

Director's Report

Project Name: Trailside Meadow
 Description: Final Site Plan Amendment
 Date on Agenda this packet pertains to: August 19th, 2021

- | | |
|---|---|
| <input type="checkbox"/> Public Hearing
<input type="checkbox"/> Initial Submittal
<input checked="" type="checkbox"/> Revised Plans
<input type="checkbox"/> Preliminary Approval
<input checked="" type="checkbox"/> Final Approval | <input type="checkbox"/> Special Land Use
<input type="checkbox"/> Rezoning
<input type="checkbox"/> Other: _____ |
|---|---|

Contact	Consultants & Departments	Approval	Denial	Approved w/Conditions	Comments
Sean O'Neil	Planning Director	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Based on conditional approval from reviewer's
DLZ	Engineering Consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	See letter dated 07/28/2021
McKenna & Associates	Planning Consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	See letter dated 07/23/2021



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

July 28, 2021

Sean O' Neil
Community Development Department
Charter Township of White Lake
7525 Highland Road
White Lake, Michigan 48383

RE: Trailside Meadow- Phases 2 and 3 - Revised FSP Review #3

DLZ# 1845-0218-00

Dear Mr. O' Neil,

We have completed our review of the revised Final Site Plan for the above-mentioned project. Plans were prepared by Atwell Group and are dated July 9, 2021. The submittal indicates the following changes to the Final Site Plan: 51 Active Adult units in Phases 2 and 3 have been changed to Single Family unit designation.

We offer the following comments with respect to the submitted plans:

General

1. Cover Sheet- It appears that the total acreage under 'Land Use' for Active Adult would be less than the 12.9 acres noted. The 12.9 acres was shown on the previous Final Site Plan and has since changed due to the change in unit designation. Please verify number and revise as needed.
2. Sheet 5- It appears that the proposed storm sewer easement edge between Units 126 and 127 will be right on or within the proposed building envelope for Unit 127. Storm sewer and/or easement in this area will require revision. If the storm sewer needs to be realigned, then this revision will also need to be shown on the Final Engineering Plan.

Our office is also in receipt of the following easements for Phases 2 and 3. Easement review comments will be sent under separate cover:

- a. Estates- Sanitary Sewer dated June 9, 2021.
- b. Estates- Storm Sewer dated June 9, 2021.
- c. Estates- Watermain dated June 9, 2021.
- d. Villas- Sanitary Sewer dated June 10, 2021.

- e. Villas- Storm Sewer dated June 10, 2021.
- f. Villas- Watermain dated June 10, 2021.

Recommendation

We find the Final Site Plan (FSP) to be acceptable subject to the above comments being addressed and plans resubmitted for our review.

Please feel free to contact our office should you have any questions.

Sincerely,

DLZ Michigan



Michael Leuffgen, P.E.
Department Manager



Victoria Loemker, P.E.
Senior Engineer

Cc: Justin Quagliata, Community Development, *via email*
Hannah Micallef, Community Development, *via email*
Aaron Potter, DPS Director, White Lake Township, *via email*

Enc. none

X:\Projects\GFL\2018\1845\021800 WLT Trailside Meadow\FSP & FEP Submittals\Amended FSP 7-12-2021\Revised FSP Submittal #3.docx



MCKENNA

July 23, 2021

Planning Commission
Charter Township of White Lake
7525 Highland Road
White Lake, MI 48383

Subject: Trailside Meadow Planned Development
Final Site Plan Review #2 (amendment)

Applicant(s): M/I Homes

Location: South side of Elizabeth Lake Road, west of Williams Lake Road

Dear Planning Commissioners:

Pinnacle Homes by M/I Homes is proposing a change to their previously approved (2019) site plan and corresponding Planned Development Agreement. The site was preliminarily approved for a 184-unit condominium development, which consisted of 91 active adult units and 93 single family homes. The initial approval was for three phases. The petitioner has built phase one, as approved in 2019. The current application is to eliminate the remaining 51 active adult units and replace them with 51 single family homes. This is a revision of Phases two and three.

According to the Zoning Ordinance, Section 6.7.E ii. ii. Minor changes in the floor area of buildings, including minor building additions, may be approved by the Planning Commission and upon written application by the developer. Such minor additions require site plan review only and may proceed without the need for another public hearing.

The site fronts on Elizabeth Lake Road and consists of 73.3 (gross) acres. The density is not changing as a result of this revised plan and will remain at 2.5 dwelling units per acre. The revised housing product will sit on the same sized “lots” (actually units, as referred to in the Condominium Act); which are 60’ wide and 120’ deep. The proposed single-family homes are all two stories with two car attached garages.

Planned Development Review Process

The Planned Development review process involves the following three (3) steps:



Source: Oakland County Property Gateway

1. Preliminary Site Plan Review: This is the step that the number of units and layout are established, the amount of open space is determined, and other project details are decided upon. At the preliminary review step the Planning Commission holds a public hearing on the rezoning application to PD – Planned Development. The Planning Commission must review the PD proposal and make a recommendation to the Township Board for the preliminary site plan and rezoning.
2. Final Site Plan Review: Final site plan review is the step at which all of the details are included on the site plan and all of the conditions of preliminary site plan review must be satisfied. The Planning Commission is required to review the final site plan and take action, approving or denying the final site plan. It is at this step where the Planning Commission also reviews the proposed Development Agreement and makes a recommendation to the Township Board. **This request is for revised final site plan approval and recommendation to the Township Board for a revised planned development agreement.**
3. Development Agreement Review: Upon recommendation of the Development Agreement by the Planning Commission, the Township Board takes final action on the Development Agreement.

REVIEW COMMENTS

1. **Zoning, Land Use, and Future Land Use**: The current Zoning District, current land use, and future land use of the site, as well as the surrounding areas, are as follows:

Location	Current Land Uses	Future Land Uses (Master Plan)	Zoning
Site	Single Family/Vacant	Residential Resort	Planned Development (PD)
North	Residential	Residential Resort	Single Family (R-1C)
East	Attached Single Family	Planned Neighborhood	Attached Single Family Residential (RM-1)
South	Single Family	Residential Resort	Single Family (R-1B)
West	Single family residential	Residential Resort	Single Family (R-1C)

2. **Required Information**: The information required for Planned Development final site plans, listed in Sections 6.8(B) of the Zoning Ordinance, has been submitted and comply with the previously approved plans and PDA.

3. Dimensional Standards:

- a. **Lot Area, Setbacks, Lot Coverage, and Layout**. Sections 3.1.10 (PD, Planned Development District) and 3.11 (Notes to District Standards) of the Zoning Ordinance include provisions for minimum lot area, setbacks, and lot coverage, as follows:



Applicable Requirement	Zoning Ordinance Requirements	Proposed
Min. Lot Area (site)	10 acres	72.8 acres
Min. lot area (lots)	To be determined by the Planning Commission	7,200 square feet
Min. Lot Width	To be determined by the Planning Commission ¹	60 feet
Min. Front Yard Setback (PD)	40 feet	50 feet
Min. Front Yard Setback (lots)	To be determined by the Planning Commission	20 feet
Min. Side Yard Setbacks (PD)	25 feet	50 feet
Min. Side Yard (lots)	To be determined by Planning Commission	10 feet each side
Min. Rear Yard Setback	To be determined by Planning Commission	30 feet
Density	Determined by reference to the Master Plan	2.5 DU/A
Max. Lot Coverage	Governed by parking, landscaping, etc., otherwise 30%	25%

¹ A minimum of 65' of width is required along the right-of-way for lots on curvilinear streets or cul-de-sacs.

b. **Wetland Setbacks.** There are no wetlands indicated on the plans submitted.

4. **Landscaping and Screening:** A landscape plan has been provided, which meets the landscape requirements in Section 5.19. However, the petitioner has reduced some of the plant material on the landscape plan (Sheet LS1) as follows:

- A change from one hundred thirteen 2-inch caliper Redbud (ornamental) trees to one hundred eight 2-inch caliper Flowering Crabapples;
- A change from six hundred eighty 36-inch high Viburnum to 642 Viburnum (same size)
- A reduction from one hundred two, 36-inch Sweetspire to ninety Sweetspire (same size)

Additionally, in the originally approved plan, the petitioner was utilizing the foundation plantings to meet the landscape requirements. This note is still on the revised plans, although a reduction of fifty-one active adult units indicates that the foundation plantings for those units have been eliminated or moved.

The petitioner should explain why there has been a reduction in landscaping plants and address the foundation plantings previously used to meet the landscaping requirements.

5. **Building Architecture and Design:** Section 6.7(C)(iii) requires residential Planned Developments to provide variations in building facades and setbacks that avoid the creation of regimented alignment of buildings. However, design compatibility within the development is required. The petitioner's engineer stated that no new elevations are proposed. The three elevations that were submitted are identical to the originally approved plans.

6. **Layout and Open Space:** The layout and open space have not changed. In the approved site plan and PDA, the open space is primarily located south of Saddleback Court and within the preservation buffers along the west, east and southern property lines.



- 7. **Sidewalks and Non-Motorized Pathway:** Section 6.7(C)(i) recommends sidewalks along all frontage streets and sidewalk connections to all major rights-of-way. Sidewalks are provided on both sides of the streets and funds have been deposited for the Elizabeth Lake Road sidewalk, per the approved site plan and PDA.
- 8. **Roads and Access:** No changes are proposed to the road layout or access from Elizabeth Lake Road. The plans reflect those approved plans from 2019.
- 9. **Off-Street Parking:** The single-family homes will each have a two-car garage and a driveway large enough to accommodate two additional cars, as per the Zoning Ordinance requirements.
- 10. **Lighting:** Section 5.18(G) of the Zoning Ordinance includes standards for outdoor lighting. No information was provided with regard to outdoor lighting. **Information should be provided with this final site plan.**

RECOMMENDATION

Based on the above findings; the proposed plan appears to meet all of the Zoning Ordinance requirements. Subject to the following conditions being met, we recommend approval of the revised final site plan and recommendation to the Township Board for approval of the Planned Development Agreement:

- 1. Plans submitted verifying a minimum of 65' of lot width along the right-of-way for lots on curvilinear streets or cul-de-sacs.
- 2. Petitioner addressing the decrease in amount of plant materials and whether or not the previously approved foundation plantings for the active adult units have been relocated or eliminated.
- 3. Outdoor lighting information provided, which meets the Zoning Ordinance requirements.
- 4. Petitioner providing lot width dimensions for lots, to ensure that they meet the minimum lot width requirements.

Respectfully submitted,

MCKENNA


Kathleen M Jackson
Senior Principal Planner

cc: Mr. Sean O'Neal, AICP
Mr. Justin Quagliata
Ms. Hannah Micallef





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THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY... THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK...

NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR... WITHOUT THE PRIOR WRITTEN CONSENT OF ATWELL LLC.

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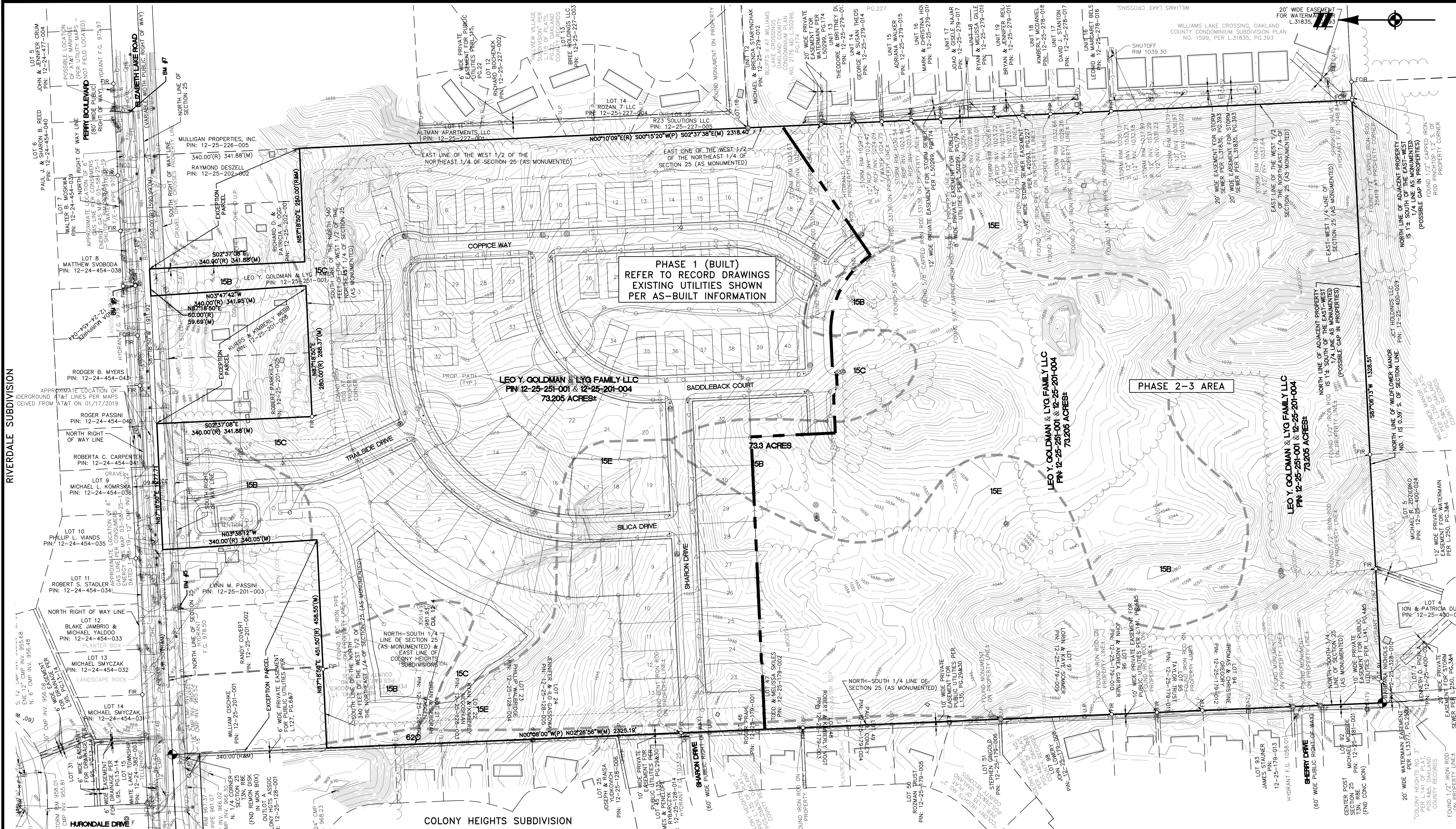
SECTION 25 TOWN 3 NORTH, RANGE 8 EAST WHITE LAKE TOWNSHIP OAKLAND COUNTY, MICHIGAN

M/1 HOMES OF MICHIGAN, LLC TRAILSIDE MEADOW FINAL SITE ENGINEERING PLAN PHASES 2-3 EXISTING CONDITIONS - OVERALL

DATE: OCTOBER 29, 2020 02/17/2021: REV PER TOWNSHIP 05/27/2021: REV PER OWNERS 07/09/2021: AMENDMENT TO PSP

Table with 2 columns: REVISIONS, SCALE 0 50 100 1" = 100 FEET

DR. SK/KS GH. CK P.M. M BUSH BOOK --- JOB 18003309 SHEET NO. 02



RIVERDALE SUBDIVISION

COLONY HEIGHTS SUBDIVISION

PHASE 1 (BUILT) REFER TO RECORD DRAWINGS EXISTING UTILITIES SHOWN PER AS-BUILT INFORMATION

PHASE 2-3 AREA

LEO Y. GOLDMAN & LYG FAMILY LLC 73.205 ACRES

LEO Y. GOLDMAN & LYG FAMILY LLC 73.205 ACRES

LEO Y. GOLDMAN & LYG FAMILY LLC 73.205 ACRES

BENCHMARKS

- BM #1: ARROW ON FIRE HYDRANT AT SOUTHEAST INTERSECTION OF BLACKBERRY DRIVE AND ELIZABETH LAKE ROAD ELEVATION: 971.51 (NAVD88)
BM #2: SET MAG NAIL IN SOUTH FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF ELIZABETH LAKE ROAD AT ADDRESS #8750 ELEVATION: 990.08 (NAVD88)
BM #3: SET MAG NAIL IN SOUTH FACE OF UTILITY POLE IN NORTH RIGHT OF WAY OF ELIZABETH LAKE ROAD AT ADDRESS #8650 ELEVATION: 999.62 (NAVD88)
BM #4: ARROW ON FIRE HYDRANT AT SOUTHEAST INTERSECTION OF COLONY HEIGHTS BOULEVARD AND ELIZABETH LAKE ROAD ELEVATION: 997.14 (NAVD88)
BM #5: ARROW ON FIRE HYDRANT IN SOUTH RIGHT OF WAY OF ELIZABETH LAKE ROAD AT ADDRESS #8381 ELEVATION: 980.84 (NAVD88)
BM #6: ARROW ON FIRE HYDRANT IN NORTH RIGHT OF WAY OF ELIZABETH LAKE ROAD AT ADDRESS #8294 ELEVATION: 981.57 (NAVD88)
BM #7: SET MAG NAIL IN SOUTH FACE OF UTILITY POLE AT NORTHWEST INTERSECTION OF PERRY BOULEVARD AND ELIZABETH LAKE ROAD ELEVATION: 978.68 (NAVD88)

SOILS LEGEND

Table with 3 columns: Map Symbol, Map Unit Name, Hydrologic Soil Group. Includes units 15B, 15C, 15E, and 62C.

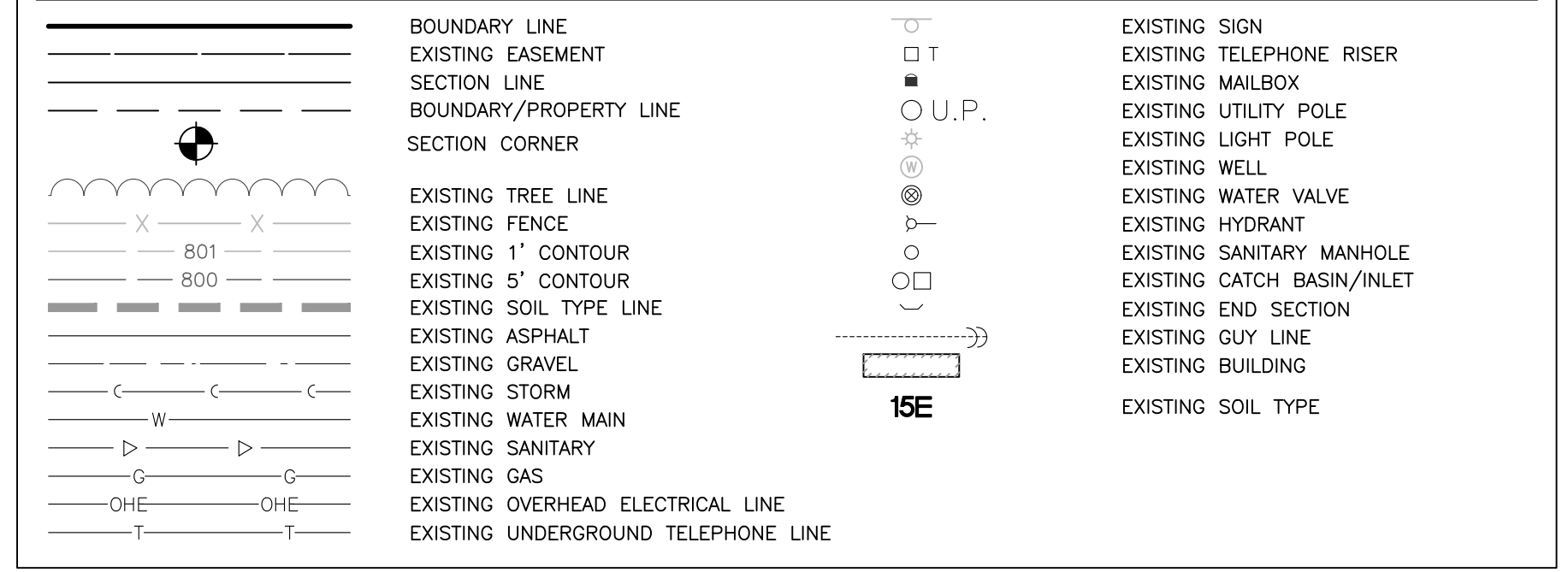
SITE INFORMATION

- SITE LOCATION: NORTHEAST 1/4 OF SECTION 25, WHITE LAKE TOWNSHIP, MICHIGAN.
1. ULTIMATE RECEIVING WATER: ALLEN LAKE (1,150 FEET FROM SITE)
2. SITE SOILS INFORMATION: PER THE NRCS WEB SURVEY FOR OAKLAND COUNTY; 15B, 15C, 15E, 62C
3. APPROXIMATE AREA OF DISTURBANCE: 62.3± ACRES

SURVEY NOTES

- 1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATES (NAD83), SOUTH ZONE, GROUND DISTANCES, INTERNATIONAL FEET. 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 CHANCED FLOODPLAIN) ACCORDING TO MAP NUMBER 26125C0339F OF THE FLOOD INSURANCE RATE MAP, EFFECTIVE DATE SEPTEMBER 26, 2006.
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.
4. SOIL BOUNDARIES AND SOIL TYPES SHOWN PER SOIL SURVEY, NATURAL RESOURCES CONSERVATION SERVICES, UNITED STATES DEPARTMENT OF AGRICULTURE WAYNE COUNTY WEB SITE SURVEY. AVAILABLE ONLINE AT HTTP://WEBSOILSURVEY.NRCS.USDA.GOV/. ACCESSED 01/10/2019.
5. THERE ARE NO RECORDED WETLANDS ON SITE.
6. LIMITS OF WOODS/TREES IS SHOWN BASED ON FIELD SURVEY AND AERIAL PHOTOGRAPHY MAPS. THERE IS APPROXIMATELY 65.7 AC. OF TREES AND APPROXIMATELY 53.5 AC. OF TREE REMOVAL ONSITE.

LEGEND

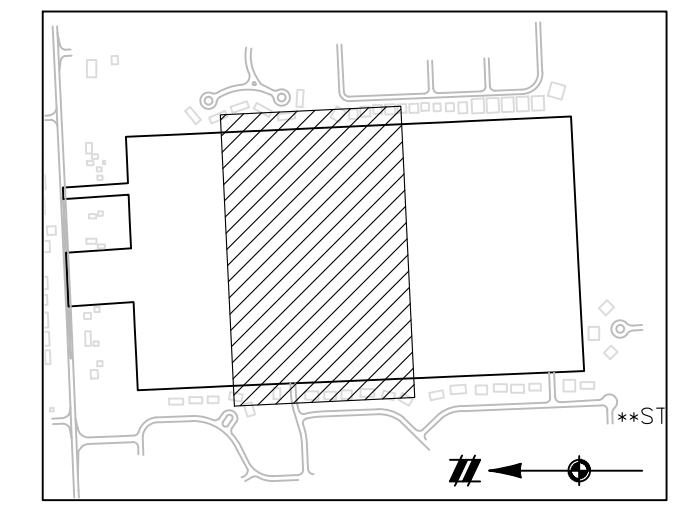


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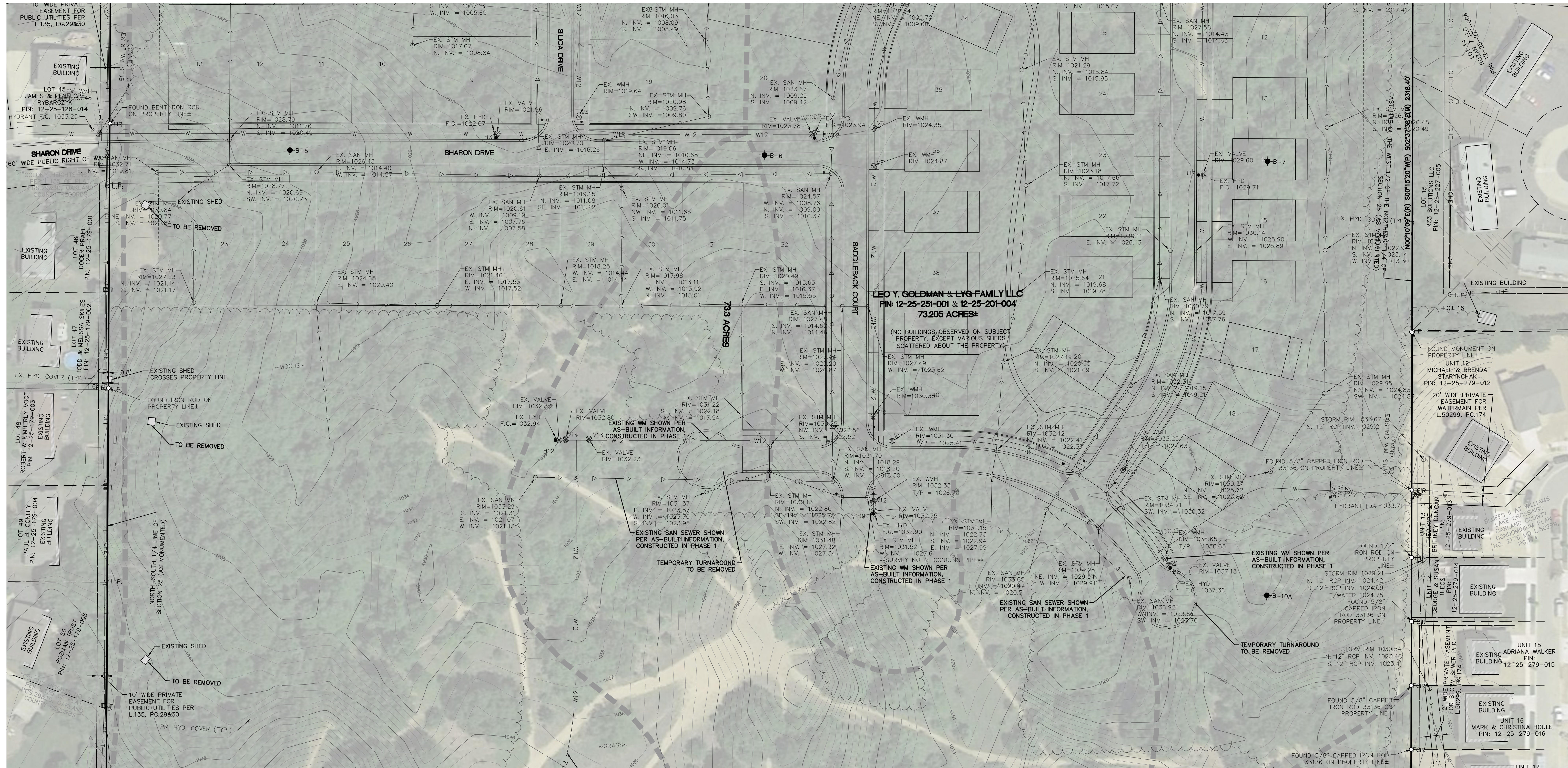
NOTICE: CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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LEGEND table with symbols for boundary lines, section lines, existing utilities, and soil types.



SEE PHASE 1 PLANS



SEE SHEET 04 FOR CONTINUATION

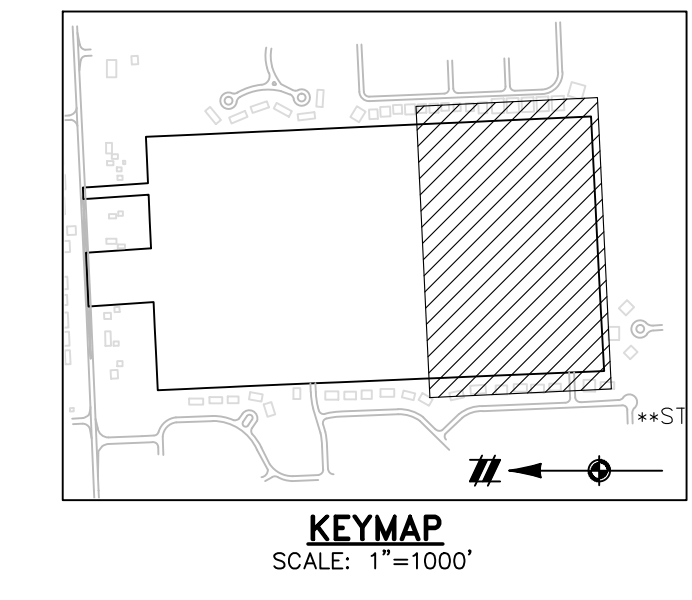
EXISTING WM SHOWN PER AS-BUILT INFORMATION, CONSTRUCTED IN PHASE 1

NOTES

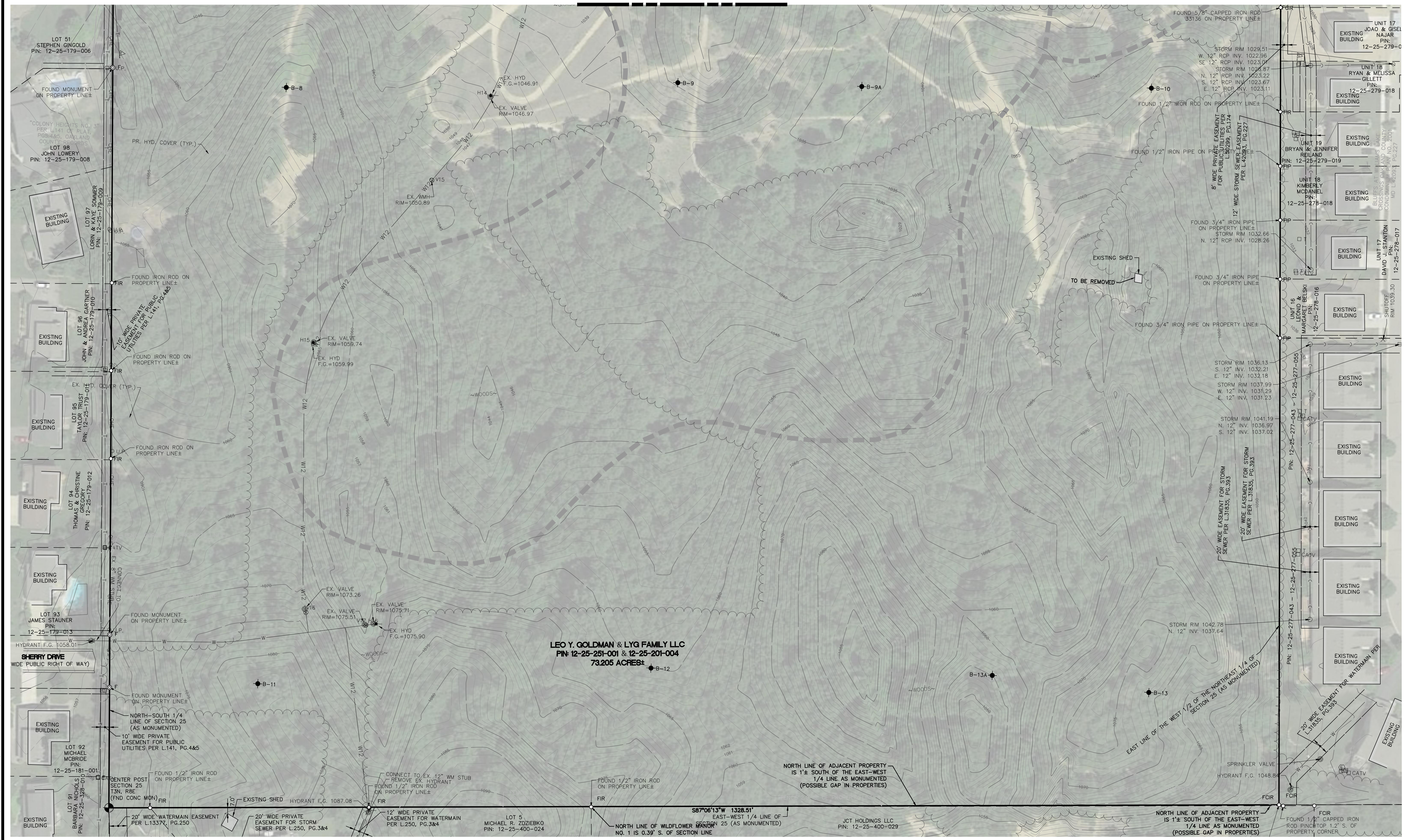
- EXISTING GROUND ELEVATIONS AND CONTOURS SHOWN AS APPROXIMATE PER GIS RECORDS AND 1" CONTOUR INFORMATION.
- THE BOUNDARY SURVEY INFORMATION SHOWN AS APPROXIMATE PER TAX RECORDS AND BEST FIT GIS RECORDS.
- SOIL BOUNDARIES AND SOIL TYPES SHOWN PER SOIL SURVEY, NATURAL RESOURCES CONSERVATION SERVICES, UNITED STATES DEPARTMENT OF AGRICULTURE WAYNE COUNTY WEB SOIL SURVEY, AVAILABLE ONLINE AT HTTP://WEBSOILSURVEY.NRCS.USDA.GOV/, ACCESSED 01/10/2019.
- EXISTING UTILITIES SHOWN AS APPROXIMATE PER AERIAL INFORMATION AND WHITE LAKE TOWNSHIP GIS SEWER MAP.
- THERE ARE NO RECORDED WETLANDS ON SITE.
- THERE ARE NO AREAS ON SITE THAT ARE WITHIN THE 100-YEAR FLOODPLAIN.
- FOREST DELINEATION IS SHOWN AS APPROXIMATE PER GIS RECORDS AND AERIAL INFORMATION. THERE IS APPROXIMATELY 65.7 AC. OF TREES AND APPROXIMATELY 62.0 AC. OF TREE REMOVAL ONSITE.

LEGEND

	BOUNDARY LINE		SECTION CORNER
	EXISTING EASEMENT		EXISTING SIGN
	SECTION LINE		EXISTING TELEPHONE RISER
	BOUNDARY/PROPERTY LINE		EXISTING MAILBOX
	EXISTING TREE LINE		EXISTING UTILITY POLE
	EXISTING FENCE		EXISTING LIGHT POLE
	EXISTING 1' CONTOUR		EXISTING WELL
	EXISTING 5' CONTOUR		EXISTING WATER VALVE
	EXISTING SOIL TYPE LINE		EXISTING HYDRANT
	EXISTING ASPHALT		EXISTING SANITARY MANHOLE
	EXISTING GRAVEL		EXISTING CATCH BASIN/INLET
	EXISTING STORM		EXISTING END SECTION
	EXISTING WATER MAIN		EXISTING GUY LINE
	EXISTING SANITARY		EXISTING BUILDING
	EXISTING GAS		SOIL BORING LOCATION
	EXISTING OVERHEAD ELECTRICAL LINE		EXISTING SOIL TYPE
	EXISTING UNDERGROUND TELEPHONE LINE		



SEE SHEET 03 FOR CONTINUATION



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SECTION 25	TOWN 3 NORTH, RANGE 8 EAST	M/I HOMES OF MICHIGAN, LLC	DATE OCTOBER 29, 2020
WHITE LAKE TOWNSHIP	OAKLAND COUNTY, MICHIGAN	TRAILSIDE MEADOW FINAL SITE ENGINEERING PLAN PHASES 2-3	02/17/2021: REV PER TOWNSHIP 05/27/2021: REV PER OCMRC 07/09/2021: AMENDMENT TO PSP
EXISTING CONDITIONS - SOUTH		REVISIONS	
SCALE 0 25 50 1" = 50 FEET		DR. SK/KS GH. CK	
P.M. M BUSH		JOB 18003309	
BOOK ---		SHEET NO. 04	

CAD FILE: 18003309S2-02A-EC.DWG



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

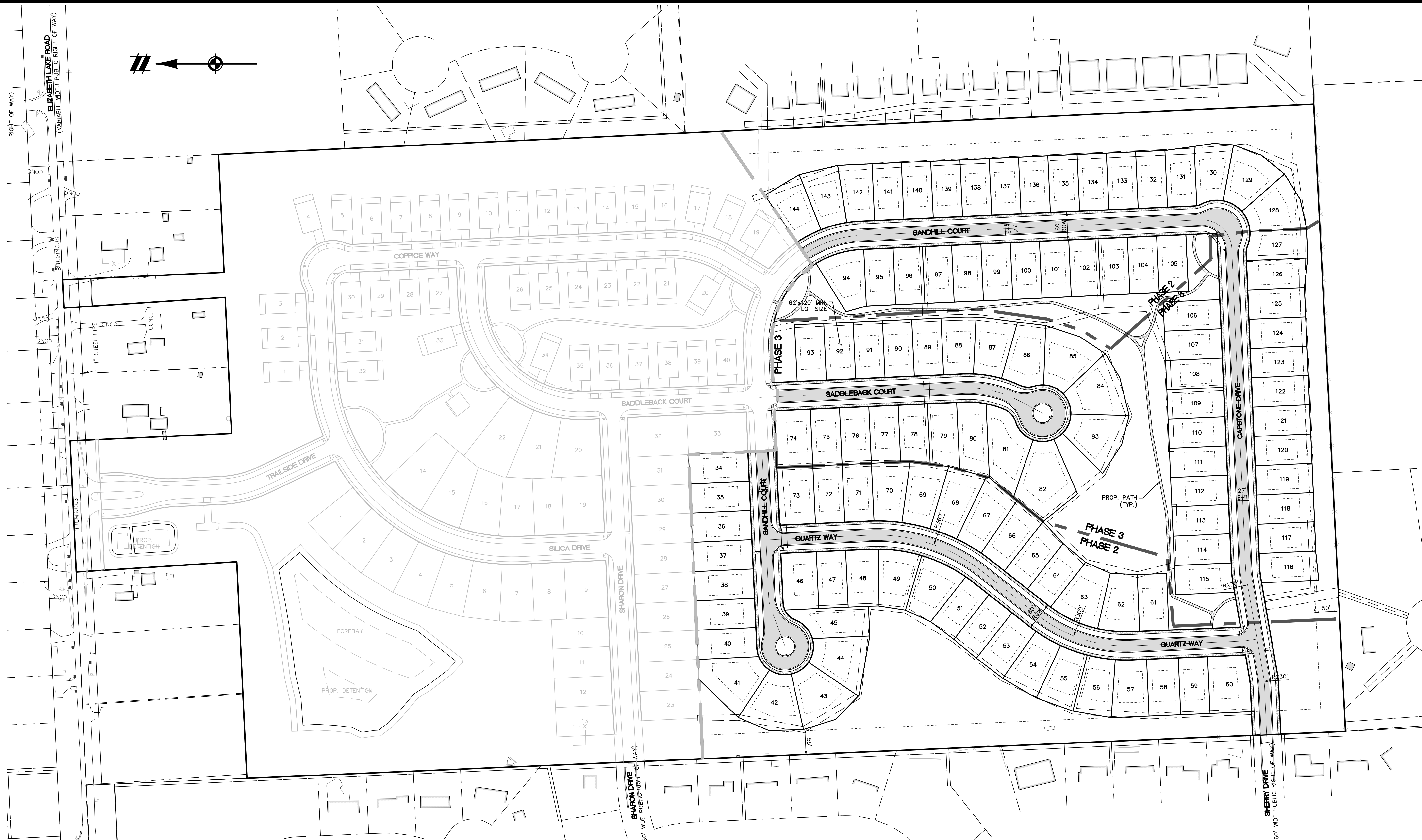
M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LAYOUT PLAN - OVERALL

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

Table with 2 columns: REVISIONS, and 2 columns: NO. and DESCRIPTION.

SCALE 0 50 100
1" = 100 FEET
DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 05

CAD FILE: 18003309S2-03-LDWG



PHASE SUMMARY table with columns: PHASE, SINGLE FAMILY, ACTIVE ADULT, COUNT.

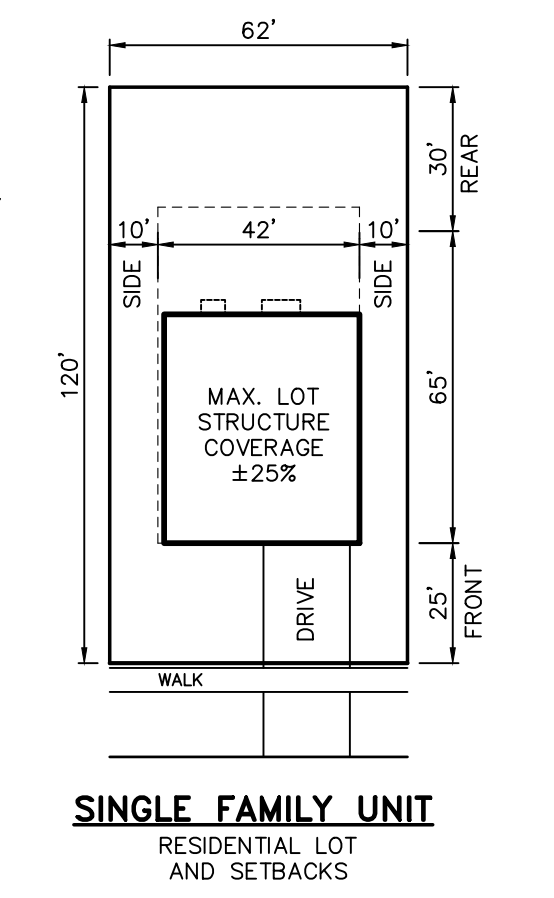
PHASE UNIT NO. SUMMARY table with columns: ACTIVE ADULT, SINGLE FAMILY, PHASE 1, PHASE 2, PHASE 3.

SINGLE FAMILY LOT AREA TABLE

Large table with 7 columns: LOT #, AREA (SF) for lots 1 through 144.

NOTES:

- 1. PROPOSED SIDEWALK AND RAMPS SHALL CONFORM TO ADA REQUIREMENTS.
2. PROPOSED SIDEWALKS WITHIN THE DEVELOPMENT SHALL BE 5' WIDE CONCRETE.
3. EACH UNIT WILL HAVE SPACE ALLOCATED FOR A MINIMUM FOUR (4) PARKING SPACES - PROVIDED BY A MINIMUM TWO-CAR GARAGE, PLUS TWO SPACES IN EACH DRIVEWAY (MINIMUM 20-FEET LONG).
4. SEE SHEETS 07 TO 08 FOR DIMENSIONS AND EASEMENTS.



LEGEND

- BOUNDARY LINE
EXIST. EASEMENT
SECTION LINE
BOUNDARY/PROPERTY LINE
EXIST. SETBACK
EXIST. TREE LINE
EXIST. CURB AND GUTTER
EXIST. FENCE
EXIST. GRAVEL
EXIST. BUILDING
PROP. EASEMENT
PROP. SETBACK
PROP. BUILDING
PROP. BACK OF CURB
PROP. R.O.W.
PROP. PHASE
PROP. LOT LINE
PROP. CONCRETE
PROP. ASPH.



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
UTILITY PLAN - OVERALL

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCWR
07/09/2021: AMENDMENT TO PSP

REVISIONS table with columns for REV, DATE, DESCRIPTION, and APPROVED. Includes scale bar (1" = 100 FEET) and job information (JOB 18003309, SHEET NO. 06).



SANITARY SEWER BASIS OF DESIGN

Table with columns for Phases - 2&3, Number of Units (111 R.E.U.), Number of Users per Unit (2.7 Persons), Average Daily Flow (100 G.P.D.), Peaking Factor (4.08), Average Flow (0.0300 M.G.D.), and Peak Flow (122.354 G.P.D.).

Pipe Capacity Check

Table for Pipe Capacity Check showing Pipe Material (PVC Truss), Diameter (8 inches), Slope (0.40%), Manning's 'n' (0.013), A (0.349 sf), R (0.167 ft), Manning's Capacity (0.786 C.F.S.), and Velocity Flowing Full (2.20 F.P.S.).

GENERAL NOTES

- 1. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS AND GENERAL CONDITIONS OF WHITE LAKE TOWNSHIP.
2. ALL WORK WITHIN THE ROAD COMMISSION FOR OAKLAND COUNTY (ROC) RIGHT-OF-WAY (ROW) SHALL BE IN ACCORDANCE WITH THE CURRENT ROC STANDARDS AND GENERAL SPECIFICATIONS.
3. HORIZONTAL SEPARATION OF 10 FEET AND VERTICAL SEPARATION OF 1.5 FEET SHALL BE MAINTAINED BETWEEN ALL WATER MAINS AND SANITARY/STORM SEWERS.
4. CALL MISS DIG 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
5. ALL STORM SEWER SHALL BE CENTERED IN A 12' EASEMENT.
6. THE DEVELOPER SHALL CONTACT THE TOWNSHIP PLANNING DEPARTMENT AT (248) 698-3300 TO SCHEDULE A PRECONSTRUCTION MEETING. ATTENDANCE AT THE PRECONSTRUCTION MEETING SHALL INCLUDE THE DEVELOPER'S PRIME CONTRACTOR. A COPY OF ALL PERMITS MUST BE SUBMITTED TO THE PLANNING DEPARTMENT PRIOR TO SCHEDULING THE MEETING.
7. THE DEVELOPER SHALL CONTACT THE TOWNSHIP ENGINEER AT (248)334-9901 48 HOURS PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE INSPECTOR APPRISED OF THE NEED FOR INSPECTION ON A DAILY BASIS. LACKING SPECIFIC SCHEDULING WITH THE INSPECTOR, THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE TOWNSHIP ENGINEER PRIOR TO RECOMMENDING WORK REQUIRING INSPECTION. FAILURE TO INFORM THE INSPECTOR OR THE TOWNSHIP ENGINEER OF A WORK CANCELLATION MAY RESULT IN A ONE-HALF DAY INSPECTION CHARGE TO THE DEVELOPER.
8. ALL WATER MAIN AND SANITARY SEWER WORK WILL REQUIRE FULL TIME INSPECTION. FULL TIME INSPECTION WILL GENERALLY BE REQUIRED FOR UNDERGROUND STORM SEWER CONSTRUCTION, CONCRETE CURBING AND PAVING OPERATIONS. SITE GRADING AND DETENTION BASIN CONSTRUCTION WILL GENERALLY BE INSPECTED ON AN INTERMITTENT BASIS.

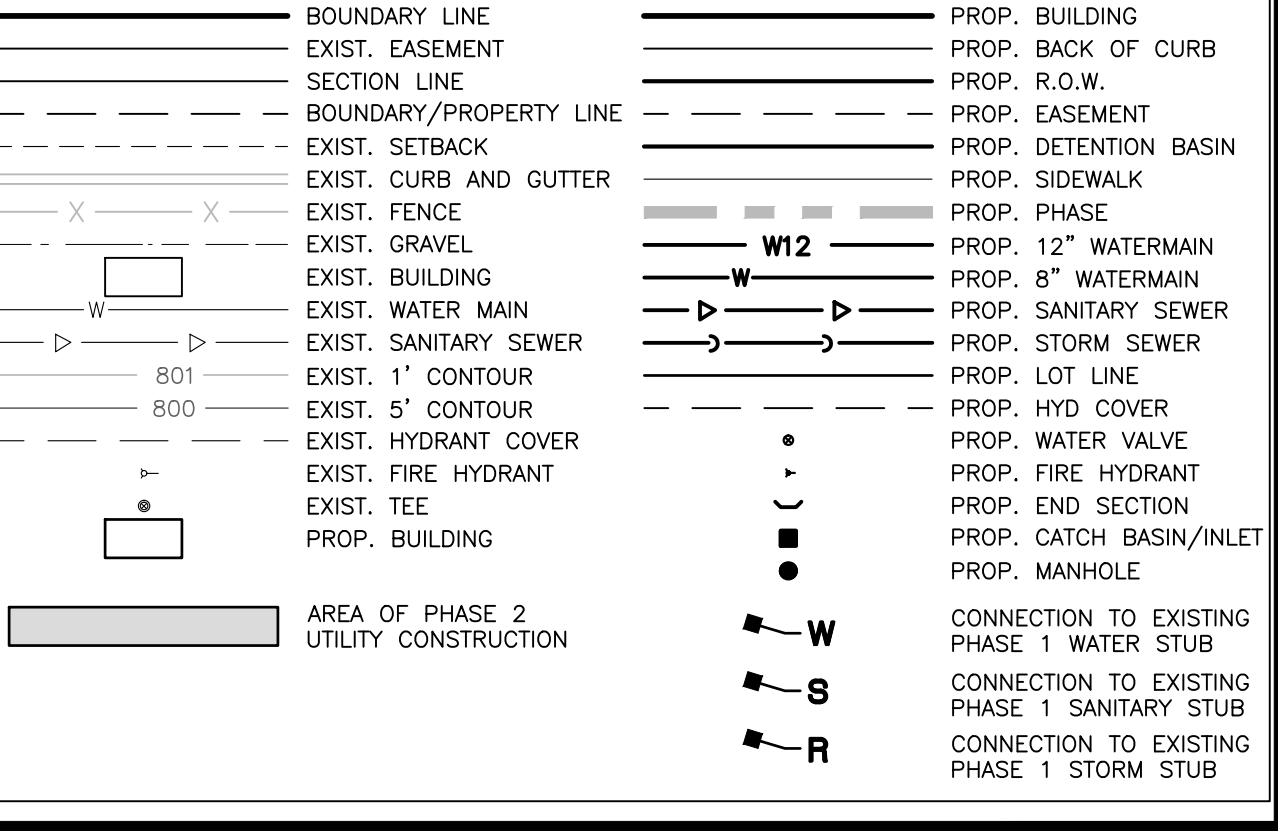
WATER SYSTEM NOTES

- 1. MINIMUM WATER PRESSURE AT A DEAD END SHALL BE 20 PSI (RESIDUAL), AND 1000 GPM FLOW.
2. WATER MAIN TO BE PLACED 7.5' INSIDE THE ROW LINE, GENERALLY ON THE N AND E SIDE.
3. ALL WATER MAIN SHALL BE CENTERED ON A 20-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60-FOOT PRIVATE ROAD EASEMENT.
4. PROVIDE 6 FEET OF COVER EXCEPT AT GATE WELLS (5-FEET).
5. STREET TREES TO BE LOCATED A MINIMUM 3 FEET FROM WATER MAIN.
6. WATER MAIN SHALL BE DUCTILE IRON, CLASS 54 W/ PUSH-ON JOINTS (INC. BENDS AND TEES).
7. MINIMUM DOMESTIC SERVICE SHALL BE 1-INCH.
8. HYDRANT LEADS MAY BE 6-INCH DIAMETER EXCEPT WHERE OVER 40 FEET IN LENGTH.
9. VALVES AND GATE WELLS SHALL BE LOCATED SO THAT NO MORE THAN FOUR (4) VALVES MUST BE CLOSED TO ISOLATE A SECTION OF WATER MAIN. VALVES SHALL BE LOCATED SO THAT NO MORE THAN 800 FEET OF WATERMAIN WILL BE OUT OF SERVICE.
10. HYDRANT SPACING SHALL BE 500 FEET MAXIMUM IN SINGLE FAMILY RESIDENTIAL AREAS, AND SHOULD BE LOCATED AT INTERSECTIONS WHERE PRACTICAL.
11. ALL MAINLINE GATE VALVES ARE TO BE WITHIN GATE WELLS, MATCHING THE WATERMAIN SIZE.
12. HYDRANTS AND AUXILIARY VALVES SHALL BE LOCATED TO BE READILY AVAILABLE BY FIRE FIGHTING EQUIPMENT.
13. HYDRANTS TO BE LOCATED 6 FEET FROM BACK OF CURB.
14. WATERMAIN AROUND CUL-DE-SACS SHALL EXTEND AROUND THE BULB TO SERVE ALL FRONTING LOTS, WITH A TERMINUS HYDRANT LOCATED IN THE CUL-DE-SAC ISLAND IN A POSITION MOST PROMINENT TO ONCOMING TRAFFIC.
15. REFER TO WHITE LAKE TOWNSHIP "STANDARD WATER MAIN DETAILS" FOR ADDITIONAL REQUIREMENTS FOR CONSTRUCTION.
16. 12-INCH WATERMAIN CONNECTION BETWEEN ELIZABETH LAKE ROAD AND SOUTH CONNECTION WAS BUILT AS PART OF PHASE 1 PER TOWNSHIP.

SANITARY SYSTEM NOTES

- 1. GENERALLY, NO SEWER SHALL BE LESS THAN 8 FEET DEEP FROM CROWN OF ROAD TO SEWER INVERT. IN NO CASE SHALL SEWER HAVE LESS THAN 4 FEET OF COVER.
2. SANITARY SEWER TO BE PLACED 7.5' INSIDE THE ROW LINE, GENERALLY ON THE S AND W SIDE.
3. ALL SANITARY SEWER SHALL BE CENTERED ON A 20-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60-FOOT PRIVATE ROAD EASEMENT.
4. STREET TREES TO BE LOCATED A MINIMUM 3 FEET FROM SEWER MAIN.
5. PIPE MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS OF WHITE LAKE TOWNSHIP AND OAKLAND COUNTY WATER RESOURCE COMMISSIONER (OCWR).
6. CURRENT OCWR "SANITARY SEWER CONSTRUCTION NOTES" APPLY TO FINAL CONSTRUCTION PLANS.
7. OCWR "STANDARD BEDDING" DETAILS SHALL BE USED FOR THE PIPE UTILIZED.
8. PROPOSED SANITARY SEWER SHALL BE 8" MINIMUM DIAMETER.
9. SERVICE LEADS SHALL BE 6 INCH MINIMUM INSTALLED AT A MINIMUM 1% GRADE.
10. PROVIDE A 1 FOOT DEEP SUMP AT FURTHEST DOWNSTREAM MANHOLE FOR CONSTRUCTION AND TESTING PURPOSES.
11. FURTHEST UPSTREAM PIPE RUNS SHALL HAVE A MINIMUM 1% GRADE UNLESS APPROVED BY THE TOWNSHIP ENGINEER.
12. NO CONDUIT THAT CARRIES STORMWATER OR GROUND WATER IS PERMITTED TO DISCHARGE INTO THE SANITARY SEWER SYSTEM.
13. INTERIOR DROP CONNECTIONS PER OAKLAND COUNTY STANDARD DETAILS ARE REQUIRED WHERE A DROP OF 18 INCHES OR MORE OCCURS AT A MANHOLE.
14. MATCH THE 8/10 POINT AT MANHOLES WHERE DIFFERING PIPE SIZES ARE PROPOSED.
15. WHERE A CHANGE IN PIPE DIRECTION OF 135 DEGREES OR LESS IS CREATED AT A MANHOLE, PROVIDE A 0.1 FOOT DROP IN PIPE INVERTS FROM UPSTREAM TO DOWNSTREAM.
16. REFER TO THE "SANITARY SEWER STANDARD DETAILS" SHEET(S) FOR ADDITIONAL REQUIREMENTS FOR CONSTRUCTION.

LEGEND



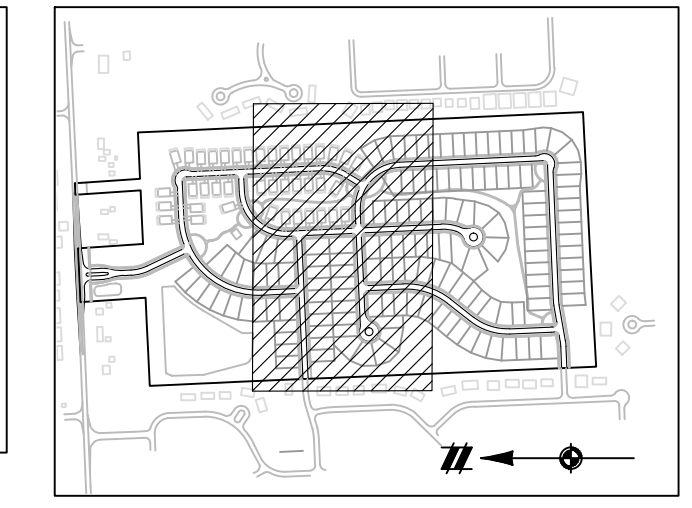
* Trailside Meadow development (Ph 2-3)

GENERAL UTILITY NOTES

1. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS AND GENERAL CONDITIONS OF WHITE LAKE TOWNSHIP.
2. ALL WORK WITHIN THE ROAD COMMISSION FOR OAKLAND COUNTY (RCOC) RIGHT-OF-WAY (ROW) SHALL BE IN ACCORDANCE WITH THE CURRENT RCOC STANDARDS AND GENERAL SPECIFICATIONS.
3. HORIZONTAL SEPARATION OF 10 FEET AND VERTICAL SEPARATION OF 1.5 FEET SHALL BE MAINTAINED BETWEEN ALL WATER MAINS AND SANITARY/STORM SEWERS.
4. CALL MISS DIG 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
5. ALL STORM SEWER SHALL BE CENTERED ON A 12' EASEMENT.
6. ALL WATER MAIN SHALL BE CENTERED ON A 20'-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60'-FOOT PRIVATE ROAD EASEMENT.
7. ALL SANITARY SEWER SHALL BE CENTERED ON A 20'-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60'-FOOT PRIVATE ROAD EASEMENT.
8. SEE SHEETS 15 TO 19 FOR ADDITIONAL UTILITY NOTES, SIZES, AND INFORMATION.
9. SEE SHEET 06 FOR OVERALL UTILITY PHASING AND STUB LOCATIONS.
10. 12-INCH WATERMAIN CONNECTION BETWEEN ELIZABETH LAKE ROAD AND SOUTH CONNECTION WAS BUILT AS PART OF PHASE 1 PER TOWNSHIP.
11. ALL MAILBOX CLUSTERS MUST BE A MINIMUM 3' FROM WATER MAIN, SANITARY AND STORM SEWERS.

LEGEND

	BOUNDARY LINE		PROP. PHASE
	EXIST. EASEMENT		PROP. EASEMENT
	SECTION LINE		PROP. LOT LINE
	BOUNDARY/PROPERTY LINE		PROP. SETBACK
	EXIST. SETBACK		PROP. BUILDING
	EXIST. TREE LINE		PROP. BACK OF CURB
	EXIST. CURB AND GUTTER		PROP. R.O.W.
	EXIST. FENCE		PROP. CONCRETE
	EXIST. GRAVEL		PROP. ASPH.
	EXIST. ASPHALT		PROP. DETENTION
	EXIST. BUILDING		PROP. MAILBOX CLUSTER



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.

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311 NORTH MAIN STREET
ANN ARBOR, MI 48104
734.994.4600

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

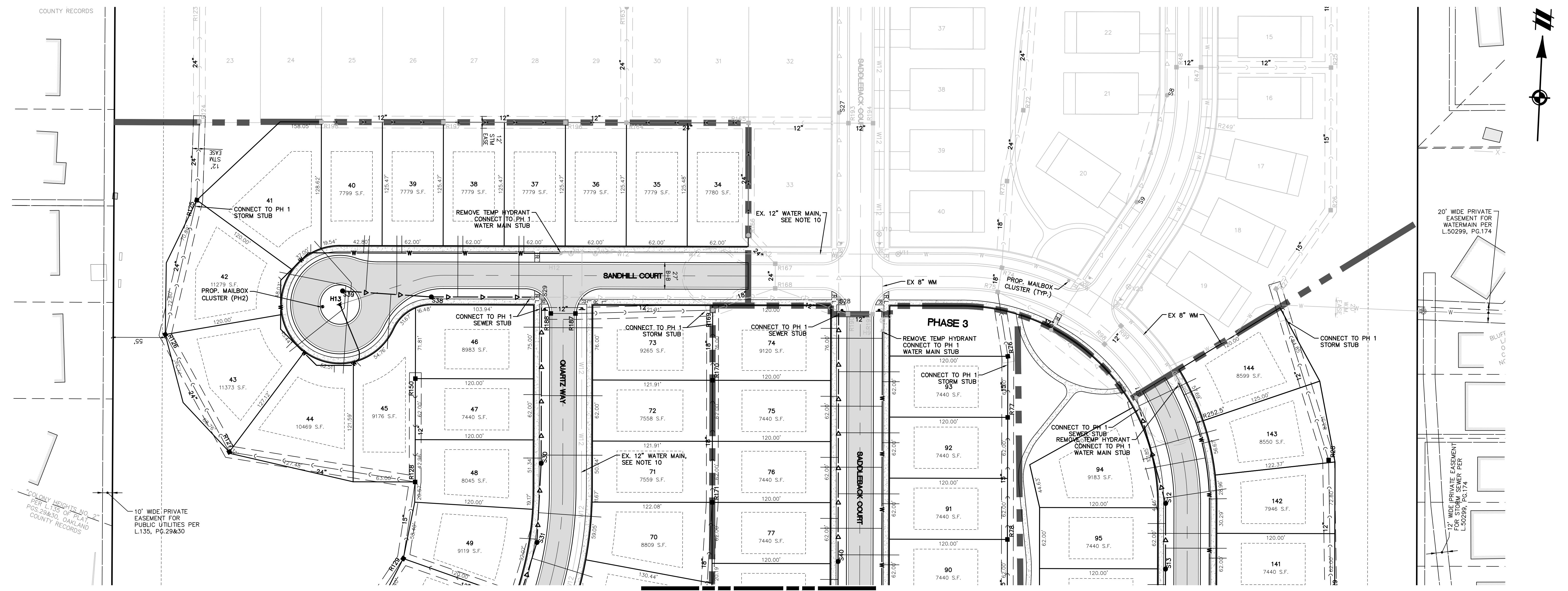
M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LAYOUT & UTILITY PLAN - NORTH

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

REVISIONS	
SCALE	0 25 50
1" = 50 FEET	
DR.	SK/KS GH. CK
P.M.	M BUSH
BOOK	--
JOB	18003309
SHEET NO.	07

SEE PHASE 1 PLANS

SEE SHEET 08 FOR CONTINUATION



COUNTY RECORDS

"COLONY HEIGHTS NO. 2" PER L.135 OF P.L.A.T. PGS.29&30, OAKLAND COUNTY RECORDS

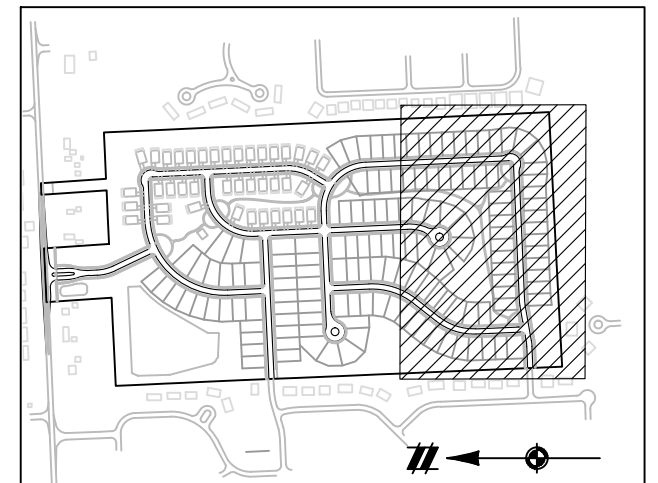
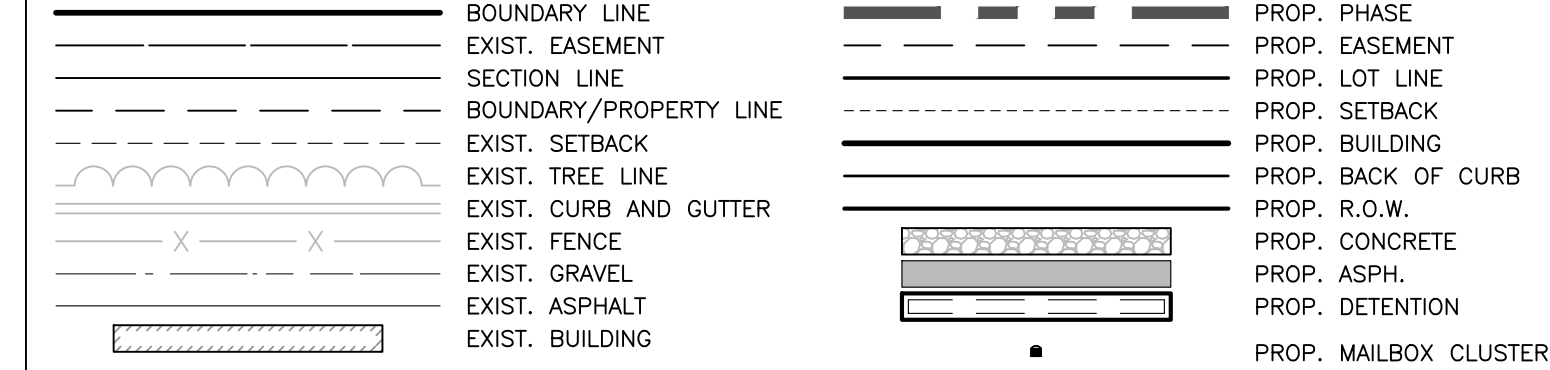
10' WIDE PRIVATE EASEMENT FOR PUBLIC UTILITIES PER L.135, PG.29&30

CAD FILE: 1800330952-03A-LDWG

GENERAL UTILITY NOTES

1. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS AND GENERAL CONDITIONS OF WHITE LAKE TOWNSHIP.
2. ALL WORK WITHIN THE ROAD COMMISSION FOR OAKLAND COUNTY (ROCC) RIGHT-OF-WAY (ROW) SHALL BE IN ACCORDANCE WITH THE CURRENT ROCC STANDARDS AND GENERAL SPECIFICATIONS.
3. HORIZONTAL SEPARATION OF 10 FEET AND VERTICAL SEPARATION OF 1.5 FEET SHALL BE MAINTAINED BETWEEN ALL WATER MAINS AND SANITARY/STORM SEWERS.
4. CALL MISS DIG 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
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7. ALL SANITARY SEWER SHALL BE CENTERED ON A 20-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60-FOOT PRIVATE ROAD EASEMENT.
8. SEE SHEETS 15 TO 19 FOR ADDITIONAL UTILITY NOTES, SIZES, AND INFORMATION.
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LEGEND



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SECTION 25
 TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MICHIGAN

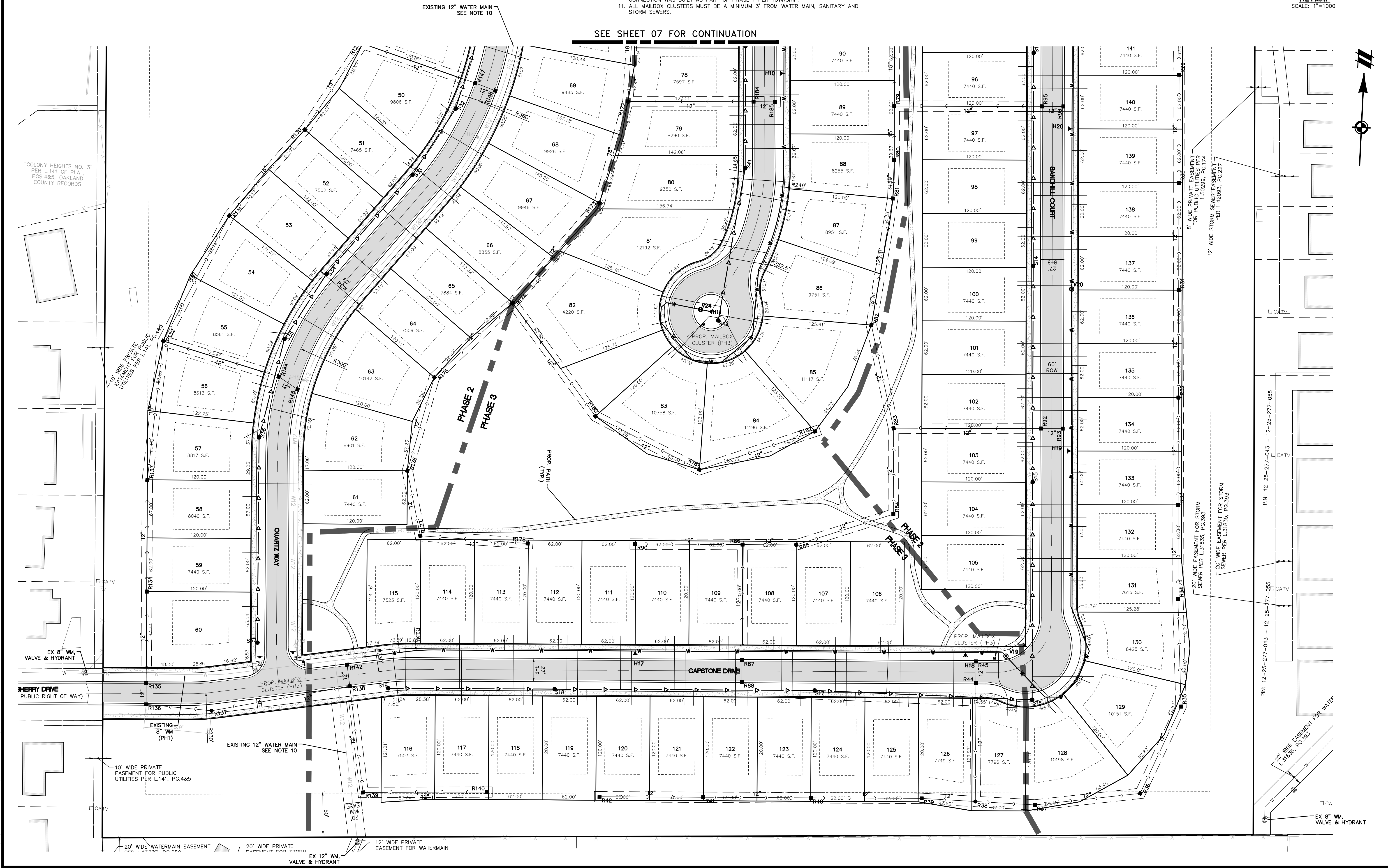
M/I HOMES OF MICHIGAN, LLC
 TRAILSIDE MEADOW
 FINAL SITE ENGINEERING PLAN
 PHASES 2-3
 LAYOUT & UTILITY PLAN - SOUTH

DATE: OCTOBER 29, 2020
 02/17/2021: REV PER TOWNSHIP
 05/27/2021: REV PER OCMRC
 07/09/2021: AMENDMENT TO FSP

NO.	DATE	DESCRIPTION

REVISIONS
 SCALE 0 25 50
 1" = 50 FEET
 DR. SK/KS G.H. CK
 P.M. M BUSH
 BOOK ---
 JOB 18003309
 SHEET NO. 08

CAD FILE: 18003309S2-03A-LDWG



"COLONY HEIGHTS NO. 3" PER L141 OF PLAT, PGS. 4&5, OAKLAND COUNTY RECORDS

EX 8" WM VALVE & HYDRANT

HERRY DRIVE PUBLIC RIGHT OF WAY

EXISTING 8" WM (PH1)

10' WIDE PRIVATE EASEMENT FOR PUBLIC UTILITIES PER L.141, PG.4&5

20' WIDE WATERMAIN EASEMENT

20' WIDE PRIVATE EASEMENT FOR WATERMAIN

EX 12" WM VALVE & HYDRANT

EXISTING 12" WATER MAIN SEE NOTE 10

SEE SHEET 07 FOR CONTINUATION

PHASE 2
 PHASE 3

PROP. PATH (TP)

CAPSTONE DRIVE

PROP. MAILBOX CLUSTER (PH3)

60' ROW

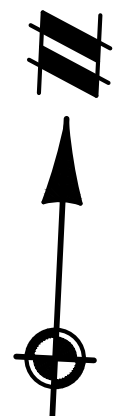
20' WIDE EASEMENT FOR STORM SEWER PER L.31835, PG.393

8' WIDE PRIVATE EASEMENT FOR PUBLIC UTILITIES PER L.50289, PG.174

12' WIDE STORM SEWER EASEMENT PER L.42093, PG.227

20' WIDE EASEMENT FOR WATER

EX 8" WM VALVE & HYDRANT



LEGEND	
	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. EROSION CONTROL
	BLANKET ON 3:1 SLOPES
	PROP. BACK OF CURB
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. SILT FENCE
	PROP. TREE FENCE
	PR. INLET FILTER (PH 1)
	PR. INLET FILTER (FUTURE)



SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- THE SMALLEST PRACTICAL AREA OF LAND SHALL BE EXPOSED AT ANY ONE TIME DURING DEVELOPMENT.
- WHEN LAND IS EXPOSED DURING DEVELOPMENT, THE EXPOSURE SHALL BE KEPT TO THE SHORTEST PERIOD OF TIME.
- TEMPORARY VEGETATION AND/OR MULCHING SHALL BE USED TO PROTECT CRITICAL AREAS EXPOSED DURING DEVELOPMENT. THE PLANS SUBMITTED TO THE TOWNSHIP SHALL SPECIFY SUCH TREATMENT.
- SEDIMENT BASINS (DEBRIS BASINS, OR SILT TRAPS) SHALL BE INSTALLED AND MAINTAINED TO REMOVE SEDIMENT FROM RUN OFF WATERS FROM LAND UNDERGOING DEVELOPMENT. THE PLANS SUBMITTED TO THE TOWNSHIP SHALL SPECIFY SUCH TREATMENT.
- PROVISION SHALL BE MADE TO EFFECTIVELY ACCOMMODATE THE INCREASED RUN OFF CAUSED BY CHANGED SOIL AND SURFACE CONDITIONS DURING AND AFTER DEVELOPMENT. THE PLANS SUBMITTED TO THE TOWNSHIP SHALL SPECIFY SUCH TREATMENT.
- THE PERMANENT FINAL VEGETATION AND STRUCTURES SHALL BE INSTALLED AS SOON AS PRACTICAL IN DEVELOPMENT. THE PLANS SUBMITTED TO THE TOWNSHIP SHALL SPECIFY SUCH TREATMENT.
- THE DEVELOPMENT PLAN SHOULD BE FITTED TO THE TOPOGRAPHY AND SOIL SO AS TO CREATE THE LEAST SOIL EROSION POTENTIAL.
- WHEREVER FEASIBLE, NATURAL VEGETATION SHOULD BE RETAINED AND PROTECTED.
- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF WHITE LAKE TOWNSHIP AND THE OAKLAND COUNTY DRAIN COMMISSIONER.
- THE CONTRACTOR SHALL MAKE DAILY INSPECTIONS TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
- 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.
- 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.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED. ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
- DURING CONSTRUCTION OF THE STORM SEWER SYSTEM, STRAW BALES, STONE FILTERS OR OTHER APPROVED MEANS, WILL PROTECT THE ENDS OF ALL OPEN PIPES.
- PROMPTLY UPON THE BACKFILLING OF STORM STRUCTURES, INLET FILTERS WILL BE PLACED AROUND THE STRUCTURE PER DETAILS.

SOIL EROSION AND SEDIMENTATION CONTROL NOTES:

- ANY REMAINING DENUDED AREA SHALL BE SEED AND MULCHED WITHIN FIVE (5) DAYS AFTER COMPLETION OF FINAL GRADING.
- WITHIN FIVE (5) DAYS AFTER COMPLETION OF PAVING, A 16-FOOT STRIP AROUND PAVED AREAS SHALL BE PROTECTED FROM SOIL EROSION BY AN APPROVED METHOD CONSISTENT WITH THE GROWING SEASON.
- INSTALL EROSION CONTROL BLANKET ON SLOPES STEEPER THAN 3:1 WITH CONCENTRATED FLOW AND AS NEEDED TO ESTABLISH VEGETATION.
- WETLANDS EXIST ON OR ADJACENT TO THIS SITE. NO WORK MAY BE DONE WITHIN 25 FEET OF WETLANDS WITHOUT SPECIAL PERMITS BEING GRANTED BY THE TOWNSHIP AND/OR MDEQ.
- STREETS AND CURBS MUST BE MAINTAINED AS APPROVED BY TOWNSHIP.
- ALL DISTURBED AREAS MUST BE STABILIZED BY SOD, OR HYDROSEEDING/ SEEDING AND INSTALLATION OF BIODEGRADABLE SOIL EROSION CONTROL BLANKETS IMMEDIATELY FOLLOWING COMPLETION OF WORK.
- CATCH BASINS MUST BE PROTECTED AND MAINTAINED USING APPROVED SEDIMENTATION FILTER BAGS/SACKS.
- YARD CATCH BASINS MUST BE PROTECTED WITH SEDIMENTATION FILTER BAGS/SACKS ALONG WITH 3' PEASTONE/GRAVEL APRON AND INSTALLED SILT FENCING AT THE PERIMETER OF THE PEASTONE/GRAVEL APRON.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURING THE STREETS REMAIN CLEAN AND FREE OF SEDIMENT DAILY AND AT THE REQUEST OF THE TOWNSHIP.
- CONTRACTOR MUST CONTACT ENVIRONMENTAL DEPARTMENT FOR A PRE-CONSTRUCTION MEETING PER WETLAND/WOODLAND PERMIT

SEQUENCE OF CONSTRUCTION SOIL EROSION CONTROL

SEQUENCE OF CONSTRUCTION SOIL EROSION CONTROL	START DAY	END DAY
1. INSTALL SILT FENCE AS SHOWN ON THE SOIL EROSION CONTROL PLAN, AND ADJACENT TO GRAVEL ACCESS DRIVES.	1	5
2. STRIP AND STOCKPILE TOPSOIL.	6	9
3. MASS GRADE AS REQUIRED.	10	40
4. INSTALL WATER MAIN & SANITARY SEWER; IMMEDIATELY ESTABLISH VEGETATION ON ALL OFF-SITE AREAS.	41	71
5. INSTALL STORM SEWER; IMMEDIATELY INSTALL SILT SACKS ON ALL CATCH BASINS AND INLETS.	72	85
6. INSTALL ALL PUBLIC UTILITIES COMPLETE (GAS, ELECTRIC, TELEPHONE, AND CABLE TV).	86	93
7. INSTALL ALL PAVEMENT.	94	110
8. FINISH GRADE, REDISTRIBUTE TOP SOIL, AND ESTABLISH VEGETATION ON ALL DISTURBED GROUND AREAS.		
9. CLEAN PAVEMENT AND STORM SEWERS OF ALL SEDIMENT.		
10. REMOVE SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.		
11. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO INSURE THAT ALL SOIL EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED.		
12. WHITE LAKE TOWNSHIP SHALL INSPECT ALL SOIL EROSION CONTROL MEASURES. UPON THEIR DIRECTION, ADDITIONAL MEASURES SHALL BE CONSTRUCTED OR MAINTENANCE WORK SHALL BE PERFORMED TO ASSURE EROSION AND SEDIMENTATION CONTROL.		

GRADING NOTES

- THE DEVELOPER IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE A RESULT OF THE DEVELOPER'S ACTIVITIES.
- GENERAL GUIDELINES USED FOR PRELIMINARY GRADING CONCEPT:
 MAX GRASS AREA GRADE = 1% (WHITE LAKE TOWNSHIP)
 MIN GRASS AREA GRADE = 2% (CLIENT)
 (NOTE 1% MIN PER WHITE LAKE TOWNSHIP)
 MAX PRIVATE ROAD SLOPE = 8% (WHITE LAKE TOWNSHIP)
 MAX DRIVEWAY SLOPE = 6% (WHITE LAKE TOWNSHIP)
 MIN DRIVEWAY SLOPE = 2%
 DROP BRICK LEDGE ON LOW SIDE OF HOUSE FRONT (CLIENT)
 WALKOUT = FG - 8 FT; VIEWOUT = FG - 4 FT (CLIENT)
 SIDE YARD = 6 INCHES BELOW BUILDING FG
- NO RETAINING WALLS ARE PROPOSED ON THIS GRADING PLAN. IF REQUIRED IN THE OPINION OF THE TOWNSHIP ENGINEER, SOIL RETAINING SYSTEMS SHALL BE DESIGNED BY A QUALIFIED STRUCTURAL OR GEOTECHNICAL ENGINEER AND SUBMITTED FOR REVIEW AND APPROVAL BY THE TOWNSHIP ENGINEER.
- ALL GRADING IS INTENDED TO MEET ADJACENT PROPERTY GRADES (NO GRADING EASEMENTS ARE PROPOSED).
- A SOIL EROSION PERMIT WILL BE REQUIRED FOR EARTH DISRUPTION GREATER THAN ONE ACRE.
- SEE SHEET 02 FOR SOILS INFORMATION.
- ENTIRE SITE TO BE MASS-GRADED IN PHASE 1.
- THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR OR THE CERTIFIED STORMWATER OPERATOR ASSIGNED BY THE CONTRACTOR.
- REFER TO SHEETS 10-11 (50-SCALE) FOR BETTER CLARITY OF EROSION CONTROL MEASURES.

811
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SECTION 25
 TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
 TRAILSIDE MEADOW
 FINAL SITE ENGINEERING PLAN
 PHASES 2-3
 GRADING & SECC PLAN -
 OVERALL

DATE: OCTOBER 29, 2020
 02/17/2021: REV PER TOWNSHIP
 05/27/2021: REV PER OCMRC
 07/09/2021: AMENDMENT TO FSP

REVISIONS

NO.	DATE	DESCRIPTION

SCALE: 0 50 100
 1" = 100 FEET

DR. SK/KS | GH. CK
 P.M. M BUSH
 BOOK --
 JOB 18003309
 SHEET NO. 09

CAD FILE: 18003309S2-05-00.DWG

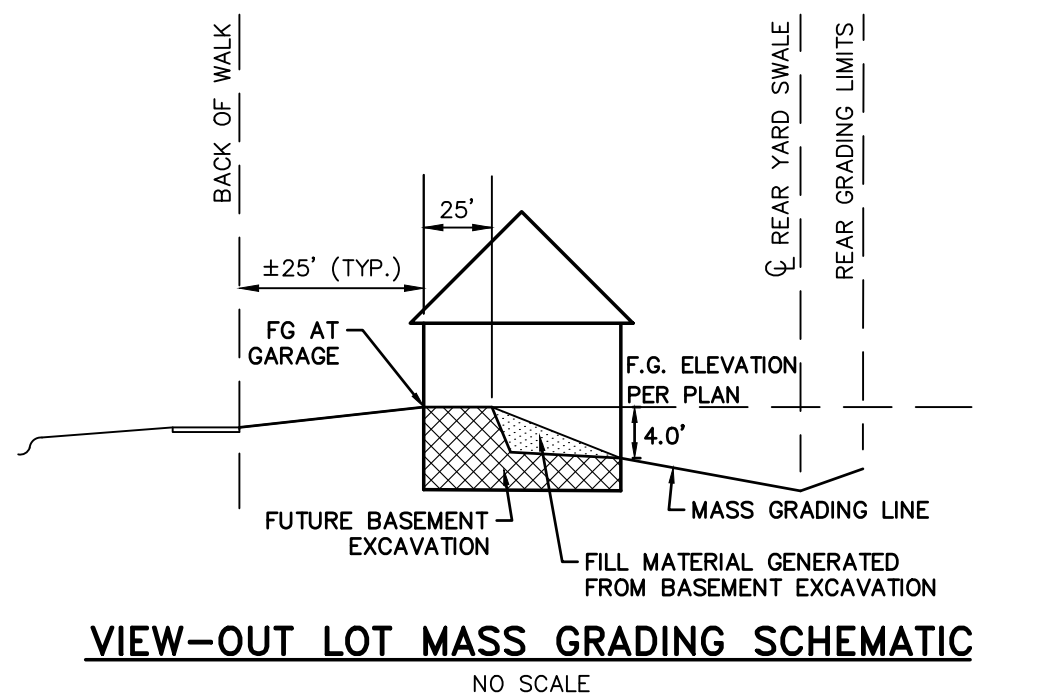
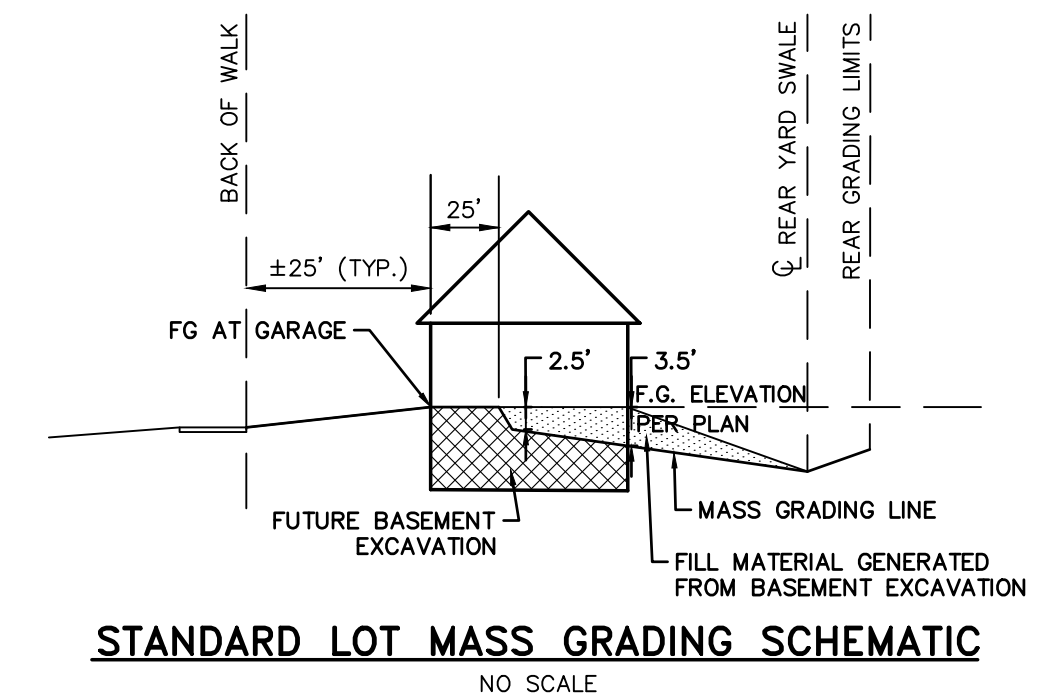
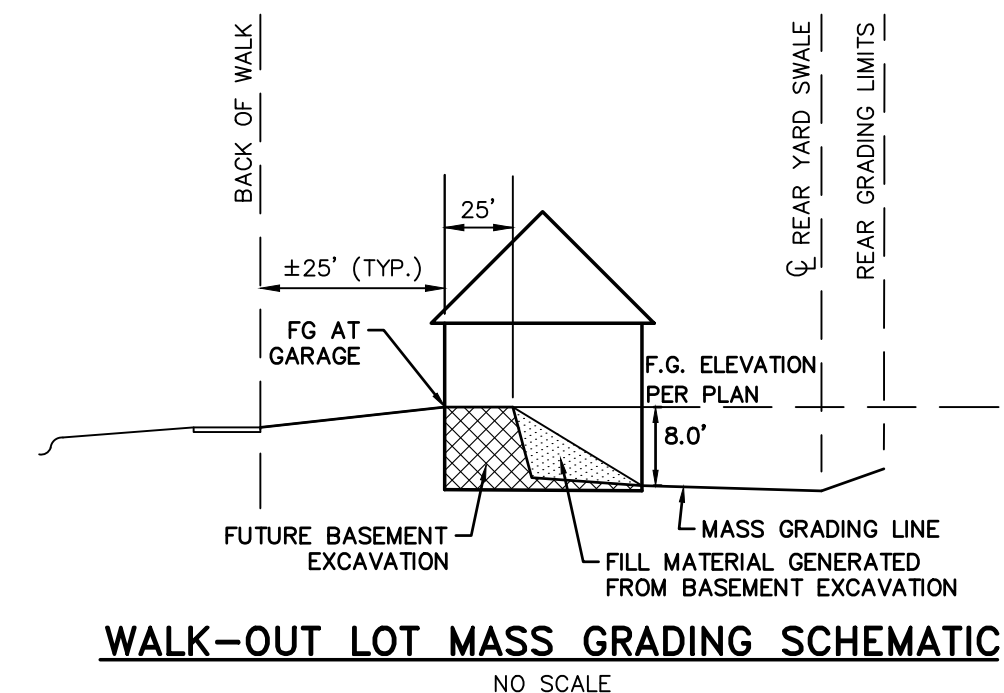
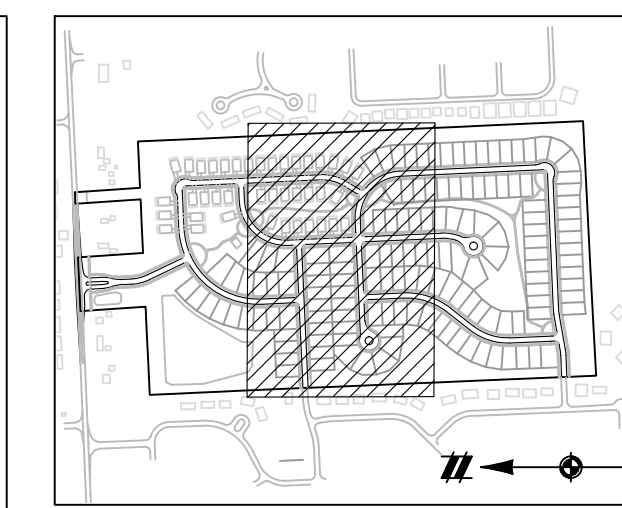


GRADING NOTES

1. SEE GRADING NOTES ON SHEET 09.
2. SEE OVERALL EROSION CONTROL PLAN - SHEET 09.

LEGEND

	BOUNDARY LINE		PROP. BUILDING
	PROPERTY LINE		PROP. STORM SEWER
	EXIST. ROADS		PROP. SANITARY
	EXIST. CONTOUR		PROP. 12" WATER MAIN
	EXIST. FENCE		PROP. 8" WATER MAIN
	EXIST. GRAVEL		PROP. SILT FENCE
	EXIST. STORM SEWER		PROP. TREE FENCE
	EXIST. BUILDING		PROP. INLET FILTER (PHASE 1)
	PROP. CONTOUR		PROP. INLET FILTER (FUTURE PHASE)
	PROP. LOT LINE		PROP. BACK OF CURB
	PROP. RIGHT OF WAY		PROP. SIDEWALK
	PROP. BACK OF CURB		PROP. EROSION CONTROL BLANKET ON 3:1 SLOPES



SEE SHEET 11 FOR CONTINUATION

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SECTION 25	TOWN 3 NORTH, RANGE 8 EAST
M/1 HOMES OF MICHIGAN, LLC	WHITE LAKE TOWNSHIP
TRAILSIDE MEADOW	OAKLAND COUNTY, MICHIGAN
FINAL SITE ENGINEERING PLAN	
PHASES 2-3	
GRADING & SECC	
PLAN - NORTH	

DATE: **OCTOBER 29, 2020**

02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

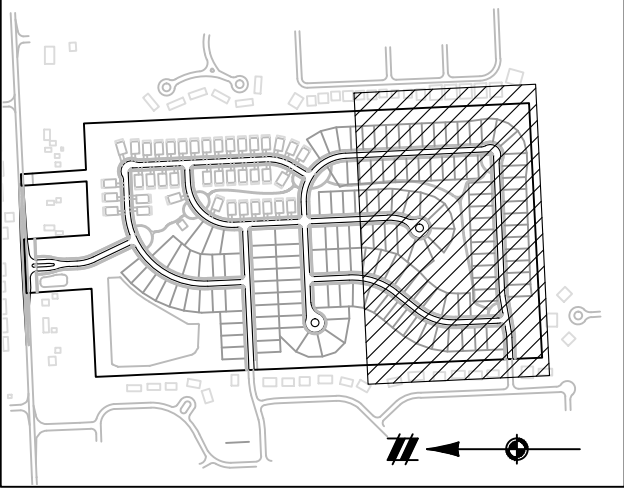
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SCALE	0 25 50
1" = 50 FEET	
DR. SK/KS	GH. CK
P.M.	M BUSH
BOOK	
JOB	18003309
SHEET NO.	10

CAD FILE: 18003309S2-03A-G.DWG



LEGEND

- BOUNDARY LINE
 - PROPERTY LINE
 - - - EXIST. ROADS
 - - - EXIST. CONTOUR
 - - - EXIST. FENCE
 - - - EXIST. GRAVEL
 - - - EXIST. STORM SEWER
 - - - EXIST. BUILDING
 - - - PROP. CONTOUR
 - - - PROP. LOT LINE
 - - - PROP. RIGHT OF WAY
 - - - PROP. BACK OF CURB
 - - - PROP. SIDEWALK
- PROP. BUILDING
 - PROP. STORM SEWER
 - PROP. SANITARY
 - PROP. 12" WATER MAIN
 - PROP. 8" WATER MAIN
 - PROP. SILT FENCE
 - PROP. TREE FENCE
 - PROP. INLET FILTER (PHASE 1)
 - PROP. INLET FILTER (FUTURE PHASE)
 - PROP. EROSION CONTROL BLANKET ON 3:1 SLOPES

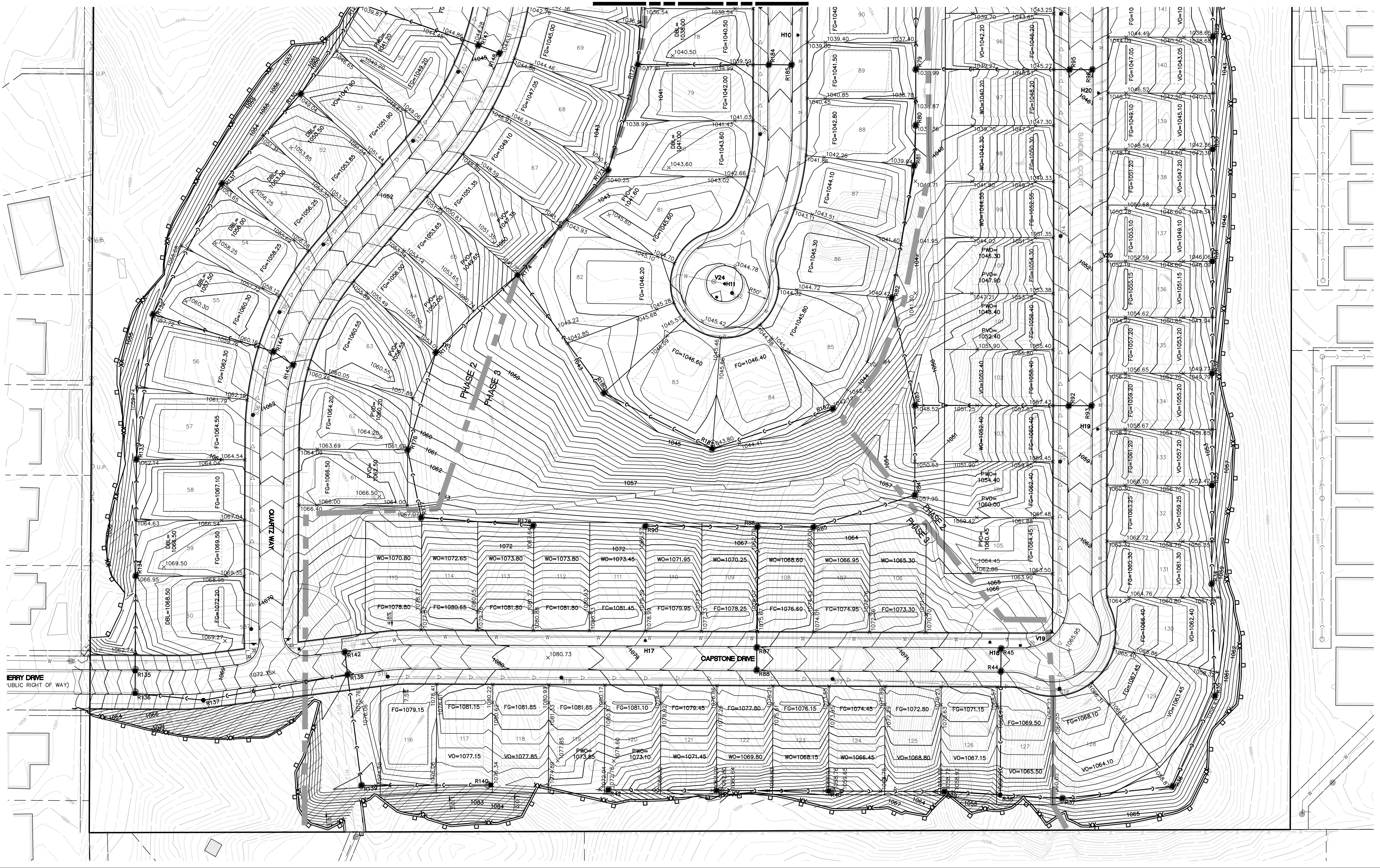


KEYMAP SCALE: 1"=1000'

GRADING NOTES

1. SEE GRADING NOTES ON SHEET 09.
2. SEE OVERALL EROSION CONTROL PLAN - SHEET 09.

SEE SHEET 10 FOR CONTINUATION



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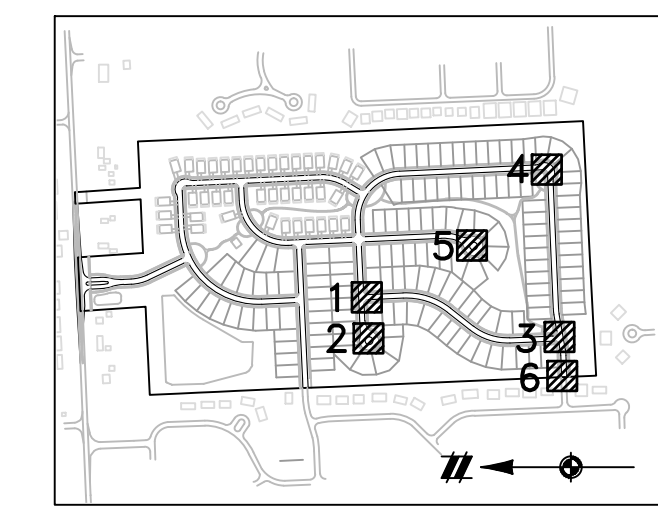
SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

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TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
GRADING & SESS PLAN - SOUTH

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO PSP

REVISIONS

SCALE	0	25	50
1" =	50	FEET	
DR.	SK/KS	GH, CK	
P.M.	M	BUSH	
BOOK	---		
JOB	18003309		
SHEET NO.	11		



KEYMAP
SCALE: 1"=1000'

811
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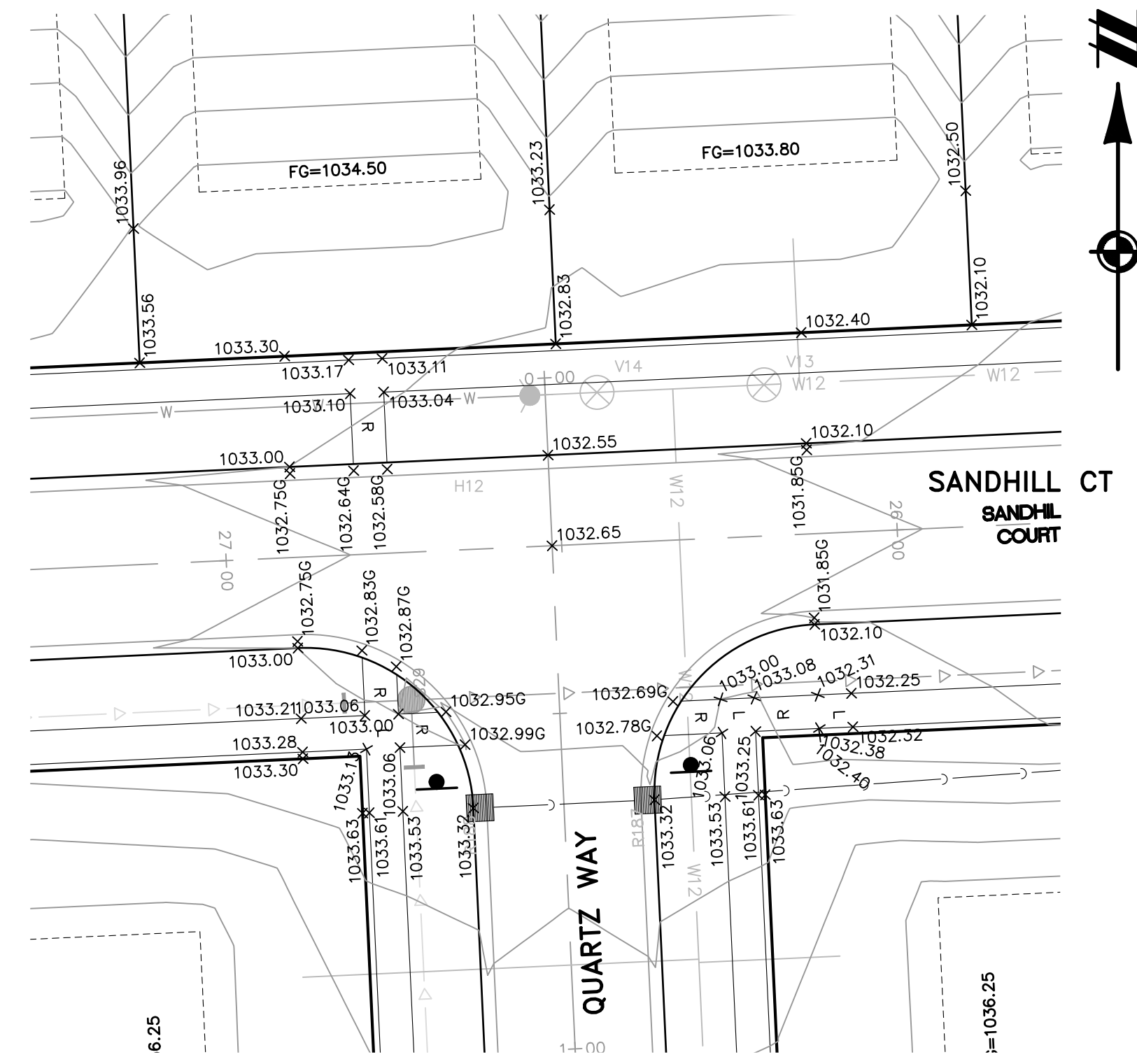
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SECTION 25
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OAKLAND COUNTY, MICHIGAN

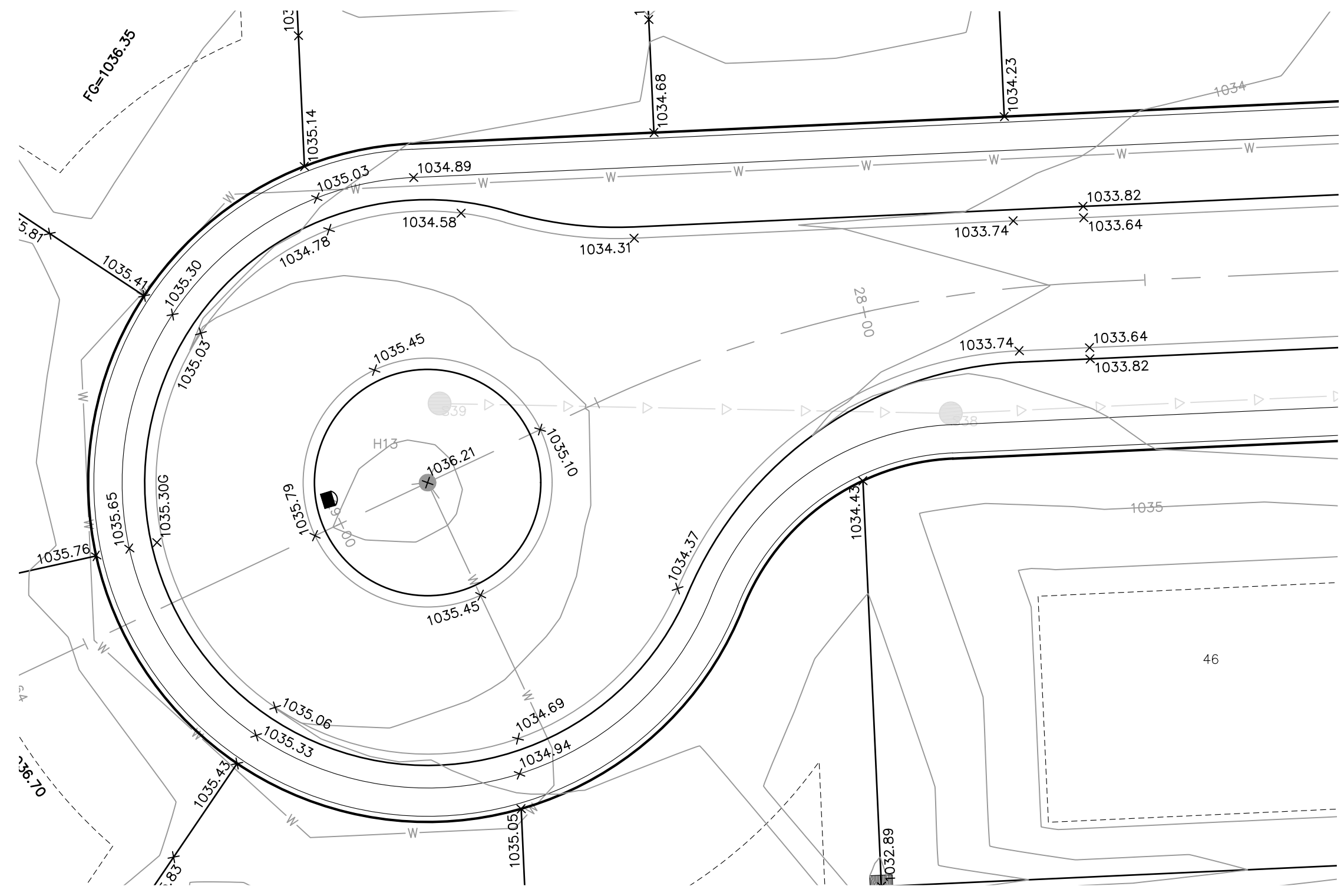
M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
GRADING DETAILS - INTERSECTION & CUL-DE-SAC

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

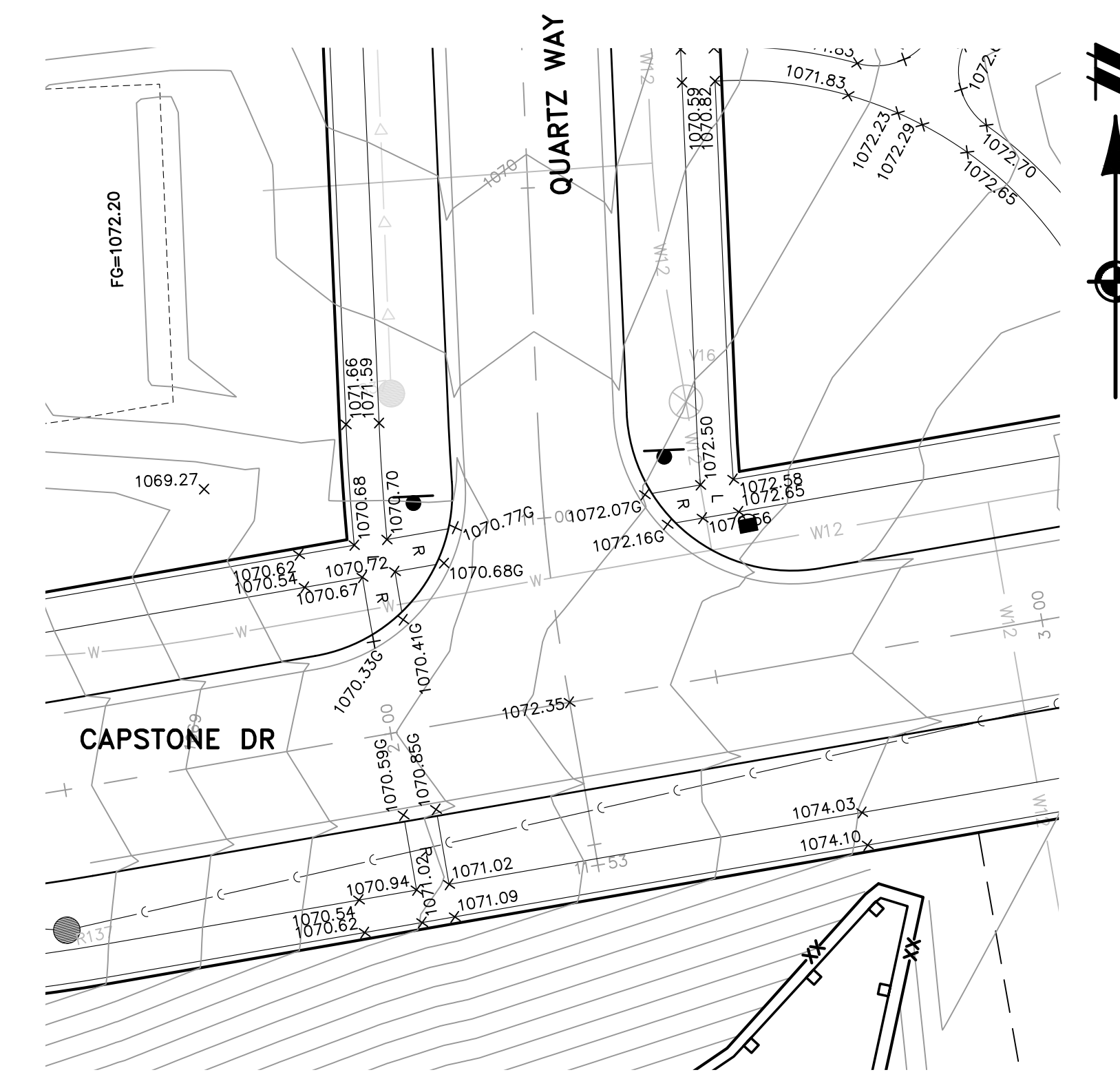
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P.M.	M BUSH
BOOK	--
JOB	18003309
SHEET NO.	12



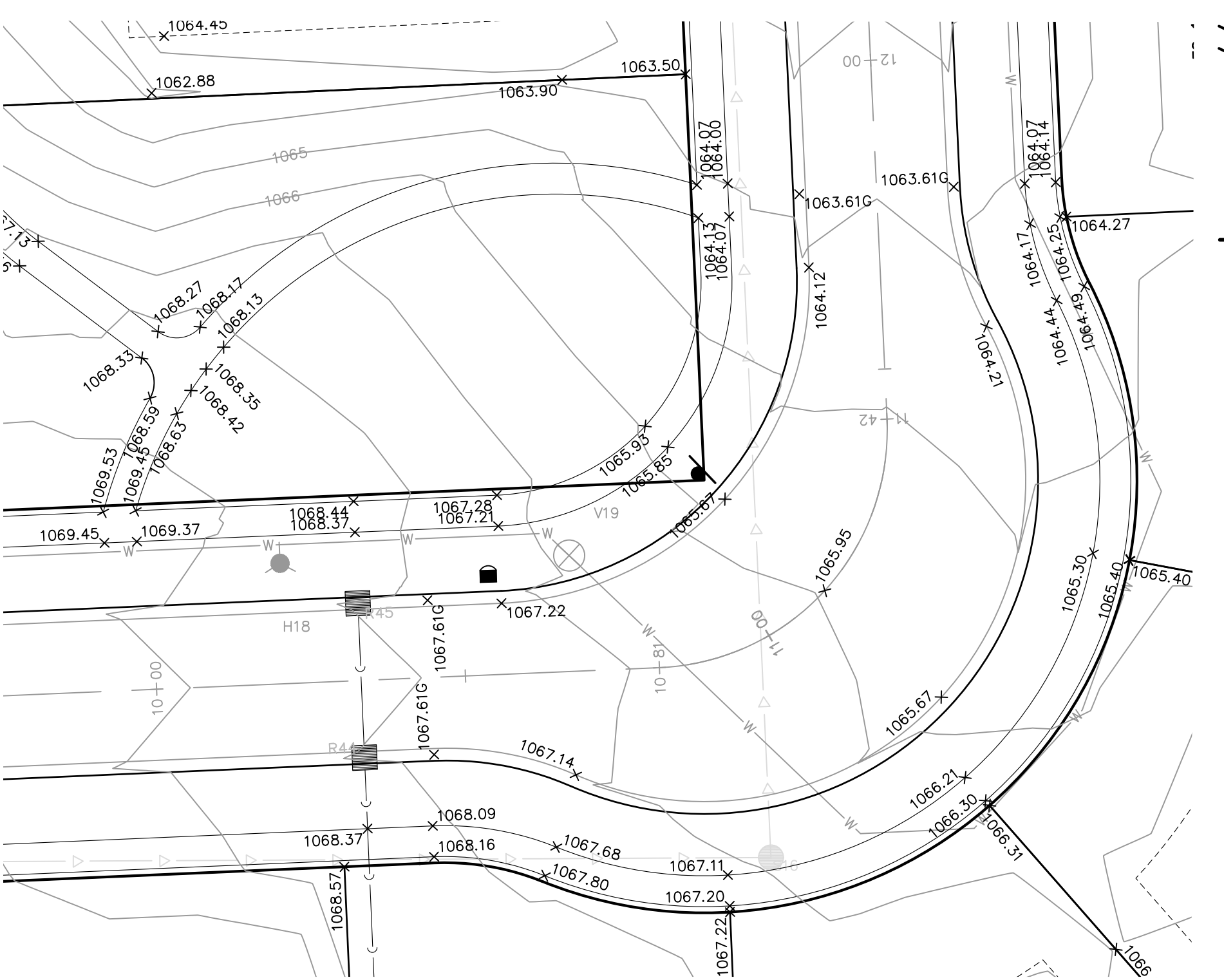
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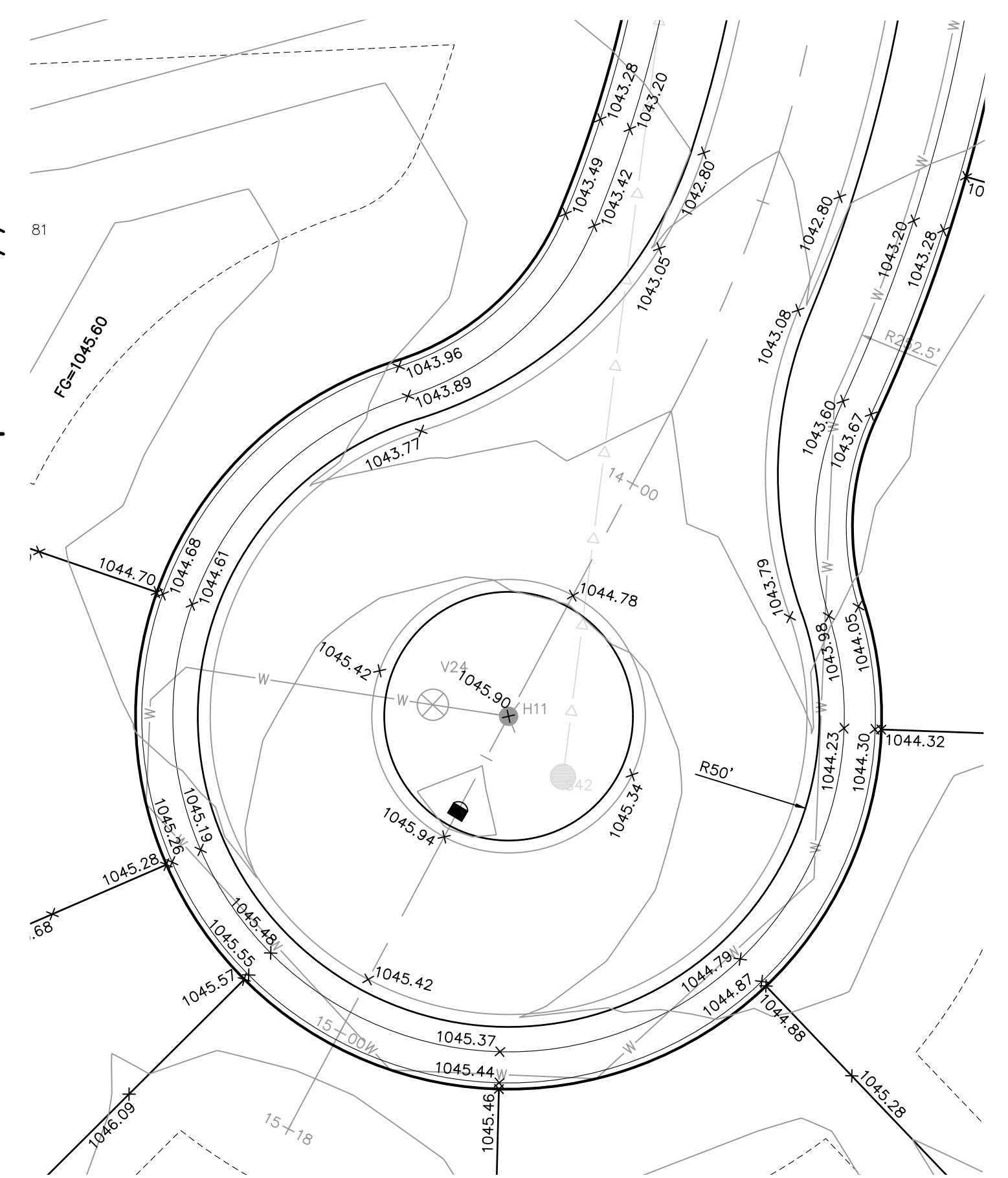
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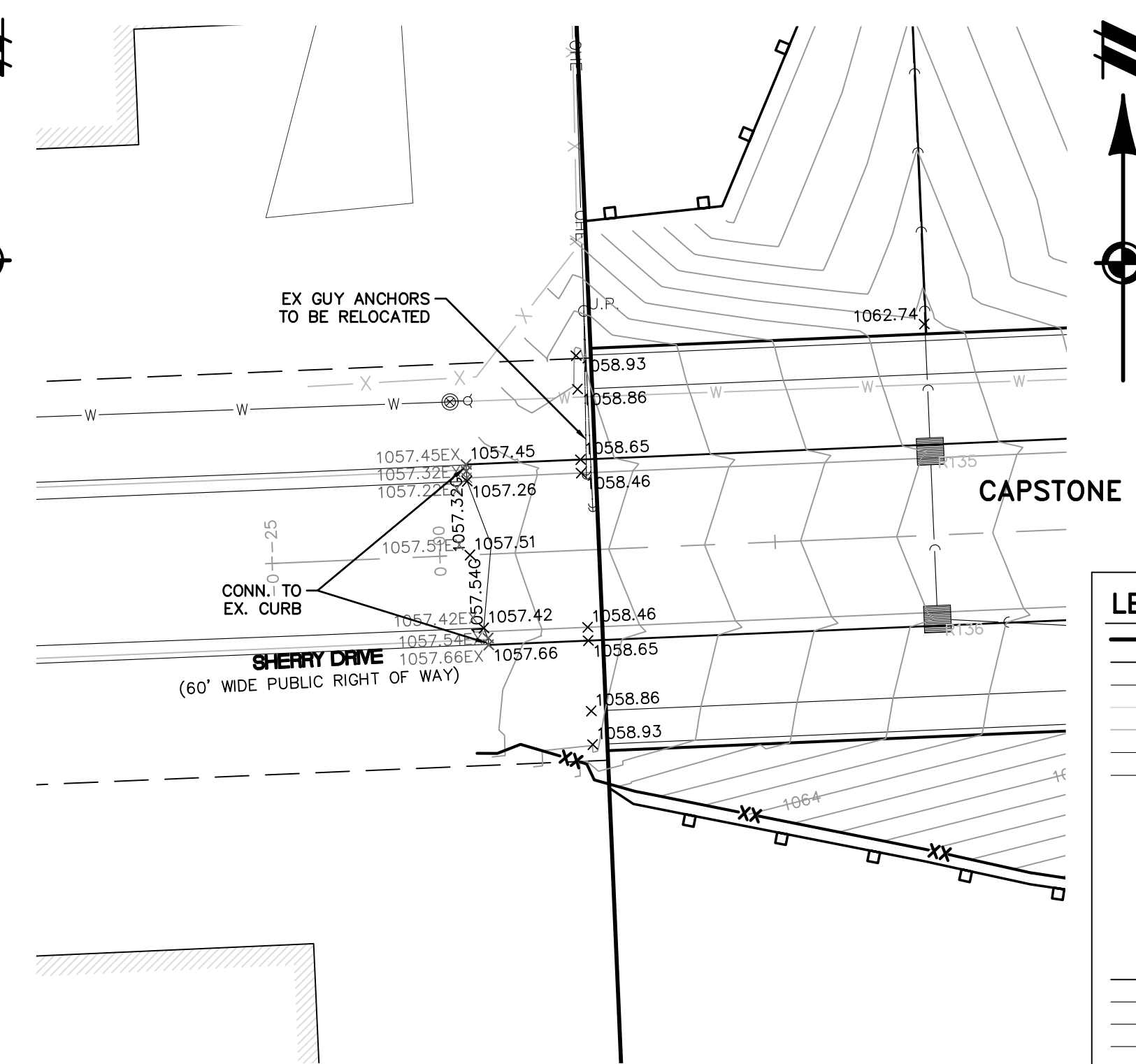
INTERSECTION (3)



EYEBROW DETAIL (4)



SADDLEBACK CT CUL-DE-SAC (5)



CONNECTION (6)

LEGEND

	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE

K:\18003309\PLAN SET\UTIL-FINAL - PHAS 2-3\DR-11-INTERSECTION PLAN-25-2021.dwg (11/11) AM WALTER SHERRIN

CAD FILE: 18003309S2-11-INTERSECTION PLAN.DWG

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OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
GRADING DETAILS - WALK 1

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OC/MRC
07/09/2021: AMENDMENT TO FSP

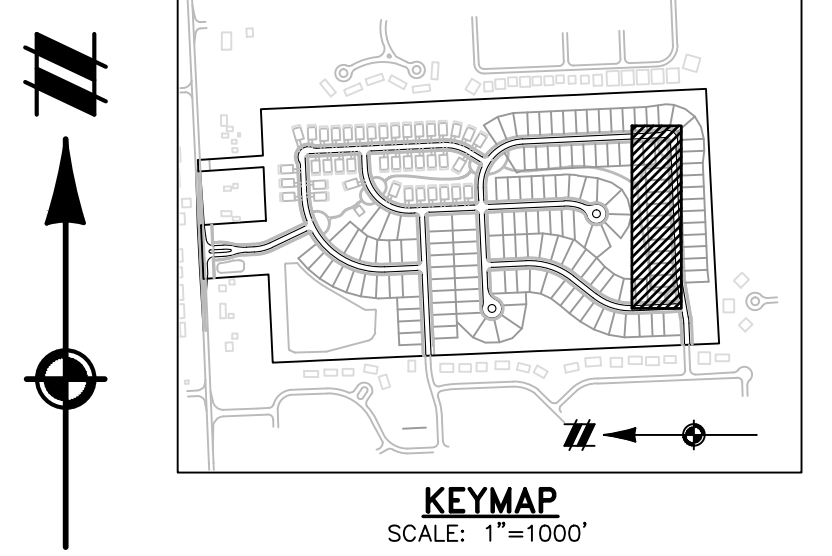
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DR. SK/KS GH. CK	
P.M. M BUSH	
BOOK --	
JOB 18003309	
SHEET NO. 13	



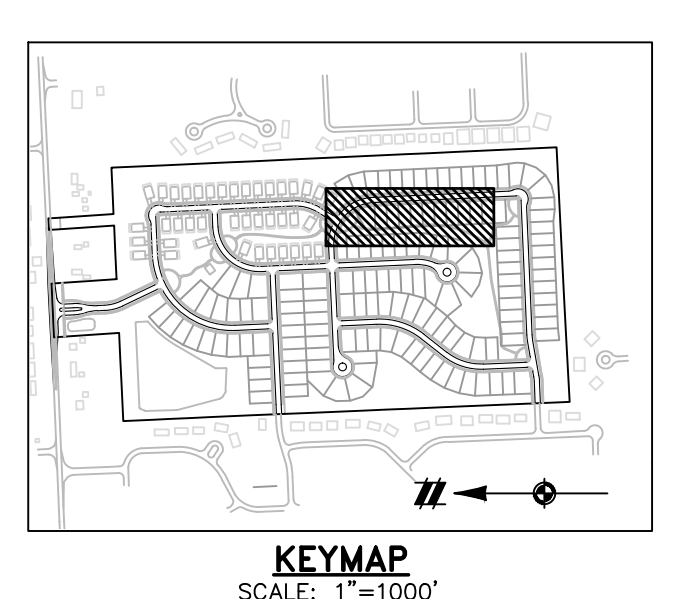
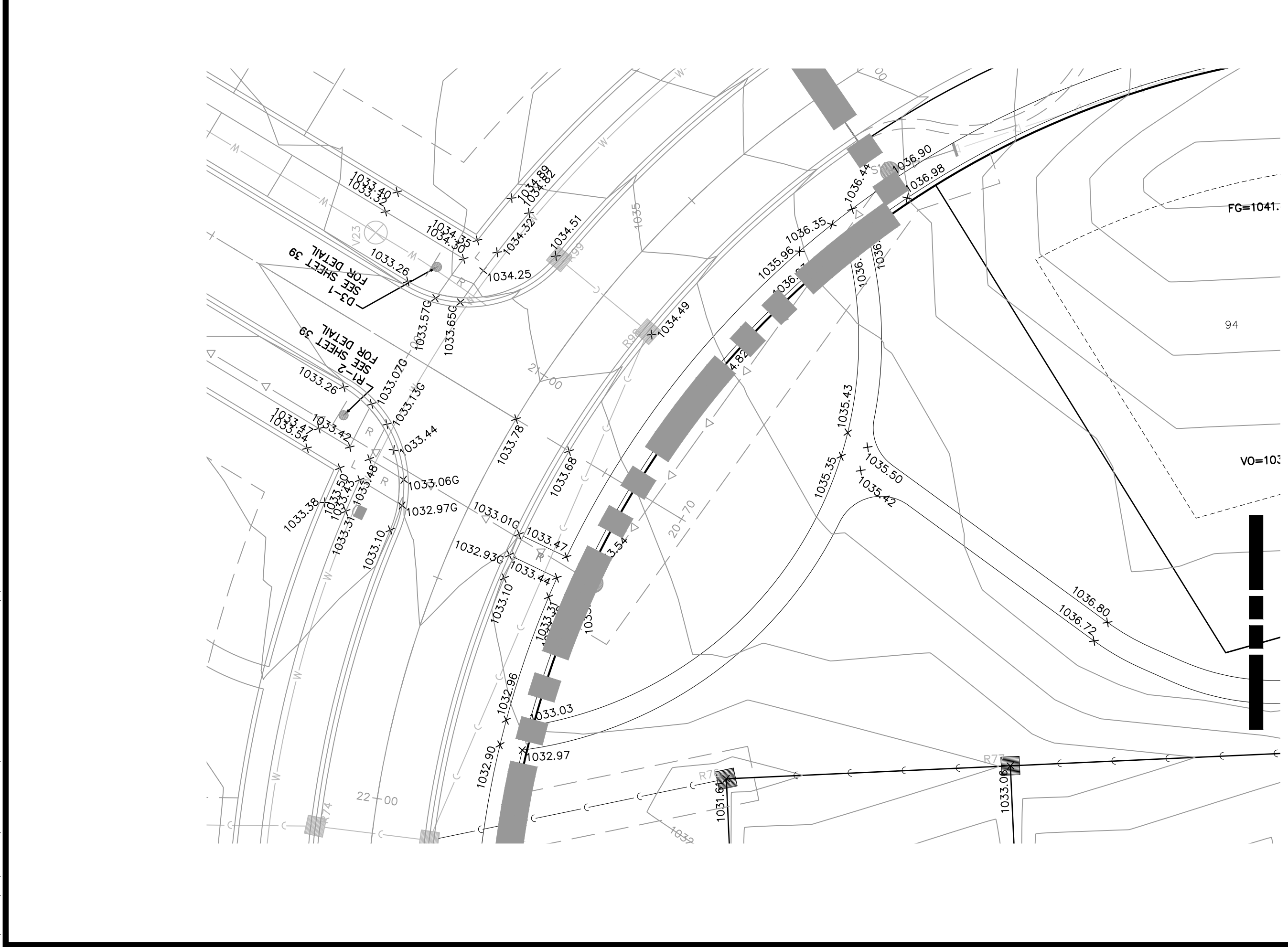
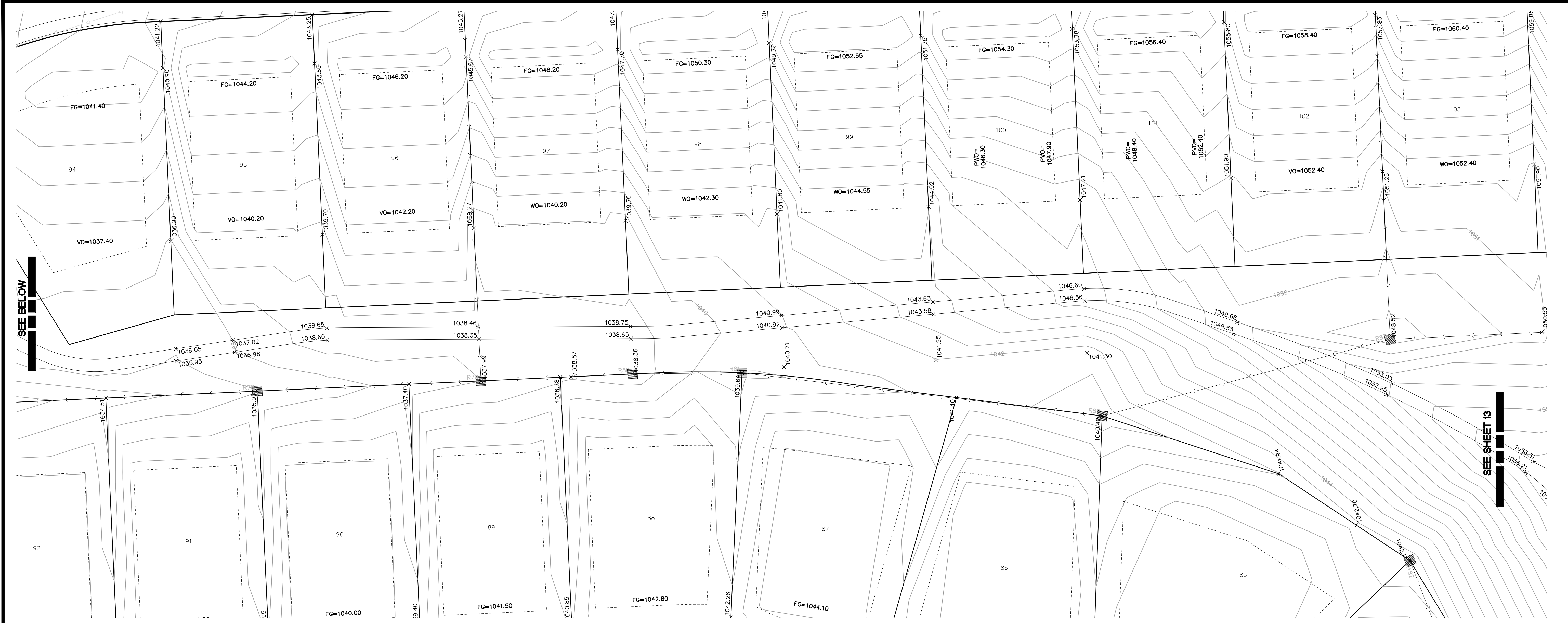
SEE BELOW

SEE SHEET 14

SEE ABOVE



LEGEND	
	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
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	PROP. 8" WATER MAIN
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	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE



LEGEND	
---	BOUNDARY LINE
---	PROPERTY LINE
---	EXIST. ROADS
---	EXIST. CONTOUR
---	EXIST. FENCE
---	EXIST. GRAVEL
---	EXIST. STORM SEWER
---	EXIST. BUILDING
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---	EXIST. CATCH BASIN
---	EXIST. END SECTION
---	PROP. CONTOUR
---	PROP. LOT LINE
---	PROP. RIGHT OF WAY
---	PROP. BACK OF CURB
---	PROP. SETBACK
---	PROP. SIDEWALK
---	PROP. BUILDING
---	PROP. STORM SEWER
---	PROP. SANITARY
---	PROP. 12" WATER MAIN
---	PROP. 8" WATER MAIN
---	PROP. END SECTION
---	PROP. CATCH BASIN/INLET
---	PROP. STORM MANHOLE
---	PROP. FIRE HYDRANT
---	PROP. VALVE

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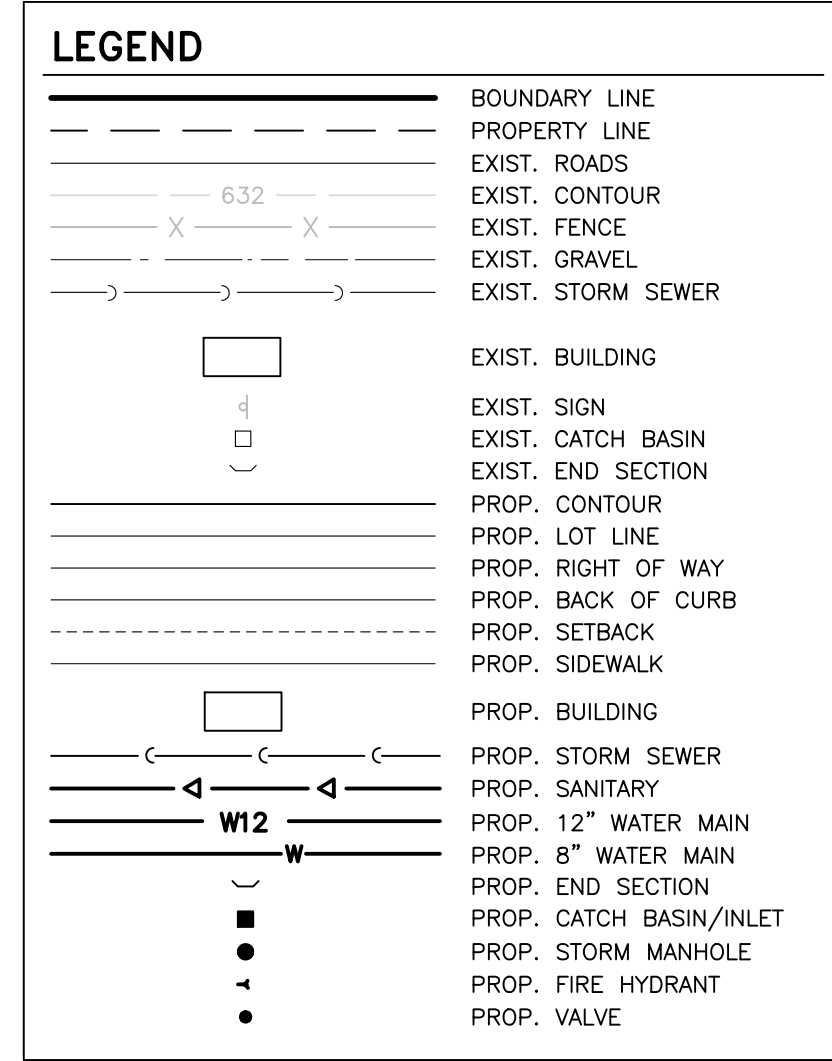
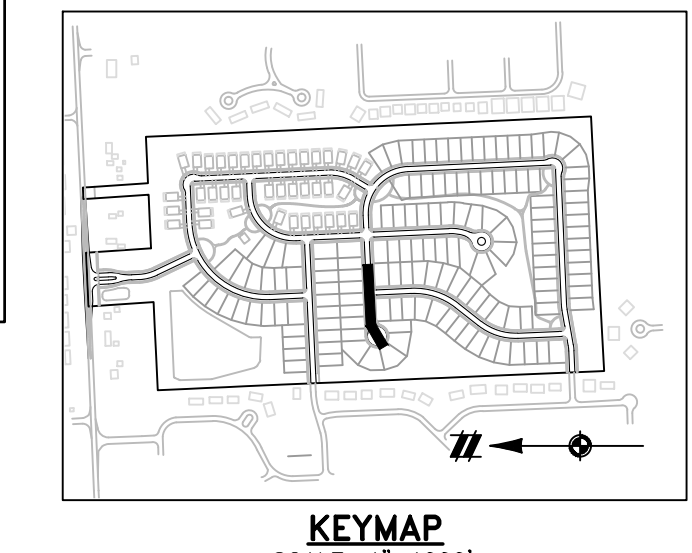
SECTION 25
 TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
 TRAILSIDE MEADOW
 FINAL SITE ENGINEERING PLAN
 PHASES 2-3
 GRADING DETAILS - WALK 2

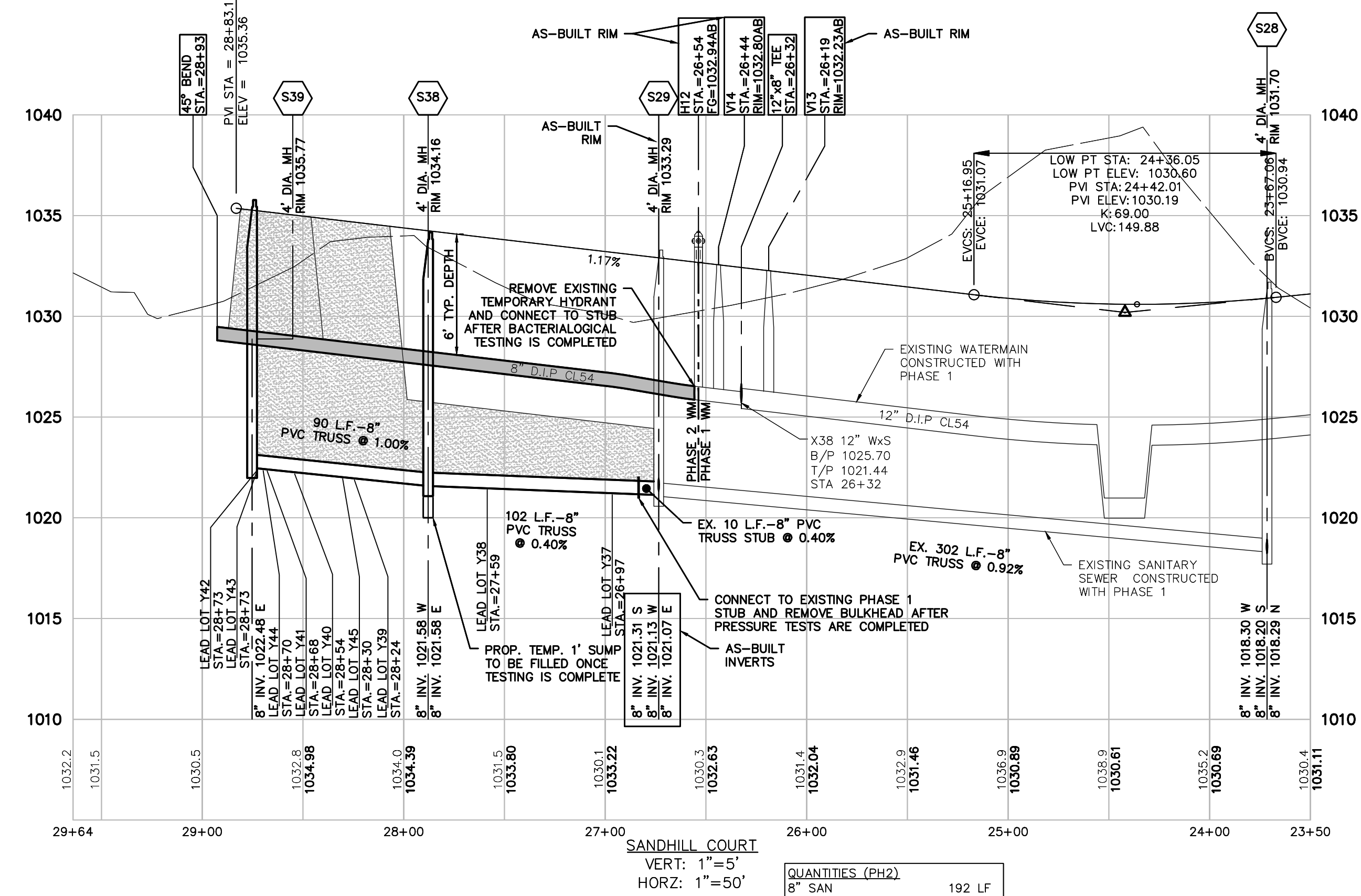
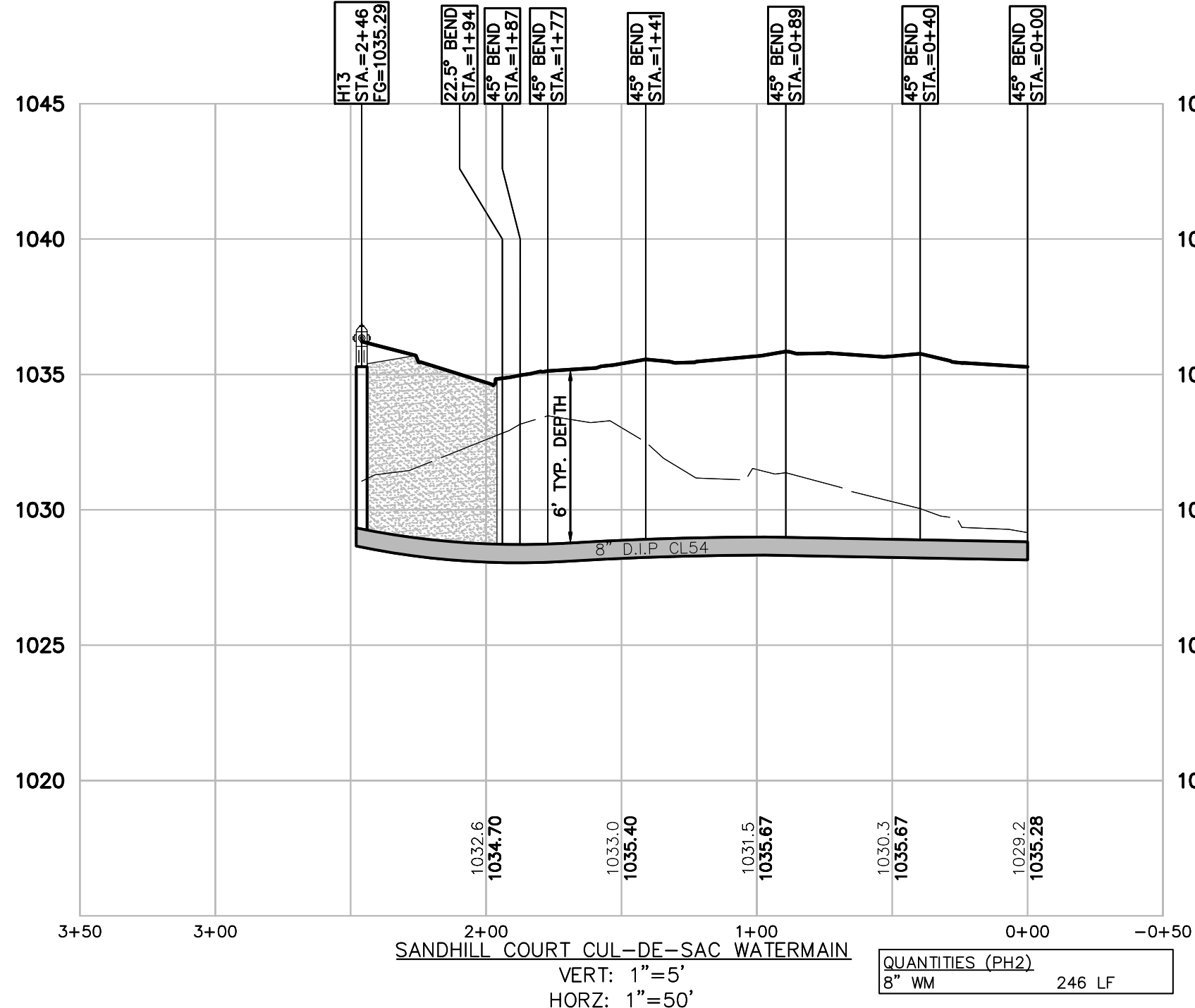
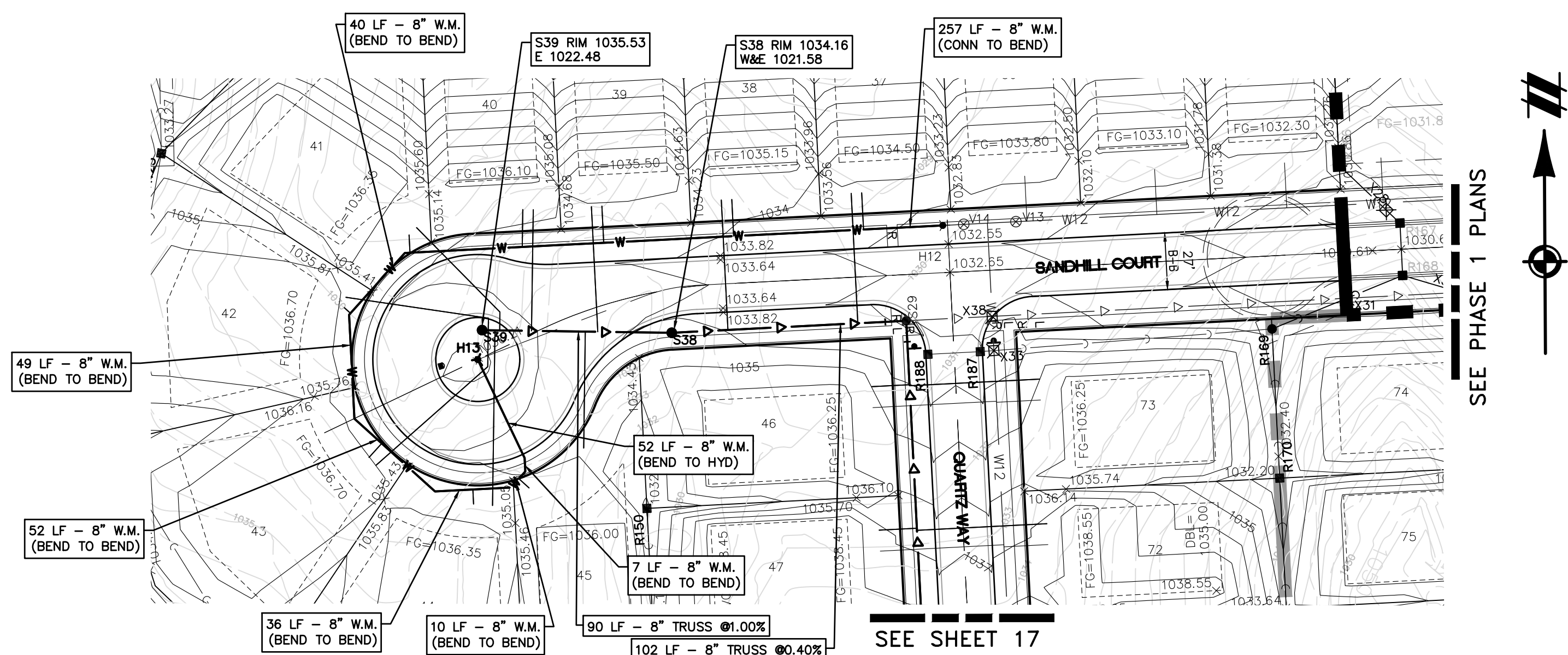
DATE: OCTOBER 29, 2020
 02/17/2021: REV PER TOWNSHIP
 05/27/2021: REV PER OCMRC
 07/09/2021: AMENDMENT TO FSP

REVISIONS	
SCALE	0 10 20
1" = 20 FEET	
DR. SK/KS	GH. CK
BOOK	--
JOB	18003309
SHEET NO.	14

CAD FILE: 18003309S2-11-INTERSECTION PLAN.DWG 7/26/2021 11:12 AM WALTER SHIBRA



- WATER MAIN NOTES:**
- ALL PROPOSED WATER MAIN SHALL BE DUCTILE IRON, CLASS 54
 - ALL WATER MAIN SHALL HAVE A MINIMUM OF 6' COVER, EXCEPT AT GATE WELLS WHERE 5' IS REQUIRED.
 - ALL HYDRANTS TO BE A MINIMUM 6' OFF BACK OF CURB
 - CENTER FULL STICK OF PIPE AT ALL WATER MAIN / UTILITY CROSSINGS.
 - ALL WATERMAIN SHOWN ON THIS SHEET SHALL BE CONSTRUCTED DURING PHASE 2.



SANITARY LEAD TABLE

LEAD NO.	SIZE	STA. FROM DIS. MANHOLE	RISER (FT)	LENGTH (FT)	INVERT ELEV. AT END OF LEAD	LOT FG.
Y37	6" SDR 23.5	STA 0+23	0.0' RISER	62 LF	1023.50	1034.50
Y38	6" SDR 23.5	STA 0+85	0.0' RISER	62 LF	1024.15	1035.15
Y39	6" SDR 23.5	STA 0+35	0.0' RISER	80 LF	1024.60	1035.60
Y40	6" SDR 23.5	STA 0+87	0.0' RISER	58 LF	1025.10	1036.10
Y41	6" SDR 23.5	STA 0+82	0.0' RISER	83 LF	1026.35	1038.35
Y42	6" SDR 23.5	STA 0+87	0.0' RISER	70 LF	1025.70	1038.70
Y43	6" SDR 23.5	STA 0+87	0.0' RISER	84 LF	1025.70	1038.70
Y44	6" SDR 23.5	STA 0+84	0.0' RISER	83 LF	1025.35	1038.35
Y45	6" SDR 23.5	STA 0+41	0.0' RISER	56 LF	1025.00	1036.00

GENERAL NOTES

1. ALL WORK MUST BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS AND GENERAL CONDITIONS OF WHITE LAKE TOWNSHIP.
2. ALL WORK WITHIN THE ROAD COMMISSION FOR OAKLAND COUNTY (ROC) RIGHT-OF-WAY (ROW) SHALL BE IN ACCORDANCE WITH THE CURRENT ROC STANDARDS AND GENERAL SPECIFICATIONS.
3. HORIZONTAL SEPARATION OF 10 FEET AND VERTICAL SEPARATION OF 1.5 FEET SHALL BE MAINTAINED BETWEEN ALL WATER MAINS AND SANITARY/STORM SEWERS.
4. CALL MISS DIG 72 HOURS IN ADVANCE OF ANY CONSTRUCTION.
5. ALL STORM SEWER SHALL BE CENTERED IN A 12' EASEMENT.
6. THE DEVELOPER SHALL CONTACT THE TOWNSHIP PLANNING DEPARTMENT AT (248) 898-3300 TO SCHEDULE A PRECONSTRUCTION MEETING. ATTENDANCE AT THE PRECONSTRUCTION MEETING INCLUDE THE DEVELOPER'S PRIME CONTRACTOR. A COPY OF ALL PERMITS MUST BE SUBMITTED TO THE PLANNING DEPARTMENT PRIOR TO SCHEDULING THE MEETING.
7. THE DEVELOPER SHALL CONTACT THE TOWNSHIP ENGINEER AT (248)334-8901 48 HOURS PRIOR TO STARTING CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE INSPECTOR ADVISED OF THE NEED FOR INSPECTION ON A DAILY BASIS. LACKING SPECIFIC SCHEDULING WITH THE INSPECTOR, THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE TOWNSHIP ENGINEER PRIOR TO RECOMMENCING WORK REQUIRING INSPECTION. FAILURE TO INFORM THE TOWNSHIP ENGINEER OF THE NEED FOR A WORK CANCELLATION MAY RESULT IN A ONE-HALF DAY INSPECTION CHARGE TO THE DEVELOPER.
8. ALL WATER MAIN AND SANITARY SEWER WORK WILL REQUIRE FULL TIME INSPECTION. FULL TIME INSPECTION WILL GENERALLY BE REQUIRED FOR UNDERGROUND STORM SEWER CONSTRUCTION, CONCRETE CURBING AND PAVING OPERATIONS. SITE GRADING AND DETENTION BASIN CONSTRUCTION WILL GENERALLY BE INSPECTED ON AN INTERMITTENT BASIS.

WATER SYSTEM NOTES

1. MINIMUM WATER PRESSURE AT A DEAD END SHALL BE 20 PSI (RESIDUAL), AND 1000 GPM FLOW.
2. WATER MAIN TO BE PLACED 7.5' INSIDE THE ROW LINE, GENERALLY ON THE N AND E SIDE.
3. ALL WATER MAIN SHALL BE CENTERED ON A 20-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60-FOOT PRIVATE ROAD EASEMENT.
4. PROVIDE 6 FEET OF COVER EXCEPT AT GATE WELLS (5-FEET)
5. STREET TREES TO BE LOCATED A MINIMUM 3 FEET FROM WATER MAIN.
6. WATER MAIN SHALL BE DUCTILE IRON, CLASS 54 W/ PUSH-ON JOINTS (INC. BENDS AND TEES)
7. MINIMUM DOMESTIC SERVICE SHALL BE 1-INCH
8. HYDRANT LEADS MAY BE 6-INCH DIAMETER EXCEPT WHERE OVER 40 FEET IN LENGTH.
9. VALVES AND GATE WELLS SHALL BE LOCATED SO THAT NO MORE THAN FOUR (4) VALVES MUST BE CLOSED TO ISOLATE A SECTION OF WATER MAIN.
10. VALVES SHALL BE LOCATED SO THAT NO MORE THAN 800 FEET OF WATERMAIN WILL BE OUT OF SERVICE.
11. HYDRANT SPACING SHALL BE 500 FEET MAXIMUM IN SINGLE FAMILY RESIDENTIAL AREAS, AND SHOULD BE LOCATED AT INTERSECTIONS WHERE PRACTICAL.
12. ALL MAINLINE GATE VALVES ARE TO BE WITHIN GATE WELLS, MATCHING THE WATERMAIN SIZE.
13. HYDRANTS AND AUXILIARY VALVES SHALL BE LOCATED TO BE READILY AVAILABLE BY FIRE FIGHTING EQUIPMENT.
14. HYDRANTS TO BE LOCATED 6 FEET FROM BACK OF CURB.
15. WATERMAIN AROUND CUL-DE-SACS SHALL EXTEND AROUND THE BULB TO SERVE ALL FRONTING LOTS, WITH A TERMINUS HYDRANT LOCATED IN THE CUL-DE-SAC ISLAND IN A POSITION MOST PROMINENT TO ONCOMING TRAFFIC.
16. REFER TO WHITE LAKE TOWNSHIP "STANDARD WATER MAIN DETAILS" FOR ADDITIONAL REQUIREMENTS FOR CONSTRUCTION.
17. PER WHITE LAKE TOWNSHIP WATER MASTER PLAN, PROVIDE A 12-INCH MAIN FROM ELIZABETH LAKE ROAD TO THE SOUTHERN CONNECTION AT THE 12-INCH STUB IN WILDFLOWER MANOR. REMAINING WATER MAIN SHALL BE 8-INCH DIAMETER.

SANITARY SYSTEM NOTES

1. GENERALLY, NO SEWER SHALL BE LESS THAN 8 FEET DEEP FROM CROWN OF ROAD TO SEWER INVERT. IN NO CASE SHALL SEWER HAVE LESS THAN 4 FEET OF COVER.
2. SANITARY SEWER TO BE PLACED 7.5' INSIDE THE ROW LINE, GENERALLY ON THE S AND W SIDE.
3. ALL SANITARY SEWER SHALL BE CENTERED ON A 20-FOOT EASEMENT WHERE LOCATED OUTSIDE THE 60-FOOT PRIVATE ROAD EASEMENT.
4. PROVIDE 6- FEET OF COVER EXCEPT AT GATE WELLS (5- FEET)
5. STREET TREES TO BE LOCATED A MINIMUM 3- FEET FROM SEWER MAIN.
6. PIPE MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT STANDARDS OF WHITE LAKE TOWNSHIP AND OAKLAND COUNTY WATER RESOURCE COMMISSIONER (OCWRC).
7. CURRENT OCWRC "SANITARY SEWER CONSTRUCTION NOTES" MUST BE SHOWN ON FINAL CONSTRUCTION PLANS.
8. OCWRC "STANDARD BEDDING" DETAILS SHALL BE USED FOR THE PIPE UTILIZED.
9. PROPOSED SANITARY SEWER SHALL BE 8" MINIMUM DIAMETER.
10. SERVICE LEADS SHALL BE 6 INCH MINIMUM INSTALLED AT A MINIMUM 1% GRADE.
11. PROVIDE A 1 FOOT DEEP SUMP AT FURTHEST DOWNSTREAM MANHOLE FOR CONSTRUCTION AND TESTING PURPOSES
12. FURTHEST UPSTREAM PIPE RUNS SHALL HAVE A MINIMUM 1% GRADE UNLESS APPROVED BY THE TOWNSHIP ENGINEER.
13. NO CONDUIT THAT CARRIES STORMWATER OR GROUND WATER IS PERMITTED TO DISCHARGE WHERE THE SANITARY SEWER SYSTEM.
14. INTERNAL DROP CONNECTIONS PER OAKLAND COUNTY STANDARD DETAILS ARE REQUIRED WHERE A DROP OF 18 INCHES OR MORE OCCURS AT A MANHOLE.
15. MATCH THE 8/10 POINT AT MANHOLES WHERE DIFFERING PIPE SIZES ARE PROPOSED.
16. WHERE A CHANGE IN PIPE DIRECTION OF 135 DEGREES OR LESS IS CREATED AT A MANHOLE, PROVIDE A 0.1 FOOT DROP IN PIPE INVERTS FROM UPSTREAM TO DOWNSTREAM.
17. REFER TO THE "SANITARY SEWER STANDARD DETAILS" SHEET(S) FOR ADDITIONAL REQUIREMENTS FOR CONSTRUCTION, TO BE PROVIDED ON ENGINEERING PLANS.



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 HELD RESPONSIBLE FOR SAFETY OF THE WORK OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

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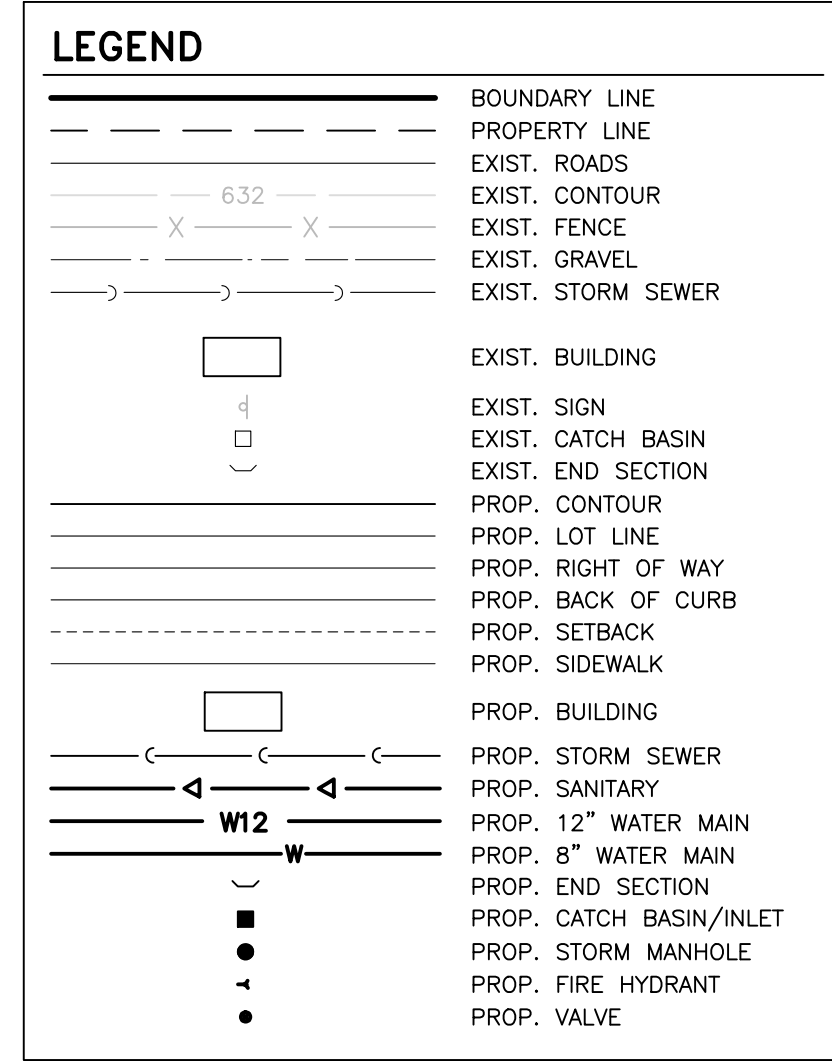
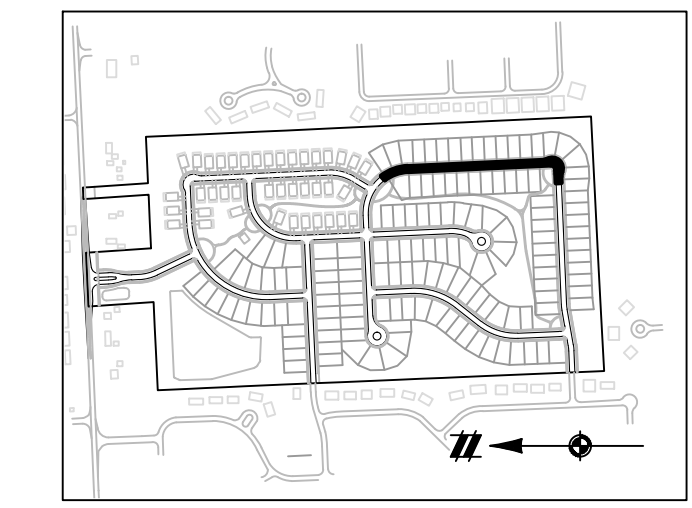
SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
SANDHILL COURT SANITARY & WATER MAIN PLAN

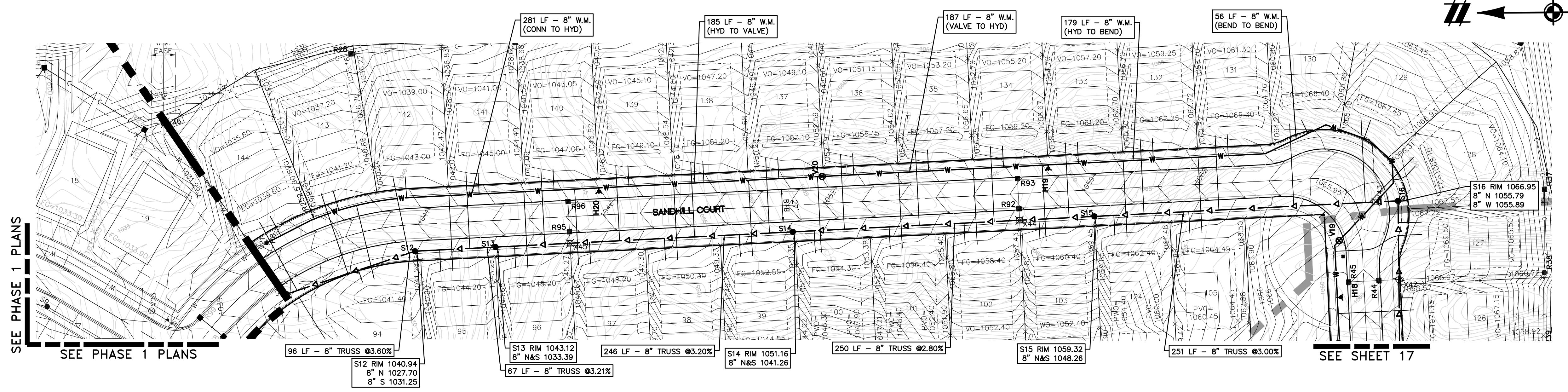
DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO PSP

Table with 2 columns: REVISIONS, SCALE. Includes scale bar from 0 to 50 feet and a note '1" = 50 FEET'.

DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 16



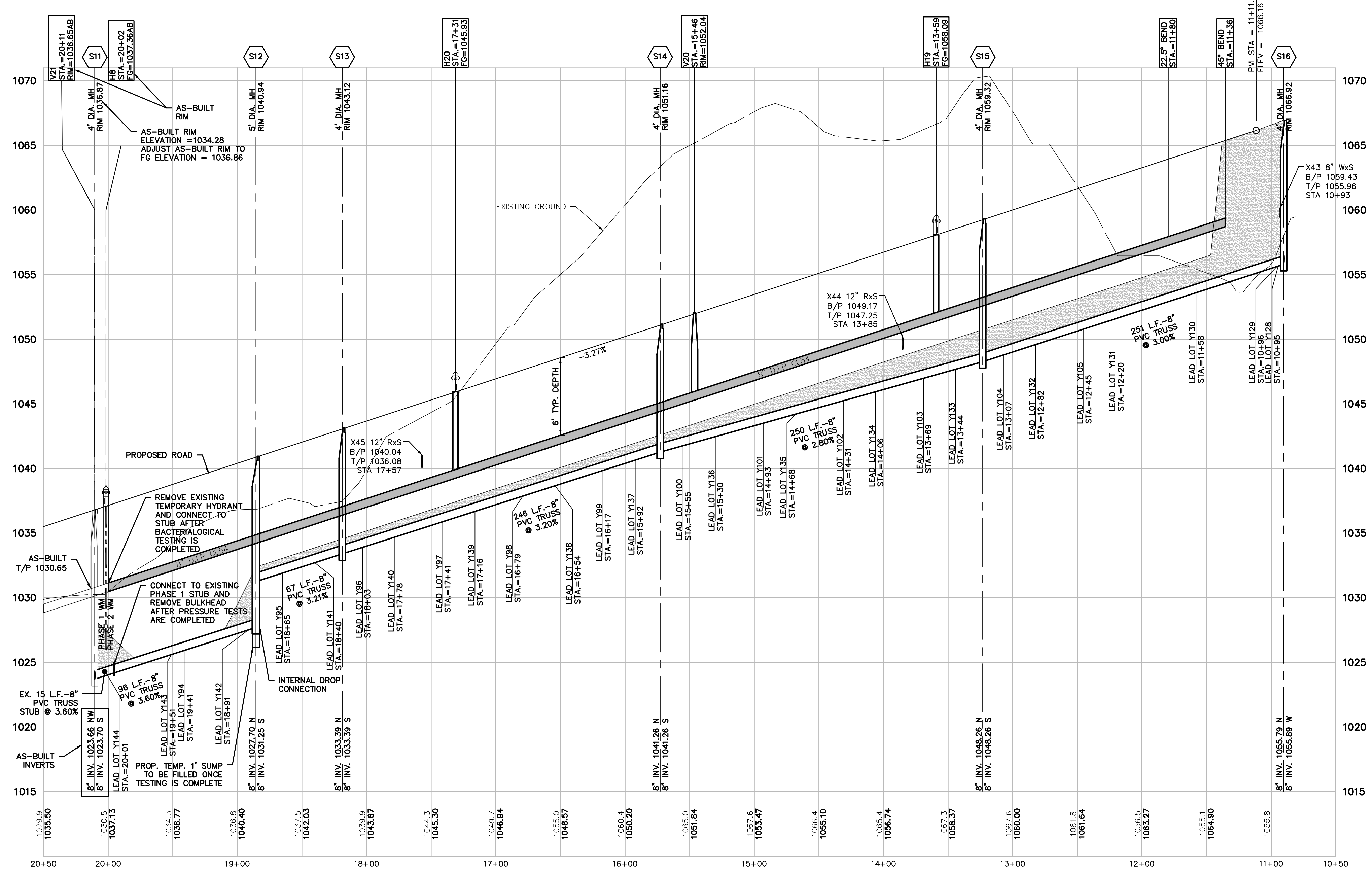
WATER MAIN NOTES:
• ALL PROPOSED WATER MAIN SHALL BE DUCTILE IRON, CLASS 54
• ALL WATER MAIN SHALL HAVE A MINIMUM OF 6' COVER, EXCEPT AT GATE WELLS WHERE 5' IS REQUIRED.
• ALL HYDRANTS TO BE A MINIMUM 6' OFF BACK OF CURB
• CENTER FULL STICK OF PIPE AT ALL WATER MAIN / UTILITY CROSSINGS.
• ALL WATERMAIN SHOWN ON THIS SHEET SHALL BE CONSTRUCTED DURING PHASE 2.



SEE PHASE 1 PLANS

SEE PHASE 1 PLANS

SEE SHEET 17



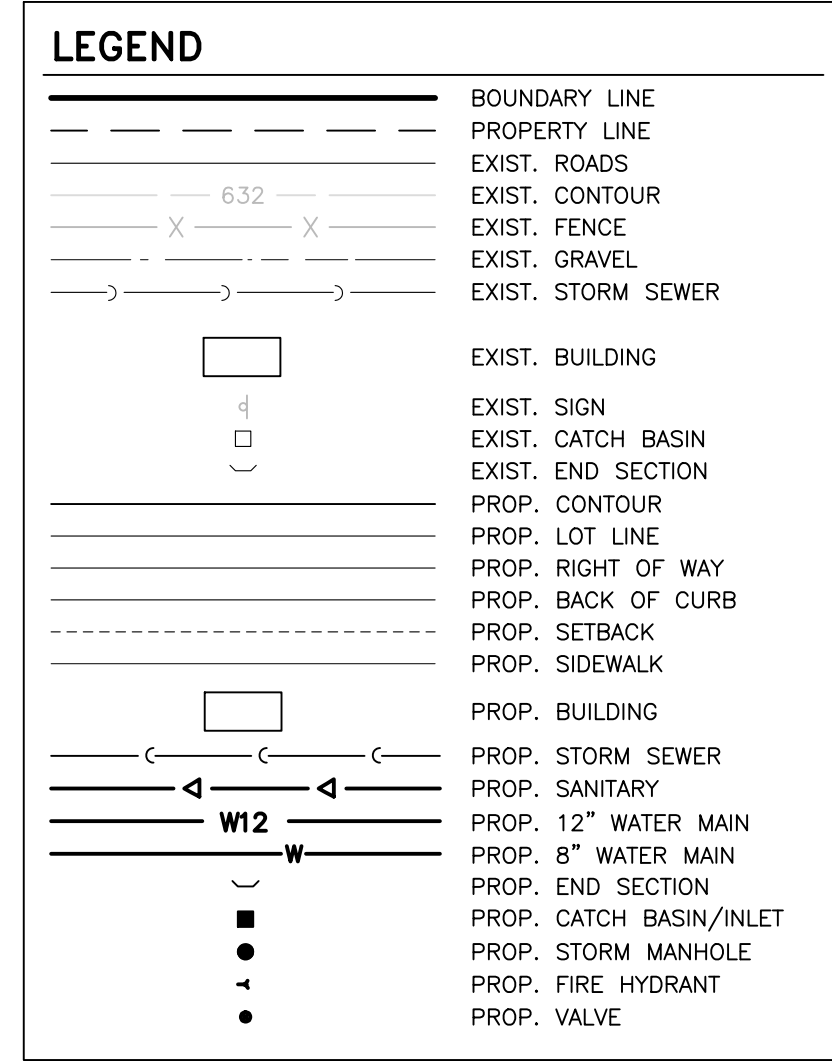
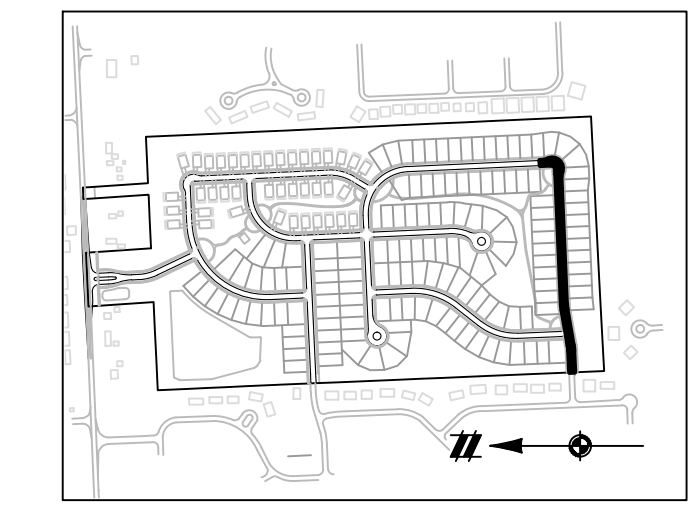
SANITARY LEAD TABLE

LEAD NO	SIZE	STA FROM DIS MANHOLE	RISE (FT)	LENGTH (FT)	INVERT ELEV AT END OF LEAD	LOT FG
Y94	6" SDR 23.5	STA 0+62	3.5' RISER	11 LF	1030.40	1041.40
Y95	6" SDR 23.5	STA 0+20	0.0' RISER	18 LF	1033.20	1044.20
Y96	6" SDR 23.5	STA 0+16	0.0' RISER	18 LF	1035.20	1046.20
Y97	6" SDR 23.5	STA 0+78	0.0' RISER	18 LF	1037.20	1048.20
Y98	6" SDR 23.5	STA 1+40	0.0' RISER	18 LF	1039.30	1050.30
Y99	6" SDR 23.5	STA 2+02	0.0' RISER	18 LF	1041.55	1052.55
Y100	6" SDR 23.5	STA 0+16	0.0' RISER	18 LF	1043.30	1054.30
Y101	6" SDR 23.5	STA 0+30	1.0' RISER	18 LF	1045.40	1056.40
Y102	6" SDR 23.5	STA 1+42	1.0' RISER	18 LF	1047.40	1058.40
Y103	6" SDR 23.5	STA 2+04	1.5' RISER	18 LF	1049.40	1060.40
Y104	6" SDR 23.5	STA 0+16	1.0' RISER	18 LF	1051.40	1062.40
Y105	6" SDR 23.5	STA 0+78	2.0' RISER	18 LF	1053.45	1064.45
Y106	6" SDR 23.5	STA 2+28	0.0' RISER	52 LF	1057.10	1068.10
Y107	6" SDR 23.5	STA 2+24	0.0' RISER	71 LF	1056.45	1067.45
Y108	6" SDR 23.5	STA 1+65	0.0' RISER	68 LF	1055.40	1066.40
Y109	6" SDR 23.5	STA 1+03	0.0' RISER	62 LF	1054.30	1065.30
Y110	6" SDR 23.5	STA 0+41	0.0' RISER	62 LF	1052.25	1063.25
Y111	6" SDR 23.5	STA 2+29	0.0' RISER	62 LF	1050.20	1061.20
Y112	6" SDR 23.5	STA 1+67	0.0' RISER	62 LF	1048.20	1059.20
Y113	6" SDR 23.5	STA 1+05	0.0' RISER	62 LF	1046.20	1057.20
Y114	6" SDR 23.5	STA 0+43	0.0' RISER	62 LF	1044.15	1055.15
Y115	6" SDR 23.5	STA 2+27	0.0' RISER	62 LF	1042.10	1053.10
Y116	6" SDR 23.5	STA 1+65	0.0' RISER	62 LF	1040.20	1051.20
Y117	6" SDR 23.5	STA 1+03	0.0' RISER	62 LF	1038.10	1049.10
Y118	6" SDR 23.5	STA 0+41	0.0' RISER	62 LF	1036.05	1047.05
Y119	6" SDR 23.5	STA 0+45	0.0' RISER	62 LF	1034.00	1045.00
Y120	6" SDR 23.5	STA 1+06	3.0' RISER	70 LF	1032.00	1043.00
Y121	6" SDR 23.5	STA 0+33	3.0' RISER	70 LF	1030.20	1041.20
Y122	6" SDR 23.5	STA 0+28	3.0' RISER	64 LF	1028.80	1039.80

QUANTITIES (PH2)
8" SAN 910 LF
8" WM 888 LF

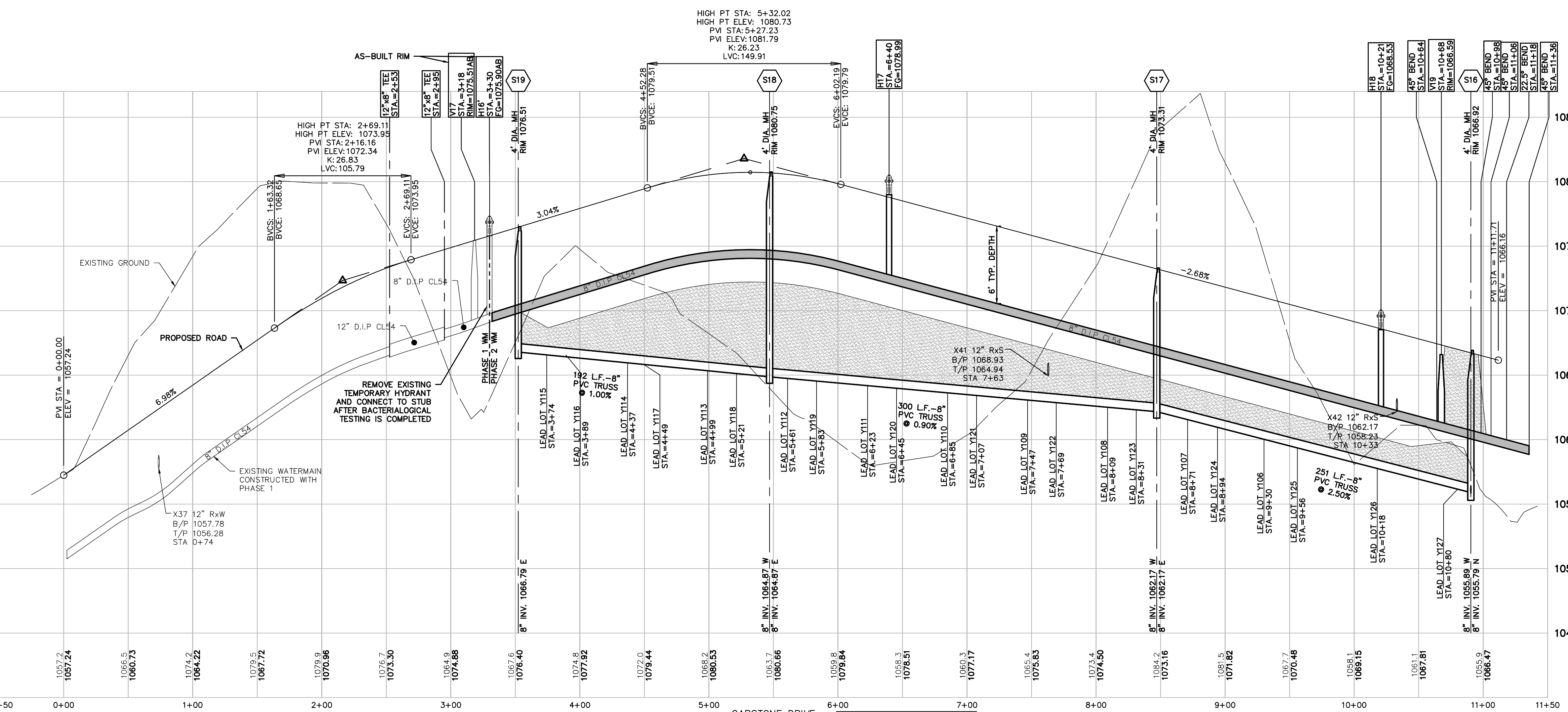
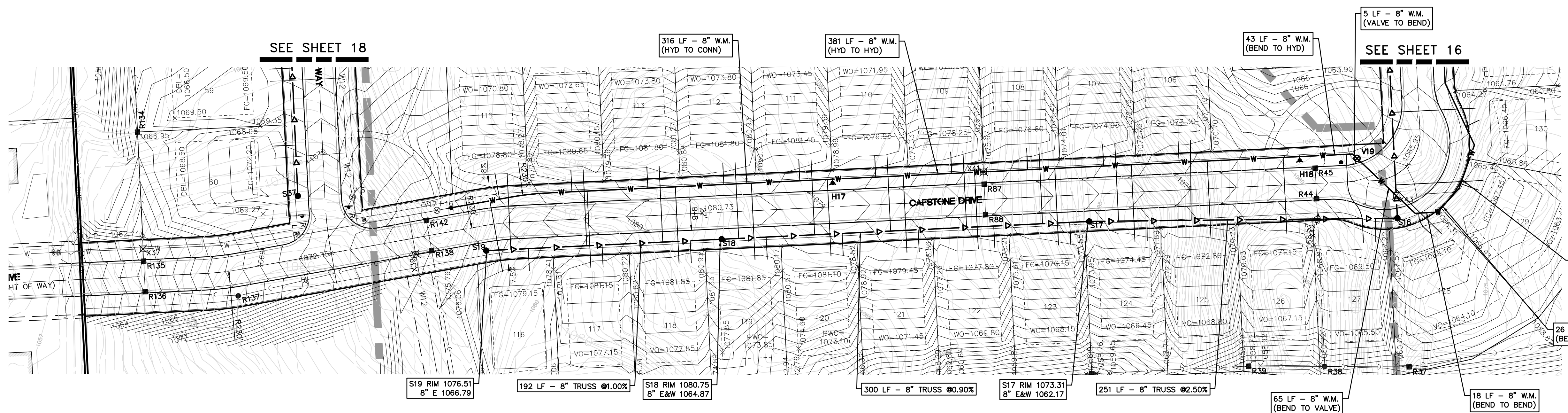
SANDHILL COURT
VERT: 1"=5'
HORIZ: 1"=50'

CAD FILE: 18003309S2-15-ROADWORK-15-ROADWORK.DWG



WATER MAIN NOTES:

- ALL PROPOSED WATER MAIN SHALL BE DUCTILE IRON, CLASS 54
- ALL WATER MAIN SHALL HAVE A MINIMUM OF 6' COVER, EXCEPT AT GATE WELLS WHERE 5' IS REQUIRED.
- ALL HYDRANTS TO BE A MINIMUM 6' OFF BACK OF CURB.
- CENTER FULL STICK OF PIPE AT ALL WATER MAIN / UTILITY CROSSINGS.
- ALL WATERMAIN SHOWN ON THIS SHEET SHALL BE CONSTRUCTED DURING PHASE 2.



SANITARY LEAD TABLE

LEAD NO.	SIZE	STA. FROM DIS MANHOLE	RISER (FT)	LENGTH (FT)	INVERT ELEV AT END OF LEAD	LOT FG
Y106	6" SDR 23.5	STA 1+68	0'0" RISER	63 LF	1063.30	1073.30
Y107	6" SDR 23.5	STA 2+27	0'0" RISER	63 LF	1063.95	1074.95
Y108	6" SDR 23.5	STA 0+38	0'0" RISER	62 LF	1065.60	1076.60
Y109	6" SDR 23.5	STA 1+00	2'5" RISER	62 LF	1067.25	1078.25
Y110	6" SDR 23.5	STA 1+62	4'0" RISER	62 LF	1068.95	1079.95
Y111	6" SDR 23.5	STA 2+24	4'5" RISER	62 LF	1070.45	1081.45
Y112	6" SDR 23.5	STA 2+86	4'5" RISER	62 LF	1070.80	1081.80
Y113	6" SDR 23.5	STA 0+48	4'0" RISER	62 LF	1070.80	1081.80
Y114	6" SDR 23.5	STA 1+10	0'0" RISER	62 LF	1069.65	1080.65
Y115	6" SDR 23.5	STA 1+72	0'0" RISER	62 LF	1067.88	1078.88
Y116	6" SDR 23.5	STA 1+58	0'0" RISER	18 LF	1068.15	1079.15
Y117	6" SDR 23.5	STA 0+98	3'0" RISER	18 LF	1070.15	1081.15
Y118	6" SDR 23.5	STA 0+26	4'5" RISER	18 LF	1070.85	1081.85
Y119	6" SDR 23.5	STA 2+64	5'0" RISER	18 LF	1070.85	1081.85
Y120	6" SDR 23.5	STA 2+02	5'0" RISER	18 LF	1070.10	1081.10
Y121	6" SDR 23.5	STA 1+40	4'0" RISER	18 LF	1068.45	1079.45
Y122	6" SDR 23.5	STA 0+78	3'0" RISER	18 LF	1066.80	1077.80
Y123	6" SDR 23.5	STA 0+18	1'5" RISER	18 LF	1065.15	1076.15
Y124	6" SDR 23.5	STA 2+04	1'5" RISER	16 LF	1063.45	1074.45
Y125	6" SDR 23.5	STA 1+42	1'5" RISER	14 LF	1061.80	1072.80
Y126	6" SDR 23.5	STA 0+80	1'0" RISER	12 LF	1060.15	1071.15
Y127	6" SDR 23.5	STA 0+18	1'0" RISER	19 LF	1058.50	1069.50

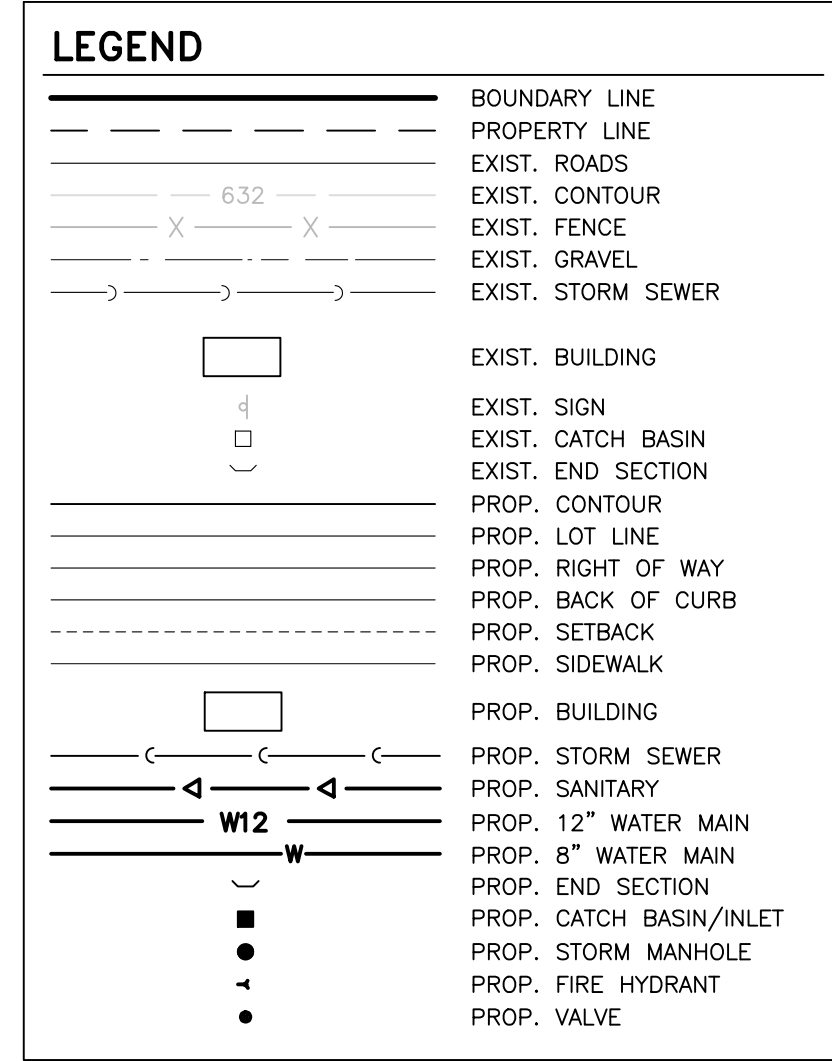
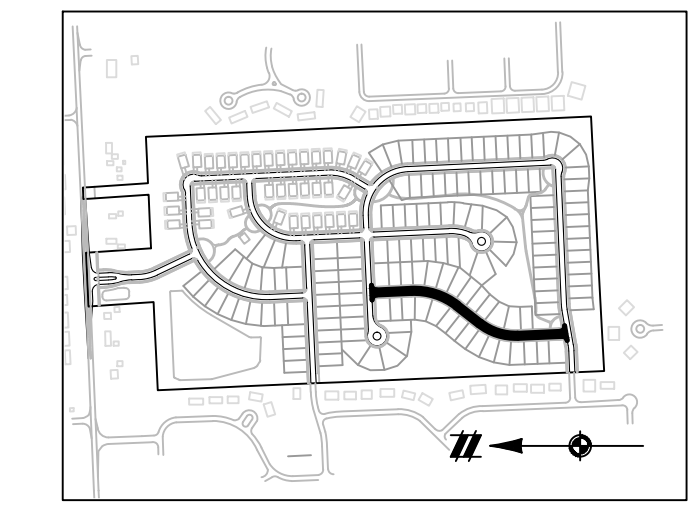
QUANTITIES (PH2)
743 LF
8" SAN
8" WM

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN
M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
CAPSTONE DRIVE SANITARY & WATER MAIN PLAN

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

REVISIONS
SCALE: 0 25 50
1" = 50 FEET
DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 17

NO.	DATE	DESCRIPTION
1	10/29/20	ISSUED FOR PERMIT
2	02/17/21	REV PER TOWNSHIP
3	05/27/21	REV PER OCMRC
4	07/09/21	AMENDMENT TO PSP

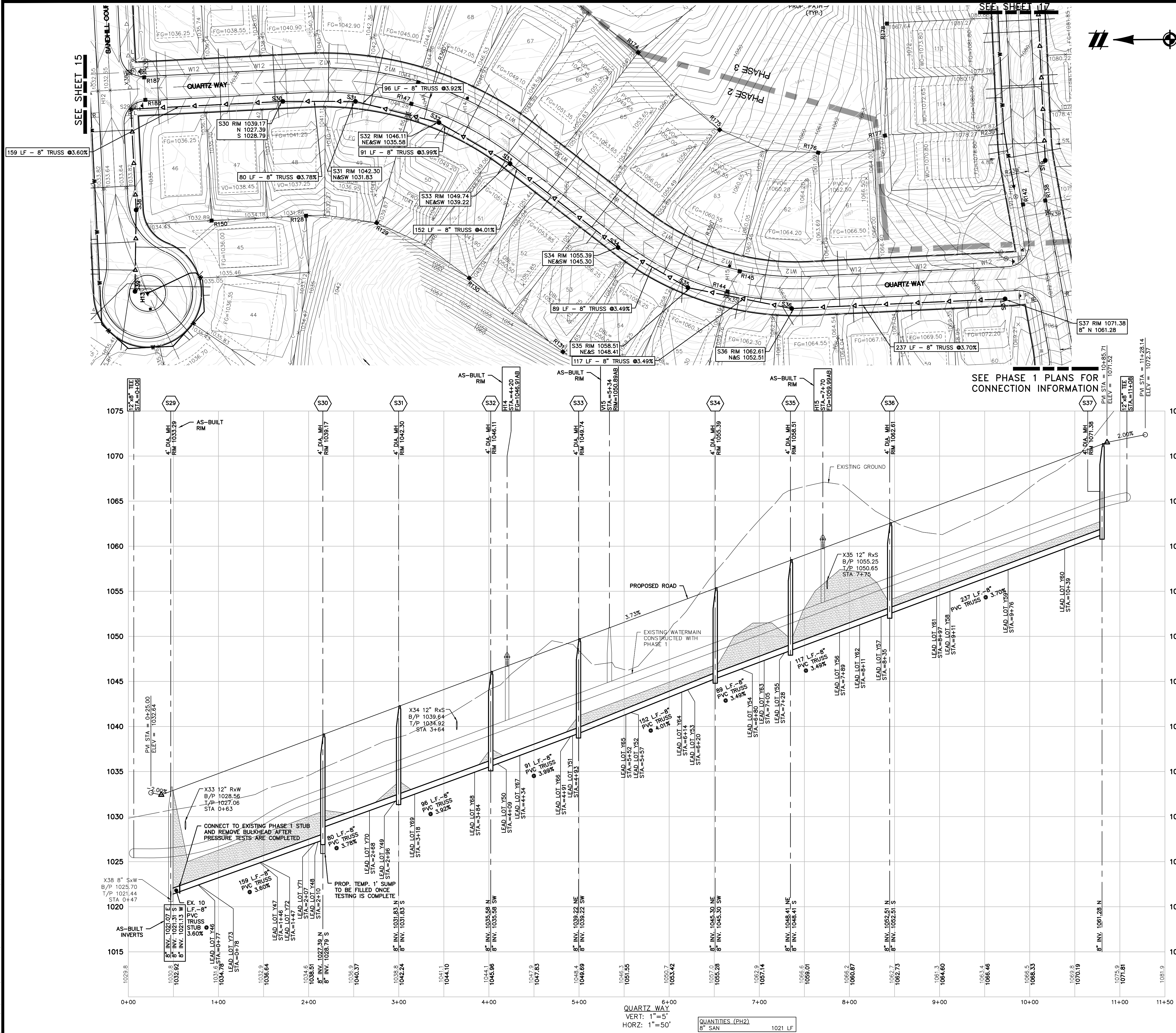


WATER MAIN NOTES:

- ALL PROPOSED WATER MAIN SHALL BE DUCTILE IRON, CLASS 54
- ALL WATER MAIN SHALL HAVE A MINIMUM OF 6" COVER, EXCEPT AT GATE WELLS WHERE 5' IS REQUIRED.
- ALL HYDRANTS TO BE A MINIMUM 6' OFF BACK OF CURB.
- CENTER FULL STICK OF PIPE AT ALL WATER MAIN / UTILITY CROSSINGS.
- WATERMAIN SHOWN ON THIS SHEET WAS CONSTRUCTED DURING PHASE 1.

SANITARY LEAD TABLE

LEAD NO.	SIZE	STA FROM DIS MANHOLE	RISER (FT)	LENGTH (FT)	INVERT ELEV AT END OF LEAD	LOT FG.
Y46	6" SDR 23.5	STA 0+31	1.5' RISER	18 LF	1025.3	1036.25
Y47	6" SDR 23.5	STA 0+99	1.5' RISER	18 LF	1027.5	1038.45
Y48	6" SDR 23.5	STA 1+63	2.0' RISER	18 LF	1030.3	1041.25
Y49	6" SDR 23.5	STA 0+77	1.0' RISER	18 LF	1033.9	1044.87
Y50	6" SDR 23.5	STA 0+07	1.0' RISER	18 LF	1038.2	1049.16
Y51	6" SDR 23.5	STA 0+85	1.0' RISER	17 LF	1040.9	1051.90
Y52	6" SDR 23.5	STA 0+58	0.0' RISER	18 LF	1042.9	1053.85
Y53	6" SDR 23.5	STA 1+21	0.0' RISER	18 LF	1045.3	1056.25
Y54	6" SDR 23.5	STA 0+31	0.0' RISER	21 LF	1047.3	1058.25
Y55	6" SDR 23.5	STA 0+82	0.0' RISER	20 LF	1049.3	1060.30
Y56	6" SDR 23.5	STA 0+58	0.0' RISER	23 LF	1051.4	1062.30
Y57	6" SDR 23.5	STA 1+07	0.0' RISER	23 LF	1053.6	1064.55
Y58	6" SDR 23.5	STA 0+68	0.0' RISER	18 LF	1056.1	1067.10
Y59	6" SDR 23.5	STA 1+33	0.0' RISER	18 LF	1058.5	1069.50
Y60	6" SDR 23.5	STA 1+06	0.0' RISER	18 LF	1061.2	1072.20
Y61	6" SDR 23.5	STA 0+53	0.0' RISER	62 LF	1065.6	1066.50
Y62	6" SDR 23.5	STA 0+82	0.0' RISER	57 LF	1063.2	1064.20
Y63	6" SDR 23.5	STA 0+58	0.0' RISER	59 LF	1049.6	1060.55
Y64	6" SDR 23.5	STA 1+14	0.0' RISER	82 LF	1045.1	1056.00
Y65	6" SDR 23.5	STA 0+92	0.0' RISER	82 LF	1042.7	1053.85
Y66	6" SDR 23.5	STA 0+83	0.0' RISER	63 LF	1040.4	1051.35
Y67	6" SDR 23.5	STA 0+30	0.0' RISER	65 LF	1038.1	1049.10
Y68	6" SDR 23.5	STA 0+79	0.0' RISER	64 LF	1036.3	1047.05
Y69	6" SDR 23.5	STA 0+17	0.0' RISER	64 LF	1034.0	1045.00
Y70	6" SDR 23.5	STA 0+50	0.0' RISER	64 LF	1032.0	1042.90
Y71	6" SDR 23.5	STA 1+60	0.0' RISER	62 LF	1029.9	1040.90
Y72	6" SDR 23.5	STA 1+00	0.0' RISER	62 LF	1027.6	1038.55
Y73	6" SDR 23.5	STA 0+31	0.0' RISER	62 LF	1025.3	1036.25

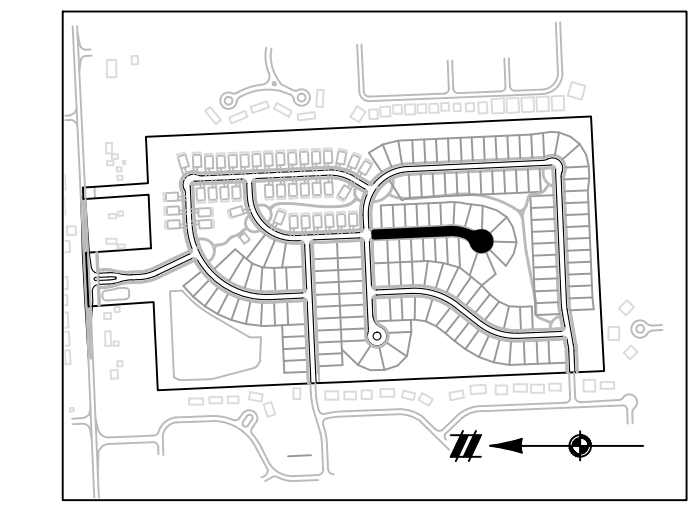


QUANTITIES (PH2)
8" SAN 1021 LF

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.

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311 NORTH MAIN STREET
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734-994-4060
866.850.4200 www.atwell-group.com

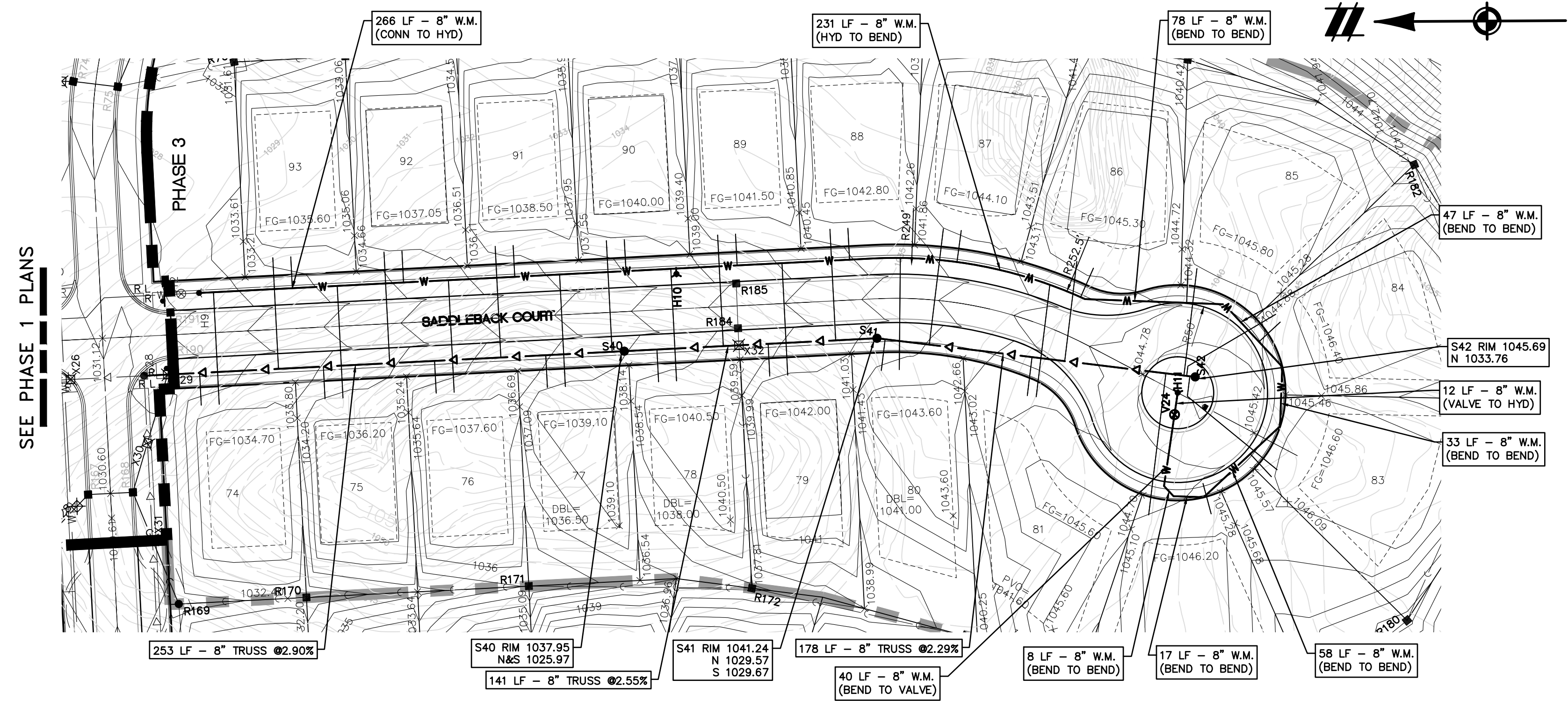


LEGEND

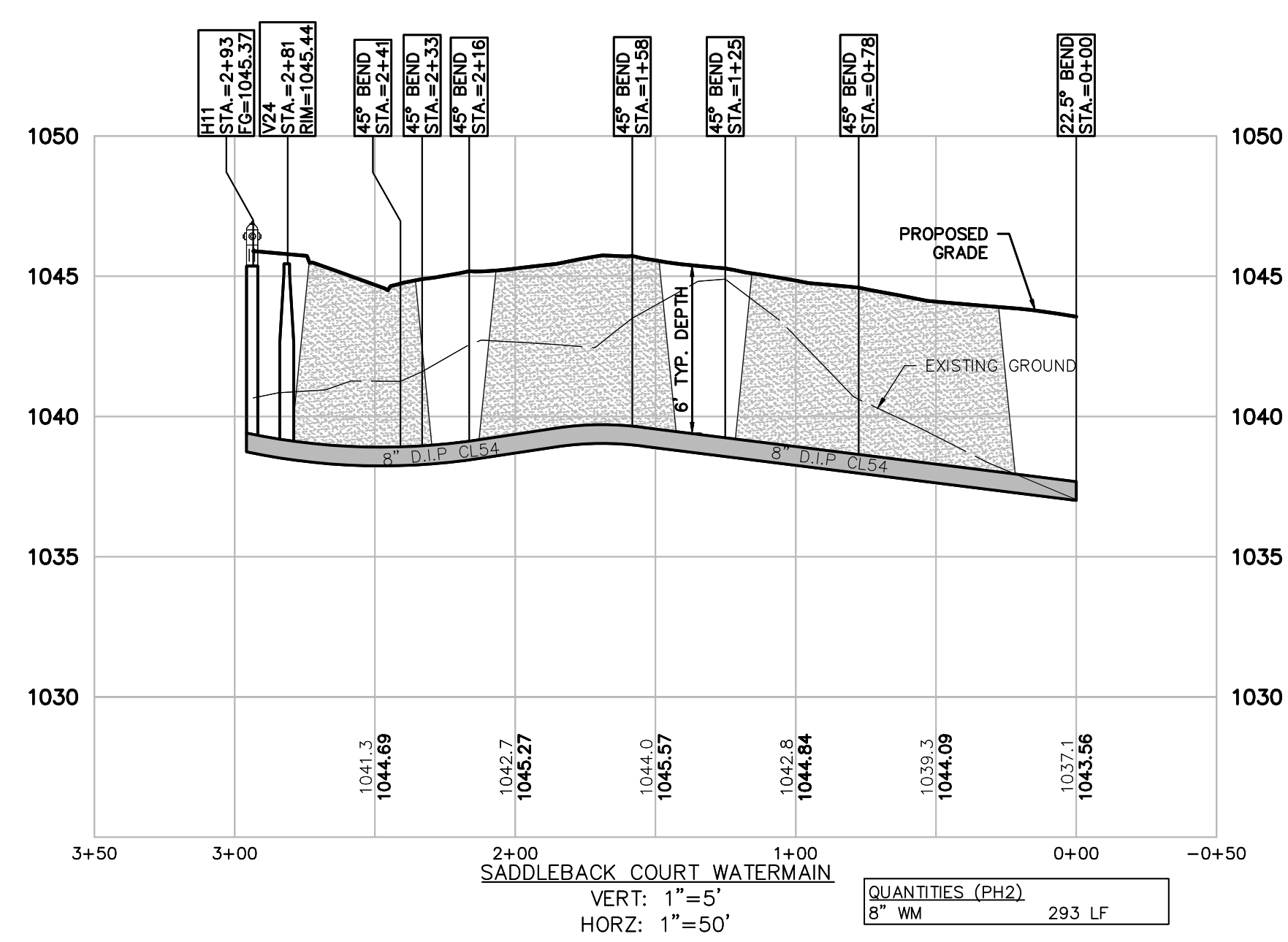
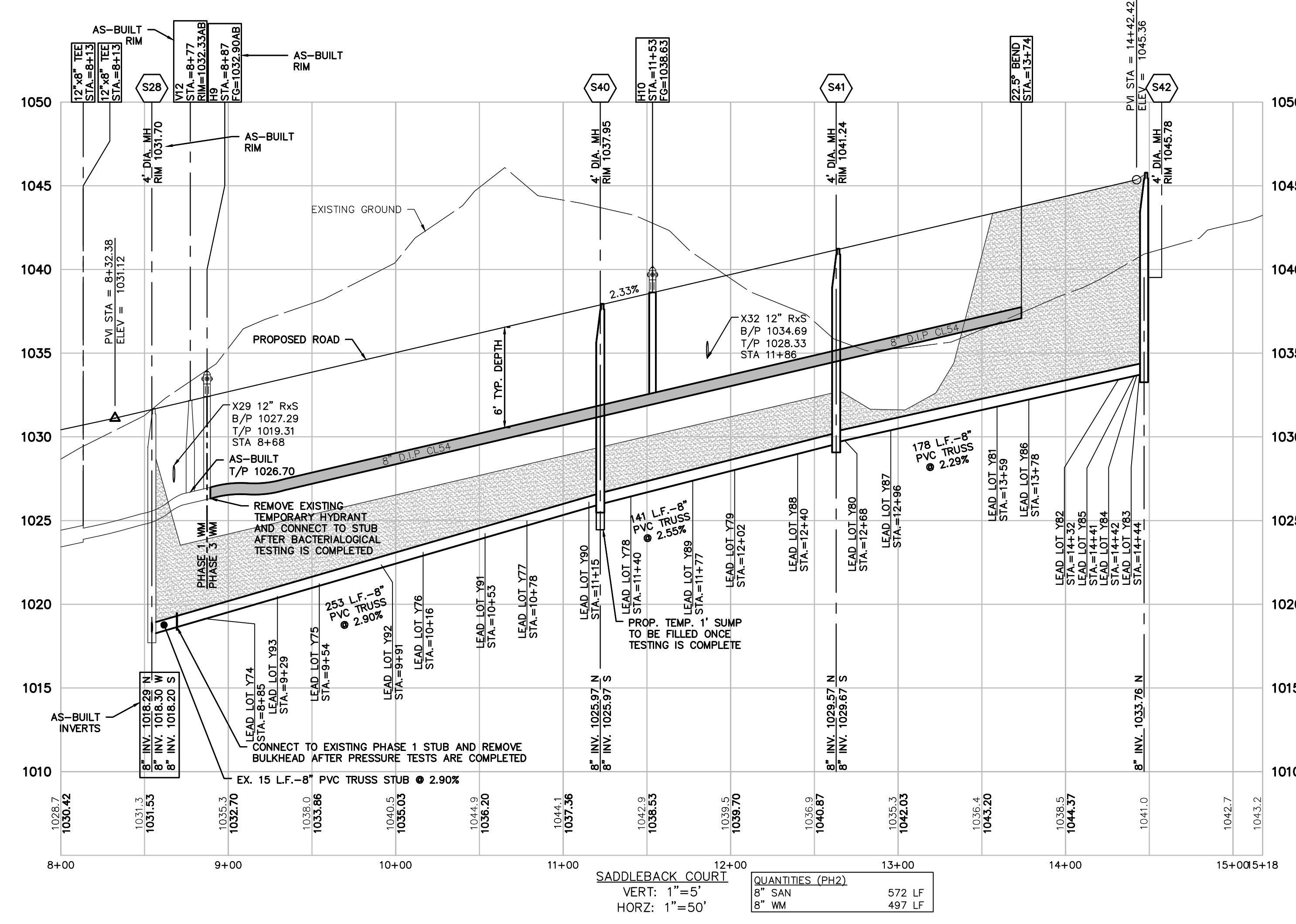
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--- (solid line)	PROPERTY LINE
--- (dotted line)	EXIST. ROADS
--- (dotted line)	EXIST. CONTOUR
--- (dotted line)	EXIST. FENCE
--- (dotted line)	EXIST. GRAVEL
--- (dotted line)	EXIST. STORM SEWER
□ (rectangle)	EXIST. BUILDING
□ (rectangle)	EXIST. SIGN
□ (rectangle)	EXIST. CATCH BASIN
--- (dotted line)	EXIST. END SECTION
--- (dotted line)	CONTOUR
--- (dotted line)	PROP. LOT LINE
--- (dotted line)	PROP. RIGHT OF WAY
--- (dotted line)	PROP. BACK OF CURB
--- (dotted line)	PROP. SETBACK
--- (dotted line)	PROP. SIDEWALK
--- (dotted line)	PROP. BUILDING
--- (dotted line)	PROP. STORM SEWER
--- (dotted line)	PROP. SANITARY
--- (dotted line)	PROP. 12" WATER MAIN
--- (dotted line)	PROP. 8" WATER MAIN
--- (dotted line)	PROP. END SECTION
--- (dotted line)	PROP. CATCH BASIN/INLET
--- (dotted line)	PROP. STORM MANHOLE
--- (dotted line)	PROP. FIRE HYDRANT
--- (dotted line)	PROP. VALVE

WATER MAIN NOTES:

- ALL PROPOSED WATER MAIN SHALL BE DUCTILE IRON, CLASS 54
- ALL WATER MAIN SHALL HAVE A MINIMUM OF 6' COVER, EXCEPT AT GATE WELLS WHERE 5' IS REQUIRED.
- ALL HYDRANTS TO BE A MINIMUM 6' OFF BACK OF CURB
- CENTER FULL STICK OF PIPE AT ALL WATER MAIN / UTILITY CROSSINGS.
- ALL WATERMAIN SHOWN ON THIS SHEET SHALL BE CONSTRUCTED DURING PHASE 3.



SEE PHASE 1 PLANS



SANITARY LEAD TABLE

QUANTITIES (PH2)

8" SAN	572 LF
8" WM	497 LF

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
SADDLEBACK COURT SANITARY & WATER MAIN PLAN

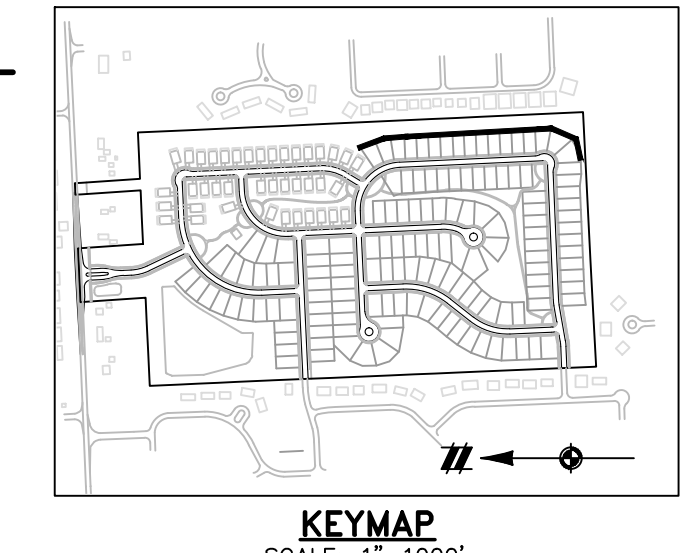
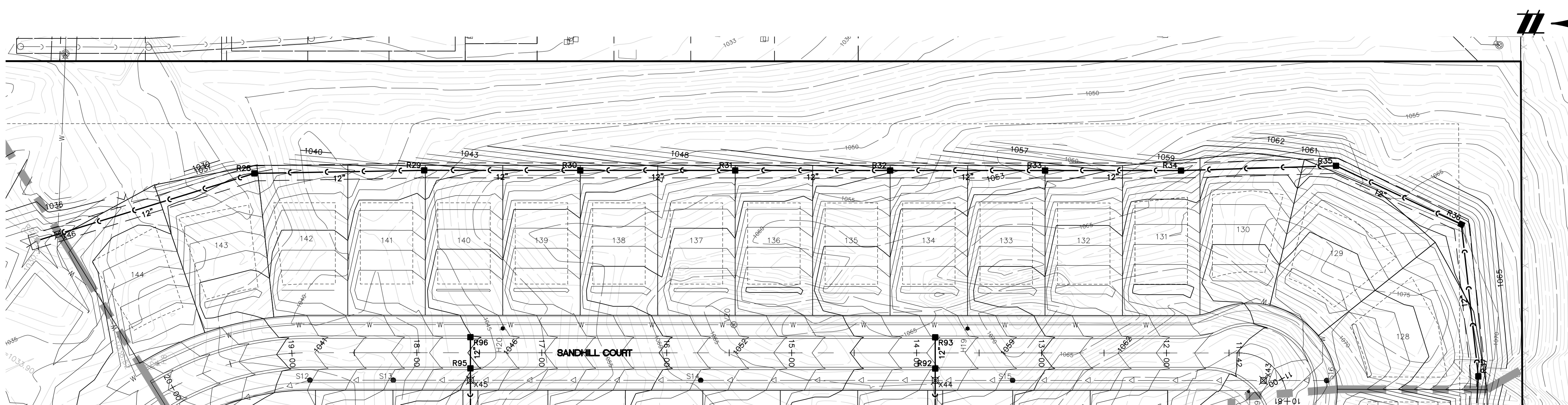
DATE: OCTOBER 29, 2020

02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO PSP

REVISIONS

SCALE: 0 25 50
1" = 50 FEET

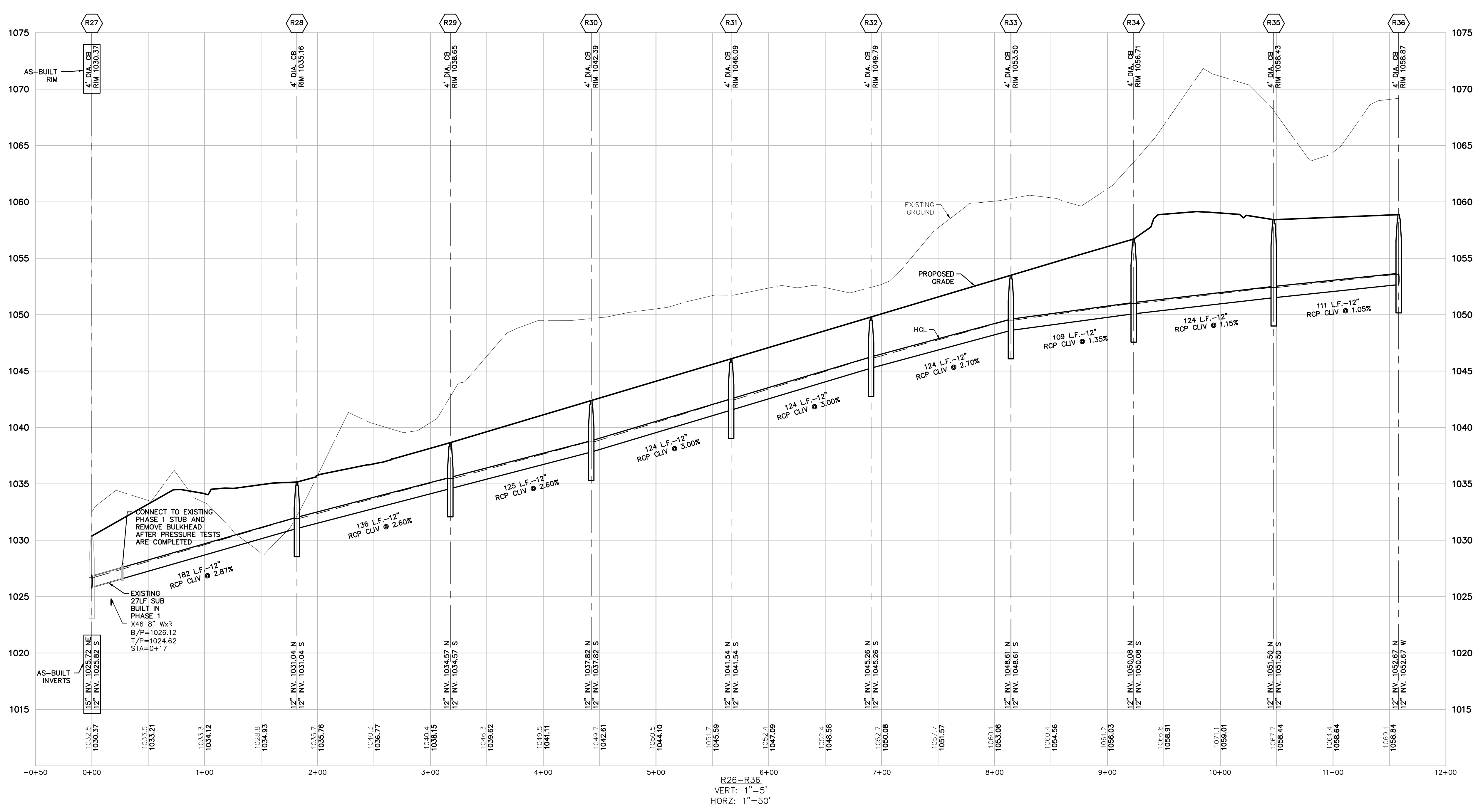
DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 19



- STORM SEWER NOTES:**
- REFER TO GENERAL NOTES ON SHEETS 01 AND 06.
 - REFER TO WHITE LAKE TOWNSHIP STANDARD STORM DETAILS AND NOTES ON SHEET DT4.
 - DUE TO THE PRESENCE OF PRIMARILY INFILTRATIVE SOILS (HYDROLOGIC GROUP 'A') ACROSS THE SITE, CONTINUOUS EDGE DRAIN BEHIND THE CURB IS NOT PROPOSED UNLESS FIELD CONDITIONS WARRANT INSTALLATION AS DIRECTED BY THE WHITE LAKE TOWNSHIP ON-SITE INSPECTOR. REFER TO NOTE #7 ON SHEET DT4 REGARDING FINGER DRAIN INSTALLATION AT LOW-POINT CATCH BASINS IN PAVED AREAS.
 - STORM SEWER SUMP LEADS MUST BE CONSTRUCTED WITH 3-INCH SCHEDULE 40 PVC PIPE.

LEGEND

	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/1 HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 1

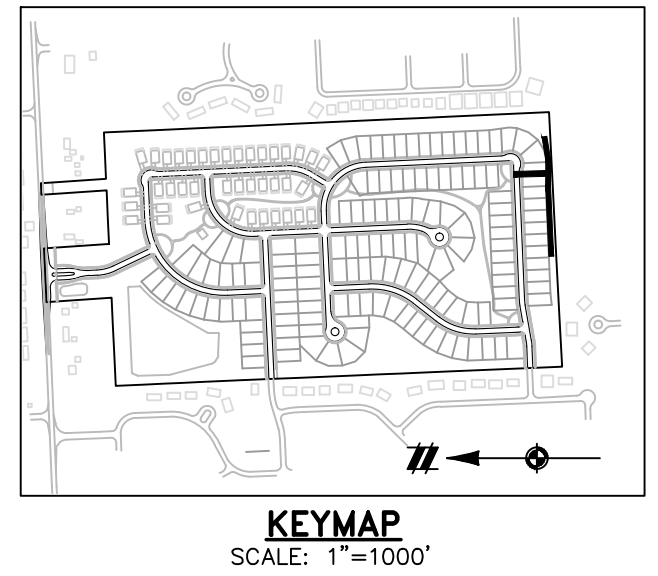
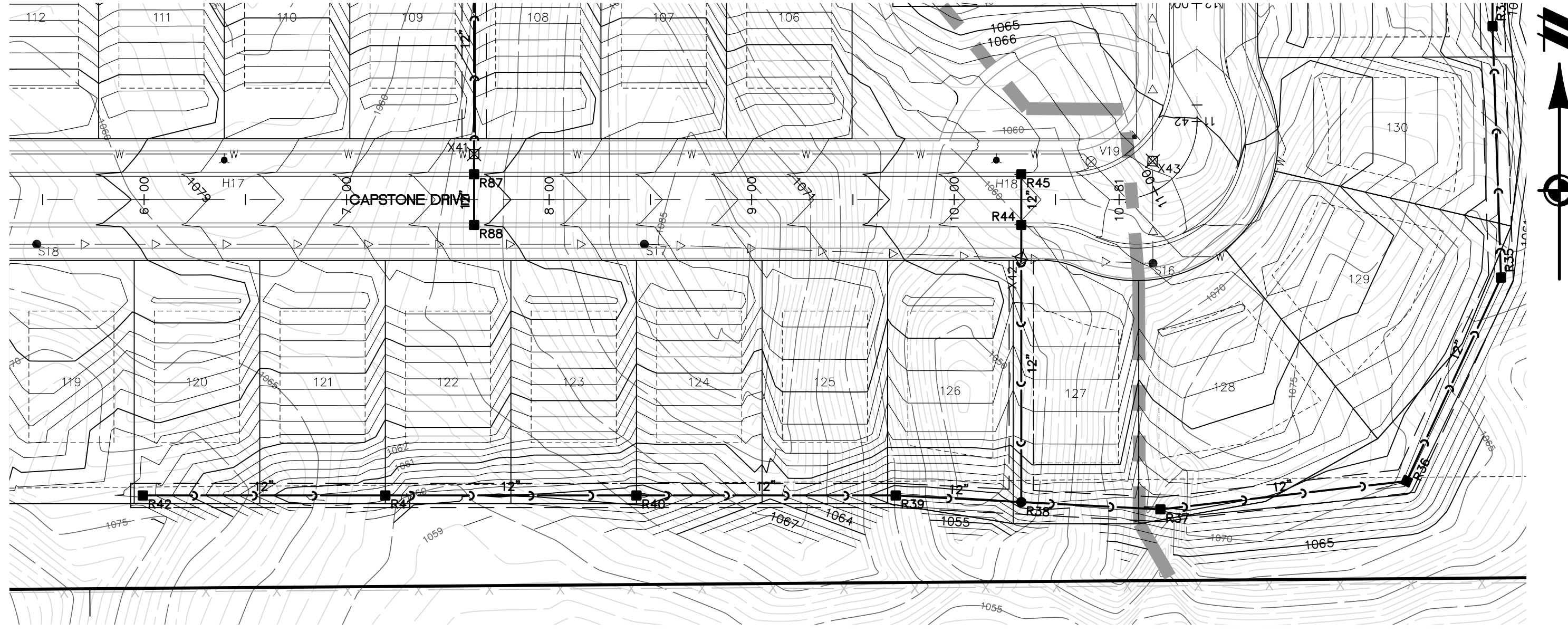
DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

REVISIONS

SCALE: 0 25 50
1" = 50 FEET

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JOB 18003309
SHEET NO. 20

CAD FILE: 18003309S2-13-STMPROF.DWG

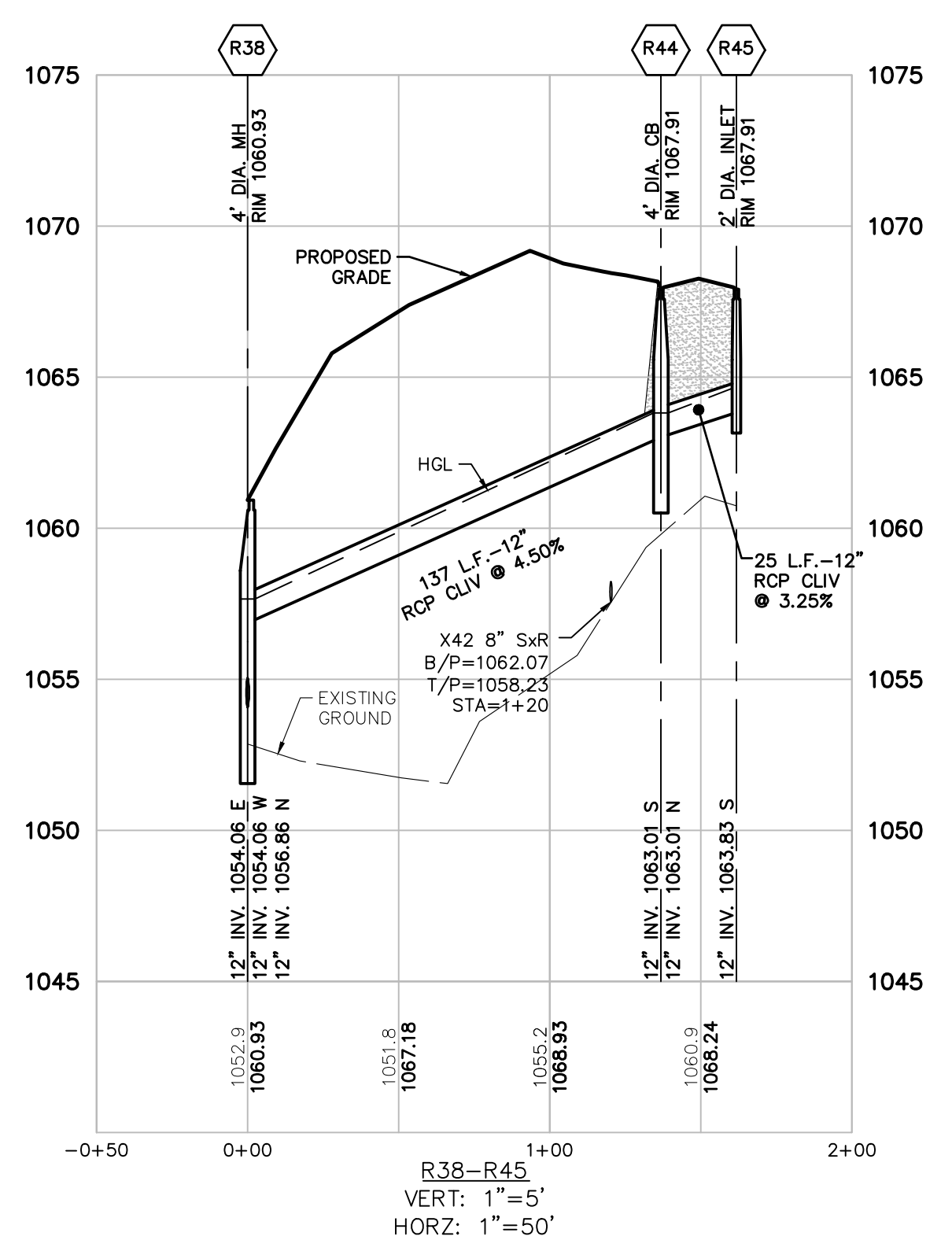
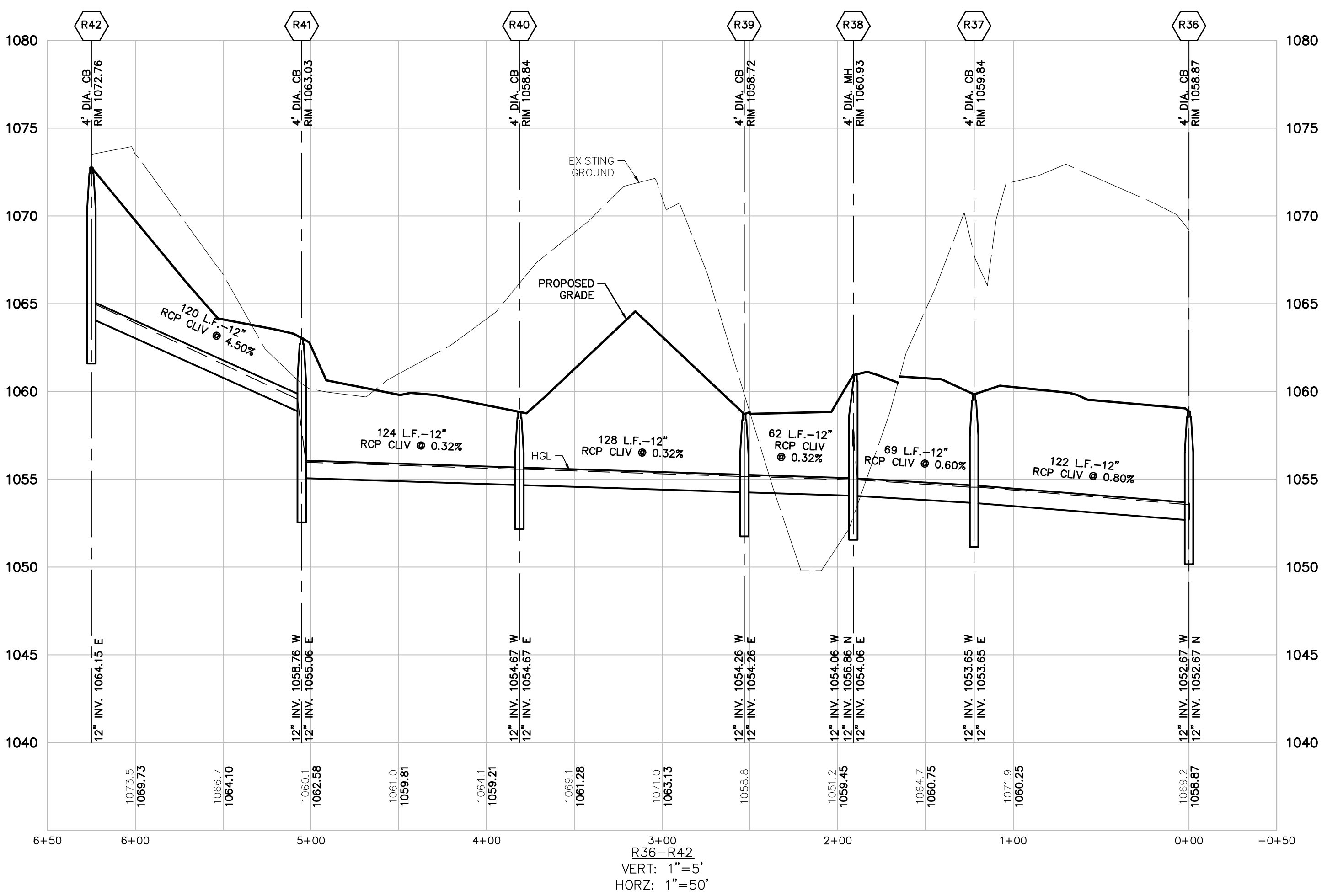


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STORM SEWER NOTES:
 SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND

	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE

SECTION 25
 TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TOWNSHIP
 OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
 TRAILSIDE MEADOW
 FINAL SITE ENGINEERING PLAN
 PHASES 2-3
 STORM SEWER PROFILES - 2

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 1" = 50 FEET

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 JOB 18003309
 SHEET NO. 21



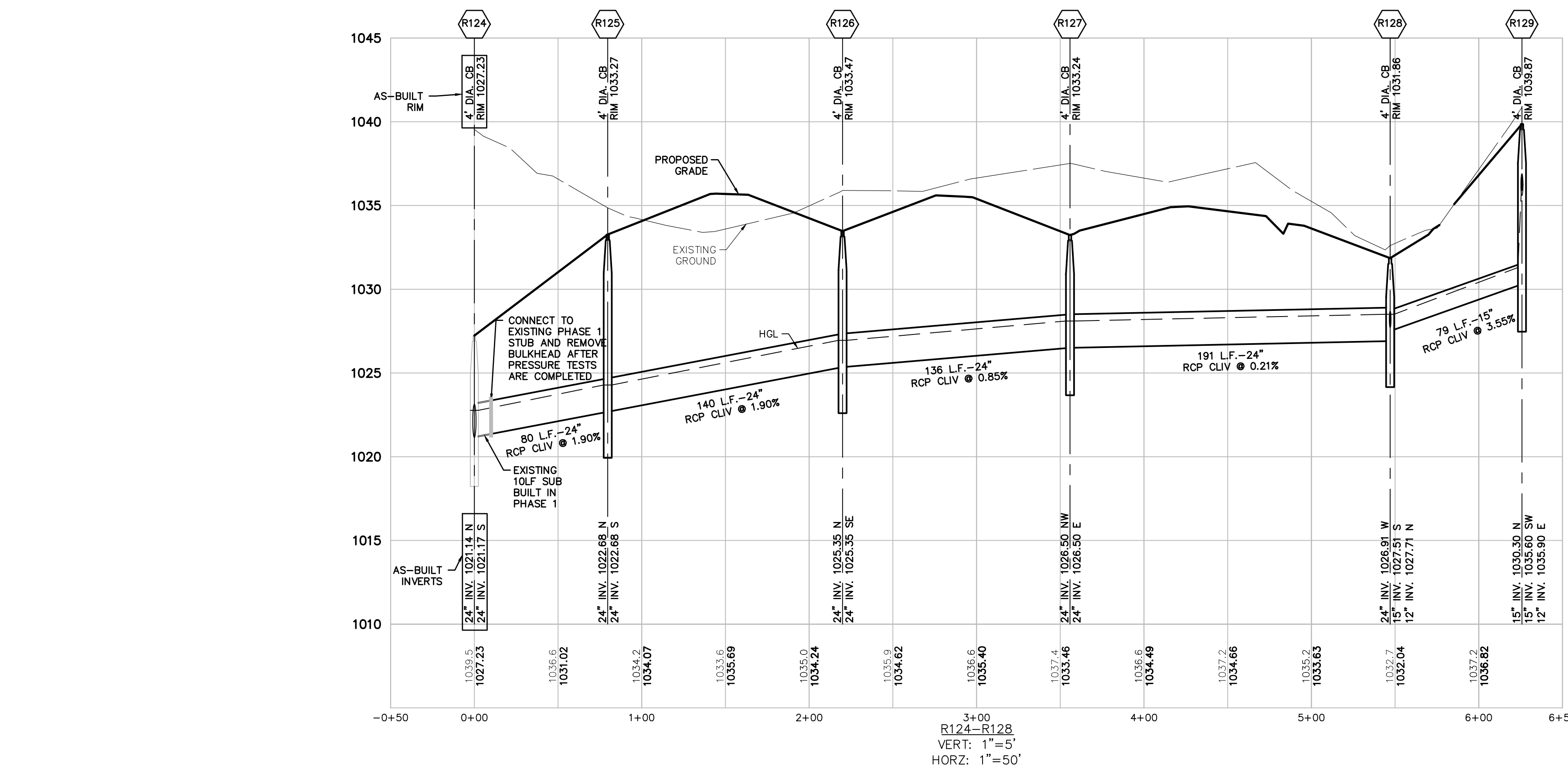
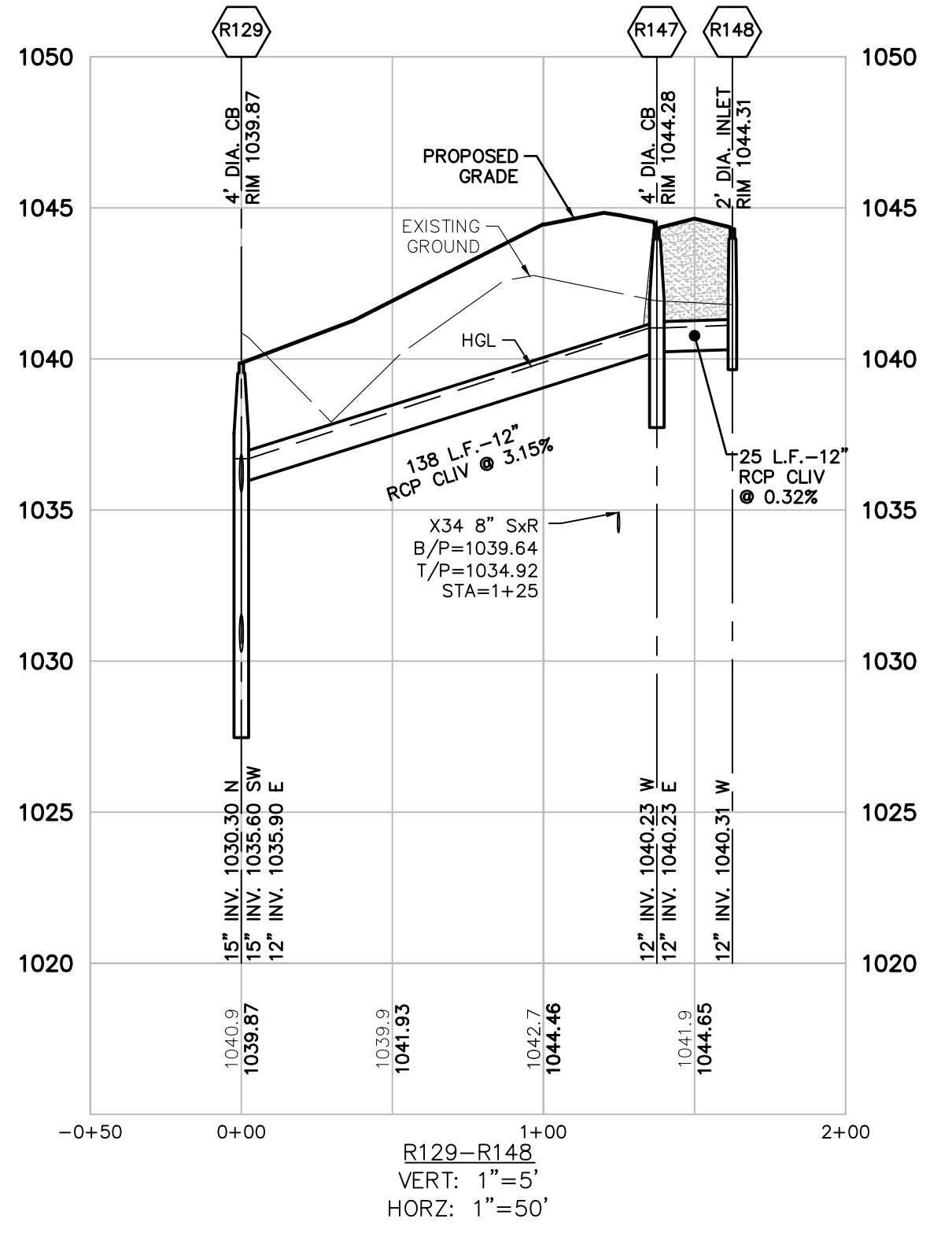
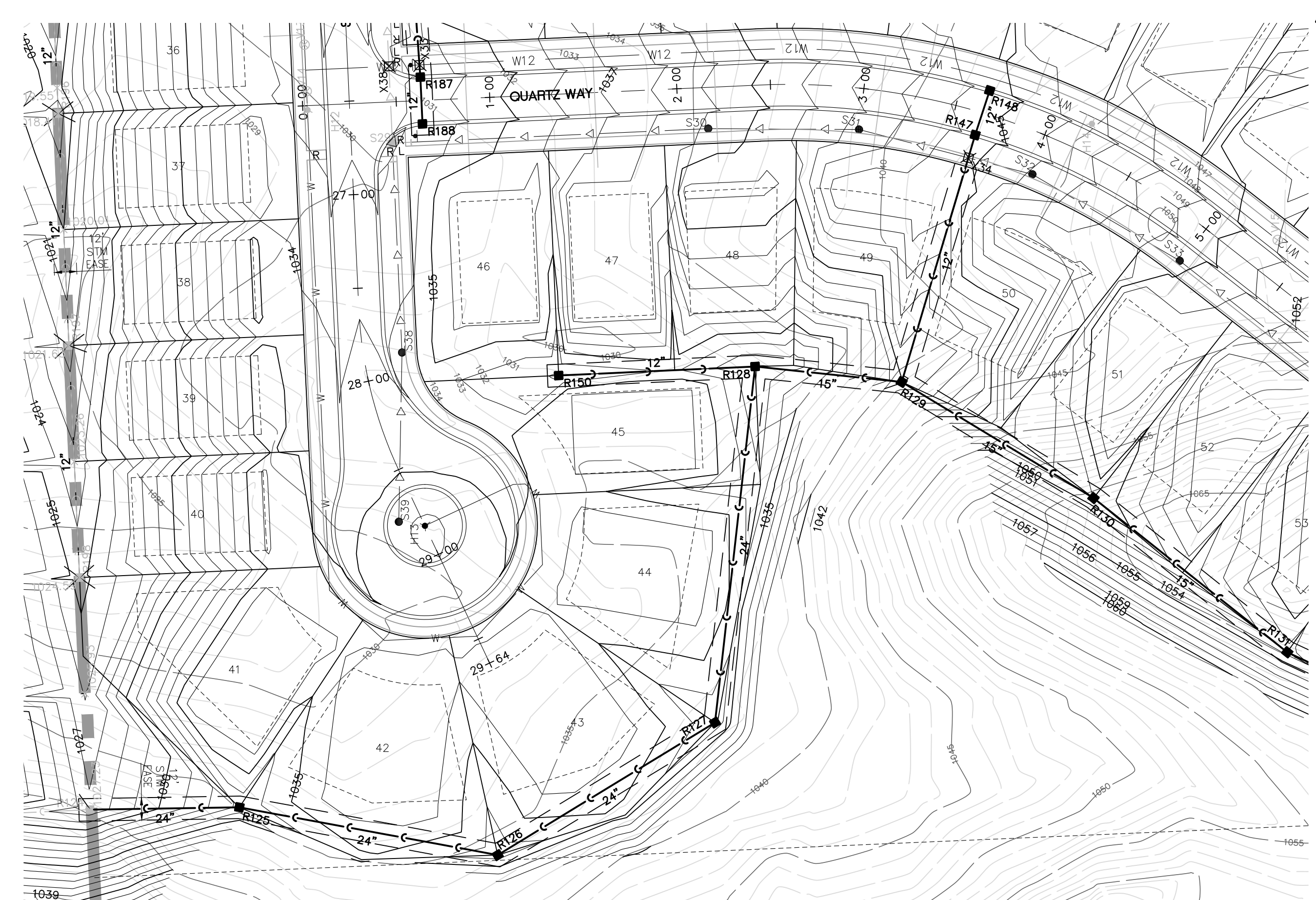
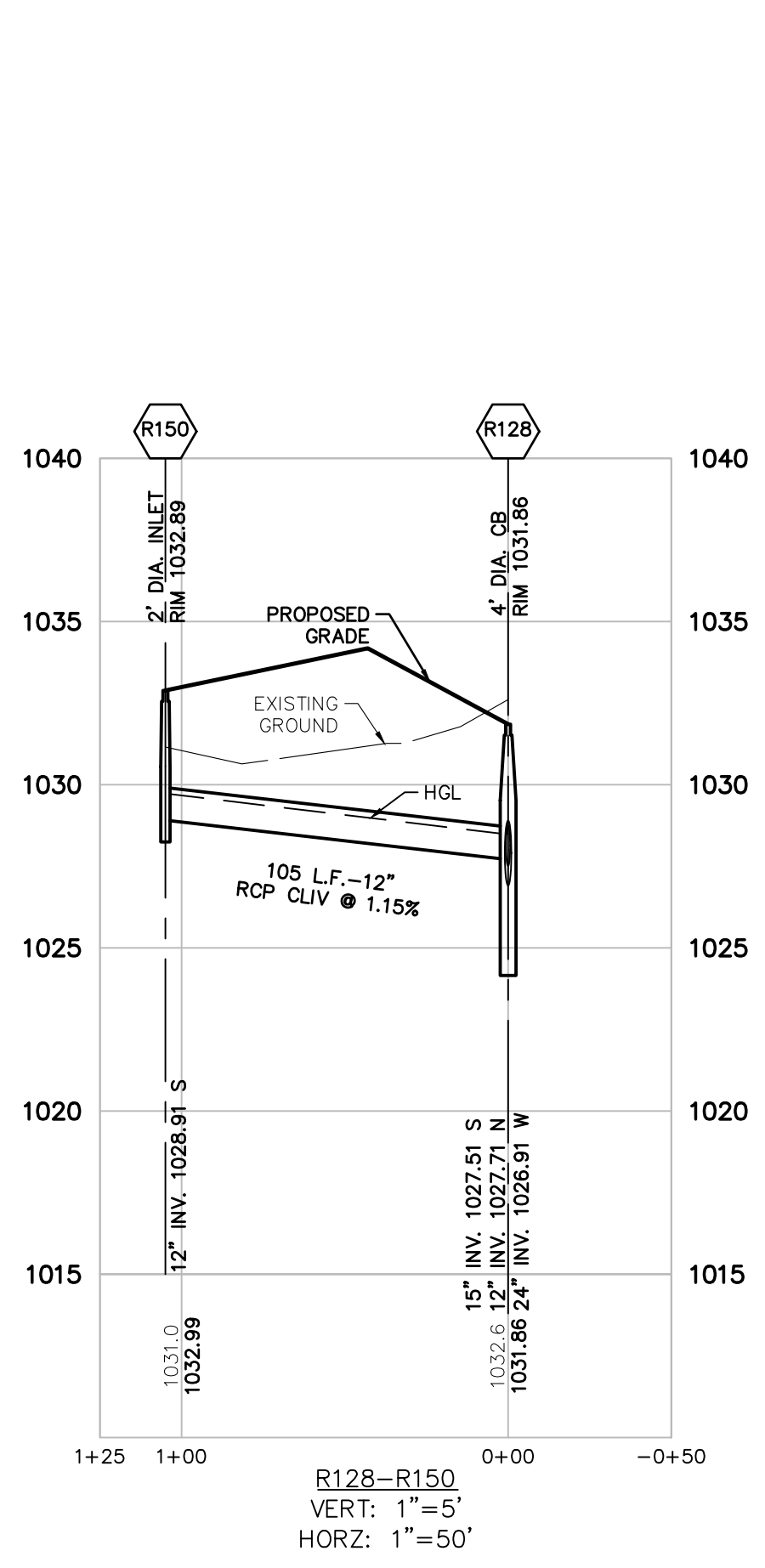
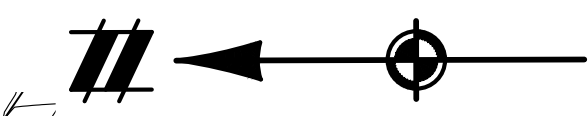
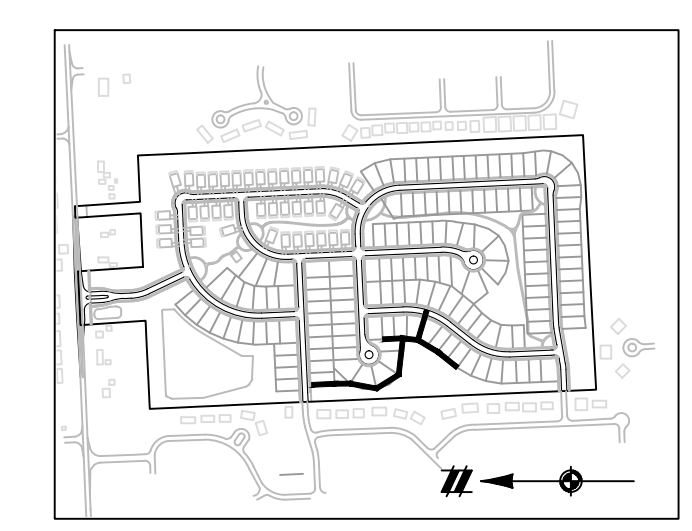
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STORM SEWER NOTES:
SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND

	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE

M/I HOMES OF MICHIGAN, LLC
 TRAILSIDE MEADOW
 FINAL SITE ENGINEERING PLAN
 PHASES 2-3
 STORM SEWER PROFILES - 3

DATE: OCTOBER 29, 2020

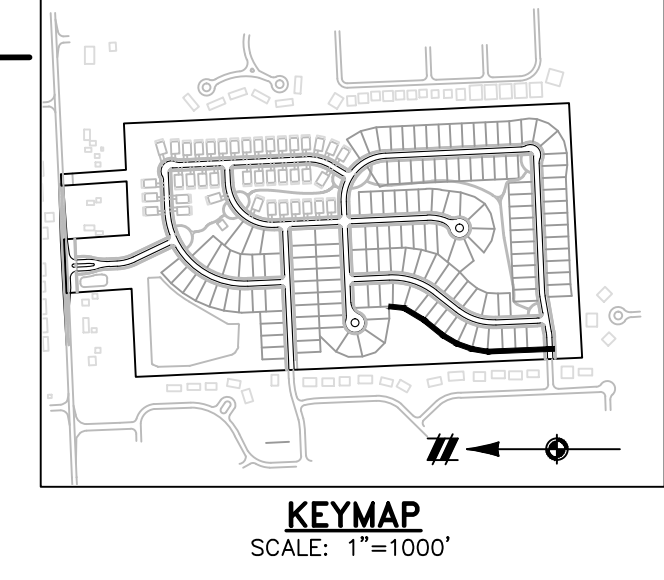
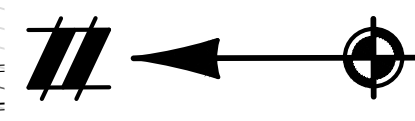
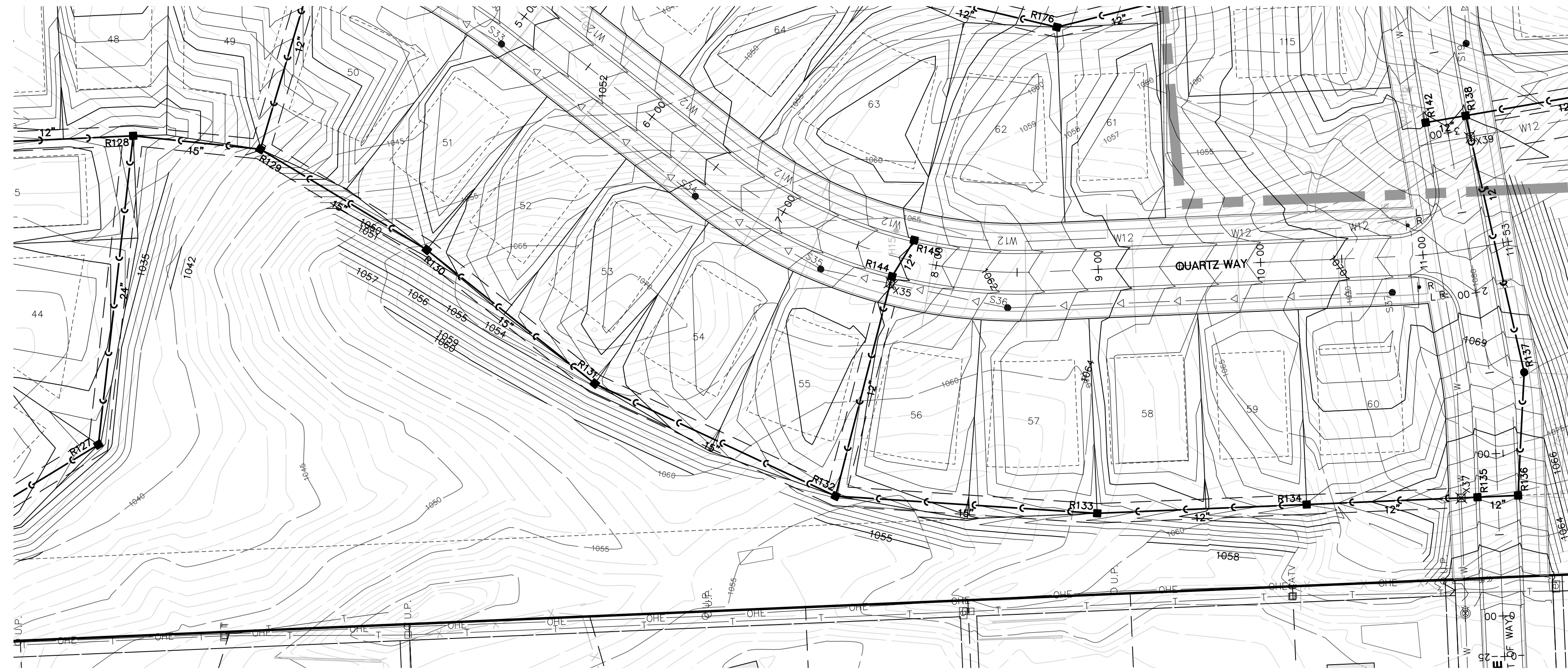
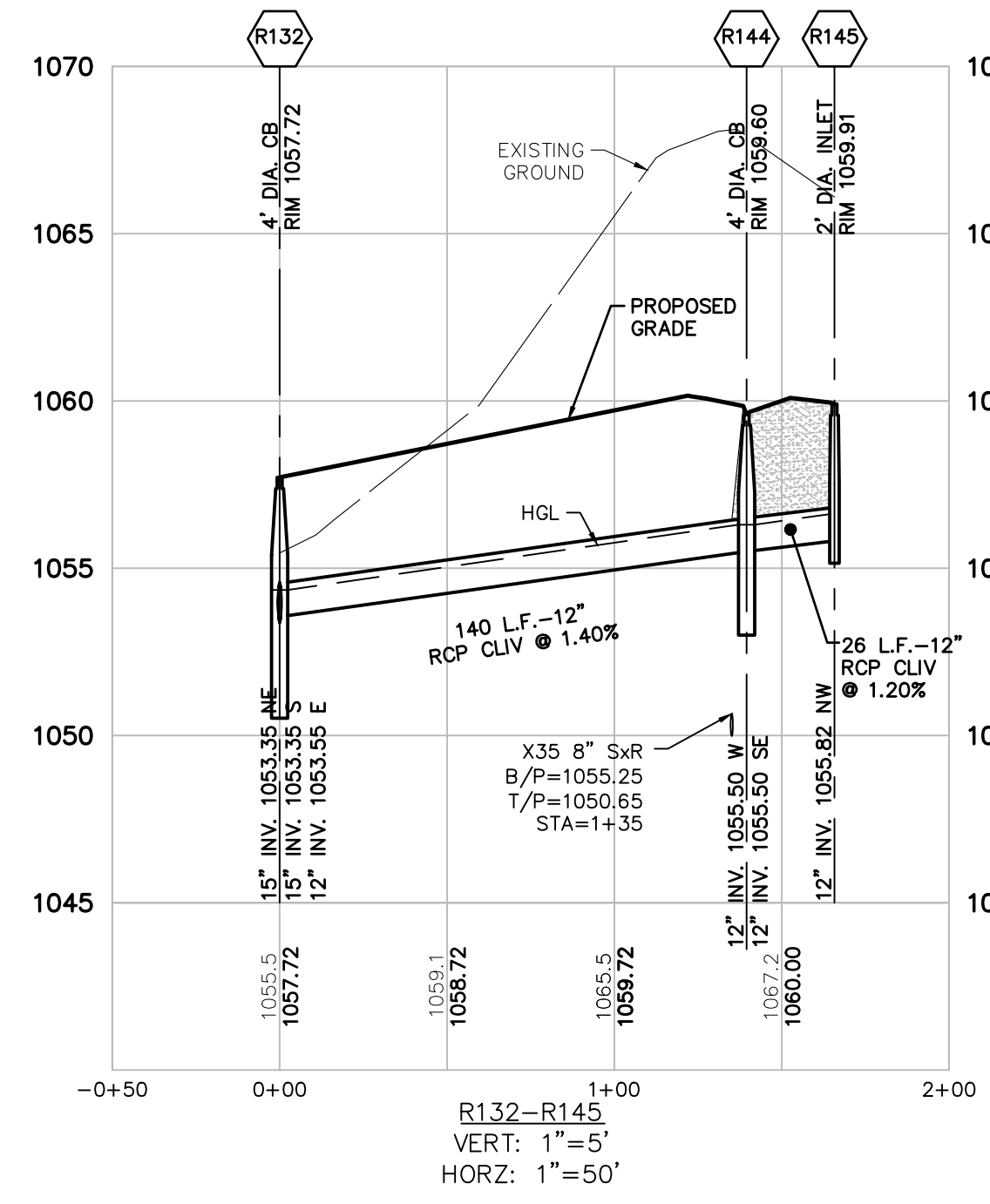
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05/27/2021	REV PER OCMRC	
07/09/2021	AMENDMENT TO PSP	

REVISIONS

SCALE: 0 25 50
 1" = 50 FEET

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 JOB 18003309
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CAD FILE: 18003309S2-13-STMPROF.DWG



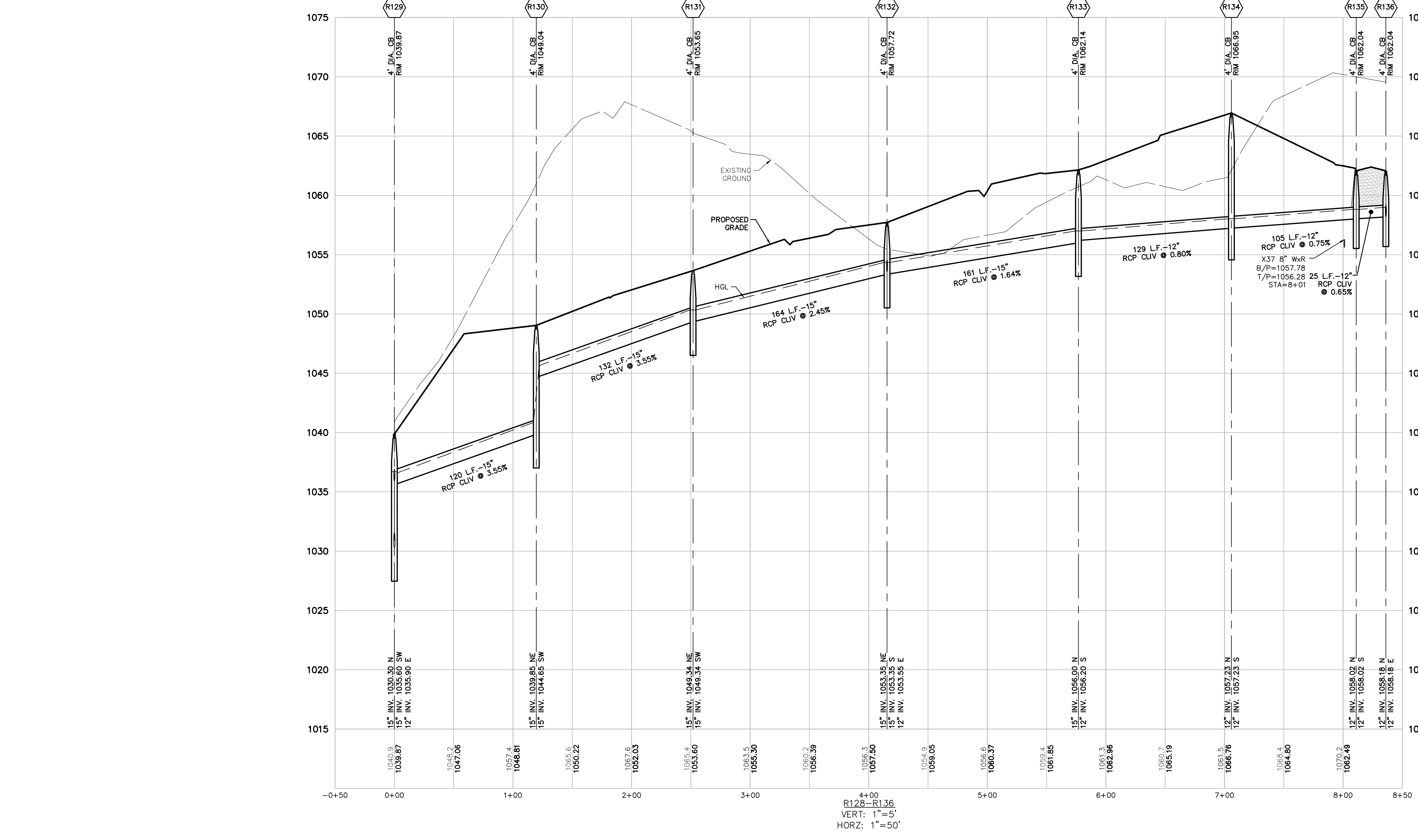
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STORM SEWER NOTES:
SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND

	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
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	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
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	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/1 HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 4

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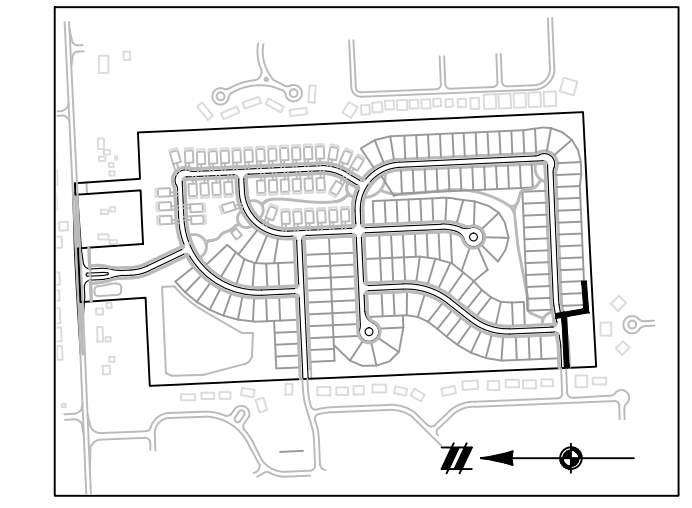
SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 5

DATE: OCTOBER 29, 2020
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05/27/2021: REV PER OCMRC
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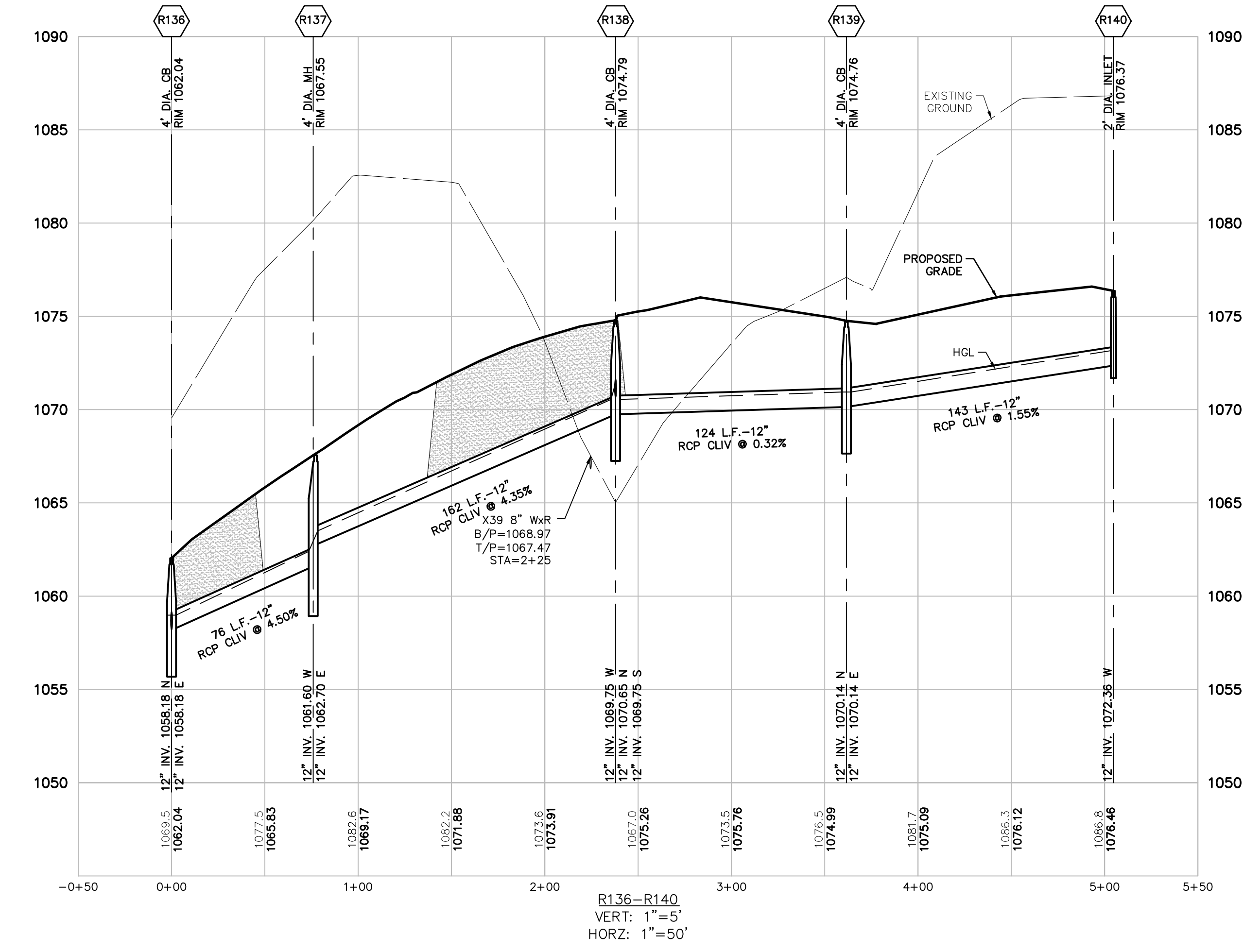
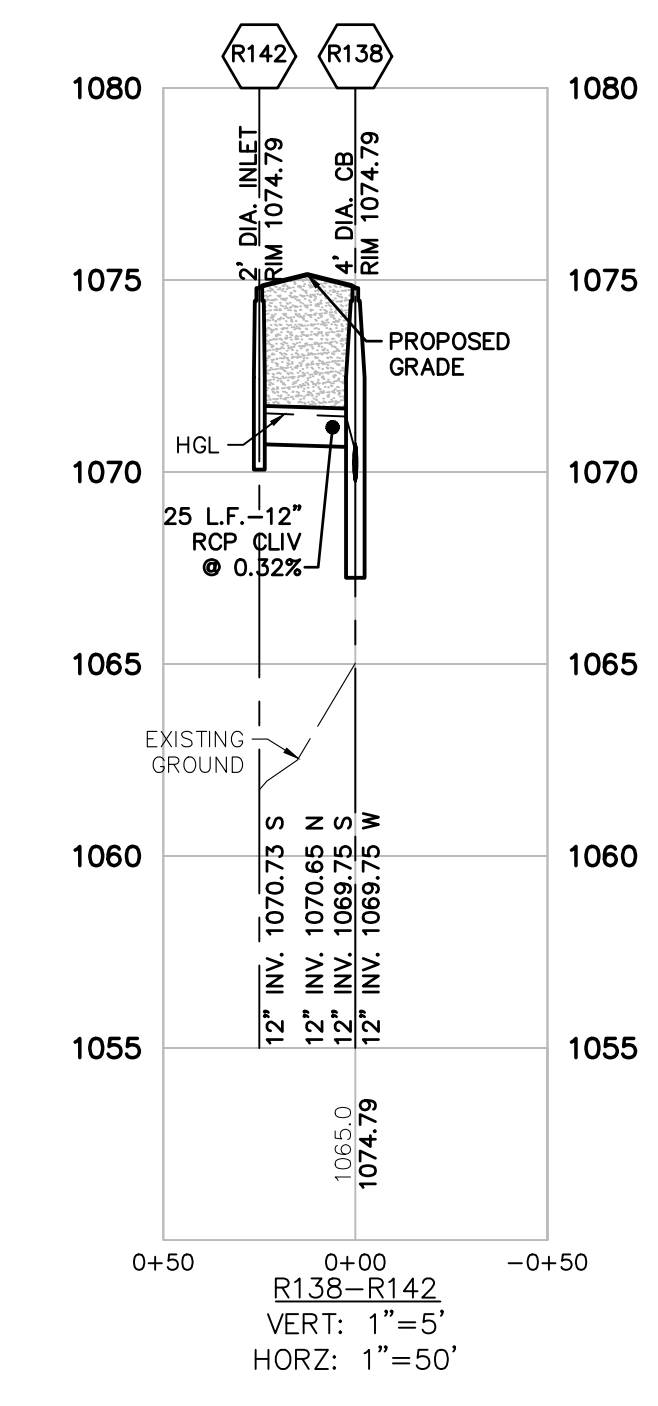
SCALE: 0 25 50
1" = 50 FEET
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SHEET NO. 24



KEYMAP
SCALE: 1"=1000'

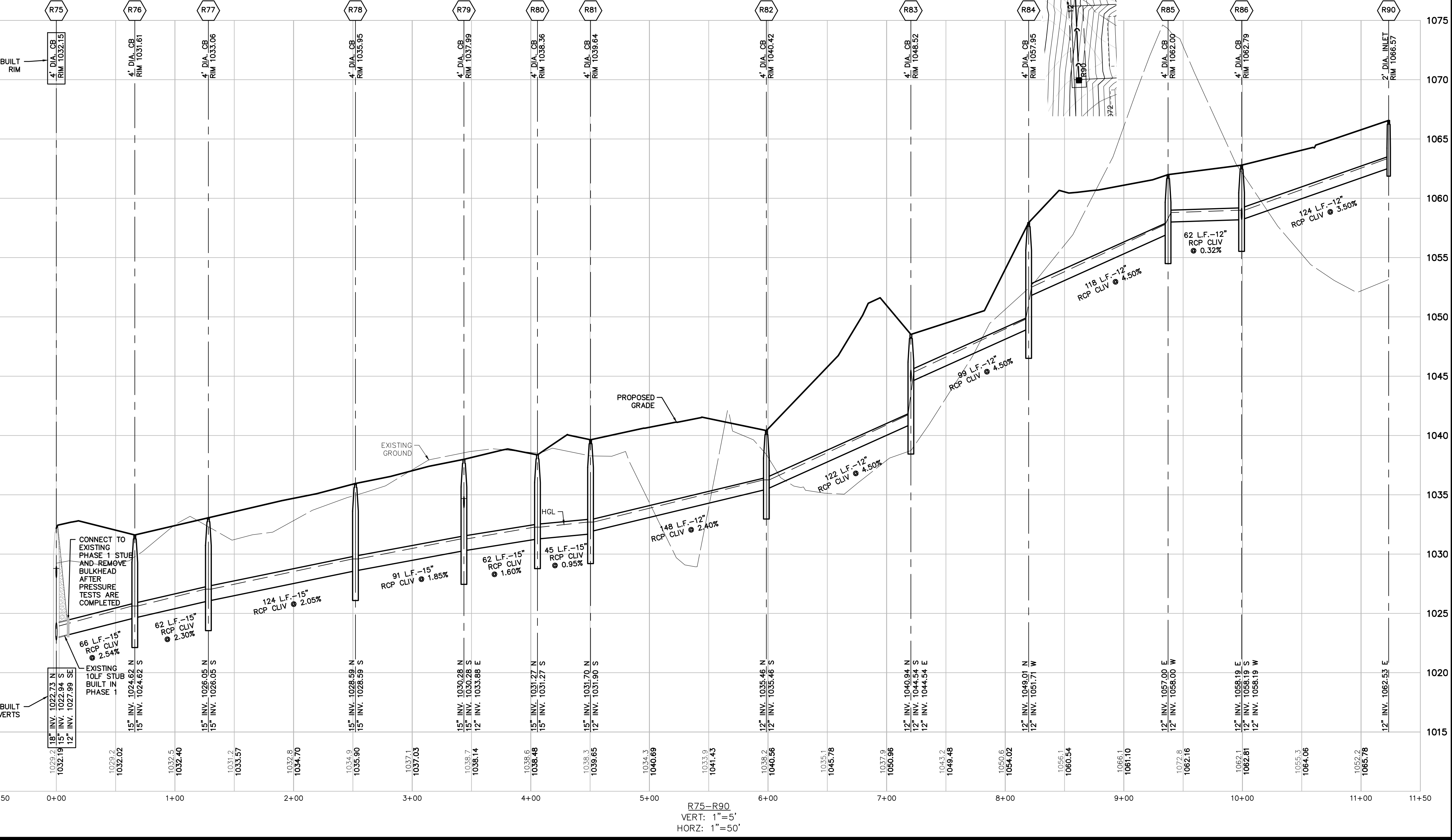
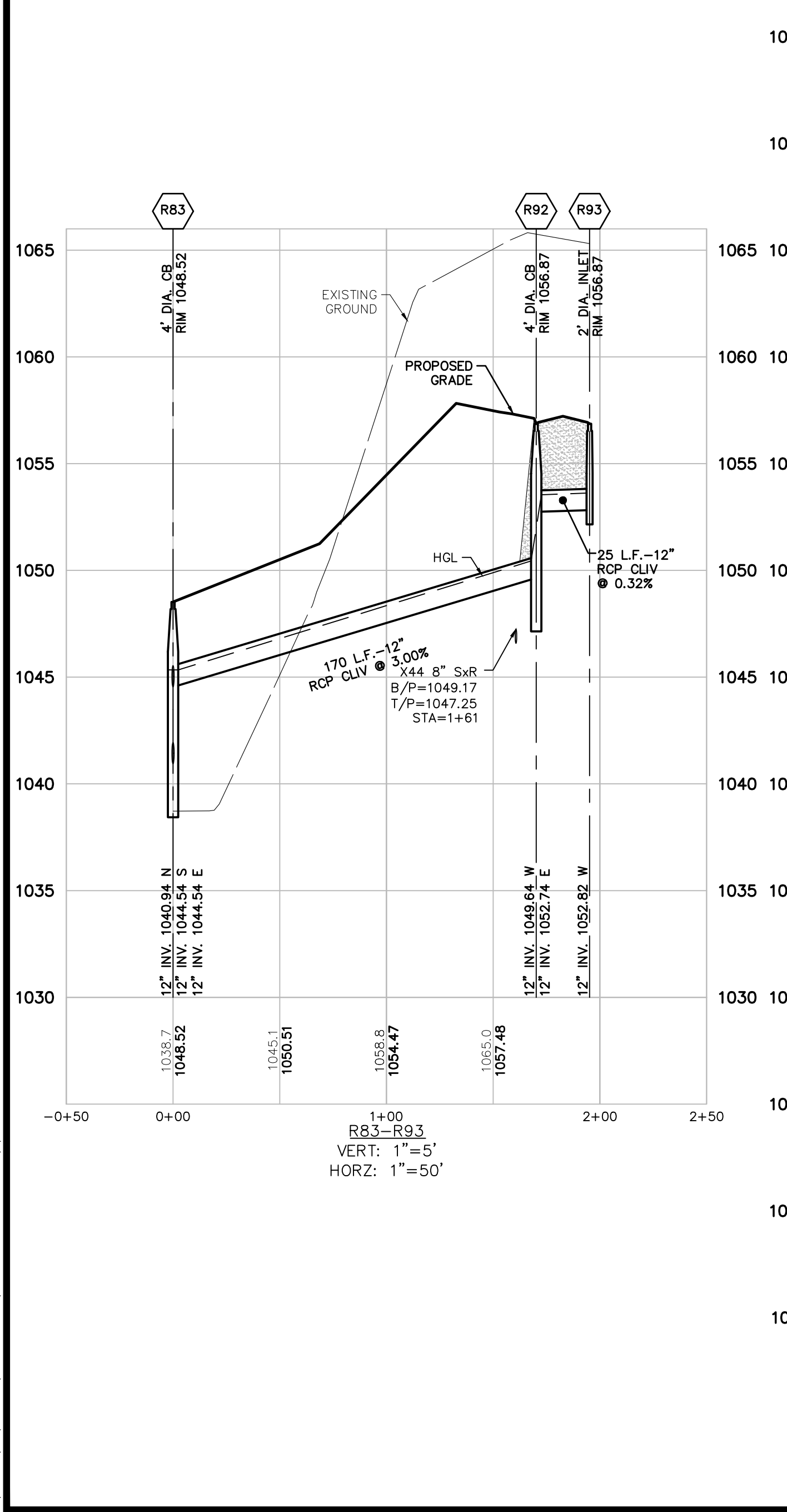
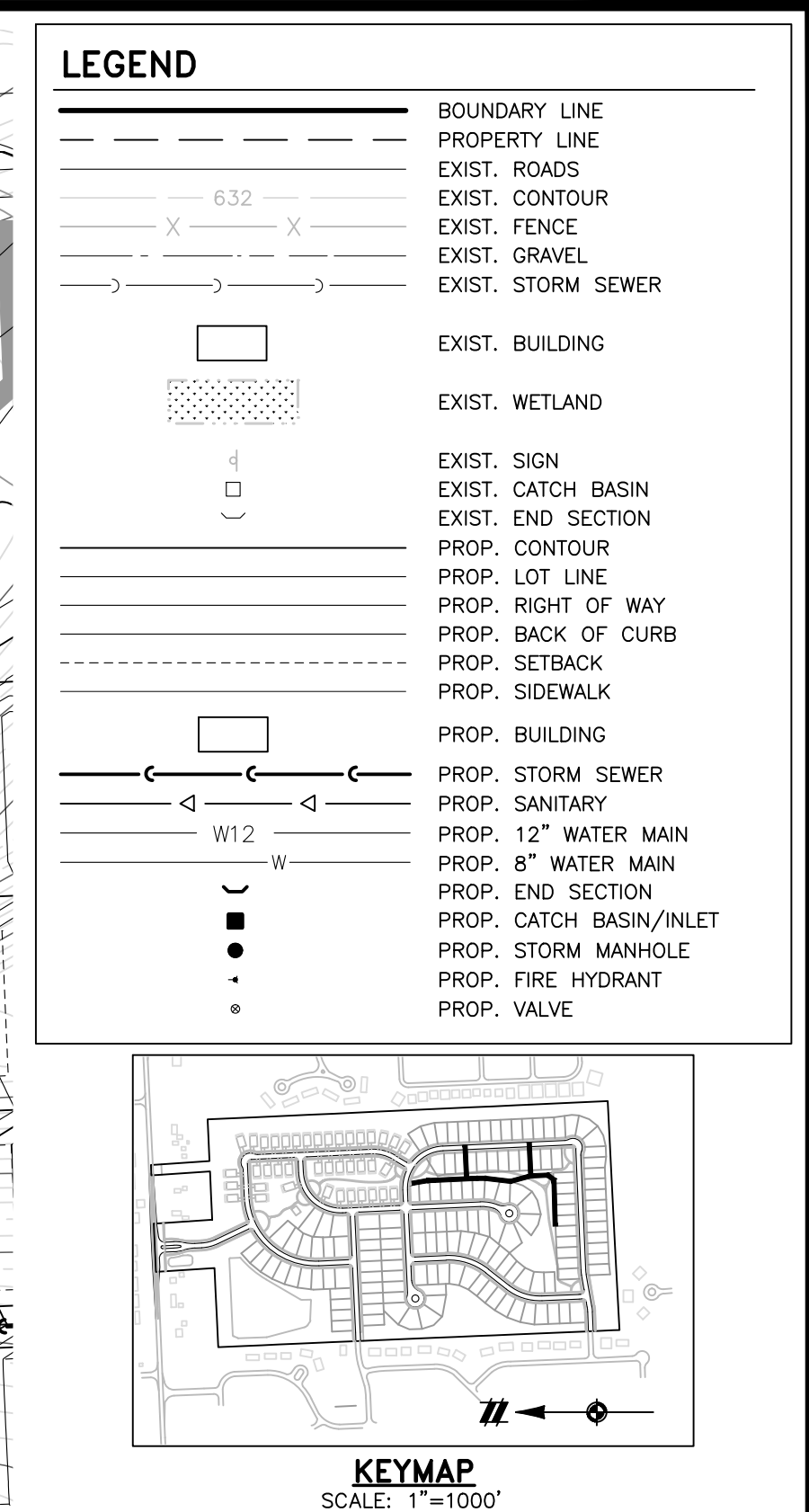
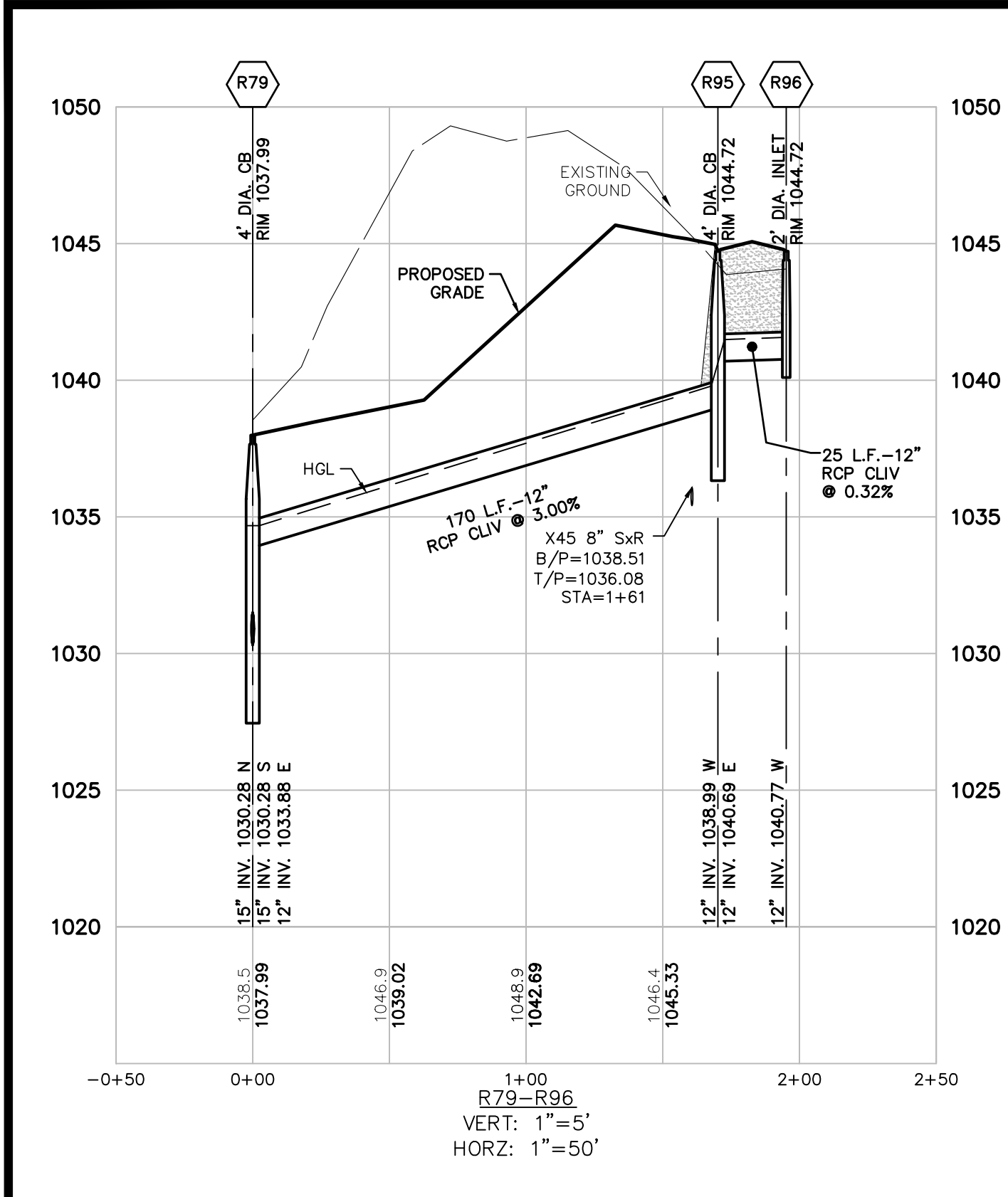
STORM SEWER NOTES:
SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND table listing symbols for boundary lines, roads, contours, fences, gravel, storm sewers, buildings, wetlands, signs, catch basins, end sections, contours, lot lines, right of way, back of curb, setbacks, sidewalks, buildings, storm sewers, sanitary lines, water mains, end sections, catch basins/inlets, storm manholes, fire hydrants, and valves.



K:\18003309\DWG\PLAN SET\SITE-FINAL - PHAS 2-3-2021-11-26 - M. KILGER.dwg

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OAKLAND COUNTY, MICHIGAN

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TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 6

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
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REVISIONS

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JOB 18003309
SHEET NO. 25

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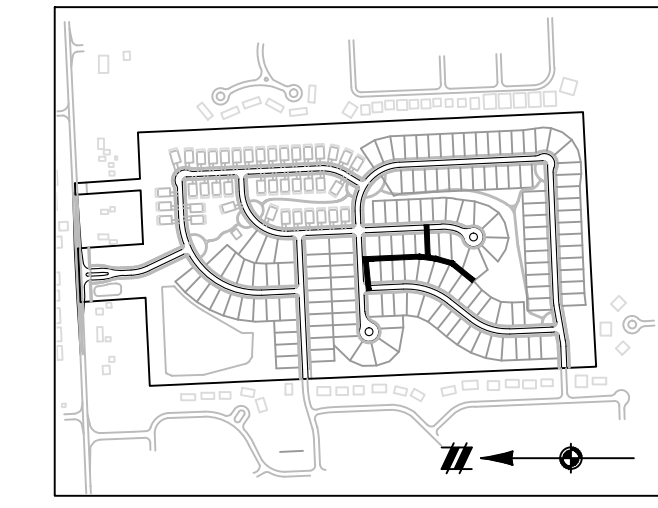
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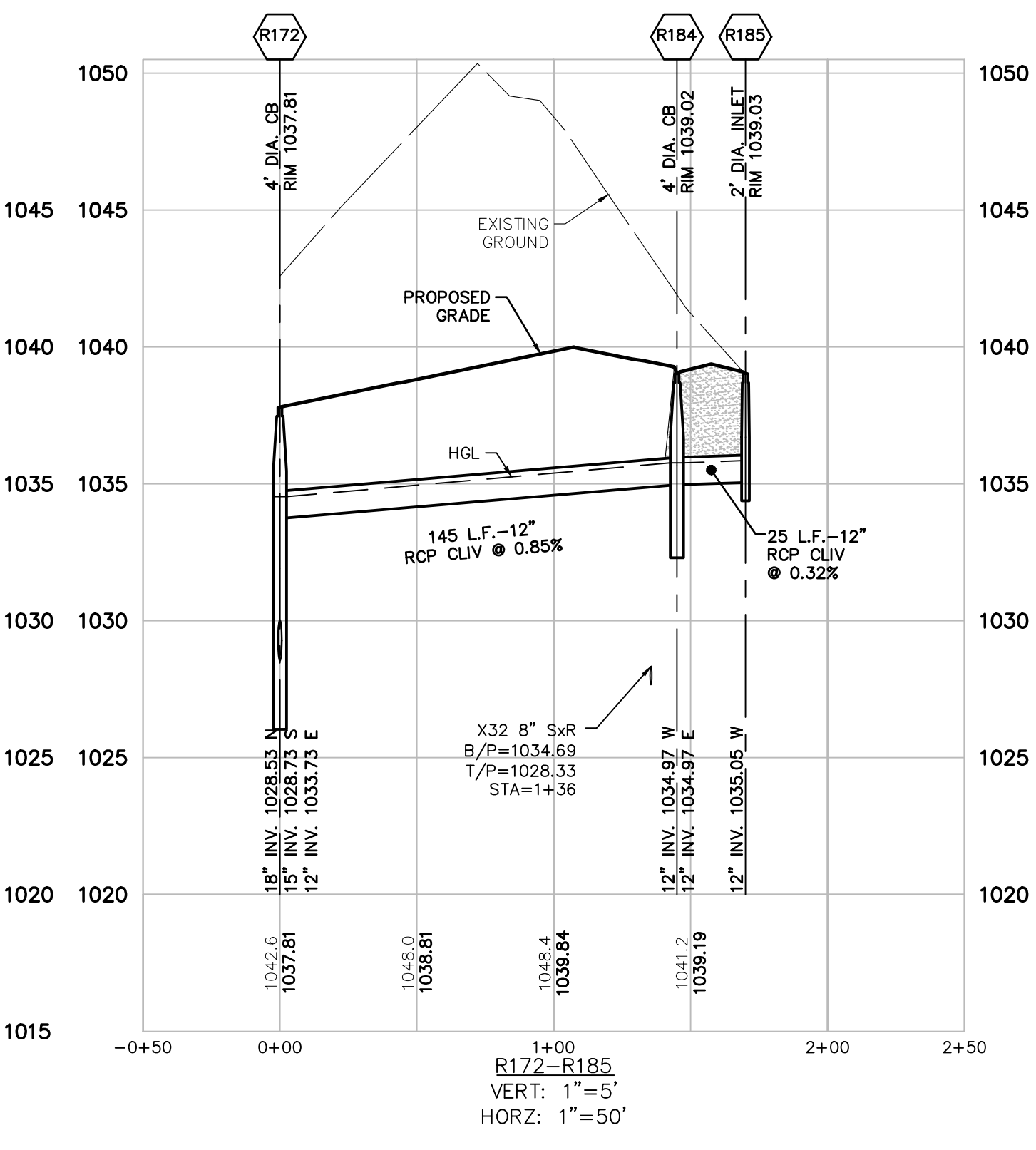
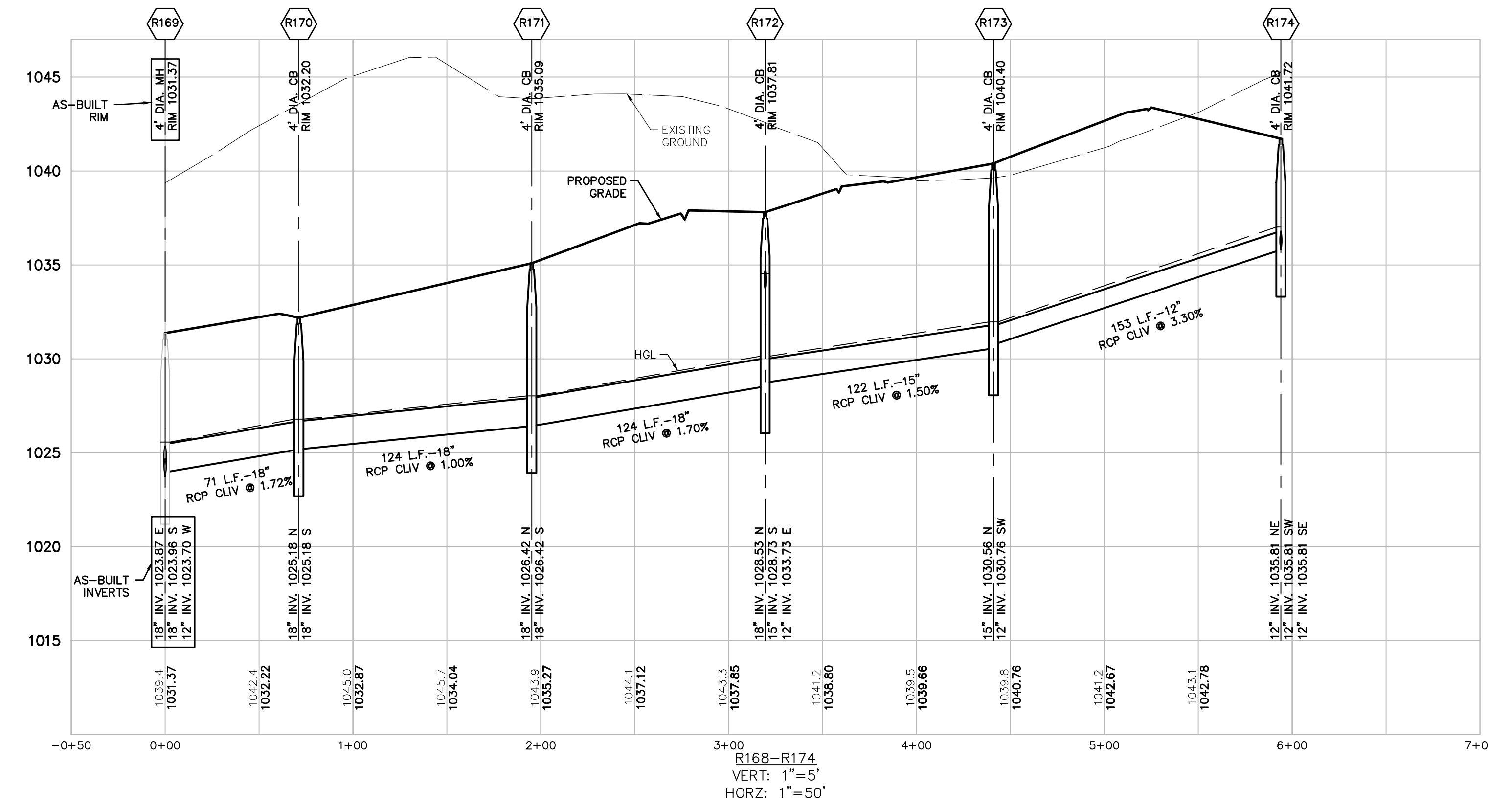
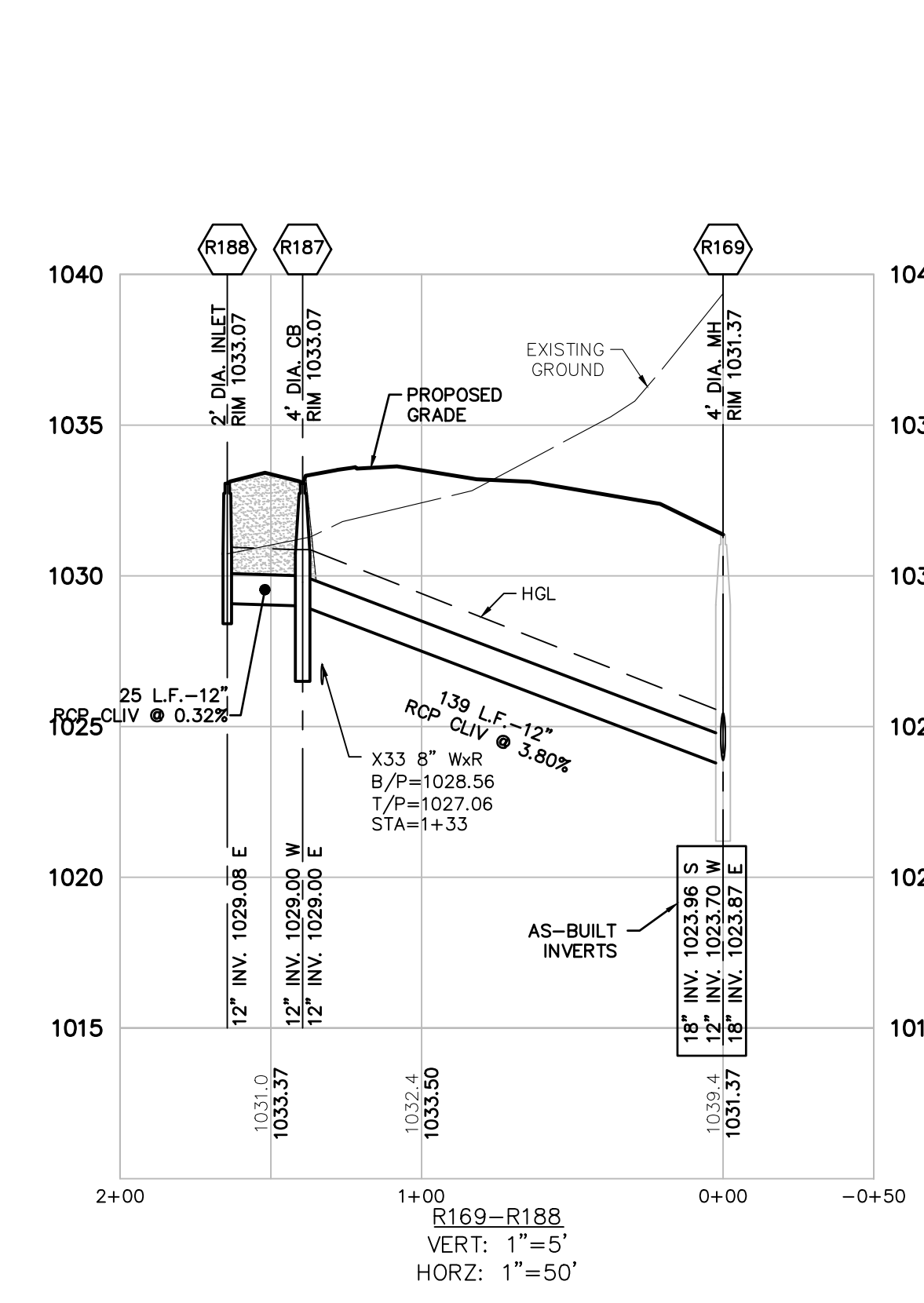
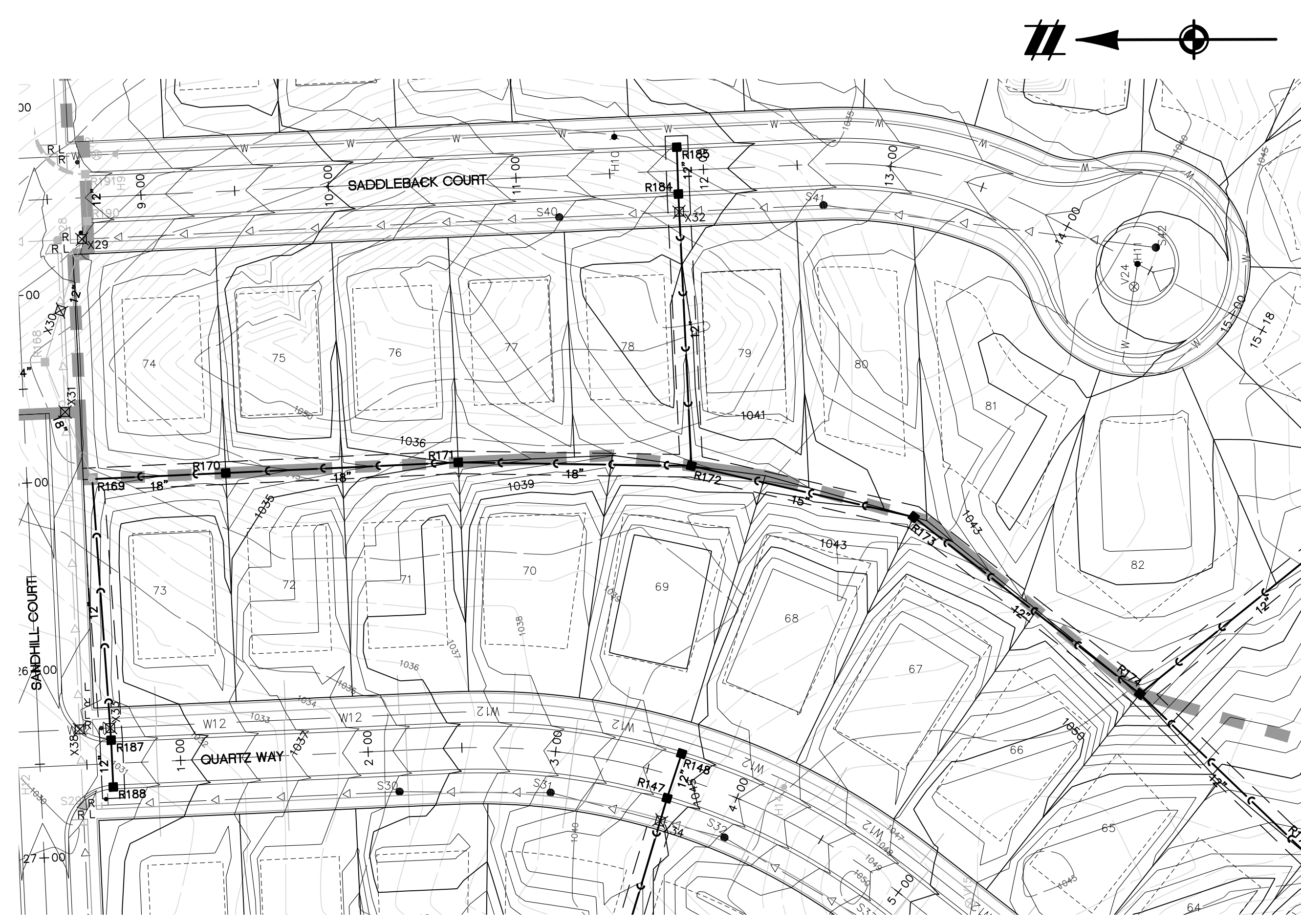
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STORM SEWER NOTES:
SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND	
	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE



SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 7

DATE: OCTOBER 29, 2020
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05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO PSP

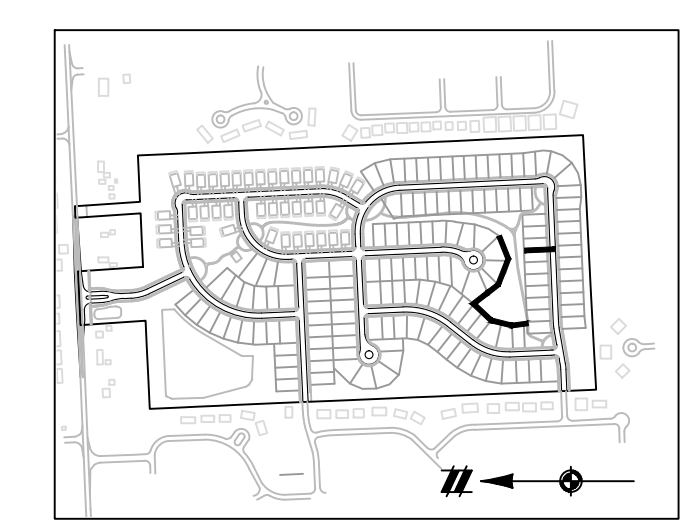
REVISIONS	
SCALE	0 25 50
1" = 50 FEET	
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P.M.	M BUSH
BOOK	--
JOB	18003309
SHEET NO.	26

CAD FILE: 18003309S2-13-STMPROF.DWG

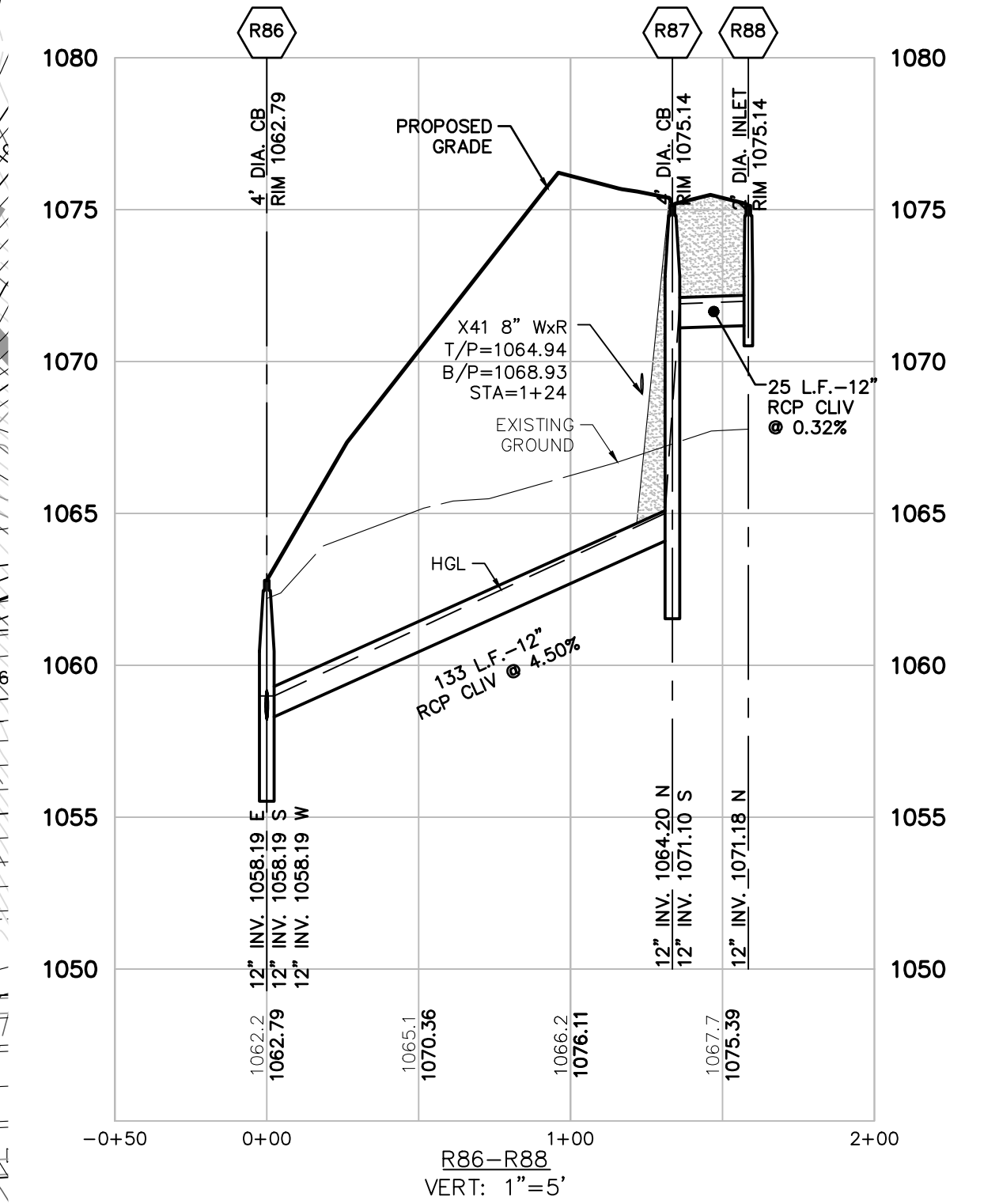
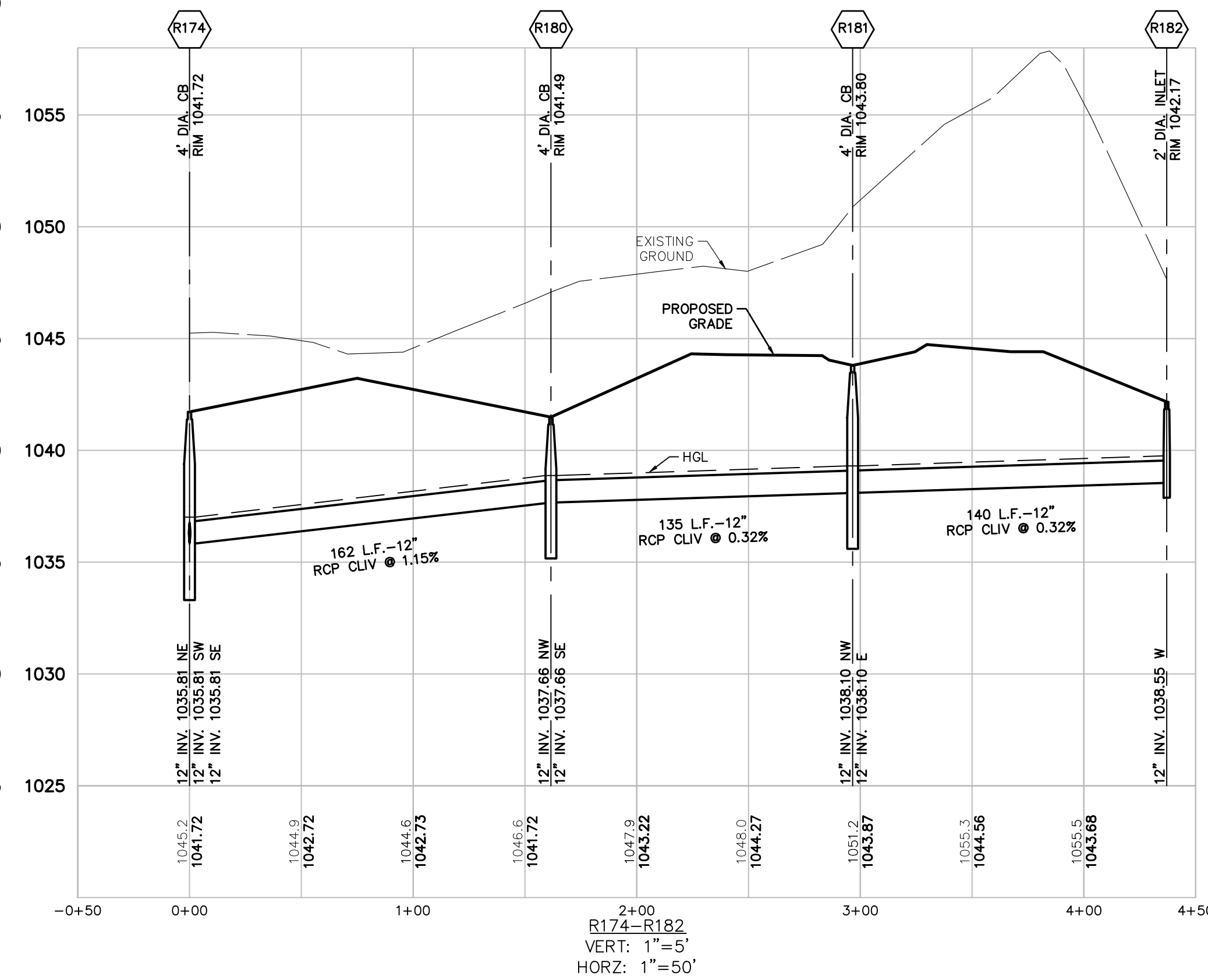
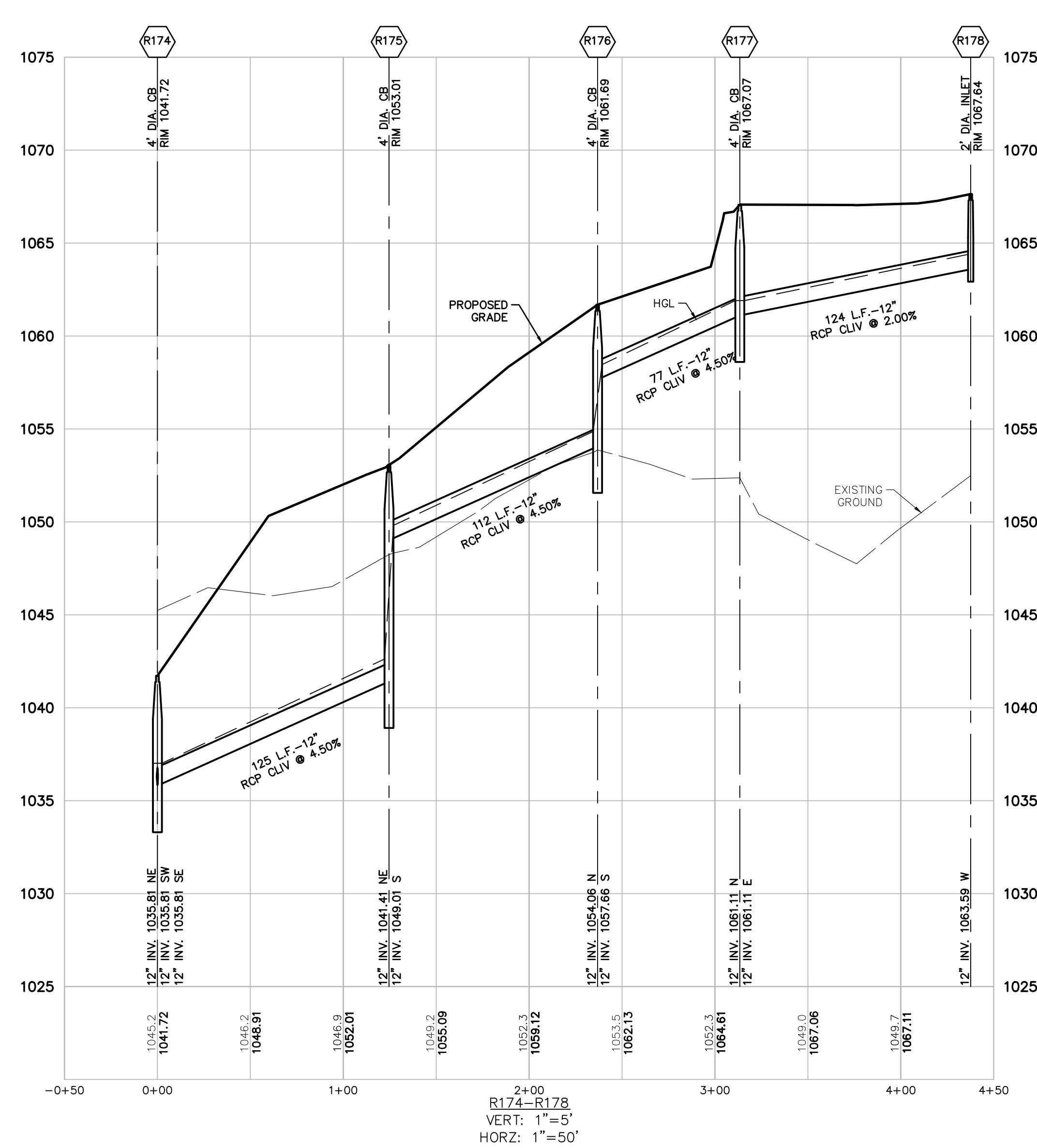
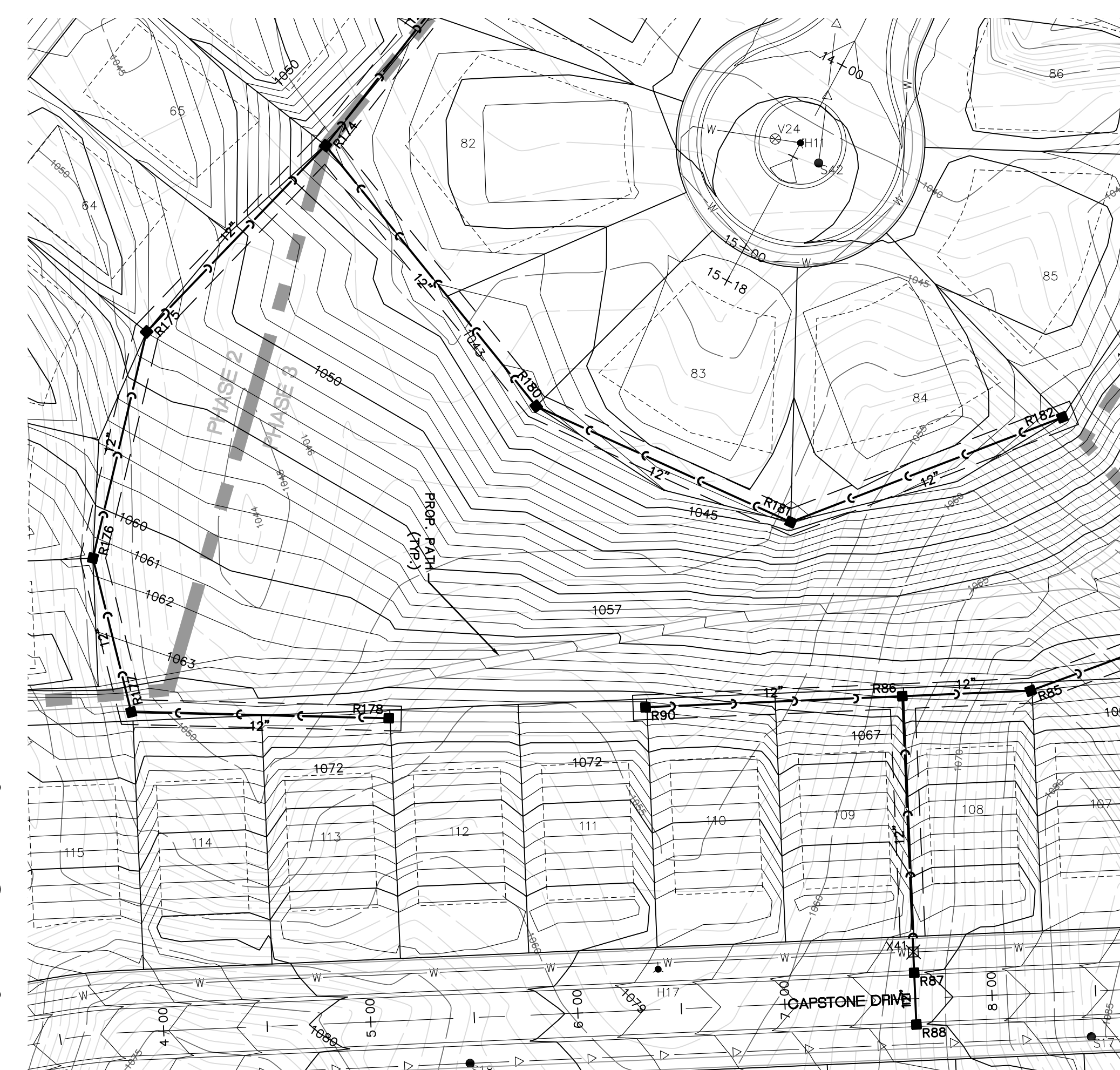
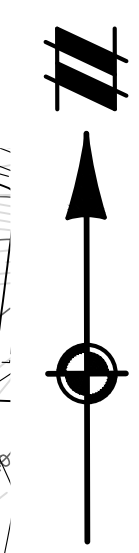
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KEYMAP
SCALE: 1"=1000'



STORM SEWER NOTES:
SEE SHEET 20 FOR STORM SEWER NOTES.

LEGEND	
	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	PROP. STORM SEWER
	PROP. SANITARY
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. END SECTION
	PROP. CATCH BASIN/INLET
	PROP. STORM MANHOLE
	PROP. FIRE HYDRANT
	PROP. VALVE

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
STORM SEWER PROFILES - 8

REVISIONS	
0	SCALE 0 25 50 1" = 50 FEET
DR. SK/KS	GH. CK
P.M.	M BUSH
BOOK	--
JOB	18003309
SHEET NO.	27

STORM SEWER CALCULATIONS AND STRUCTURE SCHEDULE

Table with columns: STR, TYPE, CASTING, RIM, PIPE OUT, PIPE IN, PIPE IN. Rows include storm sewer segments with their respective structural details and elevations.

Main calculation table with columns: FROM STRUCT, TO STRUCT, A TR AREA, C RUNOFF COEFF, AC EQUIV AREA, CA DESIGN SUM AC, TIME CONC, INTEN-SITY, Q FLOW, Qc PIPE CAPAC, D PIPE DIAM, L PIPE LENGTH, S SLOPE, HQq MIN HG, HGV MIN HG, HGL SLOPE, VF FULL, TT TIME OF FLOW, 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. Includes parameters at the top like I = B/(T+D)^E, B = 175.0, n = 0.013, E = 1, Vmin = 2.5, and a note for * Check Rim-HGL clearance.

811 logo and text: 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.

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M/1 HOMES OF MICHIGAN, LLC TRAILSIDE MEADOW FINAL SITE ENGINEERING PLAN PHASES 2-3-3 STORM SEWER CALCULATIONS SECTION 25 TOWN 3 NORTH, RANGE 8 EAST WHITE LAKE TOWNSHIP OAKLAND COUNTY, MICHIGAN

DATE: OCTOBER 29, 2020 02/17/2021: REV PER TOWNSHIP 05/27/2021: REV PER OCMRC 07/09/2021: AMENDMENT TO PSP

REVISIONS table with columns: SCALE (1" = 100 FEET), DR., SK/KS, GH, CK, P.M., M, BUSH, BOOK, JOB, SHEET NO. (18003309), and a small graphic scale.



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
DRAINAGE AREA MAP

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO PSP

REVISIONS
SCALE: 0 50 100
1" = 100 FEET
DR. SK/KS | GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO.

29

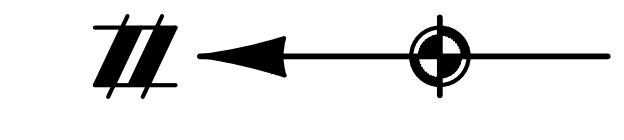
CAD FILE: 18003309S2-12-CALCS.DWG



RUNOFF COEFFICIENT 'C' SUMMARY

BASIN: 1		Basin Tributary Area: 66.7 Ac.			
LAND COVER	QUANTITY	UNIT	AREA (sf)	AREA (ac.)	'C' AC-IMP.
Misc. Impervious	0	0 sf	0.00	0.00	0.00
Houses - SF	93	1,800 sf	167,400	3.84	0.9
Houses - AA	91	2,500 sf	227,500	5.22	0.9
Driveway	184	700 sf	128,800	2.96	0.8
Road	8,800 lf	27' wide	237,600	5.45	0.8
Sidewalk	20,400 lf	5' wide	102,000	2.34	0.8
Open Water		at Outlet Elev.	36,000	0.83	1.00
Lawn		Remainder	46.05	0.2	9.21
Total			66.70		26.80
Composite Runoff 'C':			26.80 / 66.70 = 0.40		

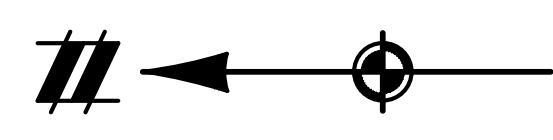
BASIN: 2		Basin Tributary Area: 3.0 Ac.			
LAND COVER	QUANTITY	UNIT	AREA (sf)	AREA (ac.)	'C' AC-IMP.
Misc. Impervious	0	0 sf	0.00	0.00	0.00
Houses	0	2,700 sf	0	0.00	0.9
Driveway	0	600 sf	0	0.00	0.8
Road	200 lf	27' wide	5,400	0.12	0.8
Sidewalk	400 lf	5' wide	2,000	0.05	0.8
Open Water		at Outlet Elev.	0	0.00	1.00
Lawn		Remainder	123,280	2.83	0.2
Total			3.00		0.70
Composite Runoff 'C':			0.70 / 3.00 = 0.23		



DETENTION BASIN 2
TRIBUTARY AREA
3.0 AC

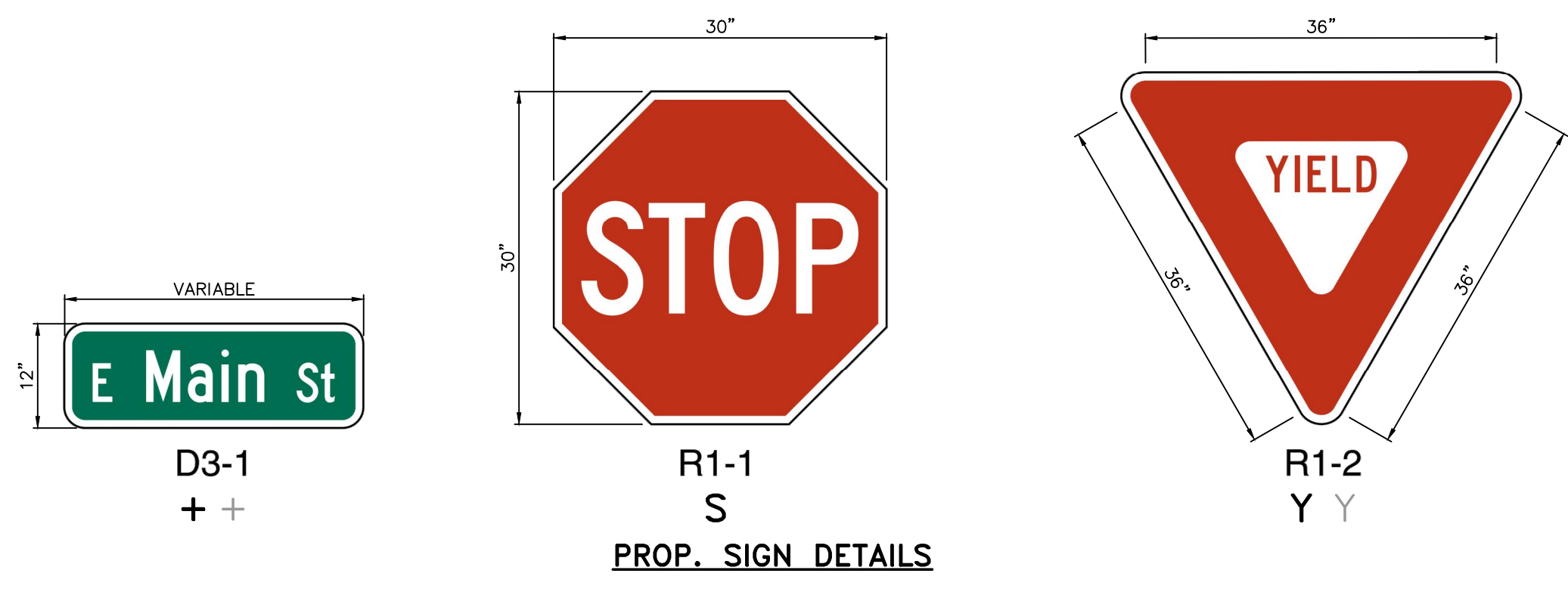
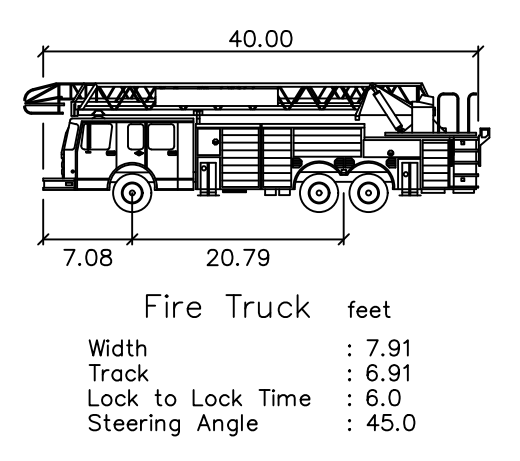
DETENTION BASIN 1
TRIBUTARY AREA
66.7 AC

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FIRE DEPARTMENT NOTES:

1. ALL REQUIRED FIRE HYDRANTS SHALL BE INSTALLED, IN SERVICE, AND FLUSHED PRIOR TO THE START OF CONSTRUCTION.
2. FIRE APPARATUS ACCESS ROADS SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING THE PARKING OF VEHICLES OR THE PLACEMENT OF CONSTRUCTION MATERIAL. THE REQUIRED NO PARKING FIRE LANE SIGNS SHALL BE INSTALLED PRIOR TO ANY BUILDING CONSTRUCTION.
3. PRIOR TO AND DURING CONSTRUCTION AN APPROVED FIRE APPARATUS ACCESS DRIVE SHALL BE CONSTRUCTED OF A MINIMUM 6" COMPACTED 21AA AGGREGATE PRIOR TO THE START OF CONSTRUCTION.
4. STREETS AND ROAD SHALL BE IDENTIFIED WITH APPROVED SIGNS. TEMPORARY SIGNS SHALL BE INSTALLED AT EACH STREET INTERSECTION WHEN CONSTRUCTION OF NEW ROADWAYS ALLOWS PASSAGE BY VEHICLES. SIGNS SHALL BE OF AN APPROVED SIZE, WEATHER RESISTANT AND BE MAINTAINED UNTIL REPLACED BY PERMANENT SIGNS.



LEGEND	
	BOUNDARY LINE
	PROPERTY LINE
	EXIST. ROADS
	EXIST. CONTOUR
	EXIST. FENCE
	EXIST. GRAVEL
	EXIST. STORM SEWER
	EXIST. BUILDING
	EXIST. WETLAND
	EXIST. SIGN
	EXIST. CATCH BASIN
	EXIST. END SECTION
	PROP. CONTOUR
	PROP. LOT LINE
	PROP. RIGHT OF WAY
	PROP. BACK OF CURB
	PROP. SETBACK
	PROP. SIDEWALK
	PROP. BUILDING
	EXIST. 12" WATER MAIN (PHASE 1)
	EXIST. 8" WATER MAIN (PHASE 1)
	EXIST. FIRE HYDRANT (PHASE 1)
	EXIST. VALVE (PHASE 1)
	PROP. 12" WATER MAIN
	PROP. 8" WATER MAIN
	PROP. FIRE HYDRANT
	PROP. VALVE
	EXIST. SIGN (PHASE 1)
	PROP. SIGN (PHASE 2-3)
	PROP. HYDRANT COVER
	EXIST. HYDRANT COVER
	PROP. YIELD SIGN
	PROP. STOP SIGN
	PROP. ROAD NAME SIGN
	PROP. YIELD SIGN
	PROP. ROAD NAME SIGN

811
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TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
FIRE PROTECTION AND SIGNAGE PLAN

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

REVISIONS
SCALE: 0 50 100
1" = 100 FEET
DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 30

K:\18003309\PLAN\REVISIONS\FINAL - PHAS 2-3\18003309-17-PP-036-7/1/2021 11:31 AM KJLDR 945038

CAD FILE: 18003309S2-17-PP-036



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
TYPICAL BUILDING ELEVATIONS

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

Table with 2 columns: REVISIONS, SCALE. Includes a graphical scale bar.

DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. 31



BLOOMINGTON - SINGLE FAMILY
TYPICAL ELEVATION SHOWN - FOR REPRESENTATIVE PURPOSES ONLY



ERIE - SINGLE FAMILY
TYPICAL ELEVATION SHOWN - FOR REPRESENTATIVE PURPOSES ONLY



FINDLAY - SINGLE FAMILY
TYPICAL ELEVATION SHOWN - FOR REPRESENTATIVE PURPOSES ONLY



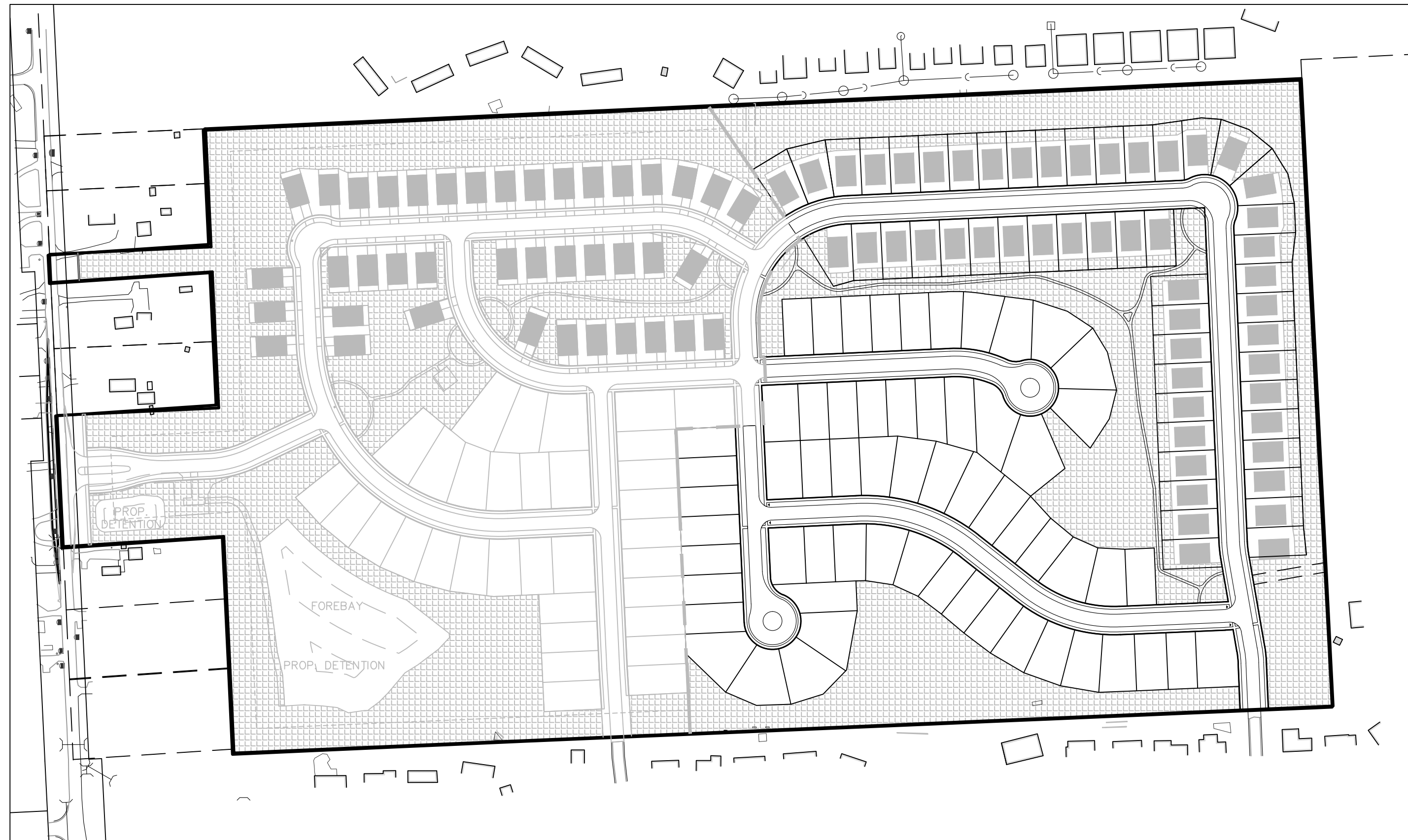
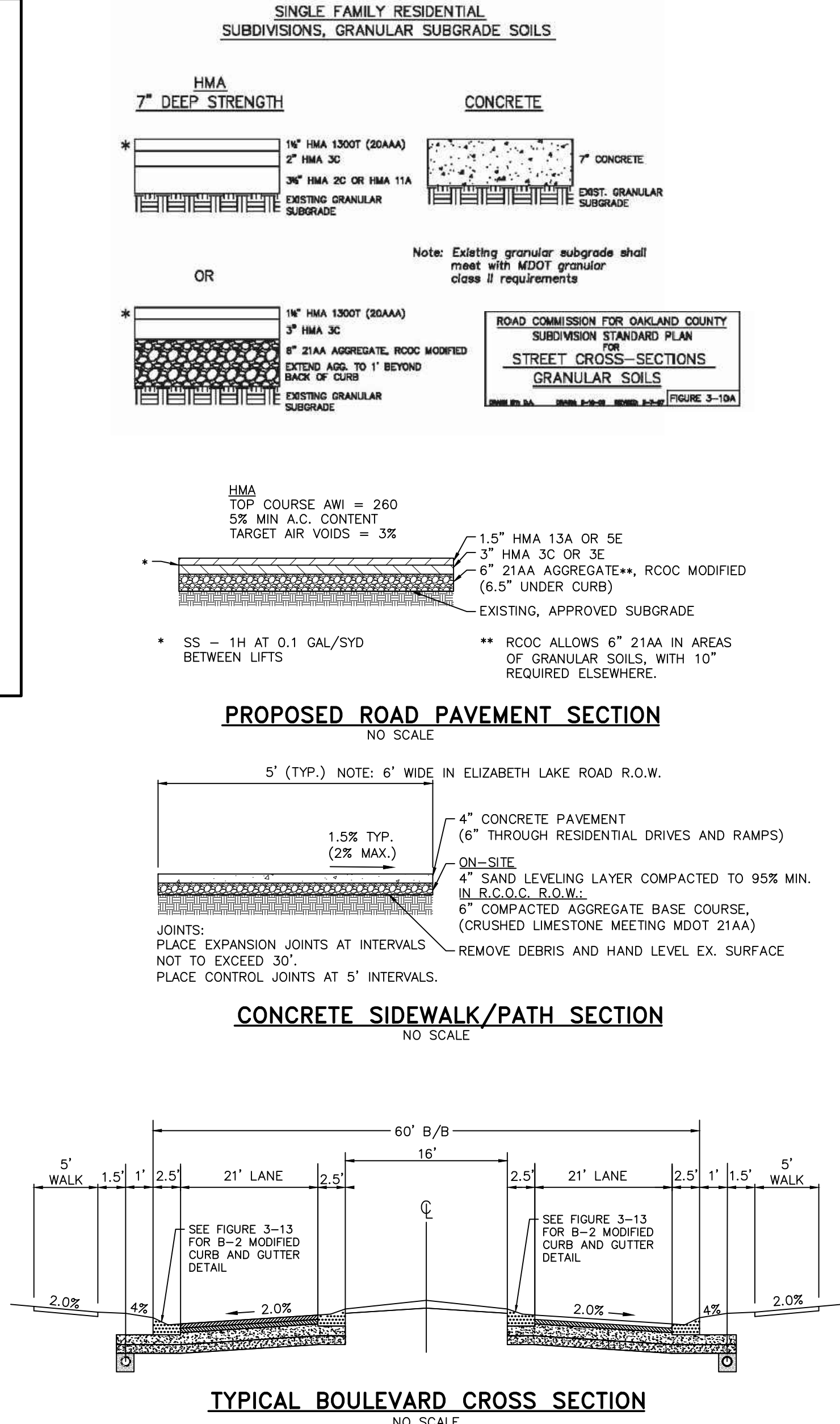
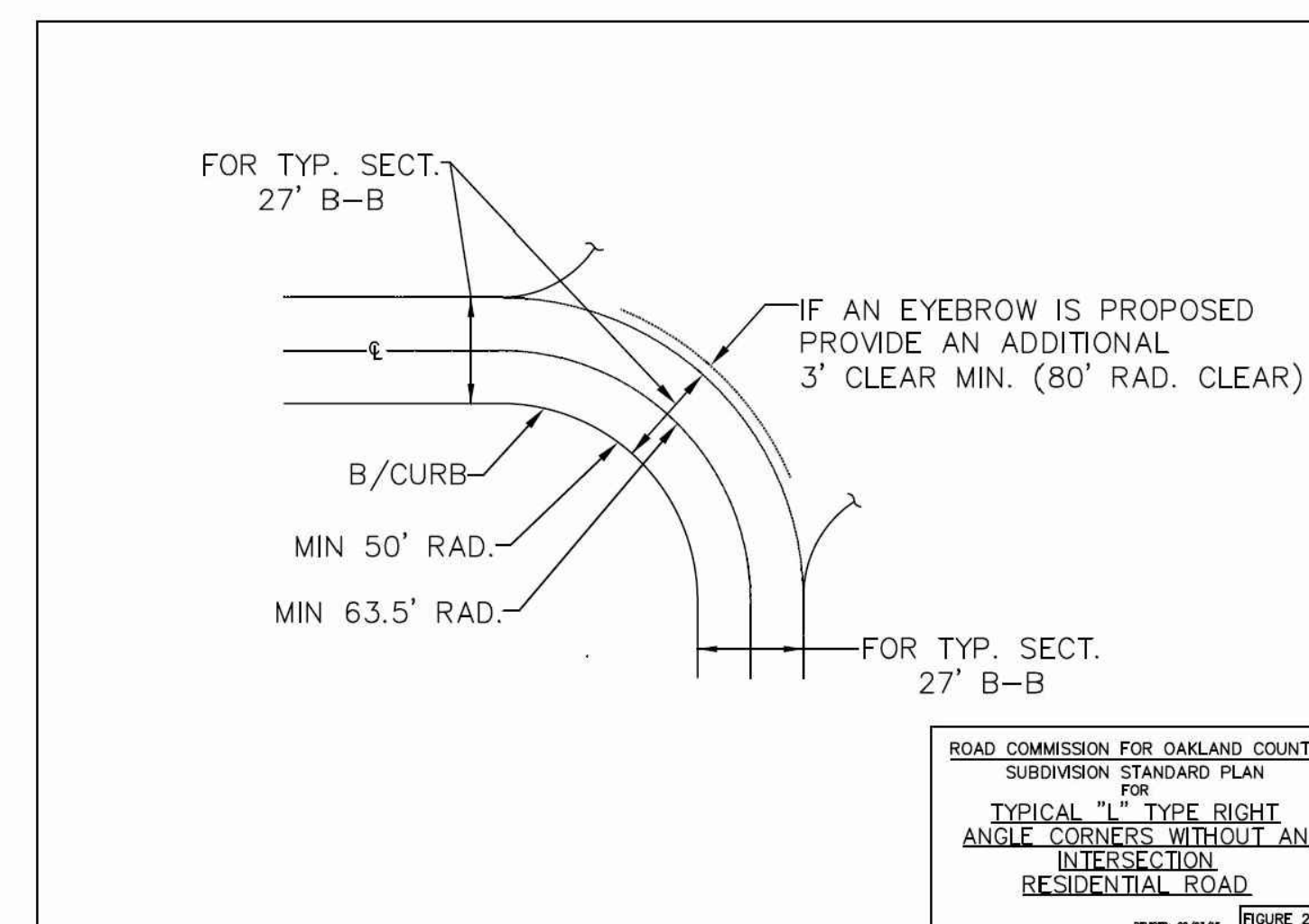
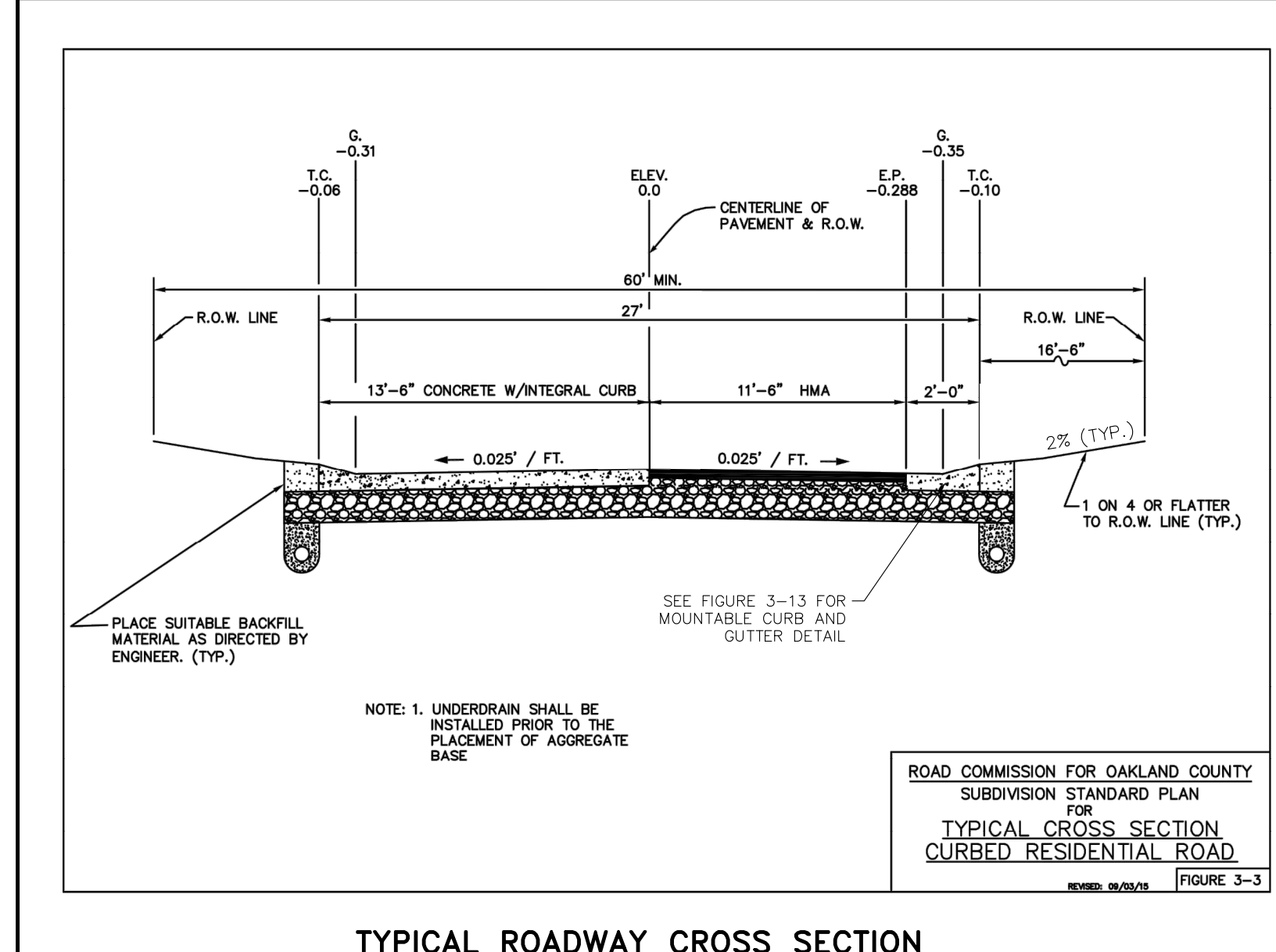
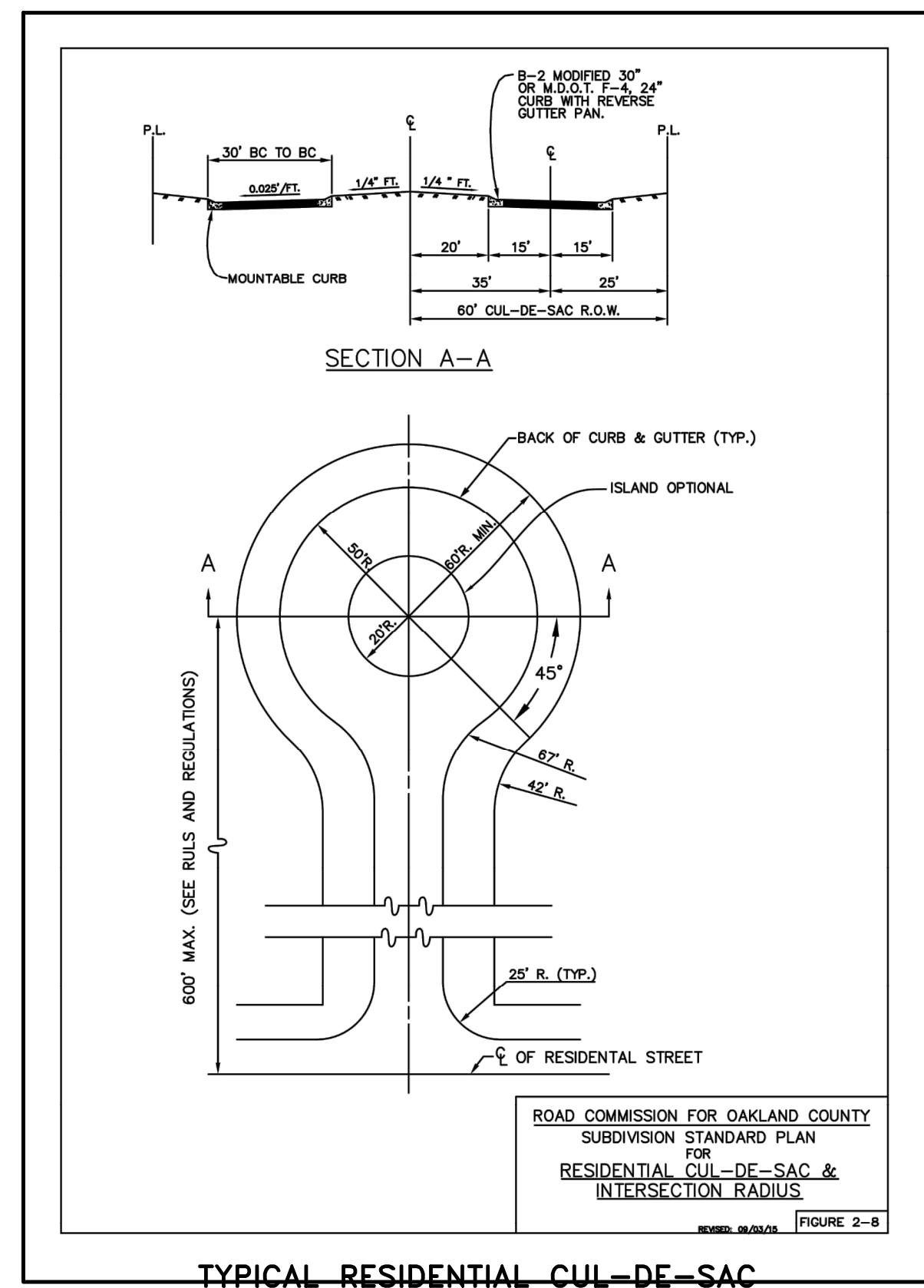
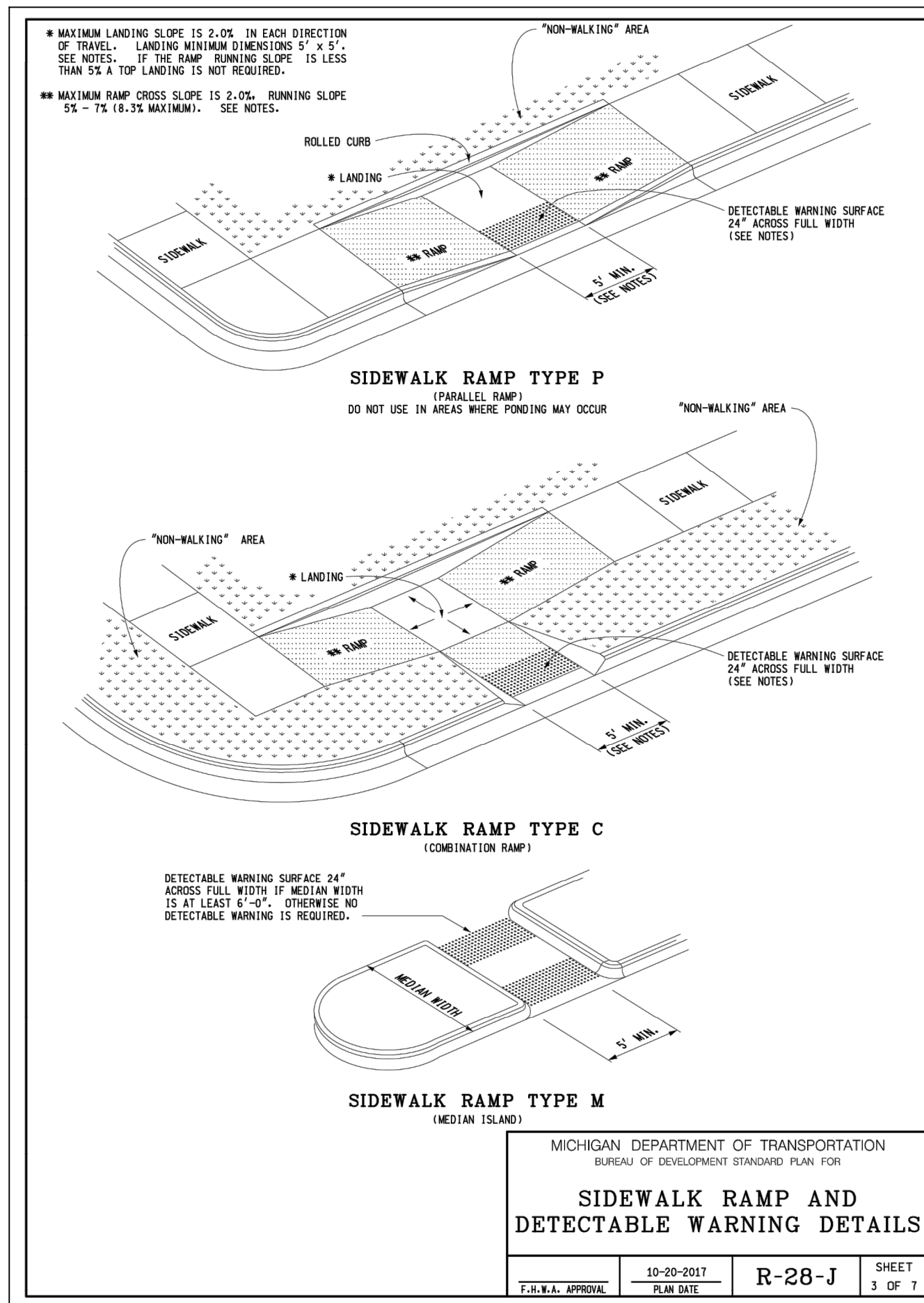
FIRESTONE - ACTIVE ADULT
TYPICAL ELEVATION SHOWN - FOR REPRESENTATIVE PURPOSES ONLY



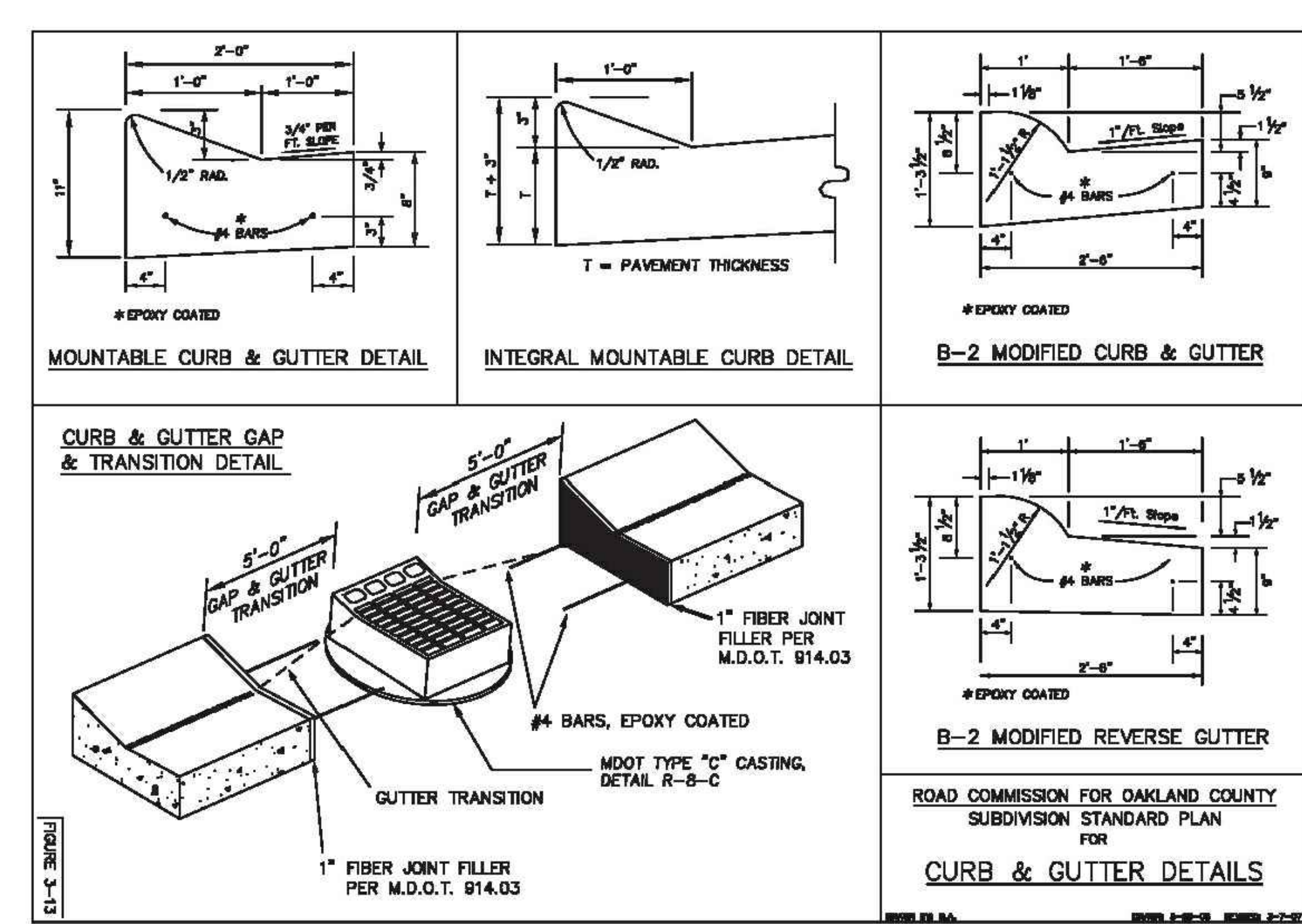
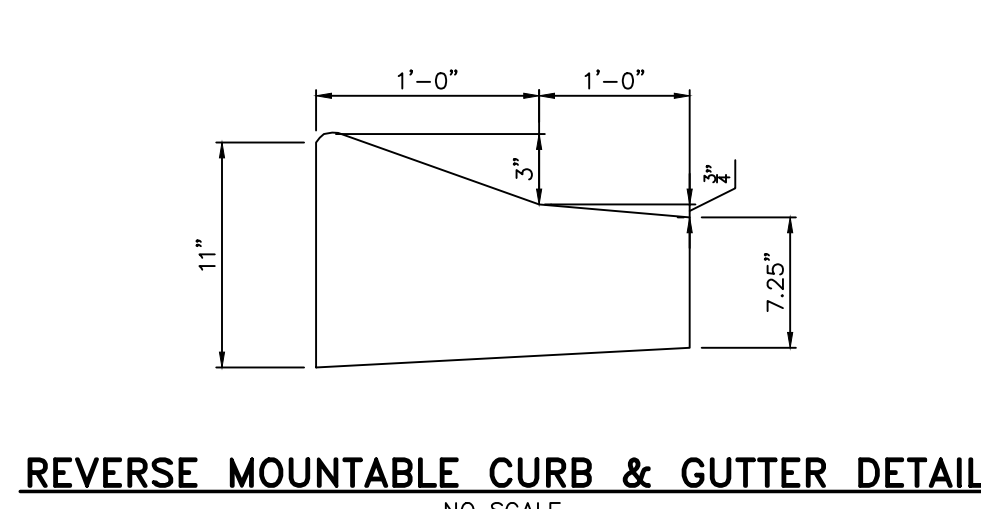
RIVERSIDE - ACTIVE ADULT
TYPICAL ELEVATION SHOWN - FOR REPRESENTATIVE PURPOSES ONLY

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CAD FILE: 18003309S2-06-01.DWG



1. THE PROPOSED OPEN SPACE AREA IS COMPUTED USING COMMON-USE GREEN AREA WITHIN THE NET SITE AREA, GENERALLY EXCLUDING THE FOLLOWING (REFER TO EXHIBIT ABOVE FOR FURTHER CLARITY):
PROPOSED ROAD RIGHT-OF-WAY EASEMENTS
SINGLE FAMILY LOTS
ACTIVE ADULT BUILDINGS, PATIOS, SIDE YARDS AND FRONT YARDS
NOTE THAT THE DETENTION BASINS (APPROX. 2.3 AC. TOTAL AREA SHOWN) ARE NOT INCLUDED AS OPEN SPACE IN THE ABOVE EXHIBIT.



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WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
PAVING & MISCELLANEOUS DETAILS

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

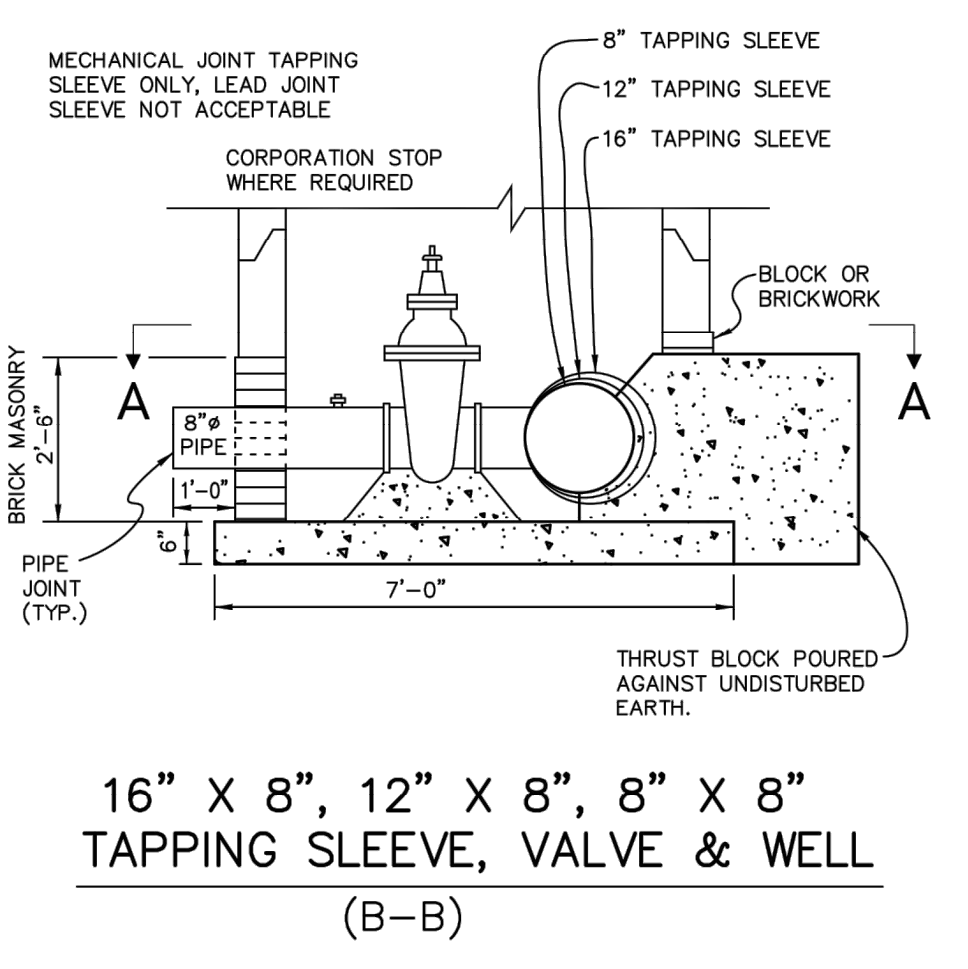
REVISIONS

SCALE: 0' 1" 2" 3" 4" 5" 6" 7" 8" 9" 10'

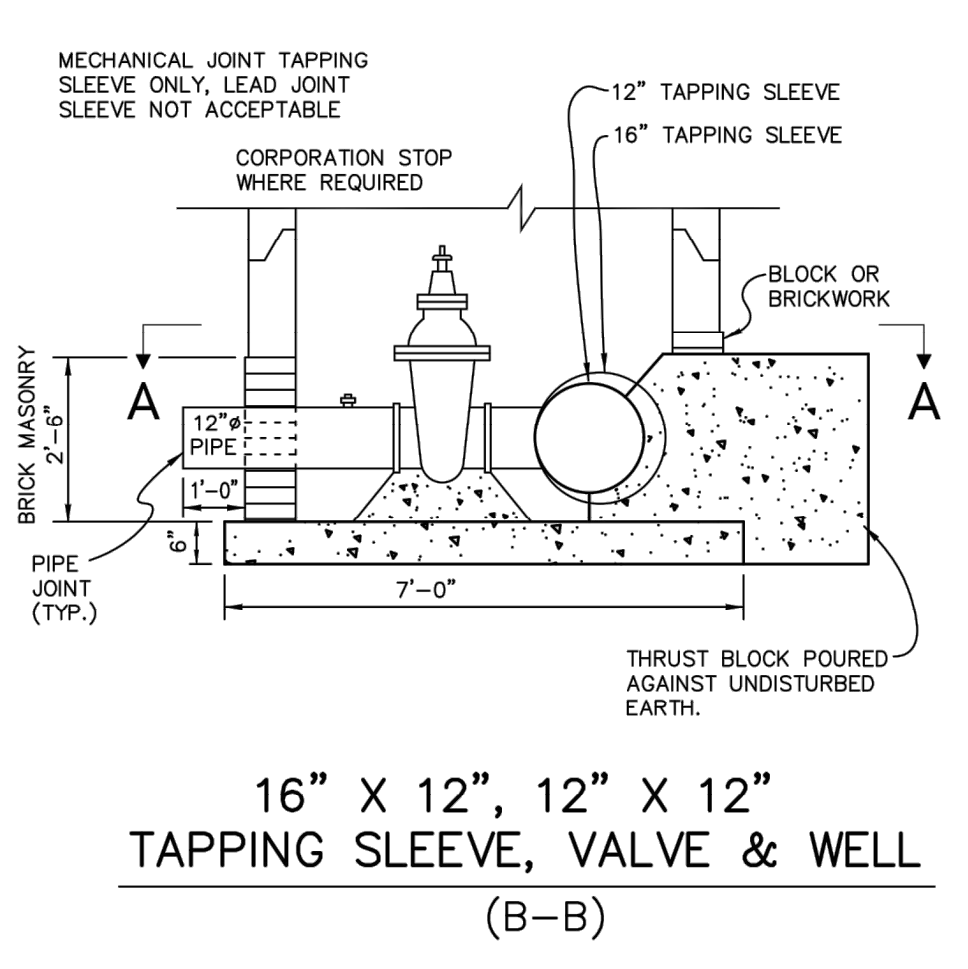
AS NOTED

DR. SK/KS GH. CK
P.M. M BUSH
BOOK ---
JOB 18003309
SHEET NO. DT1

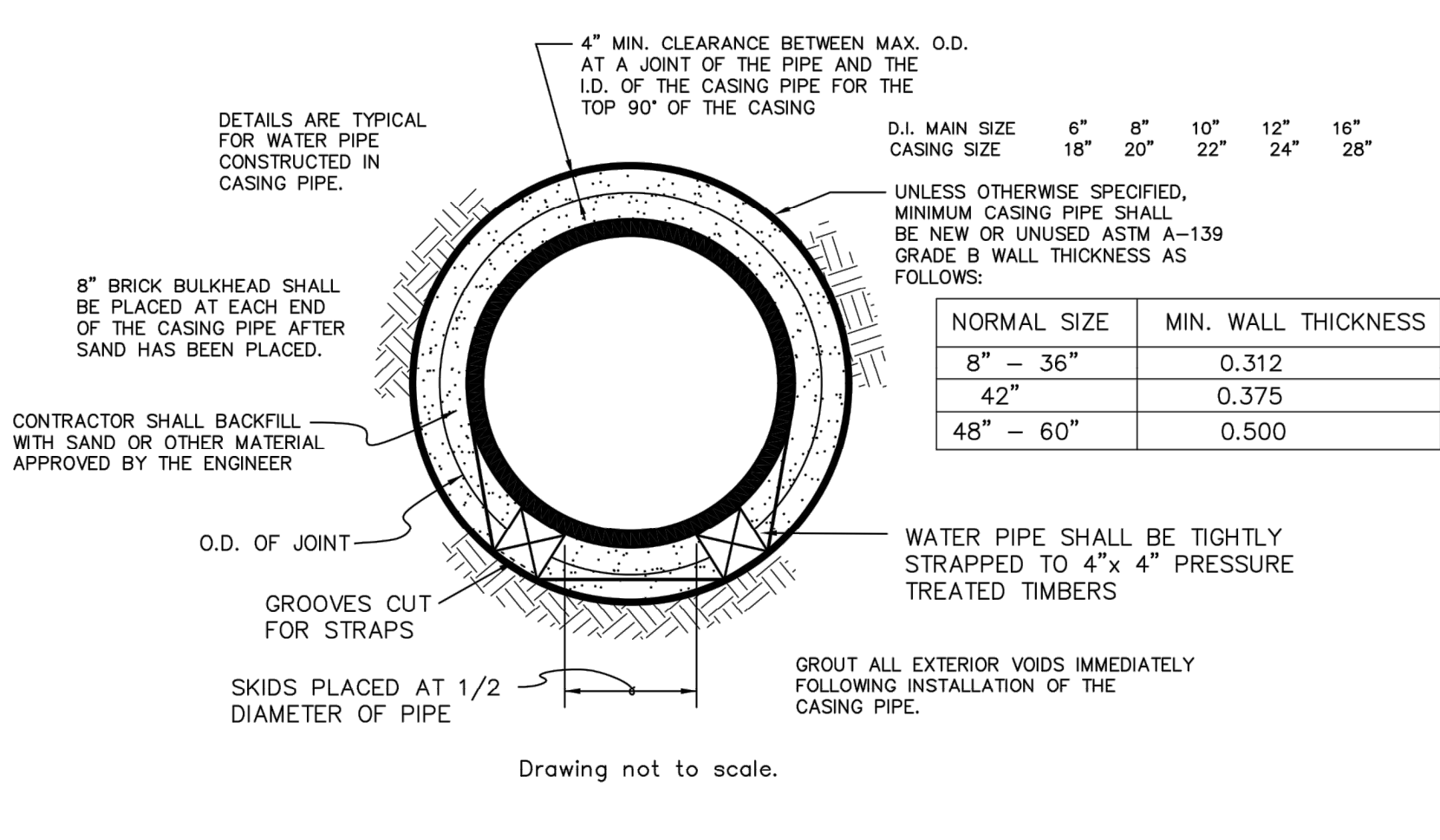
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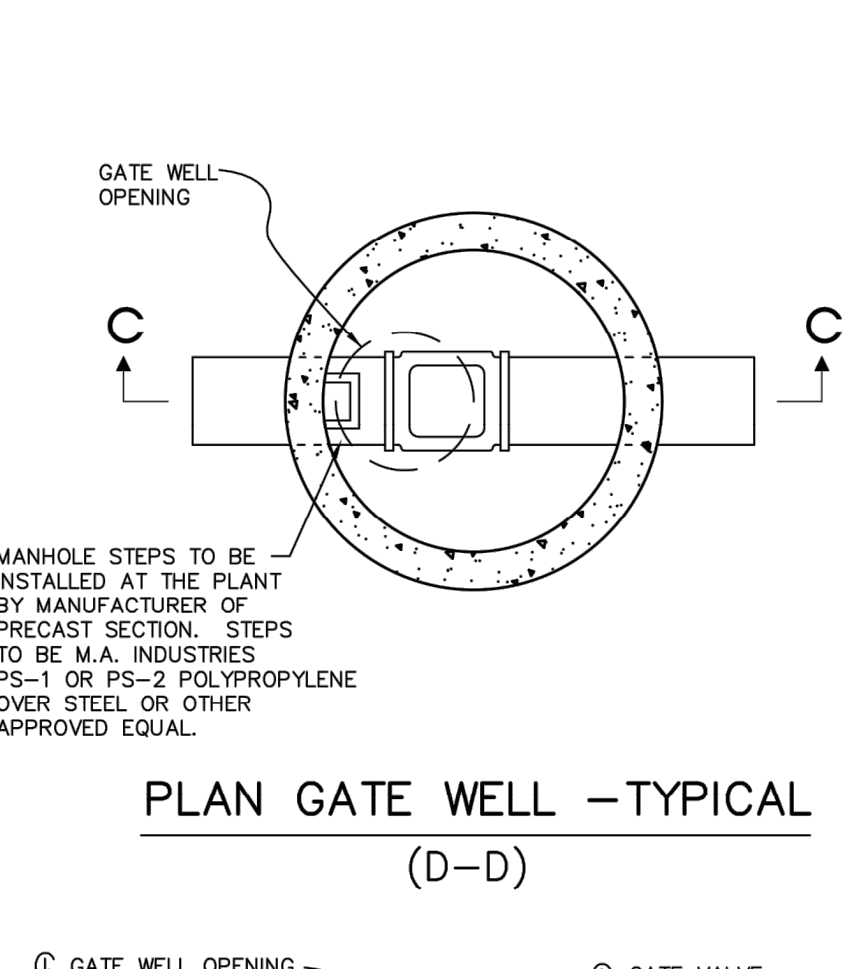
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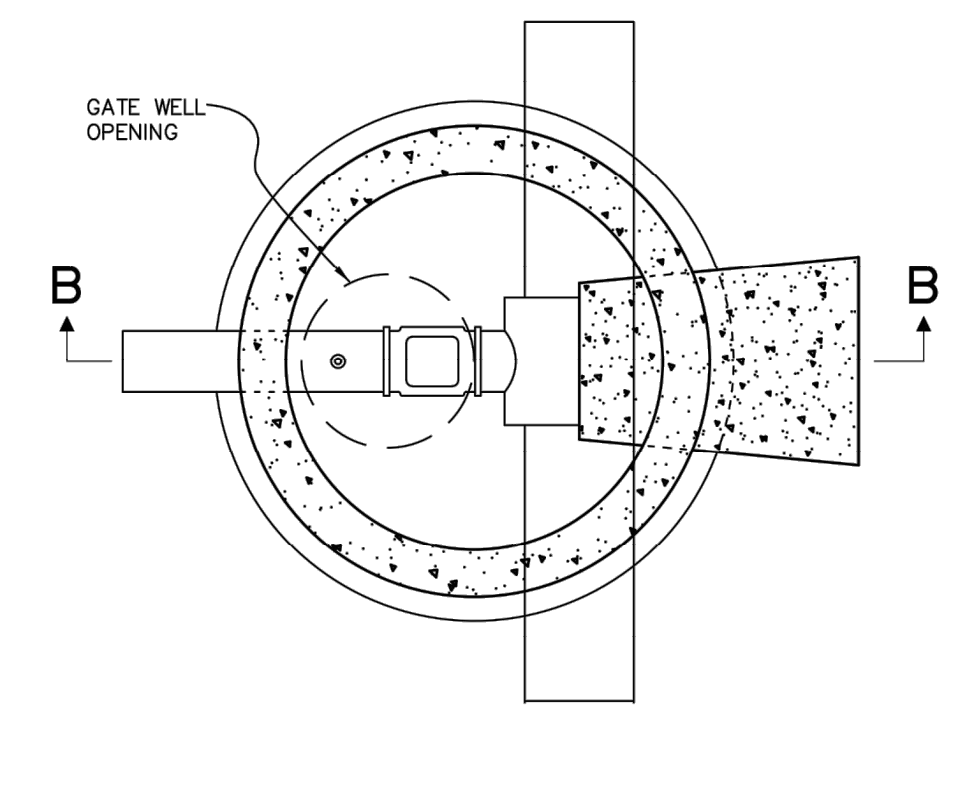
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



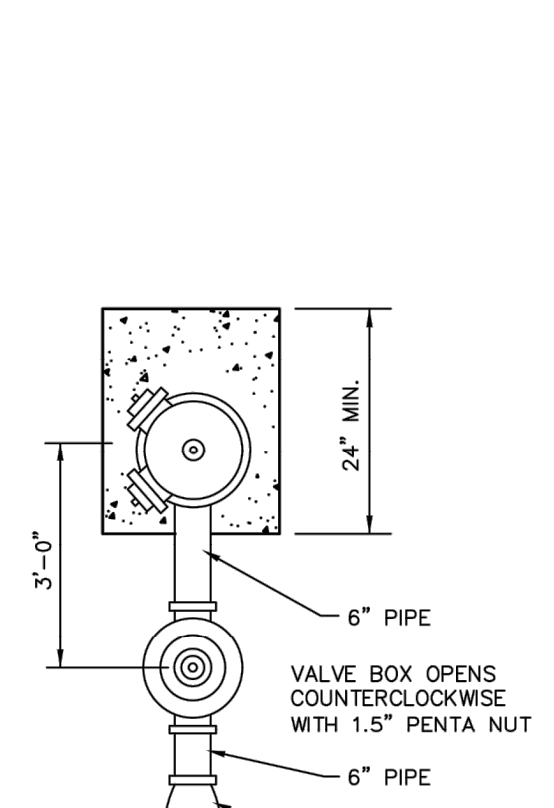
PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING



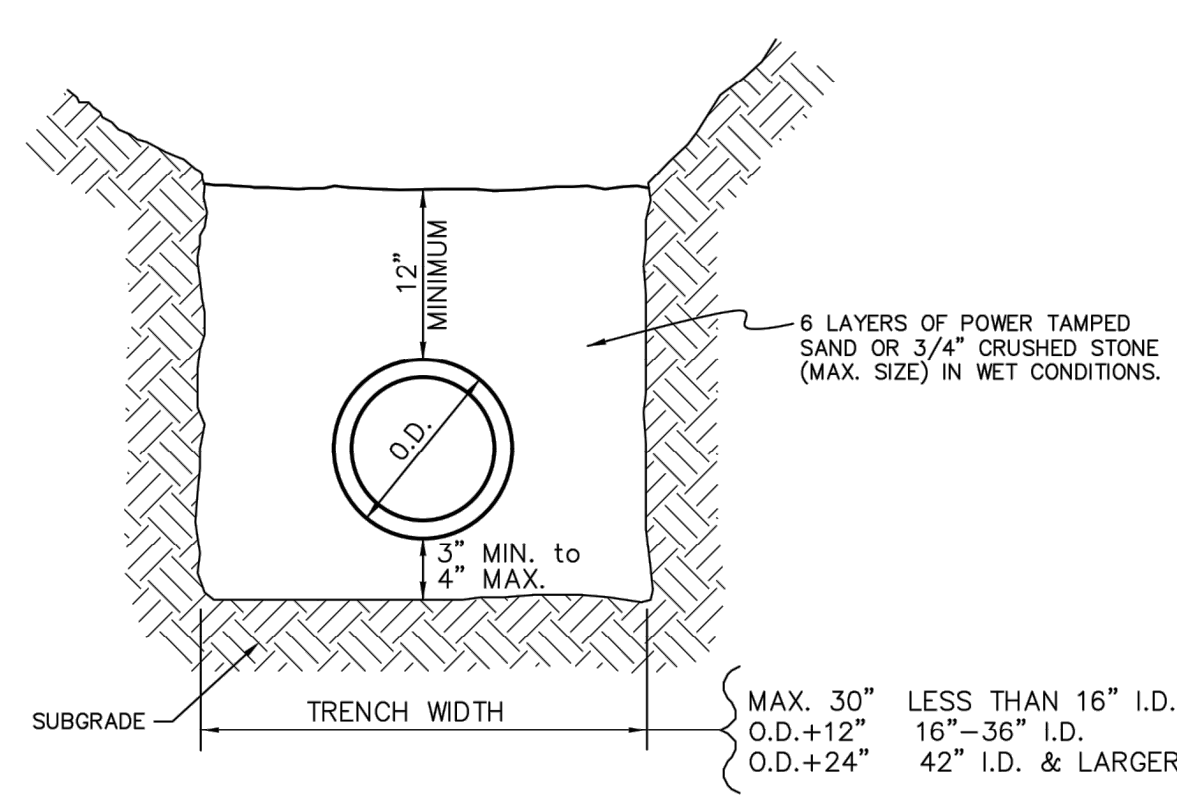
PLAN GATE WELL - TYPICAL (D-D)



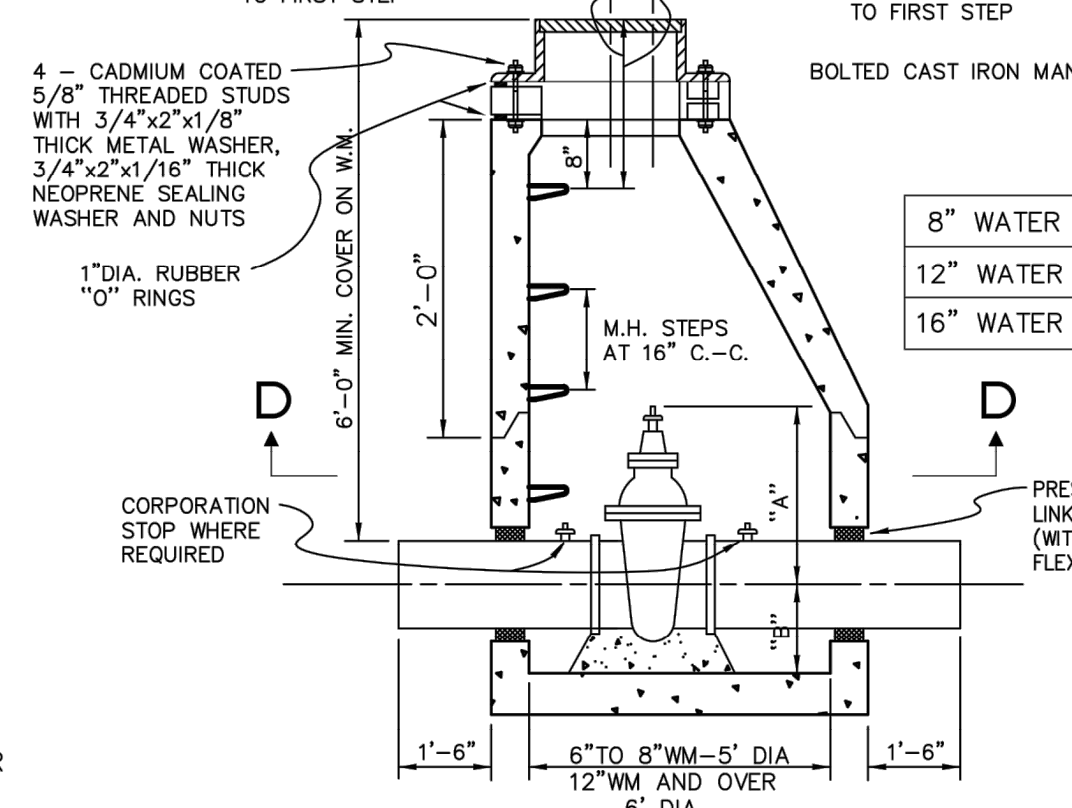
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



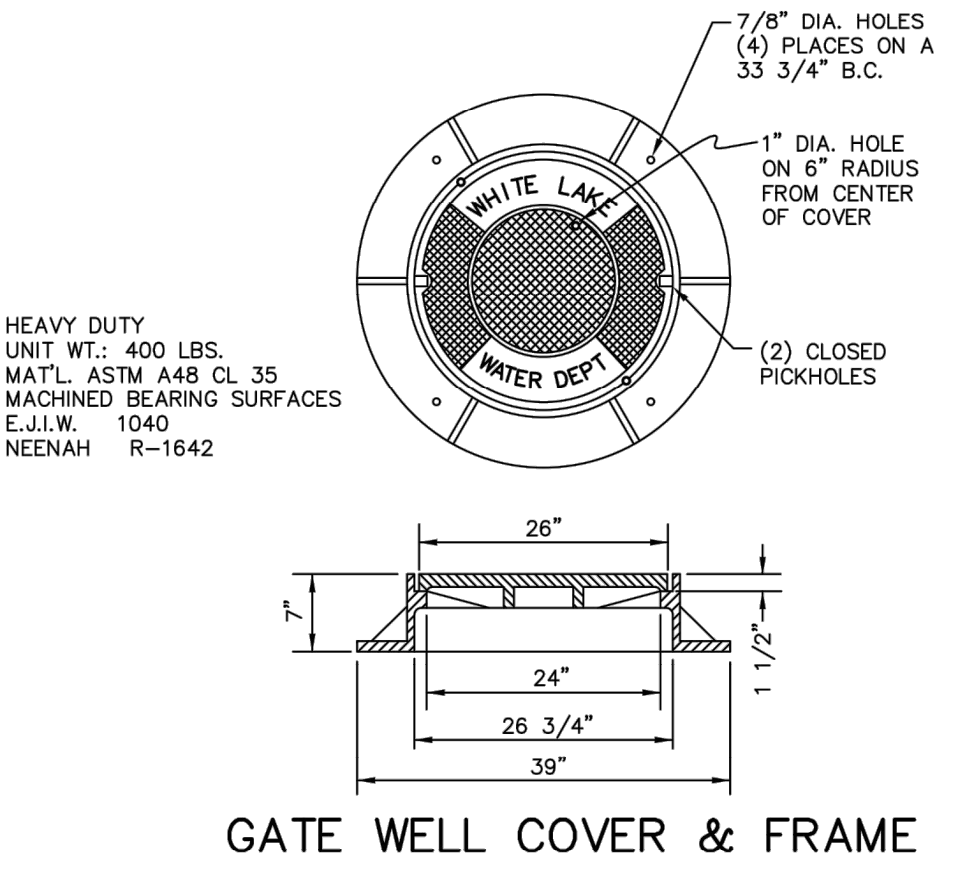
VALVE BOX OPENS COUNTERCLOCKWISE WITH 1.5" PENTA NUT



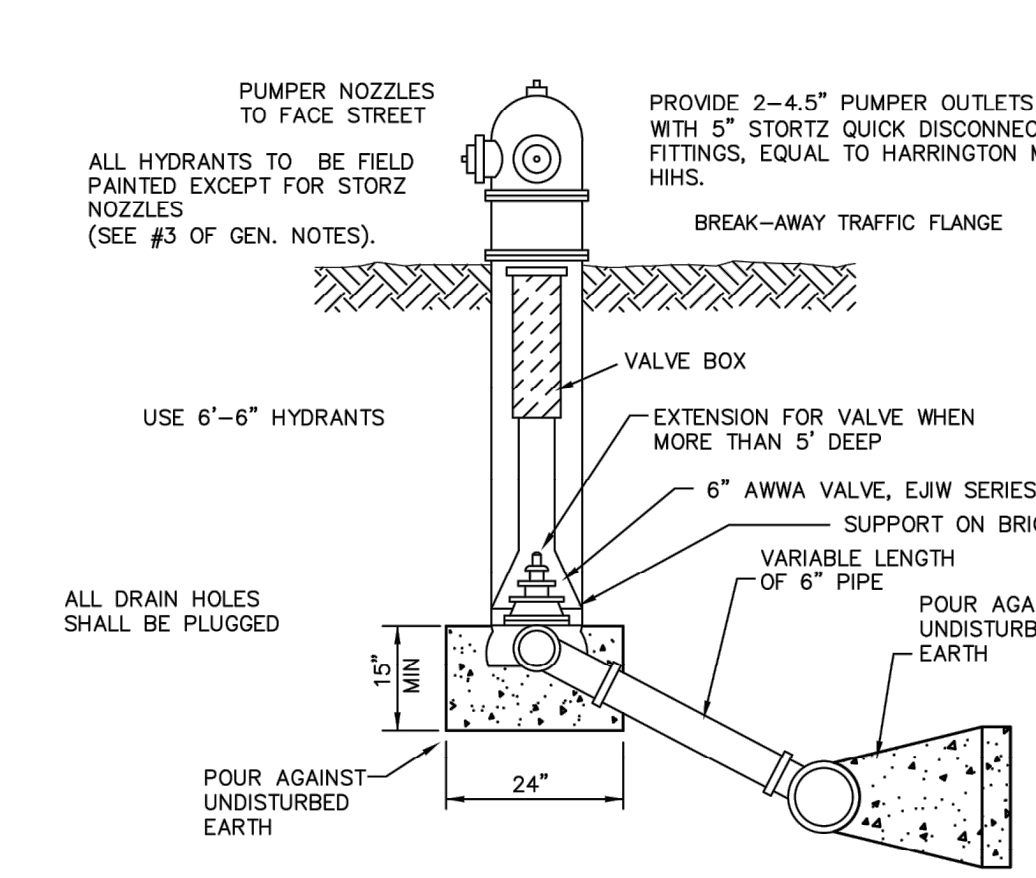
STANDARD BEDDING FOR WATER PIPE



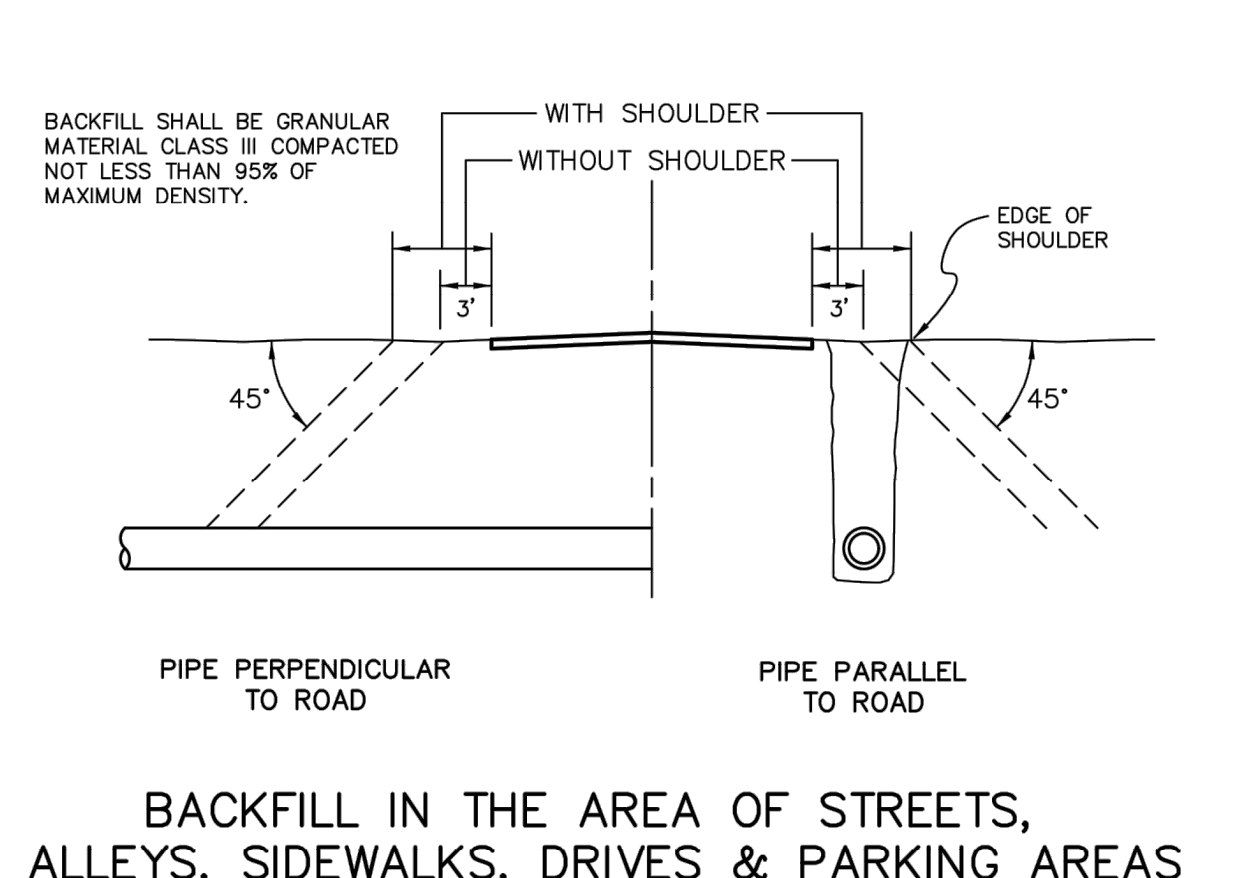
GATE WELL (C-C)



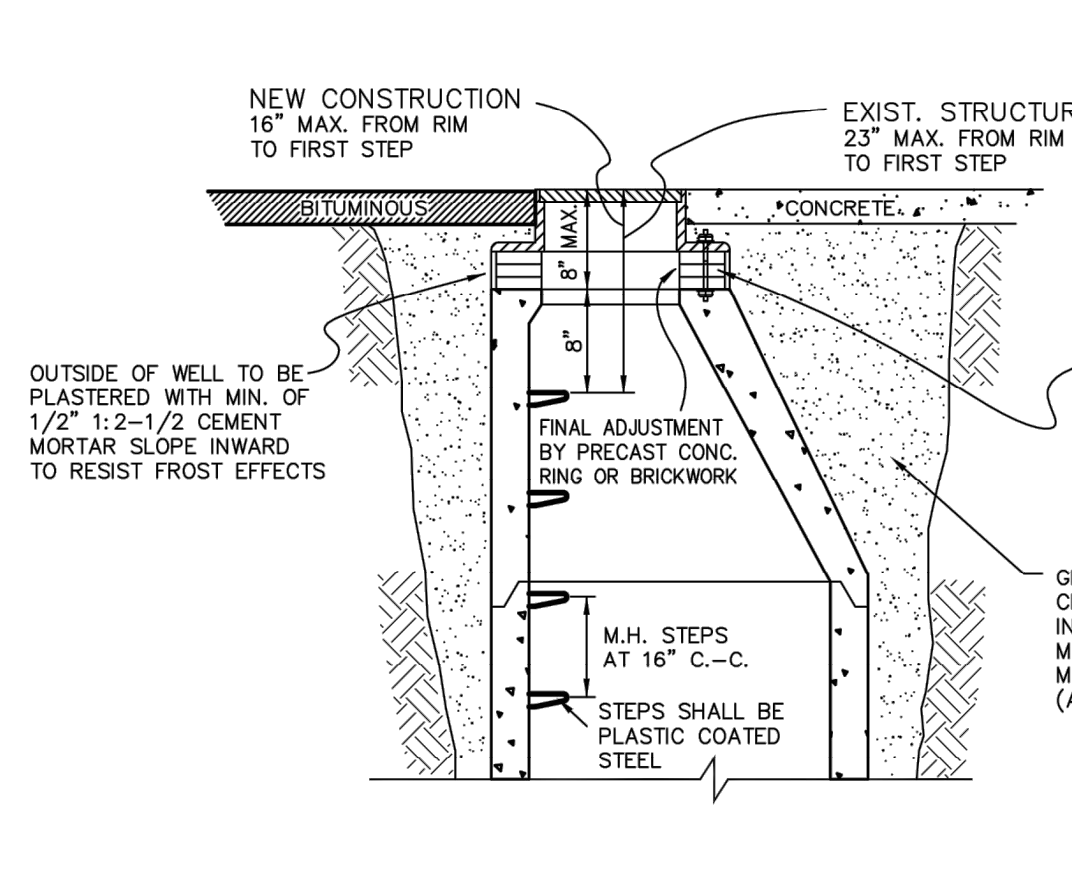
GATE WELL COVER & FRAME



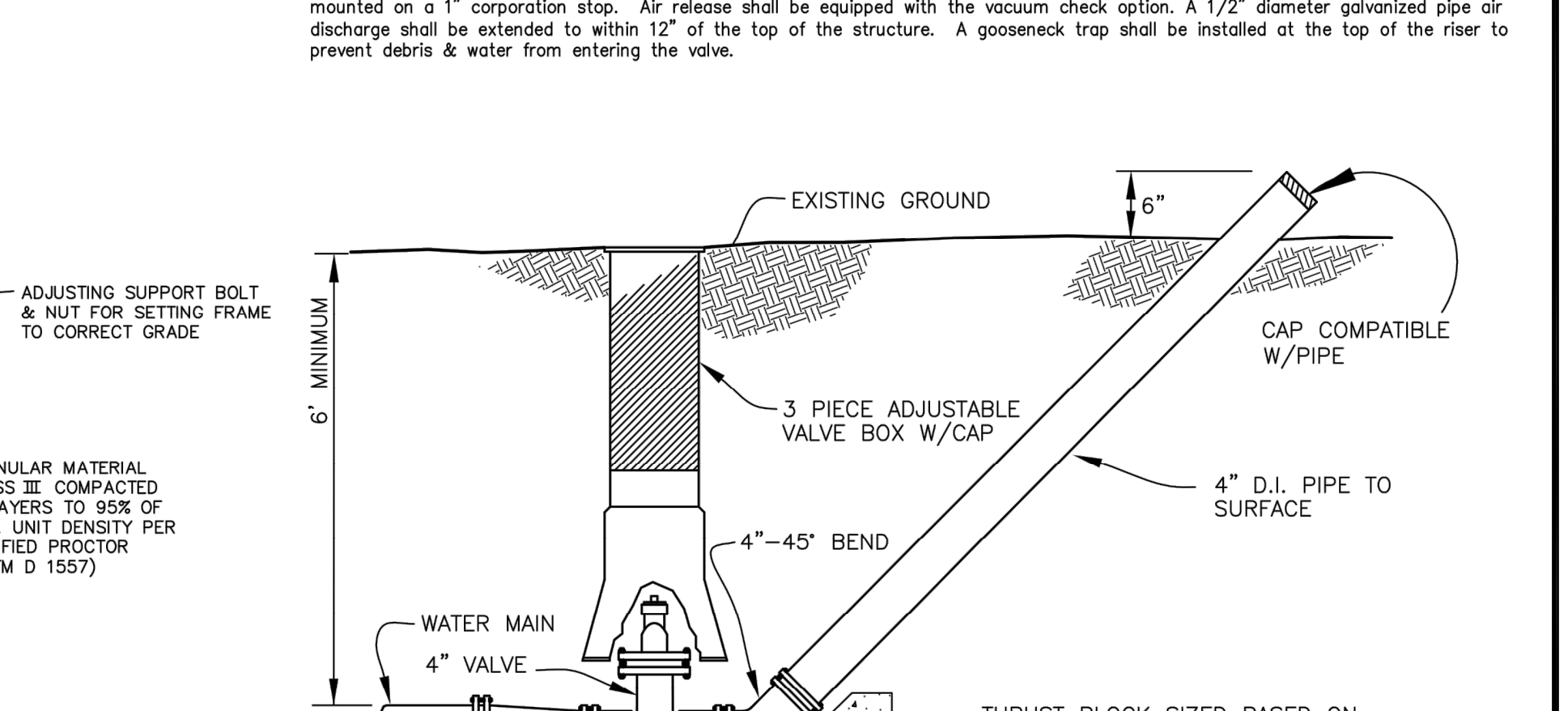
MODEL 5BR-250 EAST JORDAN OR APPROVED EQUAL TRAFFIC MODEL



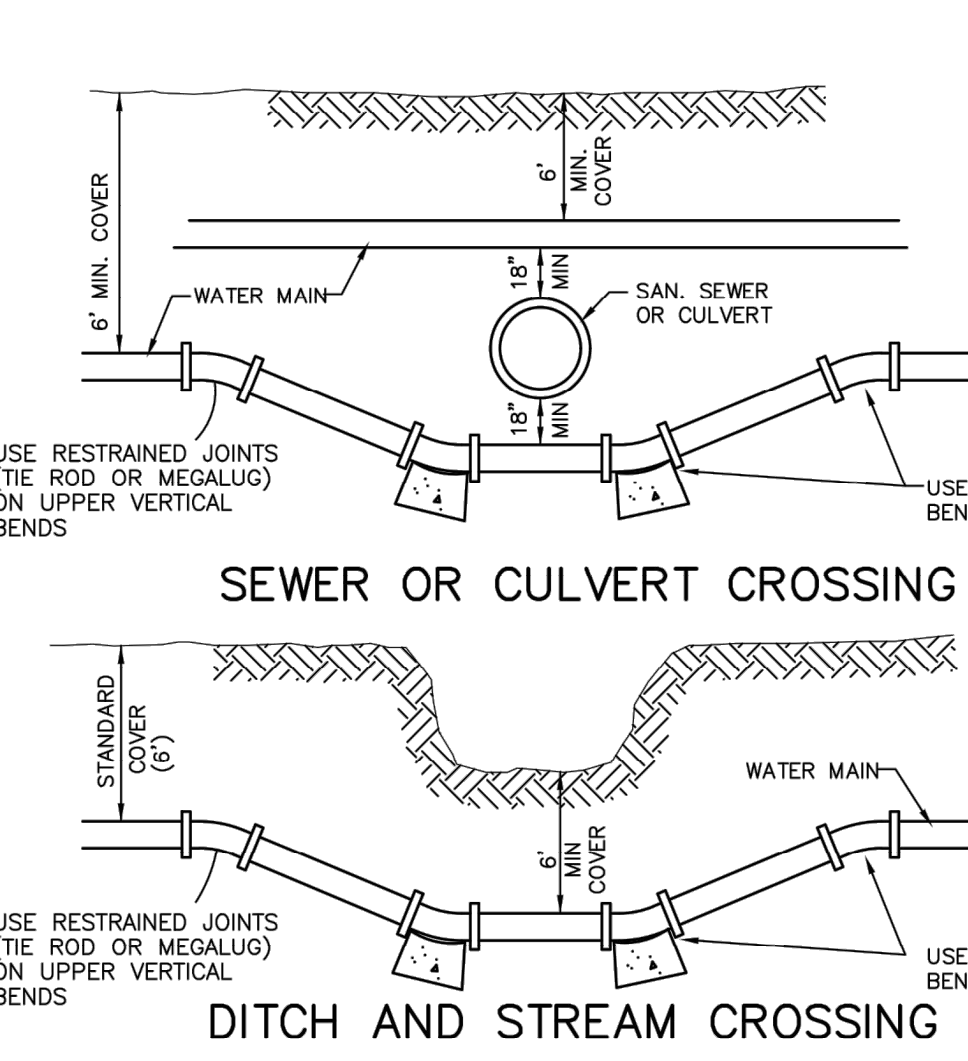
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



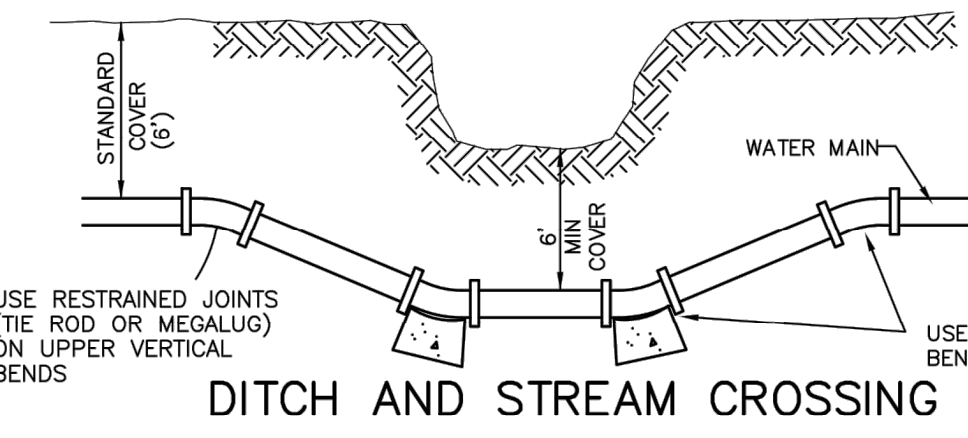
GATE WELL TOPS WITHIN PAVEMENT AREAS



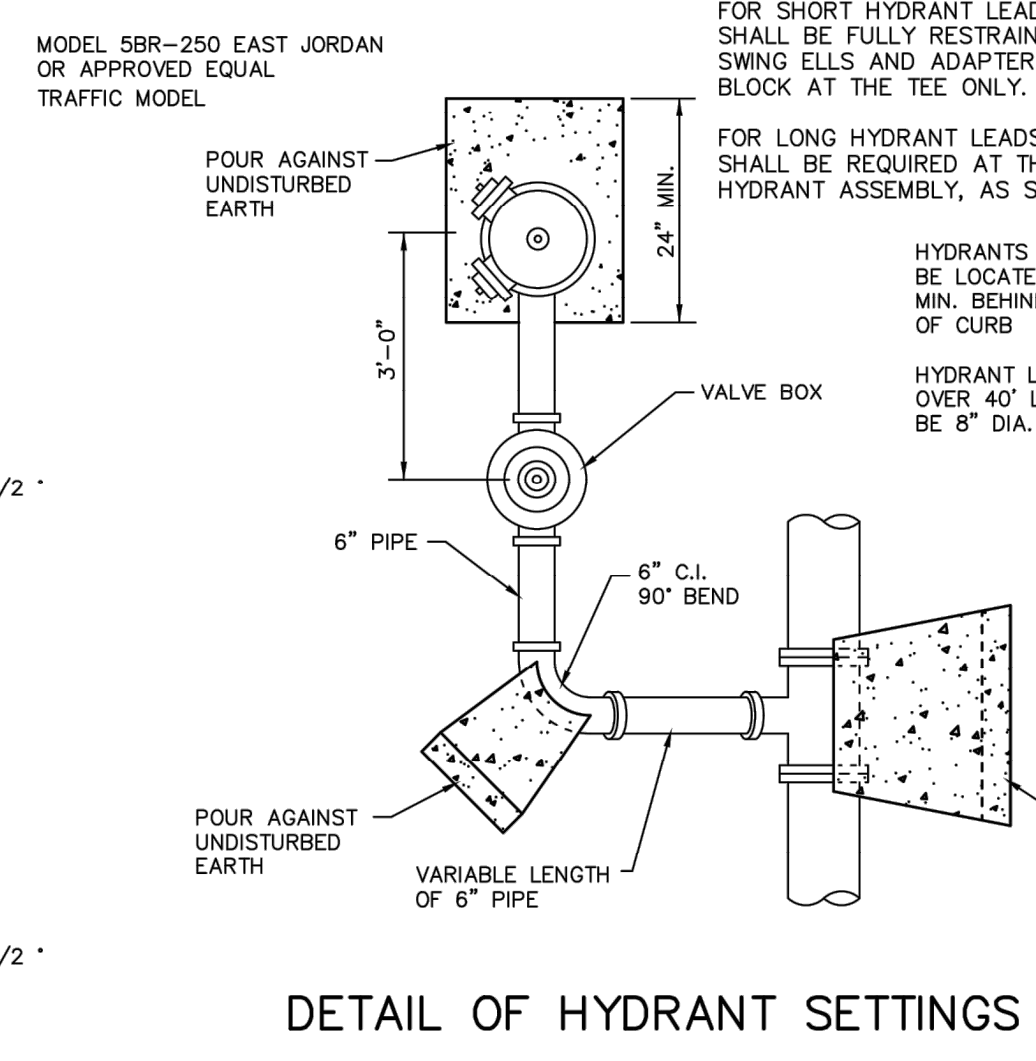
TEMPORARY BLOWOFF ASS'Y



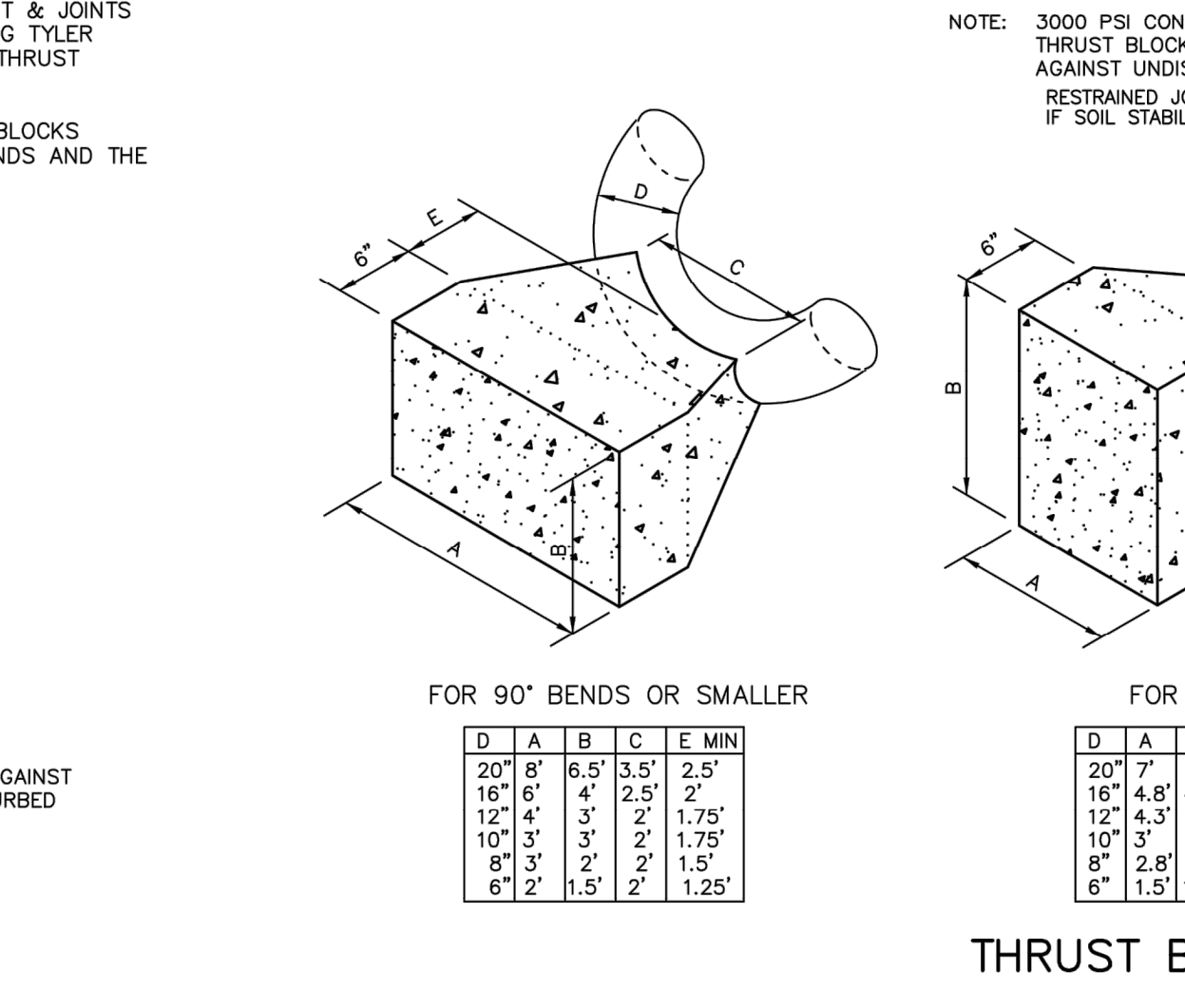
SEWER OR CULVERT CROSSING



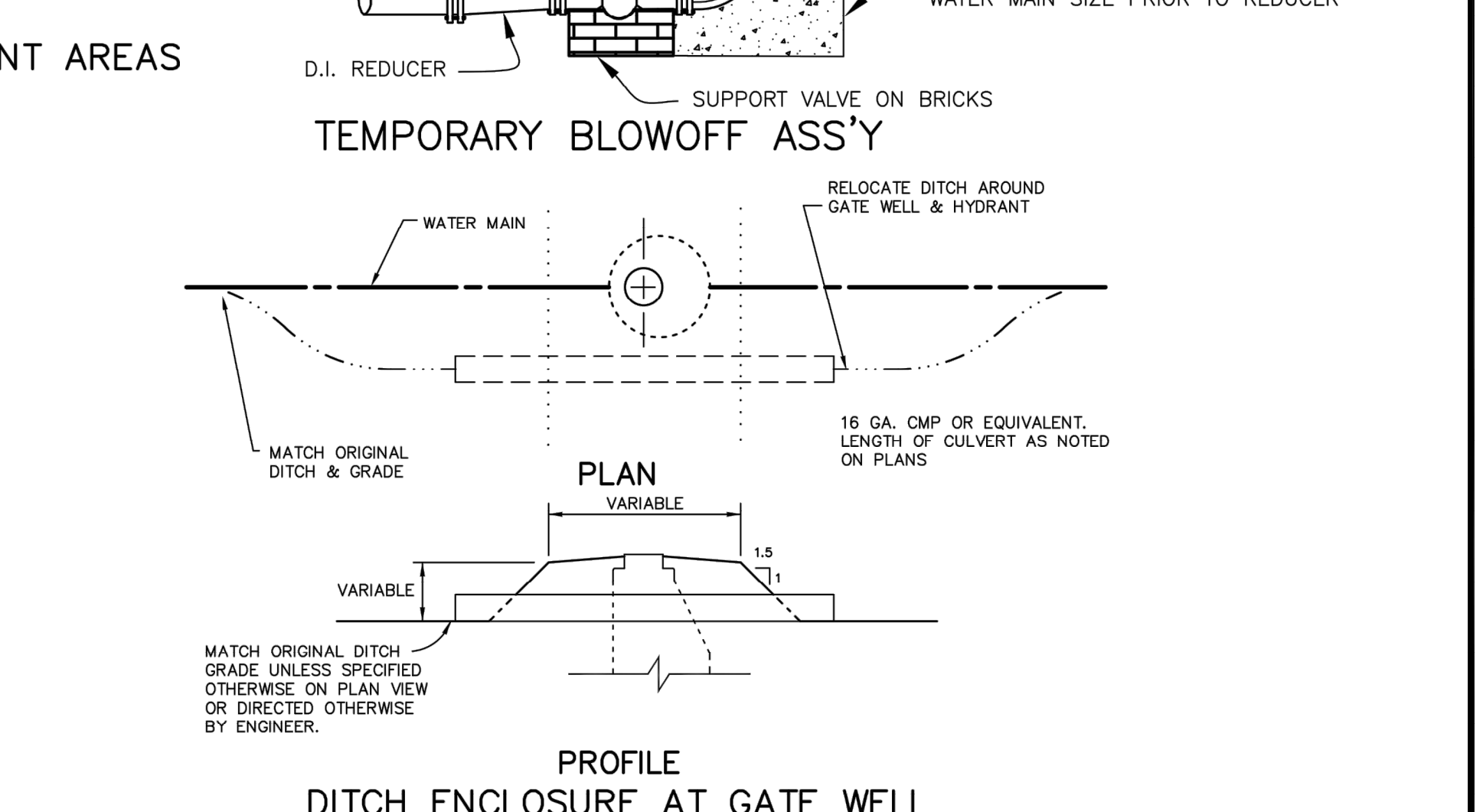
DITCH AND STREAM CROSSING



DETAIL OF HYDRANT SETTINGS



THRUST BLOCK DETAILS



DITCH ENCLOSURE AT GATE WELL

- WATER MAIN NOTES**
- All construction procedures and materials used on this project shall conform to White Lake Township current standards and specifications.
 - All hydrants shall be East Jordan Iron Works 5BR-250 traffic model. Self-draining hydrants shall not be used. Valve shall have 1-1/2" pentagon nut and shall open counter-clockwise. Provide two 4.5" pumper outlets with 5" Storz quick connect nozzles (Harrington Integral Hydrant Storz, Model HHS) as manufactured by Harrington, Inc. of Erie, PA.
 - All hydrants shall be field painted with a heavy coat of bright safety red polyurethane or alkyd glass enamel, except for the Storz fittings and caps, which shall be left unpainted.
 - Johnson and Anderson, Inc. field personnel will affix to the fixed collar of each Storz connection 1" wide 3M Scotch reflective tape, color coded per NFPA 291 guidelines flow capacity.
 - All water mains shall be ductile iron pipe Class 54, cement lined with push on joints. Mechanical joints allowed only for tapping sleeves, hydrants & hydrant valves. Only Cor-Blue bolts shall be used for assembling mechanical joints. All bands, tees, valves and hydrant tees shall have a poured concrete thrust block as detailed on this sheet. Joints which have thrust blocks bearing on soil of questionable stability shall be fully restrained utilizing Tyler swivel bells and adapters or a system approved by the Township Engineer. HDPE pipe for directional boring, if approved by the Township Engineer, shall meet all of the requirements of the MDEQ and shall be DR9 (200 psi), and shall have two #8 tracer wires, terminated in the nearest gate well at the highest step.
 - Tapping sleeve shall be mechanical joint or approved equal. Ductile iron or Stainless steel are allowed.
 - Specifications shall include direction of operation of all valves. All valves shall be counter clockwise open.
 - All necessary easements shall be provided in the name of White Lake Township before acceptance of the water distribution system.
 - The design engineer shall furnish White Lake Township with one reproducible sets of "As-Built" water main plans or an AutoCAD file upon completion of the job.
 - All required cross-connection devices shall be installed as required by the local plumbing inspector and in accordance with the standards of the Michigan Department of Public Health.
 - Gate well frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #1642 Manhole frame, solid lid cover shall be non-racking and marked "White Lake Water Department"
 - Gate valves shall be AWWA approved and of a double disc or resilient wedge design with push on joints, 16" gate valves may be mechanical joint provided Cor-Blue bolts are used. All gate valves with operating nuts greater than 5" below ground surface shall be provided with an extension stem. The length of the extension shall be such that it will be within 5' of the ground surface when an extension is used it shall be held in place by an extension stem guide suitably fastened to the wall of the gate well.
 - 1" corporation stops are to be placed on the main at each side of each main line gate valve and at such other locations as may be required by the engineer.
 - All pipe and fittings shall be subjected to a hydro-static pressure test of 150 PSI for a 2 hour duration; Township Engineer must be present. Maximum segment 2000 feet except that longer segments may be tested with allowable leakage based on 2000 feet.
 - 2 consecutive safe bacteria samples shall be taken from the water system approx. 24 hours apart at points established by the Township Engineer. Samples shall be taken by the Township Engineer.
 - Filling, flushing and sampling of water main can only be performed with a "Jumper" Line, the jumper shall be equipped with an approved RPZ type of backflow preventer.
 - Adjustments on gate wells shall be limited to 23" maximum from top of rim to first step in accordance with MIOSHA Rule 341.
 - All new water service lines shall have a minimum nominal size of 1". Services from 1" to 2" may be type K copper tubing or plastic DR-9 (200 PSI rated) meeting ASTM D2277-03 (Standard Specification for Polyethylene (PE) plastic tubing). ASTM Designation and pressure rating shall be stamped on the pipe by the manufacturer. Plastic pipe shall also meet AWWA C-901 Specifications. All sizes shall relate to the copper tubing outside diameter standard size (CTS). Copper pipe joints shall be flared. Fittings shall adapt to the plastic pipe with compression to iron pipe thread adapter. Plastic pipes shall be either compression style with a steel insert or may be fusion welded in the larger sizes.
 - Plastic water service pipes shall be traced with two #10 copper tracer wires or two #12 copper coated steel or stainless steel wires insulated with a minimum of 30 mils of polyethylene insulation. The tracer wires shall be terminated to supply line so as to be locatable at the building and the curb box without digging.
 - Water services sizes 3" and greater shall be Class 54 cement lined ductile iron with push on joints or HDPE DR-9 (200 PSI rated) with fusion welded joints and fittings, DIPS (Ductile Iron Pipe Size).
 - A stop box shall be installed at the property or easement line and shall be equivalent to an A.Y. McDonald Mfg. 6100 flare regular pattern ball valve. The curb box shall have a 1" riser pipe with an Erie 2-hole pattern cover equivalent to A.Y. McDonald Mfg. 5601L. Stop box shall be protected with a 2'x4' painted blue extending 4 feet above ground.
 - Standard pipe cover shall be 6'-0".
 - Air release manholes shall consist of a standard 5' diameter gate well style structure with a ValMatic Model 25C air release valve mounted on a 1" corporation stop. Air release shall be equipped with the vacuum check option. A 1/2" diameter galvanized pipe or discharge shall be extended to within 12" of the top of the structure. A goose-neck trap shall be installed at the top of the riser to prevent debris & water from entering the valve.

DRAWN: CAD DESIGN: OA CHECKED: - SCALE: VERT. - HORZ. AS NOTED

NO.	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
1	GENERAL	REVISION TO CAD	12/29/95	GW & NUT SIZE	07/23/98	CLARIFY HYD. SPEC	02/07/01	REV. HYD. THRUST, AIR REL.	03/29/04
2	ADD NOTE	17	11/04/97	PIPE COVER & FLANGE TAPE	05/12/99	5-BR HYD. WS STAKE	02/27/02	HDPE, HYD. VALVES	07/18/05
3	REVISE	HYD. & THRUSTING	05/18/98	ADD BLOWOFF	07/06/99	ADD NOTE 19	07/23/03	UPDATED TITLE BLOCK	04/30/13

Johnson & Anderson
 4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2680
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115
 2291 Water Street, Suite 6 Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895

White Lake Township
 7525 Highland Road (M-59) White Lake, Michigan 48383 248-698-3300



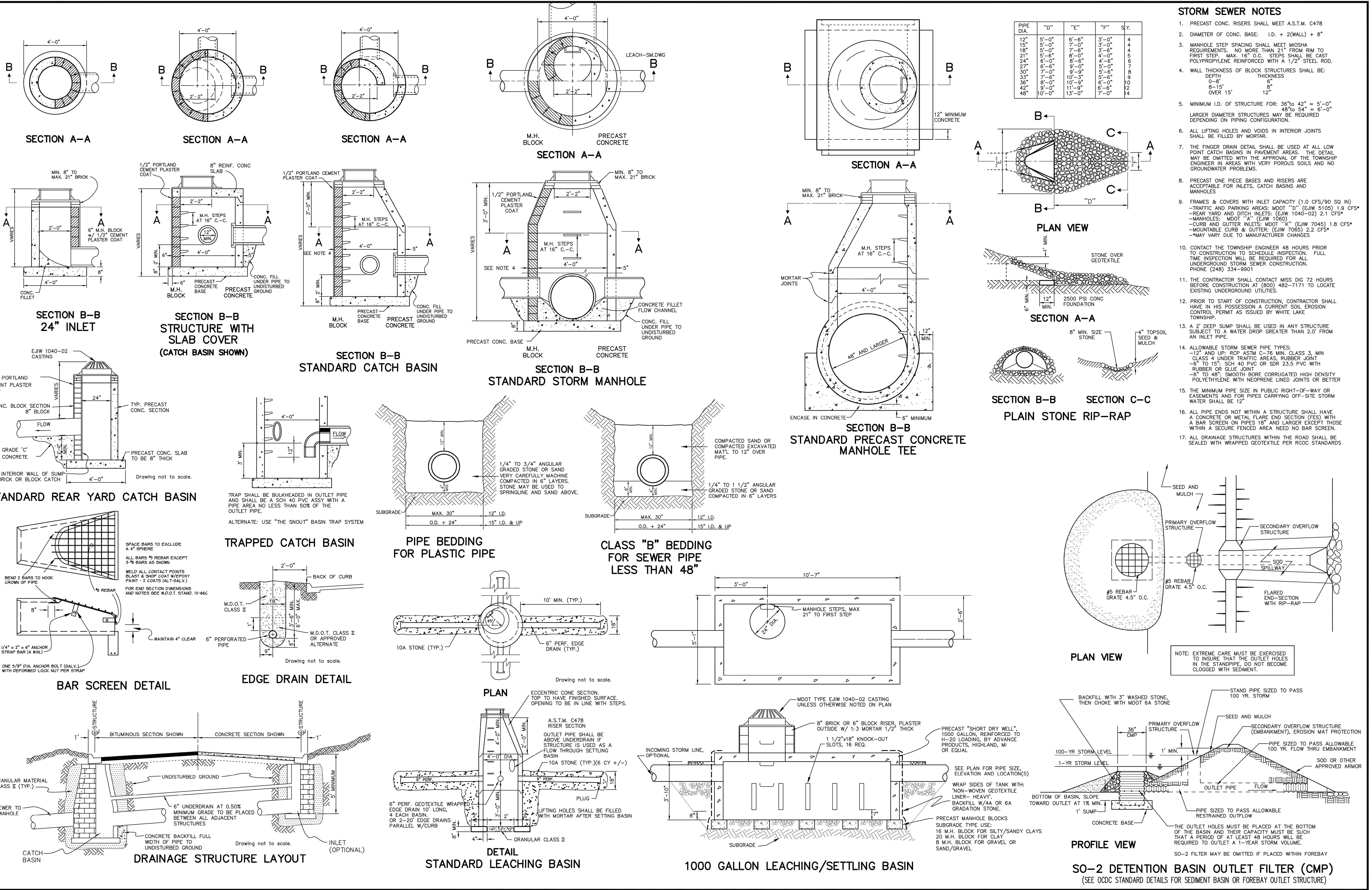
WATER MAIN STANDARD DETAILS

JOB NO. _____
 DATE ISSUED _____
 SHEET NO. **DT3**

STORM SEWER NOTES

1. PRECAST CONC. RISERS SHALL MEET A.S.T.M. C478
2. DIAMETER OF CONC. BASE: I.D. + 2(WALL) + 8"
3. MANHOLE STEP SPACING SHALL MEET MISHA REQUIREMENTS. NO MORE THAN 21" FROM RIM TO FIRST STEP. MAX. 16" O.C. STEPS SHALL BE CAST POLYPROPYLENE REINFORCED WITH A 1/2" STEEL ROD.
4. WALL THICKNESS OF BLOCK STRUCTURES SHALL BE:
DEPTH THICKNESS
0-8' 8"
8-15' 8"
OVER 15' 12"
5. MINIMUM I.D. OF STRUCTURE FOR: 36" to 42" = 5'-0"
48" to 54" = 6'-0"
LARGER DIAMETER STRUCTURES MAY BE REQUIRED DEPENDING ON PIPING CONFIGURATION.
6. ALL LIFTING HOLES AND VOIDS IN INTERIOR JOINTS SHALL BE FILLED BY MORTAR.
7. THE FINGER DRAIN DETAIL SHALL BE USED AT ALL LOW POINT CATCH BASINS IN PAVEMENT AREAS. THE DETAIL MAY BE OMITTED WITH THE APPROVAL OF THE TOWNSHIP ENGINEER IN AREAS WITH VERY POROUS SOILS AND NO GROUNDWATER PROBLEMS.
8. PRECAST ONE PIECE BASES AND RISERS ARE ACCEPTABLE FOR INLETS, CATCH BASINS AND MANHOLES.
9. FRAMES & COVERS WITH INLET CAPACITY (1.0 CFS/90 SQ IN) -TRAFFIC AND PARKING AREAS: MDOT "D" (EJW 5105) 1.9 CFS* -REAR YARD AND DITCH INLETS: (EJW 1040-02) 2.1 CFS* -MANHOLES: MDOT "A" (EJW 1060) -CURB AND GUTTER INLETS: MDOT "K" (EJW 7045) 1.8 CFS* -MOUNTABLE CURB & GUTTER: (EJW 7065) 2.2 CFS* *MAY VARY DUE TO MANUFACTURER CHANGES
10. CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION. FULL TIME INSPECTION WILL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION. PHONE (248) 334-9901
11. THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
12. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
13. A 2' DEEP SUMP SHALL BE USED IN ANY STRUCTURE SUBJECT TO A WATER DROP GREATER THAN 2.0' FROM AN INLET PIPE.
14. ALLOWABLE STORM SEWER PIPE TYPES:
-12" AND UP: RCP ASTM C-76 MIN CLASS 3, MIN CLASS 4 UNDER TRAFFIC AREAS, RUBBER JOINT
-6" TO 15": SCH 40 PVC OR SDR 23.5 PVC WITH RUBBER OR GLUE JOINT
-6" TO 48": SMOOTH BORE CORRUGATED HIGH DENSITY POLYETHYLENE WITH NEOPRENE LINED JOINTS OR BETTER
15. THE MINIMUM PIPE SIZE IN PUBLIC RIGHT-OF-WAY OR EASEMENTS AND FOR PIPES CARRYING OFF-SITE STORM WATER SHALL BE 12"
16. ALL PIPE ENDS NOT WITHIN A STRUCTURE SHALL HAVE A CONCRETE OR METAL FLARE END SECTION (FES) WITH A BAR SCREEN ON PIPES 18" AND LARGER EXCEPT THOSE WITHIN A SECURE FENCED AREA NEED NO BAR SCREEN.
17. ALL DRAINAGE STRUCTURES WITHIN THE ROAD SHALL BE SEALED WITH WRAPPED GEOTEXTILE PER ROC STANDARDS

PIPE DIA.	"D"	"E"	"F"	S.Y.
12"	5'-0"	6'-6"	3'-0"	4
15"	5'-0"	7'-0"	3'-0"	4
18"	5'-0"	7'-6"	3'-6"	4
21"	5'-6"	8'-0"	4'-0"	5
24"	6'-0"	8'-6"	4'-6"	6
27"	6'-6"	9'-0"	5'-0"	7
30"	7'-0"	9'-6"	5'-6"	8
33"	7'-6"	10'-3"	5'-6"	9
36"	8'-0"	10'-9"	6'-0"	10
42"	9'-0"	11'-9"	6'-0"	12
48"	10'-0"	13'-0"	7'-0"	14



DRAWN: CAD
DESIGN: OA
CHECKED: -

REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	08/16/95		REVISE	10-03-02		REVISE	06-01-07
		ADD SO-1	06-17-96		REVISE	12-17-03		UPDATED TITLE BLOCK	04/30/13
		NEW BAR GRATE	11-03-97		SEC REFERENCE	05-17-05			

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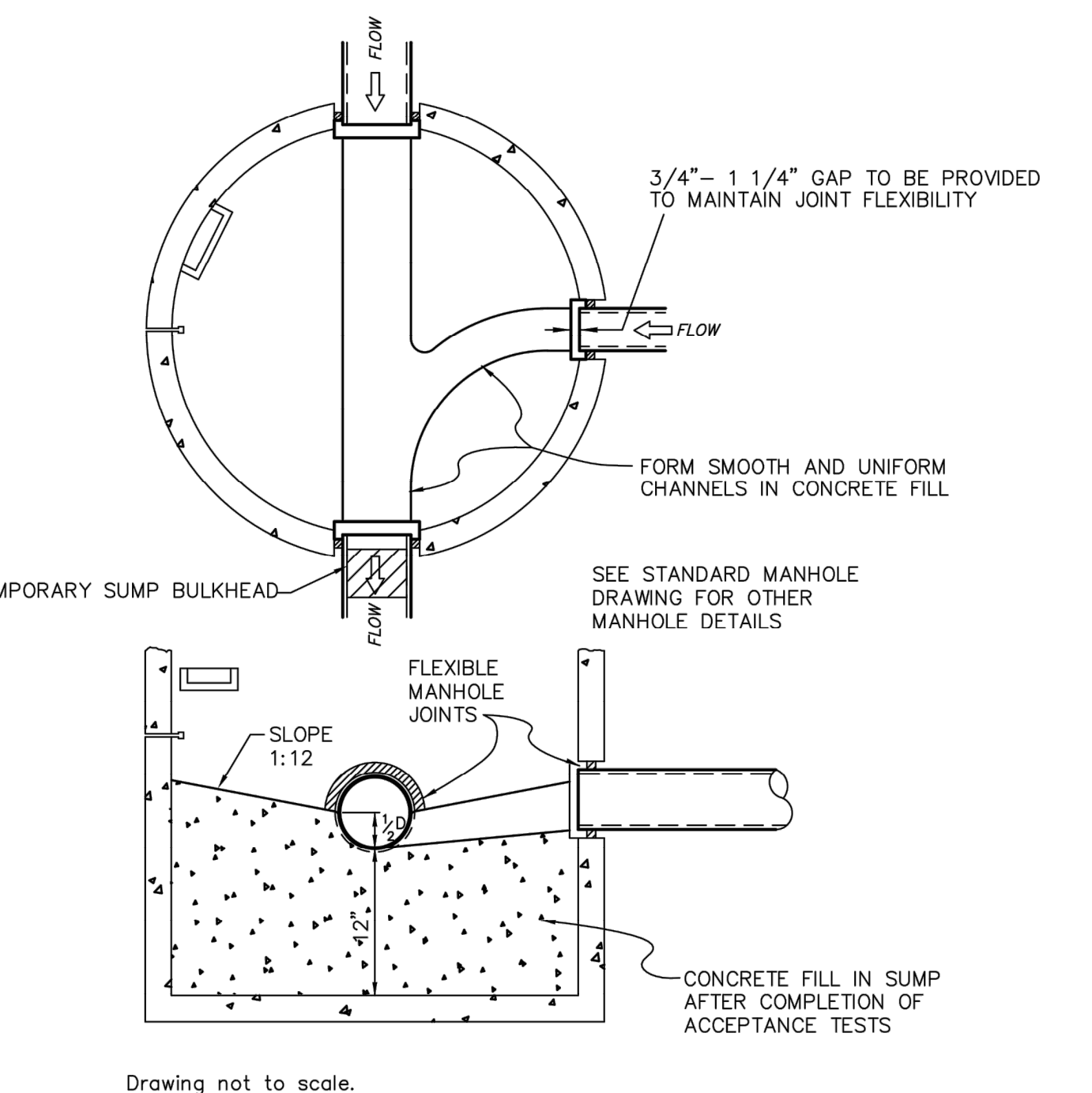
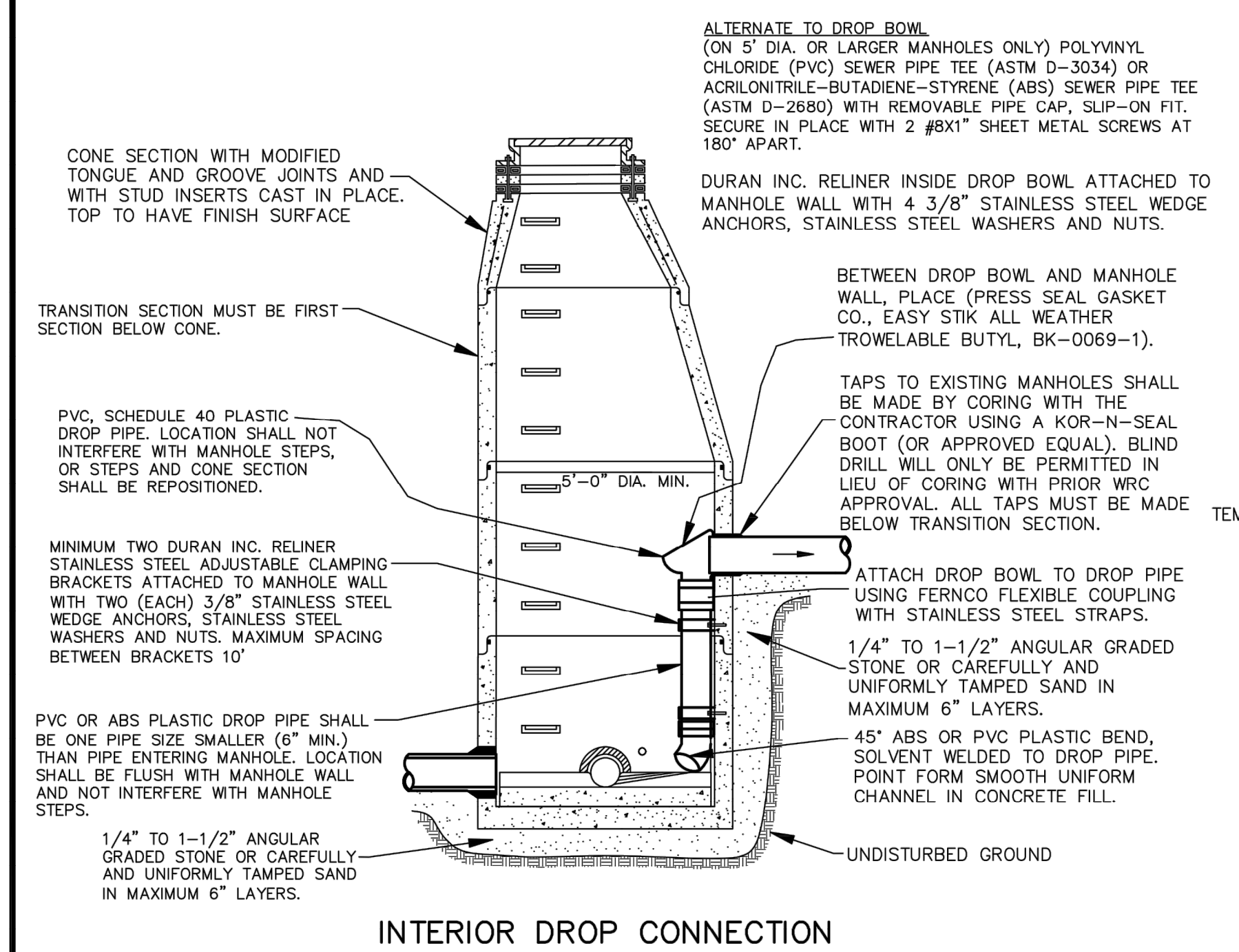
3910 Lapeer Road
 Port Huron, Michigan 48060
 tel (810) 987-7820 fax (810) 987-7895

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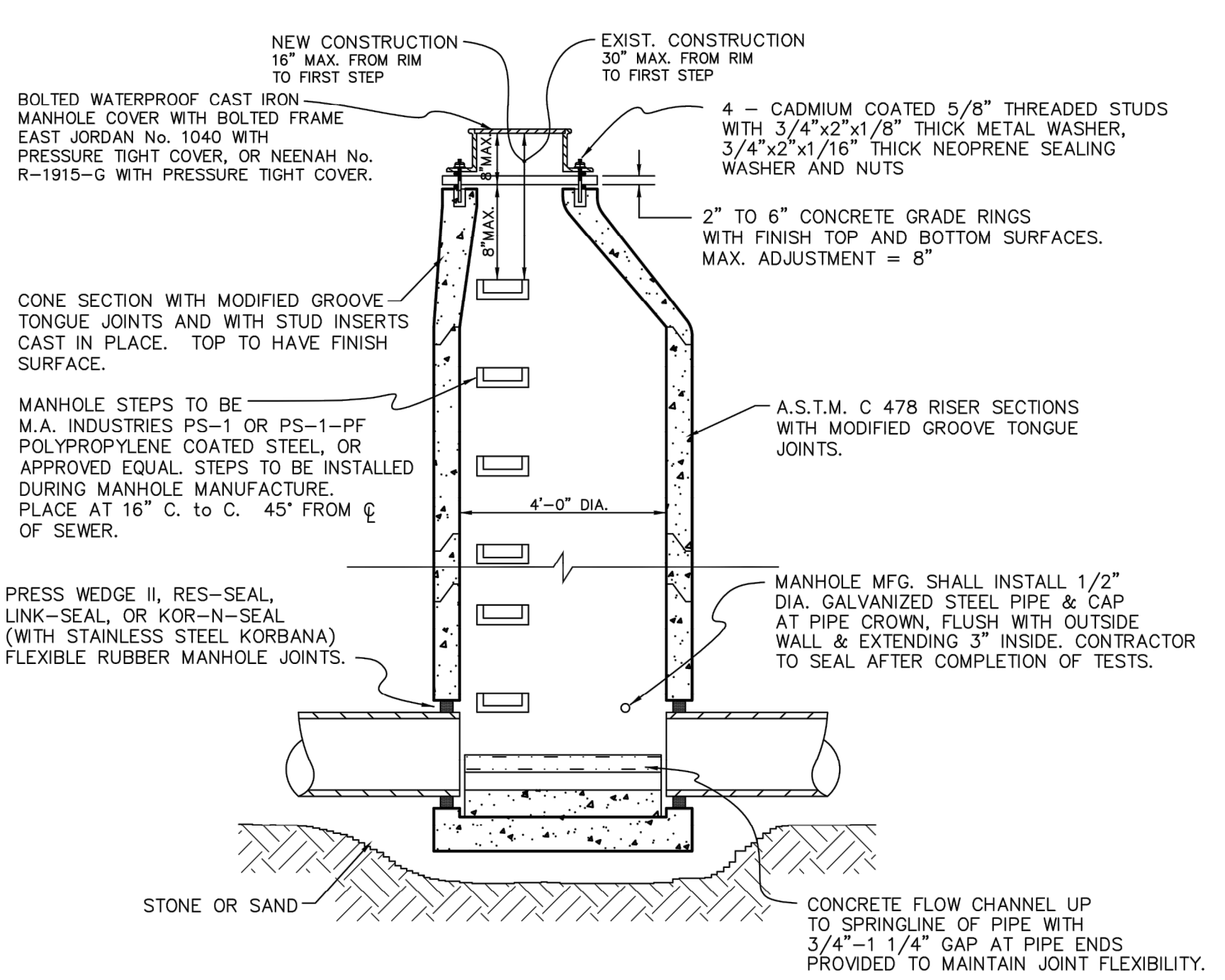
STORM SEWER STANDARD DETAILS

JOB NO. _____
 DATE ISSUED 08/16/95
 SHEET NO. **DT4**

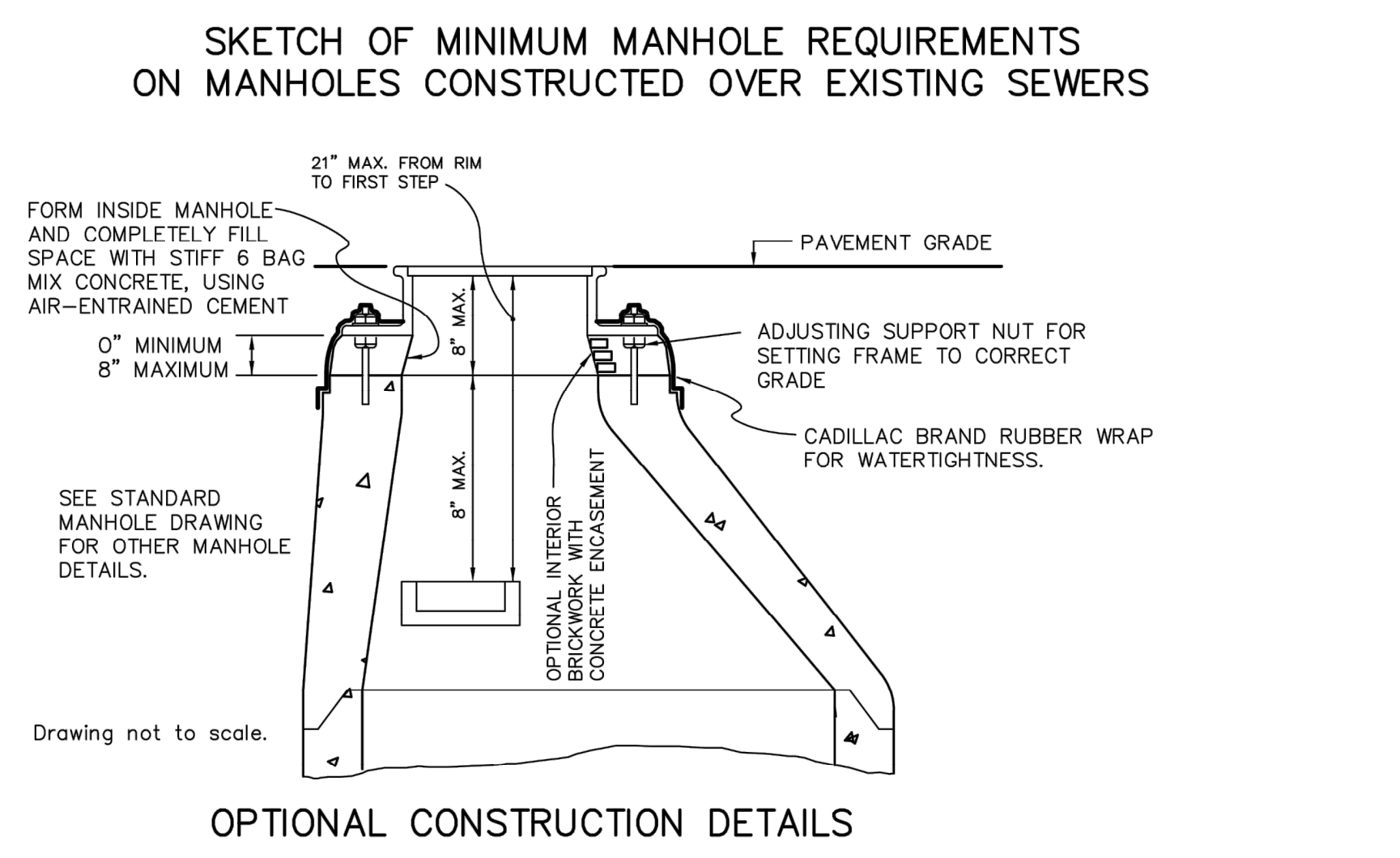
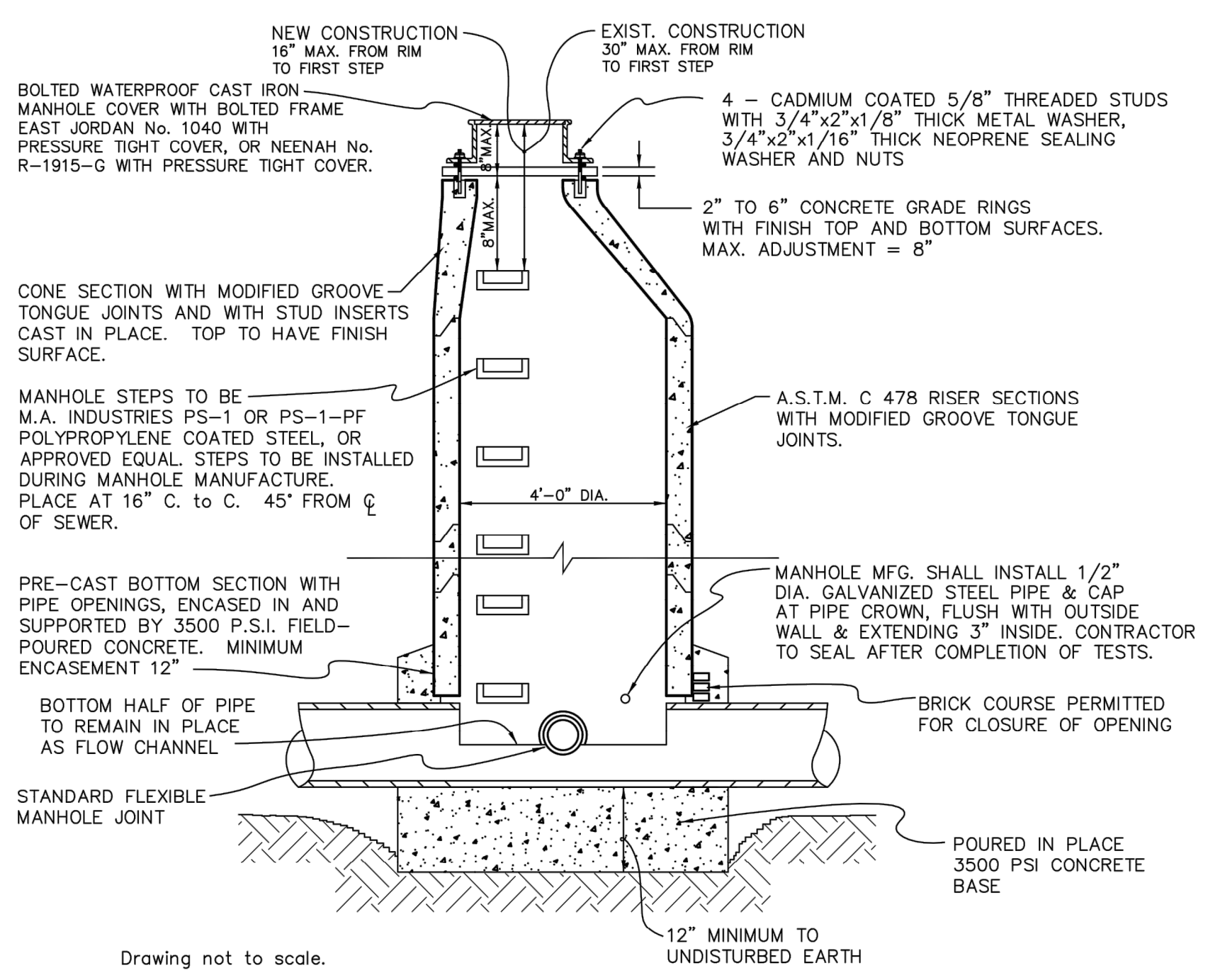
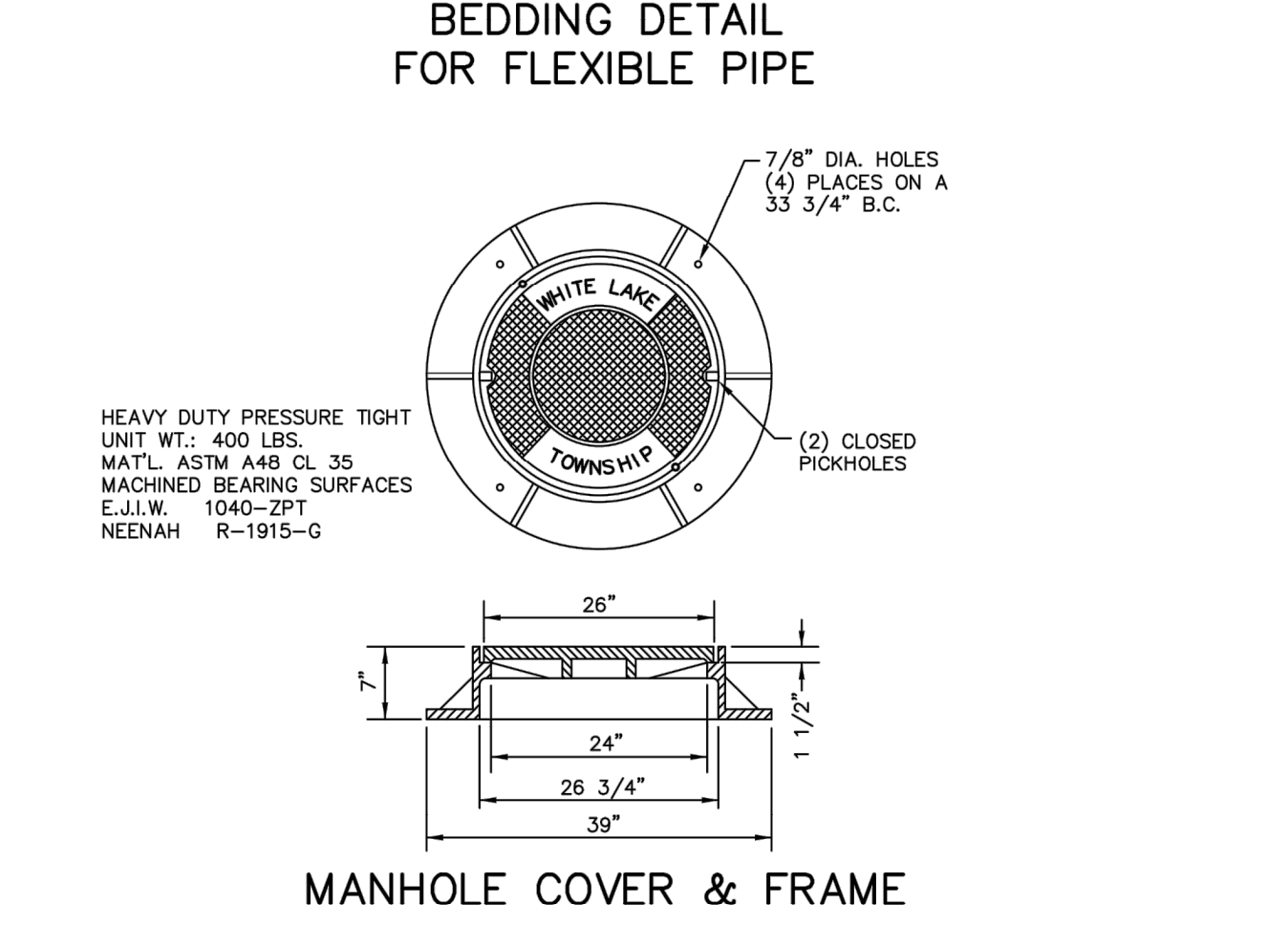
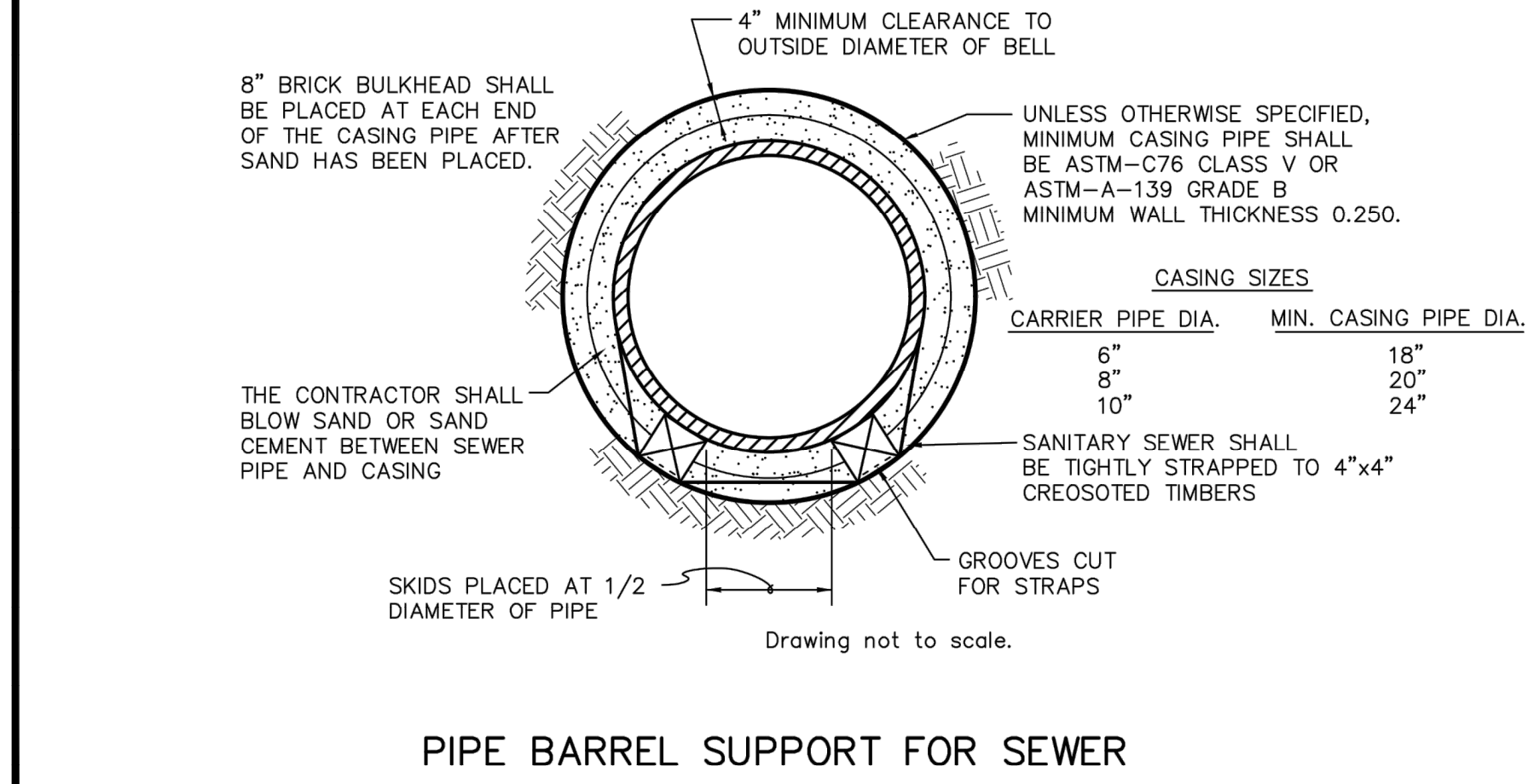
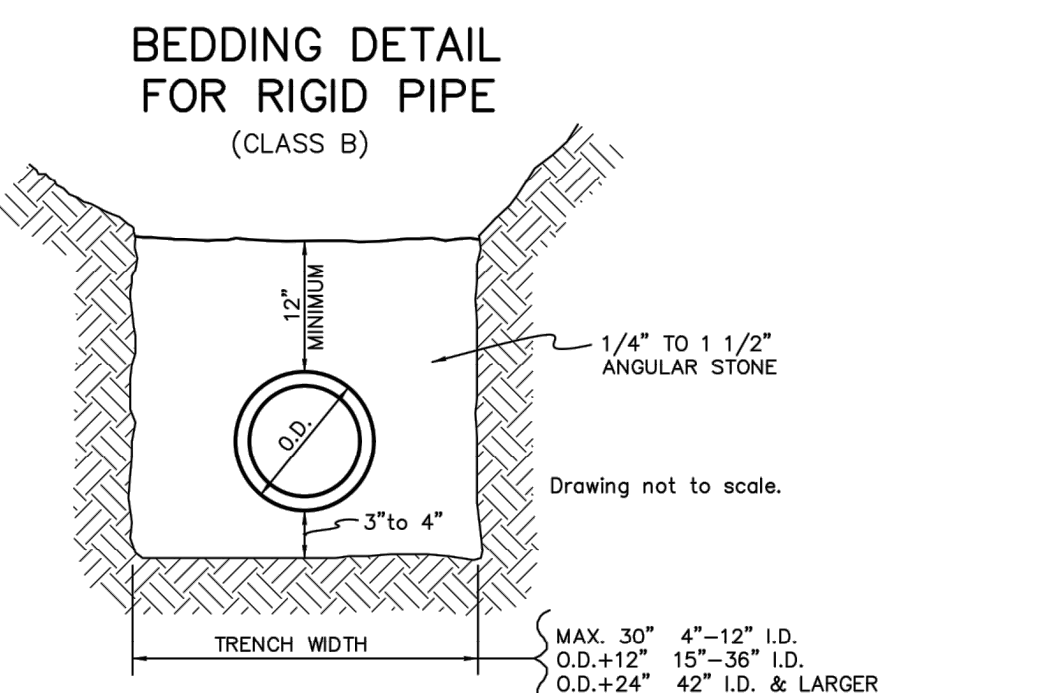
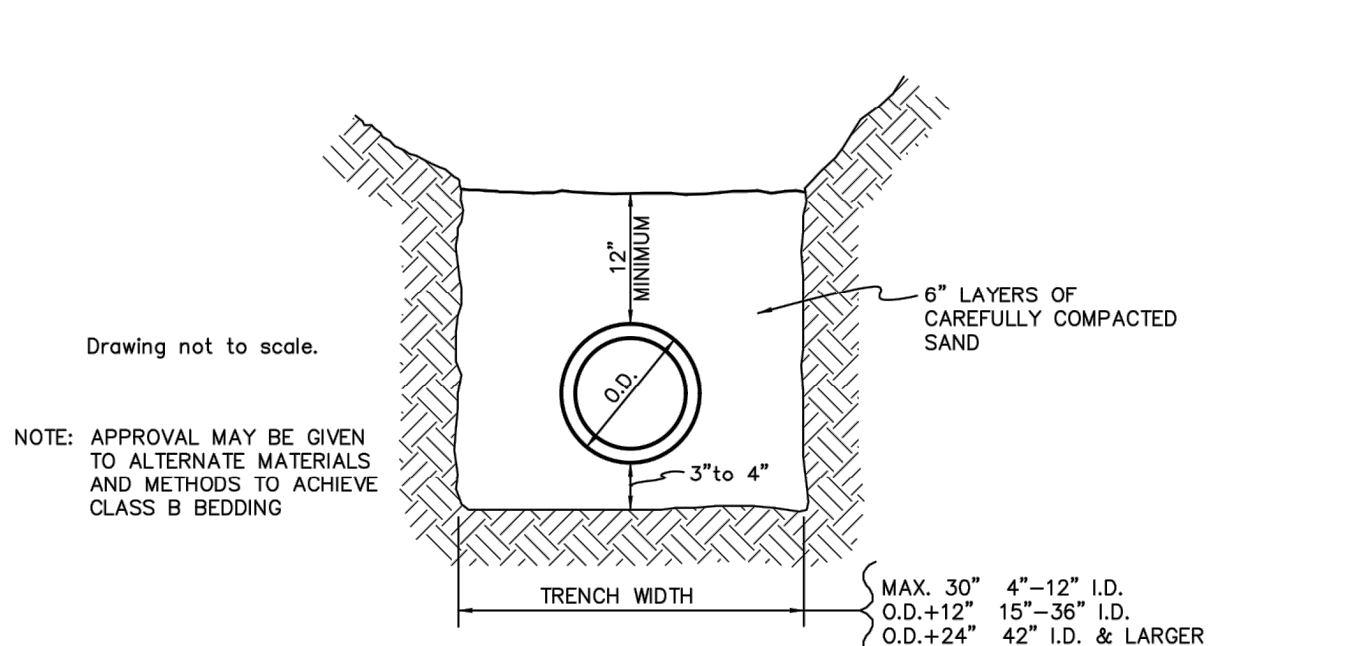
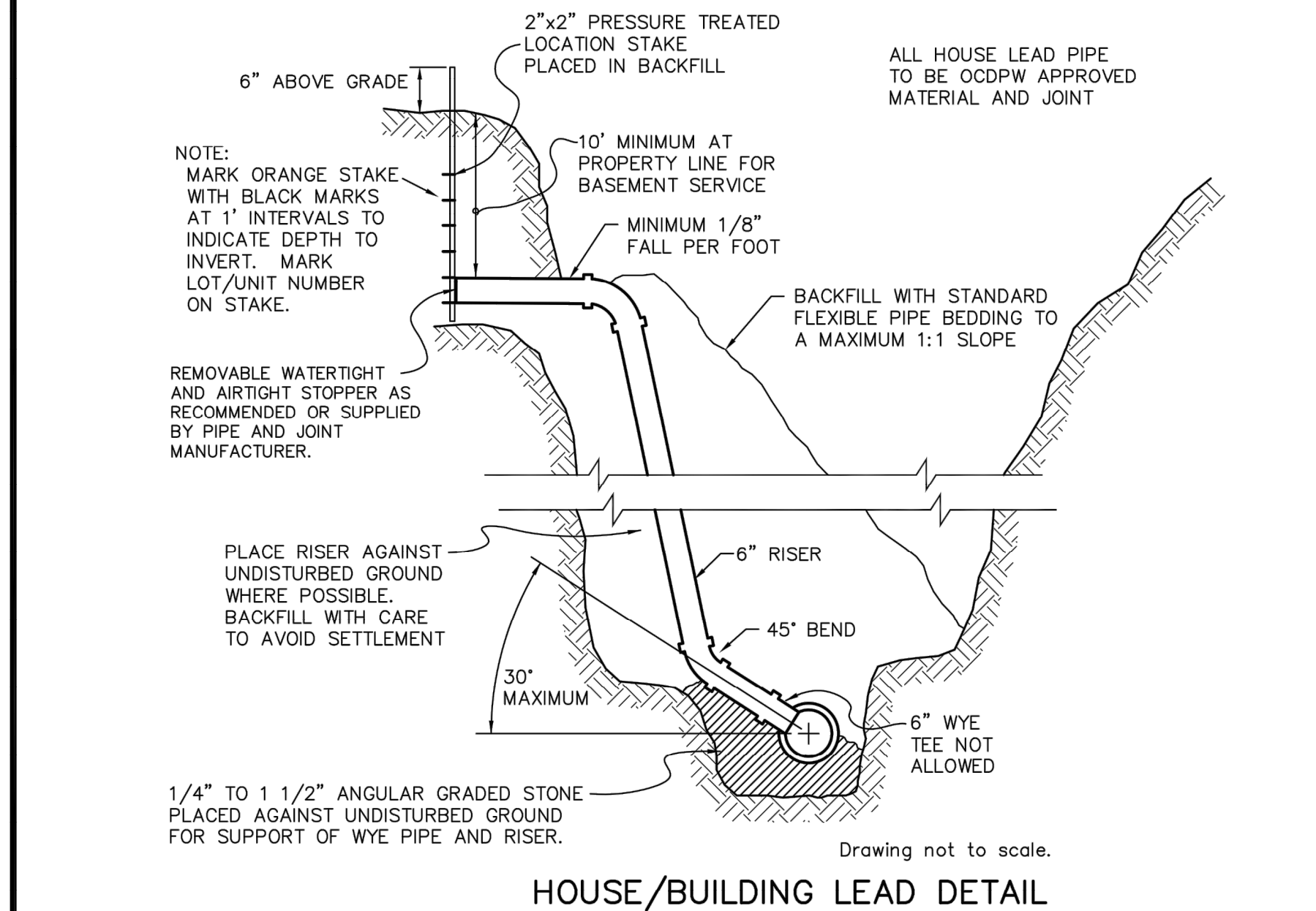
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 HORZ. AS NOTED



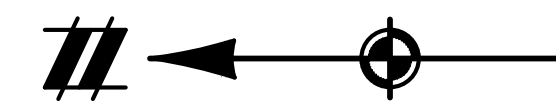
Drawing not to scale.



Drawing not to scale.



- All construction shall conform to the current standards and specifications of the local unit of government and the Oakland County Water Resources Commissioner (OCWRC). All sanitary sewer construction shall have full time inspection supervised by a professional engineer provided by or caused to be provided by the local unit of government.
- At all connections to Oakland County Water Resources Commissioner's sewers or extensions, and before start of construction, the Contractor must obtain a Sewer Inspection Permit issued by the OCWRC. Gravity sewer permit charges are \$250.00 for each connection plus \$25.00 for each manhole constructed. Pressure sewer permit charges are \$250.00 per 2460 L.F. of force main with a minimum permit fee of \$250.00. Failure to pass any test segment will result in an additional charge to the Contractor for each retest, in accordance with the above price schedule. The Contractor shall also have posted with the OCWRC a \$5,000.00 surety bond and \$500.00 cash deposit. The Contractor shall notify the local unit of government and the OCWRC (248-858-1110) 24 hours prior to the beginning of any construction. Final acceptance tests must be witnessed by County personnel and must be scheduled by Municipality or its consultant in advance with 24 hour notice at 248-858-1110.
- No sewer installation shall have an infiltration or exfiltration exceeding 100 gallons per inch diameter per mile of pipe in a 24 hour period, and no single run of sewer between manholes shall exceed 100 gallons per inch diameter per mile. Air tests in lieu of infiltration tests shall be as specified in the OCWRC "Acceptance Tests", dated September, 1972. Only pipe and pipe joints approved by the Oakland County Water Resources Commissioner may be used for sanitary sewer construction.
- Located in the first manhole upstream from the point of all connections to an existing OCWRC sewer, or extension thereto, a temporary 12-inch deep sump shall be provided in the first manhole above the connection which will be filled in after such successful completion of any acceptance test up to the standard fill provided for the flow channel. A watertight bulkhead shall be provided on the downstream of the sump manhole.
- All building leads and risers shall be 6-inch S.D.R. 23.5 ABS OR PVC pipe with chemically fused joints, or an approved equal pipe and joint. Sewer pipe wye shall contain factory installed premium joint material of an approved type compatible with that of the building lead pipe used. Building leads to be furnished with removable air tight and water-tight stoppers.
- All rigid sewer pipe shall be installed in Class "B" bedding or better. All flexible, semi-flexible or composite sewer pipe shall be installed in conformance to the Oakland County Water Resources Commissioner specifications.
- All new manholes shall have Oakland County Water Resources Commissioner approved flexible, water-tight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Precast manhole cone sections shall be Oakland County Water Resources Commissioner approved modified eccentric cone type. All manholes shall be provided with bolted, water-tight covers.
- At all connections to manholes on Oakland County Water Resources Commissioner's sewers or extensions thereto drop connections will be required when the difference in invert elevations exceeds 18-inches. Outside drop connections only will be approved.
- Taps to existing manholes shall be made by coring. The Contractor shall place a KOR-N-SEAL boot (or OCWRC approved equal) after coring is completed. Blind drilling will not be permitted in lieu of coring.
- New manholes constructed directly on Oakland County Water Resources Commissioner's sewers shall be provided with covers reading "Oakland County - Sanitary" in raised letters. New manholes built over an existing sanitary sewer shall have monolithic poured bottoms.
- No ground water, storm water, construction water, downspout drainage or weep tile drainage shall be allowed to enter any sanitary sewer installation.
- Prior to excavation, the Contractor shall telephone MISS DIG (647-7344) for the location of underground pipeline and cable facilities, and shall also notify representatives of other utilities located in the vicinity of the work.
- 18" minimum vertical separation and 10' minimum horizontal separation must be maintained between sanitary sewer and water main.
- Manhole frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #R-1642 manhole frame. Solid lid cover shall be non-rocking and marked "WHITE LAKE TOWNSHIP SEWER DEPARTMENT."



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.

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734.994.4600

SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LANDSCAPE PLAN - OVERALL

DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

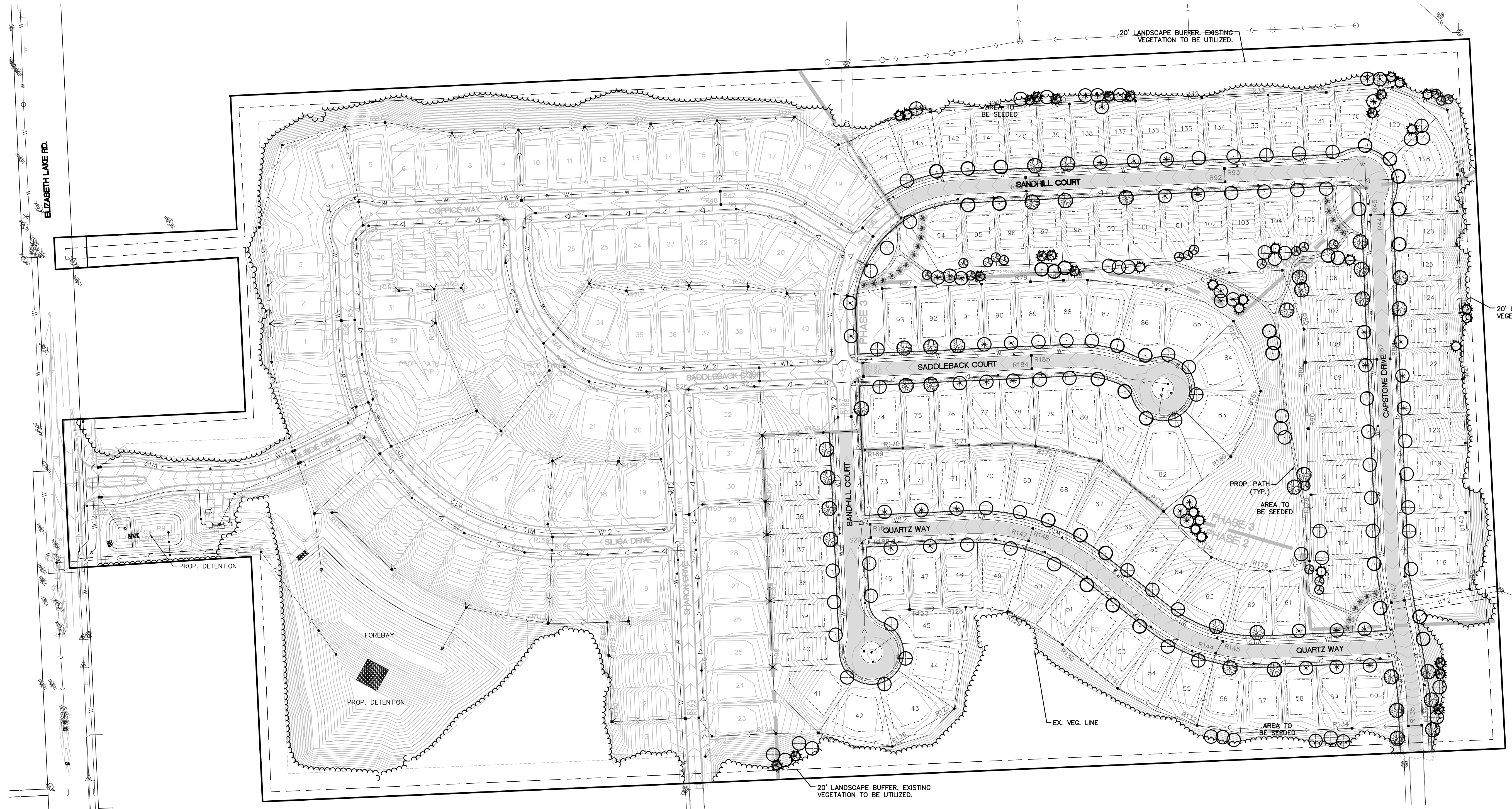
NOTES:
1. SEE SHEET LS5 FOR LANDSCAPE DETAILS
2. MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN LARGE TREES AND SANITARY SEWER, WATERMAIN, AND STORM SEWER WHERE POSSIBLE, MIN. 3'.

LEGEND

- BOUNDARY LINE
- EXIST. EASEMENT
- SECTION LINE
- BOUNDARY/PROPERTY LINE
- EXIST. SETBACK
- EXIST. TREE LINE
- EXIST. CURB AND GUTTER
- EXIST. FENCE AND GUTTER
- EXIST. GRAVEL
- EXIST. BUILDING
- EXIST. TREE LINE
- PROP. SETBACK
- PROP. BUILDING
- PROP. BACK OF CURB
- PROP. R.O.W.
- PROP. EASEMENT
- PROP. CONTOUR
- PROP. STORM SEWER
- PROP. WATERMAIN

REVISIONS

SCALE: 0 50 100
1" = 100 FEET
DR. SK/KS GH. CK
P.M. M BUSH
BOOK ---
JOB 18003309
SHEET NO. **LS1**



MASTER PLANT LIST

SYMBOL	KEY	PRIVATE STREET TREE	ELIZABETH LAKE ROAD BUFFER	SITE AREA	ENTRANCE	TOTAL	BOTANICAL NAME	COMMON NAME	SIZE	NOTES
PROPOSED DECIDUOUS TREES										
AF	49	0	41	0	90		Acer rubrum 'Franksred'	Red Sunset Red Maple	2 1/2" cal B&B	
AS	47	0	28	0	75		Acer saccharum 'Legacy'	Legacy Sugar Maple	2 1/2" cal B&B	*8 trees at 4" cal (Replacement trees)
QM	60	0	45	0	105		Quercus macrocarpa	Burr Oak	2 1/2" cal B&B	*5 trees at 4" cal (Replacement trees)
TC	49	0	26	0	75		Tilia cordata	Little Leaf Linden	2 1/2" cal B&B	*16 trees at 4" cal (Replacement trees)
UA	60	0	18	0	78		Ulmus american 'Valley Forge'	Valley Forge Elm	2 1/2" cal B&B	
	265		158		423					
PROPOSED EVERGREEN TREES										
PO	0	0	44	6	50		Picea omorika	Serbian Spruce	8' hgt B&B	
PP	0	0	49	3	52		Picea pungens	Green Spruce	8' hgt B&B	
			93	9	102					
ORNAMENTAL TREES										
AC	0	0	67	11	78		Amelanchier Canadensis	Serviceberry	Multistem B&B	
MP	0	11	97	5	108		Malus 'Prairifire'	Flowering Crabapple	2" cal B&B	
			11	164	186					
PROPOSED SHRUBS										
PO	0	29	298	25	352		Physocarpus opulifolius 'Little Devil'	Little Devil Ninebark	36" hgt B&B	
VB	0	0	653	27	642		Viburnum dentatum	Arrowwood Viburnum	36" hgt B&B	
IV	0	44	35	23	90		Itea virginica	Little Henry Sweetpire	36" hgt B&B	
WE	0	0	469	0	469		Weigela florida 'Bokraspiwi'	Weigela Spilled Wine	36" hgt B&B	
JN	0	0	455	0	455		Juniperus chinensis 'Sargentii'	Sargent Juniper	36" hgt B&B	
TD	0	15	15	0	30		Thuja occidentalis 'Little Giant'	Little Giant Dwarf Arborvitae	36" hgt B&B	
			88	1925	75	2038				

LANDSCAPE REQUIREMENTS

Street Tree	Required	Proposed	Notes
	1 Tree per 50 LF	265 Trees	
Entrance Plantings	Required	Proposed	Notes
First 150 LF of Entrance Drive	1 Deciduous Tree, Ornamental or Evergreen Tree and 3 Shrubs for Every 300 SF of the entrance area not paved.	7,650 SF/300SF= 25 Trees and 75 Shrubs	Includes boulevard plantings
Screening Requirements	Required	Proposed	Notes
Property Lines Adjacent to Residential (R1-B, R1-C, RM-1) and General Business (GB)	Screening Type B 1 Deciduous Tree or Evergreen and 8 Shrubs for every 15 LF in 20' Wide Buffer Strip	20' Wide buffer strip of existing vegetation	Existing perimeter vegetation used toward requirement.
ROW Screen on Elizabeth Lake Road	1 Deciduous Tree or Evergreen and 8 Shrubs for Every 30 LF in 20' Wide Buffer Strip	340LF/30LF= 11 Trees and 88 Shrubs and 20' wide buffer	
Interior Landscaping	Required	Proposed	Notes
	1 Deciduous Tree, Ornamental or Evergreen Tree and 5 Shrubs for Every 300 SF of 15% of the Total Lot Area	770,150SFx15%=115,522SF/300SF=385 Trees and 1,925 Shrubs	Total Lot Area=Combined single family lot area and active adult footprint. Active Adult foundation plantings used toward requirement. See detail sheet LS5.

C:\Users\jsherman\OneDrive\Desktop\LS1.dwg - P:\Users\jsherman\OneDrive\Desktop\LS1.dwg 7/8/2021 11:34 AM KYLER_H82018



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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.

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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LANDSCAPE PLAN - NORTH

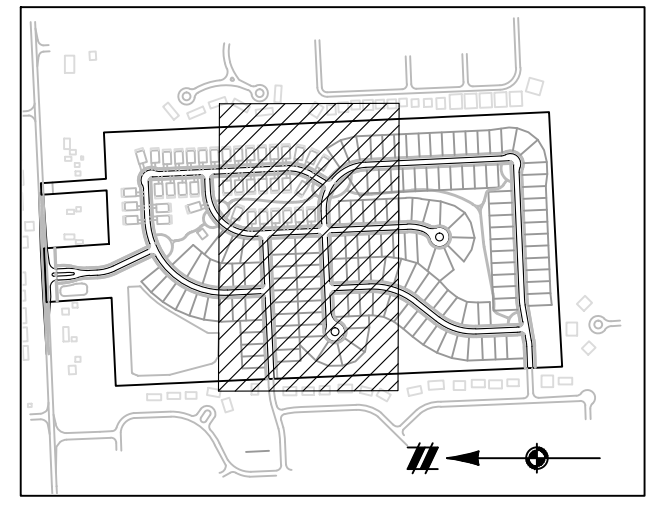
DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

Table with 2 columns: REVISIONS, SCALE. Includes a graphic scale from 0 to 50 feet and the text '1" = 50 FEET'.

DR. SK/KS | GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. **LS2**

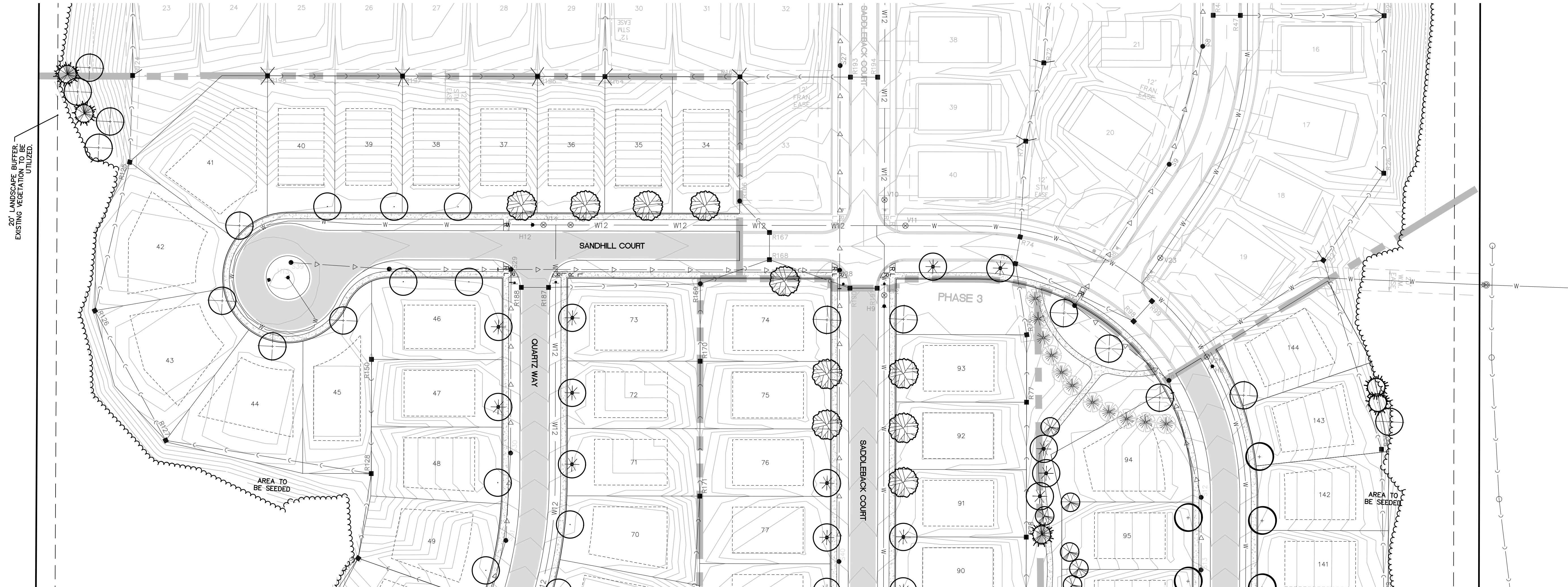
CAD FILE: 18003309S2-01-LS2.DWG

LEGEND table with symbols for: BOUNDARY LINE, EXIST. EASEMENT, SECTION LINE, BOUNDARY/PROPERTY LINE, EXIST. SETBACK, EXIST. TREE LINE, EXIST. CURB AND GUTTER, EXIST. FENCE, EXIST. GRAVEL, EXIST. BUILDING, EXIST. TREELINE, PROP. SETBACK, PROP. BUILDING, PROP. BACK OF CURB, PROP. R.O.W., PROP. EASEMENT, PROP. CONTOUR, PROP. STORM SEWER, PROP. WATERMAIN.



NOTES:

- 1. SEE SHEET LS5 FOR LANDSCAPE DETAILS
- 2. MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN LARGE TREES AND SANITARY SEWER, WATERMAIN, AND STORM SEWER WHERE POSSIBLE, MIN. 3'.



SEE SHEET LS4 FOR CONTINUATION

K:\18003309\01\LS2\LS2.DWG 11/24/2021 11:34 AM KYLER WHEATON



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LANDSCAPE PLAN - SOUTH

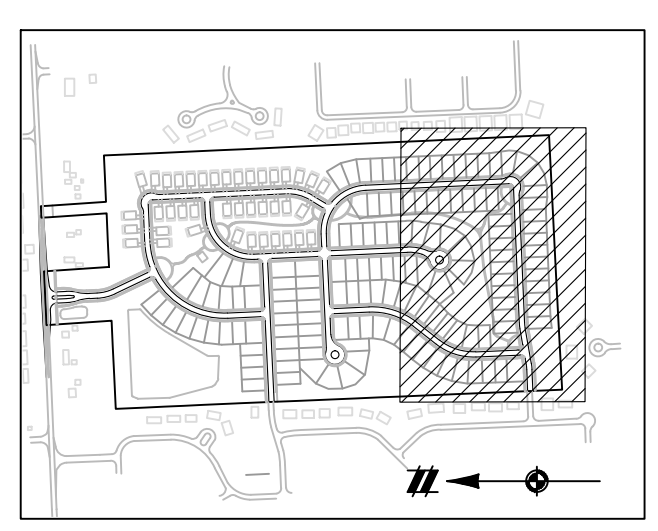
DATE: OCTOBER 29, 2020
02/17/2021: REV PER TOWNSHIP
05/27/2021: REV PER OCMRC
07/09/2021: AMENDMENT TO FSP

Table with 2 columns: REVISIONS, SCALE. Scale: 0 25 50, 1" = 50 FEET.

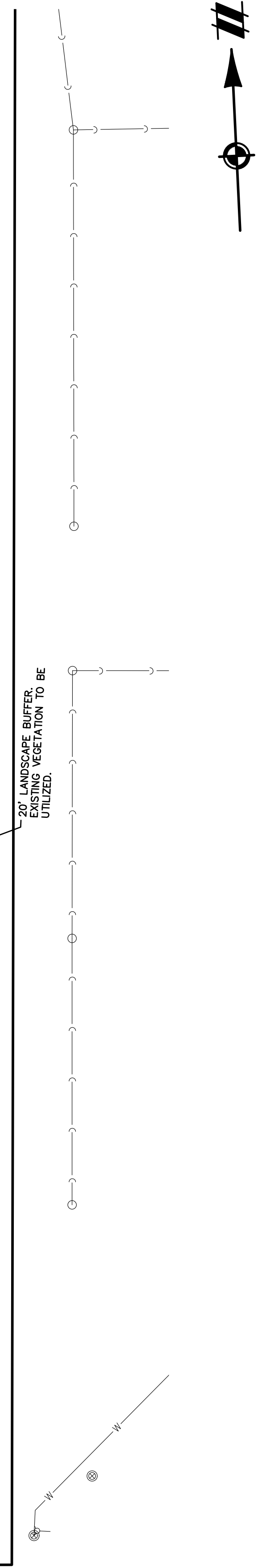
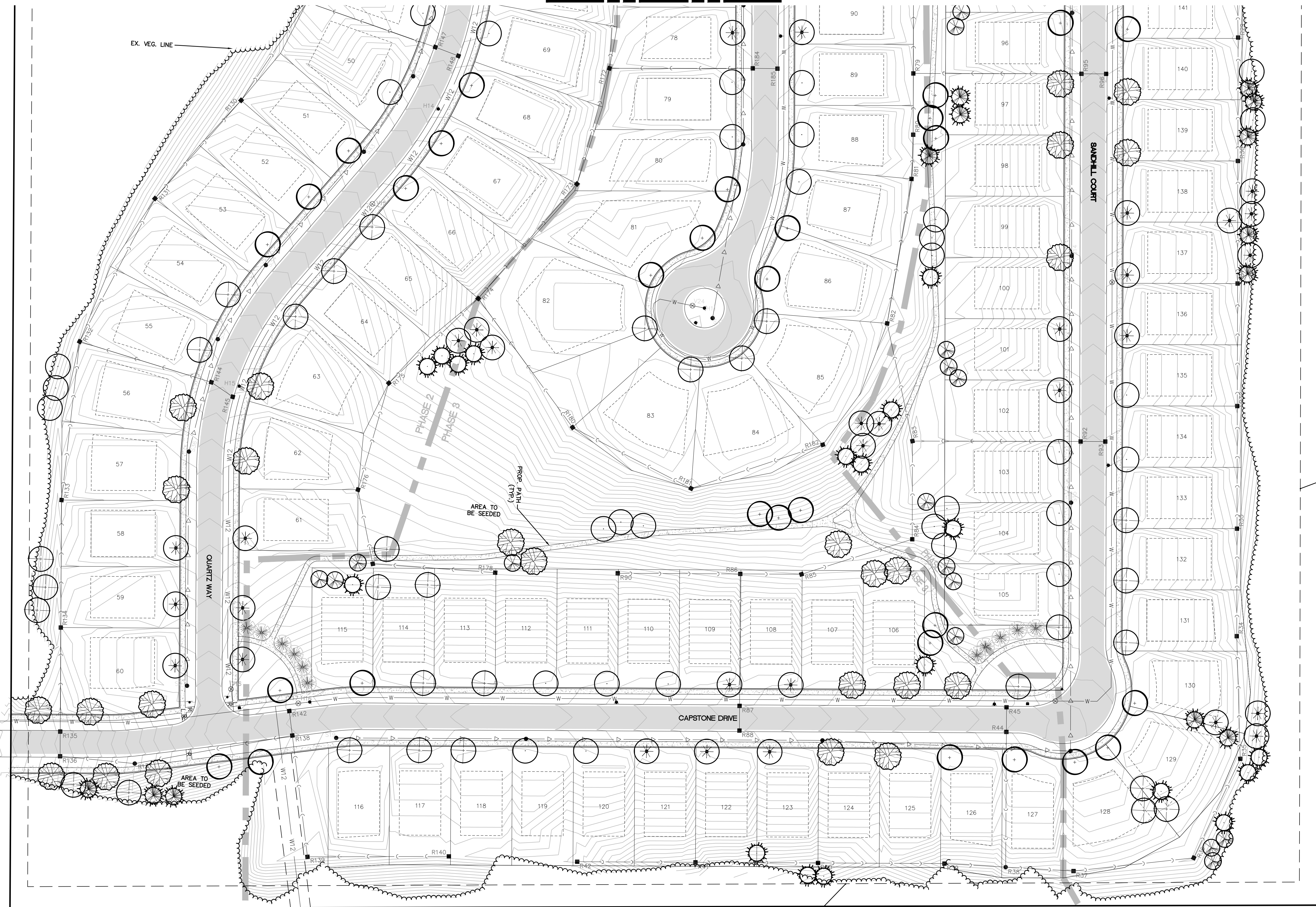
DR. SK/KS GH. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. LS3

LEGEND table with symbols for Boundary Line, Section Line, Boundary/Property Line, etc.

- NOTES: 1. SEE SHEET LS5 FOR LANDSCAPE DETAILS 2. MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN LARGE TREES AND SANITARY SEWER, WATERMAIN, AND STORM SEWER WHERE POSSIBLE, MIN. 3'.



SEE SHEET LS3 FOR CONTINUATION



CAD FILE: 18003309S2-01-LS3.DWG



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SECTION 25
TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TOWNSHIP
OAKLAND COUNTY, MICHIGAN

M/I HOMES OF MICHIGAN, LLC
TRAILSIDE MEADOW
FINAL SITE ENGINEERING PLAN
PHASES 2-3
LANDSCAPE DETAILS

Table with columns for DATE, REVISIONS, SCALE, AS NOTED, DR. SK/KS, P.M., BOOK, JOB, SHEET NO.

REVISIONS
SCALE 0 AS NOTED
DR. SK/KS | Gh. CK
P.M. M BUSH
BOOK --
JOB 18003309
SHEET NO. LS4

LANDSCAPE NOTES

- 1. ALL INTERIOR LANDSCAPING SHALL PROVIDE ONE (1) LARGE DECIDUOUS, SMALL ORNAMENTAL DECIDUOUS, OR EVERGREEN TREE AND FIVE (5) SHRUBS FOR EVERY THREE HUNDRED (300) SQUARE FEET OF REQUIRED INTERIOR LANDSCAPING AREA.
2. FOR EVERY 300 SQUARE FEET OF AREA EXCLUDING THE PAVED AREA OF THE STREET OR DRIVE AND SIDEWALKS, THERE SHALL BE PROVIDED ONE ORNAMENTAL TREE, OR ONE EVERGREEN TREE, OR ONE SHADE TREE, AND THREE SHRUBS.
3. THE REMAINING AREA SHALL BE PLANTED IN TURF, ANNUAL AND/OR PERENNIAL FLOWERS, ORNAMENTAL GRASSES, AND THE LIKE.
4. ALL REQUIRED LANDSCAPE PLANTINGS SHALL BE GUARANTEED FOR A PERIOD OF TWO (2) YEARS AND THOSE WHICH ARE DISEASED OR DEAD MUST BE REPLACED IN CONFORMANCE WITH THE APPROVED LANDSCAPE PLAN.
5. REQUIRED LANDSCAPING AND SCREENING SHALL BE INSTALLED WITHIN SIX (6) MONTHS FROM THE DATE OF COMPLETION OF THE BUILDING OR IMPROVEMENT. A FINAL CERTIFICATE OF OCCUPANCY SHALL BE WITHHELD UNTIL ALL REQUIRED LANDSCAPING AND SCREENING HAS BEEN INSTALLED AND APPROVED.
6. ALL LANDSCAPED AREAS, EXCEPT AS OTHERWISE PROVIDED, SHALL BE PROVIDED WITH A READILY AVAILABLE AND ACCEPTABLE WATER SUPPLY.
7. TREE STAKES, GUY WIRES AND TREE WRAP ARE TO BE REMOVED AFTER ONE YEAR.
8. LANDSCAPED AREAS AND PLANT MATERIALS SHALL BE KEPT FREE FROM REFUSE AND DEBRIS. PLANT MATERIALS, INCLUDING LAWNS, SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION, NEAT AND ORDERLY IN APPEARANCE. IF ANY PLANT MATERIALS REQUIRED BY THIS ORDINANCE DIES OR BECOMES DISEASED, THEY SHALL BE REPLACED WITHIN THIRTY (30) DAYS OF WRITTEN NOTICE FROM THE TOWNSHIP.
9. ALL WORKMANSHIP SHALL CONFORM TO WHITE LAKE TOWNSHIP STANDARDS AND SPECIFICATIONS.
10. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES.
11. LANDSCAPING OPERATIONS, INCLUDING PLANTING OF TREES AND SHRUBS, SHALL NOT DAMAGE ANY UTILITY OR INTERRUPT ANY UTILITY SERVICE, AND SHALL NOT DAMAGE OR CREATE A NUISANCE AFFECTING ADJACENT PROPERTY, PUBLIC STREETS, OR SIDEWALKS.
12. ALL LANDSCAPED AREAS SHALL BE PROVIDED WITH AN ADEQUATE WATER SUPPLY. IF AUTOMATIC IRRIGATION IS PROVIDED, THE PROPERTY OWNER (OR ANY APPLICABLE OWNER'S ASSOCIATION) SHALL BE RESPONSIBLE TO ENSURE THE PROPER CARE AND MAINTENANCE OF LANDSCAPE AREAS, INCLUDING KEEPING ALL LANDSCAPE MATERIALS IN A HEALTHY AND GROWING STATE.
13. NO PLANT MATERIAL SHALL BE PLANTED CLOSER THAN 4 FEET FROM ANY PROPERTY LINE.
14. REMOVE ALL TWINE, WIRE, NURSERY GUARDS, TAGS AND INORGANIC MATERIAL FROM ROOT BALL. PEEL BACK THE BURLAP FROM EARTH BALLS AND REMOVE ANY BURLAP, TWINE OR WIRE AROUND THE TRUNK FLARE AND ABOVE.
15. ALL PLANTING AREAS ARE TO BE EXCAVATED OF ALL BUILDING / CONSTRUCTION AND FILL MATERIALS AND BACKFILLED WITH GOOD MEDIUM TEXTURED PLANTING SOIL. SEEDING AREAS ARE TO BE TREATED WITH 4" OF NEW TOPSOIL AND ROTOTILLED OR OTHERWISE SCARIFIED TO BREAK UP COMPACTION AT LEAST 8" BELOW THE TOPSOIL.
16. TOPSOIL SHALL BE SCREENED AND SUITABLE FOR GROWING VEGETATION AND MEET AT A MINIMUM WHITE LAKE TOWNSHIP OR ASTM D-5288 AND MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
17. RECOMMENDED PLANTING DATES ARE MARCH 15 TO JUNE 15 AND SEPTEMBER 15 TO NOVEMBER 15.
18. PROPOSED TREES AND PLANTINGS MAY NOT BE LOCATED DIRECTLY ABOVE BURIED UTILITIES OR WITHIN DRAINAGE FLOW LINES. EVERY EFFORT MUST BE MADE TO OFFSET PLANTINGS THREE (3) FEET FROM BURIED UTILITIES AND DRAINAGE SWALE CENTERLINES.
19. MAINTAIN 10' HORIZONTAL SEPARATION BETWEEN LARGE TREES AND SANITARY SEWER, WATERMAIN, AND STORM SEWER WHERE POSSIBLE, MIN. 3'

SEED MIXES

Detention Basin Side Slope Seed Mix

Table with columns for Botanical Name and Common Name. Lists various grasses and forbs like Andropogon gerardii, Bouteloua curtipendula, Carex spp., etc.

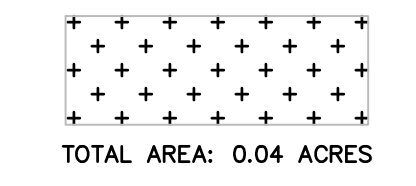


TOTAL AREA: 1.37 ACRES

Apply at 59.5 PLS pounds per acre

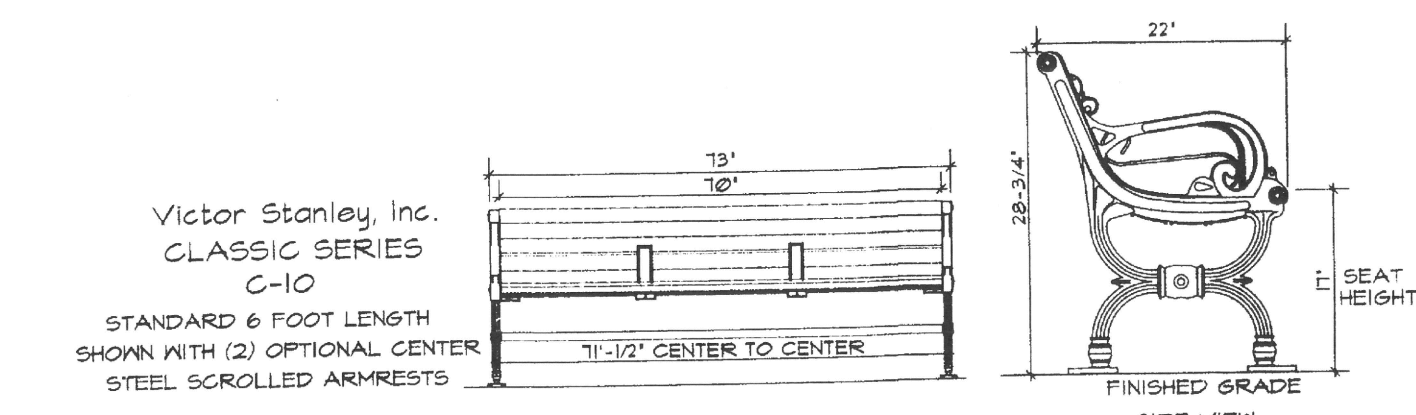
Stormwater Basin Bottom Mix

Table with columns for Botanical Name and Common Name. Lists various sedges and rushes like River Bulrush, Crested Oval Sedge, Bottlebrush Sedge, etc.



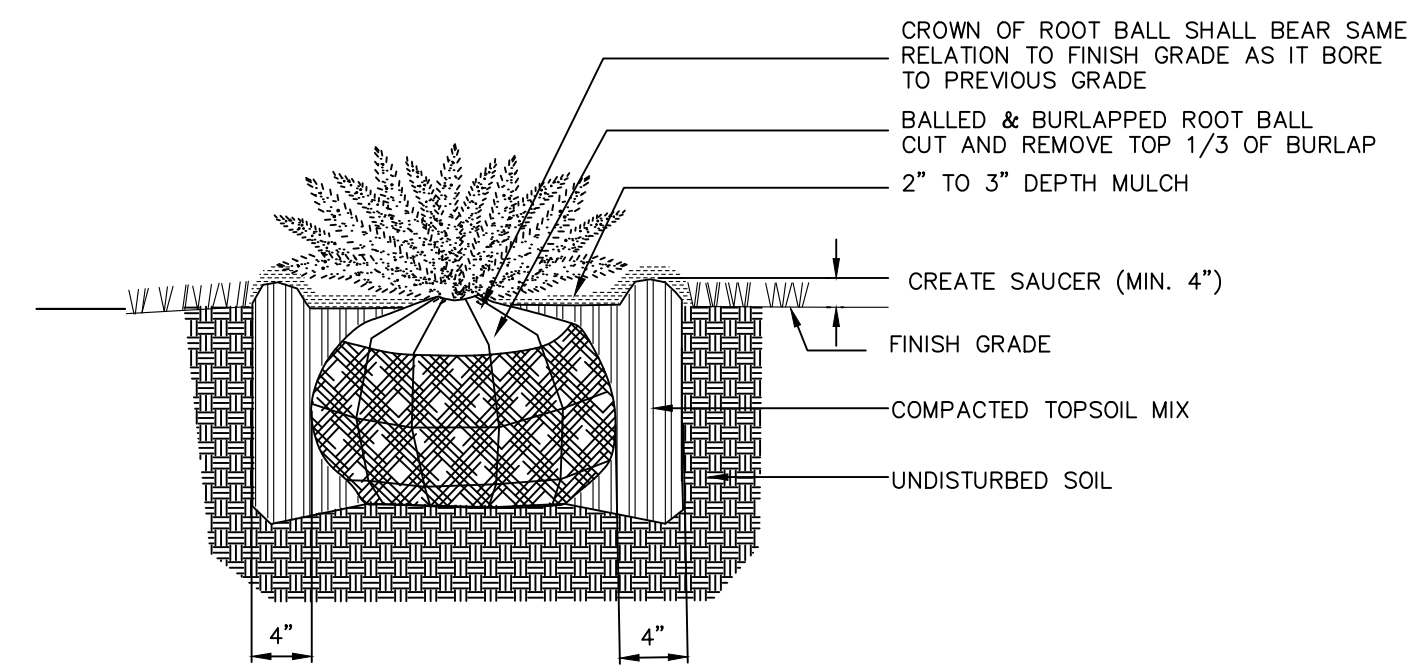
TOTAL AREA: 0.04 ACRES

Apply at 32.97 PLS pounds per acre



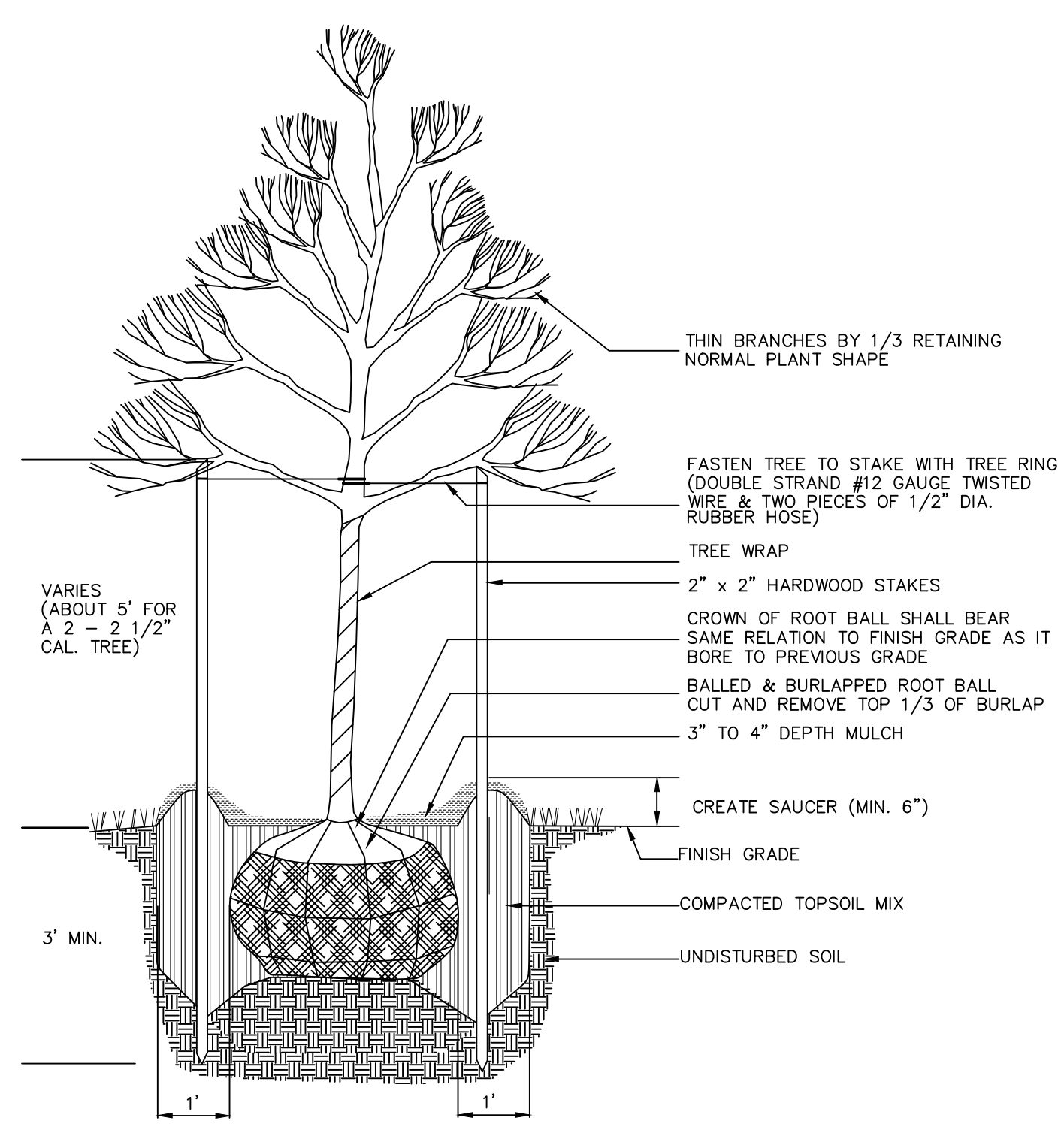
IT IS NOT RECOMMENDED TO LOCATE ANCHOR BOLTS UNTIL ASSEMBLED BENCH IS IN PLACE. CASTING DIMENSIONS VARY SLIGHTLY.

BENCH DETAIL NO SCALE



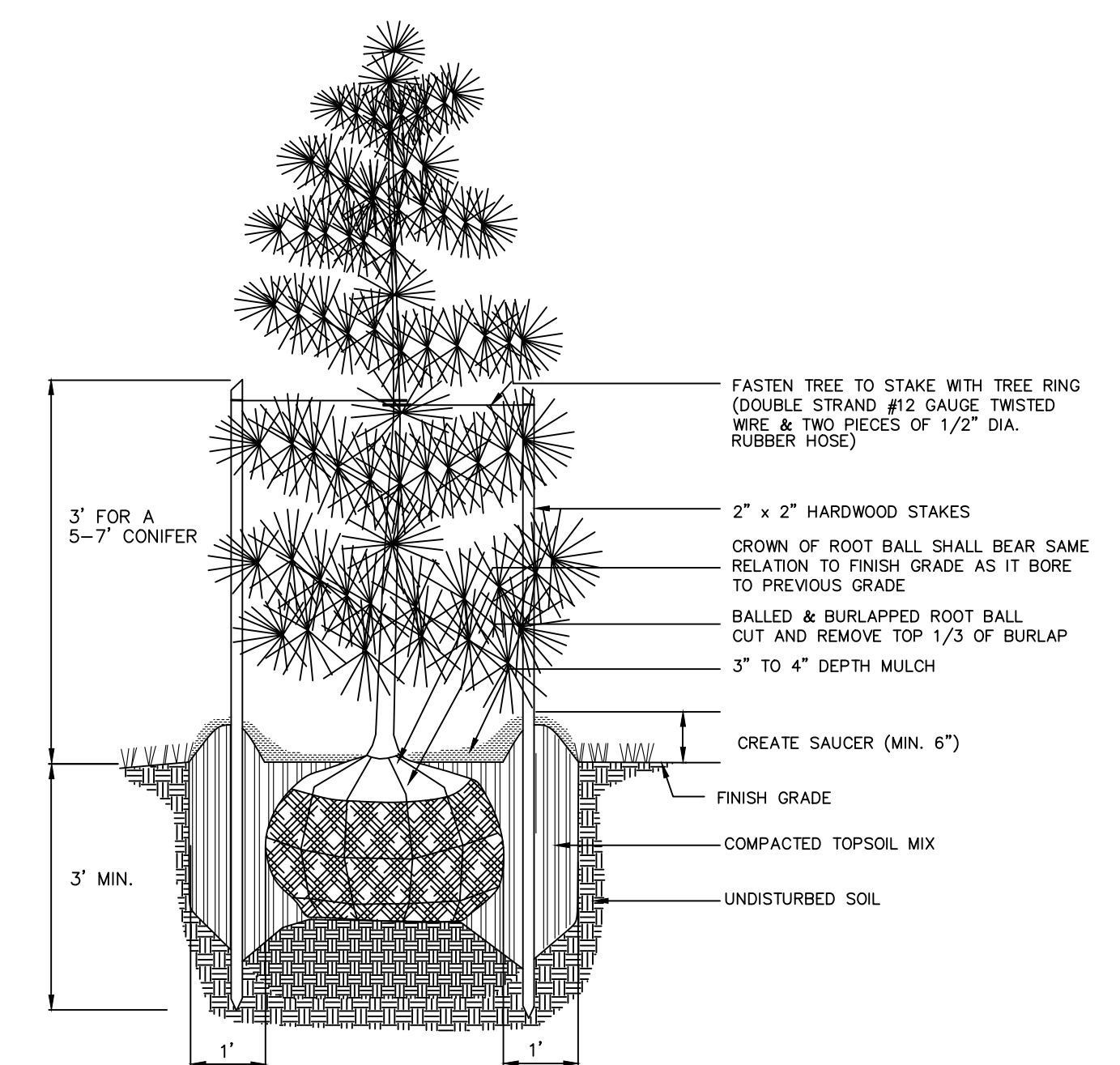
- NOTES:
1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING
2. WATER SHRUB THOROUGHLY SUBSEQUENT TO INSTALLATION

SHRUB PLANTING DETAIL NO SCALE



- NOTES:
1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING
2. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE
3. REMOVE TREE RINGS, TREE WRAP AND STAKES TWO YEARS AFTER INSTALLATION
4. WATER TREE THOROUGHLY SUBSEQUENT TO INSTALLATION

DECIDUOUS TREE PLANTING DETAIL BALLED AND BURLAPPED NO SCALE



- NOTES:
1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING
2. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE
3. REMOVE TREE RINGS AND STAKES TWO YEARS AFTER INSTALLATION
4. WATER TREE THOROUGHLY SUBSEQUENT TO INSTALLATION

CONIFEROUS TREE PLANTING DETAIL BALLED AND BURLAPPED NO SCALE