tall	Yes	No	No	No		
2978	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2979	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2980	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
2981	CRSP	Cotinus speciosa	Hawthorn	8	Good		Yes	No	No	No		
2982	ACNE	Acer negundo	Bowlder	8	Fair		Yes	No	No	No		
2983	ACNE	Acer negundo	Bowlder	8.5	Good	21: 7, 7	Yes	No	No	No		
2984	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2985	CRSP	Cotinus speciosa	Hawthorn	8	Good		Yes	No	No	No		
2986	ACNE	Acer negundo	Bowlder	8.5	Good	Fungi	Yes	No	No	No		
2987	ACNE	Acer negundo	Bowlder	8.5	Good	21: 7, 7	Yes	No	No	No		
2988	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2989	ACNE	Acer negundo	Bowlder	8.5	Good		Yes	No	No	No		
2990	ACNE	Acer negundo	Bowlder	8.5	Good	Nearly Dead	Yes	No	No	No		
2991	ACNE	Acer negundo	Bowlder	8	Good		Yes	No	No	No		
2992	SANI	Salix nigra	Black Willow	21	Good		Yes	No	No	No		
2993	ACNE	Acer negundo	Bowlder	15	Fair	Vines	Yes	No	No	No		
2994	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2995	SANI	Salix nigra	Black Willow	12	Good		Yes	No	No	No		
2996	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
2997	ACNE	Acer negundo	Bowlder	12	Good	18ft	Yes	No	No	No		
2998	ACNE	Acer negundo	Bowlder	14	Fair	21: 8, 2, Dead Branches	Yes	No	No	No		
2999	ACNE	Acer negundo	Bowlder	12.5	Good		Yes	No	No	No		
3000	ACNE	Acer negundo	Bowlder	21	Good	21: 18	Yes	No	No	No		
3001	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3002	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3003	ACNE	Acer negundo	Bowlder	10	Fair	Fallen	Yes	No	No	No		
3004	FRPE	Fraxinus pennsylvanica	Green Ash	8	Good		Yes	No	No	No		
3005	ACNE	Acer negundo	Bowlder	8	Good		Yes	No	No	No		
3006	ACNE	Acer negundo	Bowlder	22	Good	21: 15	Yes	No	No	No		
3007	ACNE	Acer negundo	Bowlder	15	Good		Yes	No	No	No		
3008	ACNE	Acer negundo	Bowlder	13	Good		Yes	No	No	No		
3009	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
3010	ACNE	Acer negundo	Bowlder	11	Good		Yes	No	No	No		
3011	LEAM	Ulmus americana	American Elm	12	Good		Yes	No	No	No		
3012	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3013	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3014	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3015	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3016	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3017	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3018	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3019	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3020	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3021	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3022	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3023	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3024	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3025	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3026	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3027	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3028	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3029	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3030	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3031	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3032	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3033	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3034	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3035	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3036	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3037	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3038	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3039	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3040	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3041	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3042	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3043	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3044	ACNE	Acer negundo	Bowlder	12	Good		Yes	No	No	No		
3045												





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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

ATWELL  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600



SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTEWAW COUNTY, MICHIGAN

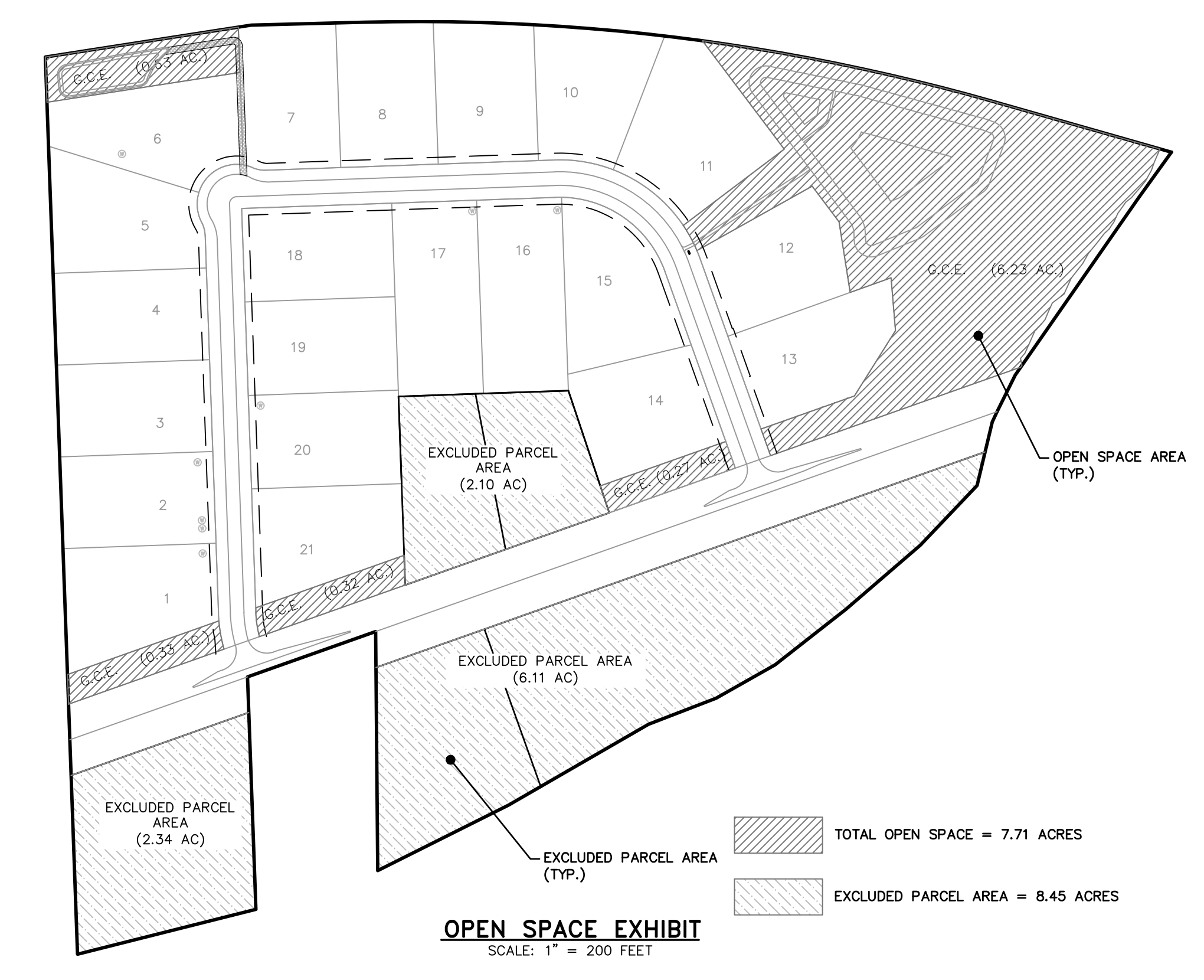
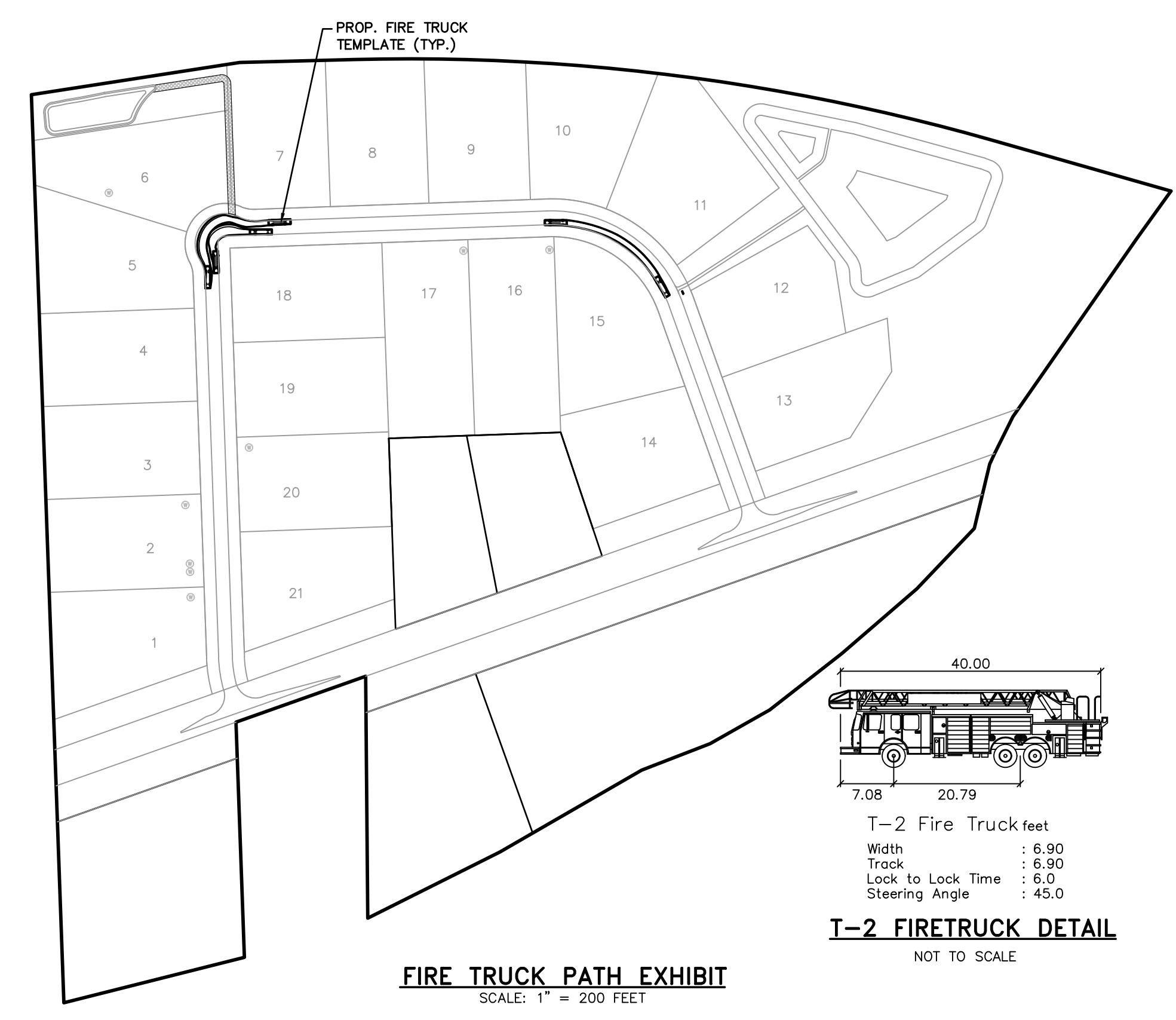
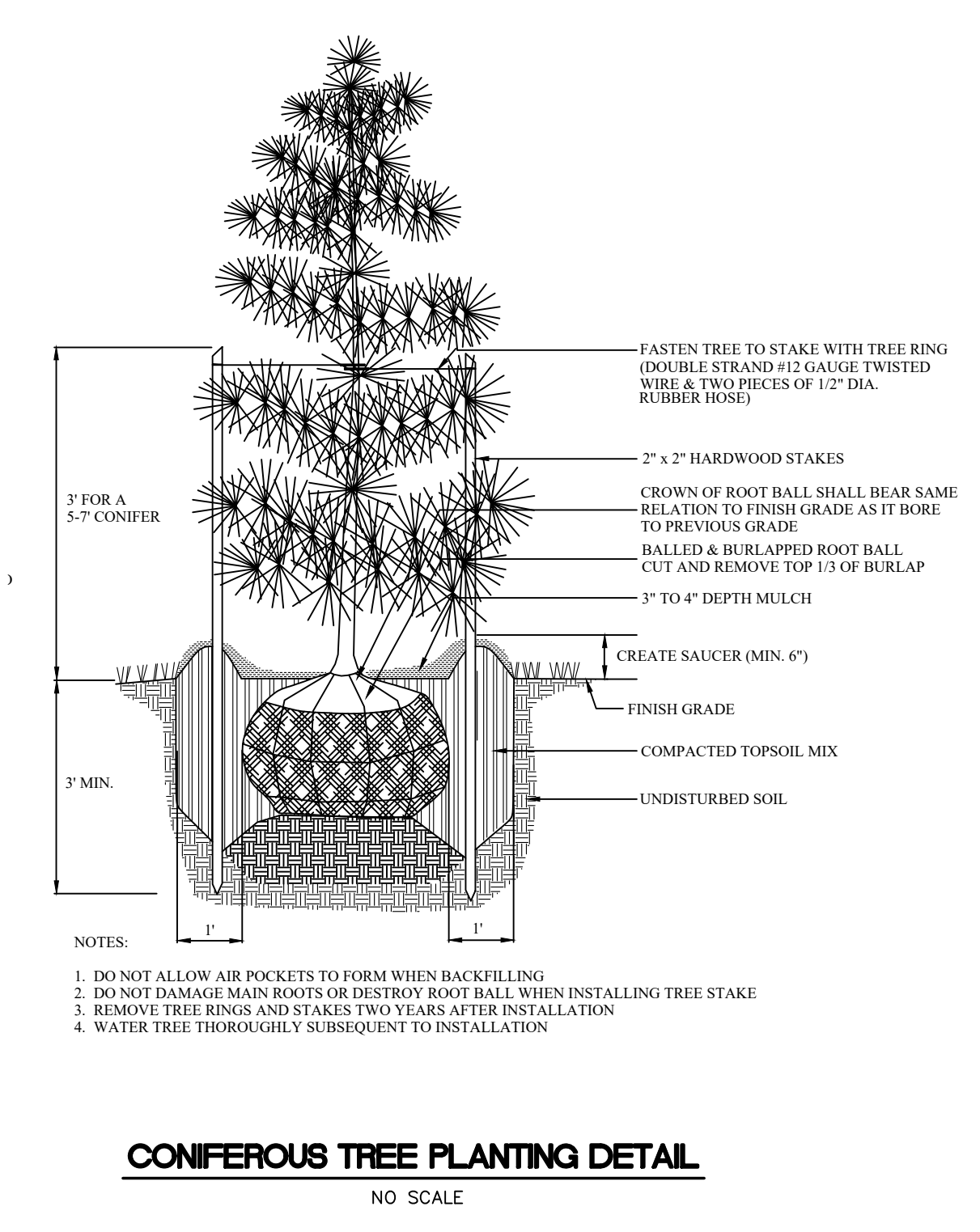
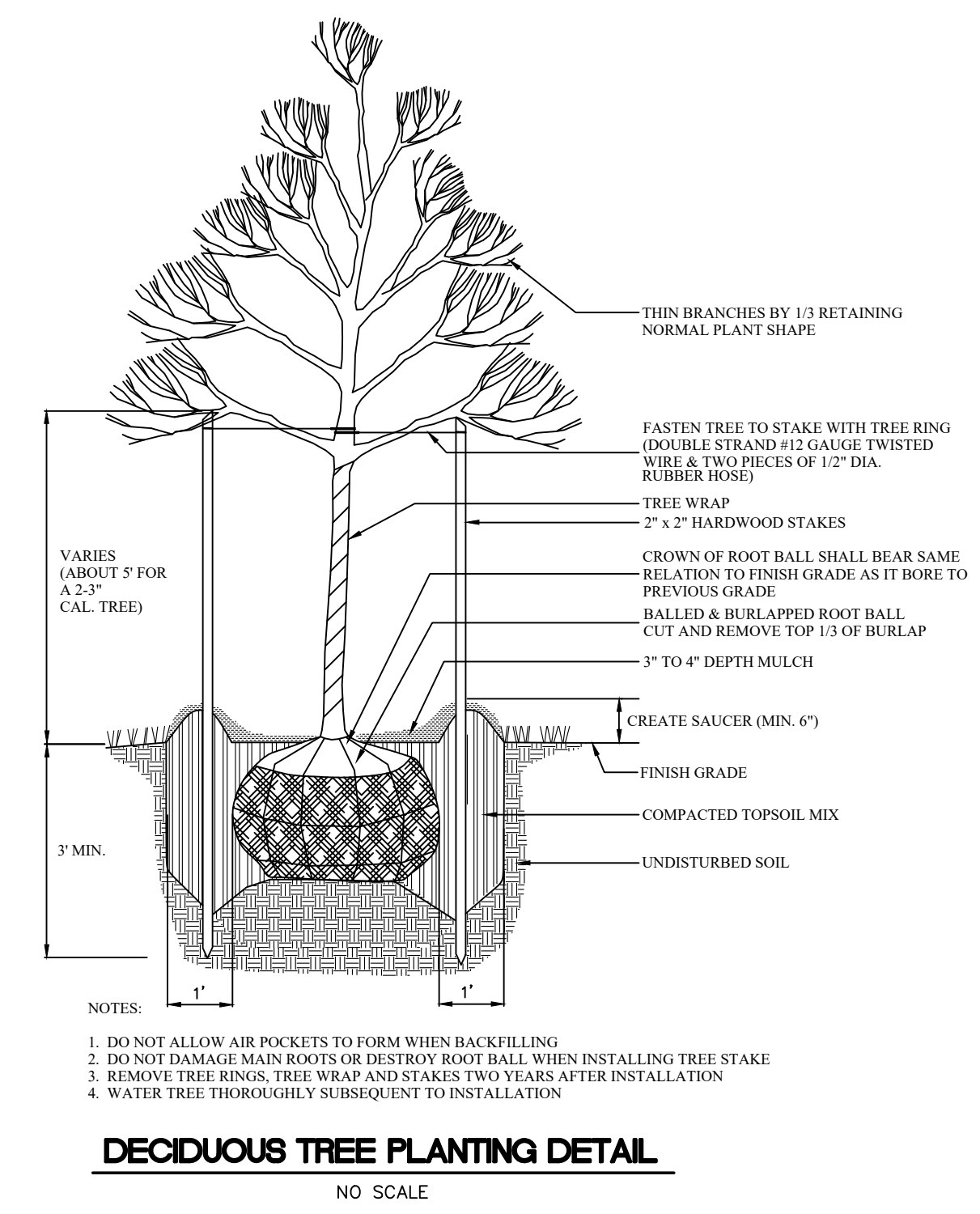
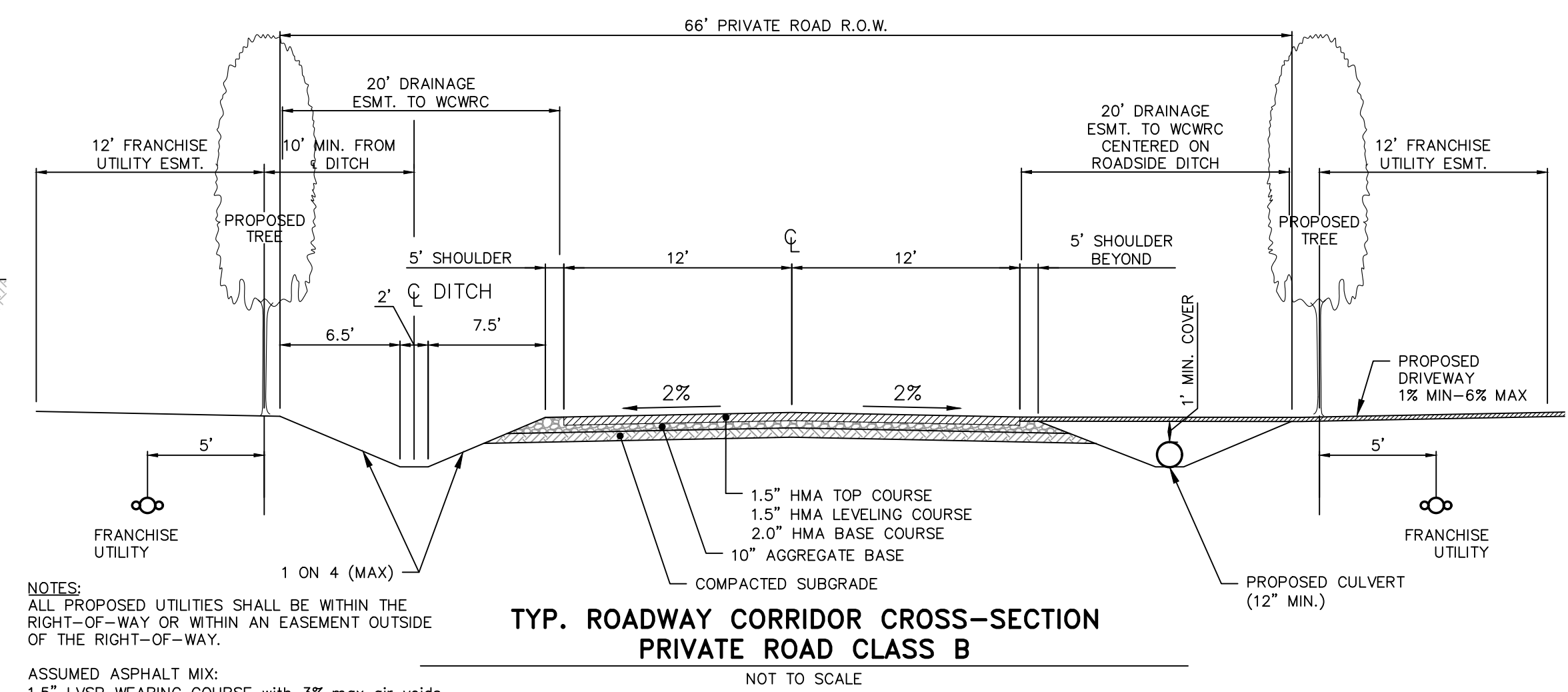
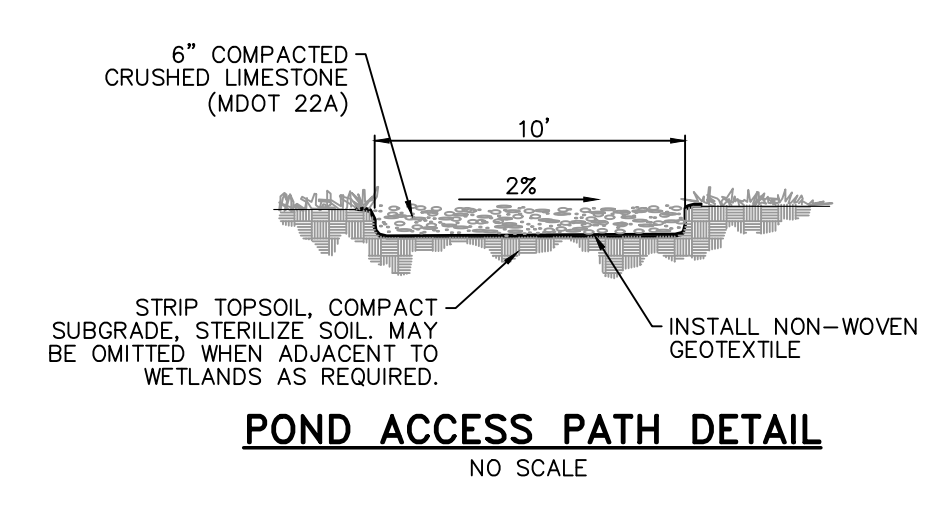
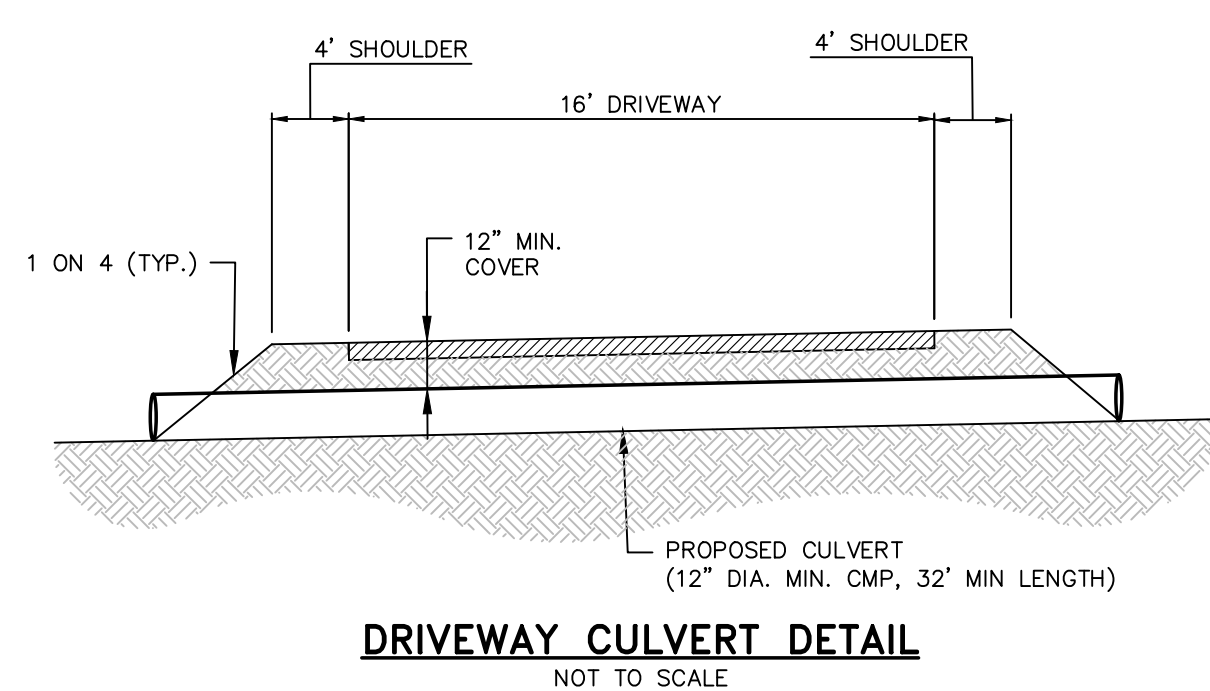
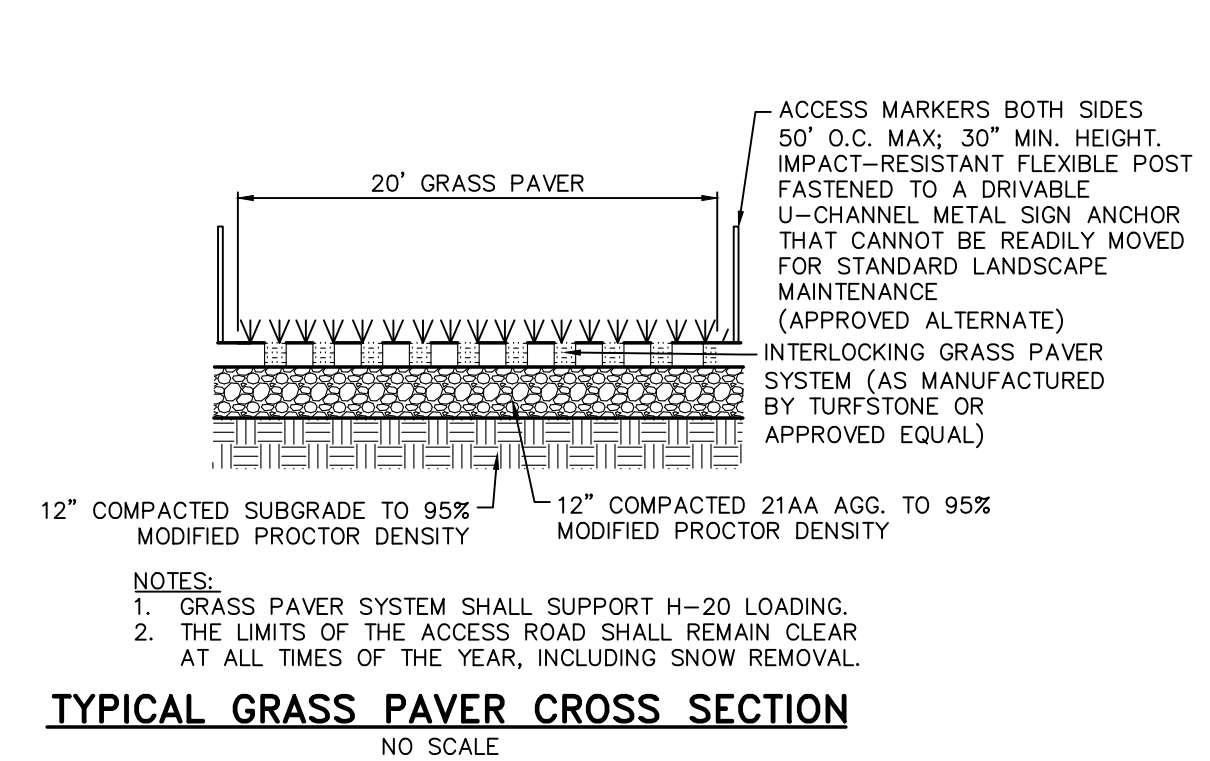
CLIENT  
LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
STANDARD DETAILS

DATE  
APRIL 18, 2023

5/30/23 PER WCWRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCWR  
10/27/23 PER WCHD/WCWR  
11/30/23 PER WCRC  
1/12/24 PER WCWRC

REVISIONS  
SCALE 0  
NO SCALE

DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 36



K:\21002863\PLAN SET\21002863-11-10-23.dwg 1/7/2024 4:52 PM DMS 307MM



**SOIL EROSION CONTROL MAINTENANCE TASKS AND SCHEDULE**

**DURING CONSTRUCTION**  
TO BE PERFORMED BY CONTRACTOR

TASKS	COMPONENTS										SCHEDULE
	PAVED AREAS	PERVIOUS AREAS	RIP-RAP/SILT FENCE	STORM DRAINAGE SYSTEM	OUTLET STRUCTURE	SEDIMENT FOREBAY	INFILTRATION AREA	INFILTRATION BMP/RAIN GARDEN	INLET FILTERS / SILT SACKS		
INSPECT FOR SEDIMENT ACCUMULATION	X	X	X	X	X	X	X	X	X	X	WEEKLY
REMOVAL OF SEDIMENT ACCUMULATION	X	X	X	X	X	X	X	X	X	X	AS NEEDED* AND PRIOR TO TURNOVER
INSPECT FOR FLOATABLES AND DEBRIS				X	X	X	X	X	X	X	QUARTERLY
CLEANING FOR FLOATABLES AND DEBRIS				X	X	X	X	X	X	X	QUARTERLY AND AT TURNOVER
INSPECTION FOR EROSION		X	X								WEEKLY
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES		X									AS NEEDED* AND PRIOR TO TURNOVER
CLEAN DRIVES AND PARKING LOTS	X										WEEKLY OR AS DETERMINED BY PERMITTING AGENCY
WATER DISTURBED AREAS TO PROVIDE DUST CONTROL											AS NEEDED
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)			X	X				X	X		ANNUALLY AND AT TURNOVER
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED			X	X				X	X		AS NEEDED

\* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

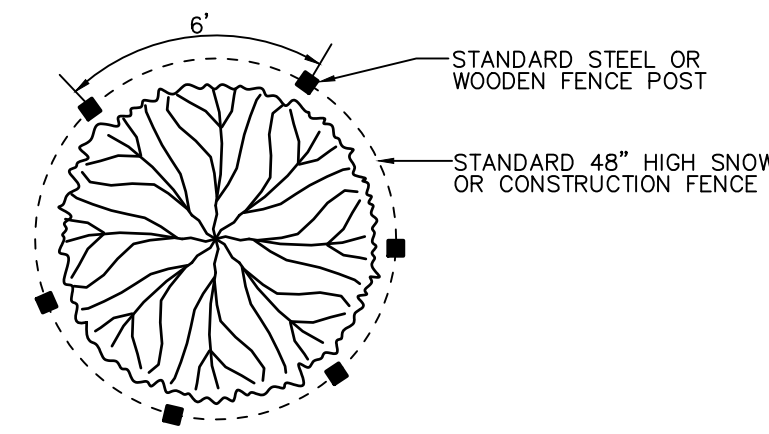
**LONG TERM STORM WATER & BUDGET**

1. THE CONDOMINIUM ASSOCIATION SHALL BE FIRST IN LINE OF RESPONSIBILITY FOR MAINTAINING ALL OF ROAD STORM SEWERS AND DETENTION BASINS
2. A CHAPTER 18 DRAINAGE DISTRICT WILL BE ESTABLISHED FOR THE ENTIRE PROJECT GIVING THE WCRC STATUTORY RESPONSIBILITY FOR ULTIMATE RESPONSIBILITY

TASKS	COMPONENTS										SCHEDULE	ANNUAL COST
	PAVED AREAS	PERVIOUS AREAS	RIP-RAP	STORM DRAINAGE SYSTEM	SEDIMENT FOREBAYS	INFILTRATION BASINS	OUTLET CONTROL STR	RAIN GARDENS	INFILTRATION TRENCHES			
INSPECT FOR SEDIMENT ACCUMULATION	X	X	X	X	X	X	X	X	X	X	SEMI-ANNUALLY/AS NEEDED*	\$100.00
REMOVAL OF SEDIMENT ACCUMULATION	X	X	X	X	X	X	X	X	X	X	5-10 YRS/AS NEEDED*	\$200.00
INSPECT FOR FLOATABLES AND DEBRIS				X	X	X	X	X	X	X	ANNUALLY	\$100.00
CLEANING FOR FLOATABLES AND DEBRIS				X	X	X	X	X	X	X	ANNUALLY	\$300.00
INSPECTION FOR EROSION		X	X								ANNUALLY/AFTER MAJOR STORMS	\$100.00
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES		X									AS NEEDED	\$300.00
RAIN GARDEN MAINTENANCE										X	TWICE PER YEAR (SPRING AND FALL)	\$500.00
CLEAN DRIVES AND PARKING LOTS	X										ANNUALLY	\$500.00
MOWING		X									0-2 TIMES PER YEAR	\$400.00
INSPECT FOLLOWING STORM 1" OR GREATER					X	X	X	X	X		AS NEEDED	\$100.00
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)			X	X	X	X	X	X	X		ANNUALLY	\$100.00
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED BY ANNUAL WET WEATHER INSPECTION			X	X	X	X	X	X	X		AS NEEDED	\$100.00
KEEP RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES AND REPORT TO PROPERTY OWNER											ANNUALLY	\$50.00
KEEP RECORDS OF ALL COSTS FOR INSPECTIONS, MAINTENANCE AND REPAIRS. REPORT TO PROPERTY OWNER											ANNUALLY	\$50.00
PROPERTY OWNER REVIEWS COST EFFECTIVENESS OF THE PREVENTATIVE MAINTENANCE PROGRAM AND MAKES NECESSARY ADJUSTMENTS											ANNUALLY	\$50.00
OWNER TO HAVE A PROFESSIONAL ENGINEER CARRY OUT EMERGENCY INSPECTIONS UPON IDENTIFICATION OF SEVERE PROBLEMS											AS NEEDED	\$150.00

\* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

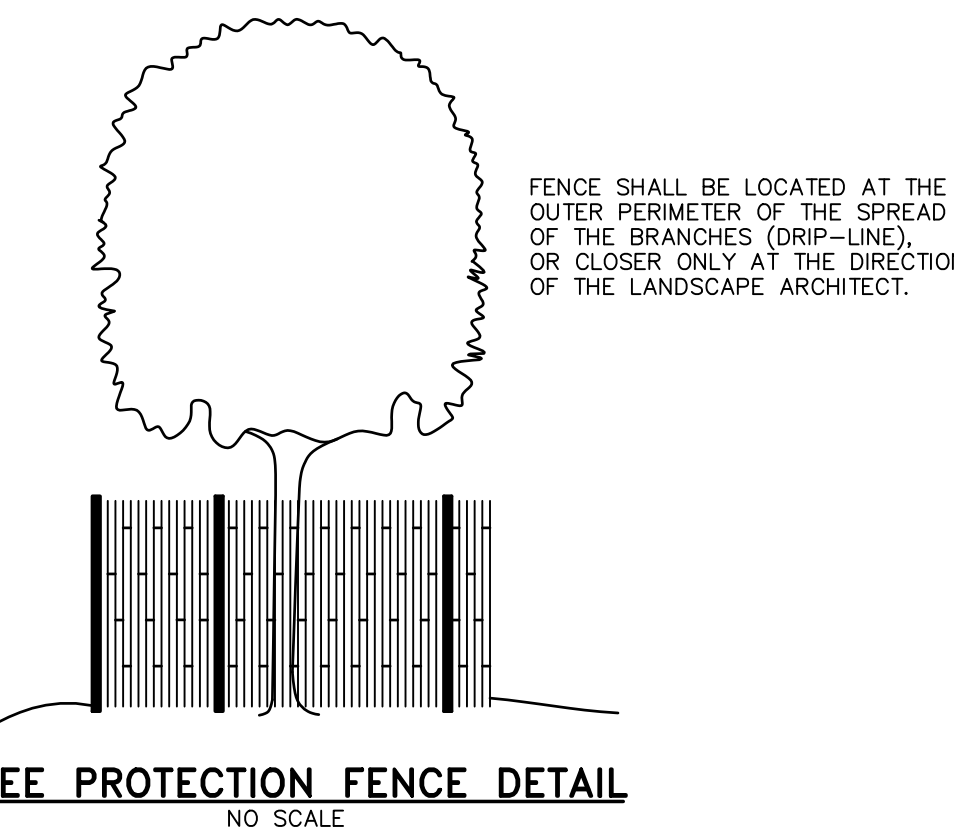
**PLAN**



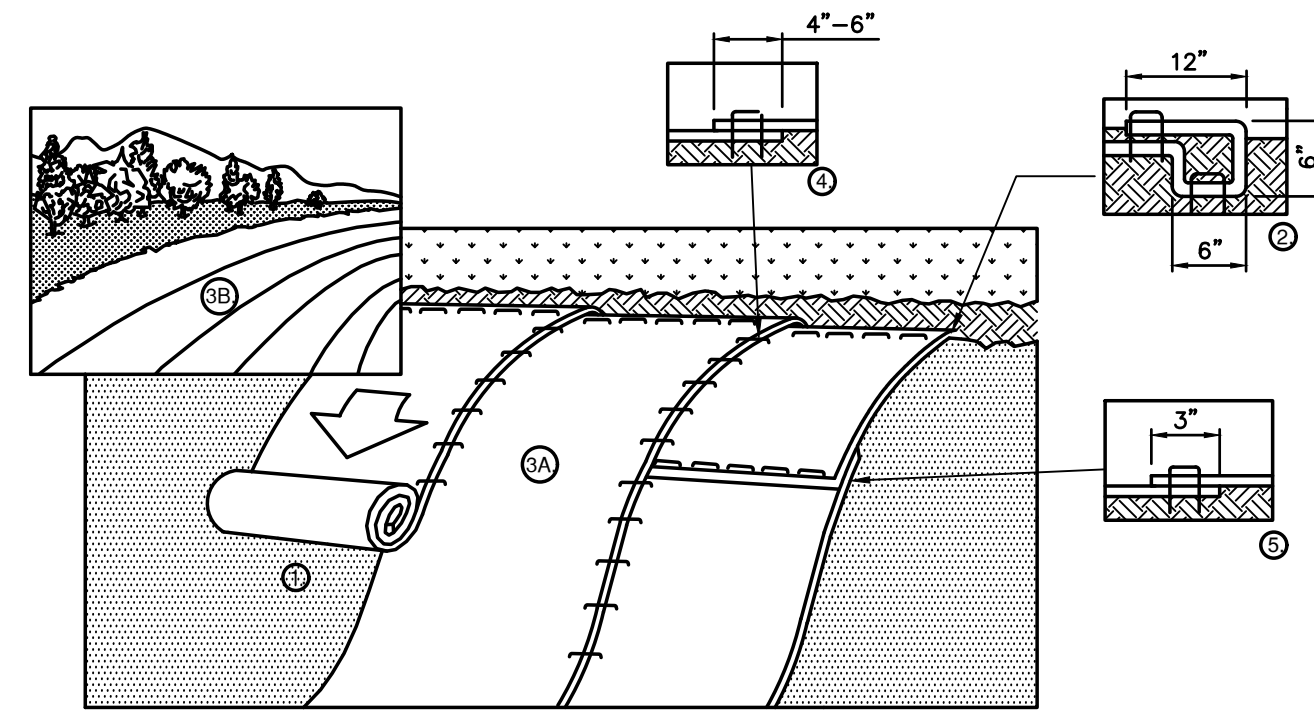
**TREE PROTECTION NOTES:**

1. ALL TREES TO BE REMOVED WILL BE IDENTIFIED BY RED FLAGGING.
2. TREE PROTECTION FENCING IS TO BE ERRECTED 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.

**ELEVATION**



**TREE PROTECTION FENCE DETAIL**  
NO SCALE



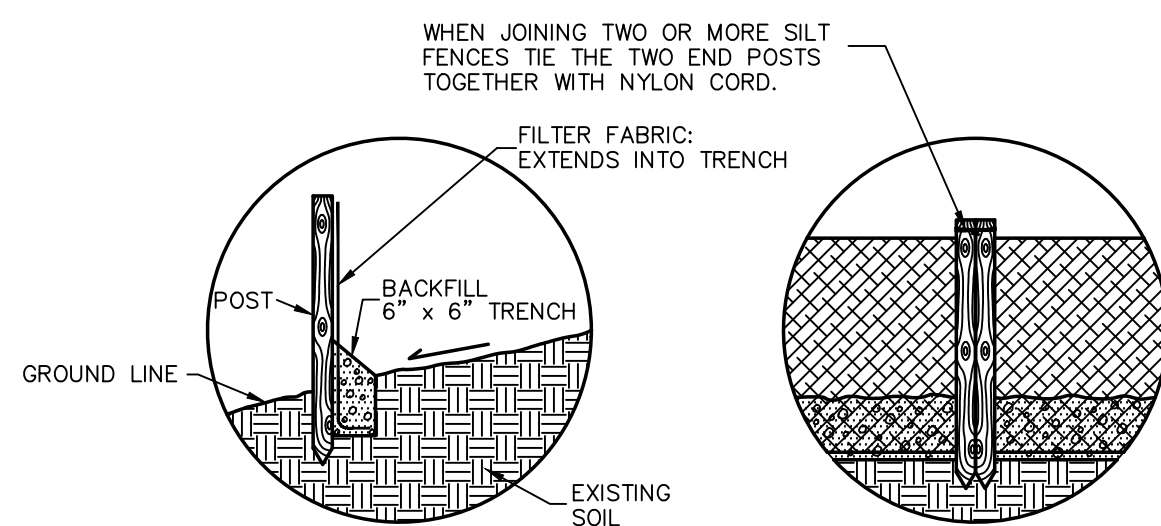
1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURER'S RECOMMENDATION.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH MINIMUM 6" OVERLAP TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.
6. PLACE STAPLES/STAKES PER MANUFACTURE RECOMMENDATION FOR THE APPROPRIATE SLOPE BEING APPLIED.

**NOTES:**

1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
2. FOLLOW EROSION CONTROL TECHNOLOGY COUNCIL SPECIFICATION FOR PRODUCT SELECTION.

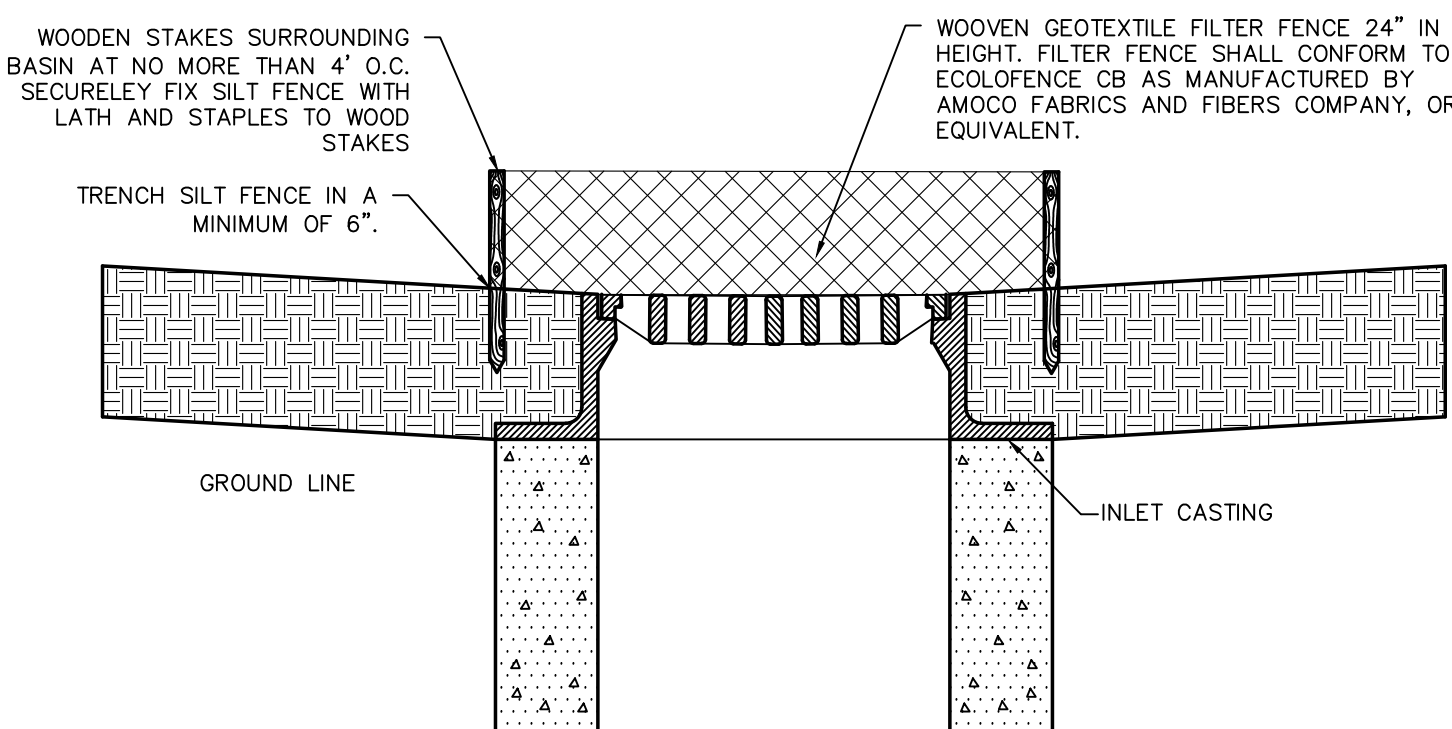
**EROSION CONTROL BLANKET (SLOPE INSTALLATION)**

NO SCALE

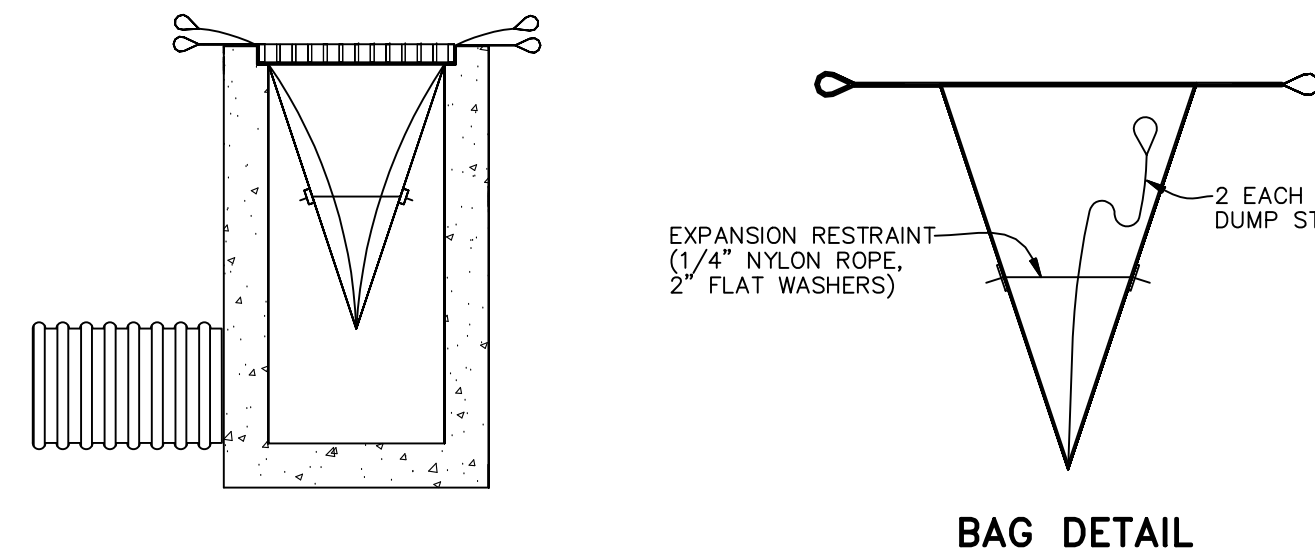


**GEOTEXTILE SILT FENCE**

NO SCALE

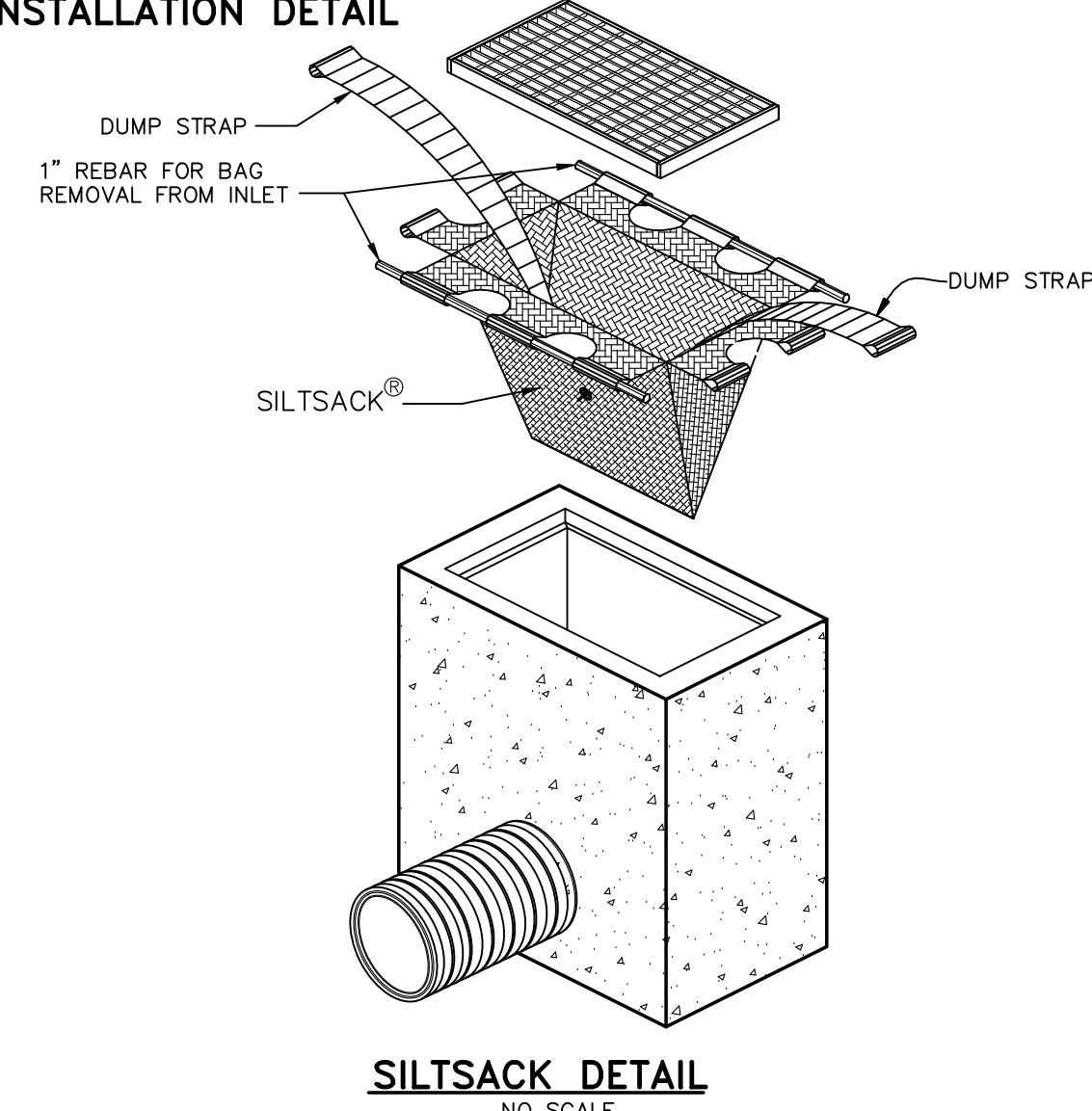


**REAR YARD STORM SEWER INLET FILTER**  
NO SCALE

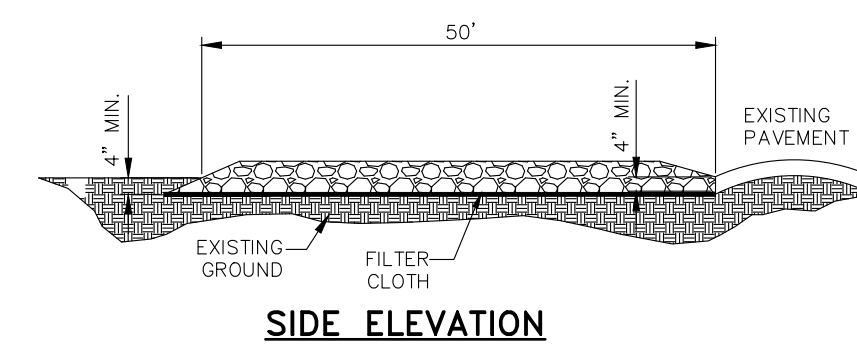


**INSTALLATION DETAIL**

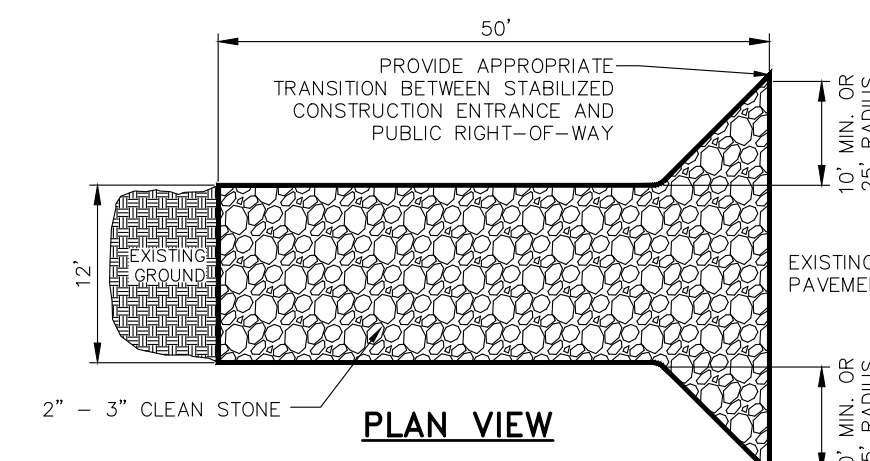
**BAG DETAIL**



**SILTSACK DETAIL**  
NO SCALE



**SIDE ELEVATION**



**PLAN VIEW**

- CONSTRUCTION SPECIFICATIONS**
1. STONE - USE COARSE AGGREGATE (2 - 3 INCH STONE)
  2. LENGTH - 50' MIN.
  3. THICKNESS - NOT LESS THAN EIGHT (8) INCHES.
  4. WIDTH - 12' MIN.

**STABILIZED CONSTRUCTION ENTRANCE AND STONE LAYDOWN**

NOT TO SCALE

**CONSTRUCTION SEQUENCE (SESC)**

1. INSTALL TEMPORARY EROSION AND SEDIMENTATION MEASURES (1 WEEK) - SPRING 2023
  - 1.1. INSTALL SEDIMENT FENCE AND TREE PROTECTION FENCING PRIOR TO ANY GRADING OPERATION
  - 1.2. INSTALL MUD TRACKING PAD
2. MASS GRADING / CONSTRUCT DETENTION FACILITIES (28 DAYS) - SPRING 2023
  - 2.1. PLACE TOPSOIL, FERTILIZER, SEED AND MULCH OVER ENTIRE DETENTION BASIN AREA
  - 2.2. INSTALL DETENTION BASIN STANDPIPE
  - 2.3. ROUGH GRADE SITE, STOCKPILE TOPSOIL
3. INSTALL UTILITIES, INCLUDING STORM DRAINAGE SYSTEM AND RIP-RAP (18 DAYS) - SPRING/SUMMER 2023
4. MAINTAIN EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED.
5. BEGIN PAVING ACTIVITIES (2 WEEKS) - WEATHER DEPENDENT - SUMMER 2023
6. INSTALL FRANCHISED UTILITIES.
7. AS-BUILT CERTIFICATION OF THE STORM WATER DETENTION SYSTEM. (1 WEEK) - FALL 2023
8. FINISH GRADE, REDISTRIBUTE TOPSOIL, SEED AND MULCH ALL DISTURBED AREAS. INSTALL LANDSCAPING. - FALL 2023
9. INSPECT AND CLEAN ALL CATCH BASINS, STORM SEWERS, AND DETENTION FACILITIES
- 9.1. REMOVE ANY ACCUMULATED SEDIMENT WITHIN THE DETENTION BASIN AND STORM SEWER SYSTEM
- 9.2. REPLACE CLEAN WASHED STONE AROUND DETENTION STANDPIPE
10. ENSURE ALL SOIL IS STABILIZED.
11. COMPLETE CONSTRUCTION OF SITE (PHASE 1). FALL 2023
12. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES. (1 WEEK) - FALL 2023

**STOCKPILE NOTE**

STOCKPILING IS NOT ANTICIPATED. IF NEEDED, SILT FENCE SHALL BE INSTALLED AND MAINTAINED AROUND THE PERIMETER OF ANY STOCKPILES. IF STOCKPILE WILL BE LARGE AND IS EXPECTED TO BE ON-SITE FOR A PERIOD OF TIME.

**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.

COPYRIGHT © 2023 ATWELL LLC. NO REPRODUCTION SHALL BE MADE WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

**ATWELL**  
866.850.4200 www.atwell-group.com  
311 N. MAIN ST.  
ANN ARBOR, MI 48104  
734.994.4600

SECTION 08  
TOWN 02 NORTH, RANGE 07 EAST  
SUPERIOR TOWNSHIP  
WASHTENAW COUNTY, MICHIGAN

CLIENT: LOMBARDO HOMES  
KINSLEY DEVELOPMENT  
FINAL SITE PLAN  
SOIL EROSION & SEDIMENTATION CONTROL DETAILS

DATE: APRIL 18, 2023

5/30/23 PER WCRC  
7/11/23 PER TWP  
8/10/23 PER WCHD/WCRC/WCRC  
10/27/23 PER WCHD/WCRC  
11/30/23 PER WCRC  
1/12/24 PER WCRC

REVISIONS

SCALE: 0 50 100  
1" = 100 FEET

DR. SK CH. MC  
P.M. MC  
BOOK --  
JOB 21002863  
SHEET NO. 37







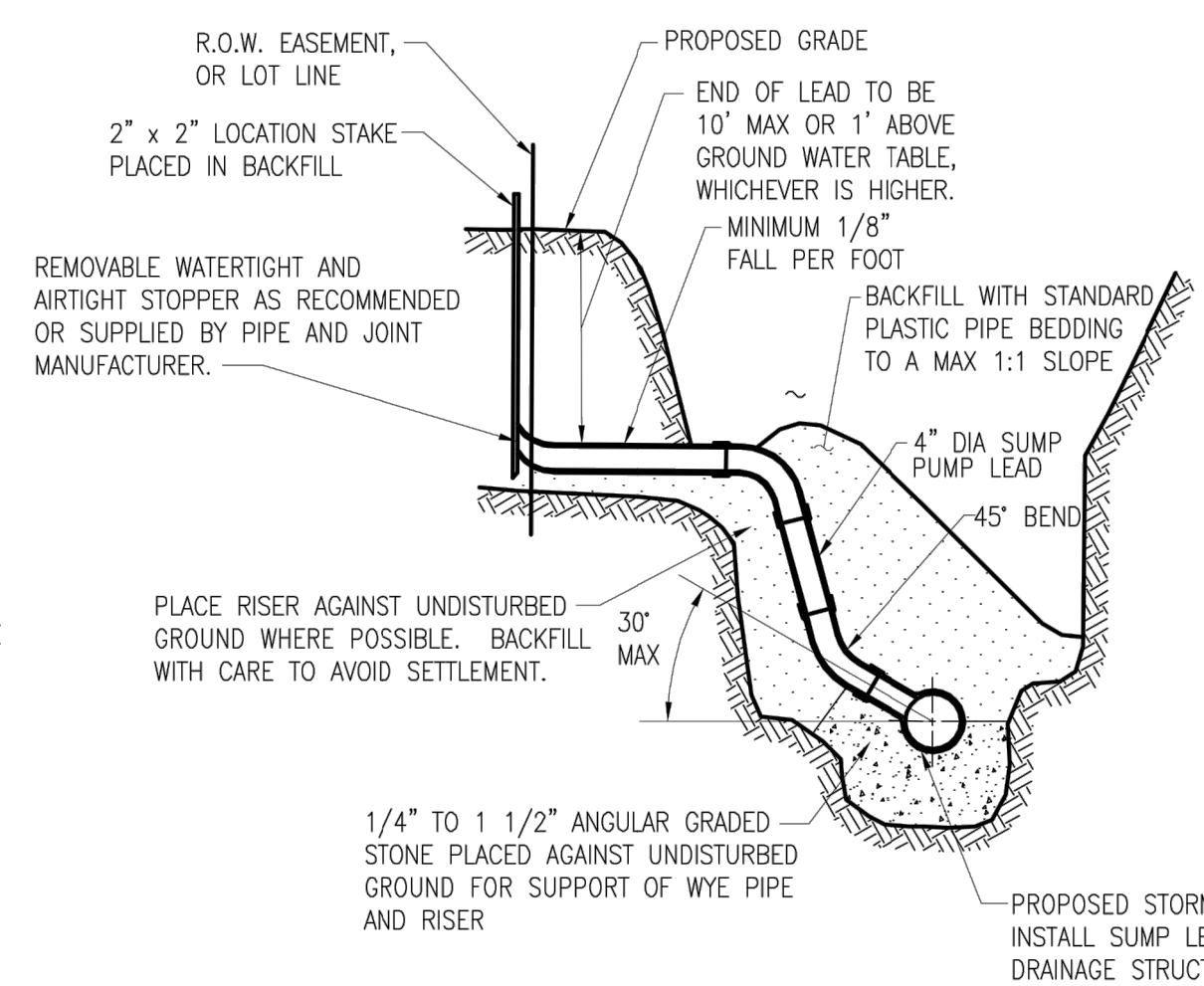
DATE	OCT 2003
CADD	DK
ENG ARCH	DLG/JGL
PROJ MGR	
SECTION	
TOWN	
RANGE	
COUNTY	WASHTENAW
CITY/TOWNSHIP	CHARTER TOWNSHIP OF SUPERIOR
H. NTS	
SCALE	V. N/A H. NTS
VERTICAL	N/A
HORIZONTAL	N/A
REVISIONS	
000-00-0000	

**GENERAL NOTES FOR STORM SEWER CONSTRUCTION**

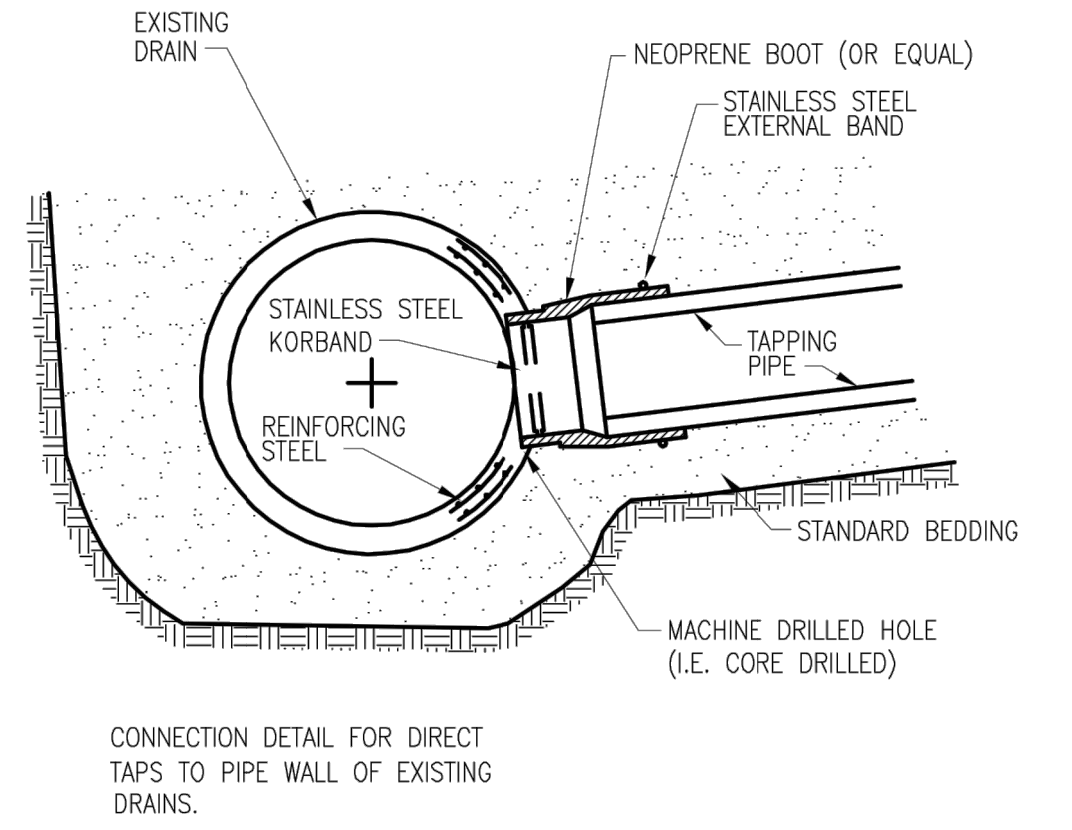
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF CHARTER TOWNSHIP OF SUPERIOR.
  - TYPE AND CLASS OF PIPE SHALL BE AS SPECIFIED ON PLANS.
  - SAND BEDDING SHALL BE USED THROUGHOUT, UNLESS OTHERWISE SPECIFIED ON THE PLAN.
  - ALL END SECTIONS 18" AND LARGER SHALL BE PROVIDED WITH A GALVANIZED BAR SCREEN.
- CONTRACTOR SHALL CONSTRUCT MANHOLES WITH PRECAST REINFORCED CONCRETE IN LIEU OF CONCRETE, BRICK AND BLOCK MANHOLES IN ACCORDANCE WITH THE FOLLOWING CONDITIONS:
  - 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.
  - 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.
  - 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.
- ALL VERTICAL OPENINGS IN CONCRETE BLOCK STRUCTURE WALLS SHALL BE COMPLETELY FILLED WITH MORTAR. ALL VERTICAL WALL JOINTS SHALL BE CEMENT POINTED.
- CONCRETE PIPE REQUIREMENTS:
  - THE CONTRACTOR SHALL PROVIDE REINFORCED CONCRETE PIPE AS SPECIFIED ON THE PLANS.
  - 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.
  - THE INSIDE JOINT OF PIPE SIZES OVER 27" DIAMETER SHALL BE POINTED UP WITH MORTAR UPON COMPLETION OF BACKFILLING OPERATIONS.
  - 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.
  - 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.

**DRAINAGE STRUCTURE REQUIREMENTS:**

- 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.
- 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.
- CATCH BASIN STEPS SHALL BE EAST JORDAN IRON WORKS 8502 PLASTIC COATED (OR APPROVED EQUAL).
- MANHOLE COVERS AND FRAMES SHALL BE EAST JORDAN IRON WORKS 1040, TYPE "B" COVER OR AS PER CONSTRUCTION DRAWINGS.
- CATCH BASIN AND INLET FRAME AND COVER SHALL BE:
  - EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH STRAIGHT FACE CURB AND GUTTER (OR AS APPROVED EQUAL).
  - EAST JORDAN IRON WORKS 5080, TYPE "M1" COVER WITH MOUNTABLE CURB AND GUTTER AND INTEGRAL CURB AND GUTTER (OR AS APPROVED EQUAL).
  - 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.
  - FRAMES SHALL BE SET IN FULL BED OF MORTAR AND THE SIDE SHALL BE OVERLAPPED TO PREVENT LEAKAGE.
- 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.
- STANDARD BRICK ADJUSTMENT: MINIMUM OF ONE COURSE AND A MAXIMUM OF 5 COURSES OF BRICK.
  - ALL BRICKS AND BLOCKS USED FOR ADJUSTMENT SHALL BE CONCRETE.
  - 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".
  - PRECAST REINFORCED CONCRETE SECTION AS MINIMUM SHALL CONFORM TO A.S.T.M. C-478.
  - CONCRETE BASE FOR MANHOLE, CATCH BASIN, AND INLET SHALL BE MDOT GRADE 30P (MIN), 8" THICK, 3000 PSI.
- PLASTER ALL OUTSIDE MASONRY SURFACES WITH 1:2 1/2 MASONRY CEMENT (TYPE II) 1/2" THICK.
- 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.
- ALL PRECAST RISER(S) SHALL BE PLACED IN A FULL BED OF MORTAR. ALL JOINTS & LIFTHOLES SHALL BE POINTED UP WITH MORTAR ON THE OUTSIDE AND INSIDE.
  - ALL VERTICAL AND HORIZONTAL BARS SHALL BE TACK-WELDED TO THE ANGLE FRAME.
  - THE BAR GRATE SCREEN SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION IS COMPLETE.

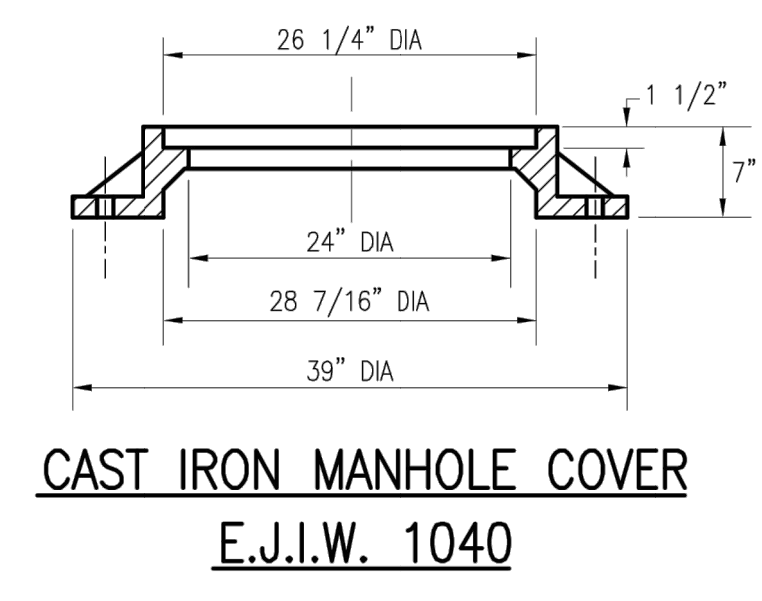
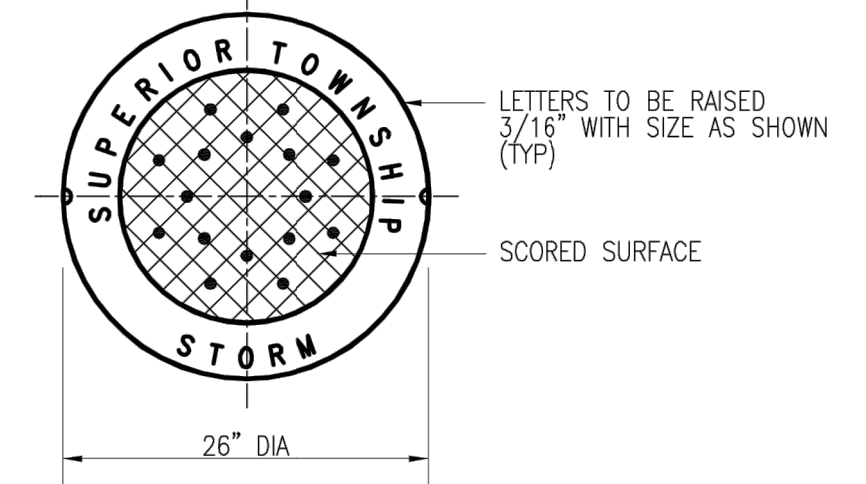


**HOUSE LEAD DETAIL FOR 4" DIA PLASTIC SUMP PUMP LEADS**

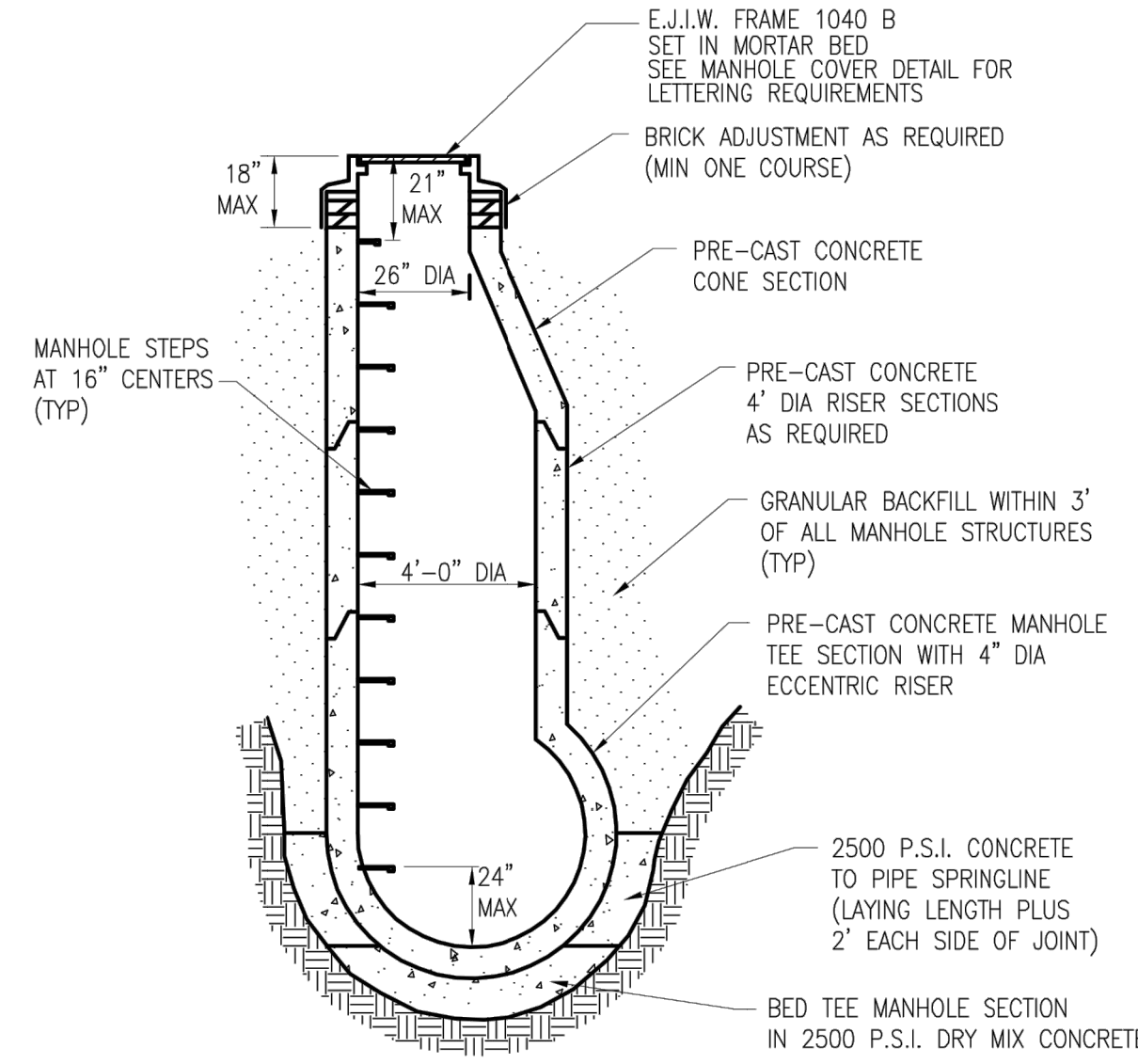


**KOR-N-TEE TAP FOR CONCRETE PIPE**

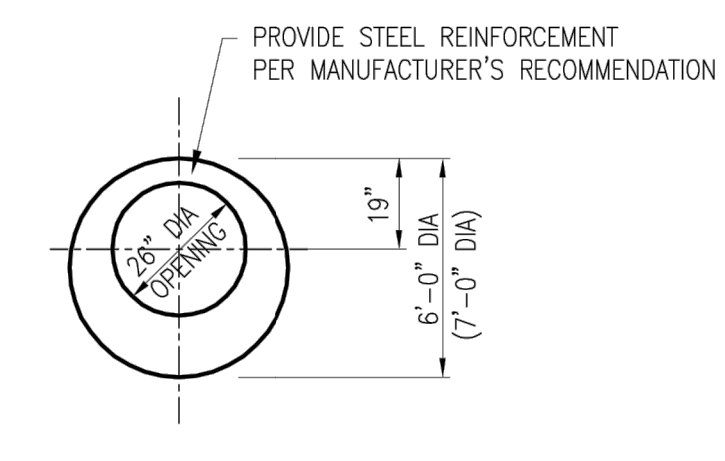
(NOTE: LETTERING SHALL BE USED ONLY FOR PUBLIC STORM SYSTEM. ALL OTHERS SHALL HAVE NO LETTERING.)



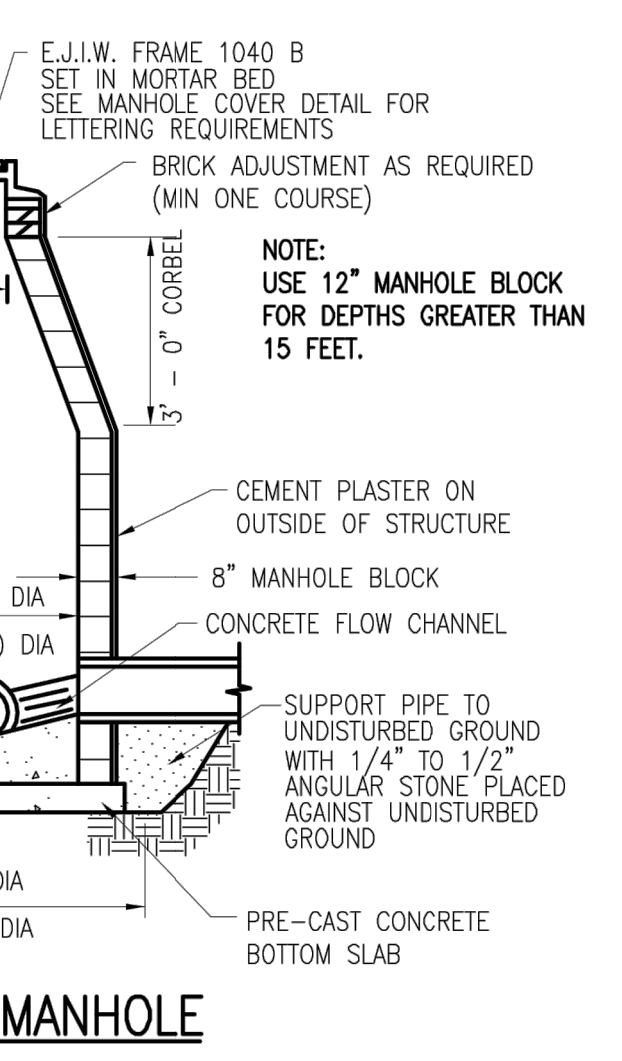
**CAST IRON MANHOLE COVER E.J.I.W. 1040**



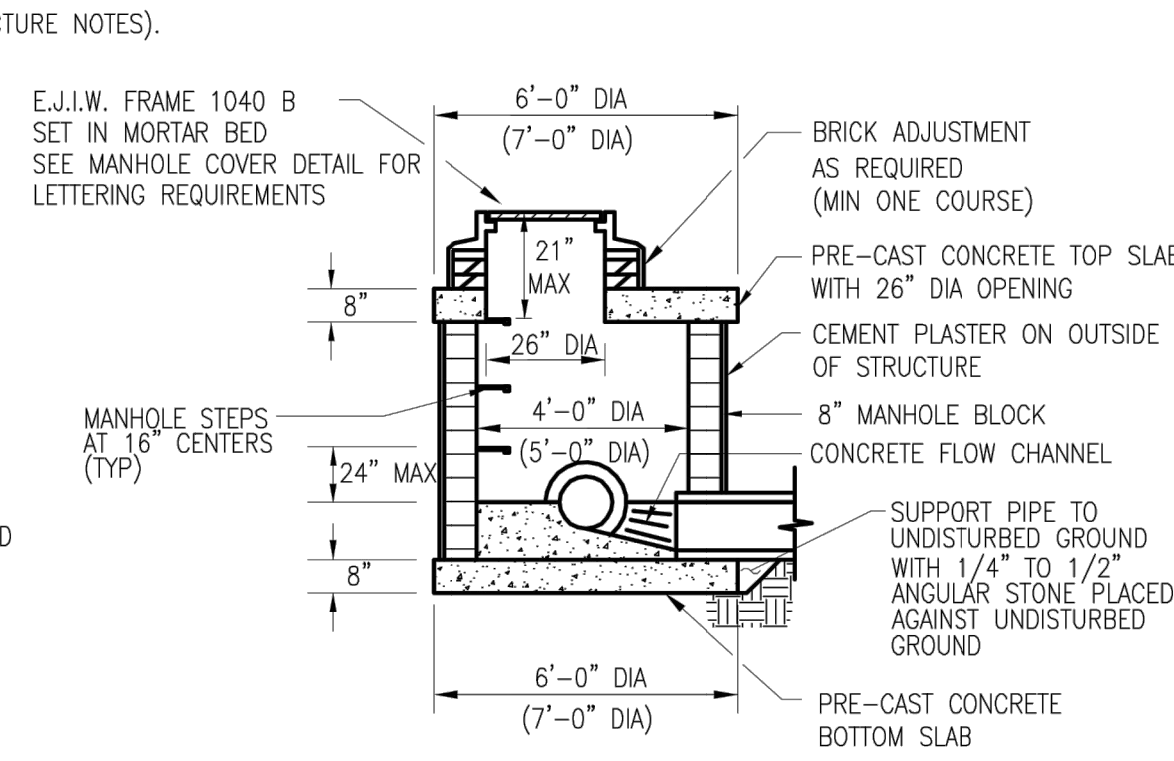
**PRE-CAST TEE MANHOLE DETAIL**



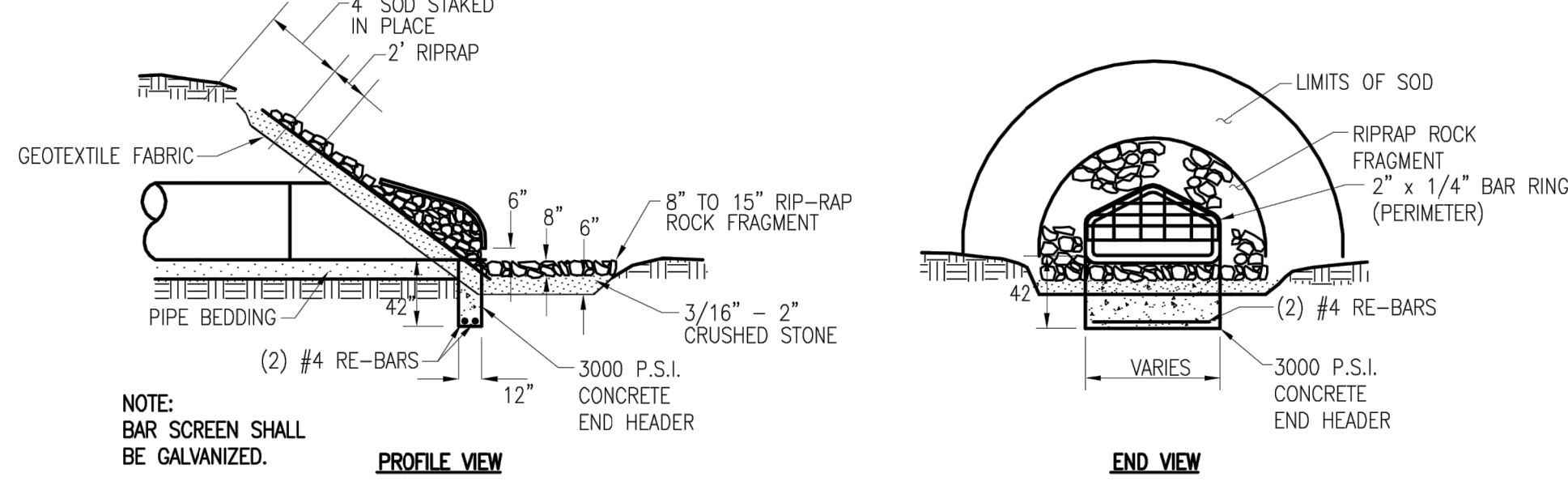
**PRE-CAST CONCRETE TOP SLAB DETAIL, 8" THICK**



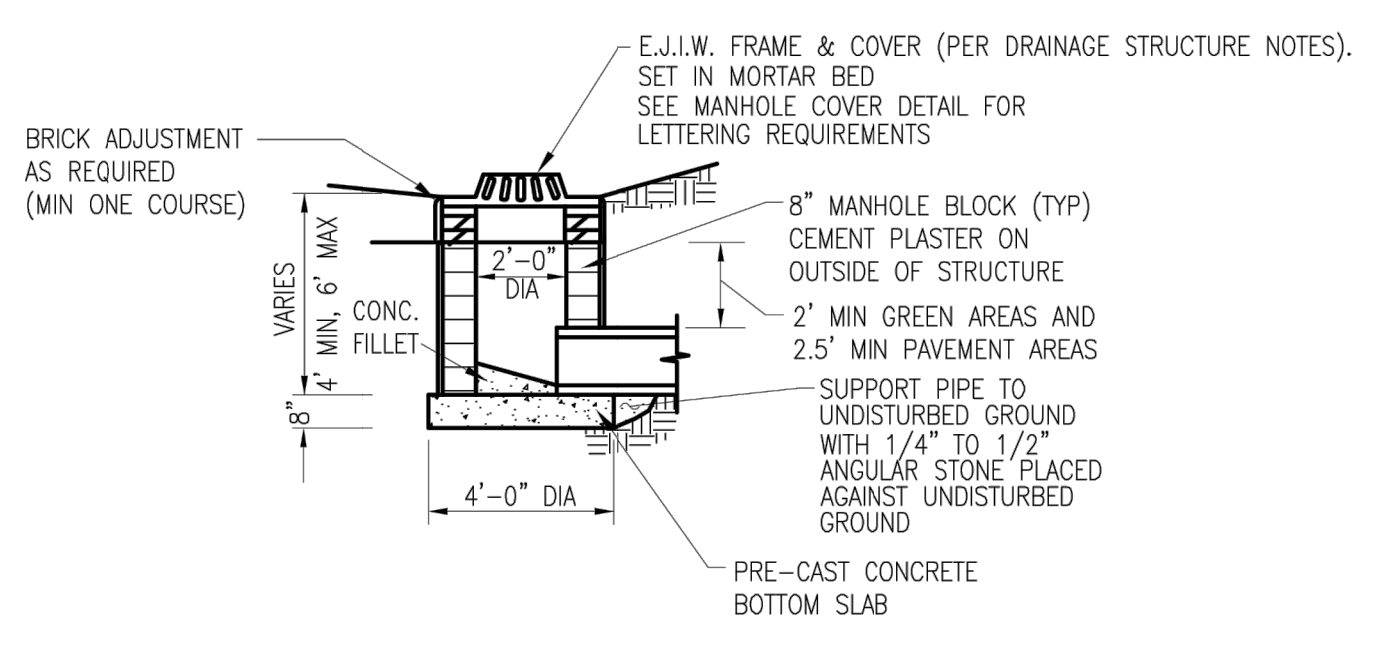
**BLOCK MANHOLE**



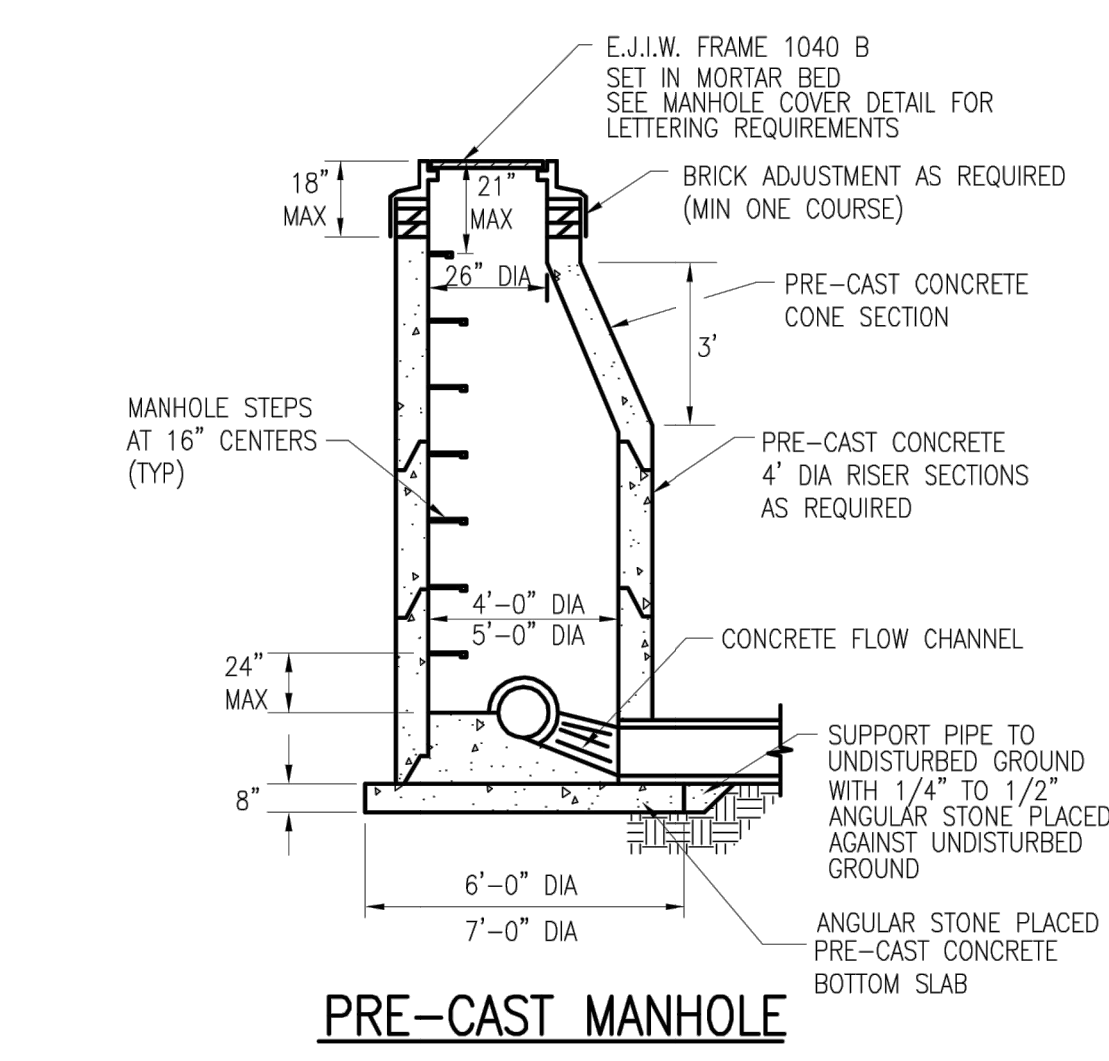
**LOW HEAD MANHOLE AND CATCH BASIN DETAIL**



**END SECTION AND BAR SCREEN DETAIL**

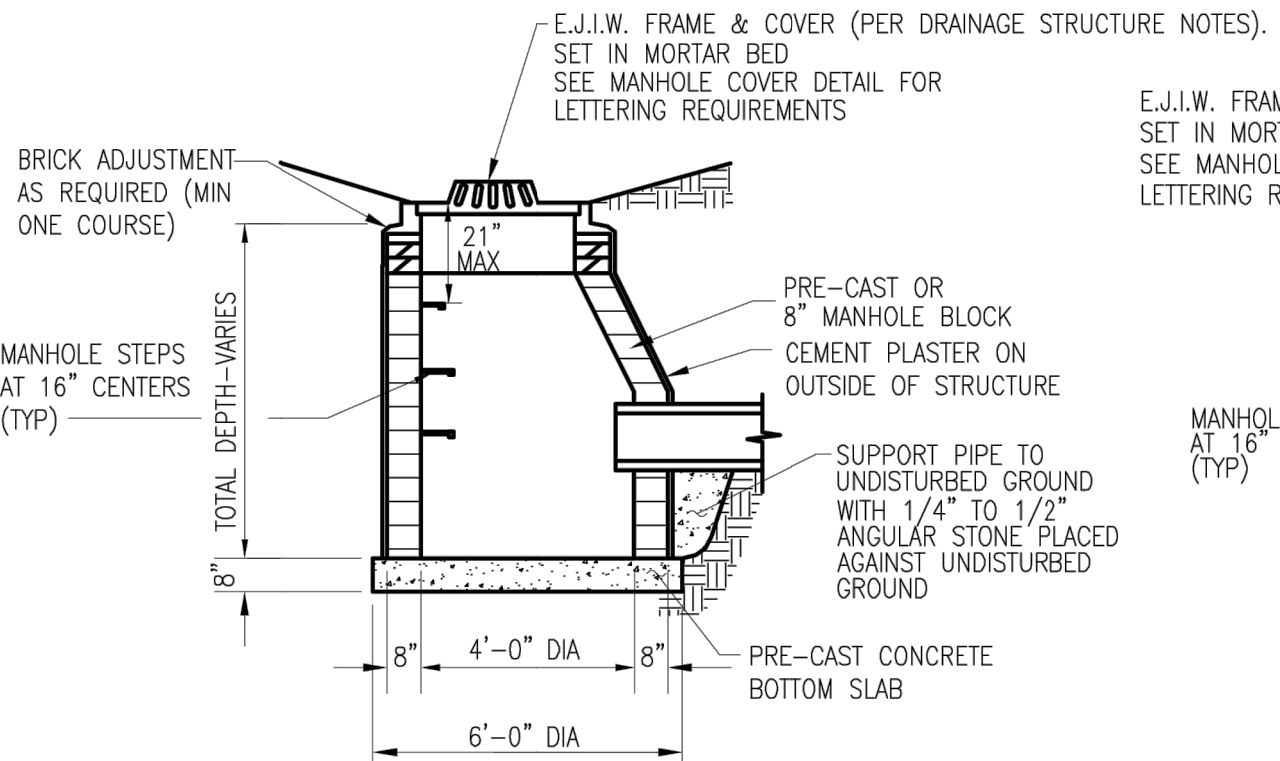


**2" DIA INLET DETAIL**

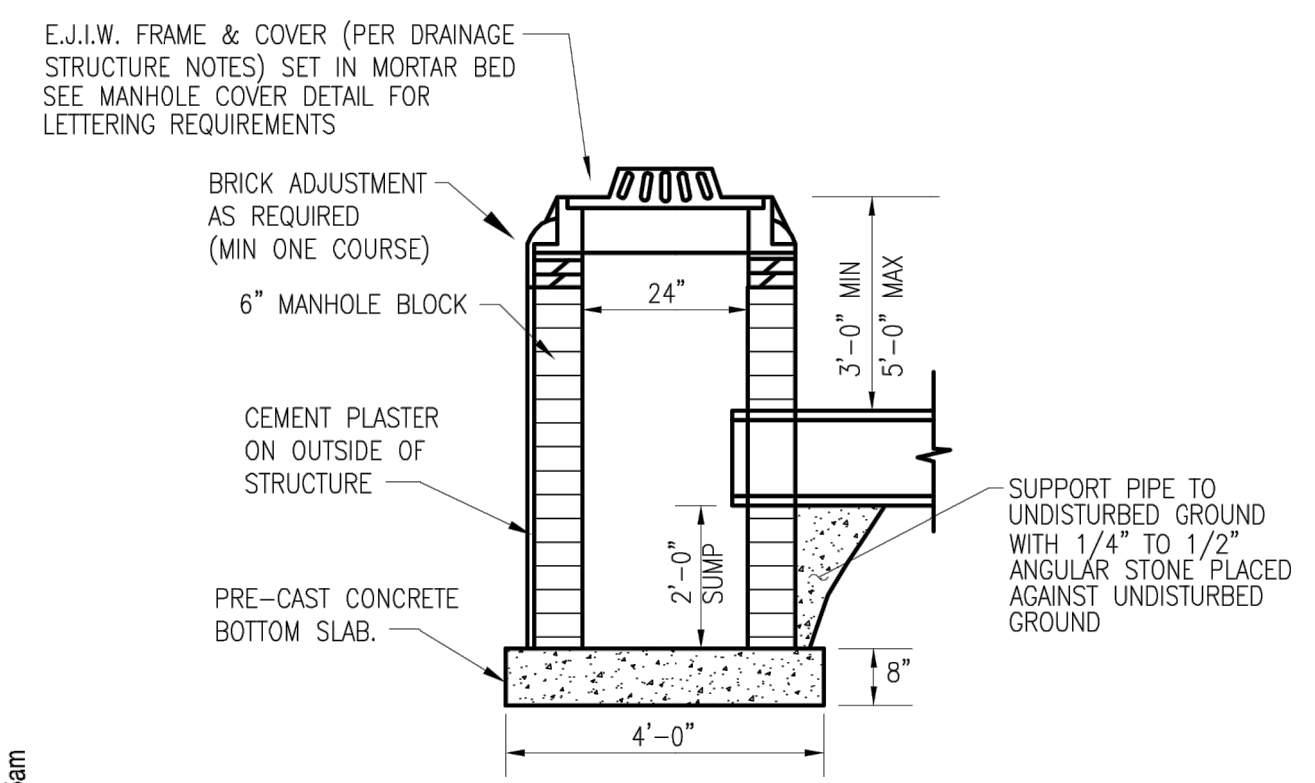


**PRE-CAST MANHOLE**

**STANDARD MANHOLE DETAILS**

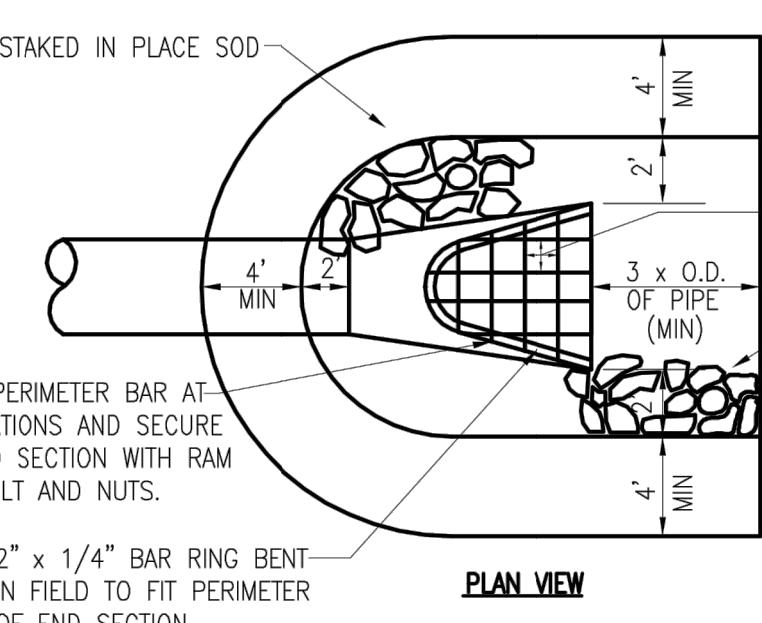


**CATCH BASIN DETAIL**



**2" DIA CATCH BASIN DETAIL**

(NOTE: 2' DIA CATCH BASIN SHALL NOT BE USED UNLESS PRIOR APPROVAL IS OBTAINED FROM TOWNSHIP ENGINEER.)



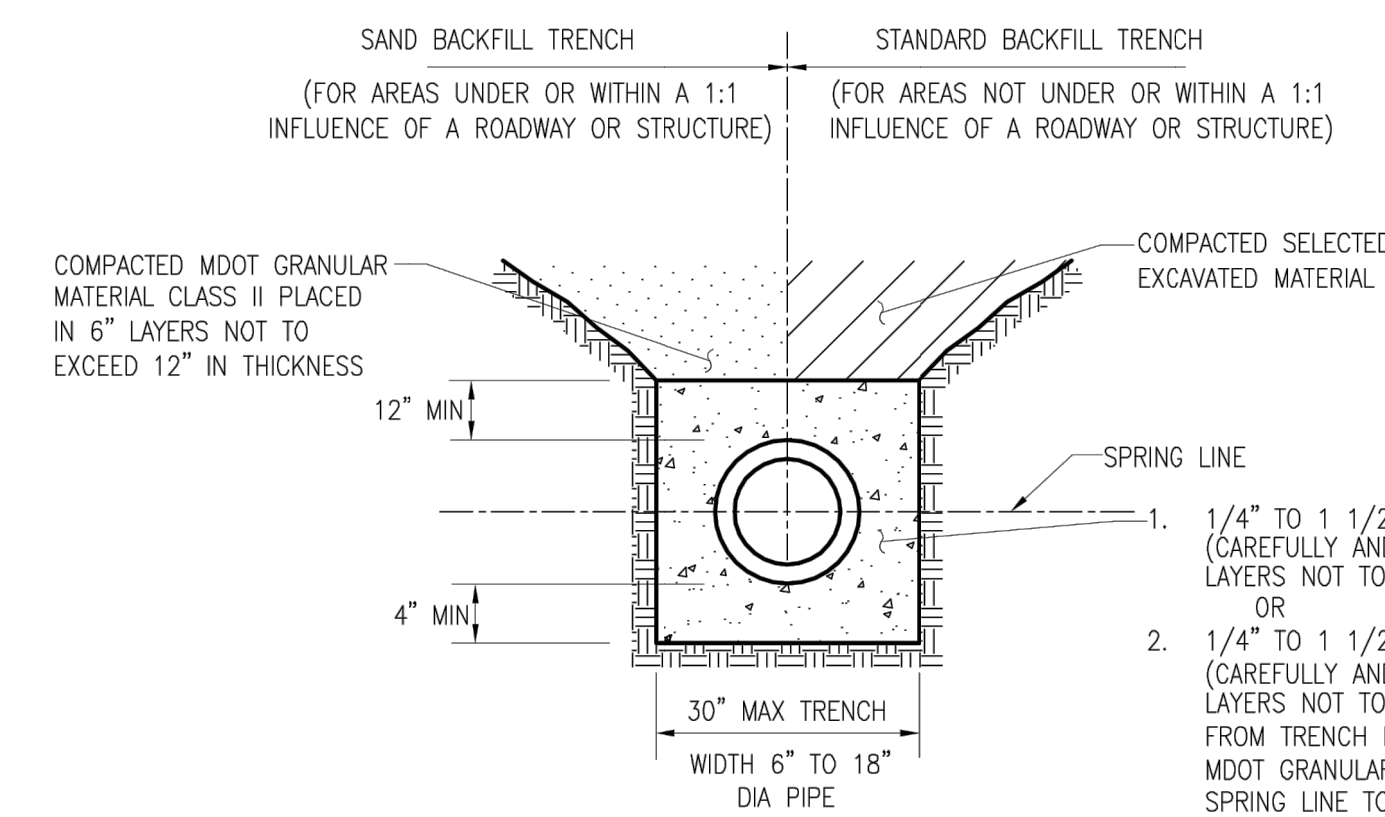
**PLAN VIEW**

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

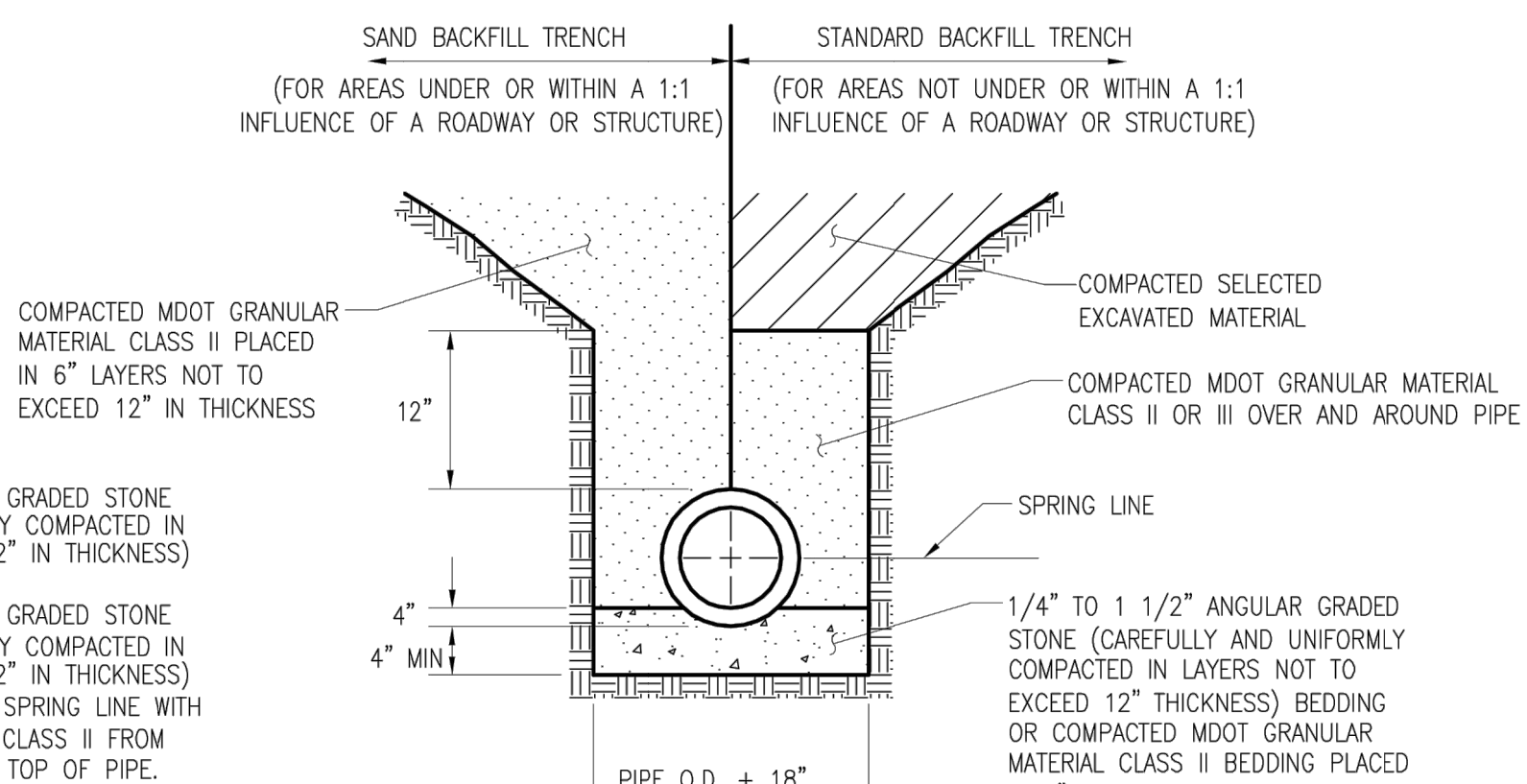
(NOTE: MINIMUM REQUIREMENTS FOR RIP-RAP MATERIAL SHALL MEET MDOT SPECIFICATION 8.19.02.)

DRAWING PATH: S:\CIVIL\Superior\Standards\CADD\STORM\SuperiorSim.dwg May 27, 2010 - 9:28am

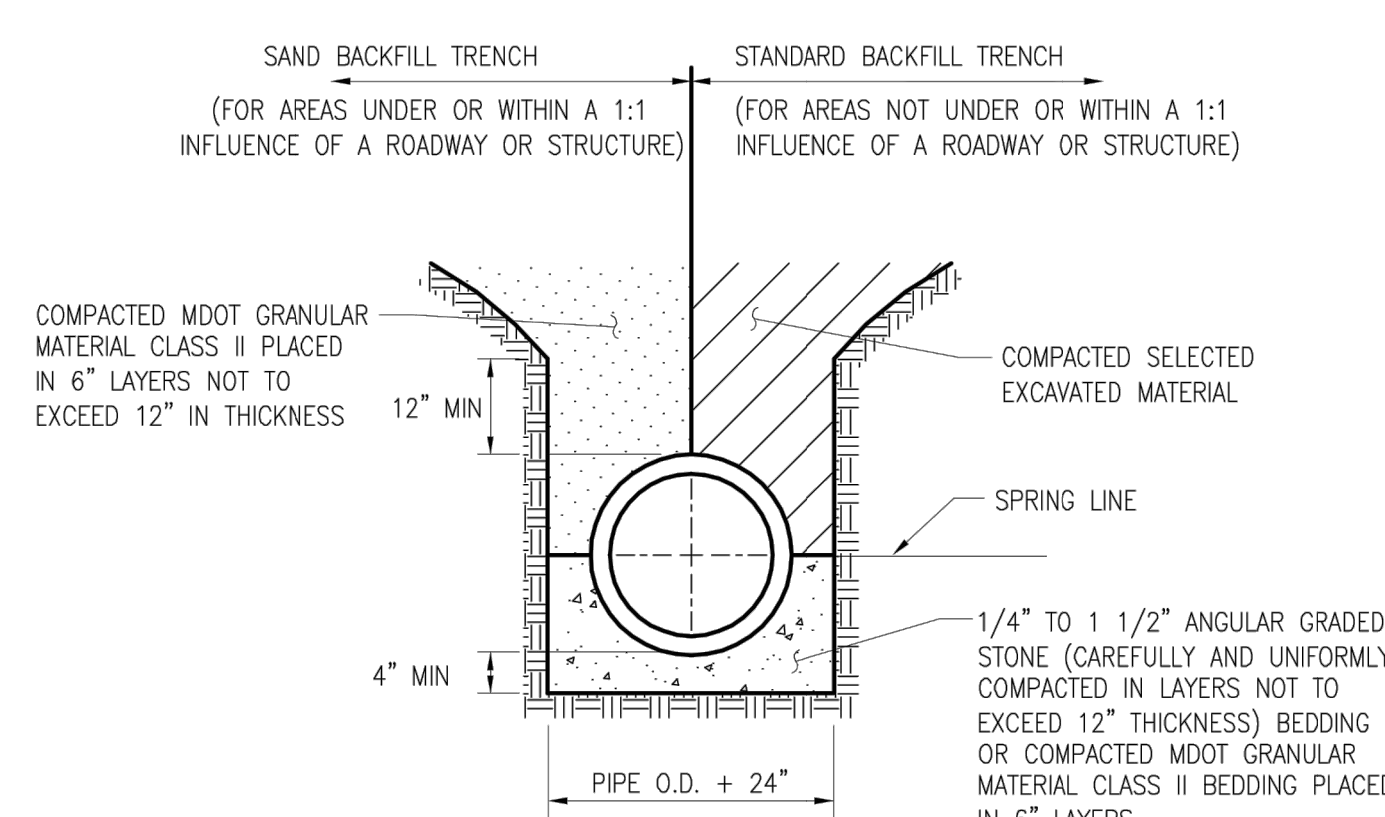




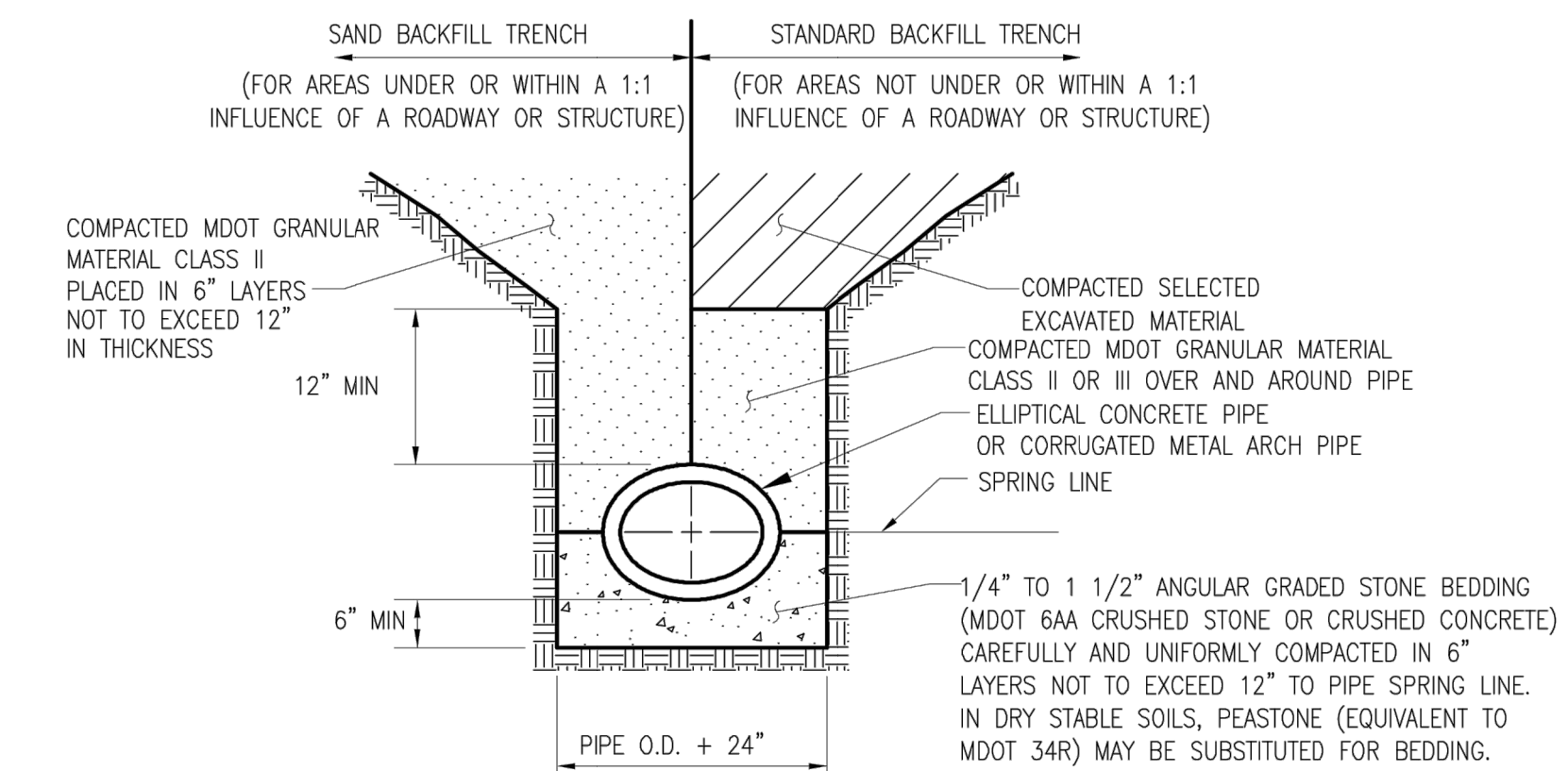
**BEDDING AND TRENCH BACKFILL DETAIL FOR 18" DIAMETER AND SMALLER PIPE (PVC SOLID WALL, AND TRUSS PIPE)**



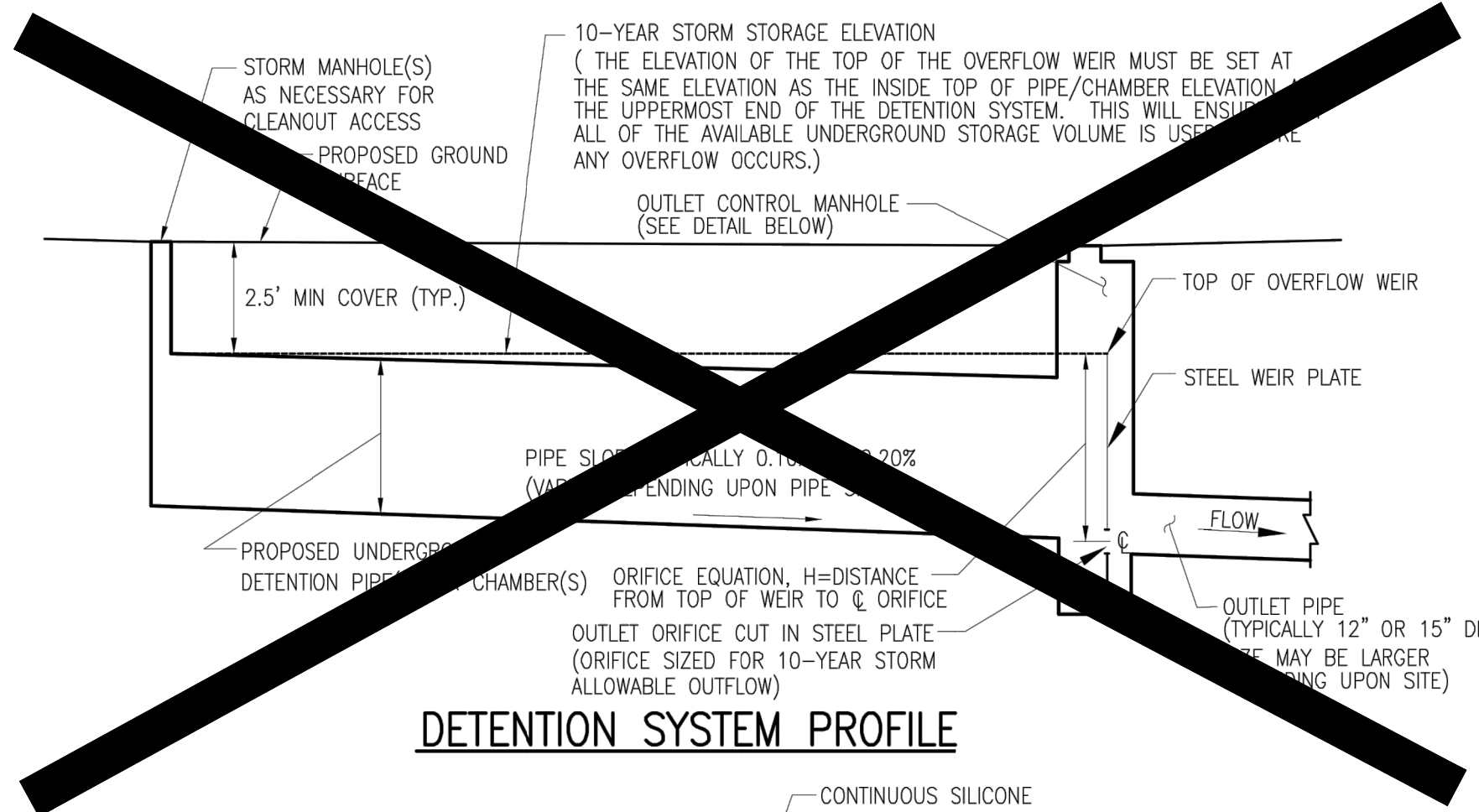
**BEDDING AND TRENCH BACKFILL DETAIL FOR 24" DIAMETER AND SMALLER PIPE**



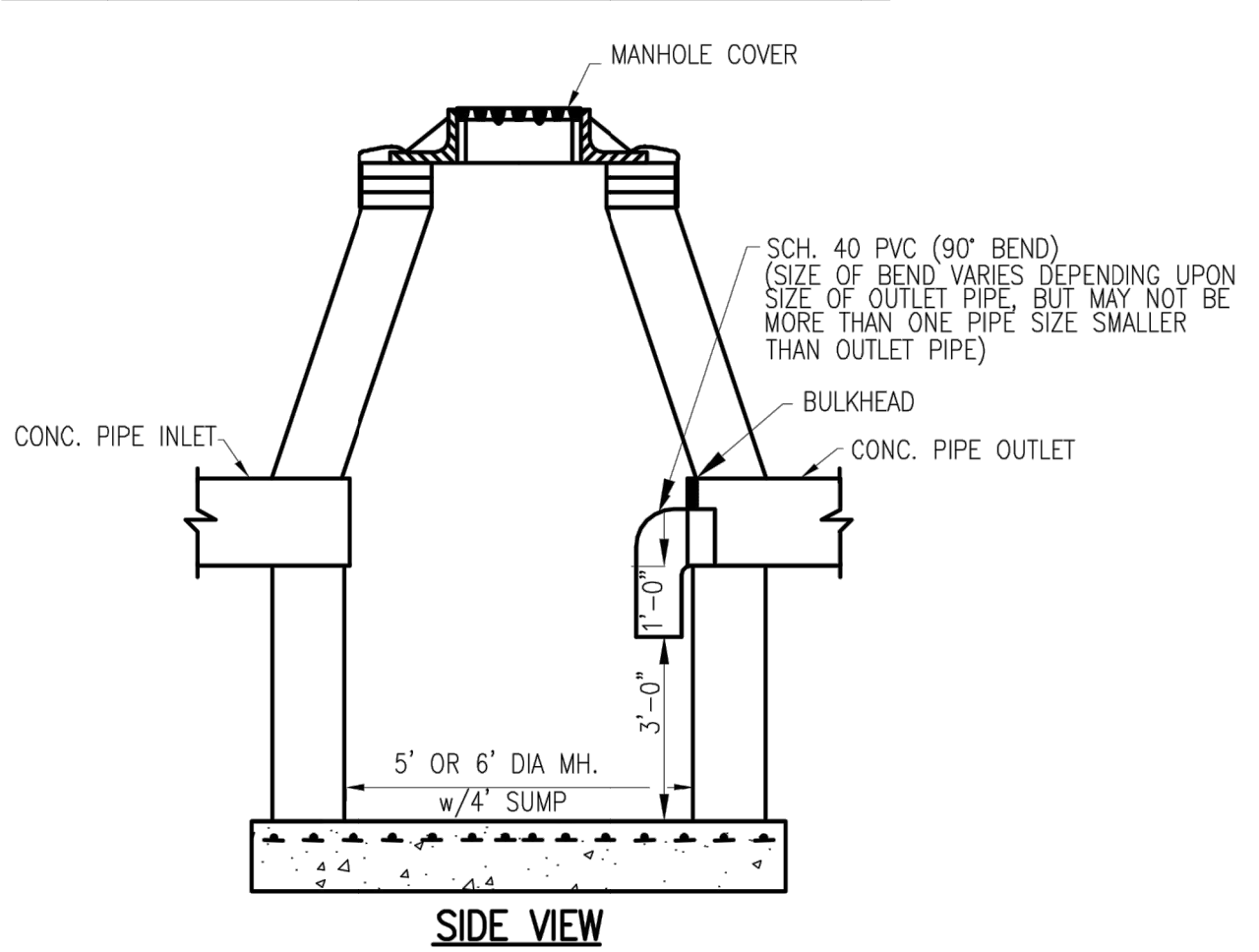
**BEDDING AND TRENCH BACKFILL DETAIL FOR 27" DIAMETER AND LARGER PIPE**



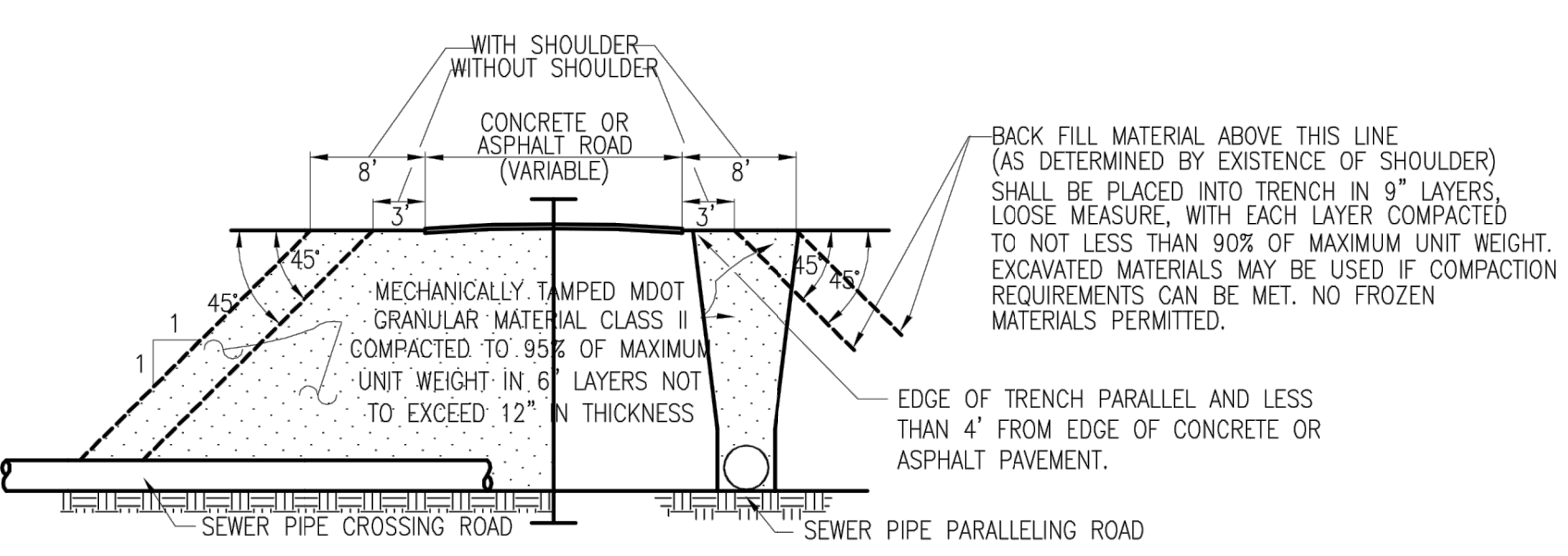
**BEDDING AND TRENCH BACKFILL DETAIL FOR ELLIPTICAL CONCRETE PIPE OR CORRUGATED METAL ARCH PIPE**



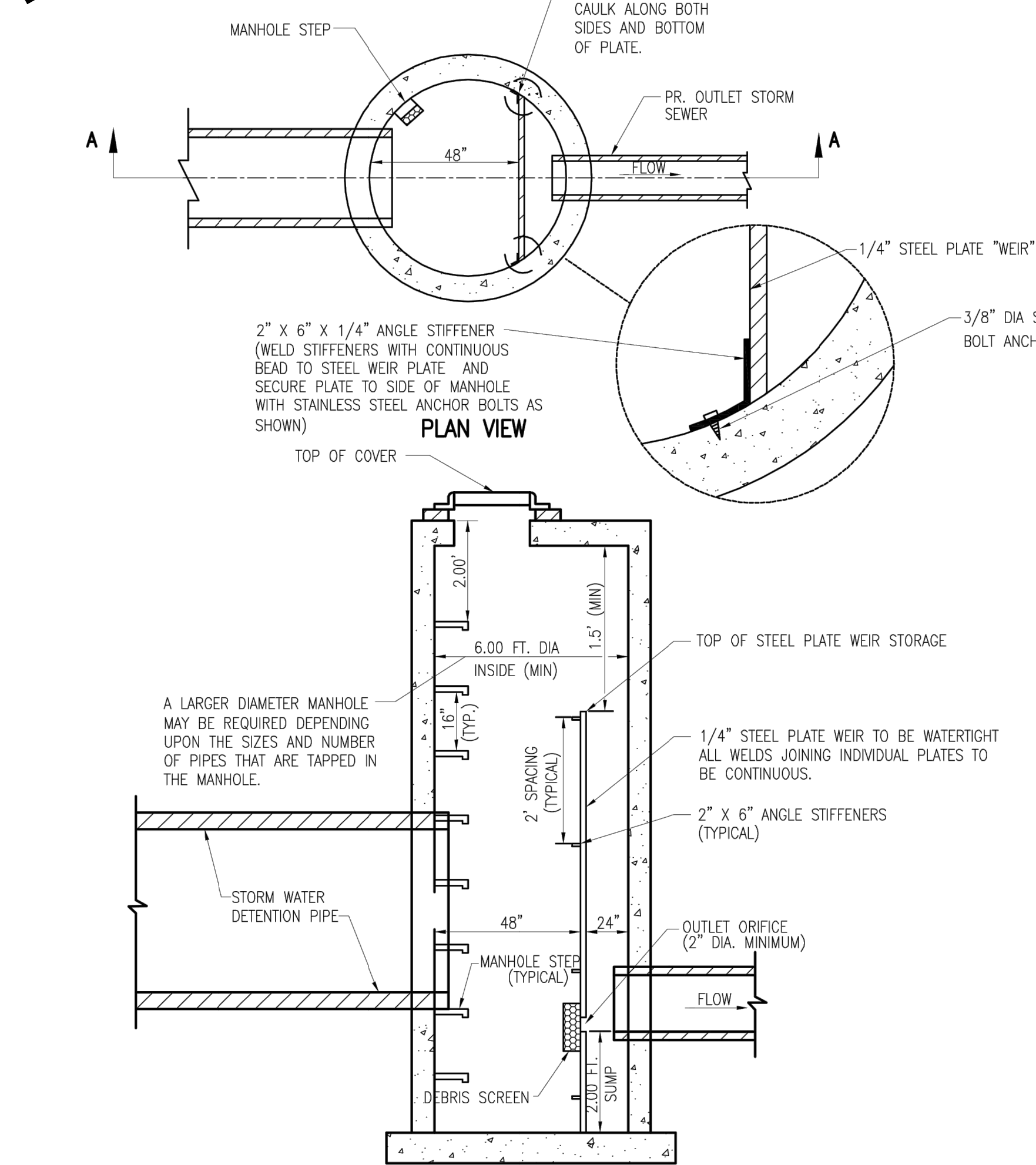
**DETECTION SYSTEM PROFILE**



**OIL/GAS SEPARATOR PLACEMENT DETAIL FOR 18" DIAMETER AND SMALLER OUTLET PIPE**

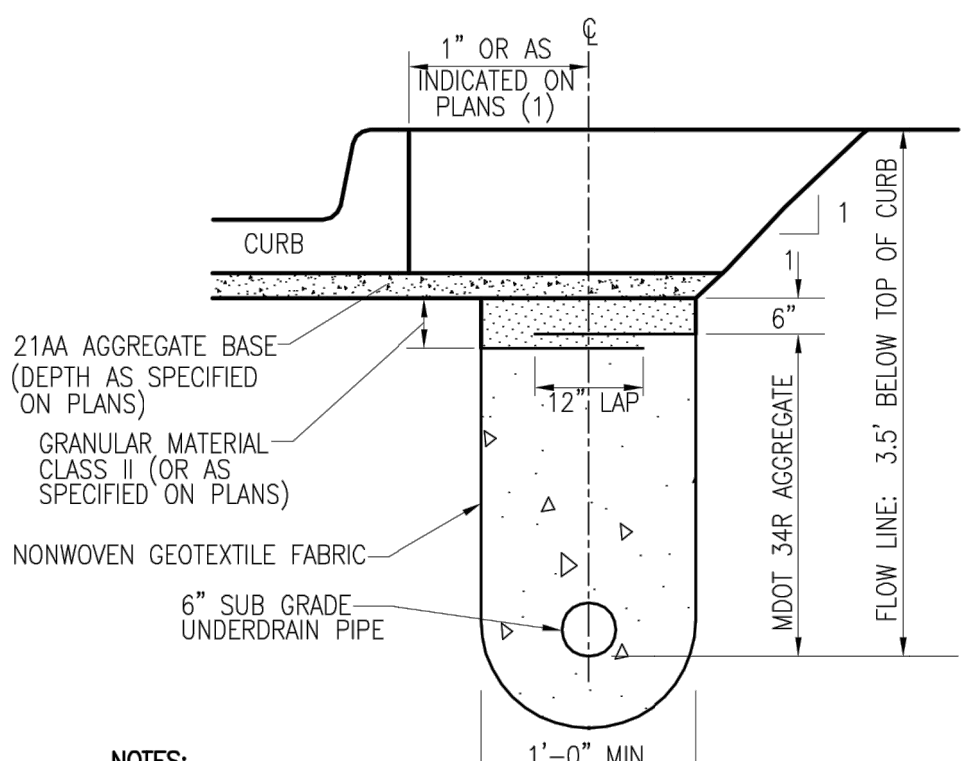


**SAND OR GRAVEL BACKFILL DETAILS FOR SEWERS UNDER CONCRETE OR ASPHALT PAVEMENTS, SIDEWALKS, DRIVEWAYS AND PARKING AREAS**

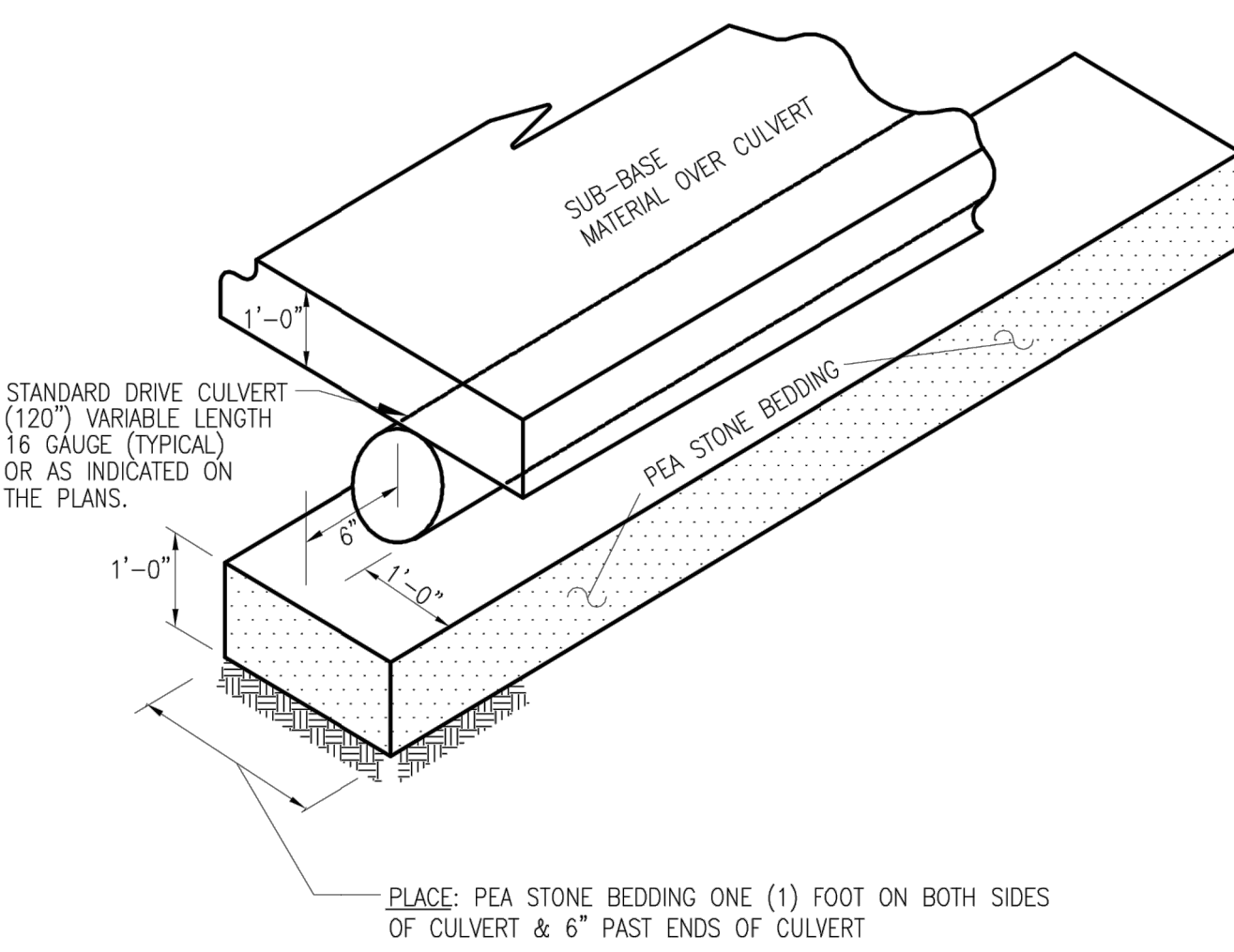


**SECTION A-A  
6 FT. DIA OUTLET MANHOLE**

**TYPICAL UNDERGROUND DETENTION AND OUTLET MANHOLE DETAILS**



**SUBGRADE UNDERDRAIN, 6"**



**DRIVE CULVERT BEDDING DETAIL**

**GENERAL NOTES FOR STORM SEWER CONSTRUCTION**

- 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 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.
- 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, ARMO CO TRUSS PIPE, OR APPROVED EQUAL, WITH PREMIUM JOINTS.  
  
TAPS TO 12" STORM SEWER SHALL BE MADE WITH A FERNOCO 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.
- 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:

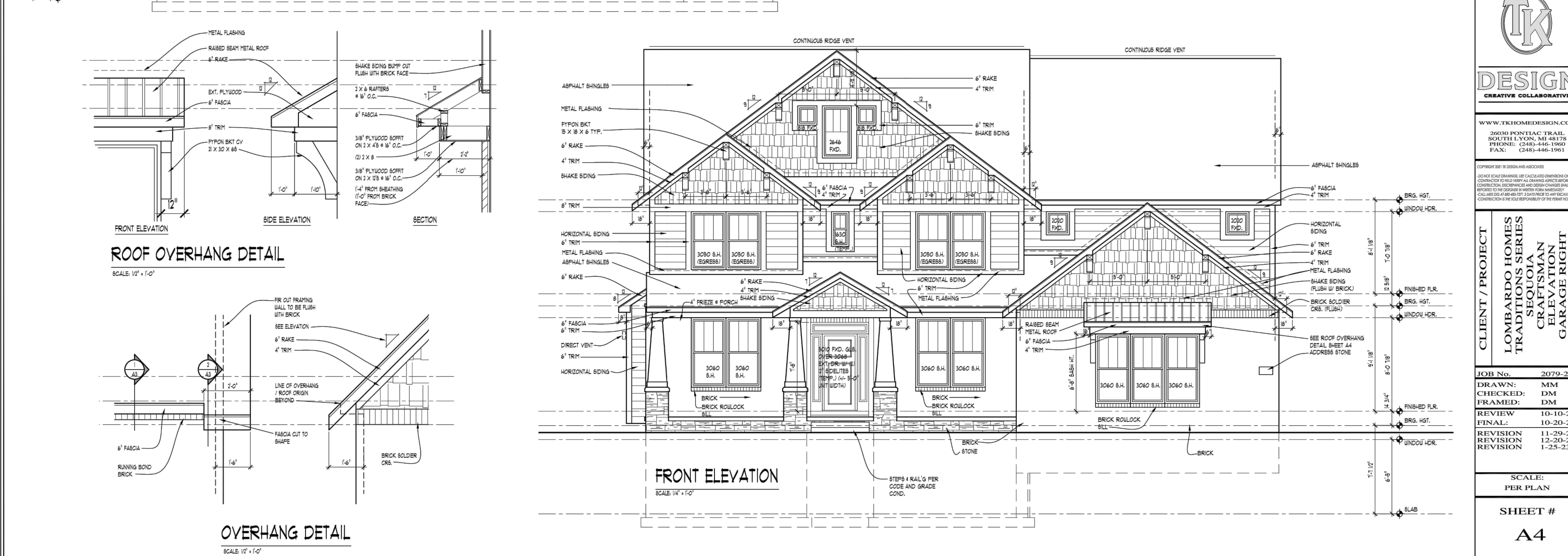
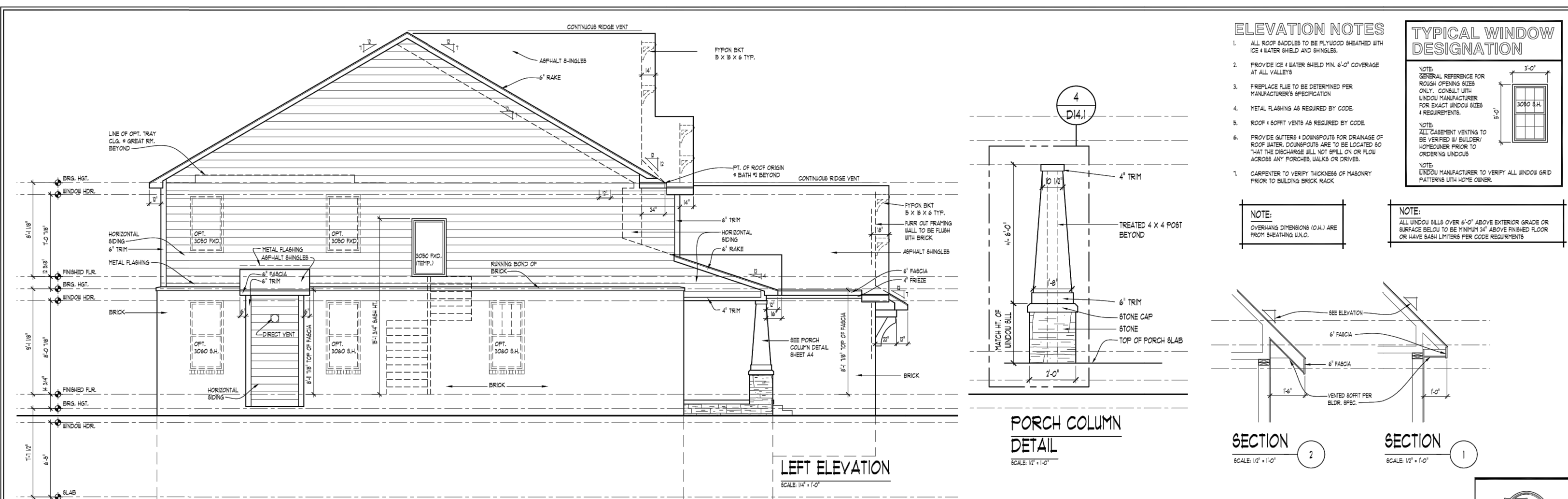
LOCATION	SODDING/ SEEDING REQUIREMENTS	FERTILIZER REQUIREMENT
SLOPES & DITCH BANKS, ETC.	MDOT "ROADSIDE" MIX (50% PERENNIAL RYE, 15% KENTUCKY BLUE, 35% RED FESCUE) APPLIED AT 100 LBS/ACRE	240 LBS/ACRE OF CHEMICAL FERTILIZER NUTRIENTS IN EQUAL PROPORTIONS OF NITROGEN, PHOSPHORIC ACID AND POTASH. (MUST 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)
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.

DRAWING PATH: S:\CIVT\Superior\Twp\Standards\CADD\STORM\SuperiorSmd2.dwg May 27, 2010 - 9:28am





**TK DESIGN**  
CREATIVE COLLABORATION

WWW.TKDESIGN.COM  
3030 PLYMOUTH TRAIL, SUITE 1000, DENVER, CO 80231  
PHONE: (303) 444-1990 FAX: (303) 444-1991

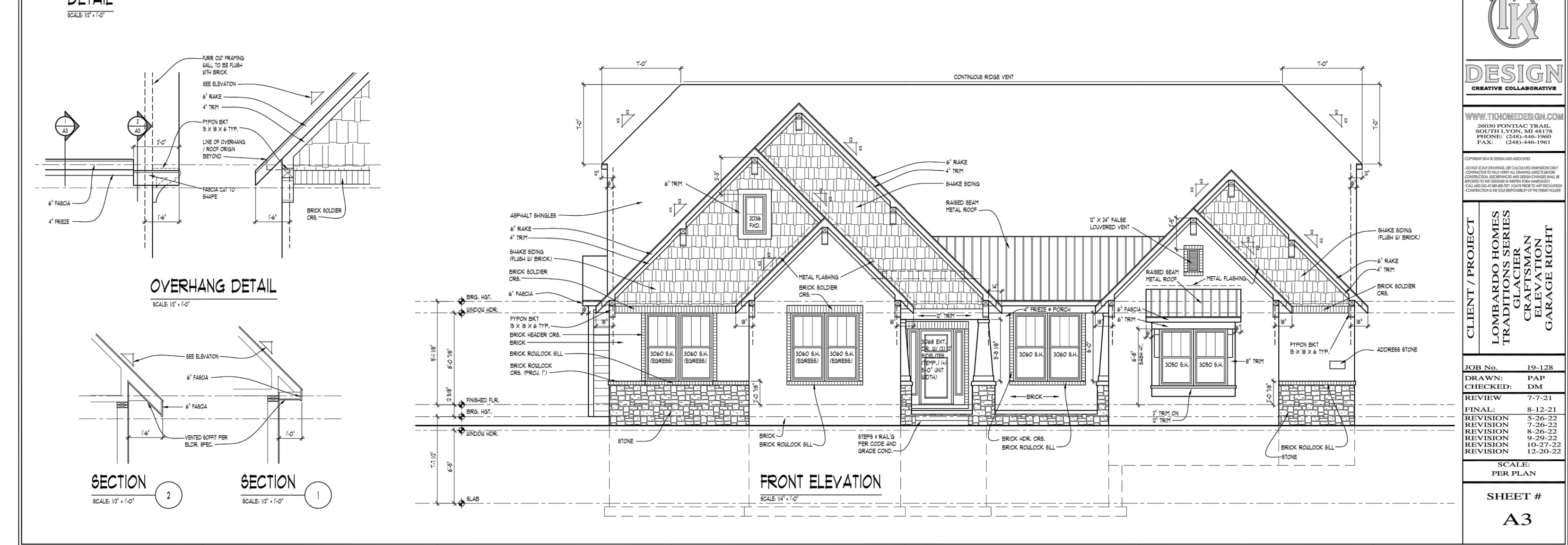
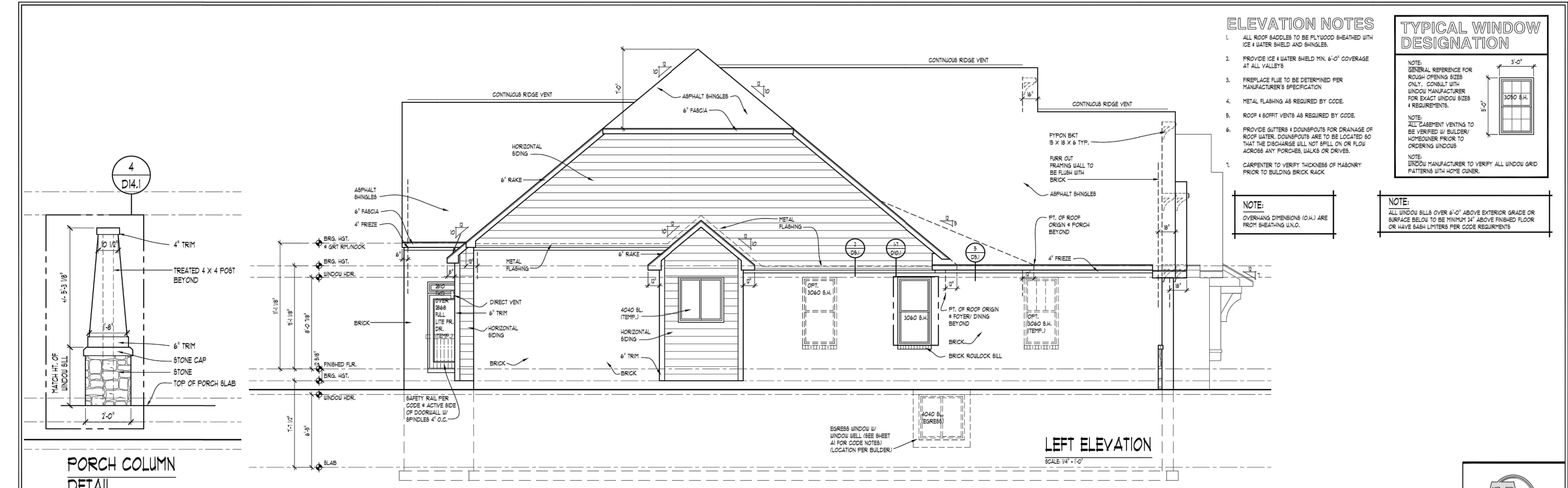
CLIENT / PROJECT  
LOMBARDO HOMES TRADITIONS SERIES CRAFTSMAN GARAGE RIGHT

SHEET # 19-128

FOR AWARD: D.M.  
REVISED: D.M.  
REVIEWED: D.M.  
FINAL: 10-10-22  
10-20-22  
11-09-22  
REVISIONS: 12-20-22  
10-27-22

SCALE: PER PLAN

SHEET # **A4**



**TK DESIGN**  
CREATIVE COLLABORATION

WWW.TKDESIGN.COM  
3030 PLYMOUTH TRAIL, SUITE 1000, DENVER, CO 80231  
PHONE: (303) 444-1990 FAX: (303) 444-1991

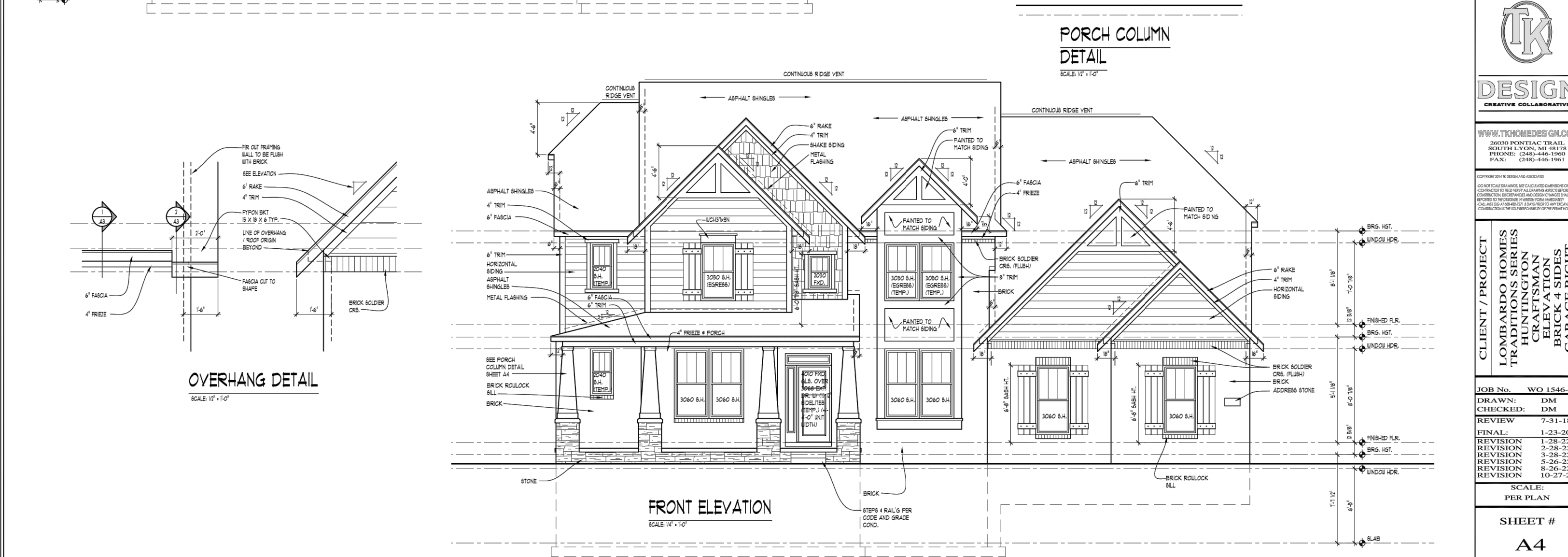
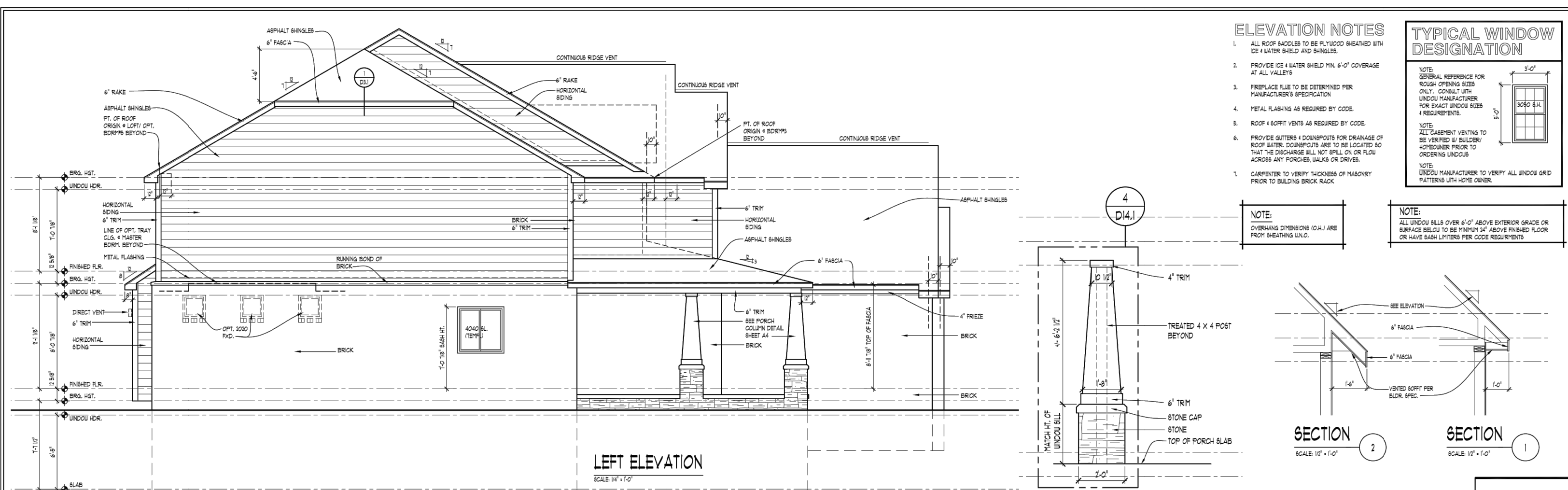
CLIENT / PROJECT  
LOMBARDO HOMES TRADITIONS SERIES CRAFTSMAN GARAGE RIGHT

SHEET # 19-128

FOR AWARD: P.A.P.  
CHECKED: E.M.  
REVIEWED: P.A.P.  
FINAL: 8-12-21  
8-12-21  
REVISIONS: 5-26-22  
8-12-22  
REVISIONS: 8-26-22  
10-20-22  
REVISIONS: 10-27-22  
12-20-22

SCALE: PER PLAN

SHEET # **A3**



**TK DESIGN**  
CREATIVE COLLABORATION

WWW.TKDESIGN.COM  
3030 PLYMOUTH TRAIL, SUITE 1000, DENVER, CO 80231  
PHONE: (303) 444-1990 FAX: (303) 444-1991

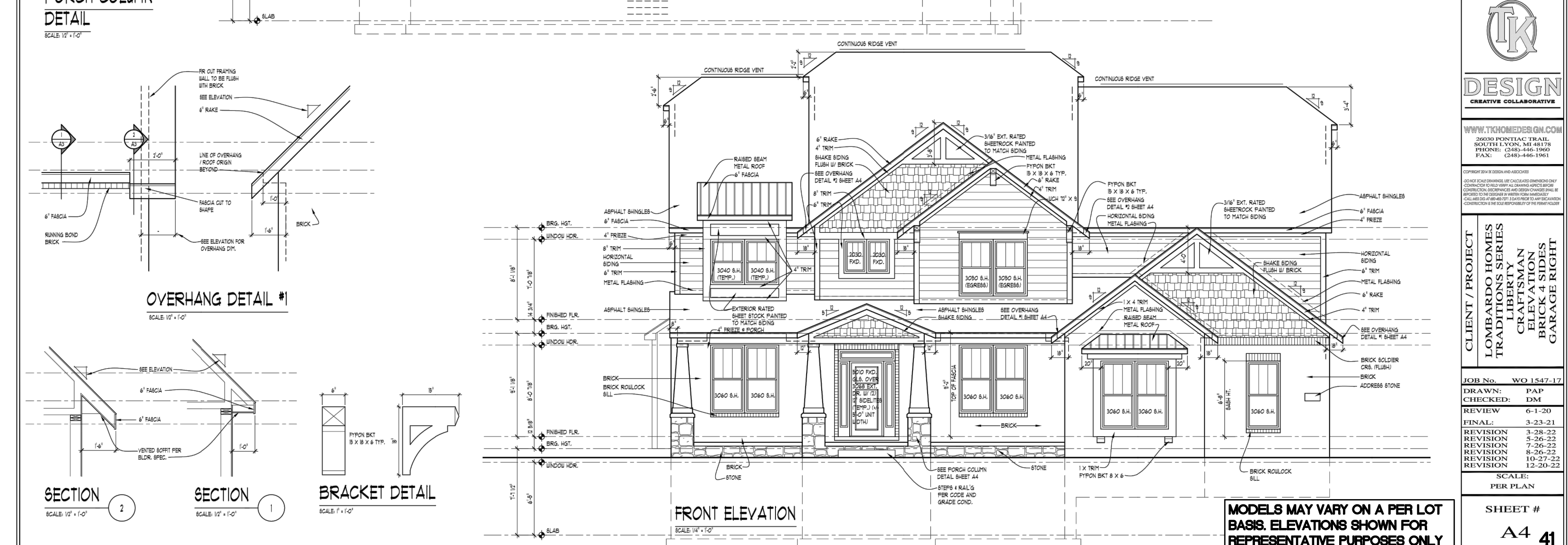
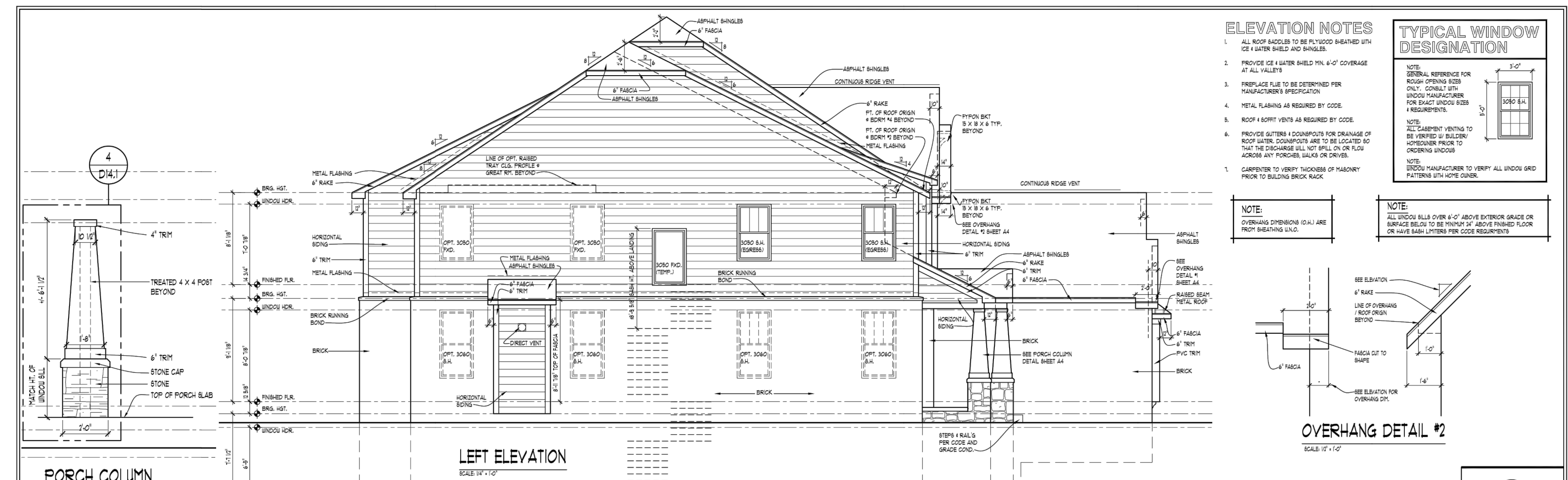
CLIENT / PROJECT  
LOMBARDO HOMES TRADITIONS SERIES CRAFTSMAN GARAGE RIGHT

SHEET # 19-128

FOR AWARD: D.M.  
REVISED: D.M.  
REVIEWED: D.M.  
FINAL: 1-23-20  
1-28-21  
REVISIONS: 3-28-20  
3-28-20  
REVISIONS: 8-26-22  
10-27-22

SCALE: PER PLAN

SHEET # **A4**



**TK DESIGN**  
CREATIVE COLLABORATION

WWW.TKDESIGN.COM  
3030 PLYMOUTH TRAIL, SUITE 1000, DENVER, CO 80231  
PHONE: (303) 444-1990 FAX: (303) 444-1991

CLIENT / PROJECT  
LOMBARDO HOMES TRADITIONS SERIES CRAFTSMAN GARAGE RIGHT

SHEET # 19-127

FOR AWARD: P.A.P.  
CHECKED: E.M.  
REVIEWED: P.A.P.  
FINAL: 6-1-20  
6-1-20  
REVISIONS: 2-28-22  
3-28-22  
REVISIONS: 5-26-22  
8-12-22  
REVISIONS: 10-27-22  
12-20-22

SCALE: PER PLAN

SHEET # **A4**

MODELS MAY VARY ON A PER LOT BASIS. ELEVATIONS SHOWN FOR REPRESENTATIVE PURPOSES ONLY