

**WHITE LAKE TOWNSHIP
PLANNING COMMISSION**
7525 Highland Road
White Lake, MI 48383
APRIL 15, 2021 @ 7:00 p.m.
Electronic Meeting

Chairman Anderson called the meeting to order at 7:00 p.m. and led the Pledge of Allegiance. Roll was called.

ROLL CALL: Steve Anderson, White Lake, MI
Merrie Carlock, White Lake, MI
Peter Meagher, White Lake, MI
Matt Slicker, Commerce, MI
Rhonda Grubb – Secretary, White Lake, MI
Mark Fine, White Lake, MI
Joe Seward, White Lake, MI

Absent: Debbie Dehart
Scott Ruggles

Also Present: Sean O’Neil, WLT Planning Director
Sherri Barber, Recording Secretary

Visitors: Mike Leuffgen (DLZ)
Chris Madigan (McKenna)

Approval of Agenda

Mr. Meagher moved to approve the agenda as presented. Ms. Carlock supported and the MOTION CARRIED with a roll call vote: (Anderson – yes; Carlock – yes; Meagher – yes; Slicker – yes; Grubb – yes; Fine – yes; Seward -- yes). 7 yes votes

Approval of Minutes

a. March 18, 2021

Mr. Meagher moved to approve the minutes of March 18, 2021 as presented. Mr. Fine supported and the MOTION CARRIED with a roll call vote: (Anderson – yes; Carlock – yes; Meagher – yes; Slicker – yes; Grubb – yes; Fine – yes; Seward -- yes). 7 yes votes

Call to the Public (for items not on the agenda)

No members of the public called in, there were no callers in the meeting room.

Public Hearing:

No public hearing.

Old Business:

No old business.

New Business

a) 7775 Highland

Location: Property described as parcel number 12-21-276-019 (7775 Highland Road), located on the north side of Highland Road, just east of Dolane Blvd, consisting of approximately 6.66 acres.

Request: **Rezoning from (SF) Suburban Farm to (LB) Local Business or any other appropriate district.**

Applicant: Wade Brancheau

Deed holders: Wade A Brancheau & Angela M Brancheau

Mr. Seward wanted to notify everyone that he owns property that was noticed regarding the hearing. Mr. Meagher pointed out that the Planning Commission bylaws do have a conflict of interest clause in Article 4.4.2.

Mr. Meagher moved to recommend that the Planning Commission recuse Mr. Seward from New Business agenda Item A (7775 Highland Road) because of a potential conflict of interest with the Planning Commission Bylaws Article 4.4.2. Mr. Seward owns property in the 300' notification area. Ms. Grubb supported and the MOTION CARRIED with a roll call vote: (Anderson – yes; Carlock – yes; Meagher – yes; Slicker – yes; Grubb – yes; Fine – yes; Seward -- yes). 7 yes votes

Mr. Madigan noted that they are in agreement with the planned rezoning. It fits with the master plan and the proposed uses are appropriate with future land use. A traffic study will be waived at this time because the traffic use won't be increased.

The approval from McKenna is based on the following:

The requested LB zoning district is consistent with the Master Plan and Future Land Use Map.

Rezoning the parcel to LB is compatible with the character of the surrounding area.

Rezoning the parcel to LB will not result in spot zoning.

The parcel is a reasonable module of land for Local Business development.

Ms. Carlock noted that it's a landlocked parcel, how do they access it? They have an easement down Tranquility Lane.

Mr. Meagher asked why would you put retail back there? Mr. O'Neil noted that you wouldn't, it would almost self regulate. Mr. Anderson stated that an office situation would be in compliance.

Wade Brancheau was in attendance to discuss his application. He purchased the property in 2018, prior to that he was co-leasing. There was a landscape company and tree farm here

previously. They operate a landscape style business from the location, their workers are all almost White Lake residents. He wants to rezone it to get it more in line with the correct zoning. He wants to get rid of the boat storage. There is a tenant who lives at the location, this is the last season. Then he can clean up from the past. He would like to continue operating as we are, minus the clutter. He's been a long time White Lake resident.

Mr. Anderson opened the hearing at 7:39 p.m. for the 7775 Highland Road rezoning.

There is no one in the waiting room.

Mr. O'Neil read from a letter that was received in opposition. Nick Seward lives at 1250 Dolane. He believes that the parcel should be a rural zoning designation. He thinks it's a buffer between residential property in the area and M-59.

Mr. Anderson closed the public hearing at 7:43 p.m.

Mr. Slicker wonders if site plan approval is necessary. Mr. O'Neil reported that if he wants to run it status quo, he won't have to. If he makes alterations, at least an administrative site plan review. The only way to get good access to the site would be to combine with properties to the east and west. Mr. Slicker asked what good it does to rezone now? Mr. Brancheau wanted to bring it into compliance.

Mr. Meagher moved to recommend approval to the White Lake Township Board of Trustees for the rezoning request from (SF) Suburban Farm to (LB) Local Business for the property described as parcel number 12-21-276-019 (7775 Highland Road), located on the north side of Highland Road, just east of Dolane Blvd, consisting of approximately 6.66 acres. Subject to Planning Department and consultant comments and subject to the applicant agreeing that boat storage will be suspended and no longer transacted and it will no longer serve as a residence. We recommend a waiver of the required traffic impact study as its not relevant. Mr. Fine supported and the MOTION CARRIED with a roll call vote: (Anderson – yes; Carlock – no; Meagher – yes; Slicker – no; Grubb – yes; Fine – yes; Seward -- yes). 5 yes votes, 2 no votes

Liaison's Report

Ms. Grubb reported that Parks and Recreation met last night and had a presentation from the Huron River Watershed Council. They also discussed an alternate for the picnic table quotes. We wanted to have an event at Hawley park in June, but it will not be planned due to Covid. Mr. Quagliata is working on the Park and Recreation bylaws.

Planning Consultant's Report

No report.

Director's Report:

Mr. O'Neil reported that ZBA did some training with Township attorney Lisa Hamameh so they are up to date with that. The May 6th meeting should have 5 action items. The Township board approved the resolution to meet electronically through Aug 31st, 2021. Planning will be submitting for a federal surface grant through Haley Stevens for the Town Center Trail. The Township could get

\$1.6 million. Mr. Anderson asked if Mohave Cantina is doing well. Mr. O'Neil doesn't know, but we have been flexible with temporary seating.

Other Business:

Conceptual Plan for 8300 Pontiac Lake Road

Bob Sowles is interested in developing the Caruso Circle area behind the Gin Mill Party Store, Nicole Rittenour is the architect.

Ms. Carlock noted that this is kind of a critical area, a gateway area to the Township. Ms. Carlock suggested giving the architect the concept developed with Waterford Township years ago. Tonight is just discussion on a conceptual plan. They are looking to purchase the property and trying to decide if they would like to purchase. They would like dedicated boat slips for all the units. Mr. O'Neil noted that Planning had a concern about car ports, they should probably be enclosed garages. They should also stub off to the adjacent motel property for cross access.

Sanitary sewer is available and the applicant will need to show feasibility for this. The watermain should be extended across the property and it's assumed that underwater detention is proposed. Ordinance requires paved parking be curbed, and we need turning radius adequate for 40' vehicles for the Fire Department.

The density may not be right here, Mr. Madigan is looking for feedback. He would substitute parking for boat slips. We need to adequately park the site, especially with the restaurant. The ADA spaces are laid out oddly. It will be important to get the open space. In the gateway you can have zero setback unless it's adjacent to residential.

The developer is trying to see if everything will work and be practical. He thinks they need close to this many units to make it work.

There are condos, apartments and live/office rentals. Mr. Meagher asked if this was the design in the master plan, it's not.

It was noted that we are looking at some grant applications for the joint gateway property between White Lake and Waterford with the County Commissioner. The Pontiac Lake Gateway Concept Plan was shared on the screen. This could help them look at our vision for this area. There is no right or wrong right now, just some feedback.

Ms. Grubb likes the concept of restaurants. She doesn't like the density, it's too dense. Mr. Meagher agrees that it is too dense for residential/commercial. Mr. Anderson asked if there are 2 and 3 stories presented. They are limited to how many stories due to proximity of the airport, Ms. Rittenour noted that we will need to watch the height.

Mr. Seward stated that he lives on Pontiac Lake, and there are condos that are just as dense, maybe denser. The houses are very close together on Kingston and Bonnie Briar. It's a challenging piece of property. Looking at what they are proposing especially with the lake front, it's a great use of the property when you compare it to the very small apartments on the other side of the lake that look terrible. The concept is very nice looking compared to what was there and what is next door to it.

Mr. Slicker likes it, it's unique with the restaurant on lake. The concern is parking. Ms. Rittenour stated that they meet the parking requirement except for the restaurant which has 12 spots. There will be some reworking of the site. There are 130 parking spots on the site. Mr. Anderson asked what the relationship is for the slips to the residents. Each resident will have a boat slip. Mr. Fine likes the concept but would like more detail. Mr. Anderson asked if there were any other questions for the Planning Commission.

Mr. Swoles would like the whole place to be developed at once, but that's not practical. The problem is the property to the East. They need 52 units to make it work and they may be get around the parking. Mr. O'Neil suggested trimming a little bit. 12 units could become two 10 unit buildings. You'll need more room, you're still dense. If you get to a point where you demonstrate engineering feasibility, something may have to give. So we may be in favor in reducing some of the parking requirements and we may need to take a look at that. Maybe visitor parking and customer parking. The state will be involved with the marina permit. It's a good idea, but there will be a process for that and further research. Mr. O'Neil noted that they will weigh in on configuration. Mr. O'Neil suggested contacting EGLE for their standards.

Communications:

Next Meeting Dates: May 6th, 2021
May 20th, 2021

Adjournment:

Mr. Seward moved to adjourn the meeting at 8:55 p.m. Ms. Carlock supported and the MOTION CARRIED with a roll call vote: (Anderson – yes; Carlock – yes; Meagher – yes; Slicker – yes; Grubb – yes; Fine – yes; Seward -- yes). 7 yes votes

Director's Report

Project Name: Stanford Holding LLC Rezoning

Description: Rezoning

Date on Agenda this packet pertains to: May 6, 2021

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

Contact	Consultants & Departments	Approval	Denial	Approved w/ Conditions	Comments
Dan Keller	Police Dept.				
John Holland	Fire Dept.				
Aaron Potter	Water Dept.				
Sean O'Neil	Planning Director				
DLZ	Engineering Consultant				
McKenna Associates	Planning Consultant				
Nick Spencer	Building Official				
Jeanine Smith	Assessing Dept				
Patricia Shull	Oakland County Int'l Airport				
Scott Sintkowski	RCOC				

WHITE LAKE TOWNSHIP

COMMUNITY DEVELOPMENT DEPARTMENT

DATE: April 29, 2021
TO: Planning Commission
FROM: Sean O'Neil, Planning Director
SUBJECT: Stanford Holding LLC - Rezoning

When considering Stanford Holding LLC's rezoning request, please be aware that the map showing the rezoning location (included in the packet) more adequately depicts the area of the property being rezoned than the survey. If you look at Exhibit B2 in the packet there is a portion of Parcel A that is located between future Parcel C and Parcel D. This area will provide the larger "parent" parcel (Parcel A) with access to Cedar Island Road, but that small portion of Parcel A will be included in the request for rezoning from AG to R1-A. It will not have an impact on the applicant's future use of Parcel A, but it will "clean up" and clarify the zoning boundaries. Additionally, I do not believe that a traffic study is warranted for this rezoning request. The rezoning will likely result in a maximum of eight (8) new acreage parcels on Cedar Island Road. This will not impact the existing traffic volumes on the road. All drive way locations and permits will be approved by the Road Commission for Oakland County.

I look forward to discussing this further with you all on May 6th when we meet. Please contact me if you have any questions or require additional information.

Thank you.



MCKENNA

April 22, 2021

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

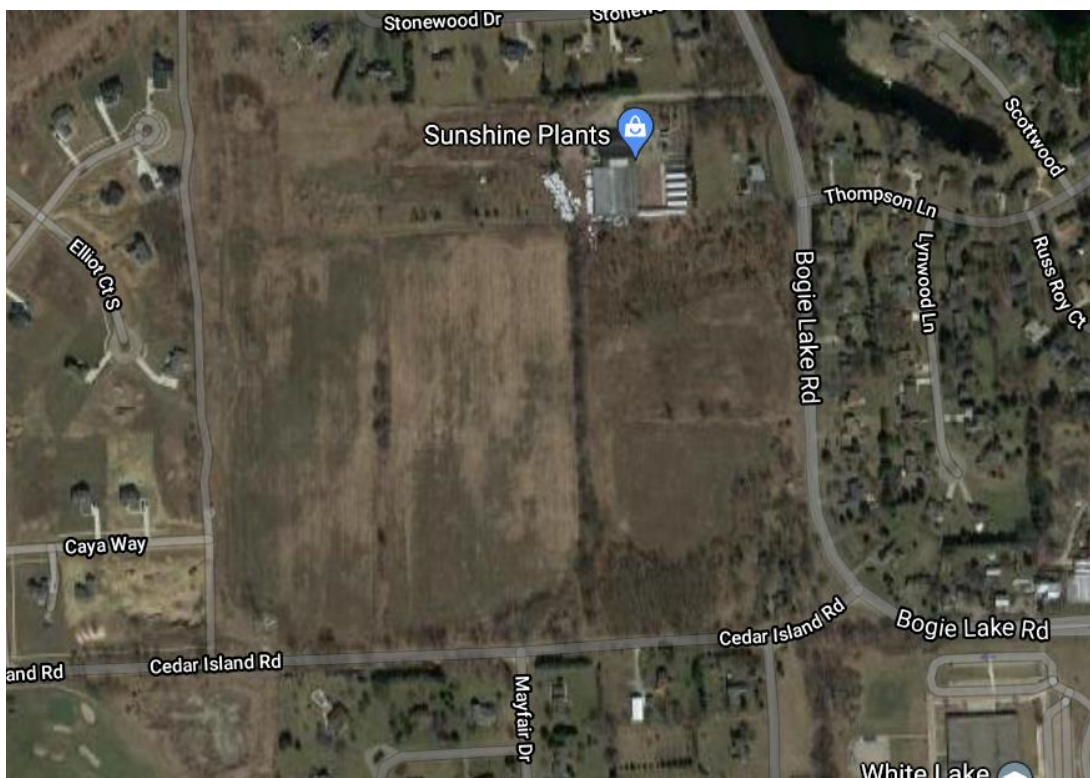
Subject: Proposed Rezoning of Tax Parcel No. 12-29-476-006
Agricultural (AG) to Single-Family Residential (R1-A)

Applicant(s): Stanford Holding LLC

Location: Northwest Corner of Bogie Lake Road and Cedar Island Road

Dear Planning Commissioners:

We have received an application from the applicant referenced above to rezone part of tax parcel 12-29-476-0006, consisting of a 9.27 acre portion, of a larger 45 acre parcel from Agricultural (AG) to Single-Family Residential (R1-A). To the east west and south land is zoned residential, and to the north is a commercial use.



Source: Google Maps

DETROIT
28 West Adams Street
Suite 1000
Detroit, Michigan 48226

☎ 313.888.9882
☎ 248.596.0930
MCKA.COM

Communities for real life.

COMMENTS

1. **Existing Conditions.** The conditions of the site and the surrounding area are summarized below:

Location	Existing Land Use	Master Plan	Existing Zoning
Site	Vacant	Open Space Estates	AG
North	Commercial	Planned Residential	AG
East	Residential	Residential Resort	R1-C
South	Residential	Open Space Estates	SF
West	Residential	Open Space Estates	AG

2. **Zoning Ordinance.** Section 7.13 of the Zoning Ordinance provides standards for the review of rezoning proposals. The following review criteria are specified in Section 7.13 (A) through (N):
- a. **Consistency with the goals, policies and future land use map of the White Lake Township Master Plan, including any subarea or corridor studies. If conditions have changed since the Master Plan was adopted, the consistency with recent development trends in the area.** The Future Land Use map shows the site as Open Space Estates. Open Space Estates is intended to include preservation of significant natural resources and features, maintenance of established wildlife corridors, and protection of lakes and stream systems within a setting of large, suburban estate lots. Further the Master Plan notes that lots in this area Should be comprised of lots of .5 acres to 1 acre in size. At a minimum lot size of 1 acre, we find the requested district is in alignment with the Future Land Use Map and Master Plan.
 - b. **Compatibility of the site's physical, geological, hydrological and other environmental features with the host of uses permitted in the proposed zoning district.** The site is presently vacant. It appears to be a reasonable module of land for single-family residential development.
 - c. **Evidence the applicant cannot receive a reasonable return on investment through developing the property with one (1) of the uses permitted under the current zoning.** While no such evidence has been submitted, we observe that the request is consistent with the use and zoning of other properties adjacent to Bogie Lake Road in this area. Further, we note that the proposed district has a minimum lot size of 1 acre, while the existing district has a minimum lot size of five acres. Leaving the existing zoning district in place would drastically limit the number of single-family lots this property could be divided into.
 - d. **The compatibility of all the potential uses allowed in the proposed zoning district with surrounding uses and zoning in terms of land suitability, impacts on the environment, density, nature of use, traffic impacts, aesthetics, infrastructure, and potential influence on property values.** The property to the north is a nonresidential use, while the rest of the surrounding area is dedicated to use as single-family dwellings. The requested district has a minimum lot area of 1 acre and does not represent a potential density that is inappropriate for the area.
 - e. **The capacity of the Township's utilities and services sufficient to accommodate the uses permitted in the requested district without compromising the "health, safety and welfare" of the Township** We defer to the Township Engineer regarding this matter.



- f. ***The capability of the street system to safely and efficiently accommodate the expected traffic generated by uses permitted in the requested zoning district. A rezoning traffic study shall be prepared as described in Section 6.3, if required based on the standards of Section 6.3.B.i of the Zoning Ordinance.*** A rezoning traffic study (“RTS”) is required if the proposal is either a) inconsistent with the Master Plan or b) involves other than residential down-zoning. This requirement can be waived if recent studies have been completed in the area and the study would be of little benefit. While we do not believe the rezoning will overburden nearby roads, the Planning Commission may find it beneficial to require the RTS.
- g. ***The apparent demand for the types of uses permitted in the requested zoning district in relation to the amount of land in the township currently zoned and available to accommodate the demand.*** The demand for single-family residential uses is apparent from the use of surrounding lands in the area.
- h. ***The boundaries of the requested rezoning district are reasonable in relationship to its surroundings, and construction on the site will be able to meet the dimensional regulations for the zoning district listed in the Schedule of Regulations.*** Though the property to the north is home to a nonresidential use, the other adjacent properties are residential areas. We find the requested district is reasonable for the area. Further the subject site is capable of being divided into lots which comply with the district standards.
- i. ***The requested zoning district is considered to be more appropriate from the township's perspective than another zoning district.*** Though we believe there are other residential zoning districts which could also advance the goals of the open space estates. We find the R-1A district closely aligns with the listed open space estates densities and is the most appropriate potential district.
- j. ***If the request is for a specific use, is rezoning the land more appropriate than amending the list of permitted or special land uses in the current zoning district to allow the use?*** The applicant states that the expected use will be single-family dwellings. The use is permitted in both the existing and proposed district. It would not be appropriate to add any uses to the existing district.
- k. ***The requested rezoning will not create an isolated and unplanned spot zone.*** The subject site is largely surrounded by single-family residential uses. We believe the requested district is appropriate for the area, and will not create an isolated or unplanned spot zone.
- l. ***The request has not previously been submitted within the past one (1) year, unless conditions have changed or new information has been provided.*** It is our understanding that this request had not been previously made.
- m. ***An offer of conditions submitted as part of a conditional rezoning request shall bear a reasonable and rational relationship to the property for which rezoning is requested.*** This standard is not applicable, as the application is not for a conditional rezoning.
- n. ***Other factors deemed appropriate by the Planning Commission and Township Board.*** If the Planning Commission or Township Board desire information on other considerations related to the proposal, we would be happy to assist them.



RECOMMENDATION

Subject to receipt or waiver of a Rezoning Traffic Study, we are comfortable recommending that the Planning Commission recommend that the Township Board approve the request to rezone the site from the AG district to the R1-A District for the following reasons:

1. The requested R1-A zoning district is consistent with the Master Plan and Future Land Use Map.
2. Rezoning the parcel to R1-A is compatible with the character of the surrounding area.
3. Rezoning the parcel to R1-A will not result in spot zoning.
4. The parcel is a reasonable module of land for single-family residential development.

If you have any questions about this report or require additional information, please do not hesitate to contact us.

Respectfully submitted,

McKENNA



Chris Madigan, AICP
Associate Planner

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



Tom Thomasma
248-933-6640

CHARTER TOWNSHIP OF WHITE LAKE
COMMUNITY DEVELOPMENT DEPARTMENT
7525 Highland Road, White Lake, Michigan 48383-2900
248-698-3300, Ext. 163

APPLICATION TO REZONE PROPERTY

Date: 1/18/2021

Applicant: Stanford Holding LLC

Address: P.O. Box 758, Walled Lake, MI 48390

Phone No.: (248) 770-9643 Fax No.: _____

E-mail: tom@ert-group.com

Applicant's Interest in Property: Owner

Property Owner: Stanford Holding LLC

Owner's Address: P.O. Box 758, Walled Lake, MI 48390

Phone No.: (248) 770-9643 Fax No.: _____

Location of Property: Cedar Island Road west of Bogie Lake Road

Sidwell No(s): 12-29-476-006

Total area of change: 9.278 acres (8) lot splits from Parcel 12-29-476-006
(8) Sidwells not assigned yet

I, the undersigned (owner, attorney, or option holder) hereby request that this property now classified
as R-1A AG District, be reclassified as R-1A District.

Applicant's Signature: 
(If owner does not sign application, attach letter signed by owner, requesting zoning change.)

Please Print Name: Thomas Thomasma

Required Attachments:

- ✓ 1. Legal description of the property proposed to be rezoned.
- ✓ 2. Location map
- ✓ 3. Rezoning sign location map
- ✓ 4. Statement indicating why change is requested
- _____ 5. Review fee (check payable to the Charter Township of White Lake)

Statement of why Zoning Change is requested.

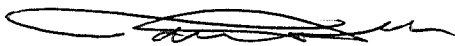
4-7-21

I am requesting a zoning change for 8 lots we are splitting off from parent parcel #12-29-476-006.

I am requesting that the zoning be changed from Agricultural to R-1A for those lots.

I intend to build homes on those lots therefore I need a residential zoning.

Thank You,



Tom Thomsma

Stanford Holding LLC

P.O. Box 758

Walled Lake, MI 48390

LOCATION MAP 45 Acres



- 2 Foot Contours
- 5 Foot Contours
- FEMA Base Flood Elevations
- FEMA Cross Sections
- 100 yr - FEMA Floodplain
- 100 yr (detailed) - FEMA Floodplain
- 500 yr - FEMA Floodplain
- FLOODWAY - FEMA Floodplain

Disclaimer: The information provided herewith has been compiled from recorded deeds, plats, tax maps, surveys and other public records. It is not a legally recorded map or survey and is not intended to be used as one. Users should consult the information sources mentioned above when questions arise. FEMA Floodplain data may not always be present on the map.

OAKLAND COUNTY MICHIGAN
 Economic Development & Community Affairs
L. Brooks Patterson
 Oakland County Executive

Date Created: 6/15/2016

NORTH
 1 inch = 3,200 feet

Cedar Island Zoning Sign Location



NOTES:

EXHIBIT 'A'

- TITLE WORK WAS NOT PROVIDED. EXISTING EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN.
- A WETLAND AND TREE SURVEY WERE NOT PERFORMED AS PART OF THIS SURVEY.
- SEE SHEET 4 FOR LEGAL DESCRIPTION.

PROPERTY CONTROLLING CORNER (PCC-007)
T.03N., R.08E.,
WHITE LAKE TOWNSHIP,
OAKLAND COUNTY,
MICHIGAN, LIBER 27862,
PAGE 767, O.C.R.
(FOUND MONUMENT
W/BRASS CAP)

WHISPERING MEADOWS
CONDOMINIUM, O.C.C.S.P. NO. 790,
LIBER 13063, PAGE 715, O.C.R.

PARCEL NO.
12-29-476-004

S89°47'00"E
S89°55'52"E

FIB 4.59'W.
SCI

1297.37'(R)
1297.00'(M)

PARCEL NO.
12-29-476-005
1609.17'(R)
1609.35'(M)

FCM 1.65'W.

500'44'40"W
362.33'(M)

809.90'(M)
811.03'(R)

EAST LINE
OF SECTION
29 &
CENTERLINE
OF ROAD

CEDAR MEADOWS CONDOMINIUM,
O.C.C.S.P. NO. 2168, LIBER 51765,
PAGE 456, O.C.R.

PARCEL NO.
12-32-452-016

PARCEL NO.
12-29-476-006
45.48 ACRES
(GROSS)

S84°04'15"W
226.85'(M)
S84°03'20"W
226.46'(R)

FOUND AXLE

33' RIGHT OF WAY LINE

**BOGIE LAKE ROAD
(WIDTH VARIES)**

S03°06'02"W
458.08'(M)
S03°18'40"W
457.42'(R)

PARCEL NO.
12-29-476-007

500'44'40"W
362.33'(M)

P.O.B.

N01°33'00"E
N01°23'00"E
SCI

FIB 0.31'S.
1.35'E.

33' RIGHT OF WAY LINE
SOUTH LINE OF SECTION 29

S89°50'00"W
1016.15'(M)

S89°50'00"W
S90°00'00"W

CEDAR ISLAND ROAD
1379.73'(M)
1379.85'(R)

(WIDTH VARIES)

FOUND AXLE
0.25'S.

S89°50'00"W
244.18'(M)
S90°00'00"W
244.06'(R)

SOUTH 1/4
CORNER OF
SECTION 29
T.03N., R.08E.,
WHITE LAKE
TOWNSHIP,
OAKLAND
COUNTY,
MICHIGAN
LIBER 17882,
PAGE 450, O.C.R.
(FOUND MONUMENT
WITH BRASS CAP)

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE OR ATTACHED DESCRIBED PARCEL(S) OF LAND ON 9/02/2020, THAT THE ERROR OF CLOSURE IS NO GREATER THAN 1 IN 5000, AND THE SURVEY IS IN FULL COMPLIANCE WITH SECTION NO. 3, ACT 132, P.A. 1970.

SOUTHEAST
CORNER OF
SECTION 29
T.03N., R.08E.,
WHITE LAKE
TOWNSHIP,
OAKLAND
COUNTY,
MICHIGAN
LIBER 17882,
PAGE 434, O.C.R.
(FOUND MONUMENT
WITH BRASS CAP)

LEGEND

- SCI SCI CAPPED IRON
- FIB FOUND IRON BAR
- FIP FOUND IRON PIPE
- FCM FOUND CONCRETE MONUMENT
- (M) MEASURED
- (R) RECORD



PAUL W. KINNUNEN
PROFESSIONAL SURVEYOR NO. 48781
EMAIL: PAUL@GREENTECHENGINEERING.NET

BASIS OF BEARING:

BEARINGS ARE BASED ON THE SOUTH LINE OF SECTION 29 BEING S89°50'00"W, PER CEDAR MEADOWS CONDOMINIUM, O.C.C.S.P. NO. 2168, LIBER 51765, PAGE 456, O.C.R.



CIVIL ENGINEERS & LAND SURVEYORS

51147 W. Pontiac Trail
Wixom, MI 48393
Phone: (248) 668-0700
Fax: (248) 668-0701

CLIENT:

STANFORD HOLDING LLC

DATE: 2-12-2021

DRAWN BY: PWK/CEH

CHECKED BY: DJL

PARCEL SPLIT

PARCEL NO. 12-29-476-006
SECTION: 29 TOWNSHIP: 03N. RANGE: 08E.
WHITE LAKE TOWNSHIP
OAKLAND COUNTY
MICHIGAN

0 150 300

FBK: --

CHF: PWK

SCALE HOR 1" = 300 FT.
VER 1" = --- FT.

1/5

20-130

NOTES:

- TITLE WORK WAS NOT PROVIDED. EXISTING EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN.
- A WETLAND AND TREE SURVEY WERE NOT PERFORMED AS PART OF THIS SURVEY.
- SEE SHEET 4 FOR LEGAL DESCRIPTION.

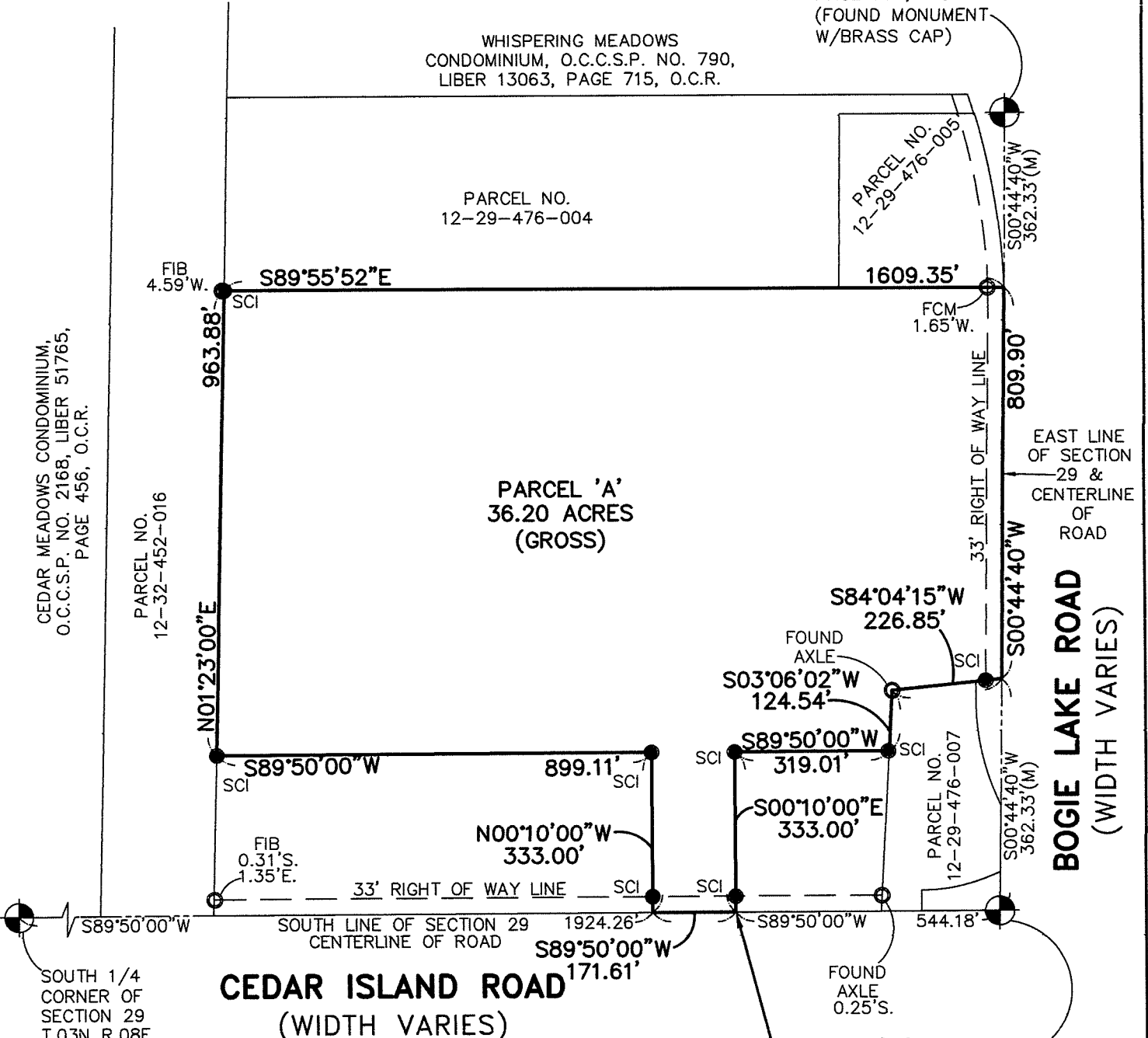
EXHIBIT 'B1'

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PARCEL 'A'
36.20 ACRES
(GROSS)



CEDAR MEADOWS CONDOMINIUM,
O.C.C.S.P. NO. 2168, LIBER 51765,
PAGE 456, O.C.R.

PARCEL NO.
12-32-452-016

PARCEL NO.
12-29-476-005

FCM
1.65'W.

EAST LINE
OF SECTION
29 &
CENTERLINE
OF ROAD

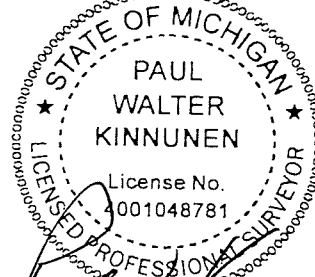
BOGIE LAKE ROAD
(WIDTH VARIES)

SOUTH 1/4
CORNER OF
SECTION 29
T.03N.,R.08E.,
WHITE LAKE
TOWNSHIP,
OAKLAND
COUNTY,
MICHIGAN
LIBER 17882,
PAGE 450, O.C.R.
(FOUND MONUMENT
WITH BRASS CAP)

CEDAR ISLAND ROAD
(WIDTH VARIES)

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE OR ATTACHED DESCRIBED PARCEL(S) OF LAND ON 9/02/2020, THAT THE ERROR OF CLOSURE IS NO GREATER THAN 1 IN 5000, AND THE SURVEY IS IN FULL COMPLIANCE WITH SECTION NO. 3, ACT 132, P.A. 1970.



PAUL W. KINNUNEN
PROFESSIONAL SURVEYOR NO. 48781
EMAIL: PAUL@GREENTECHENGINEERING.NET

SOUTHEAST
CORNER OF
SECTION 29
T.03N., R.08E.,
WHITE LAKE
TOWNSHIP,
OAKLAND
COUNTY,
MICHIGAN
LIBER 17882,
PAGE 434, O.C.R.
(FOUND MONUMENT
WITH BRASS CAP)

P.O.B. 'A'

BASIS OF BEARING:

BEARINGS ARE BASED ON THE SOUTH LINE OF SECTION 29 BEING S89°50'00"W, PER CEDAR MEADOWS CONDOMINIUM, O.C.C.S.P. NO. 2168, LIBER 51765, PAGE 456, O.C.R.

LEGEND

- SCI SCI CAPPED IRON
- FIB FOUND IRON BAR
- FIP FOUND IRON PIPE
- FCM FOUND CONCRETE MONUMENT
- (M) MEASURED
- (R) RECORD

CLIENT:

STANFORD HOLDING LLC

DATE: 2-12-2021

DRAWN BY: PWK/CEH

CHECKED BY: DJL

0 150 300

FBK: ---

CHF: PWK

2/5

SCALE HOR 1"= 300FT.
VER 1"= -- FT.

20-130



CIVIL ENGINEERS & LAND SURVEYORS

51147 W. Pontiac Trail
Wixom, MI 48393
Phone: (248) 668-0700
Fax: (248) 668-0701

PARCEL SPLIT

PARCEL NO. 12-29-476-006
SECTION: 29 TOWNSHIP: 03N. RANGE: 08E.
WHITE LAKE TOWNSHIP
OAKLAND COUNTY
MICHIGAN

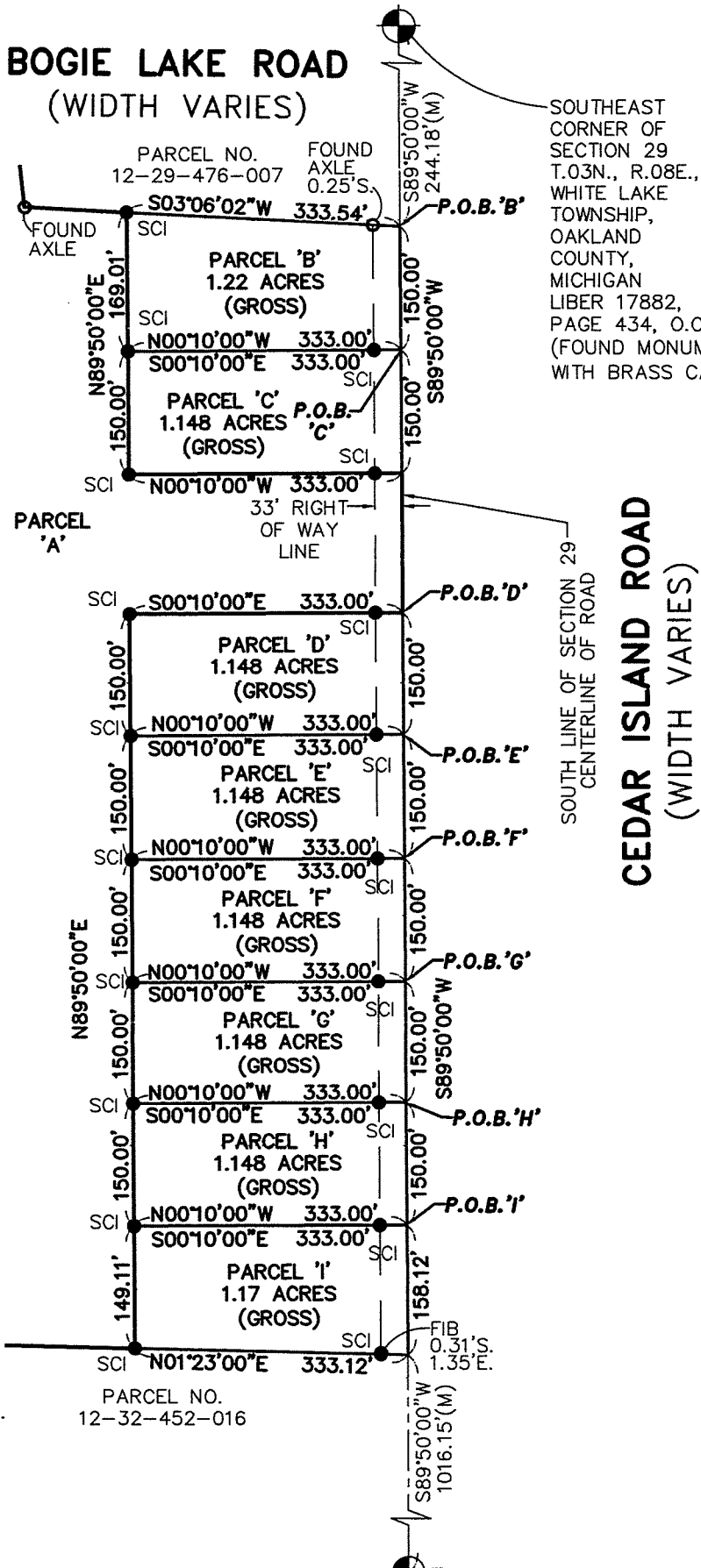
EXHIBIT 'B2'

PARCEL NET AREAS:

(NET AREA DEFINED AS THE AREA OF PARCEL NOT INCLUDING THE 33 FOOT RIGHT OF WAY FOR CEDAR ISLAND ROAD.

- PARCEL 'B' = 1.11 ACRES
- PARCEL 'C' = 1.03 ACRES
- PARCEL 'D' = 1.03 ACRES
- PARCEL 'E' = 1.03 ACRES
- PARCEL 'F' = 1.03 ACRES
- PARCEL 'G' = 1.03 ACRES
- PARCEL 'H' = 1.03 ACRES
- PARCEL 'I' = 1.05 ACRES

BOGIE LAKE ROAD (WIDTH VARIES)



SOUTHEAST CORNER OF SECTION 29 T.03N., R.08E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN LIBER 17882, PAGE 434, O.C.R. (FOUND MONUMENT WITH BRASS CAP)

SOUTH LINE OF SECTION 29 CENTERLINE OF ROAD
CEDAR ISLAND ROAD
(WIDTH VARIES)

SOUTH 1/4 CORNER OF SECTION 29 T.03N., R.08E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN LIBER 17882, PAGE 450, O.C.R. (FOUND MONUMENT WITH BRASS CAP)

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE OR ATTACHED DESCRIBED PARCEL(S) OF LAND ON 9/02/2020, THAT THE ERROR OF CLOSURE IS NO GREATER THAN 1 IN 5000, AND THE SURVEY IS IN FULL COMPLIANCE WITH SECTION NO. 3, ACT 132, P.A. 1970.



PAUL W. KINNUNEN
PROFESSIONAL SURVEYOR NO. 48781
EMAIL: PAUL@GREENTECHENGINEERING.NET

NOTES:

1. TITLE WORK WAS NOT PROVIDED. EXISTING EASEMENTS, IF ANY, HAVE NOT BEEN SHOWN.
2. A WETLAND AND TREE SURVEY WERE NOT PERFORMED AS PART OF THIS SURVEY.
3. SEE SHEET 4 FOR LEGAL DESCRIPTION.



LEGEND

- SCI SCI CAPPED IRON
- FIB FOUND IRON BAR
- FIP FOUND IRON PIPE
- FCM FOUND CONCRETE MONUMENT
- (M) MEASURED
- (R) RECORD

BASIS OF BEARING:

BEARINGS ARE BASED ON THE SOUTH LINE OF SECTION 29 BEING S89°50'00"W, PER CEDAR MEADOWS CONDOMINIUM, O.C.C.S.P. NO. 2168, LIBER 51765, PAGE 456, O.C.R.



CIVIL ENGINEERS & LAND SURVEYORS

51147 W. Pontiac Trail
Wixom, MI 48393
Phone: (248) 668-0700
Fax: (248) 668-0701

CLIENT:

STANFORD HOLDING LLC

PARCEL SPLIT

PARCEL NO. 12-29-476-006
SECTION: 29 TOWNSHIP: 03N. RANGE: 08E.
WHITE LAKE TOWNSHIP
OAKLAND COUNTY
MICHIGAN

DATE: 2-12-2021

DRAWN BY: PWK/CEH

CHECKED BY: DJL

0 100 200

FBK: --
CHF: PWK

3/5

20-130

SCALE HOR 1"=200FT.
VER 1"=--- FT.

EXHIBIT 'B3'

LEGAL DESCRIPTION (BY OTHERS):

T3N, R8E, SECTION 29 PART OF THE SOUTHEAST 1/4, BEGINNING AT A POINT, DISTANT WEST 244.06 FEET FROM THE SOUTHEAST SECTION CORNER; THENCE WEST 1379.85 FEET; THENCE N01°33'00"E 1297.37 FEET; THENCE S89°47'00"E 1609.17 FEET; THENCE S00°54'00"W 811.03 FEET; THENCE S84°03'20"W 226.46 FEET; THENCE S03°18'40"W 457.42 FEET TO THE POINT OF BEGINNING. CONTAINING 45.50 ACRES.

LEGAL DESCRIPTION (AS SURVEYED):

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 244.18 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 1379.73 FEET; THENCE N01°23'00"E 1297.00 FEET; THENCE S89°55'52"E 1609.36 FEET TO THE EAST LINE OF SAID SECTION 29, SAID EAST LINE ALSO BEING THE CENTERLINE OF BOGIE LAKE ROAD, VARIABLE WIDTH; THENCE ALONG SAID EAST LINE, S00°44'40"W 809.90 FEET; THENCE S84°04'15"W 226.85 FEET; THENCE S03°06'02"W 458.08 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 45.48 ACRES, AND SUBJECT TO RIGHTS-OF-WAY FOR CEDAR ISLAND AND BOGIE LAKE ROADS, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'A' DESCRIPTION:

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 544.18 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 171.61 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE S89°50'00"W 899.11 FEET; THENCE N01°23'00"E 963.88 FEET; THENCE S89°55'52"E 1609.35 FEET TO THE EAST LINE OF SAID SECTION 29, SAID EAST LINE ALSO BEING THE CENTERLINE OF BOGIE LAKE ROAD, VARIABLE WIDTH; THENCE ALONG SAID EAST LINE, S00°44'40"W 809.90 FEET; THENCE S84°04'15"W 226.85 FEET; THENCE S03°06'02"W 124.54 FEET; THENCE S89°50'00"W 319.01 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 36.20 ACRES, AND SUBJECT TO RIGHTS-OF-WAY FOR CEDAR ISLAND AND BOGIE LAKE ROADS, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'B' DESCRIPTION:

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 244.18 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 169.01 FEET; THENCE S03°06'02"W 333.54 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.22 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'C' DESCRIPTION:

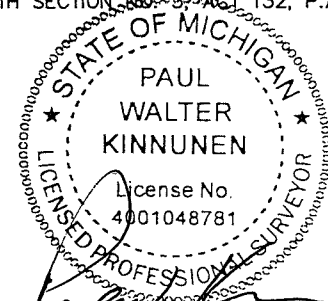
PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 394.18 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 150.00 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.148 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'D' DESCRIPTION:

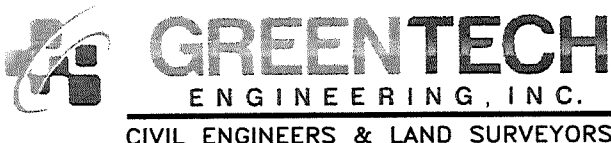
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SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE OR ATTACHED DESCRIBED PARCEL(S) OF LAND ON 9/02/2020, THAT THE ERROR OF CLOSURE IS NO GREATER THAN 1 IN 5000, AND THE SURVEY IS IN FULL COMPLIANCE WITH SECTION 132, P.A. 1970.



PAUL W. KINNUNEN
PROFESSIONAL SURVEYOR NO. 48781
EMAIL: PAUL@GREENTECHENGINEERING.NET



CIVIL ENGINEERS & LAND SURVEYORS

51147 W. Pontiac Trail
Wixom, MI 48393
Phone: (248) 668-0700
Fax: (248) 668-0701

CLIENT: STANFORD HOLDING LLC	DATE: 2-12-2021 DRAWN BY: PWK/CEH CHECKED BY: DJL
PARCEL SPLIT	
PARCEL NO. 12-29-476-006 SECTION: 29 TOWNSHIP: 03N. RANGE: 08E. WHITE LAKE TOWNSHIP OAKLAND COUNTY MICHIGAN	
FBK: --- CHF: PWK	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> 4/5 </div>
SCALE HOR 1" = --- FT. VER 1" = --- FT.	

EXHIBIT 'B4'

PROPOSED PARCEL 'E' DESCRIPTION:

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 865.79 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 150.00 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.148 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'F' DESCRIPTION:

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 1015.79 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 150.00 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.148 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'G' DESCRIPTION:

PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 1165.79 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 150.00 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.148 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'H' DESCRIPTION:

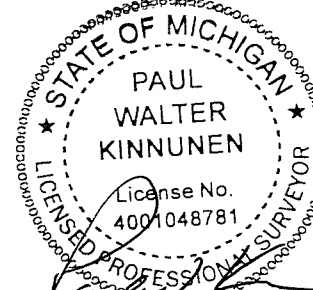
PART OF THE SOUTHEAST 1/4 OF SECTION 29, WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS: **BEGINNING** AT POINT ON THE SOUTH LINE OF SAID SECTION 29, SAID LINE ALSO BEING THE CENTERLINE OF CEDAR ISLAND ROAD, VARIABLE WIDTH, BEING DISTANT S89°50'00"W 1315.79 FEET ALONG SAID SOUTH LINE FROM THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE CONTINUING ALONG SAID SOUTH LINE, S89°50'00"W 150.00 FEET; THENCE N00°10'00"W 333.00 FEET; THENCE N89°50'00"E 150.00 FEET; THENCE S00°10'00"E 333.00 FEET TO THE SAID SOUTH LINE OF SAID SECTION 29 AND TO THE **POINT OF BEGINNING**. CONTAINING 1.148 ACRES, AND SUBJECT TO RIGHT-OF-WAY FOR CEDAR ISLAND ROAD, AND SUBJECT TO ANY OTHER RIGHTS-OF-WAY, RESTRICTIONS, AND EASEMENTS OF RECORD.

PROPOSED PARCEL 'I' DESCRIPTION:

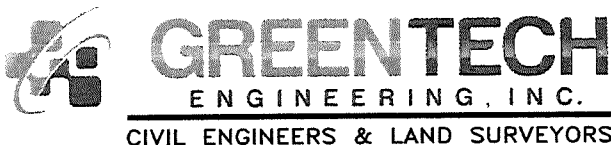
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SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT I HAVE SURVEYED AND MAPPED THE LAND ABOVE OR ATTACHED DESCRIBED PARCEL(S) OF LAND ON 9/02/2020, THAT THE ERROR OF CLOSURE IS NO GREATER THAN 1 IN 5000, AND THE SURVEY IS IN FULL COMPLIANCE WITH SECTION NO. 3, ACT 132, P.A. 1970.



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CIVIL ENGINEERS & LAND SURVEYORS

51147 W. Pontiac Trail
Wixom, MI 48393
Phone: (248) 668-0700
Fax: (248) 668-0701

CLIENT: STANFORD HOLDING LLC	DATE: 2-12-2021 DRAWN BY: PWK/CEH CHECKED BY: DJL				
PARCEL SPLIT					
PARCEL NO. 12-29-476-006 SECTION: 29 TOWNSHIP: 03N. RANGE: 08E. WHITE LAKE TOWNSHIP OAKLAND COUNTY MICHIGAN					
FBK: --- CHF: PWK	<table style="width: 100%; border: none;"> <tr> <td style="border: none; text-align: center; font-size: 2em;">5/5</td> <td style="border: none; text-align: right; font-size: 0.8em;">20-130</td> </tr> <tr> <td colspan="2" style="border: none; text-align: center; font-size: 0.8em;">SCALE HOR 1" = --- FT. VER 1" = --- FT.</td> </tr> </table>	5/5	20-130	SCALE HOR 1" = --- FT. VER 1" = --- FT.	
5/5	20-130				
SCALE HOR 1" = --- FT. VER 1" = --- FT.					

**WHITE LAKE TOWNSHIP
NOTICE OF ELECTRONIC PUBLIC HEARING
PLEASE VISIT WWW.WHITELAKETWP.COM
FOR PARTICIPATION INSTRUCTIONS**

Notice is hereby given of an electronic public hearing by the White Lake Township Planning Commission on **Thursday, May 6, 2021 at 7:00 P.M.** via Zoom, to consider the following changes to the zoning map:

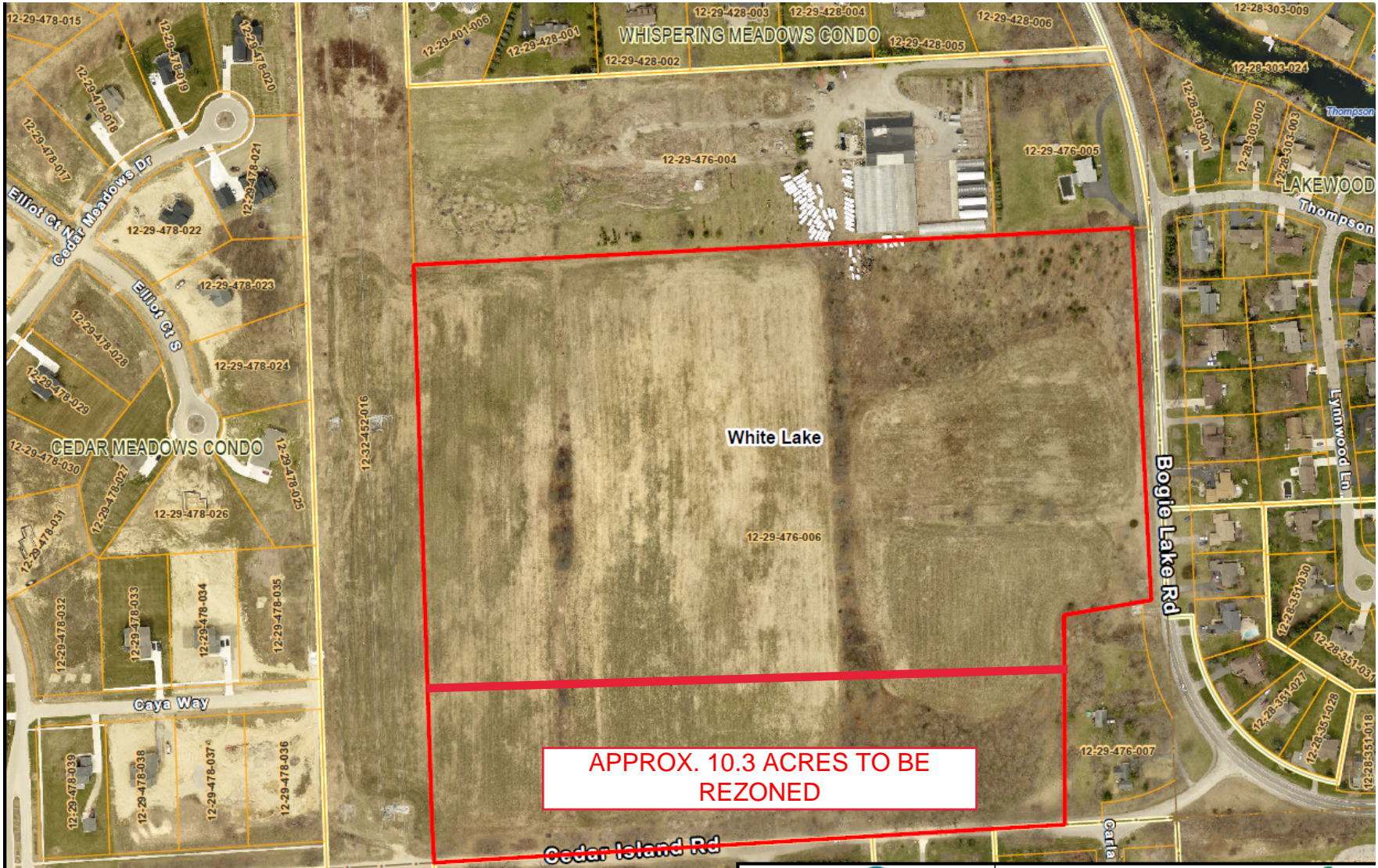
A portion of property described as parcel number 12-29-476-006 (vacant parcel), located on the north side of Cedar Island Road, west of Bogie Lake Road, consisting of approximately 10.3 acres. Applicant for 12-29-476-006 is Stanford Holding LLC
Deed holder is Stanford Holding LLC

Applicant is requesting to **rezone the property from (AG) Agricultural to (R1-A) Single Family Residential, or any other appropriate district.**

Persons interested are requested to be present via Zoom. Pertinent information relative to this rezoning request is on file at the Township Community Development Department and may be examined at any time during regular business hours of 8 a.m. to 5 p.m. Persons interested may visit the Community Development Department, call 248-698-3300, ext. 163, or attend the Public Hearing via Zoom on the date specified. Written comments are also welcome at the address above. Individuals with disabilities requiring auxiliary aids or services should contact the Clerk's Office as least 5 days before the hearing.

Sean O'Neil, AICP
Planning Director

SEE MAP ON OTHER SIDE



APPROX. 10.3 ACRES TO BE REZONED



PROPERTY PROPOSED TO BE REZONED.



Director's Report

Project Name: Lakepointe

Description: Final Site Plan Approval

Date on Agenda this packet pertains to: May 6, 2021

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

Contact	Consultants & Departments	Approval	Denial	Approved w/ Conditions	Comments
DLZ	Engineering				
McKenna & Associates	Planning Consultant				
John Holland	WLT Fire Chief				
Sean O'Neil	Planning Director				



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

April 8, 2021

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

RE: Lake Pointe – Final Site Plan and Final Engineering Plan – 3rd Review

DLZ # 1745-0385-00

Dear Mr. O' Neil,

Our office has reviewed the above-mentioned revised plans prepared by Seiber, Keast Engineering, LLC and dated March 3, 2021. These plans were reviewed for conformance with the Township Engineering Design Standards. We offer the following comments for your consideration:

Please note that comments from our February 22, 2021 review are listed in *italics*. Responses to those comments are listed in **bold**. New comments are listed in standard type.

Preliminary Site Plan Comments-The following comments from our Preliminary Site Plan review letter dated January 7, 2020 will need to be addressed:

Grading/Paving

1. *The proposed bypass lane on the west side of the Union Lake Road has been removed from this submittal. We defer to Oakland County Road Commission regarding the requirements for this bypass lane.* **Comment remains as a notation.**

Storm Sewer & Storm Water Management

1. *The plans have been revised to utilize detention instead of retention. A detention basin outlet has been provided which will leave the site, cross Union Lake Road, and discharge through the West*

*Valley site which is currently under common ownership. The FEP plans for both developments will need to be coordinated to ensure capacity is available in the West Valley development and proposed outlet. Condo Documents will need to be clarified for both developments regarding shared maintenance responsibility. The Road Commission for Oakland County will need to approve and permit the proposed storm sewer outlet crossing. **Comment remains as a notation.***

Final Site Plan/Final Engineering Plan Comments-

Grading/Paving

- 1. An off- site easement will be required from Independence Village for construction of proposed sidewalk should the area for construction fall outside the existing Union Lake Road right of way. Please verify location of right of way relative to proposed sidewalk. Comment remains. Design engineer has indicated that the applicant will be sending an easement request to the Independence Village owner requesting an easement for the sidewalk that is proposed across the Independence Village frontage. **Comment remains as a notation.***
- 2. Sheets 4 and 6- There are several areas where proposed grades in the berm areas exceed the maximum allowable 1:3 slope requirement. Please revise these areas to meet ordinance requirements. Comment partially addressed. All areas requested were adjusted to meet ordinance requirements. However, please adjust berm slope of 35.7% that has been newly shown (Sheet 5- Eastern side of property) on the plan to < 33.3%. **Comment addressed.***
- 3. Note that the grading plan has been reviewed for general conformance with the Township's requirements for grading. More detailed grading reviews will be conducted on individual buildings at time of plot plan submittal. **Comment remains as a notation.***

Sanitary Sewer

- 1. The sanitary sewer proposed along the Union Lake Road frontage is proposed to be constructed as part of the proposed West Valley development. Note that approval of this development is subject to the approval of that offsite sanitary sewer and it must be available for use by this development. In addition, an off-site easement will be required from Independence Village granted to West Valley for construction of proposed sanitary sewer should the area for construction fall outside the existing Union Lake Road right of way. Please verify location of right of way relative to proposed sanitary sewer. Design engineer has noted that the existing sanitary sewer to the northwest along Union Lake Road is within the future 60' half right of way for Union Lake Road. **Comment remains as a notation in regard to West Valley approval requirements.***
-

2. *It should be noted that the REU unit assignment factor of 0.6 REU per unit is acceptable for the purpose of capacity calculations however the Township Ordinance requires 1.0 REU per unit for the purpose of capital connection charges. **Comment remains as a notation.***
3. *Approvals/permits will be required from OCWRC and EGLE. Once sanitary sewer revisions have been addressed please provide signed & sealed electronic set for submittal to WRC along with a completed part 41 Permit Application. **Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review. Submittal to OCWRC for permits will be held until the West Valley plans are submitted for permits.***

Watermain

1. *The plans show a 20-foot-wide watermain easement which is acceptable. Easement exhibits shall be provided for review as attachments to the Township standard conveyance document. **Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review.***
2. *A permit will be required from EGLE for the watermain portion of the project. Once the watermain items have been addressed, please provide 5 signed & sealed hard copies of applicable plan sheets along with a completed, electronic Act 399 permit application for Township signature and submittal to EGLE. **Comment addressed; plans have been submitted to EGLE for Act 399 Permit.***

Stormwater Management

1. *A Storm Water Management Facilities Easement, Maintenance Agreement and Lien document will need to be completed and exhibits provided for review. **Easement exhibits have been submitted for review and comments were provided in our April 6, 2021 review letter. Please provide revised easement exhibits for review.***
 2. *Flows from the proposed detention basin for this development are proposed to be routed through proposed storm sewer in the proposed West Valley development to the southeast on the south side of Union Lake Road. Note that the West Valley development will require Final Engineering Plan approval prior to approval of Lake Pointe, since the feasibility of Lake Pointe will depend on installation of storm sewer within the West Valley development. **Comment remains as a notation.***
 7. *The footings for the proposed retaining wall along the east and southeast part of the property will need to be placed such that the footings have no negative influence with respect to vertical or lateral stresses on the adjacent storm sewer. Please verify this will not occur. Comment partially addressed. The design engineer has stated that "The retaining wall has not yet been designed. The retaining wall*
-

*has been shifted so the face of wall is at least 10 feet away (horizontally) from the storm sewer. Given that the depth of the storm sewer is less than 10 feet and that the retaining wall will have some sort of buried foundation depth, the retaining wall foundation loads on underlying soils should not have an influence on the storm sewer.” We request that the engineer who will design the wall provide an analysis of the loads and potential impacts the wall may have on surrounding utilities. Please provide completed analysis to our office. **Comment addressed; signed & sealed wall design calculations have been provided. Note the wall calculations have not been reviewed by this office but will be filed with the project documents for future reference.***

14. *Sheet 15- There are several additional items which will require revision. We have attached a marked up plan sheet for your use. Comment addressed. The items requested have been revised. However, some updates and revisions did not carry over to some plan sheets. Please revise the following: 1) Sheet 4- SP and OMH rims will need to match Detention Basin Restricted Outlet Profile View on Sheet 15. 2) Sheet 15-The Detention Basin Restricted Outlet Profile View will need to show the correct orifice diameter opening of 6” instead of 6.3”. **Comment addressed.***

Landscape Plan – Sheet LS-1

1. *The Landscape Plan shall show locations of all proposed storm sewer, sanitary sewer, and watermain. Utilities appear to be shown but are not dark enough to see. Trees shall be planted as far away from utilities as possible but in no instance shall they be closer than 3 feet from sanitary sewer, storm sewer, or watermain. Additionally, plantings of any type cannot be planted within surface drainage areas such as swales. Comment addressed. Engineer has indicated that landscape tree plantings have been updated to have a minimum distance of 3’ from the sanitary sewer, storm sewer, and watermain. **Comment addressed.***

Required Permits and Approvals

The following permits and approvals will be required

1. Permit from the Road Commission for all work within the Union Lake Road Right-Of-Way including the proposed storm sewer crossing.
 2. SESC permit from OCWRC.
 3. A Notice of Coverage for Stormwater Discharge under the NPDES program as administered by EGLE is required.
 4. Watermain permit from EGLE.
-

5. Sanitary sewer permit from OCWRC.
6. Sanitary sewer permit from EGLE.
7. Executed Stormwater Maintenance Agreement.
8. Easements for Sanitary Sewer and Watermain.

Recommendation

Our previous comments have been addressed and we recommend the plans be approved subject to the applicant acquiring the approvals/permits referenced above, and the related West Valley approvals. Please 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*
John Holland, Fire Marshall, White Lake Township, *via email*

X:\Projects\GFL\2017\1745\038500 WLT Lake Pointe\FSP & FEP Submittal #3\FSP and FEP Review.03.docx



MCKENNA

February 22, 2021

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

Subject: Lake Pointe
Final Site Plan Review #1 based on plans dated February 2, 2021

Location: East side of Union Lake Road, north of Carpathian Drive

Dear Planning Commissioners:

The site fronts on Union Lake Road, which, at this point, is a two-lane road and serves as a key thoroughfare in the Township. The 13.32 A. site (12.76 A. net of right-of-way) currently contains an existing, single-family home, but is mostly vacant. The applicant now proposes 69 new, attached single-family homes for this site in clusters of 3 or 4 units, resulting in density of 5.41 DU/A. (This is up from 57 units and 4.47 DU/A originally proposed, but a reduction from the most recent proposal of 75 units.) All units will be two-bedroom.



Source: Google Earth

HEADQUARTERS
235 East Main Street
Suite 105
Northville, Michigan 48167

☎ 248.596.0920
☎ 248.596.0930
MCKA.COM

Communities for real life.

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:

	Zoning Districts	Current Land Uses	Future Land Use
Site	Planned Development	Single Family/Vacant	Planned Neighborhood
North	Multiple Family (RM2)	Senior Housing	Planned Neighborhood
East	Multiple Family (RM2)	Single Family	Planned Neighborhood
South	Multiple Family (RM1)	Office	Planned Neighborhood
West	Neighborhood Office (NB-O)	Vacant	Planned Neighborhood

2. **Dimensional Standards:** The site is of a conforming size and the buildings comply with the applicable requirements for the Planned Development District.

Applicable Requirement	Required by the Zoning Ordinance in the RM-1 District	Proposed
Front Yard Setback	40 feet	40+ feet
Side Yard Setback	25 feet	25+ feet
Rear Yard Setback	40 feet	40+ feet
Building Height	40 feet or two stories	16'-11"
Minimum Lot Area	10 acres	12 acres
Lot Coverage	Governed by parking, landscaping, etc.	23%

3. **Landscaping and Screening:** The site is heavily wooded. The landscape plan submitted in the application materials indicates that the applicant intends to preserve some of the wooded area around the perimeter of the of the development. Per Section 6.1(F)(vi), the natural features and character of lands must be preserved wherever practical. We are not aware of a tree survey indicating the number and species of trees to be removed with this development.



Applicable Requirement	Landscaping Requirements	Proposed Landscaping
Greenbelt (Section 5.19 F)	One deciduous tree per 30 linear feet of frontage. Frontage is approximately 825 ft. (based on scaled drawing, not dimensioned). Approx. 28 required.	28 deciduous trees are proposed between the buildings and the road
Greenbelt (Section 5.19 F)	Eight shrubs per 30 linear feet of frontage. Frontage is approximately 825 ft. (based on scaled drawing, not dimensioned). Approx. 190 required.	255 shrubs provided
Interior Landscaping (Section 5.19 E)	15% of the net acreage of the site must be comprised of interior landscaping. (11.45 acres) 74,814 square feet of interior landscaping required.	74,814 square feet provided
Interior Landscaping (Section 5.19 E)	One deciduous ornamental or evergreen tree per 300 square feet of interior landscaping. (74,814 square feet) 250 trees required.	265 trees proposed.
Interior Landscaping (Section 5.19 E)	Five shrubs per 300 square feet of interior landscaping. (78,814 square feet) 1247 shrubs required.	<u>947 shrubs proposed, with the applicant proposing 620 perennials and grasses to supplement for the shrubs they are deficient.</u>
Residential Buffer (Section 5.19 D)	One deciduous or evergreen tree per 15 feet of property line (east:475 feet) 32 trees required.	32 trees provided.
Residential Buffer (Section 5.19 D)	Four shrubs per 15 feet of property line (south:1307 feet) 127 shrubs required.	127 shrubs provided.

4. **Layout and Open Space:** Section 3.11(C) of the Zoning Ordinance requires multi-family residential developments to include 5,000 sq. ft. of recreation space for the first unit plus 100 sq. ft. for each additional unit. Based on the proposed 69 units, 11,800 sq. ft. of recreation space is required. The plan proposes 49,579 SF of recreation space in the form of a central walking area with trails and pet waste stations together with a clubhouse, pool, and pergola.

Where two (2) or more multiple-family structures are erected on the same lot, a minimum setback of twenty (20) feet shall be provided between structures. If the structures have a common yard, this setback shall be increased by two (2) feet for each ten (10) feet or part thereof, by which each of the buildings exceed forty (40) feet in length on that side of the building facing the common yard. The site plan provides calculations for the required separation for both end to end and rear to rear orientations. Typical dimensions of the buildings have been provided on the Sheet 2, and we believe these requirements have been satisfied.

5. **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. The plan depicts an eight-foot-wide walk in the Union Lake Road right-of-way, connecting to a system of five-foot-wide walks within the site.



6. **Building Architecture and Design:** The buildings are proposed to be comprised largely of grey and tan horizontal siding, several shades of glen-gray brick, and asphalt shingles. Proposed color samples can be found on sheet S-1 of the site plan packet, with a diagram identifying which color schemes will be used for different building groupings. Elevation details can be found on Sheet A201 and A203. Building materials shown on the elevations should be labeled to match what is provided in Sheet S-1. Additionally, elevations and building material details should be provided for the proposed pool building.
7. **Roads and Access:** The project is accessed via a single, boulevard opening on Union Lake Road. It appears that Union Lake Road is posted at 40 mph in proximity of the site. Per Section 6.4 of the Zoning Ordinance, the entrance drive should be located at least 300 feet from the other drives/roads on that side of the street. The distances to Independence Circle to the north and Carpathian Drive to the south appear to comply. There are no driveways within the relevant distances on the opposite side of the road.
8. **Off-Street Parking:** Two-car garages provide the required parking for the residents. In addition, 31 guest parking spaces are required. Of these, 31 are provided in parking spaces distributed across the site, with the balance proposed to be handled by driveway parking.
9. **Lighting:** Sheet LS-5 indicates that a decorative street light is proposed adjacent to the main entrance of the development, and pedestrian lighting in the form of Bollard lights are proposed at several places throughout the sidewalk network. Neither of the lighting types are fully cutoff fixtures as is typically required for exterior lighting. However, Section 5.18.g of the ordinance permits non-cutoff fixtures so long as they are intended to serve as decorative lighting or pedestrian lighting, and less than 100 watts. The wattage for each light fixture type should be noted on Sheet LS-5, to ensure compliance with this standard.
10. **Signage:** Sheet LS-5 provides details for a roughly 43 square foot ground proposed for the entrance to the development. Section 5.19.I.i states the following regarding signs in residential districts “One (1) monument sign, not more than thirty (30) square feet in area, may be maintained at or adjacent to the principal entrance to the subdivision.” Signs must comply with the standards of Section 5.9 of the Zoning Ordinance and a separate sign application should be submitted to the community development department for review and approval.

Recommendation

At this time there are a few minor issues noted in the review letter, which we do not find impact the overall intensity of the proposed development, and can be corrected. If the Planning Commission is comfortable with it, then we would suggest that the project could be recommended for approval subject to the issues identified by underlining above.

If you have any questions about this report or require additional information, please do not hesitate to contact us.

Respectfully submitted,





McKENNA



Chris Madigan, AICP
Associate Planner

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





Fire Department
Charter Township
of White Lake

Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 04/12/21

Project: Lakepointe

File #: Not Shown

Date on Plans: 03/03/21

The Fire Department has the following comments with regards to the revised plans for the project known as LakePointe:

The Fire department has no further comments regarding this project as submitted.

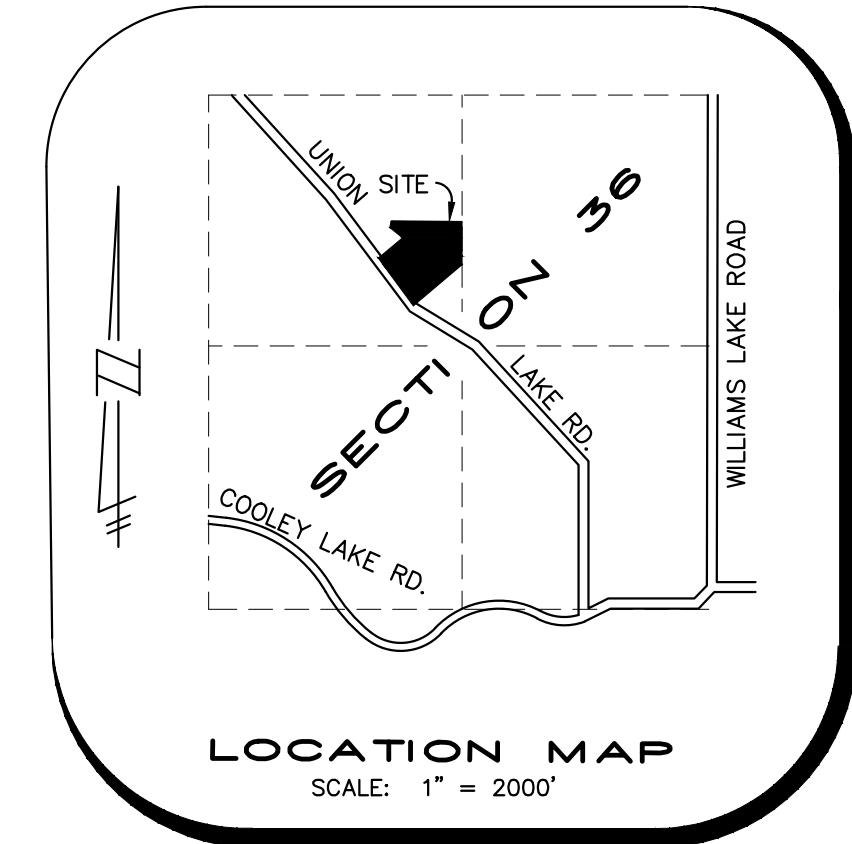
John Holland
Fire Chief
Charter Township of White Lake
(248)698-3993
jholland@whitelaketwp.com

Plans are reviewed using the International Fire Code (IFC), 2015 Edition and Referenced NFPA Standards.

ENGINEERING CONSTRUCTION PLANS FOR LAKE POINTE

A MULTI FAMILY DEVELOPMENT
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST, WHITE LAKE TOWNSHIP,
OAKLAND COUNTY, MICHIGAN

PREPARED FOR:
JMF, WHITE LAKE, LLC
1700 W. BIG BEAVER ROAD, STE. 120
TROY, MI 48084
PHONE: (248) 602-2220



LEGAL DESCRIPTION

LEGAL DESCRIPTION - OVERALL PARCEL RECOMBINATION:
A PARCEL OF LAND BEING A PART OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH 1/4 POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET, THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 583, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 48 DEGREES 03 MINUTES 08 SECONDS WEST, 580.14 FEET TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.58 FEET, THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 488.27 FEET, THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET, THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL, HEREIN DESCRIBED, CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS, ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, USED OR DEDICATED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES, ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD, SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

GENERAL NOTES

- THE CONTRACTOR SHALL CONTACT THE TOWNSHIP ENGINEER AT (248) 334-9901 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE INSPECTOR APPRAISED OF THE NEED FOR INSPECTION ON A DAY TO DAY BASIS. LACKING OF SCHEDULE COORDINATION 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.
- THE DEVELOPER SHALL CONTACT THE TOWNSHIP PLANNING DEPARTMENT AT (248) 698-3300 TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE DEVELOPER'S PRIME SITE CONTRACTOR SHALL ATTEND. A COPY OF ALL PERMITS MUST BE SUBMITTED TO THE PLANNING DEPARTMENT PRIOR TO SCHEDULING THE MEETING.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY WHITE LAKE TOWNSHIP.
- CONTRACTOR SHALL CONTACT MISS DIG AT 1-800-482-7171, 72 HOURS IN ADVANCE OF CONSTRUCTION, FOR EXISTING UNDERGROUND UTILITY LOCATIONS.
- ALL SOIL EROSION AND SILTATION MUST BE CONTROLLED AND CONTAINED ON-SITE.
- ALL EXCAVATION, INCLUDING ALL UTILITIES AND LEADS, UNDER OR WITHIN 1 ON 1 INFLUENCE OF ANY PAVEMENT (INCLUDING SIDEWALKS), EXISTING OR PROPOSED, OR WHERE SAND BACKFILL IS CALLED FOR ON THE PLAN, SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR MATERIAL (SAND) MDOT CLASS II TO 95 PERCENT MAXIMUM UNIT DENSITY (ALL OTHERS 90 PERCENT).
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND FACILITIES. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT THE PROPOSED UTILITY CROSSINGS PRIOR TO THE START OF UNDERGROUND CONSTRUCTION. ANY CONFLICTS WITH UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER.
- WHERE TWO UTILITIES CROSS, INCLUDING SANITARY SEWER LEADS, PROVIDE POROUS GRADE "B" BACKFILL MATERIAL COMPACTED TO THE UNDERSIDE OF THE HIGHER UTILITY OR AS SPECIFIED ON THE DETAIL SHEET.
- DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES.
- ANY MUD TRACKED ONTO UNION LAKE ROAD SHALL BE REMOVED DAILY.
- IF DEWATERING IS DETERMINED TO BE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE AREA TO BE DEWATERED, SUBMIT A DEWATERING PLAN TO THE WHITE LAKE TOWNSHIP ENGINEERING DIVISION FOR REVIEW, TO MONITOR AND TO DETERMINE THAT THERE WILL NOT BE ANY IMPACT TO ANY ADJOINING OR OFFSITE PROPERTIES DEWATERING PROCEDURES SHALL BE IN COMPLIANCE WITH WHITE LAKE TOWNSHIP.
- A ROAD COMMISSION FOR OAKLAND COUNTY RIGHT-OF-WAY PERMIT IS REQUIRED FOR ANY WORK WITHIN THE UNION LAKE ROAD RIGHTS-OF-WAY (OR ANY PUBLIC ROAD RIGHT-OF-WAY) AND/OR ANY TOWNSHIP EASEMENT.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO THE START OF ANY WORK.
- ALL PAVEMENT MARKINGS, TRAFFIC CONTROL SIGNS, AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- WHITE LAKE TOWNSHIP HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THE PLAN.
- IN ORDER TO VERIFY COMPLIANCE WITH APPROVED PLANS, FULL-TIME CONSTRUCTION OBSERVATION WILL GENERALLY BE REQUIRED DURING ALL PHASES OF UNDERGROUND SITE CONSTRUCTION INCLUDING INSTALLATION OF SANITARY SEWER, STORM SEWERS, DRAINS, WATER MAINS AND APPURTENANCES AS WELL AS PRIVATE STREET CURBING AND PAVING CONSTRUCTION. INTERMITTENT OBSERVATIONS WILL BE MADE FOR SITE GRADING, PARKING LOT CURBING AND PAVING, RETAINING WALL CONSTRUCTION AND OTHER SURFACE ACTIVITY.

LAKE POINTE

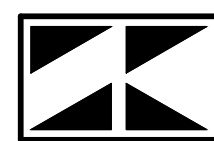
Quantity Summary

SANITARY SEWER		QUANTITY
ITEM		
1 6" PVC SDR 23.5 HOUSE LEAD		1,550 L.F.
2 8" PVC TRUSS SANITARY SEWER		1,387 L.F.
3 4" DIA. MANHOLE		10 EA.
WATER MAIN		QUANTITY
ITEM		
1 8" WATER MAIN D.I. CL54		2,216 L.F.
2 HYDRANT, VALVE & BOX		7 EA.
3 8" G.V.&W.		3 EA.
4 8"x12" TAPPING SLEEVE, VALVE & WELL		2 EA.
5 1" WATER SERVICE		1,101 L.F.
STORM SEWER		QUANTITY
ITEM		
1 12" C-76 CL 4		1,886 L.F.
2 15" C-76 CL 4		611 L.F.
3 18" C-76 CL 4		592 L.F.
4 21" C-76 CL 4		542 L.F.
5 24" C-76 CL 4		47 L.F.
6 2" DIA. INLET		9 EA.
7 4" DIA. CATCH BASIN		21 EA.
8 6" DIA. CATCH BASIN		1 EA.
9 4" DIA. MANHOLE		5 EA.
10 6" DIA. OVERFLOW MANHOLE		1 EA.
11 24" CONC. END SECTION W/ RIP RAP		1 EA.
12 6" DIA. CONTECH CS-6		1 EA.
13 36" STANDPIPE		1 EA.
PAVING		QUANTITY
ITEM		
1 INTERNAL ASPH. PAVEMENT (4" ON 10")		5,222 S.Y.
2 R.C.O.C. ROW ASPHALT PAVEMENT		259 S.Y.
3 CONCRETE SIDEWALK		26,779 S.F.
4 THICKENED EDGE CONCRETE WALK		537 L.F.
5 24" MOUNTABLE CONC. & STANDARD GUTTER		2,922 L.F.
6 F4 CONC. CURB& GUTTER		396 L.F.
7 B2 ROLL CURB WITH GUTTER		121 L.F.

ESTIMATED QUANTITIES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE QUANTITIES OF WORK REQUIRED TO COMPLETE THE PROJECT.



SCALE (IN FEET)
Scale: 1 inch = 100 ft.



SEIBER, KEAST ENGINEERING, L.L.C.

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331

ARCHITECTURAL PLANS PROVIDED BY:
ALEXANDER V. BOGAERTS AND ASSOCIATES, P.C.
2445 FRANKLIN ROAD
BLOOMFIELD HILLS, MICHIGAN 48302
PHONE: 248.334.5000

LANDSCAPE PLANS PROVIDED BY:
FELINO PASCUAL & ASSOCIATES
LANDSCAPE ARCHITECTURE
24333 ORCHARD LAKE ROAD, SUITE G
FARMINGTON, MICHIGAN 48336
PHONE: 248.557.5588

SURVEY PROVIDED BY:
ALPINE ENGINEERING, INC.
46892 WEST ROAD, SUITE 109
NOVI, MICHIGAN 48377
PHONE: 248.926.3765

SHEET INDEX

- COVER SHEET
- COMPOSITE UTILITY AND OVERALL SITE PLAN
- EXISTING CONDITIONS AND DEMOLITION PLAN
- GRADING & S.E.S.C. PLAN
- GRADING & S.E.S.C. PLAN
- GRADING & S.E.S.C. PLAN
- PROPOSED CONTOUR PLAN
- DETAILED GRADING PLAN FOR ADA PATHWAYS
- ROAD AND SANITARY SEWER PLAN
- ROAD AND SANITARY SEWER PROFILES
- WATERMAIN PLAN
- STORM SEWER PLAN
- STORM SEWER PROFILES
- STORM SEWER PROFILES
- CONTECH CS-6 DETAILS
- DETENTION BASIN PLAN, CALCULATIONS AND PROFILE
- DRAINAGE DISTRIBUTION PLAN & STORM SEWER CALCULATIONS
- APPROACH PLAN
- ND1. NOTES AND DETAILS
- ND2. NOTES AND DETAILS

DETAILS:

WHITE LAKE TOWNSHIP
SANITARY SEWER STANDARD DETAILS
WATER MAIN STANDARD DETAILS
STORM SEWER STANDARD DETAILS

OAKLAND COUNTY
SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

LANDSCAPE PLANS:

- LS-1 OVERALL LANDSCAPE PLAN
- LS-2 GENERAL LANDSCAPE PLANTING DETAIL
- LS-3 PLANT MATERIAL LIST AND PLANT DETAILS
- LS-4 BLDG. FOUNDATION, CLUBHOUSE AND ENTRY PLANTINGS
- LS-5 SITE AMENITY, PERGOLA AND ENTRY SIGN DETAILS
- LS-6 POOL DECK PLAN
- LS-7 POOL PERGOLA/TRELLIS ELEVATIONS & DETAILS

ARCHITECTURE PLANS:

- A101 INTERIOR AND END UNIT FIRST FLOOR PLANS
- A102 TYPICAL UNIT ELEVATIONS
- A200 BUILDING PLANS
- A201 BUILDING ELEVATIONS
- A203 BUILDING ELEVATIONS
- S-1 SITE PLAN
- CB4.0 CLUB HOUSE ELEVATIONS

BENCHMARKS

- BM#1 - CONCRETE MONUMENT AT SOUTHWEST CORNER OF PROPERTY.
ELEVATION: 948.29 NAVD88
- BM#2 - TELECOM MANHOLE COVER AT NORTHEAST CORNER OF CARPATHIAN DRIVE AND UNION LAKE ROAD.
ELEVATION: 984.75 NAVD88
- BM#3 - TELECOM MANHOLE COVER ±485' WSET OF CENTER OF SECTION 36 ALONG THE SOUTH PROPERTY LINE.
ELEVATION: 962.72 NAVD88
- NGS PID D16198
ELEVATION 966.63 NAVD88

REVISIONS			ENGINEER'S SEAL
NO.	ITEM	DATE	
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	
DATE: 04-08-2020			DESIGNED BY: A.A. JOB NUMBER: 18-039
			CHECKED BY: P.K. DRAWING FILE: 19089CY.dwg



NOTES

- ON-SITE SANITARY SEWERS, AND WATER MAINS SHALL BE CENTERED IN A 20-FOOT WIDE EASEMENT.
- ALL OFF-SITE SANITARY AND WATER MAIN IMPROVEMENTS WILL BECOME PUBLIC PROPERTY.
- CRITICAL STORM STRUCTURES WILL BE FITTED WITH TRAPS.
- PERIODIC MAINTENANCE OF THE STORM WATER DETENTION BASIN WILL BE REQUIRED.
- PROVISIONS PURSUANT TO OAKLAND COUNTY DRAIN COMMISSION EROSION CONTROL MANUAL WILL BE UNDERTAKEN INCLUDING, BUT NOT LIMITED TO, SILT FENCE AND INLET FILTERS.
- "NO PARKING - FIRE LANE" SIGNAGE SHALL BE INSTALLED PROHIBITING PARKING ON ONE SIDE OF THE STREET.
- PROPOSED GRADES WILL MATCH EXISTING ELEVATIONS AT THE PROPERTY LINE UNLESS RETAINING WALLS ARE PROVIDED OR GRADING EASEMENTS OBTAINED.
- A PERMIT FROM THE ROAD COMMISSION FOR OAKLAND COUNTY WILL BE REQUIRED FOR ALL WORK IN THE UNION LAKE ROAD RIGHT-OF-WAY.
- ALL WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. ALL GATE VALVES SHALL BE PLACED IN GATE WELLS.
- ALL STRUCTURES EXCEPT FOR INLETS WHICH CONNECT TO CATCH BASINS WILL BE A MINIMUM OF FOUR FEET IN DIAMETER.
- THE DEVELOPMENT SHALL BE CONSTRUCTED AS A SINGLE PHASE.
- THE CONSTRUCTION TYPE OF THE PROPOSED BUILDINGS IS WOOD CONSTRUCTION WITH BRICK VENEER AND SLAB ON GRADE.
- THE FRONT PORCH LIGHTS AND THE COACH LIGHTS WILL UTILIZE 75 WATT BULBS.

WETLANDS
NO WETLANDS EXIST ON SITE.

FLOODPLAIN INFORMATION
THE SUBJECT PROPERTY LIES WITHIN A ZONE "X" FLOOD HAZARD AREA - "AREAS OF MINIMAL FLOODING", PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP, MAP NUMBER 26125C0477F, MAP EFFECTIVE SEPTEMBER 29, 2006.

DENSITY CALCULATION:

AREA OF RESIDENTIAL SITE = 13.32 Ac.
 AREA OF 60' R.O.W. = 0.56 Ac.
 DENSITY AREA = 13.32-0.56 = 12.76 Ac.
 AREA OF INTERNAL ROADS = 1.31 Ac.
 NET DENSITY AREA = 12.76-1.31 = 11.45 Ac.
 = 498,762 S.F.

IF RM-1 ZONING APPLIED:

FOR 2 BEDROOMS UNITS
 REQUIRED 6,000 S.F./UNIT
 DEDUCT 10,000 S.F. FOR FIRST UNIT

TOTAL ALLOWABLE UNITS =
 498,762 - 10,000 / 6,000 = 81
 TOTAL ALLOWABLE UNITS = 82 UNITS
 TOTAL UNITS PROVIDED = 69 UNITS
 (5.41 UNITS / ACRE)

LIST OF ALL REQUIRED STATE AND FEDERAL PERMITS

TYPE	AGENCY	STATUS
1. NPDES	MDEQ	NOT FILED
2. SANITARY SEWER	MDEQ	NOT FILED
3. WATER MAIN	MDEQ	NOT FILED

LOT COVERAGE:

GROSS AREA OF SITE = 13.32 Ac.
 BUILDING AREA = 3.05 Ac.
 PROPOSED LOT COVERAGE = 3.05 / 13.32 = 22.89%

OPEN SPACE

NET SITE AREA = 555,826 S.F.
 ROADS = 57,063 S.F.
 SIDEWALKS = 31,908 S.F.
 DRIVEWAYS = 24,358 S.F.
 BUILDINGS = 132,860 S.F.
 CLUBHOUSE & POOL = 132,860 S.F.
 LAWN AREA = 366,700 S.F. = 8.42 AC.

PROPOSED IMPROVEMENTS

- MUNICIPAL SEWER TO BE PROVIDED BY CONSTRUCTING A GRAVITY SEWER. ALL ON-SITE GRAVITY SEWER SHALL BE 8-INCH DIAMETER.
- WATER SUPPLY TO BE PROVIDED BY CONNECTING TO EXISTING 12" WATER MAINS ALONG UNION LAKE ROAD. ALL WATER MAIN SHALL BE 8-INCH DIAMETER UNLESS OTHERWISE NOTED.
- ON-SITE STORM WATER DETENTION SHALL BE PROVIDED PER OAKLAND COUNTY DRAIN COMMISSION STANDARDS. ALL STORM DRAINAGE EASEMENTS SHALL BE A MINIMUM OF 20 FEET WIDE IF NECESSARY.
- ROADWAYS SHALL BE 27' WD. (B-B) WITH CONC. CURB & GUTTER AND ASPHALT PAVEMENT. ALL ROADWAYS SHALL BE PRIVATE. ALL SIDEWALKS SHALL BE 5 FEET WIDE. UNLESS OTHERWISE NOTED, AND MEET ALL ADA REQUIREMENTS.
- ALL ELECTRIC, CABLE T.V. AND TELEPHONE LINES SHALL BE LOCATED UNDERGROUND, AND SHALL BE PLACED WITHIN EASEMENTS DEDICATED FOR SUCH USE.

SCALE
 0 25 50 100 200
 (IN FEET)
 Scale: 1 inch = 50 ft.

PARKING CALCULATIONS

SPACES REQUIRED:
 2 SPACES FOR EACH UNIT, PLUS 1/4 SPACE FOR EACH BEDROOM.
 2 SPACES FOR EACH UNIT = 138 SPACES
 138 BEDROOMS/4 = 34.5 SPACES
 TOTAL SPACES REQUIRED = 172.5

SPACES PROVIDED:
 2 SPACES PER GARAGE = 138
 2 SPACES PER DRIVEWAY = 138
 ADDITIONAL PARKING SPACES = 31
 TOTAL SPACES PROVIDED = 307

Accessible Parking Spaces
Total Parking Spaces (Excluding Garages) = 169

Accessible Spaces
 Per 2010 ADA (208.2.3 Residential Facilities)
 Total Required (Minimum 2% of the tot) 4
 Total Provided
 Standard Accessible Spaces 2
 Van Accessible Spaces 2

SITE DATA

- EXISTING ZONING: R1-C/SINGLE FAMILY RESIDENTIAL AND LB/LOCAL BUSINESS
- SITE AREA: 13.32 ACRES GROSS, 12.76 ACRES NET
- PROPOSED LAND USE: ATTACHED SINGLE FAMILY DEVELOPMENT APARTMENTS- MULTI FAMILY
- ALL PROPOSED UNITS ARE 2-BEDROOMS
- DENSITY: 69 UNITS/12.76 ACRES = 5.41 UNITS/ACRE
- PROPERTY LINE SETBACK = FRONT 40 FEET
 SIDE 25 FEET
 REAR 25 FEET
- INTERNAL SETBACK = 30 FEET FROM BACK OF CURB.
- SIDE YARD SETBACK: MIN. 20 FEET BETWEEN BUILDINGS
- DWELLING UNITS: 69 - (2 BEDROOM UNITS)
- TRASH DISPOSAL SHALL BE BY CURB SIDE PICKUP.
- LIGHTING SHALL BE PROVIDED BY PHOTOCELL OPERATED LIGHTS LOCATED ON THE FRONT OF EACH HOME.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/INLET FILTER (ST-38)
[Symbol]	[Symbol]	CURB INLET W/SILT SAC (ST-44)
[Symbol]	[Symbol]	END SECTION W/RIP-RAP
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	FLOOD PLAIN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UTILITY WARNING
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

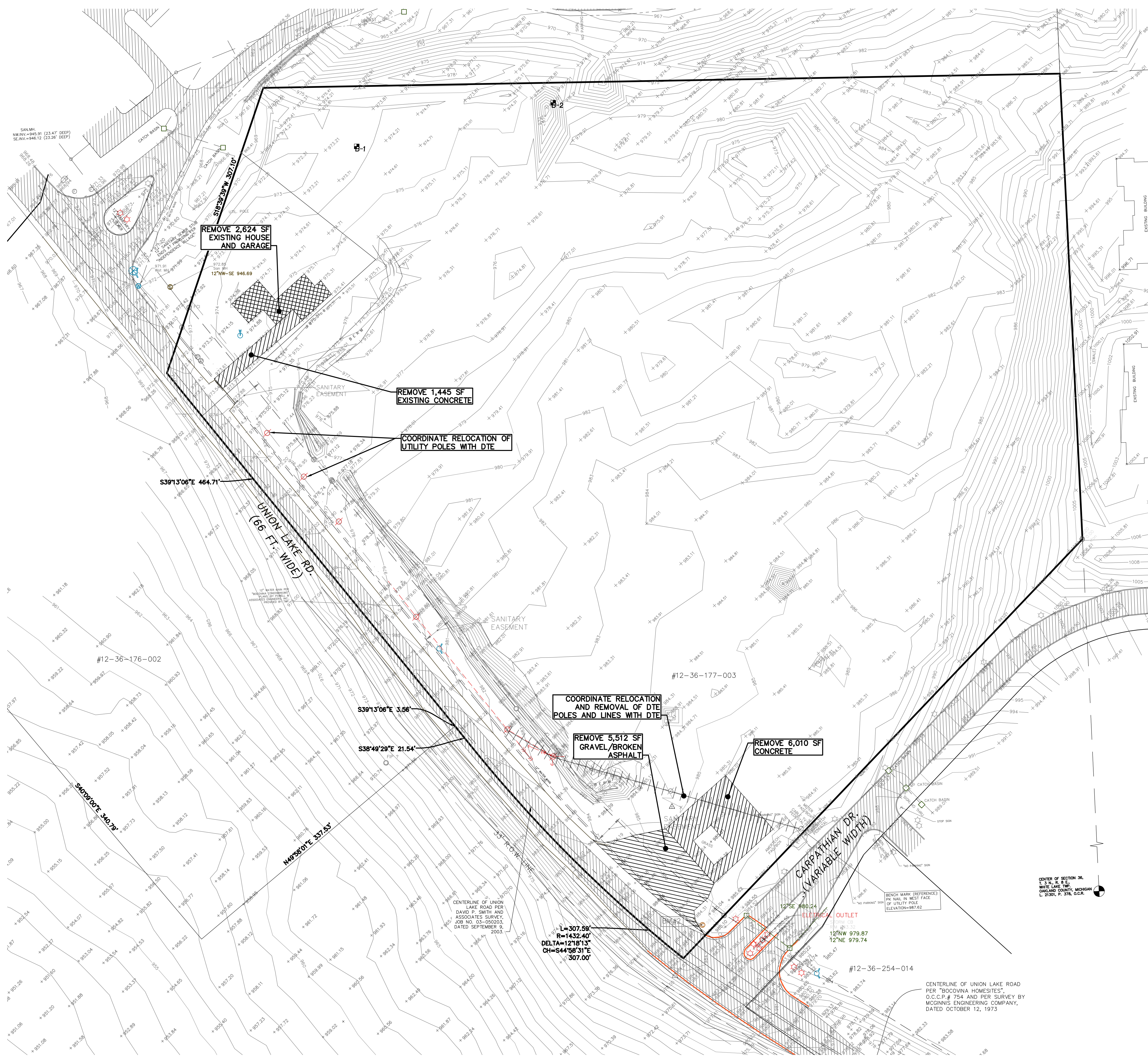
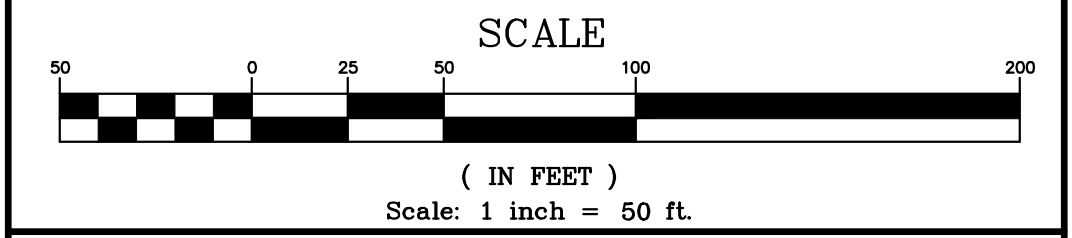
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.E. DRAWING FILE: 19039CU.dwg

COMPOSITE UTILITY AND OVERALL SITE PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 2



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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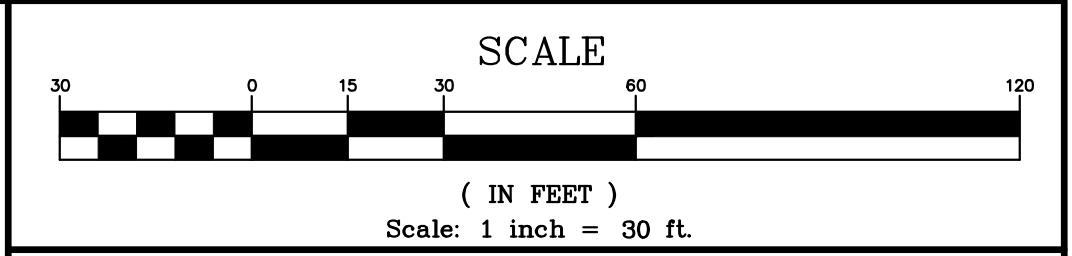
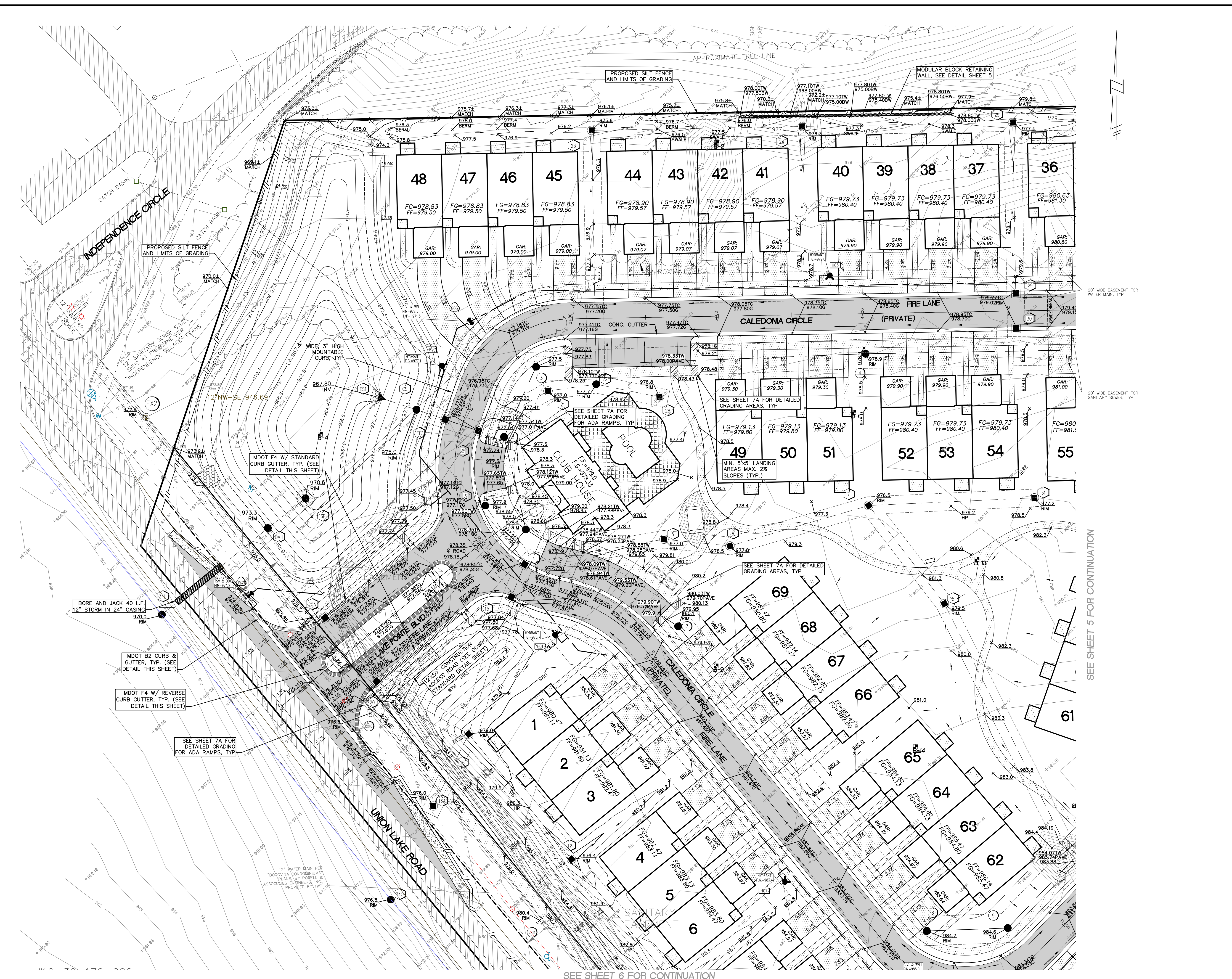
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DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING: FILE19039DM.dwg
DATE: 04-08-2020

EXISTING CONDITIONS AND DEMOLITION PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
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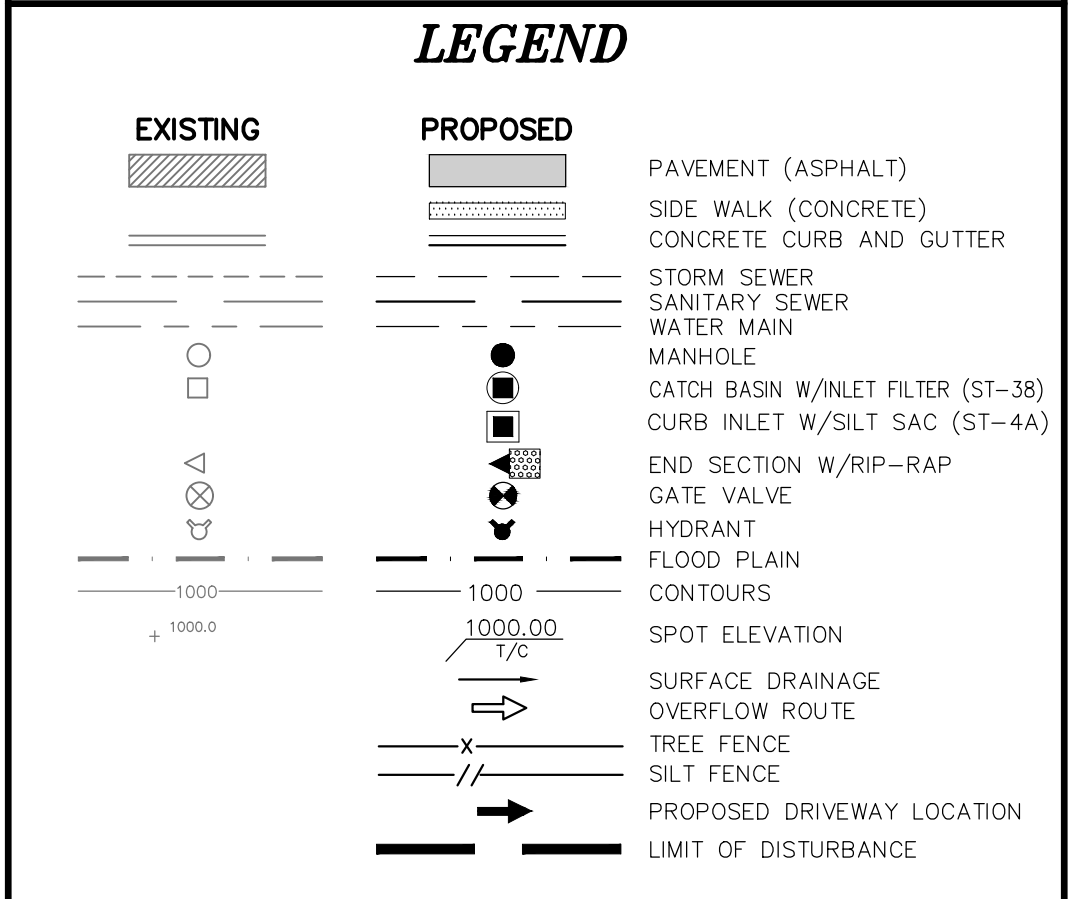
SHEET **3**



- O.C.W.R.C. S.E.S.C. NOTES**
1. CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
 2. SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.

- GRADING NOTES**
1. PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
 2. MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
 3. AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

- PAVING NOTES**
1. SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
 2. SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
 3. SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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1. REVISE PER OWNER	6-3-20	
2. REVISE GRADING ON UNITS 2 AND 6	11-9-20	
3. REV PER 11-20-20 W.L. TWP LETTER	02-02-21	
4. REVISE PER WHITE LAKE TWP	03-03-21	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

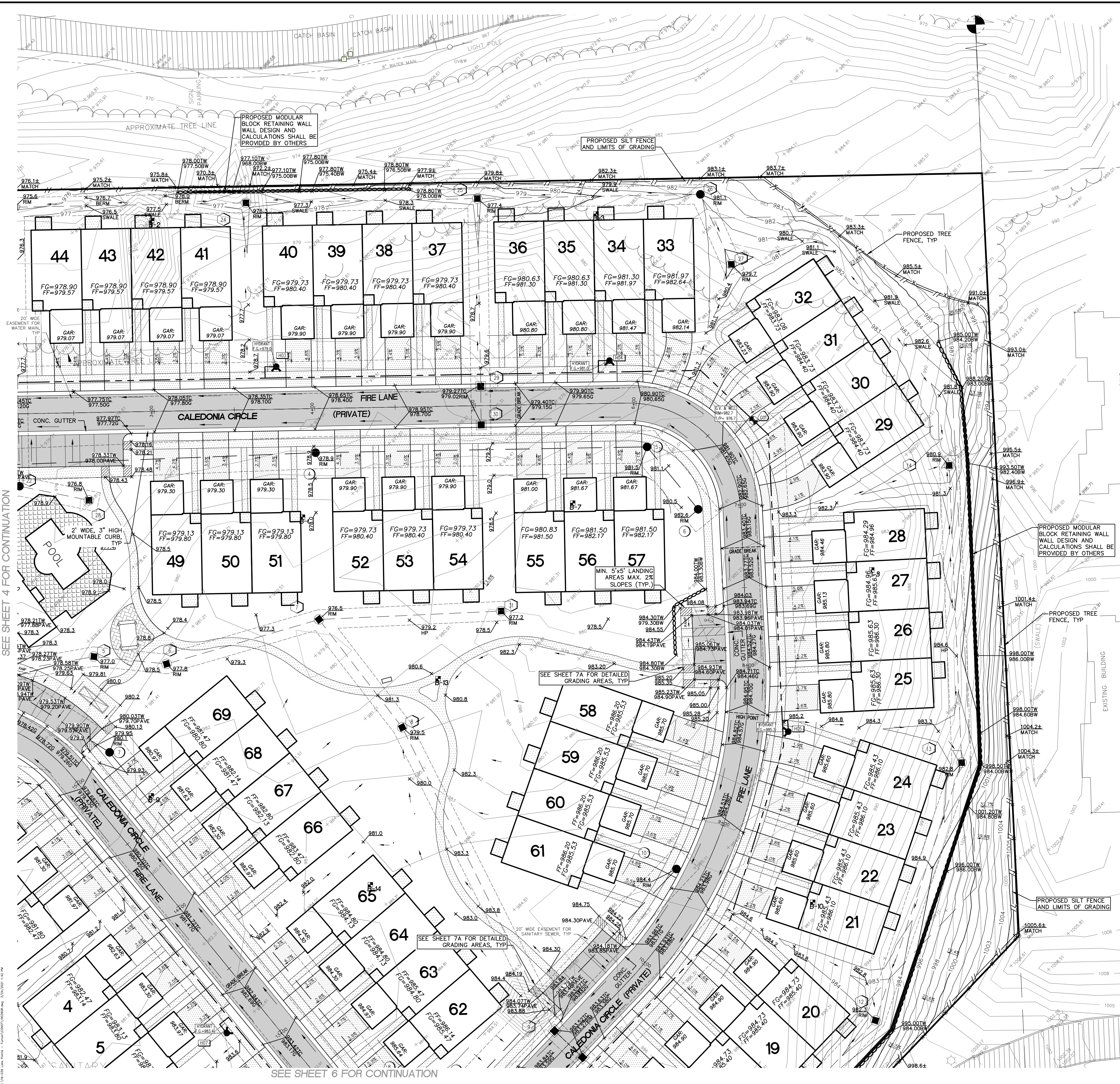
GRADING & S.E.S.C. PLAN

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SHEET 4

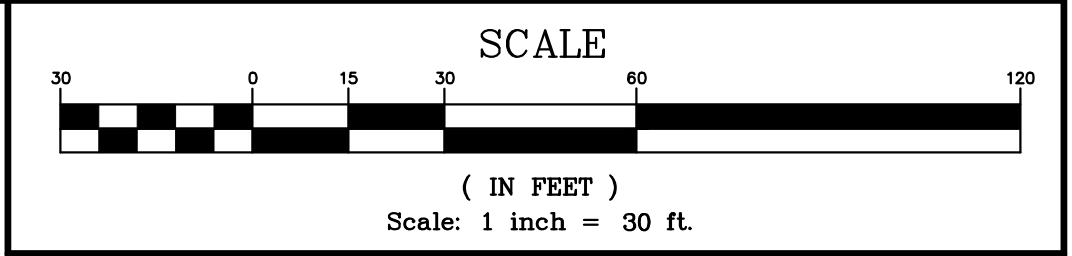
SEE SHEET 5 FOR CONTINUATION

SEE SHEET 6 FOR CONTINUATION



SEE SHEET 4 FOR CONTINUATION

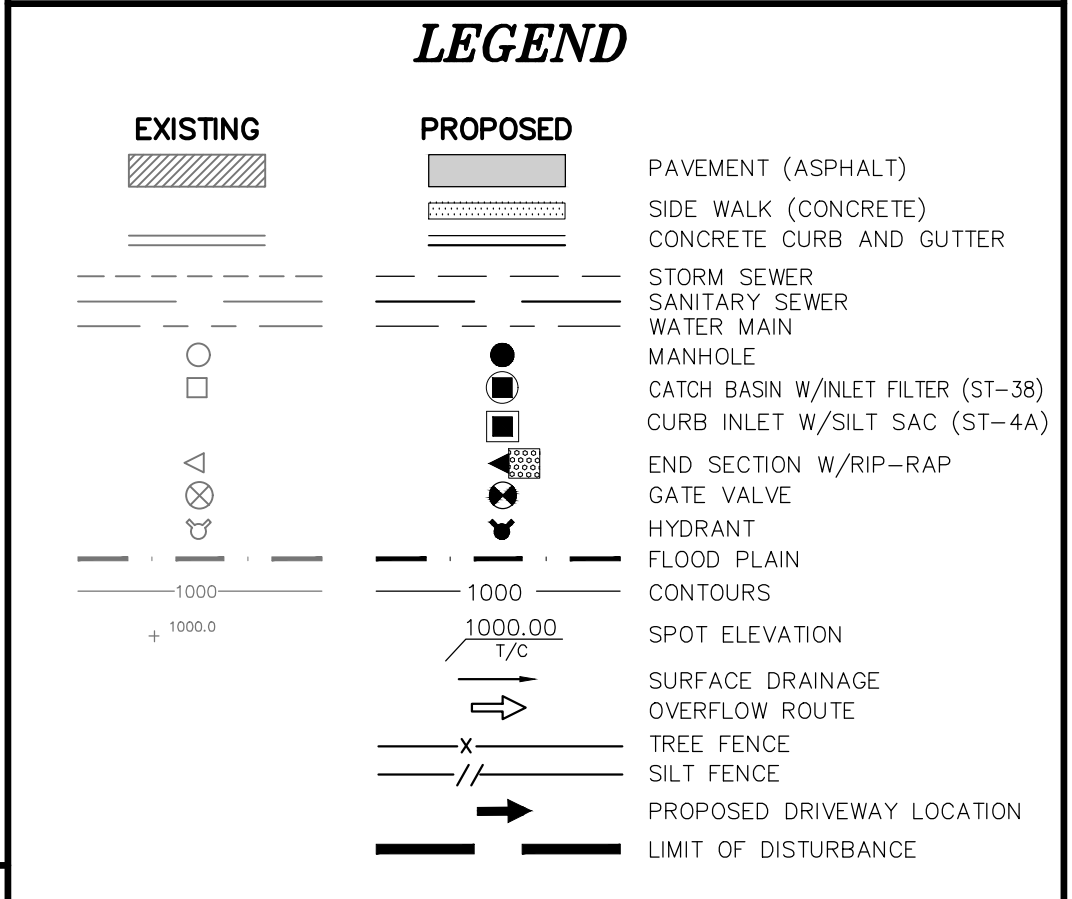
SEE SHEET 6 FOR CONTINUATION



O.C.W.R.C. S.E.S.C. NOTES
1. CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
2. SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.

GRADING NOTES
1. PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
2. MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
3. AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASIN UNTIL PERMANENT VEGETATION IS ESTABLISHED.

PAVING NOTES
1. SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
2. SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
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LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
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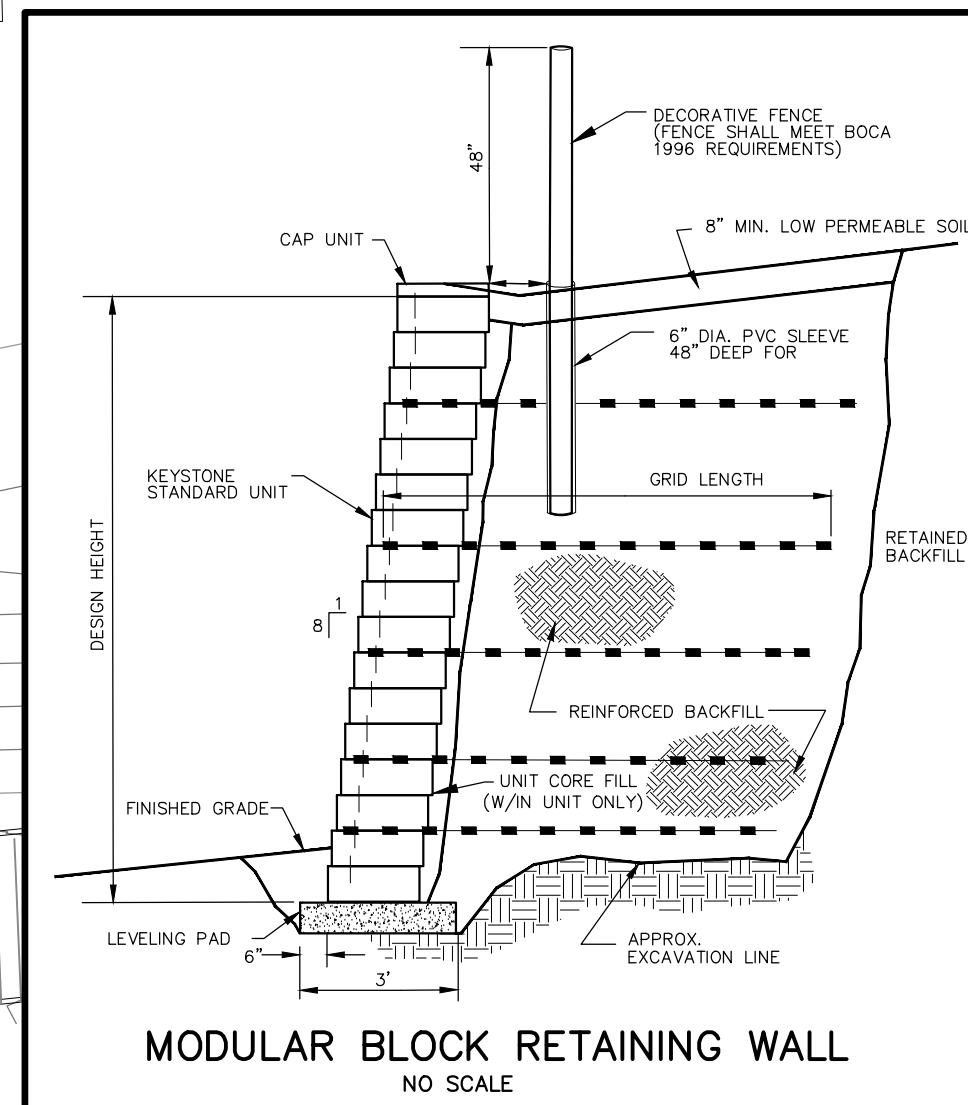
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

GRADING & S.E.S.C. PLAN

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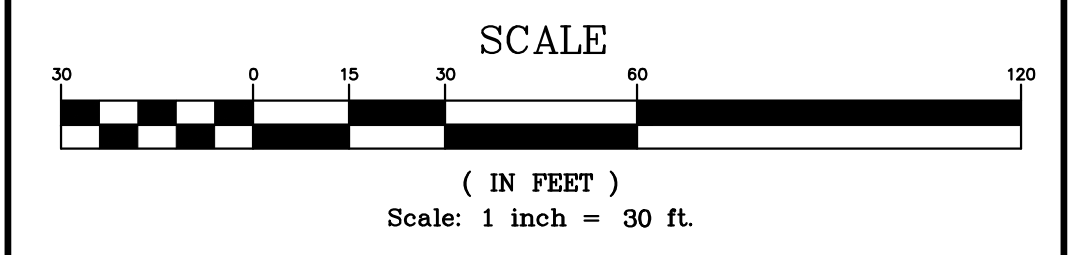
SHEET 5





SEE SHEET 4 FOR CONTINUATION

SEE SHEET 5 FOR CONTINUATION



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LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

GRADING & S.E.S.C. PLAN

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SHEET 6

PARCEL ACRES

CENTERLINE OF UNION LAKE ROAD PER DAVID P. SMITH AND ASSOCIATES SURVEY, JOB NO. 03-05203, DATED SEPTEMBER 9, 2003.

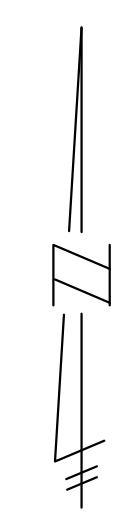
CENTERLINE OF UNION LAKE ROAD PER "BOCOVINA HOMESITES", O.C.C.P.# 754 AND PER SURVEY BY MCGINNIS ENGINEERING COMPANY, DATED OCTOBER 12, 1973

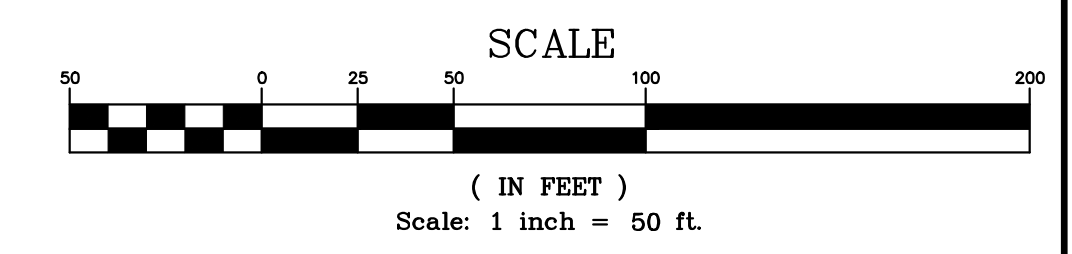
CENTER OF SECTION 36, T. 3 N., R. 8 E., WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN L. 21301, P. 378, O.C.R.

BENCH MARK (REFERENCE): PK NAIL IN WEST FACE OF UTILITY POLE ELEVATION=987.62

#12-36-254-014

NORTH AND SOUTH 1/4 LINE
S00°03'47"E 827.27'





LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
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		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		1000.00
		1000.00
		T/C
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS

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UTILITY WARNING
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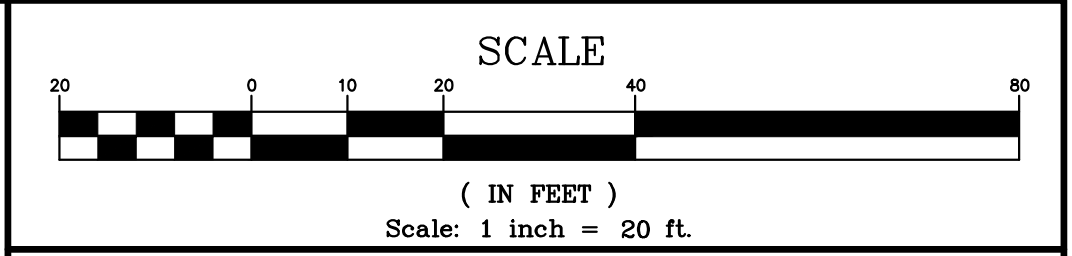
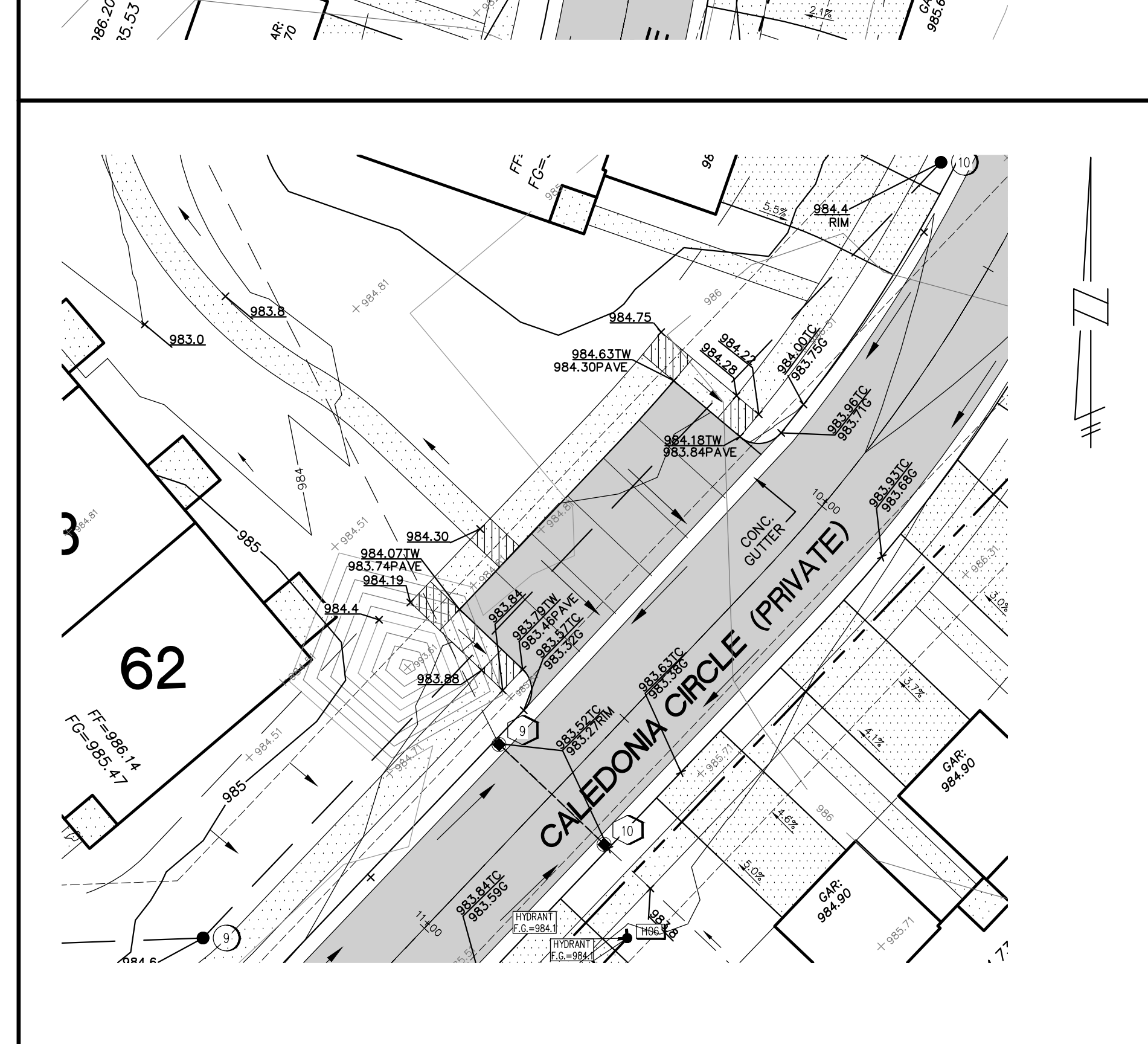
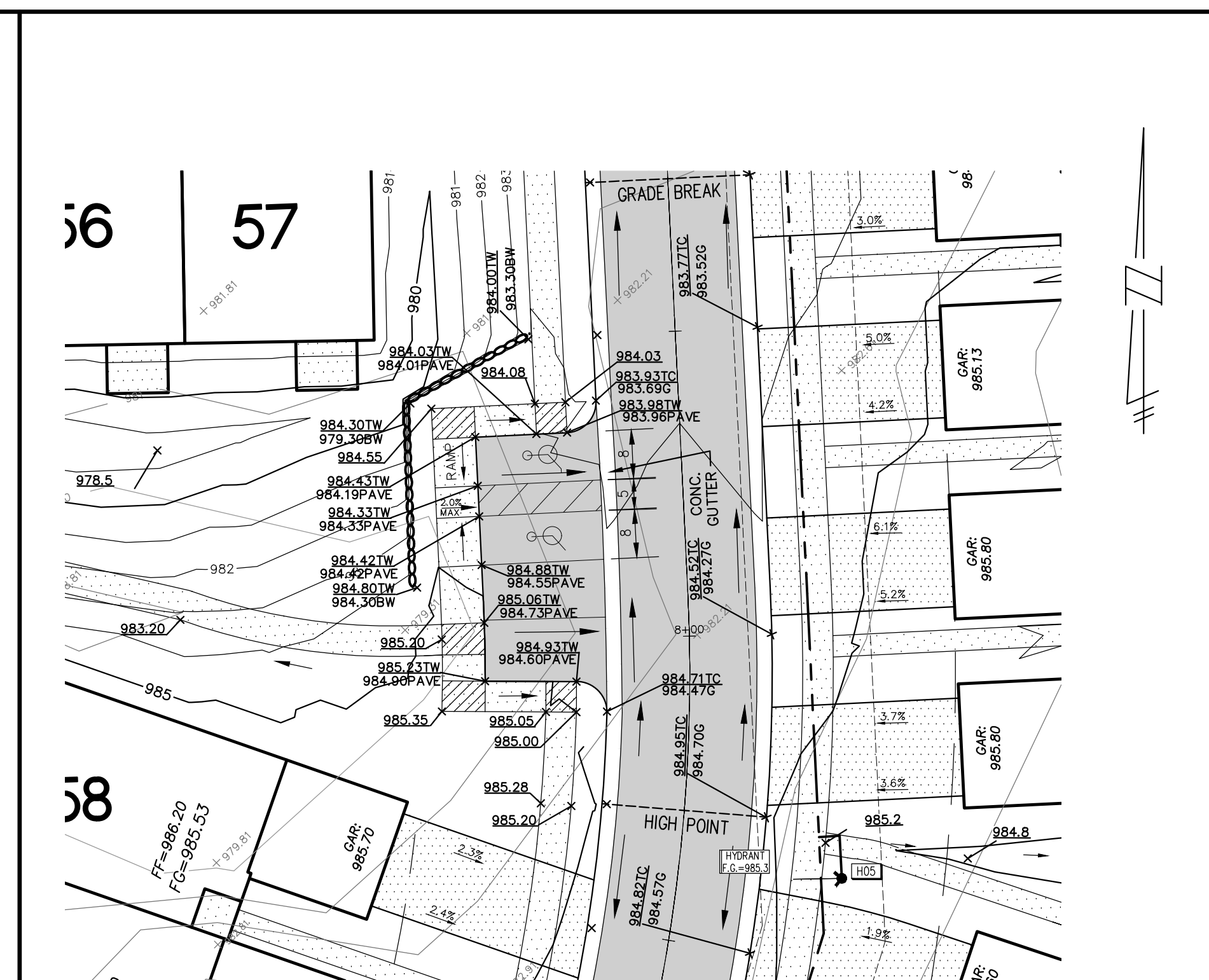
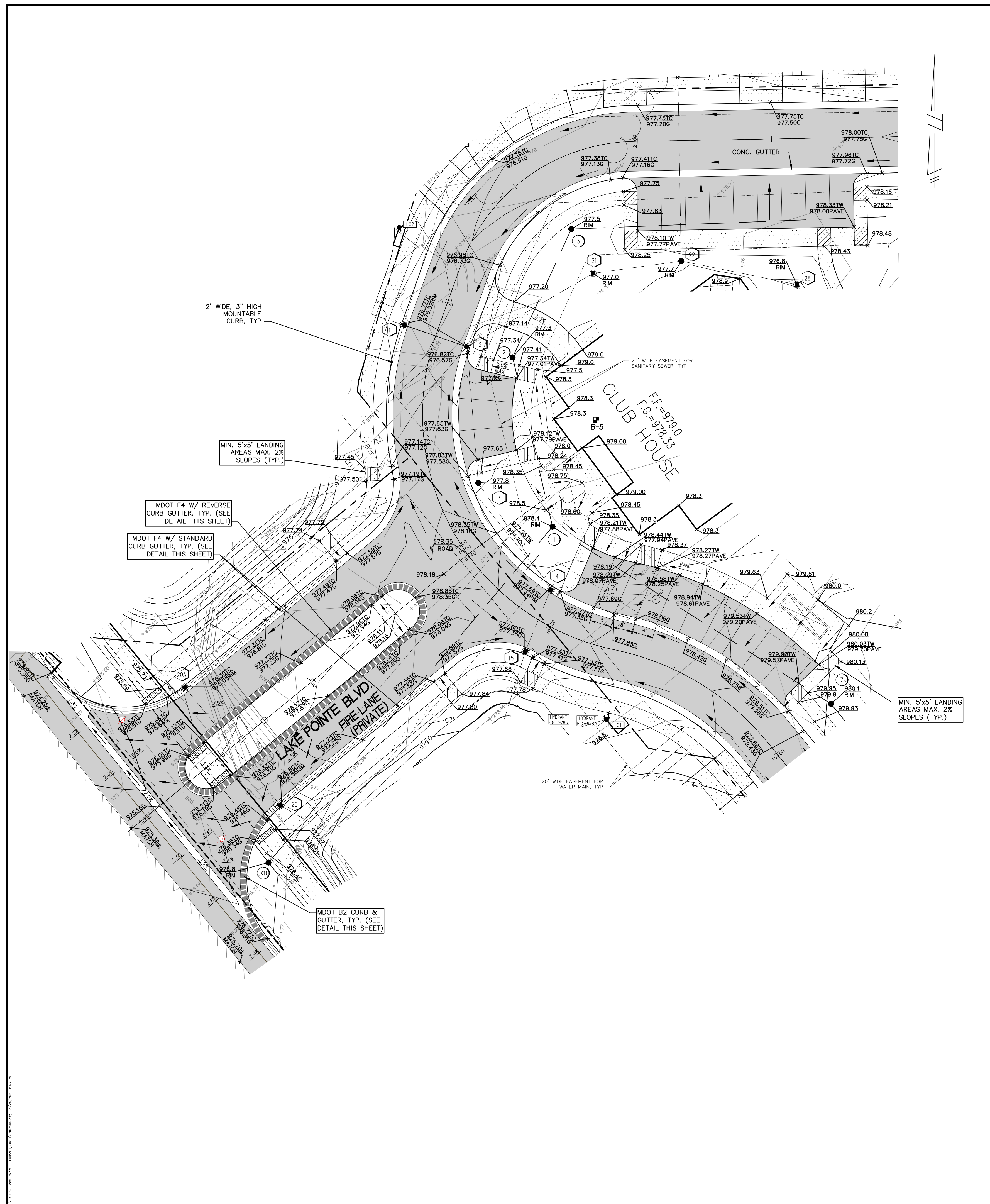
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

PROPOSED CONTOUR PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 7



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
 - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.
- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
 - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
 - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
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- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
 - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
 - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
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		CONCRETE CURB AND GUTTER
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		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		1000.00
		1000.00
		T/C
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
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LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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4.	REVISE PER WHITE LAKE TWP	03-03-21

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

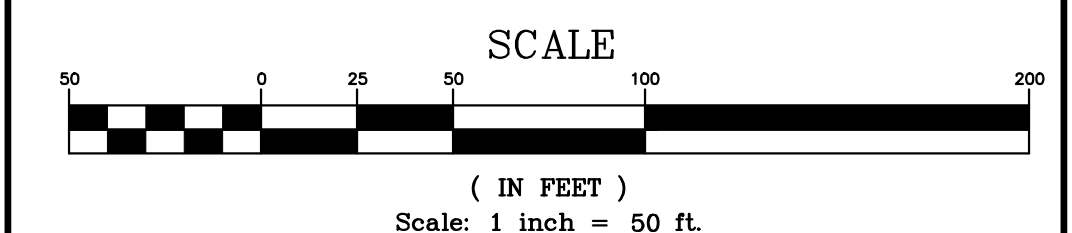
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039DG.dwg
DATE: 04-08-2020

DETAILED GRADING PLAN FOR ADA PATHWAYS

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
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PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 7A



SANITARY SEWER BASIS OF DESIGN
CONNECTION TO PROPOSED MANHOLE / 12-INCH PVC TRUSS
ON THE NORTHEAST SIDE OF UNION LAKE ROAD AT LAKE POINTE BLVD.

INITIAL DESIGN AND ULTIMATE

RESIDENTIAL EQUIVALENCY UNIT (REU) CALCULATION			
	Area (Ac)	Number of Units	REUs
MULTI-FAMILY	13.32	69	41.4
Health Club / Fitness Center w Showers &/or Pool			
	Area (SF)	Number of Fixtures	REUs
		5	6.5
			TOTAL 47.9
POPULATION			
	2.7 people/unit x 129.20 people		47.9 units
POPULATION DENSITY			
	129.20 people / 13.32 Acres		
	9.70 ppl / ac		
AVERAGE FLOW			
	129.20 people x 12,920 gal/day		100 gal/cap/day
	0.0200 cfs		
PEAK FACTOR			
	(18+SQRT(P/1000))/(4+SQRT(P/1000))		
	4.21 (28,400 > Pop > 500)		
PEAK FLOW			
	PEAK FACTOR X AVERAGE FLOW		
	0.0842 cfs		

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

- NOTES**
- ALL SANITARY SEWER SHALL BE PVC TRUSS PIPE OR APPROVED EQUIVALENT.
 - ALL SANITARY SEWER LEADS SHALL BE SDR 23.5 PVC PIPE.
 - ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 - SANITARY LEADS SHALL BE A MINIMUM OF 1% GRADE, A MAXIMUM OF 150 LF AND A MINIMUM 6" DIAMETER.
 - SANITARY LEADS SHALL BE BURIED AT LEAST 5 FEET DEEP WHERE UNDER THE INFLUENCE OF PAVEMENT.
 - ALL SANITARY MANHOLES SHALL BE 4' DIAMETER UNLESS OTHERWISE NOTED.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/ RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

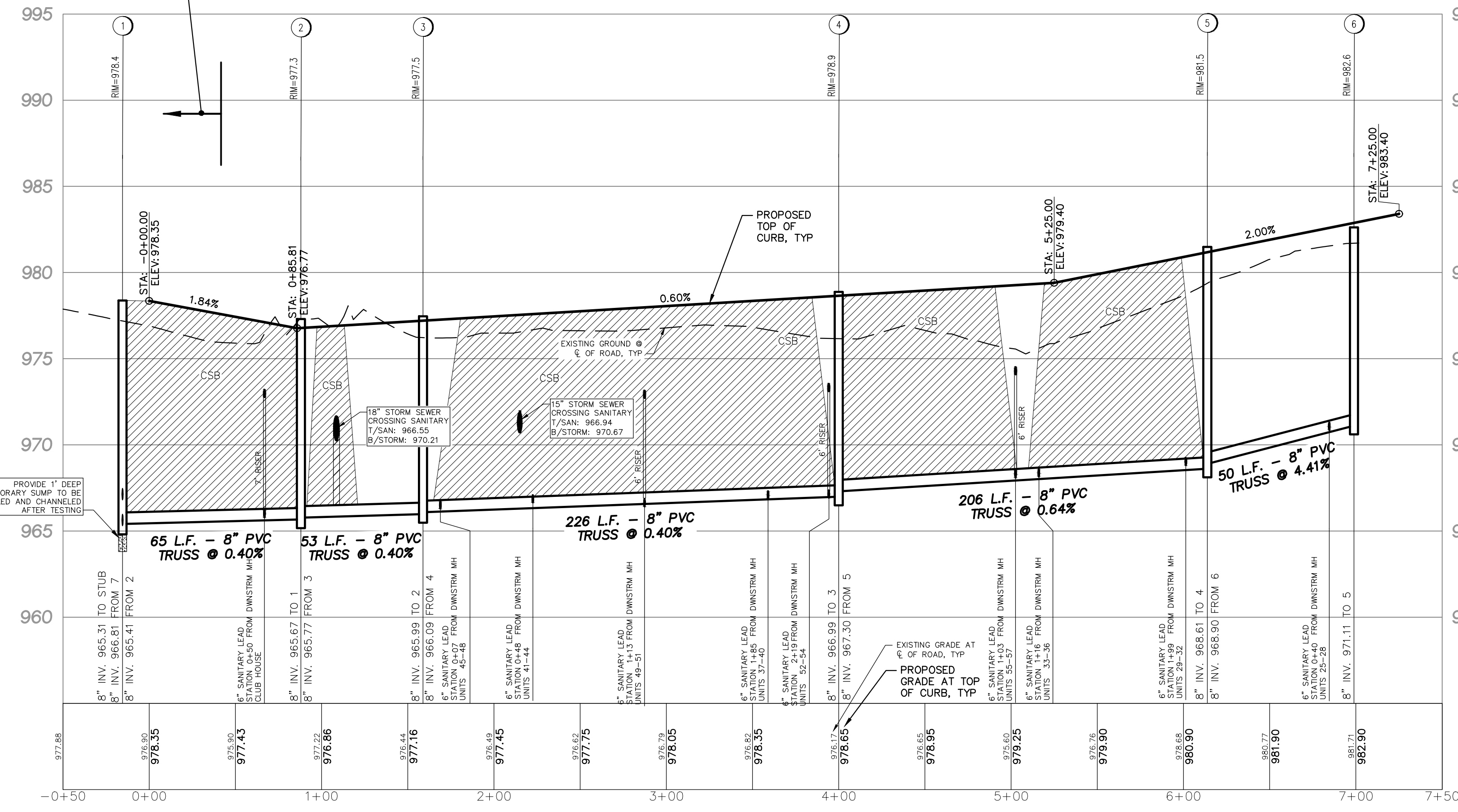
REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

ROAD AND SANITARY SEWER PLAN

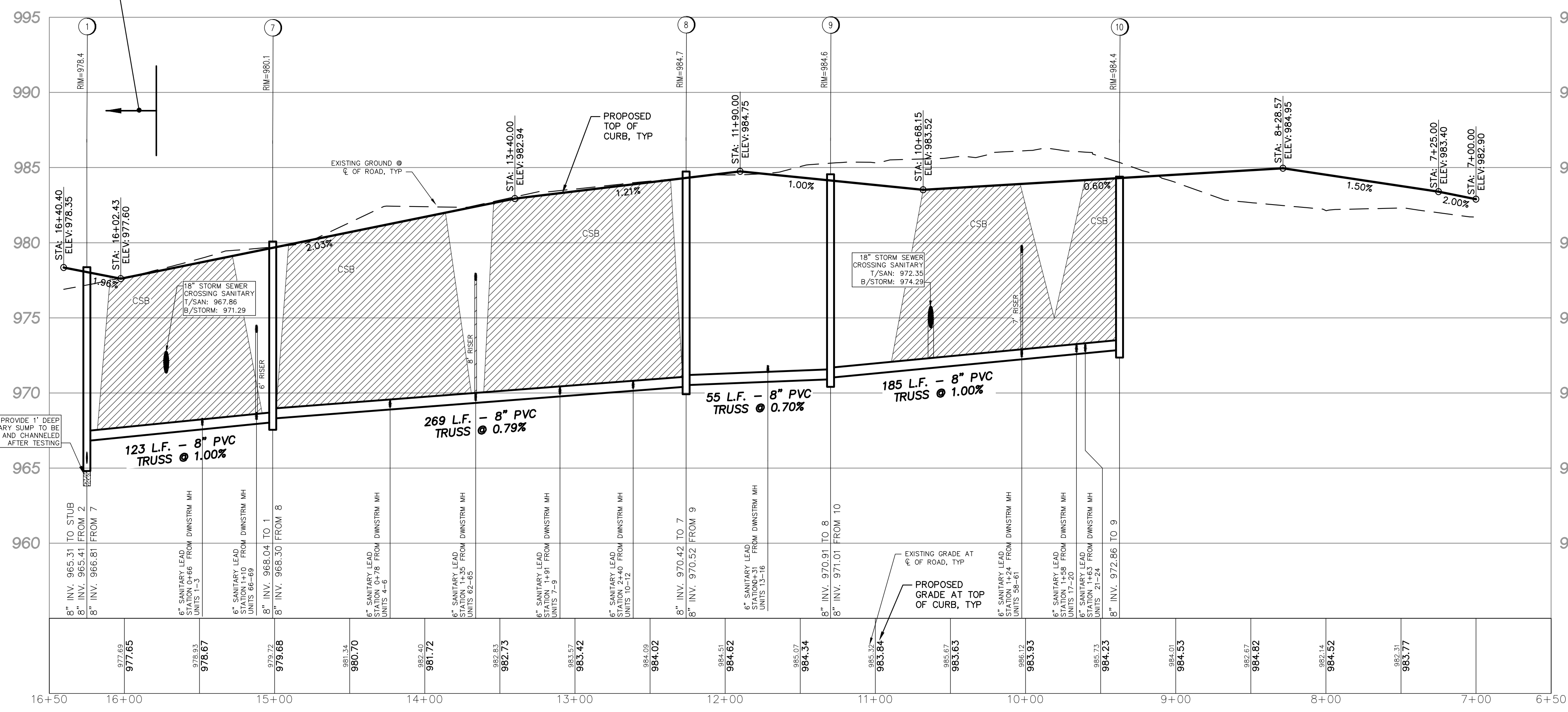
	SEIBER, KEAST ENGINEERING, L.L.C.	SHEET 8
	CONSULTING ENGINEERS	
	100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com	

SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL

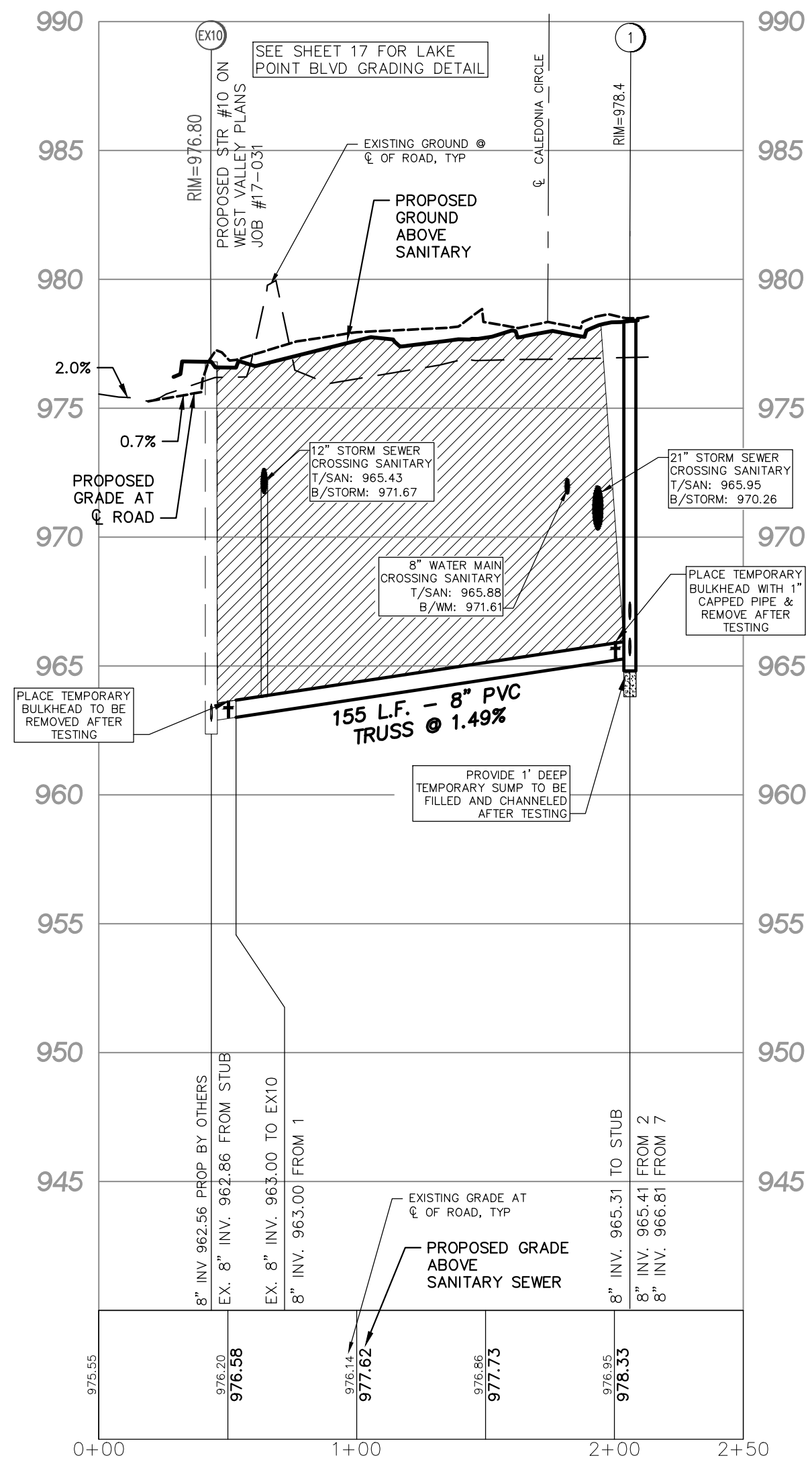


CALEDONIA CIRCLE
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

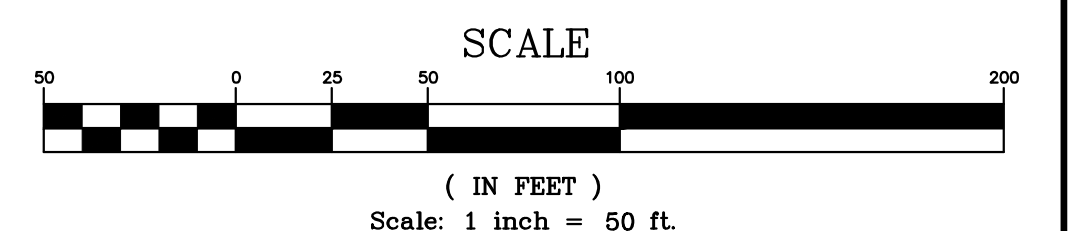
SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL



CALEDONIA CIRCLE
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



LAKE POINTE BLVD
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



LEGEND		
	EXISTING	PAVEMENT (ASPHALT)
	PROPOSED	SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/ RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

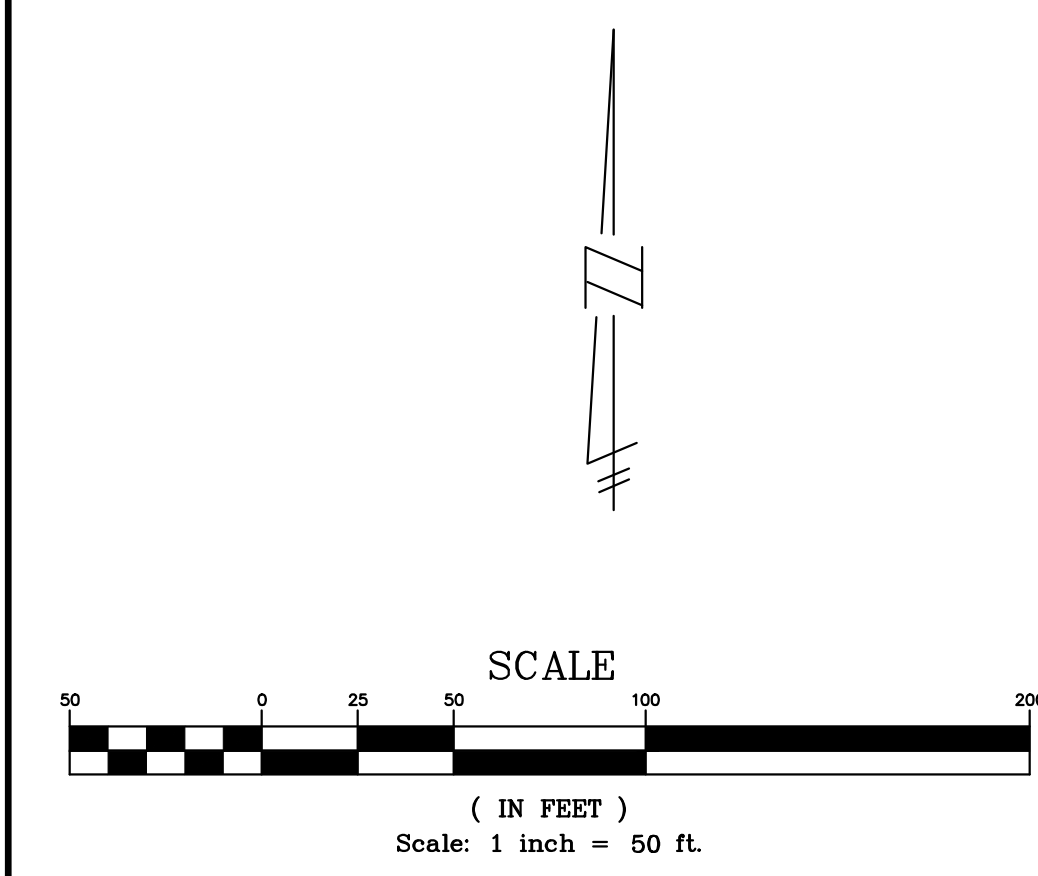
REVISIONS			UTILITY WARNING
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

ROAD AND SANITARY SEWER PROFILES

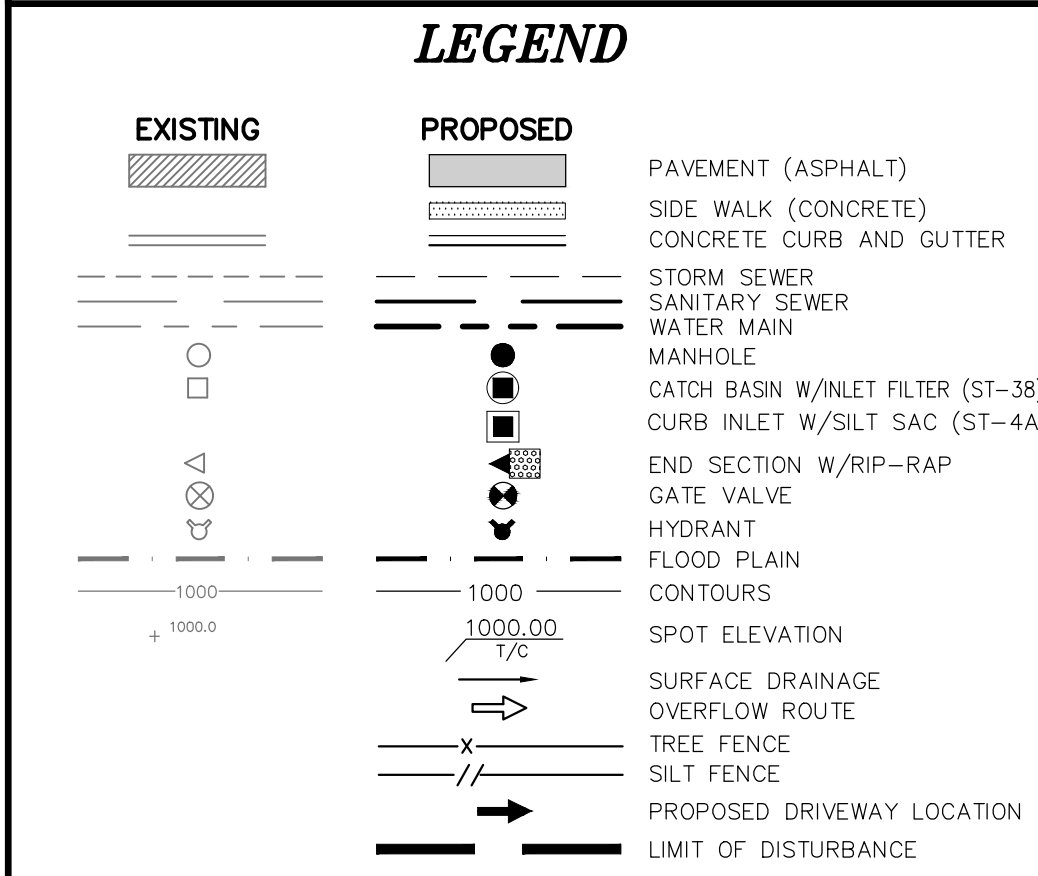
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100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 9



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT WEIGHT.

- ### NOTES
1. ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 2. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 6'-0" OF COVER EXCEPT AT GATE WELLS WHERE THEY SHALL BE INSTALLED WITH A 5' DEPTH OF COVER.
 3. ALL WATER MAIN SHALL BE DUCTILE IRON, CLASS 54, CEMENT LINED.
 4. ALL HYDRANTS MUST BE A MINIMUM OF 6' (FROM CENTER) OFF THE BACK OF CURB.
 5. HYDRANT LEADS ARE 6". LENGTH OF LEAD IS 13' UNLESS OTHERWISE NOTED.
 6. ALL WATER SERVICES ARE TO BE 1" DIAMETER. ALL WATER SERVICES SHALL BE COPPER K OR 200 PSI BLUE POLY SDR9 TUBING WITH TRACER WIRE, OR APPROVED EQUAL.



LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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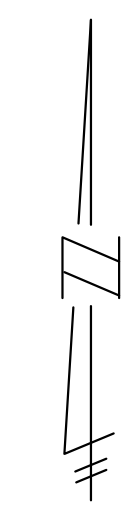
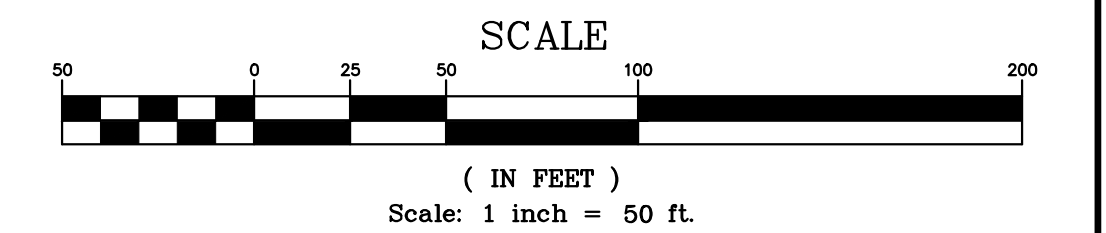
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.E. DRAWING FILE: 19039WM.dwg

WATERMAIN PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
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 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 10



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
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		TREE FENCE
		SILT FENCE
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		LIMIT OF DISTURBANCE

LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

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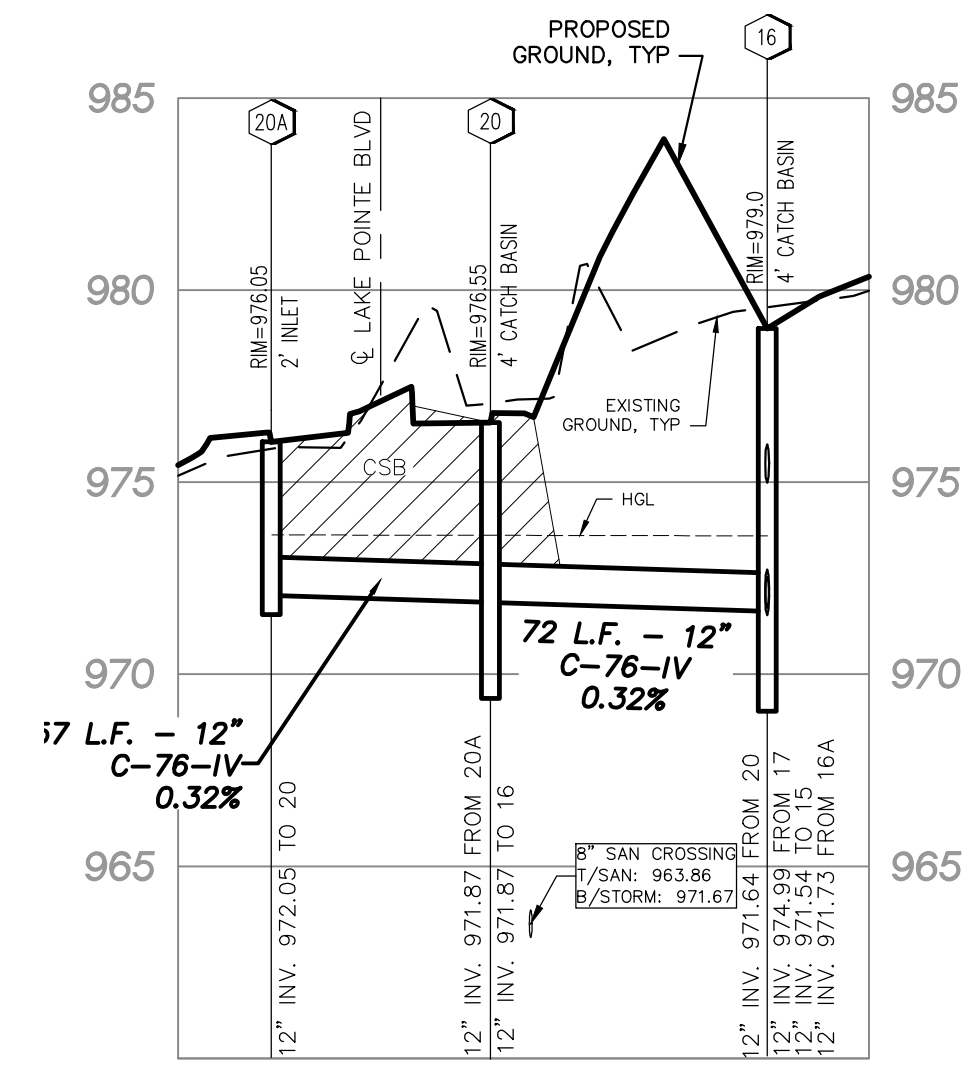
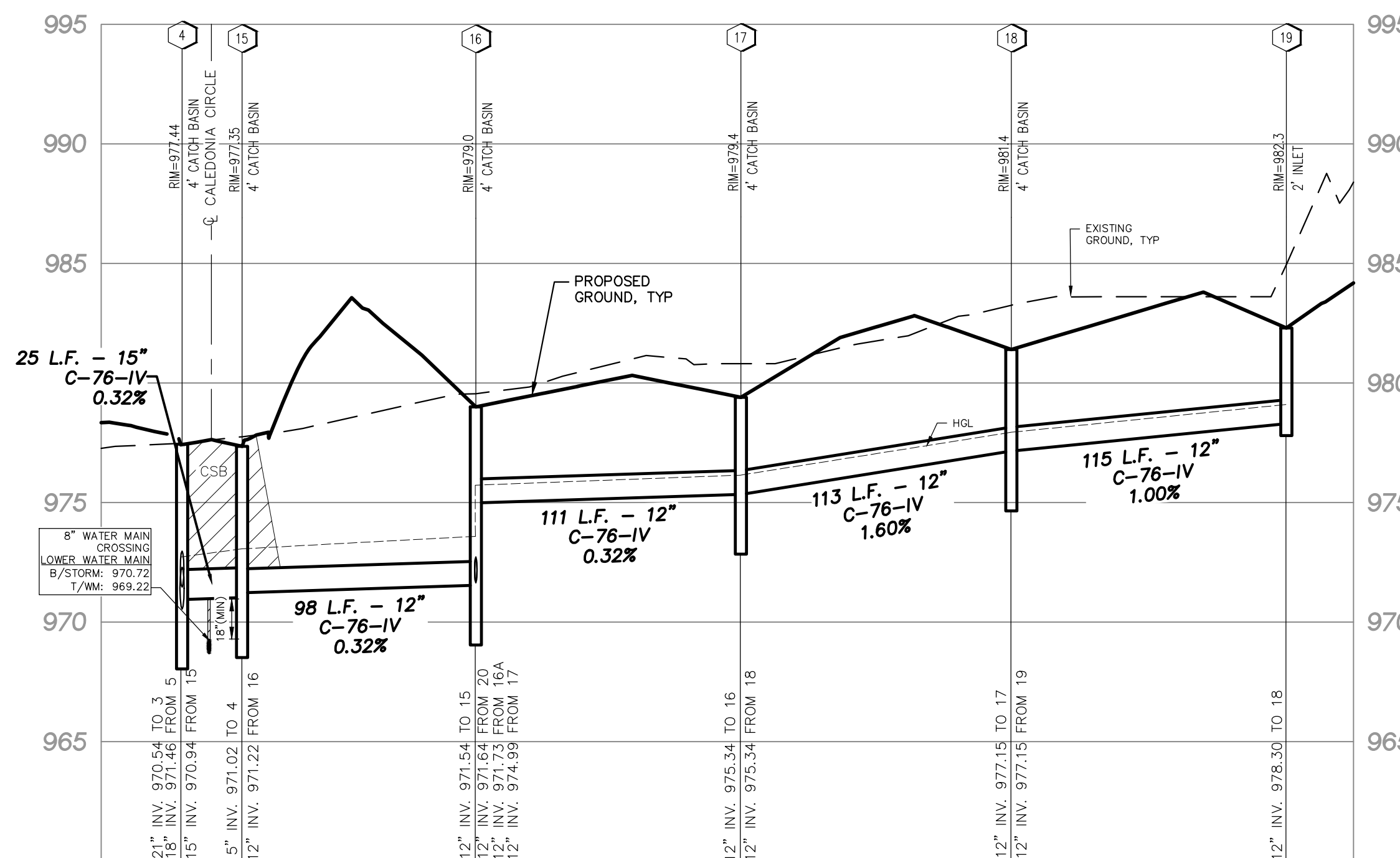
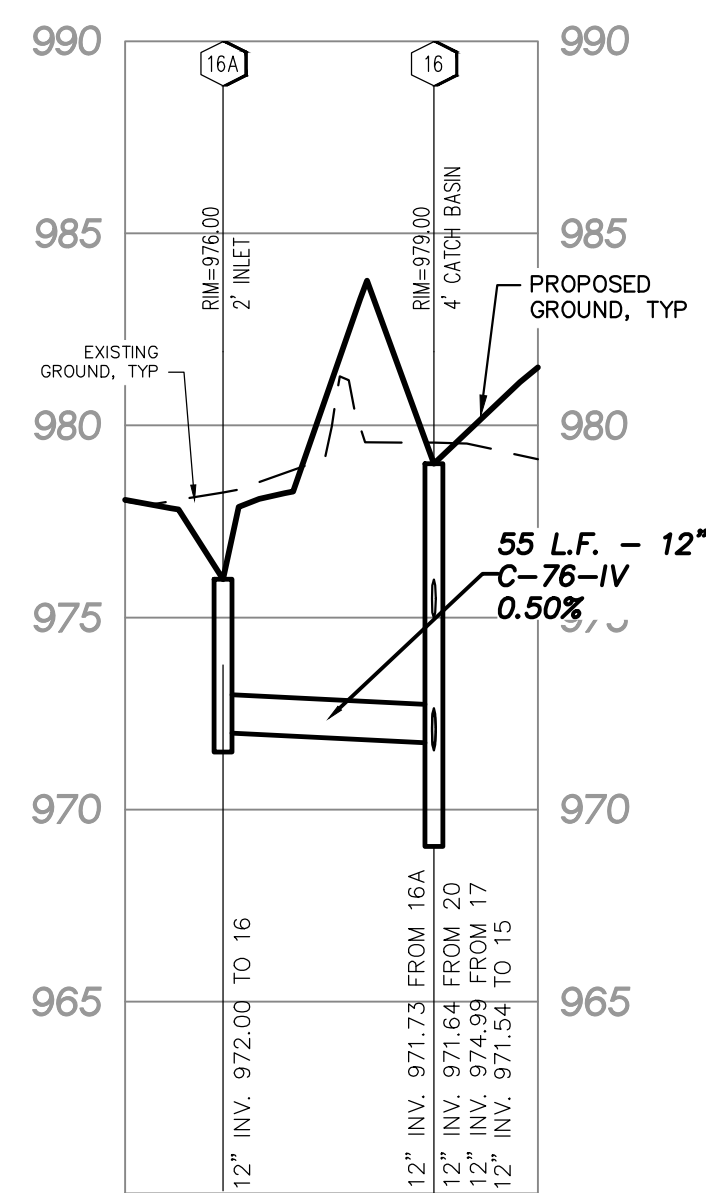
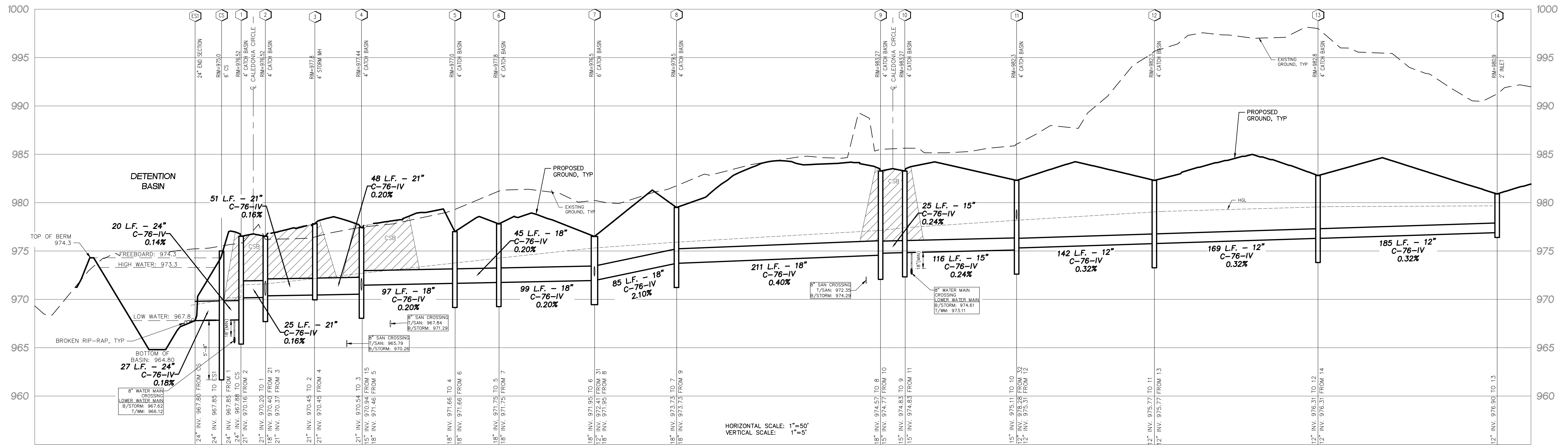
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039ST.dwg

STORM SEWER PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
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PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 11



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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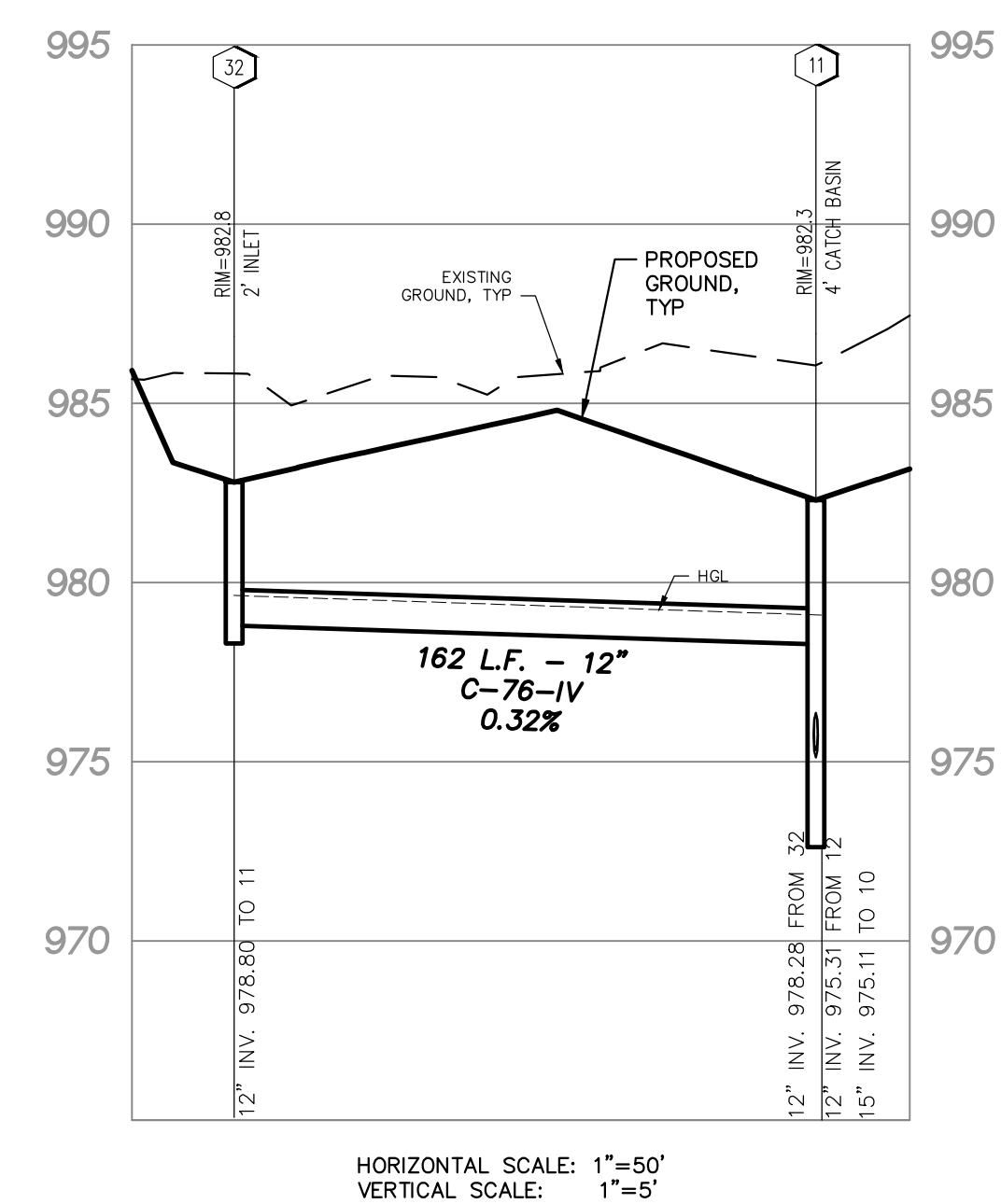
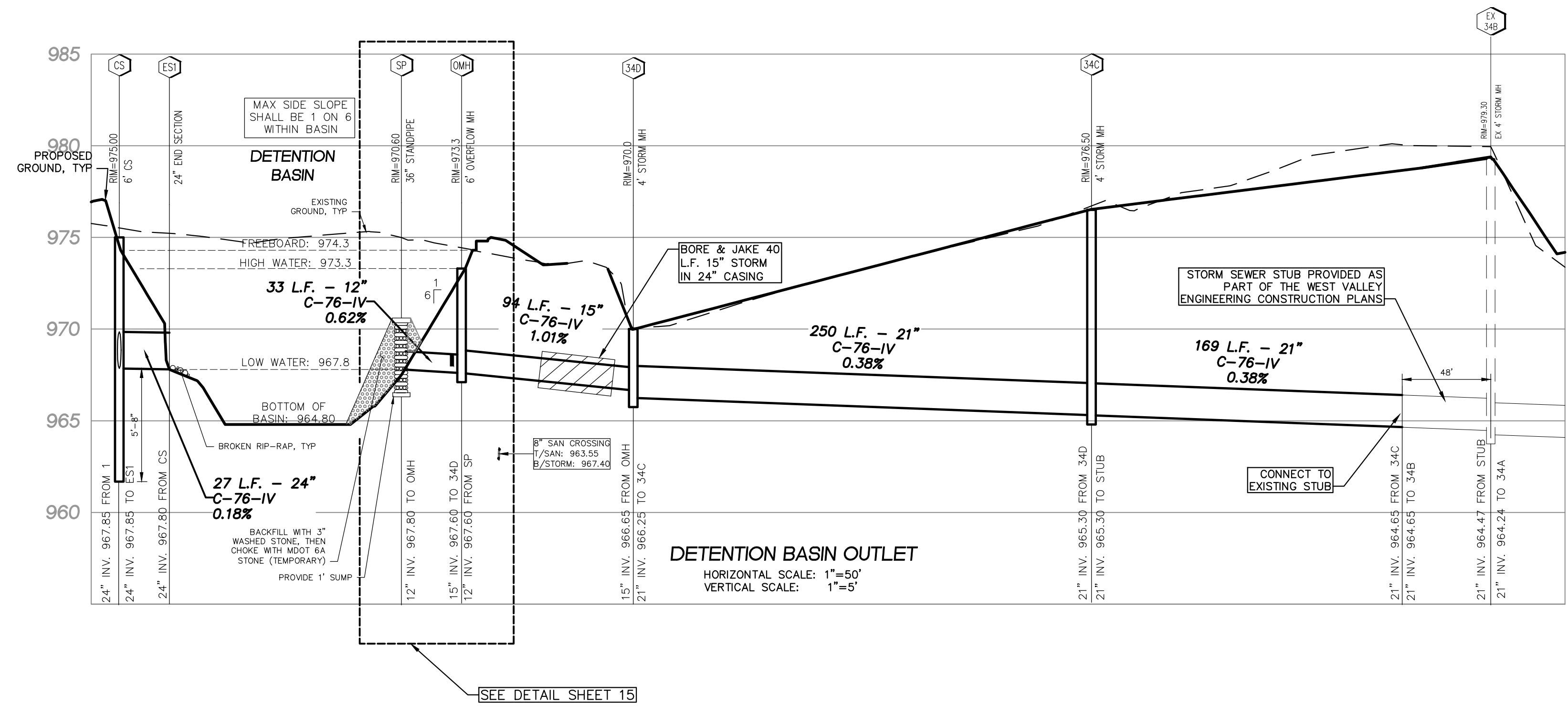
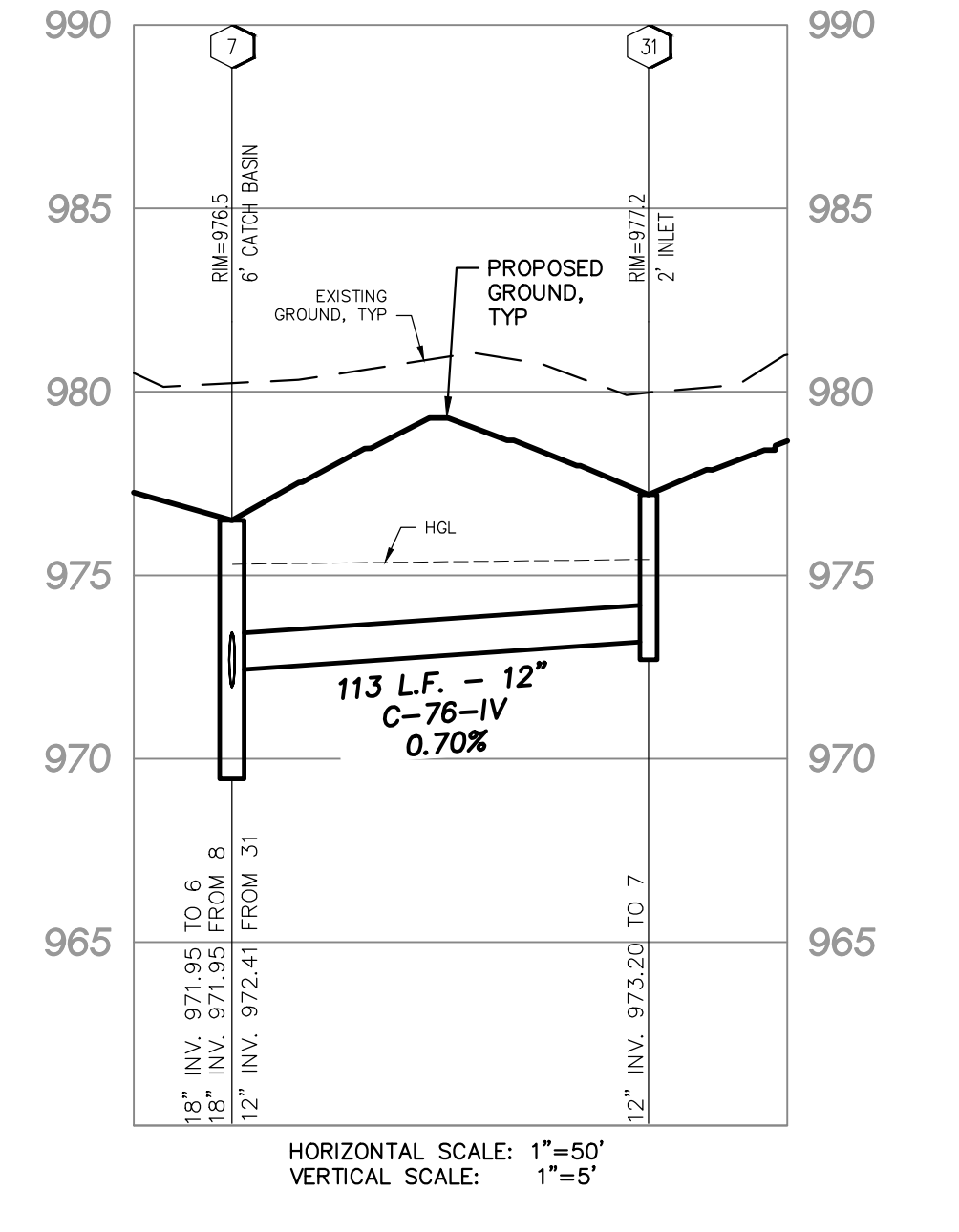
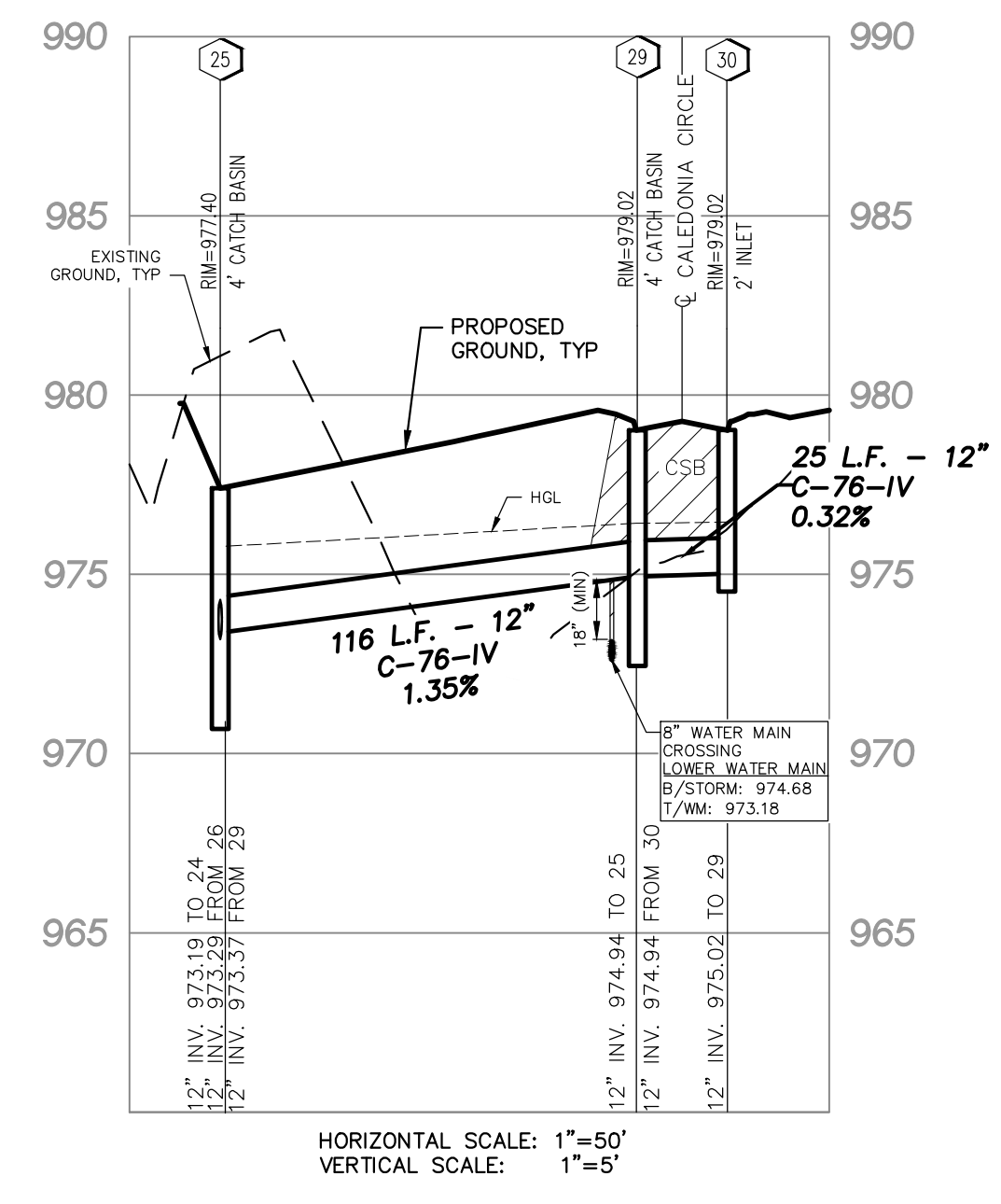
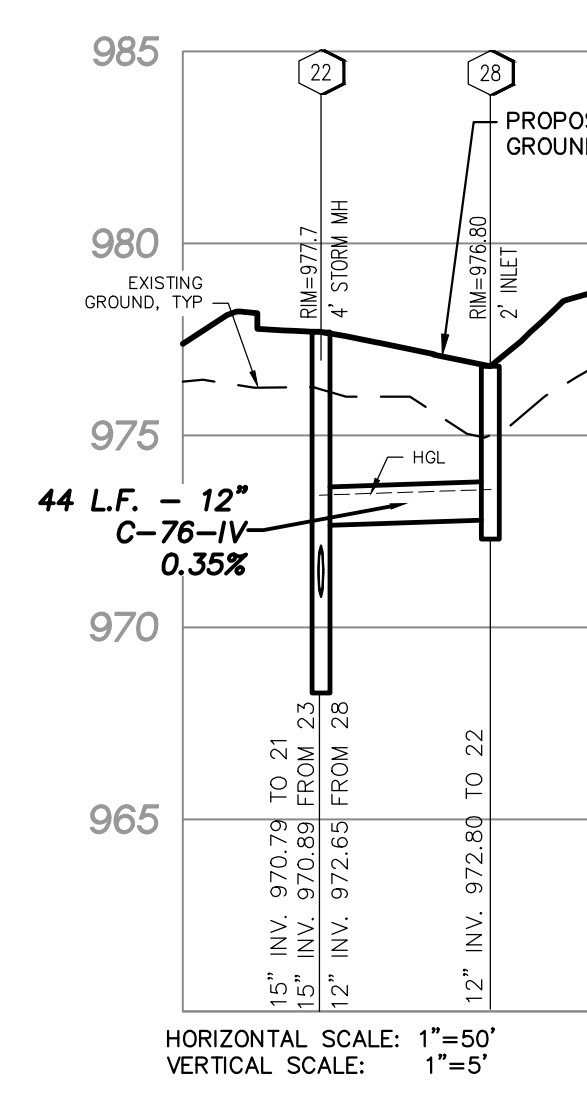
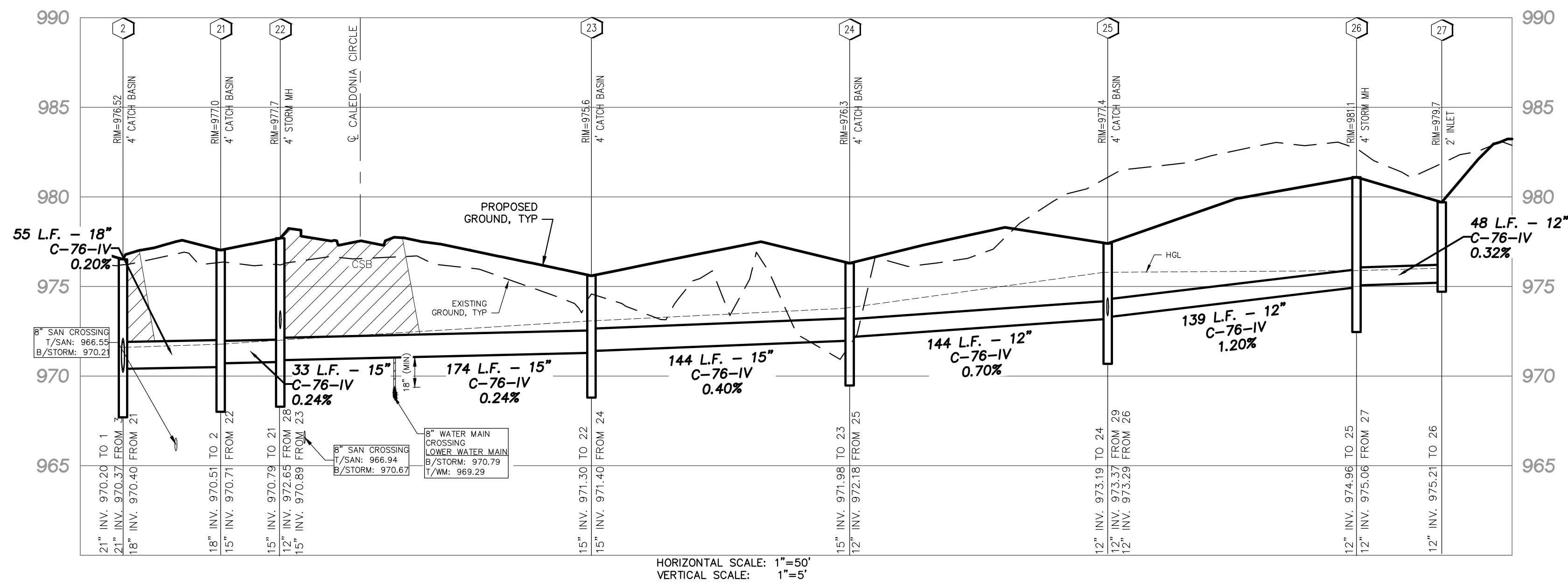
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 CHECKED BY: J.E. DRAWING FILE: 19039ST.dwg

STORM SEWER PROFILES

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SHEET
12



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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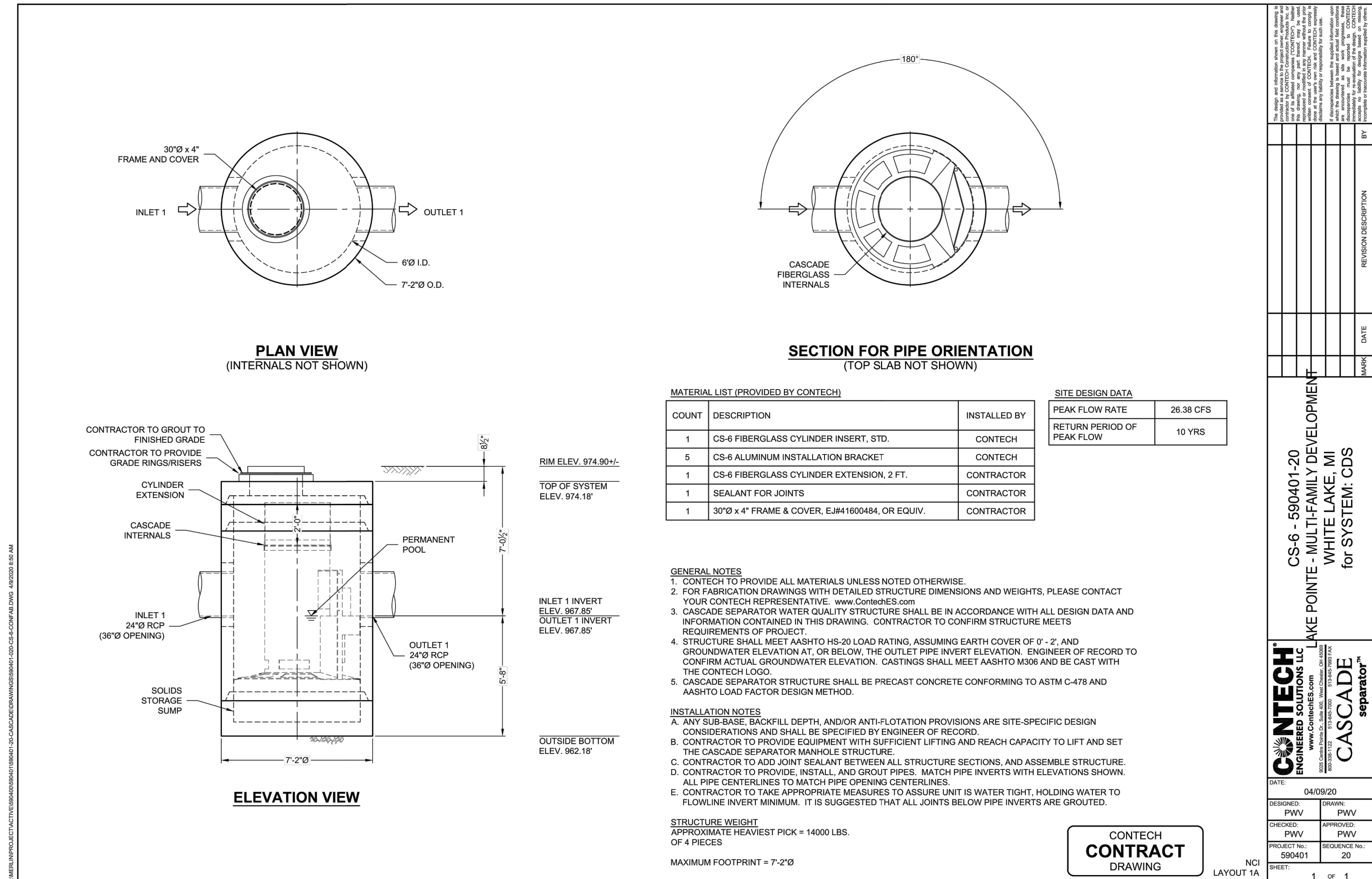
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STORM SEWER PROFILES

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SHEET
13



MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	CS-6 FIBERGLASS CYLINDER INSERT, STD.	CONTECH
5	CS-6 ALUMINUM INSTALLATION BRACKET	CONTECH
1	CS-6 FIBERGLASS CYLINDER EXTENSION, 2 FT.	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
1	30"Ø x 4" FRAME & COVER, EJ#41600484, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

PEAK FLOW RATE	28.38 CFS
RETURN PERIOD OF PEAK FLOW	10 YRS

- GENERAL NOTES**
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 - FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.contech-es.com
 - CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
 - STRUCTURE SHALL MEET MASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0'-2" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET MASHTO MIX AND BE CAST WITH THE CONTECH LOGO.
 - CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND MASHTO LOAD FACTOR DESIGN METHOD.

- INSTALLATION NOTES**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
 - CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
 - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
 APPROXIMATE HEAVIEST PICK = 14000 LBS.
 OF 4 PIECES
 MAXIMUM FOOTPRINT = 7'-2"Ø

CONTECH CONTRACT DRAWING

DATE: 04/09/20
 DESIGNED: PWV
 CHECKED: PWV
 PROJECT No.: 589401
 SHEET: 1 OF 1

DATE: 04/09/20
 DRAWN: PWV
 APPROVED: PWV
 SEQUENCE No.: 20

DATE: 04/09/20
 LAYOUT 1A

CONTECH ENGINEERED SOLUTIONS
 10000 WOODLAND AVENUE, SUITE 100
 NORTHVILLE, MI 48861
 TEL: 248.308.3331 FAX: 248.308.3332
 WWW.CONTECH-ES.COM

REVISION DESCRIPTION
 BY
 DATE

CS-6 - 589401-20
 LAKE POINTE - MULTI-FAMILY DEVELOPMENT
 WHITE LAKE, MI
 for SYSTEM: CDS

CASCADE separator

Estimated Net Annual Solids Load Reduction Based on the Rational Rainfall Method

LAKE POINTE
 White Lake Twp., MI
 Water Quality Unit

CASCADE separator

AREA	11.89 acres	CASCADE MODEL	CS-6
WEIGHTED C TC	0.53 minutes	PARTICLE SIZE	110 microns
		RAINFALL STATION	78

Rainfall Intensity ¹ (in/hr)	Percent Rainfall Volume ¹	Cumulative Rainfall Volume	% Rainfall Volume Treated	Total Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.13%	13.1%	13.1%	0.13	100.0	13.1
0.04	11.36%	24.5%	11.4%	0.25	100.0	11.4
0.06	10.08%	34.6%	10.1%	0.38	100.0	10.1
0.08	7.49%	42.1%	7.5%	0.50	100.0	7.5
0.10	7.01%	49.1%	7.0%	0.63	100.0	7.0
0.12	5.37%	54.4%	5.4%	0.76	100.0	5.4
0.14	4.73%	59.2%	4.7%	0.88	98.7	4.7
0.16	4.13%	63.3%	4.1%	1.01	96.9	4.0
0.18	3.53%	66.8%	3.5%	1.13	95.0	3.4
0.20	2.99%	69.8%	3.0%	1.26	93.1	2.8
0.25	5.50%	75.3%	5.5%	1.58	88.4	4.9
0.30	4.47%	79.8%	4.5%	1.89	83.7	3.7
0.35	3.85%	83.6%	3.9%	2.21	79.0	3.0
0.40	2.16%	85.8%	2.2%	2.52	74.3	1.6
0.45	2.09%	87.9%	2.1%	2.84	69.6	1.5
0.50	1.31%	89.2%	1.3%	3.15	64.9	0.8
0.75	5.07%	94.3%	5.1%	4.73	41.4	2.1
1.00	2.58%	96.9%	2.3%	6.30	25.2	0.6
1.50	2.50%	99.4%	1.5%	9.45	16.8	0.4
2.00	0.51%	99.9%	0.2%	12.60	12.6	0.1
2.54	0.15%	100.0%	0.1%	16.01	9.9	0.0
						88.0
						Removal Efficiency Adjustment ² = 6.5%
						Predicted % Annual Rainfall Treated = 91.8%
						Predicted Net Annual Load Removal = 81.5%

1 - Based on 5.5 years of 15 minute precipitation data from NCDC station 2102 at Detroit City Airport in Detroit, MI
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

LAKE POINTE
 SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		
NO.	ITEM	DATE
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3.	REV PER 11-20-20 W.L. TWP LETTER	02-02-21
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UTILITY WARNING
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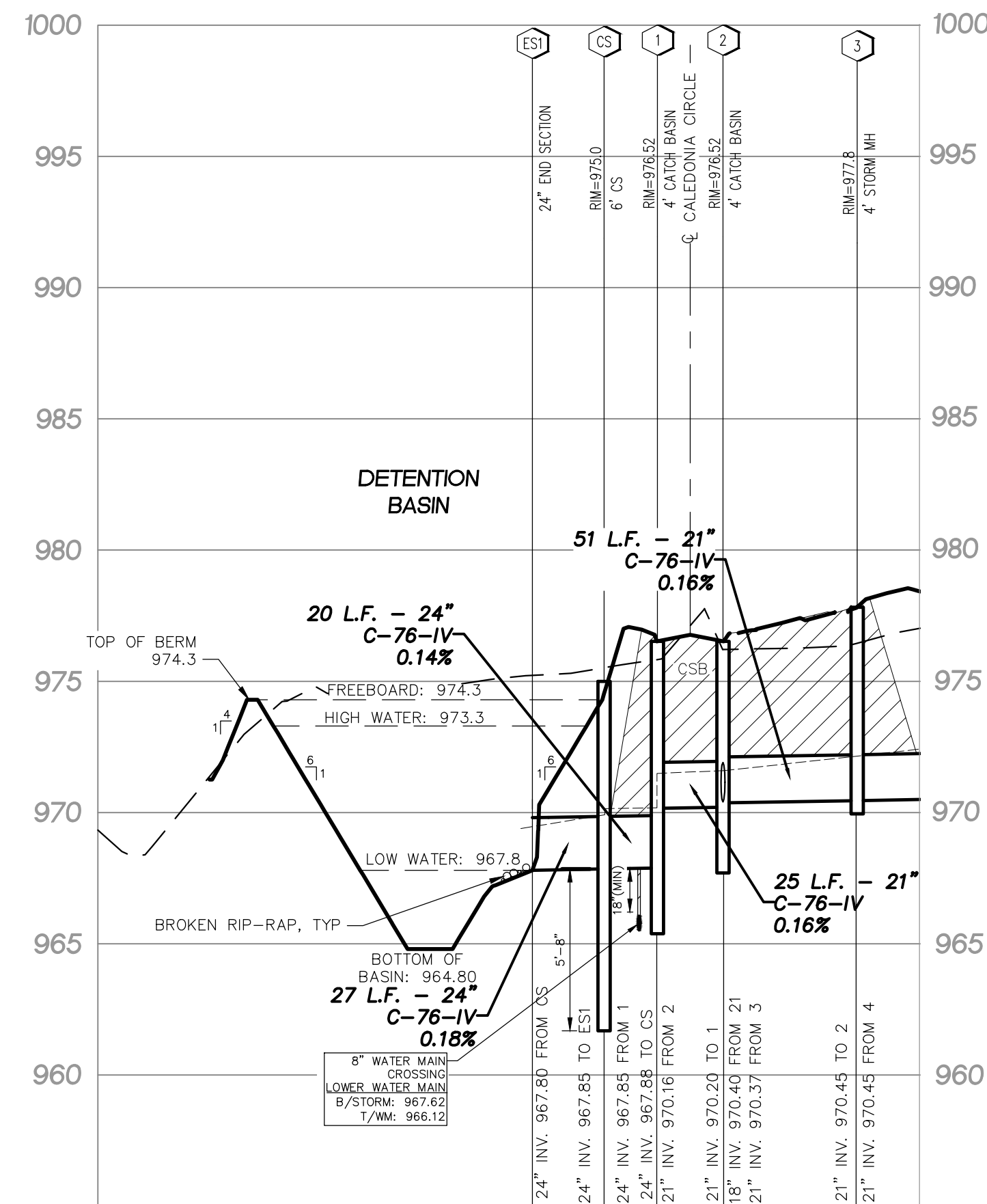
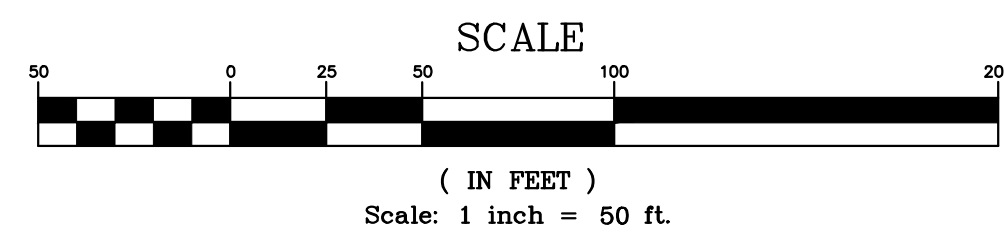
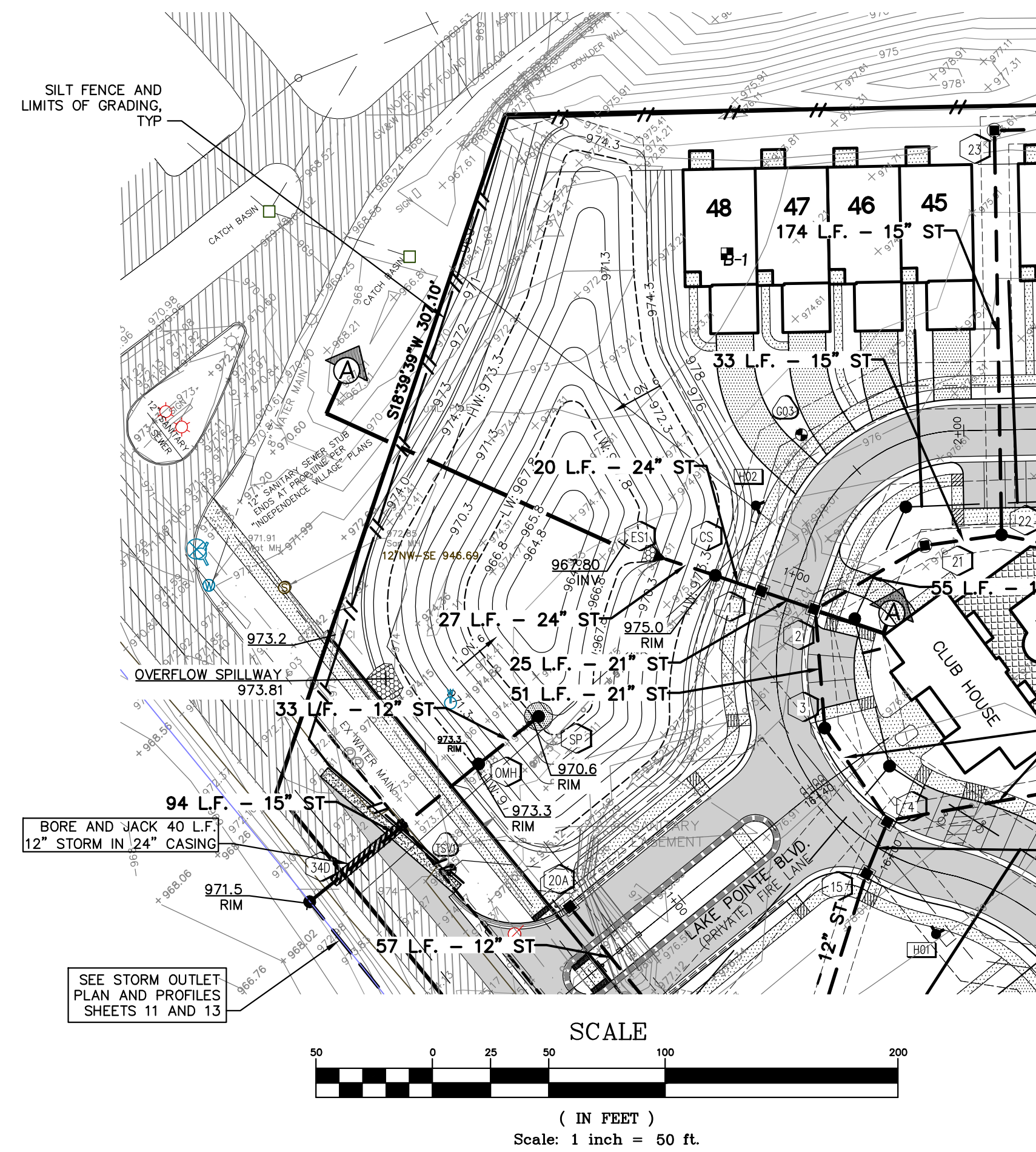
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020
 DESIGNED BY: A.A.
 CHECKED BY: J.E.
 JOB NUMBER: 19-039
 DRAWING FILE: 19039CDS.dwg

CONTECH CDS DETAILS

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SHEET 14



Detention Basin Calculations

DETERMINE DETENTION VOLUME REQUIREMENTS (100-YEAR STORM)
 $A_c = 11.64$ Ac Developed **ON-SITE** area tributary to the Detention Basin
 $Q_{all} = 2.33$ cfs Allowable Outflow (Total Area x 0.2 cfs/Ac.)
 $C = 0.53$

$Q_o = Q_{all} / (Ac * C) = 0.38$ cfs/Ac. Imp
 $T = -25 + \text{sqrt}(10312.5/Q_o) = 139.88$ min
 $V_s = (16500 * T) / (T + 25) - 40 * Q_o * T = 11876$ cf/Ac. Imp
 $V_t = V_s * Ac * C = 72,880$ ft³ req'd

DETERMINE DETENTION VOLUME REQUIREMENTS (1-YEAR STORM)
 OCWRC Volume (1-yr Storm)
 $V_r = 4320 * C * A = 26,511$ ft³

DETERMINE VOLUME PROVIDED FOR 1 YEAR AND 100-YEAR STORMS

	Elevation	Area	Vol (ft ³)
Low Water	967.8	6,248	
	968.3	7,336	3,396
	969.3	9,785	11,957
	970.3	12,665	23,182
	971.3	16,238	37,633
High Water	972.3	20,112	55,808
	973.3	24,135	77,932

1 Year Storm EL. = 970.60 ft
 Volume provided = 27,517 ft³

100 Year Storm EL. = 973.30 ft
 Volume provided = 77,932 ft³

DETERMINE OUTLET SIZE TO DEWATER 1 YEAR STORM IN 48 HOURS

Volume of Storage = 27,517 ft³
 Median Surface Area = 9,827 ft²
 Orifice Area Required = 0.038
 Area of 1" diameter hole = 0.00545
 Number of holes required = 6.96
Therefore use 7 - 1" Diameter Holes

DETERMINE 100-YEAR DETENTION BASIN OUTLET SIZE

Orifice Formula, $Q = 0.625 * A * \text{sqrt}(64.4 * H)$
 $Q_{all} = 2.33$ cfs
 Outlet Size = 6.000 in
 Invert Elevation = 967.80 ft
 Springline EL. = 968.05 ft
 $H = 5.25$ ft
 Area Req'd = $A = 0.2026$ sf
 Area of Outlet Used = 0.1963 sf
 Diameter Req'd = 6.000 in
USE 6.000 in Dia Outlet
 Q Discharge = 2.26 cfs

SIZE PRIMARY OVERFLOW STRUCTURE (OMH)

Size of Overflow MH = 6 ft
 % of MH that can be used as a Weir = 50%
 Calculated Length of Weir = $L = 9.42$ ft
 Acreage Tributary to Overflow (onsite + offsite) = 12.58 Ac
 Composite Runoff Coefficient = 0.53
 (From Pipe Flow Calculations)
 Longest Time of Flow to Basin = 21.19 min
 Sum of all Flow into the Basin = 23.74 cfs
 Volume of Basin (Det Calcs) = 77,932 ft³
 Storage Elevation = 973.30 ft
 Freeboard Elevation = 974.30 ft
 Time to Fill Basin Vprov / Flow into Basin = 54.71 min.
 $L = 175 / (T + 25) = 1.73$ in / hr
 $Q_{exp} = C * I * A = 11.50$ cfs

Calculate how high the water will rise above the Overflow Structure to pass the expected flow.
 $h = 0.51$ ft
 Rim Overflow MH = 973.30 ft
 Elevation of Water during Overflow Conditions = 973.81 ft
 Elevation of Water during Overflow Condition is Less than

Determine "C" Factor for Detention Basin

DETERMINE "C" FACTOR

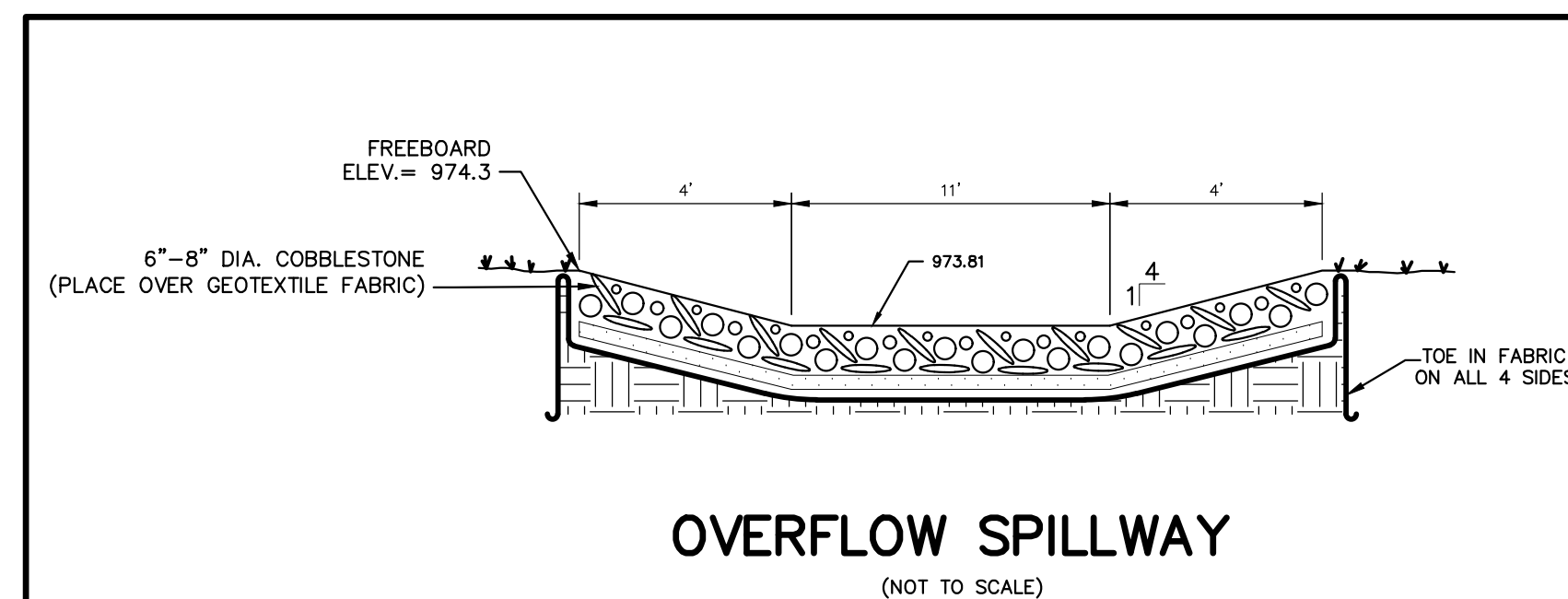
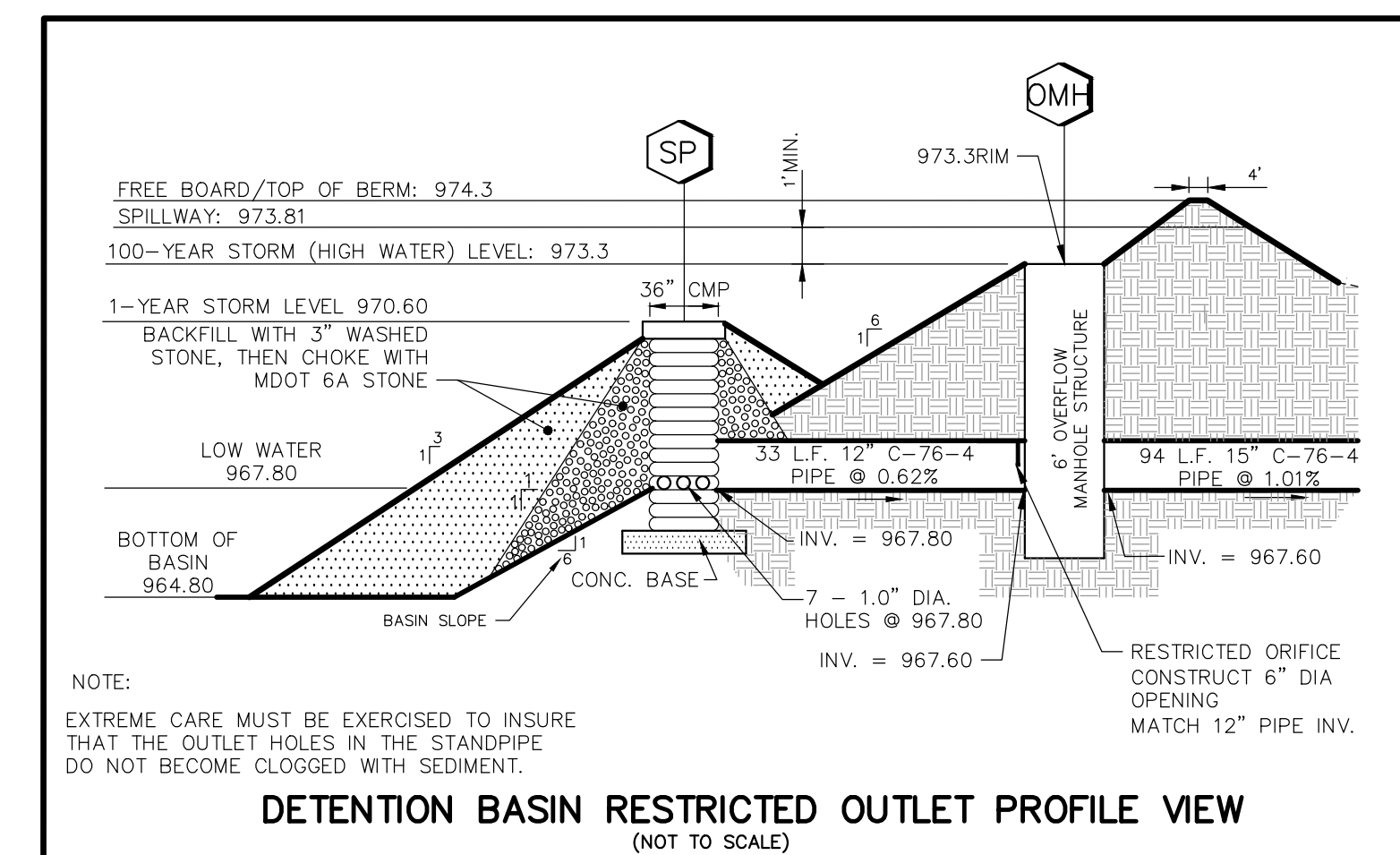
	Area	C	Area * C
AREA TRIBUTARY TO ON-SITE STORM SEWER	10.95 Ac.		
AREA TRIBUTARY TO CB 16A	0.94 Ac.		
AREA OF DETENTION BASIN	0.69 Ac.		
TOTAL AREA TRIBUTARY TO DETENTION BASIN	12.58 Ac		
DETENTION BASIN LOW WATER	0.17 Ac	@ 1.00	= 0.17
PAVING AREA (WALKS, DRIVE, ROAD)	3.14 Ac	@ 0.80	= 2.51
BUILDING AREA	3.19 Ac	@ 0.90	= 2.87
LAWN AREA INCLUDING DETENTION BASIN AREA	6.25 Ac	@ 0.20	= 1.25
TOTAL AREA	12.58 Ac	@	6.63

$C_{avg} = A * C / \text{TOTAL ACRES} = 0.53$

Determine On-Site Area to be Detained for in Detention Basin Calculations

(Note: Exclude ROW Area Tributary to CB 16A)

TOTAL AREA TRIBUTARY TO DETENTION BASIN	=	12.58 Ac
AREA TRIBUTARY TO CB 16A	=	-0.94 Ac
ON-SITE AREA TRIBUTARY TO DETENTION BASIN	=	11.64 Ac



NOTES:

- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
- ALL END SECTIONS SHALL BE CONSTRUCTED ACCORDING TO THE "END SECTION AND BAR SCREEN DETAIL" ON SHEET ND.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE

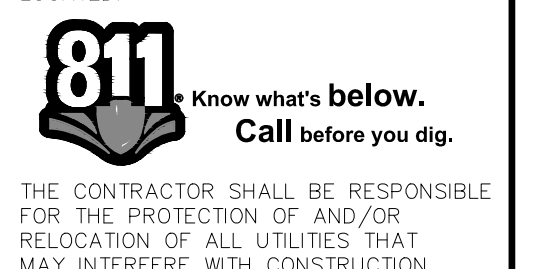
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WLL TWP LETTER	02-02-21
4.	REV PER WHITE LAKE TWP	03-03-21

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

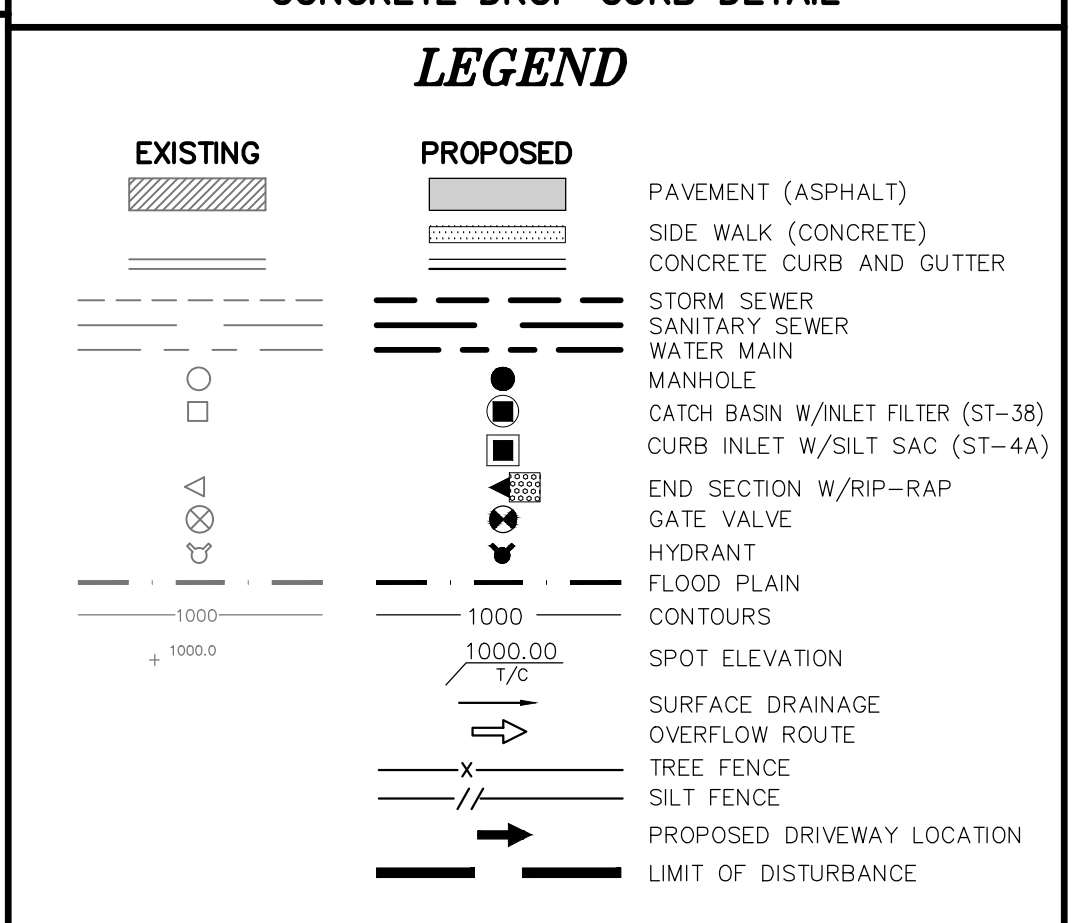
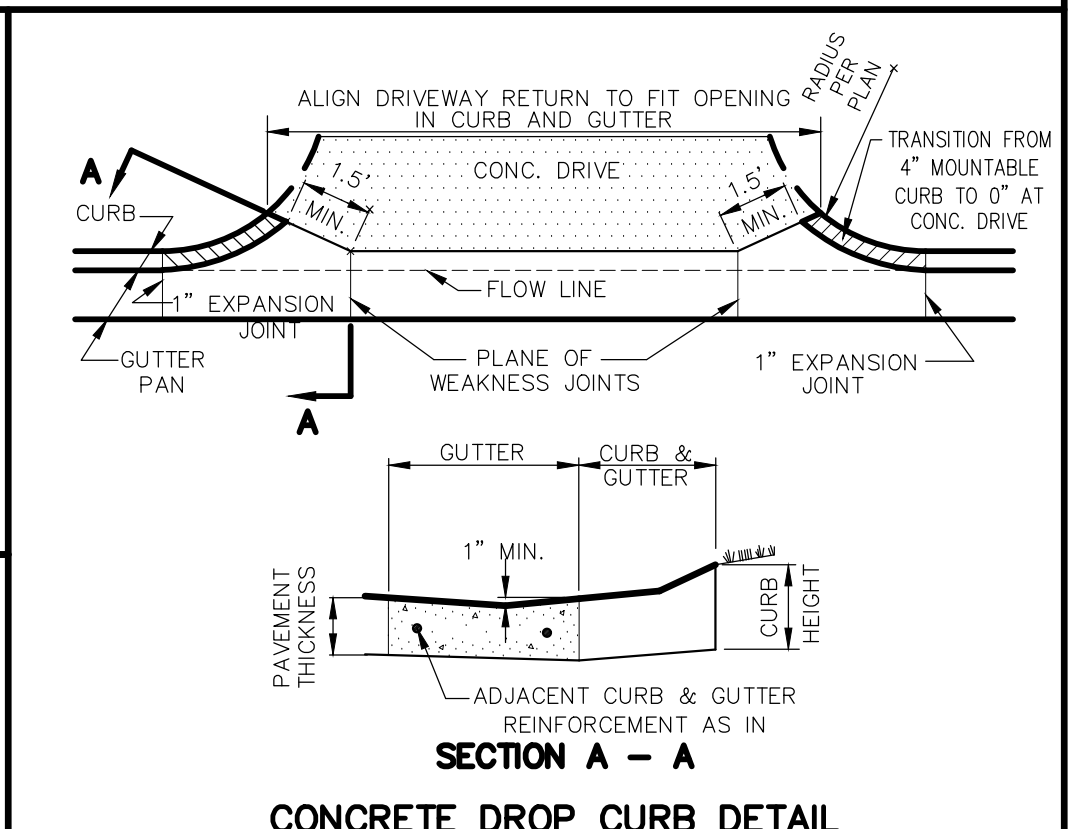
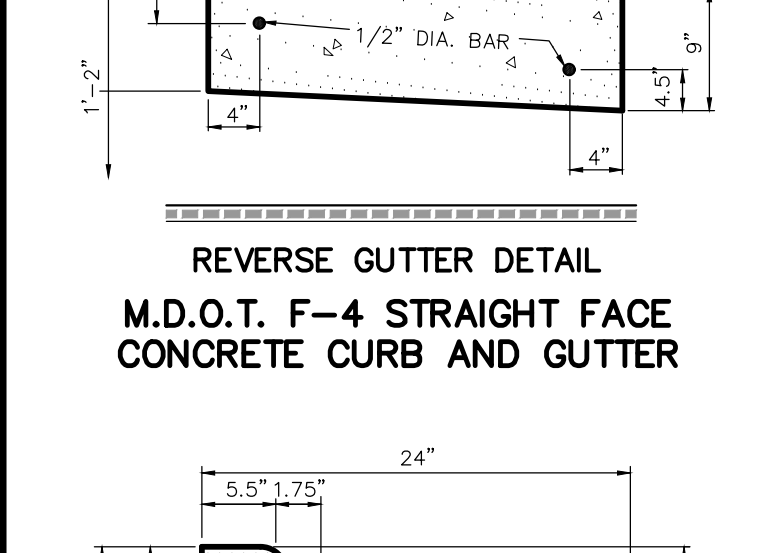
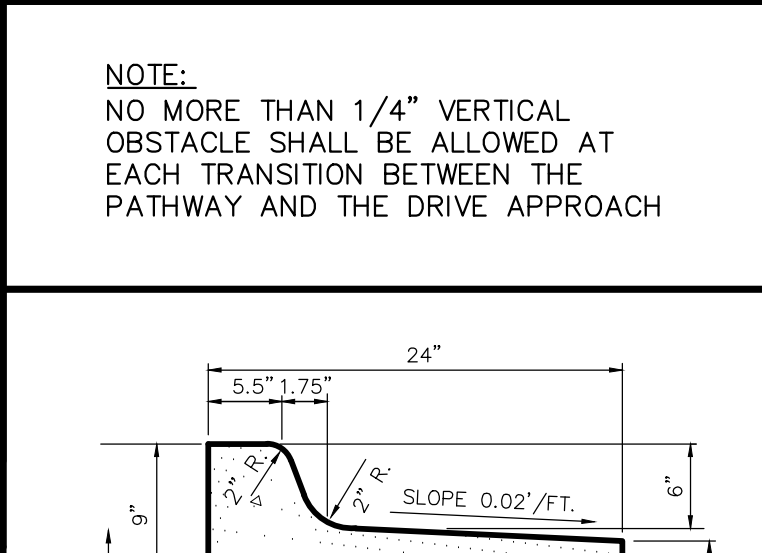
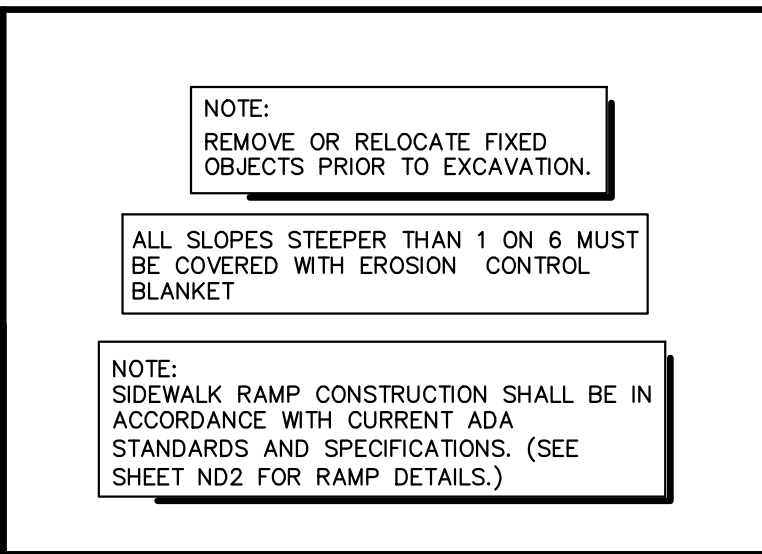
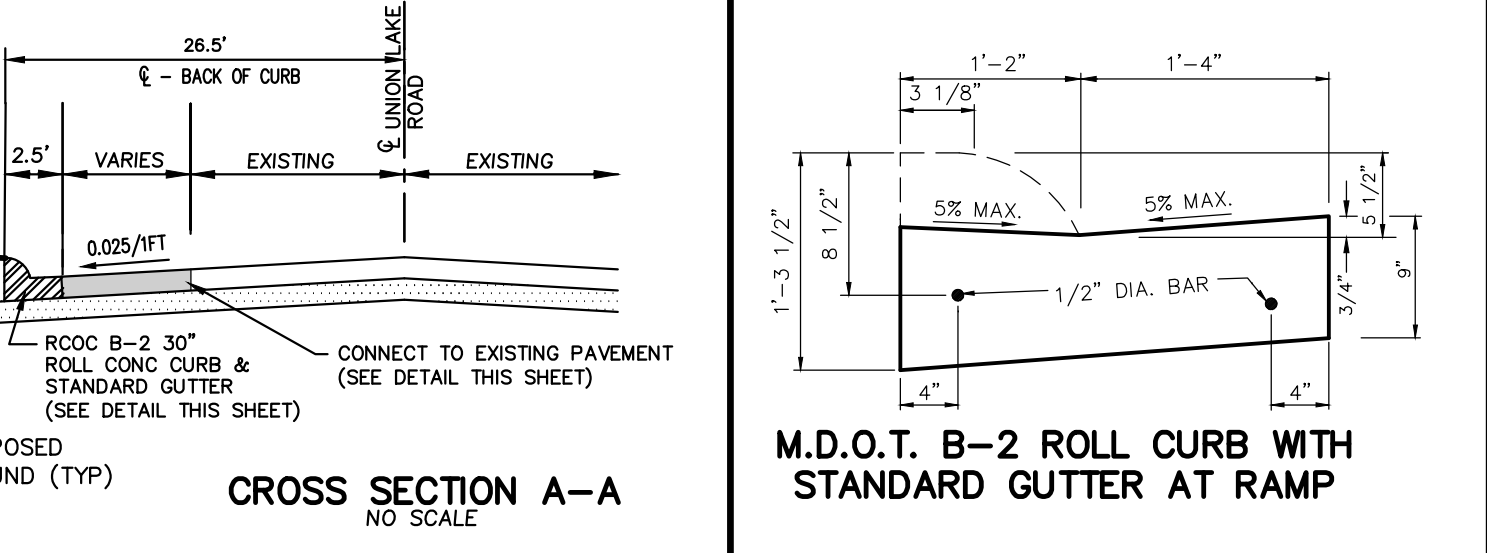
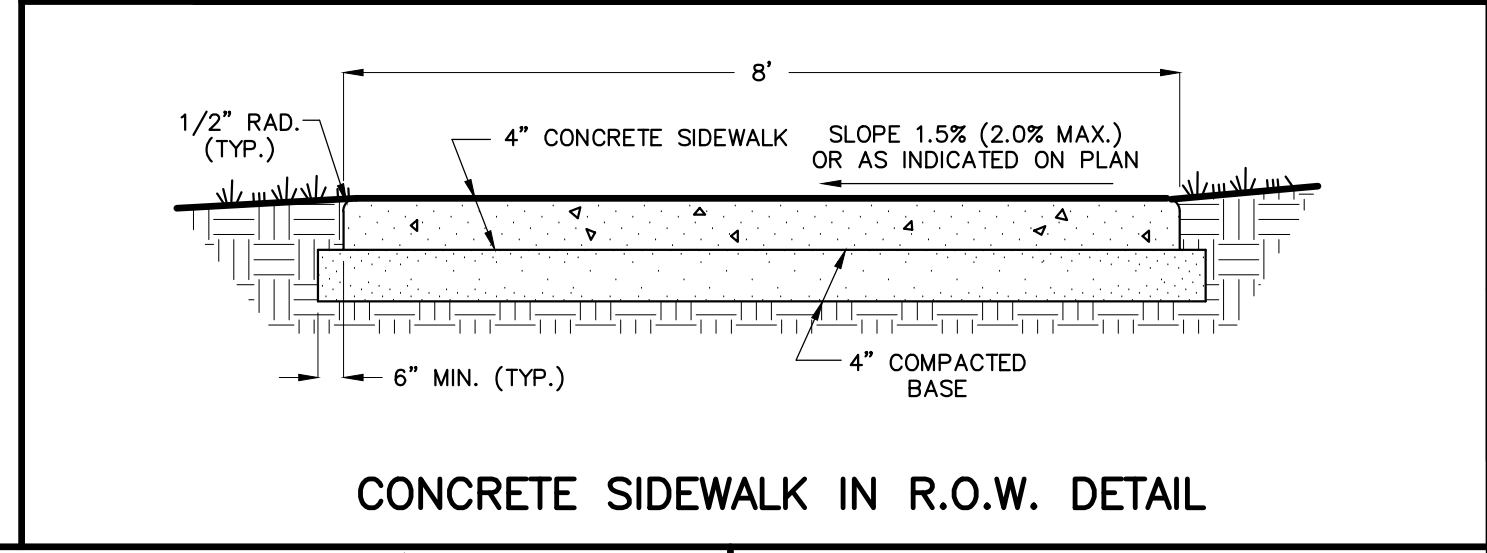
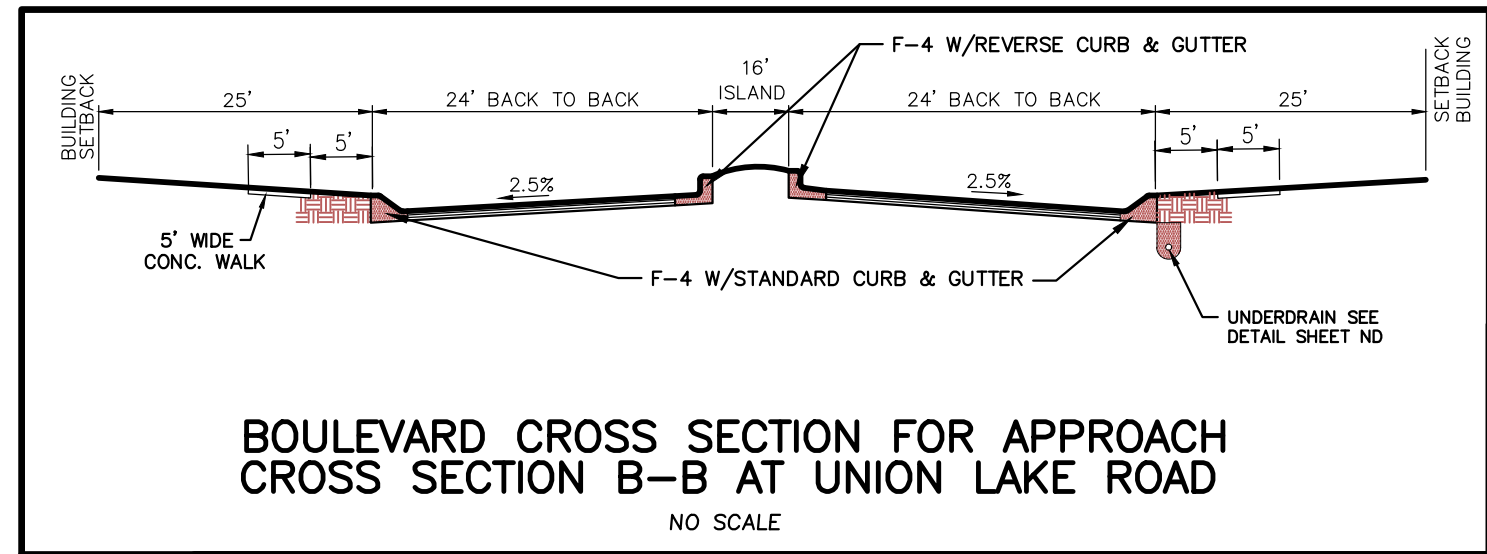
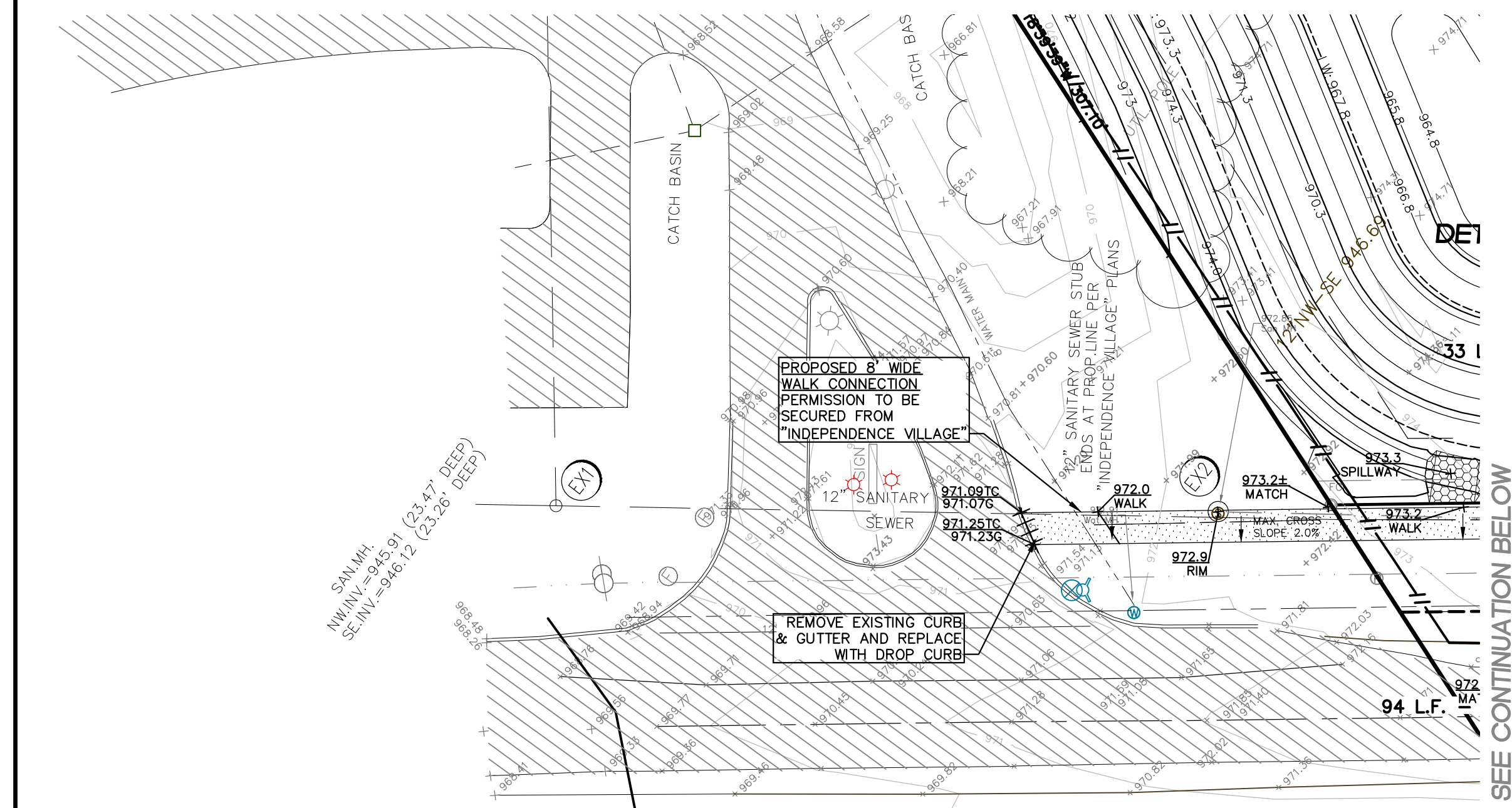
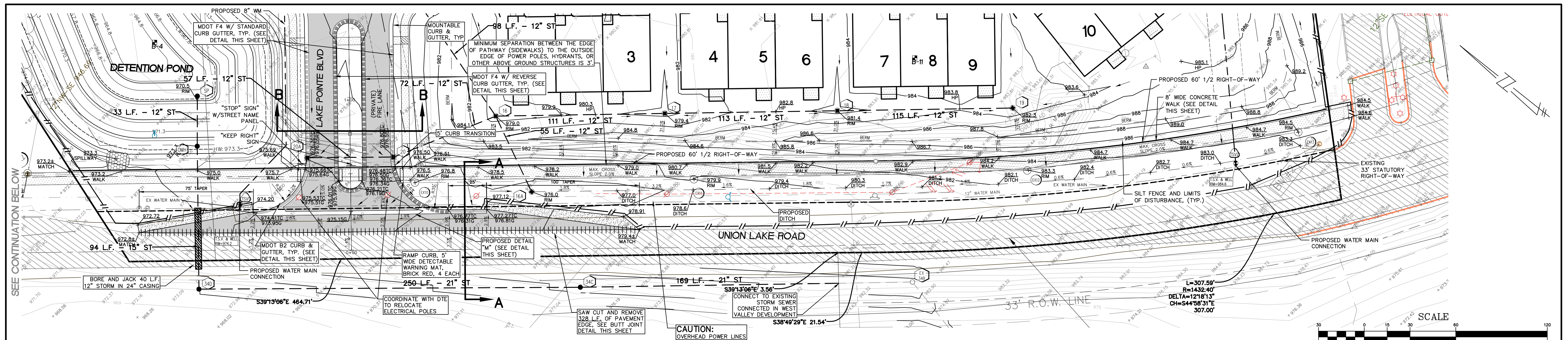


DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.F.E. DRAWING FILE: 19059DB.dwg

DETENTION BASIN PLAN, CALCULATIONS AND PROFILE

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SHEET 15



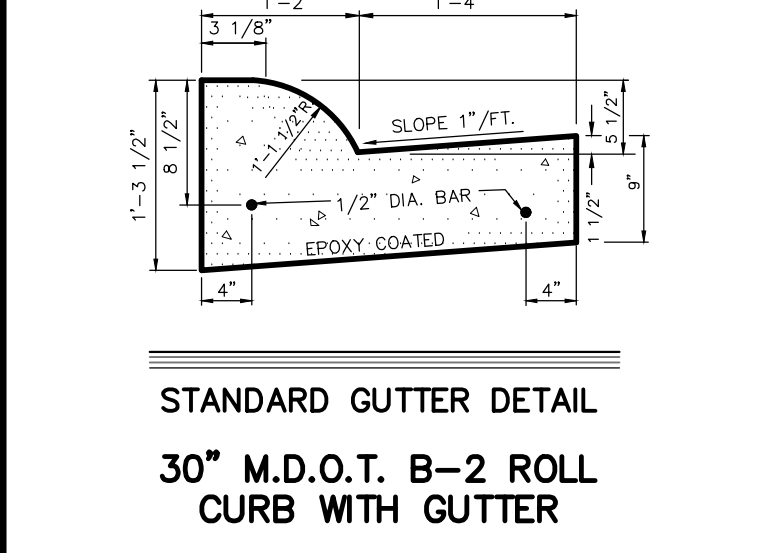
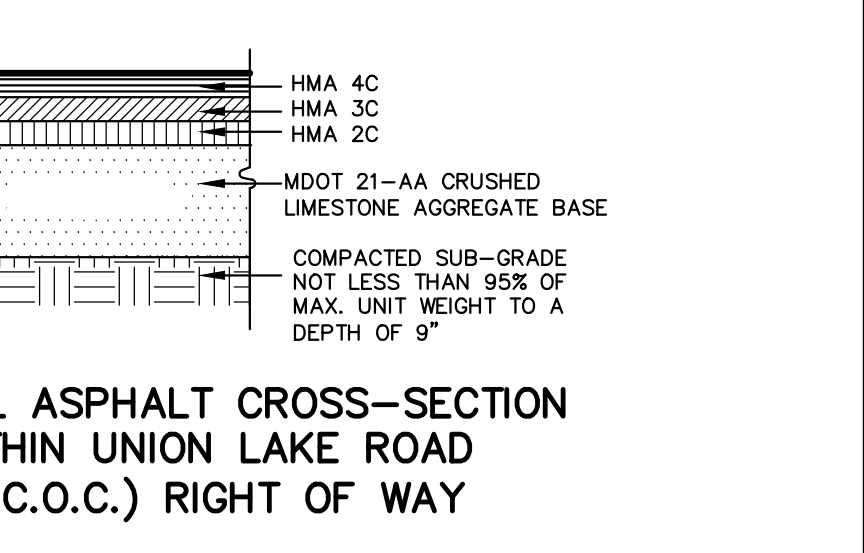
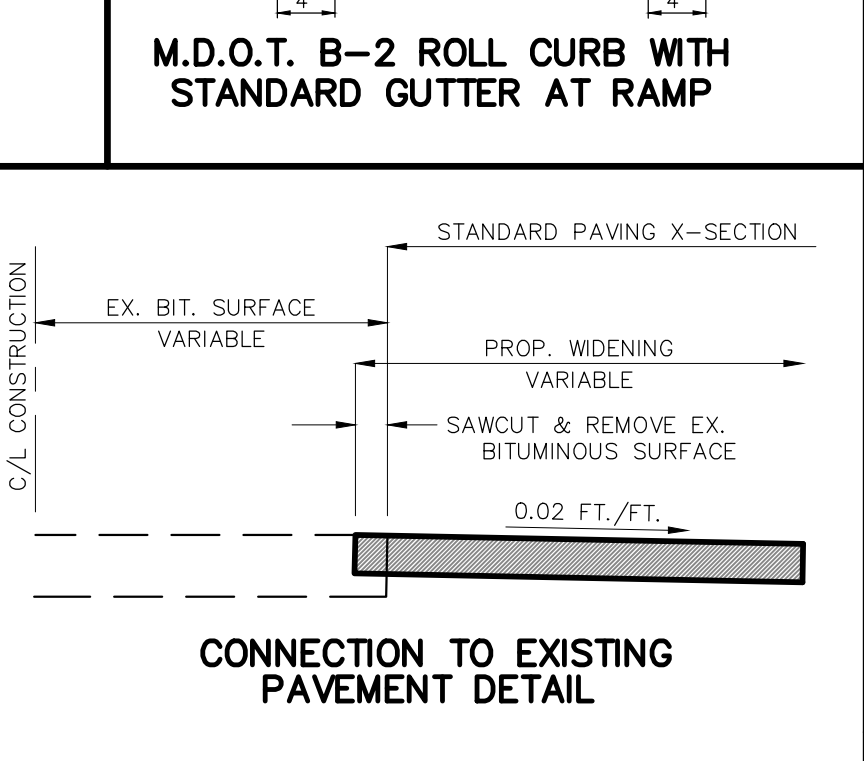
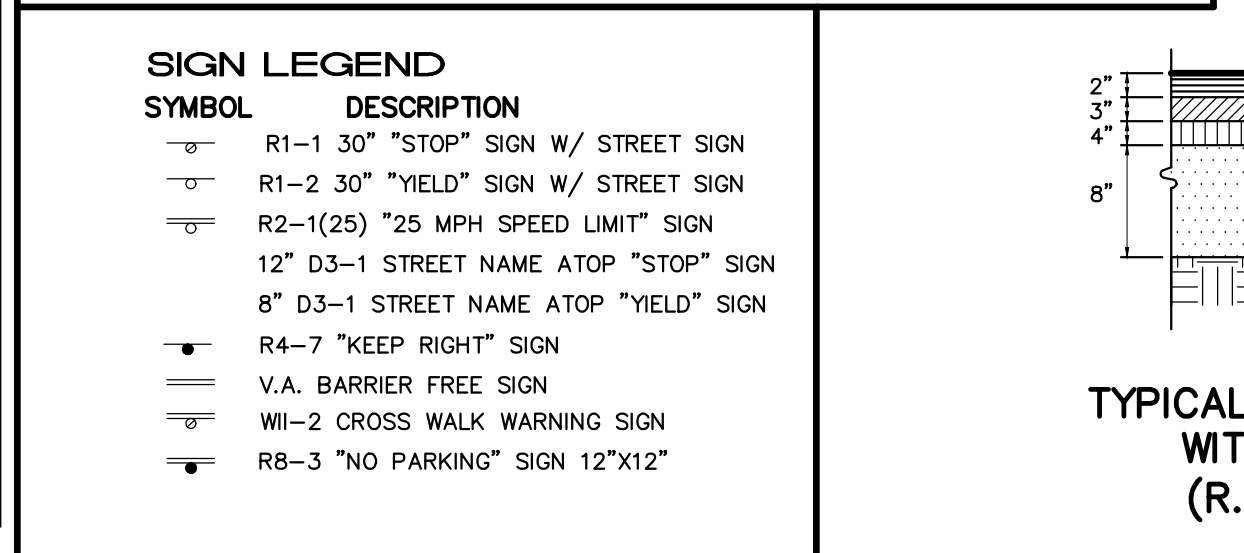
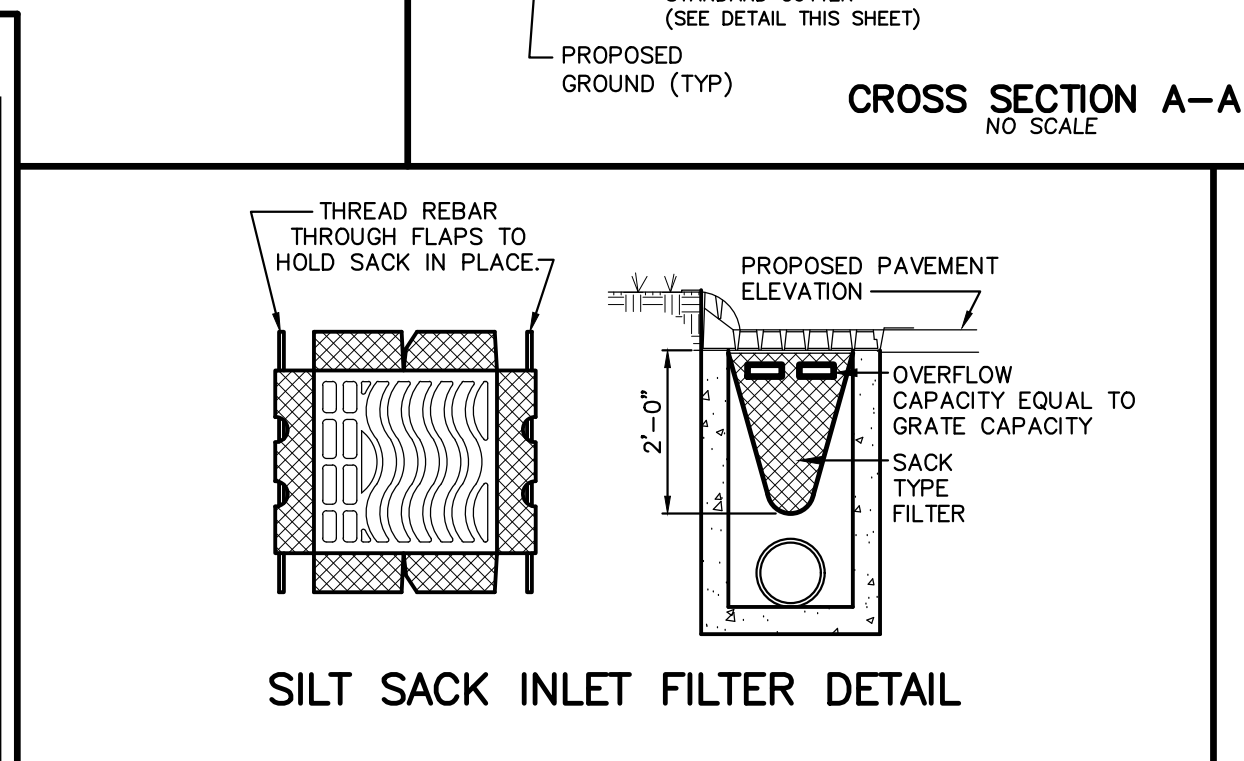
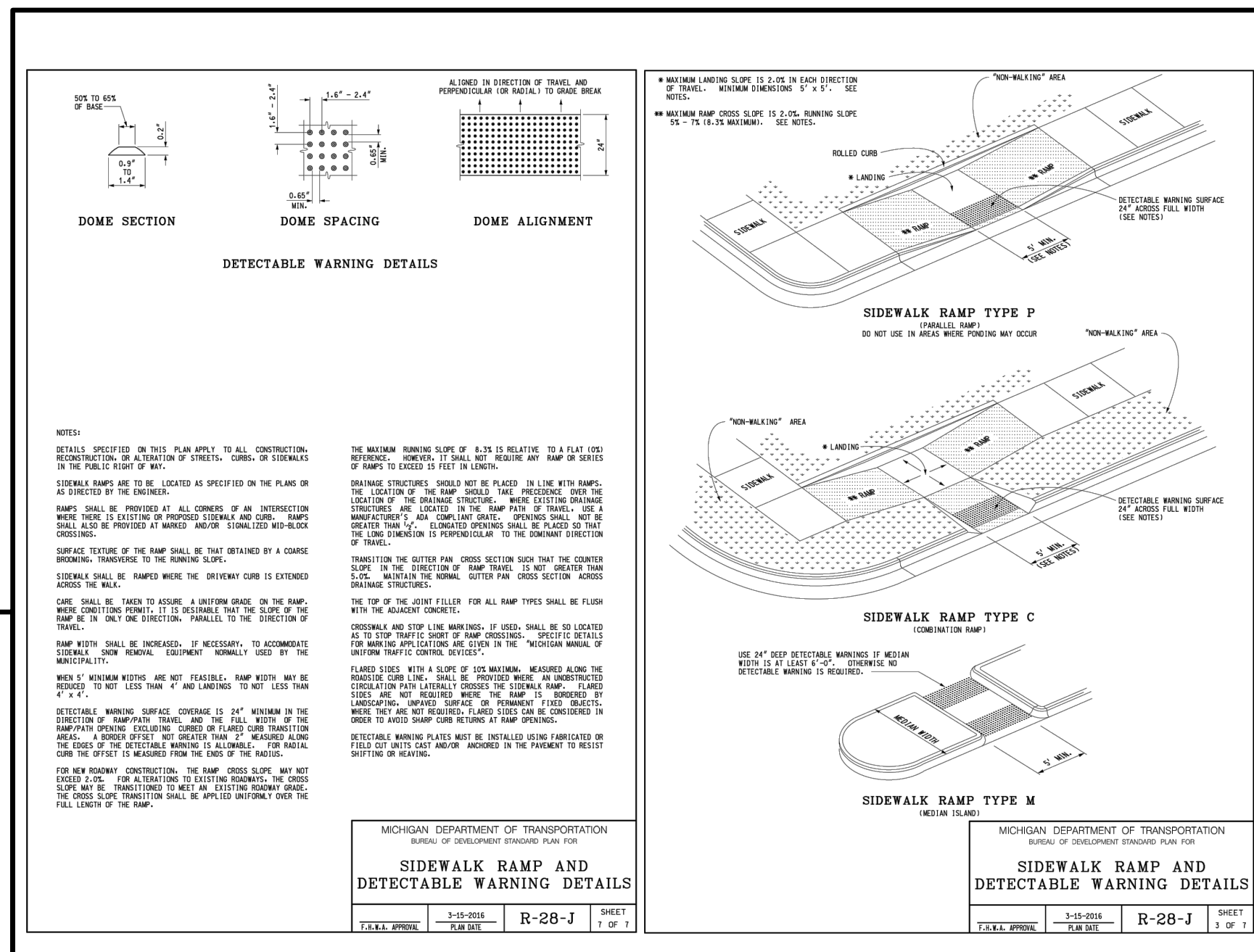
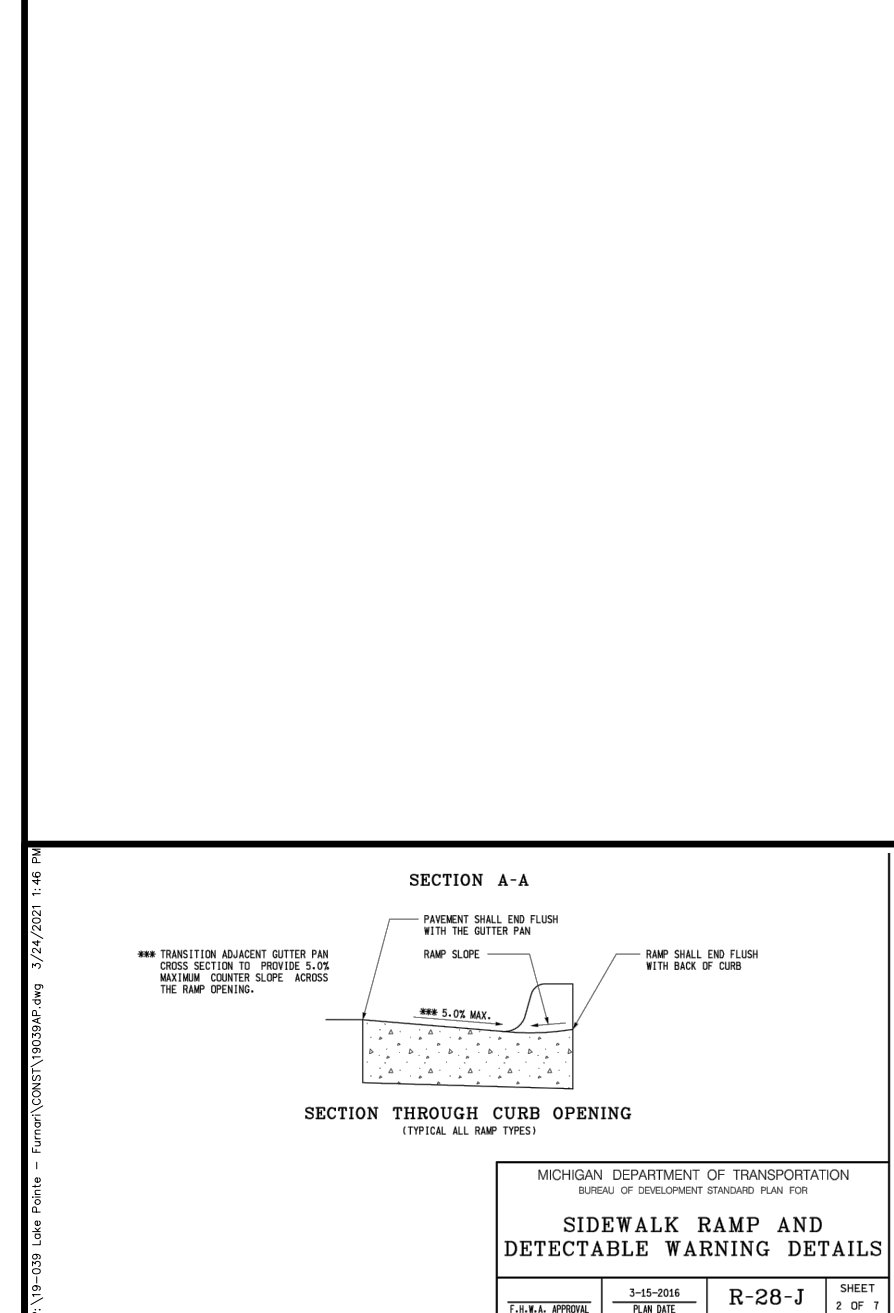
REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADINGS ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
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UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039AP.dwg



APPROACH PLAN

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SHEET 17

SOIL EROSION CONTROL NOTES

- SACK TYPE FILTERS SHALL BE INSTALLED ON ALL CATCH BASINS AND INLETS.
- DEWATERING OF ANY KIND MUST BE FILTERED THROUGH VEGETATION, STONE OR "FILTER BAG".
- IT IS THE DEVELOPER'S RESPONSIBILITY TO INSURE THE PROJECT STREETS AND ADJACENT ROADS ARE CLEAN & SWEEPED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO INSTALLATION OF PUBLIC UTILITIES (I.E. PHONE, GAS, ELECTRIC, CABLE, ETC.)
- THE DEVELOPER IS RESPONSIBLE FOR DUST CONTROL THROUGHOUT ALL PERIODS OF CONSTRUCTION. WATERING TANKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON ANY AREA WHERE DUST BECOMES A PROBLEM.
- PARKING OF VEHICLES, EQUIPMENT, OR STOCKPIILING OF MATERIALS IS STRICTLY PROHIBITED ALONG OR WITHIN THE UNION LAKE ROAD RIGHT OF WAY AREA.
- ALL CULVERT END SECTIONS MUST CONTAIN GROUTED RIP-RAP IN ACCORDANCE WITH ORDINANCE SPECIFICATIONS.
- THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE DEVELOPER.

S.E.S.C. SEQUENCE OF CONSTRUCTION

- INSTALL ALL SOIL EROSION AND TREE PROTECTION FENCING AS PER APPROVED PLANS. CLEAR ONLY WHAT IS NECESSARY TO INSTALL FENCING.
- STRIP AND STOCKPILE TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER. PLACEMENT OF ADDITIONAL CONTROL MEASURES MUST BE INSTALLED ON AND AROUND THE STOCKPILE.
- CONSTRUCT DETENTION BASIN ALONG WITH APPLICABLE STORM SEWER (END-SECTIONS, SHORT STORM SEWER LENGTHS, STANDPIPE OUTLET FILTER), GRADE TO FINAL ELEVATIONS, DISTRIBUTE TOPSOIL, SEED AND STAKE STRAW MULCH BLANKETS ON THE SLOPES OF THE BASIN.
- INSTALL UTILITIES (WATER MAIN, STORM SEWER, SANITARY SEWER) COMPLETE.
- INSTALL, AS PER APPROVED PLANS, THE CATCH BASIN INLET FILTERS. INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING.
- GRADE ROADWAY LIMITS AND INSTALL PAVEMENT COMPLETE.
- BEGIN BUILDING CONSTRUCTION
- INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRIC, TELEPHONE, CABLE) COMPLETE.
- STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
- INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY STORM EVENT THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE THE ENTIRE SITE IS FULLY STABILIZED. UPON FULL STABILIZATION IS COMPLETE, REMOVE THE STAND PIPE AND GRAVEL FILTER. THE DEVELOPER IS RESPONSIBLE FOR ALL SOIL EROSION CONTROL MEASURES.
- VEGETATION MUST BE ACCEPTABLY ESTABLISHED PRIOR TO FINAL RELEASE OF THE CONSTRUCTION DEPOSIT BY THE ROAD COMMISSION FOR UNION LAKE ROAD.

SOIL EROSION CONTROL VIOLATIONS/CITATIONS

- ROUTINE INSPECTIONS WILL BE PERFORMED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSION (O.C.W.R.C.) OR ITS AGENT ONCE A WEEK.
- UPON COMPLETION OF INSPECTION, IF THE SITE IS FOUND NOT TO BE IN COMPLIANCE WITH O.C.W.R.C.'S SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE, THEN THE PERMIT HOLDER/SIGNER WILL BE ISSUED, BY HAND, MAIL OR EMAIL, A "NOTICE OF EROSION CONTROL DEFICIENCY" LETTER, THAT WILL INCLUDE ALL CURRENT AND PERTINENT NON-COMPLIANCE ITEMS. THE SITE AND/OR DEVELOPMENT WILL HAVE A PRE-DETERMINED AMOUNT OF TIME, FROM THE DATE OF THE "NOTICE" TO RECTIFY THESE ITEMS.
- IF ALL OF THE ITEMS HAVE NOT BEEN ADDRESSED AFTER THE ELAPSED TIME SPECIFIED, THE PERMIT HOLDER/SIGNER WILL RECEIVE A "NON-COMPLIANCE" LETTER, WHICH WILL INCLUDE A "NOTICE TO SHOW CAUSE".
- UPON RECEIPT OF THE "NON-COMPLIANCE" LETTER AND THE "NOTICE TO SHOW CAUSE", THE PERMIT HOLDER/SIGNER WILL ATTEND A SHOW CAUSE HEARING AS WELL AS PAY A RE-INSPECTION FEE IN THE AMOUNT OF \$250.00 TO THE O.C.W.R.C. FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW UP. BEFORE MENTIONED ACTIVITIES MUST TAKE PLACE WITHIN 24 HOURS UPON RECEIPT OF THE LETTER. AFTER THE HEARING, THE PROJECT, DEVELOPMENT MAY BE ISSUED A "STOP WORK" ORDER.
- IF A CITATION IS ISSUED TO THE PERMIT HOLDER/SIGNER AFTER THE SHOW CAUSE HEARING, AN ADDITIONAL \$400.00 WILL BE PAID TO THEN O.C.W.R.C. FOR FOLLOW-UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED.

DETENTION BASIN MAINTENANCE SCHEDULE :

- THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF THE SEDIMENT STRUCTURES. MAINTENANCE SHOULD BE PERFORMED FOLLOWING ANY STORM AND SHOULD INCLUDE:
- CHECKING THE DEPTH OF SEDIMENT DEPOSIT TO ENSURE THE CAPACITY OF THE SEDIMENT STRUCTURES IS ADEQUATE FOR STORM WATER AND SEDIMENT DEPOSITION, AND FOR THE REMOVING OF SEDIMENT.
 - CHECKING THE BASIN FOR PIPING, SEEPAGE, OR OTHER MECHANICAL DAMAGE.
 - CHECKING FOR THE PRESENCE OF ANY SOIL CAKING, WHICH WOULD PREVENT PROPER DRAINAGE FROM THE BASIN.
 - ANY PROBLEM DISCOVERED DURING THE MAINTENANCE CHECKS SHOULD BE ADDRESSED IMMEDIATELY.
 - SEDIMENT REMOVED DURING CLEANING SHOULD BE PLACED AT AN UPLAND AREA AND STABILIZED SO THAT IT DOES NOT RE-ENTER THE DRAINAGE COURSE.

GROUND WATER NOTES

- IF THE STATIC GROUNDWATER LEVEL IS HIGHER THAN THE ELEVATION AT WHICH PROPOSED CONSTRUCTION WORK WILL TAKE PLACE, WHETHER DETERMINED BY INITIAL SOIL BORINGS OR DURING CONSTRUCTION, SO THAT IT WILL BE NECESSARY TO DEWATER AN AREA TO CONTINUE CONSTRUCTION, THEN THE WHITE LAKE TOWNSHIP WILL REQUIRE A WRITTEN DEWATERING PROCEDURE PROVIDED BY THE APPLICANT'S ENGINEER, PRIOR TO COMMENCEMENT OF THE DEWATERING OPERATION.
- IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR MUST CONTACT WHITE LAKE D.P.S IN WRITING SHOWING NEED TO DEWATER PRIOR TO ANY FURTHER CONSTRUCTION.
- IF PROCEDURES ARE NOT SUBMITTED OR, ONCE APPROVED, ARE NOT ADHERED TO, THEN WHITE LAKE TOWNSHIP MAY TAKE ACTION TO SUSPEND DEWATERING ACTIVITIES AT THE PROJECT TO REQUIRE THE ADHERENCE TO PROCEDURES.

INSPECTION & MAINTENANCE SCHEDULE FOR SOIL EROSION CONTROL

GRADE STABILIZATION STRUCTURES SUCH AS: DROP CONTROL STRUCTURES; SIDE DRAINS (ENCLOSED); DROP INLET SPILLWAYS; DROP PIPES; STRAIGHT PIPES; TOEWALLS; DROP BOXES; CHUTES OR FLUMES (SOD, ROCK CONCRETE); EARTH EMBANKMENT STRUCTURES; DOWNDRAINS; SPILLWAYS SHALL BE MAINTAINED AS FOLLOWS:

BECAUSE GRADE STABILIZATION STRUCTURES ARE SUBJECT TO HIGH FLOW CONDITIONS, PERIODIC INSPECTIONS SHOULD BE PERFORMED TO ENSURE THAT EROSION IS NOT OCCURRING, AND THAT VEGETATION IS ADEQUATELY ESTABLISHED. THESE STRUCTURES SHOULD ALSO BE INSPECTED AFTER STORM EVENTS WHICH EXCEED THE DESIGN STORM.

THE DETENTION BASIN SHOULD BE INVESTIGATED TO ENSURE THAT THE CONCENTRATED FLOWS ARE NOT CAUSING EROSION INTO THE BOTTOM OF THE BASIN AND BLOCKING INFILTRATION. CHECK THE EMERGENCY BYPASS/OVERFLOW FOR EROSION. CHECK THE STRUCTURES ITSELF FOR CRACKED CONCRETE. UNEVEN OR EXCESSIVE SETTLING, PIPING AND PROPER DRAIN FUNCTIONING. REPAIR OR REPLACE FAILING STRUCTURES IMMEDIATELY. ADDRESS VEGETATION AND EROSION PROBLEMS AS SOON AS WEATHER PERMITS. OPEN STRUCTURES SHOULD BE SIGNED OR MARKED TO ALERT PEOPLE IN THE VICINITY ABOUT POTENTIAL DANGERS.

RIP-RAP

INSPECTIONS SHOULD BE MADE OF ALL RIP-RAPPED SITES IMMEDIATELY AFTER THE FIRST RAINFALL FOLLOWING INSTALLATION. THIS IS PARTICULARLY IMPORTANT IN AREAS WHERE RIP-RAP THAT IS DISPLACED DURING THE STORM WOULD IMPACT CULTIVETS. THEREFORE, RIP-RAP SITES SHOULD BE CHECKED FOLLOWING STORMS, ESPECIALLY THOSE WHICH ARE NEAR OR EXCEED STORM FREQUENCY USED IN THE DESIGN. DISPLACED RIP-RAP SHOULD BE REMOVED FROM ITS DOWNSTREAM LOCATION AND NEW RIP-RAP PLACED ACCORDING TO THE ENGINEERED SPECIFICATIONS.

STORMWATER CONVEYANCE CHANNEL

AT MINIMUM, CHECK ALL CONSTRUCTED CHANNELS AFTER EACH STORM WHICH MEETS OR EXCEEDS THE DESIGN STORM. ON RIP-RAP LINED WATERWAYS, CHECK FOR SCOURING BELOW THE RIP-RAP LAYER, AND BE SURE THE STONES HAVE NOT BEEN DISPLACED BY THE FLOW. PARTICULAR ATTENTION SHOULD BE PAID TO THE OUTLET OF THE CHANNEL. IF EROSION IS OCCURRING, APPROPRIATE ENERGY DISSIPATION MEASURES SHOULD BE TAKEN. SEDIMENT SHOULD BE REMOVED FROM RIP-RAP LINED CHANNELS IF IT REDUCES THE CAPACITY OF THE CHANNEL.

SPOIL PILES

WHEN VEGETATION STABILIZATION IS PROMPTLY AND EFFECTIVELY APPLIED, VERY LITTLE MAINTENANCE IS REQUIRED. THE GUIDELINES BELOW SHOULD BE FOLLOWED ON ALL SITES: (1) PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE EXCESSIVE EROSION HASN'T OCCURRED. IF RUN OFF OR WIND EROSION HAS OCCURRED, REDUCE THE SIDE OF SLOPES OF THE SPOIL PILE, OR STABILIZE THE SPOIL PILE WITH PIECES OF SOD LAID PERPENDICULAR TO THE SLOPE, AND STAKED. (2) WHEN FILTER FENCING IS USED AROUND A SPOIL PILE, PERIODIC CHECKS SHOULD BE MADE TO ENSURE THAT PIPING HAS NOT OCCURRED UNDER FENCING, AND TO ENSURE THE FENCE HAS NOT COLLAPSED DUE TO SOIL SLIPPING OR ACCESS BY CONSTRUCTION EQUIPMENT. REPAIR ANY DAMAGED FENCING IMMEDIATELY. (3) BERMS AT THE BASE OF THE SPOIL PILE WHICH BECOME DAMAGED SHOULD BE REPLACED.

CATCH BASIN FILTERS

EFFECTIVE FILTERS WILL COLLECT SEDIMENT, PARTICULARLY WHEN THE SOIL IS SANDY. THESE FILTERS MUST BE CLEANED PERIODICALLY, SO THEY DON'T BECOME CLOGGED AND CAUSE FLOODING CONDITIONS, PIPING, OR OVERTOPPING OF THE CONTROL STRUCTURES. MAINTENANCE OF THESE ITEMS REQUIRES INSPECTION WEEKLY OR AFTER EACH RAIN EVENT. ALSO, THESE ITEMS ARE REUSABLE IF MAINTAINED CORRECTLY. THEY CAN BE REMOVED, EMPTIED, CLEANED AND REPLACED WITHOUT PURCHASING NEW ONES.

BUFFER/FILTER STRIPS

(25' ENVIRONMENTAL SETBACKS)
PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE THAT CONCENTRATED FLOWS HAVE NOT DEVELOPED, AND TO MAKE SURE THE VEGETATIVE COVER IS MAINTAINING ITS EFFECTIVENESS. IF THE INTEGRITY OF THE BUFFER/FILTER STRIP IS JEOPARDIZED BY UPLAND EROSION, OR IF CONCENTRATED FLOWS ARE CREATING RILLS OR GULLIES UP-SLOPE OF THE STRIP, ADDITIONAL BMP'S MAY NEED TO BE INSTALLED. IF THE BUFFER STRIP IS BEING JEOPARDIZED BY STREAM BANK EROSION, THEN THE CAUSE OF THE BANK EROSION NEEDS TO BE INVESTIGATED AND ACTIONS TAKEN TO ADDRESS THE CAUSES. DAMAGED STRIPS SHOULD BE REPAIRED AS SOON AS POSSIBLE. STRIPS DAMAGED DUE TO CONSTRUCTION UP-SLOPE OF THE BUFFER/FILTER SHOULD BE REPLANTED, AS NECESSARY, AFTER THE CAUSE OF THE DAMAGE IS ASSESSED AND ANY OTHER BMP'S ARE NEEDED ARE IMPLEMENTED.

SILT FENCE

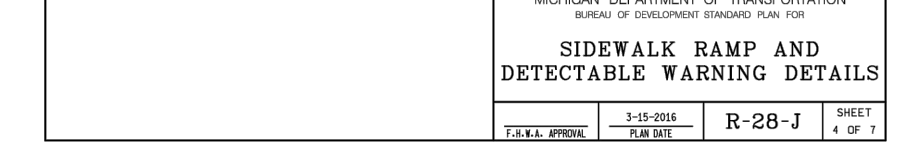
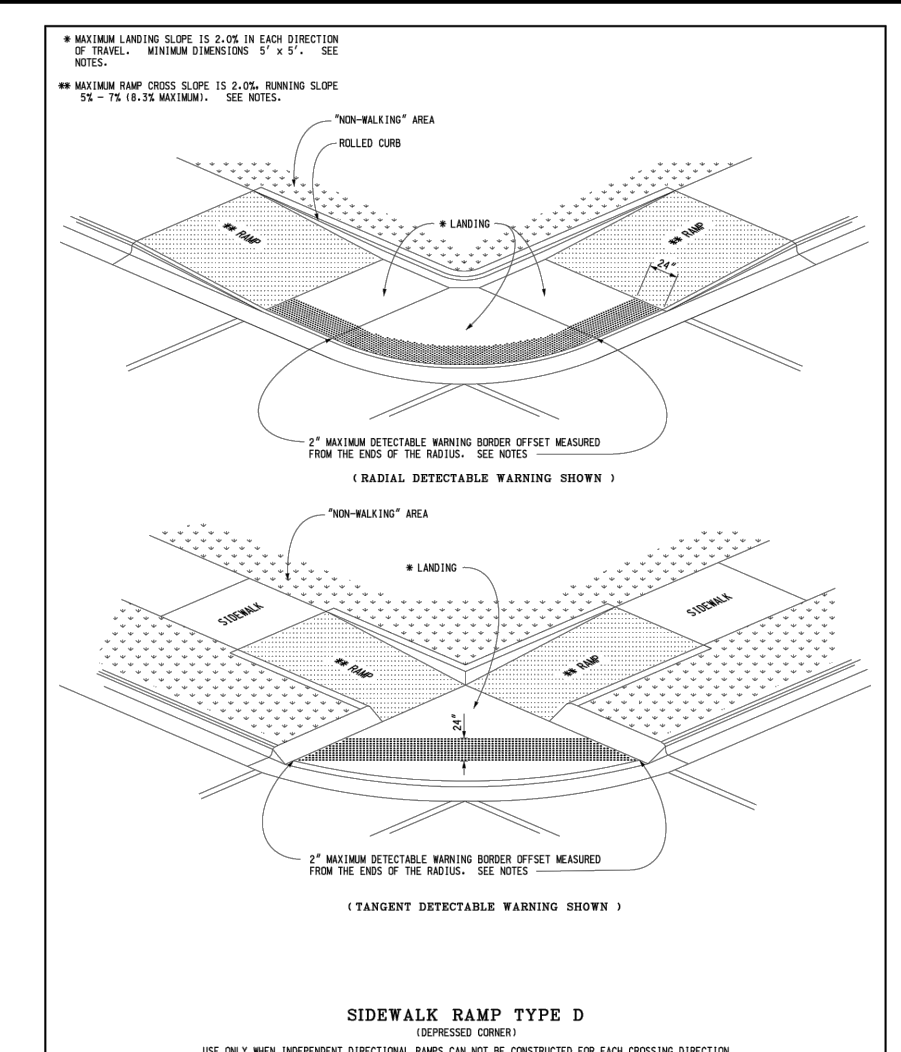
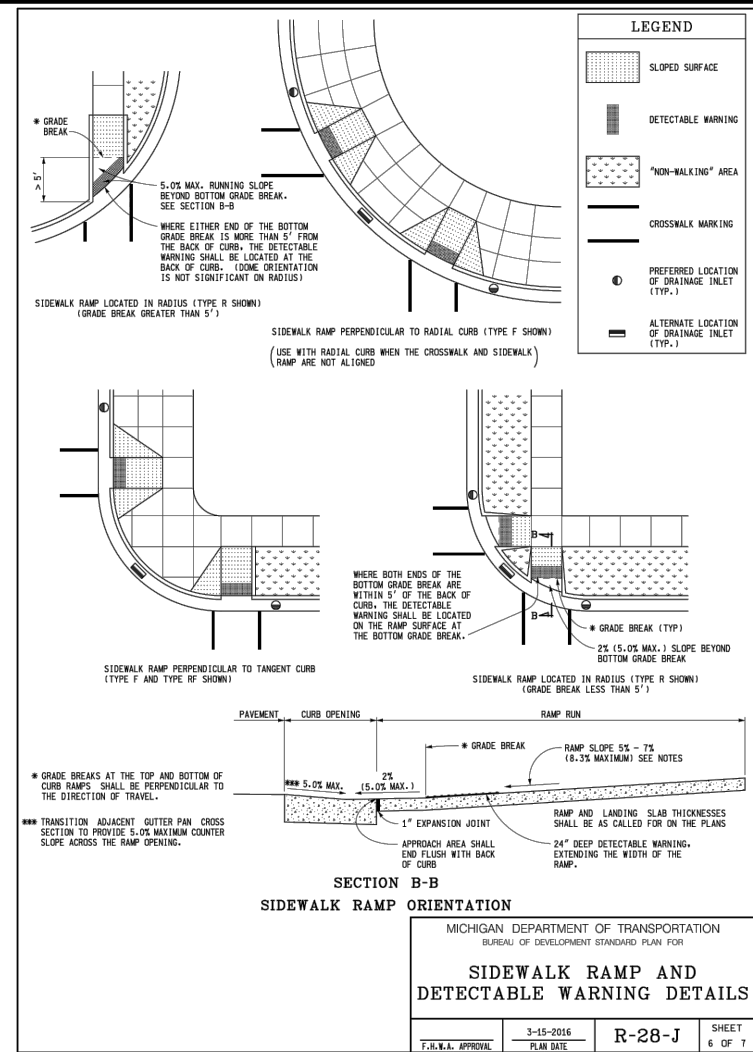
SILT FENCES SHOULD BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND SEVERAL TIMES DURING PROLONGED RAINFALLS. IF THE FENCE IS SAGGING OR THE SOIL HAS REACHED ONE HALF THE HEIGHT OF THE FABRIC, THE SOIL BEHIND THE FABRIC MUST BE REMOVED AND DISPOSED OF IN A STABLE UPLAND SITE. THE SOIL CAN BE ADDED TO THE SPOIL PILE. IF THE FABRIC IS BEING UNDERCUT (I.E. IF THE WATER IS SEEPING UNDER THE FENCE), THE FENCE SHOULD BE REMOVED AND REINSTALLED FOLLOWING THE GIVEN PROCEDURES. FABRIC WHICH DECOMPOSES OR OTHERWISE BECOMES INEFFECTIVE SHOULD BE REMOVED AND REPLACED WITH NEW FILTER FABRIC IMMEDIATELY. FILTER FENCES SHOULD BE REMOVED ONCE VEGETATION IS WELL ESTABLISHED AND THE UP-SLOPE AREA IS FULLY STABILIZED OR UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

SEEDING, SODDING & MULCHING

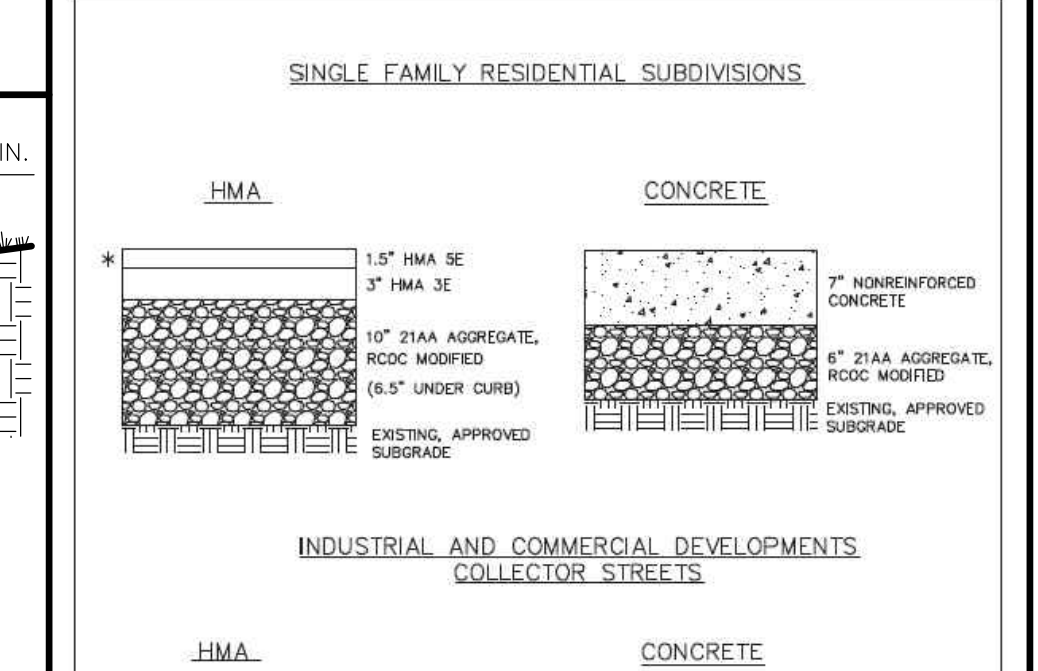
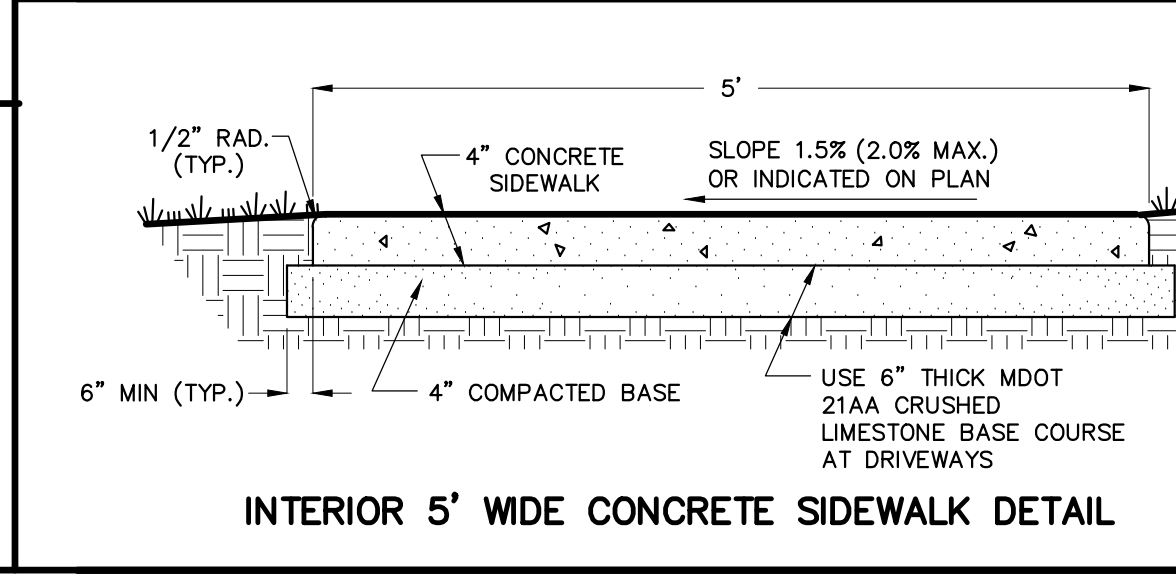
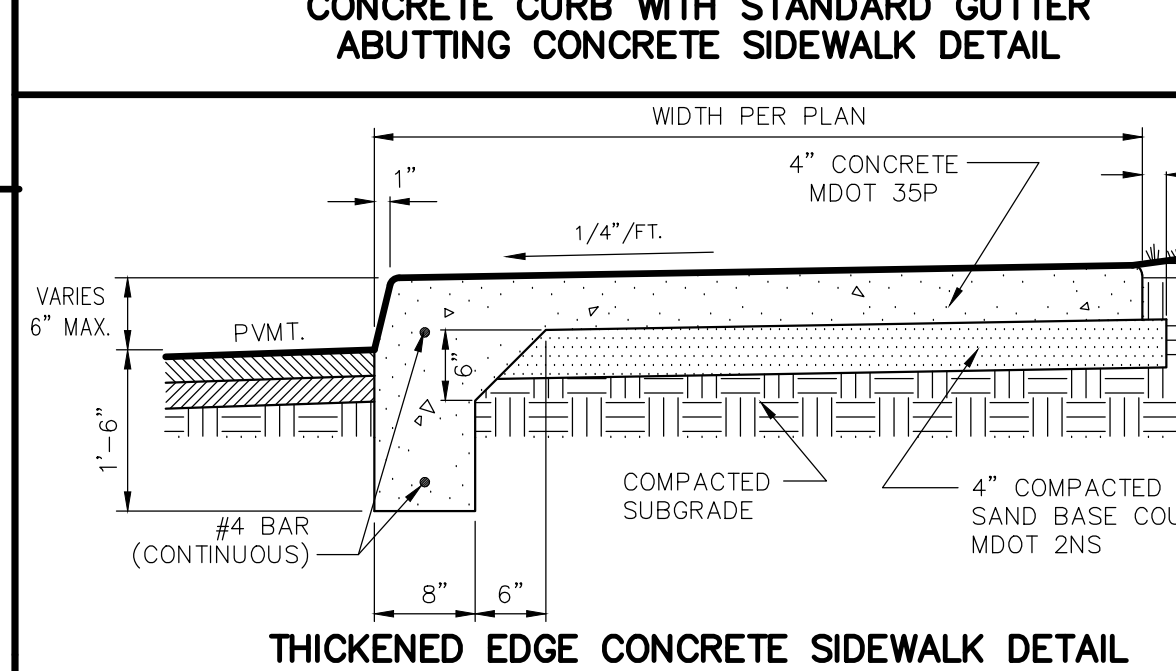
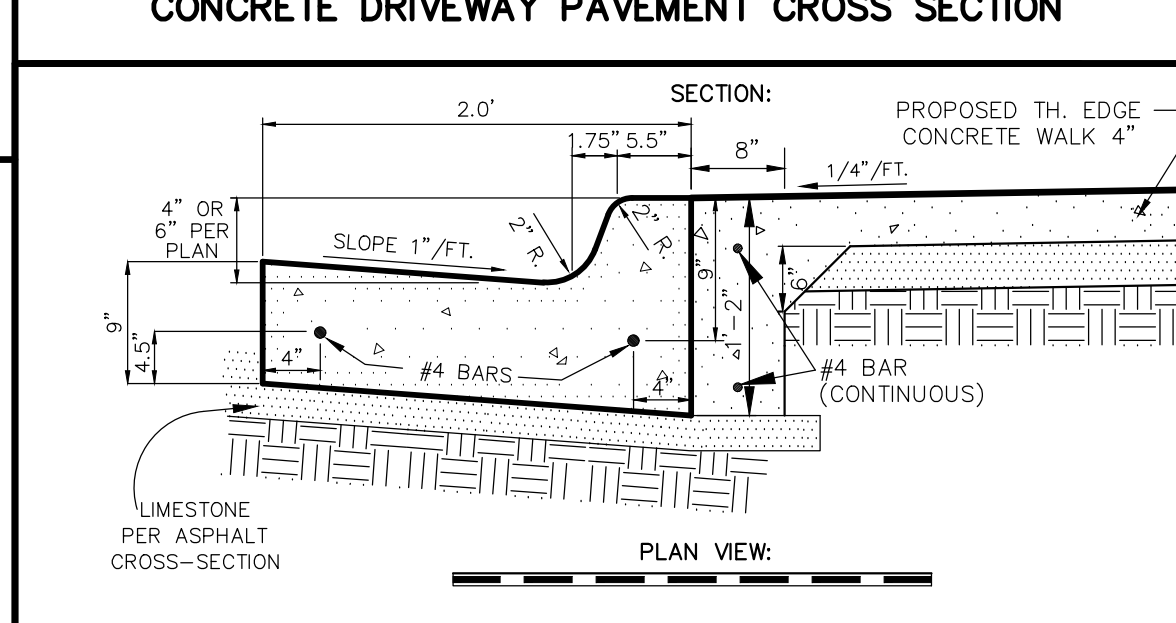
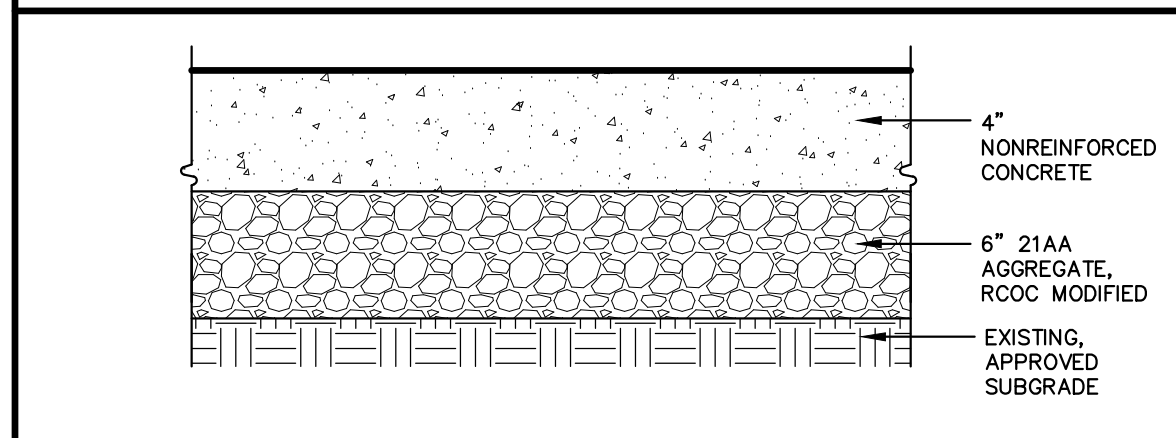
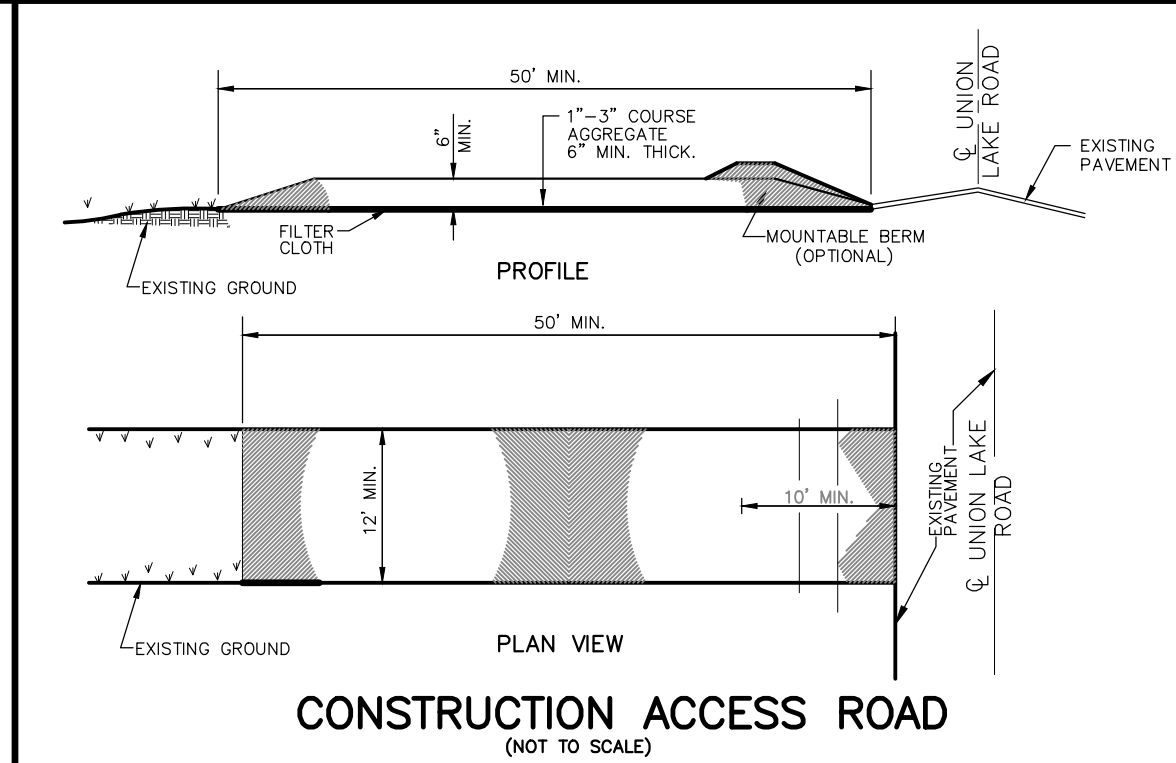
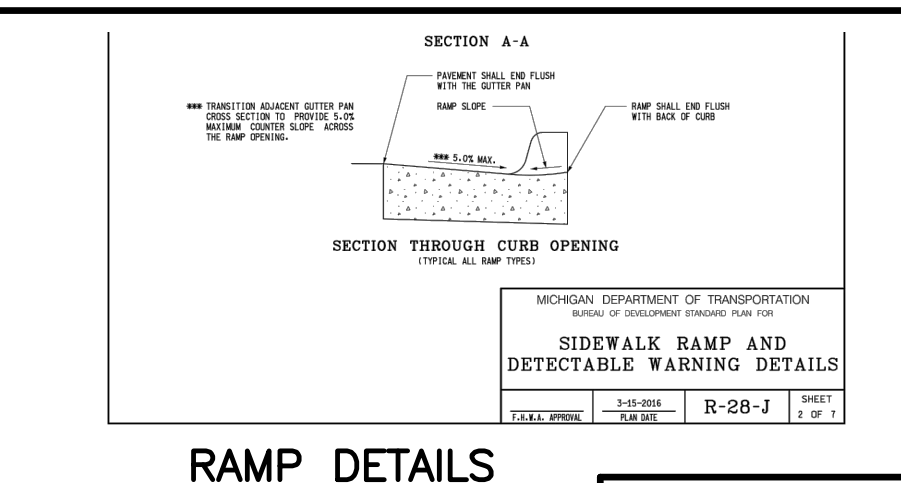
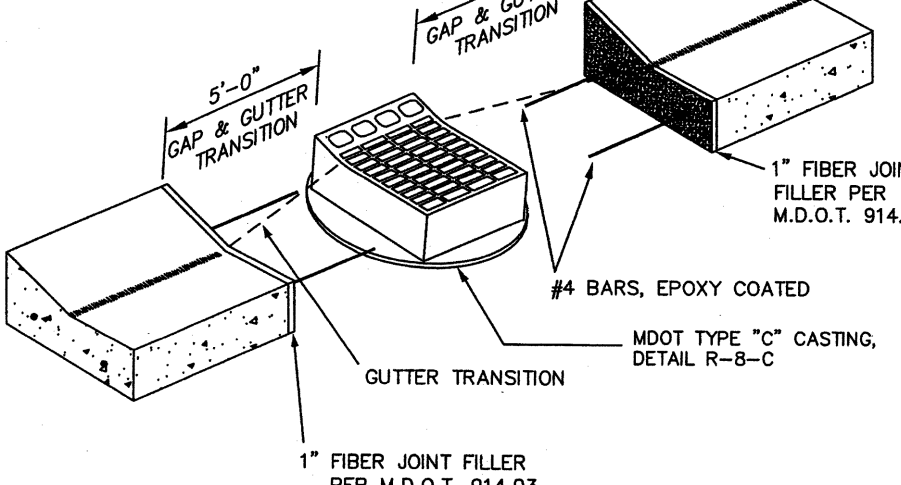
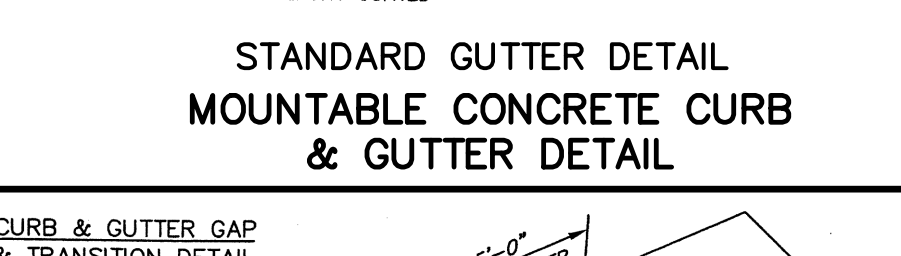
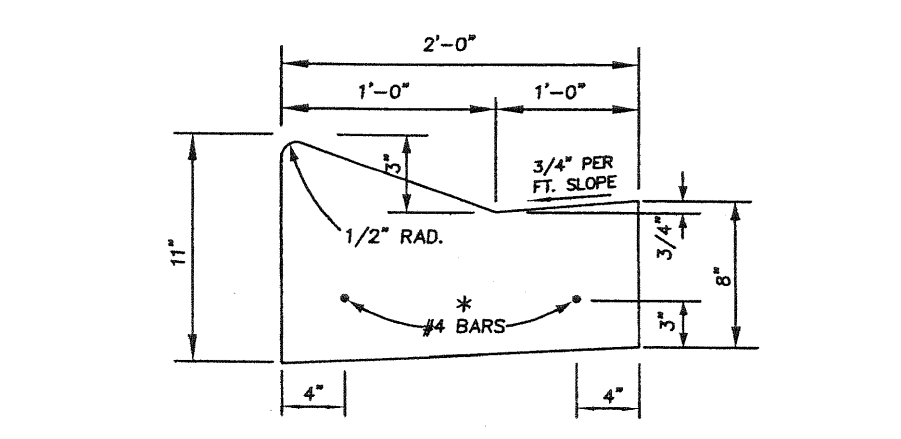
SEEDING, SODDED OR MULCHED AREAS SHOULD BE CHECKED FOLLOWING EACH RAIN TO ENSURE THE MATERIAL IS STAYING IN PLACE. ADDITIONAL TACKING MATERIALS OR NETTING MAY BE NEEDED TO BE APPLIED TO HOLD THE AFOREMENTIONED MATERIALS IN PLACE. MAINTENANCE PROCEDURES SHOULD ALSO BE FOLLOWED FOR THE BMP'S WHICH WERE IMPLEMENTED TO KEEP ERODED SOIL OR CONCENTRATED RUNOFF AWAY FROM THESE TARGET AREAS.

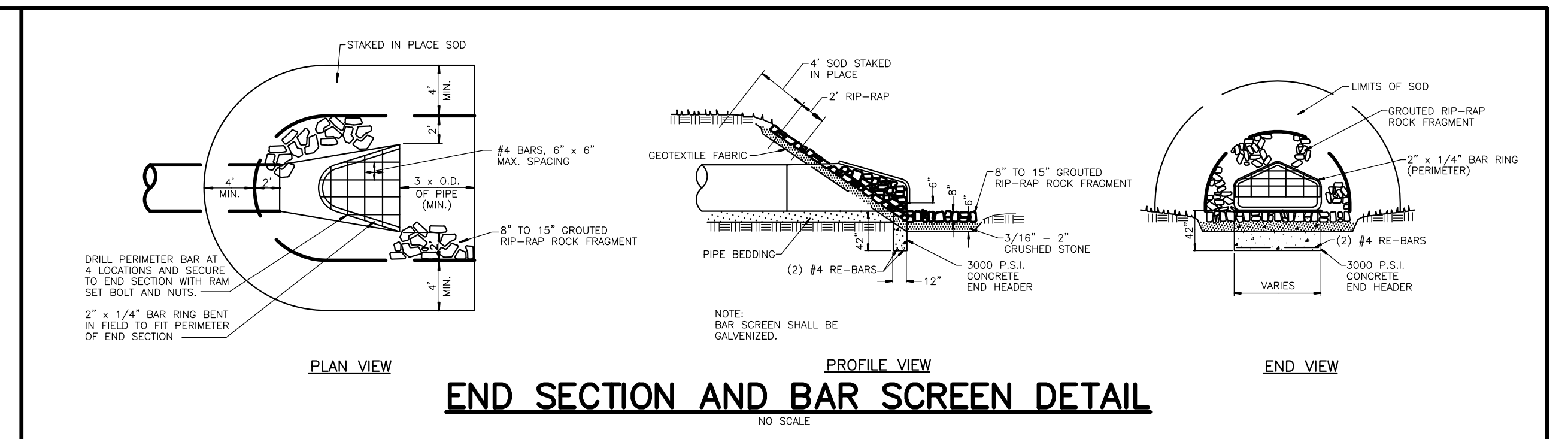
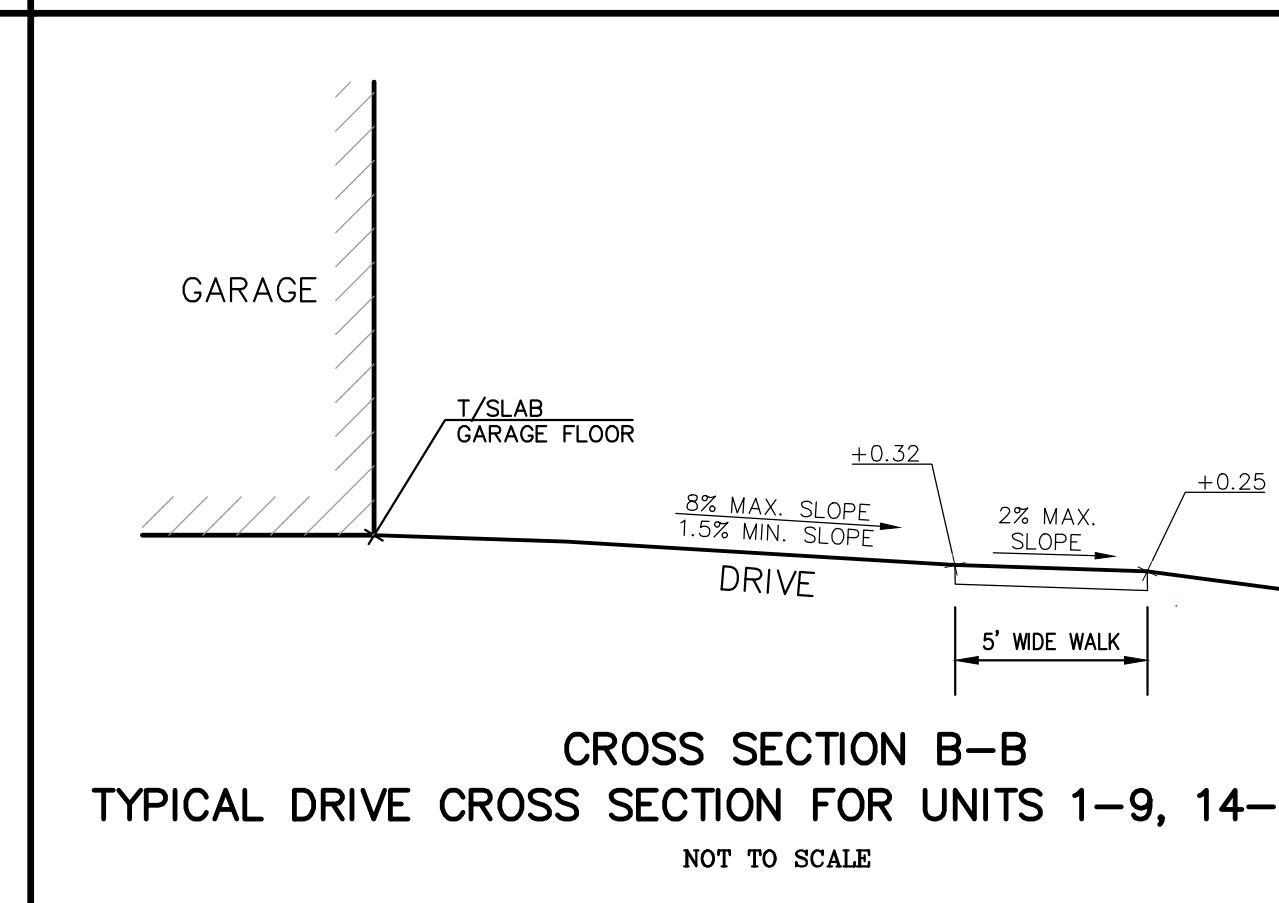
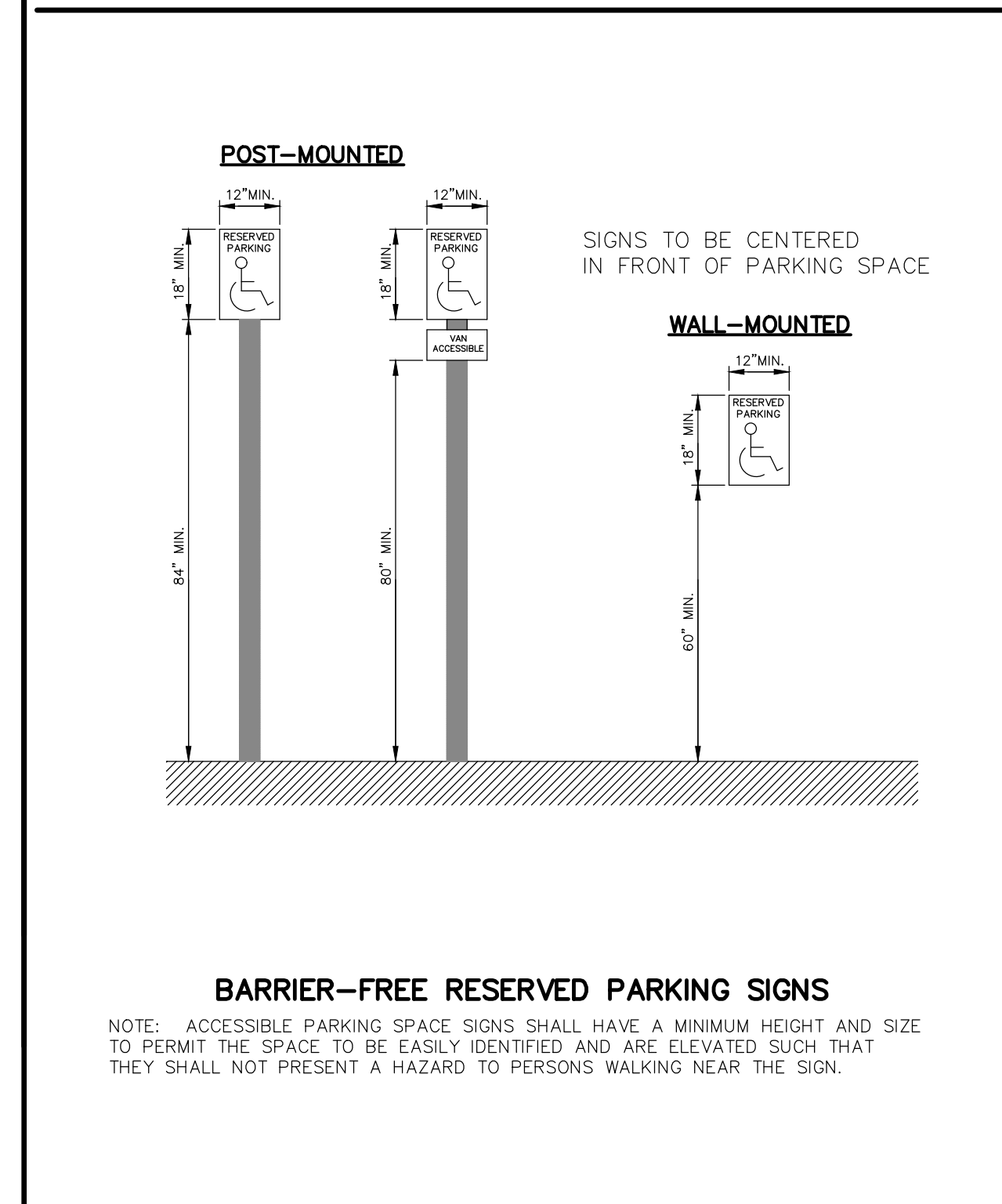
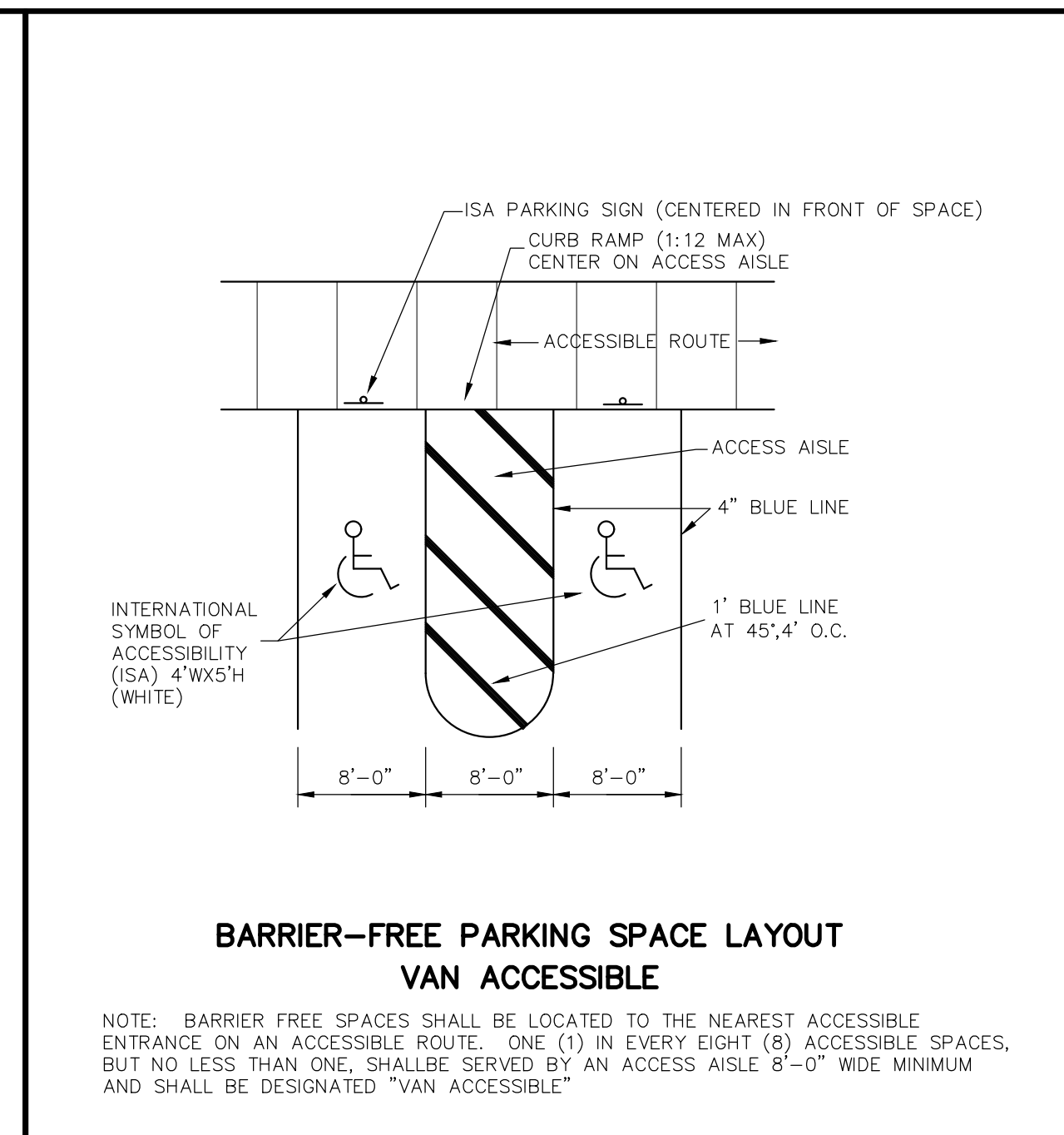
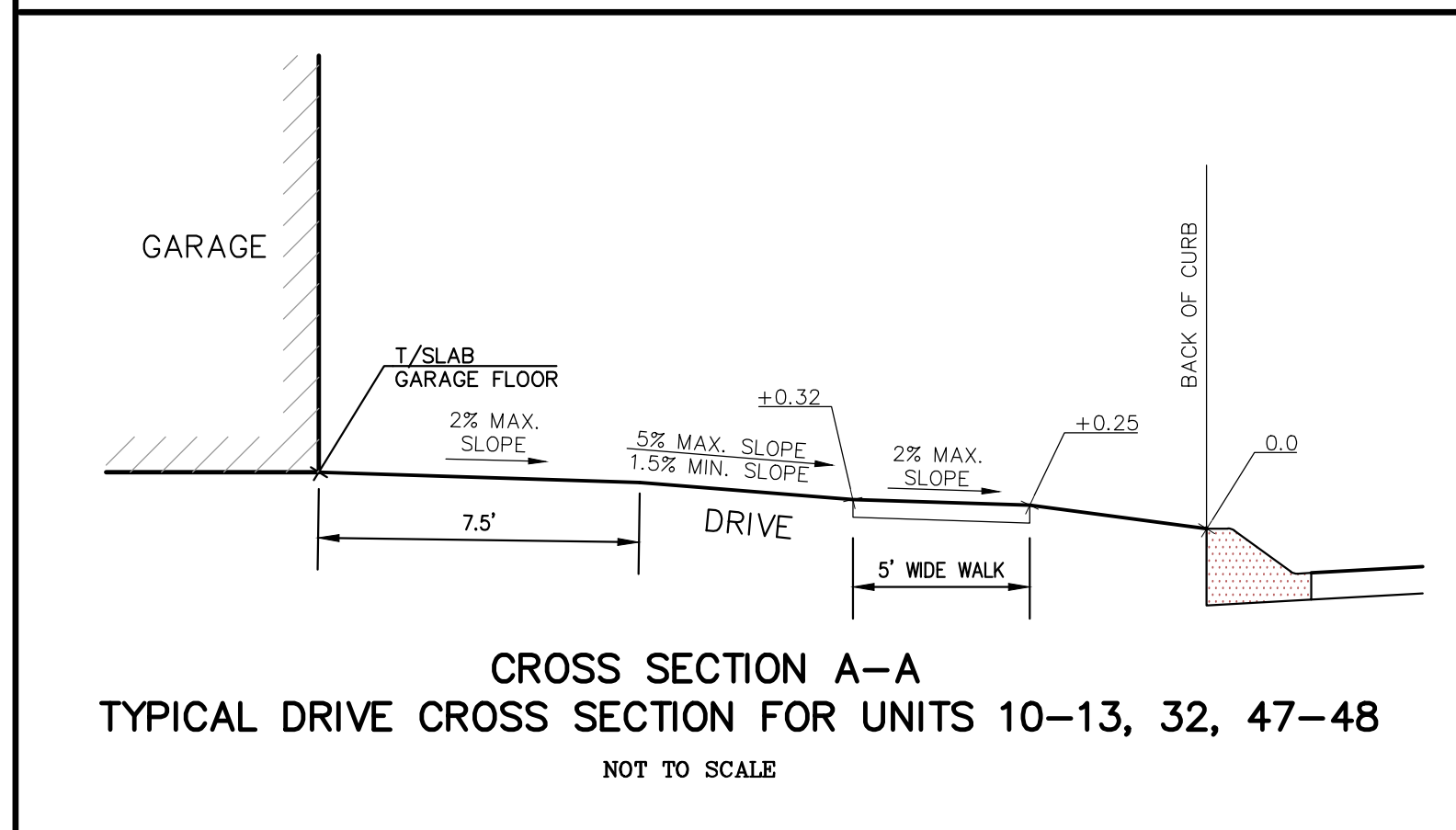
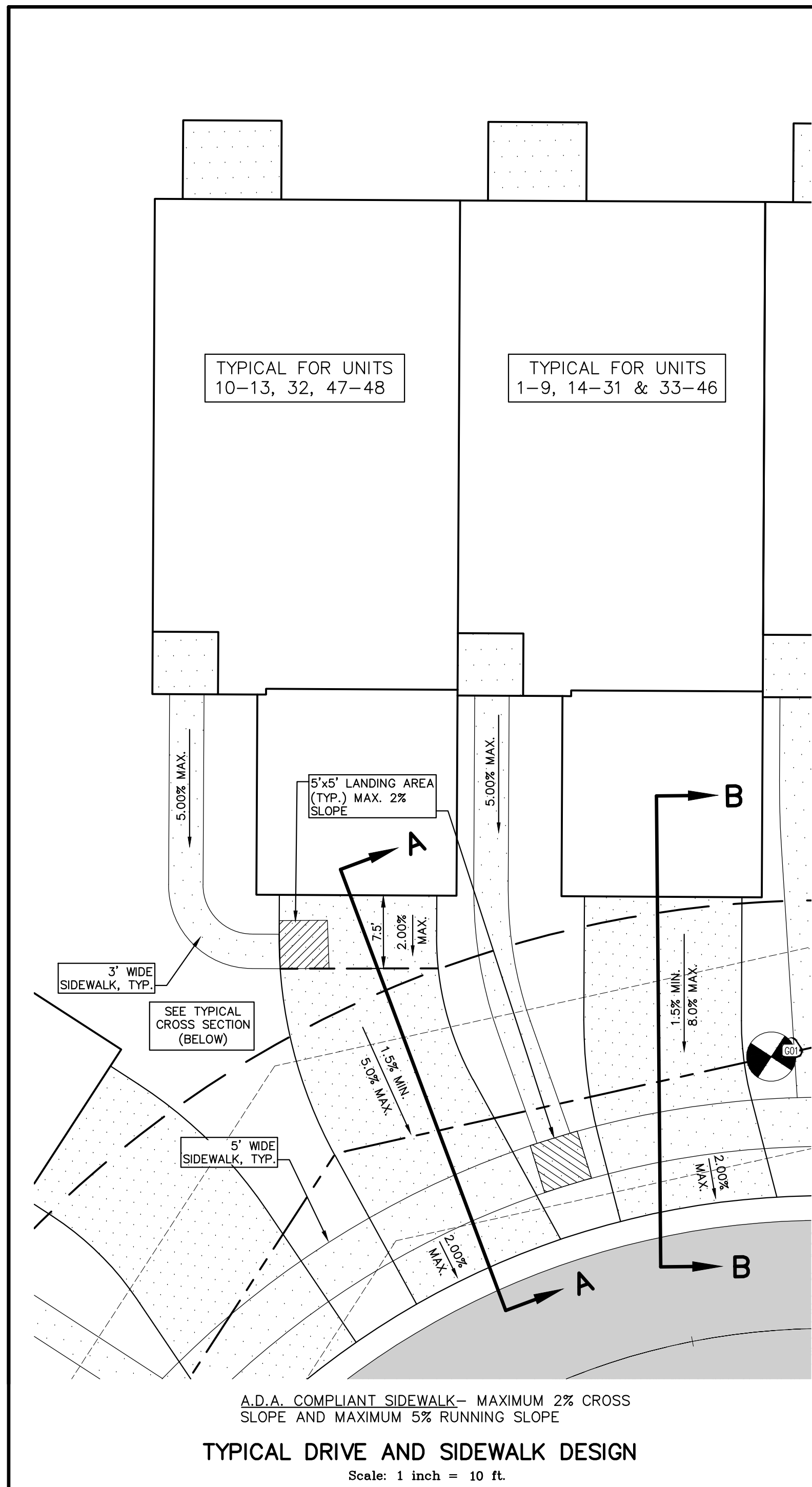
ACCESS ROAD (UNION LAKE ROAD)

PROPER MAINTENANCE INCLUDE ADDING ADDITIONAL LAYERS OF STONE WHEN THE ORIGINAL STONE BECOMES COVERED WITH MUD. AFTER EACH STORM EVENT, INSPECT THE ROAD FOR EROSION AND MAKE ANY NECESSARY REPAIRS. IT IS ALSO IMPORTANT TO CHECK AND MAINTAIN ANY BMP'S WHICH ARE USED IN CONJUNCTION WITH THIS BMP, ESPECIALLY THOSE FOR DRAINAGE. ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC RIGHT-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY SWEEPING.



NOTE: DETECTABLE WARNING PLATES MUST BE CONCRETE-EMBEDDED DETECTABLE WARNING PLATES. STAMPED CONCRETE WILL NOT BE ACCEPTABLE.





LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

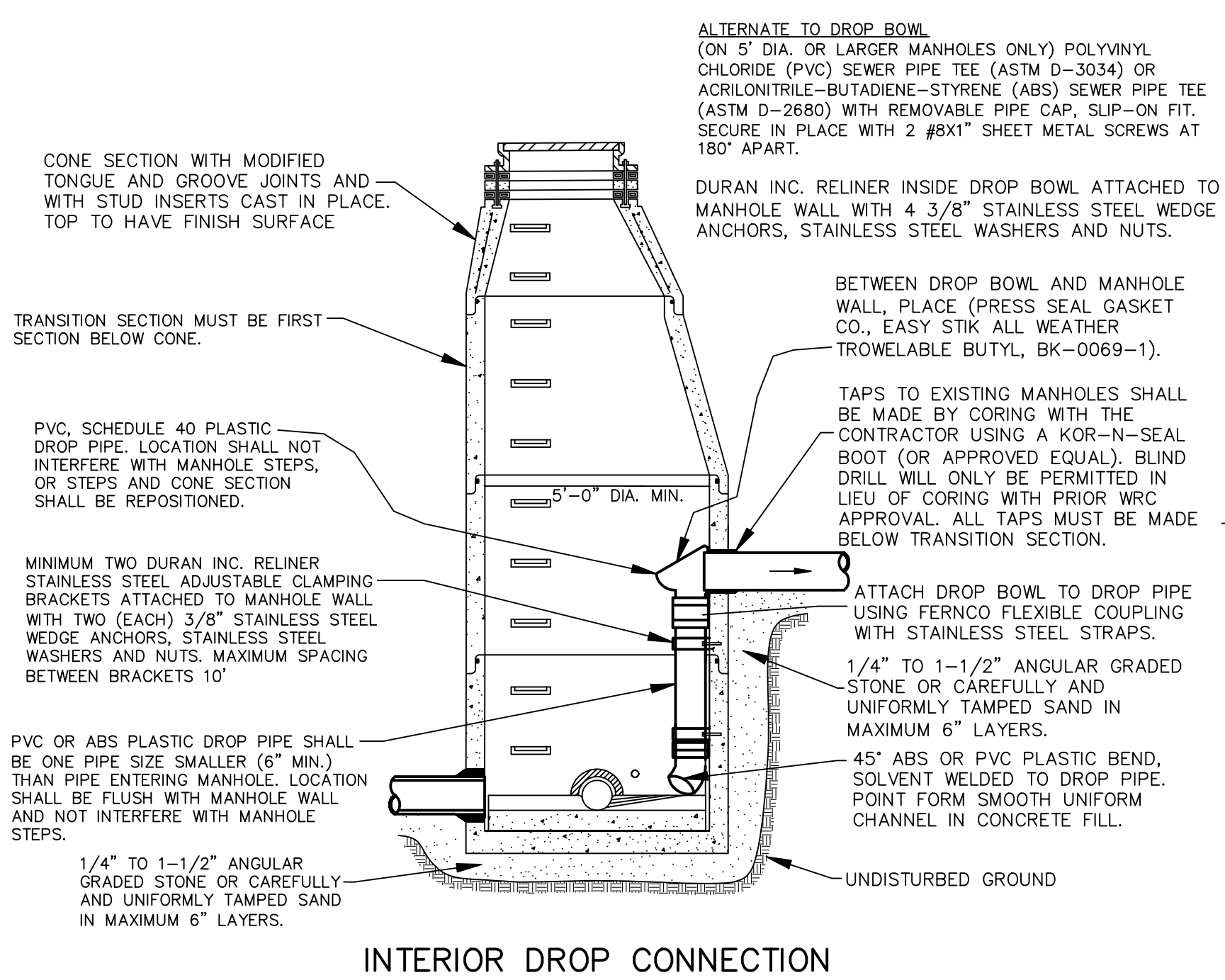
DATE: 04-08-2020 DESIGNED BY: A.A. JOD NUMBER: 19-030
CHECKED BY: J.E. DRAWING FILE: 19030ND.dwg

NOTES AND DETAILS

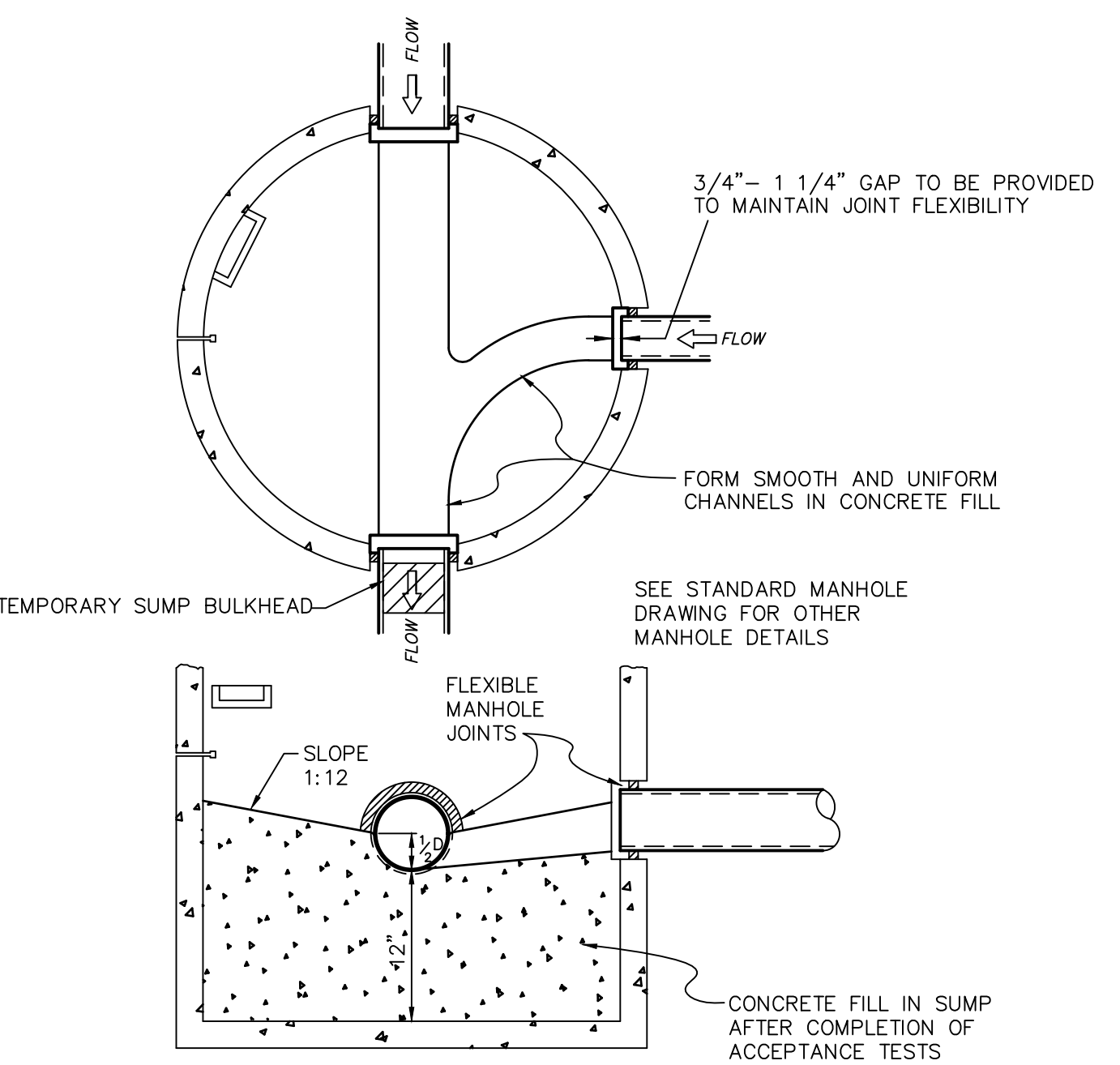
SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET
ND2

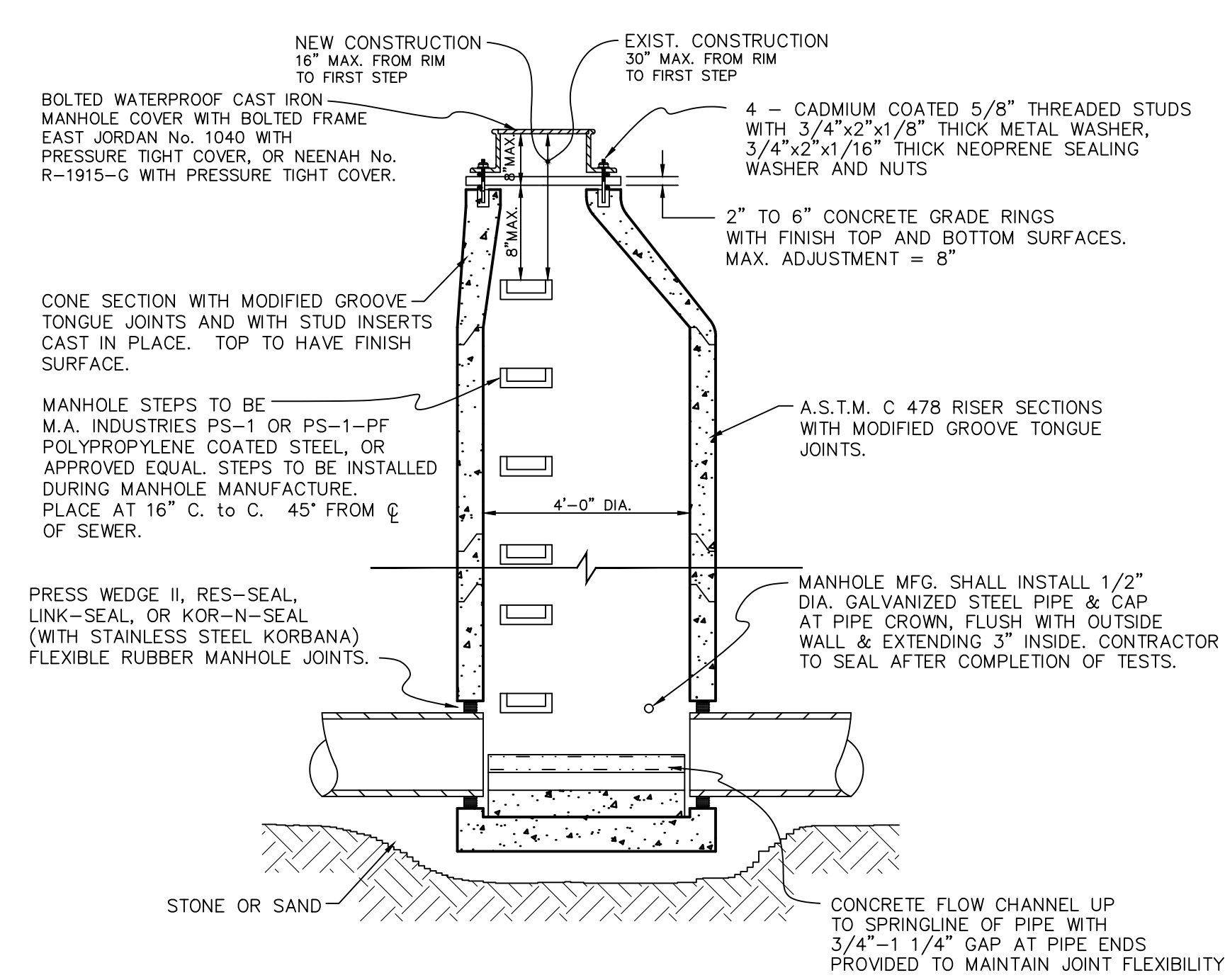
- All construction shall conform to the current standards and specifications of the local unit of government and the Oakland County Water Resources Commissioner (OCWRC). All sanitary sewer construction shall have full time inspection supervised by a professional engineer provided by or caused to be provided 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."



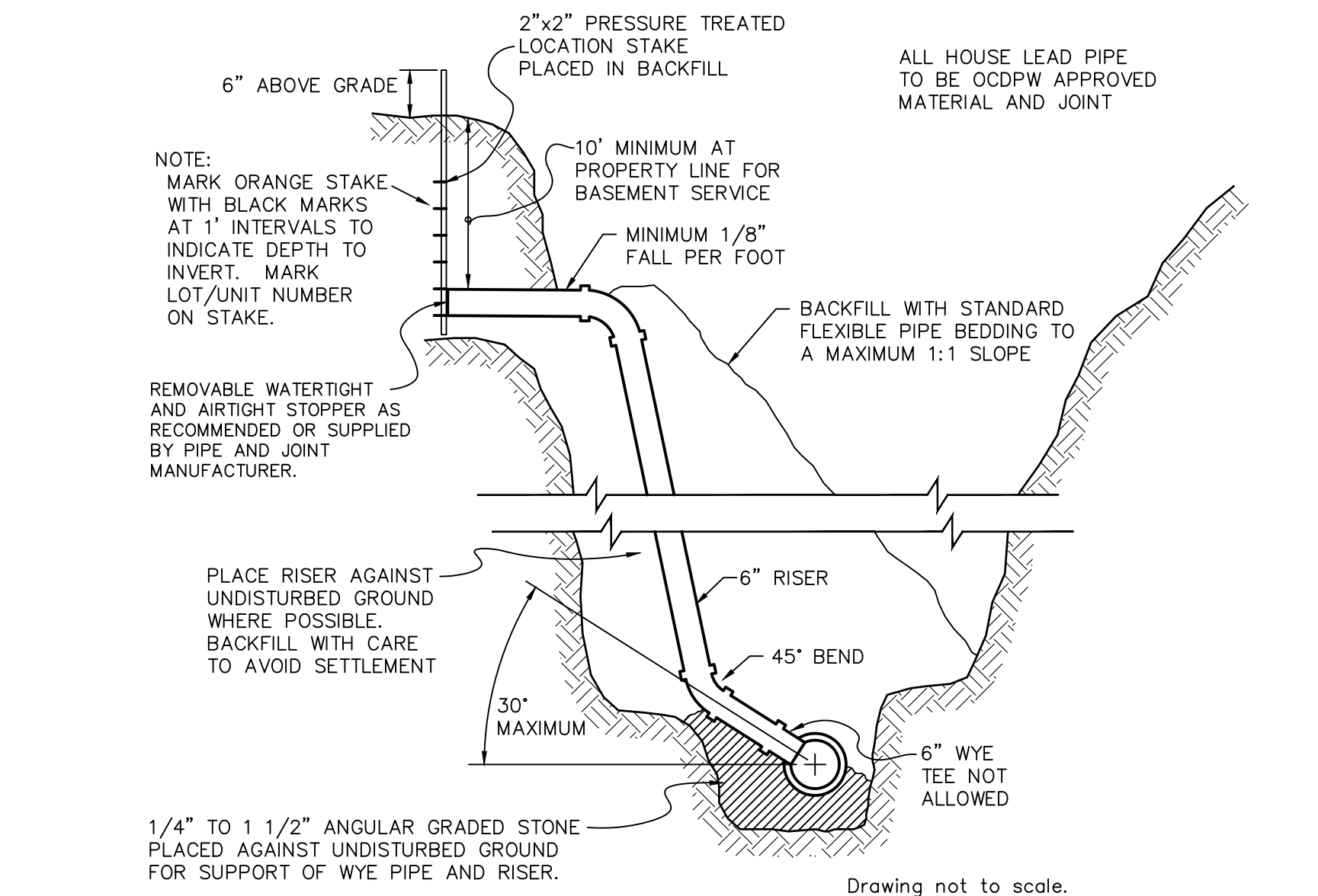
INTERIOR DROP CONNECTION



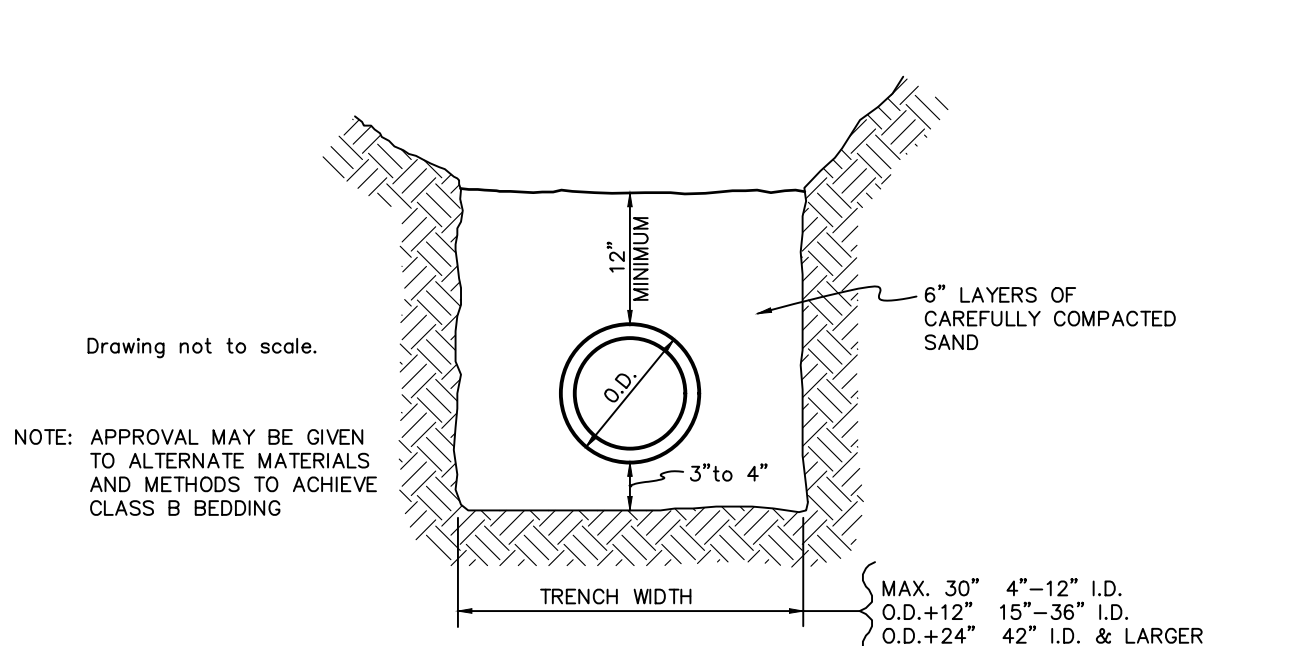
SUMP MANHOLE FOR TESTING, CLEANING, AND DEWATERING



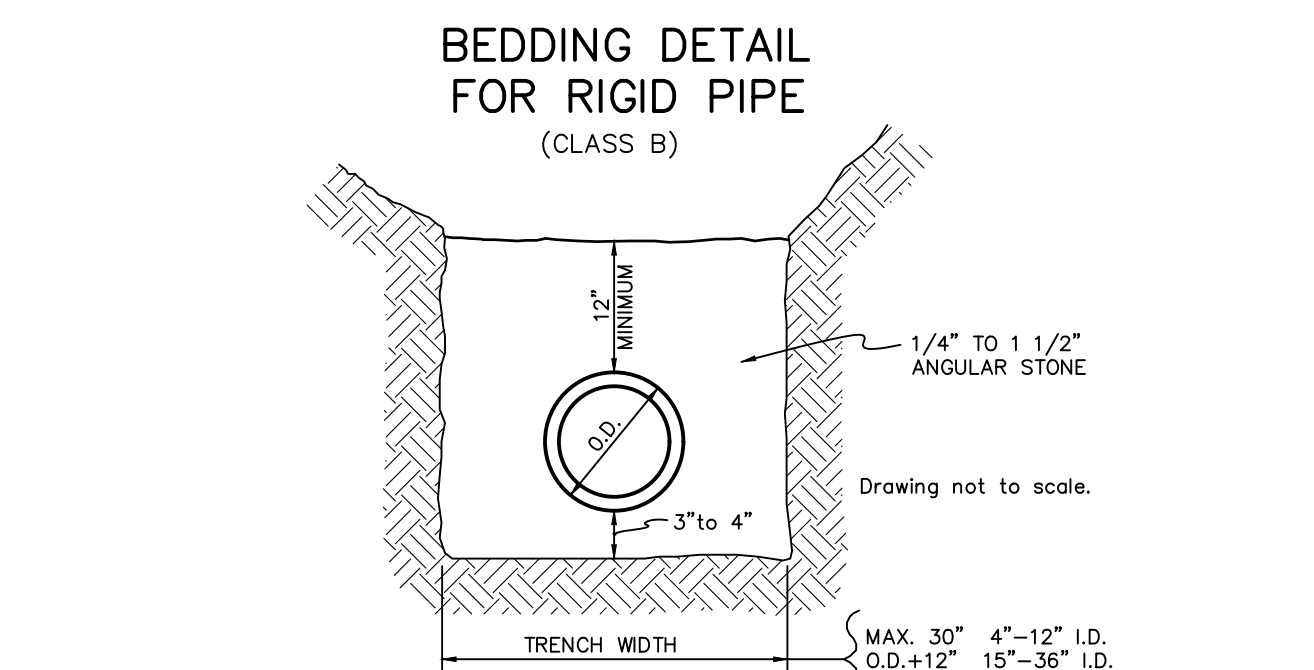
STANDARD MANHOLE ON 8" THROUGH 24" DIAMETER SEWERS



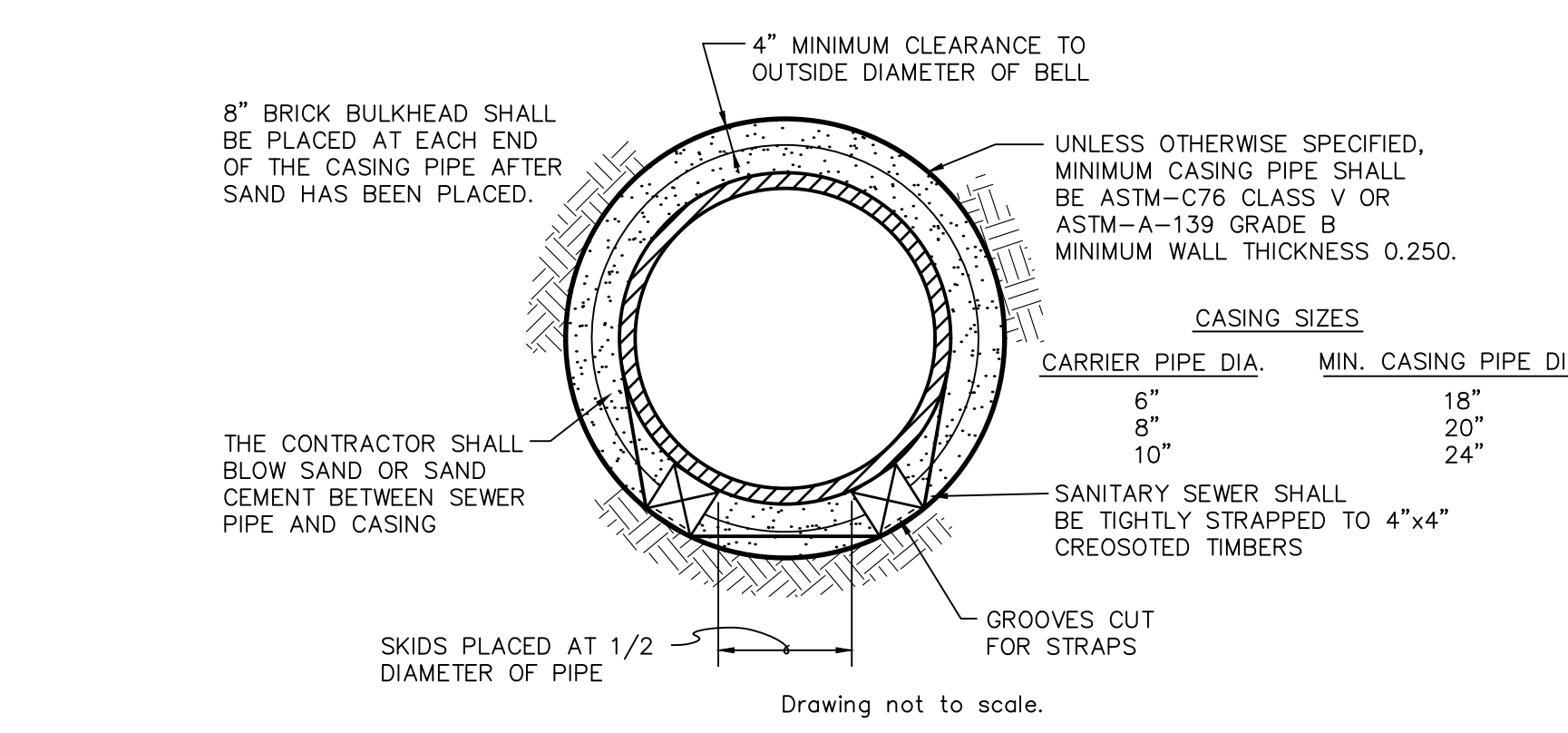
HOUSE/BUILDING LEAD DETAIL



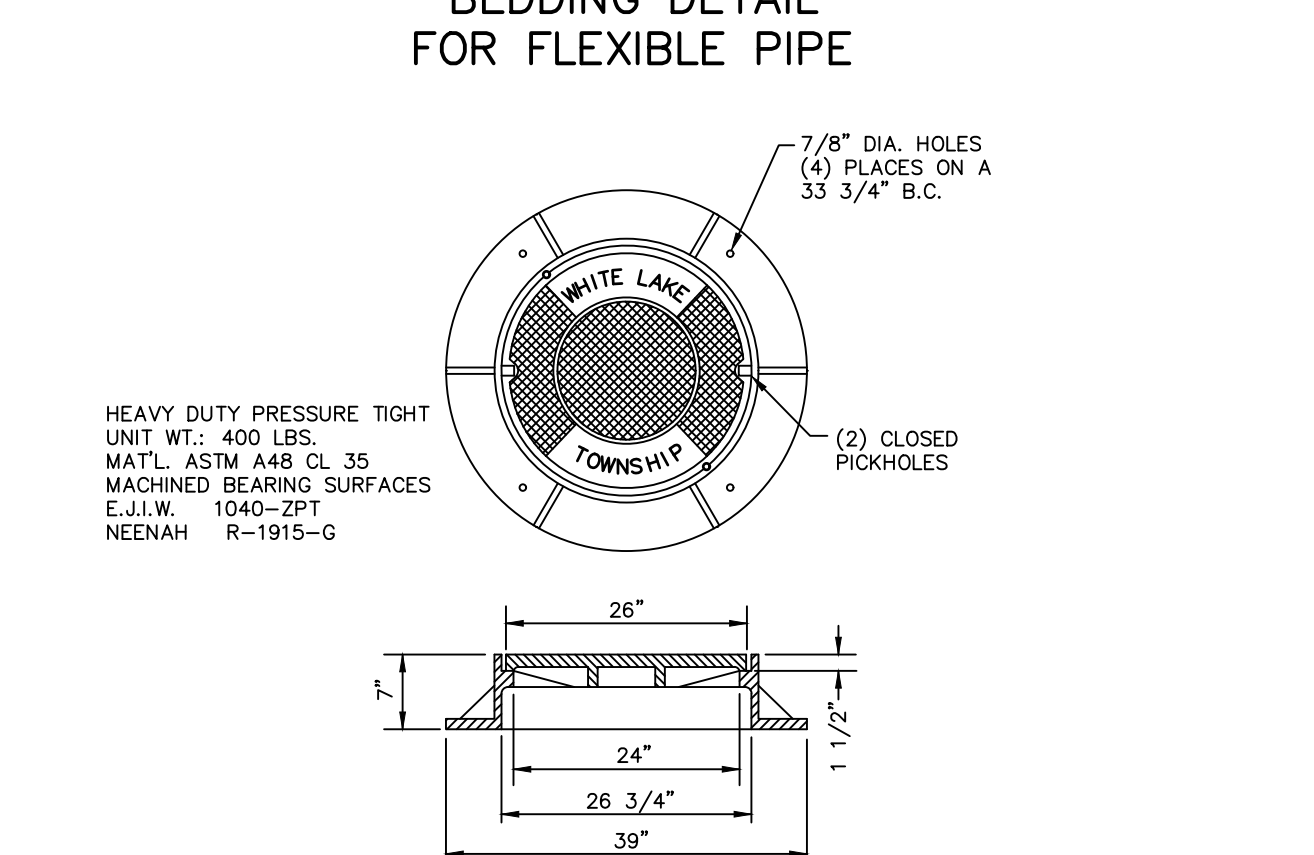
BEDDING DETAIL FOR RIGID PIPE (CLASS B)



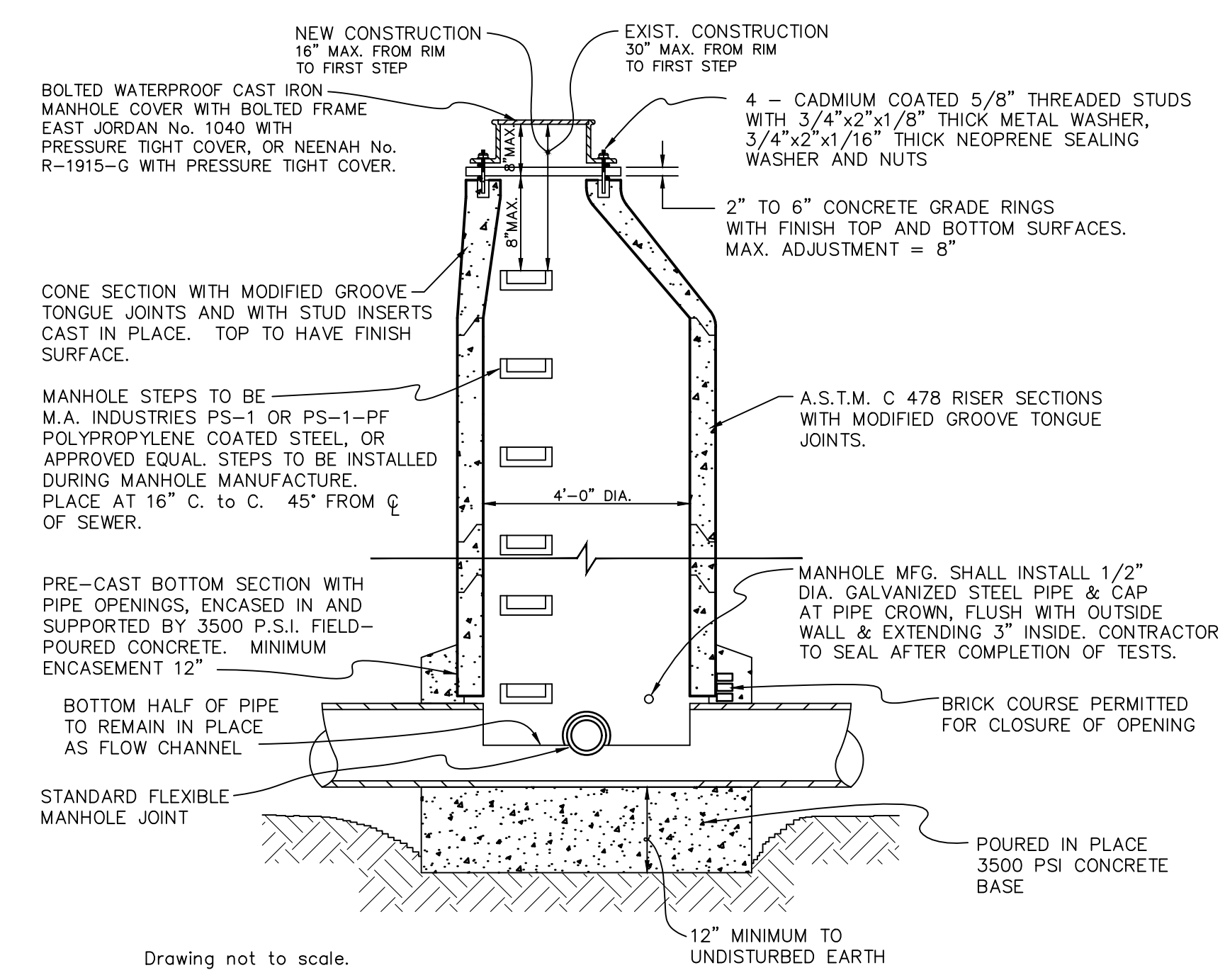
BEDDING DETAIL FOR FLEXIBLE PIPE



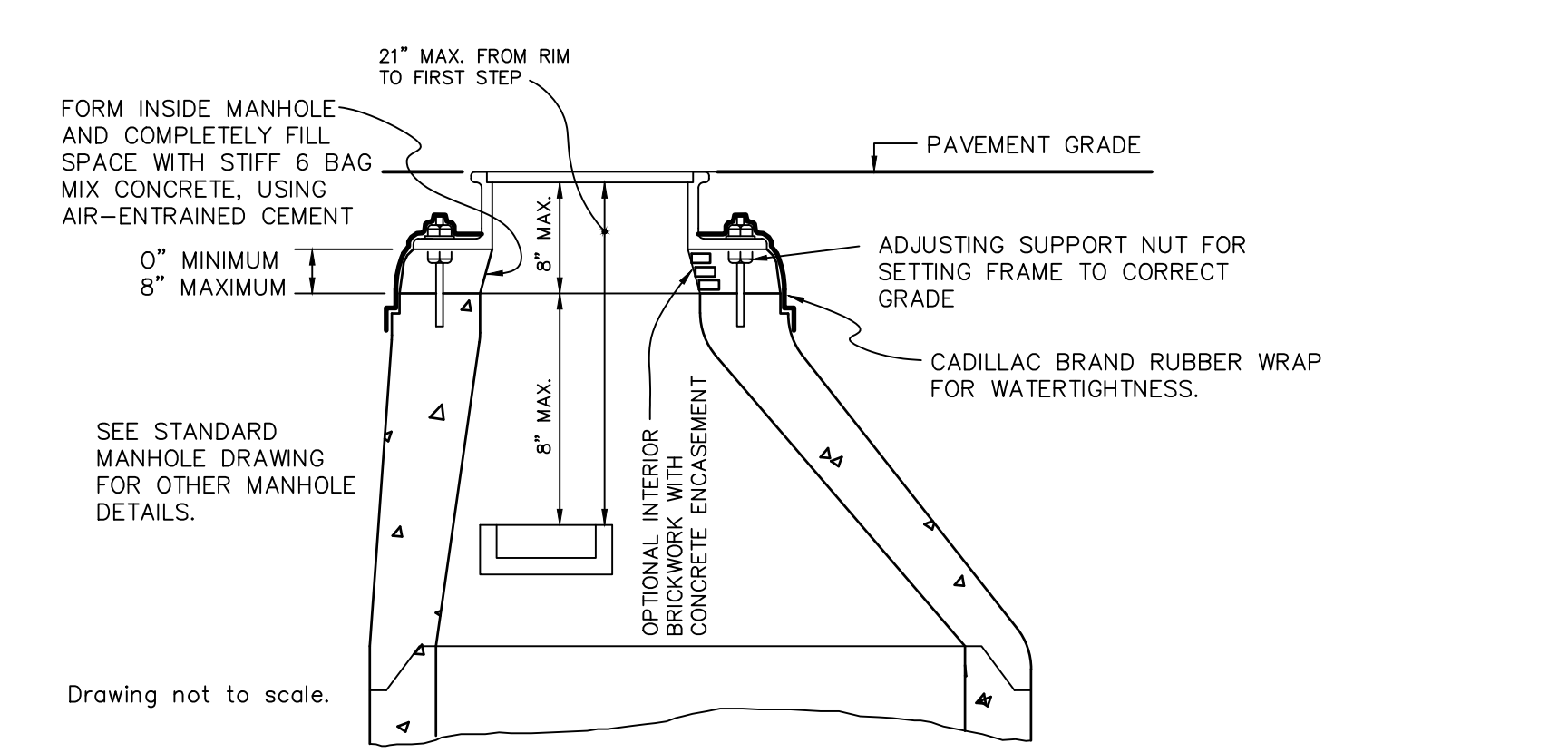
PIPE BARREL SUPPORT FOR SEWER



MANHOLE COVER & FRAME



SKETCH OF MINIMUM MANHOLE REQUIREMENTS ON MANHOLES CONSTRUCTED OVER EXISTING SEWERS



OPTIONAL CONSTRUCTION DETAILS

DRAWN: CAD
DESIGN: OA
CHECKED: --

VERT. -
SCALE: HORZ. AS NOTED

REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	09/11/97		OCWRC COMMENTS	11/06/15			
		UPDATED TITLE BLOCK	04/30/13						
		UPDATED NOTES	02/17/15						

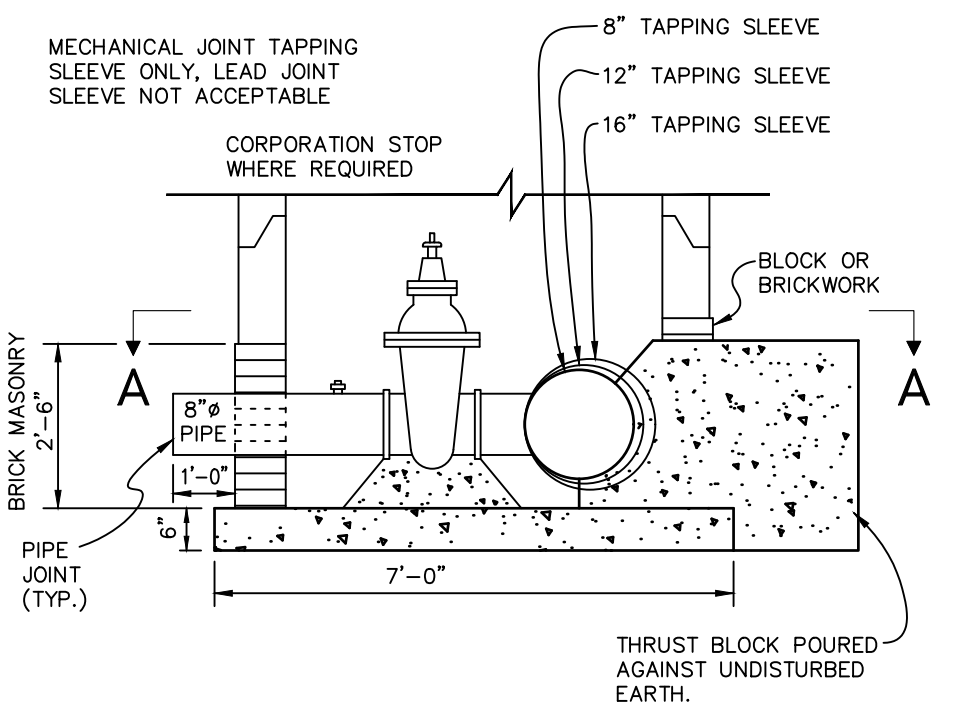
Johnson & Anderson
 4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115
 2291 Water Street, Suite 6 Port Huron, Michigan 49860 tel (810) 987-7820 fax (810) 987-7895

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

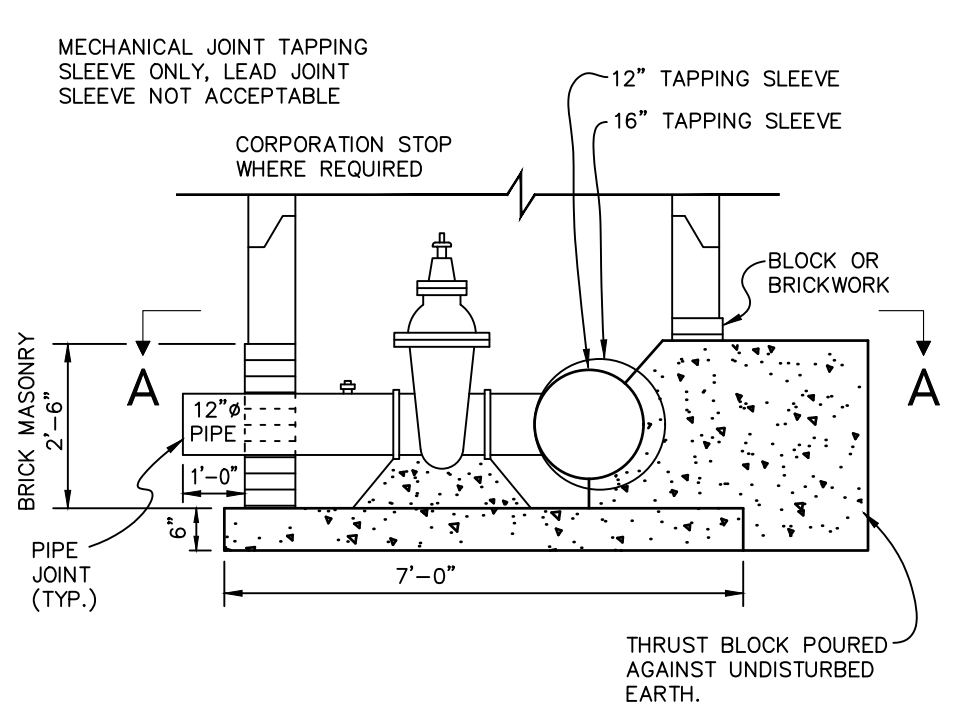


SANITARY SEWER STANDARD DETAILS

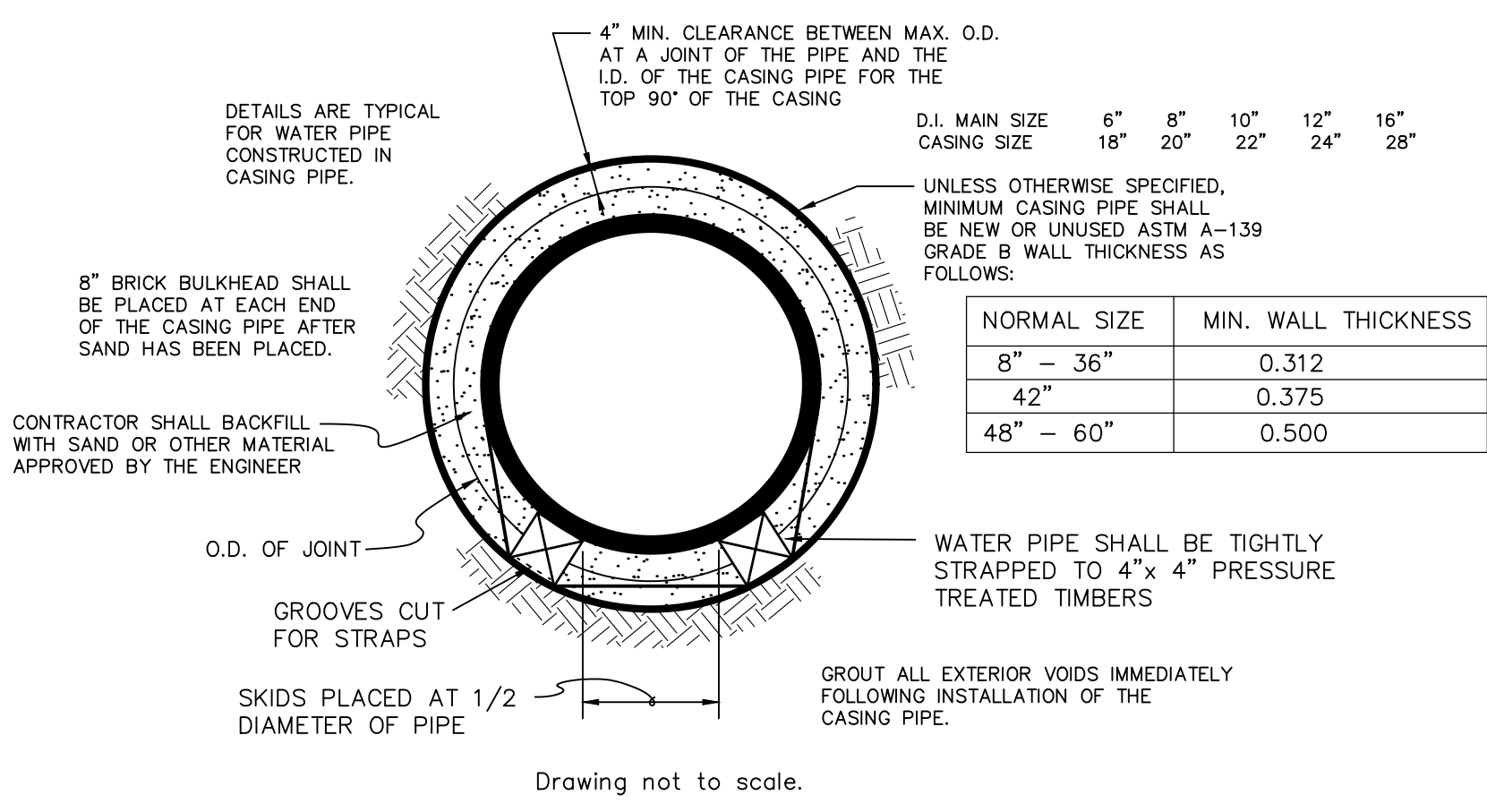
JOB NO.	
DATE ISSUED	09/11/97
SHEET NO.	



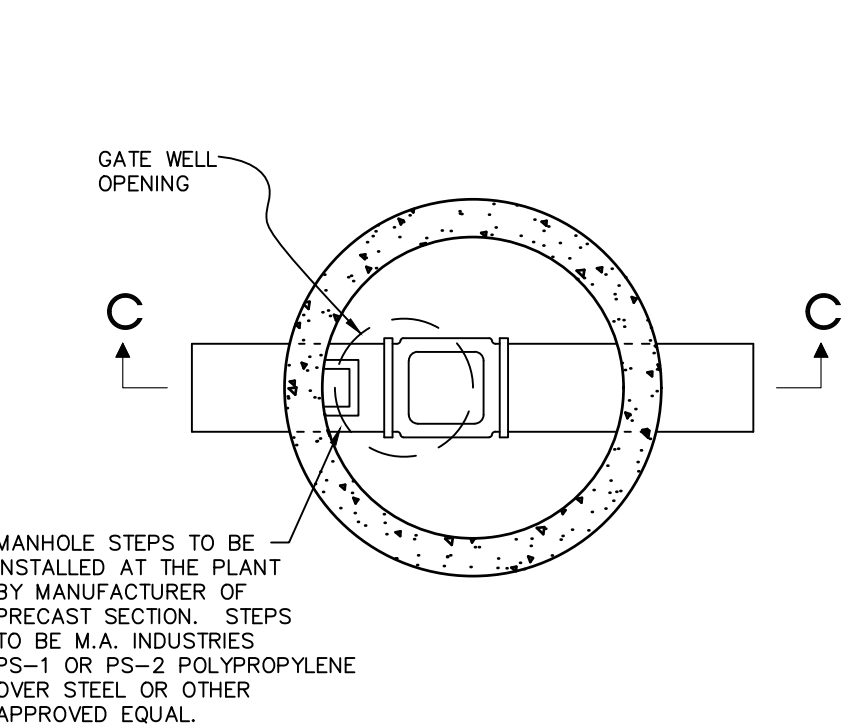
16" X 8", 12" X 8", 8" X 8" TAPPING SLEEVE, VALVE & WELL (B-B)



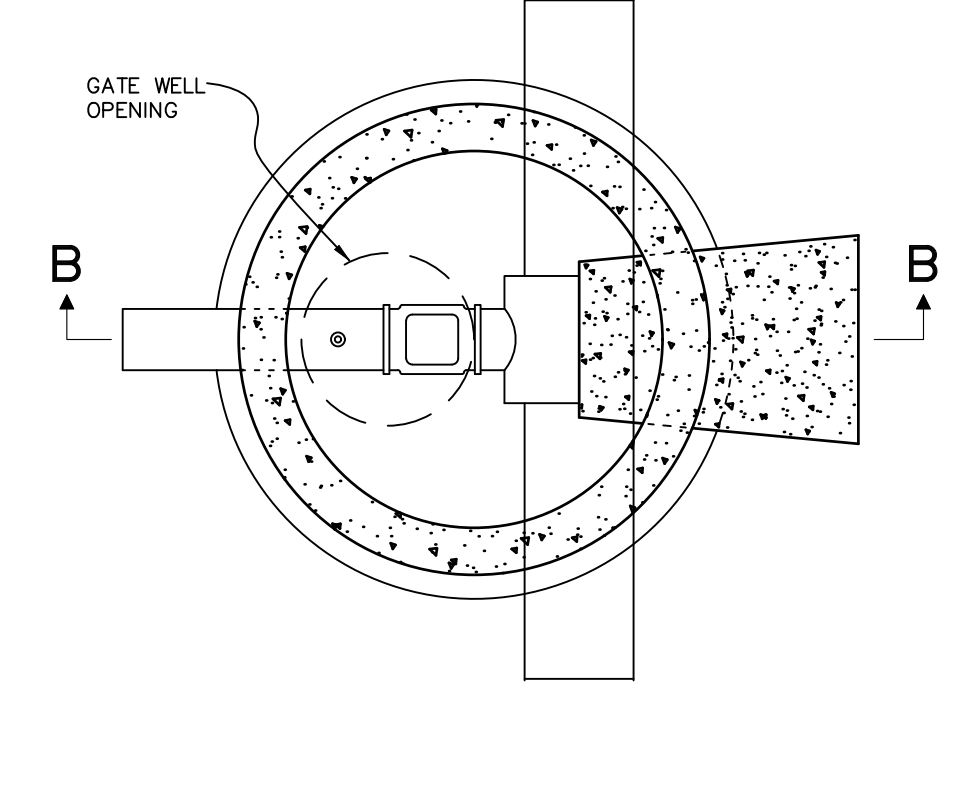
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



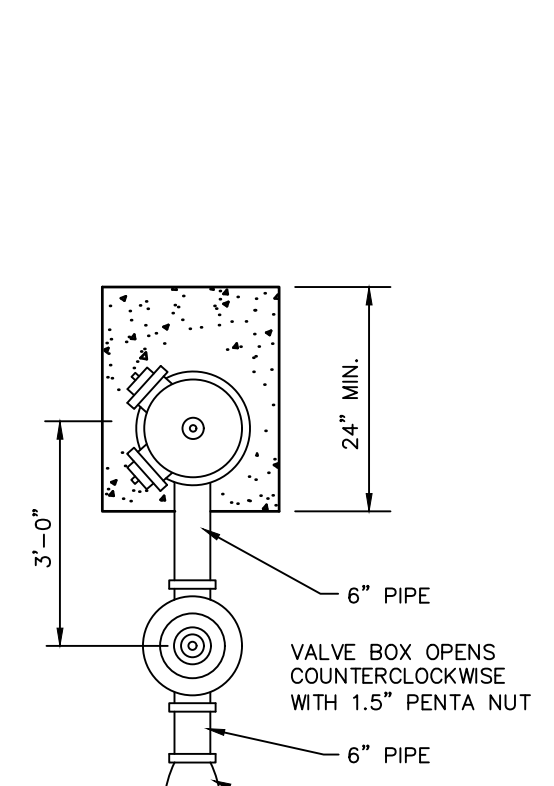
PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING



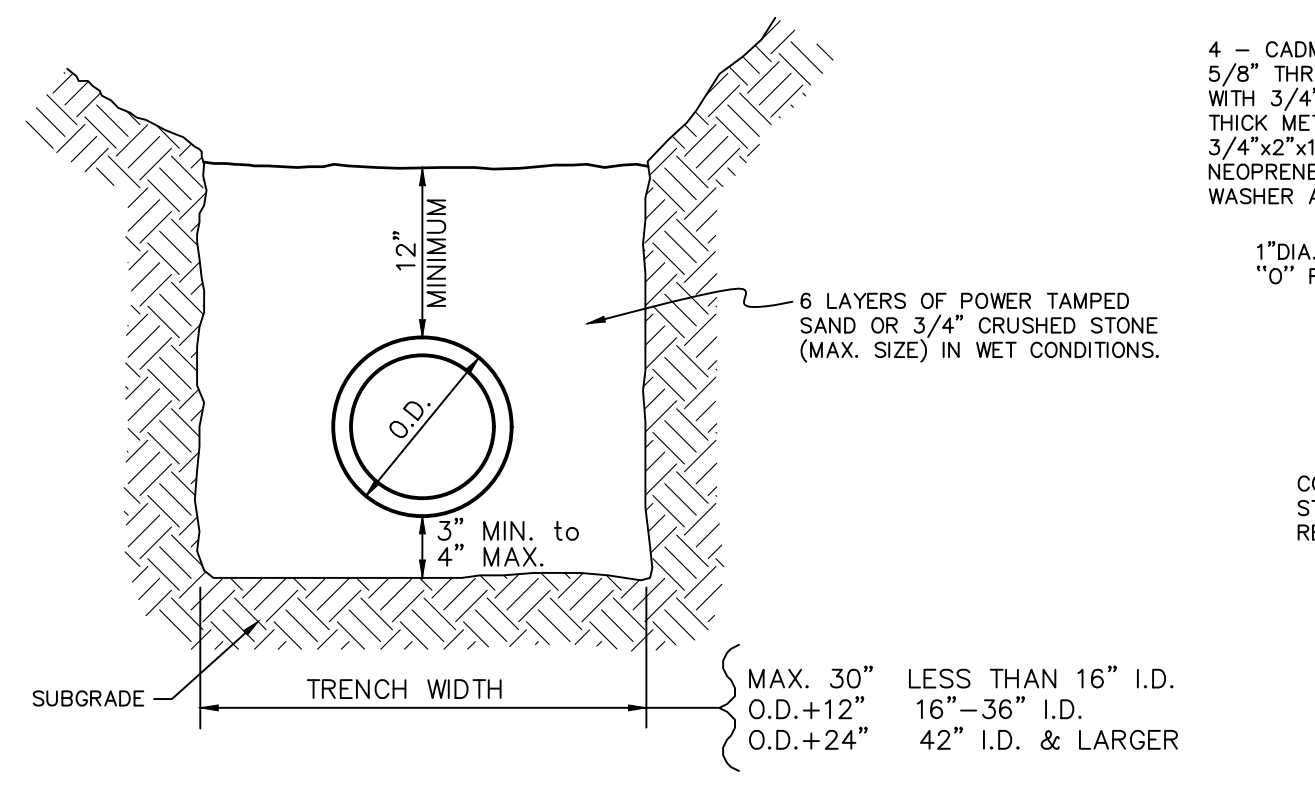
PLAN GATE WELL - TYPICAL (D-D)



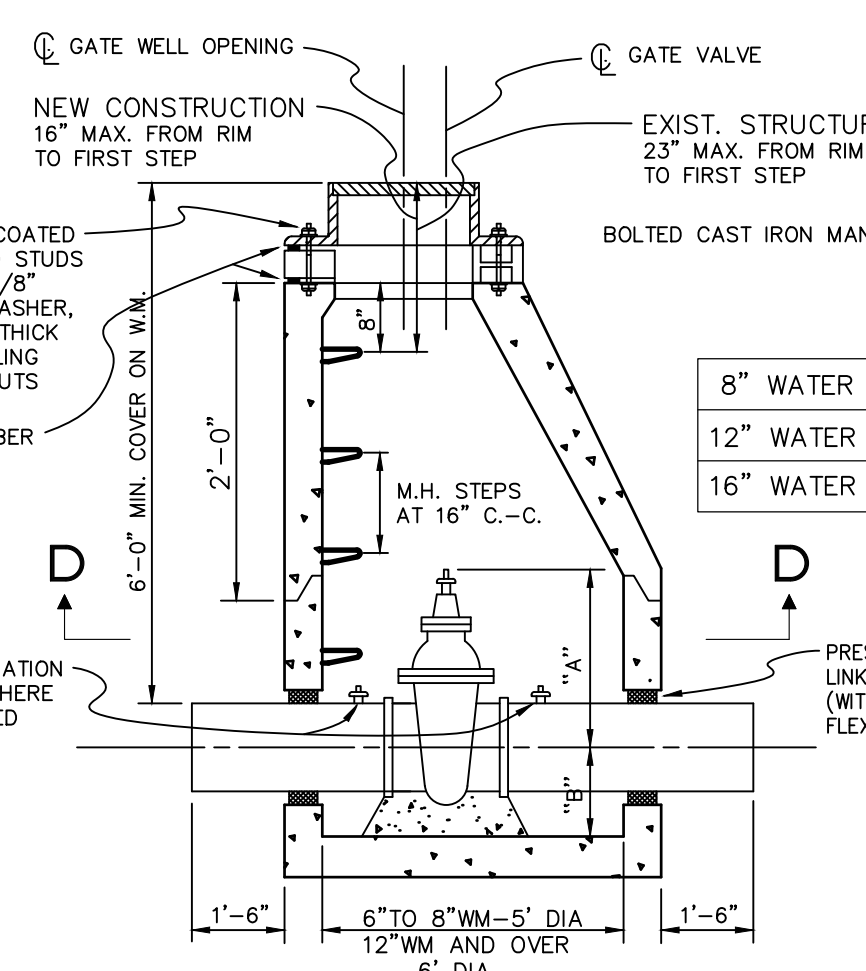
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



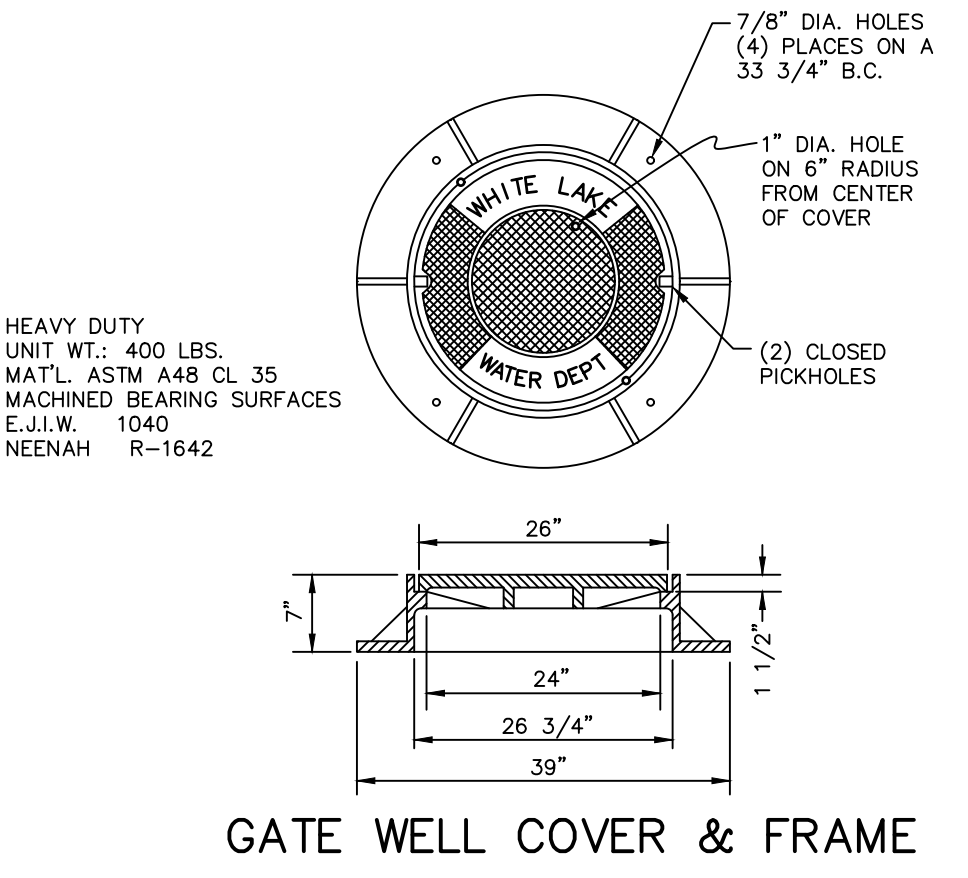
VALVE BOX OPENS COUNTERCLOCKWISE WITH 1.5" PENTA NUT



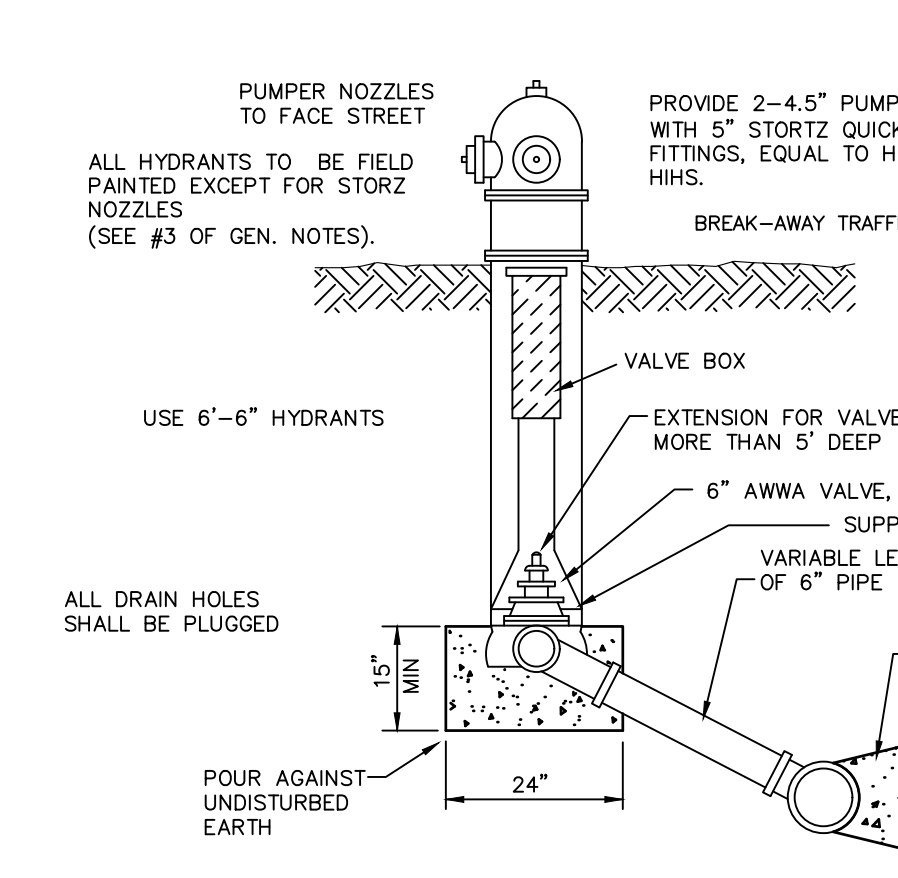
STANDARD BEDDING FOR WATER PIPE



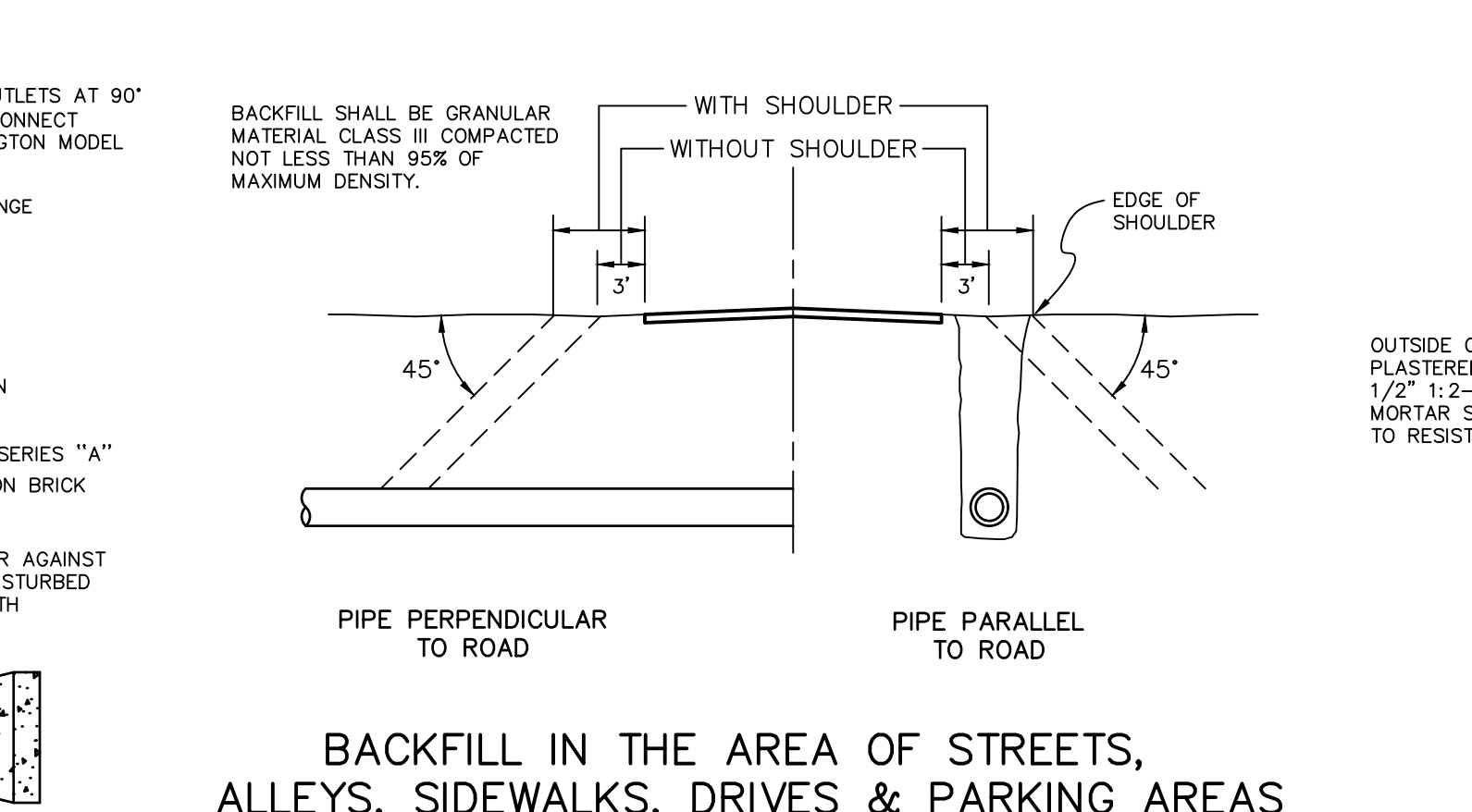
GATE WELL (C-C)



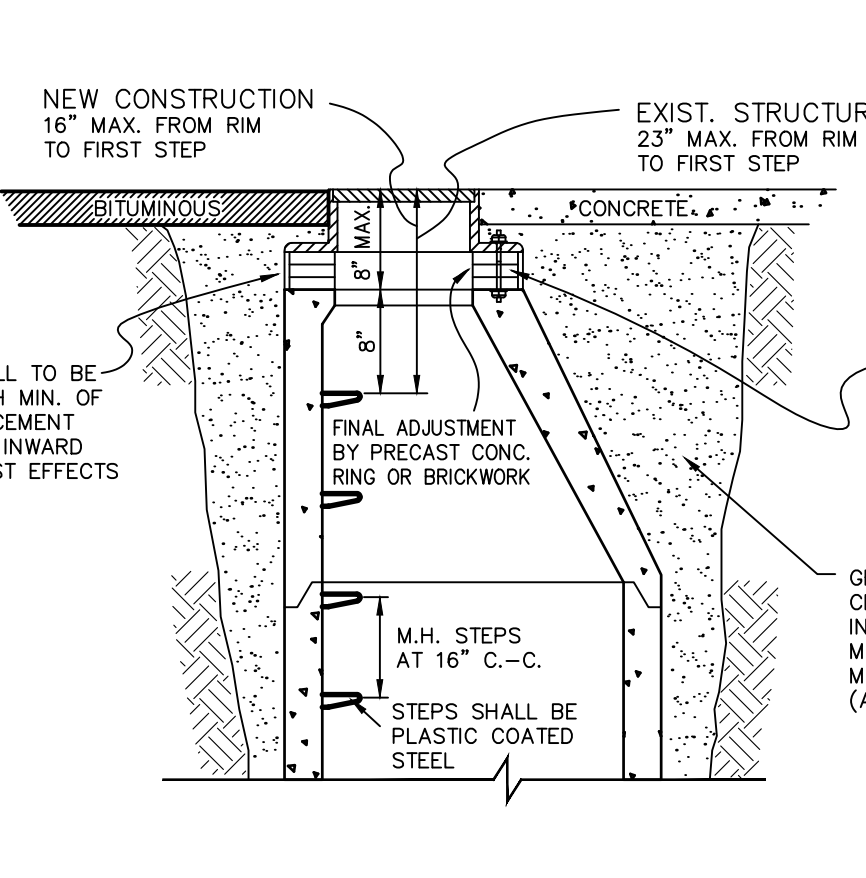
GATE WELL COVER & FRAME



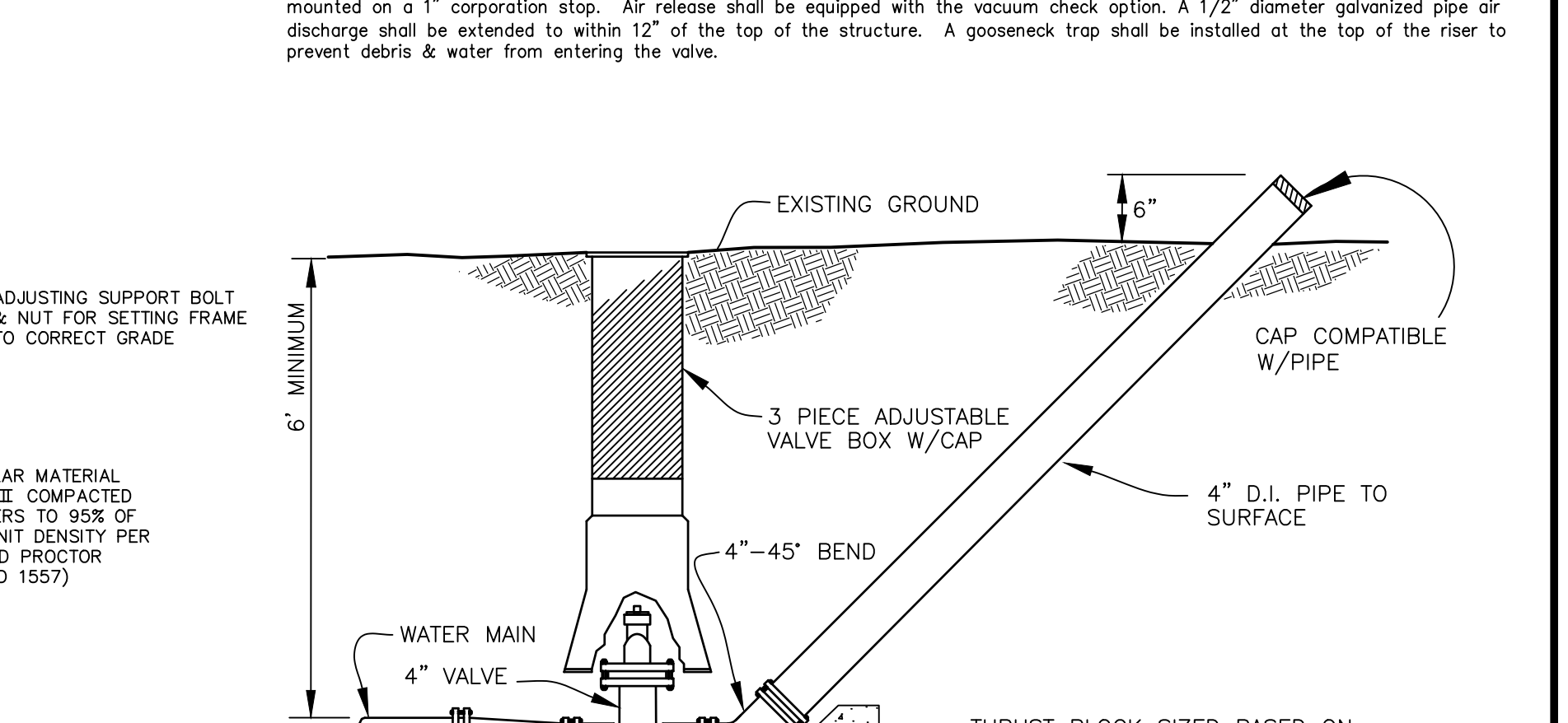
MODEL 5BR-250 EAST JORDAN OR APPROVED EQUAL TRAFFIC MODEL



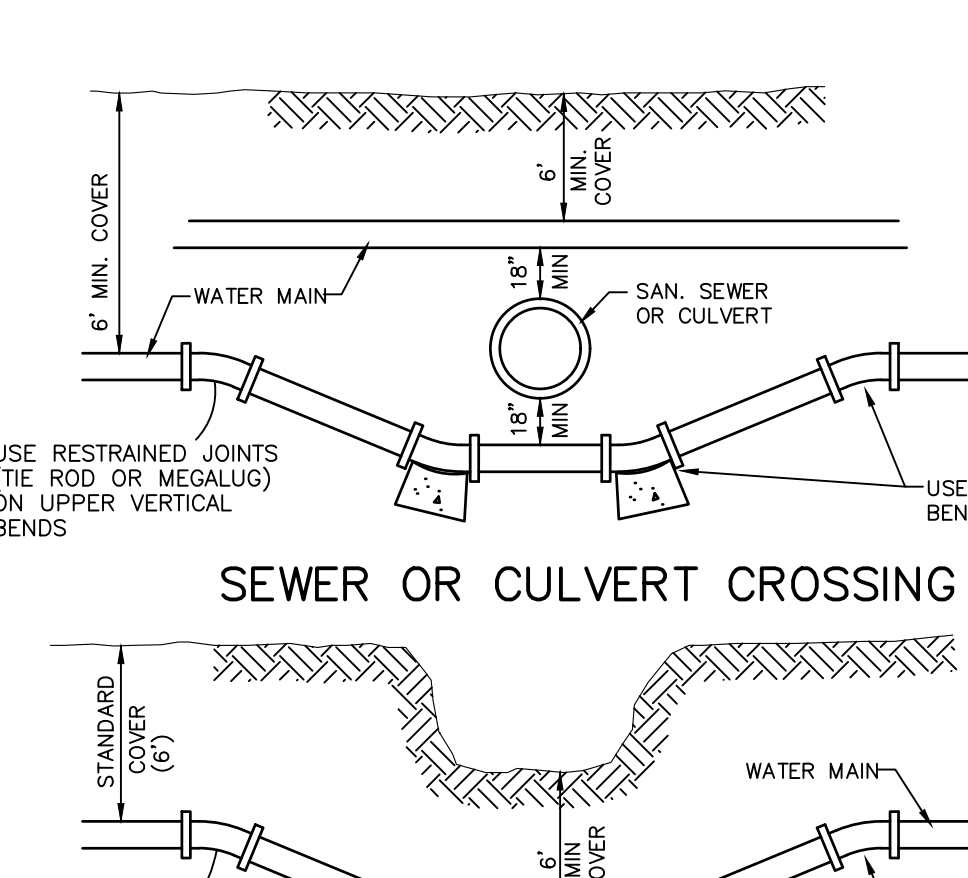
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



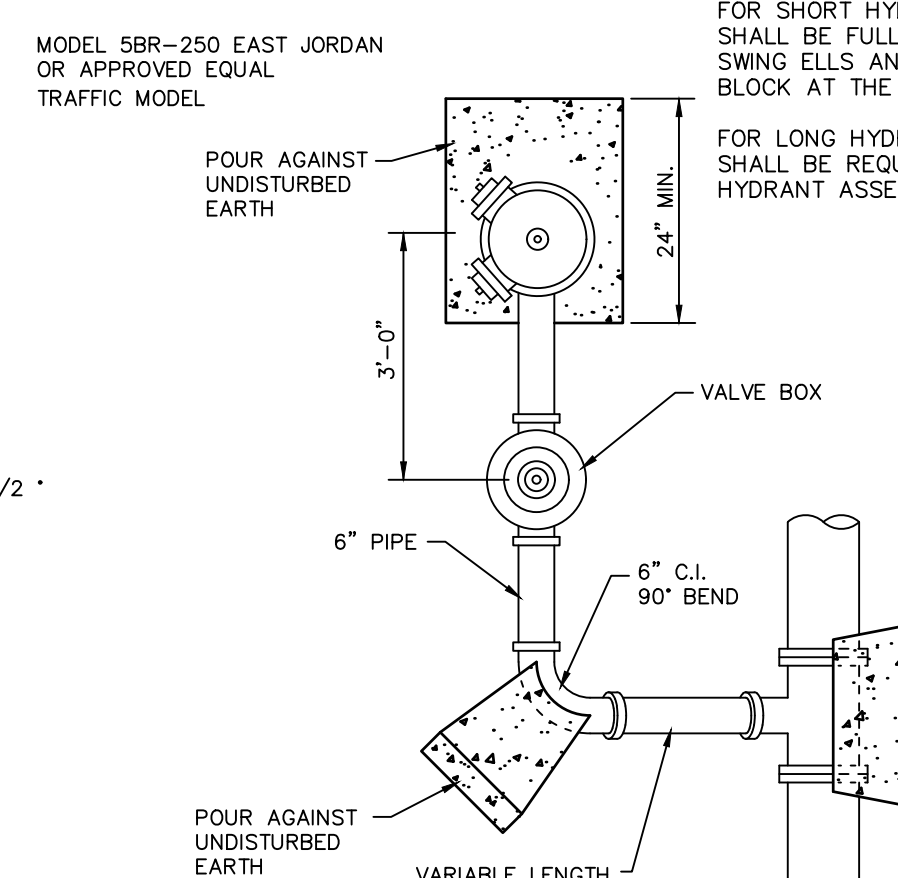
GATE WELL TOPS WITHIN PAVEMENT AREAS



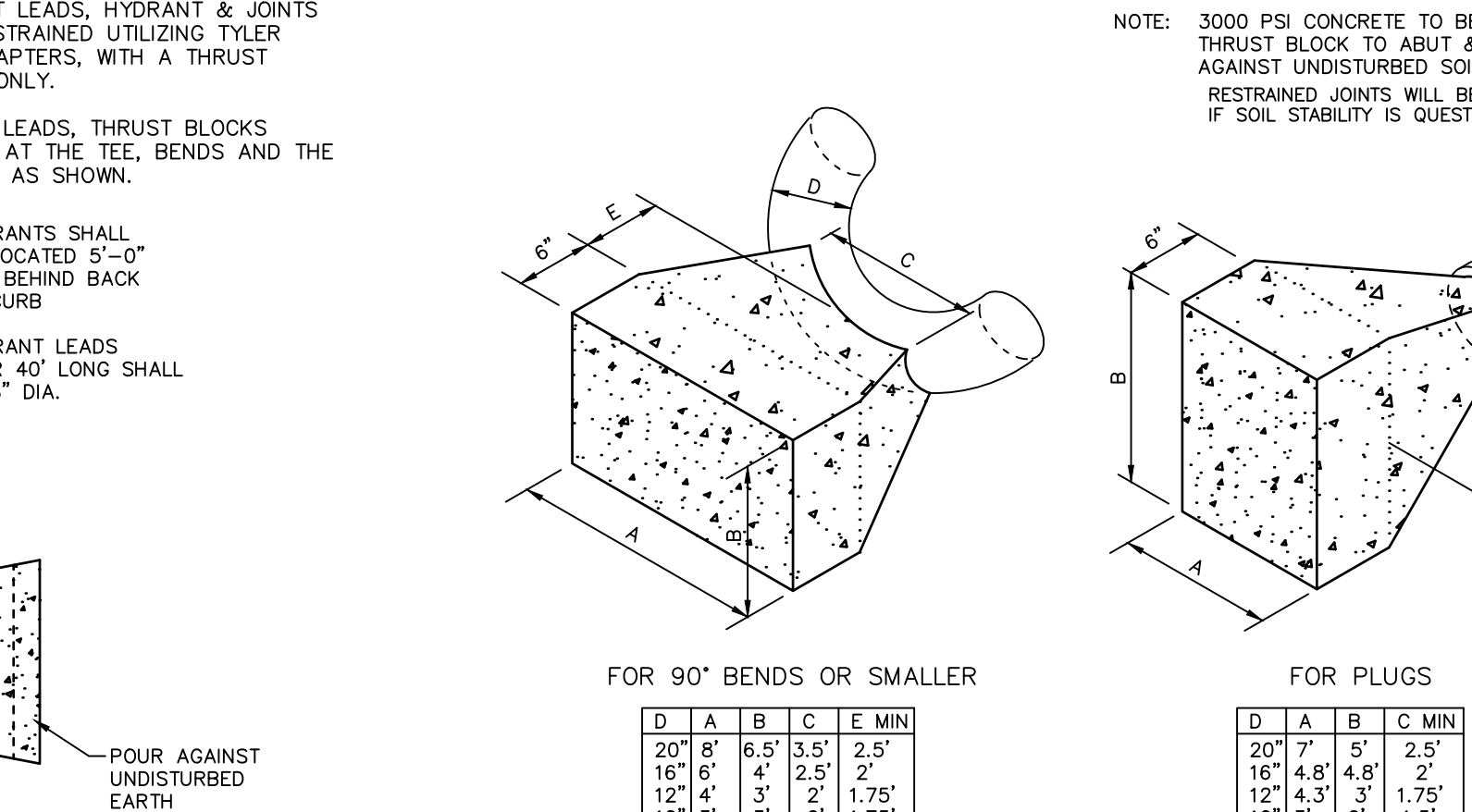
TEMPORARY BLOWOFF ASS'Y



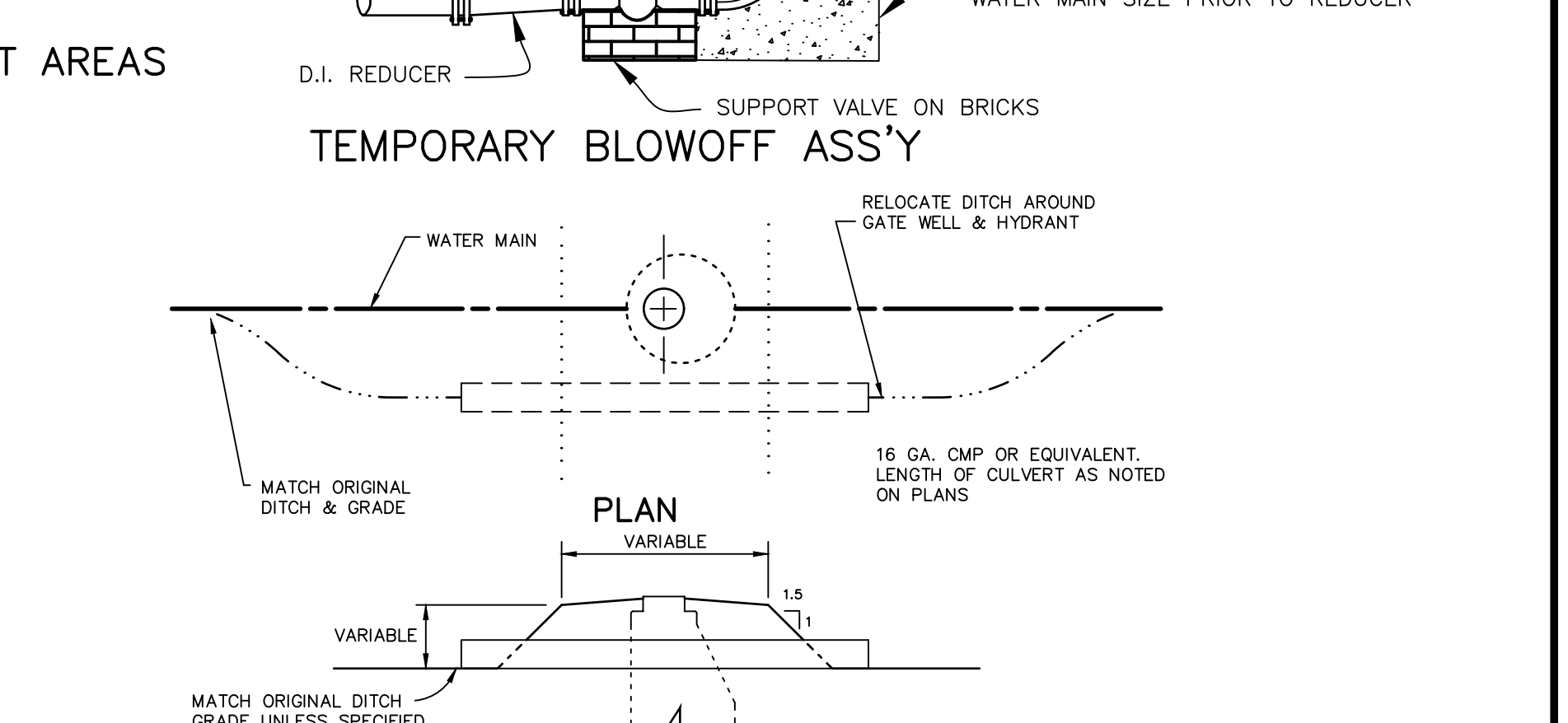
SEWER OR CULVERT CROSSING



DETAIL OF HYDRANT SETTINGS



THRUST BLOCK DETAILS



DITCH ENCLOSURE AT GATE WELL

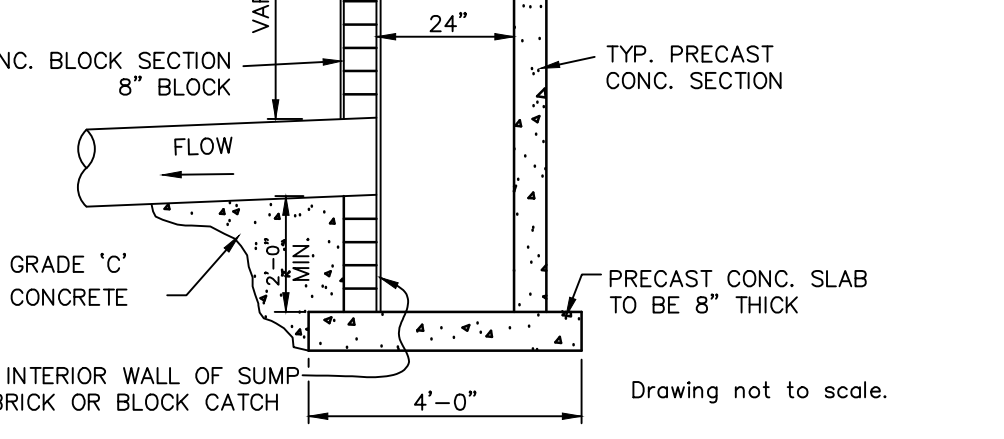
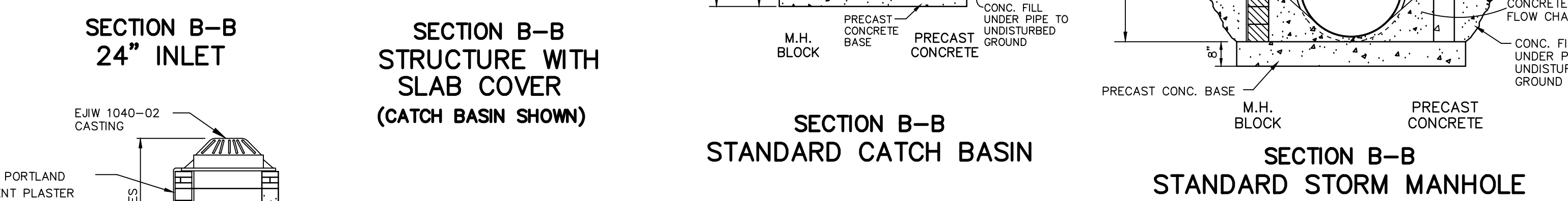
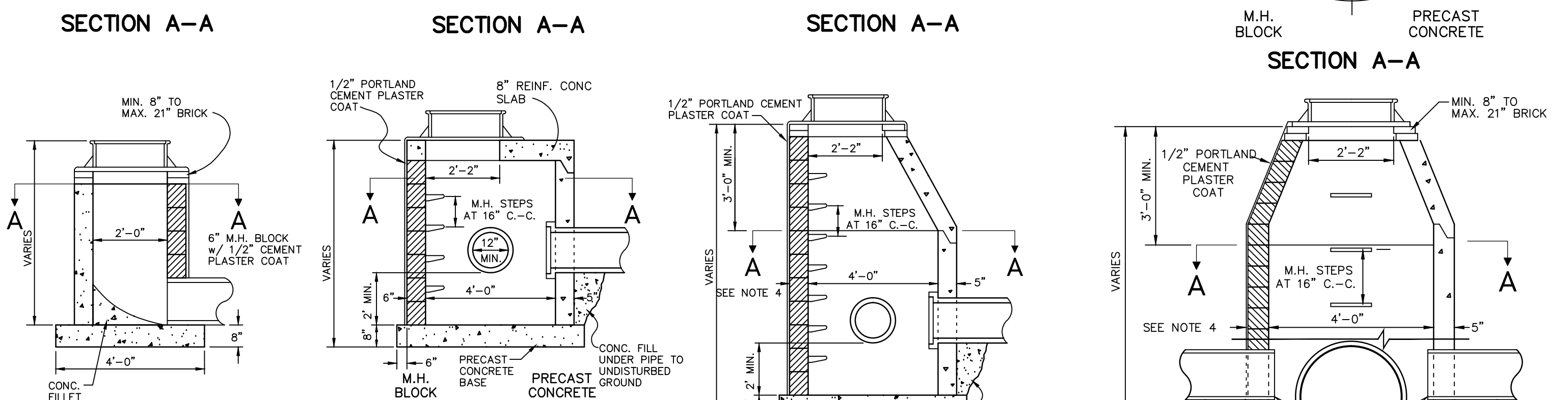
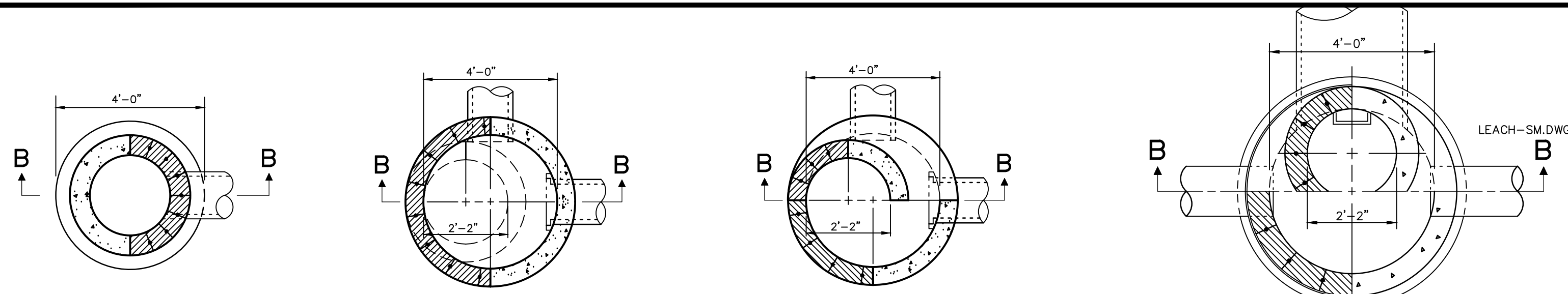
- WATER MAIN NOTES**
- All construction procedures and materials used on this project shall conform to White Lake Township current standards and specifications.
 - All hydrants shall be East Jordan Iron Works 5BR-250 traffic model. Self-draining hydrants shall not be used. Valve shall have 1-1/2" pentagon nut and shall open counter-clockwise. Provide two 4.5" 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 ells 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 #R-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 D2237-03 (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-301 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.

REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	<p>Johnson & Anderson 4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 881-7800 fax (248) 881-2680</p> <p>1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115</p> <p>2291 Water Street, Suite 6 Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895</p>
	01	GENERAL REVISION TO CAD	12/29/95	02	CLARIFY HYD. SPEC	02/07/01	03	REV. HYD. THRUST, AIR REL.	03/29/04	
	02	ADD NOTE 17	11/04/97	04	5-BR HYD, WS STAKE	02/27/02	04	HDPE, HYD, VALVES	07/18/05	
	03	REVISE HYD. & THRUSTING	05/18/98	05	ADD BLOWOFF	07/06/99	06	UPDATED TITLE BLOCK	04/30/13	

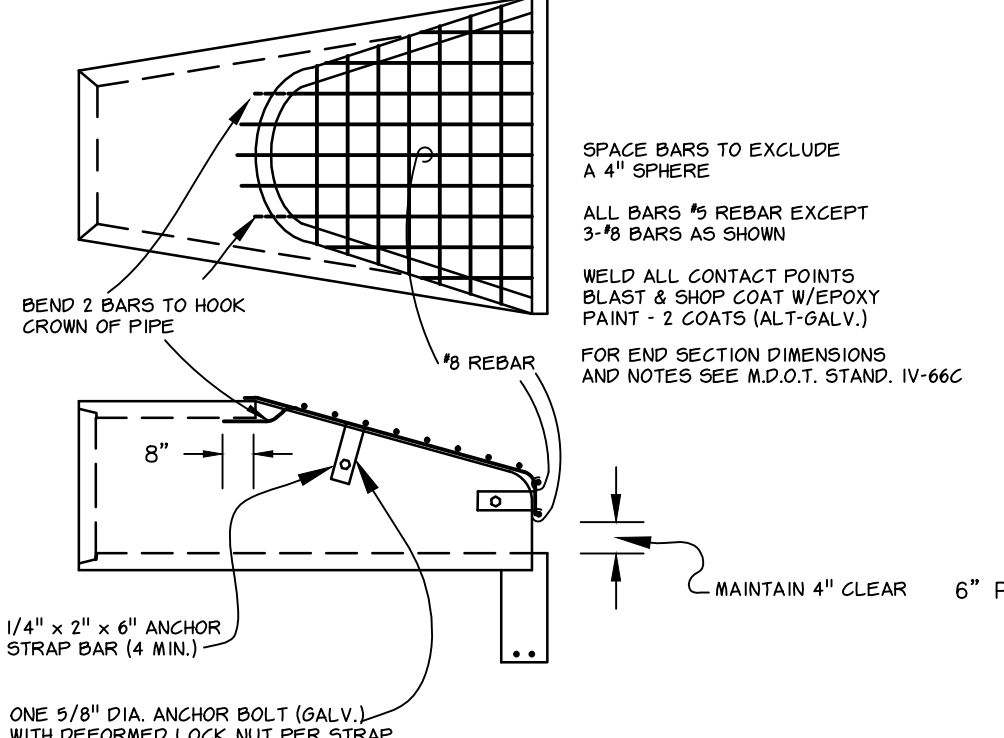
<p>White Lake Township 7525 Highland Road (M-59) White Lake, Michigan 48383 248-698-3300</p>	<p>WATER MAIN STANDARD DETAILS</p>	<p>JOB NO. _____ DATE ISSUED _____ SHEET NO. _____</p>
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DRAWN: CAD
 DESIGN: OA
 CHECKED: -

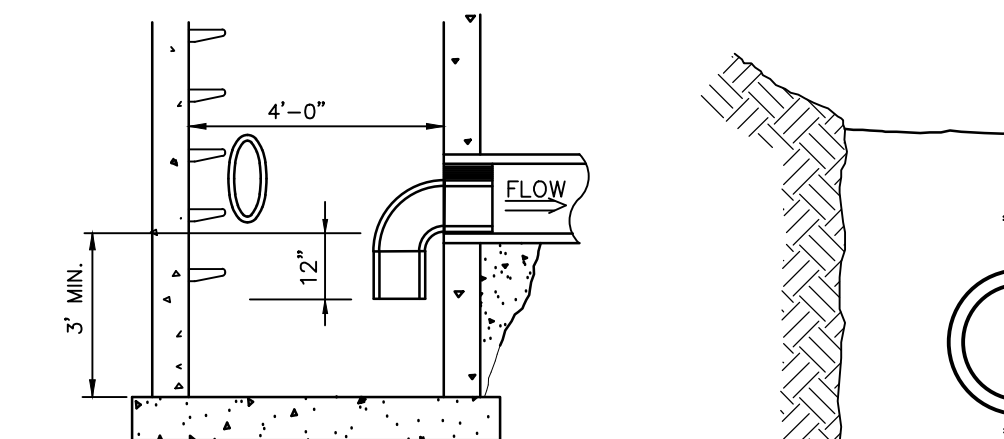
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 HORZ. AS NOTED



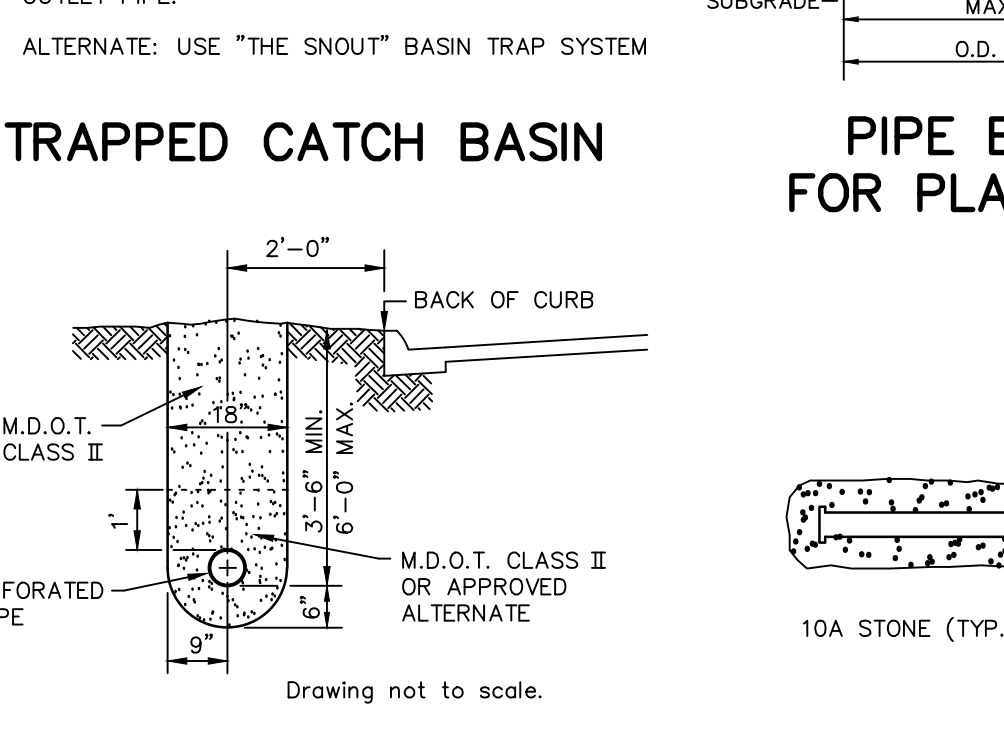
STANDARD REAR YARD CATCH BASIN



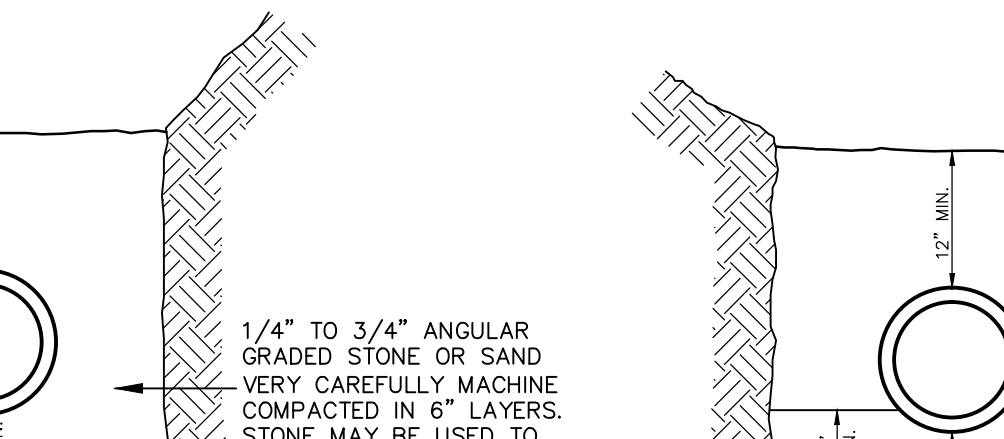
TRAPPED CATCH BASIN



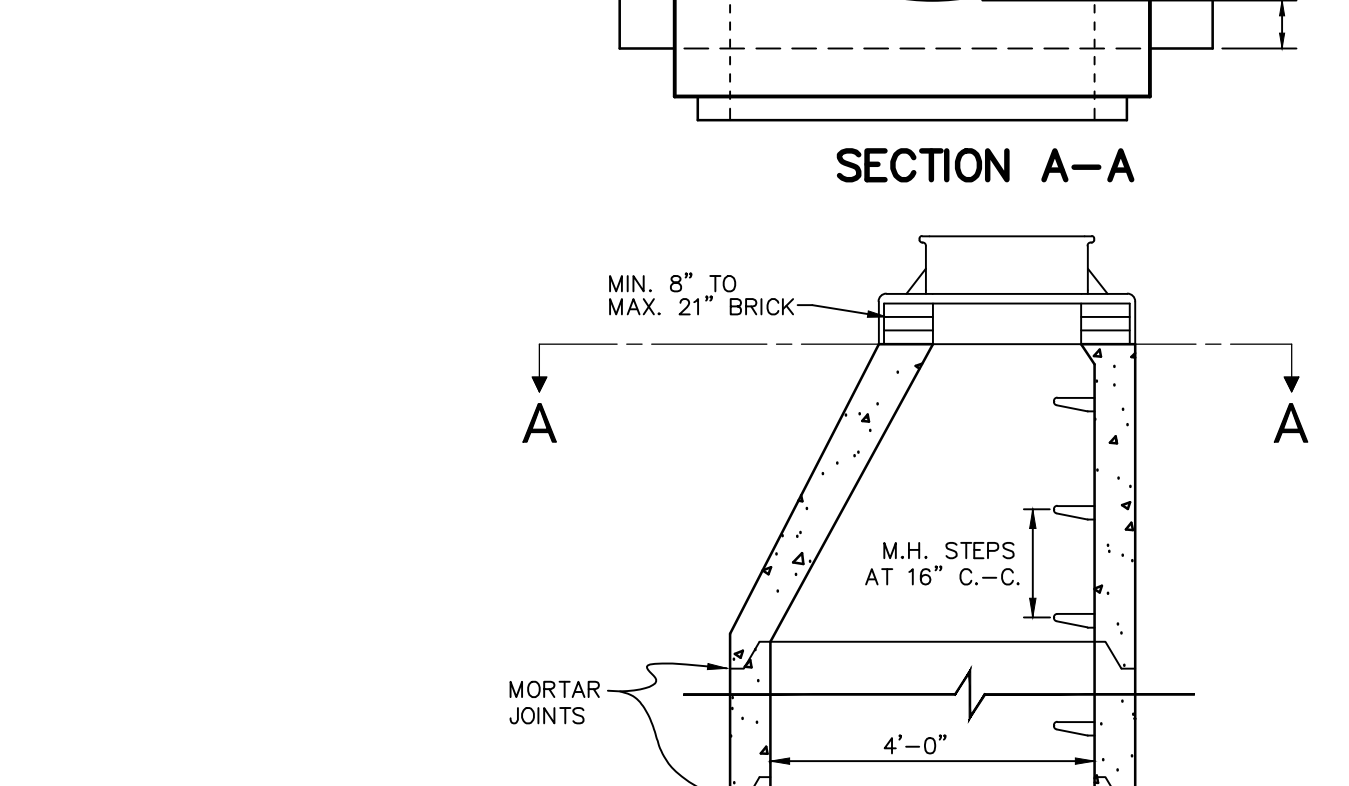
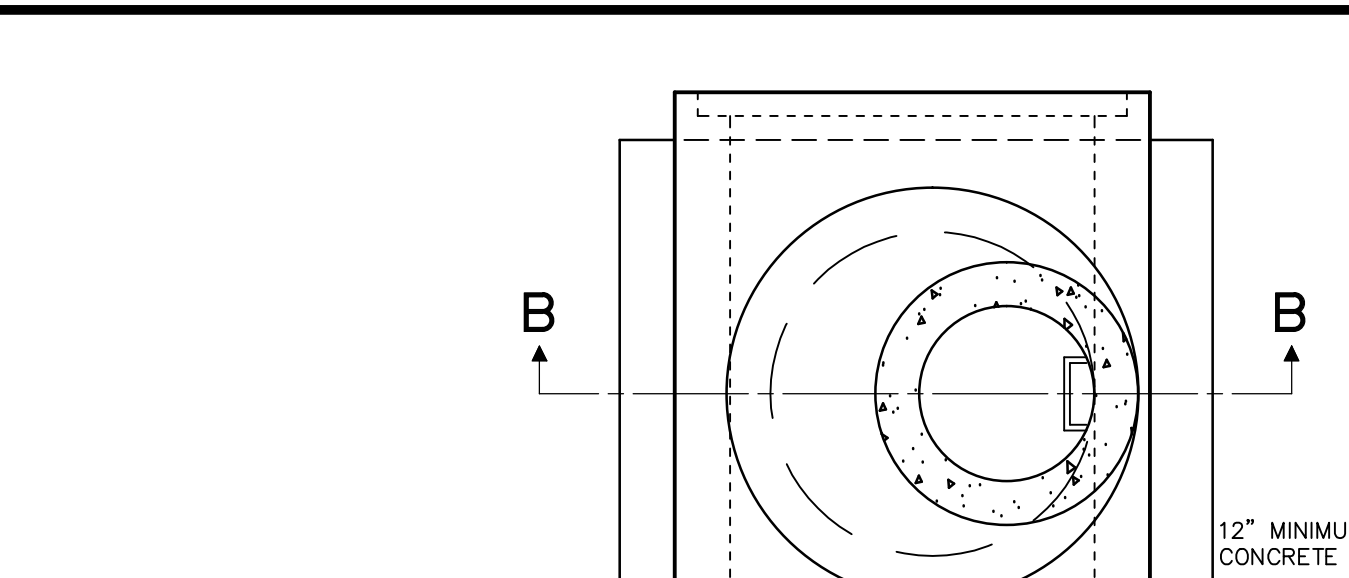
PIPE BEDDING FOR PLASTIC PIPE



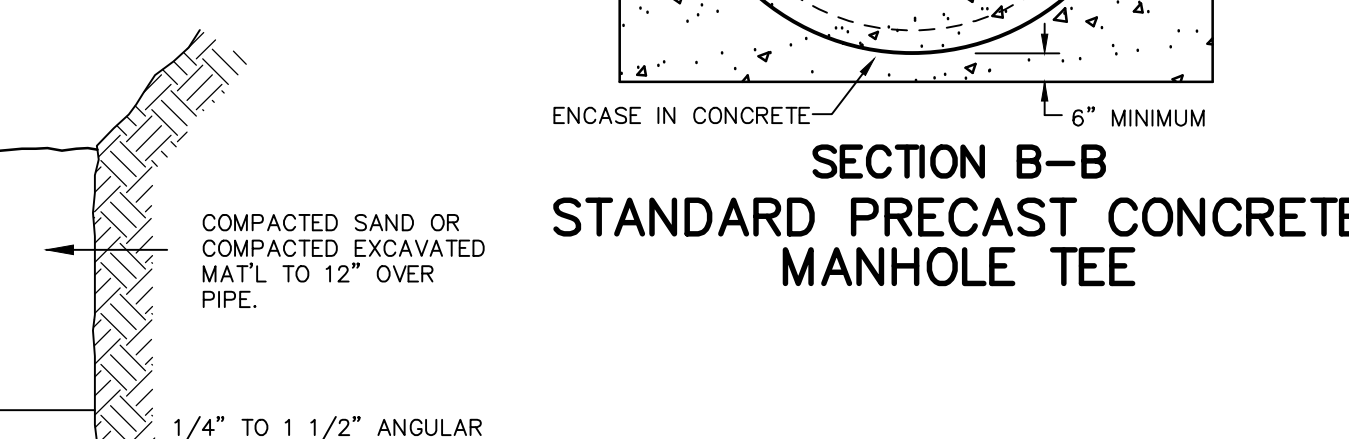
CLASS "B" BEDDING FOR SEWER PIPE LESS THAN 48"



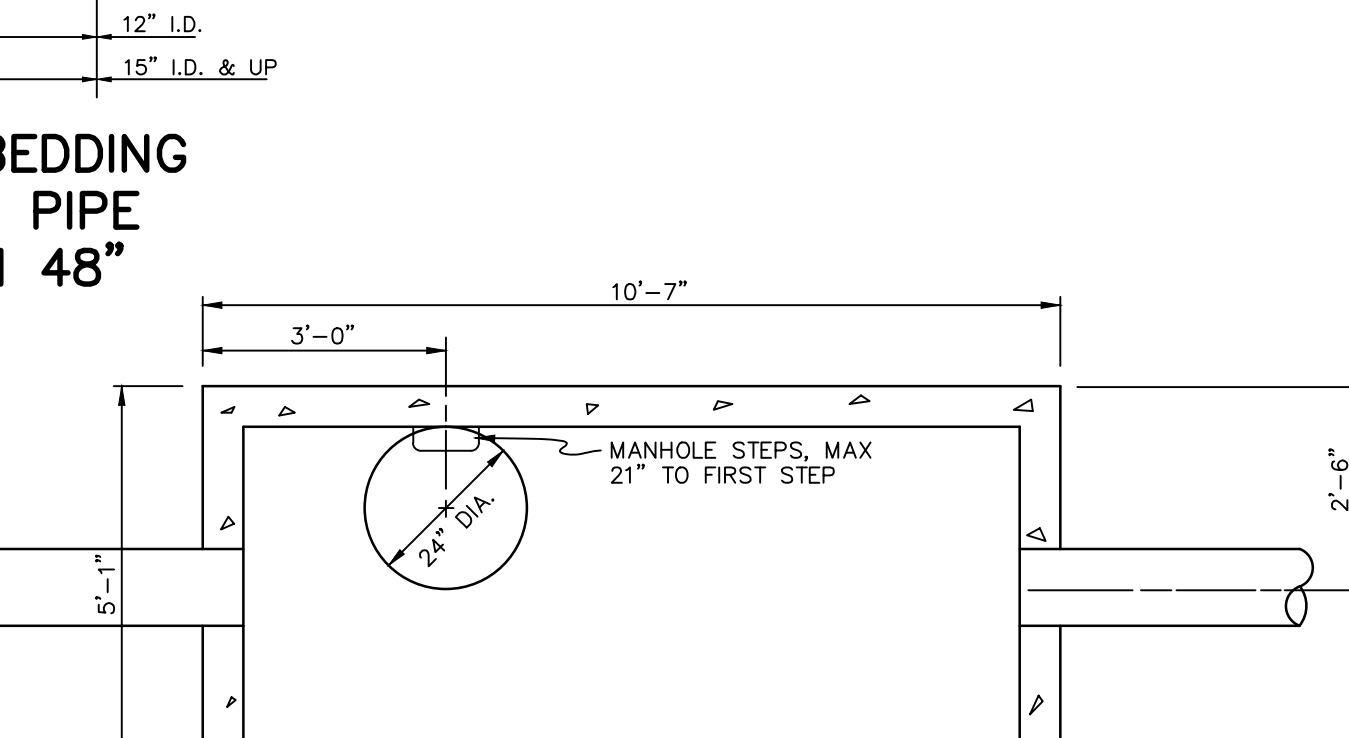
1000 GALLON LEACHING/SETTLING BASIN



STANDARD PRECAST CONCRETE MANHOLE TEE

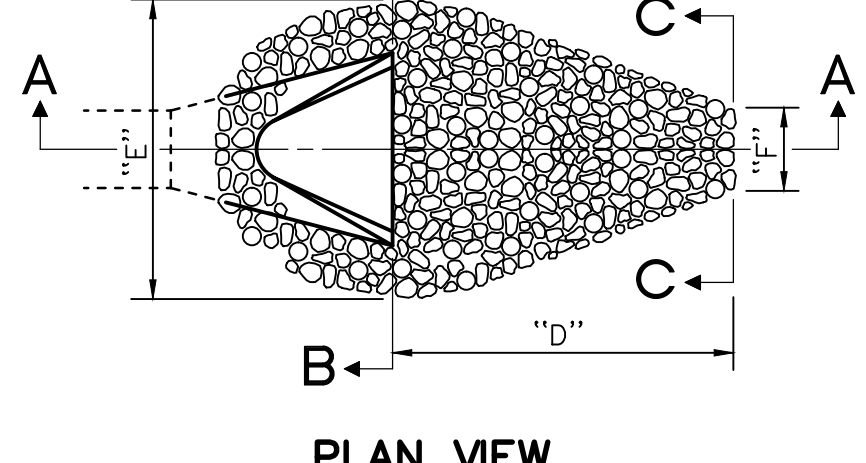


BAR SCREEN DETAIL

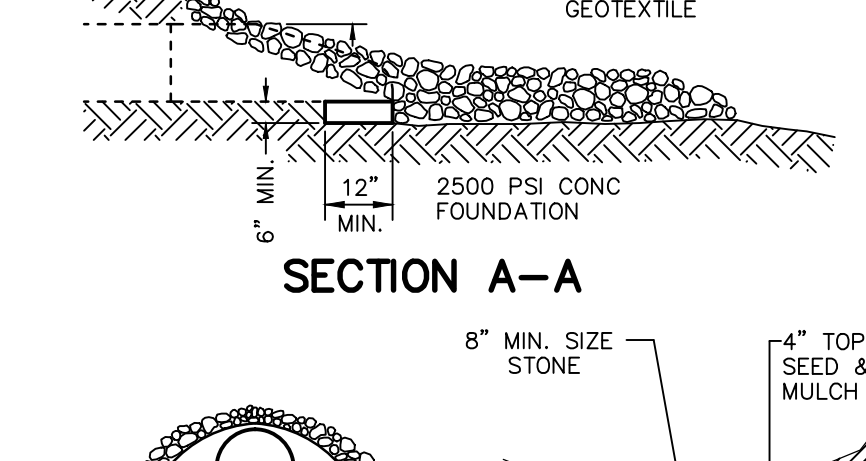


EDGE DRAIN DETAIL

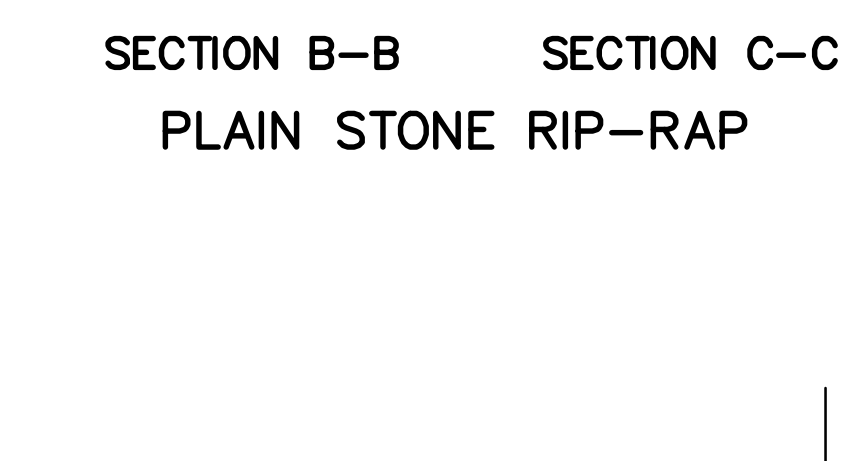
PIPE DIA.	"D"	"E"	"F"	S.Y.
12"	5'-0"	6'-6"	3'-0"	4
15"	5'-0"	7'-0"	3'-0"	4
18"	5'-0"	7'-6"	3'-0"	4
21"	5'-6"	8'-0"	4'-0"	5
24"	6'-0"	8'-6"	4'-6"	6
27"	6'-6"	9'-0"	5'-0"	7
30"	7'-0"	9'-6"	5'-6"	8
33"	7'-6"	10'-3"	5'-6"	9
36"	8'-0"	10'-9"	6'-0"	10
42"	9'-0"	11'-9"	6'-6"	12
48"	10'-0"	13'-0"	7'-0"	14



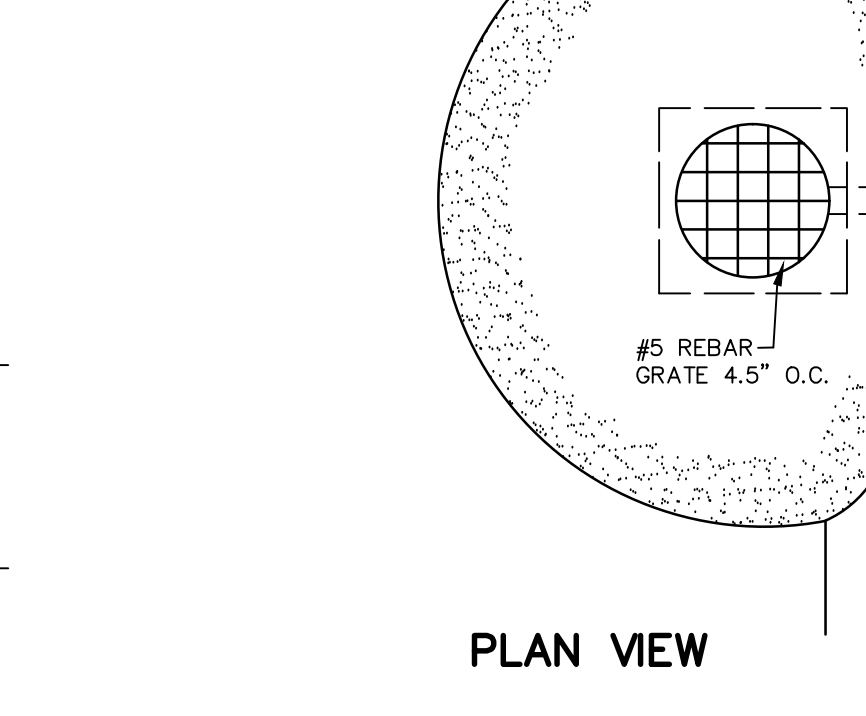
PLAIN STONE RIP-RAP



STANDARD PRECAST CONCRETE MANHOLE



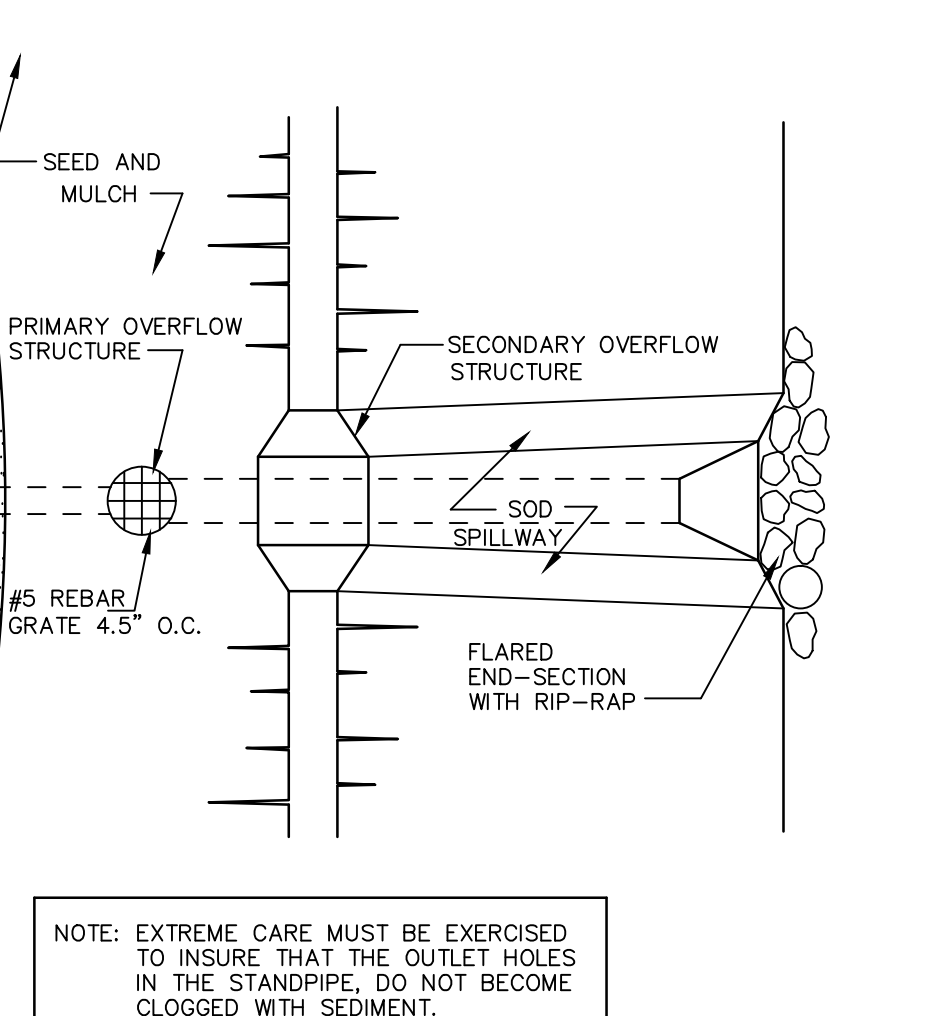
STANDARD PRECAST CONCRETE MANHOLE



1000 GALLON LEACHING/SETTLING BASIN

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 MIOSHA 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" 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 DG 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 STANDARD



SO-2 DETENTION BASIN OUTLET FILTER (CMP)

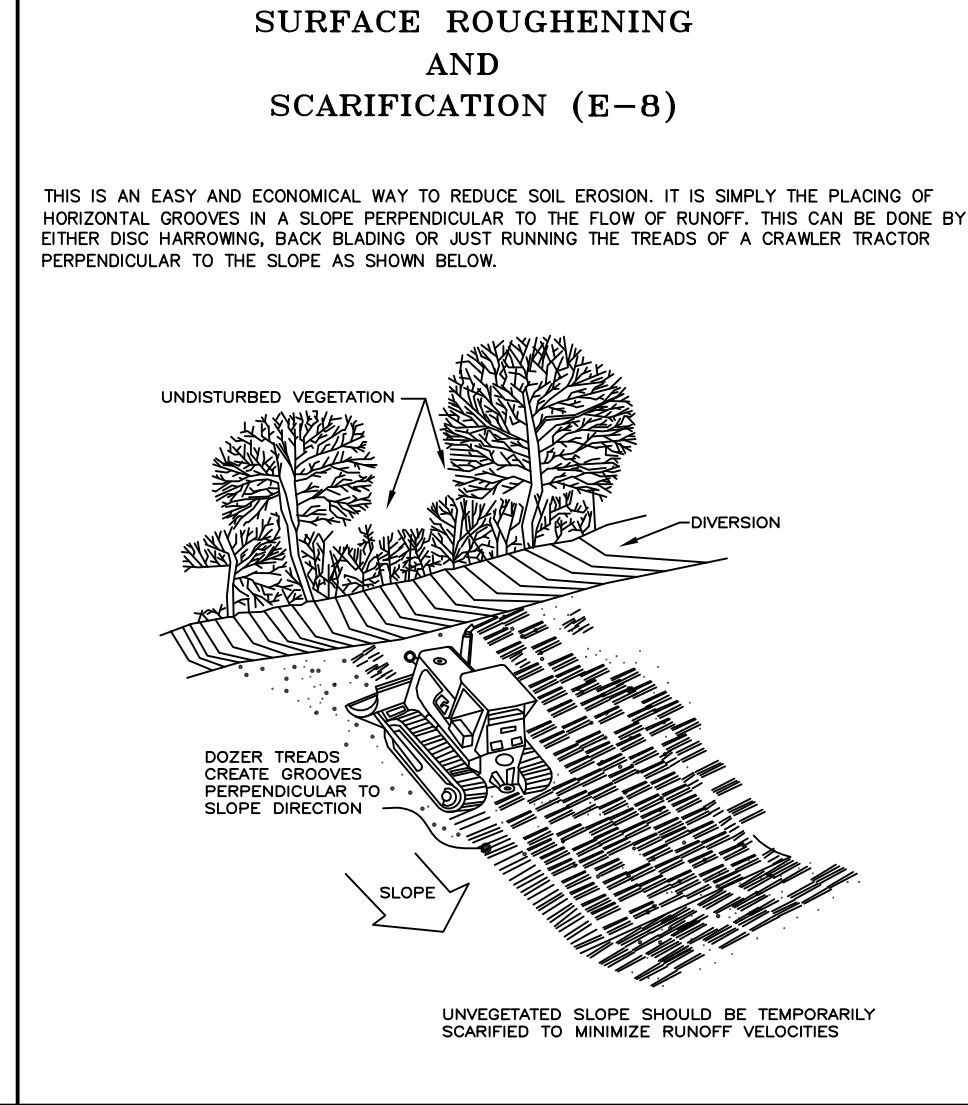
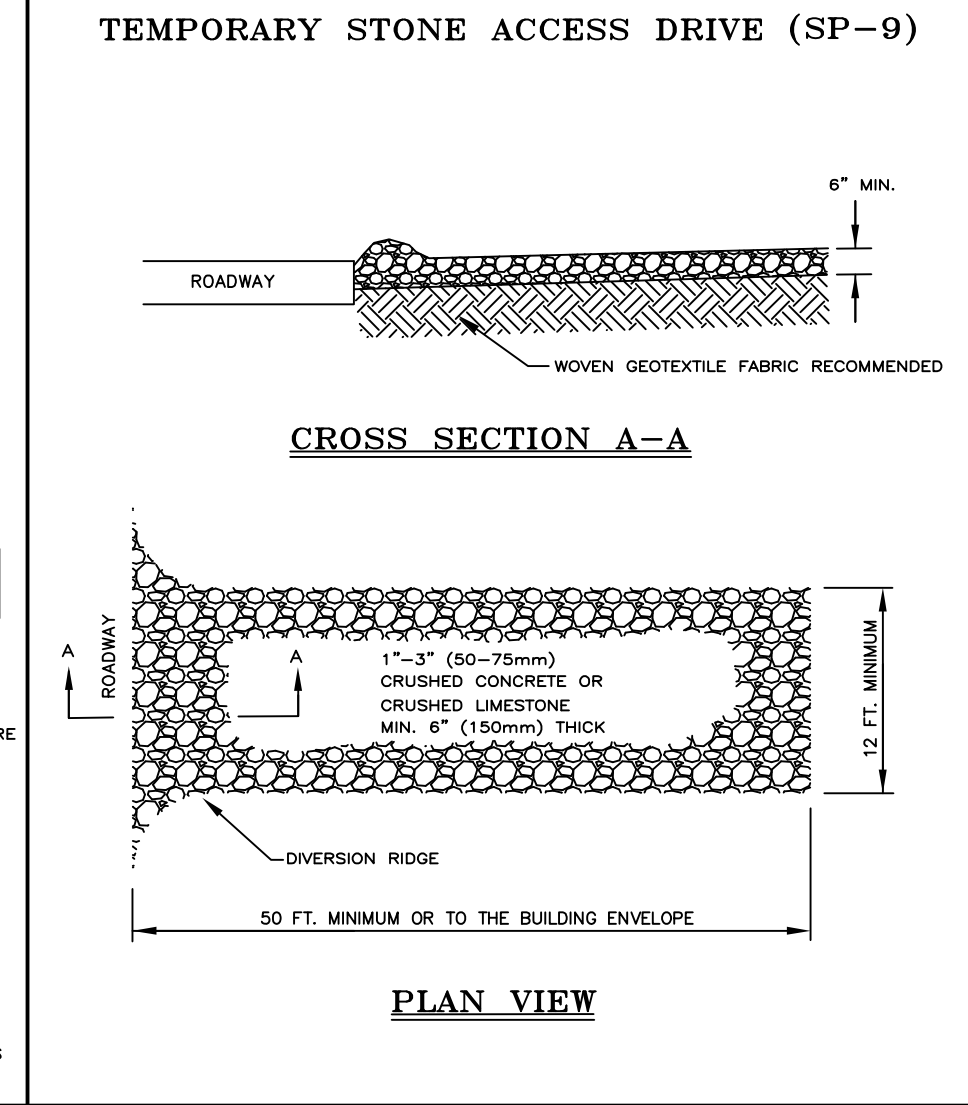
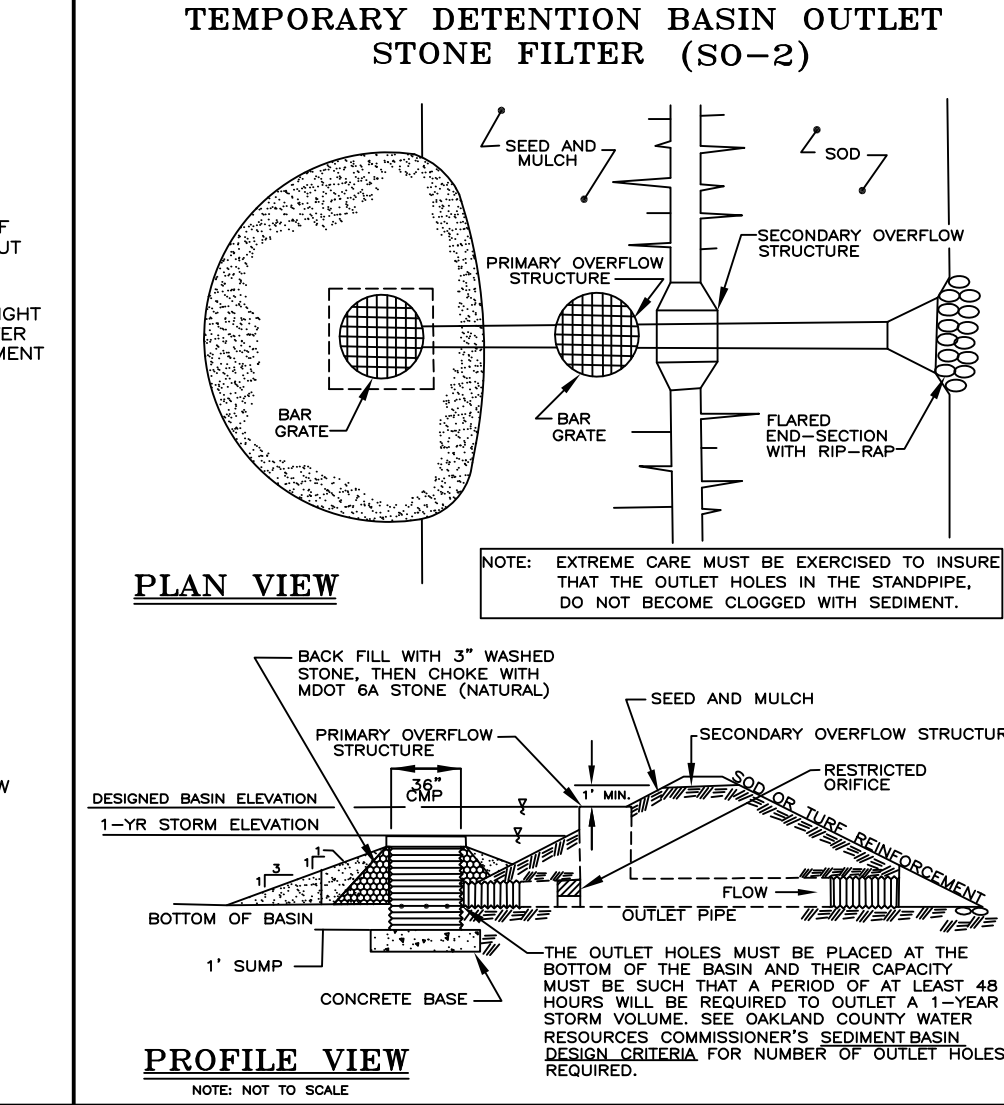
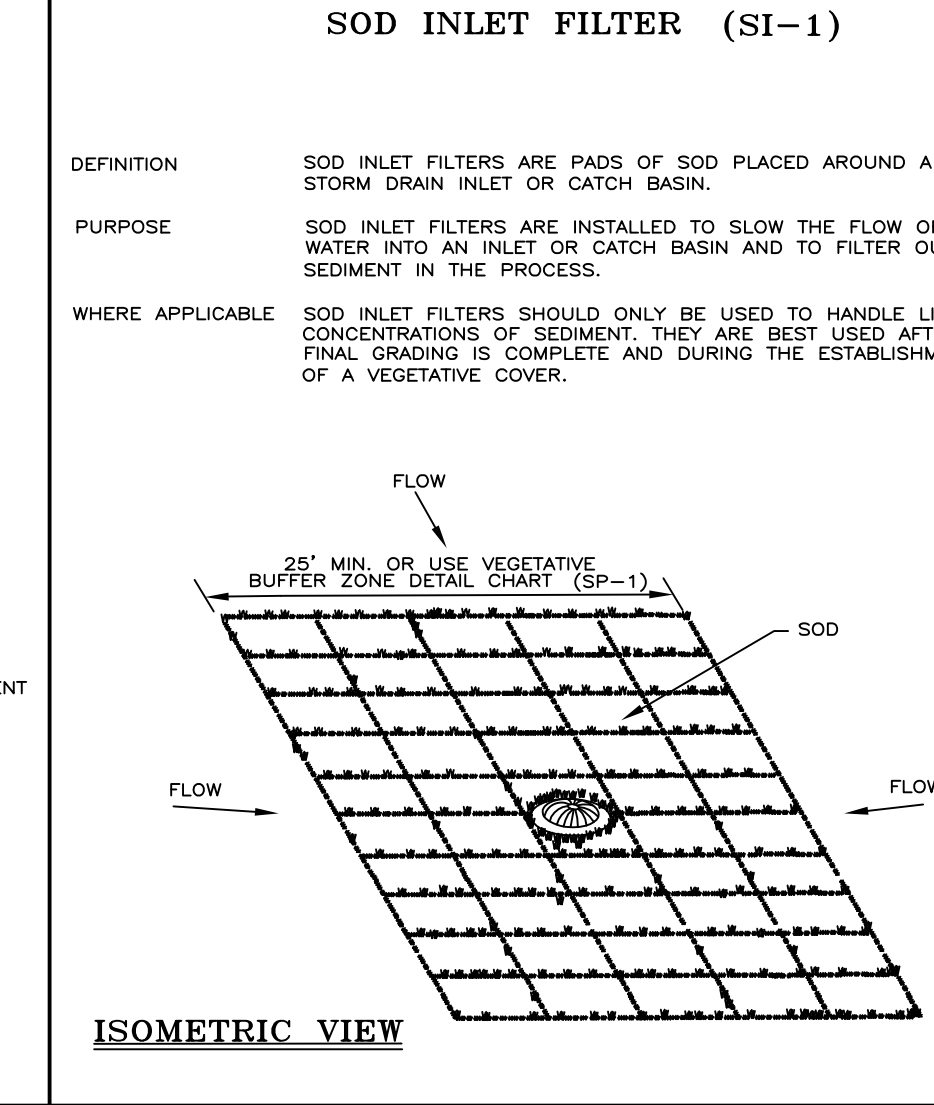
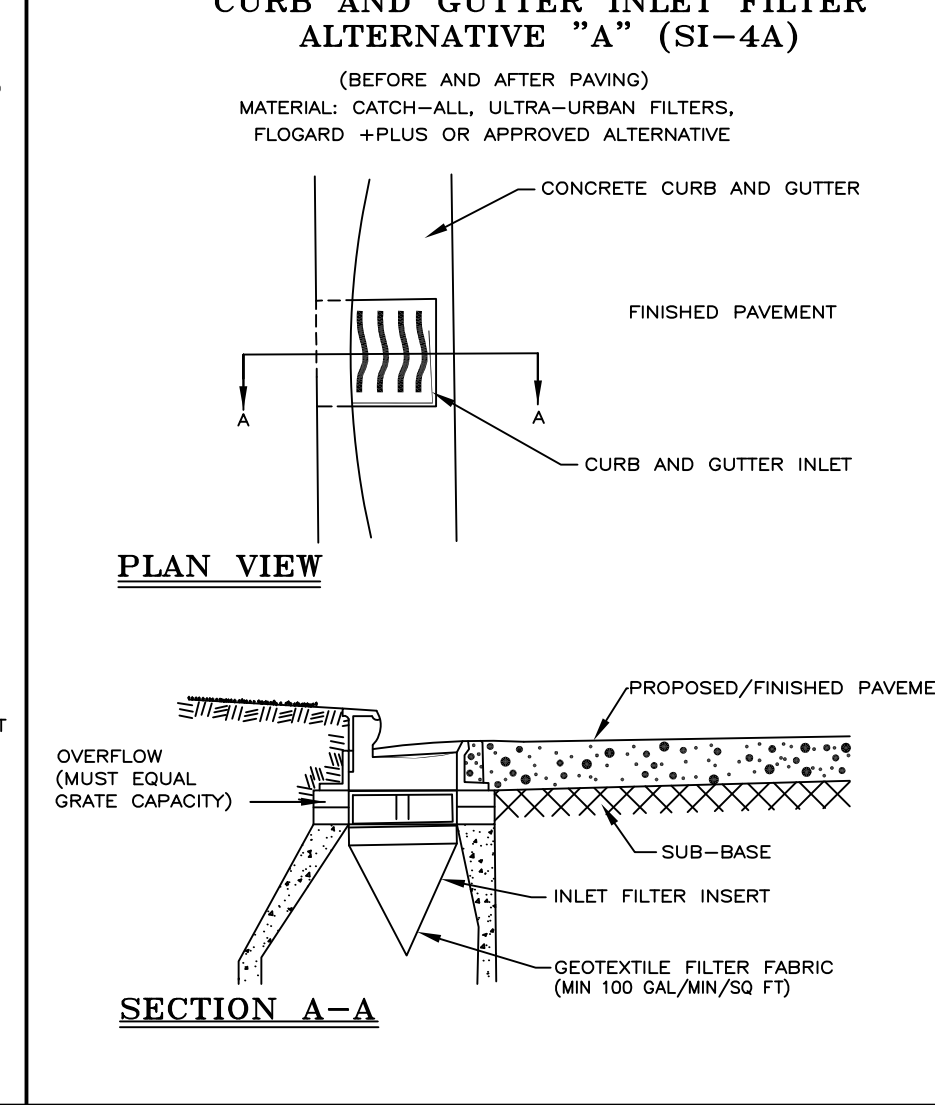
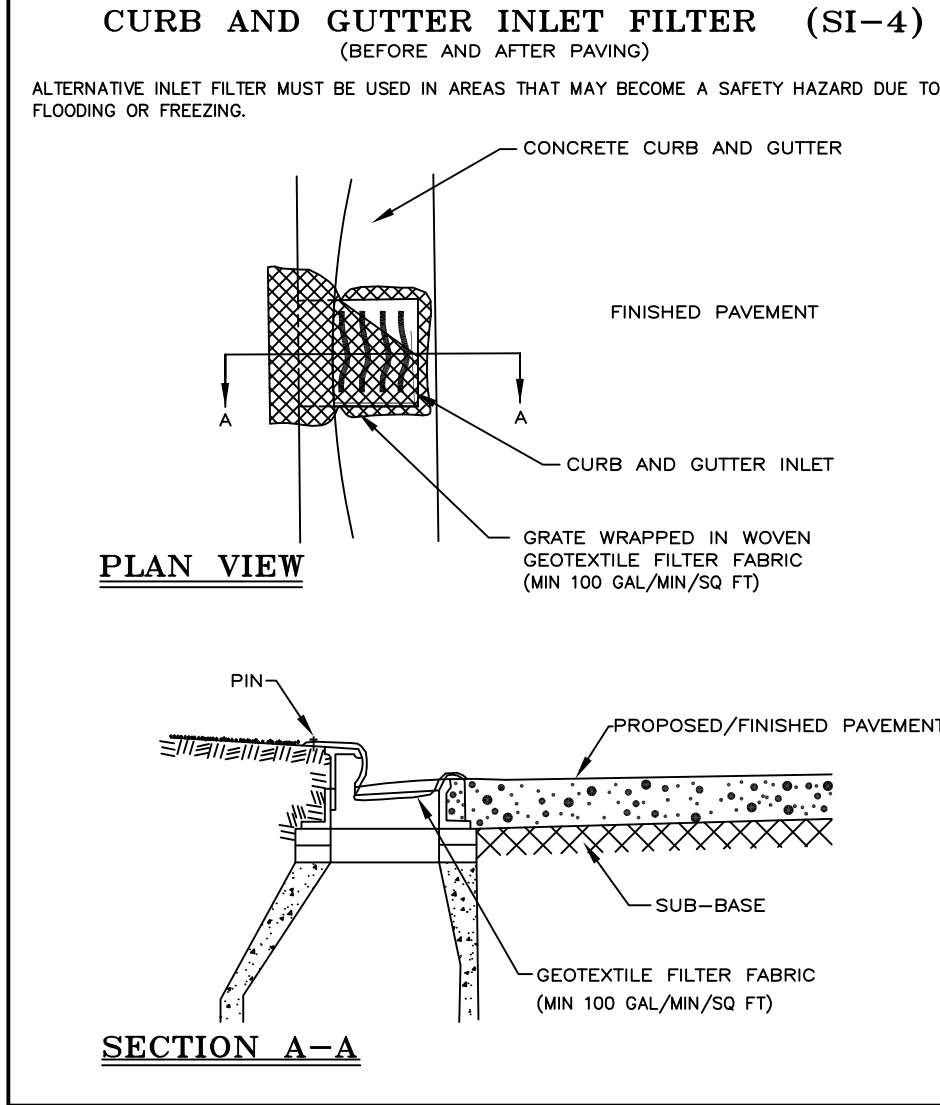
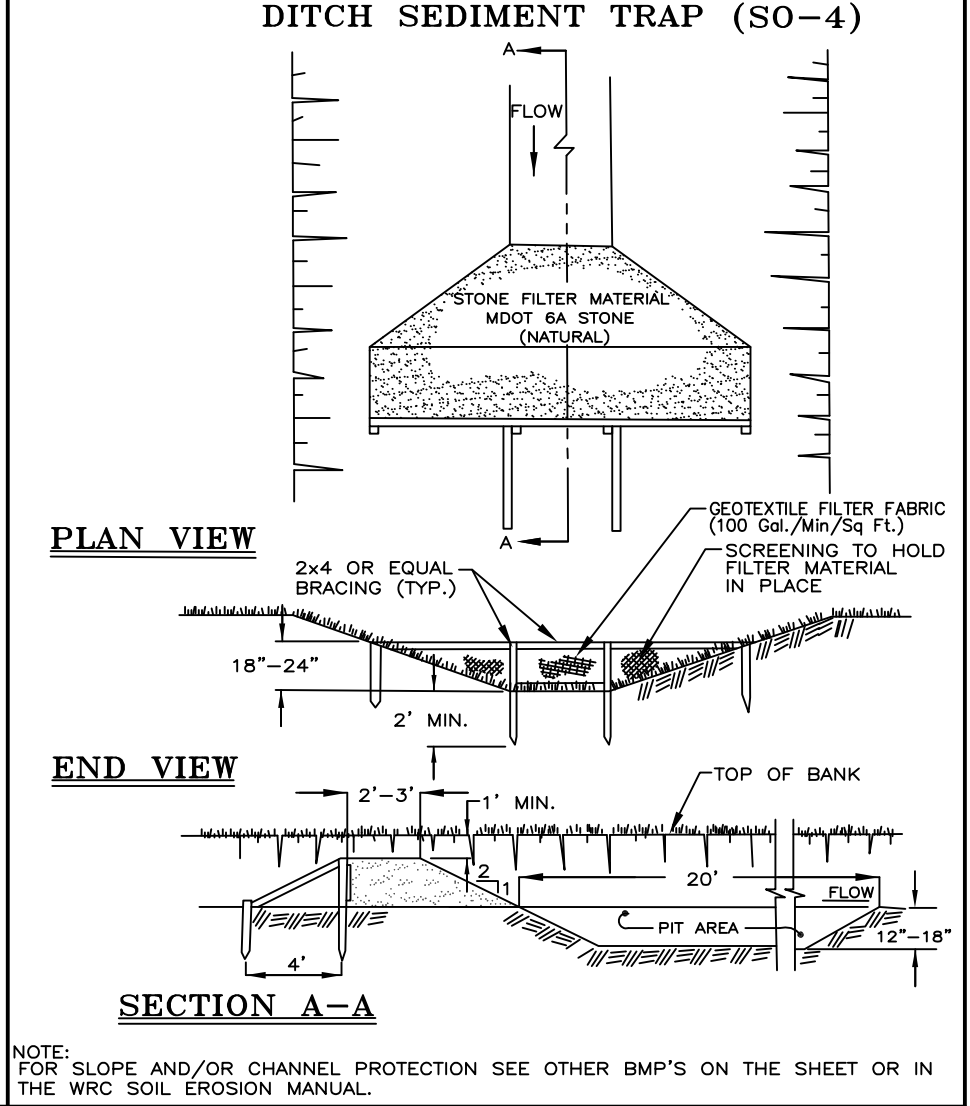
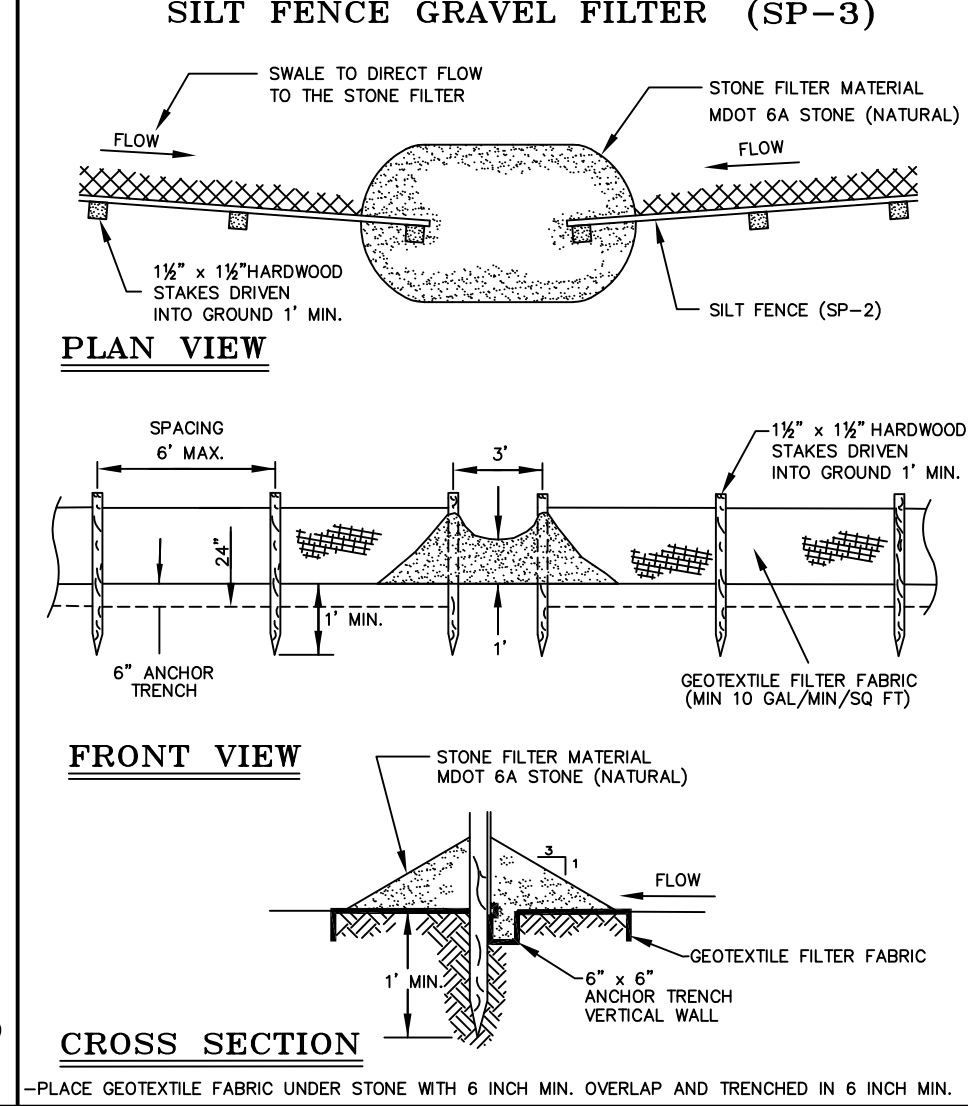
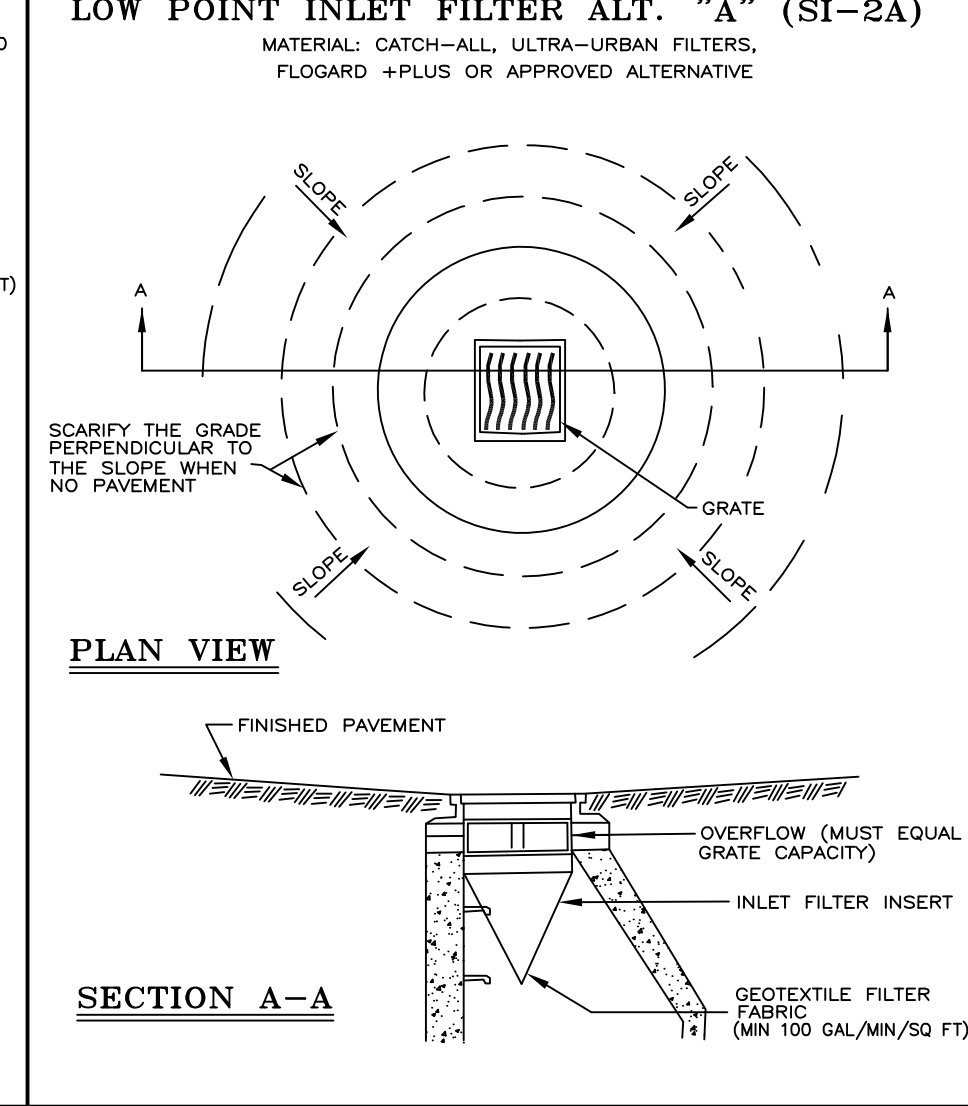
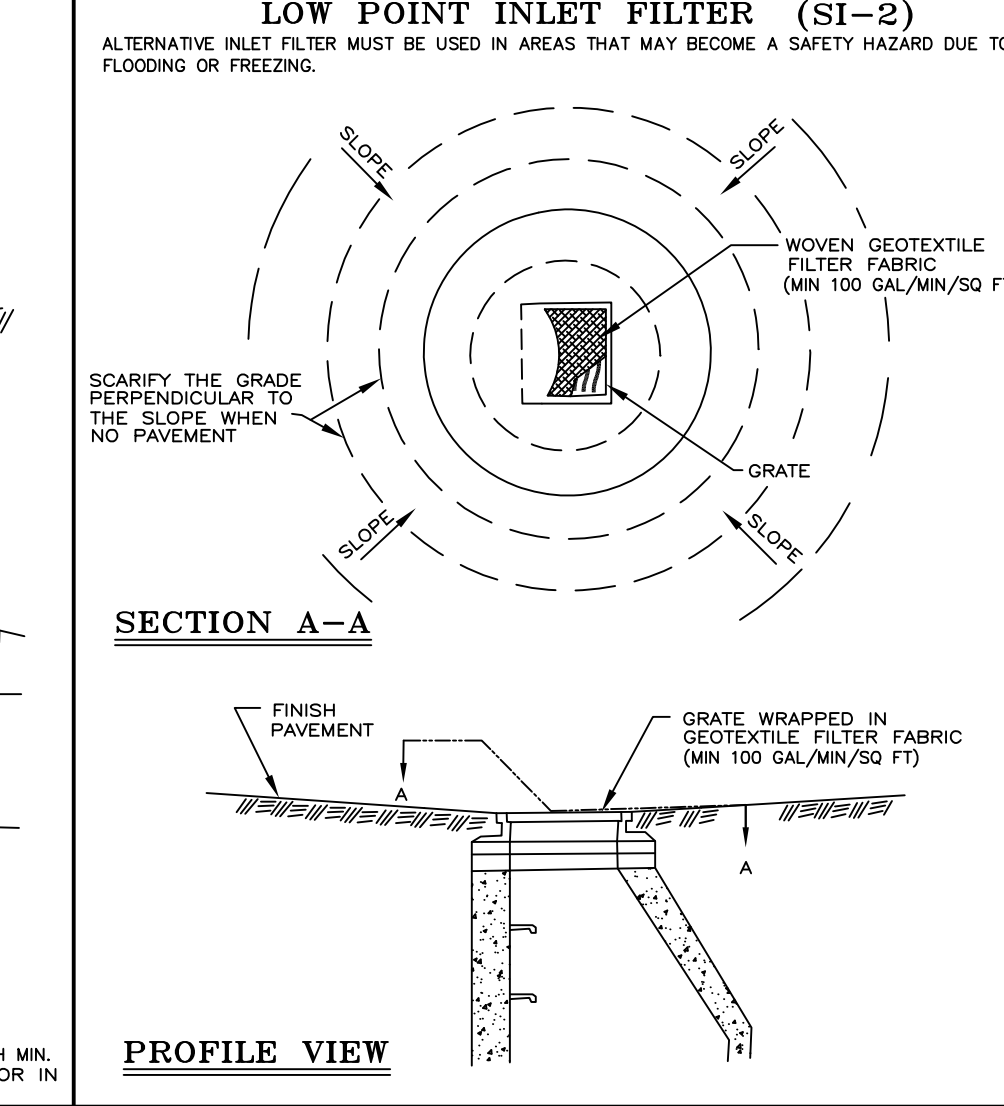
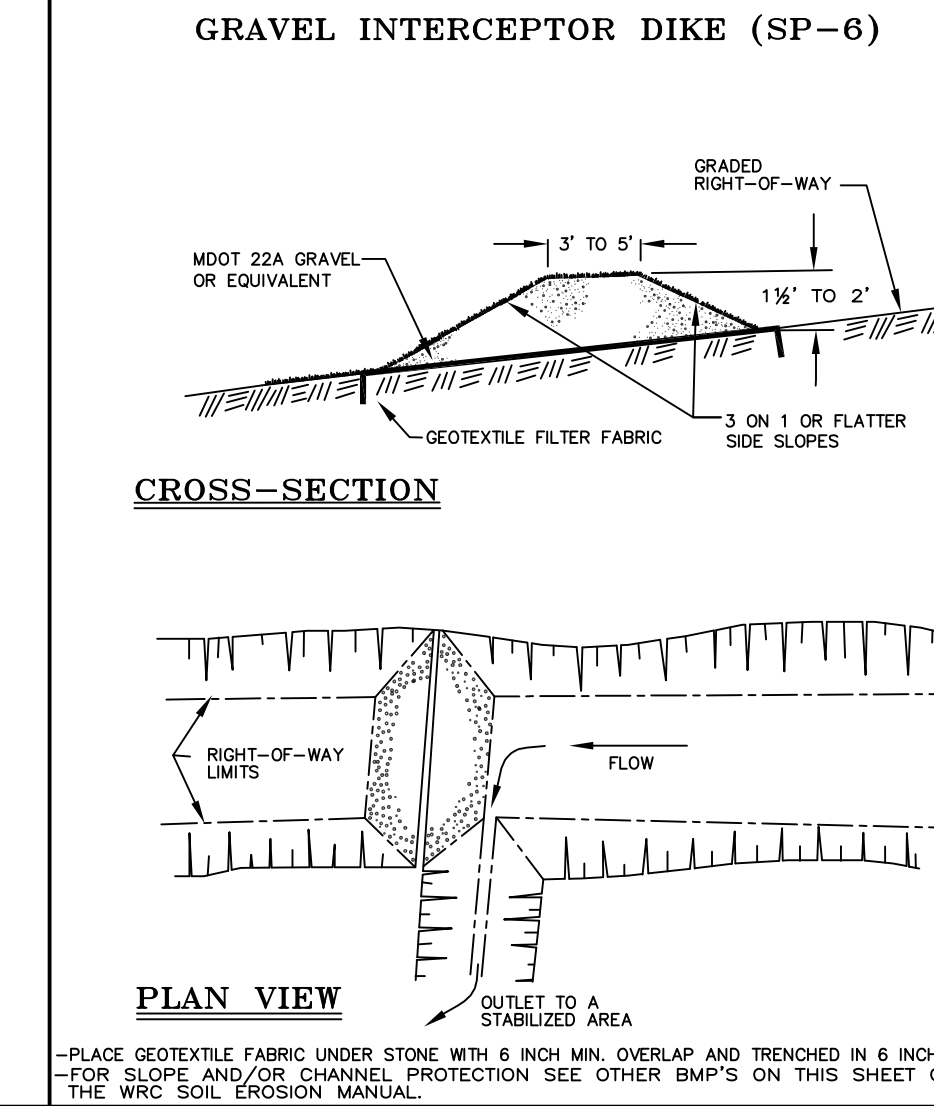
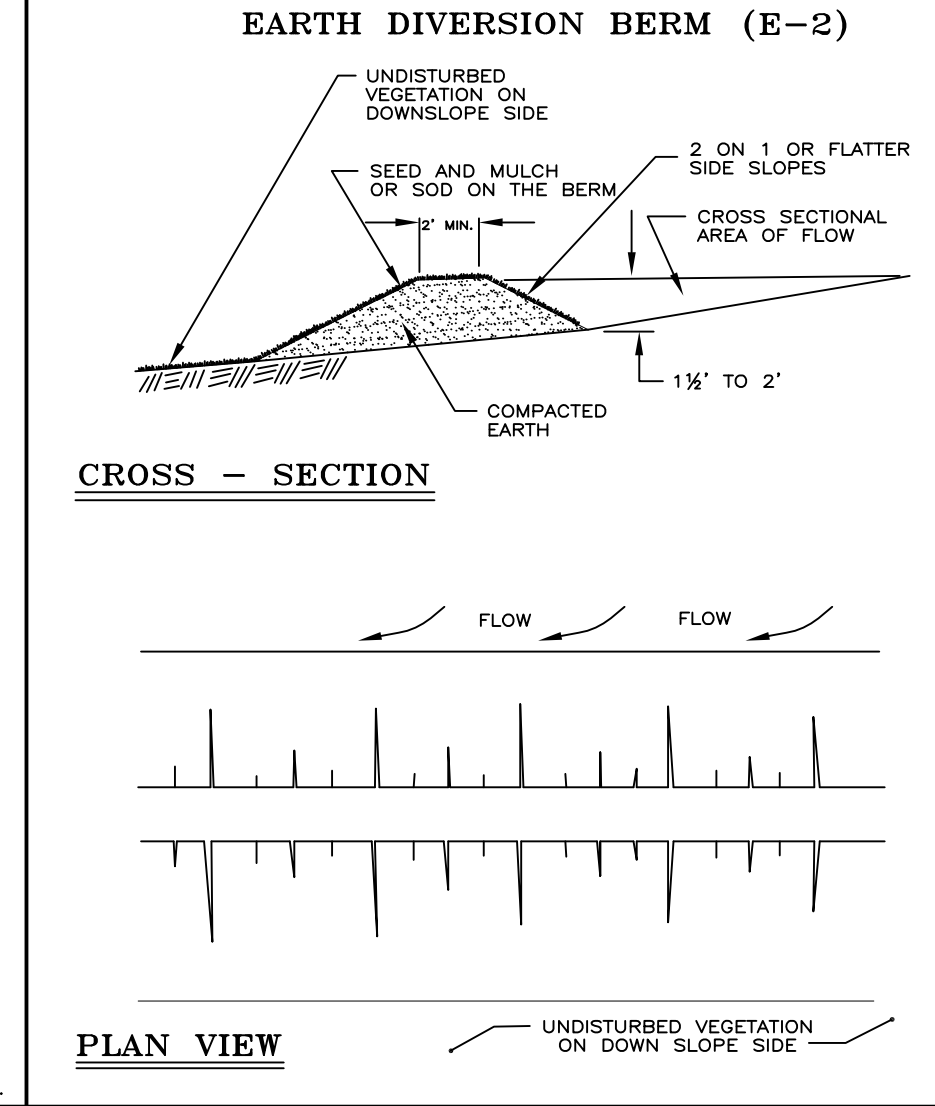
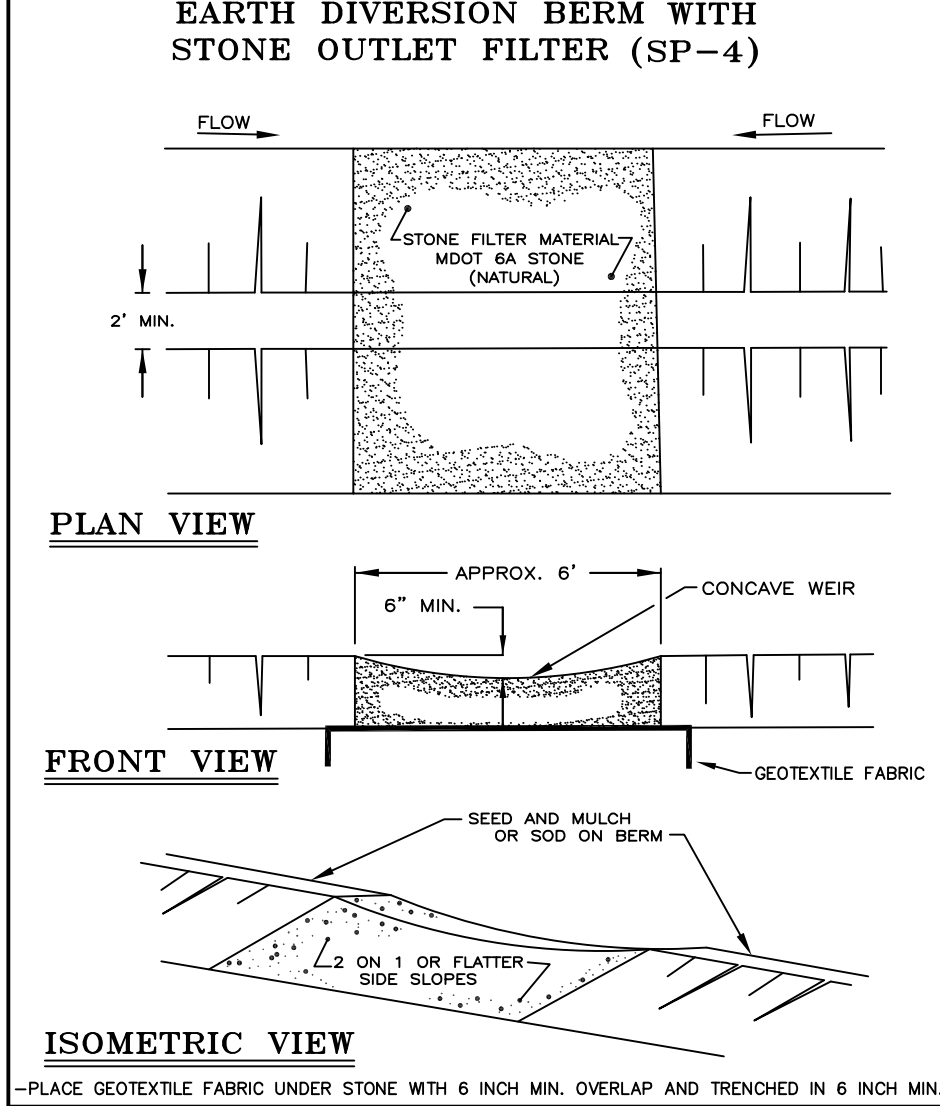
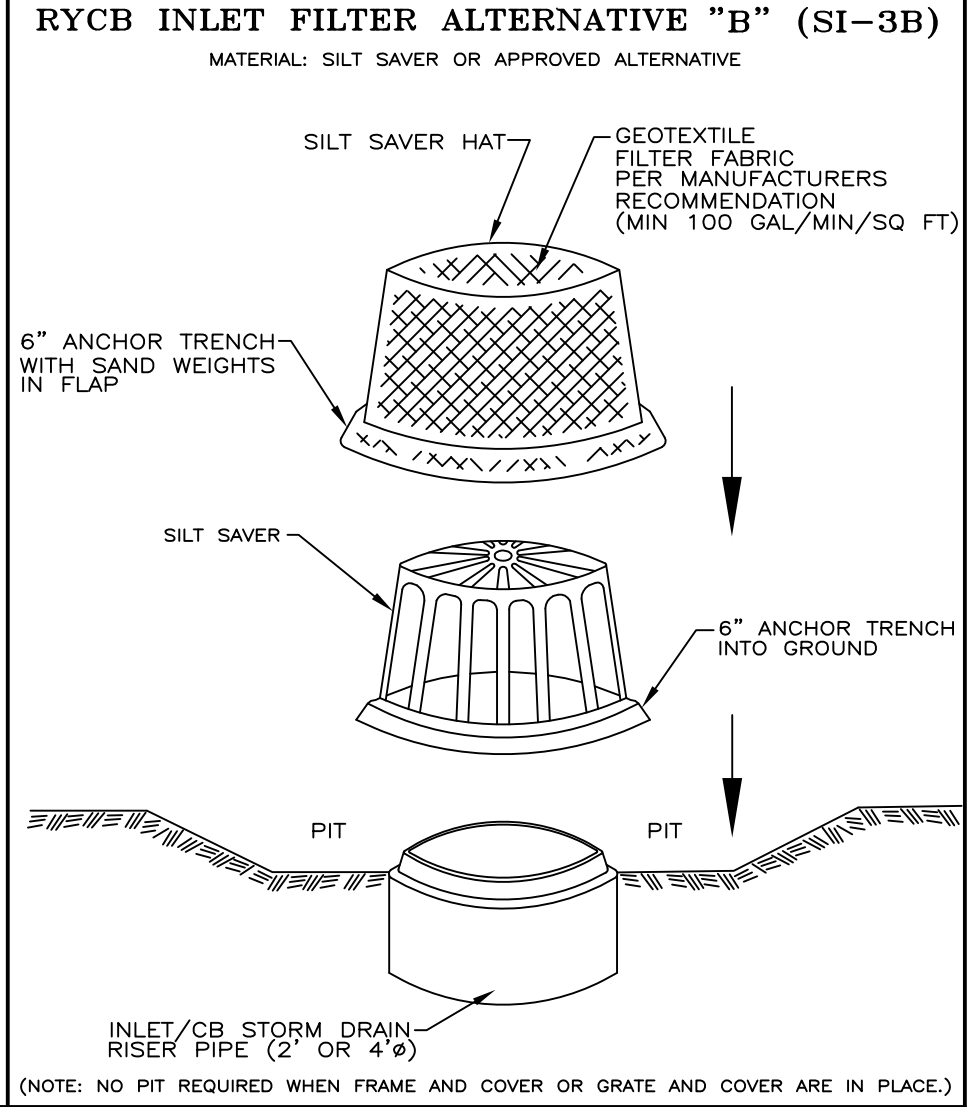
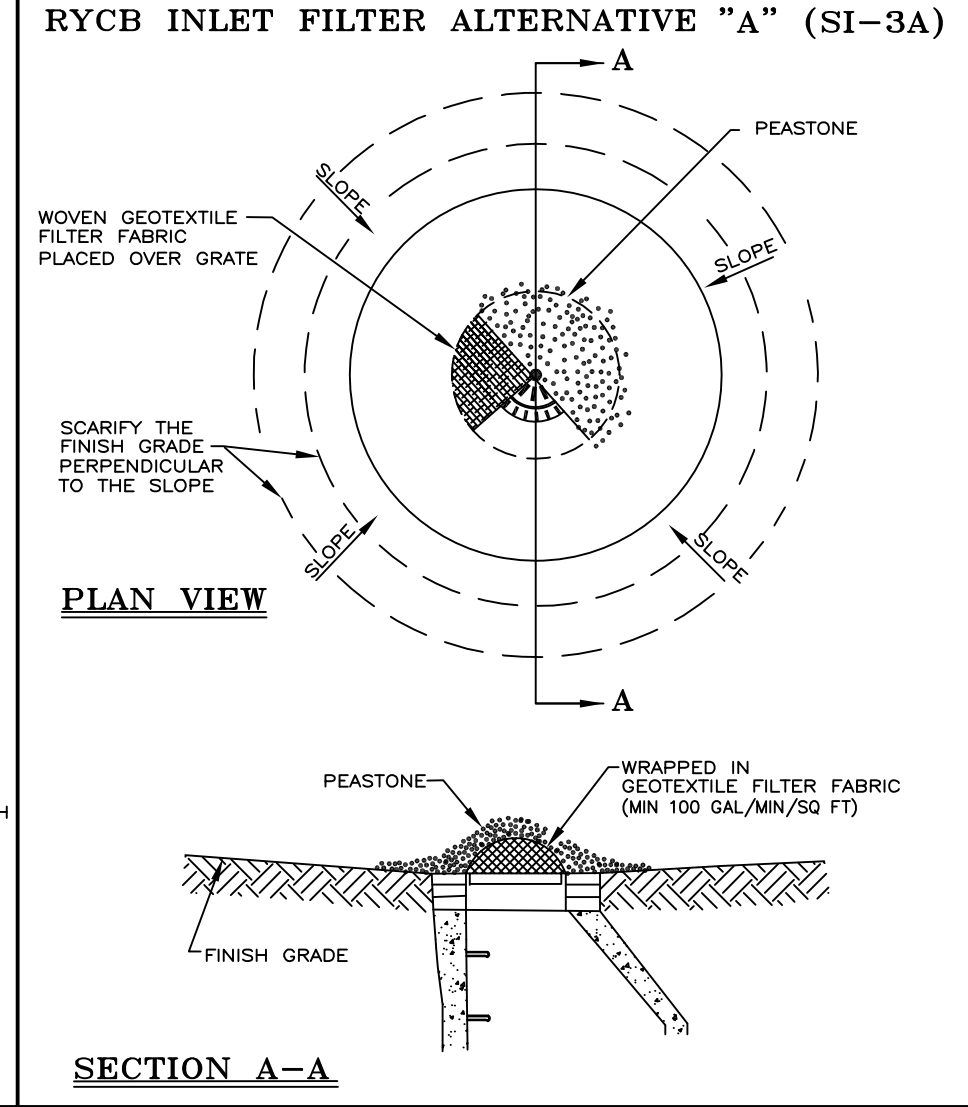
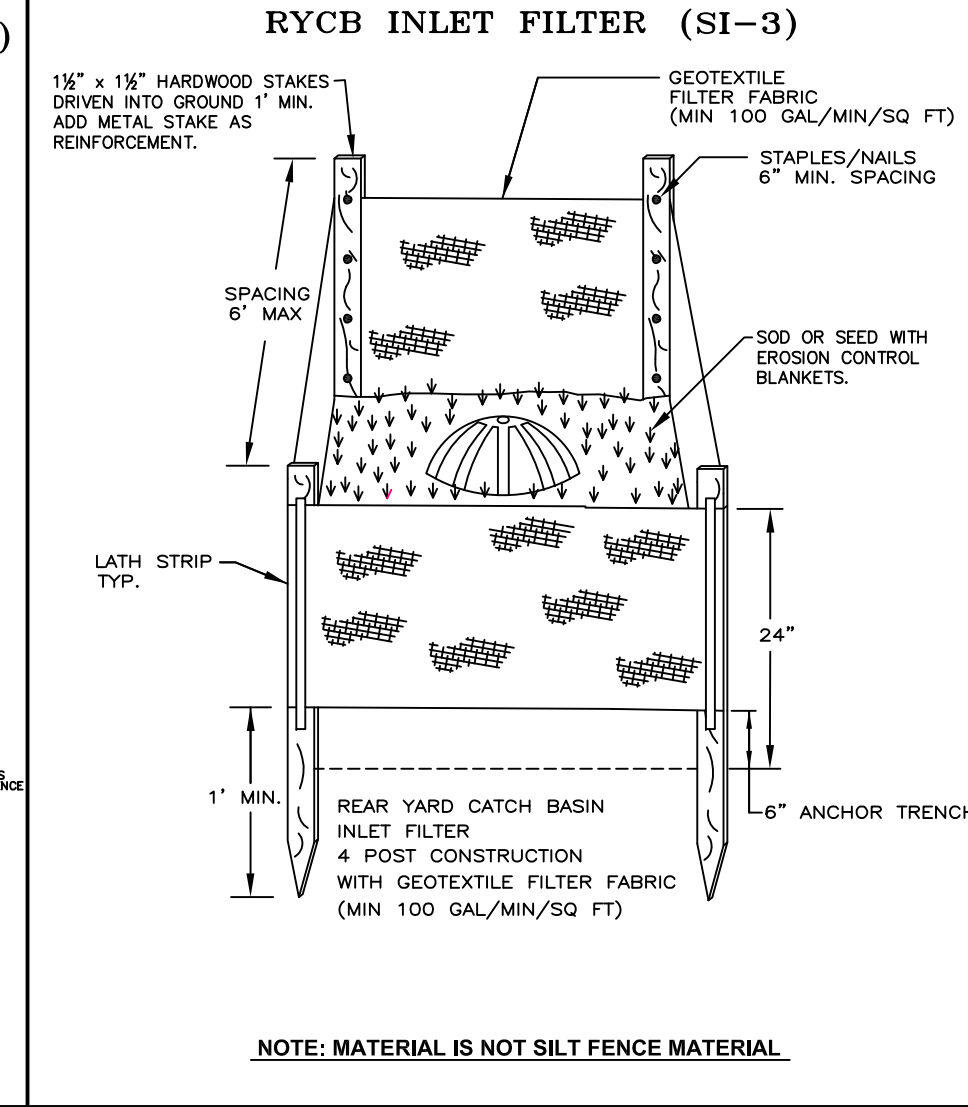
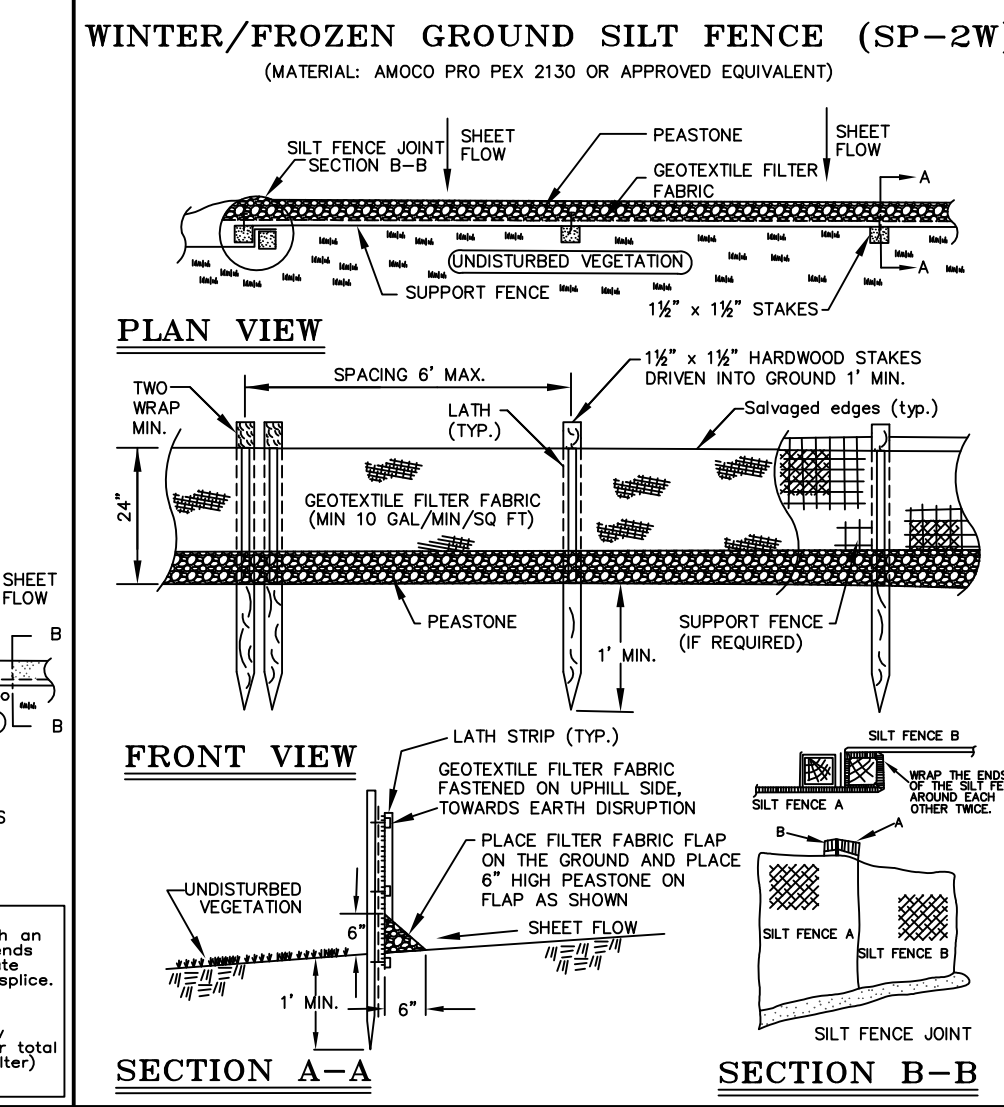
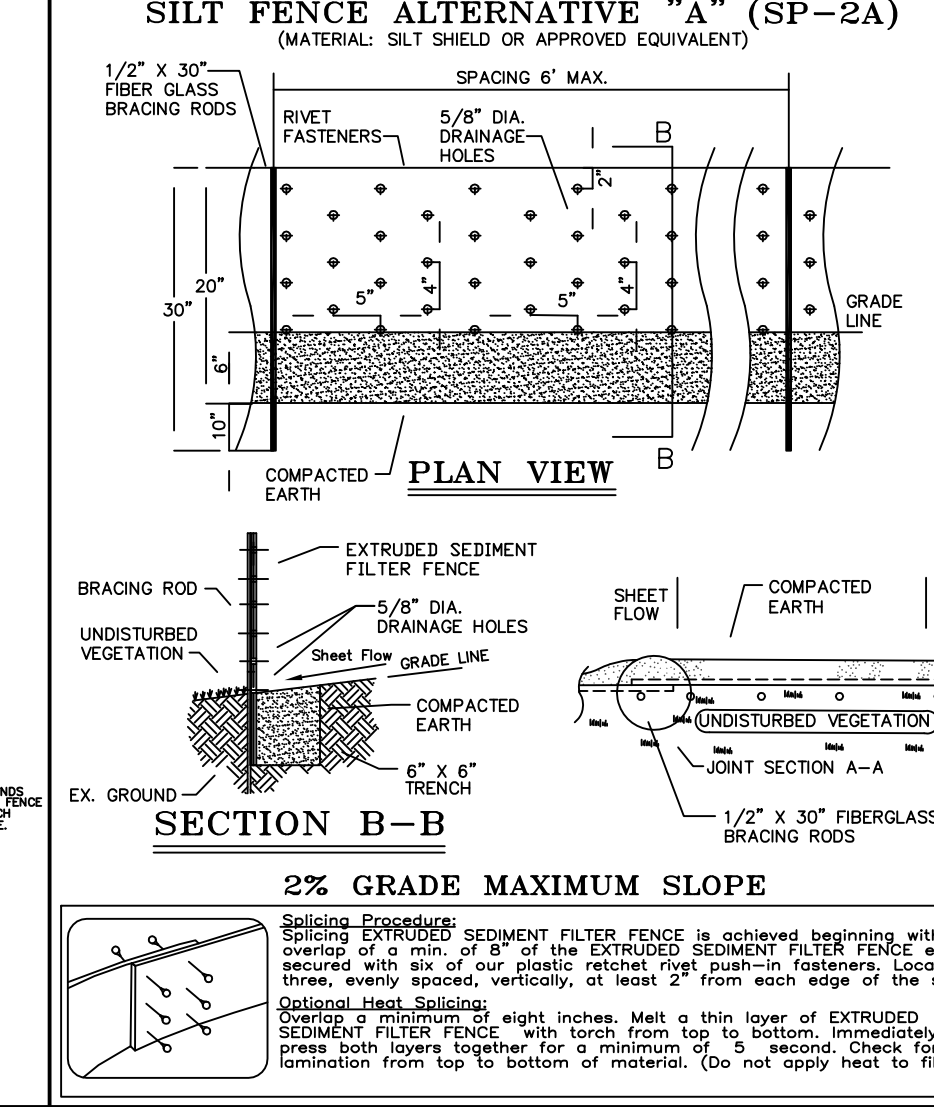
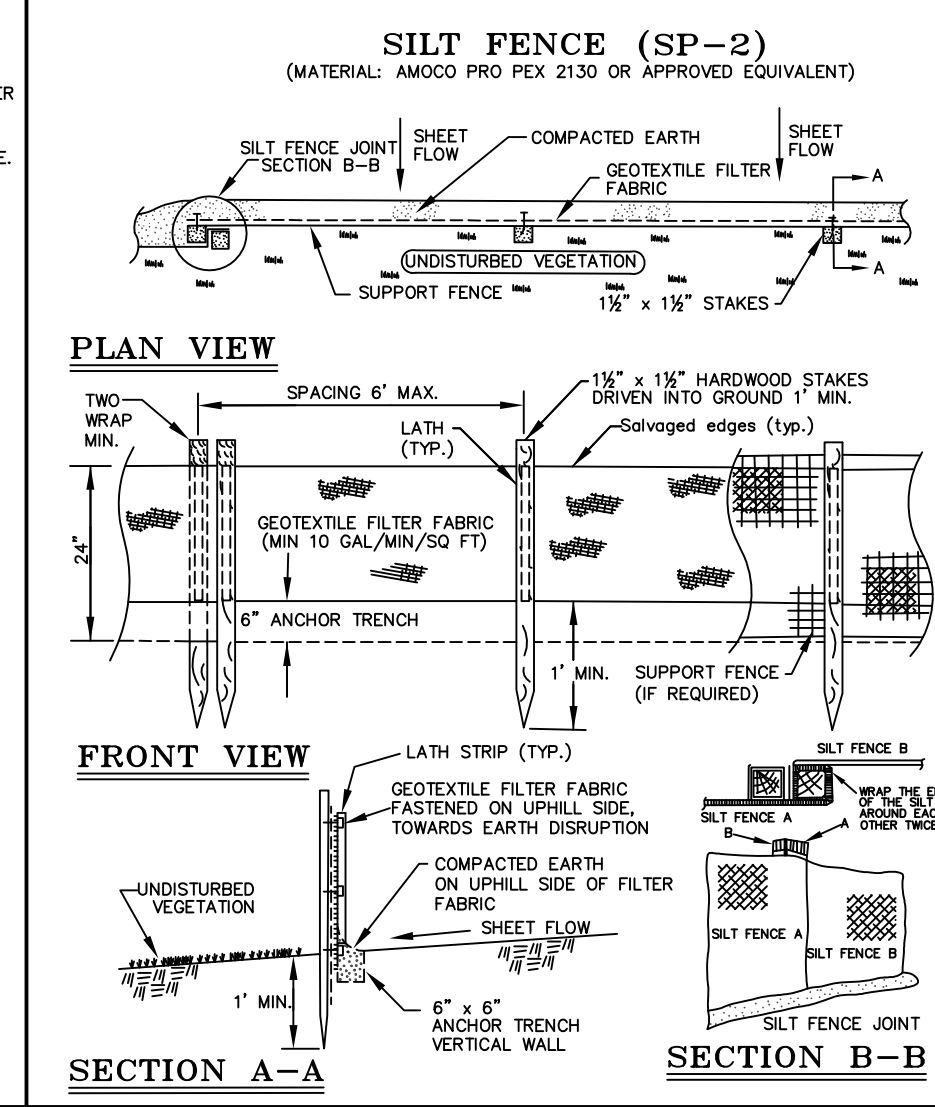
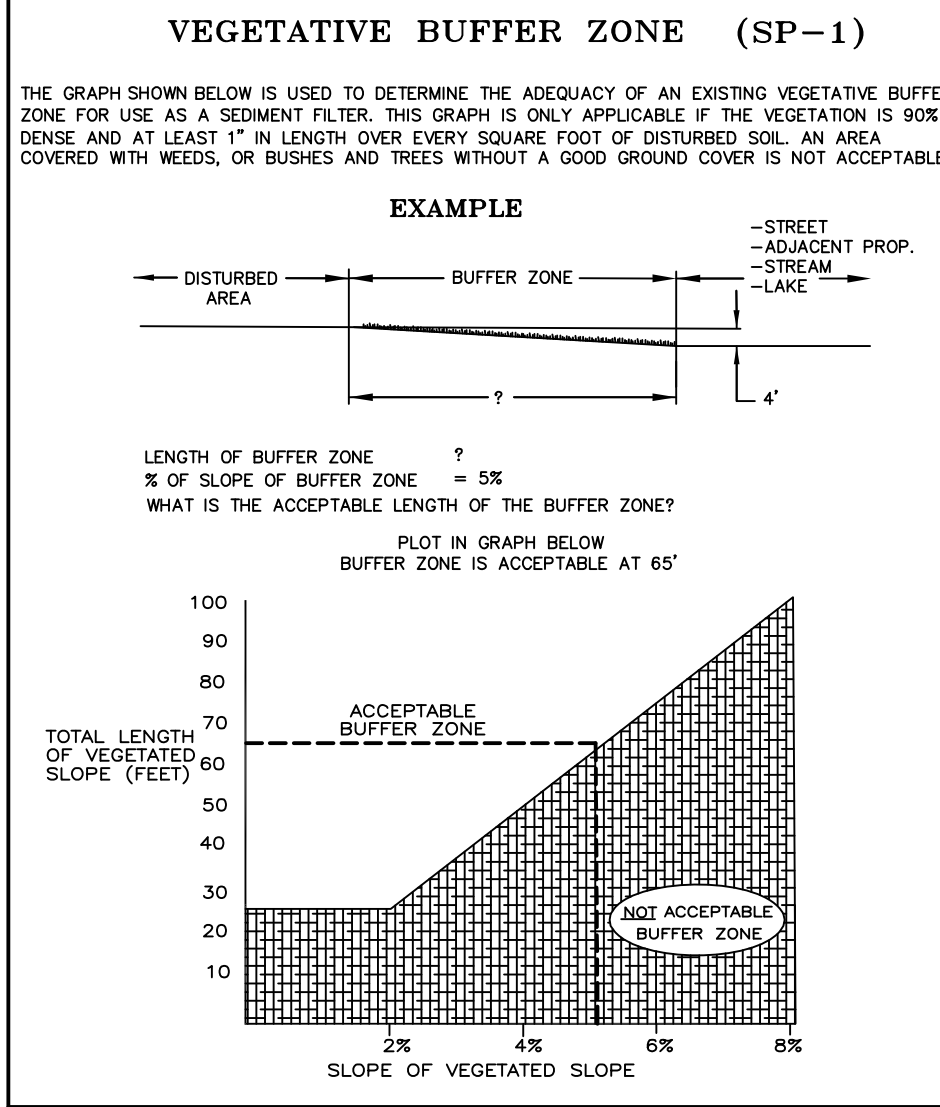
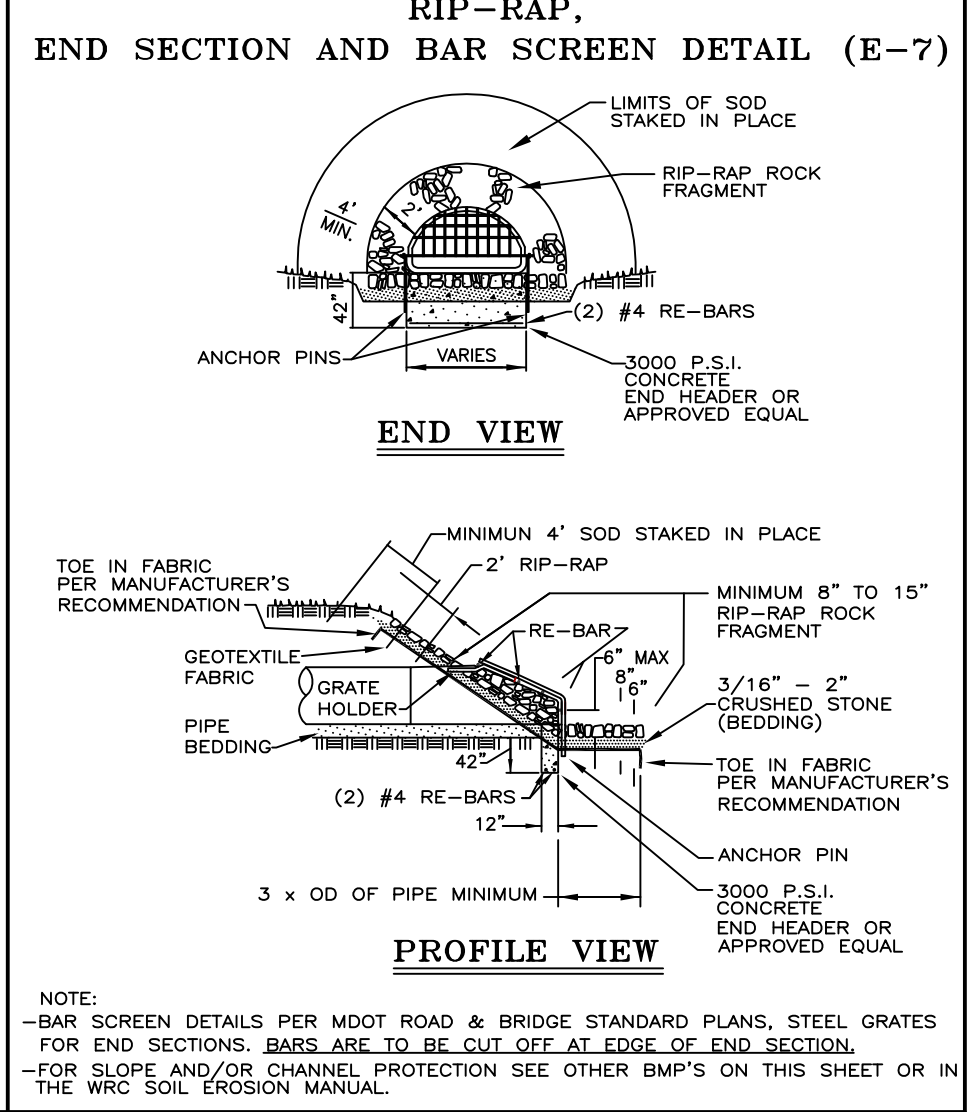
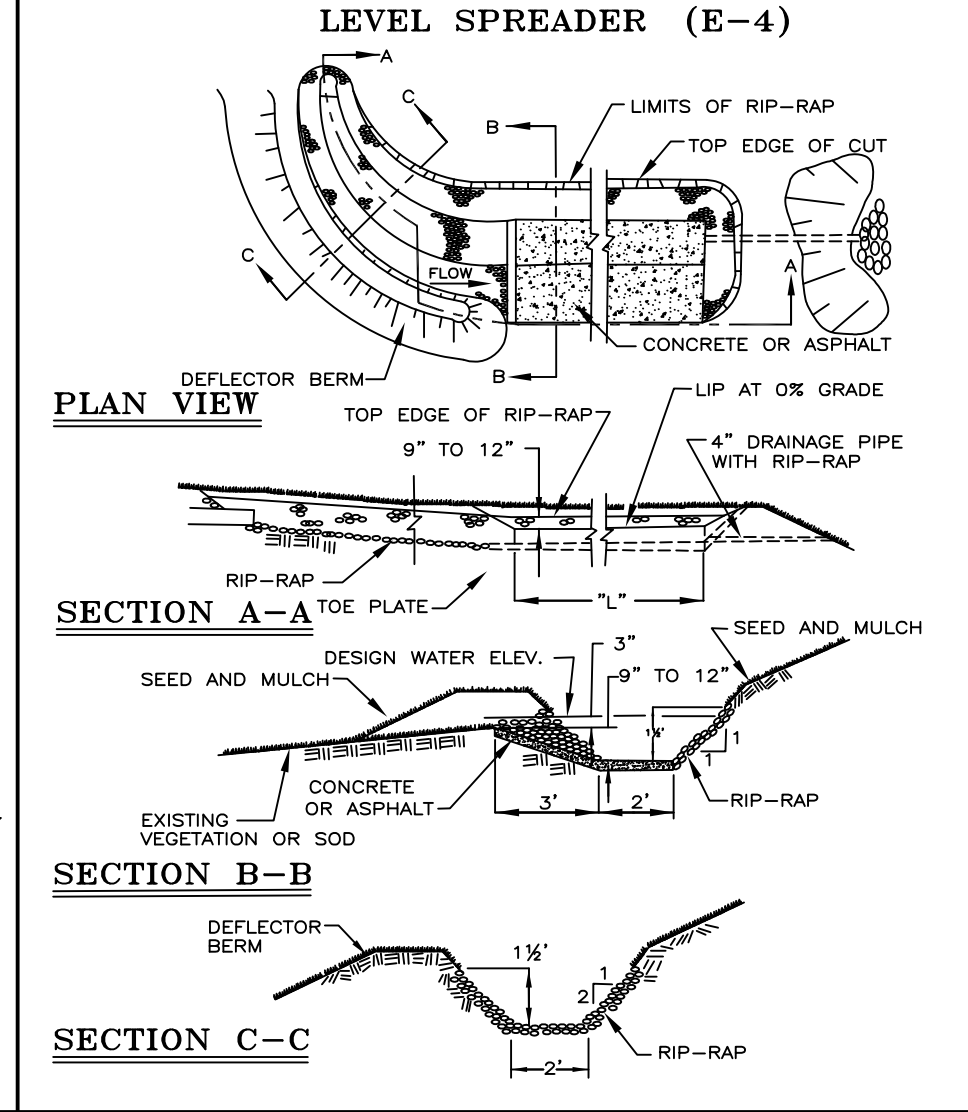
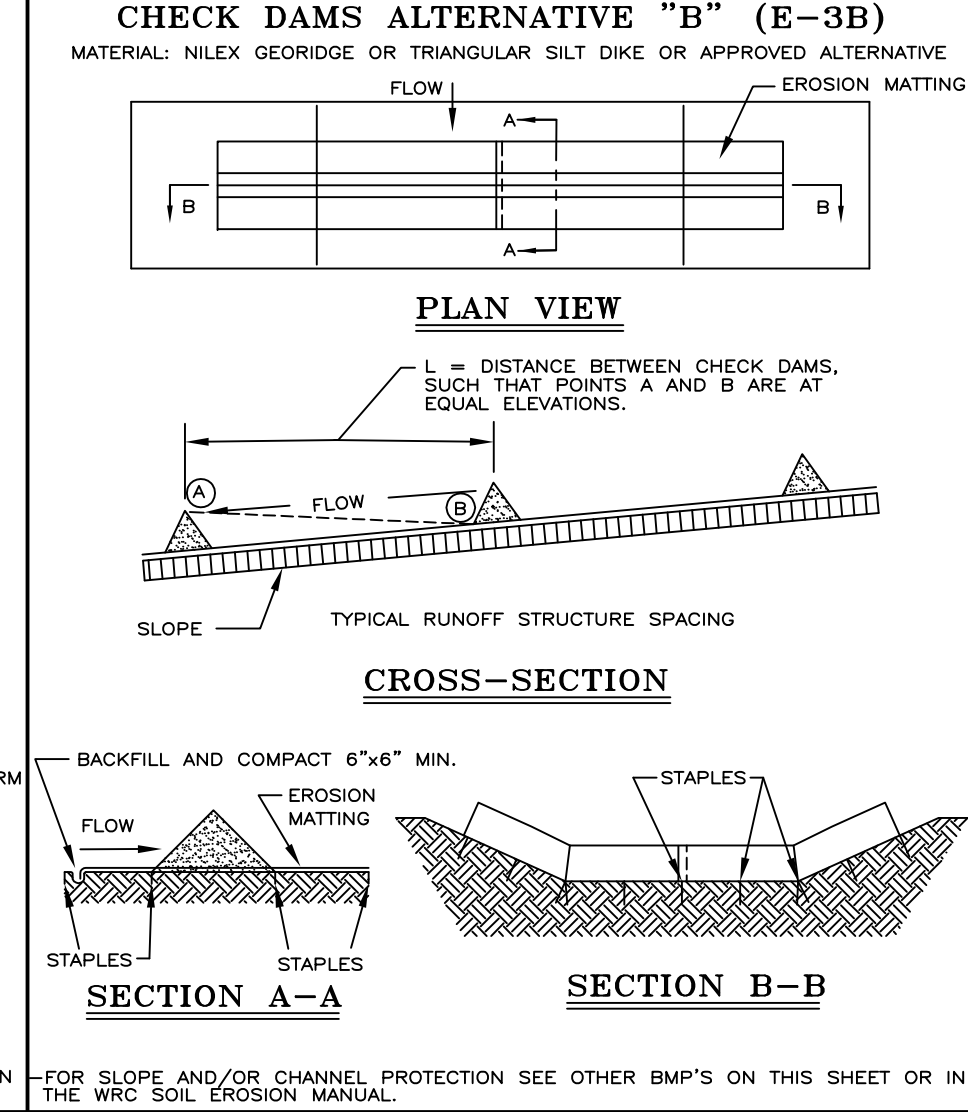
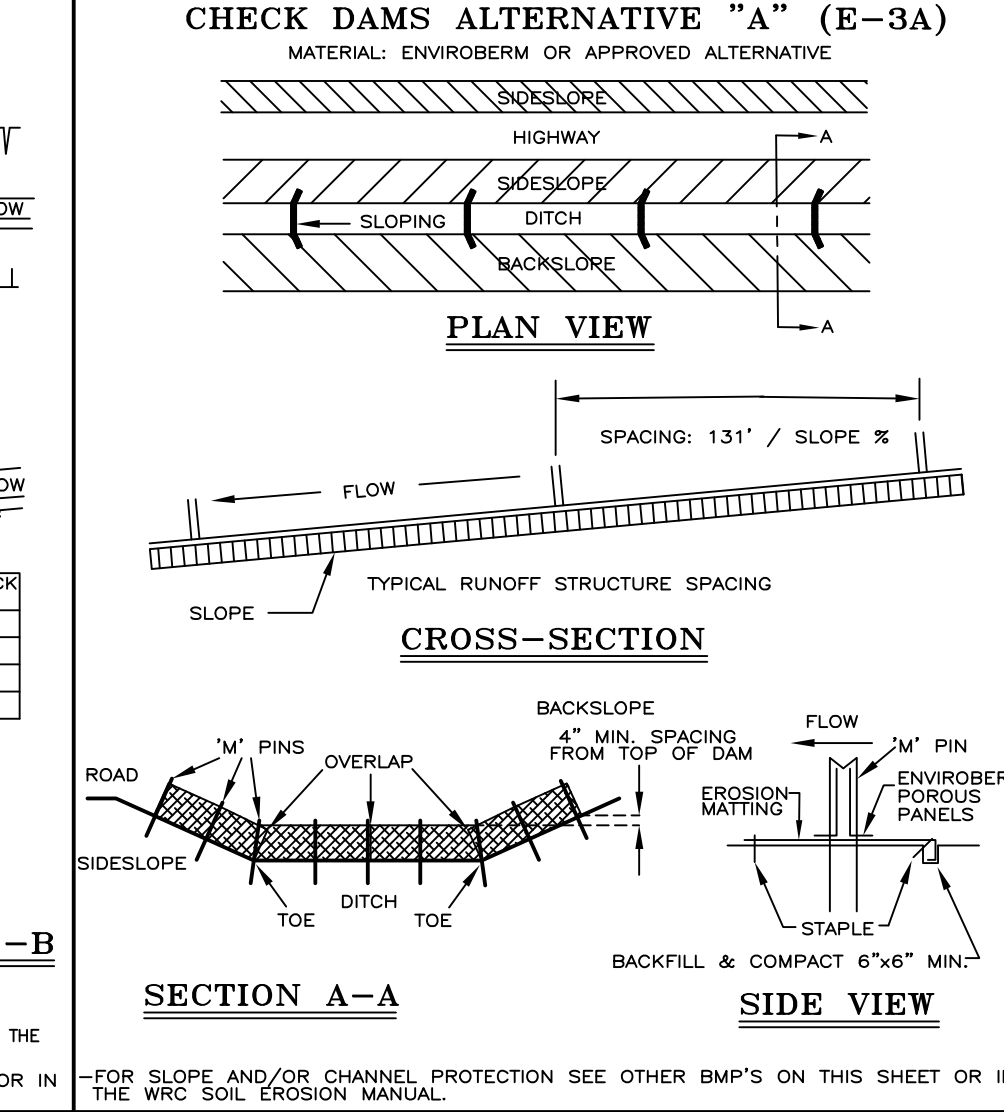
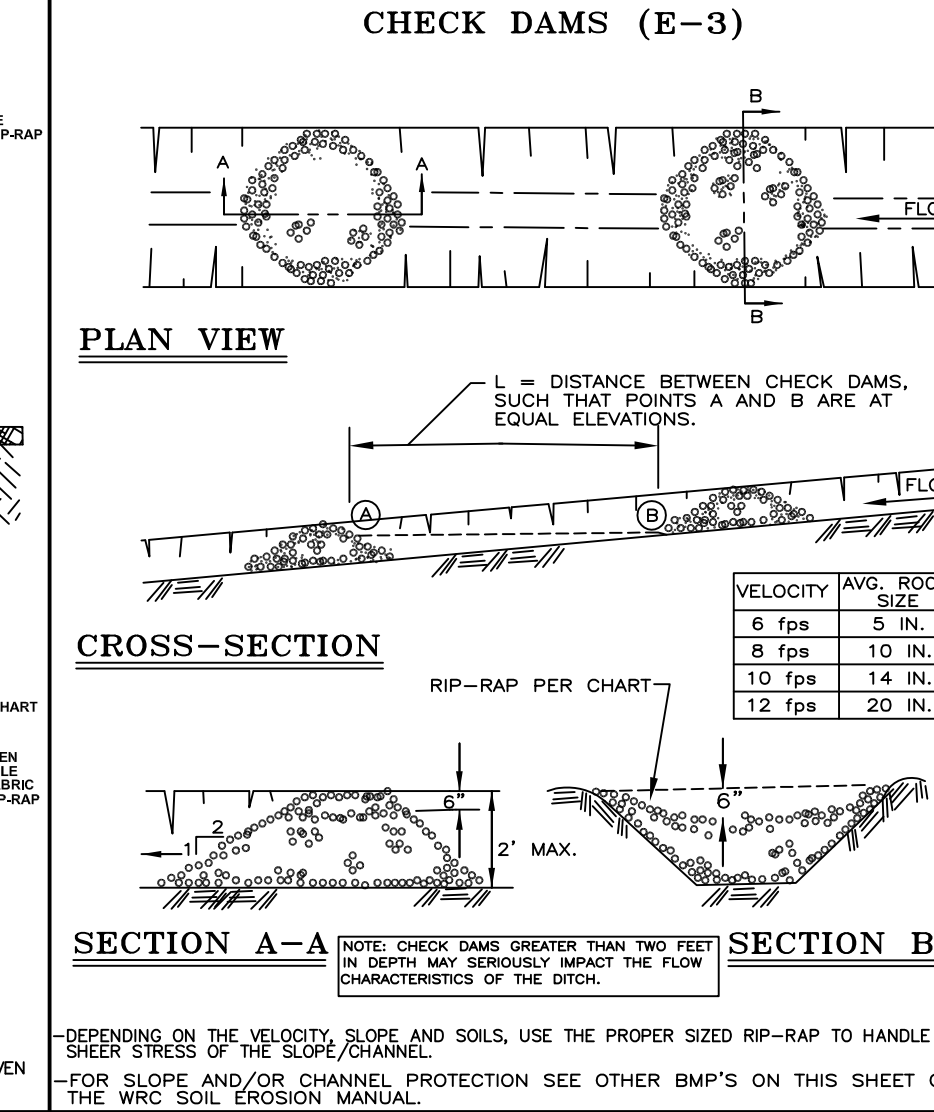
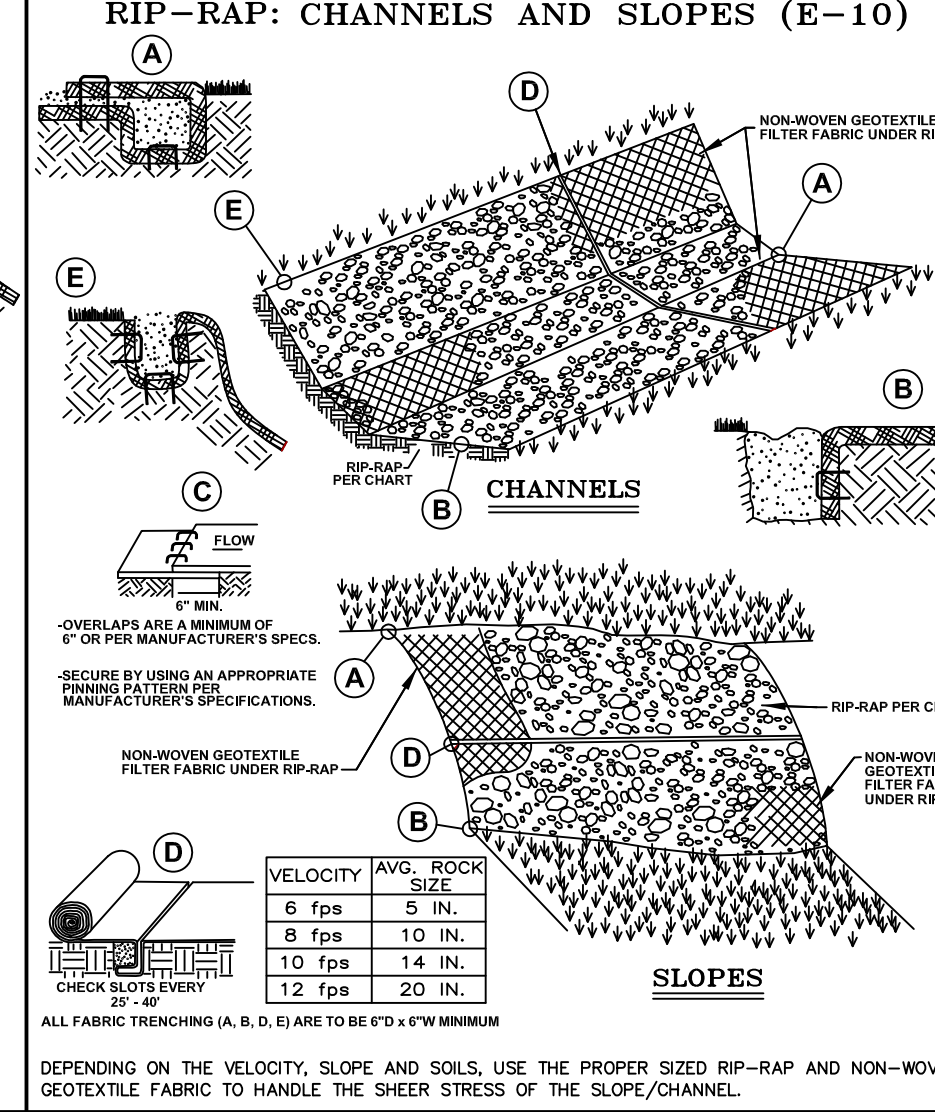
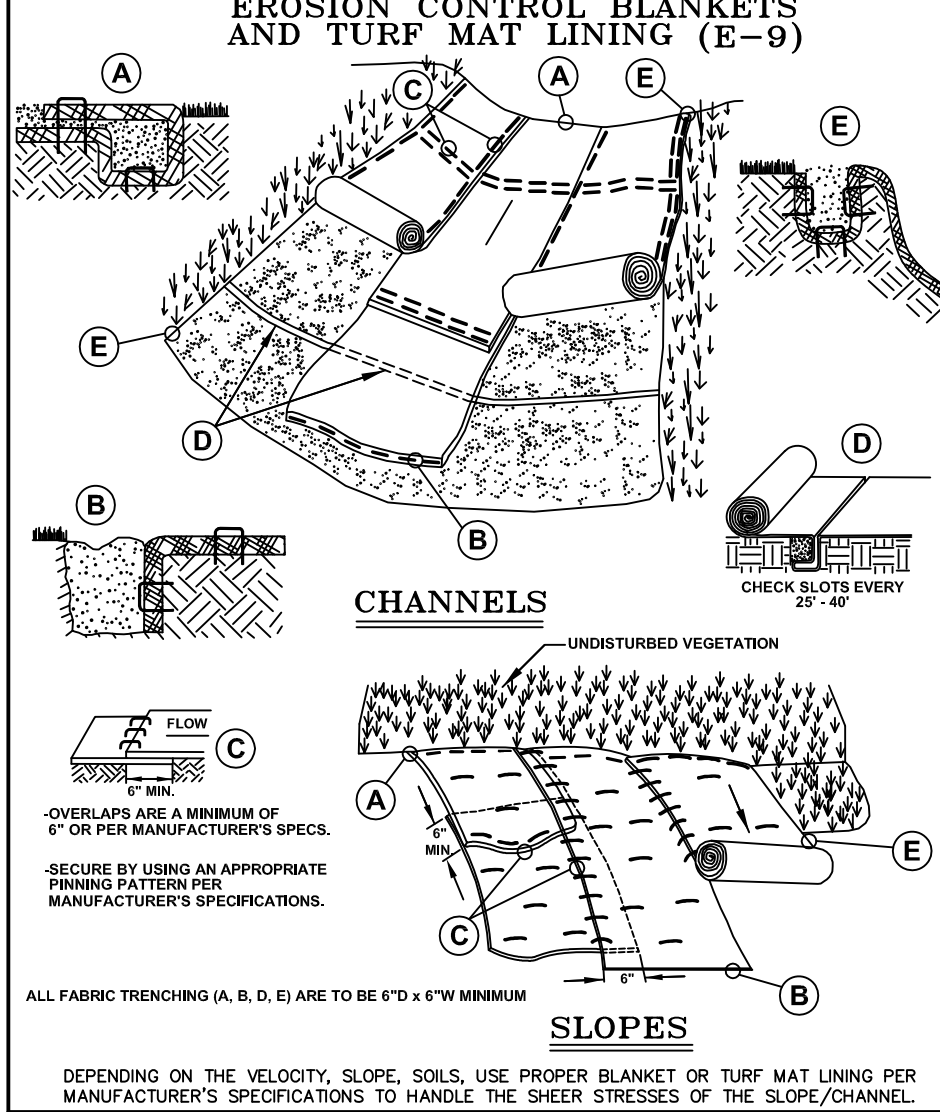
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	FIRST ISSUE	08/16/95		REVISE	10-03-02		REVISE	06-01-07
	ADD SO-1	06-17-96		REVISE	12-17-03		UPDATED TITLE BLOCK	04/30/13
	NEW BAR GRATE	11-03-97		SEC REFERENCE	05-17-05			

Johnson & Anderson
 4694 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115
 3910 Lapeer Road 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

STORM SEWER STANDARD DETAILS
 DATE ISSUED: 08/16/95
 SHEET NO. _____

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



NOTE:

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

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REV.	DATE	DESCRIPTION
1	01/01/01	ISSUED FOR PERMIT
2	01/01/01	PROPOSED DETAIL REVISIONS
3	01/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES
4	01/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES
5	01/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES

ORIG. DATE: 01/01/01

SCALE: _____

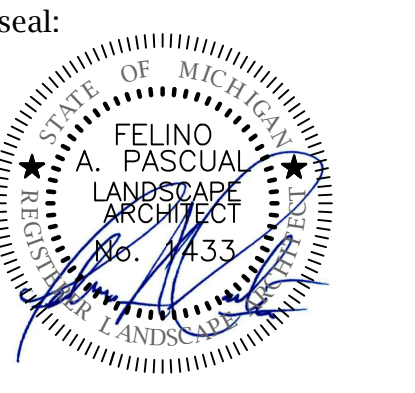
DESIGNED BY: WRC

DRAWN BY: Mapping

WRC WATER RESOURCES COMMISSIONER

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD MICHIGAN 48320-1907

SHEET NO.: 1 of 1



client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

Union Lake Road

sheet title:
OVERALL LANDSCAPE PLAN VIEW

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
LS21.009.01	SPA	2-02-2021
LS21.009.03	SPA	3-22-2021

drawn by:
JP, DK

checked by:
FP
 date:
1-4-2021

notice:
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 Do Not scale drawings. Use figured dimensions only.



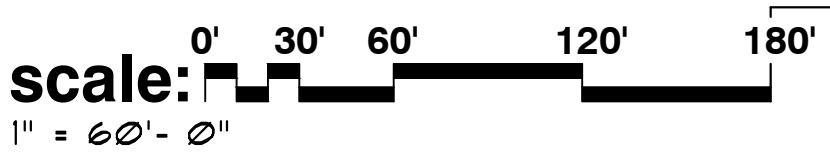
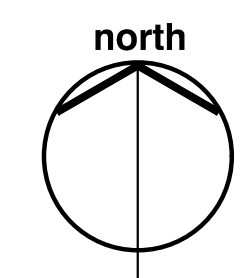
The location and elevations of existing underground utilities as shown on this drawing are only approximate; no guarantee is either expressed or implied as to the completeness of accuracy; contractor shall be exclusively responsible for determining the exact location and elevation prior to the start of construction.

project no:
LS21.009.01

sheet no:
LS-1 of 7

overall view landscape plan for:
Lake Pointe
 a multi-family residential community
 White Lake Township, Michigan

note:
 conceptual landscape plan for graphic presentation purposes only and in no way a construction document or approved for record.



general landscape notes:

- LANDSCAPE CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANTINGS AND RELATED WORK, CONTACT THE OWNER AND/OR LANDSCAPE ARCHITECT WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLAN, PLANT MATERIAL LIST, AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE TO BE LOCATED BY CONTACTING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING.
- NUMERICAL VALUE ON THE LANDSCAPE QUANTITIES SPECIFIED ON THE PLAN TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY ANY CONCERN/DISCREPANCY WITH LANDSCAPE ARCHITECT.
- ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON SITE IF NECESSARY.
- ALL SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY WHITE LAKE TOWNSHIP AND LANDSCAPE ARCHITECT.
- ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAILED, SHOWN ON PLAN.
- PLANT BEDS TO BE DRESSED WITH MIN. 4" OF FINELY DOUBLE SHREDDED HARBARK MULCH.
- DIG SHRUB PITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
- NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK MULCH REQUIRED FOR ALL PLANTINGS.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB EARTH BALLS, AND FROM TREE TRUNKS. 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE WITH 3" PULLED AWAY FROM TRUNK. 4" THICK BARK MULCH FOR SHRUBS AND 4" THICK BARK MULCH FOR PERENNIALS.
- PLANT MATERIAL QUALITY & INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- PROVIDE FEAT SOD FOR ALL NEW AND DISTURBED LAWN AREAS UNLESS NOTED OTHERWISE.
- ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND FERTILIZER BEFORE PLANT INSTALLATION.
- PLANT TREES AND SHRUBS GENERALLY NO CLOSER THAN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:
 a) SHADE TREES 5 FT.
 b) ORNAMENTAL AND EVERGREEN TREES (CRAB, PINE, SPRUCE, ETC.) 10 FT.
 c) SHRUBS THAT ARE LESS THAN 1 FOOT TALL AND WIDE AT MATURITY 2 FT.
- NO TREES OR EVERGREENS TO BE INSTALLED OVER ANY PROPOSED OR EXISTING UTILITY LINES AS SHOWN ON THE OVERALL LANDSCAPE PLAN. SEE ENGINEERING PLANS FOR LOCATION AND DETAILS.
- ALL LAWN AREAS AND LANDSCAPE BEDS TO BE FULLY IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM. IRRIGATION SYSTEM TO HAVE SEPARATE ZONES FOR LAWN AREAS, PARKING ISLANDS, AND SHRUB BEDS WITH DIFFERENT CONTROL MOISTURE LEVEL ADJUSTMENT PER ZONE AS REQUIRED.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN TO RECEIVE EDGING. EDGING SHALL BE 4" X 1/8" METAL (FINISH BLACK OR GREEN) OR APPROVED EQUAL AND TO BE INSTALLED WITH HORIZONTAL METAL STAKES AT 32" O.C. OR PER MANUFACTURER'S SPECIFICATION.
- LANDSCAPE BEDS ADJACENT AND NEXT TO BUILDING SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS A MIN. OF 12" DEPTH. BACK FILL WITH GOOD, MEDIUM TEXTURED PLANTING SOILS. ADD A MIN. 4" OF TOPSOIL OVERFILL TO FINISH GRADE. PROVIDE POSITIVE DRAINAGE.
- WATERING OF ALL PLANTS AND TREES TO BE PROVIDED IMMEDIATELY AND MULCHING WITHIN 24 HOURS AFTER INSTALLATION.
- ALL TREE PITS TO BE TESTED FOR PROPER DRAINAGE PRIOR TO TREE PLANTING. PROVIDE APPROPRIATE DRAINAGE SYSTEM AS REQUIRED IF THE TREE PIT DOES NOT DRAIN SUFFICIENTLY.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE PLANT MATERIALS AND IRRIGATION INSTALLATION FOR A PERIOD OF TWO YEAR BEGINNING AFTER THE COMPLETION OF LANDSCAPE INSTALLATION DATE APPROVED BY THE TWP. OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE DURING AND AT THE END OF THE GUARANTEE PERIOD, ANY DEAD OR UNACCEPTABLE PLANTS, AS DETERMINED BY THE TOWNSHIP OR LANDSCAPE ARCHITECT, WITHOUT COST TO THE OWNER.

sheet index

- LS-1 OVERALL LANDSCAPE PLAN VIEW
- LS-2 GENERAL PLANTING DETAIL
- LS-3 PLANT MATERIAL LIST & PLANTING DETAILS
- LS-4 BUILDING FOUNDATION, CLUBHOUSE & ENTRY PLANTING DETAILS
- LS-5 SITE AMENITY, PERGOLA & ENTRY SIGN DETAILS
- LS-6 POOL DECK PLAN
- LS-7 POOL PERGOLA \ TRELLIS ELEVATIONS & DETAILS

residential landscape requirements:

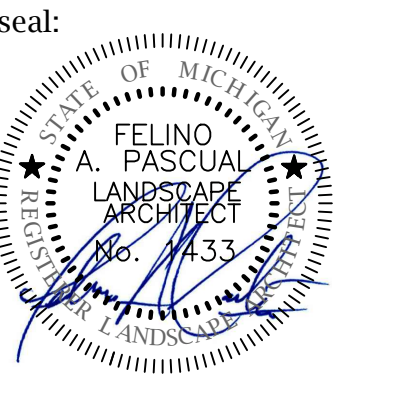
greenbelt	REQUIRED	PROVIDED
TOTAL LN.FT. OF GREENBELT FRONTAGE	825±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 TREES)	28	28
EIGHT (8) SHRUB PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 x 8 = 220 SHRUBS)	190	255 (A)

interior landscape	REQUIRED	PROVIDED
TOTAL ACRES OF SITE	19.32 AC±	
ACRES OF 60' R.O.M. AREA	56 AC±	
ACRES OF INTERNAL ROAD AREA	1.31 AC±	
TOTAL ACRES OF SITE NET AREA	11.45 AC± (498,762 SQ.FT.)	
TOTAL SQ.FT. OF INTERIOR LANDSCAPING AREA (15% OF 11.45 AC± (498,762 SQ.FT.) = 74,814.3±)	74,814.3 SQ.FT.	
ONE (1) DECIDUOUS, ORNAMENTAL OR EVERGREEN TREE PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 TREES)	250	265 (B)
FIVE (5) SHRUB PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 x 5 = 1,247 SHRUBS)	1247	478 (C)

residential buffer	REQUIRED	PROVIDED
TOTAL LN.FT. OF EAST PROPERTY LINE	475±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 TREES)	32	32
FOUR (4) SHRUB PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 x 4 = 126.7 SHRUBS)	127	167 (B)

note:
 'A' - 65 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS
 'B' - 40 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS
 'C' - SUPPLEMENTAL PERENNIAL PLANTINGS TO BE CREDITED TOWARDS INTERIOR SHRUB LANDSCAPE PLANTING REQUIREMENTS
 620- PERENNIALS AND GRASSES
 2500- GROUND COVERS





client:
JM WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

Union Lake Road
 sheet title:
GENERAL LANDSCAPE PLANTING DETAIL

job no./issue/revision date:

LS19.124.11 TWP.	11-12-2019
LS19.124.12 TWP.	12-27-2019
LS20.089.10 TWP.	10-14-2020
LS21.009.01 SPA	1-18-2021
LS21.009.01 SPA	2-02-2021
LS21.009.03 SPA	3-22-2021

drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

notice:
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project no:
LS21.009.01

sheet no:
LS-2 of 7



PROPOSED ADJACENT CLUBHOUSE FACILITY LANDSCAPE PLANTINGS. SEE SHEET L9-4 FOR DETAILS

DETENTION POND - SEE SHEET L9-3 FOR PROPOSED PLANTINGS AND POND SEED MIX DETAILS

HATCHING DENOTES EXISTING WOODS AND VEGETATION ON ADJACENT PROPERTY TO REMAIN

HATCHING DENOTES EXISTING TREES AND VEGETATION ON ADJACENT PROPERTY TO REMAIN

PROPOSED BUILDING FOUNDATION PLANTINGS SEE SHT. L9-4 FOR DETAILS

REAR YARD AREAS TO RECEIVE HYDROSEED ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE.

HATCHING DENOTES EXISTING EVERGREEN TREES ON ADJACENT PROPERTY

PROPOSED RETAINING WALL. SEE ENGINEERING PLANS FOR DETAILS

FRONT AND SIDES LAWN AREAS TO RECEIVE IRRIGATION AND SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE

2A landscape planting details
 SCALE: 1"=40'-0"

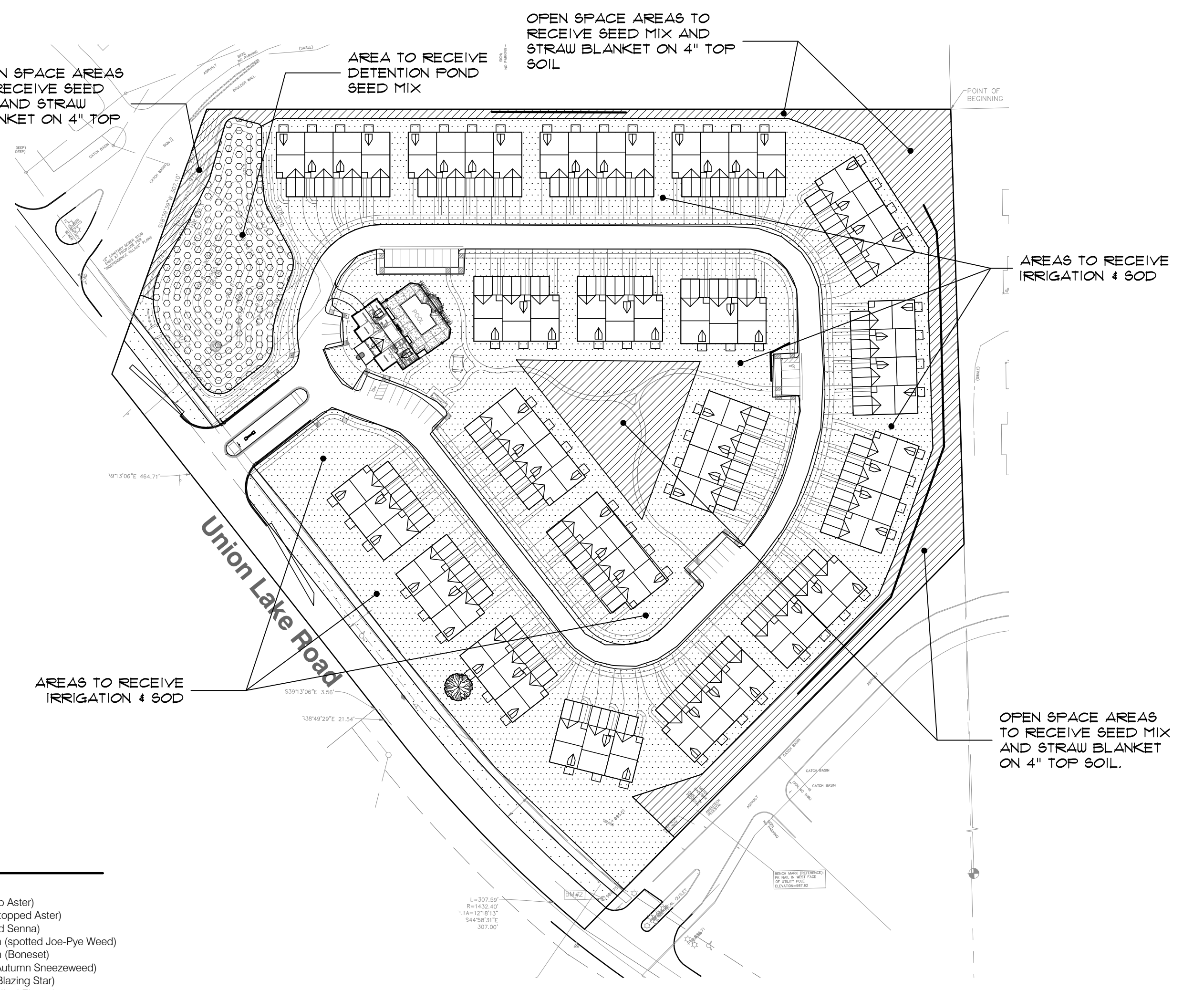
landscape legend

- deciduous trees**
 (Maples, Celtis occidentalis, Zeikova serrata, Oaks, Lindens, Nyssa sylvatica, etc...)
- ornamental trees**
 (Eastern Redbud, Crabs, Hawthorn, Serviceberry, etc...)
- evergreen trees**
 (White Pine, Austrian Pine, Spruces)
- deciduous shrubs**
 (viburnum, forsythia, burning bush, cotoneaster dogwood, etc.)
- evergreen shrubs**
 (Junipers, yews, hollies, arbutovite, boxwood, etc.)
- perennials and/or seasonal flowers**
 (Daylily, Sedum, Ornamental Grasses, Black Eyed Susan, etc...)

PROPOSED UNDERGROUND UTILITIES-SEE ENGINEERING PLAN FOR FINAL LOCATIONS, SIZES, TYPES, ELEVATIONS AND DETAILS.

PROPOSED BUILDING FOUNDATION PLANTINGS. SEE SHT. L9-4 FOR DETAILS

BENCH MARK (REFERENCE):
 10' W. WALL, W. WEST FACE
 OF UTILITY POLE
 ELEVATION=197.62



Landscape maintenance notes:

LANDSCAPE MAINTENANCE PROCEDURES AND FREQUENCIES TO BE FOLLOWED SHALL BE SPECIFIED ON THE LANDSCAPE PLAN, ALONG WITH THE MANNER IN WHICH THE EFFECTIVENESS, HEALTH AND INTENDED FUNCTIONS OF THE VARIOUS LANDSCAPE AREAS ON THE SITE WILL BE ENSURED.

- LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.
- PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.
- ALL DEAD OR DISEASED PLANT MATERIAL SHALL BE REMOVED AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 15 AND NOVEMBER 15 OR UNTIL THE PREPARED SOIL BECOMES FROZEN. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE.

Planting landscape notes:

GENERAL NOTES:

- PLANT MATERIALS TO BE INSTALLED ACCORDING TO THE WHITE LAKE TOWNSHIP, AND CURRENT AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.
- PLANT MATERIALS TO BE GUARANTEED FOR 2 YEARS. REPLACE FALLING MATERIAL WITHIN 1 YEAR, OR THE NEXT APPROPRIATE PLANTING PERIOD.
- PLANT MATERIALS TO BE OF PREMIUM QUALITY, NO. 1 GRADE NORTHERN NURSERY GROWN, IN HEALTHY CONDITION, FREE OF PESTS AND DISEASES.
- MULCH IS TO BE NATURAL COLORED, FINELY SHREDDED HARDWOOD BARK OF 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE W/3" PULLED AWAY FROM TRUNK, 3" THICK BARK MULCH FOR SHRUBS AND 2" THICK BARK MULCH FOR PERENNIALS.
- CALL MISS DIG AT 1-800-482-7171 PRIOR TO ANY CONSTRUCTION.

DECIDUOUS 4 EVERGREEN TREE:

- TREE SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
- DO NOT PRUNE TERMINAL LEADER, PRUNE ONLY DEAD OR BROKEN BRANCHES.
- REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.
- REMOVE TREE STAKES, GUY WIRES AND TREE WRAP AFTER ONE WINTER SEASON.

SHRUB:

- SHRUB SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
- DO NOT PRUNE TERMINAL LEADER, PRUNE ONLY DEAD OR BROKEN BRANCHES.
- REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.

LAWN:

- SOD LAWN AREAS SHALL BE KENTUCKY BLUE GRASS BLEND GRASS IN A SOD NURSERY ON LOAM SOIL, SOD TO BE INSTALLED ON MINIMUM 2" TOPSOIL.
- SEEDDED LAWN AREAS SHALL CONSIST OF THE FOLLOWING TYPES AND PROPORTIONS:
 5% PERENNIAL RYE GRASS
 10% RED FESCUE
 25% CHEWING FESCUE
 60% KENTUCKY BLUE GRASS

SEED MIX SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE AND WEED CONTENT SHALL NOT EXCEED 1% SEED. PROVIDE A MINIMUM 4" TOP SOIL ON ALL SEEDDED LAWN AREA

detention basin seed mix:

Sedge Meadow Mix: (Edge Zone)
 A mix of sedges, grasses and wildflowers recommended for soils that are saturated during most of the growing season. Use just above the normal waterline in the capillary zone in our Lake Edge Enhancement System.

Sedge Meadow Mix oz/acre

1	Carex comosa (Bristly Sedge)	1	Aster puniceus (Swamp Aster)
1	Carex cristata (Crested Sedge)	1	Aster umbellatus (Flat-topped Aster)
1	Carex frankii (Frank's Sedge)	3	Cassia hebecarpa (Wild Senna)
1	Carex hystericina (Porcupine Sedge)	2	Eupatorium perfoliatum (Boneset)
4	Carex lurida (Lurid Sedge)	2	Helenium autumnale (Autumn Sneezeweed)
2	Carex stipata (Ait-Fruited Sedge)	2	Liatris spicata (Dense Blazing Star)
2	Carex tribuloides (Pointed Oval Sedge)	1	Lobelia cardinalis (Cardinal Flower)
64	Elymus virginicus (Virginia Wild Rye)	1	Lobelia siphilitica (Great Blue Lobelia)
6	Glyceria striata (Wet Marsh Grass)	2	Penstemon digitalis (Frogflowe Beardtongue)
8	Leersia oryzoides (Rice Cut Grass)	1	Pyroanthemum virginianum (Mountain Mint)
8	Panicum virgatum (Switchgrass)	3	Rudbeckia fulgida speciosa (Showy Black-Eyed Susan)
2	Scirpus atrovirens (Dark Green Bulrush)	4	Rudbeckia hirta (Black-Eyed Susan)
		3	Rudbeckia subtomentosa (Sweet Black-Eyed Susan)
		2	Silphium integrifolium (Rosinweed)
		2	Silphium perfoliatum (Cupplant)
		2	Silphium terebinthaecum (Pianne Dock)
		1	Solidago patula (Swamp Goldenrod)
		2	Solidago riddellii (Riddell's Goldenrod)
		2	Verbena hastata (Blue Vervain)
		2	Vernonia fasciculata (Smooth Ironweed)
		1	Veronicastrum virginicum (Culvers Root)
		1	Zizia aurea (Golden Alexanders)

Forbs oz/acre

1	Alisma subcordatum (Water plantain)
1	Angelica atropurpurea (Angelica)
1	Aster novae-angliae (New England Aster)

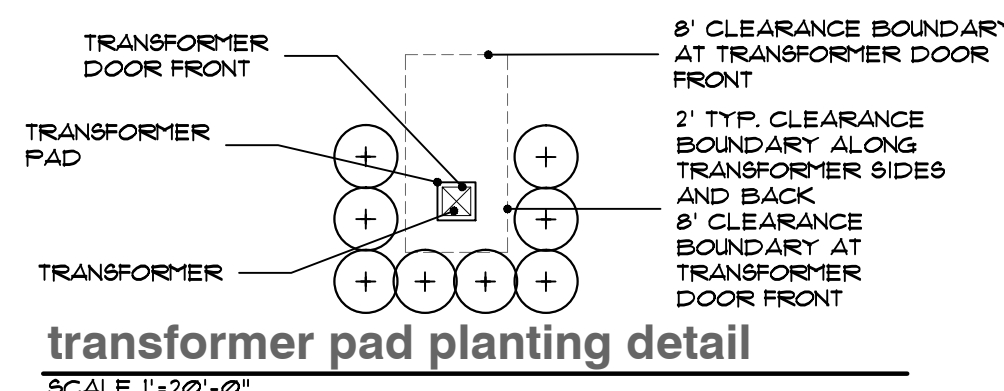
Components per acre
 8 lbs grasses and sedges, 3 lbs forbs

annual cover: (Edge, Upland & Dry Upland Zones)
 50% Temporary Grasses: will contain two of the following species.

Seed Data

Annual Rye	Avena sativa
Winter Wheat	Lolium multiflorum
American Slough Grass	Trifolium aestivum
	Beckmannia syzigachne

SOURCE:
 NATIVESCAPE LLC
 P.O. BOX 122
 MANCHESTER, MICHIGAN 48158
 ph. 517.456.1616
 www.nativescape.net



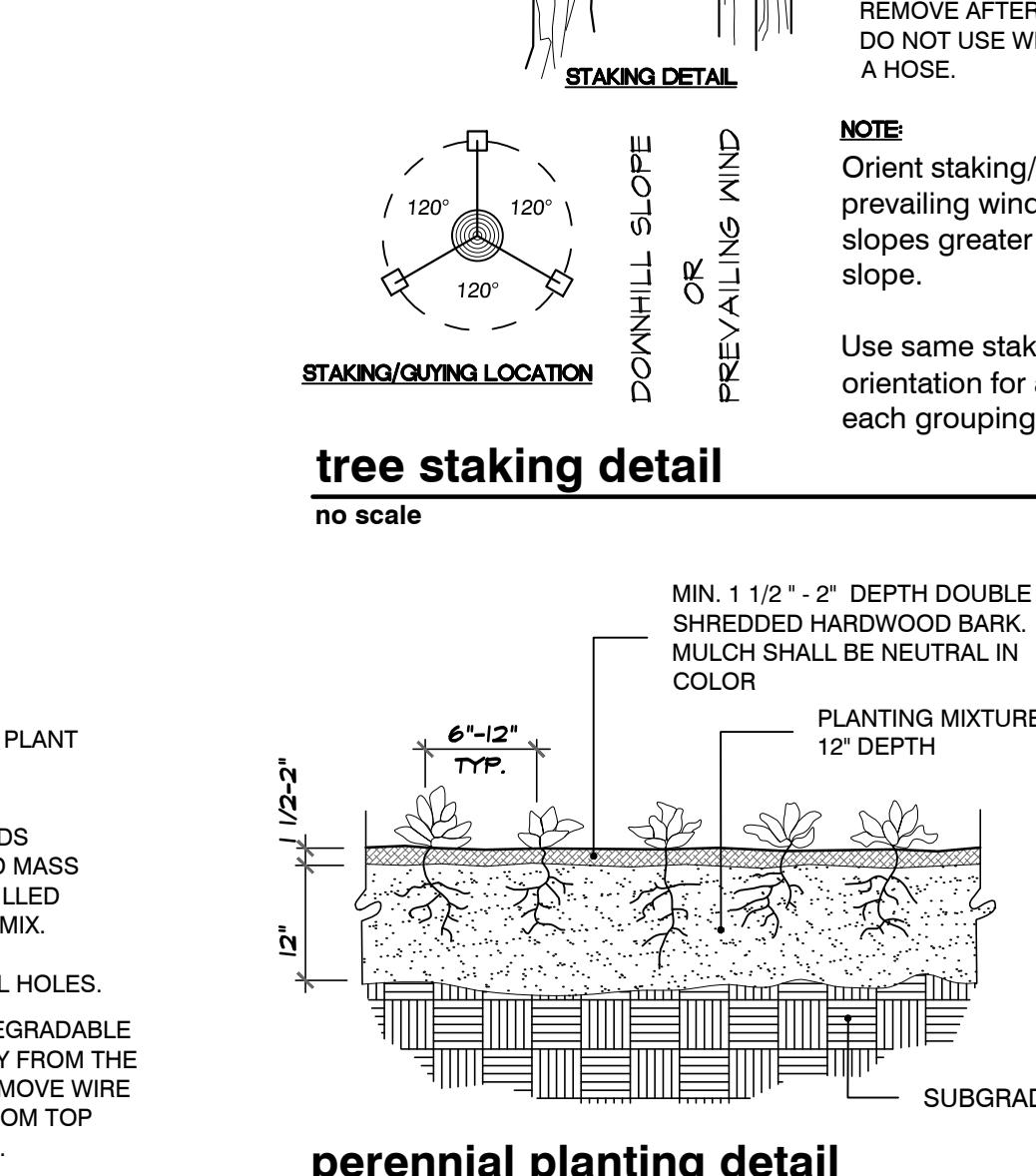
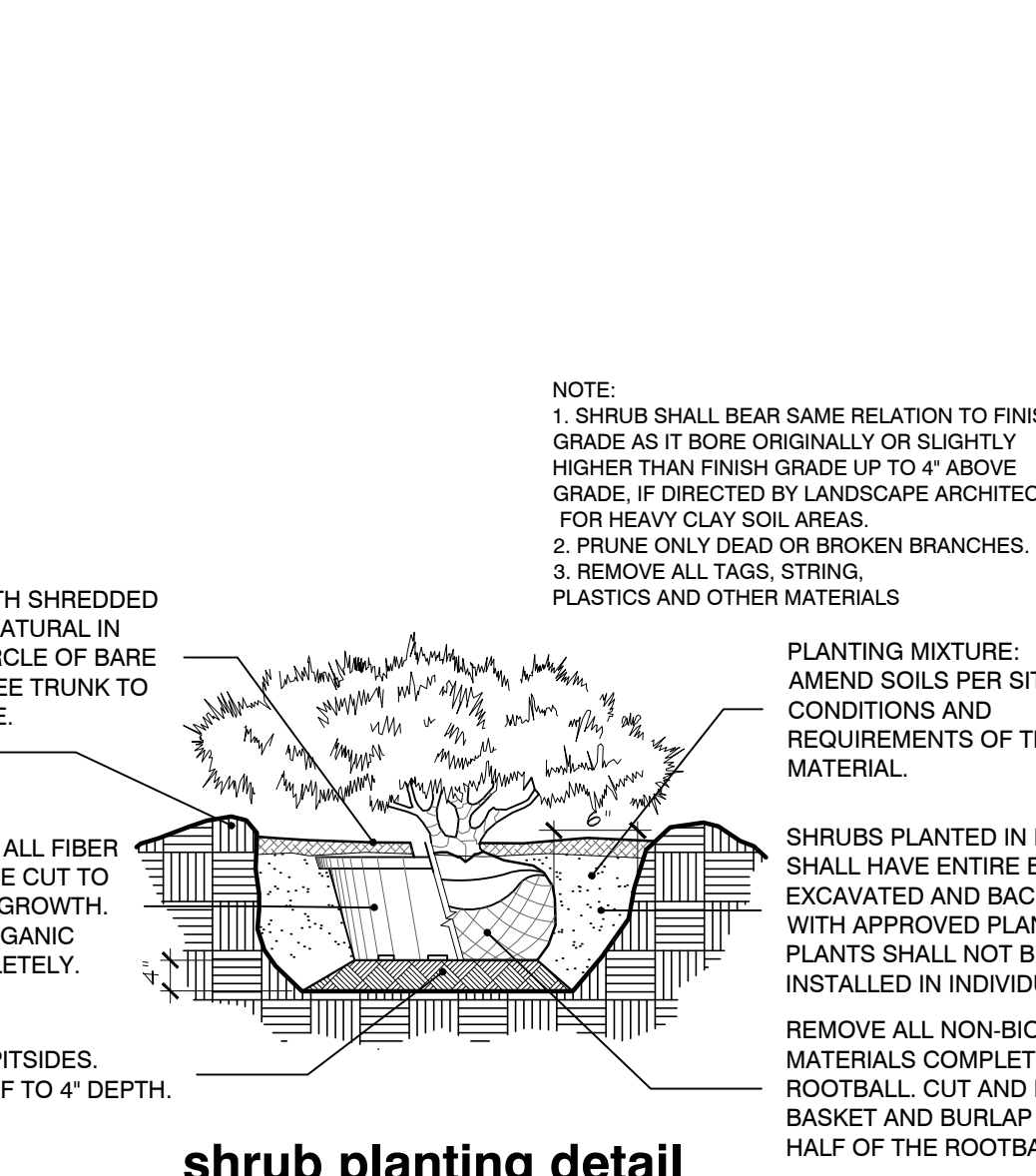
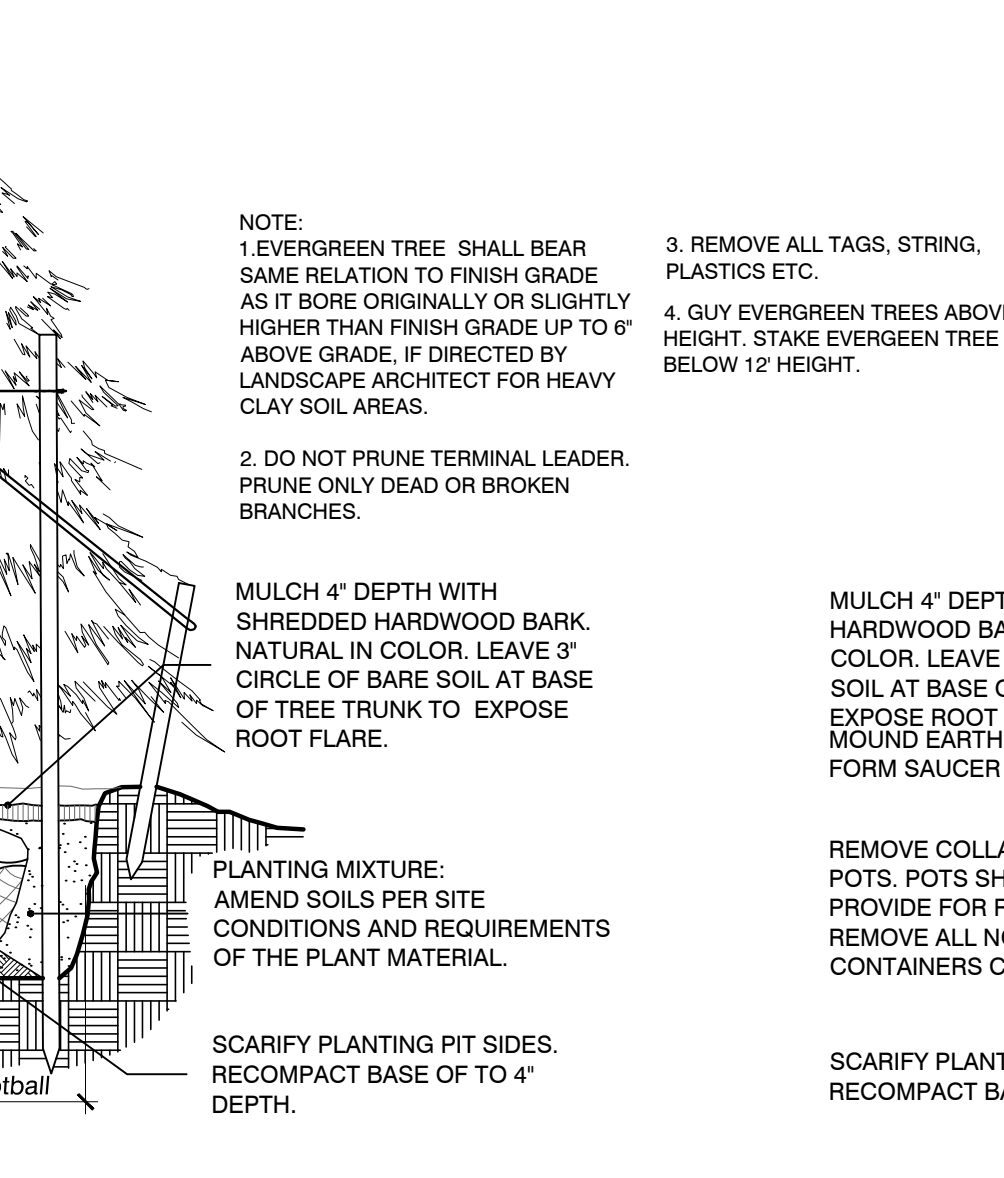
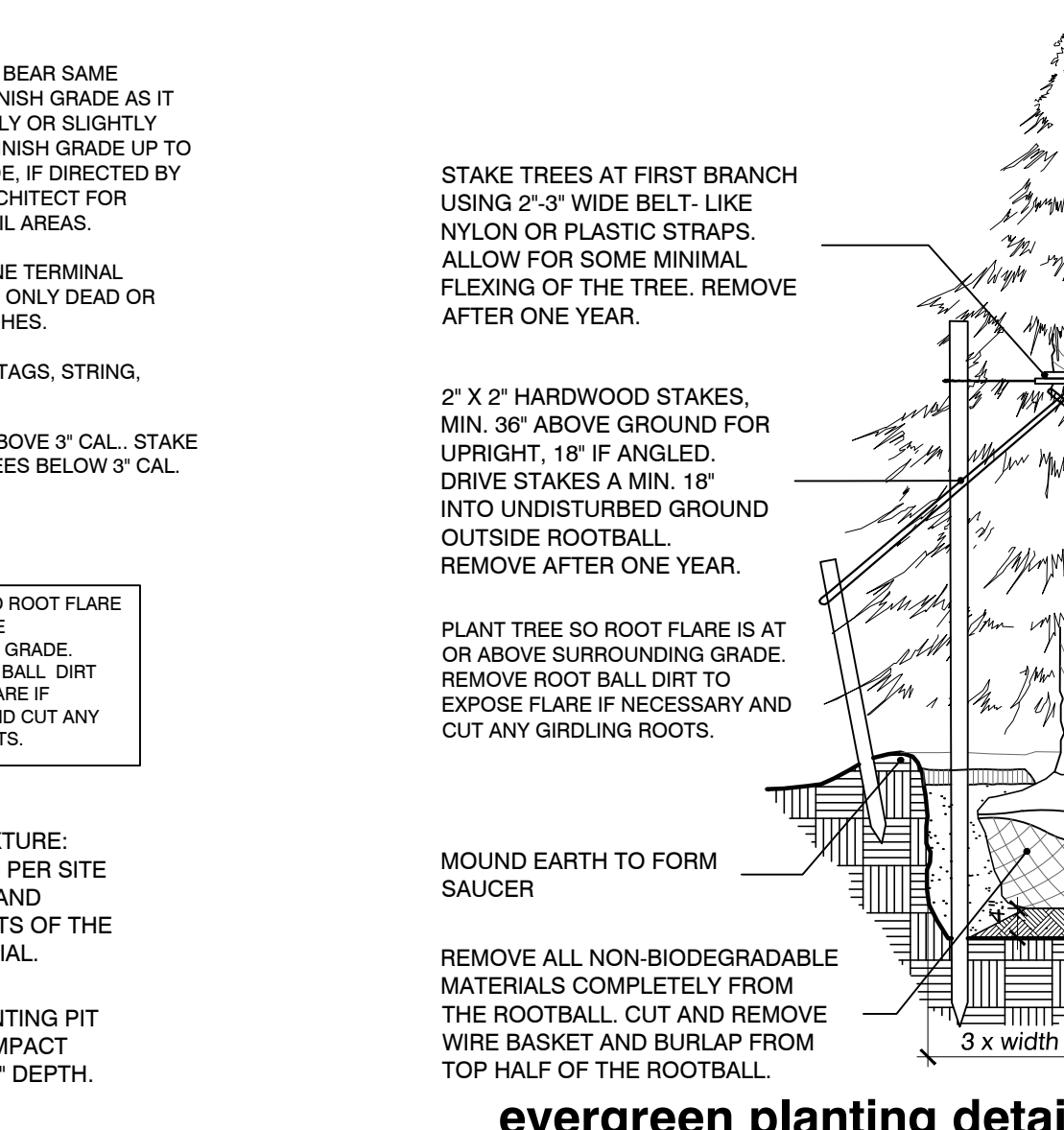
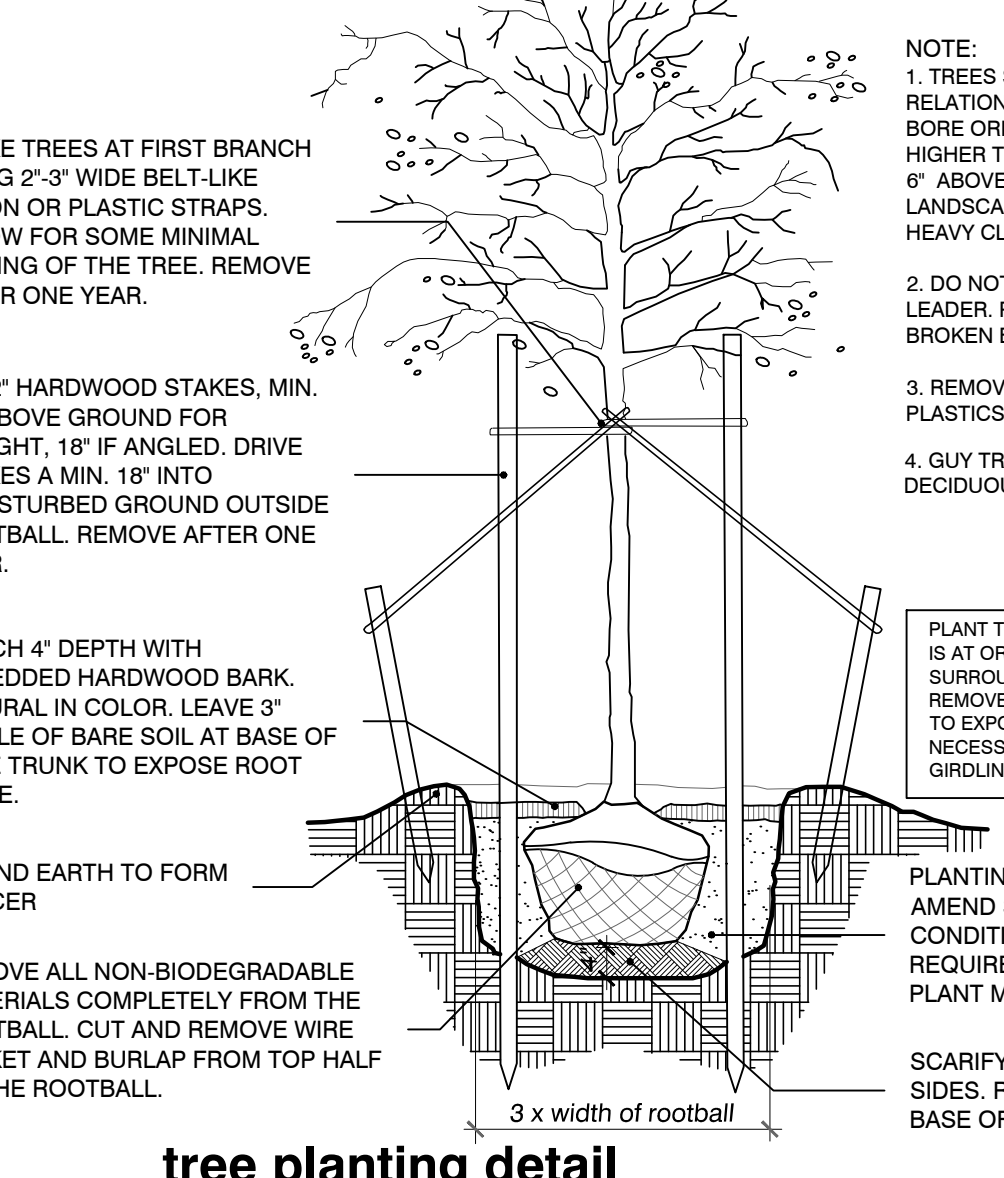
transformer pad planting detail
 SCALE 1" = 20'-0"

A MINIMUM OF 2' SEPARATION BETWEEN TRANSFORMER AND FULL GROWN SHRUBS AND TREES. GROUND COVERS ALLOWED UP TO TRANSFORMER PAD IF MAINTAINED BELOW 4" FULL GROWTH. IF TRANSFORMER FACES TOWARDS THE HOUSE, THEN THE SAME CONDITIONS EXIST. NO FULL GROWTH IN FRONT OF THE TRANSFORMER FOR AT LEAST A MINIMUM OF 8'. THERE ARE NO WAIVERS GRANTED TO THE ABOVE CONDITION. DETAIL PER THE DETROIT EDISON COMPANY-SERVICE PLANNING DEPARTMENT (3-11-98)

SEE ENGINEERING PLANS FOR PROPOSED LOCATIONS, TOTAL NUMBER OF TRANSFORMERS AND FINAL LOCATION PER DETROIT EDISON REQUIREMENTS.

plant material list

key	quant. LS-2	botanical name	common name	size	comments
LARGE AND SMALL DECIDUOUS TREES					
GT	5	GLEDTISIA TRI. INERMIS 'SKYCOLE'	SKYLINE LOCUST	2 1/2" BB	
TC	1	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2 1/2" BB	
LB	6	LIQUIDAMBAR STRACIFLUA	AMERICAN SWEETGUM	2 1/2" BB	
ZS	12	ZELKOVA SERRATE 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	2 1/2" BB	
AR	11	ACER R. 'FRANKSRED'	RED SUNSET RED MAPLE	2 1/2" BB	
CO	4	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" BB	
LT	10	LIRIODENDRON TULIPIFERA	TULIPTREE	2 1/2" BB	
QB	5	QUERCUS 'BICOLOR'	SWAMP WHITE OAK	2 1/2" BB	
AF	35	ACER X FREEMANI 'JEFFERED'	AUTUMN BLAZE RED MAPLE	2 1/2" BB	
APC	3	ACER P. 'CRIMSON KING'	CRIMSON KING NORWAY MAPLE	2 1/2" BB	
AS	2	ACER SACCHARUM	SUGAR MAPLE	2 1/2" BB	
OY	9	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2 1/2" BB	
CJ	1	CERCIDIPHYLLUM JAPONICUM	KATSURATREE	2 1/2" BB	
CB	4	CARPINUS BETULUS 'FASTIGIATA'	PYRAMIDAL EUROPEAN HORNBEAM	2 1/2" BB	
CC	1	CERCIS CANADENSIS	EASTERN REDBUD (MULTI-STEM)	8' BB	(MULTI-STEM)
AC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	8' BB	(MULTI-STEM)
CK	5	CORNUS KOUSA	KOUSA DOGWOOD	2" BB	
CP	1	CRATAEGUS PHAENOPYRUM	WASHINGTON HAUTHORN	2" BB	
MS	6	MALUS 'SNOWDRIFT'	SNOWDRIFT CRABAPPLE	2" BB	
MF	1	MALUS FLORIBUNDA	JAPANESE FLOWERING CRABAPPLE	2" BB	
MJ	1	MAGNOLIA LILIFLORA 'JANE'	JANE MAGNOLIA	8' BB	(MULTI-STEM)
MR	4	STRINGIA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	2" BB	
AP	2	ACER P. 'BLOODGOOD'	BLOODGOOD LACE LEAF JAPANESE MAPLE	11' CONT. T. HIGH	
LARGE AND SMALL EVERGREENS					
AW	16	ABIES CONCOLOR	CONCOLOR WHITE FIR	8' BB	
AUL	36	ABIES CONCOLOR	CONCOLOR WHITE FIR	10' BB O	
PA	22	PICEA ABIES	NORWAY SPRUCE	8' BB	
PAL	13	PICEA ABIES	NORWAY SPRUCE	10' BB O	
PS	12	FINUS STROBUS	EASTERN WHITE PINE	8' BB	
PSL	1	FINUS STROBUS	EASTERN WHITE PINE	10' BB O	
PD	33	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	8' BB	
PDL	19	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	10' BB O	
SHRUBS					
EA	26	EUONYMUS ALATUS COMPACTA	DWARF WINGED BURNING BUSH	3" BB	60" SPACING O.C.
FI	50	FORSYTHIA X INTERMEDIA	BORDER FORSYTHIA	3" BB	60" SPACING O.C.
CS	28	CORNUS STOLONIFERA	REDTWIG DOGWOOD	3" BB	60" SPACING O.C.
VHK	43	VIBURNUM X B. 'MOHAUK'	MOHAUK VIBURNUM	3" BB	60" SPACING O.C.
RAG	11	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	15' CONT.	48" SPACING O.C.
EF	55	EUONYMUS FORTUNEI 'MOONSHADOW'	DWARF WINGED BURNING BUSH	15' CONT.	48" SPACING O.C.



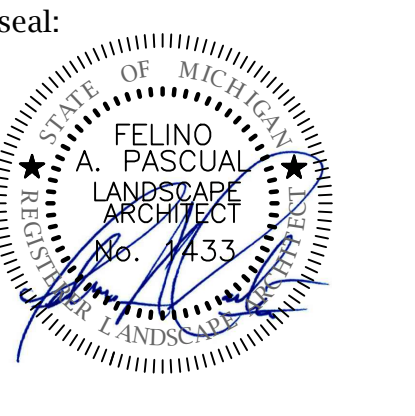
tree planting detail
 no scale

evergreen planting detail
 no scale

shrub planting detail
 no scale

perennial planting detail
 no scale

tree staking detail
 no scale



client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

Union Lake Road
 sheet title:
BLDG. FOUNDATION, CLUBHOUSE AND ENTRY PLANTINGS

job no./issue/revision date:
 LS19.124.11 TWP. 11-12-2019
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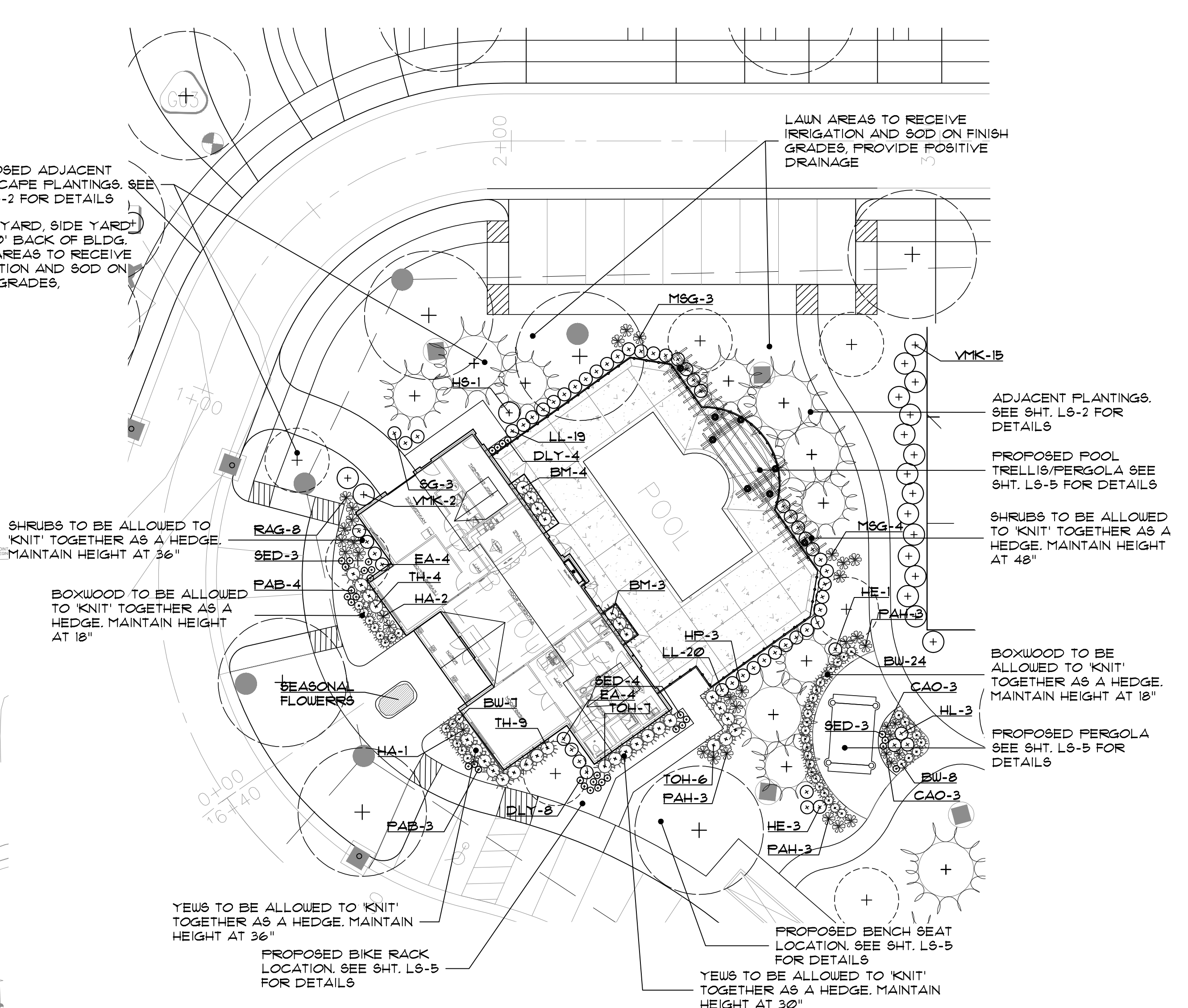
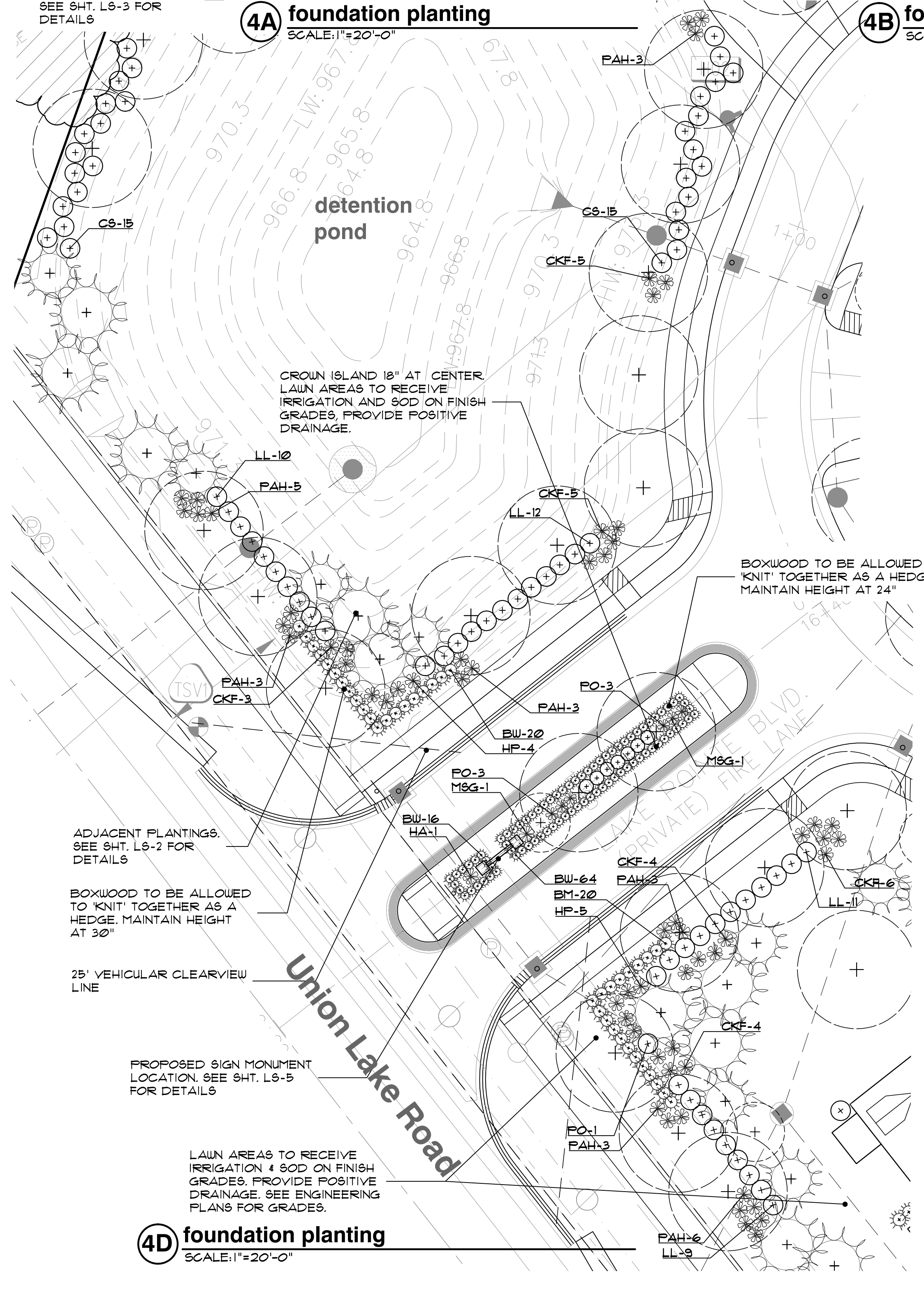
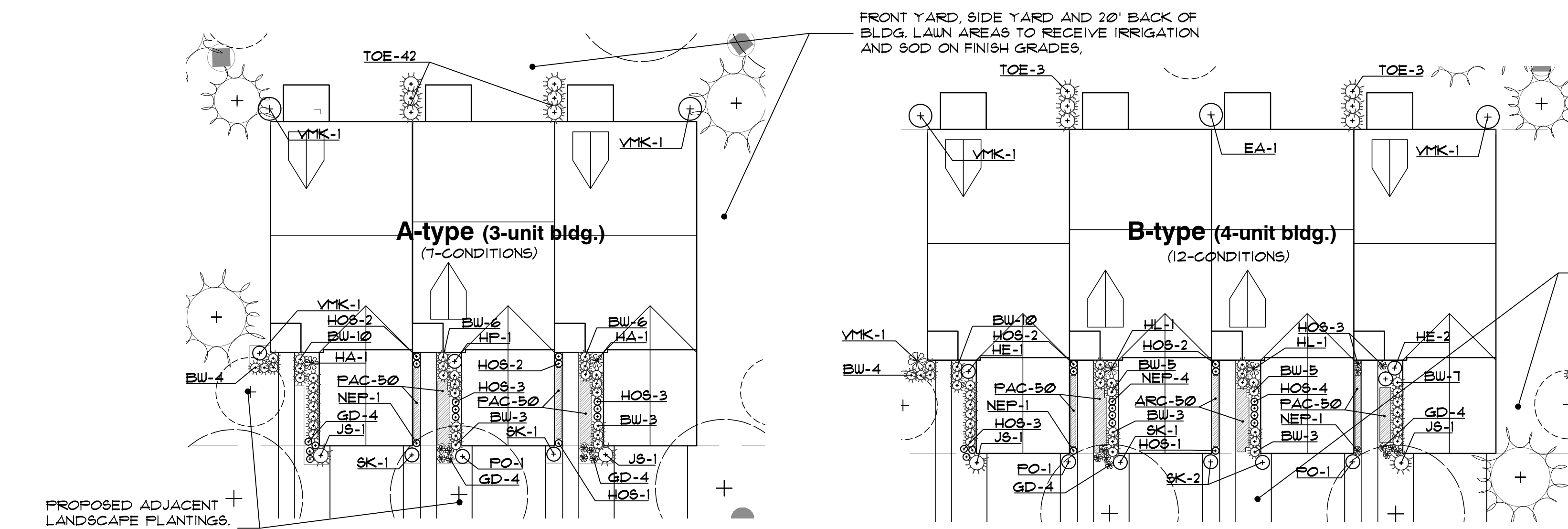
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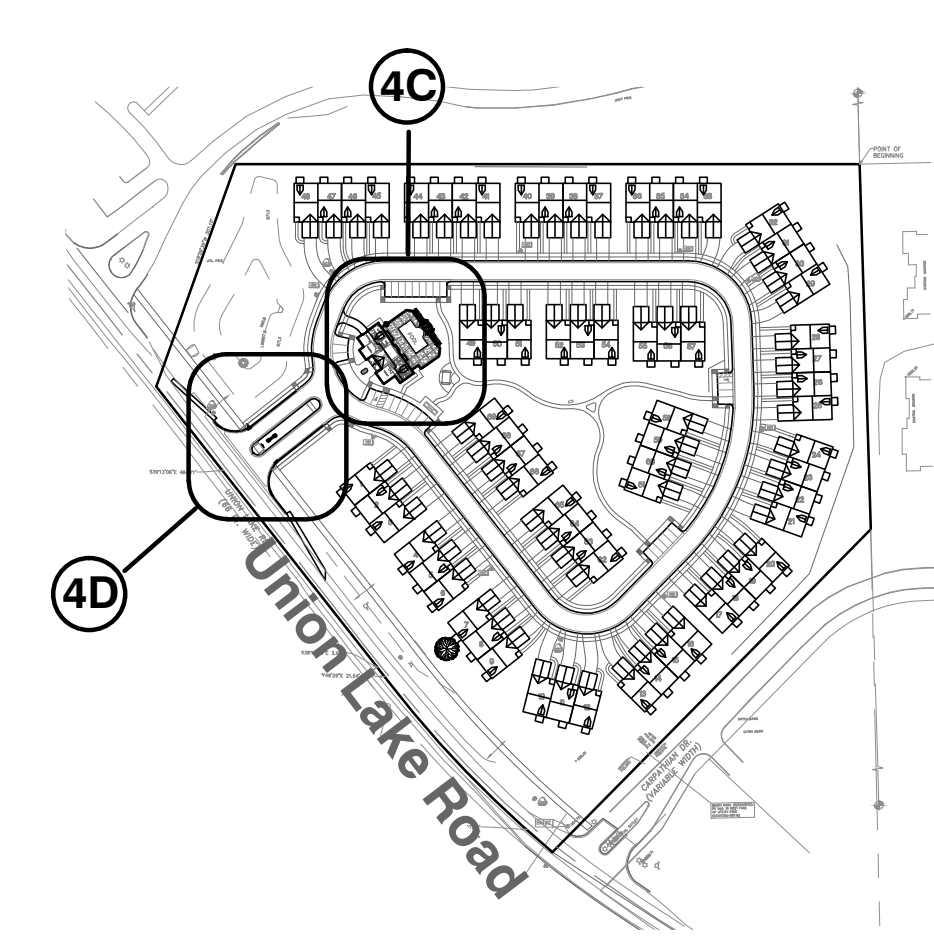
project no:
LS21.009.01

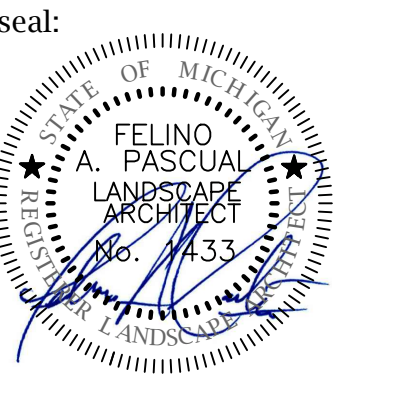
sheet no:
LS-4 of 7



plant material list

key	quant. 4A	quant. 4B	quant. 4C	quant. 4D	botanical name	common name	size	comments
SHRUBS								
SK	14	36	-	-	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	3' BB	
HP	1	-	3	9	HYDRANGEA ANNABELLE	ANNABELLE HYDRANGEA	9" CONT.	
HA	14	-	3	1	HYDRANGEA ANNABELLE	ANNABELLE HYDRANGEA	9" CONT.	
HL	-	24	3	-	HYDRANGEA 'LINDSEY ANN'	LA DREAMIN HYDRANGEA	9" CONT.	
HE	-	36	4	-	HYDRANGEA M. 'GLOWING EMBERS'	GLOWING EMBERS HYDRANGEA	9" CONT.	
FO	1	24	-	1	PHYSCARRUS OPULIFOLIUS 'SEWARD'	SUMMER WINE NINEBARK	9" CONT.	
SG	-	-	3	-	SPIRAEA X.B. 'BUMALDA 'GOLDFLAME'	GOLDFLAME SPIREA	9" CONT.	
FI	-	-	-	-	FORSYTHIA X INTERMEDIA	BORDER FORSYTHIA	3' BB	60" O.C. SPACING
VMK	21	36	11	-	VIBURNUM X.B. 'MOHAUK'	MOHAUK VIBURNUM	3' BB	
LL	-	-	39	42	LIGUSTRUM X. VICARYI	GOLDEN VICARY PRIVET	9" CONT.	60" O.C. SPACING
RA	-	-	-	-	RIBES ALPIMUM 'GREEN MOUND'	GREEN MOUND ALPINE CURRANT	9" CONT.	
EA	-	12	8	-	EUONYMUS ALATUS COMPACTA	DWARF WINGED BURNING BUSH	3' BB	60" O.C. SPACING
HS	-	-	1	-	HIBISCUS SYRIACUS 'BLUE BIRD ALTHEA'	BLUE BIRD ROSE OF SHARON	3' BB	
RAG	-	-	8	-	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	9" CONT.	
BW	224	144	39	100	BUXUS M. 'GREEN VELVET'	GREEN VELVET BOXWOOD	18" HIGH BB	24" O.C. SPACING
BM	-	-	1	20	BUXUS M. 'GREEN MOUNTAIN'	GREEN MOUNTAIN BOXWOOD	30" HIGH BB	32" O.C. SPACING
TH	-	-	19	-	TAXUS 'HICKSII'	HICK YEW	36" BB	36" O.C. SPACING
TOE	42	12	-	-	THUJA OCCIDENTALIS 'SHARAD'	EMERALD GREEN ARBORVITAE	5' BB	36" O.C. SPACING
TOH	-	-	13	-	THUJA OCCIDENTALIS 'HELTZ'	HELTZ ARBORVITAE	9" CONT.	36" O.C. SPACING
CS	-	-	-	30	CORNUS STOLONIFERA	REDTIG DOGWOOD	9" CONT.	60" O.C. SPACING
JS	14	24	-	-	JUNIPERUS SKYROCKET	SKYROCKET JUNIPER	5' BB	60" O.C. SPACING
PERENNIALS AND GRASSES								
NEP	1	12	-	-	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW NEPETA	1" CONT.	24" O.C. SPACING
GD	84	36	-	-	GERANIUM X. 'ROZANNE'	ROZANNE GERANIUM	32 / FLAT	12" O.C. SPACING
PAC	100	1200	-	-	PAC ASANDRA	ASANDRA	32 / FLAT	12" O.C. SPACING
DLY	-	-	12	-	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	1" CONT.	24" O.C. SPACING
SED	-	-	10	-	SEDUM X. 'NEON'	NEON SEDUM	1" CONT.	12" O.C. SPACING
HOS	11	180	-	-	HOSTA 'PATRIOT'	PATRIOT HOSTA	1" CONT.	24" O.C. SPACING
PAH	-	-	9	26	FENNICETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CKF	-	-	-	25	CALAMAGROSTIS X.A. 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	9" CONT.	36" O.C. SPACING
ARC	-	600	-	-	AJUGA REPTAN 'CATLIN'S GAIN'	CATLINS GAIN AJUGA	32 / FLAT	12" O.C. SPACING
M8G	-	-	1	2	MISCANTHUS SINENSIS 'MORNING LIGHT'	MORNING LIGHT JAPANESE SILVER GRASS	9" CONT.	
PAB	-	-	1	-	FENNICETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CAO	-	-	6	-	CALAMAGROSTIS ARUNDINACEA 'OVERDAM'	OVERDAM REED GRASS	9" CONT.	36" O.C. SPACING





client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

sheet title:
SITE AMENITY, PERGOLA AND ENTRY SIGN DETAILS

job no./issue/revision date:
 LS19.124.11 TWP. 11-12-2019
 LS19.124.12 TWP. 12-27-2019
 LS20.089.10 TWP. 10-14-2020
 LS21.009.01 SPA 1-18-2021
 LS21.009.01 SPA 2-02-2021
 LS21.009.03 SPA 3-22-2021

drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

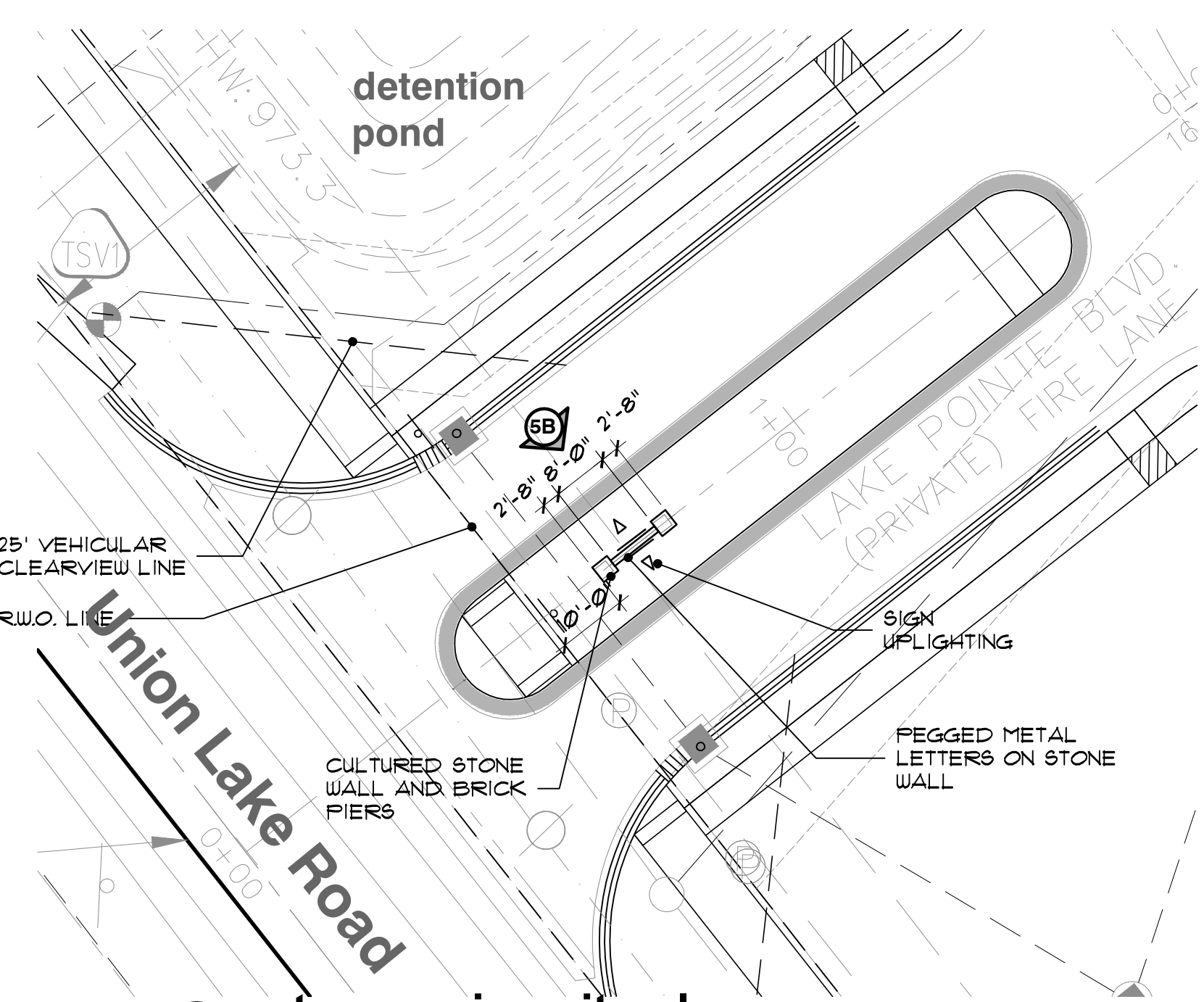
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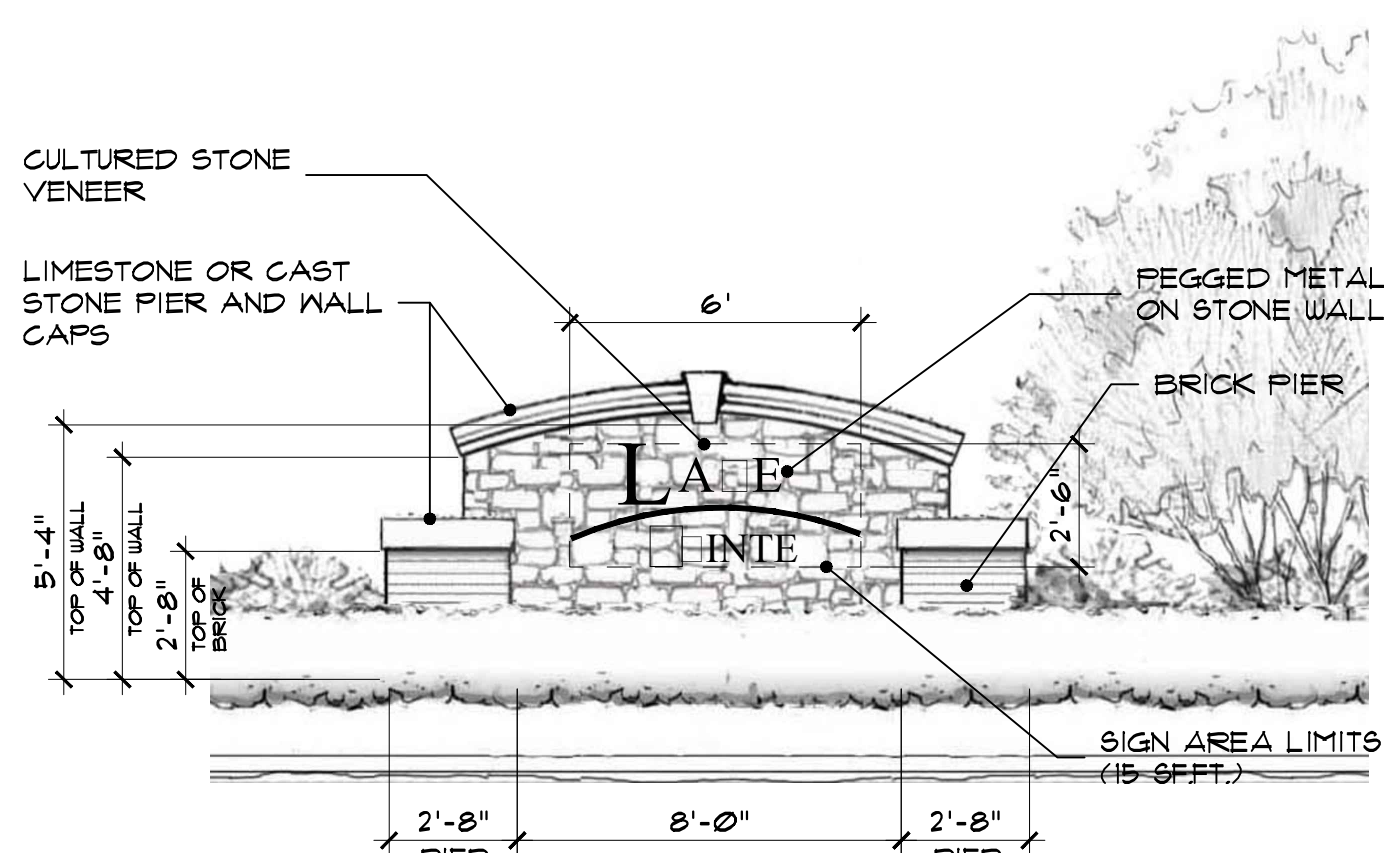
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project no:
LS21.009.01

sheet no:
LS-5 of 7



5A entrance sign site plan
 SCALE 1"=20'-0"



5B entrance sign elevation
 SCALE 1"=4'-0"

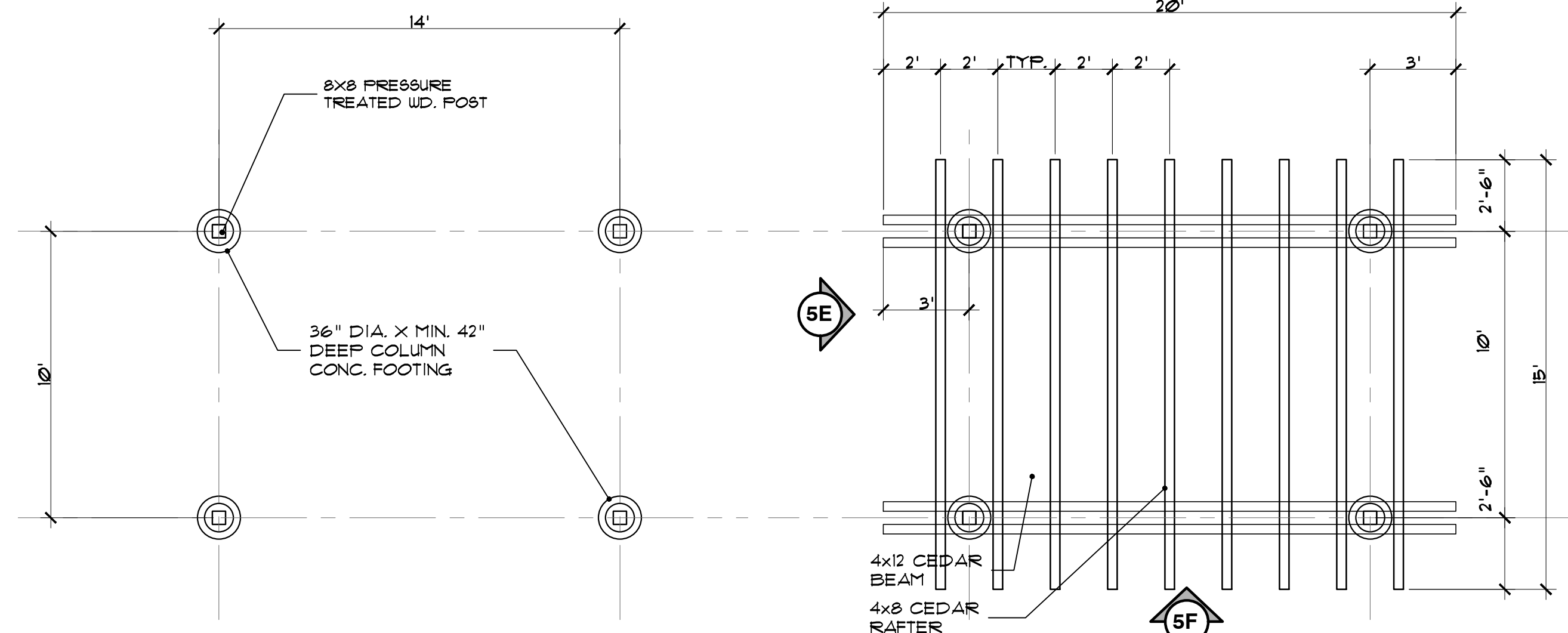
signage monument notes:

- LOCATE AND STAKE ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. COORDINATE ANY ADJUSTMENTS WITH ARCHITECT.
- SIGN UP-LIGHTING SHALL BE CONTROLLED WITH A "PHOTO-EYE" SWITCH. ALL LIGHTING SHALL BE SHIELDED FROM PUBLIC ROW'S AND ADJACENT PROPERTIES.
- SEE LANDSCAPE PLAN FOR PROPOSED PLANTINGS ADJACENT TO PROPOSED ENTRY SIGN MONUMENTS, PIERS & FENCES.
- VERIFY SOIL BEARING CAPACITY PRIOR TO ENTRY SIGN MONUMENT & PIER CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL ENTRY MONUMENT & PIER FOOTING DESIGN.
- ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION.

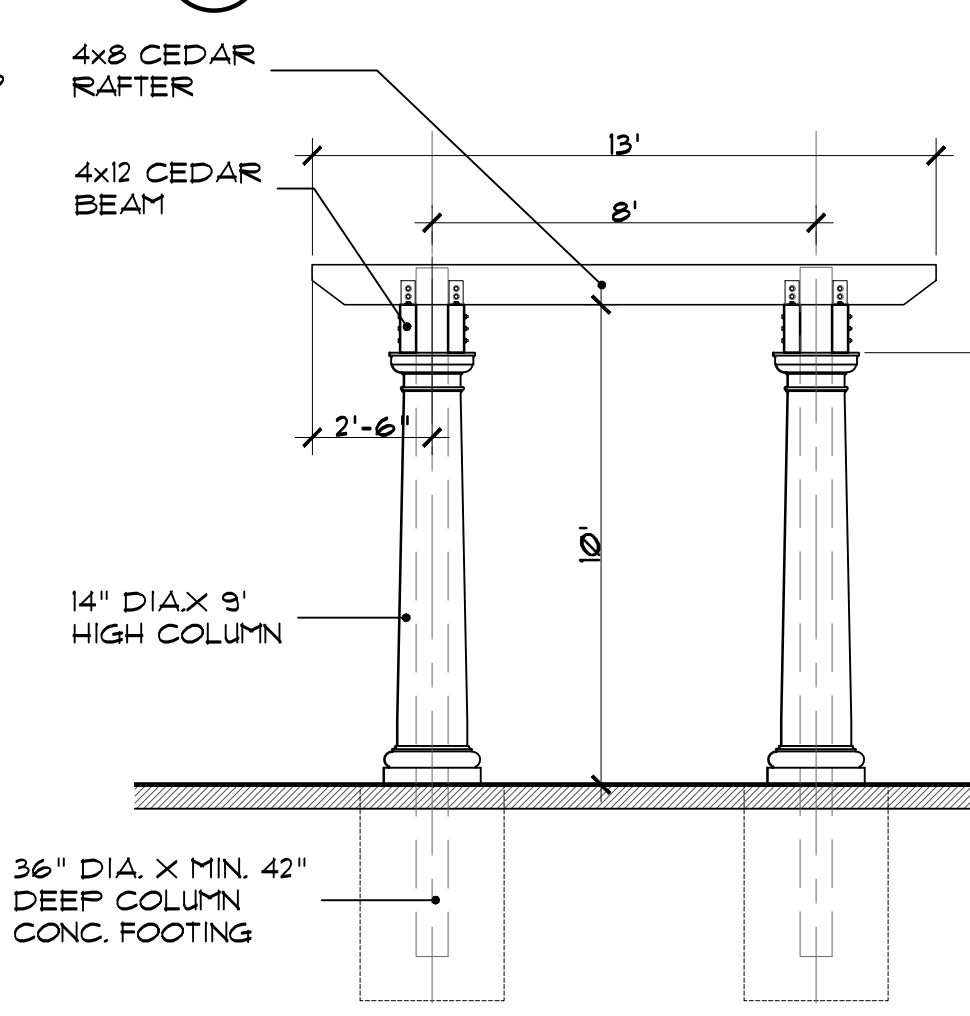


ACUITY BRANDS LIGHTINGS
 ONE LITHONIA WAY
 CONYERS, GA 30012
 PEACHTREE, GA 30269
 PH. 770-322-3000
 BRAND: HYDREL
 MODEL: 47505F or EQUAL
 (LED 3500K /100 watt)

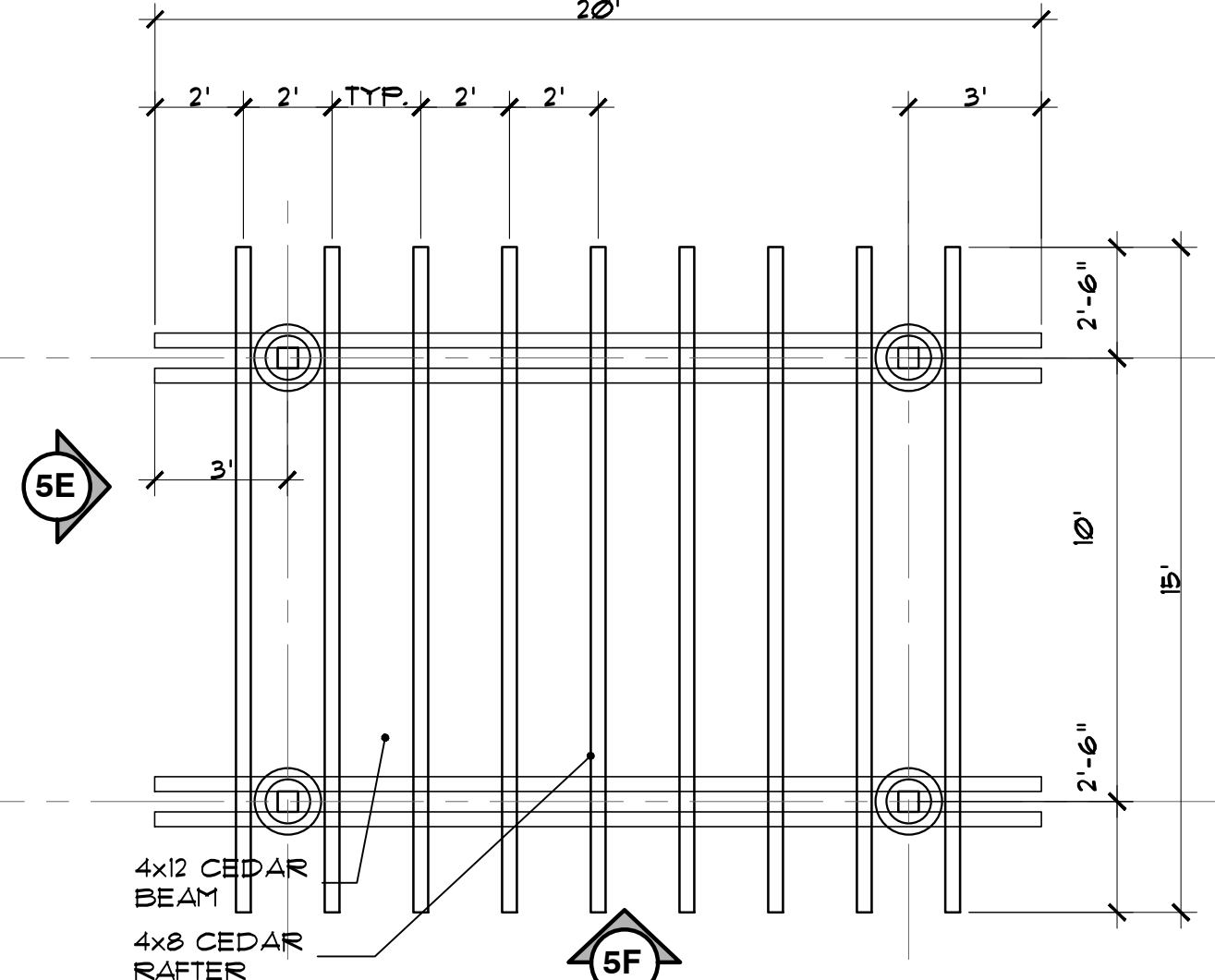
sign panel uplighting
 (2-CONDITIONS)



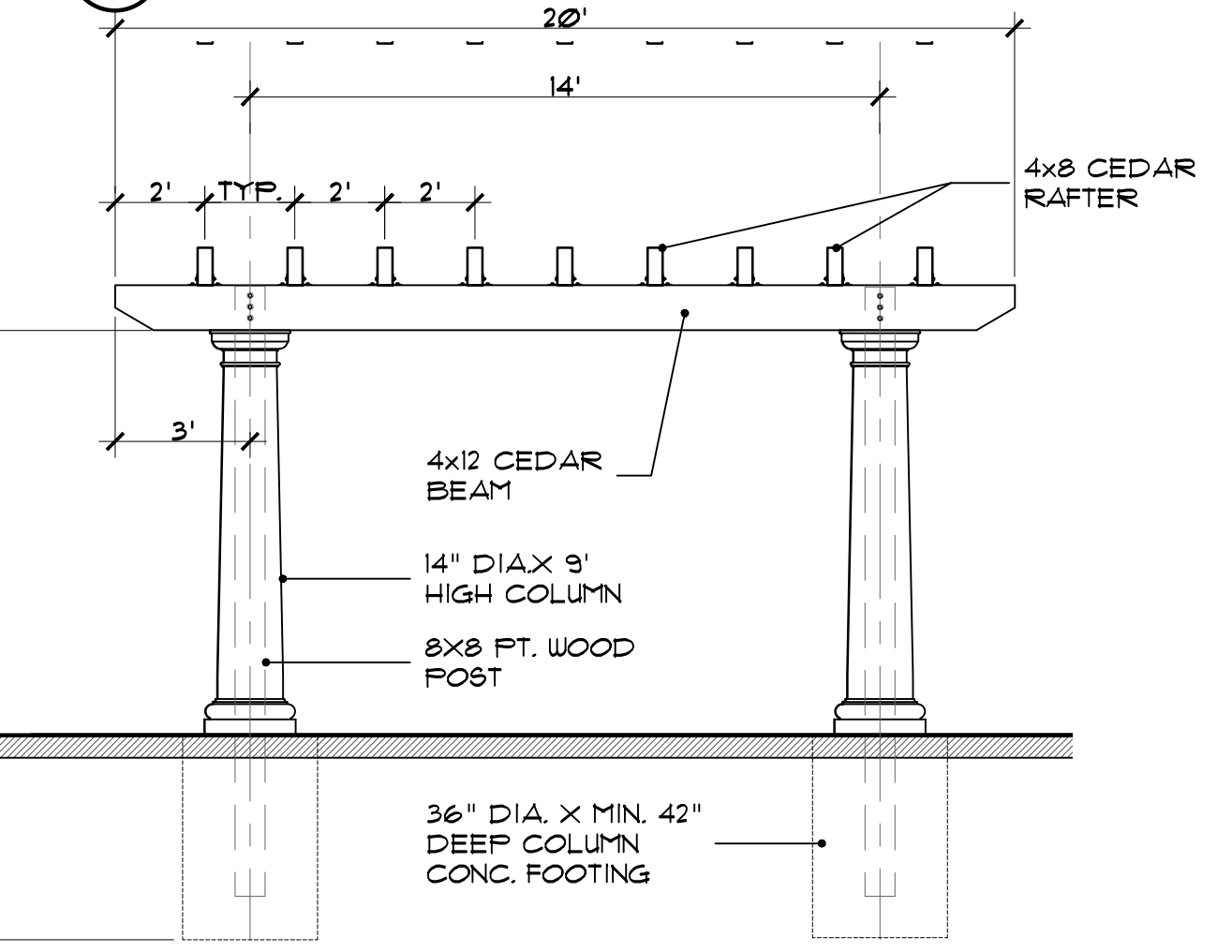
5C pergola foundation plan
 SCALE 1/4"=1'-0"



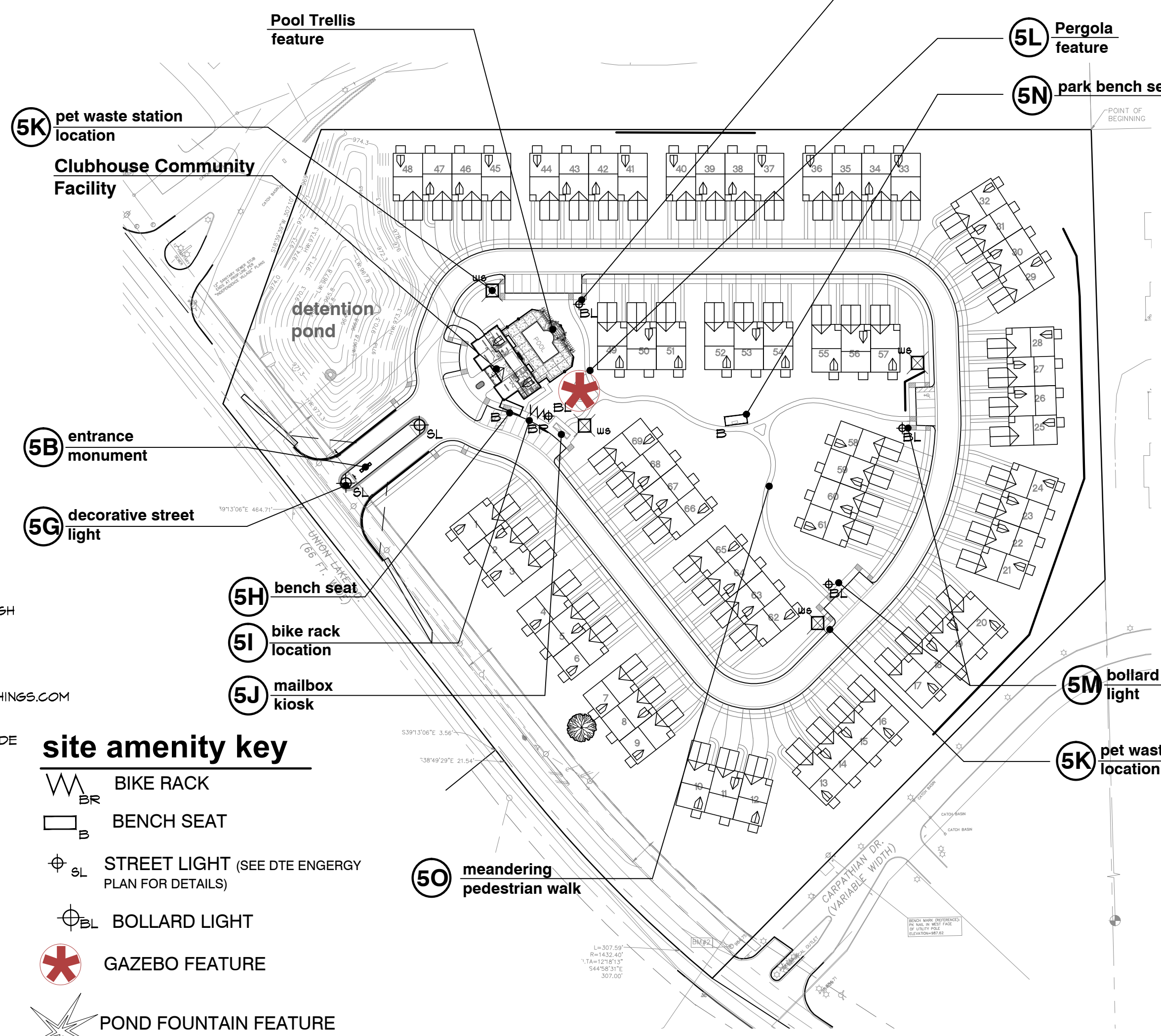
5E pergola elevation view
 SCALE 1/4"=1'-0"



5D pool trellis-pergola plan
 SCALE 1/4"=1'-0"



5F pergola elevation view
 SCALE 1/4"=1'-0"



site amenity key

- BIKE RACK
- BENCH SEAT
- STREET LIGHT (SEE DTE ENRGY PLAN FOR DETAILS)
- BOLLARD LIGHT
- GAZEBO FEATURE
- POND FOUNTAIN FEATURE

site amenity reference location map
 SCALE 100' = 1'-0"

5G decorative pole & light
 (1-CONDITION)



MANUFACTURED BY ANOVA, INC.
 211 NORTH LINDBERGH BLVD. SUITE 200
 ST. LOUIS, MISSOURI 63141-1804
 TOLL FREE NO. (800)231-1827
 WWW.ANOVAFURNISHINGS.COM

5H bench seat
 (1-CONDITION)



BIKE RACK BY DUMOR INC.
 MODEL NO. 130-20 (8-2 SURFACE PLATE MOUNT) 2 3/8" O.D. BLACK POWDER-COATED LOOP OR EQUAL

5I bicycle rack
 (1-CONDITION)

5B entrance monument

5C decorative street light

5H bench seat

5I bike rack location

5J mailbox kiosk

5M bollard light

5L pergola feature

5N park bench seat

5M bollard light

5K pet waste station location



5J mailbox kiosk
 (1-LOCATIONS)



5L pergola feature
 (1-CONDITION)
 STICK BUILT OR KIT FORM TO BE BUILT BY MANUFACTURER STANDARDS



5N park bench seating
 (1-CONDITIONS)
 6" WIDE PARK BENCH SEAT BY DUMOR, INC. MODEL NO. 34-60D (8-1) SUPPORT: 8-1 EMBEDMENT FINISH: BLACK POWDER-COATED



5K pet waste station
 TOTAL OF 4-CONDITIONS
 BY ZERO WASTE USA 12316 WORLD TRADE DRIVE #102 SAN DIEGO, CA. 92128 PH. 800-784-2568 WWW.ZEROWASTEUSA.COM
 MODEL NO. JJB006-BLACK DESCRIPTION: ENTRY DOG WASTE STATION (73"H X 13"W) FINISH: BLACK



5M bollard light
 (4-CONDITIONS)
 BY LITHONIA LIGHTS OR EQUAL MODEL: DSXB LED (D-SERIES LED BOLLARD 8"DIA X 42" HGT.) OR EQUAL



5O meandering pedestrian walk
 5' WIDE MEANDERING WALK

lighting note:
 ALL FRONT PORCH LIGHTS AND COACH LIGHTS WILL UTILIZE 75 WATT BULBS.



client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER
 ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp.,
 Michigan

Union Lake Road
 sheet title:
POOL DECK PLAN

job no./issue/revision date:
 LS19.124.11 TWP. 11-12-2019
 LS19.124.12 TWP. 12-27-2019
 LS20.089.10 TWP. 10-14-2020
 LS21.009.01 SPA 1-18-2021
 LS21.009.01 SPA 2-02-2021
 LS21.009.03 SPA 3-22-2021

drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

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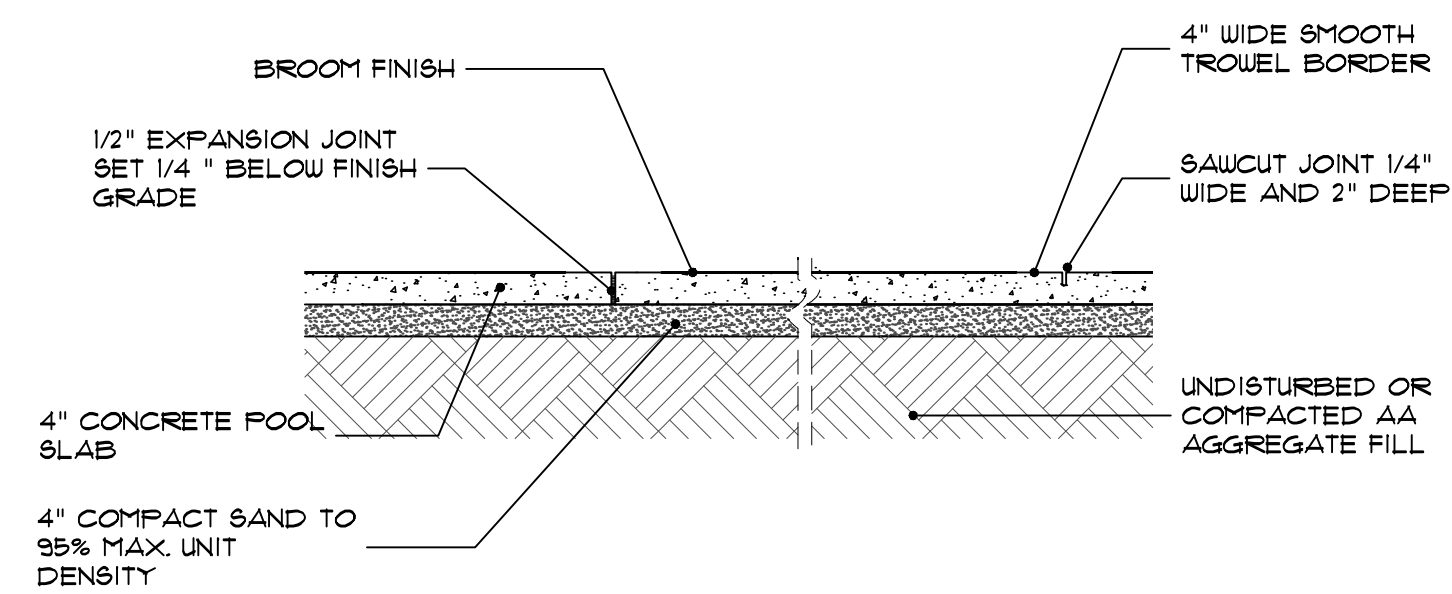
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 underground utilities as shown on this
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 of construction

project no:
LS21.009.01

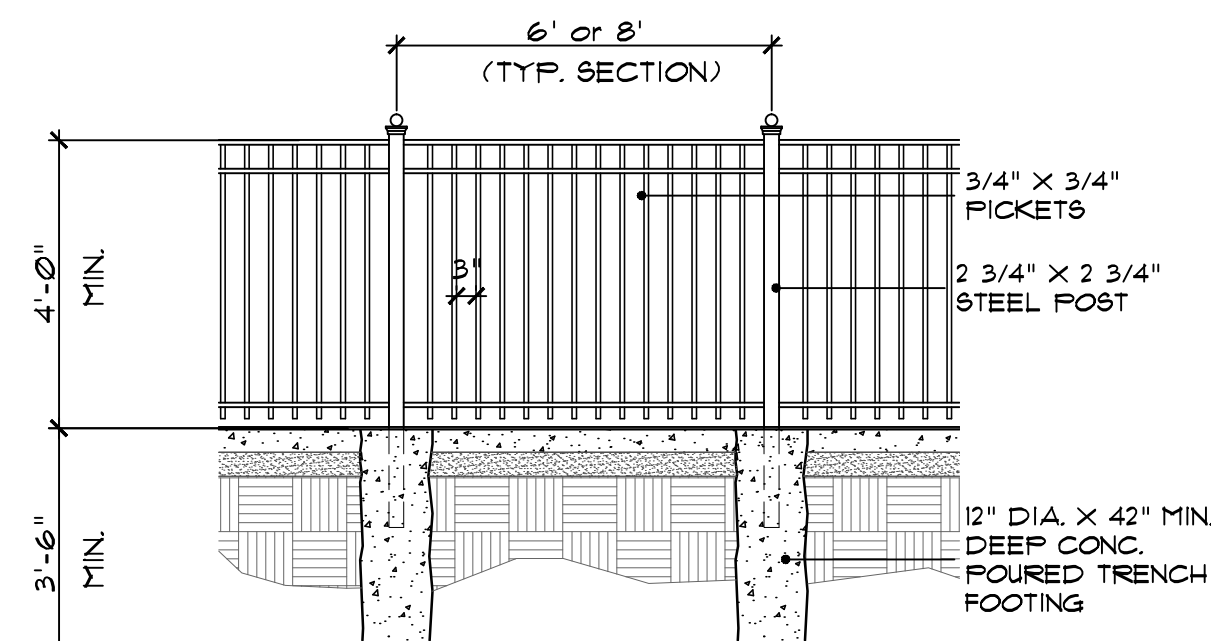
sheet no:
LS-6 of 7

swimming pool notes

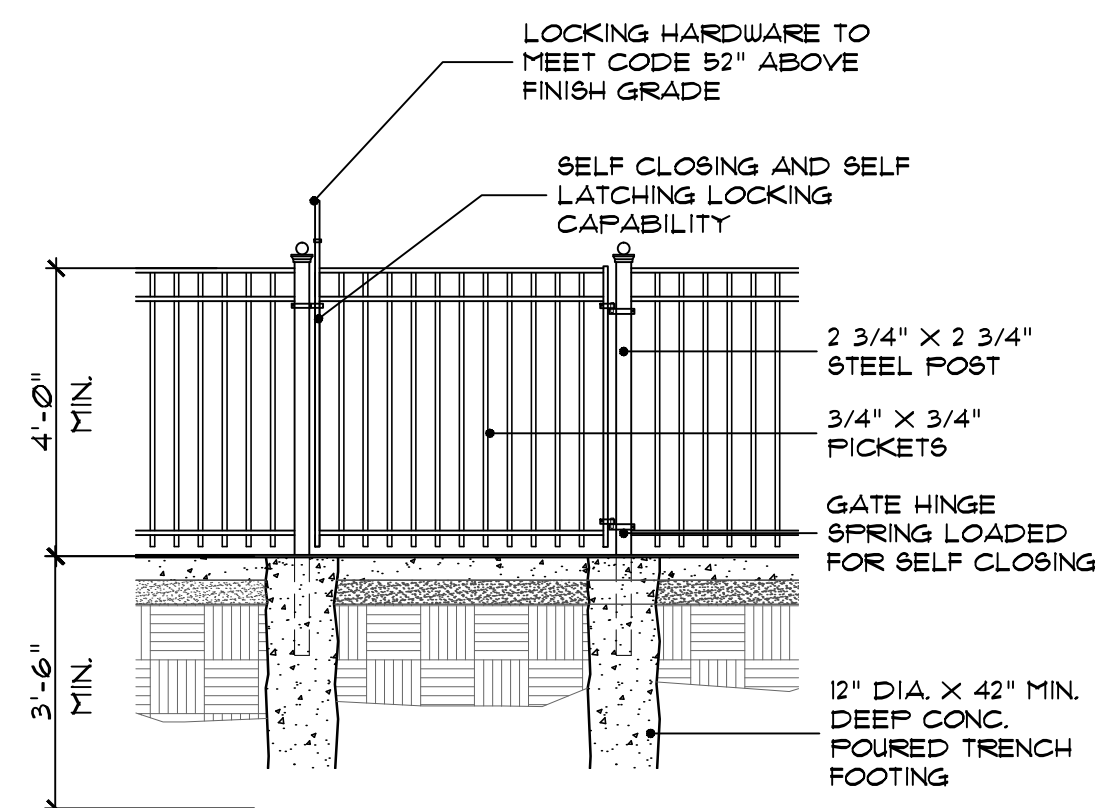
- THIS DRAWING ONLY PROVIDES THE LOCATION AND SHAPE OF THE PROPOSED SWIMMING POOL, DECK, AND / OR SPA. ALL STRUCTURAL AND ELECTRICAL REQUIREMENTS, CONSTRUCTION DETAILS, MATERIAL DETAILS, FINAL POOL FENCE LOCATION, AND OTHER RELATED INFORMATION ARE THE RESPONSIBILITY OF THE DESIGN BUILD FIRM OR CONTRACTOR.
 - THE DESIGN BUILD FIRM / CONTRACTOR SHALL PREPARE DETAILED PLANS, DRAWINGS AND SPECIFICATIONS TO BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL. THE DESIGN BUILD FIRM / POOL CONTRACTOR SHALL BE RESPONSIBLE TO MAKE APPLICATION TO AND OBTAIN POOL CONSTRUCTION PERMITS AND APPROVALS FROM LOCAL GOVERNING MUNICIPALITIES AND THE STATE.
 - CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.
- THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES, SEE ABOVE.
- POOL DECK TO PITCH AWAY FROM POOL AND WALLS WITH NO PUDDLING TO OCCUR



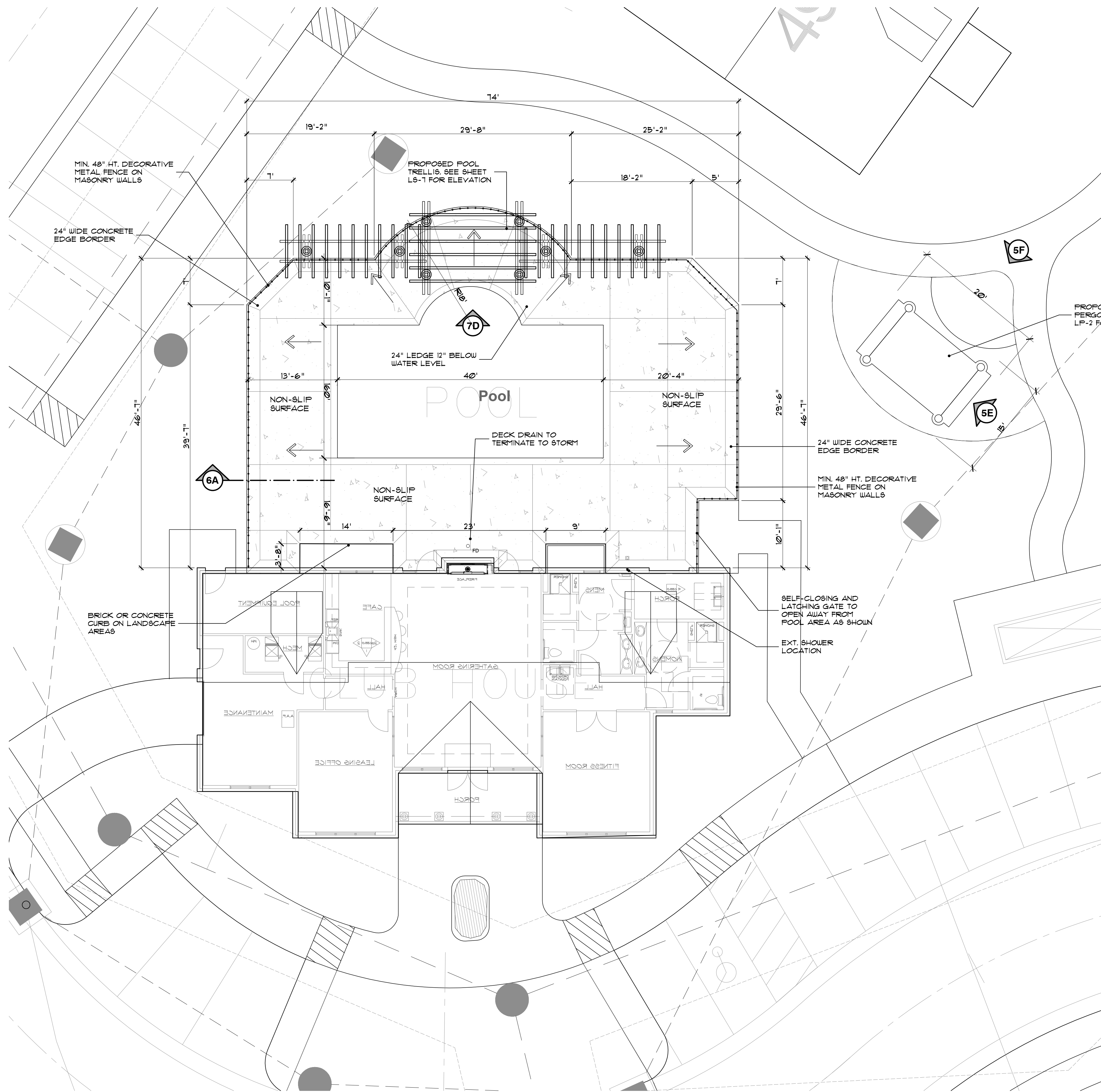
6A concrete pool deck
 SCALE: 1/2"=1'-0"



6B pool fence detail
 SCALE: 3/8"=1'-0"

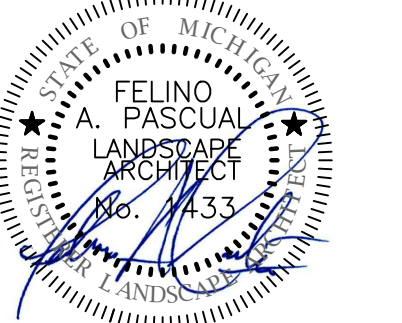


6C pool fence gate detail
 SCALE: 3/8"=1'-0"



6D pool deck plan
 SCALE: 1/8"=1'-0"

seal:



client:

JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER
 ROAD SUITE 120
 TROY, MI 48084

project:

LAKE POINTE

project location:

White Lake Twp. ,
 Michigan

Union Lake Road

sheet title:

**POOL PERGOLA
 \ TRELLIS ELEVATIONS
 & DETAILS**

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
LS21.009.01	SPA	2-02-2021
LS21.009.03	SPA	3-22-2021

drawn by:
JP, DK

checked by:
FP

date:
1-4-2021

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project no:

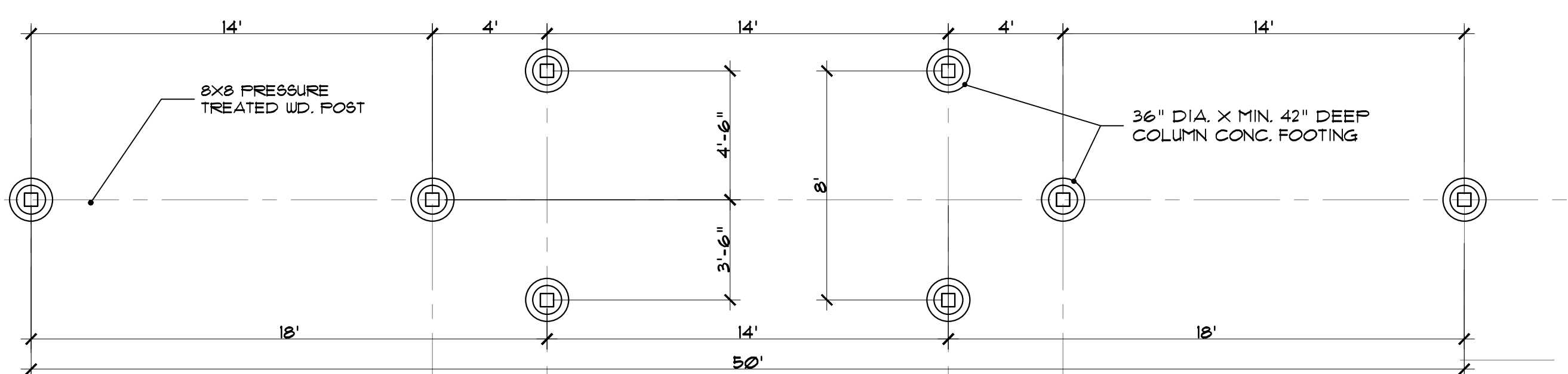
LS21.009.01

sheet no:

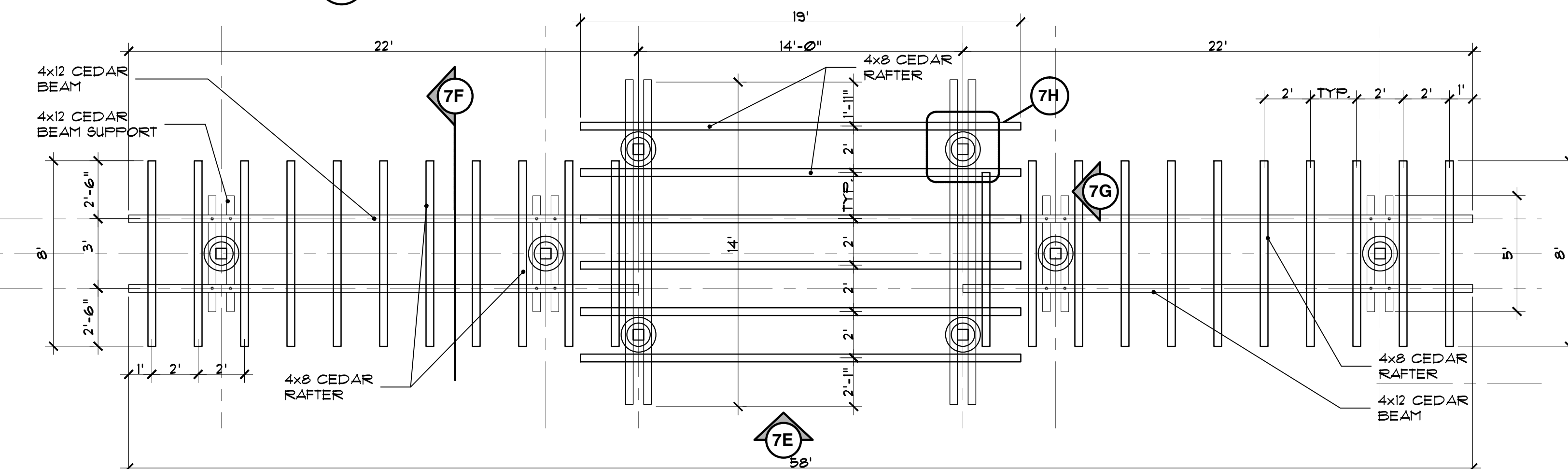
LS-7 of 7

general notes:

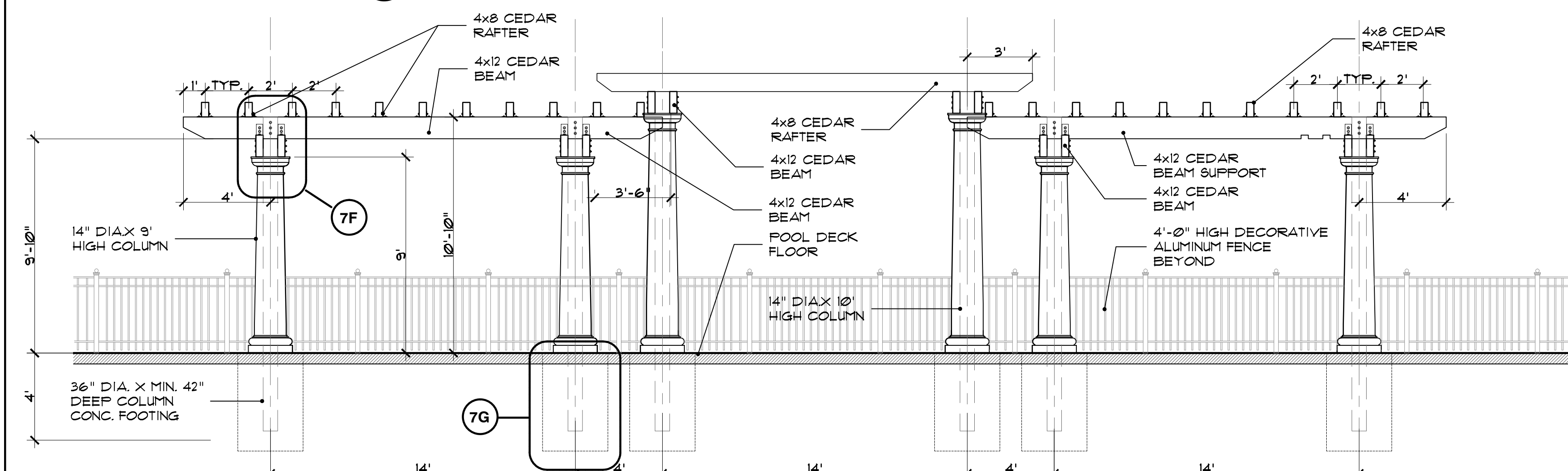
- ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION FROM ALL NECESSARY AGENCIES.
- CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANS AND RELATED WORK. CONTACT THE OWNER WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLANS AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING. CONTACT MISS DIG AT 811 OR 800-482-7171 BEFORE YOU DIG.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.
- VERIFY SOIL BEARING CAPACITY PRIOR TO ANY POST FOOTING CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL POST FOOTING DESIGN.
- ALL EXPOSED SAW CUT AREAS OF CEDAR WOOD LUMBER TO BE SEALED WITH WOOD PRESERVATIVE AS REQUIRED INCLUDING TRIMMED ENDS PER DRAWINGS.
- ALL BRACKETS, FASTENERS, COMPOSITE SCREWS, NAILS, BOLTS, SHALL BE GALVANIZED OR ZINC COATED WITH ACG AND CBA RATED FORMULATIONS.
- GRADES BY OTHERS. FINAL GRADES TO PROVIDE POSITIVE DRAINAGE.
- CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.
- FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL WITH AN ASSUMED SAFE BEARING CAPACITY OF 2000 P.S.I. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. VERIFY FOUNDATION SOIL BEARING PRESSURE IN FIELD BY SOILS ENGINEER.
- PROVIDE NECESSARY SHEETING SHORING BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS.
- MINIMUM CONCRETE STRENGTH TO BE 3000 P.S.I. @ 28 DAYS. U.O.N. ± SLABS SHALL BE 3500 P.S.I. MIN. U.O.N. ± EXPOSED CONCRETE SHALL BE 4000 P.S.I. WITH 6% ± 1% ENTRAINED AIR U.O.N.
- ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST RECOMMENDATIONS OF A.C.I.
- PROVIDE MINIMUM 3" CONCRETE COVER FOR REINFORCEMENT BARS BELOW GRADE AND MINIMUM 2" CONCRETE COVER FOR REINFORCEMENT BARS ABOVE GRADE.



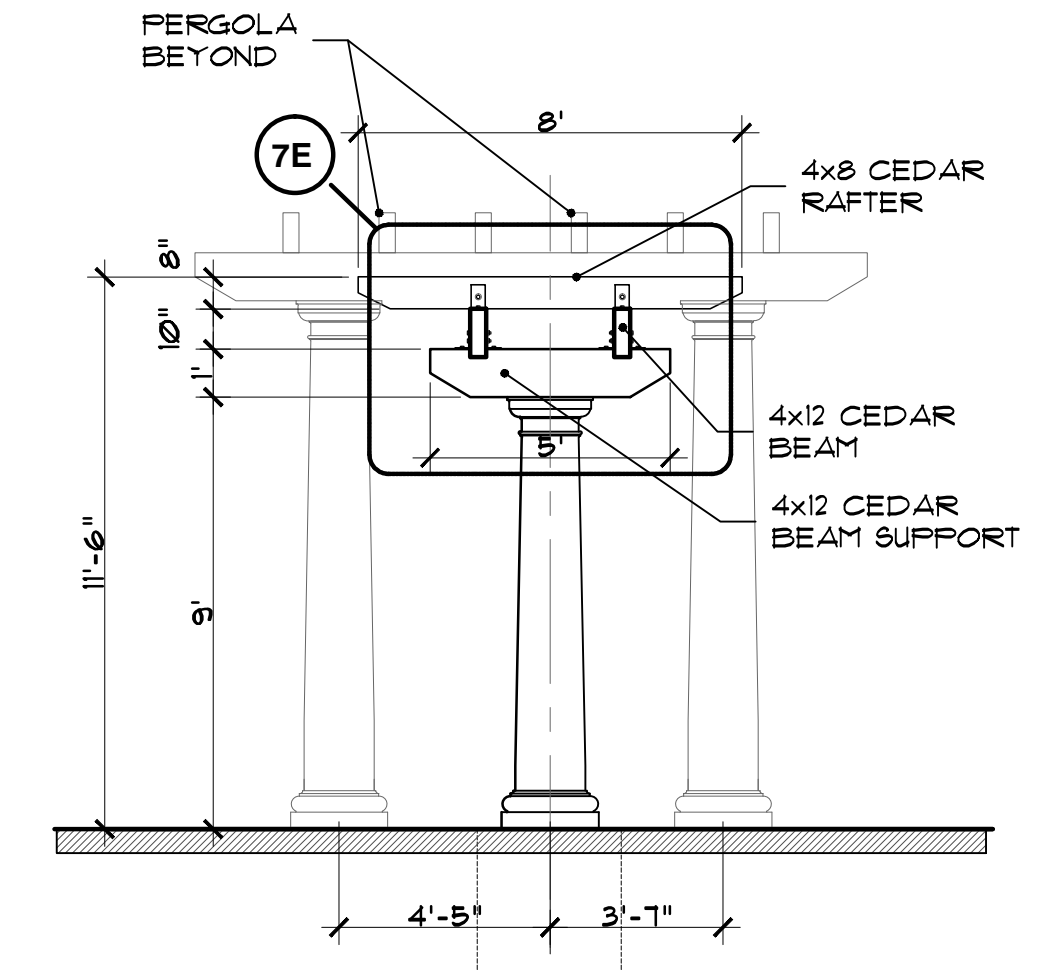
7A pool trellis-pergola foundation plan
 SCALE 1/4" = 1'-0"



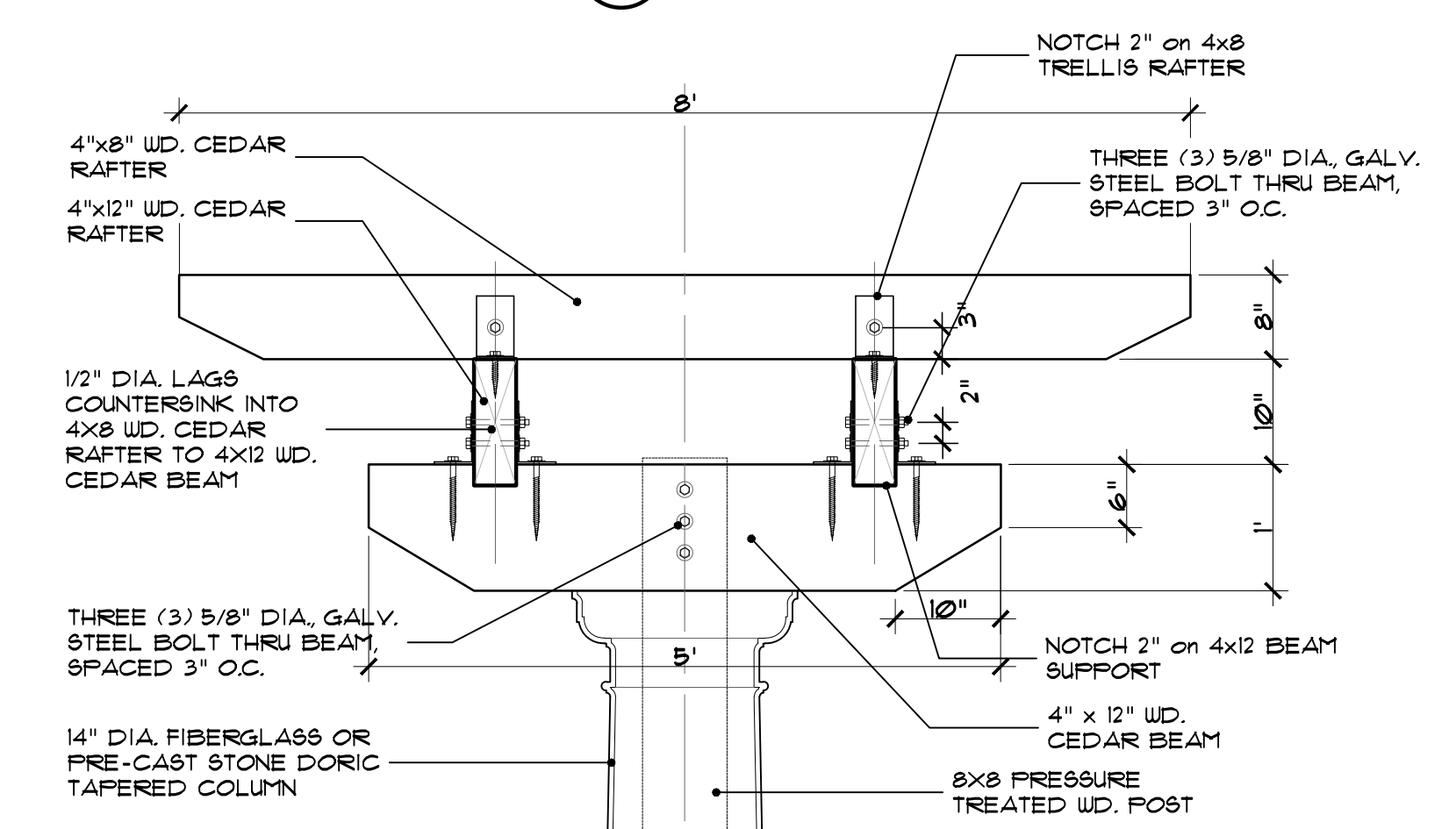
7B pool trellis-pergola plan
 SCALE 1/4" = 1'-0"



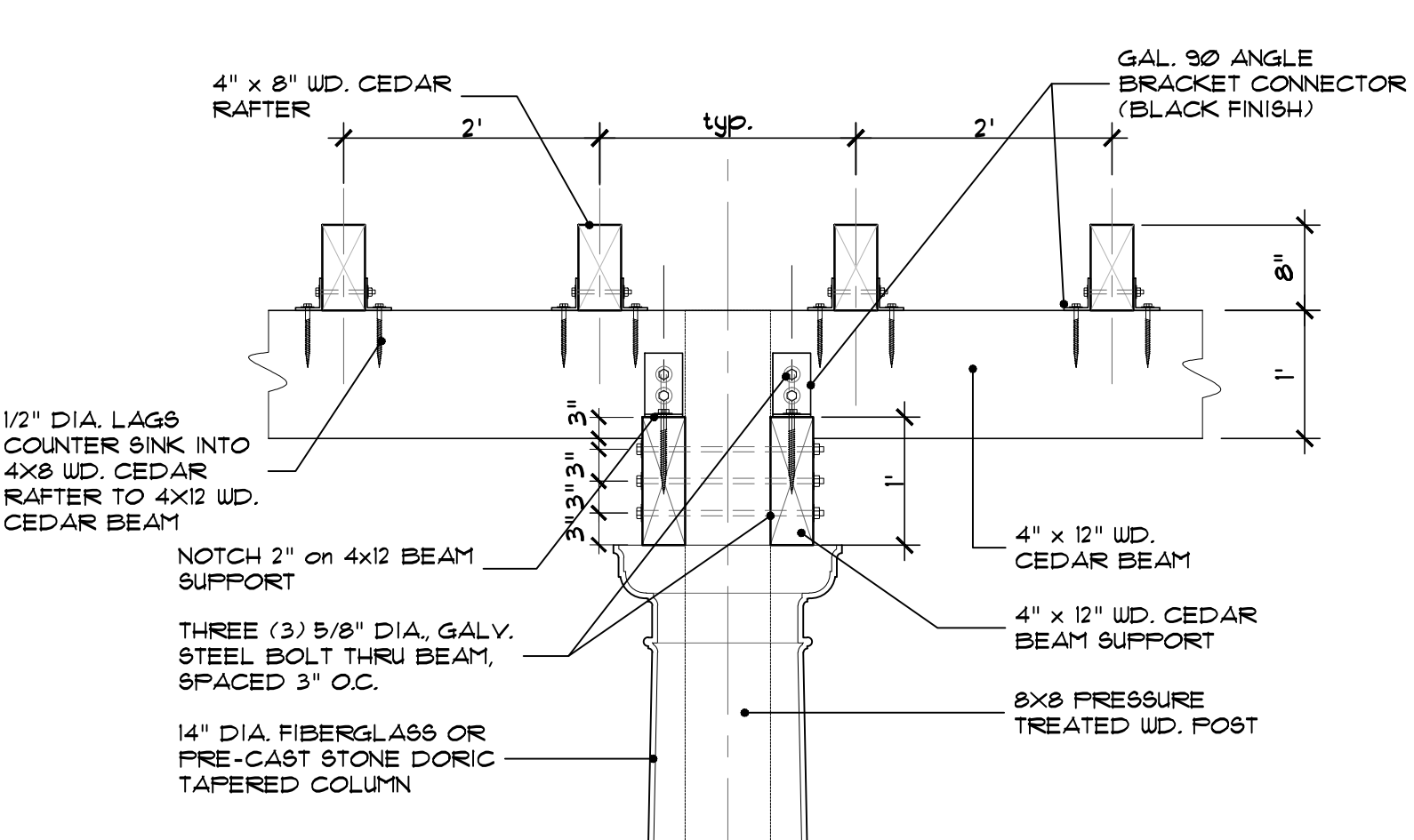
7C pool trellis-pergola elevation view
 SCALE 1/4" = 1'-0"



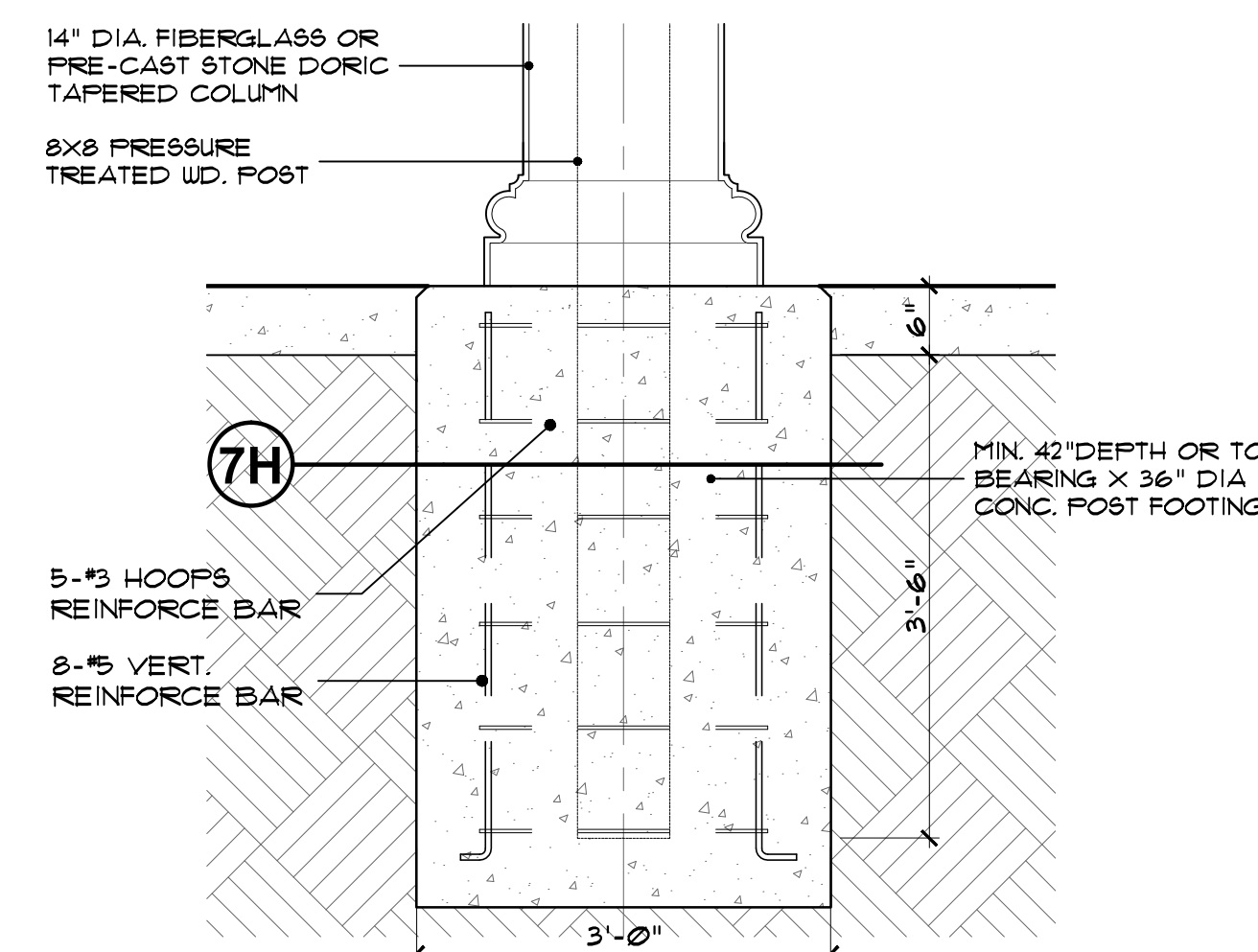
7D pool trellis-pergola elevation view
 SCALE 1/4" = 1'-0"



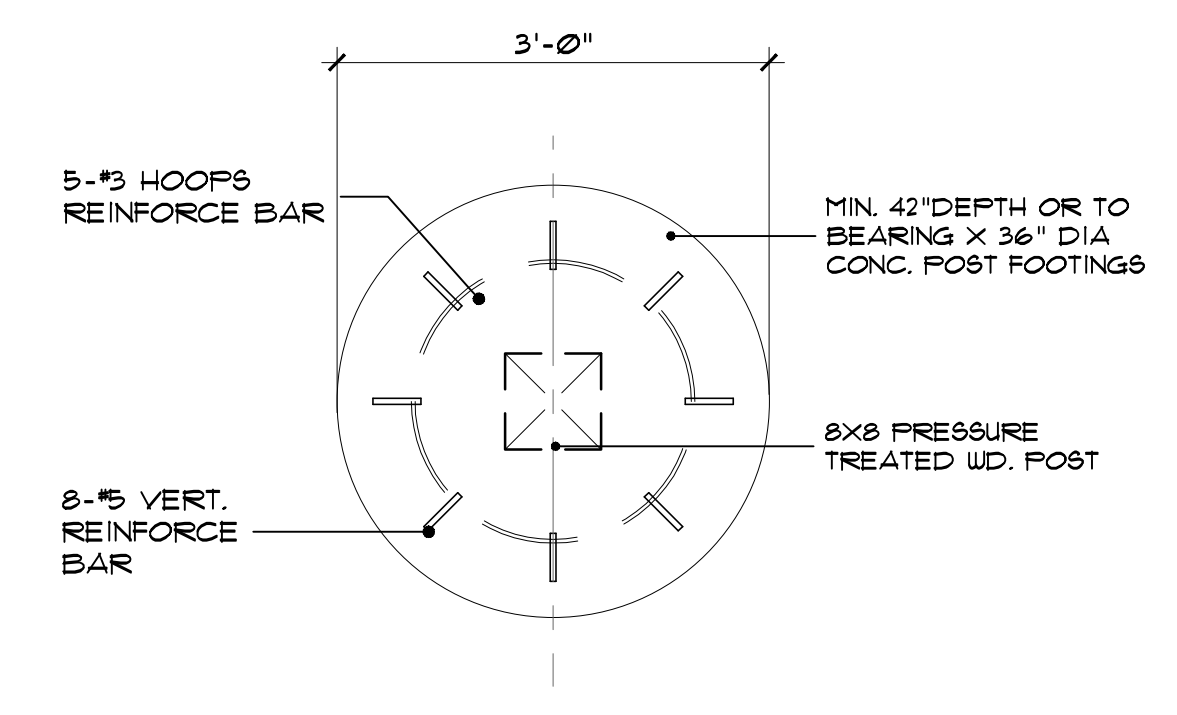
7E trellis connection detail
 SCALE: 3/4" = 1'-0"



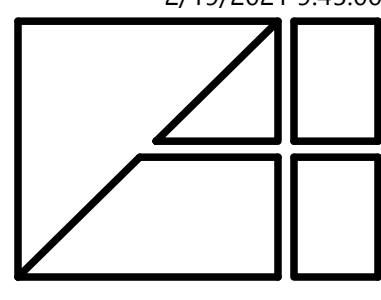
7F pergola connection detail
 SCALE: 3/4" = 1'-0"



7G pergola footing detail
 SCALE: 3/4" = 1'-0"



7H pergola footing detail
 SCALE: 3/4" = 1'-0"



Alexander V. Bogaerts + Associates, P.C. • Architecture • Planning • Interior Design
2445 Franklin Road
Bloomfield Hills, MI 48302
248 • 334 • 5000

CLIENT/PROJECT
WEST VALLEY
MULTIFAMILY COMMUNITY
WHITE LAKE, MICHIGAN

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BOGAERTS + ASSOC.

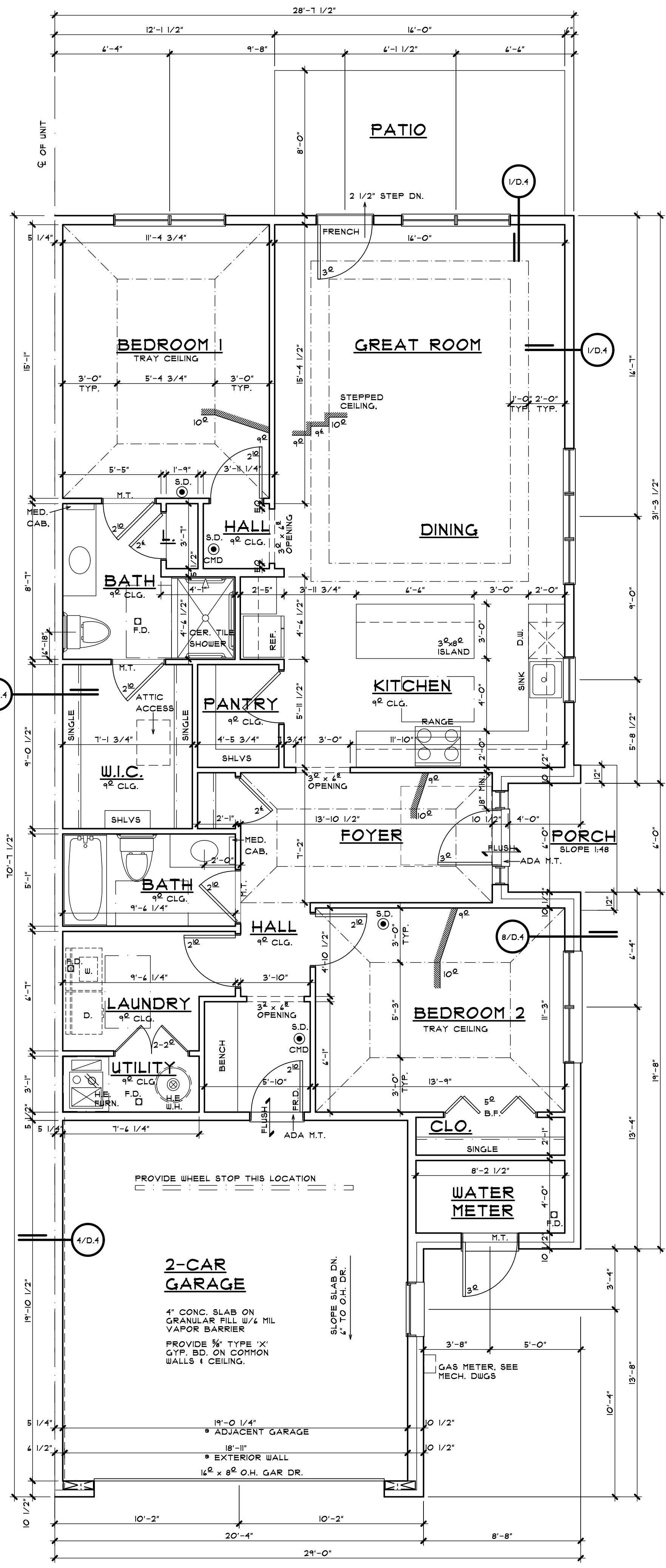
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CONSTRUCTION

REVISIONS

DRAWN BY
MS / DA
CAD FILENAME
UNITPLANS.DWG
CHECKED BY
JOB NUMBER
8140
DATE

SHEET NUMBER
A101

- NOTES**
- ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.
 - PROVIDE PEEP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.
 - ALL DRYWALL TO BE PREPARED & READY TO BE PAINTED INCLUDING THE GARAGE.
 - BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.
- NOTE:**
FUTURE GRAB BARS SHOWN AT WATER CLOSETS, TUBS & SHOWERS. PROVIDE BLOCKING ONLY AT TIME OF OCCUPANCY.
- NOTE:**
ALL GYP. BOARD INSTALLED IN ROUGH BY ROUGH CARPENTERS MUST BE MOLD/MOISTURE RESISTANT TYPE APPROVED FOR INSTALLATION DURING THE ROUGH FRAMING PROCESS.
- NOTE:**
ROUGH CARPENTER TO VERIFY ALL TUB AND SHOWER SIZES PRIOR TO ROUGH IN.
- NOTE:**
REFER TO STRUCTURAL DESIGN DRAWINGS FOR ALL STRUCTURAL INFORMATION.



END UNIT GROSS SQUARE FOOTAGE	
1ST FLOOR (FIN.)	1,478 SQ FT
GARAGE	416 SQ FT

1 END UNIT FIRST FLOOR PLAN - TYPE 'B'
A101 SINGLE STORY DWELLING UNIT

SCALE: 1/4" = 1'-0"

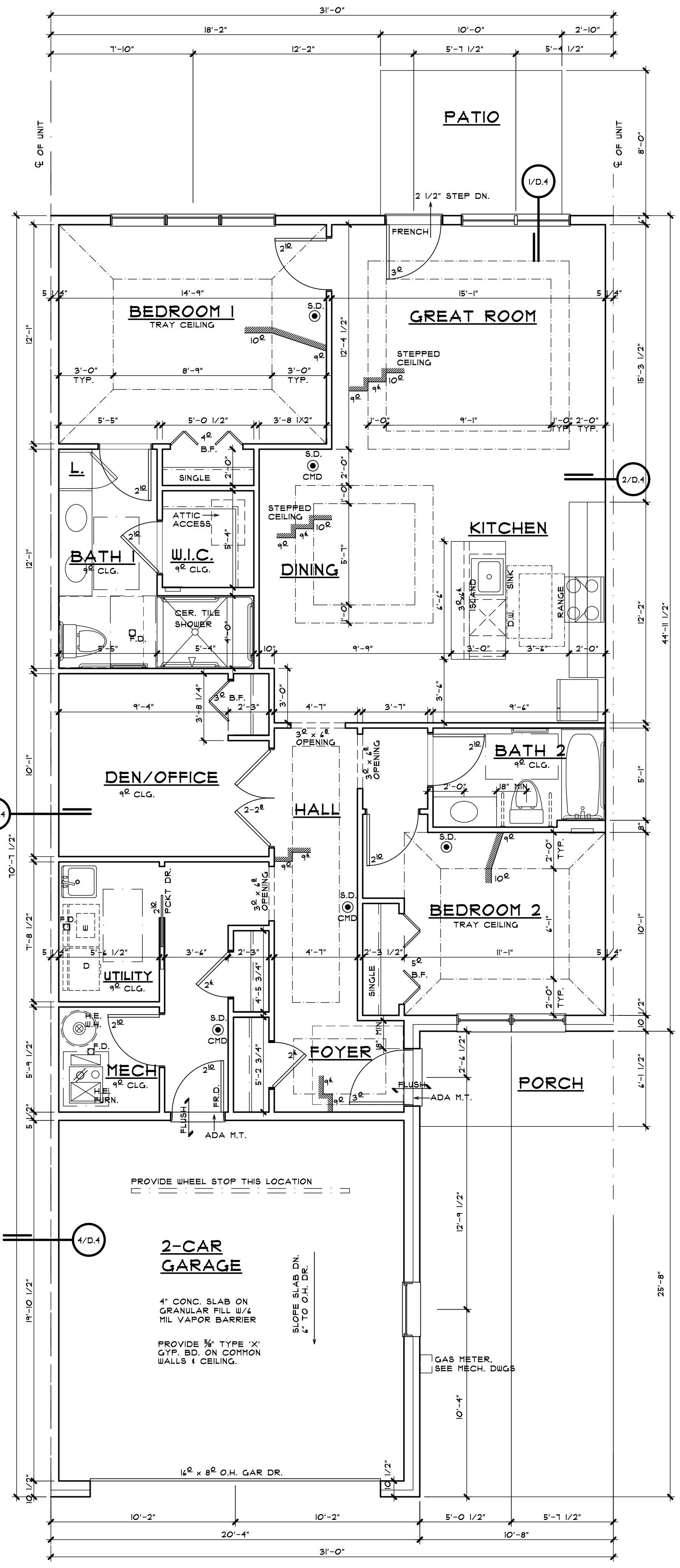
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SEE SHEETS D1-D4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS N1 - N4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

ALL INTERIOR PARTITION DIMENSIONS ARE 3/16" UNLESS NOTED OTHERWISE.



INTERIOR UNIT GROSS SQUARE FOOTAGE	
1ST FLOOR (FIN.)	1,494 SQ FT
GARAGE	421 SQ FT

2 INTERIOR UNIT FIRST FLOOR PLAN - TYPE 'B'
A101 SINGLE STORY DWELLING UNIT

SCALE: 1/4" = 1'-0"

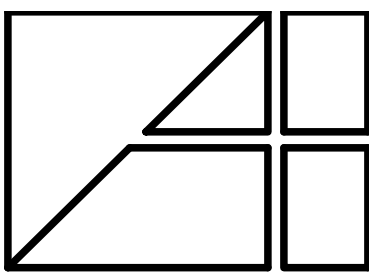
DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.

SEE SHEETS D1-D4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS N1 - N4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

ALL INTERIOR PARTITION DIMENSIONS ARE 3/16" UNLESS NOTED OTHERWISE.



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2445 Franklin Road
Bloomfield Hills, MI 48302
248-334-5000

SHEET TITLE
TYP. UNIT ELEVATIONS
(1/4" Scale)

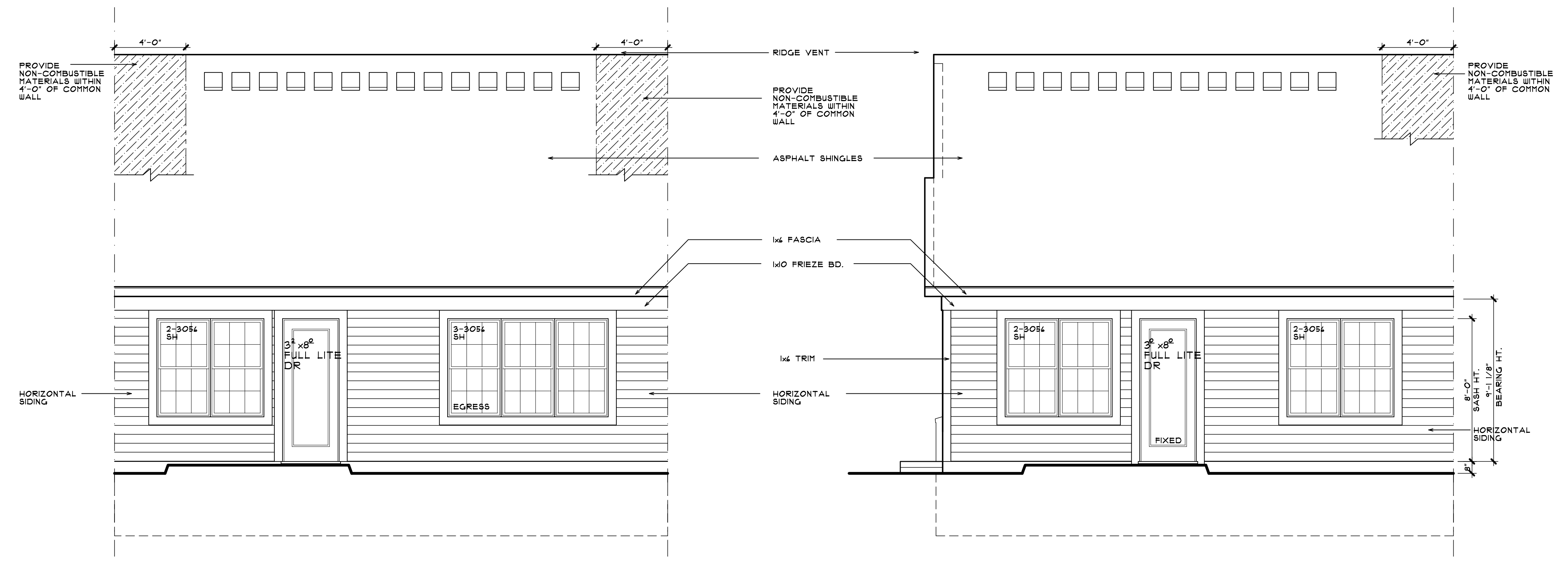
CLIENT/PROJECT
WEST VALLEY
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WHITE LAKE, MICHIGAN

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00-00-00

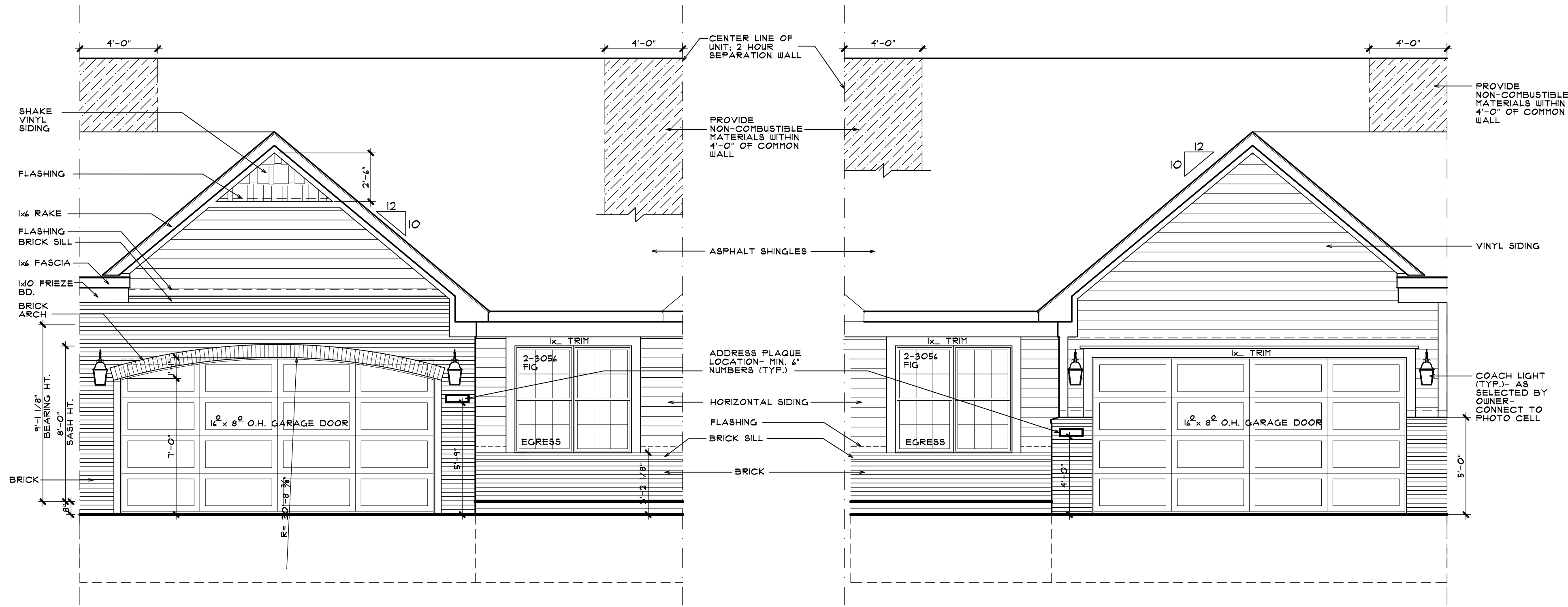
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MS / DA
CAD FILENAME
UNITPLANS.DWG
CHECKED BY

JOB NUMBER
8140
DATE
SHEET NUMBER
A102

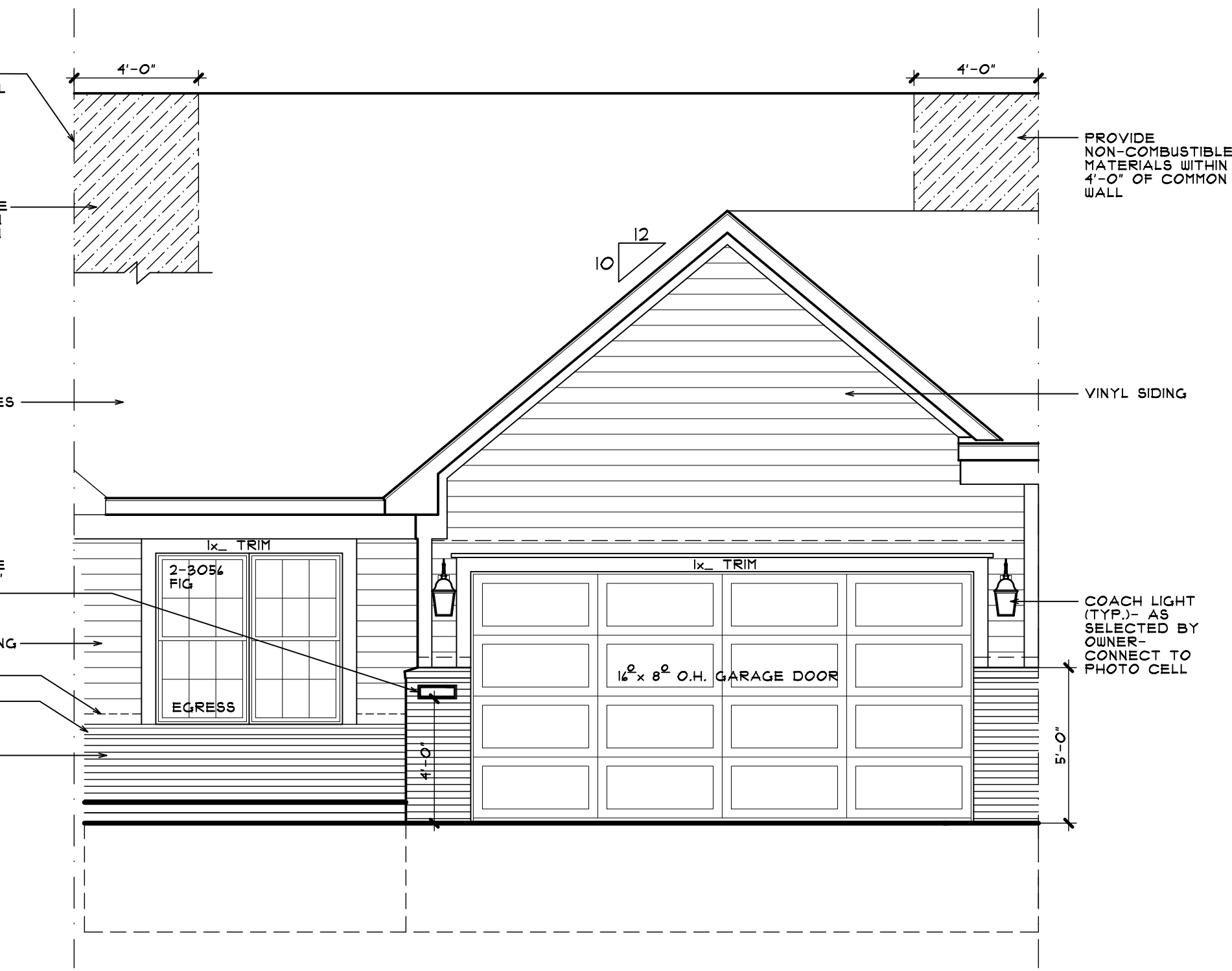


5 REAR ELEVATION - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"

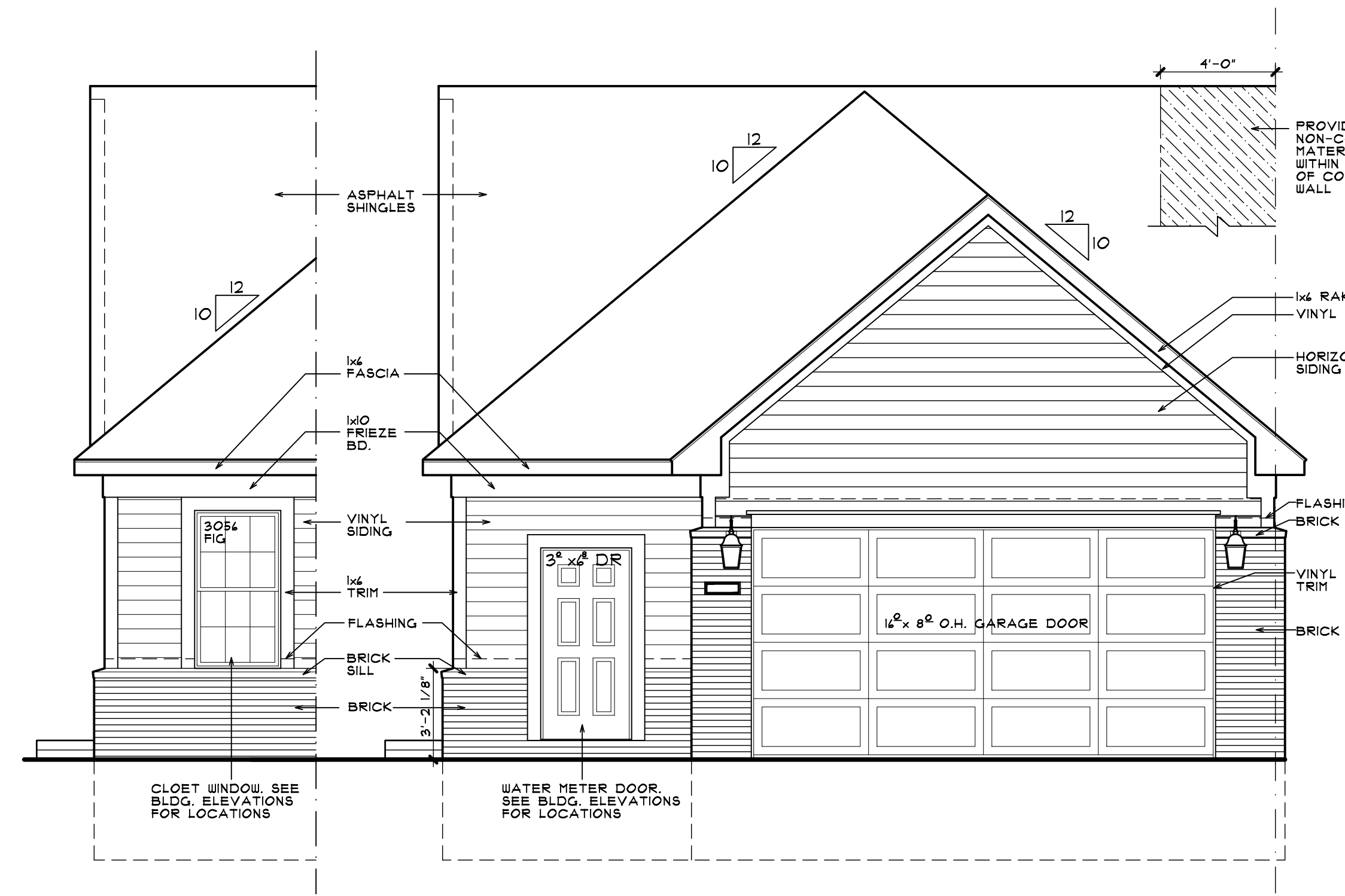
2 REAR ELEVATION - TYP. END UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



4 FRONT ELEVATION B - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



3 FRONT ELEVATION A - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



1 FRONT ELEVATION - TYP. END UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"

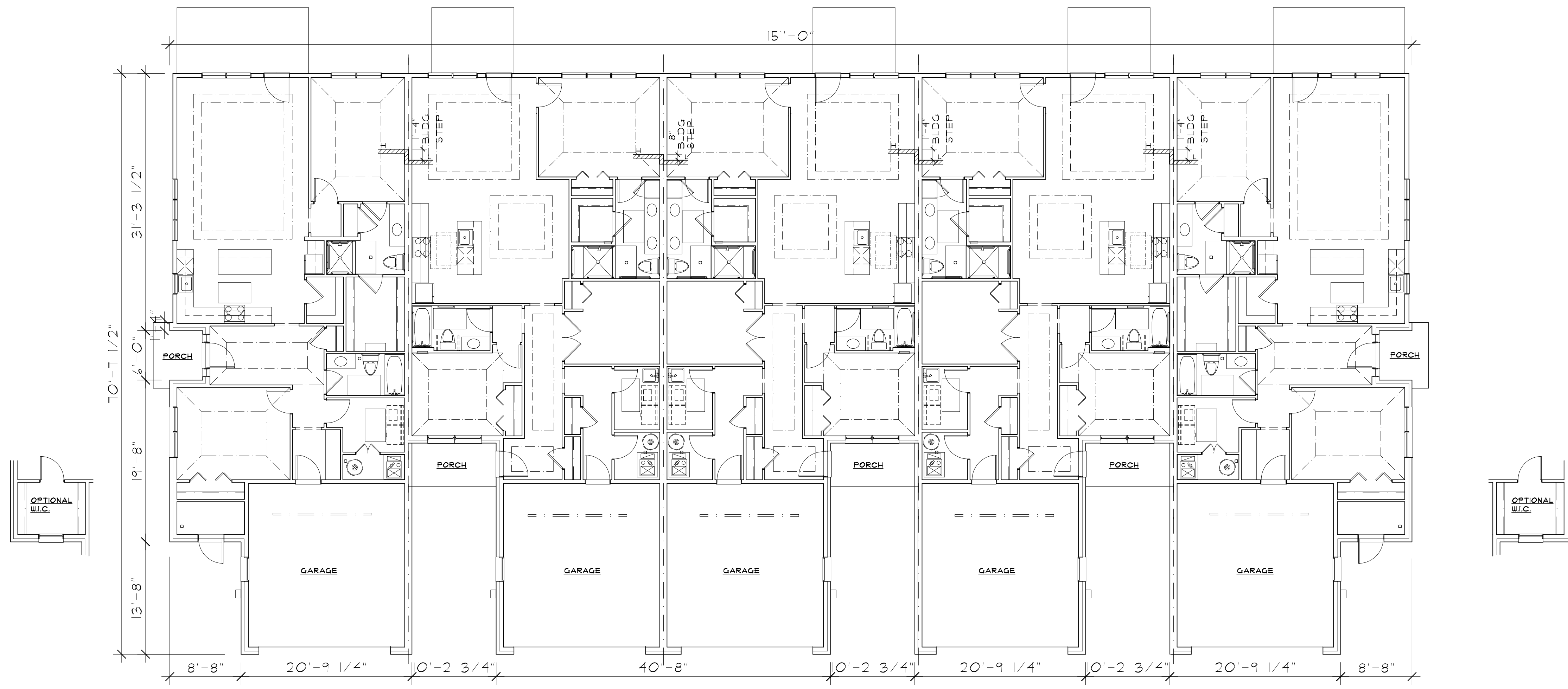
ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

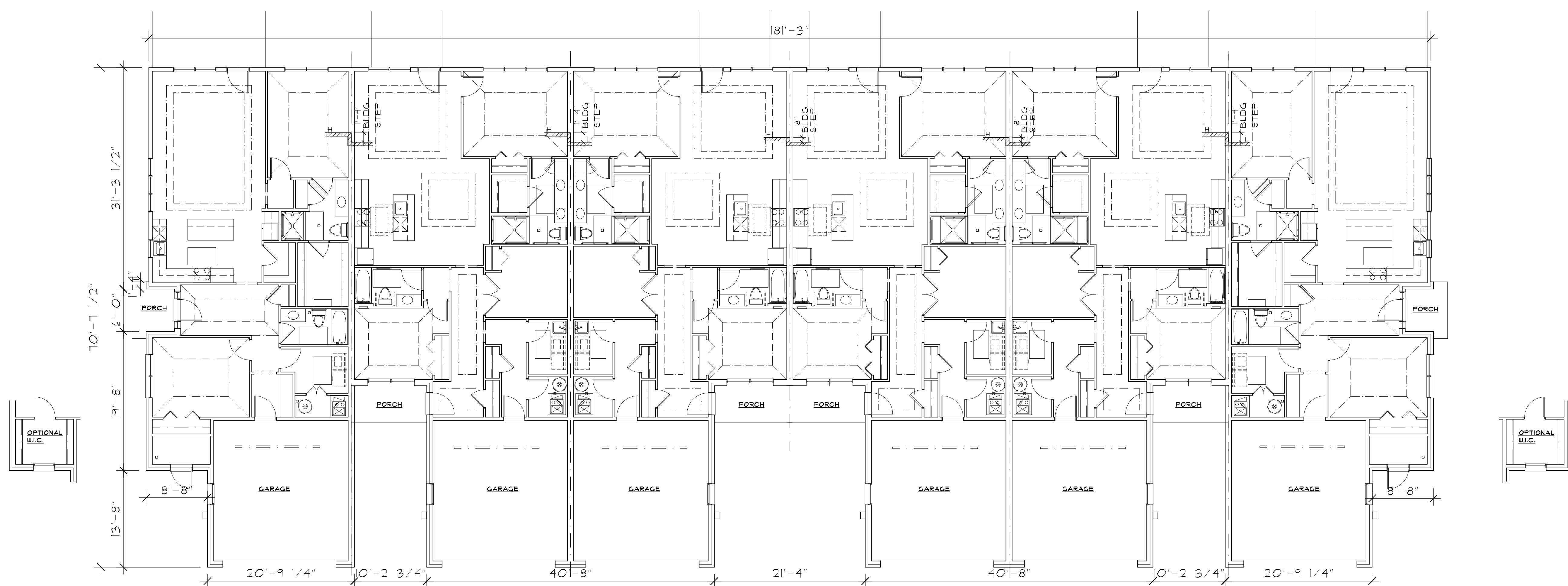
SEE SHEETS DJ-D-1 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.



2 BUILDING C (UNITS 13-17) - FIRST FLOOR PLAN
A200 SINGLE STORY DWELLING UNIT

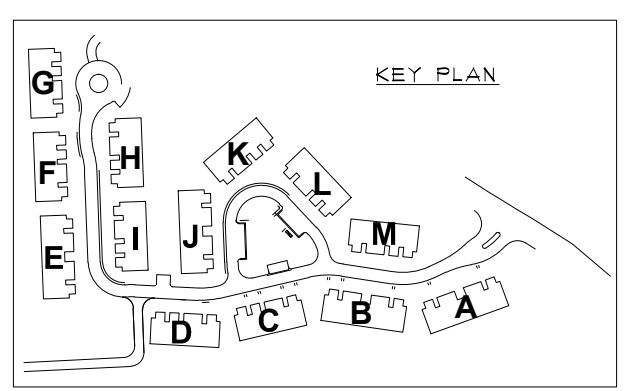
SCALE: 1/8" = 1'-0"



1 BUILDING A (UNITS 1-6) - FIRST FLOOR PLAN
A200 SINGLE STORY DWELLING UNIT

SCALE: 1/8" = 1'-0"

NOTE:
 • REFER TO 1/4" SCALE UNIT PLANS FOR ALL NOTES, DIMENSIONS, DETAILS AND ALL ADDITIONAL INFORMATION NOT SHOWN.
 • SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.



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SHEET TITLE
BUILDING PLANS

CLIENT/PROJECT
**WEST VALLEY
 MULTIFAMILY COMMUNITY
 WHITE LAKE, MICHIGAN**

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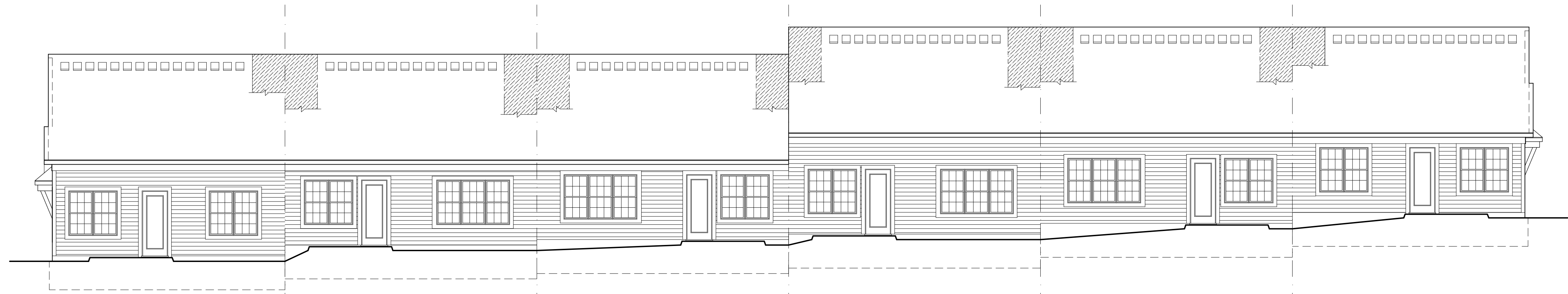
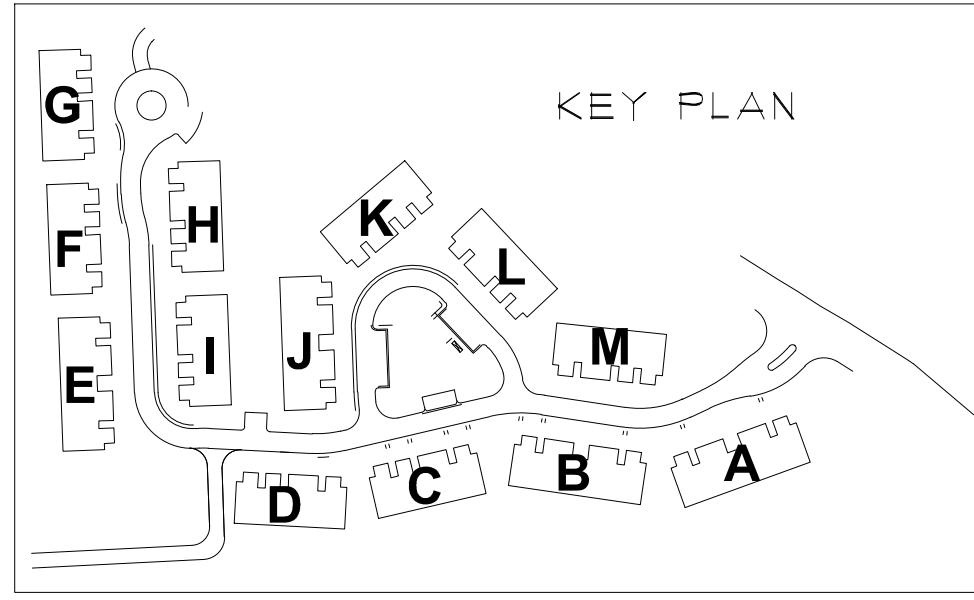
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REVISIONS

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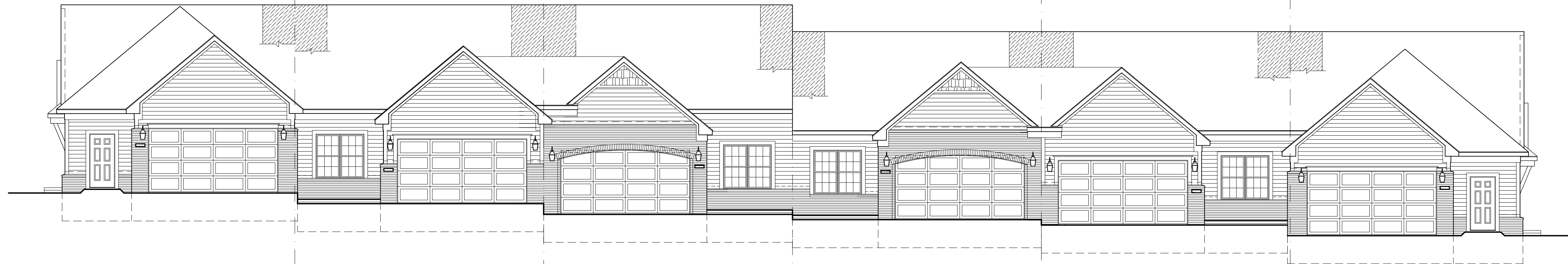
JOB NUMBER
 8140
 DATE

SHEET NUMBER
A200



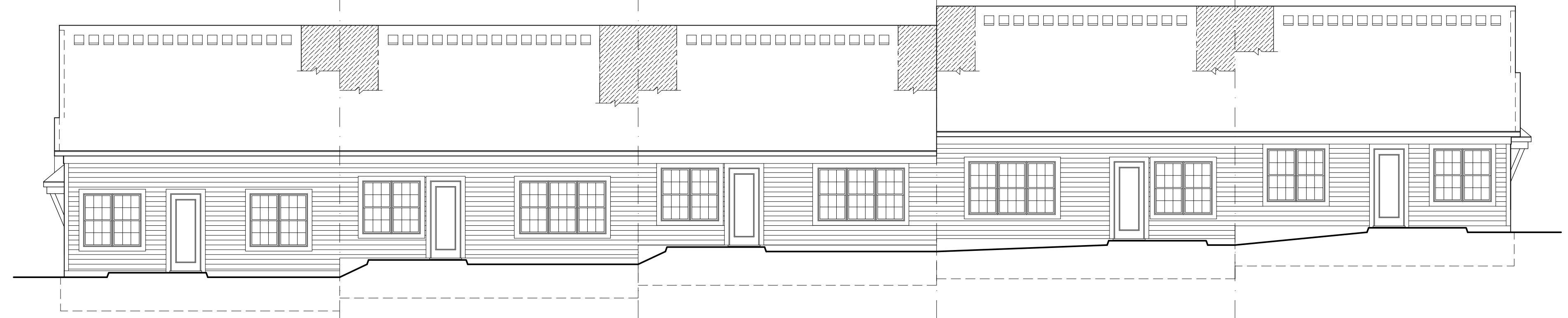
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 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



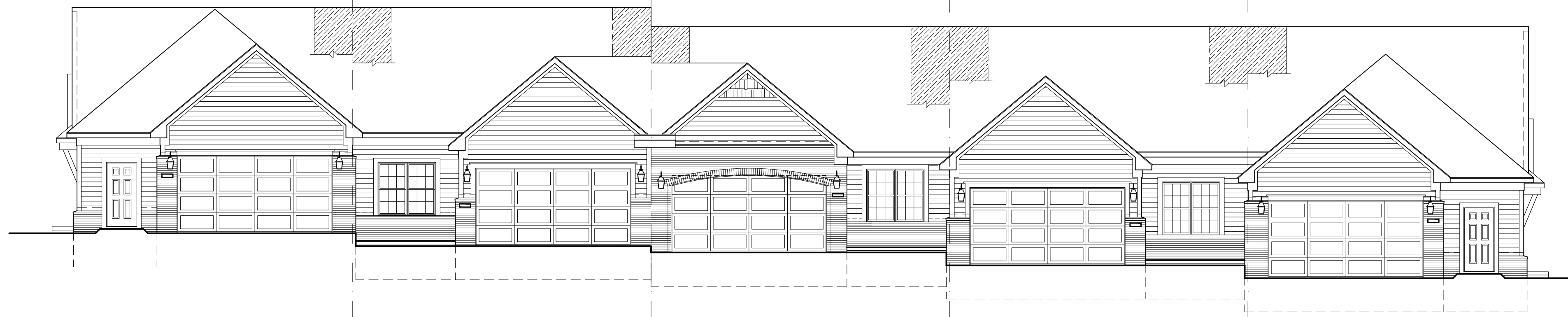
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 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



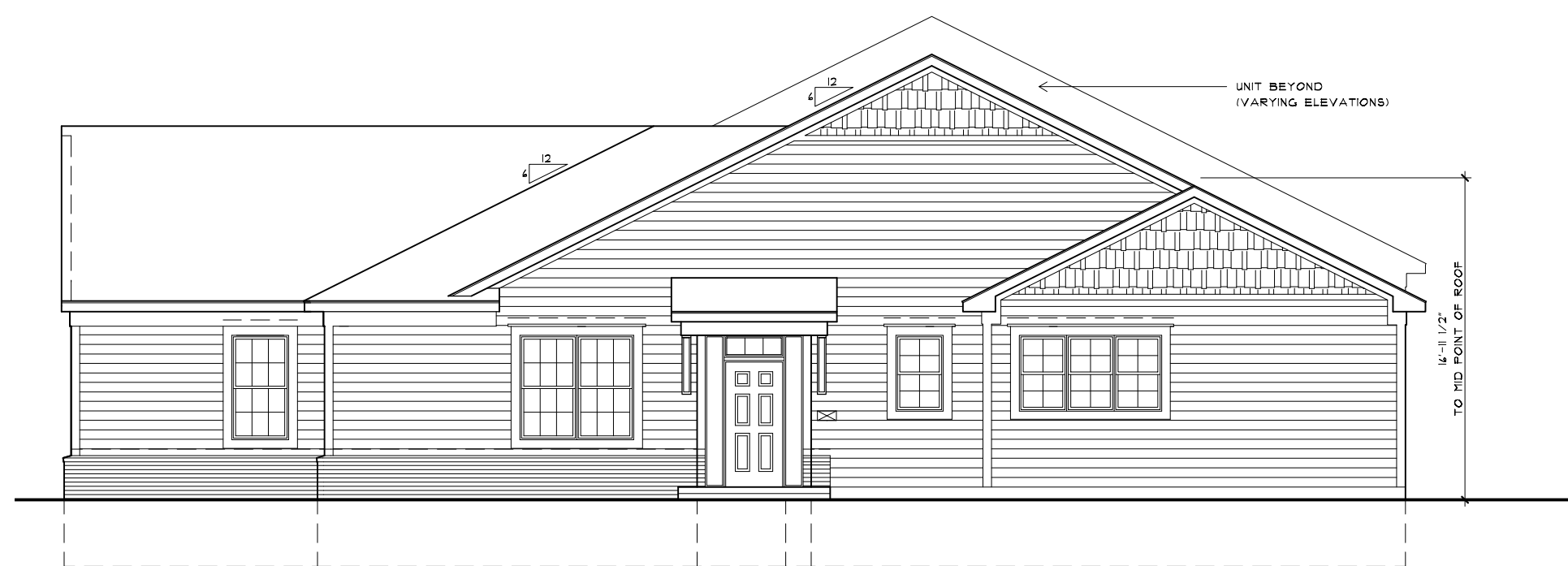
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 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



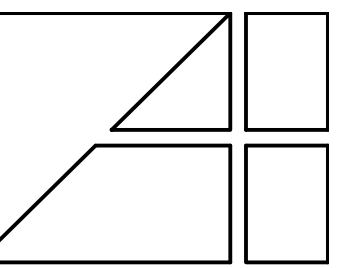
5 UNIT BUILDING - FRONT ELEVATION (BUILDING C, UNITS 13-17)
 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



TYPICAL RIGHT SIDE ELEVATION
 LEFT SIDE - OPP. HAND

SCALE: 1/8" □ 1'-0"



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SHEET TITLE
 BUILDING ELEVATIONS

CUSTOMER PROJECT
 WEST VALLEY
 MULTIFAMILY COMMUNITY
 WHITE LAKE, MICHIGAN

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PRELIMINARY
 08-19-19

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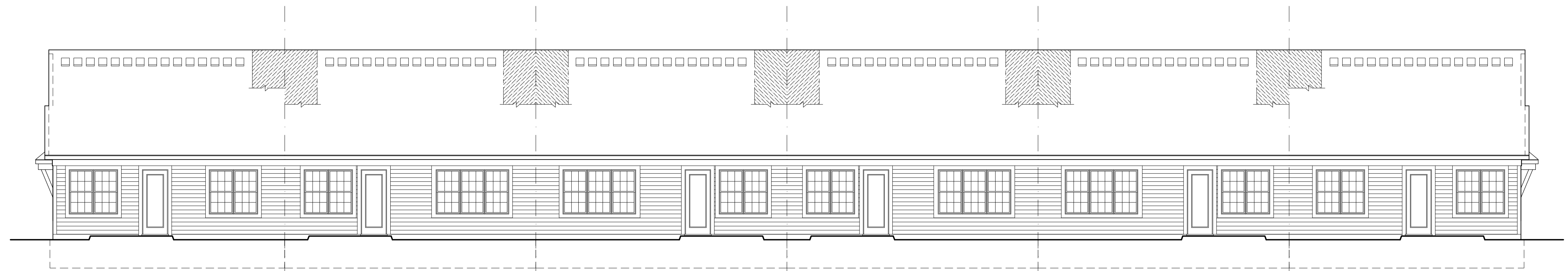
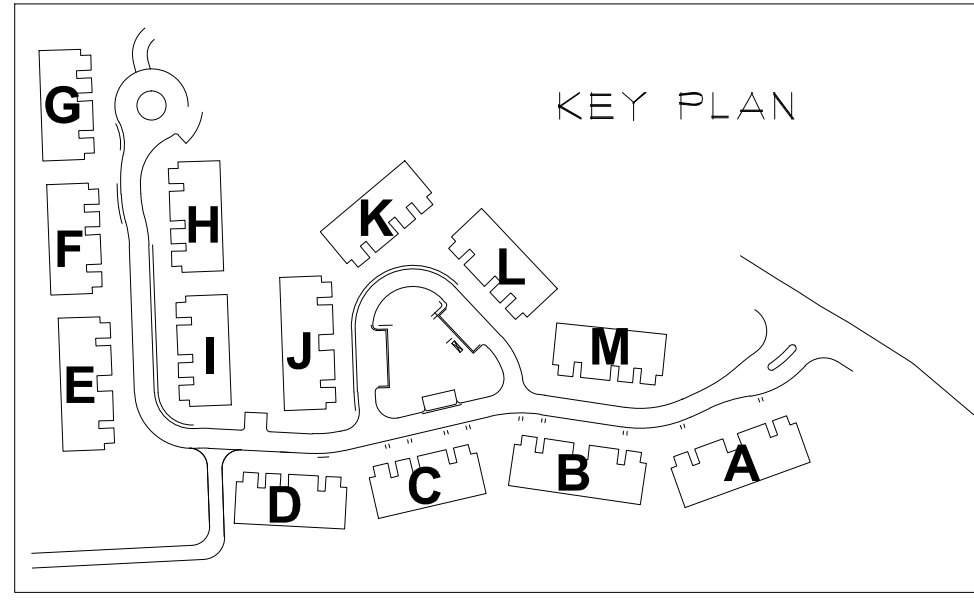
CHECKED BY

JOB NUMBER
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DATE

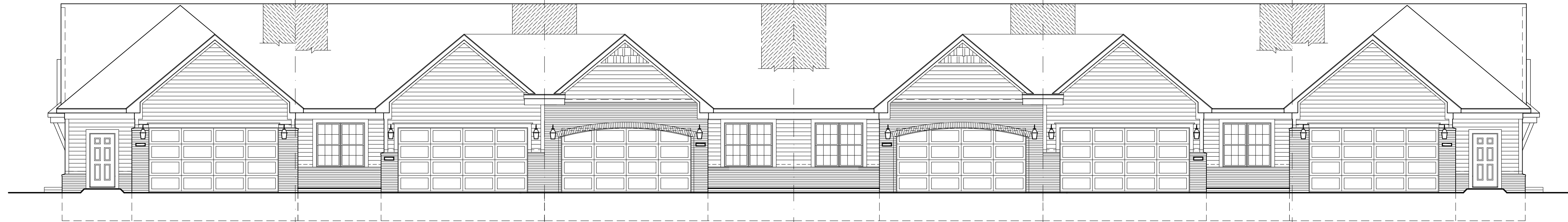
SHEET NUMBER

A201



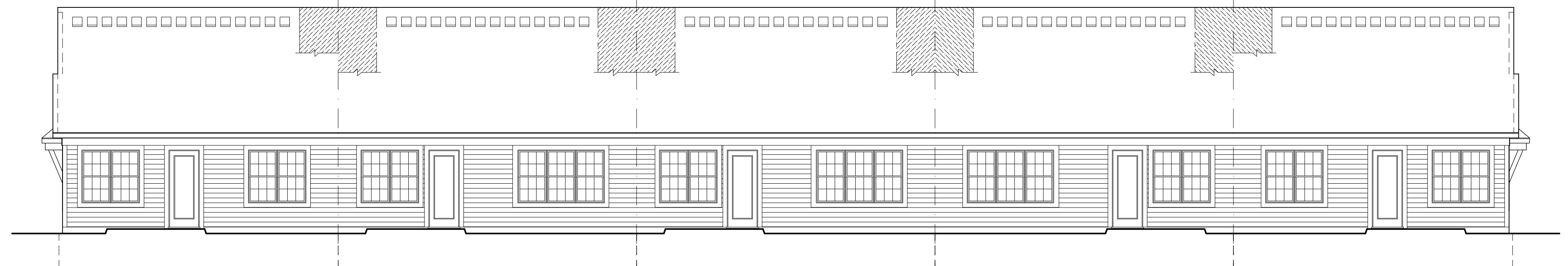
6 UNIT BUILDING - FRONT ELEVATION (BUILDING E, UNITS 23-28)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



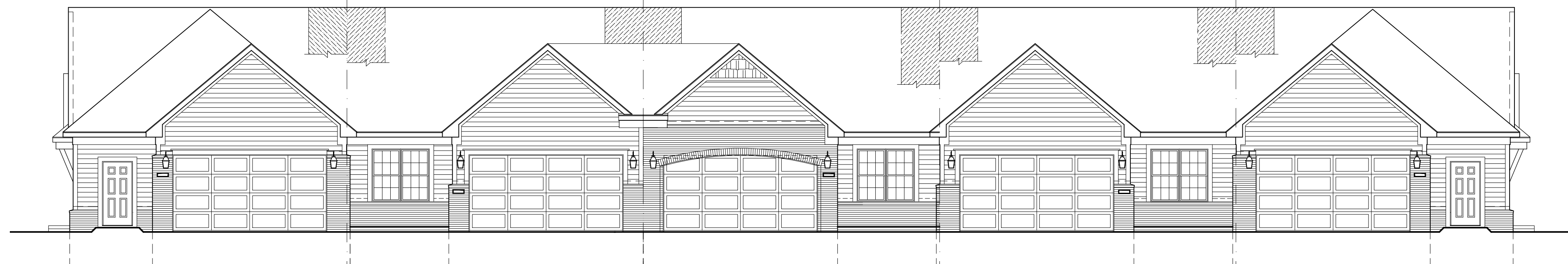
6 UNIT BUILDING - FRONT ELEVATION (BUILDING E, UNITS 23-28)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



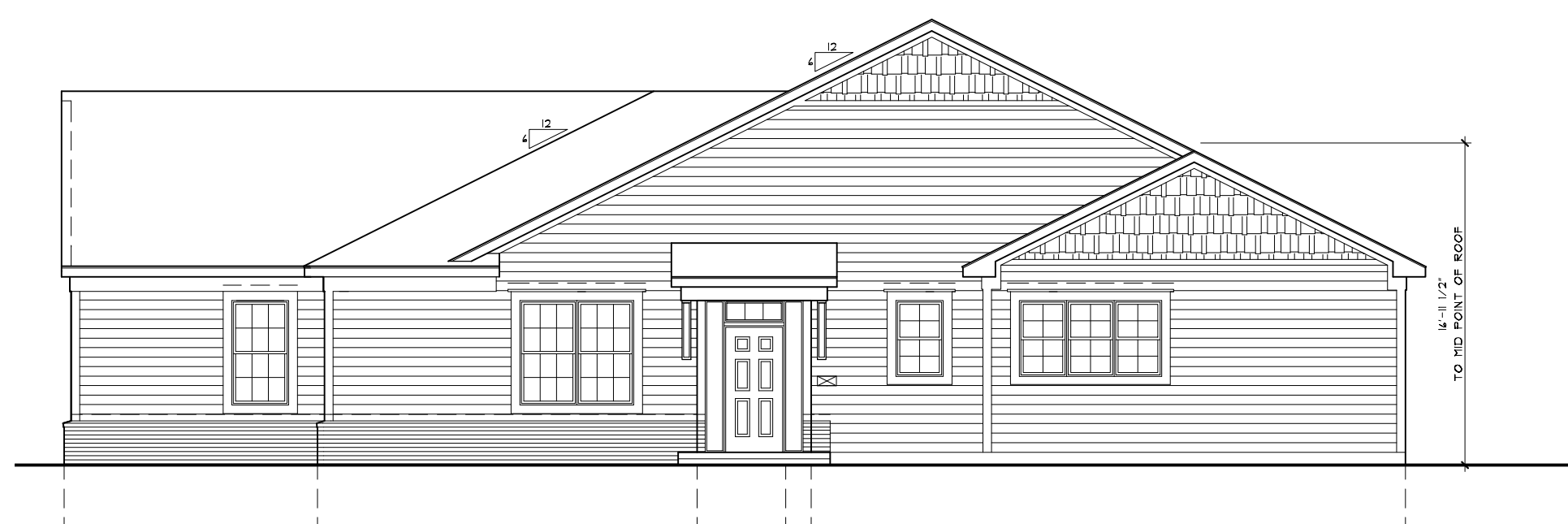
5 UNIT BUILDING - REAR ELEVATION (BUILDING C, UNITS 18-22)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



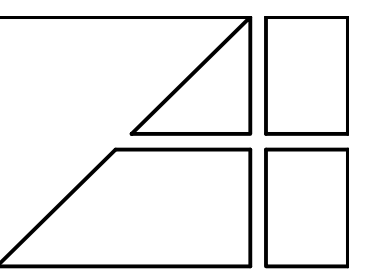
5 UNIT BUILDING - FRONT ELEVATION (BUILDING D, UNITS 18-22)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



TYPICAL RIGHT SIDE ELEVATION
 LEFT SIDE - OPP. HAND

SCALE: 1/8" = 1'-0"



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BUILDING ELEVATIONS

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JOB NUMBER
 8140

DATE

SHEET NUMBER
 A203

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2 COLOR SCHEMES

Scale: NONE

ITEM NUMBER	MATERIAL
1	BRICK
2	TRIM/COLUMN/BRACKET
3	PAINTED DOORS

NOTE: ALL MATERIALS TO BE EQUAL OR SIMILAR

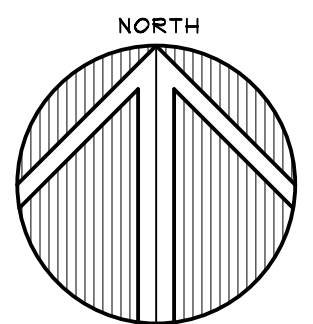
2
S1



1
S1

1 SITE PLAN
NOTE: SITE PLAN SHOWN FOR REFERENCE ONLY. REFER TO CIVIL ENGINEERING DRAWINGS FOR ALL ADDITIONAL INFORMATION.

Scale: NONE



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CLIENT/PROJECT
**LAKE POINTE
MULTIFAMILY COMMUNITY**
WHITE LAKE, MICHIGAN

SHEET TITLE
SITE PLAN

DATE: 08-19-19

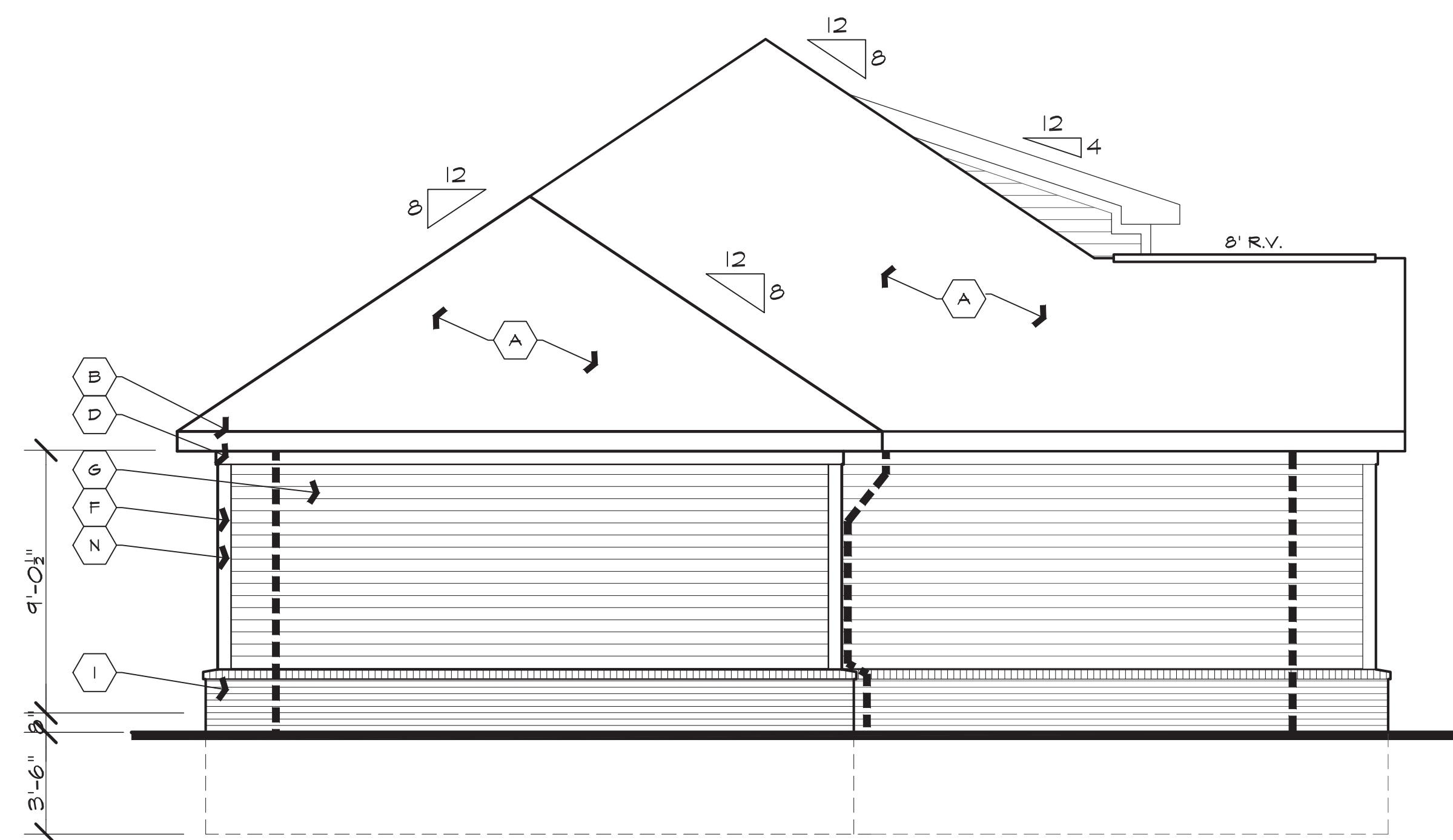
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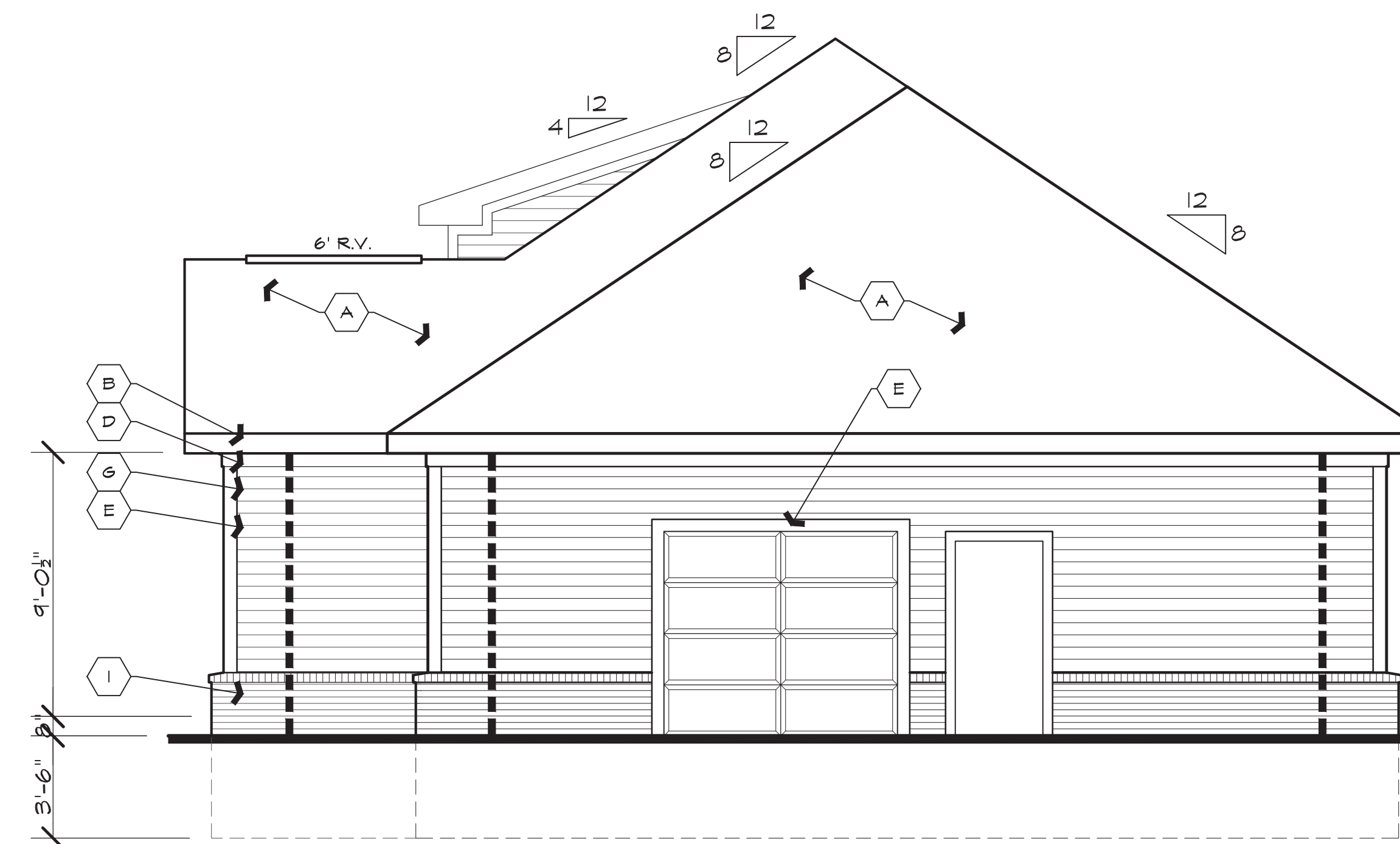
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LEFT ELEVATION
 SCALE: 1/4"=1'-0"



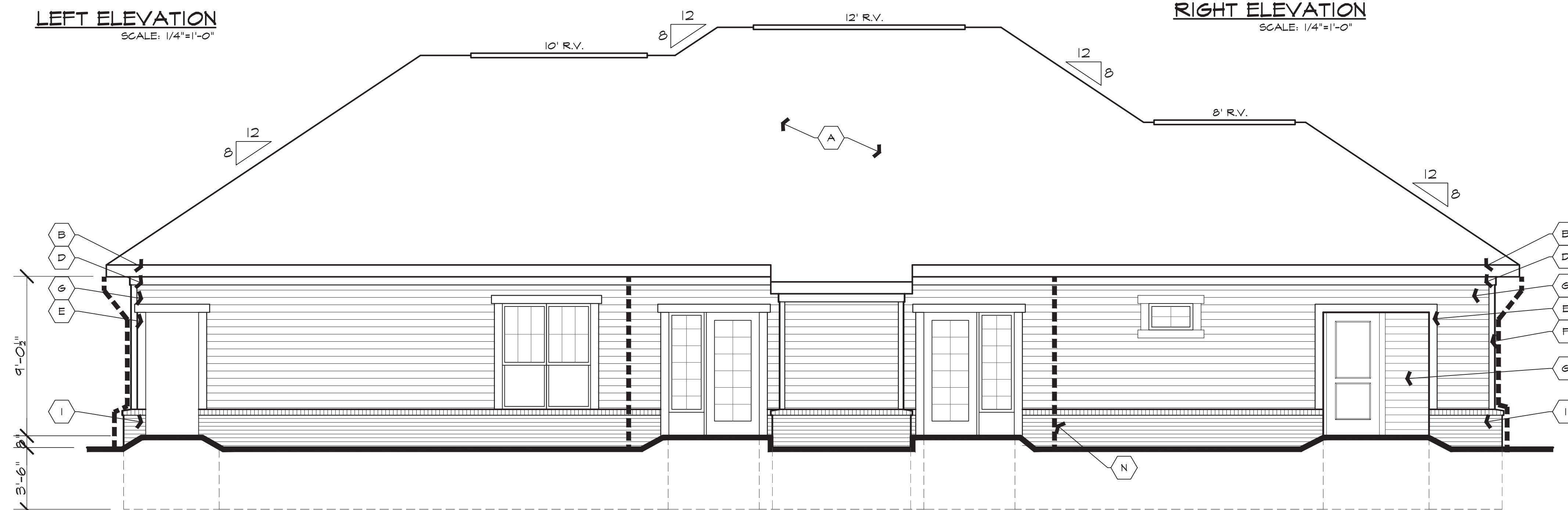
RIGHT ELEVATION
 SCALE: 1/4"=1'-0"

NOTE TO ALL CONTRACTORS :

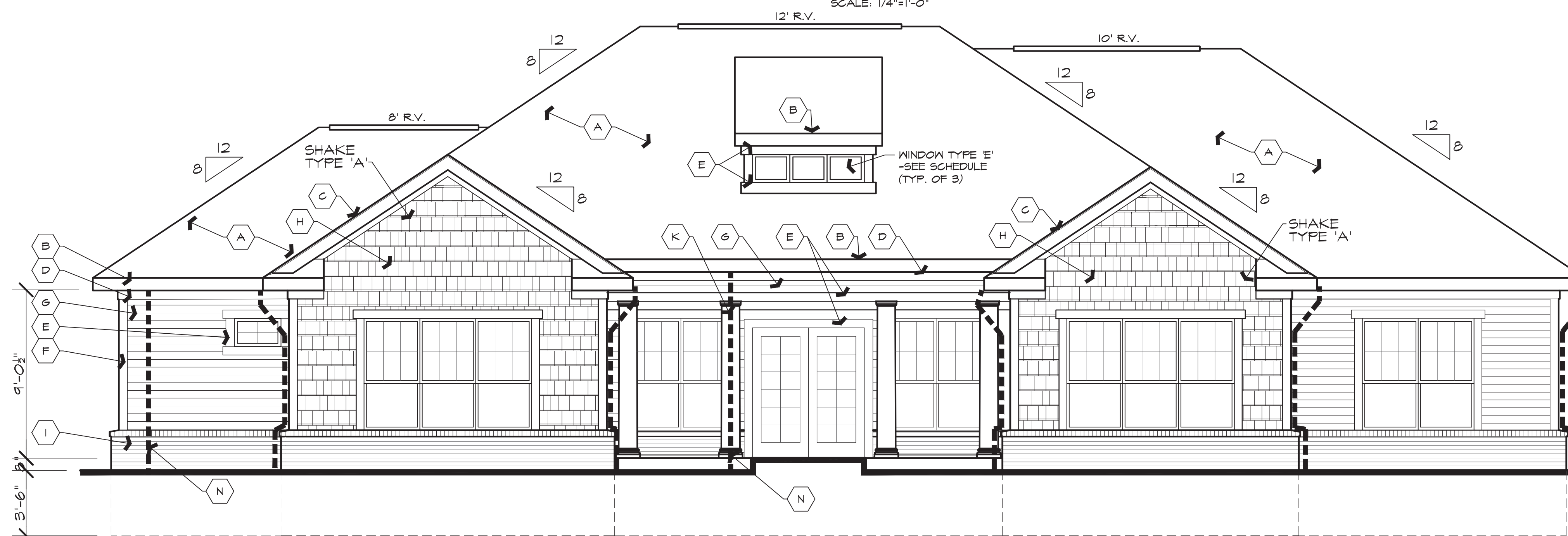
ALL CONTRACTORS SHALL VERIFY & COORDINATE ALL DIMENSIONS ON DRAWINGS, AS WELL AS REVIEW & COORDINATE PLANS W/ EXTERIOR BLDG. ELEVATIONS, SECTIONS, & DETAILS BEFORE COMMENCING WITH THE WORK. IF DIMENSIONAL ERRORS OR CONFLICTS OCCUR BETWEEN PLANS, BLDG. ELEVATIONS, SECTIONS & DETAILS IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. CONTRACTORS WHO FAIL TO VERIFY, REVIEW, & COORDINATE THE WORK, & CONTRACTORS WHO SCALE DRAWINGS TO DETERMINE PLACEMENT OF PART(S) OF THE WORK, SHALL TAKE FULL RESPONSIBILITY SHOULD THAT PORTION OF THE WORK BE IMPROPERLY LOCATED OR CONSTRUCTED.

MATERIAL LEGEND

- A ASPHALT SHINGLES
- B MET. DRIP EDGE & GUTTER ON 2x8 WD. TRIM FASCIA (ALUM. CLAD)
- C MET. DRIP EDGE ON 2x8 WD. TRIM RAKE BD. (ALUM. CLAD)
- D 1x4 WD. TRIM SUB-RAKE BD. (ALUM. CLAD)
- E 1x6 FRIEZE BD W/ ALUM WRAP
- F 1x6 VINYL TRIM
- G VINYL CORNER TRIM
- H HORIZ. VINYL SIDING
- I VINYL SHAKE SIDING
- J BRICK W/ BRICK SILL
- K 12" RD COLUMN
- L MTL FLASHING
- M ROOF JACK
- N DOWNSPOUT



REAR ELEVATION
 SCALE: 1/4"=1'-0"



FRONT ELEVATION
 SCALE: 1/4"=1'-0"

Issued For:	
REVIEW	11.11.16
REVISED	7.10.17
REVISED PER COMMENTS	10.12.17
REVISED	12.4.17

Developer:
FAIRVIEW COMPANIES
 1700 W. Big Beaver, Suite 120
 Troy, Michigan 48084

Project:
ENCORE
 at DEERHILL

Independence Township, Michigan
 Sheet Title:

COMMUNITY BUILDING ELEVATIONS

Project Number: 16-122
 Drawn: RCC
 Checked: DT
 Date: 9.23.16
 Sheet Number:

CB4.0

Director's Report

Project Name: Lakepointe

Description: Planned Development Agreement

Date on Agenda this packet pertains to: May 6, 2021

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

Contact	Consultants & Departments	Approval	Denial	Approved w/ Conditions	Comments
DLZ	Engineering				
McKenna & Associates	Planning Consultant				
Lisa Hamameh	Township Attorney				
Sean O'Neil	Planning Director				



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

April 28, 2021

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

RE: Lake Pointe Apartment Development – Planned Development Agreement – 3rd Review

DLZ Job No. 1745-0385-00

Dear Mr. O' Neil,

The applicant is proposing a 69 unit attached single family apartment development on a 13.32 acre parcel located off Union Lake Road. This is a review of the proposed PDA documents that were prepared for JMF White Lake, LLC. and were submitted to this office on April 20,2021 via Dropbox.

The following items were submitted as part of this review:

- Draft PDA Agreement
- Easement for Sanitary Sewer dated March 27, 2020 and associated Exhibit A
- Easement for Watermain dated April 8, 2021 and associated Exhibit A
- Easement for Storm Sewer and Detention Basin dated March 8, 2021 and associated Exhibits B and C
- Road Right of Way Dedication dated April 4, 2020 and associated Exhibits B and C

Please note that comments from our April 6,2021 review are in *italics*. Responses to those items are in **bold**. New comments are in standard typeface.

We offer the following comments for your consideration:

General

1. *We generally defer comment regarding document format and agreement language to the Township Attorney. **Comment remains.***
2. *We defer to the Township regarding item 2.4 and whether the Township does indeed waive the Traffic Impact Assessment, and Community Impact Statements. Comment partially addressed. A Traffic Impact Assessment was submitted and reviewed by Township staff and consultants. It is*

*unknown whether a Community Impact Statement has been submitted and reviewed by the appropriate parties. **Comment addressed. Design engineer has stated that a Community Impact Statement is not required by the Township.***

3. *Article I, Section 1.1- Change ‘northwest side of Union Lake Road’ to ‘northeast...’ Also remove reference to ‘Schroeder Drive off Williams Lake Road...’ **Comment addressed.***
4. *Article IV- Section 4.3- add the following language at end of sentence: ‘, approved Final Engineering Plan, and RCOC approval.’ **Comment addressed.***
5. *Article IV- Section 4.5 (a)- add the following language: ‘... dedicated to the Township **as depicted in Easement for Sanitary Sewer Exhibits.**’ **Comment addressed.***
6. *Article IV- Section 4.5 (b)- add the following language: ‘... dedicated to the Township **as depicted in Easement for Watermain Exhibits.**’ **Comment addressed.***
7. *Article IV- Section 4.6- add the following language: ‘... engineering regulations and standards **as depicted in Easement for Storm Sewer Exhibits.**’ **Comment addressed.***
8. *Article IV- Section 4.8 (c)- add the following language: ‘...with the approved PD Plan **and approved Final Engineering Plan...**’ **Comment addressed.***
9. *Article VI, Section 6.1- add the following language on line 4: ‘...in accordance with the PD Plan **and approved Final Engineering Plan...**’ **Comment addressed.***
10. *We defer to the Township with respect to whether there will be restrictions and by laws since this development is to be single family apartments. Our concern is the protection of surface drainage easements from encroachments so as surface drainage in these areas does not become impeded. **Comment rescinded, design engineer has stated that this development consists only of rental properties and will thus be under the control of a single owner.***
11. *A Storm Maintenance Agreement and Lien are required as noted in our February 22, 2021 Final Engineering Review letter. The Storm Sewer and Detention Basin Easement documents were provided with this PDA review. The Maintenance Agreement will need to contain language referencing shared maintenance responsibility between Lake Pointe and West Valley as detention basin discharge from Lake Pointe will flow through West Valley’s storm sewer system. **Comment remains as a notation; we recommend approval subject to preparation and approval of a joint maintenance agreement regarding the storm sewer.***

The following items listed with respect to the submitted easement documents will require revision:

Sanitary Sewer Easement

1. *Please flip the bearing for call 2 to read North East instead of South West. **Comment addressed.***
 2. *Please label Easement Exhibit “Exhibit ‘A’” to be consistent with Township standard easement conveyance document. **Comment addressed.***
-

3. *Please include burdened property description in new “Exhibit A” to be consistent with Township standard easement conveyance document. **Comment addressed.***
4. *Does not close with current bearings in calls. **Comment addressed.***

Watermain Easement

1. *Please modify call 10 on Exhibit B to read “134.74 feet” instead of “14.74 feet.” **Comment addressed.***
2. *Please modify call 31 on Exhibit C to read “24.56 feet” not “24.58 feet.” **Comment addressed.***
3. *Please modify call 35 on Exhibit C to read “42.56 feet” not “42.65 feet.” **Comment addressed.***
4. *Please label Easement Exhibit “Exhibit ‘A’” to be consistent with township standard easement conveyance document. **Comment addressed.***
5. *Please include burdened property description in new “Exhibit A” to be consistent with Township standard easement conveyance document. **Comment addressed.***
6. *Does not close as currently described. **Comment addressed.***

Storm Water Management Facilities Easement

1. *Please modify bearing for call 2 on Exhibit C to read North **West** instead of North East. **Comment addressed.***
2. *Please modify bearing for call 74 on Exhibit B to read South **East**. **Comment addressed.***
3. *Please include burdened property description in new “Exhibit A” to be consistent with Township standard easement conveyance document. **Comment addressed.***
4. *Please include Storm Water Management Facilities easement description in new “Exhibit B” to be consistent with Township standard easement conveyance document. **Comment addressed.***
5. *Does not close as currently described. **Comment addressed.***

Road Right-Of-Way Dedication

1. *Please modify call 2 to read “S00°18’25” E, 475.18 feet.” **Comment addressed.***
2. *Please modify call 3 to read “S46°03’15” W.” **Comment addressed.***
3. *Acreage should be 1.119 not 0.119. **Comment addressed.***

We note that all easements now close.



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT- Lake Pointe PDA – Review .03
April 28, 2021
Page 4 of 4

Recommendation-

We recommend approval of the PDA subject to Township concurrence that a Community Impact Statement is not required and subject to preparation and approval of a joint maintenance agreement between Lake Pointe and West Valley regarding the storm sewer.

If you have any questions, please feel free to call me.

Sincerely,

DLZ Michigan

Michael Leuffgen, P.E.
Department Manager

Victoria Loemker, P. E.
Senior Engineer

Cc: Aaron Potter, DPS Director, *via email*
Hannah Micallef, Community Development, *via email*
Lisa Hamameh, RSJA Law, *via email*

X:\Projects\GFL\2017\1745\038500 WLT Lake Pointe\PDA Review\Submittal #3\Review.03.docx



April 29, 2021

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

Subject: LakePointe Planned Development
Development Agreement Review #3

Applicant(s): JMF White Lake, LLC (Lake Pointe)

Location: East side of Union Lake Road, north of Carpathian Drive

Dear Planning Commissioners:

The site fronts on Union Lake Road, which, at this point, is a two-lane road, which serves as a key thoroughfare in the Township. The 13.32 A. site (12.76 A. net of right-of-way) currently contains an existing, single-family home, but is mostly vacant. The applicant proposes 69 new, attached single-family homes for this site in clusters of two and three units, resulting in density of 5.41 DU/A. It appears that the units could have up to four bedrooms, depending on the floor plan.

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

1. Preliminary Site Plan Review: This is the step in which the number of units and road 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. The Planning Commission must review the PD proposal and make a recommendation to the Township Board for the preliminary site plan. The Township Board is required to take action, approving or denying the preliminary site plan. The property is rezoned to PD at the end of this step.
2. Final Site Plan Review: Final site plan review is the step at which all of the details are included on the final 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
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

We have the following comments on the Development Agreement:

1. **Information Required per Zoning Ordinance, Section 6.7(B)(i)(c):**

- a. Completed Development Schedule, including any individual stages or phases, and the anticipated beginning and completion dates. We note that a development schedule section is included in the agreement but is somewhat vague and does not include all of the items listed in the ordinance. We defer to Planning Commission as to whether the section is adequate.
- b. The Township Attorney will need to be satisfied with the enforcement provisions of Article VI.
- c. Any other information deemed necessary by the Township, the Township Attorney, or Township Engineer.

Recommendation

We recommend that once these outstanding comments are addressed to the satisfaction of the Planning Commission, the agreement be recommended for approval.

If you have any questions about this report or require additional information, please do not hesitate to contact us.

Respectfully submitted,

McKENNA



Chris Madigan, AICP
Associate Planner

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



LISA J. HAMAMEH
lhamameh@rsjalaw.com

27555 Executive Drive, Suite 250
Farmington Hills, Michigan 48331
P 248.489.4100 | F 248.489.1726
rsjalaw.com



ROSATI | SCHULTZ
JOPPICH | AMTSBUECHLER

April 28, 2021

via email only: soneil@whitelaketwp.com

Sean O'Neil
Community Development Director
White Lake Township
7525 Highland Road
White Lake, Michigan 48383

**RE: 3rd Review of Planned Development Agreement
Lake Pointe**

Dear Sean:

You asked that we review the proposed revised Planned Development Agreement for Lake Pointe ("Agreement") submitted by JMF White Lake, LLC ("Developer"). As is our general practice, we did not review the proposed Exhibits to the document, including the Site Plan, and therefore defer to the Township Engineer. Our comments regarding the Planned Development Agreement follow:

General Comments

1. As stated in previous correspondence and as acknowledged by the Developer, prior to the execution of the Agreement, the Developer must provide documentation evidencing ownership of the Property. In addition, a company resolution authorizing the signer to execute the Agreement on behalf of the LLC is required.
2. As stated in previous correspondence, the Township should consider whether it will require a Private Road Agreement for the Project.
3. As stated in previous correspondence, the Zoning Ordinance, Section 6.6 (https://www.whitelaketwp.com/sites/default/files/fileattachments/planning/page/2311/clearzoning_ordinance_revised_03_10_21.pdf), requires the PD Agreement include a community impact statement which is not included in the Agreement. If the Township has waived this requirement, the PD Agreement should so state.
4. A recital should be added to include the date the PD Agreement was approved by the Township Board. This recital will include a blank line until that date is determined.

5. As stated in previous correspondence, Paragraph 1.4 should be revised or a new paragraph added to require adherence to all Township Ordinances, Codes, Rules, Regulations and Standards, except as otherwise provided in the PD Agreement.
6. As stated in previous correspondence, Paragraph 2.3 should explain the reason for the contribution for speed bumps and off-site sidewalks. Developer's legal counsel understandably questioned the rationale behind this request. The rationale is that since these "conditions of approval" relate to off-site improvements, the Agreement should explain how the conditions are connected to the development. Presumably, the reason the Township Board imposed these conditions was in an effort to address concerns expressed by Township Board Members and/or residents of neighboring properties regarding the impact of the development (e.g. cut-through traffic, safety). A simple statement explaining the connection will suffice.
7. The Township should consider whether the development schedule provided in Paragraph 4.2 is acceptable. The Zoning Ordinance requires a development schedule, including any individual stages or phases, and the anticipated beginning and completion dates.
8. Paragraph 16 (which should be renumbered Paragraph 7.13) was added at our request, however, we inadvertently included a developer for an unrelated project in the requested language. Therefore the reference to "Rose" in the 6th line of this this paragraph should be replaced with the term Developer. I apologize for the error.

If you have any additional questions or would like to discuss this matter further, please call.

Very truly yours,

ROSATI SCHULTZ JOPPICH
& AMTSBUECHLER PC



Lisa J. Hamameh

cc: M. Leuffgen

PLANNED DEVELOPMENT AGREEMENT

LAKE POINTE

Entered into between:

JMF White Lake, LLC

A Michigan limited liability company

and

Charter Township of White Lake, a Michigan Charter Township

Dated: _____, 2021

PLANNED DEVELOPMENT AGREEMENT

This Planned Development Agreement (the "Agreement") is entered into as of _____, 2021, by and among JMF White Lake, LLC, a Michigan limited liability company, whose address is 1700 W. Big Beaver Road, Suite 120, Troy, Michigan 48084 (hereafter referred to as "Developer" or "Owner"), and Charter Township of White Lake, a Michigan Charter Township, whose address is 7525 Highland Road, White Lake, Michigan 48383 ("Township").

RECITALS

- A. Developer owns certain real property consisting of approximately 13.32 acres located in the Township on the northeast side of Union Lake Road and northwest of Carpathian Drive, which is more particularly described on Exhibit A attached hereto (the "Property"). The Property is zoned PD, or Planned Development by the Township.
- B. Developer desires to develop the Property as multi-family, residential housing project consisting of 69 units as depicted in the Final ~~Preliminary~~ Site Plan attached hereto as Exhibit B (the "Final PD Plan") for the proposed Lake Pointe residential development (the "Project").
- C. At a meeting held by the Township Planning Commission on January 16, 2020, the Township Planning Commission recommended approval of Developer's ~~application for approval of the~~ a revised Preliminary Site Plan, subject to conditions-
- D. At a meeting held by the Township Board on January 21, 2020, the Township Board approved the ~~application for~~ revised Preliminary Site Plan, subject to conditions ~~for the Project~~.
- E. At a meeting held by the Township Board on February 16, 2021, the Township Board approved a one-year extension of the revised Preliminary Site Plan for the Project.
- F. At a meeting held by the Township Planning Commission on _____, 2021, the Township Planning Commission recommended approval of the Final Site Plan for the Project, subject to conditions.

G. At a meeting held by the Township Board on _____, 2021, the Township Board approved the Final Site Plan, subject to conditions.

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H.

~~E.I.~~

~~F.~~ By entering into this Agreement, Owner and the Township desire to set forth the parties' obligations with respect to the Planned Development for the Property and the Project and the terms and requirements under which the Property and the Project shall be developed.

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NOW, THEREFORE, in consideration of the premises and the mutual covenants of the parties described in this Agreement, the parties agree as follows:

ARTICLE I

DESCRIPTION OF THE PROJECT; PD AND PD PLANS

- 1.1. **Description of Project.** The project ("Project") covers an area comprising approximately of 13.32 acres located on the northeast~~west~~ side of Union Lake Road and west of Williams Lake Road. ~~Schroeder Drive off of Williams Lake Road in the Township.~~ The Project will consist of 69 attached residential housing units. Each residence will be ranch-style dwelling with a 2-car attached garage.
- 1.2. **PD Plan Approval; Exhibits.** The revised Preliminary Site Plan ~~(the "PD Plan")~~ prepared by Sieber, Keast Engineering, L.L.C. was approved by the Township Board on January 21, 2020, and thereafter extended for one year by the Township Board at its meeting held on February 16, 2021. The ~~Upon~~ Township Board thereafter on _____, 2021, approved the ~~approval of a Final Site Plan for the Project (the "Final PD Plan,")~~ which ~~such~~ approval grants Developer the right to construct facilities as set forth in the Final PD Plan, subject to this Agreement and all applicable permits in the ordinary course, as the same may be modified and amended in accordance with the Township Zoning Ordinance from time to time. All exhibits attached hereto are incorporated herein and made a part hereof by reference.
- 1.3. **Performance Criteria.** Developer affirmatively submits that the proposed uses on the Property shall not exceed the performance criteria found in the Township Zoning Ordinance and the standards listed therein, ~~except as may specifically be modified by the terms hereof or in the approved Final PD Plan.~~
- 1.4. **Variances and/or Modifications to Standard Zoning Requirements.** Variances from the Township Zoning Ordinance which the Township shall be deemed to have granted, and hereby grants, as well as modifications to standard zoning requirements which will be requested, if any, are as set forth on the Final PD Plan and this Agreement.

- 1.5. **Minor Modifications.** If, following the approval of the Final PD Plan, Developer proposes minor changes to the Final PD Plan, including changes required during final engineering review and required by other State and County regulatory agencies, such minor changes may be made subject only to "Administrative Approval". The term "Minor Changes" shall be those changes set forth in the Township Zoning Ordinance, Article 6, Section 6.7(E)(i-iii). For purposes of this Agreement, "Administrative Approval" shall mean the approval by the Planning Director of the Township, or his/her designee, or such other individual as may be designated by the Township Board, without the necessity of review by the Township Board or the Township Planning Commission or any amendment to this Agreement.
- 1.6. **Statement of Planning Objectives and Community Benefits to be Achieved by the Project.** The primary planning objectives of this development is to create alternative, high quality rental housing options that appeal to both active retirees and empty nesters who want to stay in place or be attracted to the White Lake community and to meet the needs and growing demand of younger working and professional millenials for high quality rental housing, consistent with the Master Plan objective to provide for a diversity of housing opportunities in the Township. The Project will provide more open space and less housing density than permitted under the applicable zoning ordinance and Master Plan. A substantially larger open space area is achievable because of the unique situation where the Developer also owns the West Valley development on the southwest side of Union Lake Road and can provide an integrated storm drainage system serving multiple properties. Developer also agreed to contribute \$15,000 for the installation of speed bumps in the neighboring Bocovina development. Developer will also contribute to the Township the sum of \$2,050 for the future installation of approximately 630 square feet of offsite concrete sidewalk along Union Lake Road to Independence Circle. ~~if the owners of Independence Village grant easement rights to construct the sidewalk.~~ -The Project also includes substantial on-site recreational amenities, including walking paths, seating areas and a swimming pool and clubhouse.

ARTICLE II

REQUIREMENTS FOR DEVELOPMENT

- 2.1. **Development Standards.** The Property shall be developed and improved in compliance with the following:
- (a) The Charter Township of White Lake Zoning Ordinance, as amended, and engineering design standards, except where modified by this Agreement and the Exhibits attached hereto;
 - (b) This Agreement;
 - (c) The Final PD Plan;
 - (d) The conditions set forth in Paragraph 2.3 below; and

(e) All applicable federal, state and county laws, rules and regulations.

- 2.2. **Effect of PD Approval.** To the extent that developing the Property in accordance with this Agreement and the PD Plan will deviate from the Zoning Ordinance or any other Township Ordinance or regulation, this Agreement and the Final PD Plan shall control. To the extent this Agreement and PD Plan attached hereto are silent on development issues, the Project shall comply with the Zoning Ordinance and other Township ordinances and regulations. All improvements constructed in accordance with this Agreement and the Final PD Plan shall be deemed to be conforming under the Zoning Ordinance and in compliance with all ordinances of the Township. The Project shall not be subject to any additional requirements contained in any amendments or additions to Zoning Ordinances adopted subsequent to the date of this Agreement which conflict with the provisions of this Agreement including the PD Plan and/or any plans which are approved pursuant to this Agreement.
- 2.3. **Conditions to Approval.** Prior to commencement of construction of the Project, Developer will: -contribute the sum of \$15,000 to pay for speed bumps to be installed in the neighboring Bocavina residential development per a separate ~~written~~written agreement with the Bocavina's homeowners association; and deliver the sum of \$2,050 to the Township for future installation of an off-site concrete sidewalk as described in paragraph 1.6 above. In addition, no bars shall be installed on the back of patios to interfere with access to the open space from the patios.
- 2.4. **Traffic Impact Assessment.** A revised traffic impact assessment dated December 2, 2019, prepared by Fleis and Vandenbrink was received and reviewed by Township staff and consultants.

ARTICLE III

USES WITHIN THE PROJECT

- 3.1. **Approved Uses for the Project.** The Project will consist of 69 ranch-style residential units (or a density at 5.41 units per acre) in 19 buildings. Each residence shall have two bedrooms and an attached 2-car garage and each building shall contain no more than 4-attached residential dwelling units.
- 3.2. **Project Amenities.** In order to provide on-site recreational amenities to serve the residents of the Project, Developer will install a clubhouse and pool as depicted in the PD Plan. An open space area consisting of approximately 8.42 acres will be maintained, with walking paths, seating, a pergola structure and dog waste stations as depicted in the Final PD Plan.

ARTICLE IV

DEVELOPER'S RIGHTS AND OBLIGATIONS

- 4.1. **Right to Develop.** Developer shall have the right to develop the Property in accordance with the PD Plan and this Agreement.

- 4.2. **Development Schedule.** Developer shall commence development of the Project within 12 months from the Township's approval of this ~~PD~~ Agreement. The foregoing development schedule may be modified by Developer as necessary or appropriate based on market and other conditions, with the Township's consent, which shall not be unreasonably withheld or delayed.
- 4.3. **Internal Roads in the Project.** The internal roads within the Project will be private and constructed in accordance with Final PD Plan, ~~and~~ Township Engineering Design Standards, approved Final Engineering Plan, and RCOC Approval.
- 4.4. **Landscape Plan.** The Landscape Plans, Sheets LS-1 through LS-7, which are part of the Final PD Plan attached hereto as Exhibit B, identify the landscaping to be installed within the Project.
- 4.5. **Utilities.**
- (a) **Sanitary Sewer System.** Sanitary sewers shall be extended by the Developer to serve the Project which must connect to the Township's sanitary sewer system. Connection to the sanitary sewer system shall require payment of all applicable fees, charges, and assessments, in accordance with the Township's Ordinance. The Final PD Plan identifies the sewer lines and related sanitary sewer easements to be dedicated to the Township as depicted in the Easement for Sanitary Sewer Exhibits.
- (b) **Water System.** Water service shall be extended by the Developer to serve the Project which must connect to the Township's water system. Connection to the water system shall require payment of all applicable fees, charges, and assessments, in accordance with the Township Ordinance. The Final PD Plan identifies the water lines and related water easements to be dedicated to the Township as depicted in the Easement for Watermain Exhibits.
- 4.6. **Storm Water Detention.** Storm water shall be conveyed by a storm sewer system to a storm water detention basin located within the Project as shown in the Final PD Plan. All such storm water drainage facilities, including the detention basin and all related improvements shall be designed in accordance with all applicable ordinances and engineering regulations and standards as depicted in the Easement for Storm Sewer Exhibits.
- 4.7. **Signs.** The entrance signage and other directional signage for the Project shall be as depicted in the Final PD Plan. Any additional signage or modification of signage proposed to be installed will have to be approved by the Township and Developer will comply with all the sign regulations in the Township's sign ordinance.
- 4.8. **Architectural and Site Design Guidelines.** The Project shall be developed in conformance with the following architectural and site minimum standards:
- (a) **Minimum Setbacks.** Setback requirements shall be in accordance with the approved final PD Plan.

- (b) **Exterior Materials.** The building elevations and exterior materials shall be consistent with the elevations and materials set forth in the Final PD Plan and any modifications to same will be of equal or better quality and durability and shall be approved in accordance with the Township Zoning Ordinance.
- (c) **Driveways and Sidewalks.** Curbs, gutters and sidewalks shall be constructed of concrete and shall be in accordance with the approved Final PD Plan and approved Final Engineering Plan. Driveways shall be constructed of concrete.

ARTICLE V

MAINTENANCE OF OPEN SPACE

- 5.1. **Common Elements and Common Facilities.** The Developer shall have the responsibility for maintaining the open space and installed landscaping located within the Project.

ARTICLE VI

TOWNSHIP'S RIGHTS AND OBLIGATIONS

- 6.1. **Permits and Authorizations.** The Township shall grant to Developer and its contractors and subcontractors all Township permits and authorizations necessary to bring and/or construct all utilities necessary to service the Property and to otherwise develop and improve the Property in accordance with the Final PD Plan, provided the Developer has first made all requisite filings and submissions for permits, complied with the requirements for said permits or authorizations submittals, and paid all required fees in accordance with the Township's Ordinances. Any applications for permits or authorizations from the Township will be processed in the customary manner. The Township shall cooperate with Developer in connection with Developer's applications for any necessary county, state, federal or utility company approvals, permits or authorizations to the extent that such applications and or discussions are consistent with the Final PD Plan and this Agreement and provided that the Township shall not be required to initiate legal proceedings or assume any financial obligations of Developer, including without limitation the payment of any compensation, cost or fee. Once appropriate approvals are granted, Developer shall be entitled to obtain a grading permit from the Township and thereafter commence grading and clearing activities.
- 6.2. **Township Action For Failure to Maintain Property.** In the event the Developer defaults in its obligation to maintain the property in a reasonable condition, using reasonable standards, and consistent with and as required under the Final PD Plan and this Agreement, the Township may serve written notice upon Developer setting forth the manner in which Developer has failed to maintain the Property, and such notice shall include a demand that deficiencies be cured within a stated reasonable time period no less than thirty (30) days, and shall set forth the date, time and place of a hearing before the Township Board for the

purpose of allowing Developer to be heard as to why the Township should not proceed to perform the maintenance which has not been undertaken. In that hearing, the time for curing such deficiencies, and the hearing itself, may be extended. If, following the hearing, the Township Board shall determine that the Developer has not cured such deficiency within the time specified at the hearing, then upon five (5) days written notice to Developer, the Township shall thereupon have the power and authority, but not the obligation, to enter upon the Property or cause its agents or contractors to enter upon the Property to cure such deficiency as reasonably found by the Township to be appropriate and/or necessary, in a manner so as to reasonably minimize any interference with the residential occupancy and use the Property and the cost and expense of such curative actions, including the cost of notices by the Township and reasonable legal, planning, and engineering fees and costs incurred by the Township shall be paid by the Developer. Such amount shall constitute a lien on the Property and the Township may require such costs and expenses to be paid prior to the commencement of work. If such costs and expenses have not been paid within sixty (60) days of a billing to the Developer ~~Owner~~, all unpaid amounts may be (a) placed on a delinquent tax roll of the Township as to the Property and shall accrue interest and penalties and shall be collected as and shall be deemed delinquent real property taxes in the discretion of the Township; or (b) assessed against the Developer and collected as special assessment on the next annual Township tax roll; or (c) collected by use of the applicable provisions of Michigan law providing for foreclosure by advertisement, the Owner having specifically granted the Township the required power of sale to do so; or (d) collected by suit against Developer. If suit is initiated, the Developer shall pay all of the Township's reasonable legal fees and costs. The selection of remedy shall be at the sole option of the Township, and election of one remedy shall not waive the use of any other remedy.

ARTICLE VII

MISCELLANEOUS PROVISIONS

- 7.1. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan.
- 7.2. **Counterparts.** This Agreement may be executed in multiple counterparts, each of which shall be deemed an original and all of which shall constitute an agreement. The signature of any party to any counterpart shall be deemed to be a signature to, and may be appended to, any other counterpart.
- 7.3. **Successors and Assigns.** The terms, provisions and conditions of this Agreement are and shall be deemed to be of benefit to the Property and shall run with and bind the Property, and shall bind and inure to the benefit of the successors and assigns of the parties to this Agreement.
- 7.4. **Amendment.** This Agreement may only be modified by written agreement of the Township and Developer or any successor in title who assumes Developer's rights and obligations hereunder.

- 7.5. **Authority.** This Agreement has been duly authorized by all necessary action of Developer and the Township, through the approval of the members of the Developer and the Township Board at a meeting in accordance with the laws of the State of Michigan, and the ordinances of the Township. By the execution of this Agreement, the parties each warrant that they have the authority to execute this Agreement and bind the Property in its respective entities to its terms and conditions.
- 7.6. **Partial Invalidity.** Invalidation of any of the provisions contained in this Agreement or the application thereof to any persons by judgment or court order shall in no way affect any of the other provisions hereof or the application thereof to any other person and the same shall remain in full force and effect.
- 7.7. **No Partnership.** None of the terms or provisions contained in this Agreement shall be deemed to create a partnership or joint venture between Developer and the Township.
- 7.8. **Incorporation of Documents.** The recitals contained in this Agreement, the introductory paragraph, and all exhibits attached to this Agreement and referred to herein shall for all purposes be deemed to be incorporated in this Agreement by this reference and made a part of this Agreement.
- 7.9. **Integration Clause.** This Agreement is intended as the complete integration of all understandings between the parties related to the subject matter herein. No prior contemporaneous addition, deletion, or other amendment shall have any force or effect whatsoever, unless referenced in this Agreement.
- 7.10. **Recording.** This Agreement, ~~or a notice of its existence,~~ shall be executed by the Developer and recorded by the Developer in the office of the Oakland County Register of Deeds. ~~and may be recorded by any of the undersigned parties following the execution of this Agreement. Alternatively, the Township shall be authorized to prepare and record a Notice of Development Agreement.~~
- 7.11. **Waiver.** Failure of either party to insist upon strict performance of any of the terms, conditions or covenants hereof shall not be deemed to be a waiver of any rights or remedies that such party may have hereunder, at law or in equity, and shall not be deemed a waiver of any subsequent breach or default under this Agreement. No waiver by either party of any default under this Agreement shall be affecting or binding unless made in writing and no such waiver shall be implied from any omission by the party to take an action with respect to the default. No express written waiver of any default shall affect any other default or cover any other period of time, and one or more written waivers of any default shall not be deemed to be a waiver of any subsequent default in performance of the same or any other term or provision contained in this Agreement.
- 7.12. **Violations** ~~ag.~~ Violations of the provisions of this Agreement shall be deemed to be violations of the Township Zoning Ordinance and shall entitle the Township to all rights and remedies provided by the Zoning Ordinance or any other applicable law for such violation.

16. **Acknowledgments.** The parties negotiated the terms of the Agreement and the parties agree that its terms, conditions and requirements are lawful and consistent with the intent and provisions of local ordinances, state and federal law. Developer has offered and agreed to proceed with the undertakings and obligations as set forth in this Agreement in order to protect the public health, safety, and welfare and provide material advantages and development options for Rose, all of which undertakings and obligations the parties agree are necessary in order to ensure public health, safety, and welfare, to ensure compatibility with adjacent uses of land, to promote use of the Property in a socially, environmentally, and economically desirable manner, and to achieve other reasonable and legitimate objectives of the parties, as authorized under applicable Township ordinances and the Michigan Zoning Enabling Act, MCL 125.3101, *et seq.*, as amended. It is also agreed and acknowledged that the terms, conditions, obligations, and requirements of this Agreement are clearly and substantially related to the burdens to be created by the development and use of the Property under the approved PD, and are, without exception, clearly and substantially related to the Township's legitimate interests in protecting the public health, safety and general welfare. Furthermore, the parties fully accept and agree to the final terms, conditions, requirements and obligations of the Agreement and shall not be permitted in the future to claim that the effect of the Agreement results in an unreasonable limitation upon uses of all or any portion of the Property, or claim that enforcement of the Agreement causes an inverse condemnation, other condemnation or taking of all or any portion of the Property

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(Signatures and notarization are contained on the following page)

JMF WHITE LAKE, LLC

By: _____
Its: _____
Dated: _____

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this ____ day of _____, 2021 by Michael S. Furnari, the sole member and manager of JMF White Lake, LLC, a limited liability company, on behalf of said company.

Notary Public
Notary Public, State of _____, County of _____
Acting in the County of _____
My Commission Expires: _____

CHARTER TOWNSHIP OF WHITE LAKE

By: _____
Its: _____
Dated: _____

STATE OF MICHIGAN)
) SS
COUNTY OF OAKLAND)

The foregoing instrument was acknowledged before me this ___ day of _____,
2021 by [NAME], [TITLE] of Charter Township of White Lake, a municipal corporation, on
behalf of said corporation.

Notary Public
Notary Public, State of _____, County of _____
Acting in the County of _____
My Commission Expires: _____

Prepared by and recorded, return to:

121352.000001 4836-8538-0322.1

EXHIBIT A

LEGAL DESCRIPTION – OVERALL PARCEL RECOMBINATION:

A PARCEL OF LAND BEING A PART OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH ¼ POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH ¼ LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET; THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 563, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 46 DEGREES 03 MINUTES 08 SECONDS WEST, 590.14 FEET, TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.59 FEET; THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 468.27 FEET; THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED. CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS. ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, USED OR DEEDED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES. ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD. SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

LEGAL DESCRIPTION – SUBJECT PROPERTY



**SEIBER, KEAST
ENGINEERING, L.L.C.**

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 04-04-2020
JOB NO.: 19-039
DWG FILE: 19-039ROW-ULR
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 1

EXHIBIT B

ROAD RIGHT-OF-WAY DEDICATION

Legal Description

A Road Right-of-way Dedication located in a part of the Northwest 1/4 of Section 36, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan; being more particularly described as Commencing at the North 1/4 Corner of said Section 36; thence South 00°03'47" East, 1315.77 feet, along the North and South 1/4 line of said Section 36, to the Northeasterly Corner of Subject Property; thence South 00°18'25" East, 475.18 feet, along the Easterly line of said Subject Property line, to a point on the Southerly line of said Subject Property; thence South 46°03'08" West, 529.93 feet, along the Southerly line of said Subject Property, for a POINT OF BEGINNING; thence continuing South 46°03'08" West, 60.21 feet, to a point on the centerline of Union Lake Road; thence the following (3) courses along the centerline of said Union Lake Road, (1) 307.59 feet along a curve to the right, said curve having a radius of 1432.69 feet, a central angle of 12°18'04" and a chord bearing and distance of North 42°30'07" West, 307.00 feet, (2) North 36°21'05" West, 21.54 feet, (3) North 36°44'42" West, 468.27, to a point on the Westerly line of Subject Property; thence North 21°07'22" East, 70.85 feet, along the Westerly line of said Subject Property; thence South 36°44'42" East, 506.16 feet; thence South 36°21'05" East, 21.75 feet; thence 299.65 feet along a curve to the left, said curve having a radius of 1372.69 feet, a central angle of 12°30'26" and chord bearing and distance of South 42°36'18" East, 299.05 feet, to the Point of beginning. All of the above containing 1.119Acres.

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LEGAL DESCRIPTION – R.O.W. DEDICATION



**SEIBER, KEAST
ENGINEERING, L.L.C.**

CONSULTING ENGINEERS

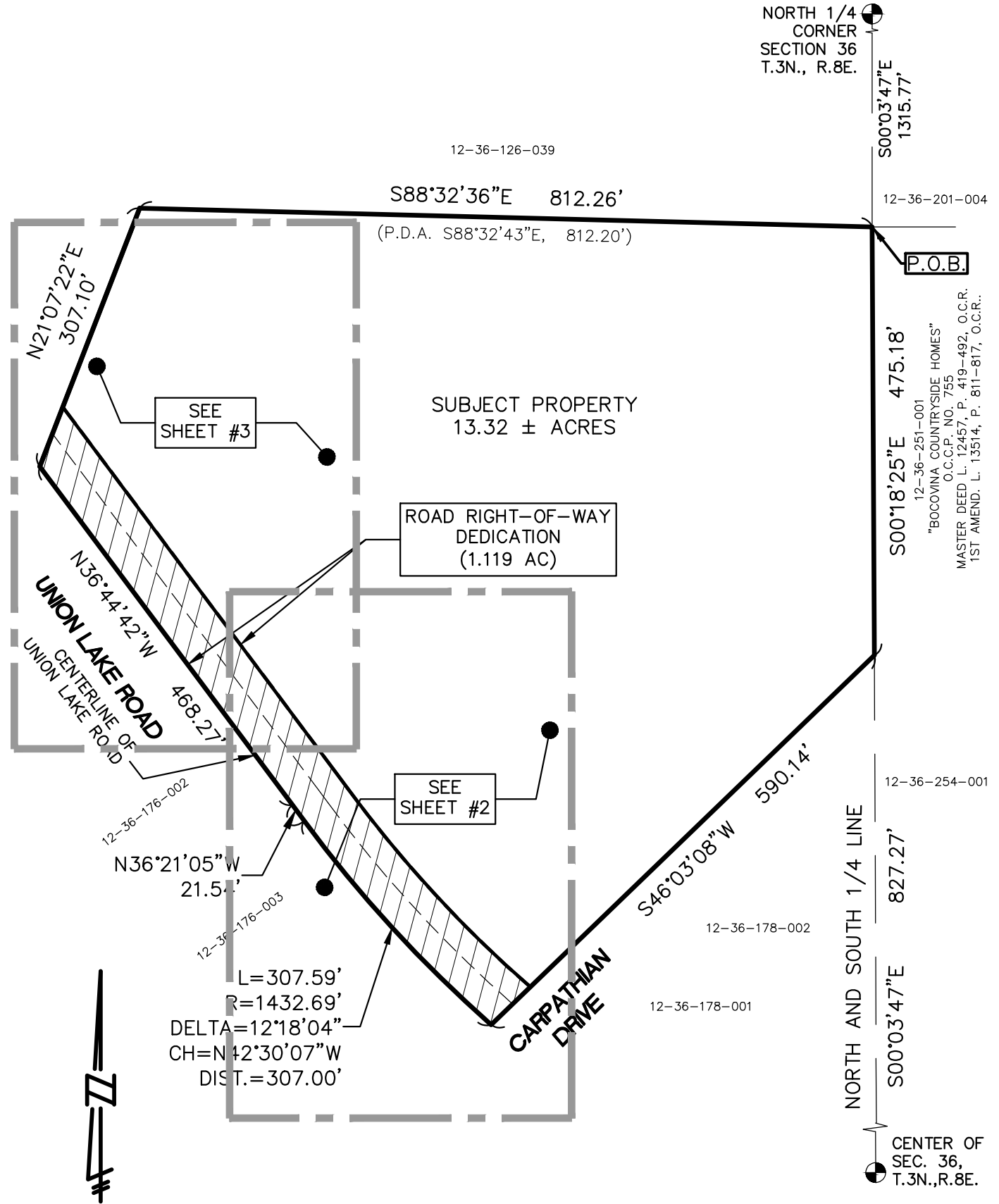
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 04-04-2020
JOB NO.: 19-039
DWG FILE: 19-039ROW-ULR
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 1

EXHIBIT C



RIGHT-OF-WAY DEDICATION
(1.119 ACRES)

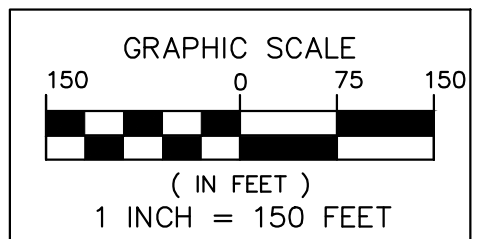


DIAGRAM - SUBJECT PROPERTY



**SEIBER, KEAST
ENGINEERING, L.L.C.**

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 150'
DATE: 04-04-2020
JOB NO.: 19-039
DWG FILE: 19-039ROW-ULR
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 3

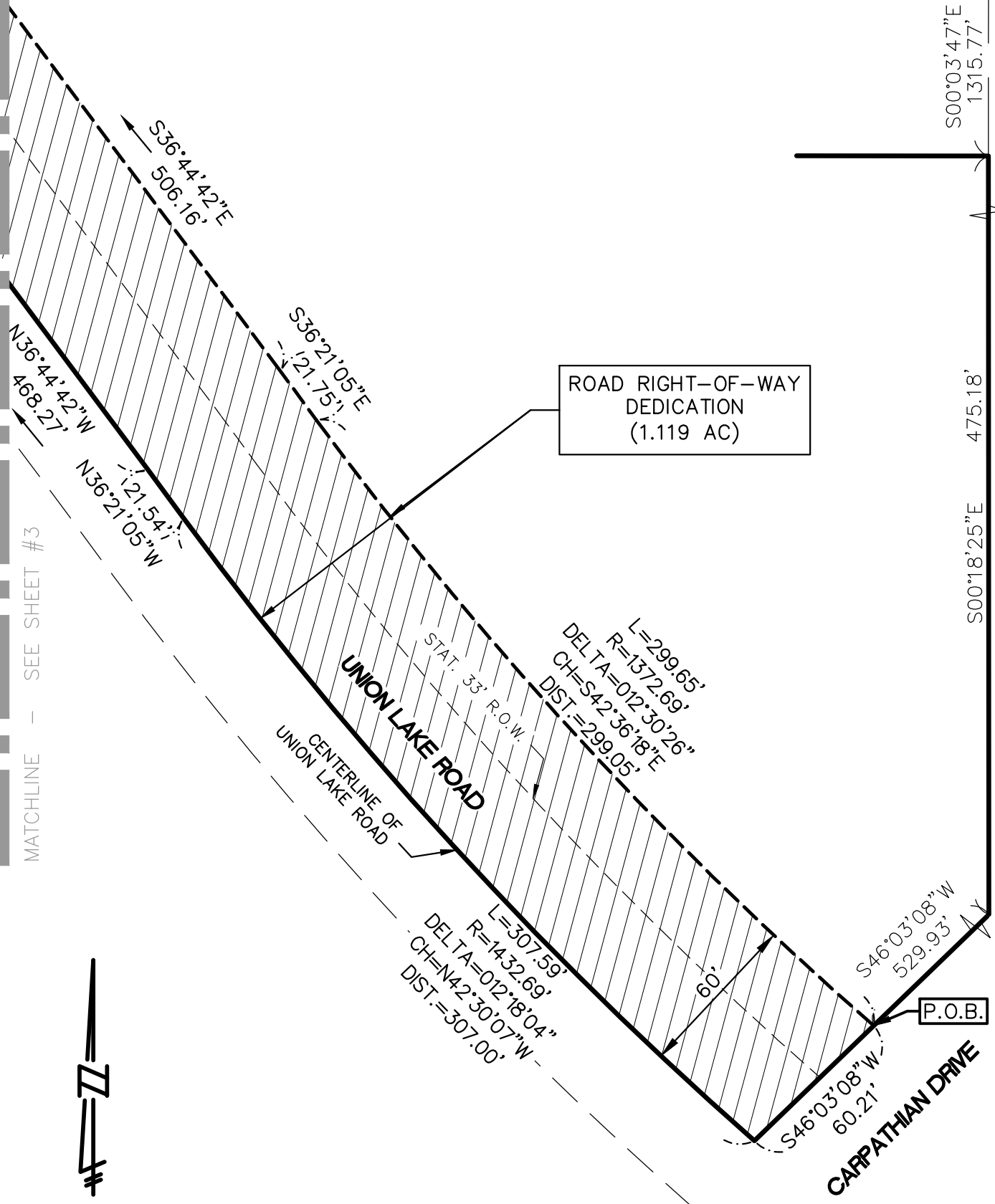
EXHIBIT C

NORTH 1/4 POST
SECTION 36
T.3N., R.8E.
OAKLAND COUNTY, MICHIGAN

S00°03'47"E
1315.77'

475.18'

S00°18'25"E



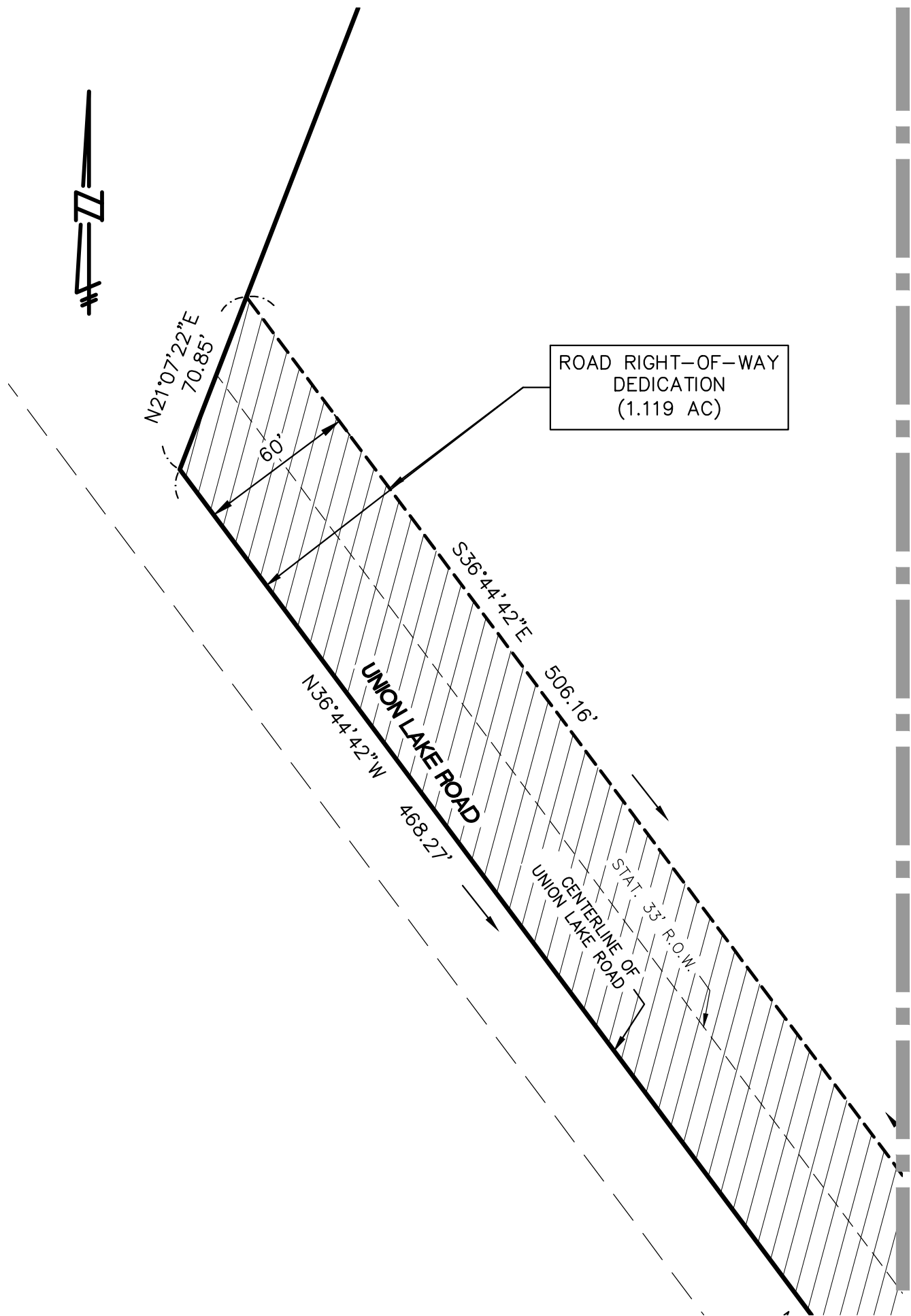
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SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE
SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE:	1" = 50'
DATE:	04-04-2020
JOB NO.:	19-039
DWG FILE:	19-039ROW-ULR
DRAWN BY:	DFR
CHECK:	JE
SHEET:	2 OF 3

EXHIBIT C



ROAD RIGHT-OF-WAY DEDICATION (1.119 AC)

RIGHT-OF-WAY DEDICATION (1.119 ACRES)

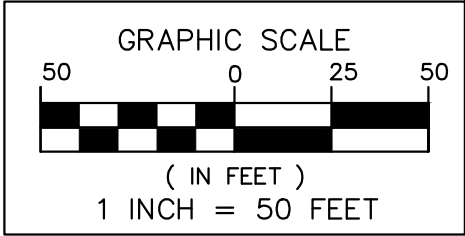


DIAGRAM - R.O.W. DEDICATION

MATCHLINE - SEE SHEET #2

C:\Users\dfromero\Documents\WORK\19-039 lake pointe\EASEMENTS\19-039ROW-ULR.dwg



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 50'
DATE: 04-04-2020
JOB NO.: 19-039
DWG FILE: 19-039ROW-ULR
DRAWN BY: DFR
CHECK: JE
SHEET: 3 OF 3

EXHIBIT A

LEGAL DESCRIPTION – OVERALL PARCEL RECOMBINATION:

A PARCEL OF LAND BEING A PART OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH ¼ POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH ¼ LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET; THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 563, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 46 DEGREES 03 MINUTES 08 SECONDS WEST, 590.14 FEET, TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.59 FEET; THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 468.27 FEET; THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED. CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS. ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, USED OR DEEDED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES. ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD. SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

LEGAL DESCRIPTION – SUBJECT PROPERTY



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 04/08/2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 6

EXHIBIT A

EASEMENT FOR WATER MAIN

Legal Description

An Easement for Water Main located in a part of the Northwest 1/4 of Section 36, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan; being more particularly described as Commencing at the Center of said Section 36; thence N00°03'47"W, 827.27 feet, along the North and South 1/4 line of said Section 36, to a point on the Southerly line of Subject Property; thence S46°03'08"W, 529.94 feet, along the Southerly line of said Subject Property, to a point on the Northerly right-of-way line of Union Lake Road; thence 54.34 feet along a curve to the right, said curve having a radius of 1372.69 feet, a central angle of 02°16'05" and a chord bearing and distance of N47°43'26"W, 54.34 feet, along the Northerly right-of-way line of said Union Lake Road, for a POINT OF BEGINNING; thence continuing 20.07 along curve to the right, said curve having a radius of 1372.69 feet, a central angle of 00°50'16" and a chord bearing and distance of N46°10'16"W, 20.07 feet; thence N48°44'36"E, 119.05 feet; thence N13°03'27"W, 95.98 feet; thence S75°45'20"W, 16.72 feet; thence N75°35'39"W, 40.80 feet; thence N36°44'42"W, 312.28 feet; thence N78°49'22"W, 24.58 feet; thence N36°44'42"W, 134.74 feet; thence S53°15'18"W, 105.71 feet; thence N82°23'05"W, 15.05 feet, to a point on the Northerly right-of-way line of said Union Lake Road; thence N36°44'42"W, 27.97 feet, along the Northerly right-of-way line of said Union Lake Road; thence S82°23'05"E, 26.45 feet; thence N53°15'18"E, 97.56 feet; thence N36°45'26"W, 25.40 feet; thence N08°15'18"E, 9.18 feet; thence N19°30'18"E, 91.73 feet; thence N64°30'18"E, 61.52 feet; thence S88°32'47"E, 477.12 feet; thence S44°02'18"E, 66.26 feet; thence S00°18'25"E, 199.80 feet; thence S19°31'06"W, 117.15 feet; thence S46°03'08"W, 209.69 feet; thence S75°45'20"W, 28.52 feet; thence N13°03'27"W, 20.00 feet; thence S75°45'20"W, 32.03 feet; thence N75°35'39"W, 28.64 feet; thence N36°44'42"W, 312.92 feet; thence N78°49'22"W, 24.56 feet; thence N36°44'49"W, 163.92 feet; thence N19°30'18"E, 80.56 feet; thence N64°30'18"E, 48.44 feet; thence S88°32'48"E, 464.15 feet; thence S44°02'18"E, 50.05 feet; thence S00°18'25"E, 188.28 feet; thence S19°31'06"W, 108.94 feet; thence S46°03'08"W, 199.67 feet; thence S75°45'20"W, 22.80 feet; thence S13°03'27"E, 128.36 feet; thence S48°44'36"W, 129.30 feet, to the Point of Beginning. All of the above containing 0.982 Acres.

LEGAL DESCRIPTION – EASEMENT



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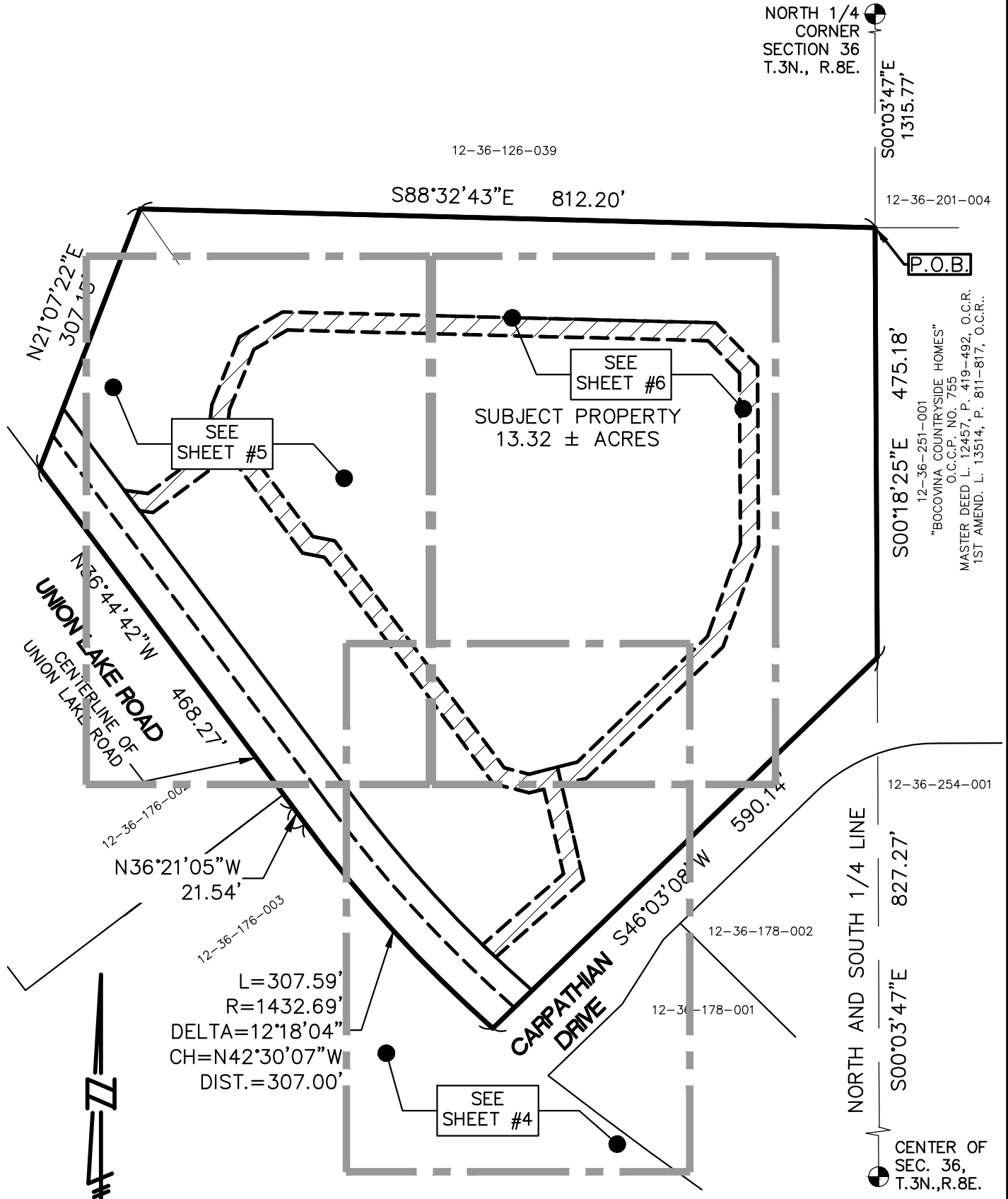
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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 04/08/2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DFR
CHECK: JE
SHEET: 2 OF 6

EXHIBIT A



EASEMENT FOR WATER MAIN
(0.982 ACRES)

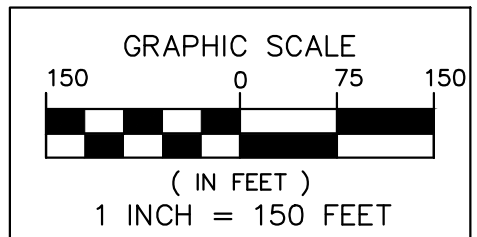
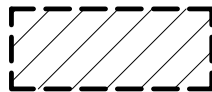


DIAGRAM - SUBJECT PROPERTY



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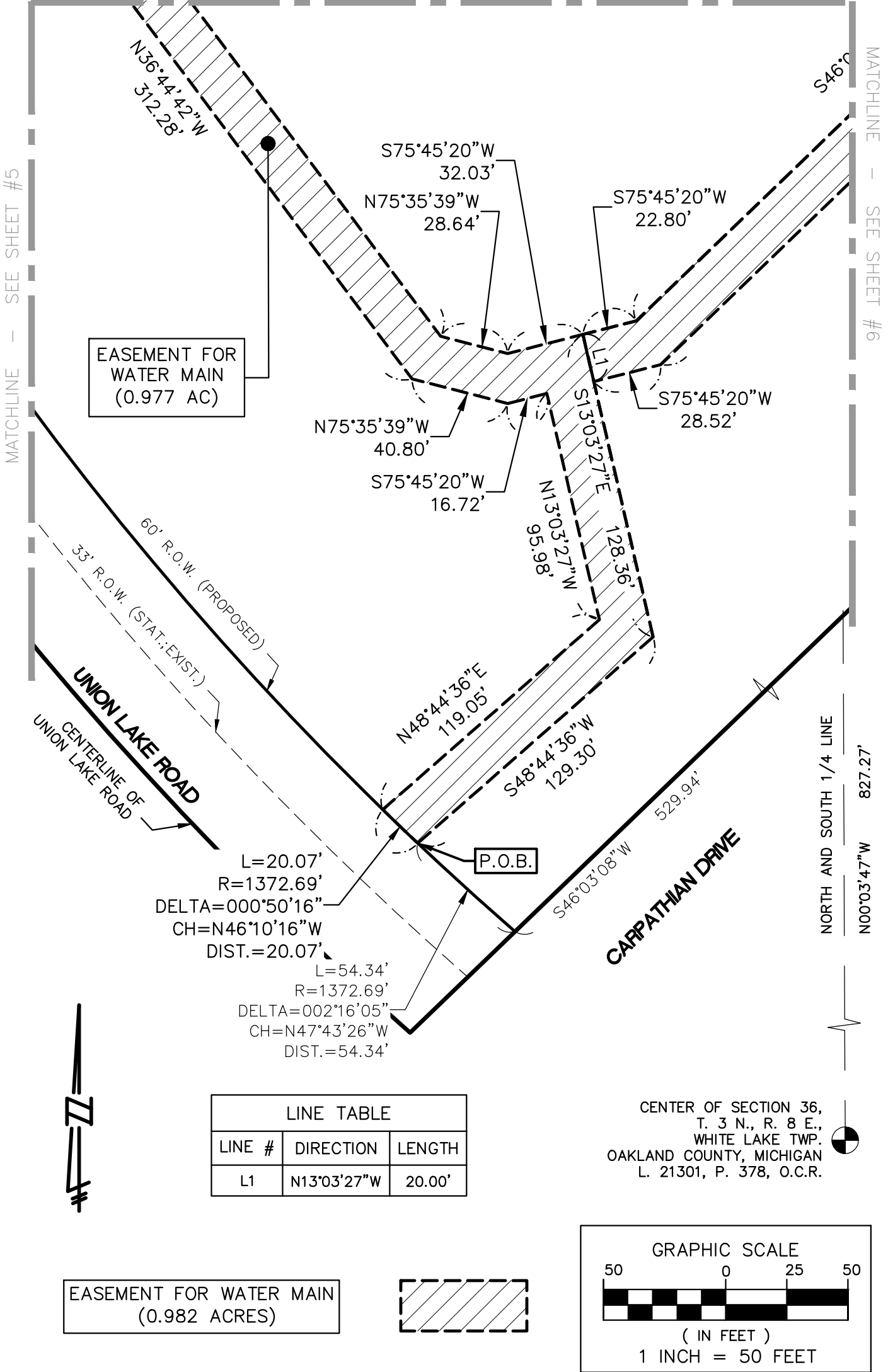
LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 150'
DATE: 04/08/2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DFR
CHECK: JE
SHEET: 3 OF 6

EXHIBIT A

MATCHLINE - SEE SHEET #5



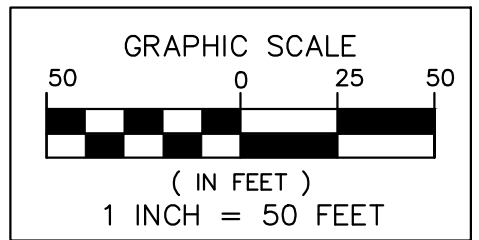
L=20.07'
R=1372.69'
DELTA=000°50'16"
CH=N46°10'16"W
DIST.=20.07'

L=54.34'
R=1372.69'
DELTA=002°16'05"
CH=N47°43'26"W
DIST.=54.34'

LINE TABLE		
LINE #	DIRECTION	LENGTH
L1	N13°03'27"W	20.00'

CENTER OF SECTION 36,
T. 3 N., R. 8 E.,
WHITE LAKE TWP.
OAKLAND COUNTY, MICHIGAN
L. 21301, P. 378, O.C.R.

EASEMENT FOR WATER MAIN
(0.982 ACRES)



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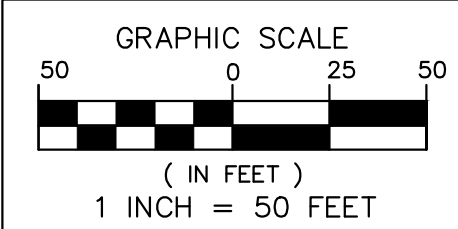
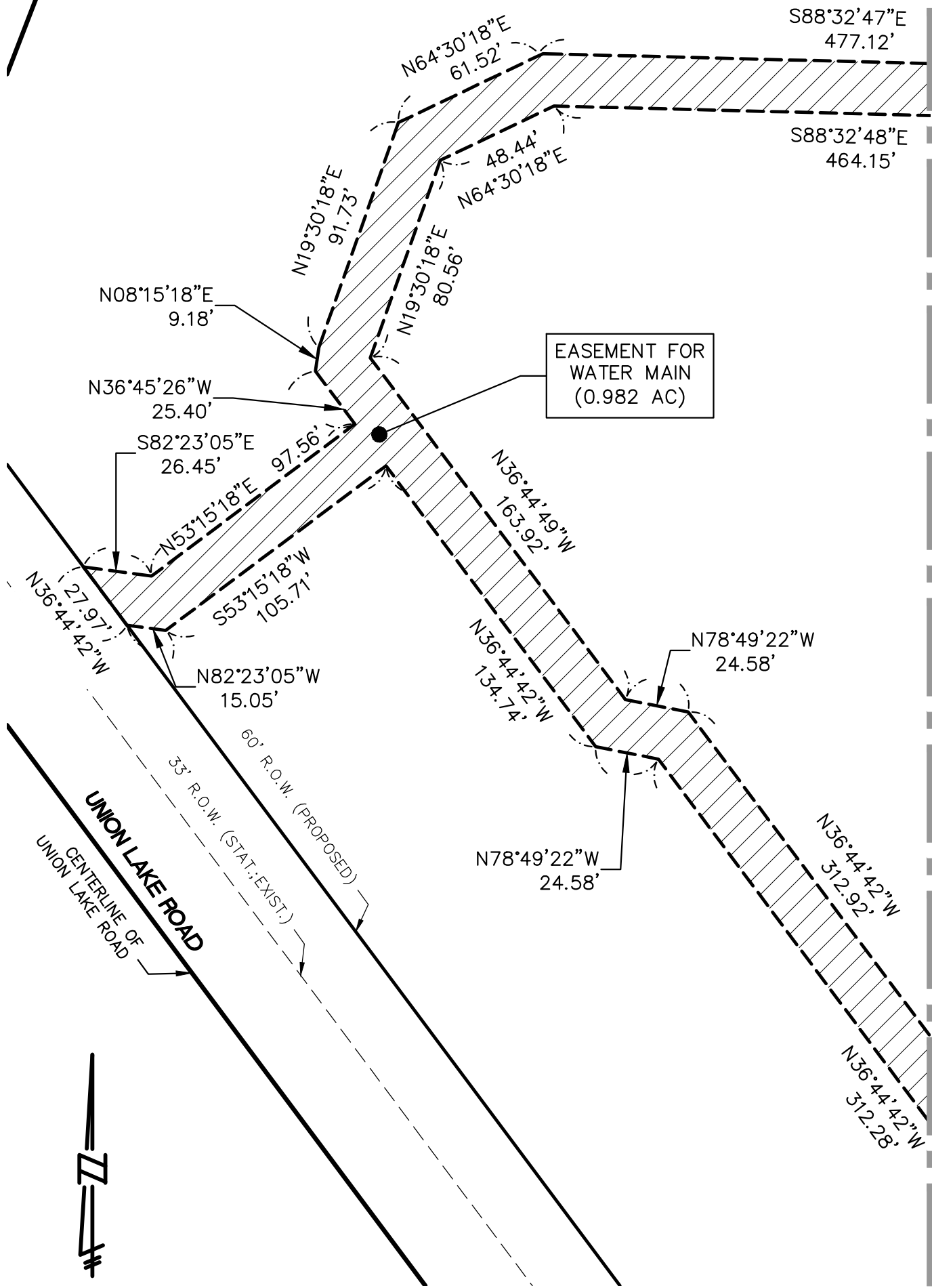
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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 50'
DATE: 04/08/2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DFR
CHECK: JE
SHEET: 4 OF 6

EXHIBIT A



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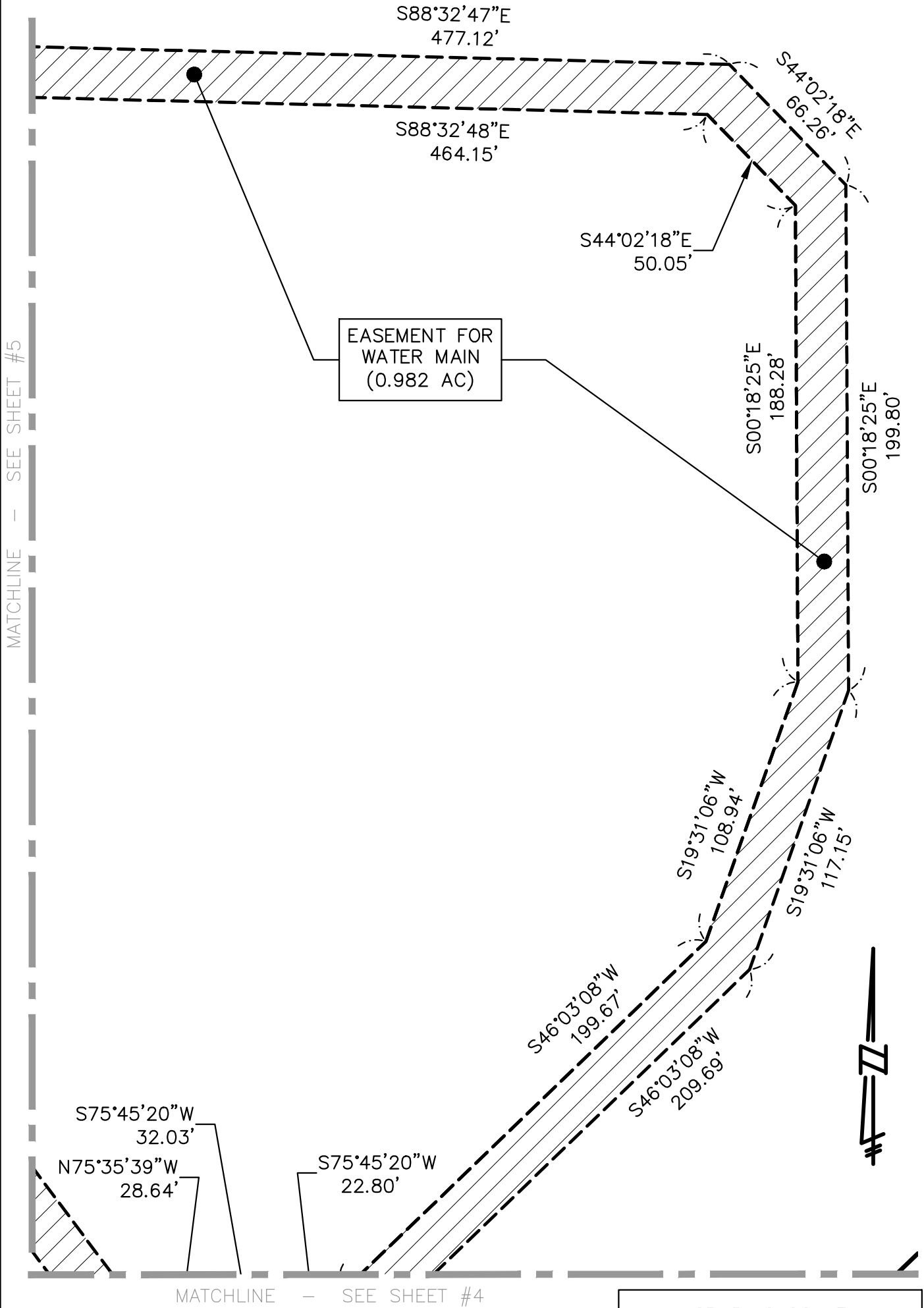
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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE:	1" = 50'
DATE:	04/08/2021
JOB NO.:	19-039
DWG FILE:	19-039ESMT-WM
DRAWN BY:	DFR
CHECK:	JE
SHEET:	5 OF 6

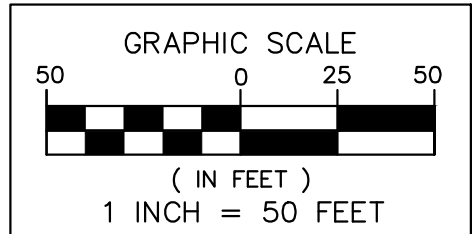
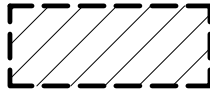
EXHIBIT A



MATCHLINE - SEE SHEET #5

MATCHLINE - SEE SHEET #4

EASEMENT FOR WATER MAIN
(0.982 ACRES)



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 50'
DATE: 04/08/2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DFR
CHECK: JE
SHEET: 6 OF 6

EXHIBIT A

LEGAL DESCRIPTION – OVERALL PARCEL RECOMBINATION:

A Parcel of land being a part of the Southeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of Section 36, T.3N., R.8E., White Lake Township, Oakland County, Michigan, being more particularly described as follows:

Commencing at the North $\frac{1}{4}$ post of said Section 36, T.3N., R.8E., Oakland County, Michigan, thence proceeding along the North and South $\frac{1}{4}$ line of said Section 36, South $00^{\circ}03'47''$ East, 1315.77 feet to the Northeast corner of the Southeast $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of said Section, thence in part along the Westerly line of Bocovina Countryside Homes, Oakland County plan No. 755, master deed as recorded in Liber 12457, Pages 419 through 492, 1st amendment as recorded in Liber 13514, Pages 811 through 817 Oakland County records, South $00^{\circ}18'25''$ East, 475.18 feet; thence along the Northwesterly line of Carpathian Drive as recorded in Bocovina Homesites, Oakland plan no. 754, master deed as recorded in Liber 12457, Pages 493 through 563, 1st amendment as recorded in Liber 13514, Pages 801 through 810, Oakland County records, South $46^{\circ}03'08''$ West, 590.14 feet, to the centerline of Union Lake Road, thence along the arc of a curve to the right, radius 1432.69 feet, central angle $12^{\circ}18'04''$, (the chord of said curve bears North $42^{\circ}30'07''$ West, 307.00 feet) and having an arc distance of 307.59 feet; thence continuing along said centerline the following two courses, North $36^{\circ}21'05''$ West, 21.54 feet and North $36^{\circ}44'42''$ West, 468.27 feet; thence North $21^{\circ}07'22''$ East, 307.10 feet; thence South $88^{\circ}32'43''$ East, 812.20 feet to the point of beginning of the parcel Herein described. Containing 580,140 gross square feet or 13.32 gross acres of land, more or less. Also being subject to the rights of the public and/or any other governmental unit in any part of Union Lake Road taken, used or deeded for street, road, highway or public utility purposes. Also being subject to any other easements, restrictions or conditions of record. Sidwell : 12-36-177-003, 12-36-177-002.

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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 3.8.2021
JOB NO.: 19-039
DWG FILE:19-039ESMT-ST.dwg
DRAWN BY: DN
CHECK: JE
SHEET: 1 OF 1

EXHIBIT B

EASEMENT FOR STORM SEWER

Legal Description

An Easement for Storm Sewer located in a part of the Northwest 1/4 of Section 36, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan; being more particularly described as Commencing at the North 1/4 Corner of said Section 36; thence S00°03'47"E, 1315.77 feet, along the North and South 1/4 line of said Section 36, to the Northeasterly Corner of Subject Property; thence N88°32'43"W, 149.05 feet, along the Northerly line of Subject Property; thence S01°27'17"W, 57.20 feet, **for a POINT OF BEGINNING** ; thence S68°35'24"W, 12.00 feet; thence N21°24'36"W, 49.65 feet; thence N88°35'53"W, 128.83 feet; thence S01°30'09"W, 141.43 feet; thence N88°16'33"W, 12.00 feet; thence N01°30'09"E, 141.36 feet; thence N88°35'53"W, 276.00 feet; thence S01°27'18"W, 162.86 feet; thence S76°02'38"E, 45.30 feet; thence S13°57'22"W, 12.00 feet; thence N76°02'38"W, 49.09 feet; thence S84°31'20"W, 31.06 feet; thence S62°13'16"W, 49.58 feet; thence S02°10'42"E, 45.73 feet; thence S31°50'04"E, 42.68 feet; thence N82°30'30"E, 93.54 feet; thence S81°47'00"E, 45.07 feet; thence N76°13'29"E, 98.35 feet; thence N89°49'43"E, 120.19 feet; thence S00°10'17"E, 12.00 feet; thence S89°49'43"W, 107.95 feet; thence S35°08'46"E, 73.84 feet; thence S24°08'07"E, 210.40 feet; thence S43°58'05"E, 133.58 feet; thence N46°03'09"E, 134.96 feet; thence N20°57'43"E, 166.68 feet; thence N00°03'56"E, 190.05 feet; thence S89°56'04"E, 12.00 feet; thence S00°03'56"W, 192.26 feet; thence S20°57'43"W, 171.56 feet; thence S46°03'09"W, 143.54 feet; thence S44°22'07"W, 168.12 feet; thence N45°37'53"W, 12.00 feet; thence N44°22'07"E, 162.38 feet; thence N43°58'07"W, 135.84 feet; thence N24°08'07"W, 211.34 feet; thence N35°08'46"W, 80.11 feet; thence S76°13'29"W, 95.88 feet; thence N81°47'00"W, 45.75 feet; thence S82°30'30"W, 92.44 feet; thence S24°44'21"W, 21.54 feet; thence S19°43'20"W, 94.19 feet; thence S36°55'24"E, 341.72 feet; thence S53°04'46"W, 12.00 feet; thence N36°55'23"W, 335.63 feet; thence S28°37'12"W, 51.54 feet; thence N61°22'48"W, 12.00 feet; thence N28°37'12"E, 55.21 feet; thence N57°52'09"W, 67.55 feet; thence N36°28'37"W, 64.16 feet; thence N53°31'23"E, 12.00 feet; thence S36°28'37"E, 61.89 feet; thence S57°52'09"E, 63.46 feet; thence N19°43'20"E, 90.49 feet; thence N24°44'21"E, 22.15 feet; thence N31°50'04"W, 46.50 feet; thence N02°10'42"W, 48.75 feet; thence N68°41'01"W, 32.13 feet; thence S25°20'54"W, 82.72 feet; thence S53°15'19"W, 42.64 feet; thence S59°48'37"W, 29.18 feet; thence N36°44'43"W, 131.15 feet to the Westerly Line of Subject Property; thence N21°08'04"E, 227.73 feet along the Westerly Line of said Subject Property; thence N76°47'35"E, 29.49 feet; thence S70°39'11"E, 34.98 feet; thence S02°26'23"E, 13.82 feet; thence S00°51'41"W, 48.07 feet; thence S04°04'53"E, 23.53 feet; thence S24°01'07"E, 72.73 feet; thence S03°42'22"E, 34.67 feet; thence S68°41'01"E, 33.78 feet; thence N62°13'16"E, 52.99 feet; thence N84°31'20"E, 29.14 feet; thence N01°27'18"E, 174.35 feet; thence S88°35'53"E, 436.79 feet; thence S21°24'36"E, 57.62 feet, **to the POINT OF BEGINNING**. All of the above containing 1.675 Acres.

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**SEIBER, KEAST
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CONSULTING ENGINEERS

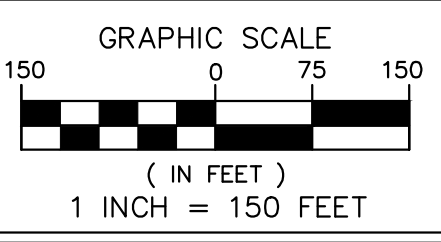
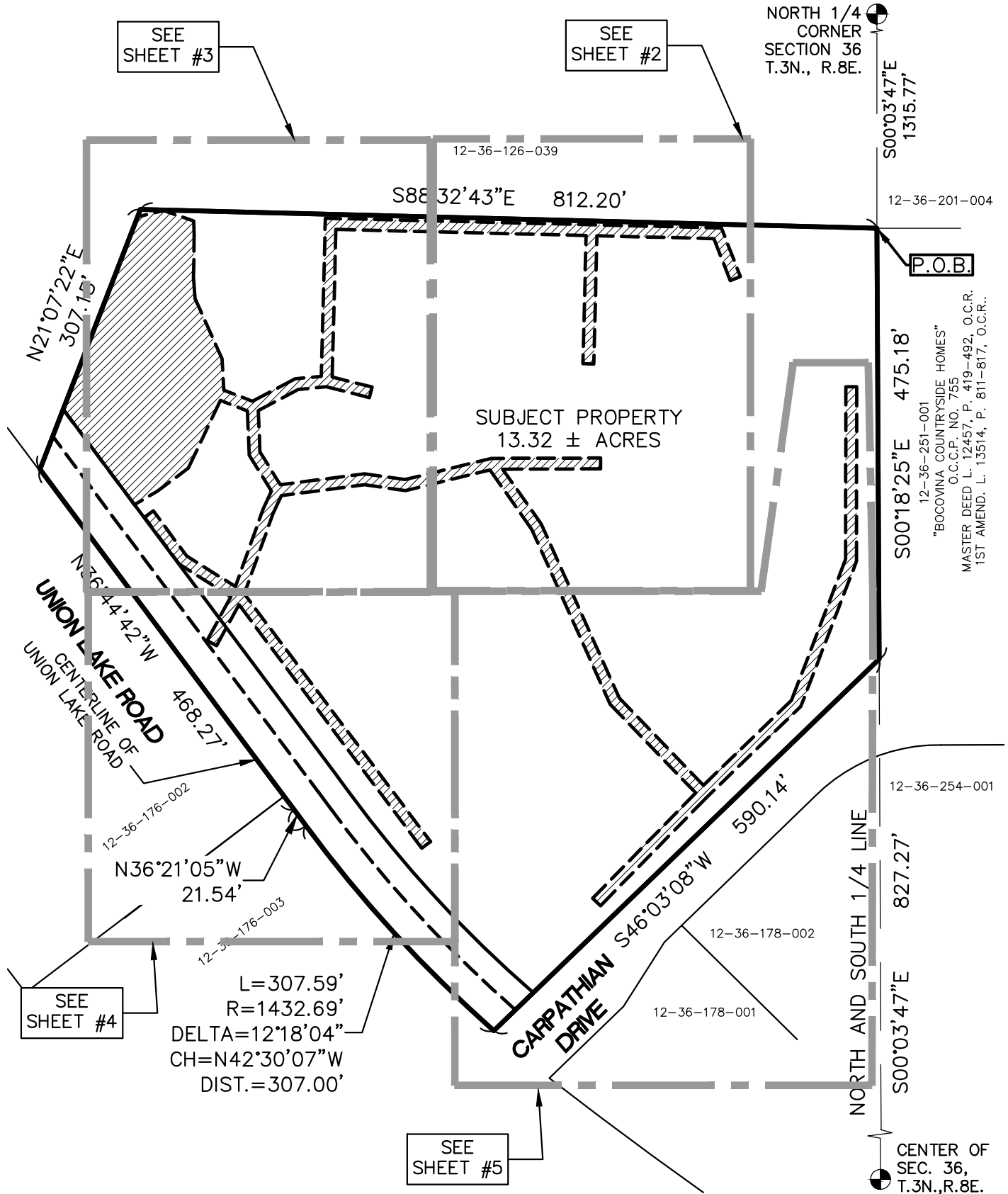
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LAKE POINTE

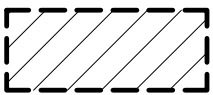
SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 3.8.2021
JOB NO.: 19-039
DWG FILE:19-039ESMT-ST.dwg
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 1

EXHIBIT C



EASEMENT FOR STORM SEWER
(1.675 ACRES)



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE:	1" = 150'
DATE:	3.8.2021
JOB NO.:	19-039
DWG FILE:	19-039ESMT-ST.dwg
DRAWN BY:	DFR
CHECK:	JE
SHEET:	1 OF 4

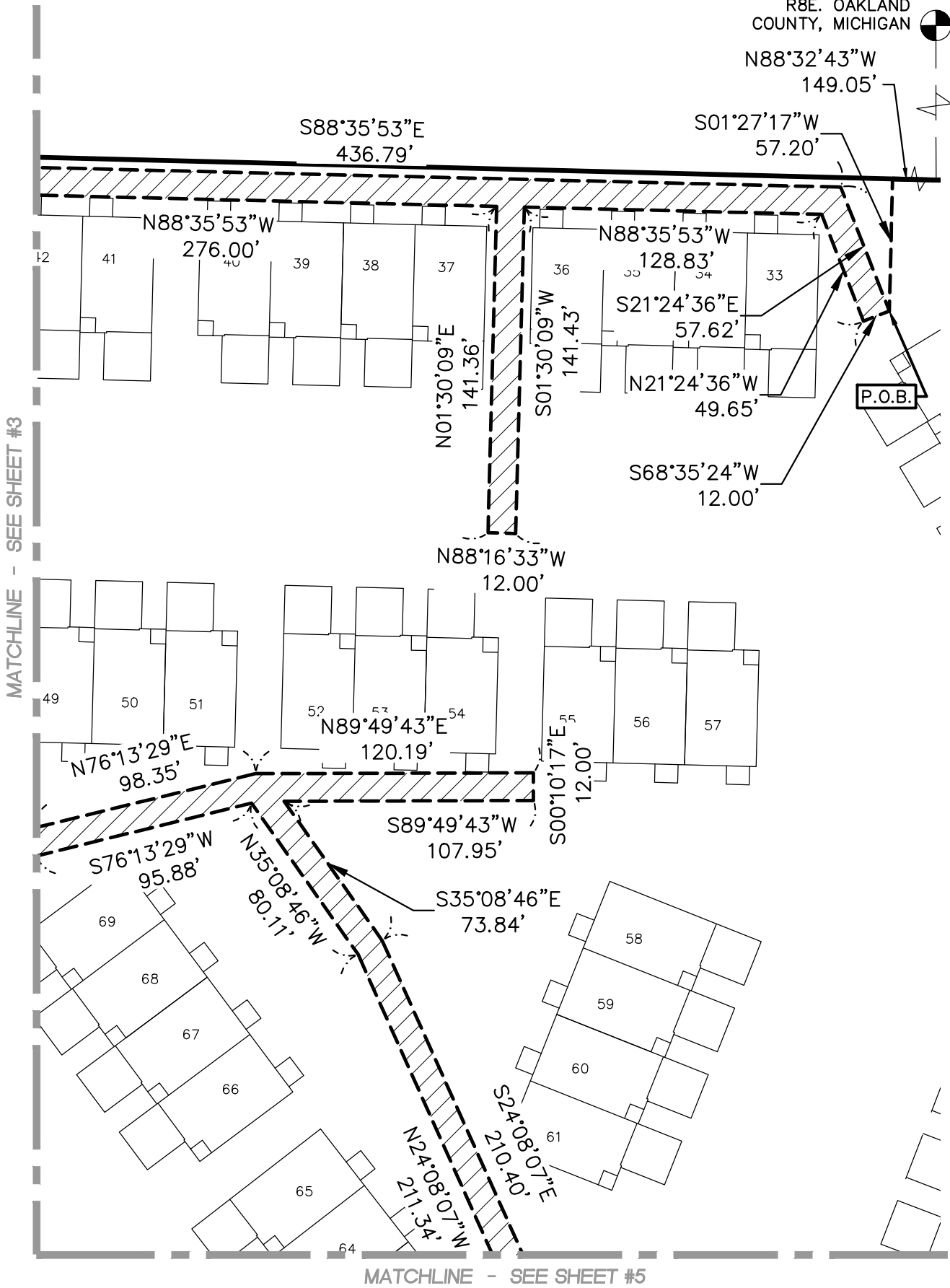
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EXHIBIT C

NORTH ¼ POST
SECTION 36 T.3.N,
R8E. OAKLAND
COUNTY, MICHIGAN

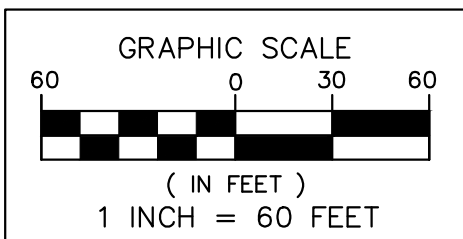


N88°32'43"W
149.05'
S01°27'17"W
57.20'
S00°03'47"E
1315.77'



P.O.B.

C:\Users\jromero\Documents\WORK\19-039 lake pointe\EASEMENTS\19-039ESMT-ST.dwg



EASEMENT FOR STORMSEWER
(1.675 ACRES)



**SEIBER, KEAST
ENGINEERING, L.L.C.**

CONSULTING ENGINEERS

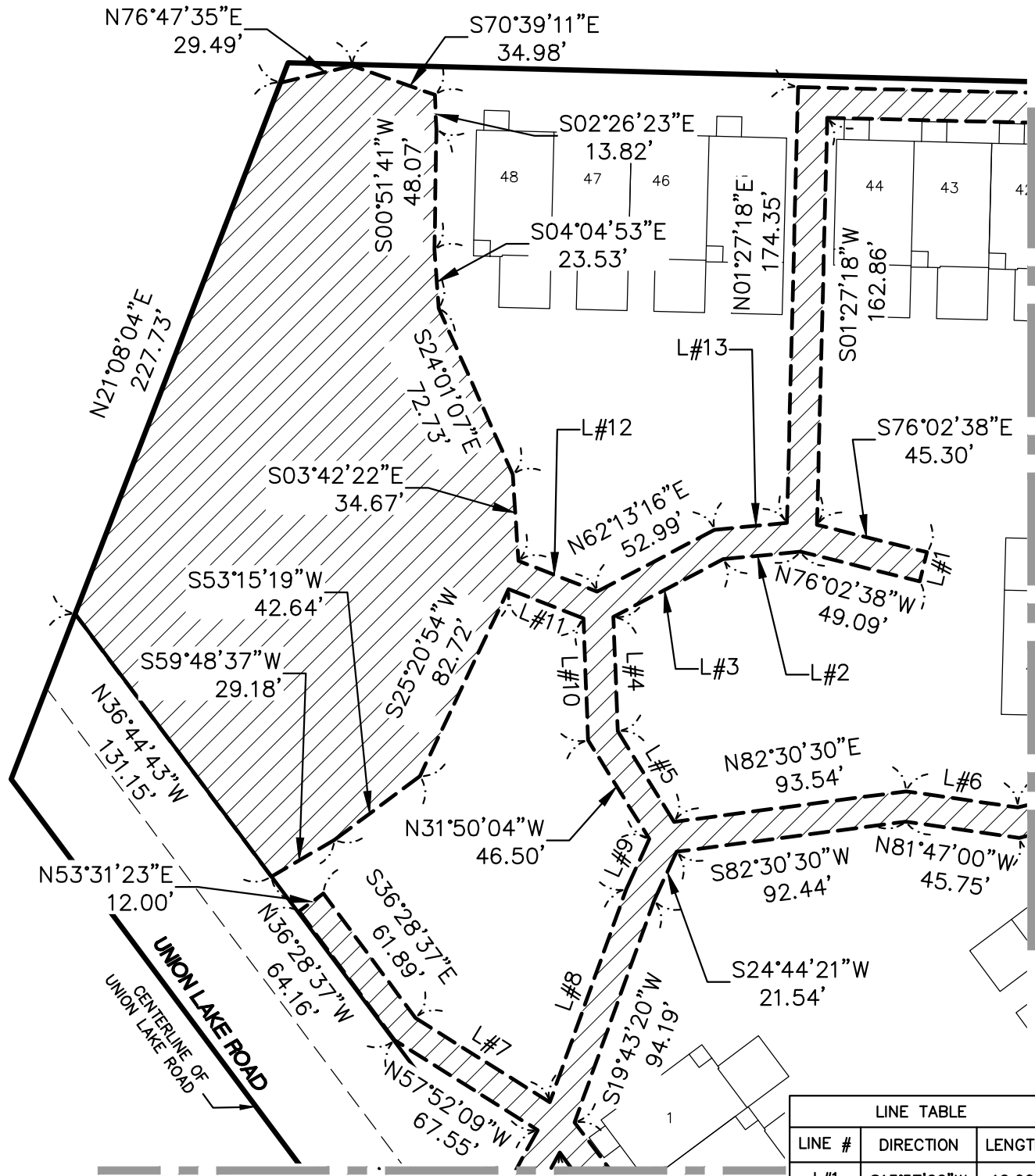
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PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 60'
DATE: 3.8.2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-WM
DRAWN BY: DN
CHECK: JE
SHEET: 2 OF 5

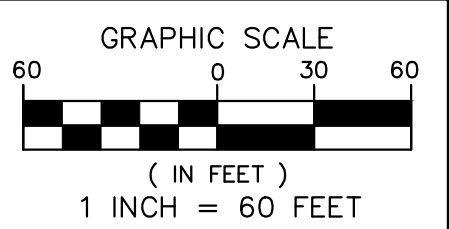
EXHIBIT C



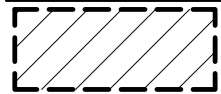
MATCHLINE - SEE SHEET #2

MATCHLINE - SEE SHEET #4

LINE TABLE		
LINE #	DIRECTION	LENGTH
L#1	S13°57'22"W	12.00'
L#2	S84°31'20"W	31.06'
L#3	S62°13'16"W	49.58'
L#4	S02°10'42"E	45.73'
L#5	S31°50'04"E	42.68'
L#6	S81°47'00"E	45.07'
L#7	S57°52'09"E	63.46'
L#8	N19°43'20"E	90.49'
L#9	N24°44'21"E	22.15'
L#10	N02°10'42"W	48.75'
L#11	N68°41'01"W	32.13'
L#12	S68°41'01"E	33.78'
L#13	N84°31'20"E	29.14'



EASEMENT FOR STORMSEWER
(1.675 ACRES)



**SEIBER, KEAST
ENGINEERING, L.L.C.**

CONSULTING ENGINEERS
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PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

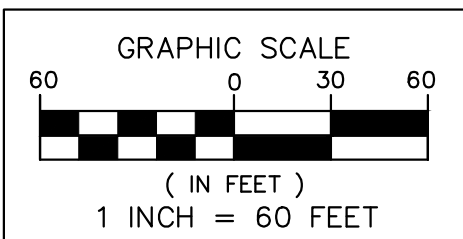
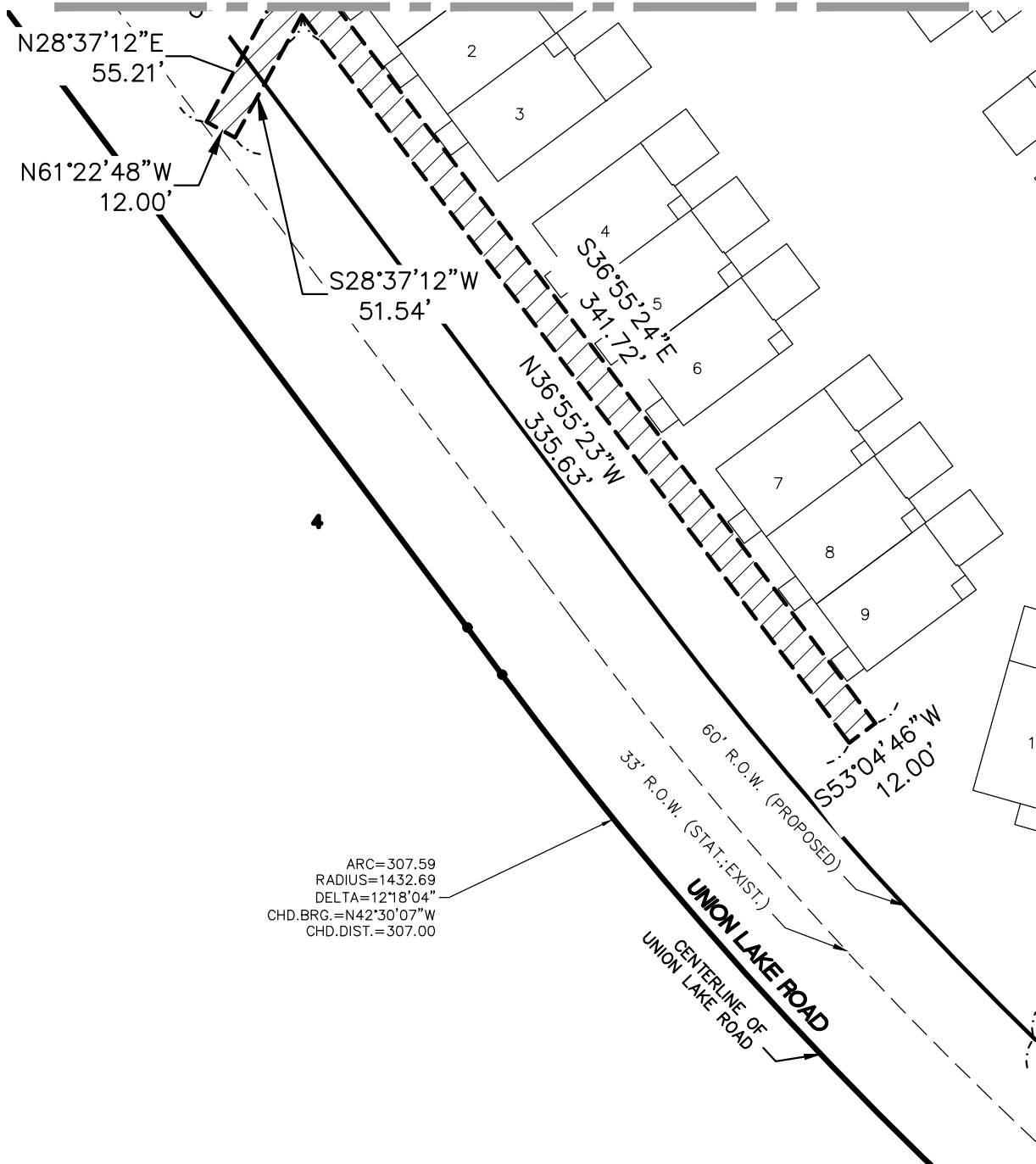
SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 60'
DATE: 3.8.2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-ST.dwg
DRAWN BY: DN
CHECK: JE
SHEET: 3 OF 5

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EXHIBIT C

MATCHLINE - SEE SHEET #3



EASEMENT FOR STORMSEWER
(1.675 ACRES)



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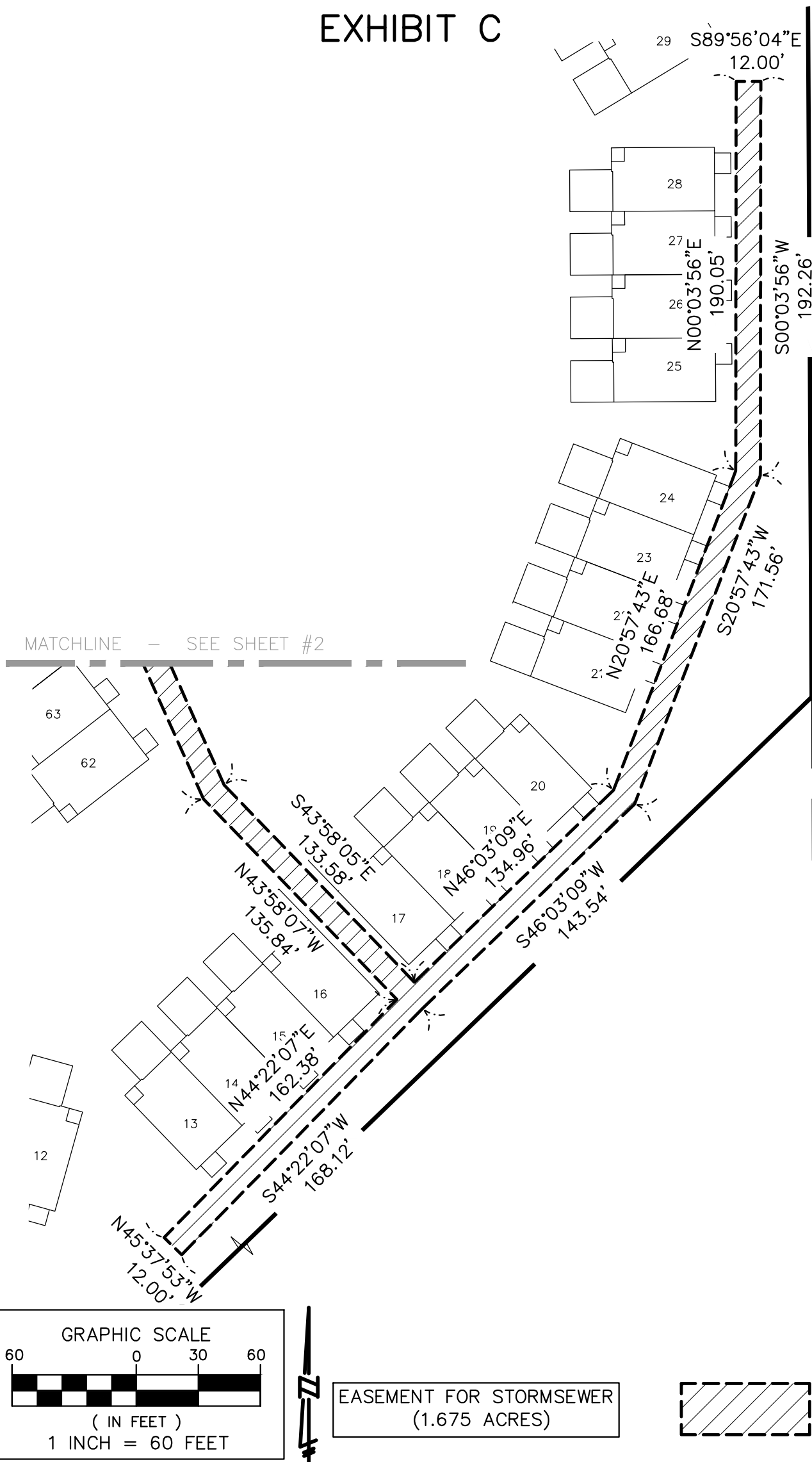
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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 60'
 DATE: 3.8.2021
 JOB NO.: 19-039
 DWG FILE:19-039ESMT-ST.dwg
 DRAWN BY: DN
 CHECK: JE
 SHEET: 4 OF 5

EXHIBIT C



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 60'
DATE: 3.8.2021
JOB NO.: 19-039
DWG FILE: 19-039ESMT-ST.dwg
DRAWN BY: DN
CHECK: JE
SHEET: 5 OF 5

EXHIBIT A

LEGAL DESCRIPTION – OVERALL PARCEL RECOMBINATION:

A PARCEL OF LAND BEING A PART OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH ¼ POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH ¼ LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST ¼ OF THE NORTHWEST ¼ OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET; THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 563, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 46 DEGREES 03 MINUTES 08 SECONDS WEST, 590.14 FEET, TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.59 FEET; THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 468.27 FEET; THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET; THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED. CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS. ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, USED OR DEEDED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES. ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD. SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

LEGAL DESCRIPTION – SUBJECT PROPERTY



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 03-27-2020
JOB NO.: 19-039
DWG FILE: 19-039ESMT-SAN
DRAWN BY: DFR
CHECK: JE
SHEET: 1 OF 5

EXHIBIT A

EASEMENT FOR SANITARY SEWER

Legal Description

An Easement for Sanitary Sewer located in a part of the Northwest 1/4 of Section 36, Town 3 North, Range 8 East, White Lake Township, Oakland County, Michigan; being more particularly described as Commencing at the North 1/4 Corner of said Section 36; thence S00°03'47"E, 1315.77 feet, along the North and South 1/4 line of said Section 36, to the Northeasterly Corner of Subject Property; thence N88°32'43"W, 812.20 feet, along the Northerly line of Subject Property, to a point on the Easterly line of Subject Property; thence S21°07'22"W, 236.29 feet, along the Easterly line of Subject Property, to a point on the Northerly right-of-way line of Union Lake Road; thence S36°44'42"E, 212.59 feet, along the Northerly right-of-way line of said Union Lake Road, **for a POINT OF BEGINNING**; thence N43°00'54"E, 146.67 feet; thence N10°47'17"W, 63.39 feet; thence N27°00'55"E, 62.36 feet; thence S89°46'51"E, 231.79 feet; thence S88°32'43"E, 211.27 feet; thence S36°47'22"E, 65.05 feet; thence S53°12'38"W, 20.00 feet; thence N36°47'22"W, 55.35 feet; thence N88°32'43"W, 201.35 feet; thence N89°46'51"W, 219.27 feet; thence S27°00'55"W, 43.21 feet; thence S10°47'17"E, 57.55 feet; thence S55°03'55"E, 121.02 feet; thence S36°44'59"E, 265.62 feet; thence S89°37'06"E, 46.37 feet; thence N46°03'08"E, 190.53 feet; thence S43°56'52"E, 20.00 feet; thence S46°03'08"W, 198.67 feet; thence N89°37'06"W, 64.46 feet; thence N36°44'59"W, 272.34 feet; thence N55°03'55"W, 113.18 feet; thence S43°00'54"W, 146.68 feet, to a point on the Northerly right-of-way line of Union Lake Road; thence N36°44'42"W, 20.32 feet, along the Northerly right-of way line of Union Lake Road, to the Point of Beginning. All of the above containing 0.641 Acres.

LEGAL DESCRIPTION - EASEMENT



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ENGINEERING, L.L.C.**

CONSULTING ENGINEERS

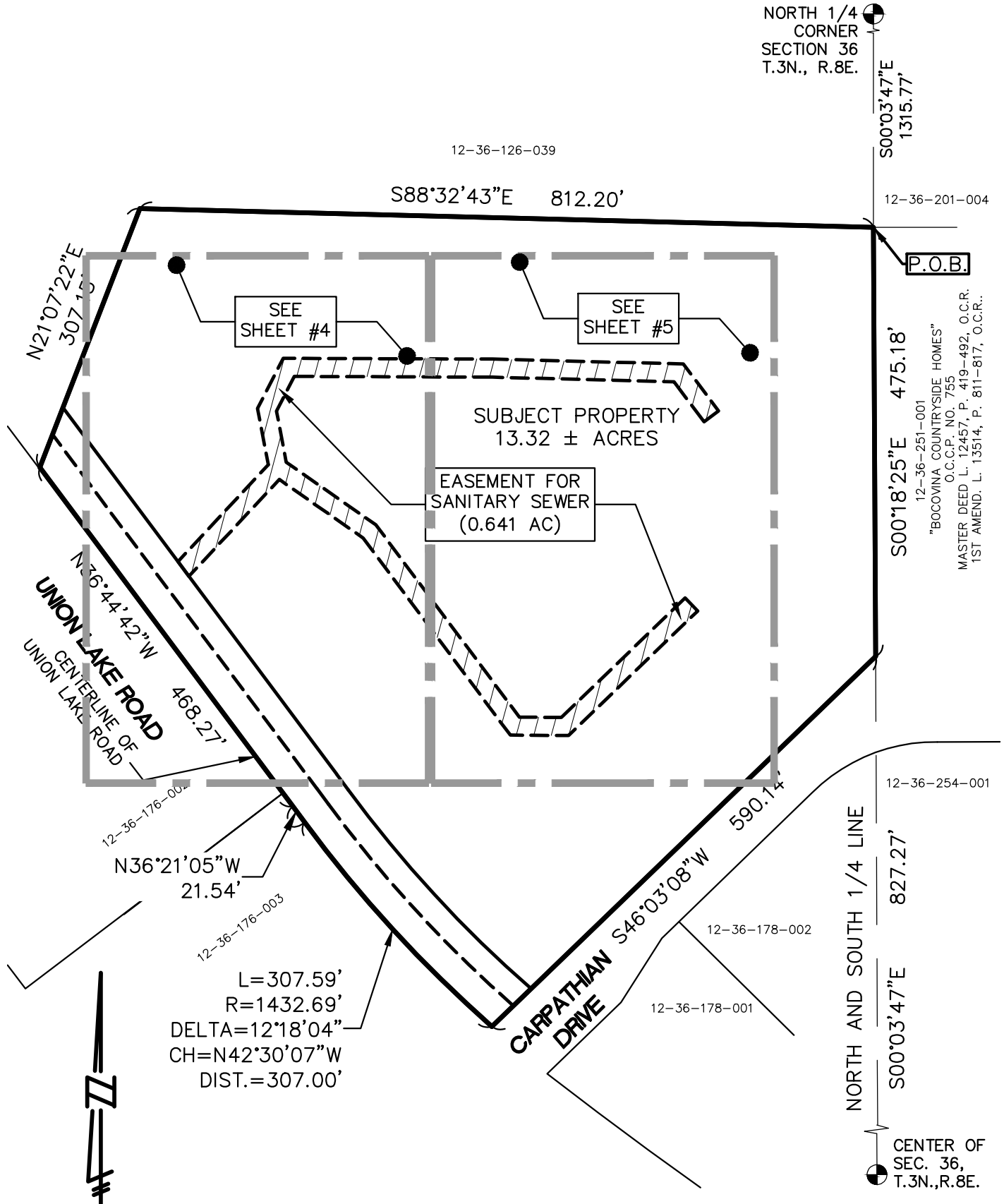
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PHONE: 248.308.3331 EMAIL: INFO@SEIBERKEAST.COM

LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: NOT TO SCALE
DATE: 03-27-2020
JOB NO.: 19-039
DWG FILE: 19-039ESMT-SAN
DRAWN BY: DFR
CHECK: JE
SHEET: 2 OF 5

EXHIBIT A



EASEMENT FOR SANITARY SEWER
(0.641 ACRES)

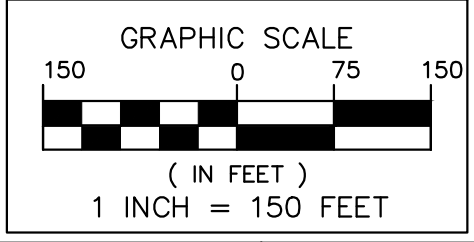
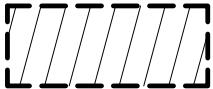


DIAGRAM - SUBJECT PROPERTY



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LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE:	1" = 150'
DATE:	03-27-2020
JOB NO.:	19-039
DWG FILE:	19-039ESMT-SAN
DRAWN BY:	DFR
CHECK:	JE
SHEET:	3 OF 5

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EXHIBIT A

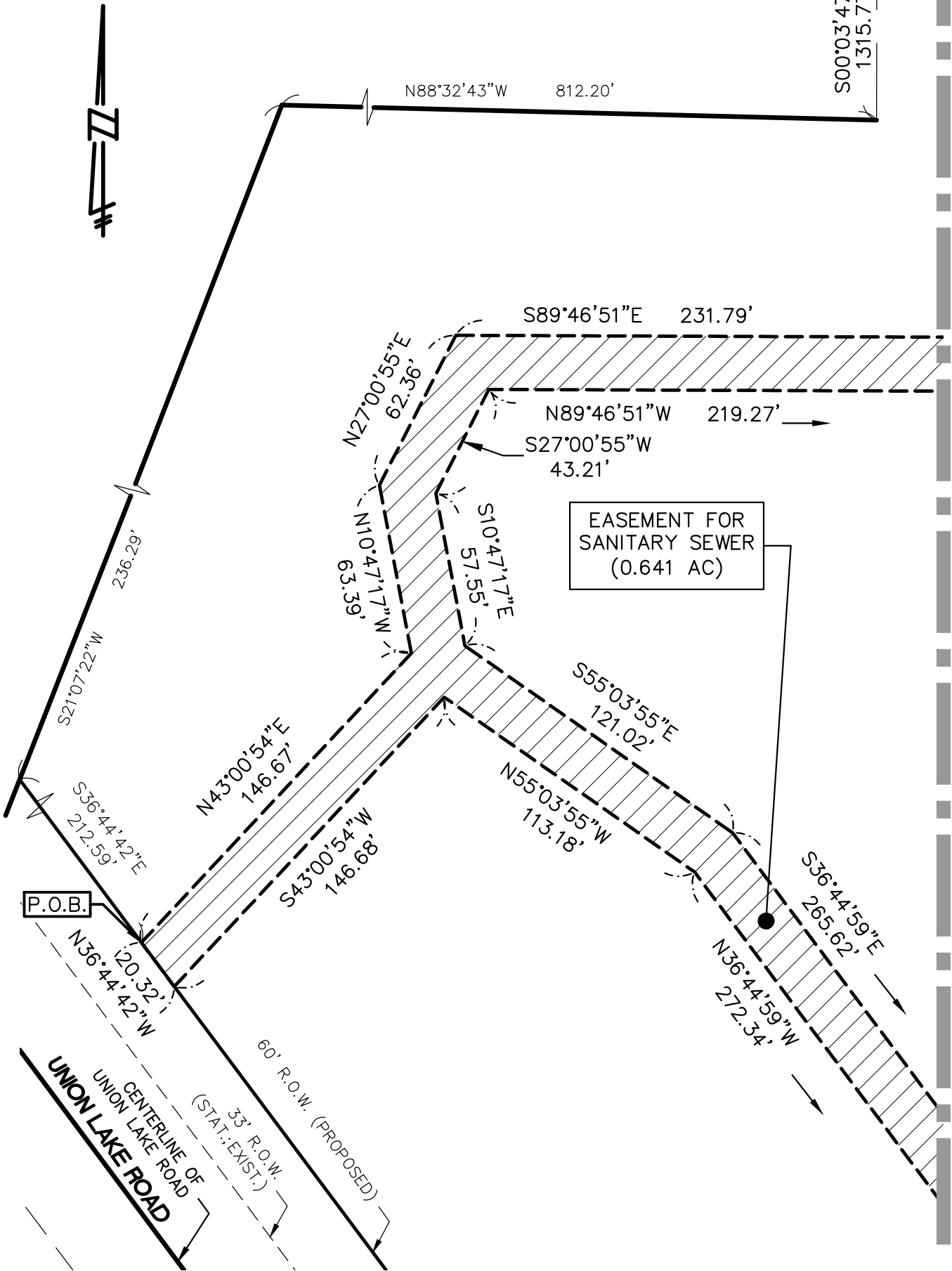
NORTH 1/4 POST
SECTION 36
T.3N., R.8E.
OAKLAND COUNTY, MICHIGAN



S00°03'47"E
1315.77'

N88°32'43"W 812.20'

MATCHLINE - SEE SHEET #5



P.O.B.

EASEMENT FOR
SANITARY SEWER
(0.641 AC)

UNION LAKE ROAD
CENTERLINE OF
UNION LAKE ROAD
(STAT.:EXIST.)

60' R.O.W. (PROPOSED)
33' R.O.W. (EXIST.)

EASEMENT FOR SANITARY SEWER
(0.641 ACRES)

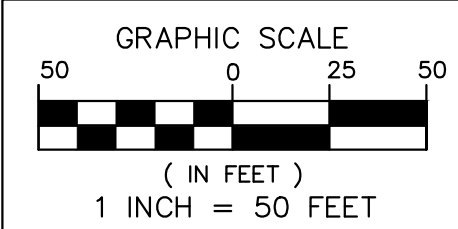


DIAGRAM - EASEMENT



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ENGINEERING, L.L.C.**

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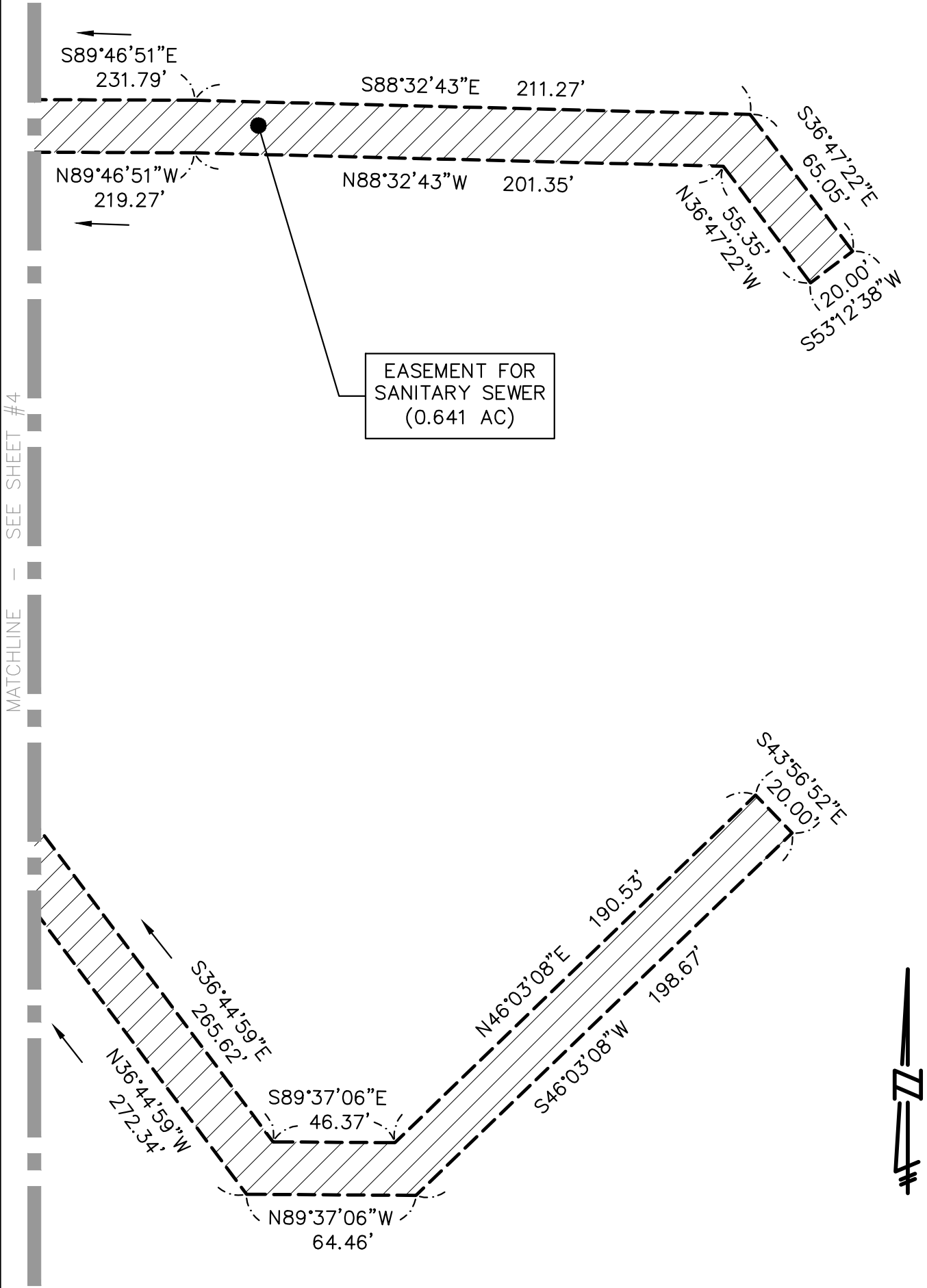
LAKE POINTE

SECTION 36, TOWN 3 NORTH,
RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

SCALE: 1" = 50'
DATE: 03-27-2020
JOB NO.: 19-039
DWG FILE: 19-039ESMT-SAN
DRAWN BY: DFR
CHECK: JE
SHEET: 4 OF 5

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EXHIBIT A



EASEMENT FOR SANITARY SEWER
(0.641 ACRES)

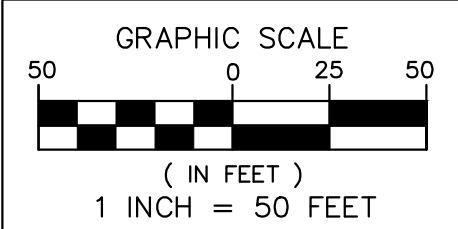
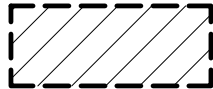


DIAGRAM - EASEMENT



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ENGINEERING, L.L.C.**

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LAKE POINTE

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RANGE 8 EAST, WHITE LAKE TWP.,
OAKLAND COUNTY, MICHIGAN

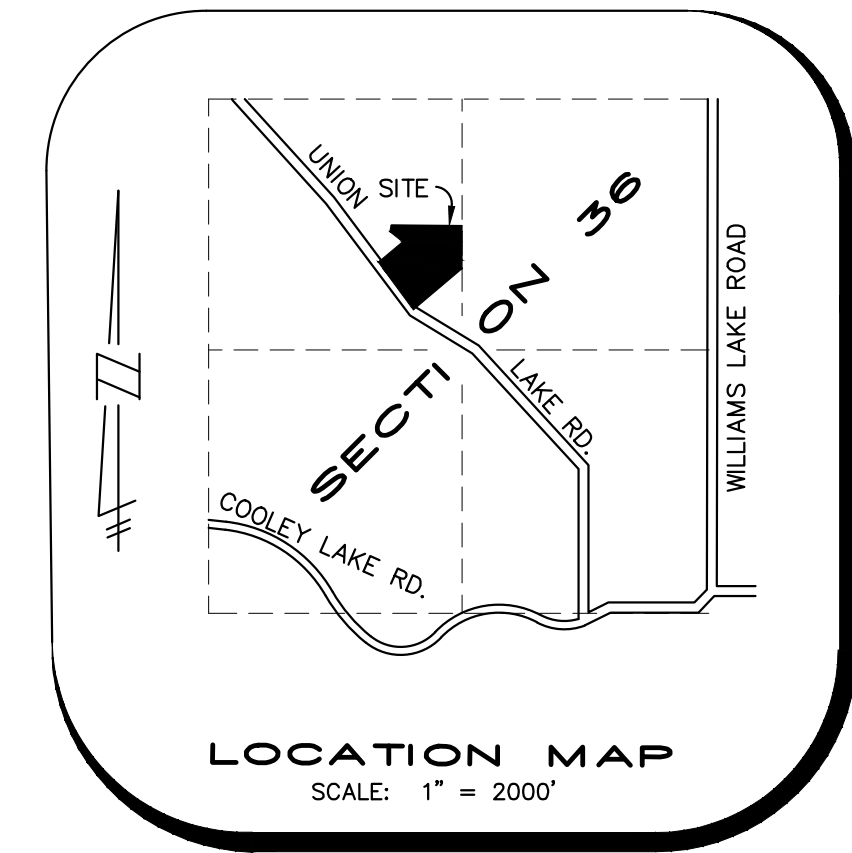
SCALE: 1" = 50'
DATE: 03-27-2020
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DRAWN BY: DFR
CHECK: JE
SHEET: 5 OF 5

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ENGINEERING CONSTRUCTION PLANS FOR LAKE POINTE

A MULTI FAMILY DEVELOPMENT
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST, WHITE LAKE TOWNSHIP,
OAKLAND COUNTY, MICHIGAN

PREPARED FOR:
JMF, WHITE LAKE, LLC
1700 W. BIG BEAVER ROAD, STE. 120
TROY, MI 48084
PHONE: (248) 602-2220



LEGAL DESCRIPTION

LEGAL DESCRIPTION - OVERALL PARCEL RECOMBINATION:
A PARCEL OF LAND BEING A PART OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY, MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTH 1/4 POST OF SAID SECTION 36, T.3N., R.8E., OAKLAND COUNTY, MICHIGAN, THENCE PROCEEDING ALONG THE NORTH AND SOUTH 1/4 LINE OF SAID SECTION 36, SOUTH 00 DEGREES 03 MINUTES 47 SECONDS EAST, 1315.77 FEET TO THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION, THENCE IN PART ALONG THE WESTERLY LINE OF BOCOVINA COUNTRYSIDE HOMES, OAKLAND COUNTY PLAN NO. 755, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 419 THROUGH 492, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 811 THROUGH 817 OAKLAND COUNTY RECORDS, SOUTH 00 DEGREES 18 MINUTES 25 SECONDS EAST, 475.18 FEET, THENCE ALONG THE NORTHWESTERLY LINE OF CARPATHIAN DRIVE AS RECORDED IN BOCOVINA HOMESITES, OAKLAND PLAN NO. 754, MASTER DEED AS RECORDED IN LIBER 12457, PAGES 493 THROUGH 583, 1ST AMENDMENT AS RECORDED IN LIBER 13514, PAGES 801 THROUGH 810, OAKLAND COUNTY RECORDS, SOUTH 48 DEGREES 03 MINUTES 08 SECONDS WEST, 580.14 FEET TO THE CENTERLINE OF UNION LAKE ROAD, THENCE ALONG THE ARC OF A CURVE TO THE RIGHT, RADIUS 1432.69 FEET, CENTRAL ANGLE 12 DEGREES 18 MINUTES 04 SECONDS, (THE CHORD OF SAID CURVE BEARS NORTH 42 DEGREES 30 MINUTES 07 SECONDS WEST, 307.00 FEET) AND HAVING AN ARC DISTANCE OF 307.58 FEET, THENCE CONTINUING ALONG SAID CENTERLINE THE FOLLOWING TWO COURSES, NORTH 36 DEGREES 21 MINUTES 05 SECONDS WEST, 21.54 FEET AND NORTH 36 DEGREES 44 MINUTES 42 SECONDS WEST, 488.27 FEET, THENCE NORTH 21 DEGREES 07 MINUTES 22 SECONDS EAST, 307.10 FEET, THENCE SOUTH 88 DEGREES 32 MINUTES 43 SECONDS EAST, 812.20 FEET TO THE POINT OF BEGINNING OF THE PARCEL, HEREIN DESCRIBED, CONTAINING 580,140 GROSS SQUARE FEET OR 13.32 GROSS ACRES OF LAND, MORE OR LESS, ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND/OR ANY OTHER GOVERNMENTAL UNIT IN ANY PART OF UNION LAKE ROAD TAKEN, UNDER OR DEEDED FOR STREET, ROAD, HIGHWAY OR PUBLIC UTILITY PURPOSES, ALSO BEING SUBJECT TO ANY OTHER EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD, SIDWELL NOS.: 12-36-177-003, 12-36-177-002.

GENERAL NOTES

- THE CONTRACTOR SHALL CONTACT THE TOWNSHIP ENGINEER AT (248) 334-9901 48 HOURS PRIOR TO BEGINNING OF CONSTRUCTION. THE CONTRACTOR SHALL KEEP THE INSPECTOR APPRAISED OF THE NEED FOR INSPECTION ON A DAY TO DAY BASIS. LACKING OF SCHEDULE COORDINATION WITH THE INSPECTOR, THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE TOWNSHIP ENGINEER PRIOR TO RECOMMENDING WORK. 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.
- THE DEVELOPER SHALL CONTACT THE TOWNSHIP PLANNING DEPARTMENT AT (248) 698-3300 TO SCHEDULE A PRE-CONSTRUCTION MEETING. THE DEVELOPER'S PRIME SITE CONTRACTOR SHALL ATTEND. A COPY OF ALL PERMITS MUST BE SUBMITTED TO THE PLANNING DEPARTMENT PRIOR TO SCHEDULING THE MEETING.
- ALL CONSTRUCTION MUST CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS ADOPTED BY WHITE LAKE TOWNSHIP.
- CONTRACTOR SHALL CONTACT MISS DIG AT 1-800-482-7171, 72 HOURS IN ADVANCE OF CONSTRUCTION, FOR EXISTING UNDERGROUND UTILITY LOCATIONS.
- ALL SOIL EROSION AND SILTATION MUST BE CONTROLLED AND CONTAINED ON-SITE.
- ALL EXCAVATION, INCLUDING ALL UTILITIES AND LEADS, UNDER OR WITHIN 1 ON 1 INFLUENCE OF ANY PAVEMENT (INCLUDING SIDEWALKS), EXISTING OR PROPOSED, OR WHERE SAND BACKFILL IS CALLED FOR ON THE PLAN, SHALL BE BACKFILLED AND COMPACTED WITH GRANULAR MATERIAL (SAND) MDOT CLASS II TO 95 PERCENT MAXIMUM UNIT DENSITY (ALL OTHERS 90 PERCENT).
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES AND FACILITIES. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT THE PROPOSED UTILITY CROSSINGS PRIOR TO THE START OF UNDERGROUND CONSTRUCTION. ANY CONFLICTS WITH UTILITIES SHALL BE IMMEDIATELY REPORTED TO THE PROJECT ENGINEER.
- WHERE TWO UTILITIES CROSS, INCLUDING SANITARY SEWER LEADS, PROVIDE POROUS GRADE "B" BACKFILL MATERIAL COMPACTED TO THE UNDERSIDE OF THE HIGHER UTILITY OR AS SPECIFIED ON THE DETAIL SHEET.
- DUST CONTROL SHALL BE MAINTAINED AT ALL TIMES.
- ANY MUD TRACKED ONTO UNION LAKE ROAD SHALL BE REMOVED DAILY.
- IF DEWATERING IS DETERMINED TO BE REQUIRED, IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO IDENTIFY THE AREA TO BE DEWATERED, SUBMIT A DEWATERING PLAN TO THE WHITE LAKE TOWNSHIP ENGINEERING DIVISION FOR REVIEW, TO MONITOR AND TO DETERMINE THAT THERE WILL NOT BE ANY IMPACT TO ANY ADJOINING OR OFFSITE PROPERTIES DEWATERING PROCEDURES SHALL BE IN COMPLIANCE WITH WHITE LAKE TOWNSHIP.
- A ROAD COMMISSION FOR OAKLAND COUNTY RIGHT-OF-WAY PERMIT IS REQUIRED FOR ANY WORK WITHIN THE UNION LAKE ROAD RIGHTS-OF-WAY (OR ANY PUBLIC ROAD RIGHT-OF-WAY) AND/OR ANY TOWNSHIP EASEMENT.
- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS, INVERTS AND GRADES PRIOR TO THE START OF ANY WORK.
- ALL PAVEMENT MARKINGS, TRAFFIC CONTROL SIGNS, AND PARKING SIGNS SHALL COMPLY WITH THE DESIGN AND PLACEMENT REQUIREMENTS OF THE 2011 MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- WHITE LAKE TOWNSHIP HAS NO RESPONSIBILITY TO IMPROVE OR MAINTAIN THE PRIVATE STREETS CONTAINED WITHIN OR PRIVATE STREETS PROVIDING ACCESS TO THE PROPERTY DESCRIBED IN THE PLAN.
- IN ORDER TO VERIFY COMPLIANCE WITH APPROVED PLANS, FULL-TIME CONSTRUCTION OBSERVATION WILL GENERALLY BE REQUIRED DURING ALL PHASES OF UNDERGROUND SITE CONSTRUCTION INCLUDING INSTALLATION OF SANITARY SEWER, STORM SEWERS, DRAINS, WATER MAINS AND APPURTENANCES AS WELL AS PRIVATE STREET CURBING AND PAVING CONSTRUCTION. INTERMITTENT OBSERVATIONS WILL BE MADE FOR SITE GRADING, PARKING LOT CURBING AND PAVING, RETAINING WALL CONSTRUCTION AND OTHER SURFACE ACTIVITY.

LAKE POINTE

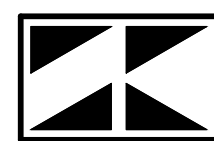
Quantity Summary

SANITARY SEWER		QUANTITY
ITEM		
1 6" PVC SDR 23.5 HOUSE LEAD		1,550 L.F.
2 8" PVC TRUSS SANITARY SEWER		1,387 L.F.
3 4" DIA. MANHOLE		10 EA.
WATER MAIN		QUANTITY
ITEM		
1 8" WATER MAIN D.I. CL54		2,216 L.F.
2 HYDRANT, VALVE & BOX		7 EA.
3 8" G.V.&W.		3 EA.
4 8"x12" TAPPING SLEEVE, VALVE & WELL		2 EA.
5 1" WATER SERVICE		1,101 L.F.
STORM SEWER		QUANTITY
ITEM		
1 12" C-76 CL 4		1,886 L.F.
2 15" C-76 CL 4		611 L.F.
3 18" C-76 CL 4		592 L.F.
4 21" C-76 CL 4		542 L.F.
5 24" C-76 CL 4		47 L.F.
6 2" DIA. INLET		9 EA.
7 4" DIA. CATCH BASIN		21 EA.
8 6" DIA. CATCH BASIN		1 EA.
9 4" DIA. MANHOLE		5 EA.
10 6" DIA. OVERFLOW MANHOLE		1 EA.
11 24" CONC. END SECTION W/ RIP RAP		1 EA.
12 6" DIA. CONTECH CS-6		1 EA.
13 36" STANDPIPE		1 EA.
PAVING		QUANTITY
ITEM		
1 INTERNAL ASPH. PAVEMENT (4" ON 10")		5,222 S.Y.
2 R.C.O.C. ROW ASPHALT PAVEMENT		259 S.Y.
3 CONCRETE SIDEWALK		26,779 S.F.
4 THICKENED EDGE CONCRETE WALK		537 L.F.
5 24" MOUNTABLE CONC. & STANDARD GUTTER		2,922 L.F.
6 F4 CONC. CURB& GUTTER		396 L.F.
7 B2 ROLL CURB WITH GUTTER		121 L.F.

ESTIMATED QUANTITIES ARE FOR REFERENCE ONLY. CONTRACTOR SHALL DETERMINE THE QUANTITIES OF WORK REQUIRED TO COMPLETE THE PROJECT.



SCALE (IN FEET)
Scale: 1 inch = 100 ft.



SEIBER, KEAST ENGINEERING, L.L.C.

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MICHIGAN • 48167
PHONE: 248.308.3331

ARCHITECTURAL PLANS PROVIDED BY:
ALEXANDER V. BOGAERTS AND ASSOCIATES, P.C.
2445 FRANKLIN ROAD
BLOOMFIELD HILLS, MICHIGAN 48302
PHONE: 248.334.5000

LANDSCAPE PLANS PROVIDED BY:
FELINO PASCUAL & ASSOCIATES
LANDSCAPE ARCHITECTURE
24333 ORCHARD LAKE ROAD, SUITE G
FARMINGTON, MICHIGAN 48336
PHONE: 248.557.5588

SURVEY PROVIDED BY:
ALPINE ENGINEERING, INC.
46892 WEST ROAD, SUITE 109
NOVI, MICHIGAN 48377
PHONE: 248.926.3765

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- COVER SHEET
- COMPOSITE UTILITY AND OVERALL SITE PLAN
- EXISTING CONDITIONS AND DEMOLITION PLAN
- GRADING & S.E.S.C. PLAN
- GRADING & S.E.S.C. PLAN
- GRADING & S.E.S.C. PLAN
- PROPOSED CONTOUR PLAN
- DETAILED GRADING PLAN FOR ADA PATHWAYS
- ROAD AND SANITARY SEWER PLAN
- ROAD AND SANITARY SEWER PROFILES
- WATERMAIN PLAN
- STORM SEWER PLAN
- STORM SEWER PROFILES
- STORM SEWER PROFILES
- CONTECH CS-6 DETAILS
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- DRAINAGE DISTRIBUTION PLAN & STORM SEWER CALCULATIONS
- APPROACH PLAN
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SANITARY SEWER STANDARD DETAILS
WATER MAIN STANDARD DETAILS
STORM SEWER STANDARD DETAILS

OAKLAND COUNTY
SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

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- LS-2 GENERAL LANDSCAPE PLANTING DETAIL
- LS-3 PLANT MATERIAL LIST AND PLANT DETAILS
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- LS-7 POOL PERGOLA/TRELLIS ELEVATIONS & DETAILS

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- A102 TYPICAL UNIT ELEVATIONS
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- A201 BUILDING ELEVATIONS
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BENCHMARKS

- BM#1 - CONCRETE MONUMENT AT SOUTHWEST CORNER OF PROPERTY.
ELEVATION: 948.29 NAVD88
- BM#2 - TELECOM MANHOLE COVER AT NORTHEAST CORNER OF CARPATHIAN DRIVE AND UNION LAKE ROAD.
ELEVATION: 984.75 NAVD88
- BM#3 - TELECOM MANHOLE COVER ±485' WSET OF CENTER OF SECTION 36 ALONG THE SOUTH PROPERTY LINE.
ELEVATION: 962.72 NAVD88
- NGS PID D16198
ELEVATION 966.63 NAVD88

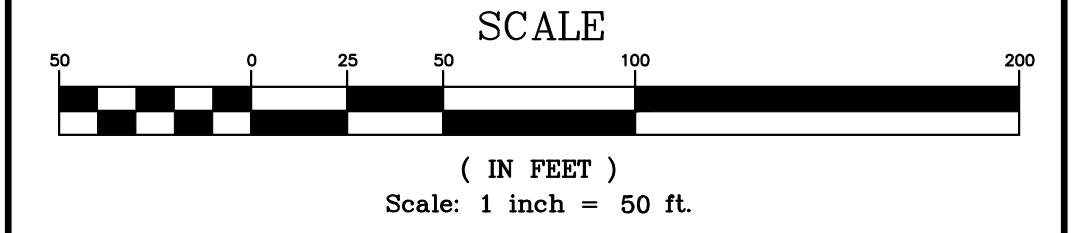
REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

ENGINEER'S SEAL



DATE: 04-08-2020 DESIGNED BY: A.A. CHECKED BY: P.K. JOB NUMBER: 18-039 DRAWING FILE: 19089CY.dwg



- ### NOTES
- ON-SITE SANITARY SEWERS, AND WATER MAINS SHALL BE CENTERED IN A 20-FOOT WIDE EASEMENT.
 - ALL OFF-SITE SANITARY AND WATER MAIN IMPROVEMENTS WILL BECOME PUBLIC PROPERTY.
 - CRITICAL STORM STRUCTURES WILL BE FITTED WITH TRAPS.
 - PERIODIC MAINTENANCE OF THE STORM WATER DETENTION BASIN WILL BE REQUIRED.
 - PROVISIONS PURSUANT TO OAKLAND COUNTY DRAIN COMMISSION EROSION CONTROL MANUAL WILL BE UNDERTAKEN INCLUDING, BUT NOT LIMITED TO, SILT FENCE AND INLET FILTERS.
 - "NO PARKING - FIRE LANE" SIGNAGE SHALL BE INSTALLED PROHIBITING PARKING ON ONE SIDE OF THE STREET.
 - PROPOSED GRADES WILL MATCH EXISTING ELEVATIONS AT THE PROPERTY LINE UNLESS RETAINING WALLS ARE PROVIDED OR GRADING EASEMENTS OBTAINED.
 - A PERMIT FROM THE ROAD COMMISSION FOR OAKLAND COUNTY WILL BE REQUIRED FOR ALL WORK IN THE UNION LAKE ROAD RIGHT-OF-WAY.
 - ALL WATER MAIN SHALL BE CLASS 54 DUCTILE IRON. ALL GATE VALVES SHALL BE PLACED IN GATE WELLS.
 - ALL STRUCTURES EXCEPT FOR INLETS WHICH CONNECT TO CATCH BASINS WILL BE A MINIMUM OF FOUR FEET IN DIAMETER.
 - THE DEVELOPMENT SHALL BE CONSTRUCTED AS A SINGLE PHASE.
 - THE CONSTRUCTION TYPE OF THE PROPOSED BUILDINGS IS WOOD CONSTRUCTION WITH BRICK VENEER AND SLAB ON GRADE.
 - THE FRONT PORCH LIGHTS AND THE COACH LIGHTS WILL UTILIZE 75 WATT BULBS.

PARKING CALCULATIONS

SPACES REQUIRED:

- 2 SPACES FOR EACH UNIT, PLUS 1/4 SPACE FOR EACH BEDROOM.
- 2 SPACES FOR EACH UNIT = 138 SPACES
- 138 BEDROOMS/4 = 34.5 SPACES
- TOTAL SPACES REQUIRED = 172.5

SPACES PROVIDED:

- 2 SPACES PER GARAGE = 138
- 2 SPACES PER DRIVEWAY = 138
- ADDITIONAL PARKING SPACES = 31
- TOTAL SPACES PROVIDED = 307

Accessible Parking Spaces
 Total Parking Spaces (Excluding Garages) = 169
 Accessible Spaces Per 2010 ADA (208.2.3 Residential Facilities)
 Total Required (Minimum 2% of the tot) = 4
 Total Provided
 Standard Accessible Spaces = 2
 Van Accessible Spaces = 2

- ### SITE DATA
- EXISTING ZONING: R1-C/SINGLE FAMILY RESIDENTIAL AND LB/LOCAL BUSINESS
 - SITE AREA: 13.32 ACRES GROSS, 12.76 ACRES NET
 - PROPOSED LAND USE: ATTACHED SINGLE FAMILY DEVELOPMENT APARTMENTS- MULTI FAMILY
 - ALL PROPOSED UNITS ARE 2-BEDROOMS
 - DENSITY: 69 UNITS/12.76 ACRES = 5.41 UNITS/ACRE
 - PROPERTY LINE SETBACK = FRONT 40 FEET
SIDE 25 FEET
REAR 25 FEET
 - INTERNAL SETBACK = 30 FEET FROM BACK OF CURB.
 - SIDE YARD SETBACK: MIN. 20 FEET BETWEEN BUILDINGS
 - DWELLING UNITS: 69 - (2 BEDROOM UNITS)
 - TRASH DISPOSAL SHALL BE BY CURB SIDE PICKUP.
 - LIGHTING SHALL BE PROVIDED BY PHOTOCELL OPERATED LIGHTS LOCATED ON THE FRONT OF EACH HOME.

WETLANDS

NO WETLANDS EXIST ON SITE.

FLOODPLAIN INFORMATION

THE SUBJECT PROPERTY LIES WITHIN A ZONE "X" FLOOD HAZARD AREA - "AREAS OF MINIMAL FLOODING", PER THE NATIONAL FLOOD INSURANCE PROGRAM, FLOOD INSURANCE RATE MAP, MAP NUMBER 26125C0477F, MAP EFFECTIVE SEPTEMBER 29, 2006.

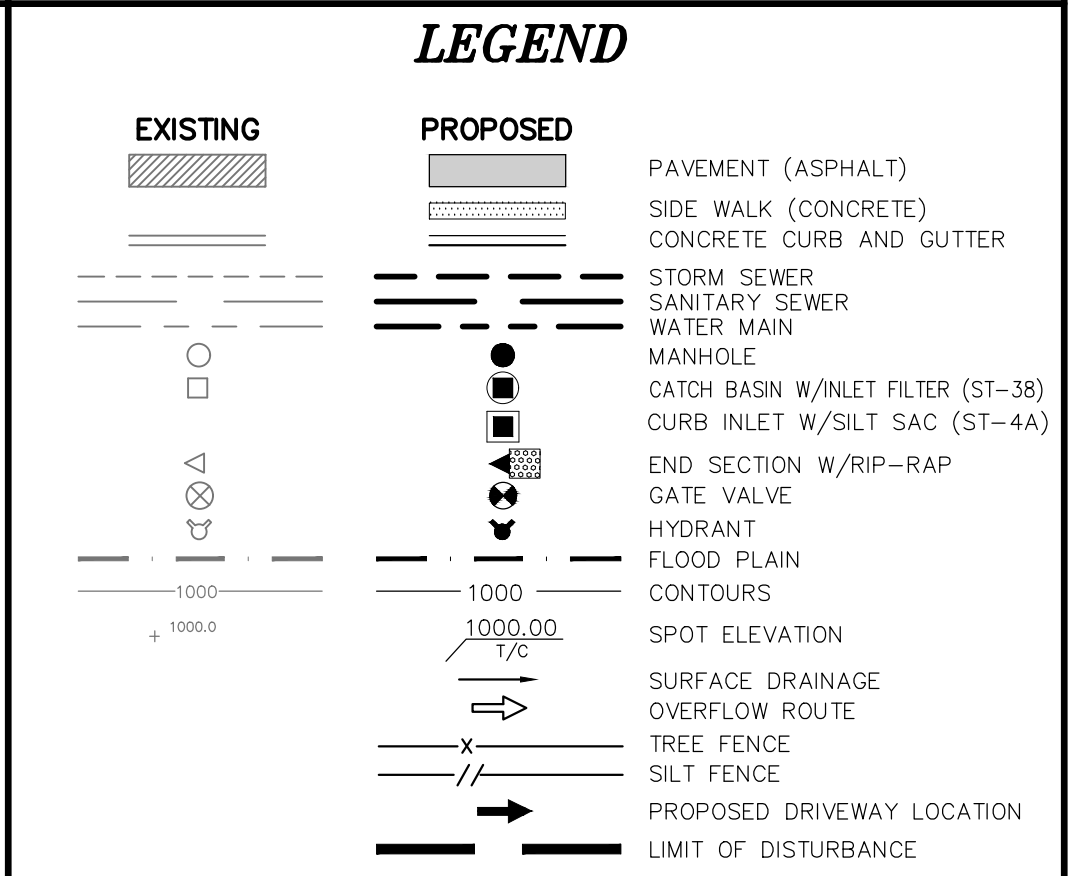
DENSITY CALCULATION:

AREA OF RESIDENTIAL SITE = 13.32 Ac.
 AREA OF 60' R.O.W. = 0.56 Ac.
 DENSITY AREA = 13.32-0.56 = 12.76 Ac.
 AREA OF INTERNAL ROADS = 1.31 Ac.
 NET DENSITY AREA = 12.76-1.31 = 11.45 Ac.
 NET DENSITY AREA = 498,762 S.F.

IF RM-1 ZONING APPLIED:

FOR 2 BEDROOMS UNITS
 REQUIRED 6,000 S.F./UNIT
 DEDUCT 10,000 S.F. FOR FIRST UNIT

TOTAL ALLOWABLE UNITS =
 498,762 - 10,000 / 6,000 = 81
 TOTAL ALLOWABLE UNITS = 82 UNITS
 TOTAL UNITS PROVIDED = 69 UNITS
 (5.41 UNITS / ACRE)



LIST OF ALL REQUIRED STATE AND FEDERAL PERMITS

TYPE	AGENCY	STATUS
1. NPDES	MDEQ	NOT FILED
2. SANITARY SEWER	MDEQ	NOT FILED
3. WATER MAIN	MDEQ	NOT FILED

LOT COVERAGE:

GROSS AREA OF SITE = 13.32 Ac.
 BUILDING AREA = 3.05 Ac.
 PROPOSED LOT COVERAGE = 3.05 / 13.32 = 22.89%

OPEN SPACE

NET SITE AREA = 555,826 S.F.
 ROADS = 57,063 S.F.
 SIDEWALKS = 31,908 S.F.
 DRIVEWAYS = 24,358 S.F.
 BUILDINGS = 132,860 S.F.
 CLUBHOUSE & POOL = 132,860 S.F.
 LAWN AREA = 366,700 S.F. = 8.42 AC.

- ### PROPOSED IMPROVEMENTS
- MUNICIPAL SEWER TO BE PROVIDED BY CONSTRUCTING A GRAVITY SEWER. ALL ON-SITE GRAVITY SEWER SHALL BE 8-INCH DIAMETER.
 - WATER SUPPLY TO BE PROVIDED BY CONNECTING TO EXISTING 12" WATER MAINS ALONG UNION LAKE ROAD. ALL WATER MAIN SHALL BE 8-INCH DIAMETER UNLESS OTHERWISE NOTED.
 - ON-SITE STORM WATER DETENTION SHALL BE PROVIDED PER OAKLAND COUNTY DRAIN COMMISSIONER STANDARDS. ALL STORM DRAINAGE EASEMENTS SHALL BE A MINIMUM OF 20 FEET WIDE IF NECESSARY.
 - ROADWAYS SHALL BE 27' WD. (B-B) WITH CONC. CURB & GUTTER AND ASPHALT PAVEMENT. ALL ROADWAYS SHALL BE PRIVATE. ALL SIDEWALKS SHALL BE 5 FEET WIDE. UNLESS OTHERWISE NOTED, AND MEET ALL ADA REQUIREMENTS.
 - ALL ELECTRIC, CABLE T.V. AND TELEPHONE LINES SHALL BE LOCATED UNDERGROUND, AND SHALL BE PLACED WITHIN EASEMENTS DEDICATED FOR SUCH USE.

STORM STRUCTURE SCHEDULE

NO.	TYPE	SIZE (DIA)	SUMP DEPTH (feet)	FRAME AND COVER
1	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
2	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
3	MANHOLE	4	0	EJW 1040 Frame Type B Cover
4	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
5	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
6	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
7	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
8	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
9	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
10	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
11	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
12	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
13	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
14	INLET	2	0	EJW 1040 Frame Type N Cover
15	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
16	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
17	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
18	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
19	INLET	2	0	EJW 1040 Frame Type N Cover
20	CATCH BASIN	4	2	EJW 7045 Frame Type M1 Cover
20A	INLET	2	0	EJW 7045 Frame Type M1 Cover
21	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
22	MANHOLE	4	0	EJW 1040 Frame Type B Cover
23	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
24	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
25	CATCH BASIN	4	2	EJW 1040 Frame Type N Cover
26	MANHOLE	4	0	EJW 1040 Frame Type B Cover
27	INLET	2	0	EJW 1040 Frame Type N Cover
28	INLET	2	0	EJW 1040 Frame Type N Cover
29	CATCH BASIN	4	2	EJW 7065 Frame Type M1 Cover
30	INLET	2	0	EJW 7065 Frame Type M1 Cover
31	INLET	2	0	EJW 1040 Frame Type N Cover
32	INLET	2	0	EJW 1040 Frame Type N Cover
34C	MANHOLE	4	0	EJW 1040 Frame Type B Cover
34D	MANHOLE	4	0	EJW 1040 Frame Type B Cover
OMH	OVERFLOW MANHOLE	6	0	EJW 1040 Frame Type B Cover
SP	STAND PIPE	3		SEE DETAIL ON SHEET 15
CS	CONTECH	6		SEE DETAIL ON SHEET 14

LAKE POINTE SECTION 36, TOWN 3 NORTH, RANGE 8 EAST WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UTILITY WARNING
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

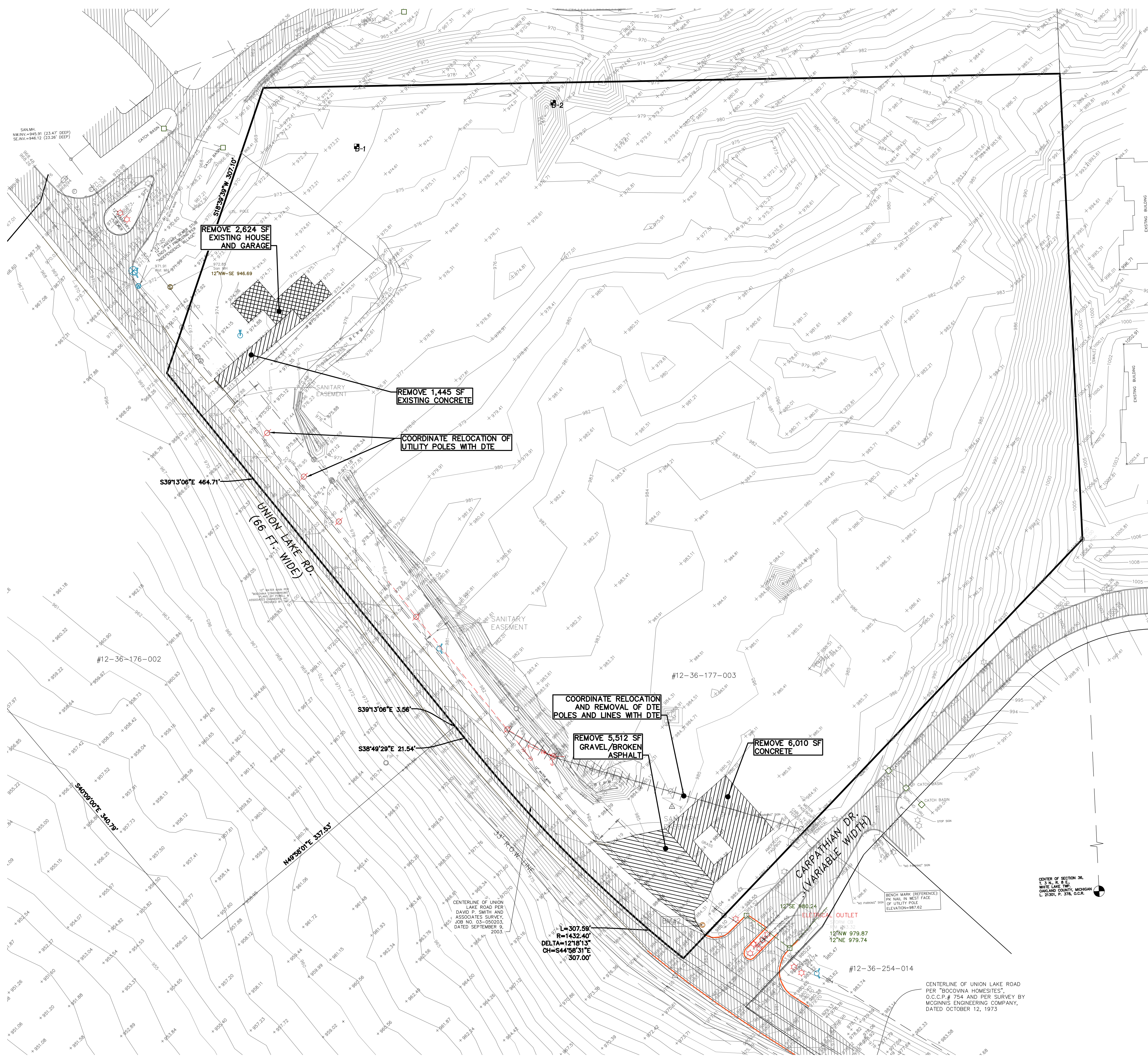
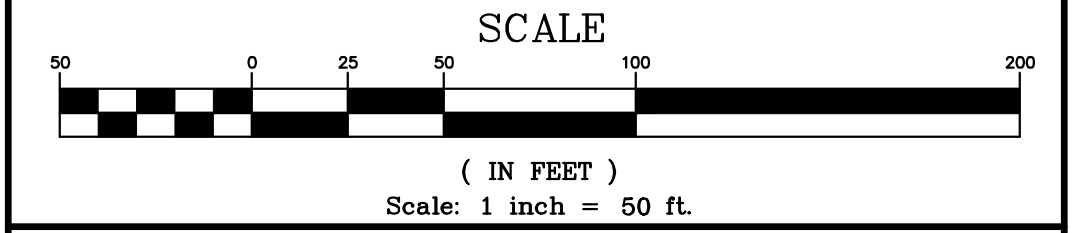
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

COMPOSITE UTILITY AND OVERALL SITE PLAN

DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.E. DRAWING FILE: 19039CUI.dwg

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET **2**



LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

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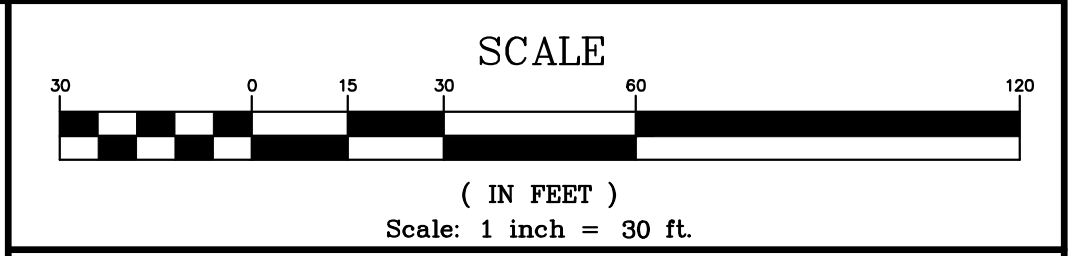
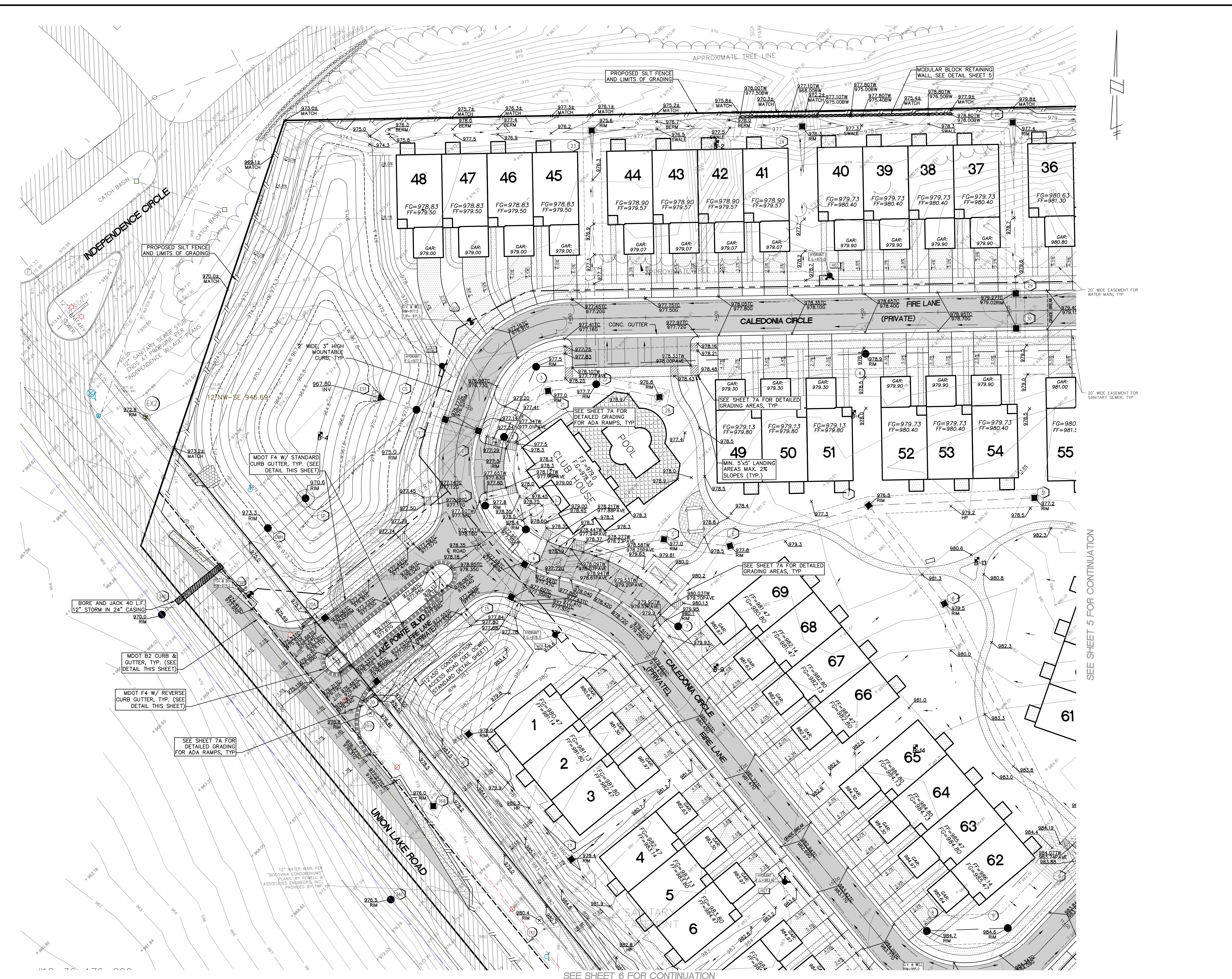
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.E. DRAWING FILE: 19039DM.dwg

EXISTING CONDITIONS AND DEMOLITION PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
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 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
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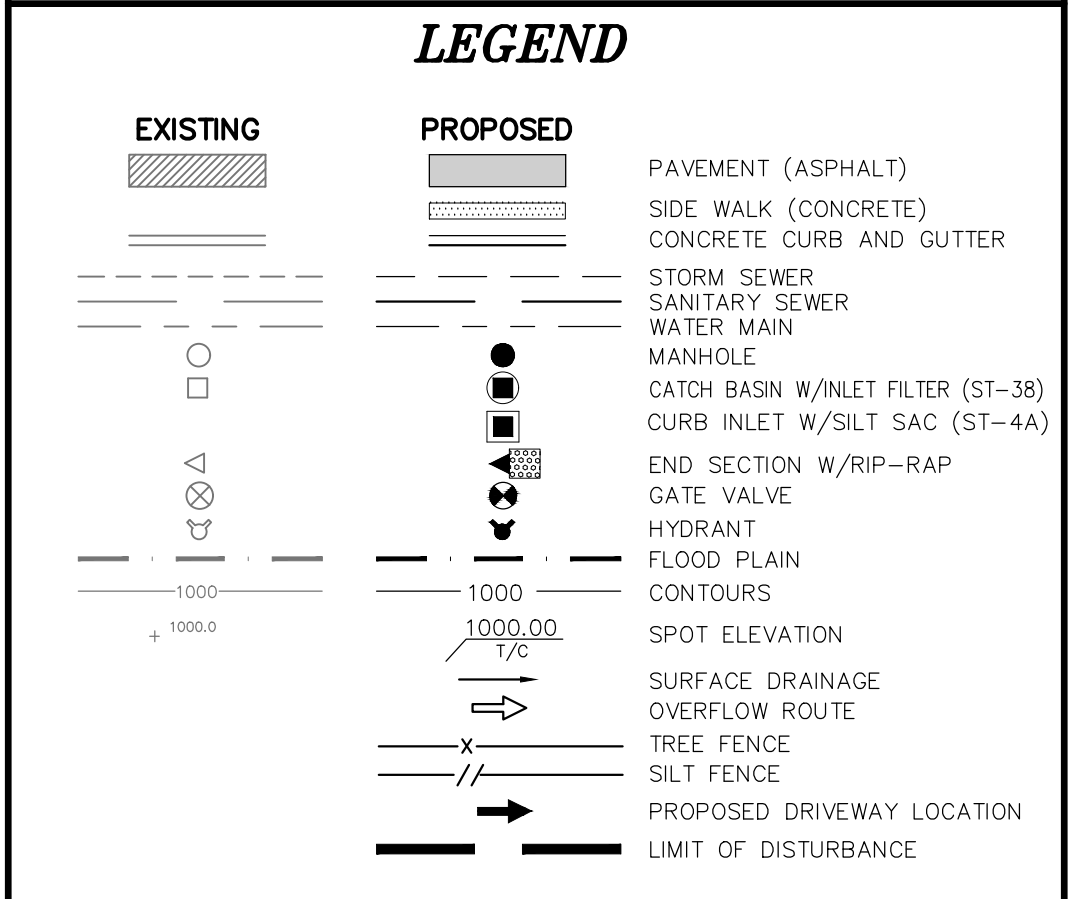
SHEET
3



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
 - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.

- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
 - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
 - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.

- PAVING NOTES**
- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
 - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
 - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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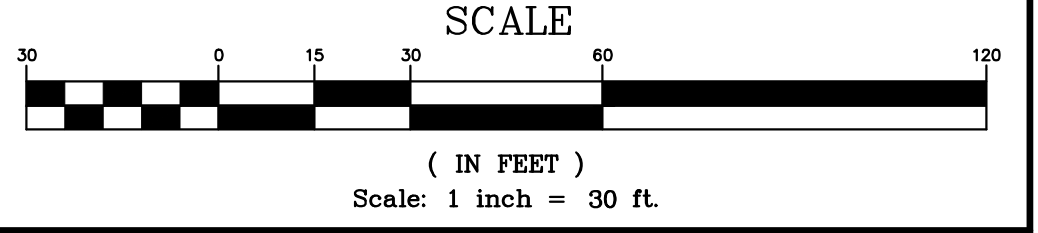
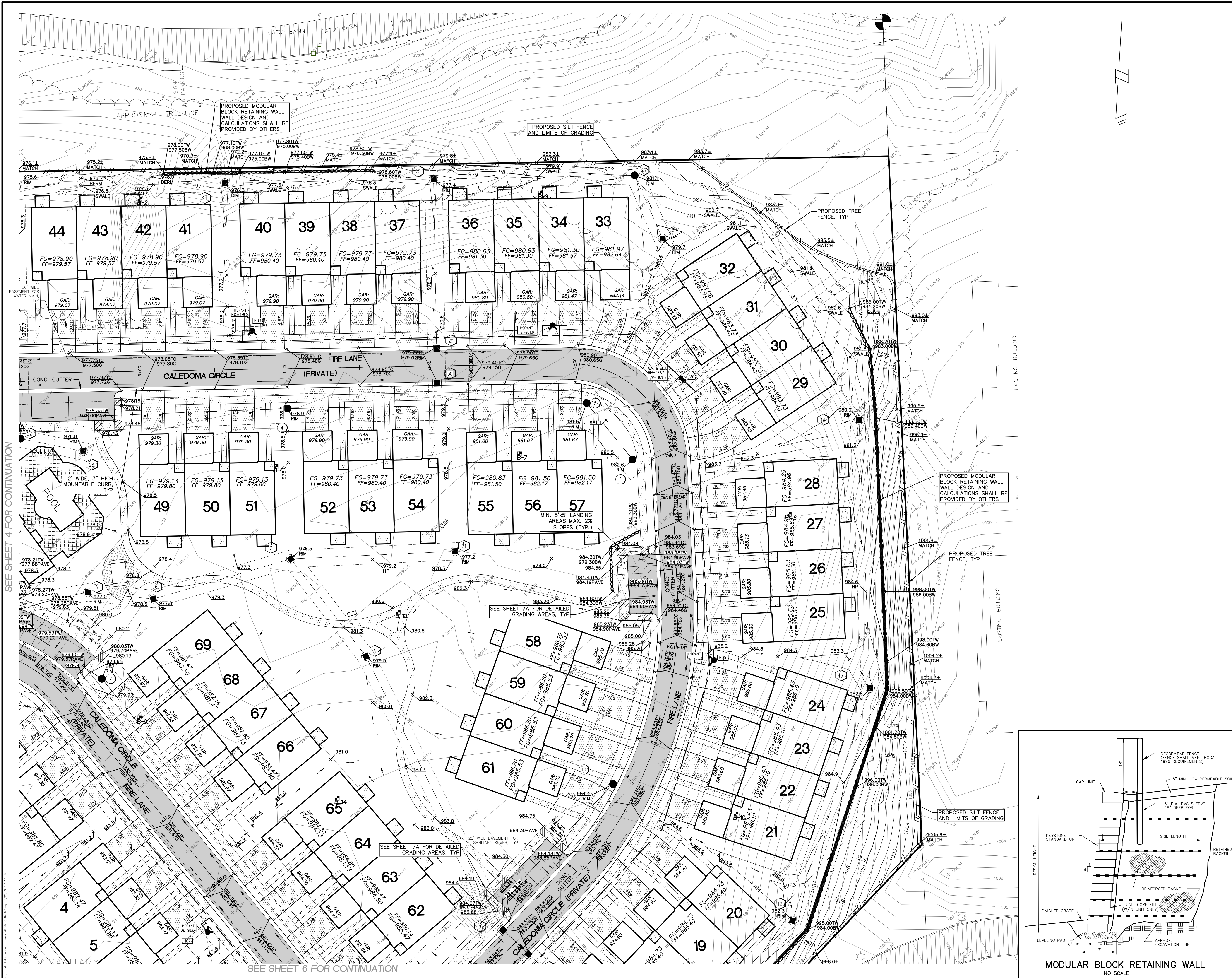
GRADING & S.E.S.C. PLAN

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PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 4

SEE SHEET 5 FOR CONTINUATION

SEE SHEET 6 FOR CONTINUATION



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		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
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		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
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		SILT FENCE
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LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

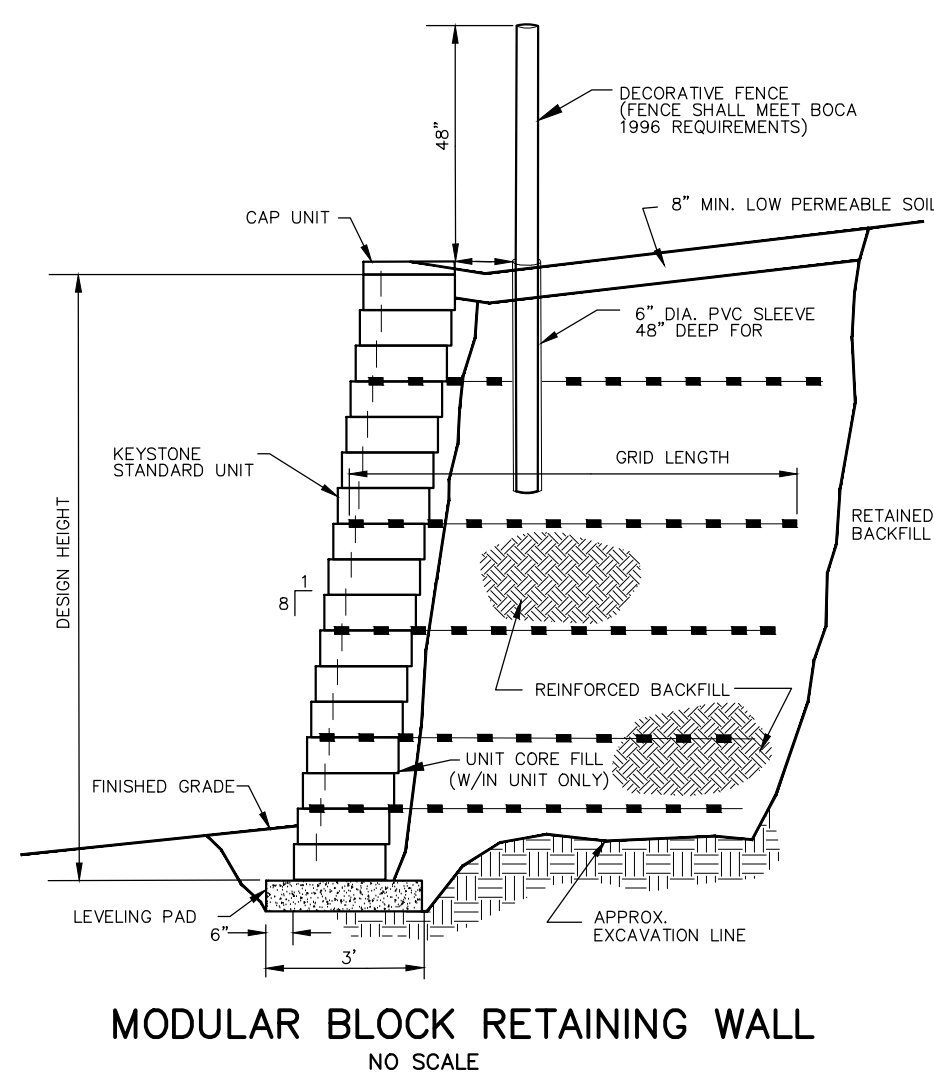
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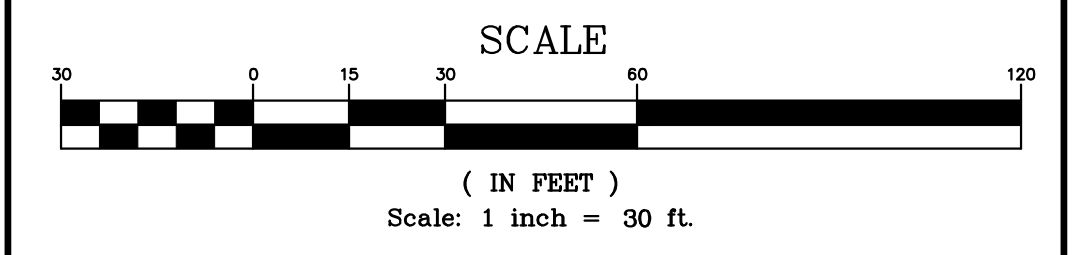
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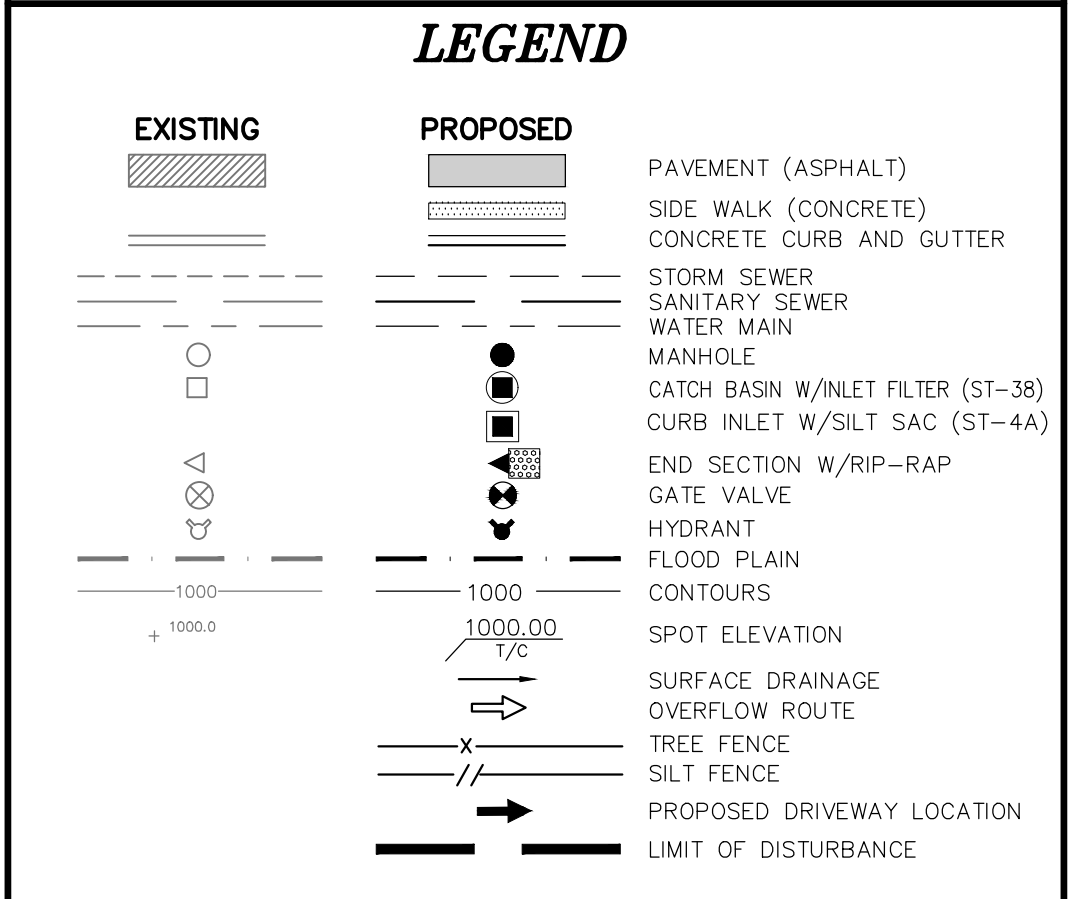
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DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg





- O.C.W.R.C. S.E.S.C. NOTES**
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 - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
 - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

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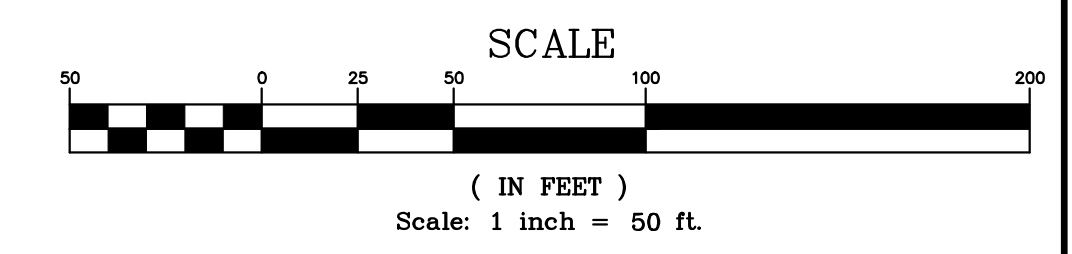
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GRADING & S.E.S.C. PLAN

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SHEET 6

PARCEL ACRES



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

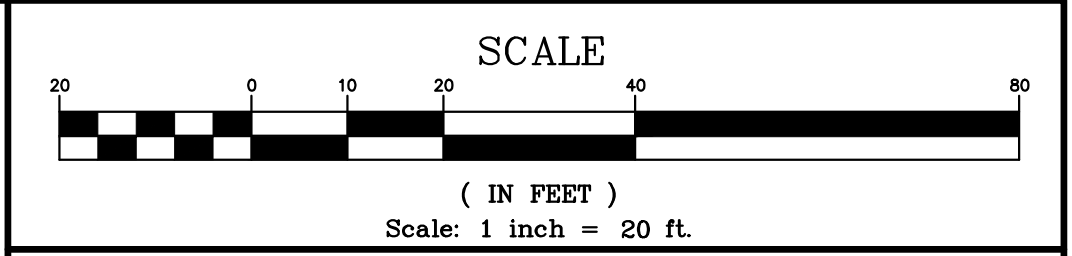
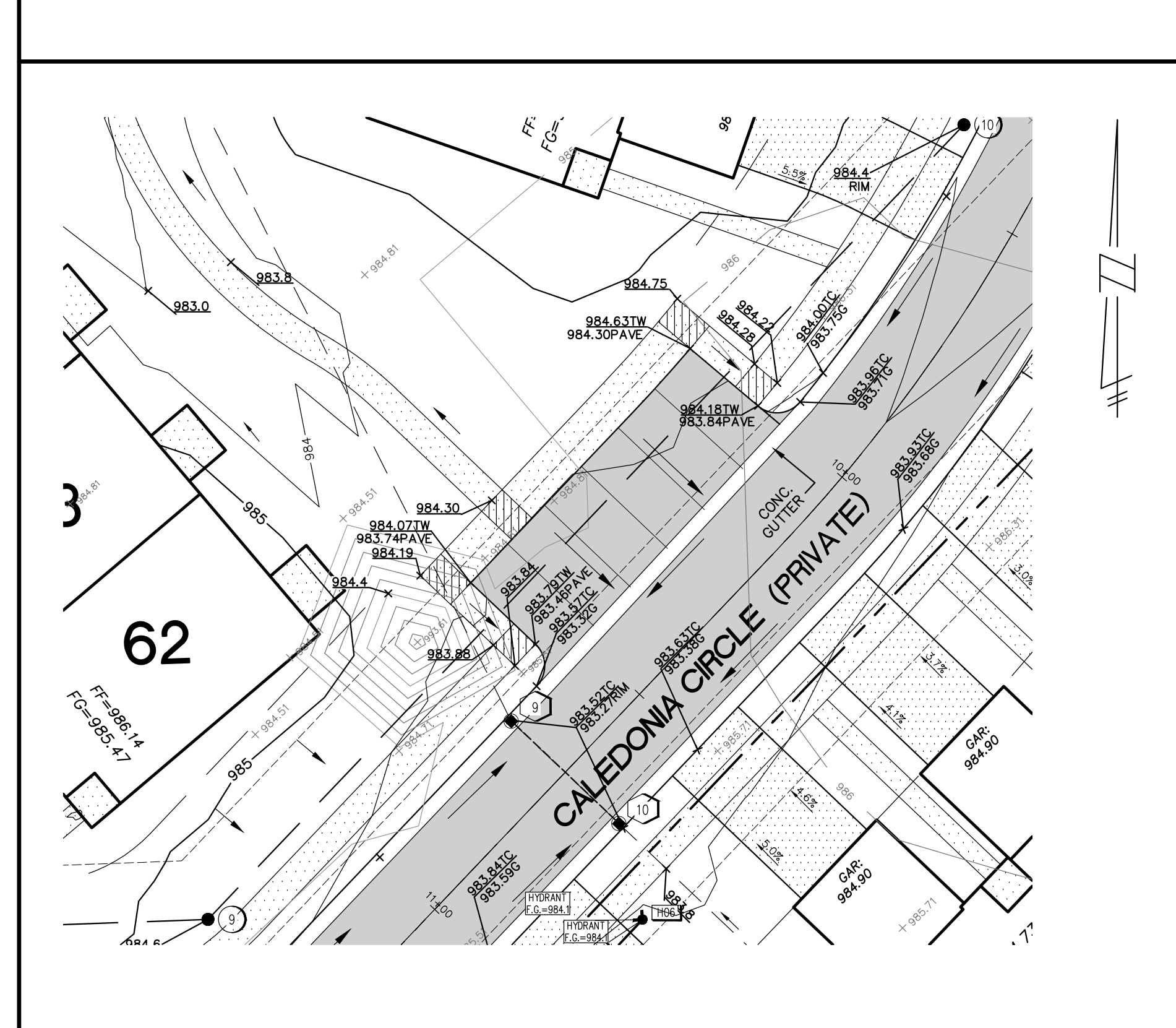
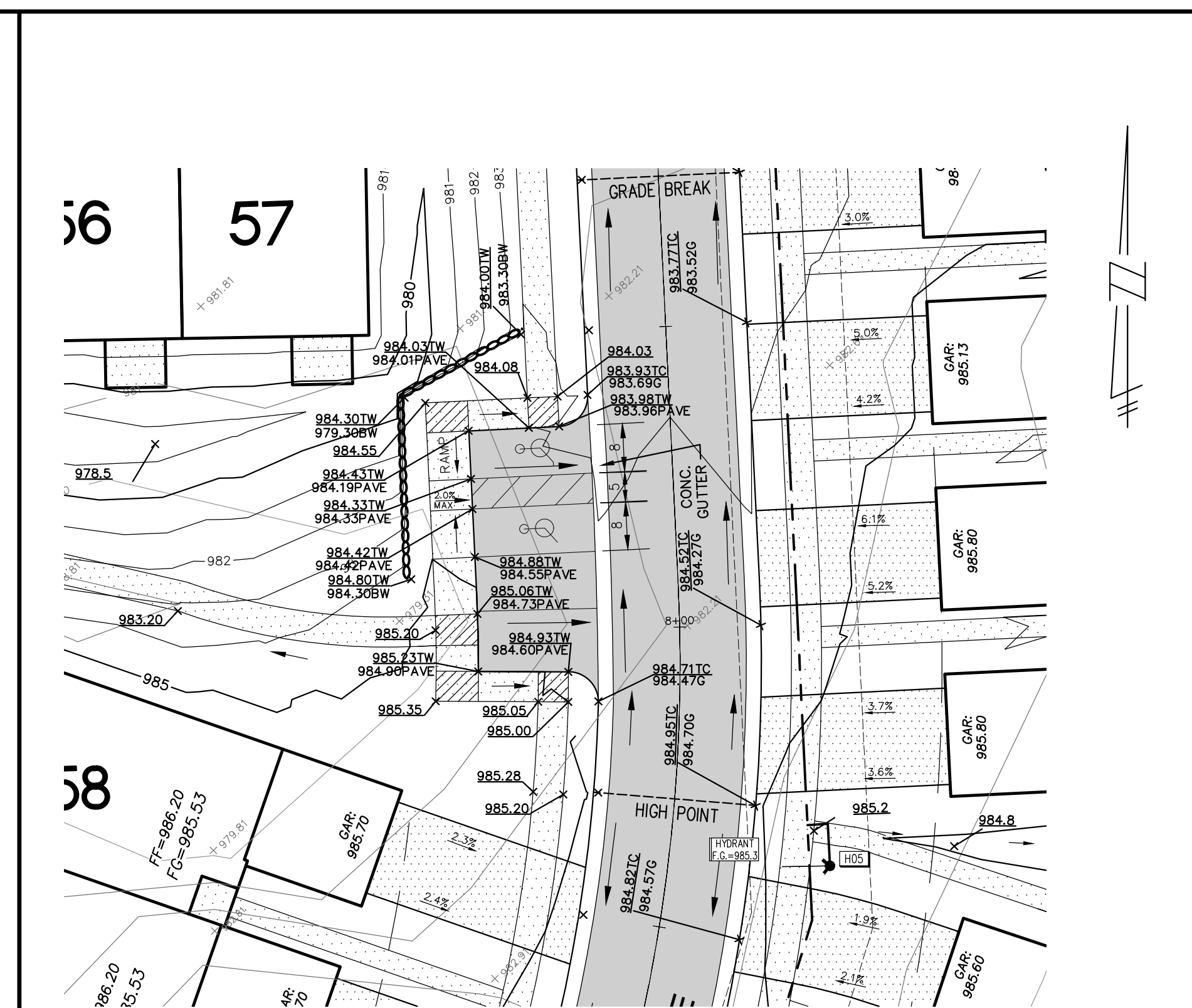
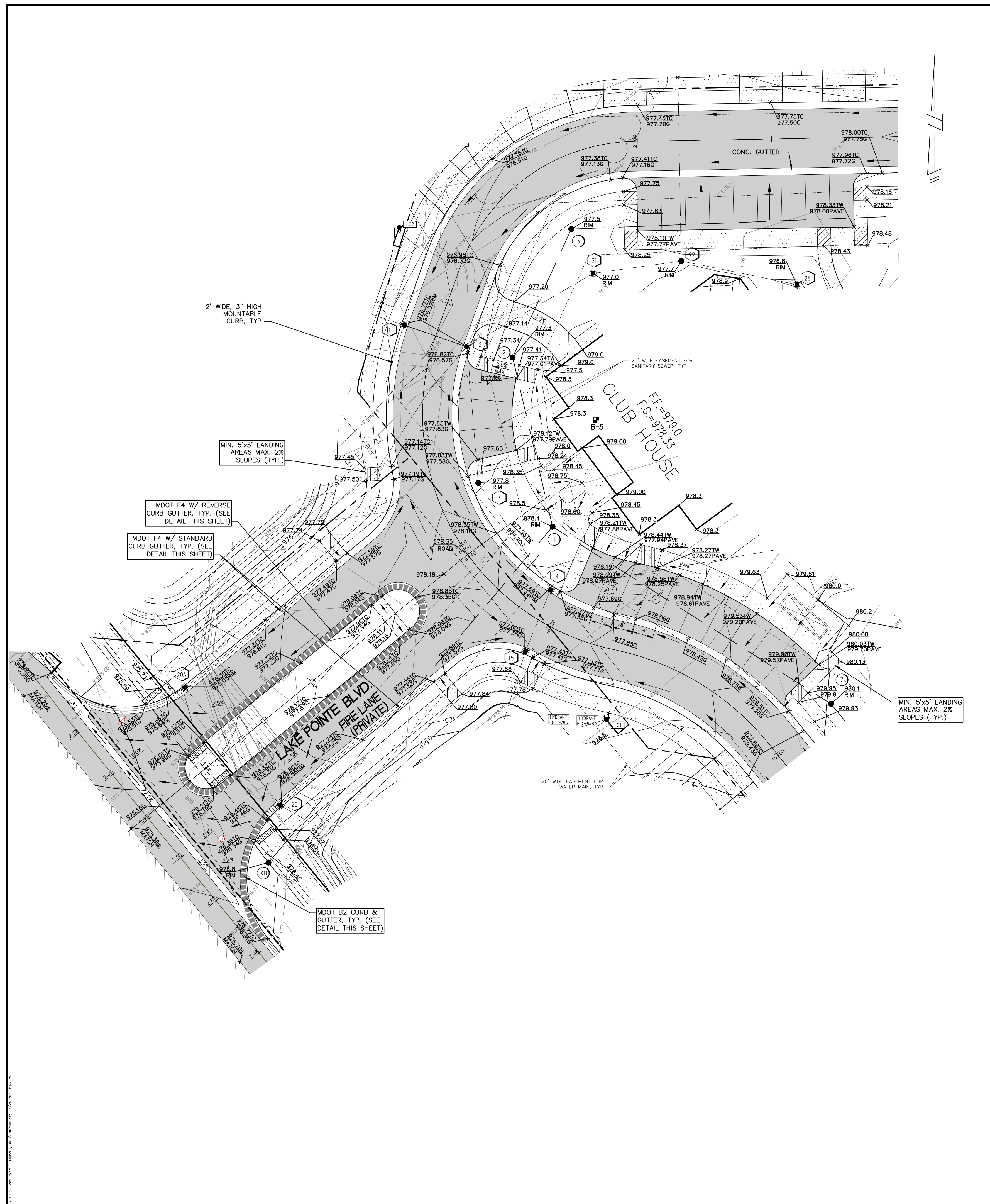
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039GR.dwg

PROPOSED CONTOUR PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 7



- O.C.W.R.C. S.E.S.C. NOTES**
- CONTRACTOR SHALL MAINTAIN ALL SOIL EROSION CONTROLS WEEKLY AND AFTER EVERY STORM EVENT.
 - SEE SHEET ND1 FOR SOIL EROSION CONTROL MAINTENANCE.
- GRADING NOTES**
- PROVIDE MINIMUM 2% SLOPE IN SIDE YARD AND REAR YARD SWALES.
 - MAINTAIN A MAXIMUM 1V:3H SLOPE FROM HOUSE TO SIDE YARD SWALES.
 - AFTER INITIAL EXAMINATION & GRADING OF THE RETENTION BASIN, SILT FENCE SHALL BE PLACED AROUND THE BASINS UNTIL PERMANENT VEGETATION IS ESTABLISHED.
- PAVING NOTES**
- SIDEWALKS AND RAMP CONSTRUCTION SHALL BE ACCORDANCE WITH ADA STANDARDS. (SEE SHEET ND1 FOR RAMP DETAILS)
 - SEE SHEET ND1 & 16 FOR ALL CURB AND PAVING DETAILS.
 - SEE UNION LAKE ROAD APPROACH PLAN NOTES ON SHEETS 16.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		1000.00
		1000.00
		T/C
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

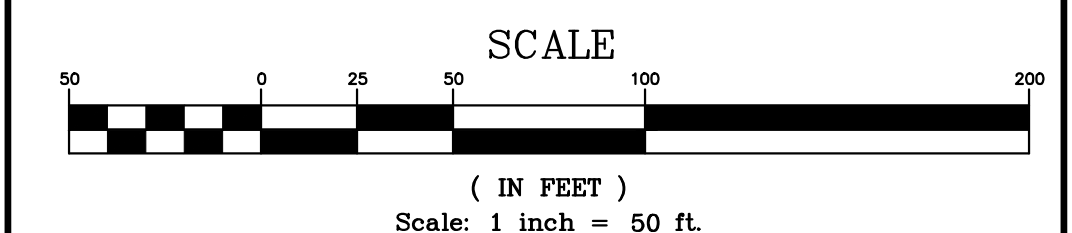
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039DG.dwg
DATE: 04-08-2020

DETAILED GRADING PLAN FOR ADA PATHWAYS

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 7A



SANITARY SEWER BASIS OF DESIGN
CONNECTION TO PROPOSED MANHOLE / 12-INCH PVC TRUSS
ON THE NORTHEAST SIDE OF UNION LAKE ROAD AT LAKE POINTE BLVD.

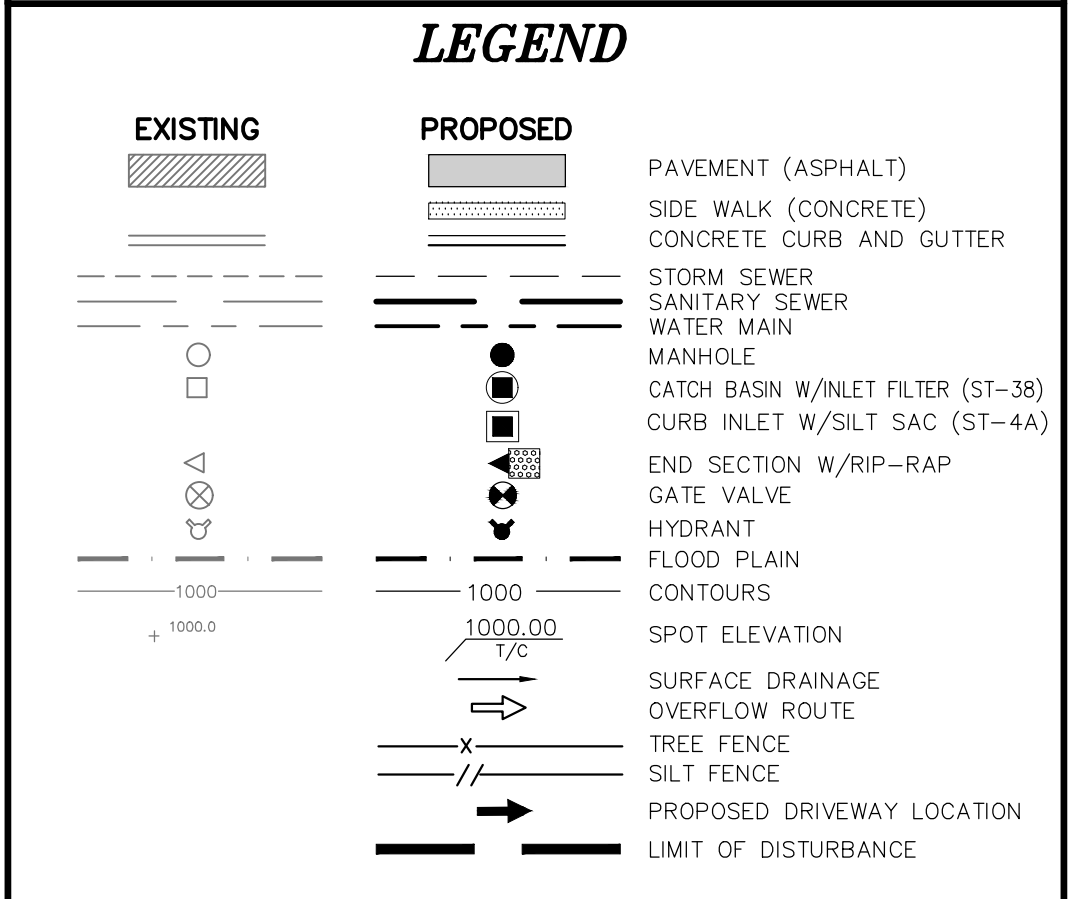
INITIAL DESIGN AND ULTIMATE

RESIDENTIAL EQUIVALENCY UNIT (REU) CALCULATION			
	Area (Ac)	Number of Units	REUs
MULTI-FAMILY	13.32	69	41.4
Health Club / Fitness Center w Showers &/or Pool			
	Area (SF)	Number of Fixtures	REUs
		5	6.5
			TOTAL 47.9

POPULATION	2.7 people/unit x 129.20 people	47.9 units
POPULATION DENSITY	129.20 people / 13.32 Acres	
	9.70 ppl / ac	
AVERAGE FLOW	129.20 people x 12,920 gal/day	100 gal/cap/day
	0.0200 cfs	
PEAK FACTOR	(18+SQRT(P/1000))/(4+SQRT(P/1000))	
	4.21 (28,400 > Pop > 500)	
PEAK FLOW	PEAK FACTOR X AVERAGE FLOW	
	0.0842 cfs	

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

- NOTES**
- ALL SANITARY SEWER SHALL BE PVC TRUSS PIPE OR APPROVED EQUIVALENT.
 - ALL SANITARY SEWER LEADS SHALL BE SDR 23.5 PVC PIPE.
 - ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 - SANITARY LEADS SHALL BE A MINIMUM OF 1% GRADE, A MAXIMUM OF 150 LF AND A MINIMUM 6" DIAMETER.
 - SANITARY LEADS SHALL BE BURIED AT LEAST 5 FEET DEEP WHERE UNDER THE INFLUENCE OF PAVEMENT.
 - ALL SANITARY MANHOLES SHALL BE 4' DIAMETER UNLESS OTHERWISE NOTED.



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

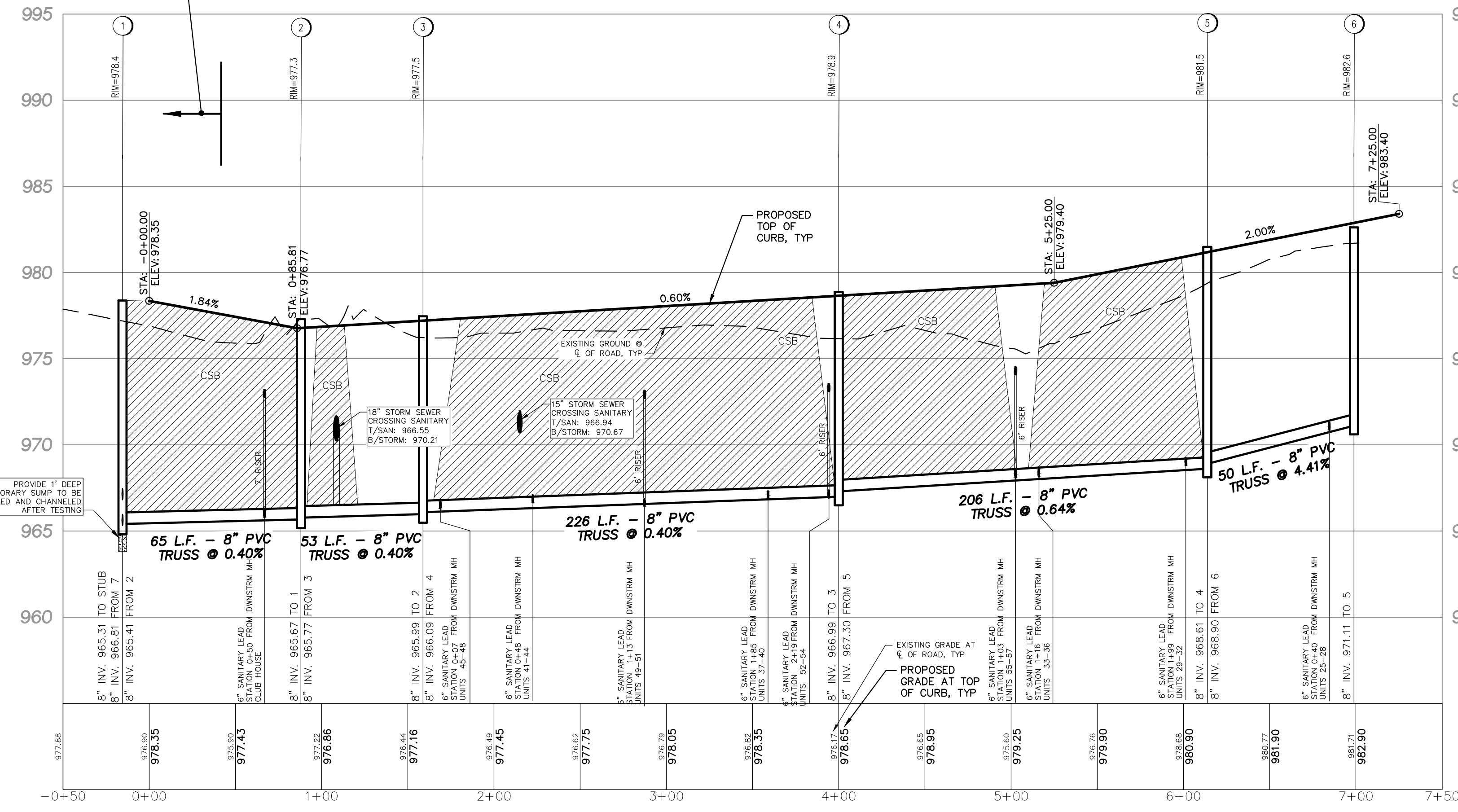
REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED. Know what's below. Call before you dig. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

ROAD AND SANITARY SEWER PLAN

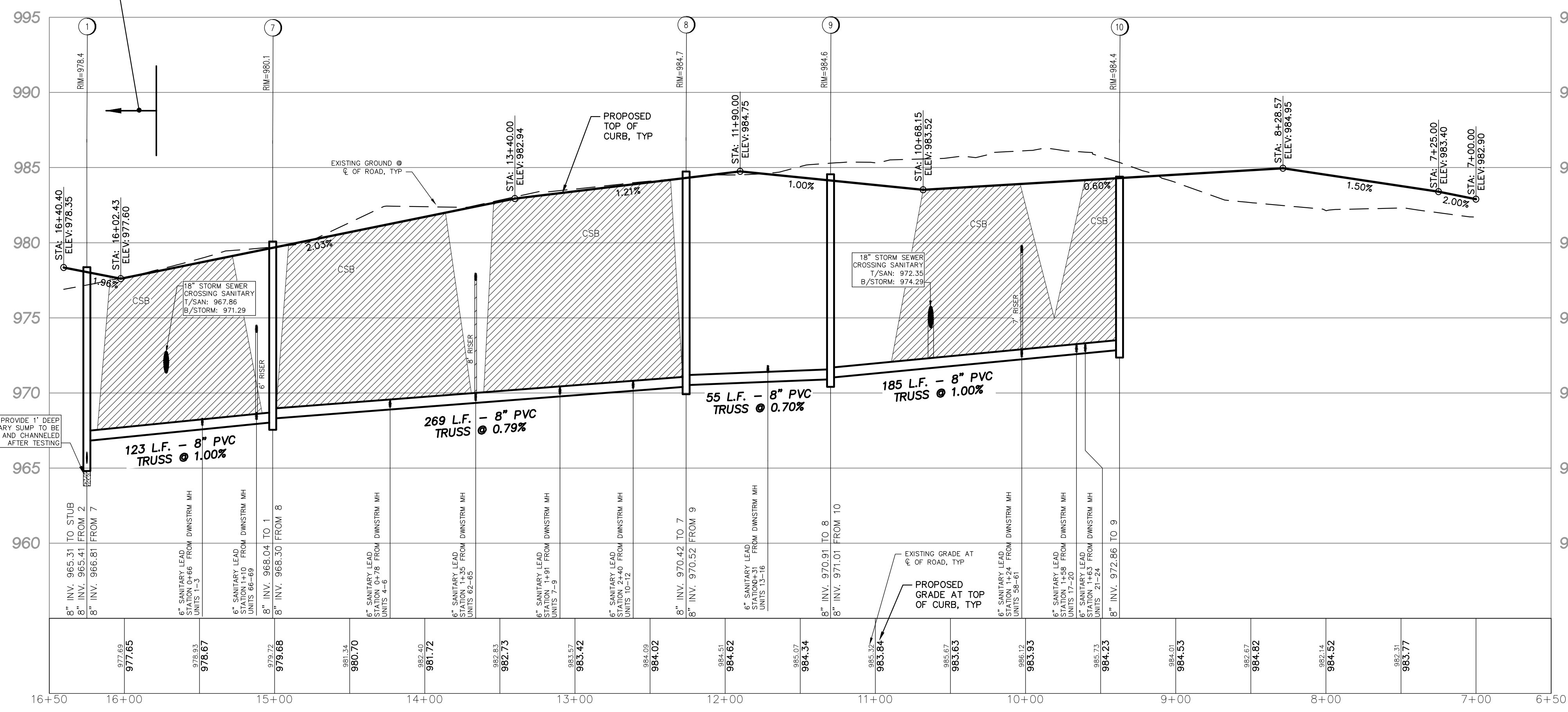
	SEIBER, KEAST ENGINEERING, L.L.C. CONSULTING ENGINEERS 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com	SHEET 8
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SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL

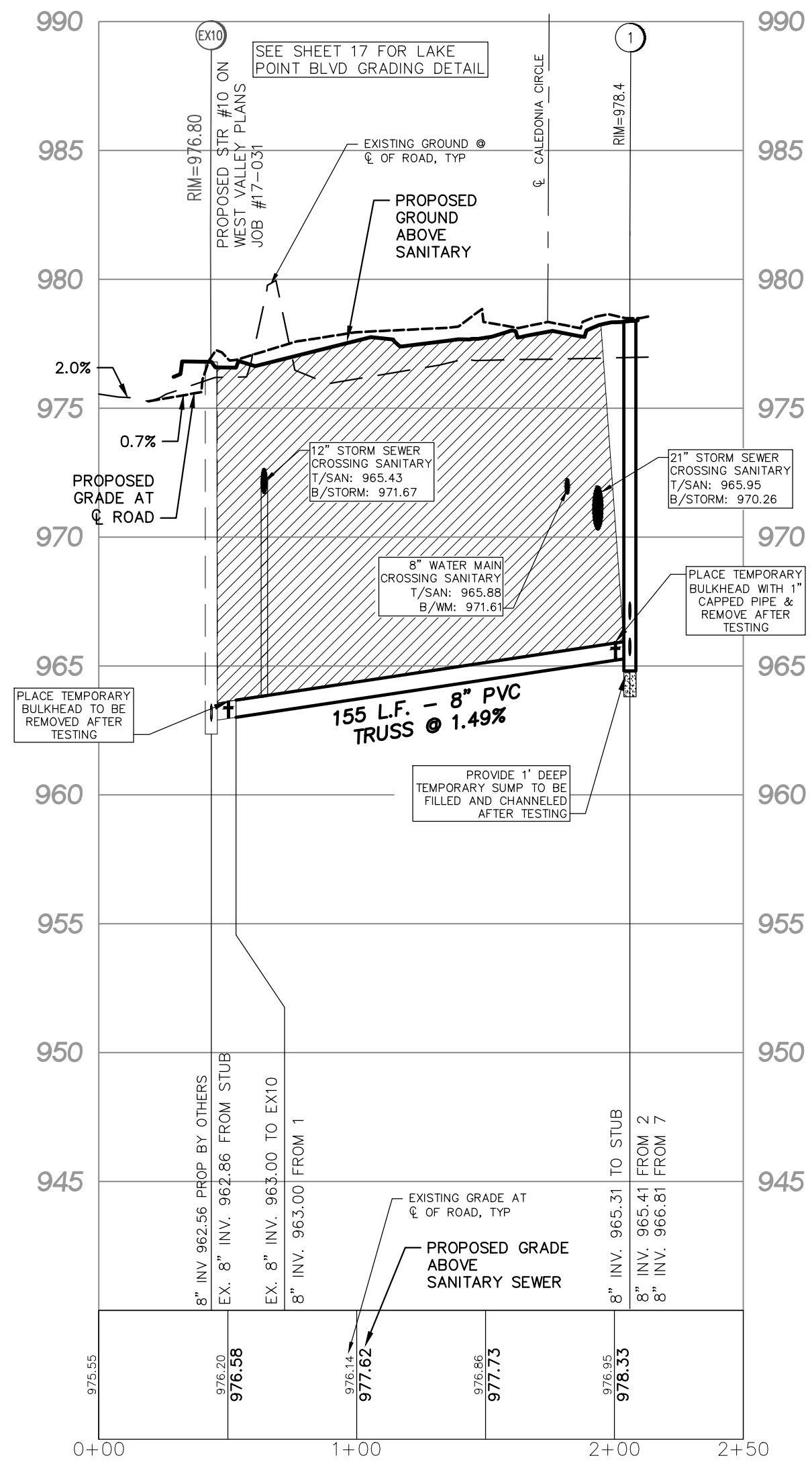


CALEDONIA CIRCLE
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'

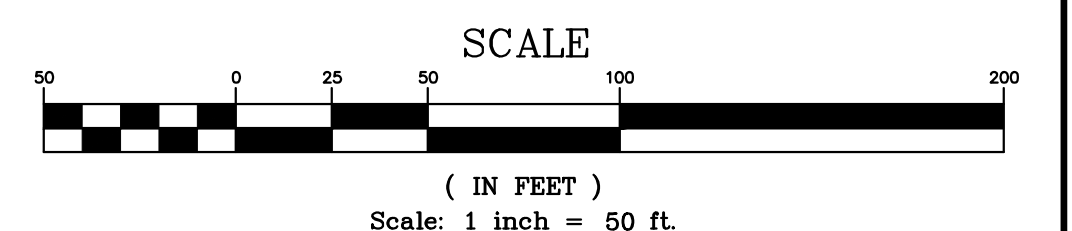
SEE GRADING PLAN (SHEET 4) FOR INTERSECTION GRADING DETAIL



CALEDONIA CIRCLE
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



LAKE POINTE BLVD
SCALE: HORIZONTAL: 1" = 50'
VERTICAL: 1" = 5'



LEGEND	
	EXISTING PAVEMENT (ASPHALT)
	PROPOSED PAVEMENT (ASPHALT)
	EXISTING CONCRETE CURB AND GUTTER
	PROPOSED CONCRETE CURB AND GUTTER
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	MANHOLE
	CATCH BASIN W/INLET FILTER (ST-38)
	CURB INLET W/SILT SAC (ST-4A)
	END SECTION W/ RIP-RAP
	GATE VALVE
	HYDRANT
	FLOOD PLAIN
	CONTOURS
	SPOT ELEVATION
	SURFACE DRAINAGE
	OVERFLOW ROUTE
	TREE FENCE
	SILT FENCE
	PROPOSED DRIVEWAY LOCATION
	LIMIT OF DISTURBANCE

LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

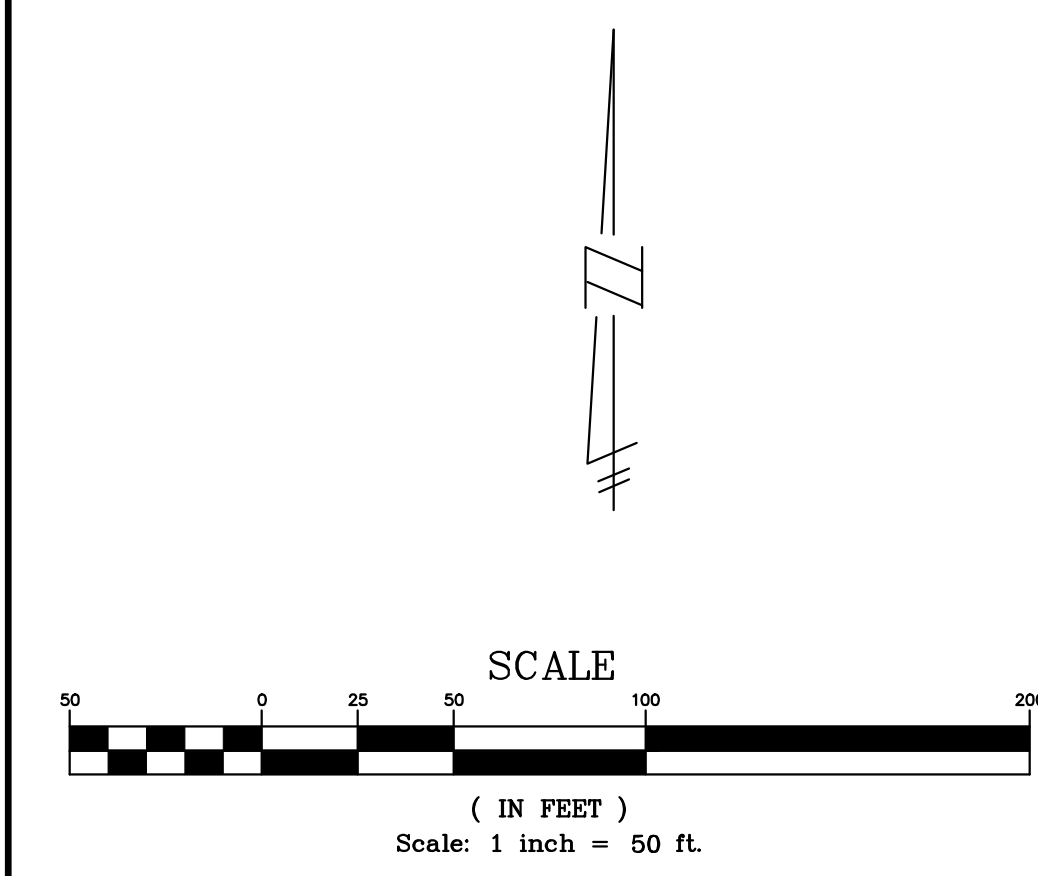
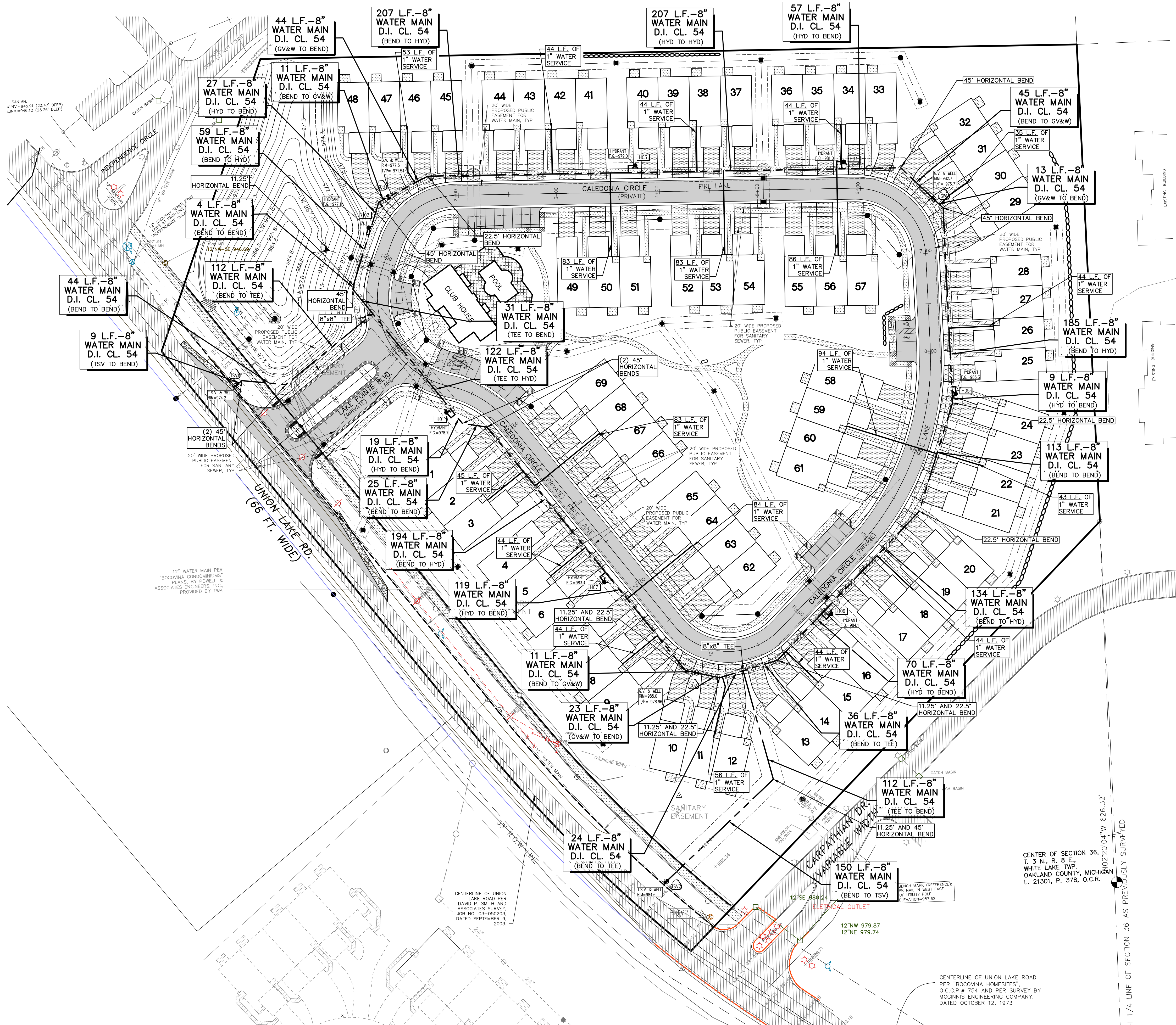
REVISIONS			UTILITY WARNING
NO.	DESCRIPTION	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
1.	REVISE PER OWNER	6-3-20	
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4.	REV PER WHITE LAKE TWP	03-03-21	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039RD.dwg

ROAD AND SANITARY SEWER PROFILES

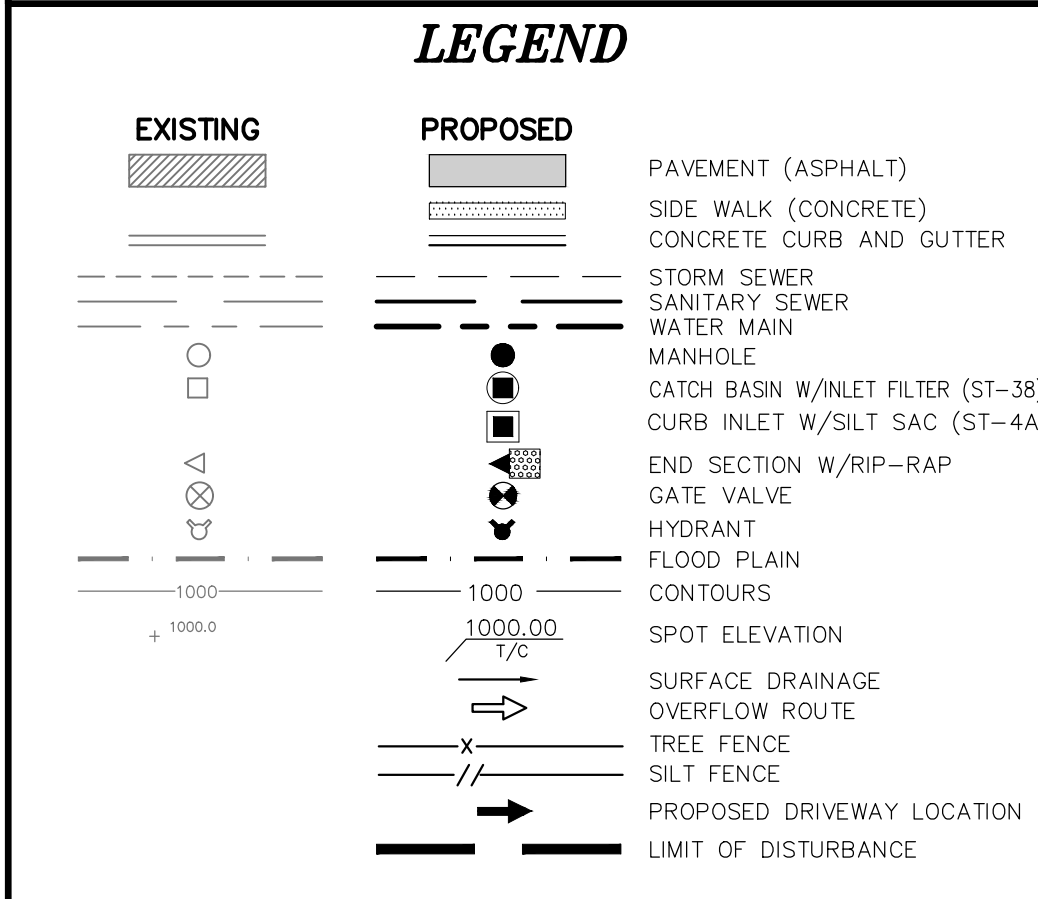
SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 9



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT WEIGHT.

- NOTES**
1. ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 2. WATER MAINS SHALL BE INSTALLED WITH A MINIMUM OF 6'-0" OF COVER EXCEPT AT GATE WELLS WHERE THEY SHALL BE INSTALLED WITH A 5' DEPTH OF COVER.
 3. ALL WATER MAIN SHALL BE DUCTILE IRON, CLASS 54, CEMENT LINED.
 4. ALL HYDRANTS MUST BE A MINIMUM OF 6' (FROM CENTER) OFF THE BACK OF CURB.
 5. HYDRANT LEADS ARE 6". LENGTH OF LEAD IS 13' UNLESS OTHERWISE NOTED.
 6. ALL WATER SERVICES ARE TO BE 1" DIAMETER. ALL WATER SERVICES SHALL BE COPPER K OR 200 PSI BLUE POLY SDR9 TUBING WITH TRACER WIRE, OR APPROVED EQUAL.



LAKE POINTE
 SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

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

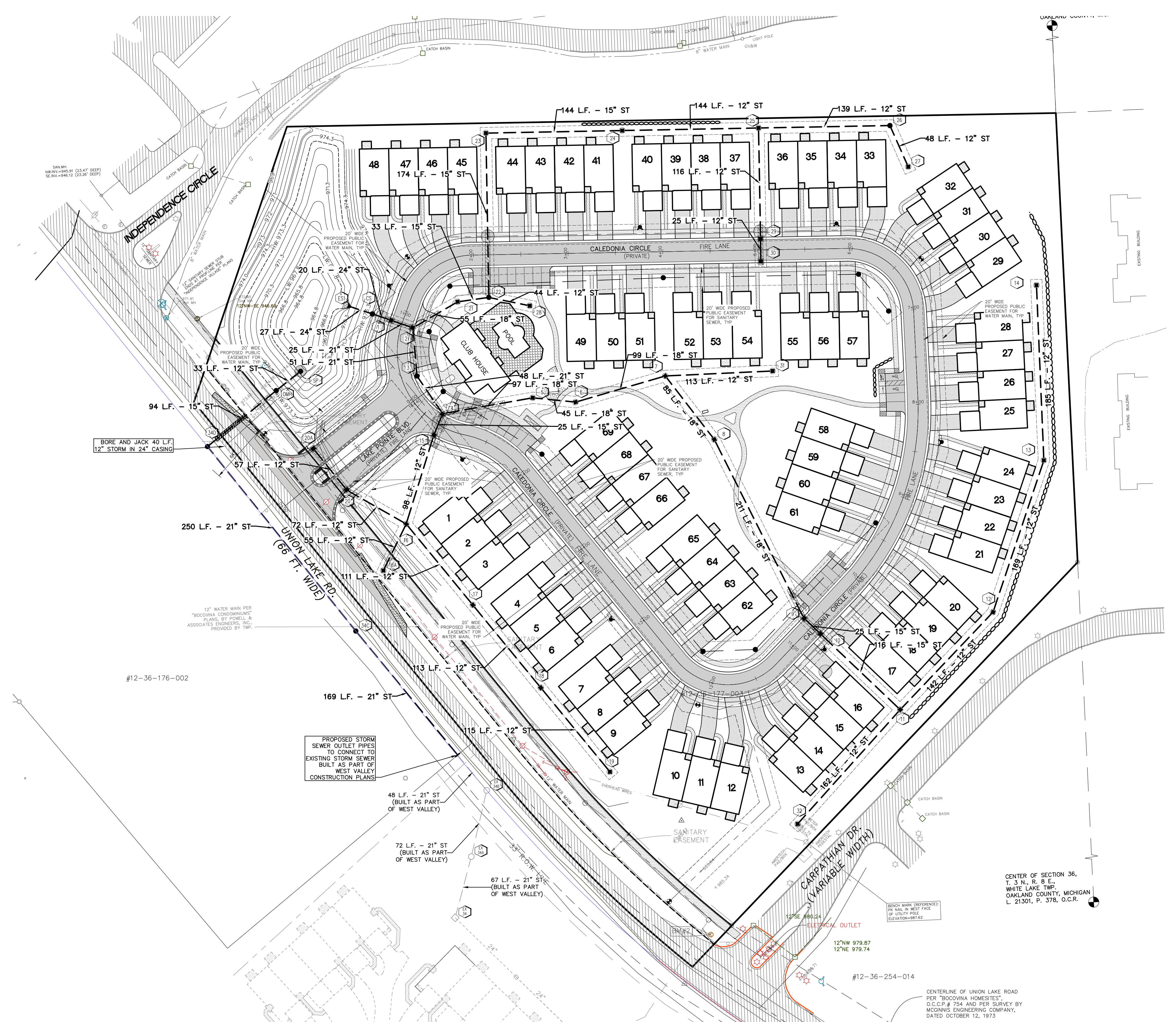
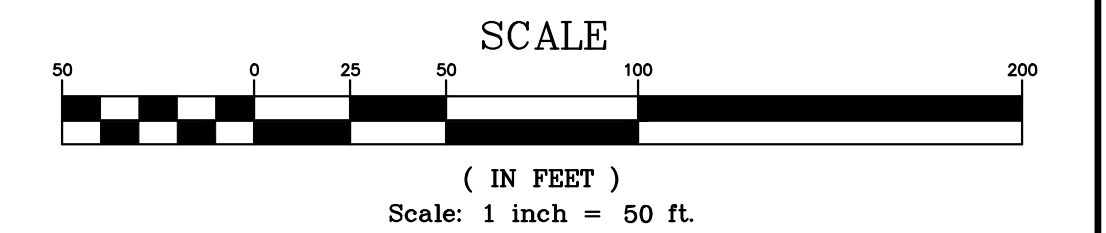
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.E. DRAWING FILE: 19039WM.dwg

WATERMAIN PLAN

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 10



LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WL TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

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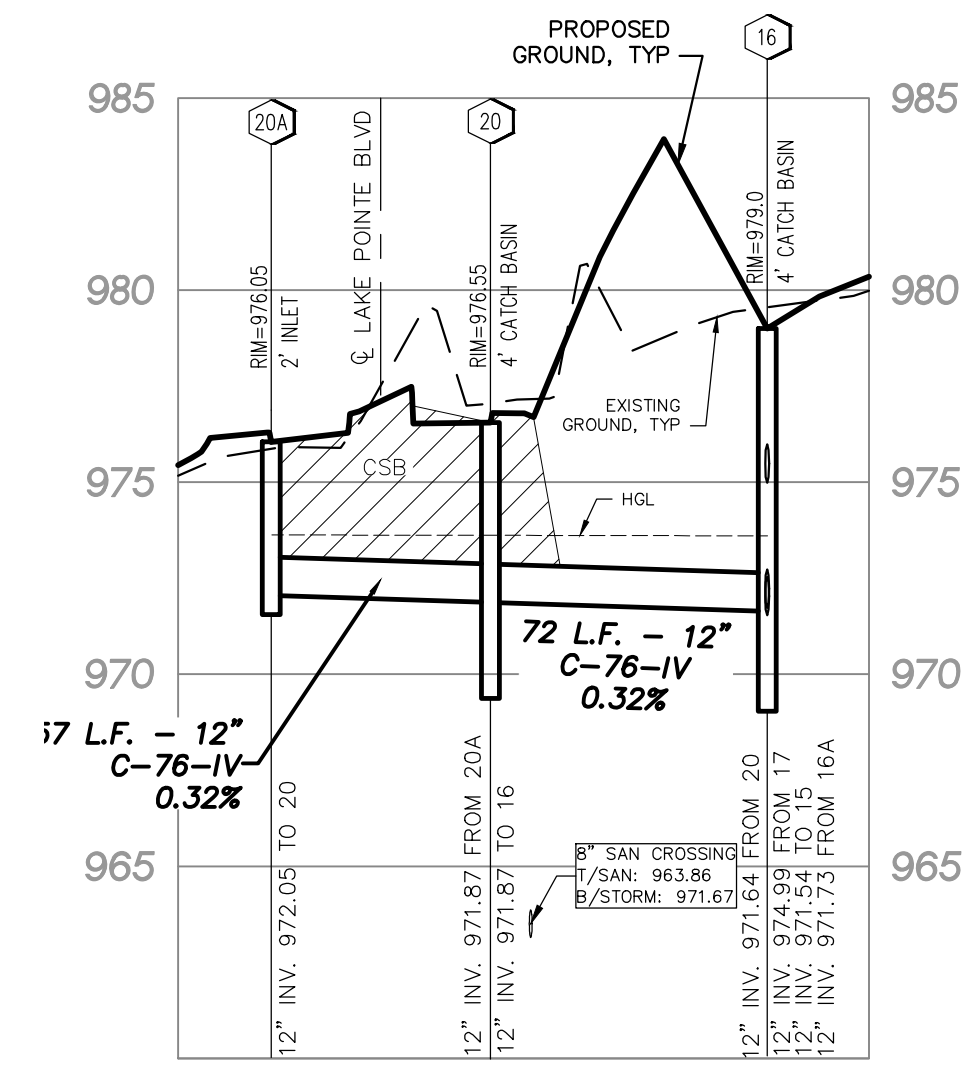
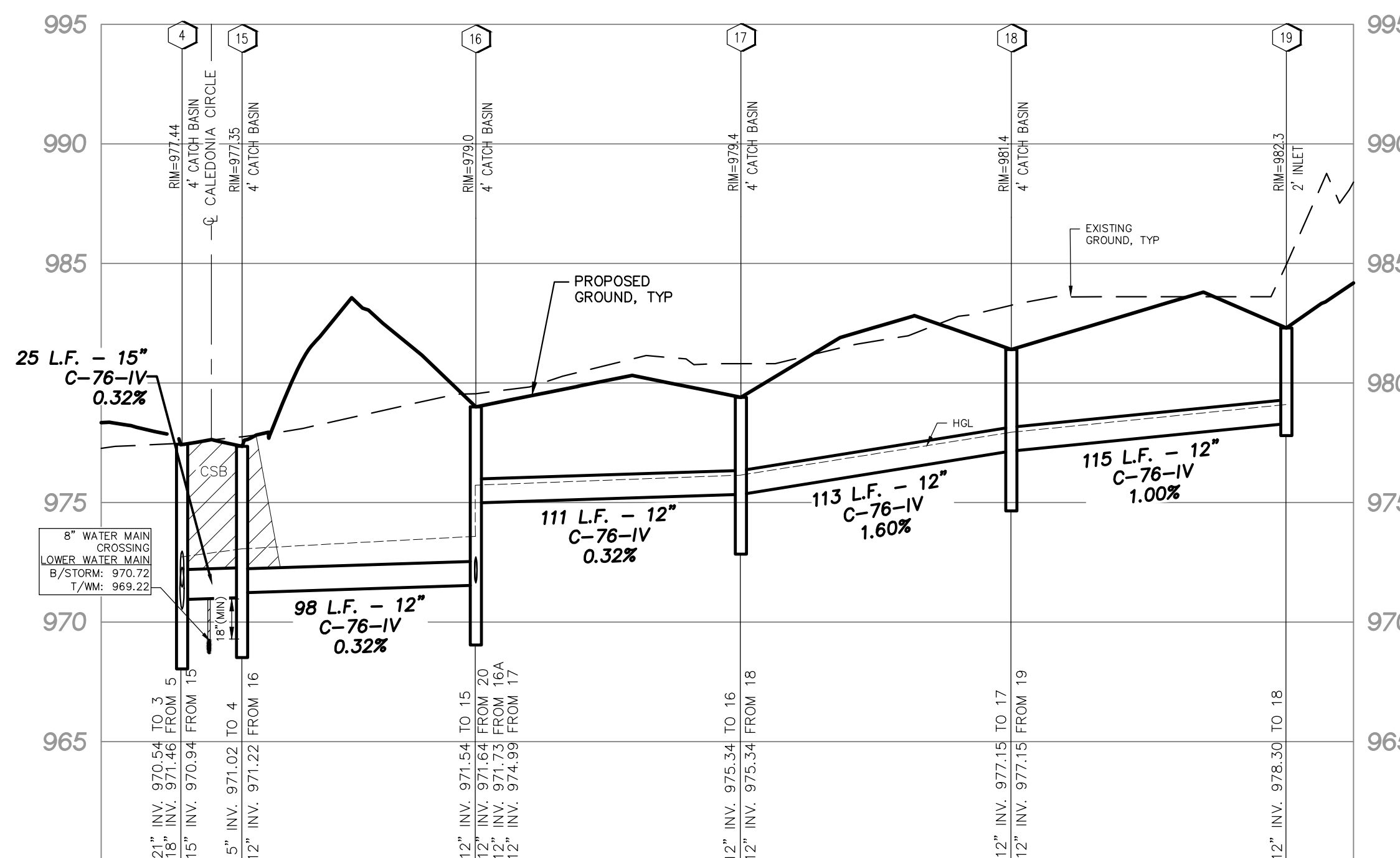
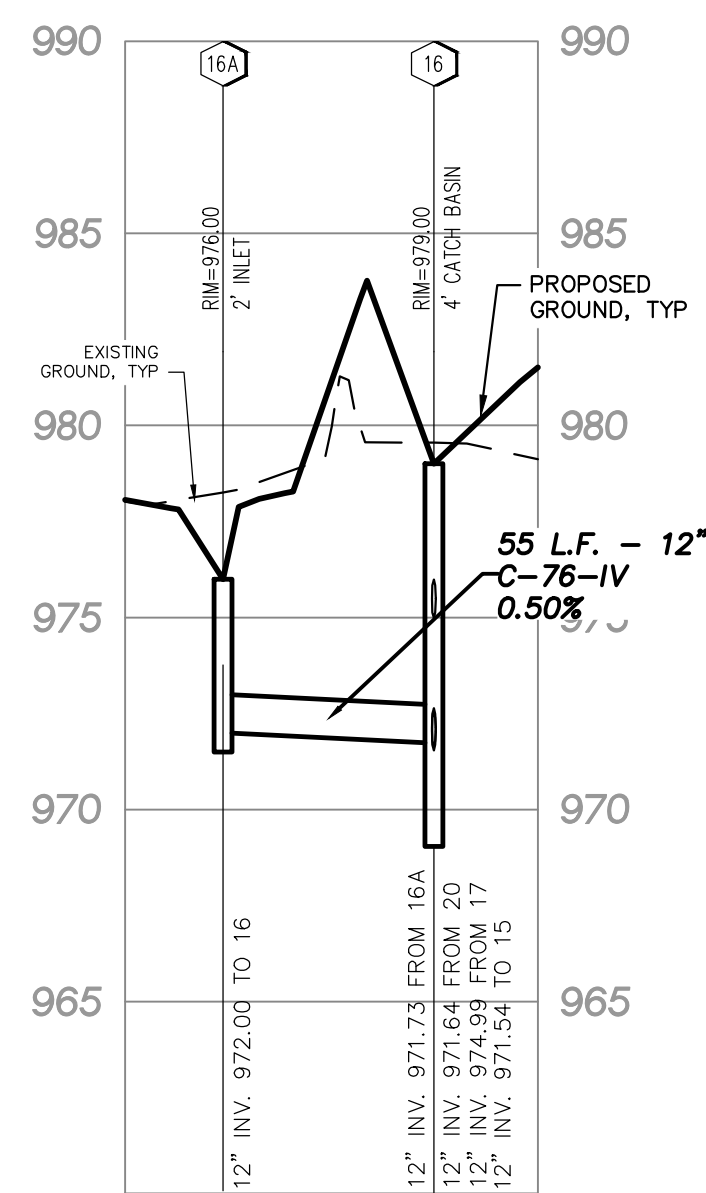
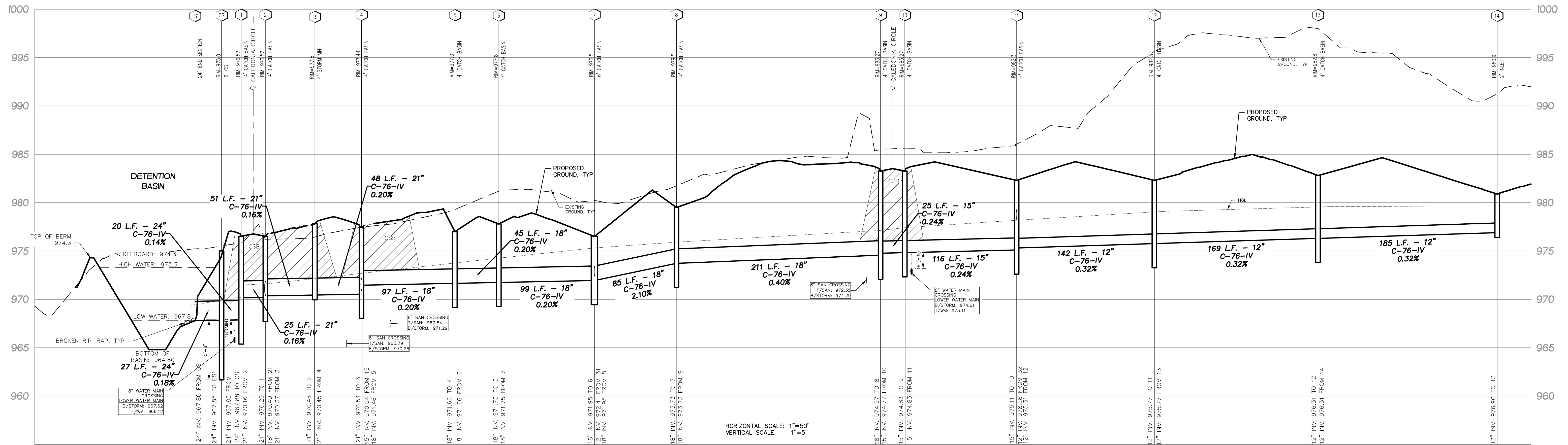
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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

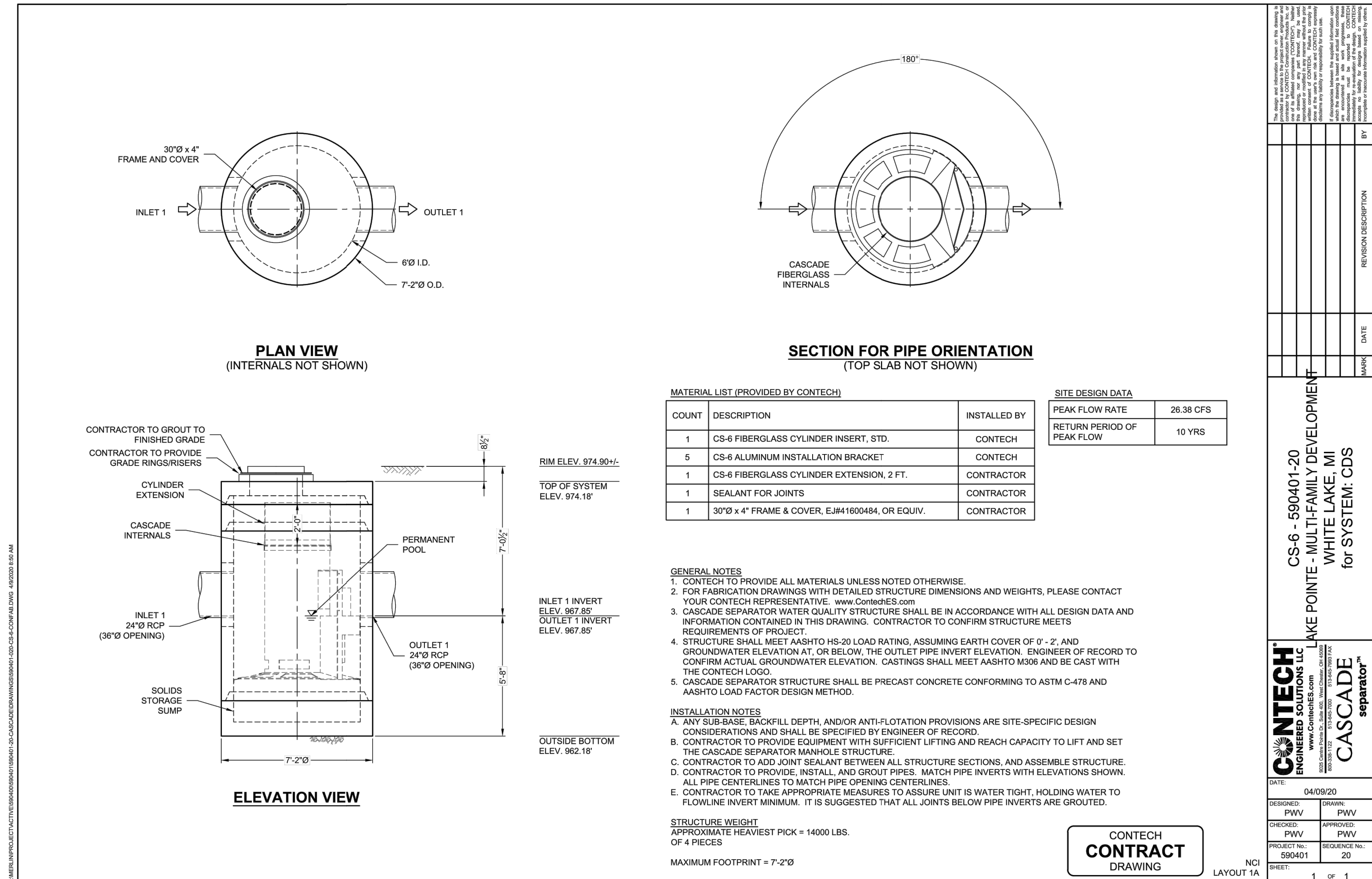
DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039ST.dwg

STORM SEWER PLAN

	SEIBER, KEAST ENGINEERING, L.L.C. CONSULTING ENGINEERS 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com	SHEET 11
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LAKE POINTE	
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN	
REVISIONS	
NO.	ITEM
1.	REVISE PER OWNER
2.	REVISE GRADES ON UNITS 2 AND 6
3.	REV PER 11-20-20 W.L. TWP LETTER
4.	REVISE PER WHITE LAKE TWP
DATE	DATE
6-3-20	11-9-20
02-02-21	03-03-21
UTILITY WARNING	
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.	
811 Know what's below. Call before you dig.	
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.	
DATE: 04-08-2020	DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E.	DRAWING FILE: 19039ST.dwg
STORM SEWER PROFILES	
SEIBER, KEAST ENGINEERING, L.L.C. CONSULTING ENGINEERS	
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com	
SHEET 12	



MATERIAL LIST (PROVIDED BY CONTECH)

COUNT	DESCRIPTION	INSTALLED BY
1	CS-6 FIBERGLASS CYLINDER INSERT, STD.	CONTECH
5	CS-6 ALUMINUM INSTALLATION BRACKET	CONTECH
1	CS-6 FIBERGLASS CYLINDER EXTENSION, 2 FT.	CONTRACTOR
1	SEALANT FOR JOINTS	CONTRACTOR
1	30"Ø x 4" FRAME & COVER, EJ#41600484, OR EQUIV.	CONTRACTOR

SITE DESIGN DATA

PEAK FLOW RATE	28.38 CFS
RETURN PERIOD OF PEAK FLOW	10 YRS

- GENERAL NOTES**
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
 - FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE. www.contech-es.com
 - CASCADE SEPARATOR WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
 - STRUCTURE SHALL MEET MASHTO HS-20 LOAD RATING, ASSUMING EARTH COVER OF 0'-2" AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET MASHTO MIX AND BE CAST WITH THE CONTECH LOGO.
 - CASCADE SEPARATOR STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND MASHTO LOAD FACTOR DESIGN METHOD.

- INSTALLATION NOTES**
- ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
 - CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CASCADE SEPARATOR MANHOLE STRUCTURE.
 - CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
 - CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
 - CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

STRUCTURE WEIGHT
 APPROXIMATE HEAVIEST PICK = 14000 LBS.
 OF 4 PIECES
 MAXIMUM FOOTPRINT = 7'-2"Ø

CONTECH CONTRACT DRAWING

DATE: 04/09/20
 DESIGNED: PWV
 CHECKED: PWV
 PROJECT No.: 589401
 SHEET: 1 OF 1

DATE: 04/09/20
 DRAWN: PWV
 APPROVED: PWV
 SEQUENCE No.: 20

DATE: 04/09/20
 LAYOUT 1A

CONTECH ENGINEERED SOLUTIONS
 10000 WOODLAND AVENUE, SUITE 100
 NORTHVILLE, MI 48861
 TEL: 248.308.3331 FAX: 248.308.3332
 WWW.CONTECH-ES.COM

REVISION DESCRIPTION
 BY
 DATE

CONTECH ENGINEERED SOLUTIONS
 10000 WOODLAND AVENUE, SUITE 100
 NORTHVILLE, MI 48861
 TEL: 248.308.3331 FAX: 248.308.3332
 WWW.CONTECH-ES.COM

CONTECH ENGINEERED SOLUTIONS
 10000 WOODLAND AVENUE, SUITE 100
 NORTHVILLE, MI 48861
 TEL: 248.308.3331 FAX: 248.308.3332
 WWW.CONTECH-ES.COM

Estimated Net Annual Solids Load Reduction Based on the Rational Rainfall Method

LAKE POINTE
 White Lake Twp., MI
 Water Quality Unit

CASCADE separator™

AREA: 11.89 acres
 WEIGHTED C: 0.53
 TC: 21.14 minutes

CASCADE MODEL: CS-6
 PARTICLE SIZE: 110 microns
 RAINFALL STATION: 78

Rainfall Intensity ¹ (in/hr)	Percent Rainfall Volume ¹	Cumulative Rainfall Volume	% Rainfall Volume Treated	Total Flowrate (cfs)	Removal Efficiency (%)	Incremental Removal (%)
0.02	13.13%	13.1%	13.1%	0.13	100.0	13.1
0.04	11.36%	24.5%	11.4%	0.25	100.0	11.4
0.06	10.08%	34.6%	10.1%	0.38	100.0	10.1
0.08	7.49%	42.1%	7.5%	0.50	100.0	7.5
0.10	7.01%	49.1%	7.0%	0.63	100.0	7.0
0.12	5.37%	54.4%	5.4%	0.76	100.0	5.4
0.14	4.73%	59.2%	4.7%	0.88	98.7	4.7
0.16	4.13%	63.3%	4.1%	1.01	96.9	4.0
0.18	3.53%	66.8%	3.5%	1.13	95.0	3.4
0.20	2.99%	69.8%	3.0%	1.26	93.1	2.8
0.25	5.50%	75.3%	5.5%	1.58	88.4	4.9
0.30	4.47%	79.8%	4.5%	1.89	83.7	3.7
0.35	3.85%	83.6%	3.9%	2.21	79.0	3.0
0.40	2.16%	85.8%	2.2%	2.52	74.3	1.6
0.45	2.09%	87.9%	2.1%	2.84	69.6	1.5
0.50	1.31%	89.2%	1.3%	3.15	64.9	0.8
0.75	5.07%	94.3%	5.1%	4.73	41.4	2.1
1.00	2.58%	96.9%	2.3%	6.30	25.2	0.6
1.50	2.50%	99.4%	1.5%	9.45	16.8	0.4
2.00	0.51%	99.9%	0.2%	12.60	12.6	0.1
2.54	0.15%	100.0%	0.1%	16.01	9.9	0.0
						88.0
						Removal Efficiency Adjustment ² = 6.5%
						Predicted % Annual Rainfall Treated = 91.8%
						Predicted Net Annual Load Removal = 81.5%

1 - Based on 5.5 years of 15 minute precipitation data from NCDC station 2102 at Detroit City Airport in Detroit, MI
 2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.

LAKE POINTE
 SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		
NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 W.L. TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UTILITY WARNING
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-08-2020
 DESIGNED BY: A.A.
 CHECKED BY: J.E.

JOB NUMBER: 19-039
 DRAWING FILE: 19039CDS.dwg

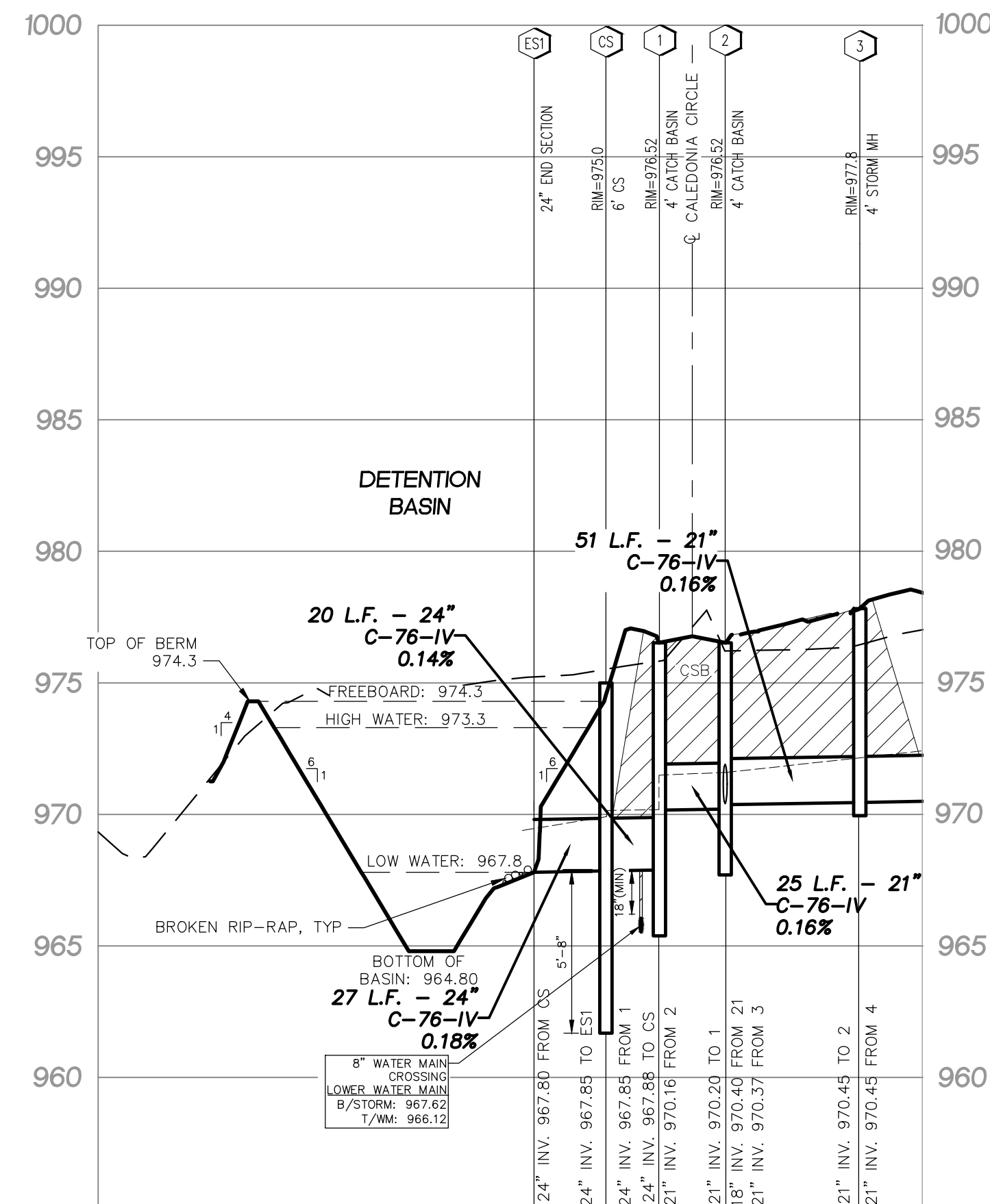
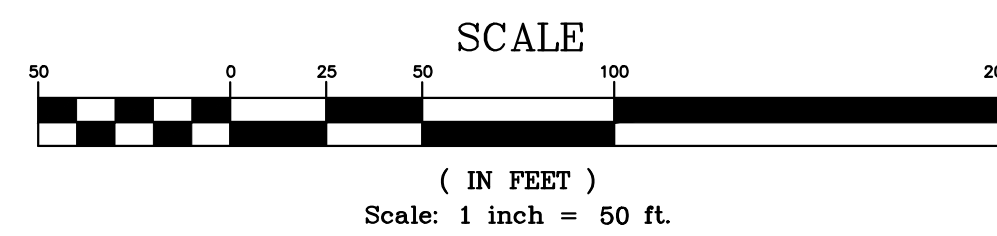
CONTECH CDS DETAILS

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET 14



SEE STORM OUTLET PLAN AND PROFILES SHEETS 11 AND 13



Detention Basin Calculations

DETERMINE DETENTION VOLUME REQUIREMENTS (100-YEAR STORM)

Ac = 11.64 Ac Developed **ON-SITE** area tributary to the Detention Basin
 $Q_{all} = 2.33$ cfs Allowable Outflow (Total Area x 0.2 cfs/Ac.)
 $C = 0.53$

$Q_o = Q_{all} / (Ac * C) = 0.38$ cfs/Ac. Imp
 $T = -25 + \sqrt{10312.5 / Q_o} = 139.88$ min
 $V_s = (16500 * T) / (T + 25) - 40 * Q_o * T = 11876$ cf/Ac. Imp
 $V_t = V_s * Ac * C = 72,880$ ft³ req'd

DETERMINE DETENTION VOLUME REQUIREMENTS (1-YEAR STORM)

OCWRC Volume (1-yr Storm)
 $V_r = 4320 * C * A = 26,511$ ft³

DETERMINE VOLUME PROVIDED FOR 1 YEAR AND 100-YEAR STORMS

	Elevation	Area	Vol (ft ³)	
Low Water	967.8	6,248		
	968.3	7,336	3,396	
	969.3	9,785	11,957	1 Year Storm EL. = 970.60 ft
	970.3	12,665	23,182	Volume provided = 27,517 ft ³
	971.3	16,238	37,633	
High Water	972.3	20,112	55,808	100 Year Storm EL. = 973.30 ft
	973.3	24,135	77,932	Volume provided = 77,932 ft ³

DETERMINE OUTLET SIZE TO DEWATER 1 YEAR STORM IN 48 HOURS

Volume of Storage = 27,517 ft³
 Median Surface Area = 9,827 ft²
 Orifice Area Required = 0.038
 Area of 1" diameter hole = 0.00545
 Number of holes required = 6.96
Therefore use 7 - 1" Diameter Holes

DETERMINE 100-YEAR DETENTION BASIN OUTLET SIZE

Orifice Formula, $Q = 0.625 * A * \sqrt{64.4 * H}$
 $Q_{all} = 2.33$ cfs
 Outlet Size = 6.000 in
 Invert Elevation = 967.80 ft
 Springline EL. = 968.05 ft
 $H = 5.25$ ft
 Area Req'd = A = 0.2026 sf
 Area of Outlet Used = 0.1963 sf
 Diameter Req'd = 6.000 in
USE 6.000 in Dia Outlet
 Q Discharge = 2.26 cfs

SIZE PRIMARY OVERFLOW STRUCTURE (OMH)

Size of Overflow MH = 6 ft
 % of MH that can be used as a Weir = 50%
 Calculated Length of Weir = L = 9.42 ft
 Acreage Tributary to Overflow (onsite + offsite) = 12.58 Ac
 Composite Runoff Coefficient = 0.53
 (From Pipe Flow Calculations)
 Longest Time of Flow to Basin = 21.19 min
 Sum of all Flow into the Basin = 23.74 cfs
 Volume of Basin (Det Calcs) = 77,932 ft³
 Storage Elevation = 973.30 ft
 Freeboard Elevation = 974.30 ft
 Time to Fill Basin Vprov / Flow into Basin = 54.71 min.
 $I = 175 / (T + 25) = 1.73$ in / hr
 $Q_{exp} = C * I * A = 11.50$ cfs

Calculate how high the water will rise above the Overflow Structure to pass the expected flow.

$h = 0.51$ ft
 Rim Overflow MH = 973.30 ft
 Elevation of Water during Overflow Conditions = 973.81 ft
 Elevation of Water during Overflow Condition is Less than

Determine "C" Factor for Detention Basin

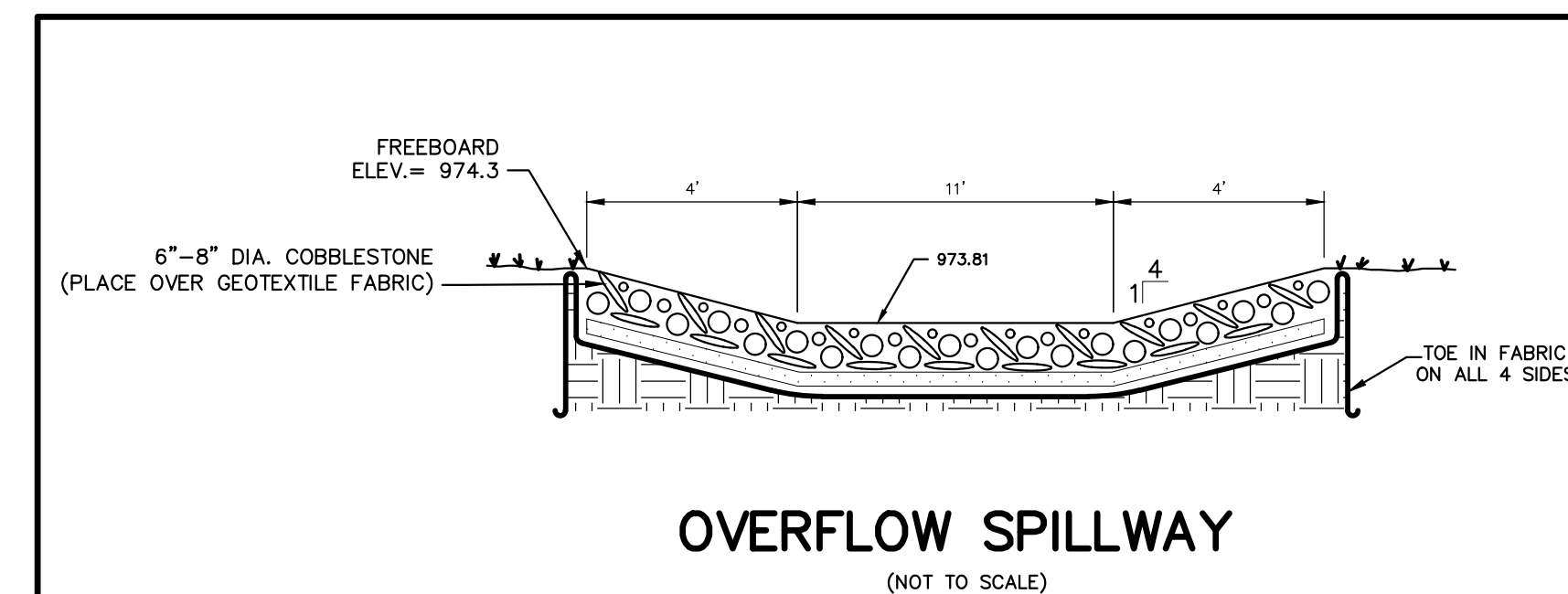
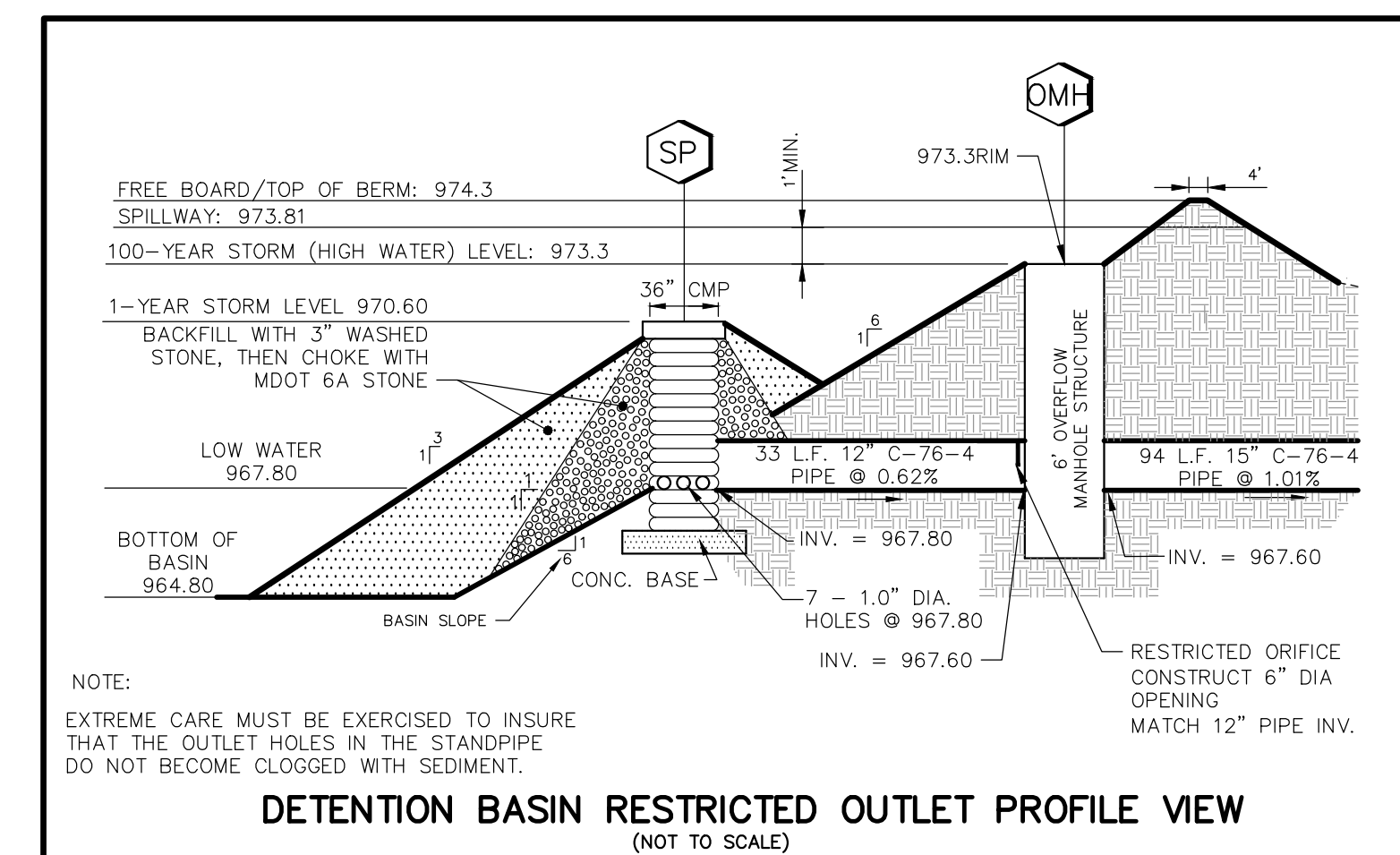
DETERMINE "C" FACTOR	Area	C	Area * C
AREA TRIBUTARY TO ON-SITE STORM SEWER	10.95 Ac.		
AREA TRIBUTARY TO CB 16A	0.94 Ac.		
AREA OF DETENTION BASIN	0.69 Ac.		
TOTAL AREA TRIBUTARY TO DETENTION BASIN	= 12.58 Ac		
DETENTION BASIN LOW WATER	= 0.17 Ac	@ 1.00	= 0.17
PAVING AREA (WALKS, DRIVE, ROAD)	= 3.14 Ac	@ 0.80	= 2.51
BUILDING AREA	= 3.19 Ac	@ 0.90	= 2.87
LAWN AREA INCLUDING DETENTION BASIN AREA	= 6.25 Ac	@ 0.20	= 1.25
TOTAL AREA	= 12.58 Ac	@	6.63

$C_{avg} = A * C / \text{TOTAL ACRES} = 0.53$

Determine On-Site Area to be Detained for in Detention Basin Calculations

(Note: Exclude ROW Area Tributary to CB 16A)

TOTAL AREA TRIBUTARY TO DETENTION BASIN	= 12.58 Ac
AREA TRIBUTARY TO CB 16A	= -0.94 Ac
ON-SITE AREA TRIBUTARY TO DETENTION BASIN	= 11.64 Ac



NOTES:

- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
- ALL END SECTIONS SHALL BE CONSTRUCTED ACCORDING TO THE "END SECTION AND BAR SCREEN DETAIL" ON SHEET ND.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/INLET FILTER (ST-38)
		CURB INLET W/SILT SAC (ST-4A)
		END SECTION W/RIP-RAP
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

LAKE POINTE

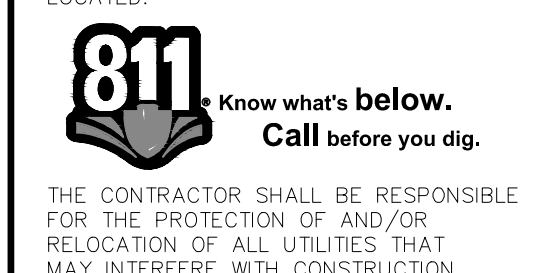
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
 WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	REVISE PER OWNER	6-3-20
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 WALL TWP LETTER	02-02-21
4.	REV PER WHITE LAKE TWP	03-03-21

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
 CHECKED BY: J.F.E. DRAWING FILE: 19059DB.dwg

DETENTION BASIN PLAN, CALCULATIONS AND PROFILE

SEIBER, KEAST ENGINEERING, L.L.C.
 CONSULTING ENGINEERS
 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

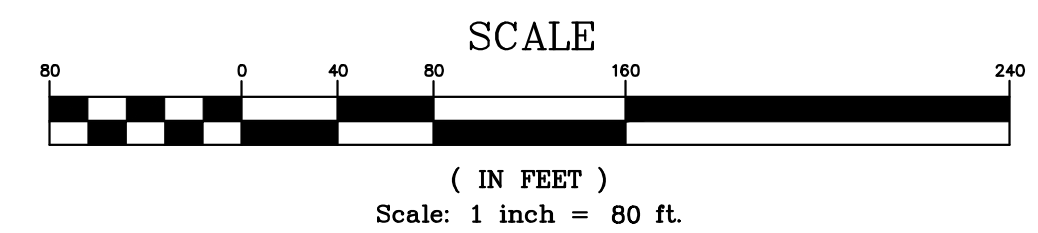
SHEET 15



Lake Pointe WHITE LAKE TOWNSHIP STORM SEWER DESIGN															SEIBER, KEAST & ASSOC., INC. December 21, 2020 JOB NO. 19-039													
10.00		year design - I = 175			T+25			n = 0.013			C = 0.53																	
MH-MH	A(s) acres	C	A(s)xC unit	A(s)xC cumul.	T min	I in/hr	Q cfs	Dia in	Hyd.Gr. %	Vel. ft/sec	Length ft	Tr Time min	Inv. upst.	Inv. dnst.	Grnd. upst.	HGL upst.	Pipe slope-%	RIM -HGL	Rim -inv	T/Pipe -RIM	T/Pipe -RIM							
28-22	0.14	0.53	0.07	0.07	15.00	4.38	0.32	12	0.01	2.68	44	0.27	972.80	972.65	976.80	973.60	0.35	3.20	4.00	3.00	4.05							
															Downstream Data -													
30-29	0.35	0.53	0.18	0.18	15.00	4.38	0.80	12	0.05	2.57	25	0.16	975.02	974.94	979.02	975.82	0.32	3.20	4.00	3.00	3.08							
29-25	0.69	0.53	0.36	0.55	15.16	4.36	2.38	12	0.45	5.27	116	0.37	974.94	973.37	979.02	975.74	1.35	3.28	4.08	3.08	3.03							
															Downstream Data -													
27-26	0.40	0.53	0.21	0.21	15.00	4.38	0.92	12	0.07	2.57	48	0.31	975.21	975.06	979.70	976.01	0.32	3.69	4.49	3.49	5.04							
26-25	0.00	0.53	0.00	0.21	15.31	4.34	0.91	12	0.07	4.97	139	0.47	974.96	973.29	981.10	975.76	1.20	5.34	6.14	5.14	3.11							
25-24	0.26	0.53	0.14	0.35																								
															+ flow 29													
24-23	0.20	0.53	0.10	1.00	16.27	4.24	4.22	15	0.43	3.44	144	0.70	971.98	971.40	976.30	973.46	0.40	2.84	4.32	3.07	2.95							
23-22	0.25	0.53	0.13	1.13	16.97	4.17	4.70	15	0.53	3.83	174	0.76	971.30	970.89	975.60	972.84	0.24	2.76	4.30	3.05	5.56							
22-21	0.00	0.53	0.00	1.13																								
															+ flow 28													
21-2	0.14	0.53	0.08	1.28	17.86	4.08	5.21	18	0.25	2.95	55	0.31	970.51	970.40	977.00	971.73	0.20	5.27	6.49	4.99	4.62							
															Downstream Data -													
20A-20	0.10	0.53	0.05	0.05	15.00	4.38	0.24	12	0.00	2.57	57	0.37	972.05	971.87	976.05	974.44	0.32	1.61	4.00	3.00	4.18							
20-16	0.12	0.53	0.06	0.12	15.37	4.33	0.51	12	0.02	2.57	72	0.47	971.87	971.64	977.05	974.44	0.32	2.61	5.18	4.18	6.36							
															Downstream Data -													
19-18	0.38	0.53	0.20	0.20	15.00	4.38	0.88	12	0.06	4.54	115	0.42	978.30	977.15	982.30	979.10	1.00	3.20	4.00	3.00	3.25							
18-17	0.19	0.53	0.10	0.30	15.42	4.33	1.30	12	0.13	5.74	113	0.33	977.15	975.34	981.40	977.95	1.60	3.45	4.25	3.25	3.06							
17-16	0.18	0.53	0.10	0.40	15.75	4.29	1.71	12	0.23	2.57	111	0.72	975.34	974.99	979.40	976.14	0.32	3.26	4.06	3.06	3.01							
16-15	1.06	0.53	0.56	0.96																								
															+ flow 20													
15-4	0.78	0.53	0.41	1.48	16.75	4.19	6.22	15	0.93	5.07	25	0.08	971.02	970.94	977.35	972.84	0.32	4.51	6.33	5.08	5.25							
															Downstream Data -													
32-11	0.39	0.53	0.20	0.20	15.00	4.38	0.89	12	0.06	2.57	162	1.05	978.80	978.28	982.80	979.60	0.32	3.20	4.00	3.00	3.02							
															Downstream Data -													
31-7	0.48	0.53	0.25	0.25	15.00	4.38	1.11	12	0.10	3.80	113	0.50	973.20	972.41	977.20	974.42	0.70	2.78	4.00	3.00	3.09							
															Downstream Data -													
14-13	0.32	0.53	0.17	0.17	15.00	4.38	0.74	12	0.04	2.57	185	1.20	976.90	976.31	980.90	977.70	0.32	3.20	4.00	3.00	5.49							
13-12	0.27	0.53	0.14	0.31	16.20	4.25	1.32	12	0.14	2.57	189	1.10	976.31	975.77	982.80	977.11	0.32	5.69	6.49	5.49	5.53							
12-11	0.41	0.53	0.22	0.53	17.30	4.14	2.19	12	0.38	2.78	142	0.85	975.77	975.31	982.30	976.78	0.32	5.52	6.53	5.53	5.99							
11-10	0.22	0.53	0.12	0.64																								
															+ flow 32													
10-9	0.72	0.53	0.38	1.23	18.84	3.99	4.91	15	0.58	4.00	25	0.10	974.83	974.77	983.27	975.92	0.24	7.35	8.44	7.19	7.25							
9-8	0.53	0.53	0.28	1.51	18.94	3.98	6.00	18	0.33	3.76	211	0.94	974.57	973.73	983.27	975.77	0.40	7.50	8.70	7.20	4.27							
8-7	0.53	0.53	0.28	1.79	19.88	3.90	6.96	18	0.44	8.61	85	0.16	973.73	971.95	979.50	974.93	2.10	4.57	5.77	4.27	3.05							
7-6	0.38	0.53	0.20	1.98																								
															+ flow 31													
6-5	0.07	0.53	0.04	2.27	20.38	3.86	8.77	18	0.70	4.96	45	0.15	971.75	971.66	977.80	973.63	0.20	4.17	6.05	4.55	3.84							
5-4	0.12	0.53	0.06	2.34	20.53	3.84	8.99	18	0.73	5.09	97	0.32	971.66	971.46	977.00	973.32	0.20	3.68	5.34	3.84	4.48							
4-3	0.70	0.53	0.37	2.71																								
															+ flow 15													
3-2	0.00	0.53	0.00	4.19	20.97	3.81	15.97	21	1.02	6.64	51	0.13	970.45	970.37	977.90	972.12	0.16	5.78	7.45	5.70	4.40							
2-1	0.57	0.53	0.30	4.50																								
															+ flow 21													
1-CS	0.94	0.53	0.49	6.27	21.14	3.79	23.76	24	1.10	7.56	20	0.04	967.88	967.85	976.52	969.92	0.14	6.60	8.64	6.64	5.15							
CS-ES	0.00	0.53	0.00	6.27	21.19	3.79	23.74	24	1.10	7.56	27	0.06	967.85	967.80	975.00	969.70	0.18	5.30	7.15	5.15	(2.00)							
															Downstream Data -													

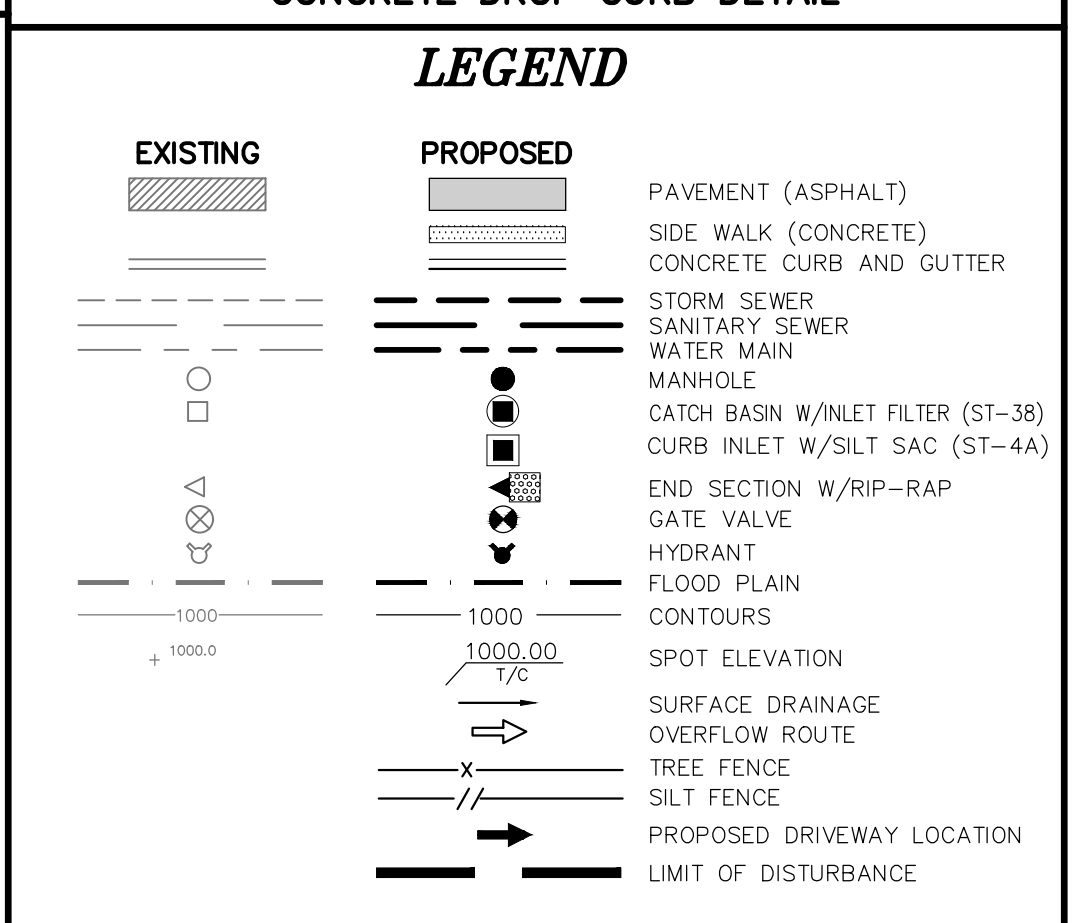
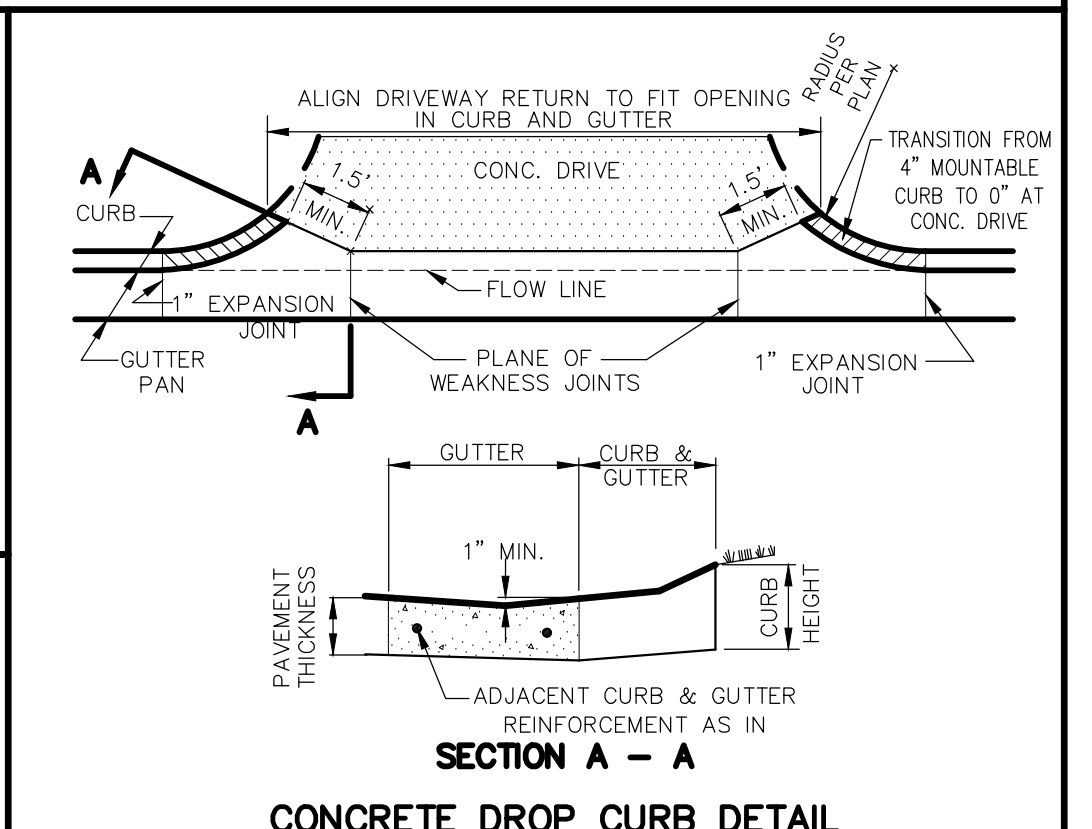
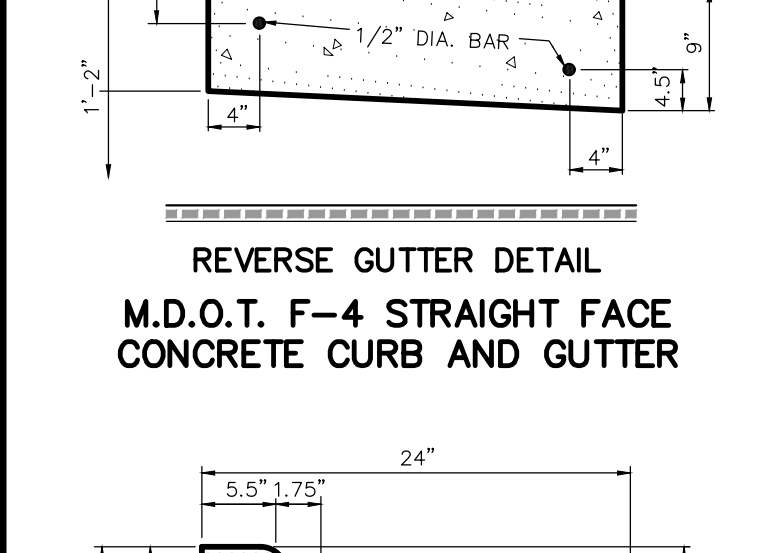
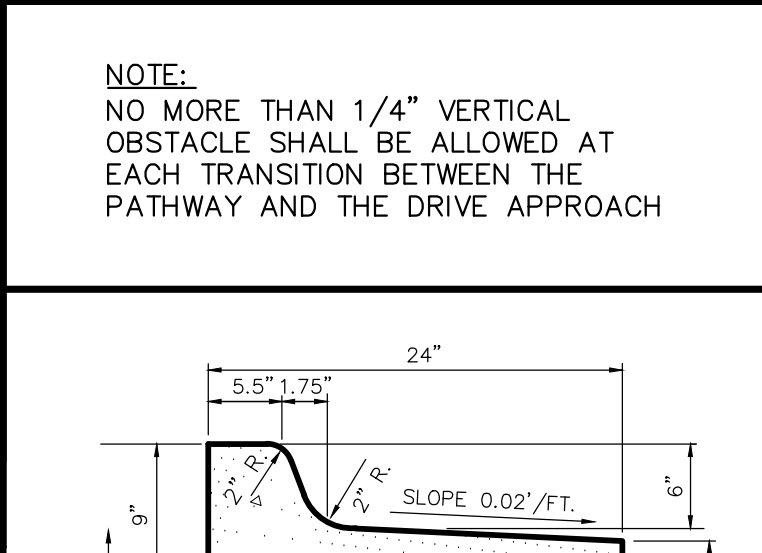
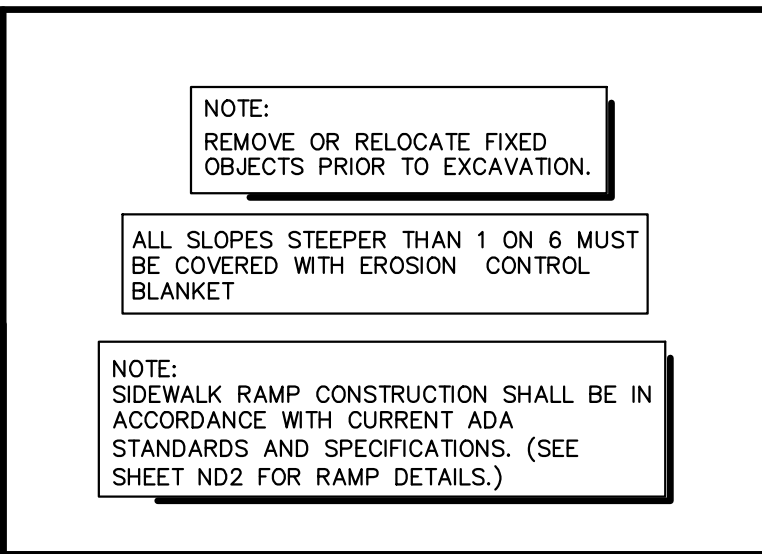
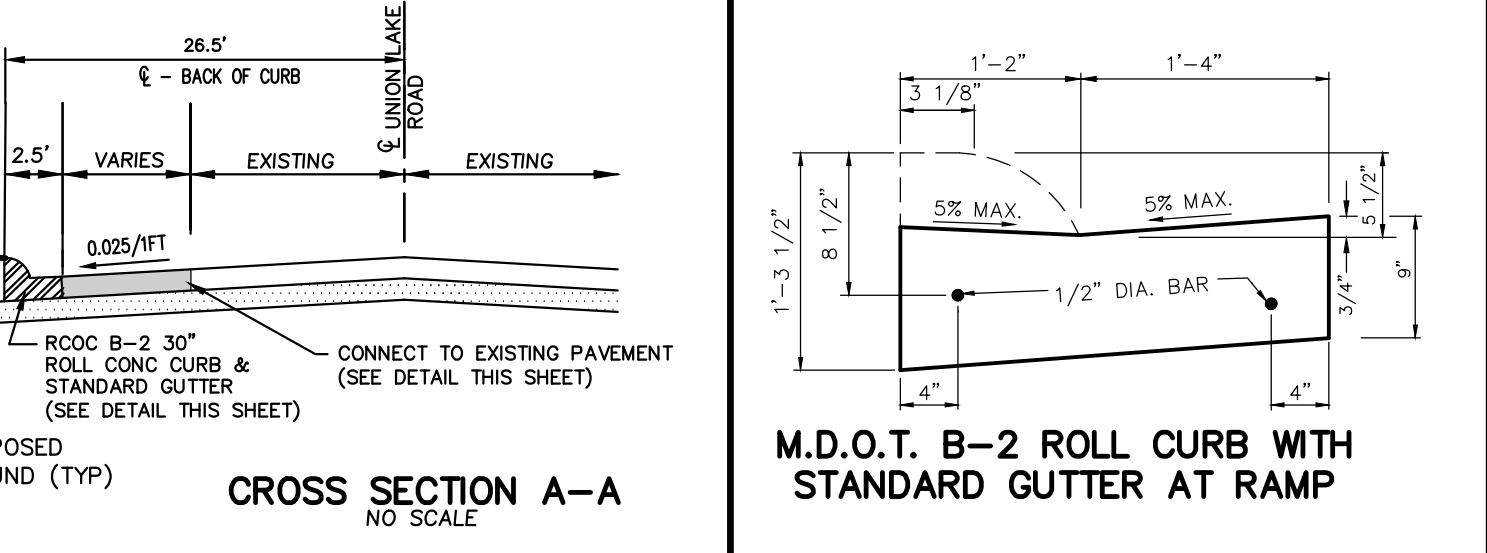
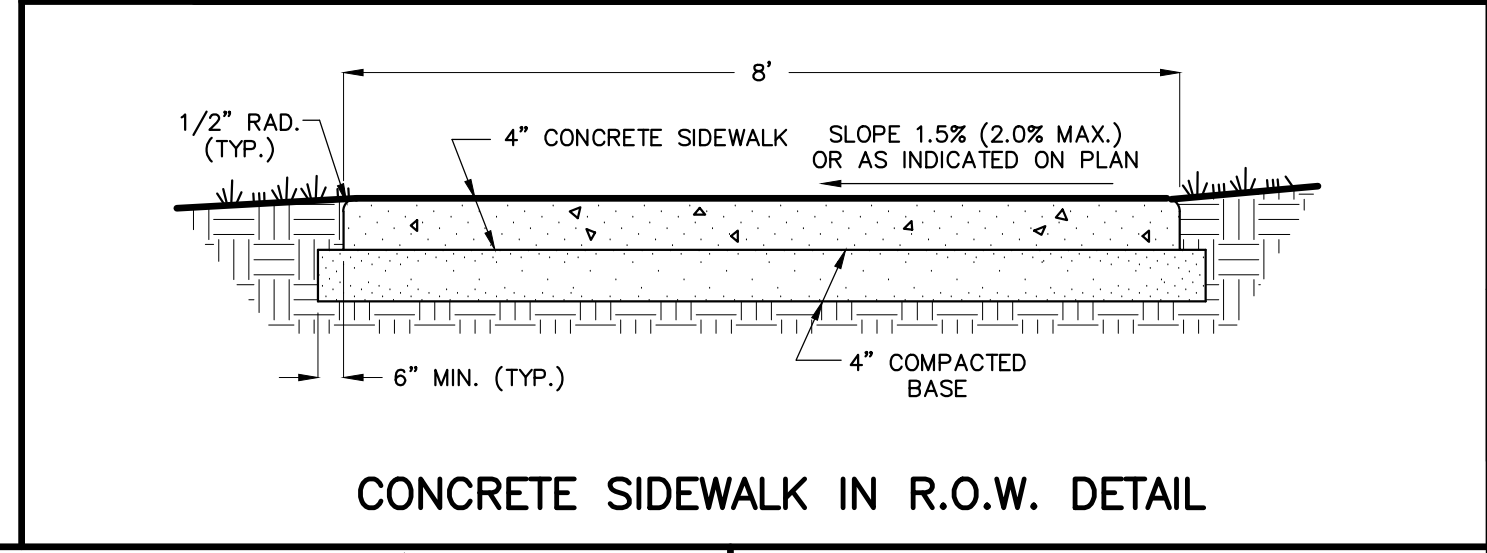
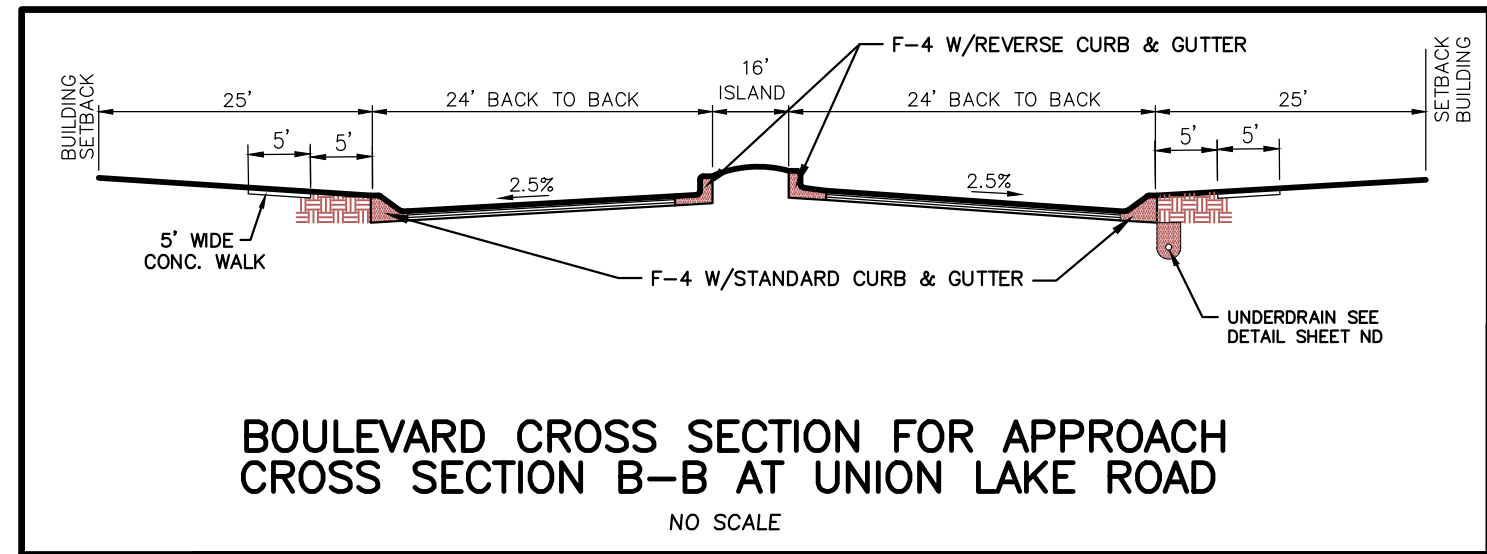
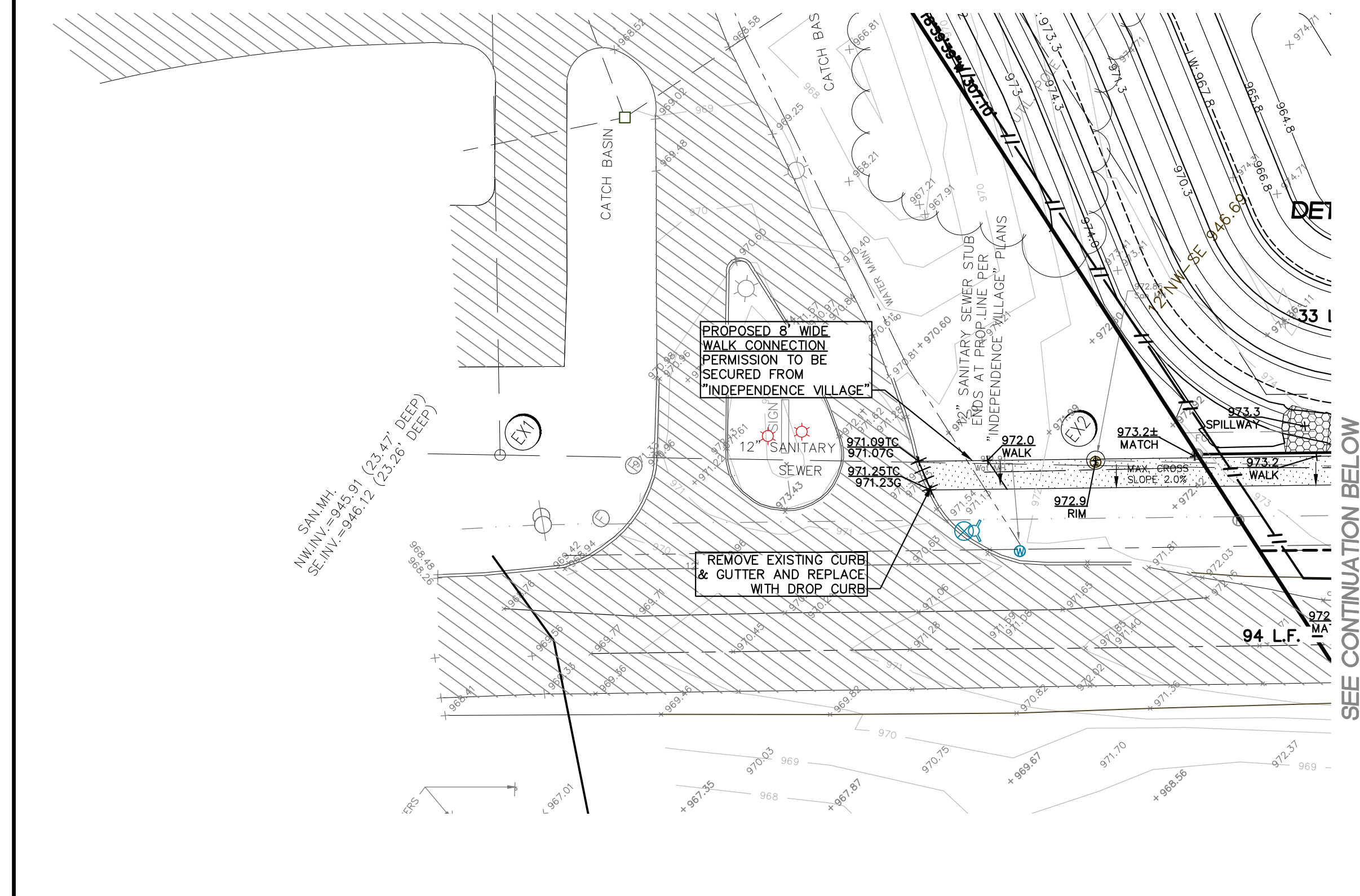
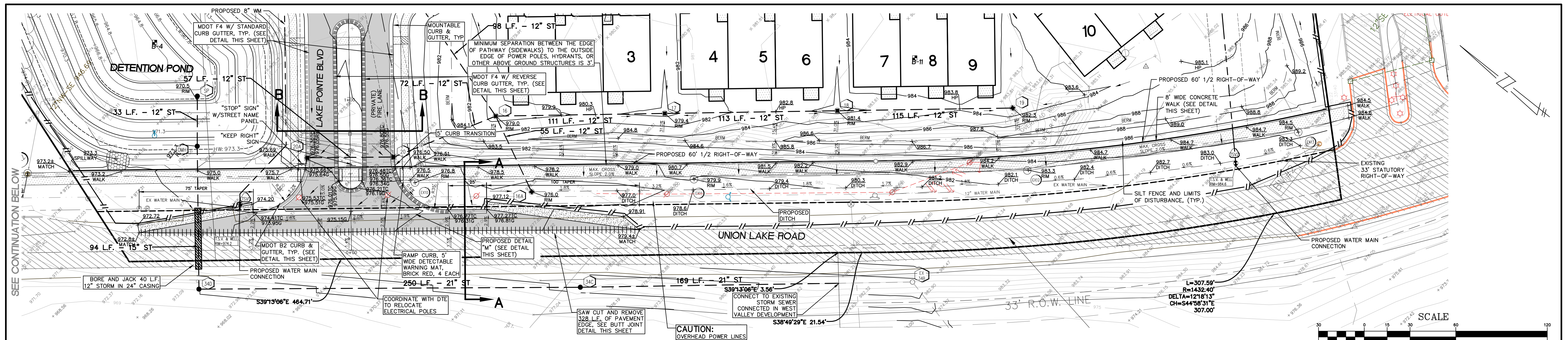
UNION LAKE STORM SEWER

MH-MH	Q cfs	Dia in	Hyd.Gr. %	Vel. ft/sec	Length ft	Tr Time min	Inv. upst.	Inv. dnst.	Grnd. upst.	HGL upst.	Pipe slope-%	RIM -HGL	Rim -inv	T/Pipe -RIM	T/Pipe -RIM													
SP-OMH	(Q actual from Detention Basin Calculations)			2.26	33	0.15	967.80	967.60	970.50	971.89	0.62	(1.39)	2.70	1.70	4.70													
OMH-34D	(Q exp from Detention Basin Calculations)			11.50	94	0.17	967.60	966.65	973.30	971.76	1.01	1.54	5.70	4.45	2.10													
34D-34C				11.50	250	0.87	966.25	965.30	970.00	968.78	0.38	1.22	3.75	2.00	9.45													
34C-STUB				11.50	169	0.59	965.30	964.65	976.50	967.46	0.38	9.04	11.20	9.45														
															Downstream Data -													

Note: At Strucrus SP, the HGL is lower than the Detention Basin Highwater Elevation. OK.
Note: At OMH, the HGL is lower than the Detention Basin Highwater / Rim elevations. OK.



LAKE POINTE			
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN			
REVISIONS		UTILITY WARNING	
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.  Know what's below. Call before you dig. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
1.	REVISE PER OWNER	6-3-20	
2.	REVISE GRADES ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 W.L. TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	
DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039 CHECKED BY: J.E. DRAWING FILE: 19039DD.dwg			
DRAINAGE DISTRIBUTION PLAN & STORM SEWER CALCULATIONS			
 SEIBER, KEAST ENGINEERING, L.L.C. CONSULTING ENGINEERS 100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167 PHONE: 248.308.3331 EMAIL: info@seiberkeast.com			SHEET 16



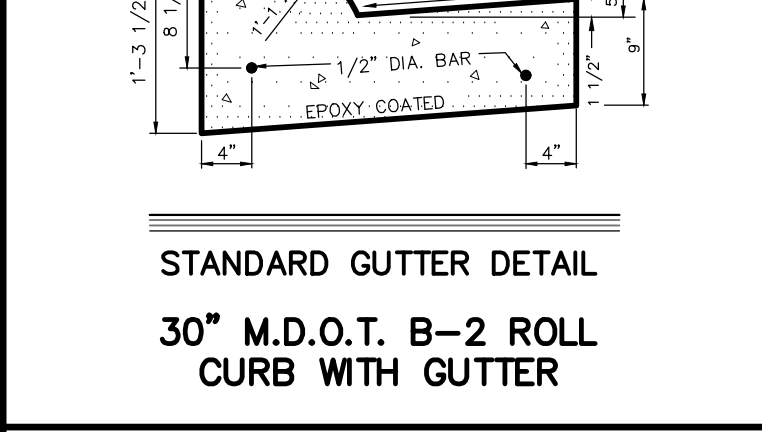
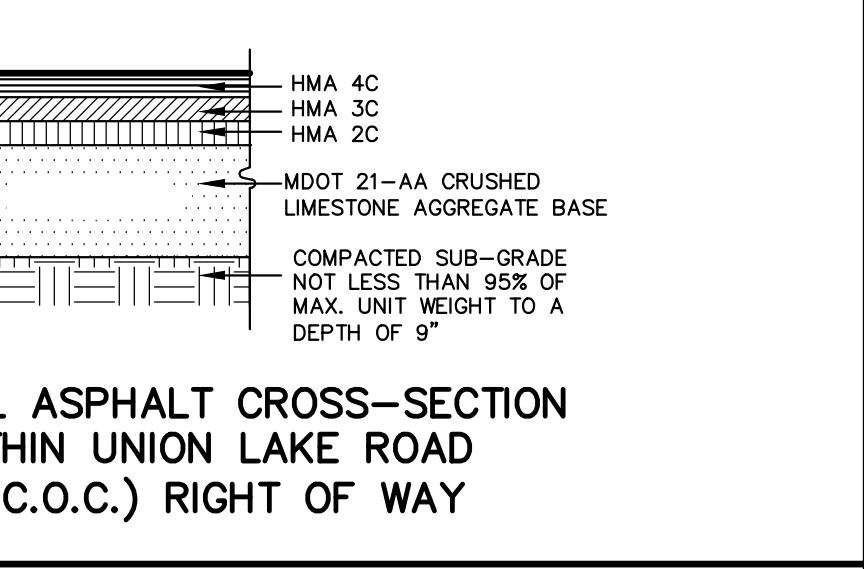
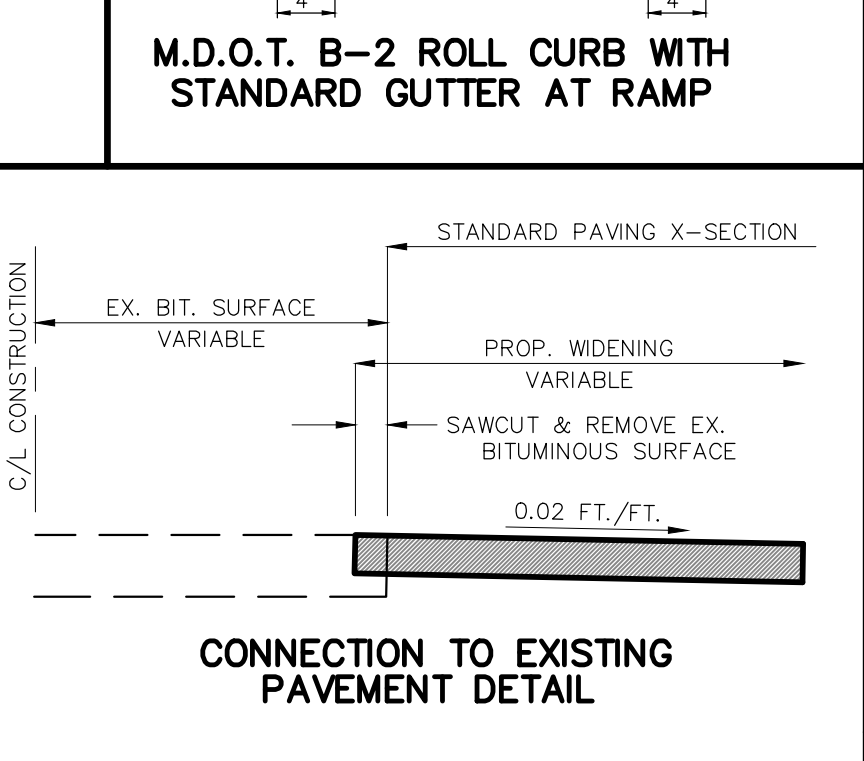
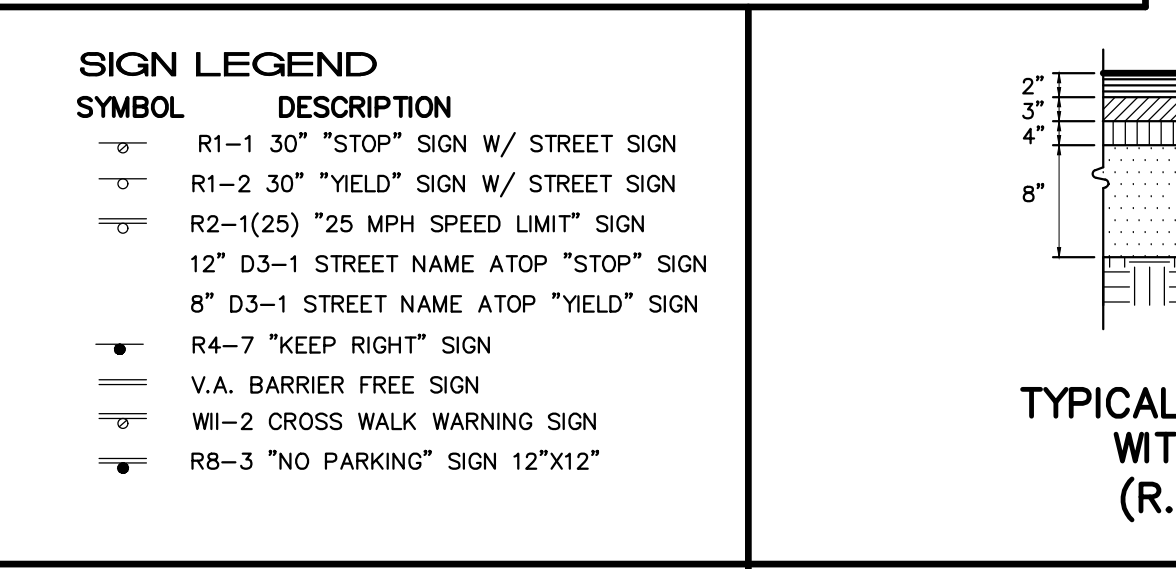
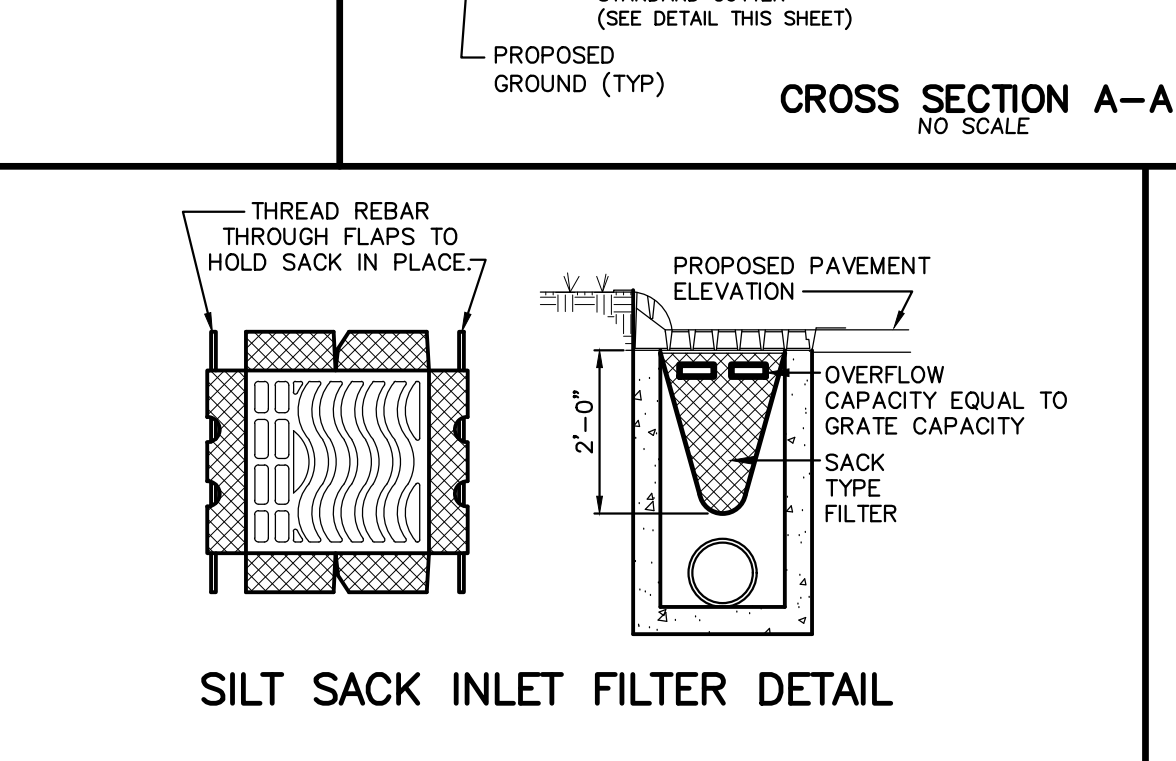
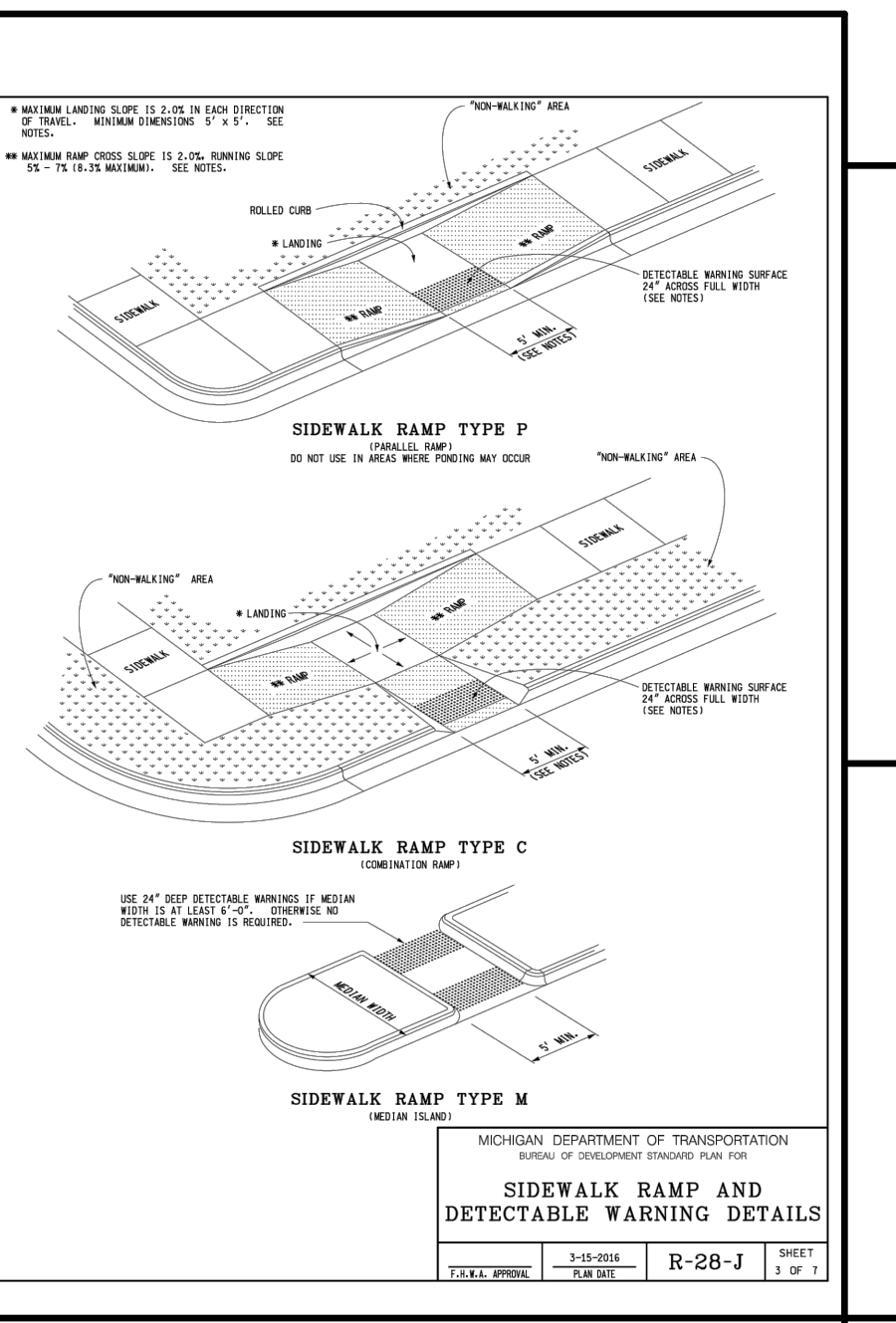
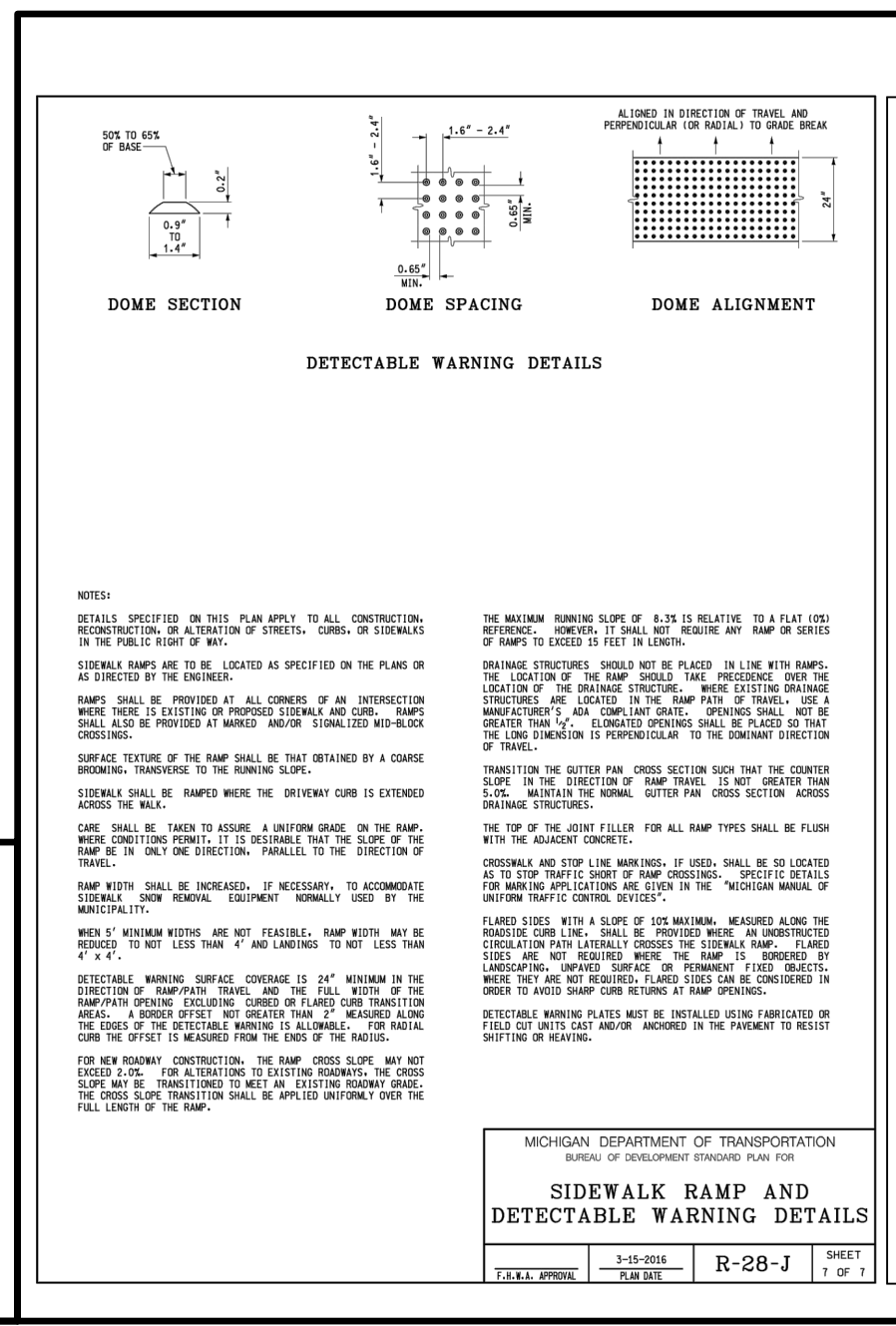
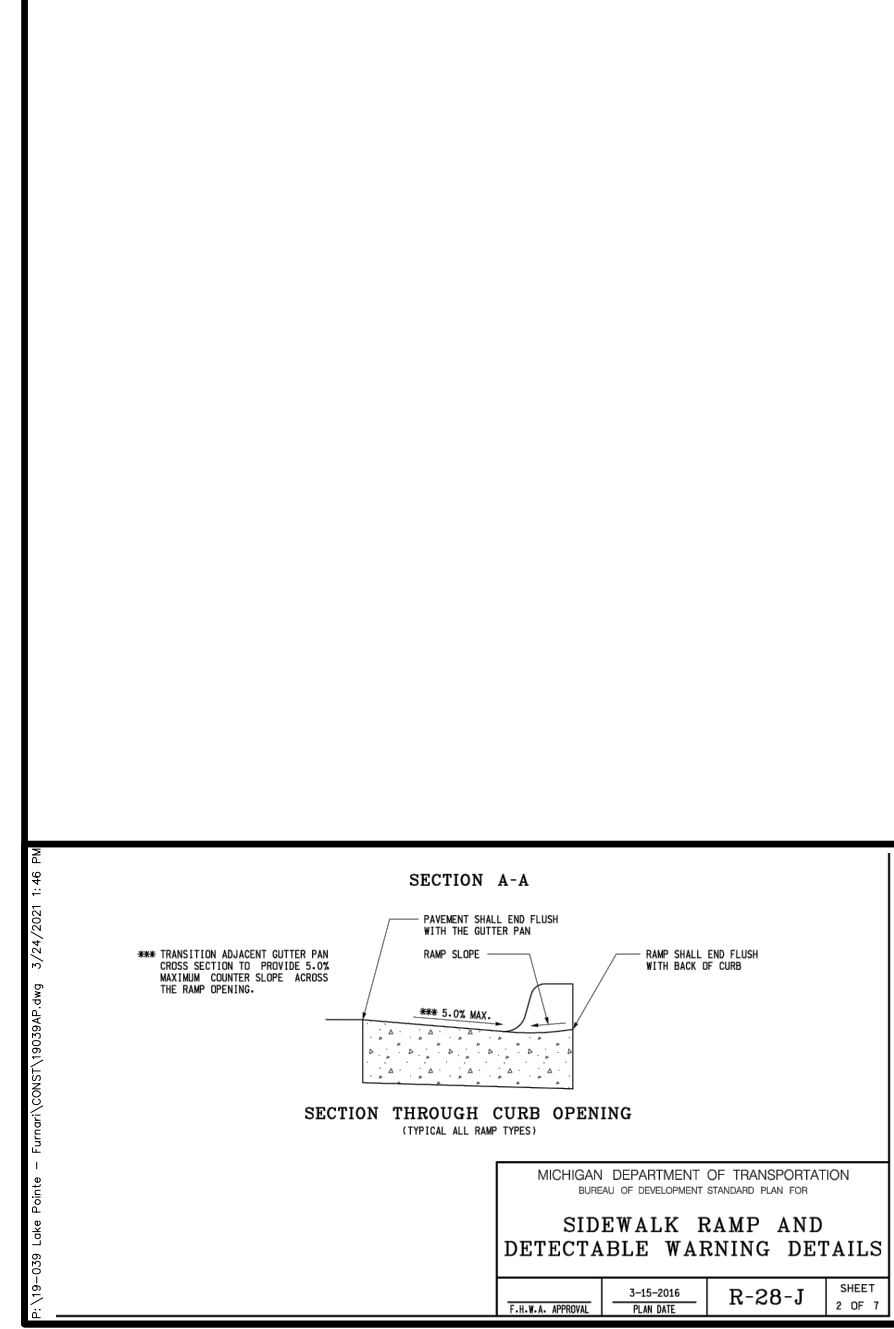
REVISIONS

NO.	ITEM	DATE
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2.	REVISE GRABES ON UNITS 2 AND 6	11-9-20
3.	REV PER 11-20-20 W/L TWP LETTER	02-02-21
4.	REVISE PER WHITE LAKE TWP	03-03-21

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-039
CHECKED BY: J.E. DRAWING FILE: 19039AP.dwg



APPROACH PLAN

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SHEET 17

SOIL EROSION CONTROL NOTES

- SACK TYPE FILTERS SHALL BE INSTALLED ON ALL CATCH BASINS AND INLETS.
- DEWATERING OF ANY KIND MUST BE FILTERED THROUGH VEGETATION, STONE OR "FILTER BAG".
- IT IS THE DEVELOPER'S RESPONSIBILITY TO INSURE THE PROJECT STREETS AND ADJACENT ROADS ARE CLEAN & SWEEPED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO INSTALLATION OF PUBLIC UTILITIES (I.E. PHONE, GAS, ELECTRIC, CABLE, ETC.)
- THE DEVELOPER IS RESPONSIBLE FOR DUST CONTROL THROUGHOUT ALL PERIODS OF CONSTRUCTION. WATERING TANKS WILL BE AVAILABLE AT ALL TIMES TO BE USED ON ANY AREA WHERE DUST BECOMES A PROBLEM.
- PARKING OF VEHICLES, EQUIPMENT, OR STOCKPIILING OF MATERIALS IS STRICTLY PROHIBITED ALONG OR WITHIN THE UNION LAKE ROAD RIGHT OF WAY AREA.
- ALL CULVERT END SECTIONS MUST CONTAIN GROUTED RIP-RAP IN ACCORDANCE WITH ORDINANCE SPECIFICATIONS.
- THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE DEVELOPER.

S.E.S.C. SEQUENCE OF CONSTRUCTION

- INSTALL ALL SOIL EROSION AND TREE PROTECTION FENCING AS PER APPROVED PLANS. CLEAR ONLY WHAT IS NECESSARY TO INSTALL FENCING.
- STRIP AND STOCKPILE TOPSOIL IN A LOCATION APPROVED BY THE OWNER/ENGINEER. PLACEMENT OF ADDITIONAL CONTROL MEASURES MUST BE INSTALLED ON AND AROUND THE STOCKPILE.
- CONSTRUCT DETENTION BASIN ALONG WITH APPLICABLE STORM SEWER (END-SECTIONS, SHORT STORM SEWER LENGTHS, STANDPIPE OUTLET FILTER). GRADE TO FINAL ELEVATIONS, DISTRIBUTE TOPSOIL, SEED AND STAKE STRAW MULCH BLANKETS ON THE SLOPES OF THE BASIN.
- INSTALL UTILITIES (WATER MAIN, STORM SEWER, SANITARY SEWER) COMPLETE.
- INSTALL, AS PER APPROVED PLANS, THE CATCH BASIN INLET FILTERS. INSPECT AND MAINTAIN FILTERS AS DIRECTED TO PREVENT CLOGGING AND UNNECESSARY FLOODING.
- GRADE ROADWAY LIMITS AND INSTALL PAVEMENT COMPLETE.
- BEGIN BUILDING CONSTRUCTION
- INSTALL ALL PUBLIC UTILITIES (GAS, ELECTRIC, TELEPHONE, CABLE) COMPLETE.
- STABILIZE TEMPORARILY OR PERMANENTLY ALL DISTURBED AREAS WITHIN FIVE (5) DAYS OF FINAL GRADE.
- INSPECT AND MAINTAIN ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES WEEKLY AND AFTER EVERY STORM EVENT THROUGHOUT THE CONSTRUCTION OF THE PROJECT. REMOVAL OF CONTROL MEASURES MAY ONLY TAKE PLACE ONCE THE ENTIRE SITE IS FULLY STABILIZED. UPON FULL STABILIZATION IS COMPLETE, REMOVE THE STAND PIPE AND GRAVEL FILTER. THE DEVELOPER IS RESPONSIBLE FOR ALL SOIL EROSION CONTROL MEASURES.
- VEGETATION MUST BE ACCEPTABLY ESTABLISHED PRIOR TO FINAL RELEASE OF THE CONSTRUCTION DEPOSIT BY THE ROAD COMMISSION FOR UNION LAKE ROAD.

SOIL EROSION CONTROL VIOLATIONS/CITATIONS

- ROUTINE INSPECTIONS WILL BE PERFORMED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSION (O.C.W.R.C.) OR ITS AGENT ONCE A WEEK.
- UPON COMPLETION OF INSPECTION, IF THE SITE IS FOUND NOT TO BE IN COMPLIANCE WITH O.C.W.R.C.'S SOIL EROSION AND SEDIMENTATION CONTROL ORDINANCE, THEN THE PERMIT HOLDER/SIGNER WILL BE ISSUED, BY HAND, MAIL OR EMAIL, A "NOTICE OF EROSION CONTROL DEFICIENCY" LETTER, THAT WILL INCLUDE ALL CURRENT AND PERTINENT NON-COMPLIANCE ITEMS. THE SITE AND/OR DEVELOPMENT WILL HAVE A PRE-DETERMINED AMOUNT OF TIME, FROM THE DATE OF THE "NOTICE" TO RECTIFY THESE ITEMS.
- IF ALL OF THE ITEMS HAVE NOT BEEN ADDRESSED AFTER THE ELAPSED TIME SPECIFIED, THE PERMIT HOLDER/SIGNER WILL RECEIVE A "NON-COMPLIANCE" LETTER, WHICH WILL INCLUDE A "NOTICE TO SHOW CAUSE".
- UPON RECEIPT OF THE "NON-COMPLIANCE" LETTER AND THE "NOTICE TO SHOW CAUSE", THE PERMIT HOLDER/SIGNER WILL ATTEND A SHOW CAUSE HEARING AS WELL AS PAY A RE-INSPECTION FEE IN THE AMOUNT OF \$250.00 TO THE O.C.W.R.C. FOR ADDITIONAL INSPECTIONS, HEARINGS AND REPORT FOLLOW UP. BEFORE MENTIONED ACTIVITIES MUST TAKE PLACE WITHIN 24 HOURS UPON RECEIPT OF THE LETTER. AFTER THE HEARING, THE PROJECT, DEVELOPMENT MAY BE ISSUED A "STOP WORK" ORDER.
- IF A CITATION IS ISSUED TO THE PERMIT HOLDER/SIGNER AFTER THE SHOW CAUSE HEARING, AN ADDITIONAL \$400.00 WILL BE PAID TO THEN O.C.W.R.C. FOR FOLLOW-UP INSPECTIONS, MEETINGS AND OTHER EXPENSES INCURRED.

DETENTION BASIN MAINTENANCE SCHEDULE :

- THE PROPERTY OWNER IS RESPONSIBLE FOR THE MAINTENANCE OF THE SEDIMENT STRUCTURES. MAINTENANCE SHOULD BE PERFORMED FOLLOWING ANY STORM AND SHOULD INCLUDE:
- CHECKING THE DEPTH OF SEDIMENT DEPOSIT TO ENSURE THE CAPACITY OF THE SEDIMENT STRUCTURES IS ADEQUATE FOR STORM WATER AND SEDIMENT DEPOSITION, AND FOR THE REMOVING OF SEDIMENT.
 - CHECKING THE BASIN FOR PIPING, SEEPAGE, OR OTHER MECHANICAL DAMAGE.
 - CHECKING FOR THE PRESENCE OF ANY SOIL CAKING, WHICH WOULD PREVENT PROPER DRAINAGE FROM THE BASIN.
 - ANY PROBLEM DISCOVERED DURING THE MAINTENANCE CHECKS SHOULD BE ADDRESSED IMMEDIATELY.
 - SEDIMENT REMOVED DURING CLEANING SHOULD BE PLACED AT AN UPLAND AREA AND STABILIZED SO THAT IT DOES NOT RE-ENTER THE DRAINAGE COURSE.

GROUND WATER NOTES

- IF THE STATIC GROUNDWATER LEVEL IS HIGHER THAN THE ELEVATION AT WHICH PROPOSED CONSTRUCTION WORK WILL TAKE PLACE, WHETHER DETERMINED BY INITIAL SOIL BORINGS OR DURING CONSTRUCTION, SO THAT IT WILL BE NECESSARY TO DEWATER AN AREA TO CONTINUE CONSTRUCTION, THEN THE WHITE LAKE TOWNSHIP WILL REQUIRE A WRITTEN DEWATERING PROCEDURE PROVIDED BY THE APPLICANT'S ENGINEER, PRIOR TO COMMENCEMENT OF THE DEWATERING OPERATION.
- IF GROUNDWATER IS ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR MUST CONTACT WHITE LAKE D.P.S IN WRITING SHOWING NEED TO DEWATER PRIOR TO ANY FURTHER CONSTRUCTION.
- IF PROCEDURES ARE NOT SUBMITTED OR, ONCE APPROVED, ARE NOT ADHERED TO, THEN WHITE LAKE TOWNSHIP MAY TAKE ACTION TO SUSPEND DEWATERING ACTIVITIES AT THE PROJECT TO REQUIRE THE ADHERENCE TO PROCEDURES.

INSPECTION & MAINTENANCE SCHEDULE FOR SOIL EROSION CONTROL

GRADE STABILIZATION STRUCTURES SUCH AS: DROP CONTROL STRUCTURES; SIDE DRAINS (ENCLOSED); DROP INLET SPILLWAYS; DROP PIPES; STRAIGHT PIPES; TOEWALLS; DROP BOXES; CHUTES OR FLUMES (SOD, ROCK CONCRETE); EARTH EMBANKMENT STRUCTURES; DOWNDRAINS; SPILLWAYS SHALL BE MAINTAINED AS FOLLOWS:

BECAUSE GRADE STABILIZATION STRUCTURES ARE SUBJECT TO HIGH FLOW CONDITIONS, PERIODIC INSPECTIONS SHOULD BE PERFORMED TO ENSURE THAT EROSION IS NOT OCCURRING, AND THAT VEGETATION IS ADEQUATELY ESTABLISHED. THESE STRUCTURES SHOULD ALSO BE INSPECTED AFTER STORM EVENTS WHICH EXCEED THE DESIGN STORM.

THE DETENTION BASIN SHOULD BE INVESTIGATED TO ENSURE THAT THE CONCENTRATED FLOWS ARE NOT CAUSING EROSION INTO THE BOTTOM OF THE BASIN AND BLOCKING INFILTRATION. CHECK THE EMERGENCY BYPASS/OVERFLOW FOR EROSION. CHECK THE STRUCTURES ITSELF FOR CRACKED CONCRETE. UNEVEN OR EXCESSIVE SETTLING, PIPING AND PROPER DRAIN FUNCTIONING. REPAIR OR REPLACE FAILING STRUCTURES IMMEDIATELY. ADDRESS VEGETATION AND EROSION PROBLEMS AS SOON AS WEATHER PERMITS. OPEN STRUCTURES SHOULD BE SIGNED OR MARKED TO ALERT PEOPLE IN THE VICINITY ABOUT POTENTIAL DANGERS.

RIP-RAP

INSPECTIONS SHOULD BE MADE OF ALL RIP-RAPPED SITES IMMEDIATELY AFTER THE FIRST RAINFALL FOLLOWING INSTALLATION. THIS IS PARTICULARLY IMPORTANT IN AREAS WHERE RIP-RAP THAT IS DISPLACED DURING THE STORM WOULD IMPACT CULTIVETS. THEREFORE, RIP-RAP SITES SHOULD BE CHECKED FOLLOWING STORMS, ESPECIALLY THOSE WHICH ARE NEAR OR EXCEED STORM FREQUENCY USED IN THE DESIGN. DISPLACED RIP-RAP SHOULD BE REMOVED FROM ITS DOWNSTREAM LOCATION AND NEW RIP-RAP PLACED ACCORDING TO THE ENGINEERED SPECIFICATIONS.

STORMWATER CONVEYANCE CHANNEL

AT MINIMUM, CHECK ALL CONSTRUCTED CHANNELS AFTER EACH STORM WHICH MEETS OR EXCEEDS THE DESIGN STORM. ON RIP-RAP LINED WATERWAYS, CHECK FOR SCOURING BELOW THE RIP-RAP LAYER, AND BE SURE THE STONES HAVE NOT BEEN DISPLACED BY THE FLOW. PARTICULAR ATTENTION SHOULD BE PAID TO THE OUTLET OF THE CHANNEL. IF EROSION IS OCCURRING, APPROPRIATE ENERGY DISSIPATION MEASURES SHOULD BE TAKEN. SEDIMENT SHOULD BE REMOVED FROM RIP-RAP LINED CHANNELS IF IT REDUCES THE CAPACITY OF THE CHANNEL.

SPOIL PILES

WHEN VEGETATION STABILIZATION IS PROMPTLY AND EFFECTIVELY APPLIED, VERY LITTLE MAINTENANCE IS REQUIRED. THE GUIDELINES BELOW SHOULD BE FOLLOWED ON ALL SITES: (1) PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE EXCESSIVE EROSION HASN'T OCCURRED. IF RUN OFF OR WIND EROSION HAS OCCURRED, REDUCE THE SIDE OF SLOPES OF THE SPOIL PILE, OR STABILIZE THE SPOIL PILE WITH PIECES OF SOD LAID PERPENDICULAR TO THE SLOPE, AND STAKED. (2) WHEN FILTER FENCING IS USED AROUND A SPOIL PILE, PERIODIC CHECKS SHOULD BE MADE TO ENSURE THAT PIPING HAS NOT OCCURRED UNDER FENCING, AND TO ENSURE THE FENCE HAS NOT COLLAPSED DUE TO SOIL SLIPPING OR ACCESS BY CONSTRUCTION EQUIPMENT. REPAIR ANY DAMAGED FENCING IMMEDIATELY. (3) BERMS AT THE BASE OF THE SPOIL PILE WHICH BECOME DAMAGED SHOULD BE REPLACED.

CATCH BASIN FILTERS

EFFECTIVE FILTERS WILL COLLECT SEDIMENT, PARTICULARLY WHEN THE SOIL IS SANDY. THESE FILTERS MUST BE CLEANED PERIODICALLY, SO THEY DON'T BECOME CLOGGED AND CAUSE FLOODING CONDITIONS, PIPING, OR OVERTOPPING OF THE CONTROL STRUCTURES. MAINTENANCE OF THESE ITEMS REQUIRES INSPECTION WEEKLY OR AFTER EACH RAIN EVENT. ALSO, THESE ITEMS ARE REUSABLE IF MAINTAINED CORRECTLY. THEY CAN BE REMOVED, EMPTIED, CLEANED AND REPLACED WITHOUT PURCHASING NEW ONES.

BUFFER/FILTER STRIPS

(25' ENVIRONMENTAL SETBACKS)
PERIODIC INSPECTIONS SHOULD BE DONE TO ENSURE THAT CONCENTRATED FLOWS HAVE NOT DEVELOPED, AND TO MAKE SURE THE VEGETATIVE COVER IS MAINTAINING ITS EFFECTIVENESS. IF THE INTEGRITY OF THE BUFFER/FILTER STRIP IS JEOPARDIZED BY UPLAND EROSION, OR IF CONCENTRATED FLOWS ARE CREATING RILLS OR GULLIES UP-SLOPE OF THE STRIP, ADDITIONAL BMP'S MAY NEED TO BE INSTALLED. IF THE BUFFER STRIP IS BEING JEOPARDIZED BY STREAM BANK EROSION, THEN THE CAUSE OF THE BANK EROSION NEEDS TO BE INVESTIGATED AND ACTIONS TAKEN TO ADDRESS THE CAUSES. DAMAGED STRIPS SHOULD BE REPAIRED AS SOON AS POSSIBLE. STRIPS DAMAGED DUE TO CONSTRUCTION UP-SLOPE OF THE BUFFER/FILTER SHOULD BE REPLANTED, AS NECESSARY, AFTER THE CAUSE OF THE DAMAGE IS ASSESSED AND ANY OTHER BMP'S ARE NEEDED ARE IMPLEMENTED.

SILT FENCE

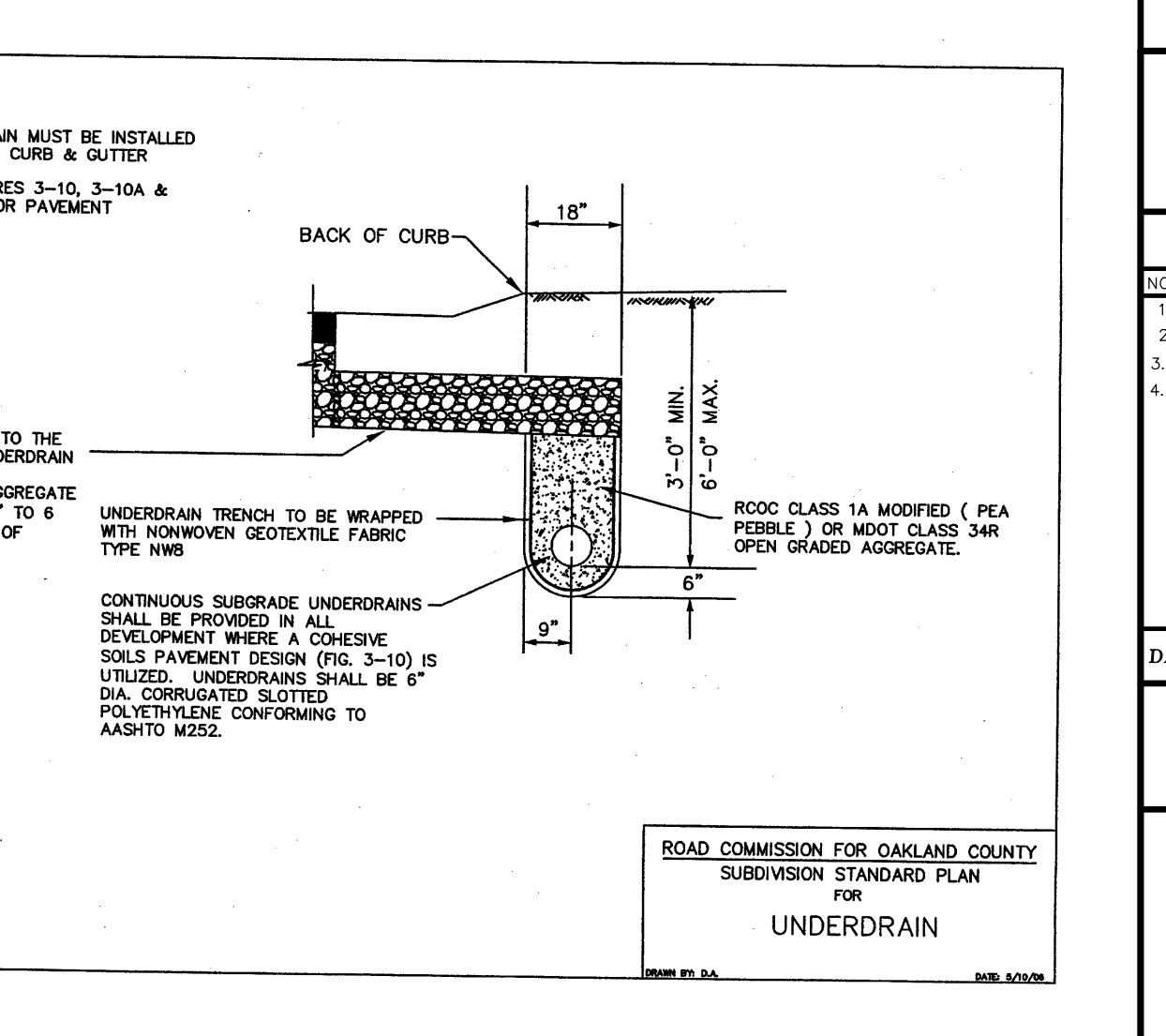
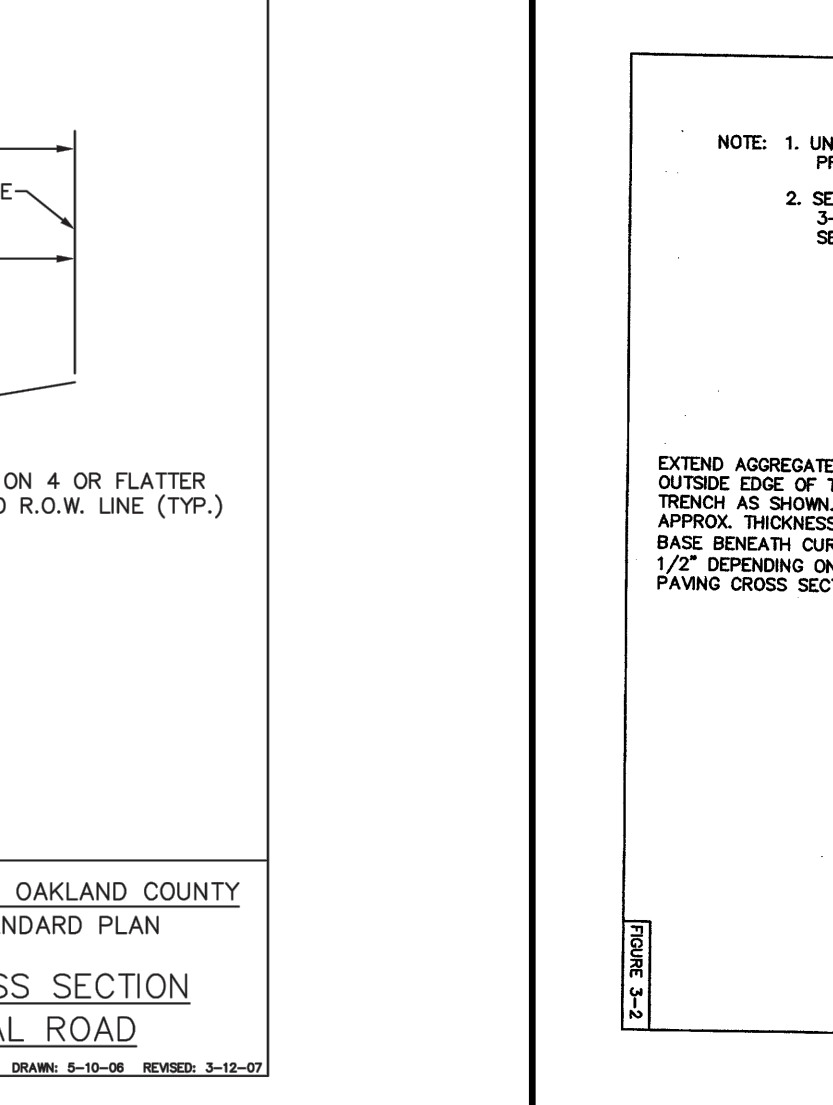
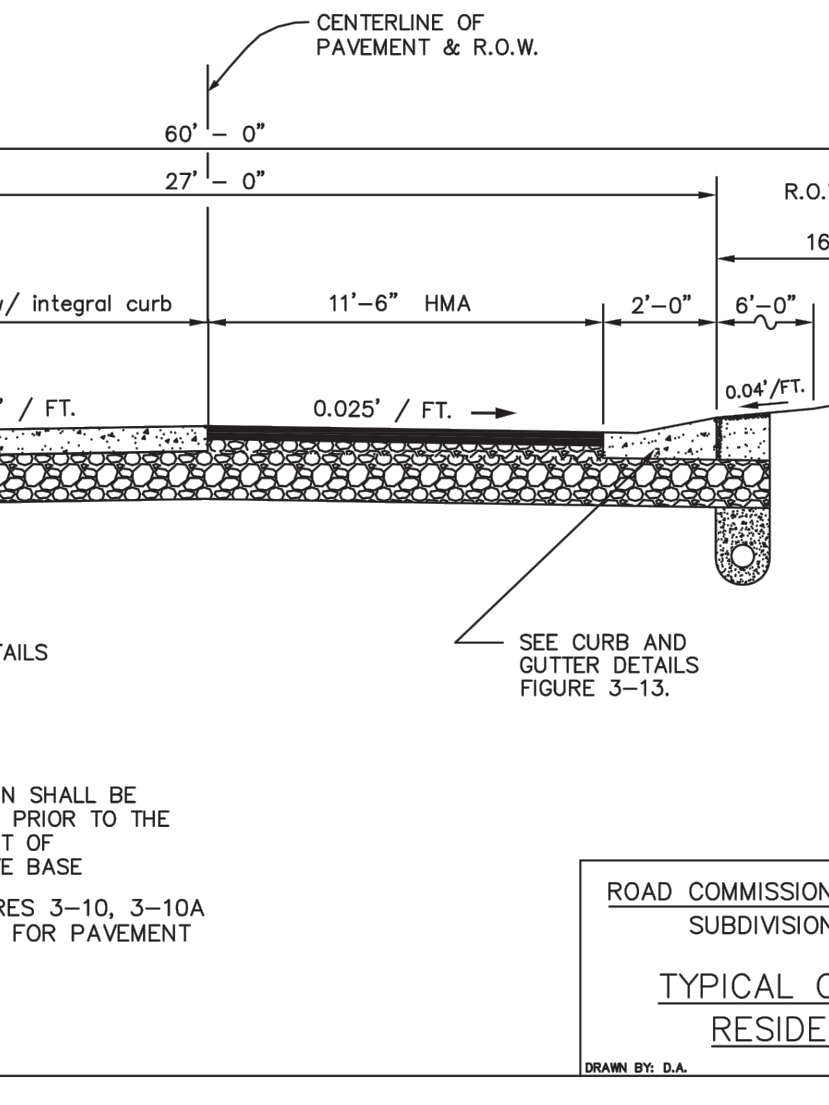
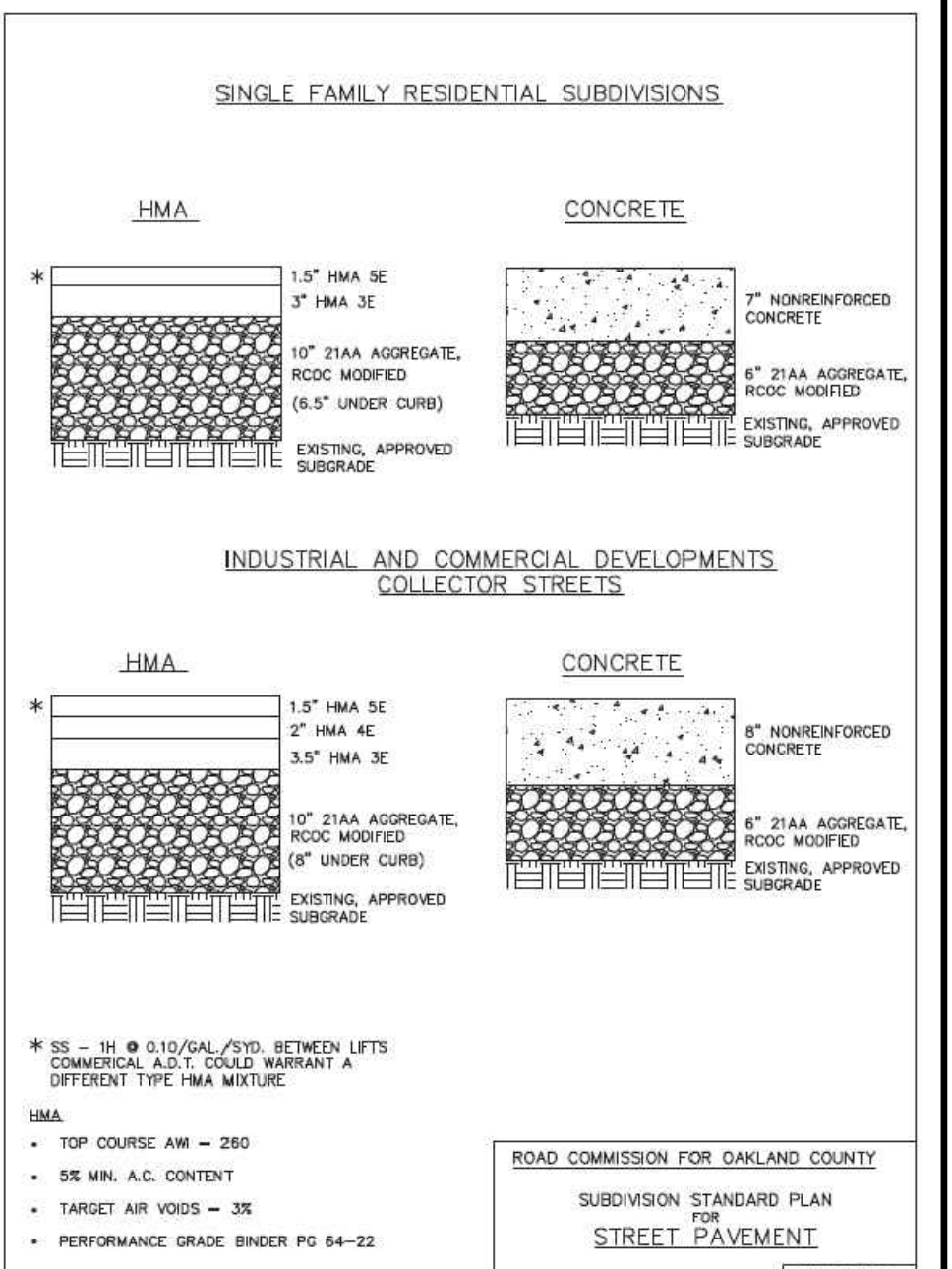
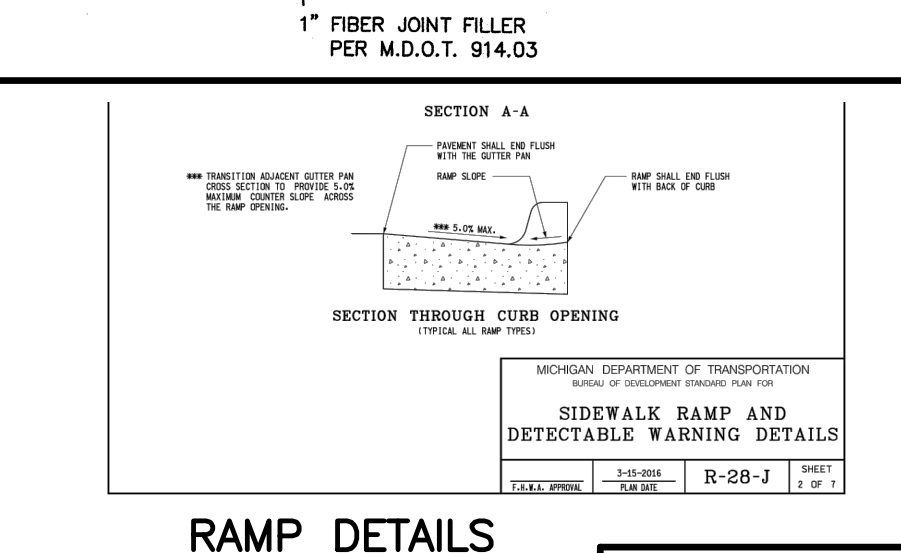
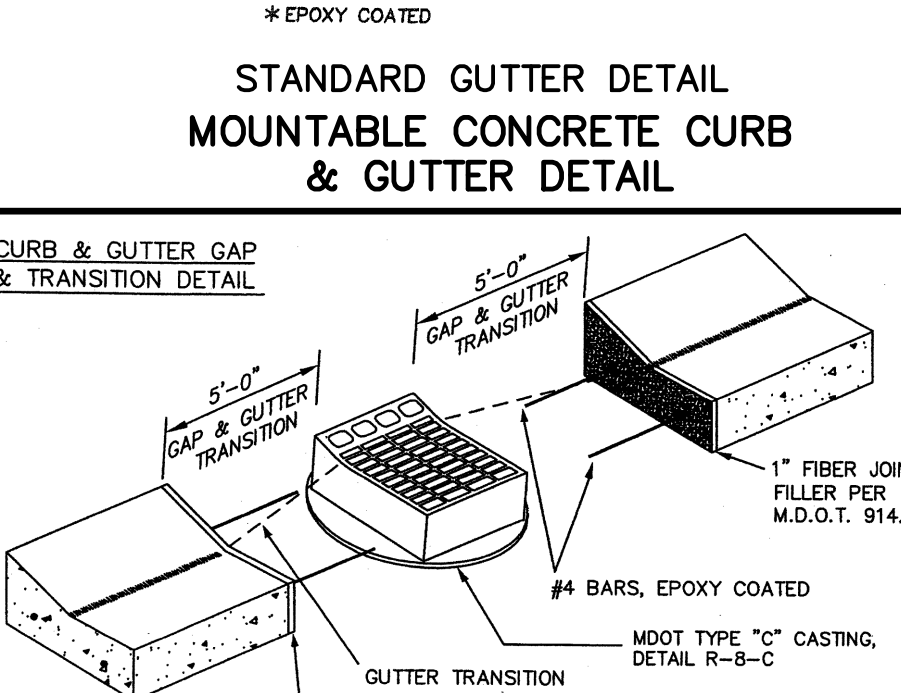
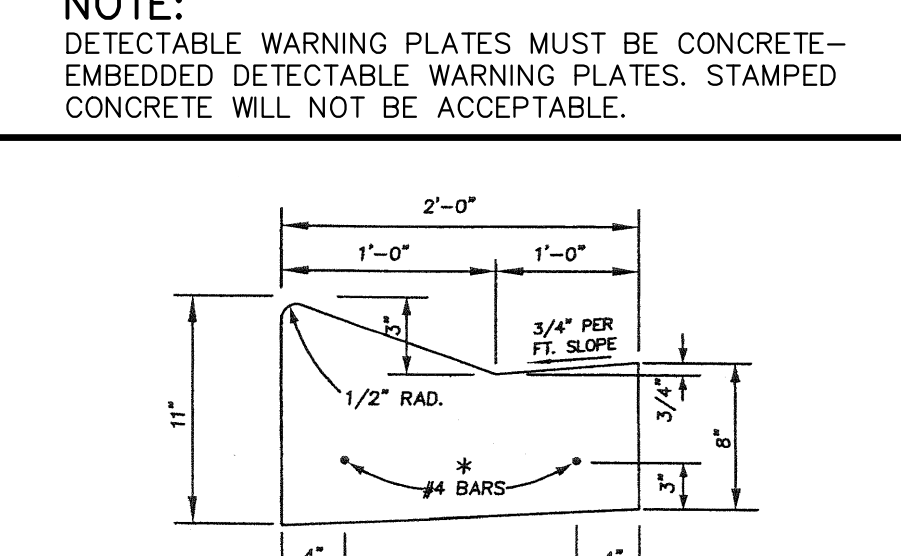
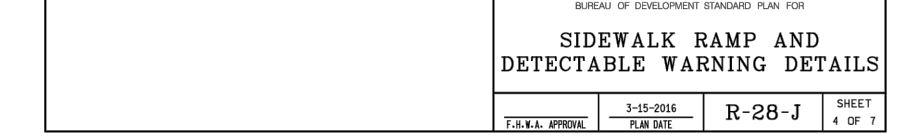
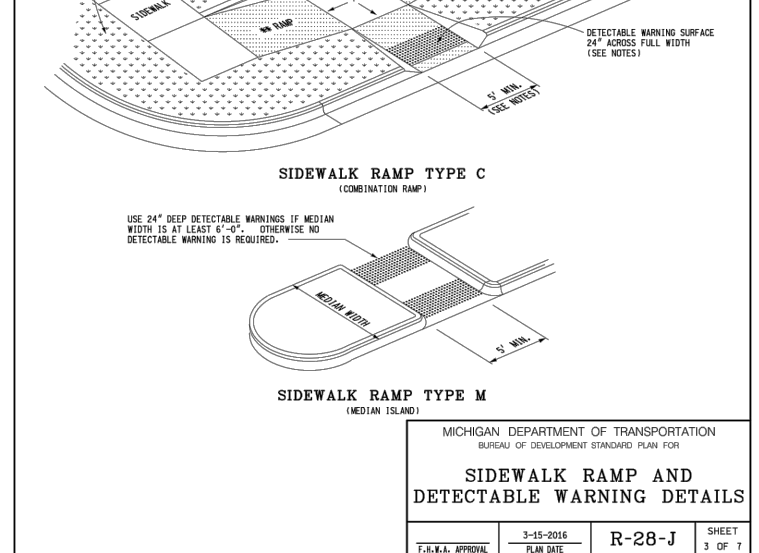
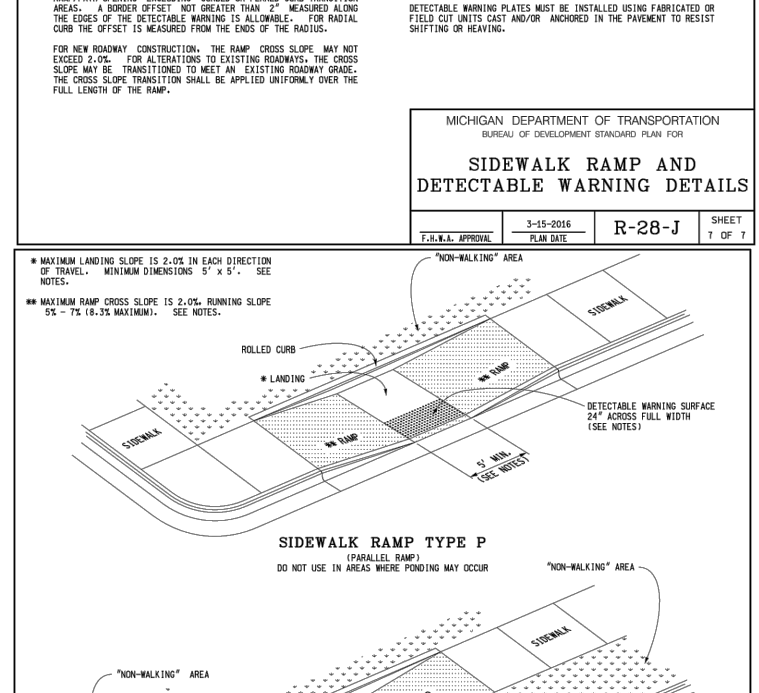
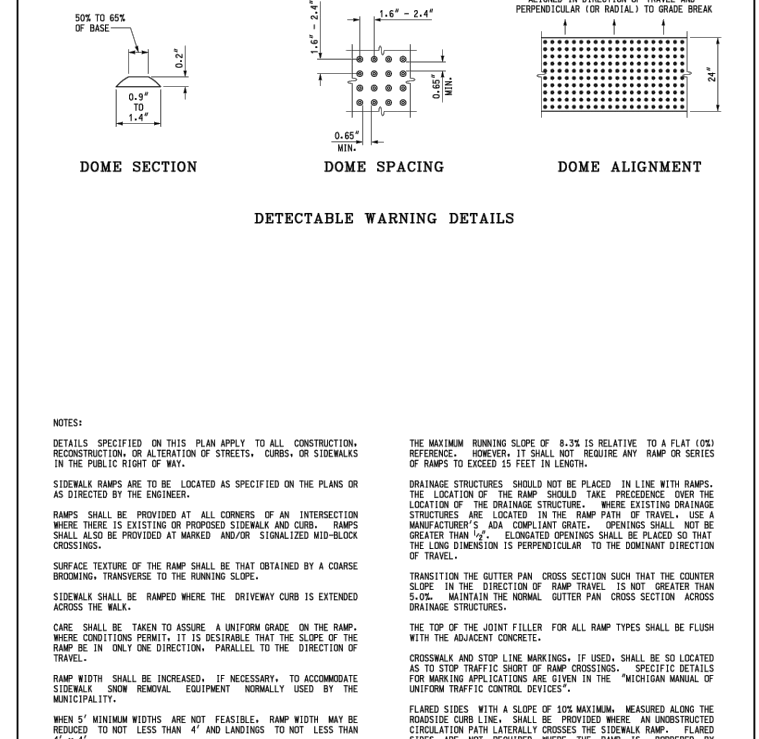
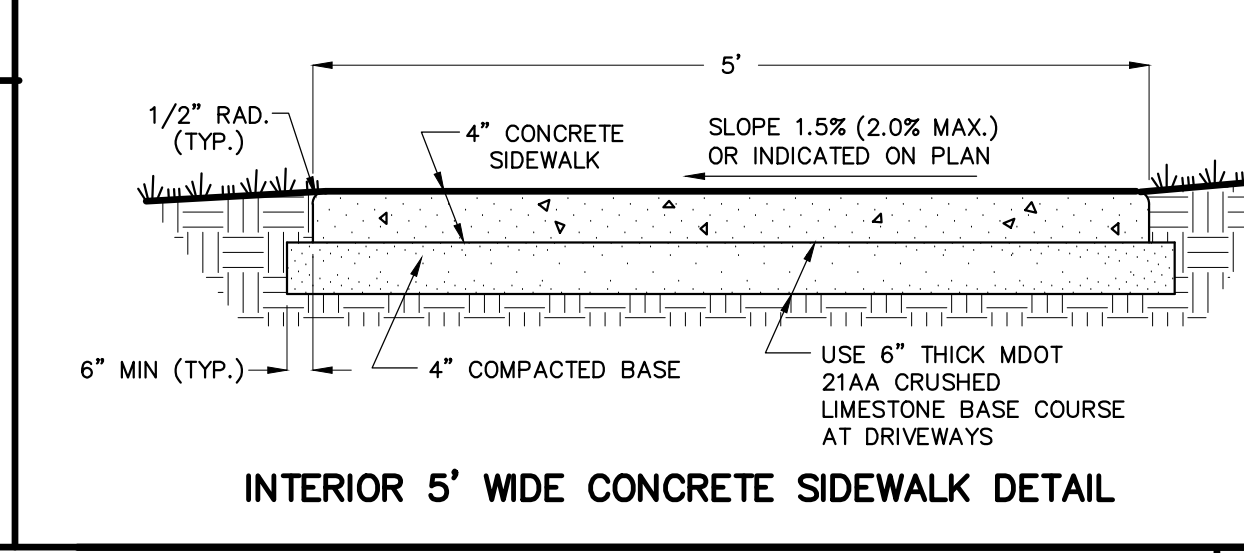
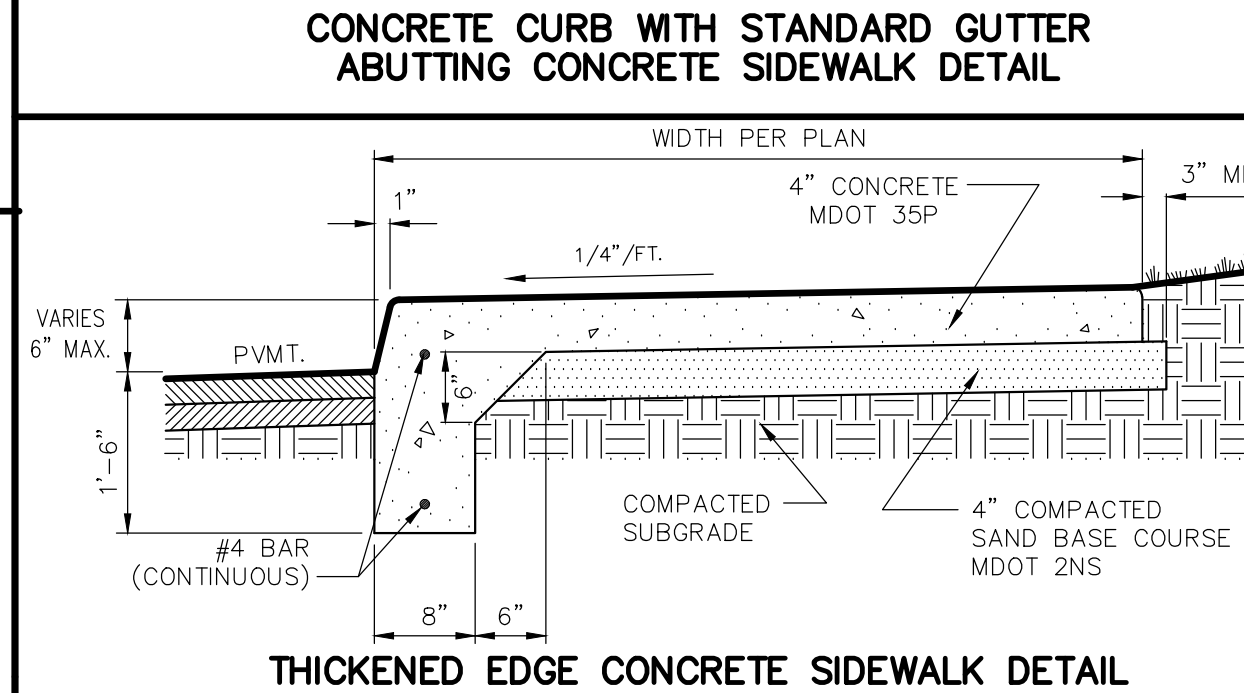
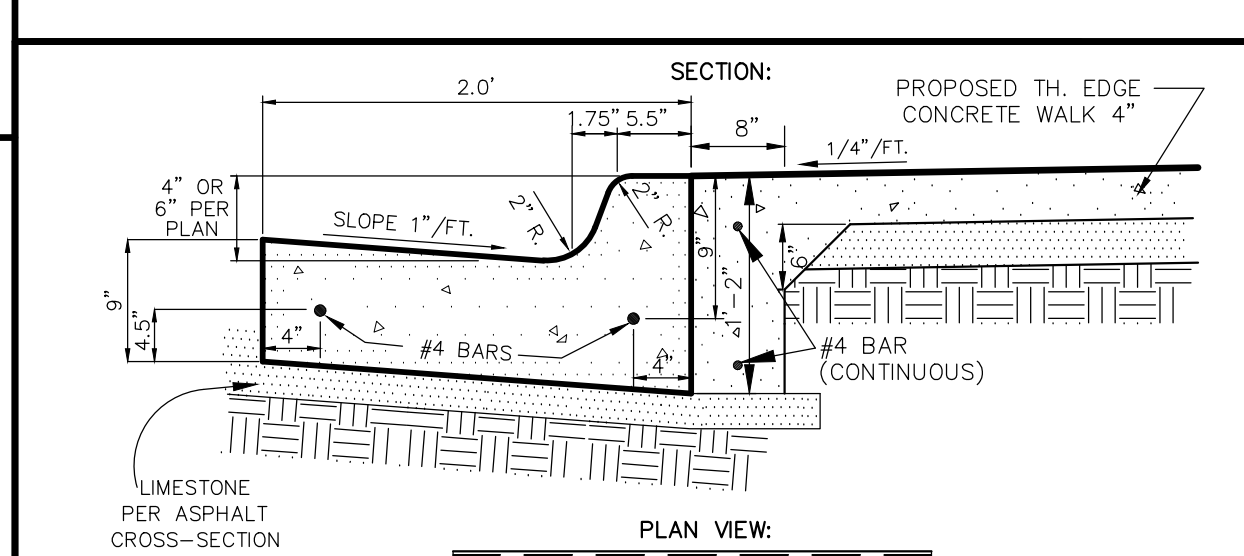
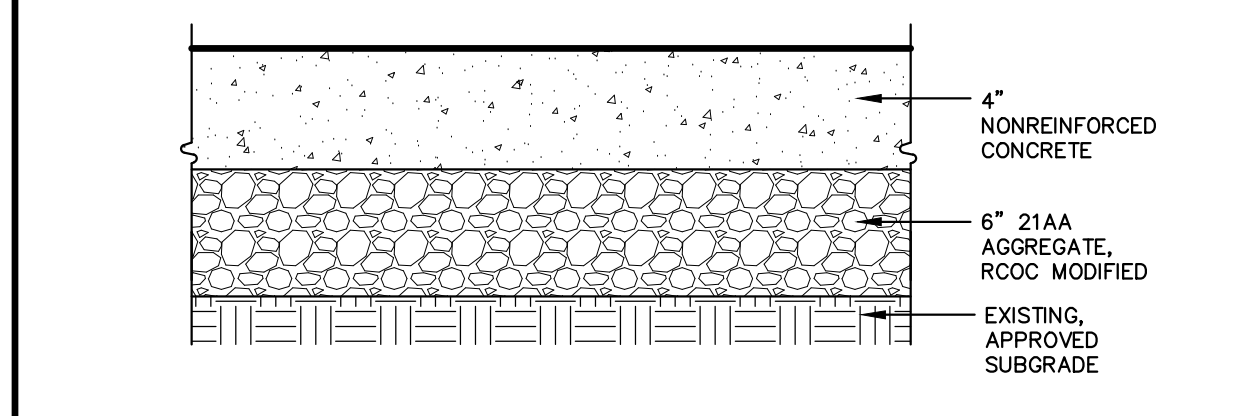
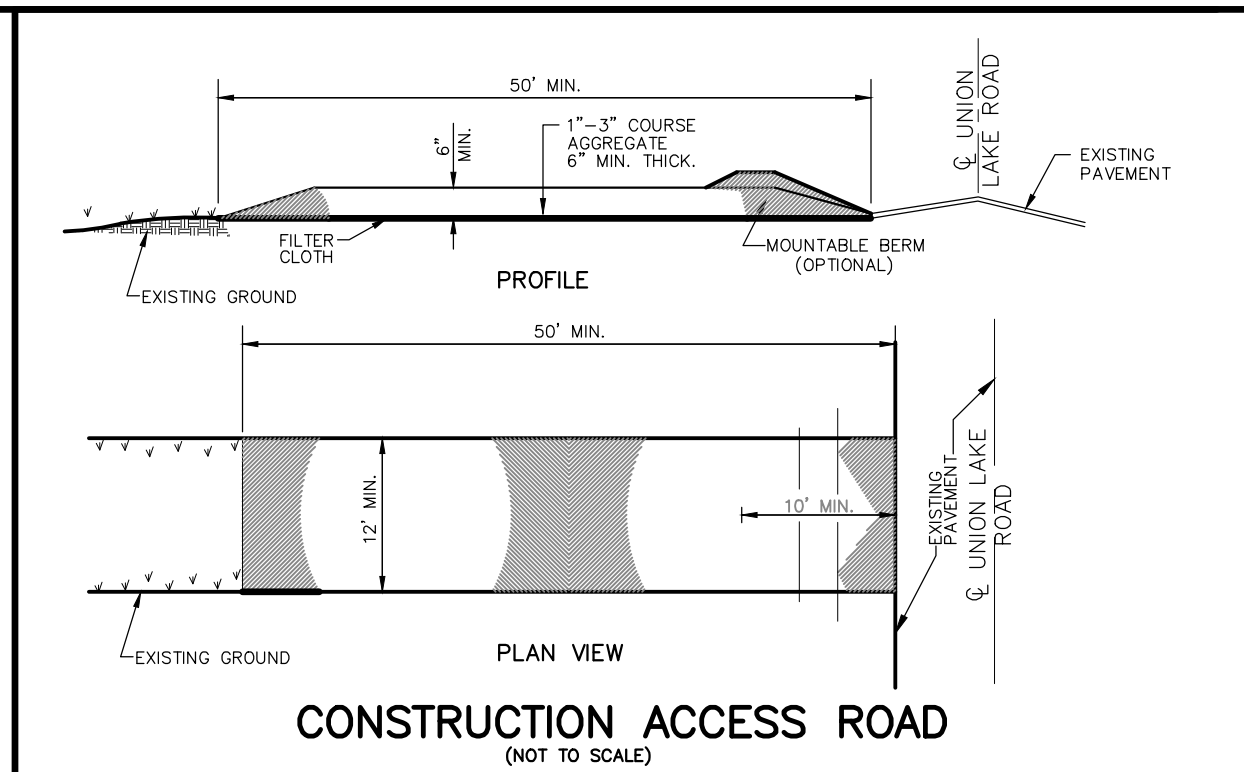
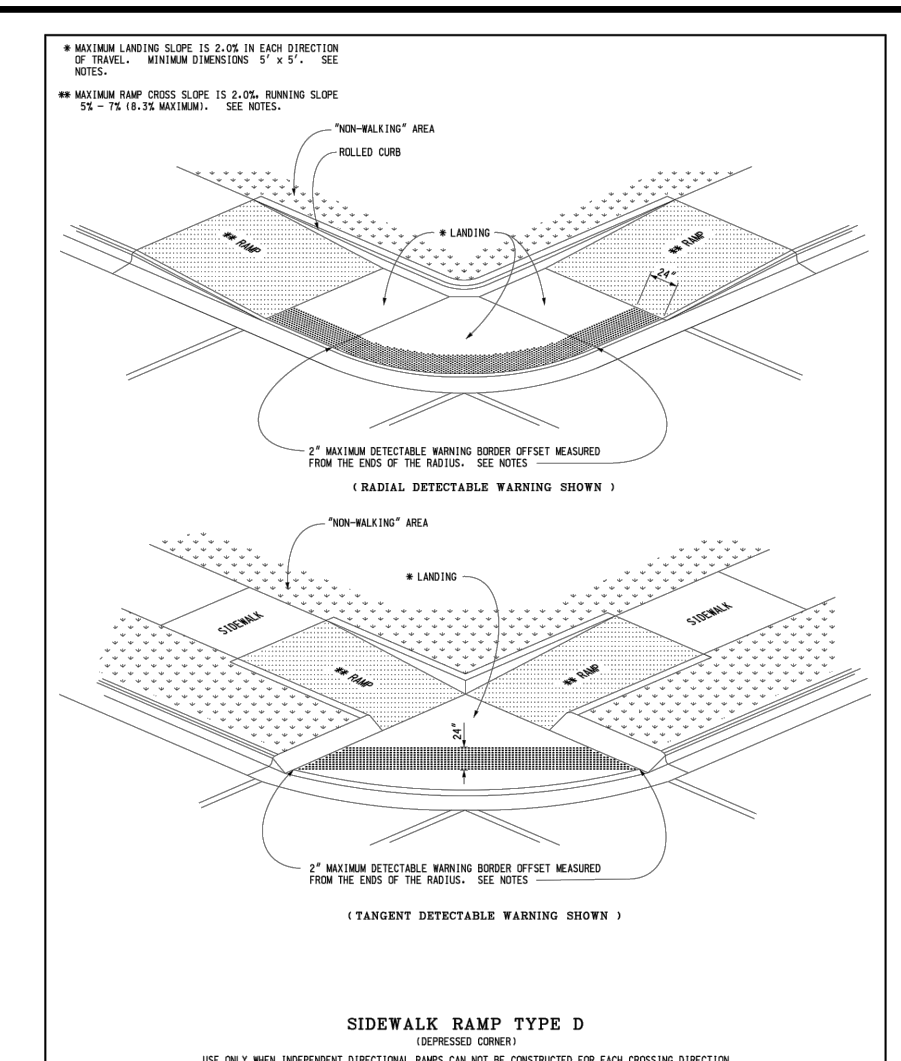
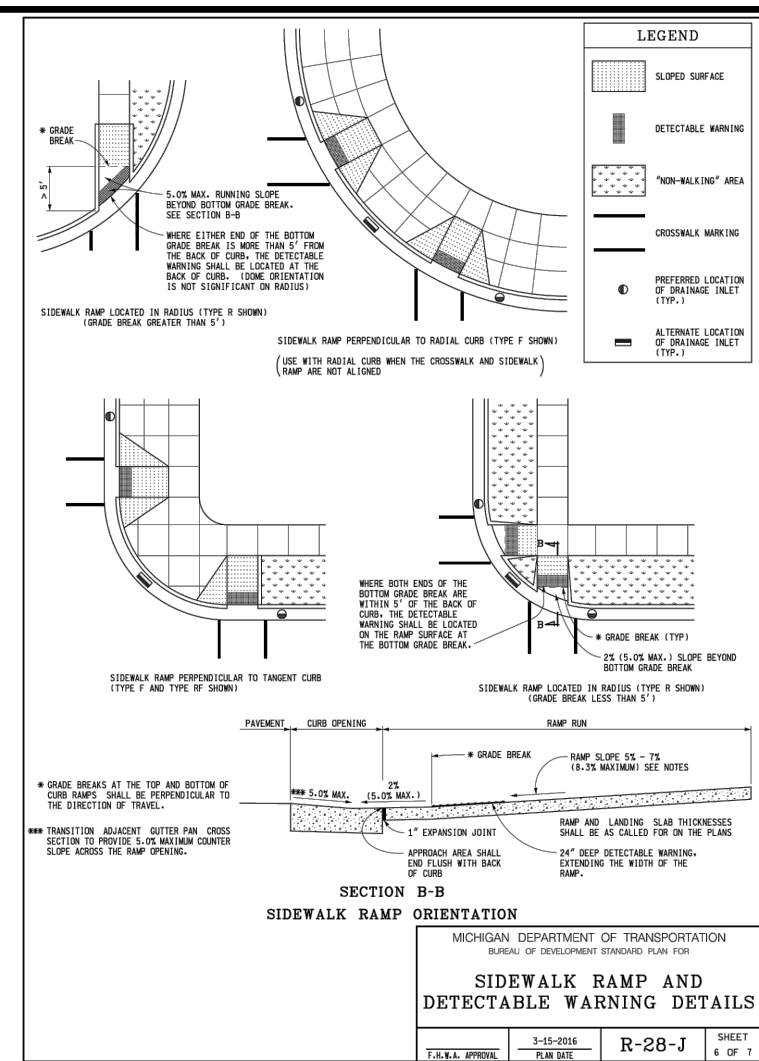
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SEEDING, SODDING & MULCHING

SEEDING, SODDING OR MULCHED AREAS SHOULD BE CHECKED FOLLOWING EACH RAIN TO ENSURE THE MATERIAL IS STAYING IN PLACE. ADDITIONAL TACKING MATERIALS OR NETTING MAY BE NEEDED TO BE APPLIED TO HOLD THE AFOREMENTIONED MATERIALS IN PLACE. MAINTENANCE PROCEDURES SHOULD ALSO BE FOLLOWED FOR THE BMP'S WHICH WERE IMPLEMENTED TO KEEP ERODED SOIL OR CONCENTRATED RUNOFF AWAY FROM THESE TARGET AREAS.

ACCESS ROAD (UNION LAKE ROAD)

PROPER MAINTENANCE INCLUDE ADDING ADDITIONAL LAYERS OF STONE WHEN THE ORIGINAL STONE BECOMES COVERED WITH MUD. AFTER EACH STORM EVENT, INSPECT THE ROAD FOR EROSION AND MAKE ANY NECESSARY REPAIRS. IT IS ALSO IMPORTANT TO CHECK AND MAINTAIN ANY BMP'S WHICH ARE USED IN CONJUNCTION WITH THIS BMP, ESPECIALLY THOSE FOR DRAINAGE. ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC RIGHT-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY SWEEPING.



LAKE POINTE

SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

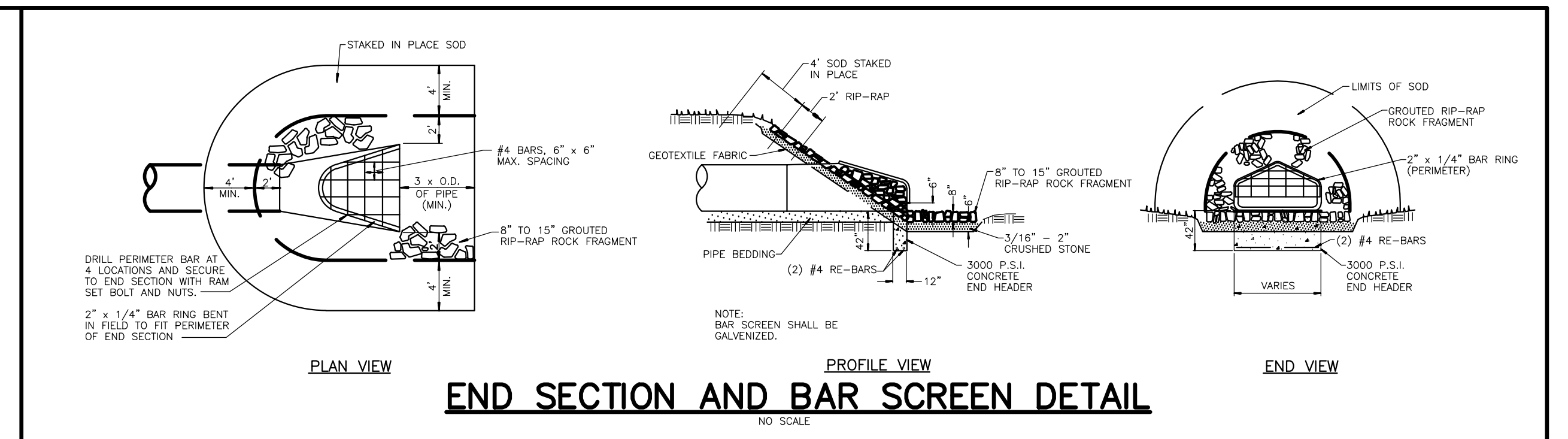
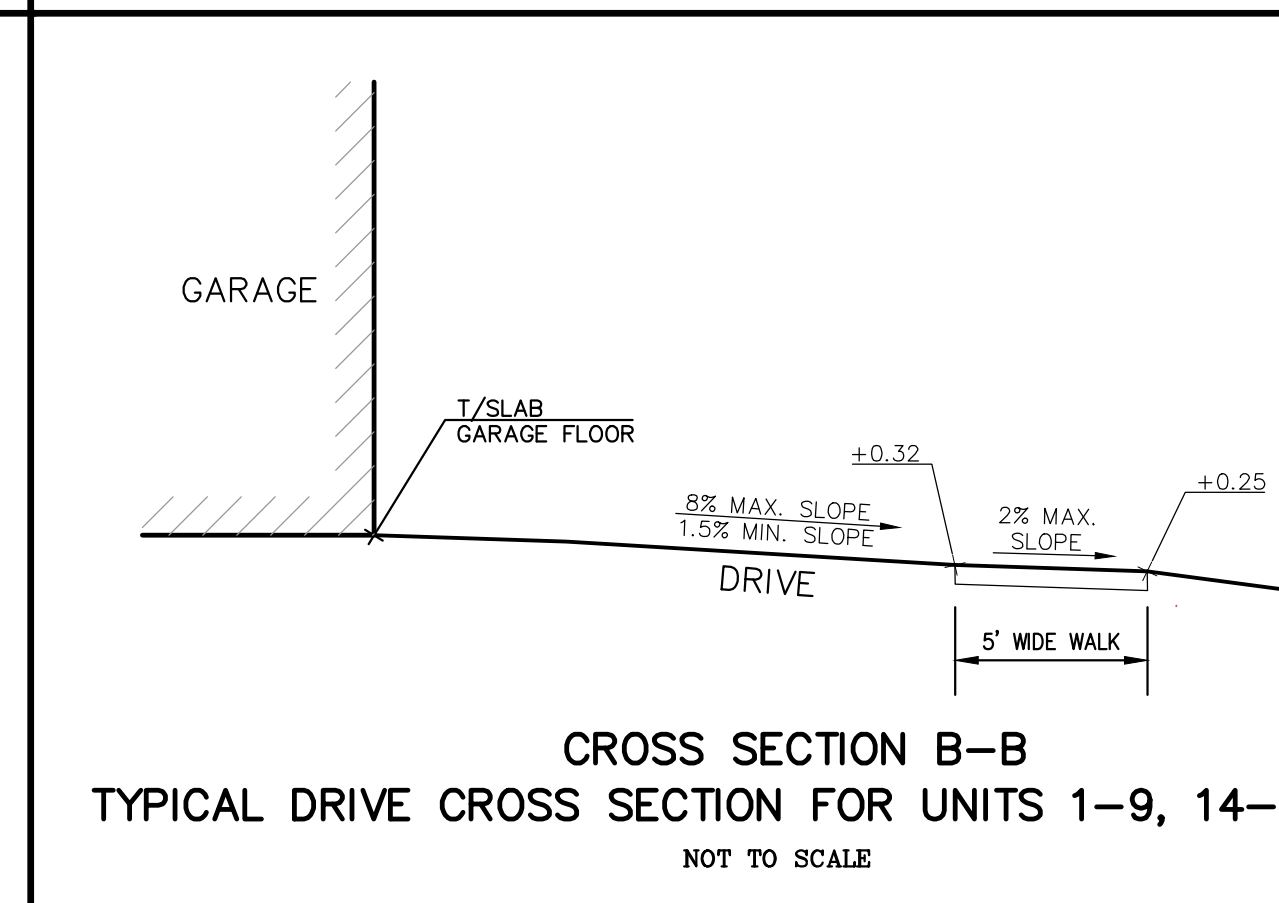
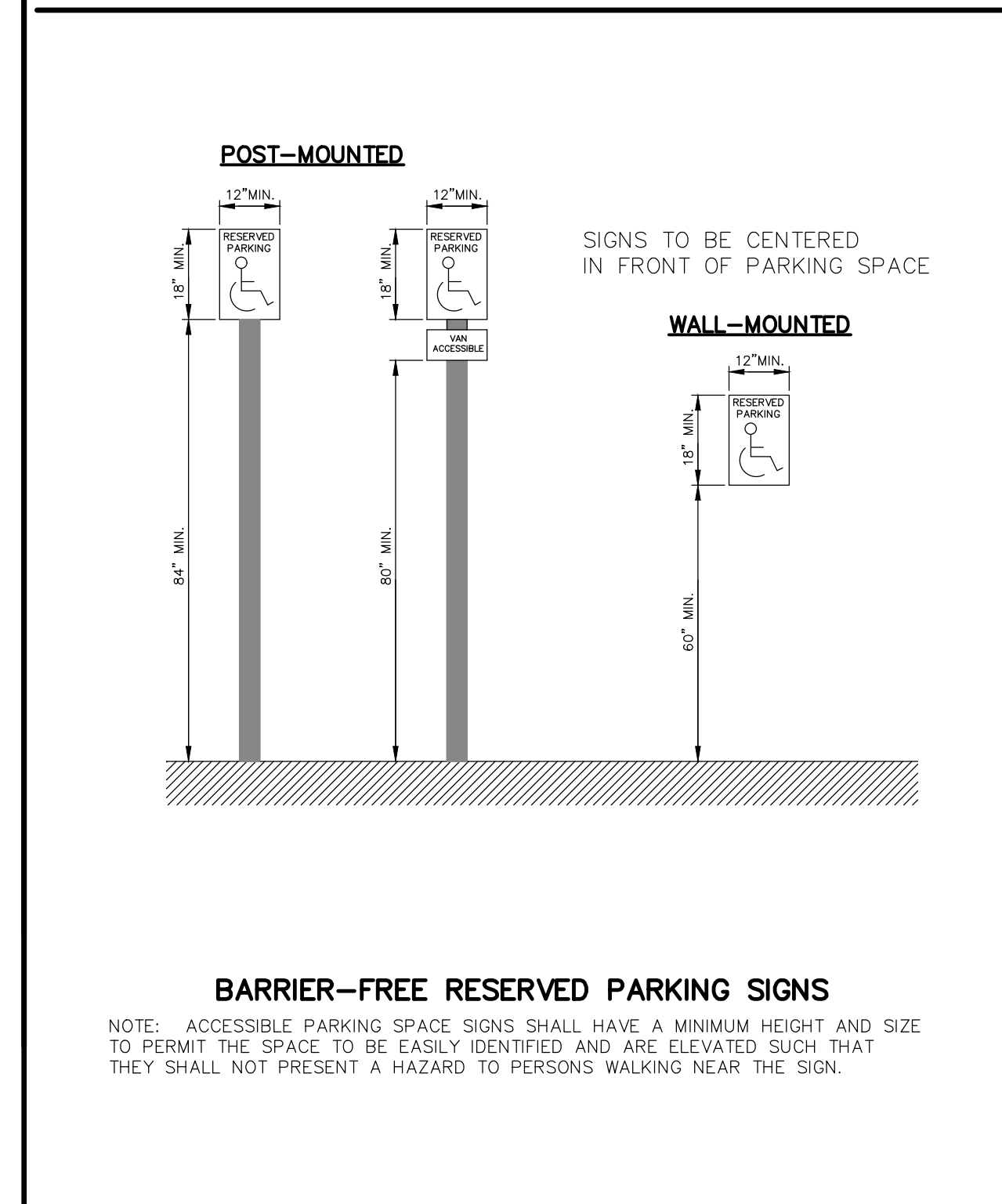
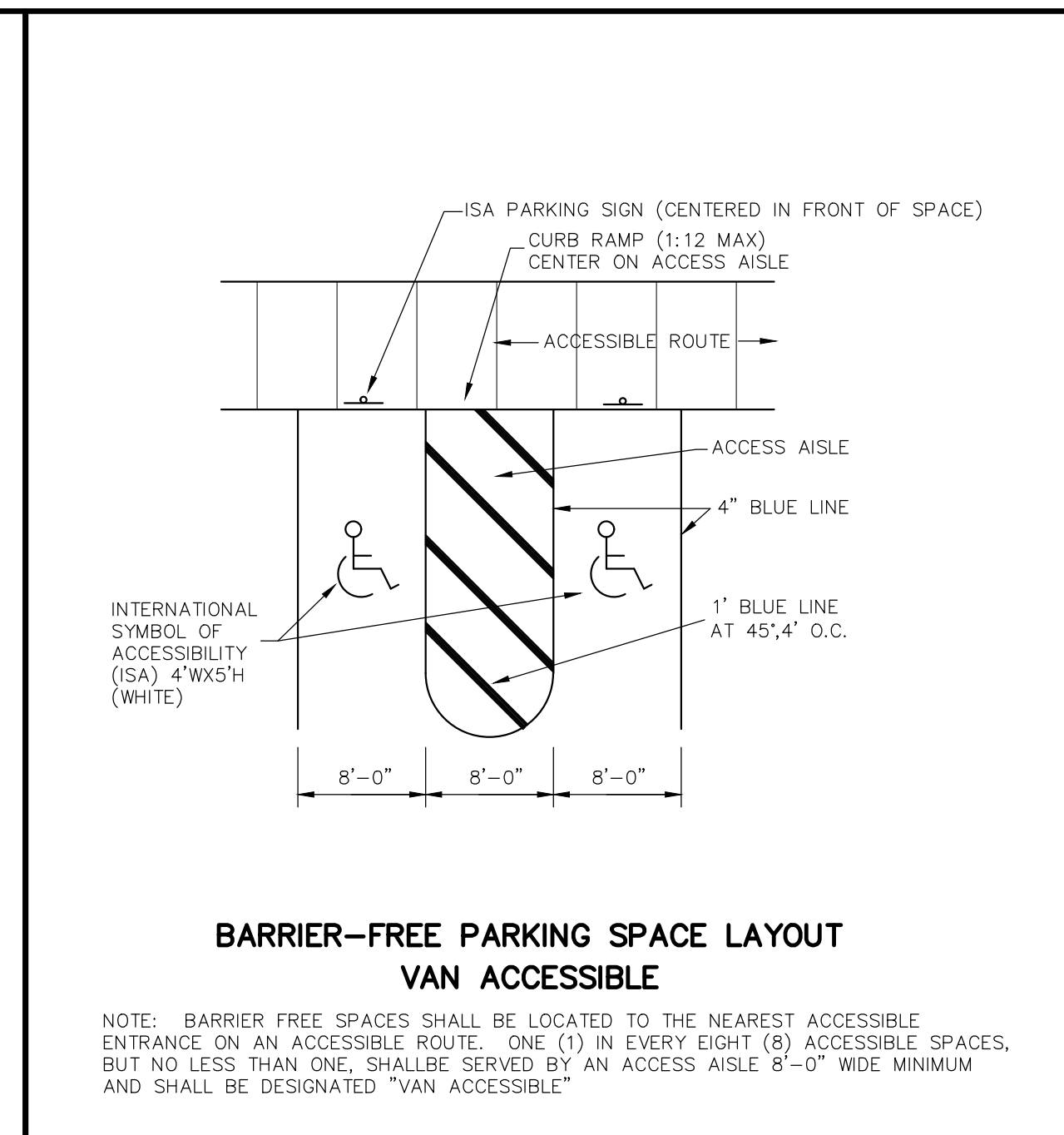
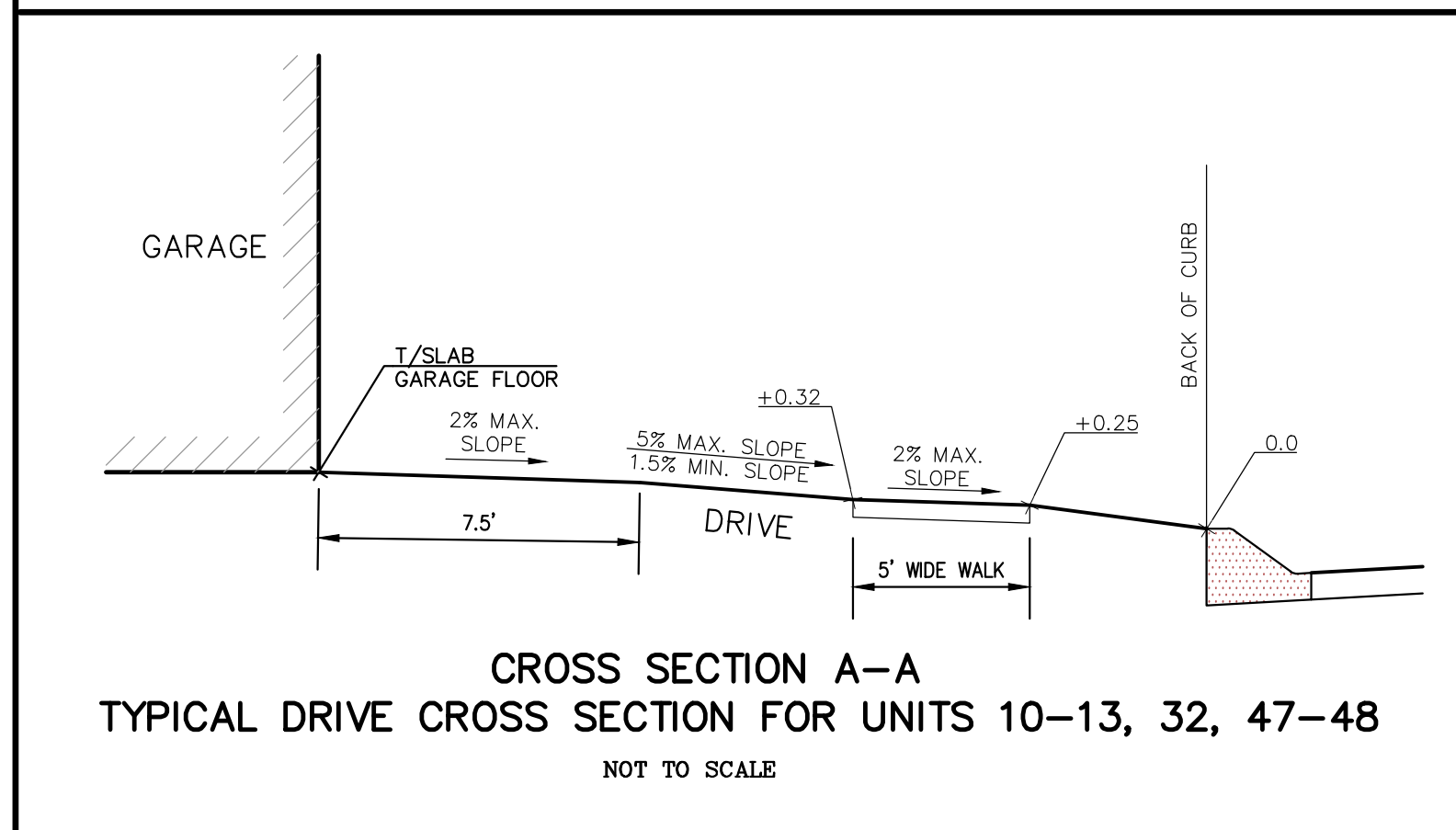
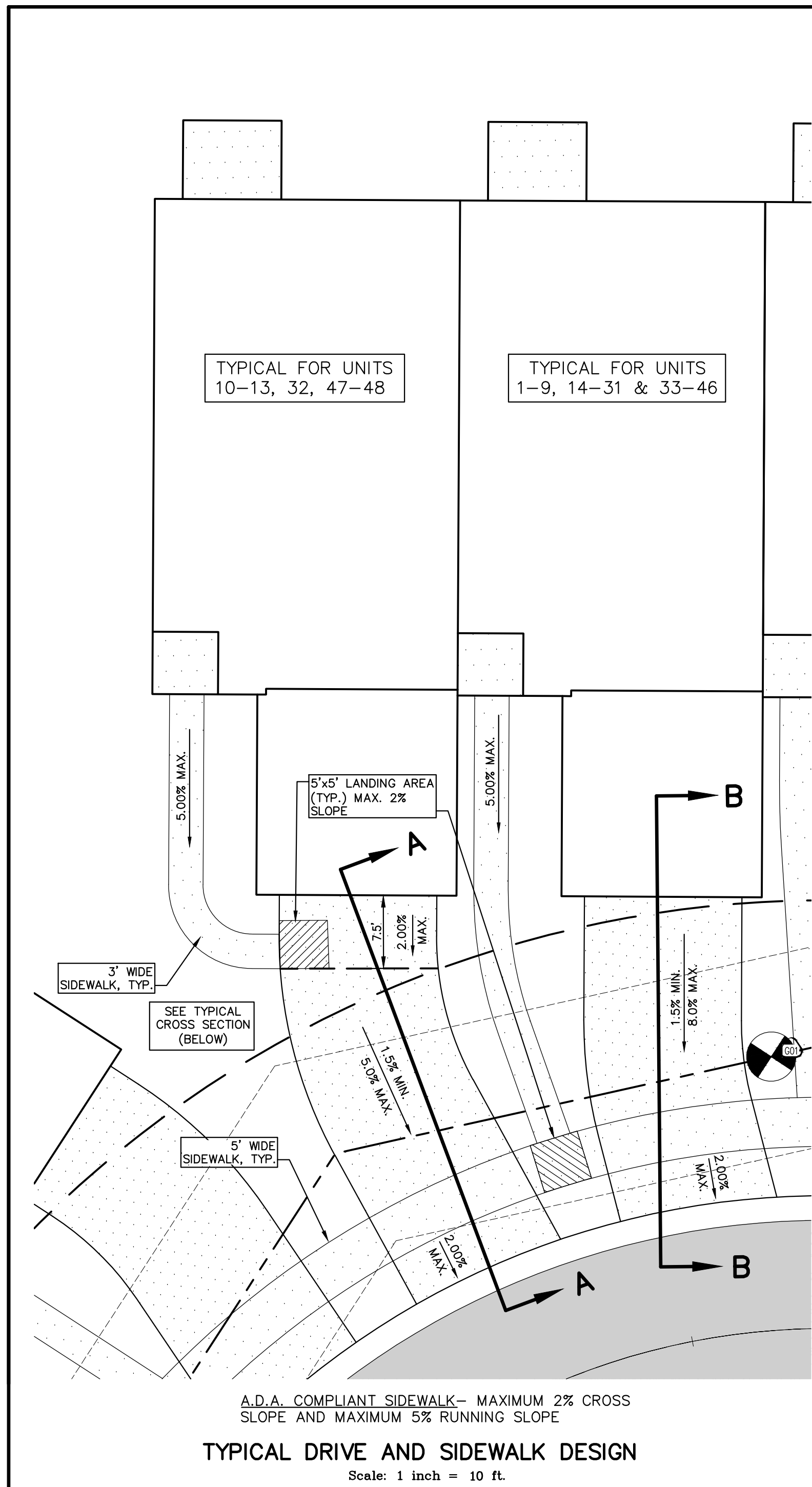
REVISIONS			UTILITY WARNING
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2.	REVISE GRADINGS ON UNITS 2 AND 6	11-9-20	
3.	REV PER 11-20-20 W.L. TWP LETTER	02-02-21	
4.	REVISE PER WHITE LAKE TWP	03-03-21	

DATE: 04-08-2020 DESIGNED BY: A.A. JOB NUMBER: 19-030
CHECKED BY: J.E. DRAWING FILE: 19030ND.dwg

NOTES AND DETAILS

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SHEET ND1



LAKE POINTE
SECTION 36, TOWN 3 NORTH, RANGE 8 EAST
WHITE LAKE TWP., OAKLAND COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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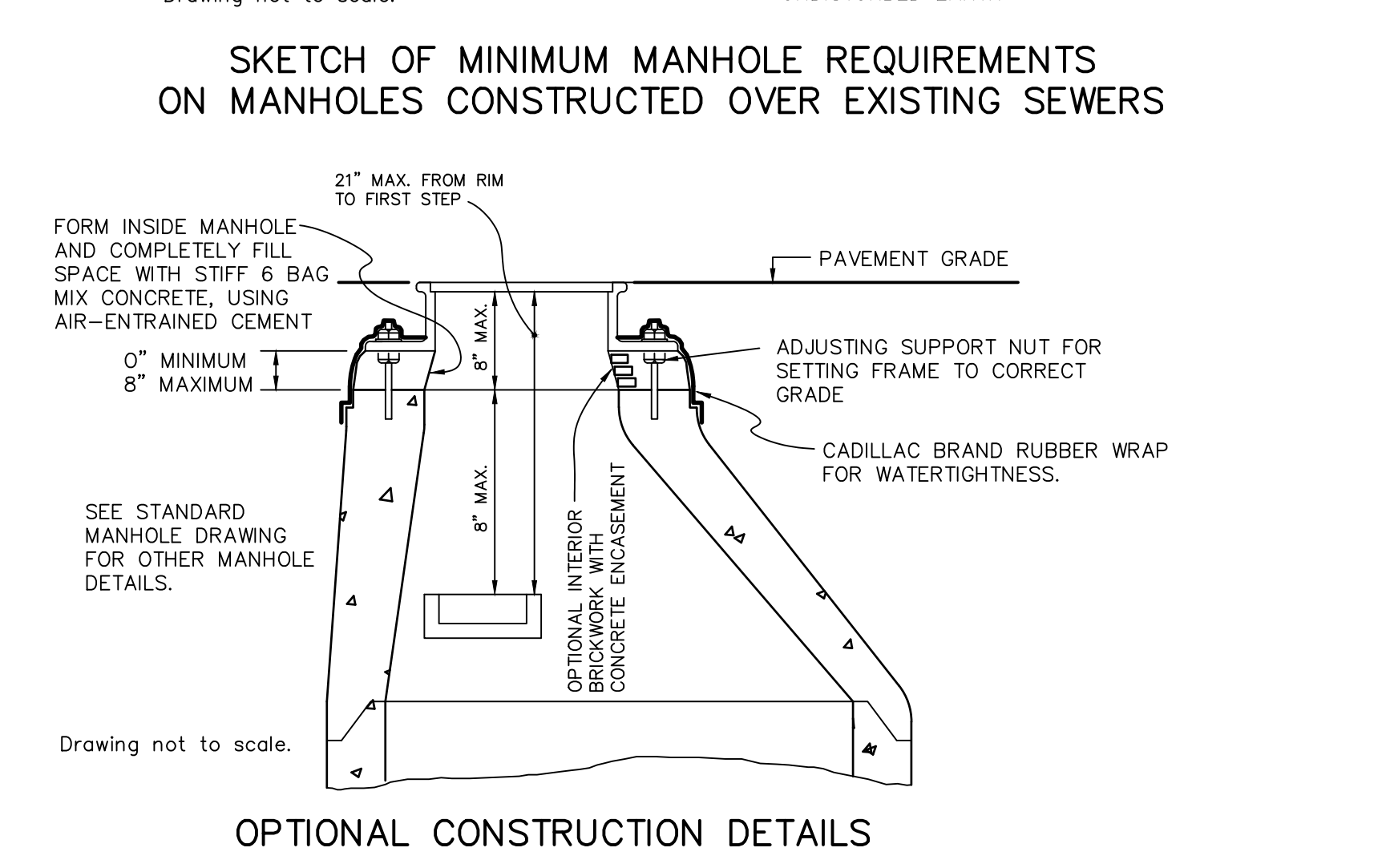
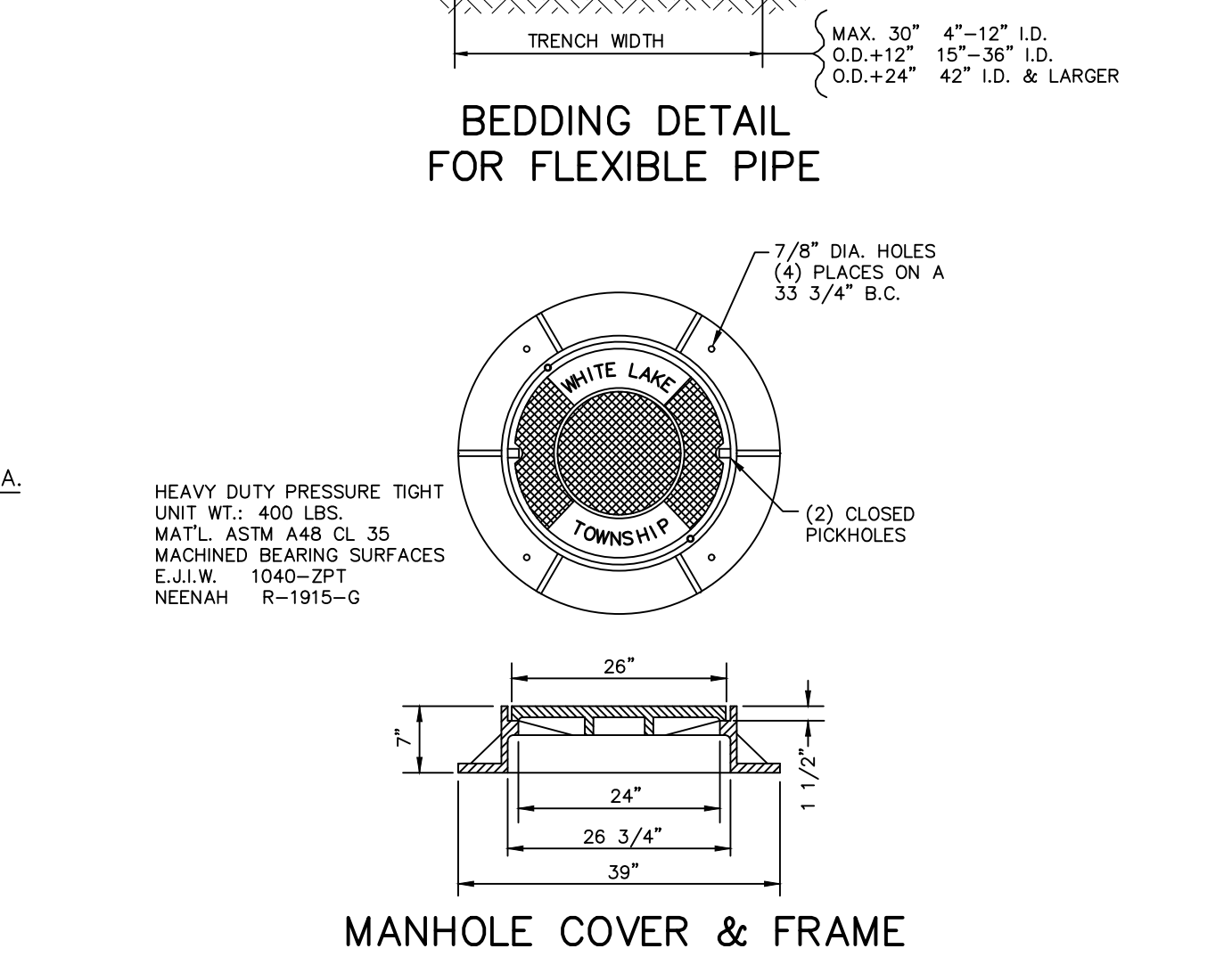
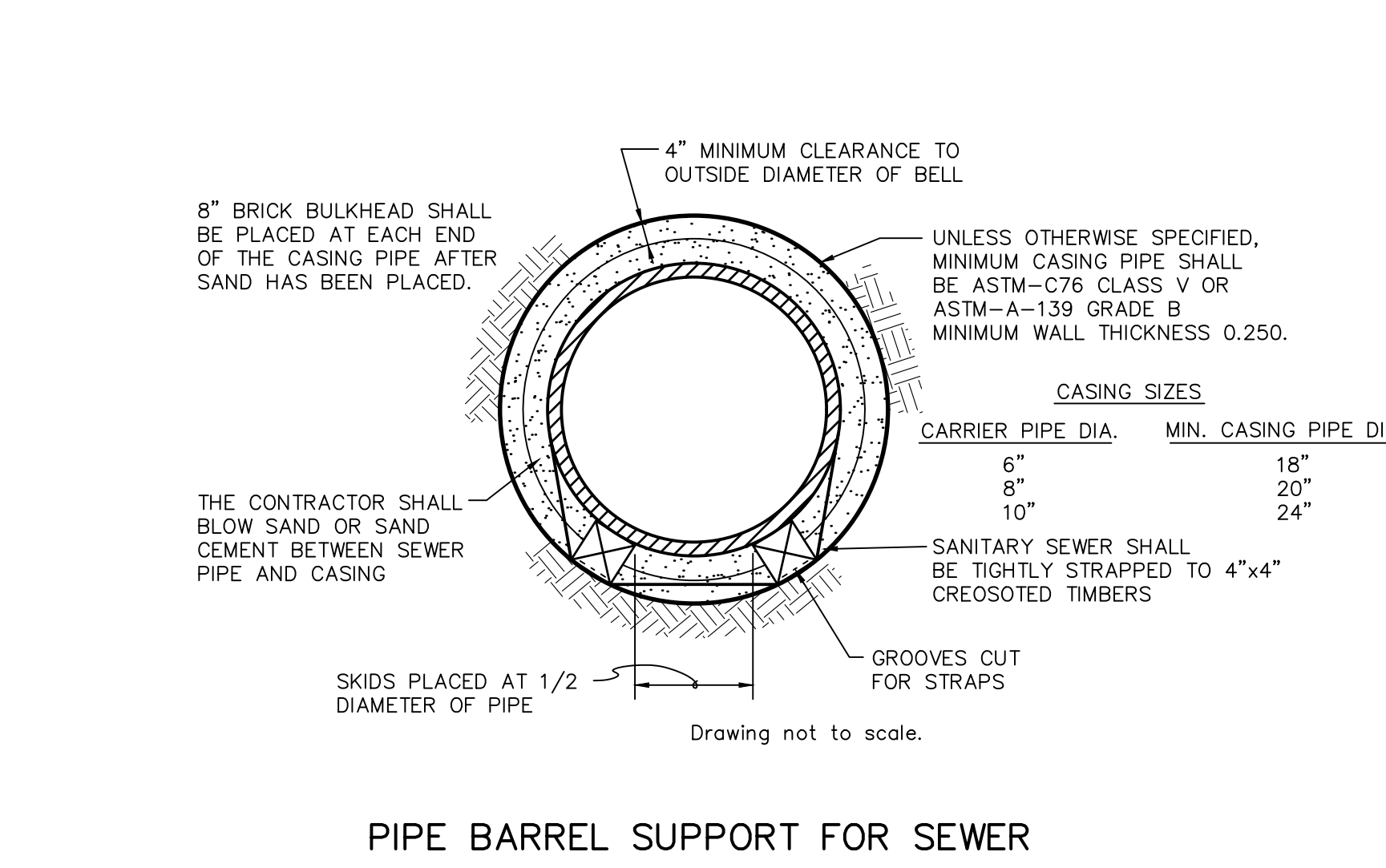
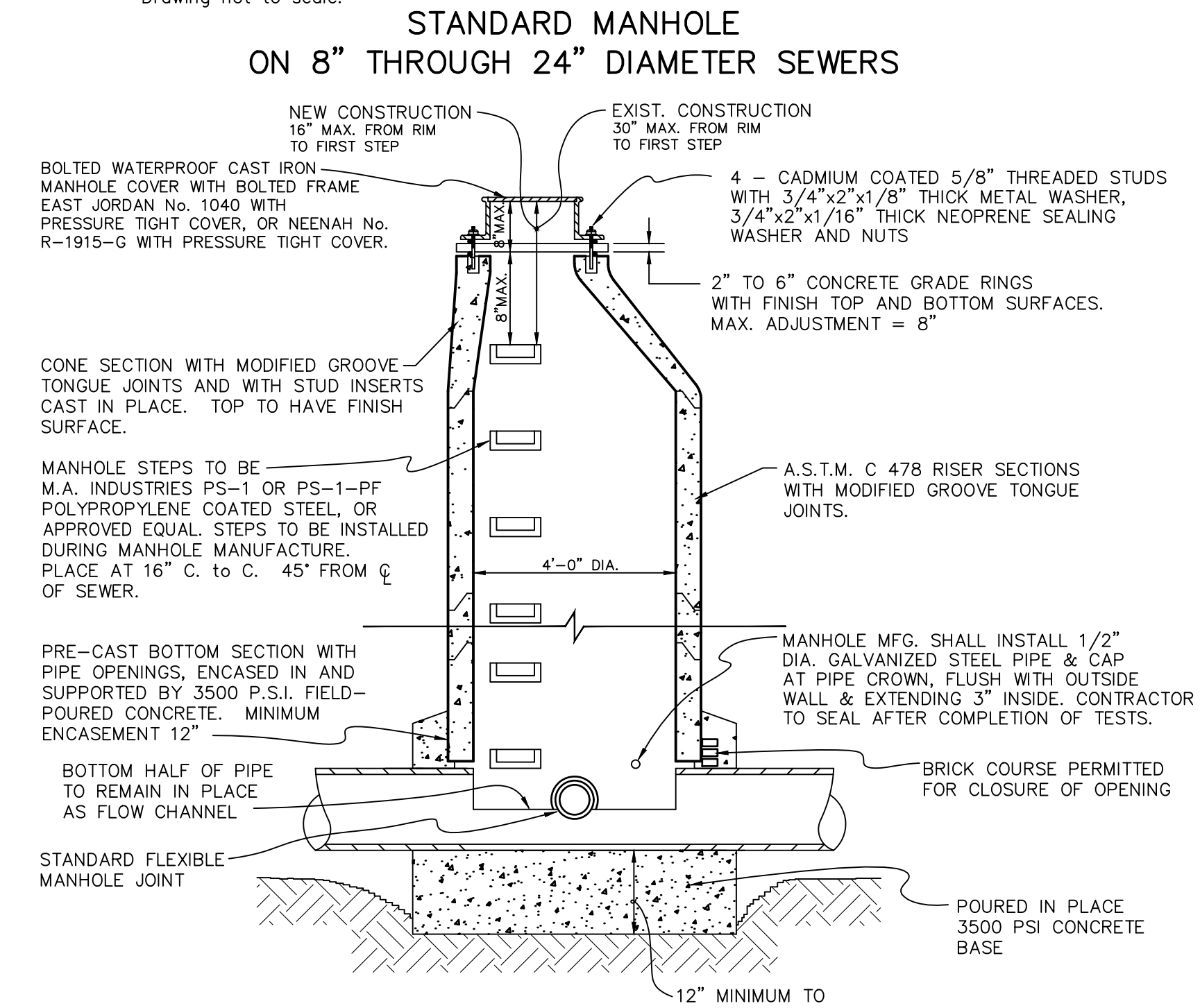
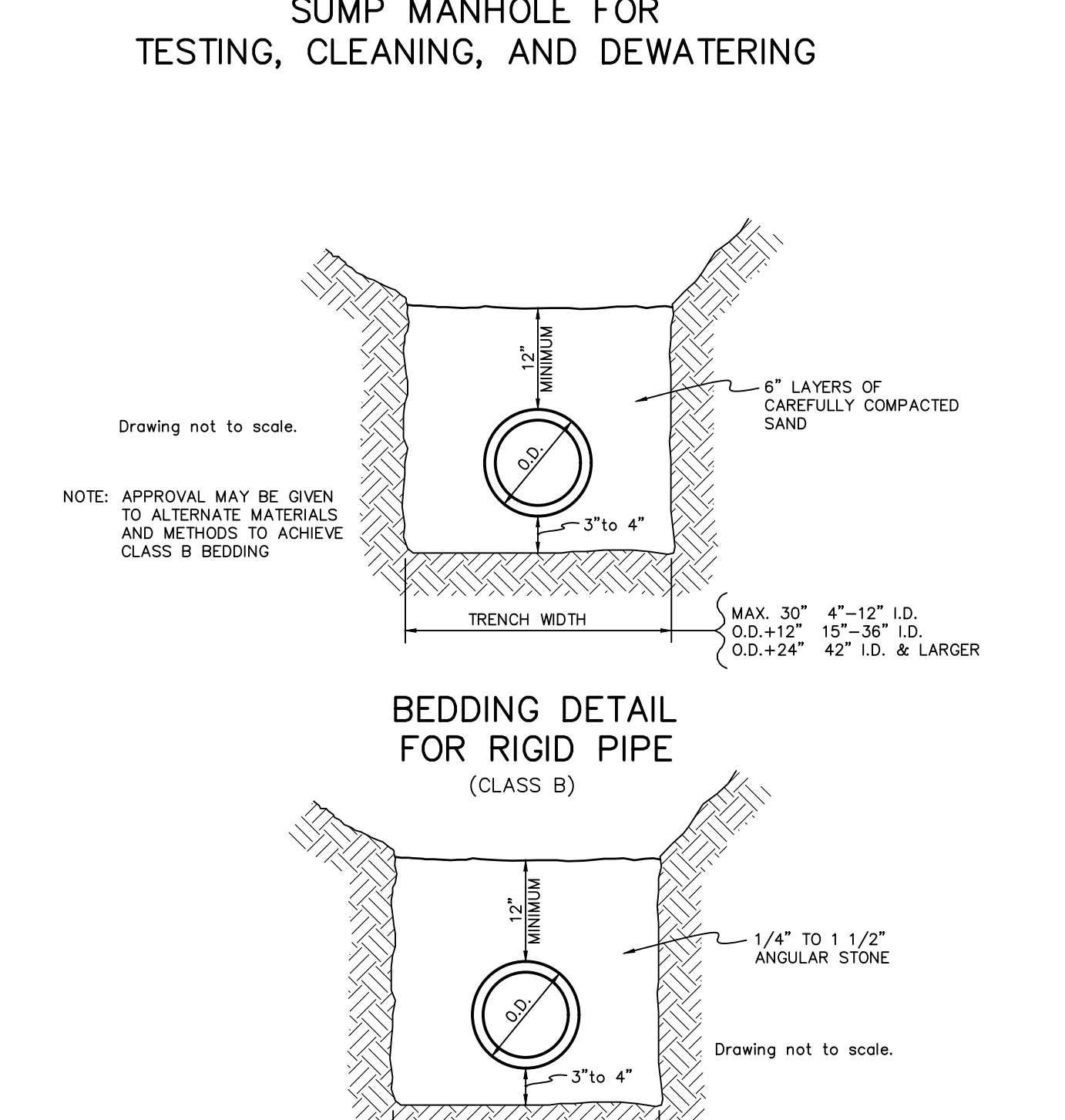
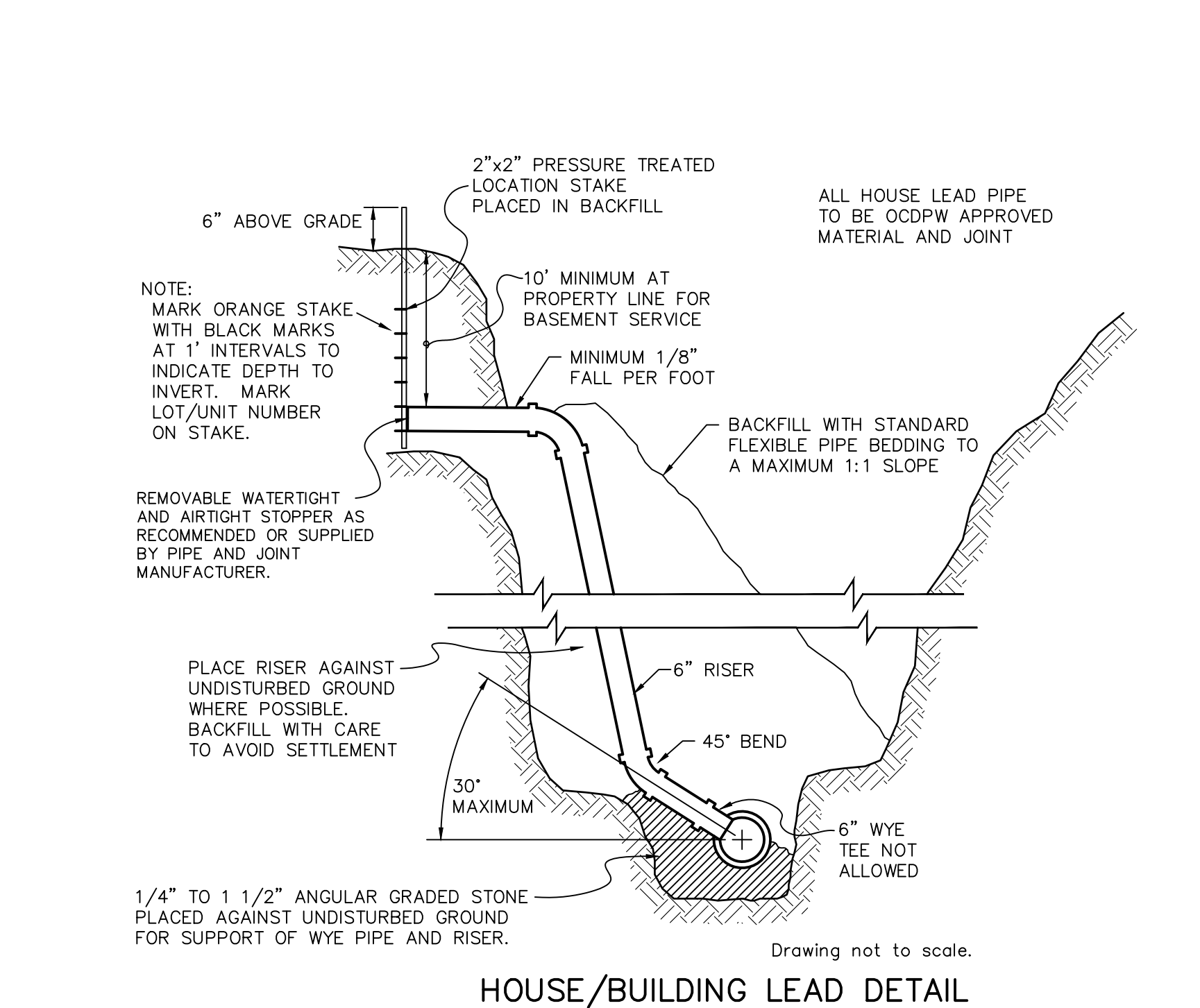
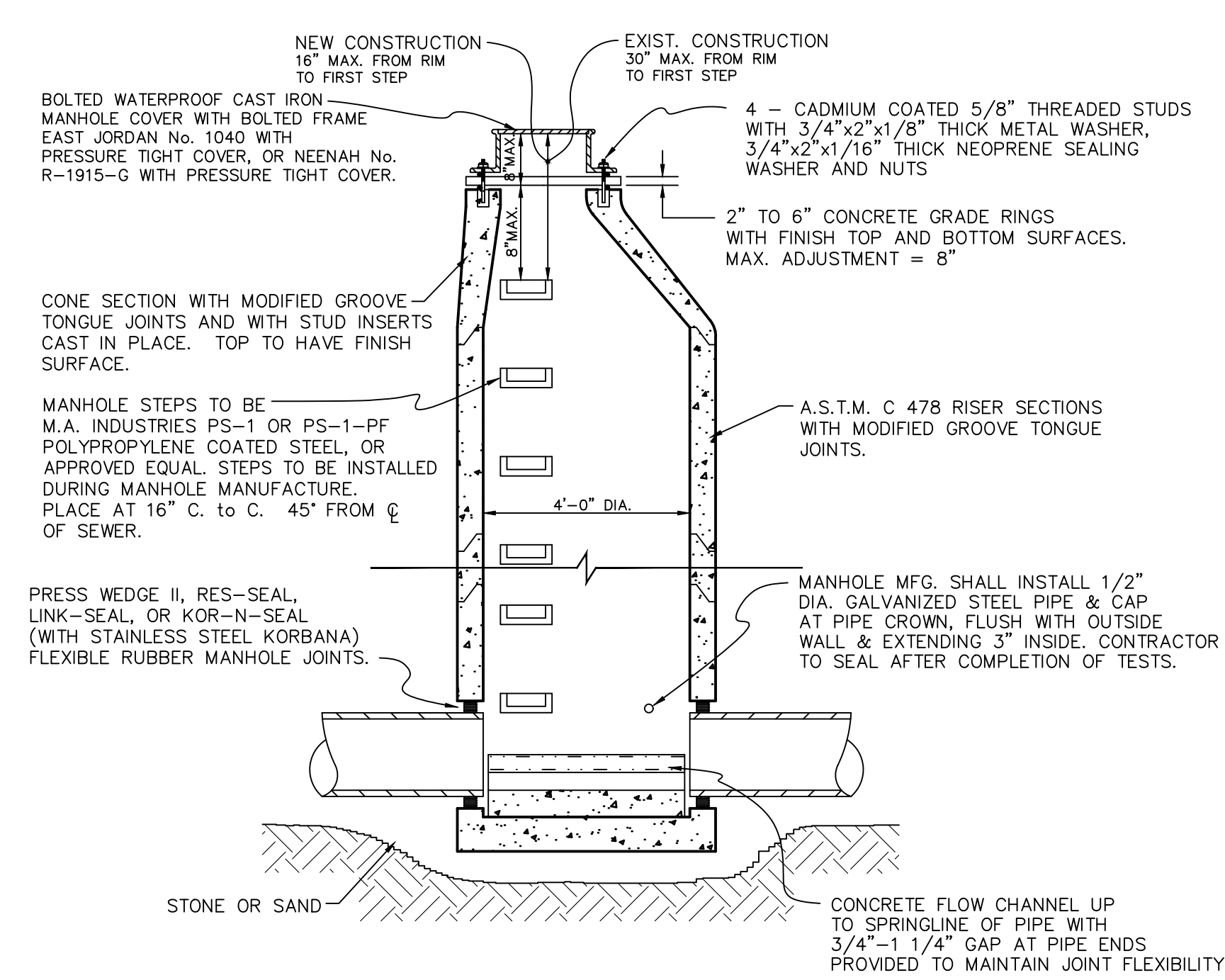
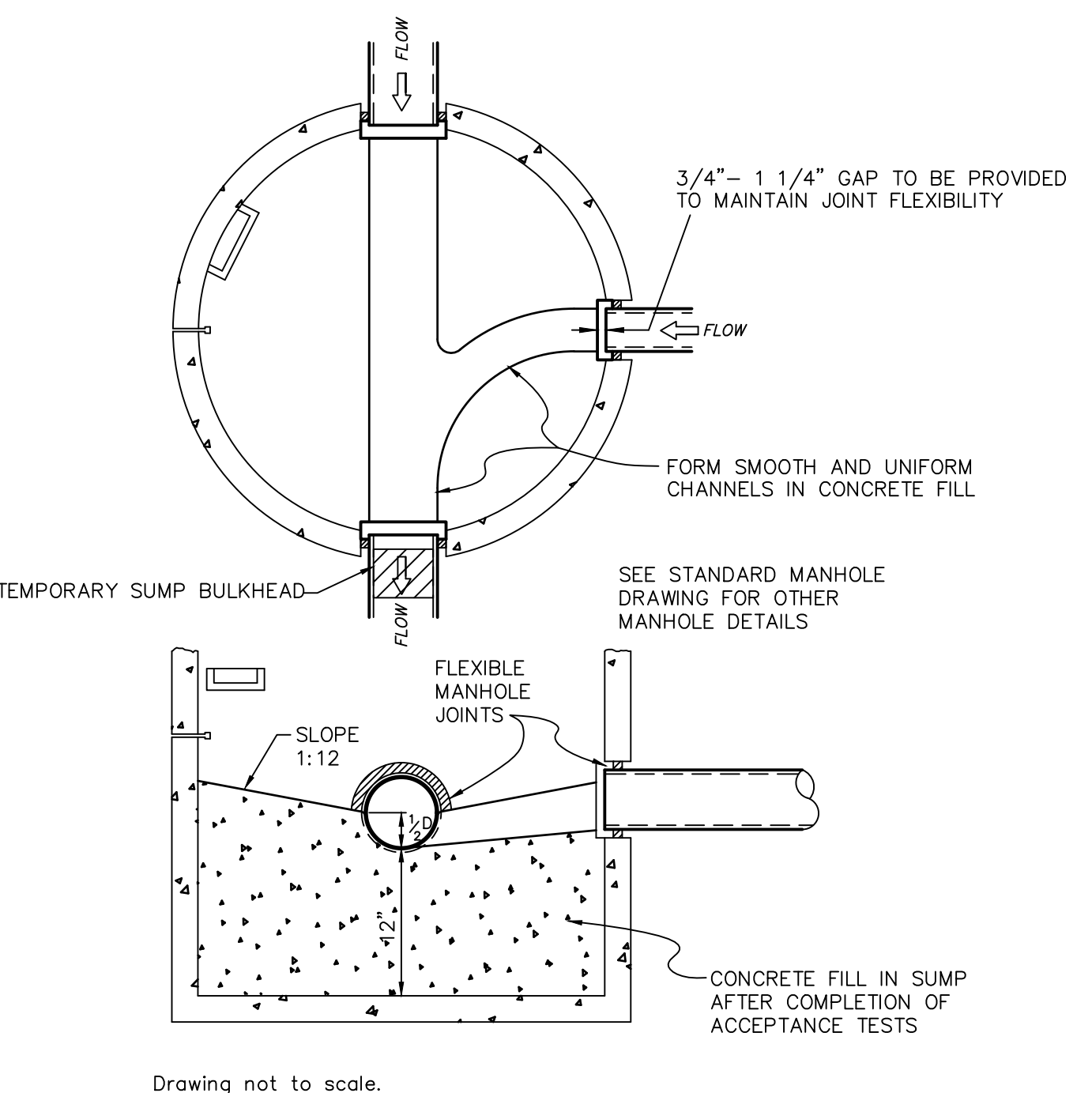
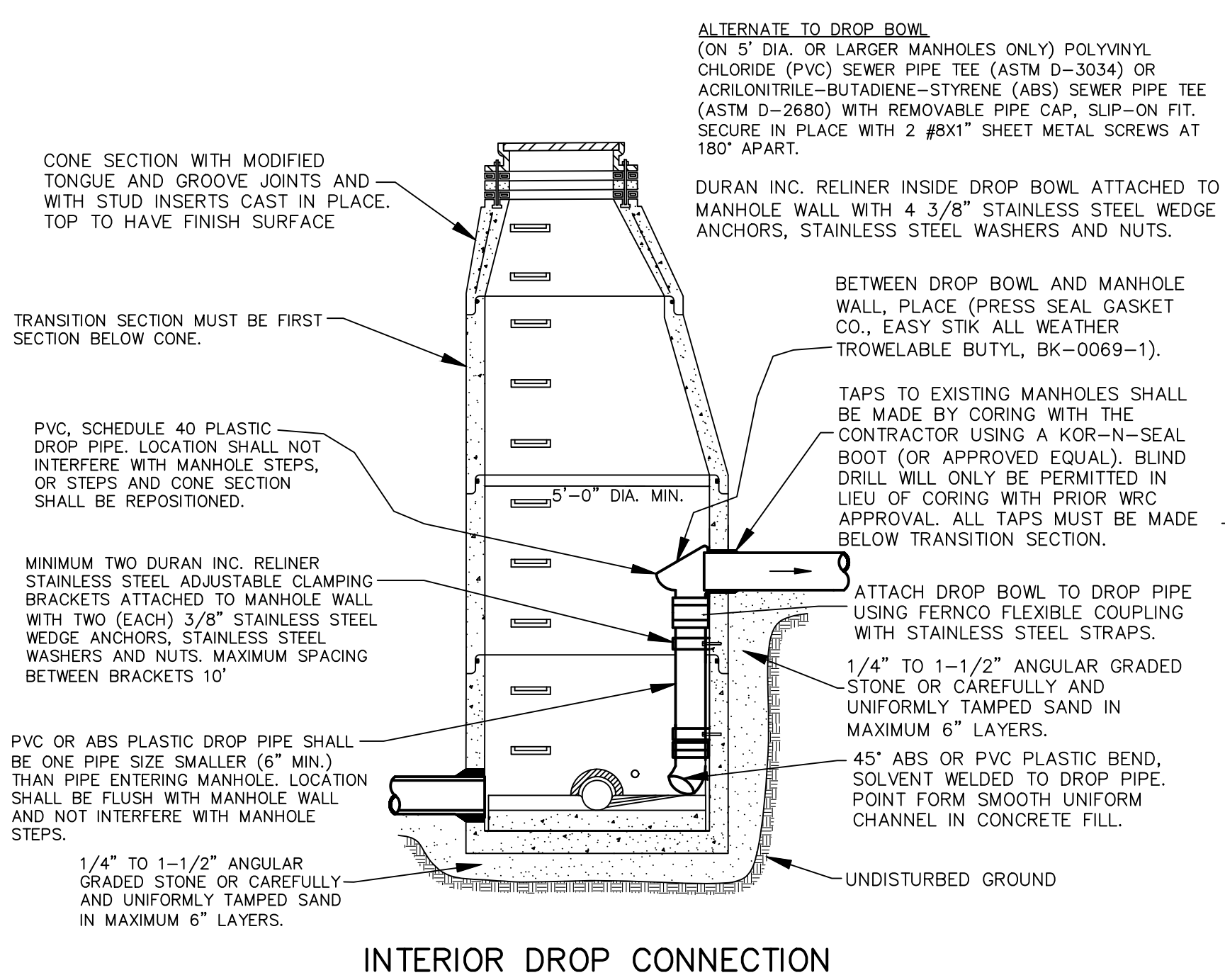
DATE: 04-08-2020 DESIGNED BY: A.A. JOD NUMBER: 19-030
CHECKED BY: J.E. DRAWING FILE: 19030ND.dwg

NOTES AND DETAILS

SEIBER, KEAST ENGINEERING, L.L.C.
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET ND2

- 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."



DRAWN: CAD
DESIGN: OA
CHECKED: --

VERT. -
SCALE: HORZ. AS NOTED

REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	09/11/97		OCWRC COMMENTS	11/06/15			
		UPDATED TITLE BLOCK	04/30/13						
		UPDATED NOTES	02/17/15						

Johnson & Anderson

4494 Elizabeth Lake Road
Waterford, Michigan 48328
tel (248) 681-7800 fax (248) 681-2660

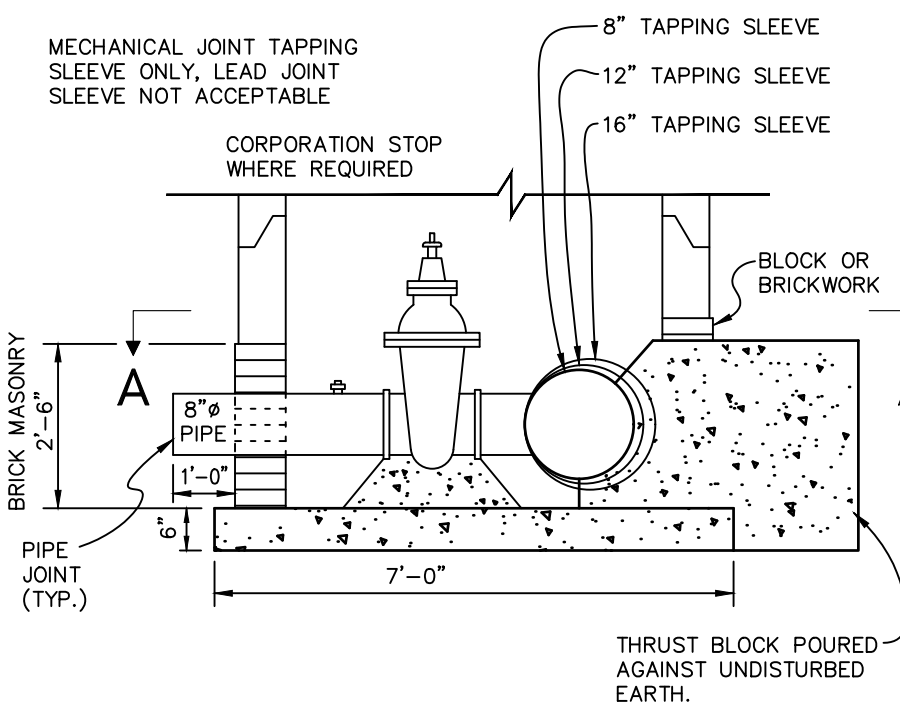
1060 W. Norton Avenue, Suite 7
Muskegon, Michigan 49441
tel (231) 780-3100 fax (231) 780-3115

2291 Water Street, Suite 6
Port Huron, Michigan 49860
tel (810) 987-7820 fax (810) 987-7895

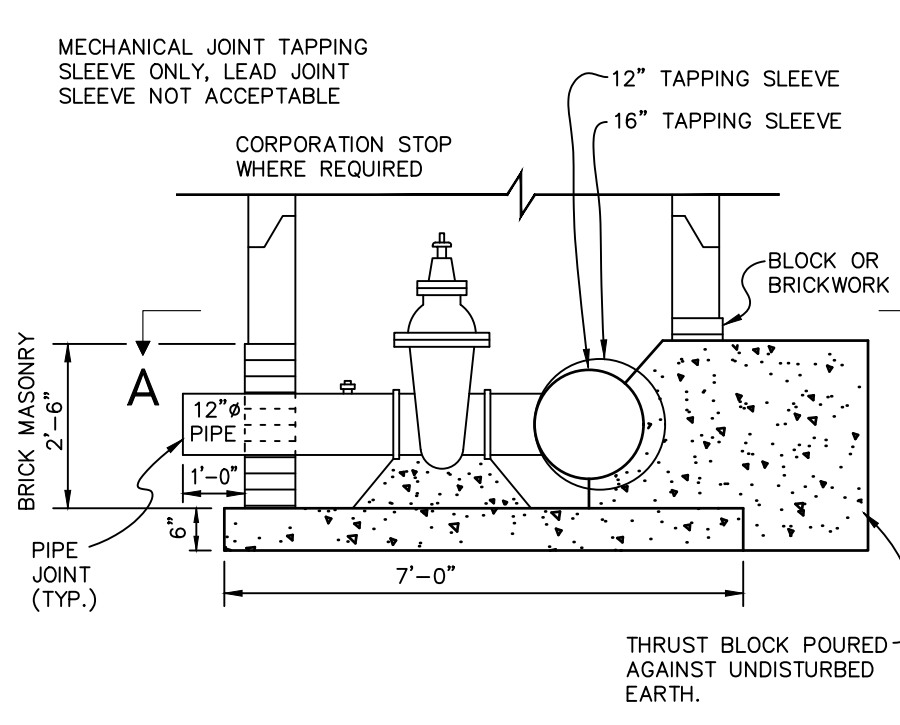
White Lake Township
7525 Highland Road (M-59)
White Lake, Michigan 48383
248-698-3300

SANITARY SEWER STANDARD DETAILS

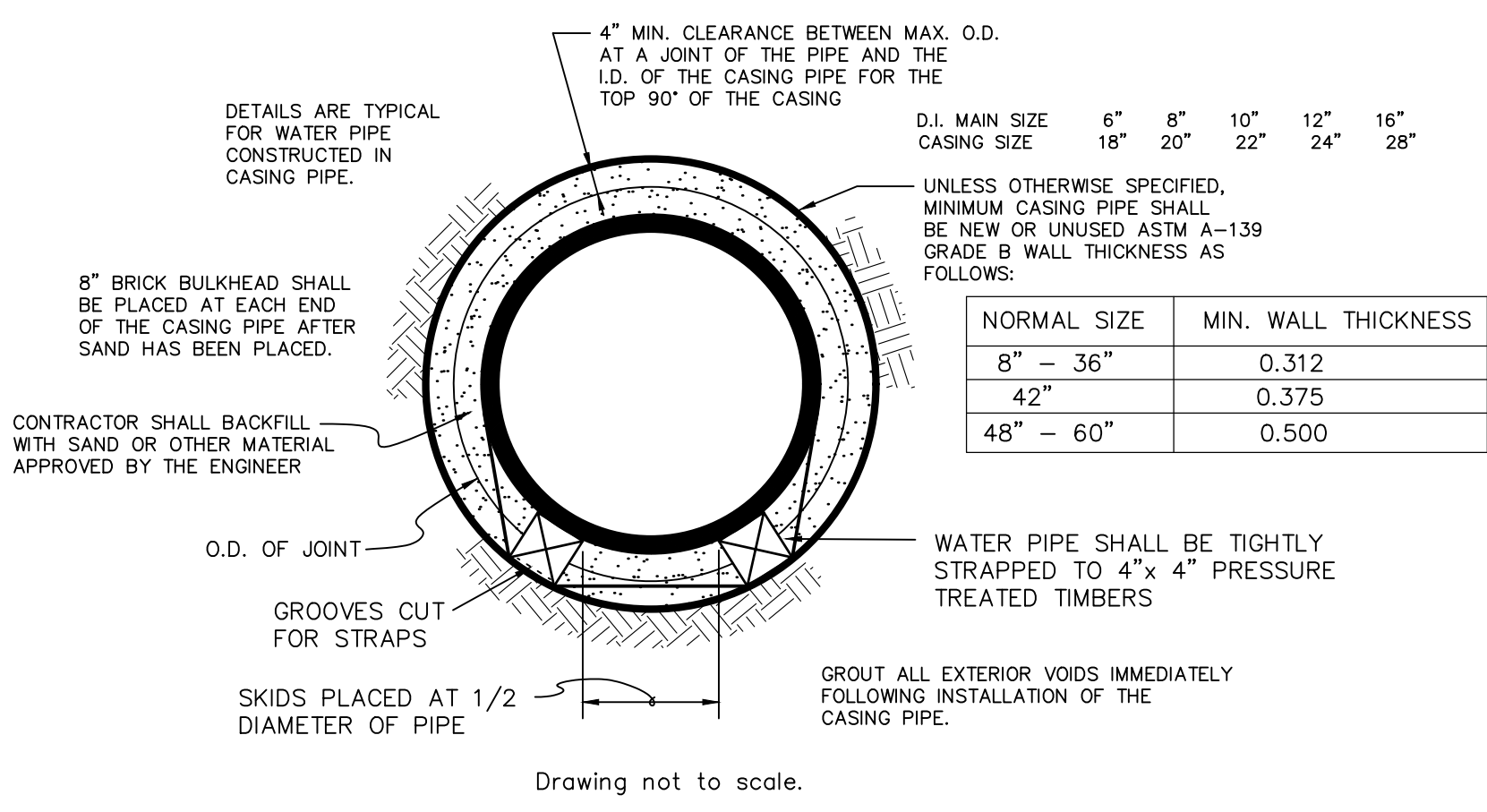
JOB NO.
DATE ISSUED
SHEET NO.



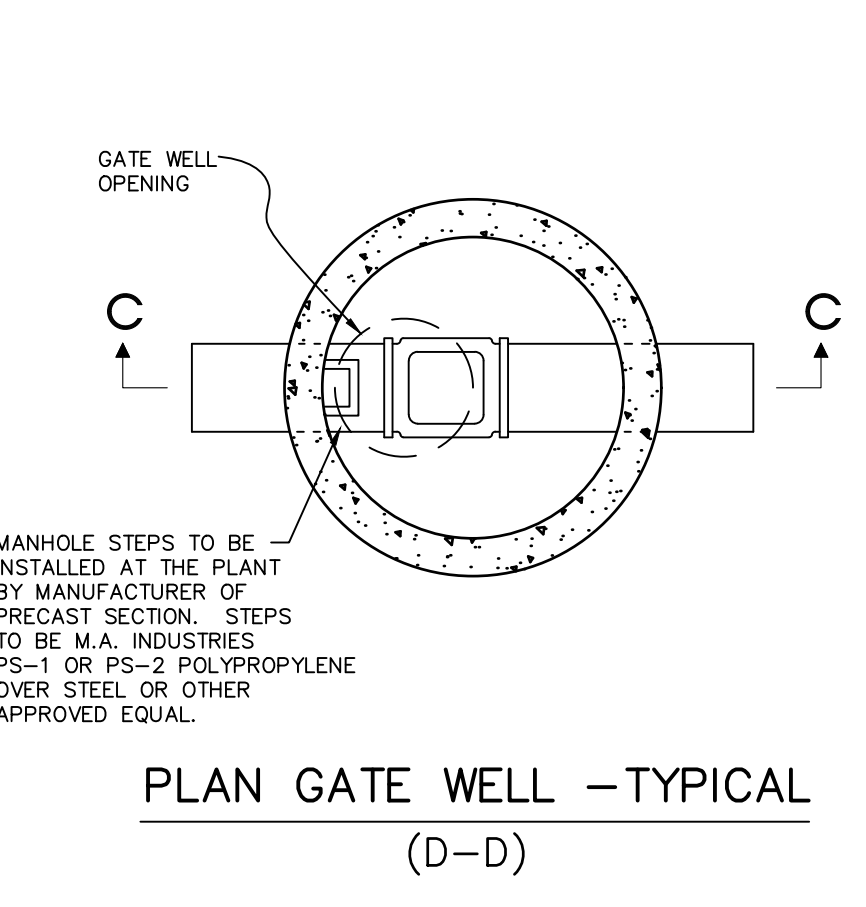
16" X 8", 12" X 8", 8" X 8" TAPPING SLEEVE, VALVE & WELL (B-B)



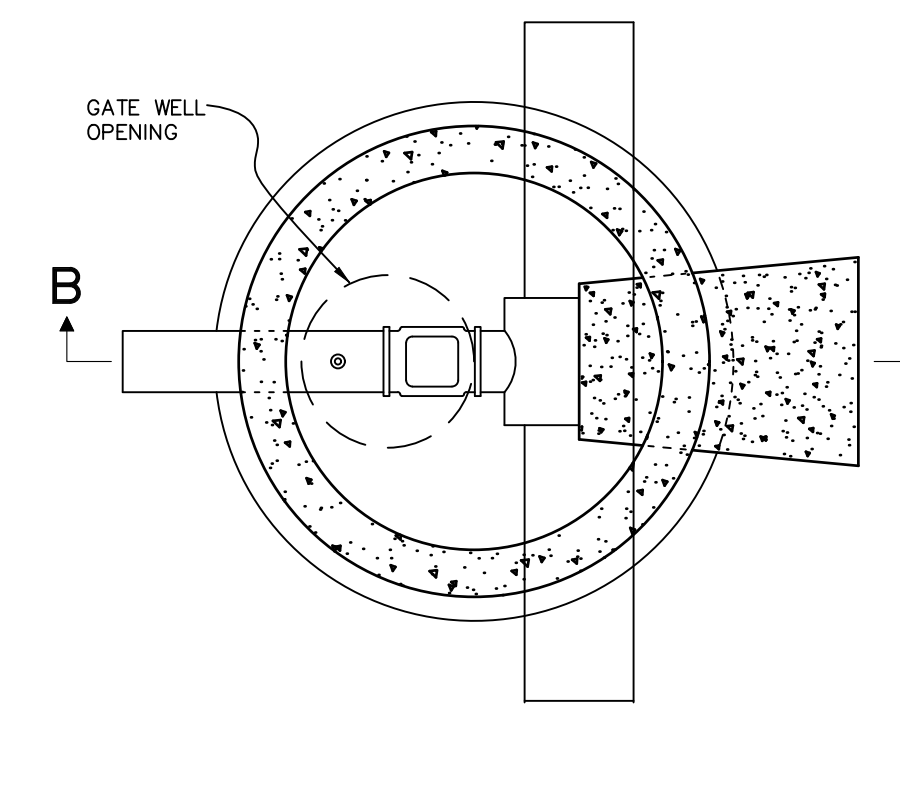
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



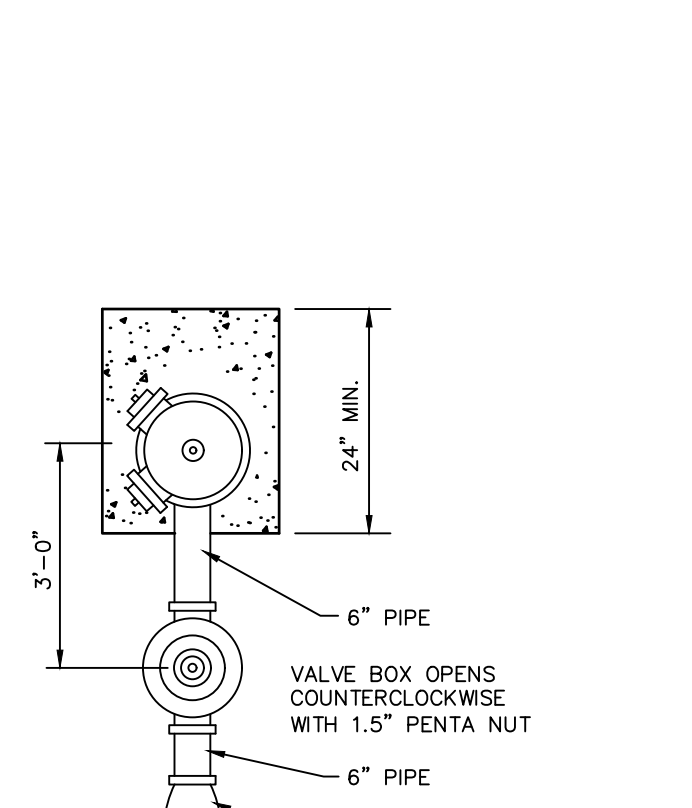
PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING



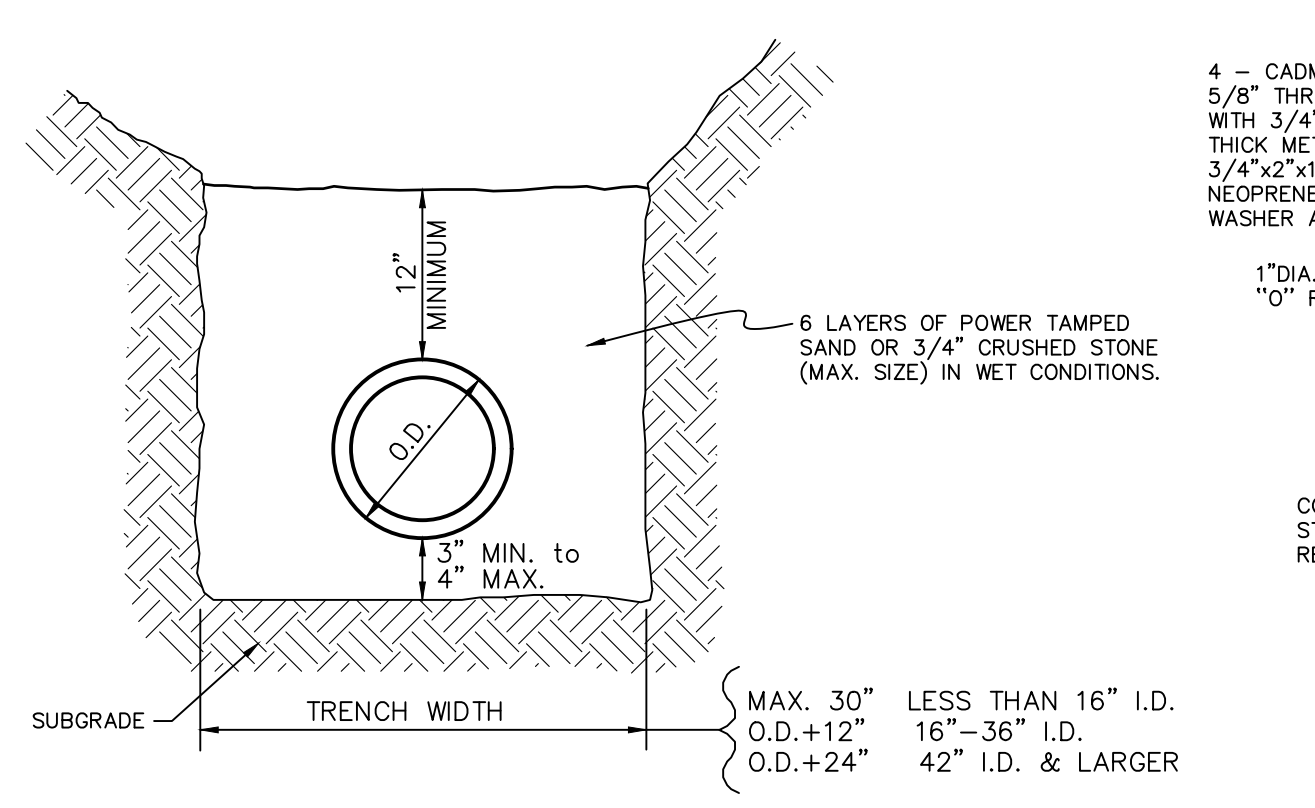
PLAN GATE WELL - TYPICAL (D-D)



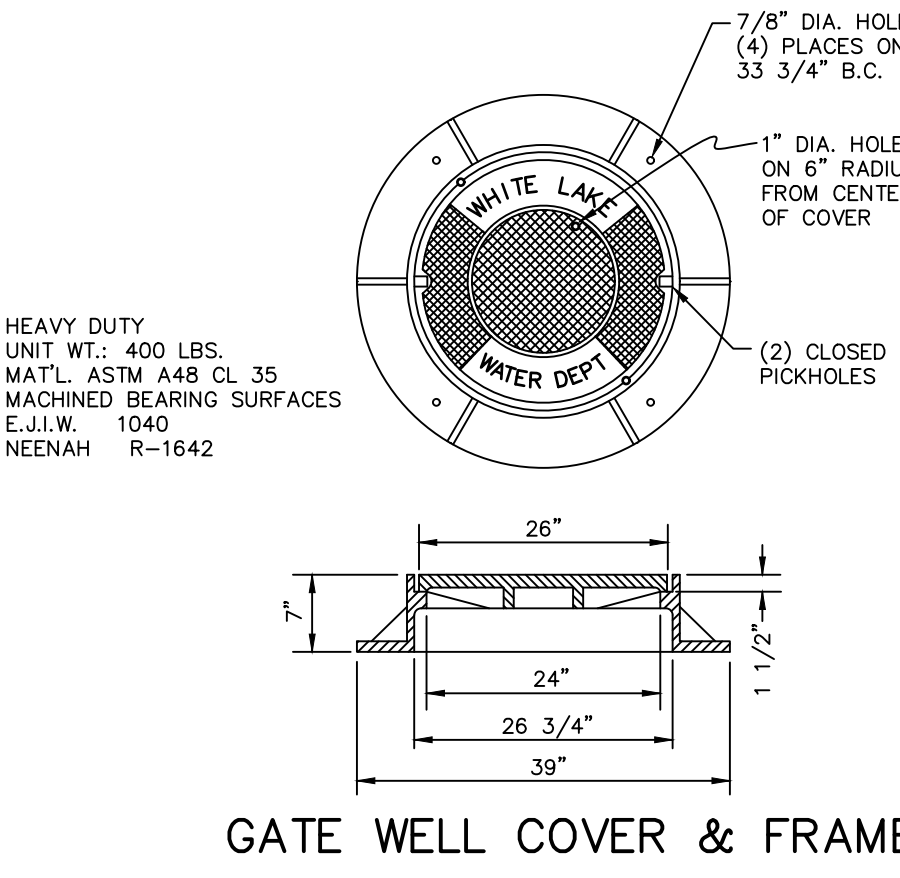
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



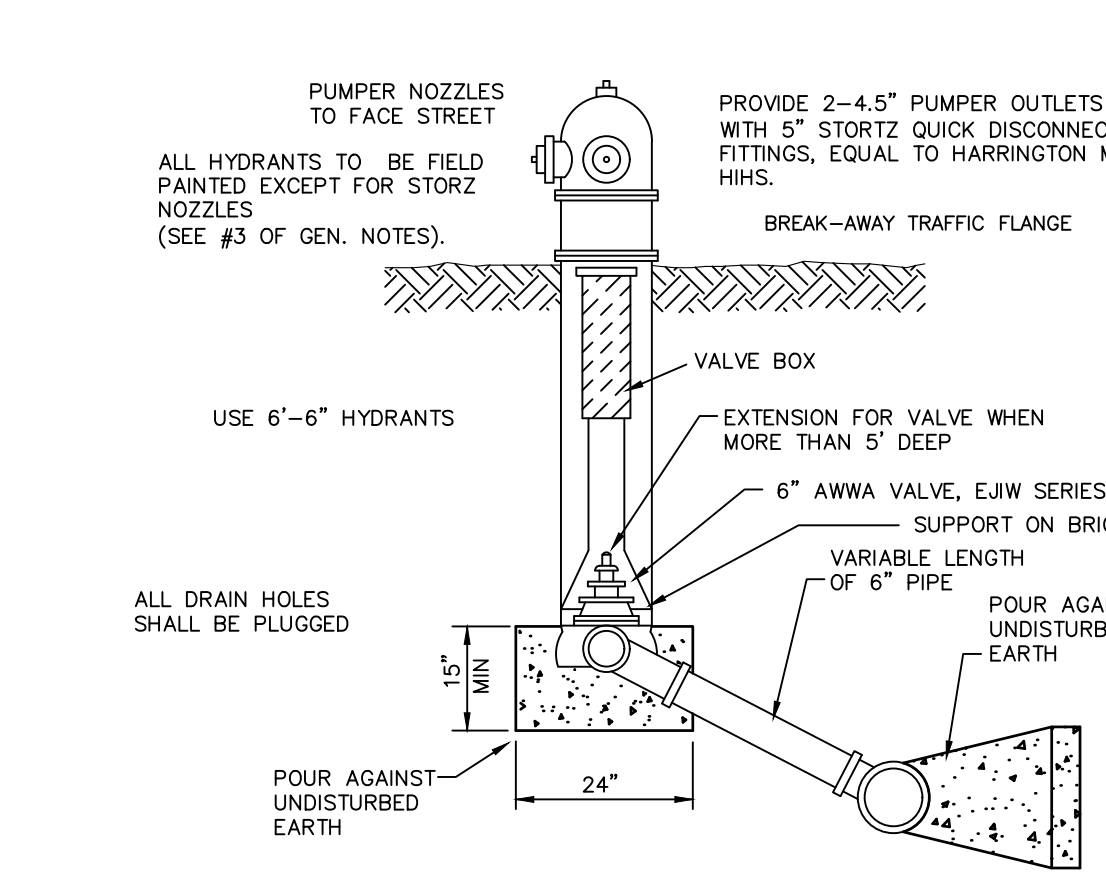
STANDARD BEDDING FOR WATER PIPE



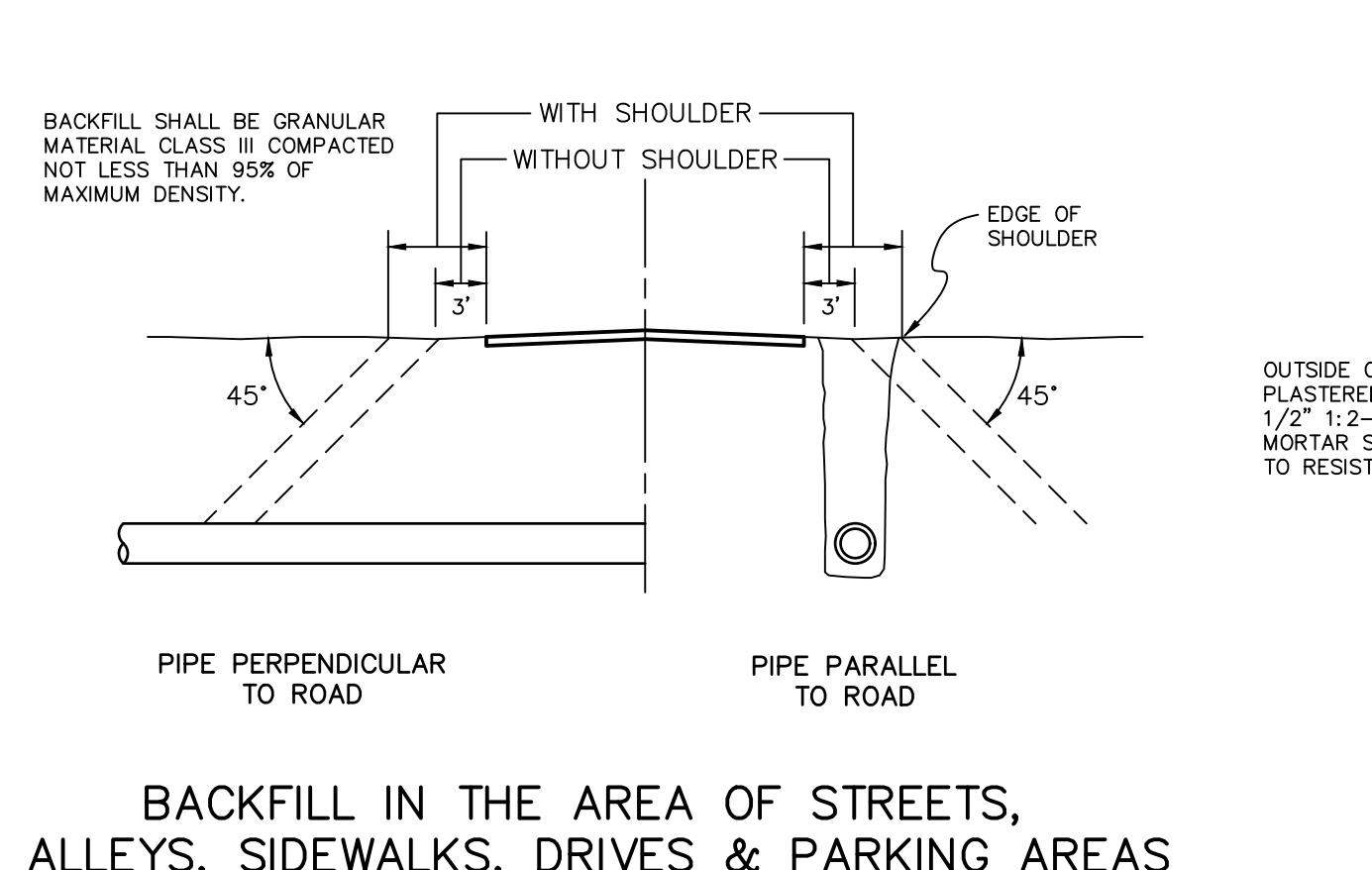
GATE WELL (C-C)



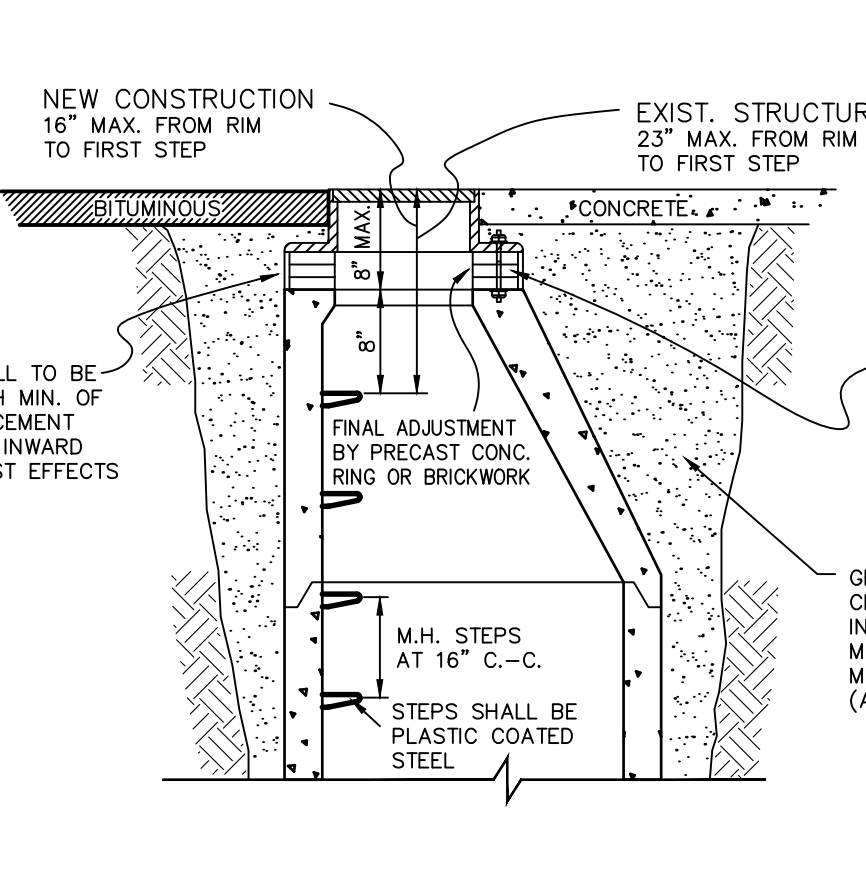
GATE WELL COVER & FRAME



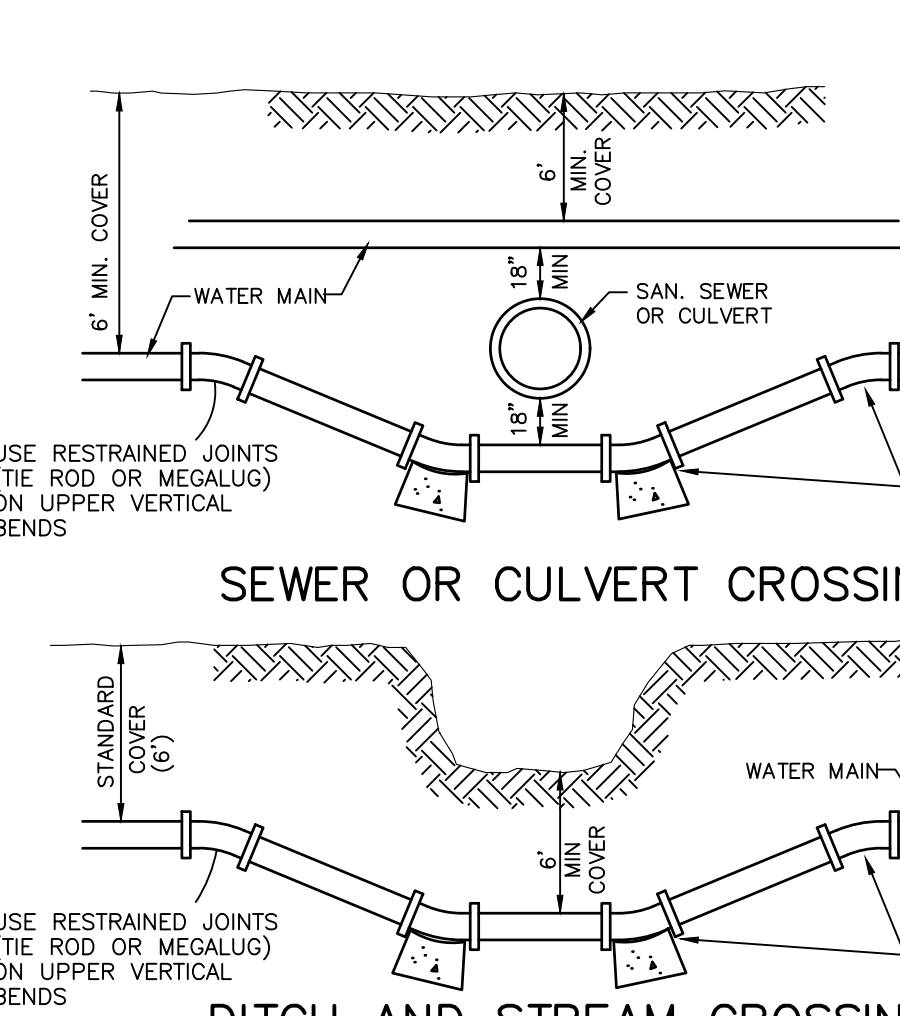
DETAIL OF HYDRANT SETTINGS



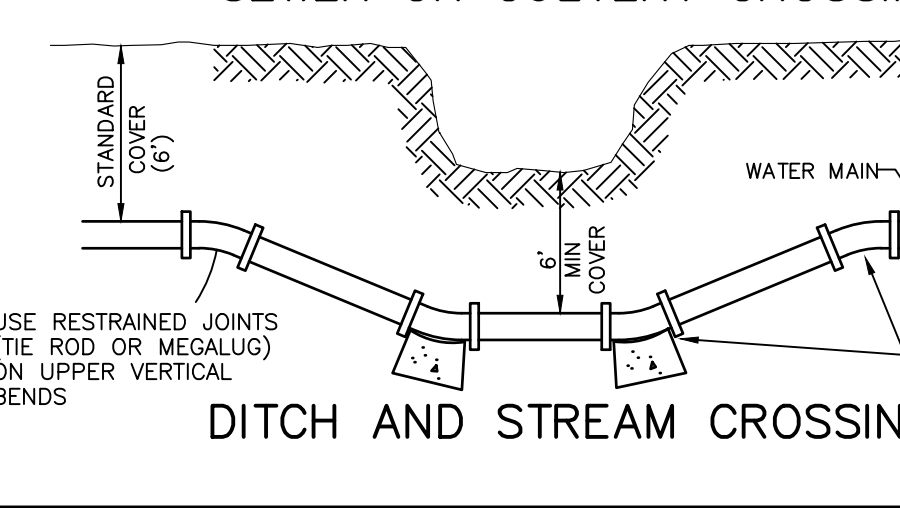
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



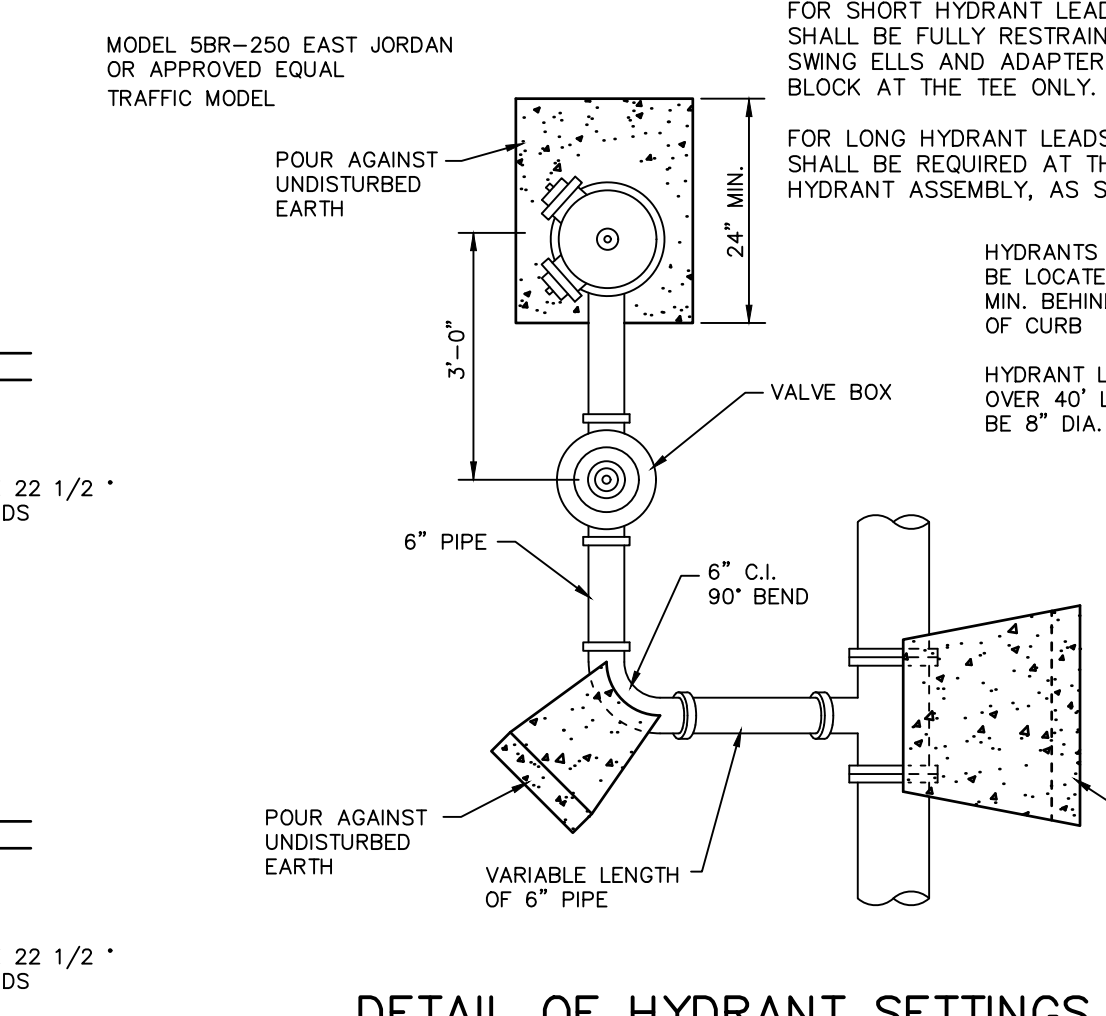
GATE WELL TOPS WITHIN PAVEMENT AREAS



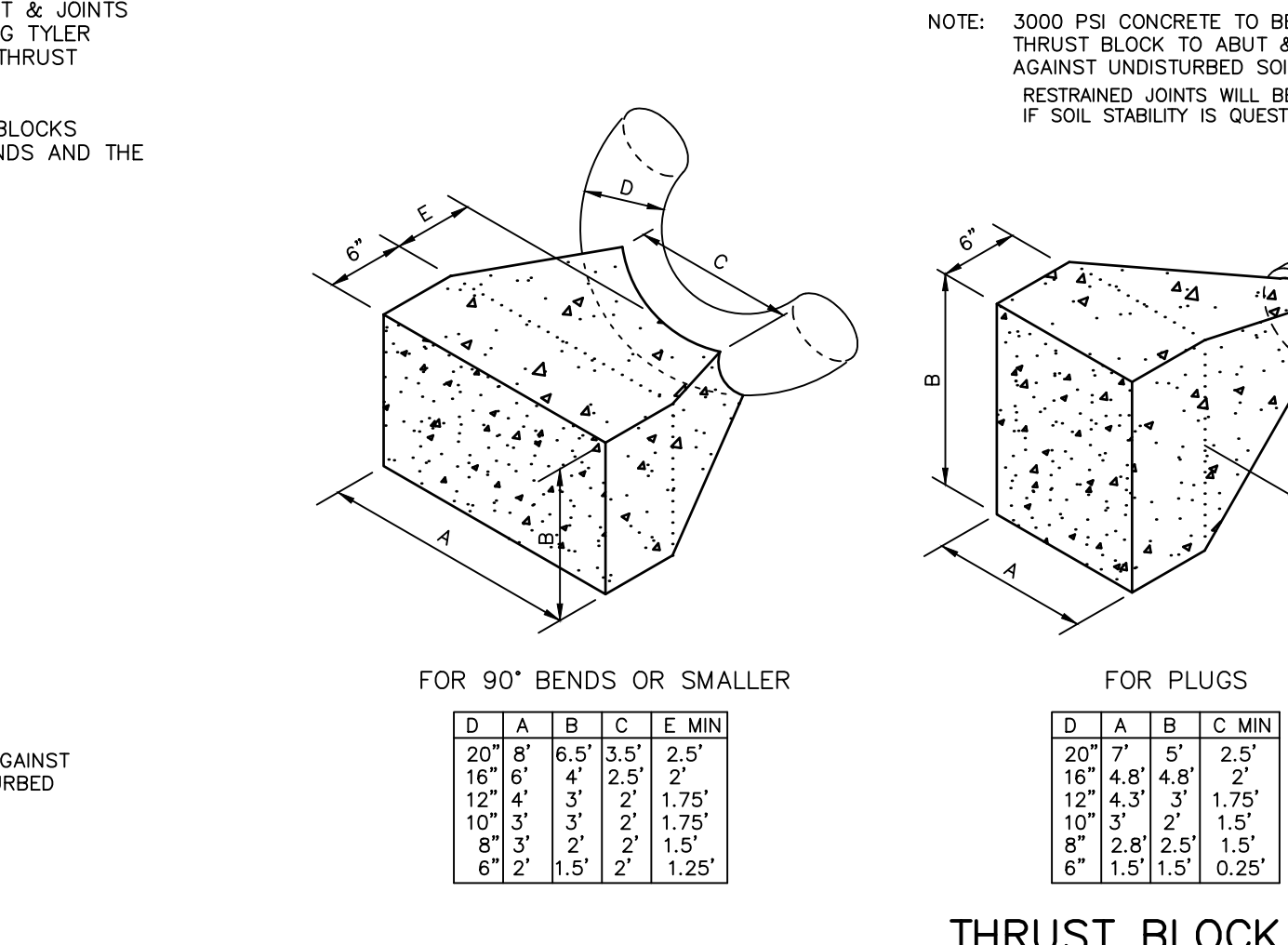
SEWER OR CULVERT CROSSING



DITCH AND STREAM CROSSING

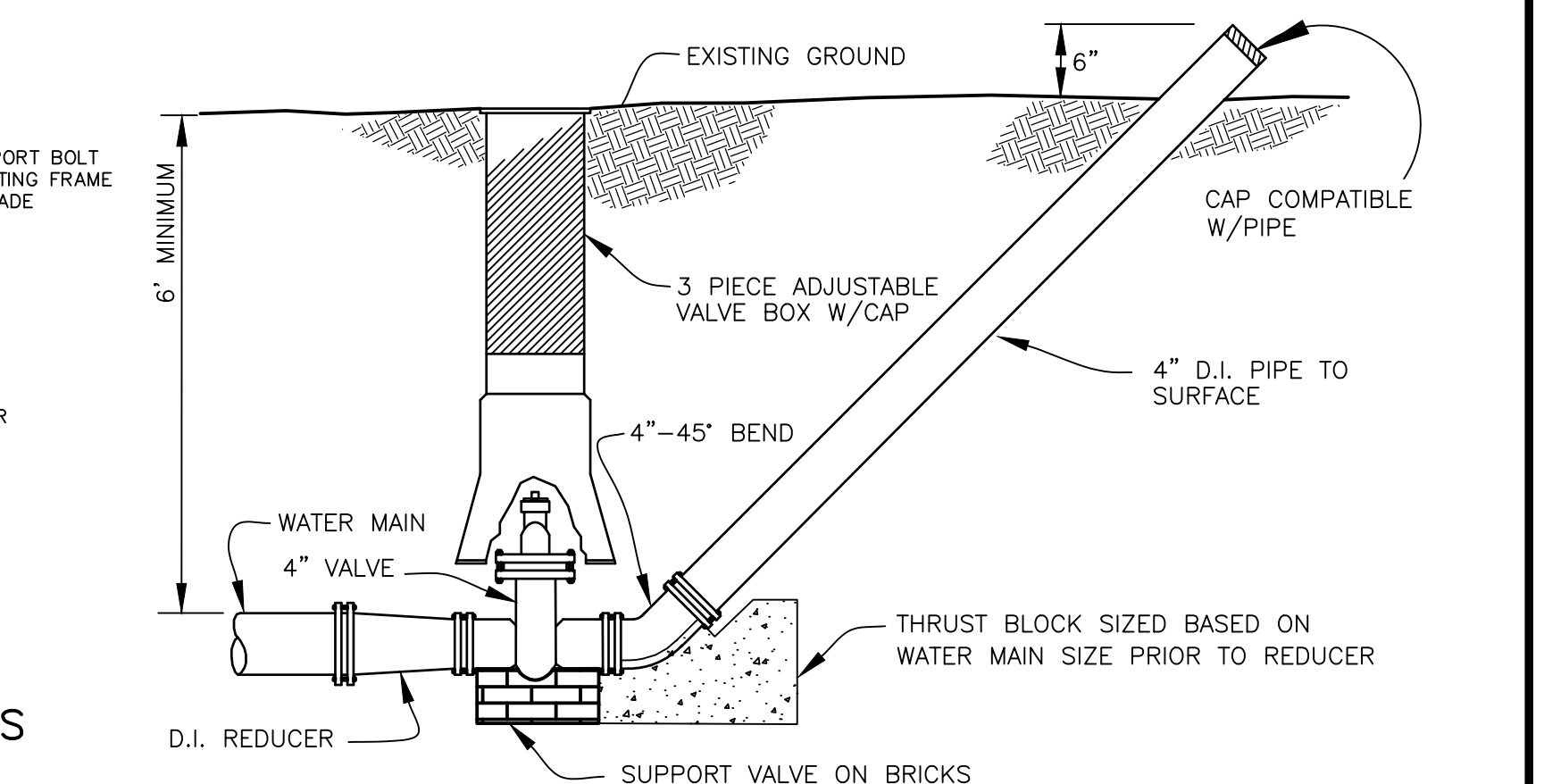


DETAIL OF HYDRANT SETTINGS

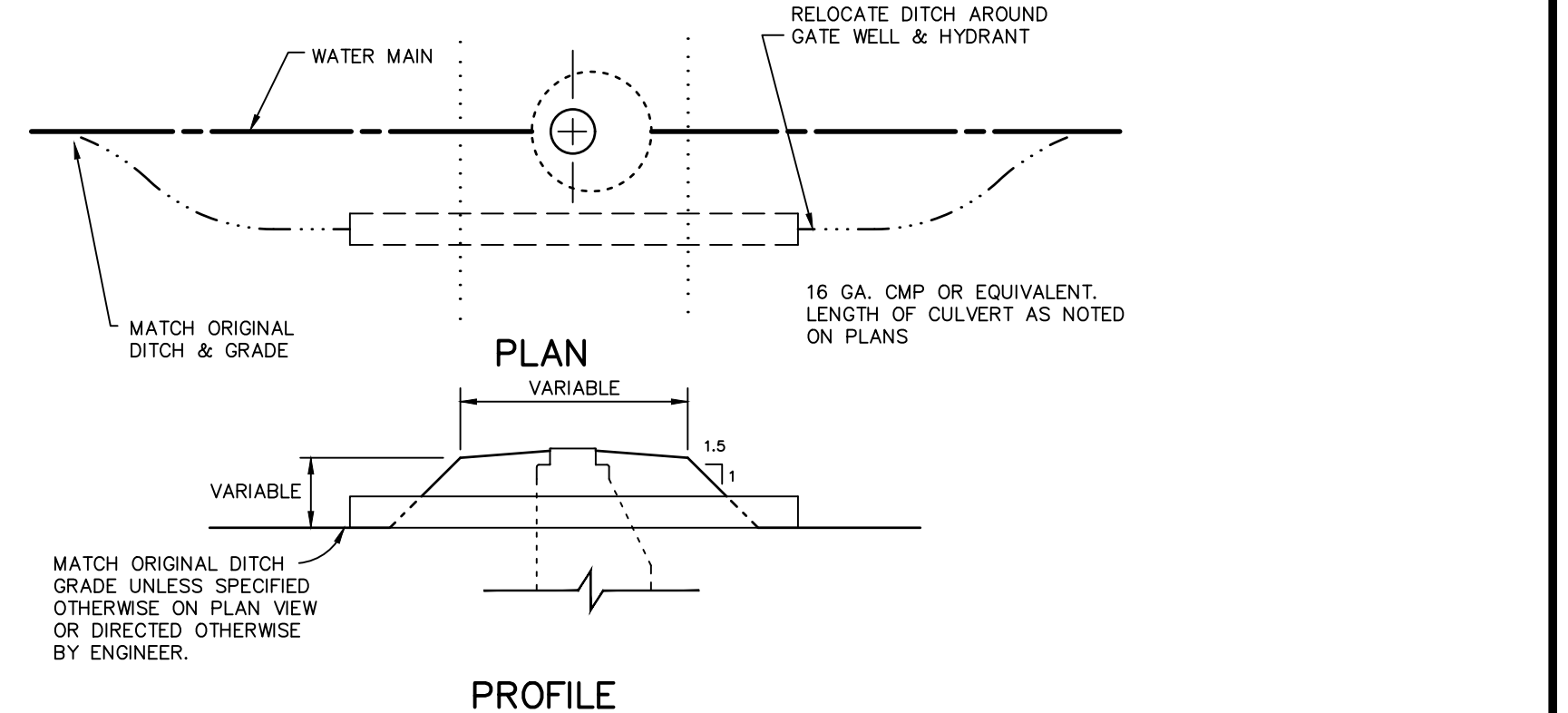


THRUST BLOCK DETAILS

- 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" 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 alkyl 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 ells 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 set 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 #R-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 D2237-03 (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-301 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.



TEMPORARY BLOWOFF ASS'Y



DITCH ENCLOSURE AT GATE WELL

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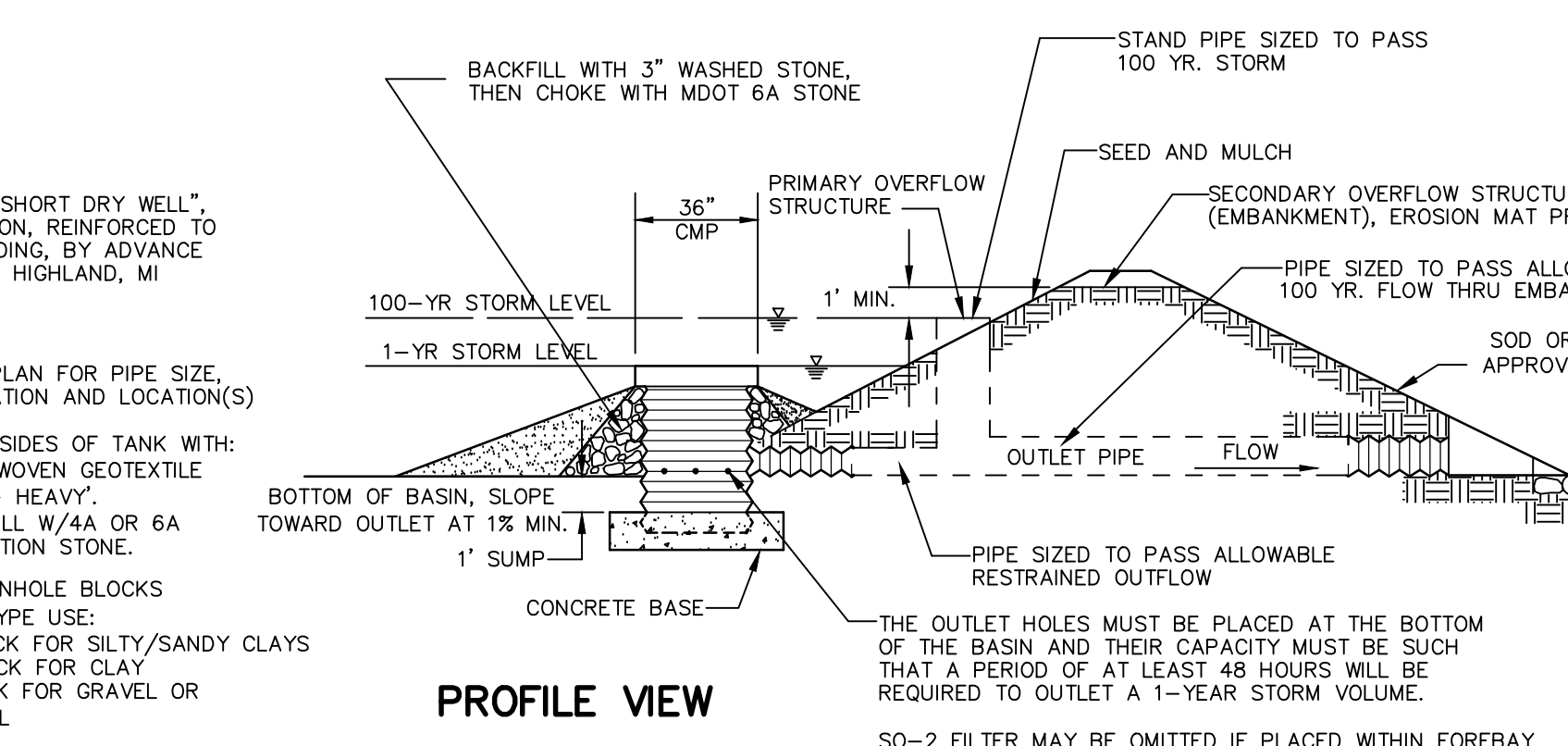
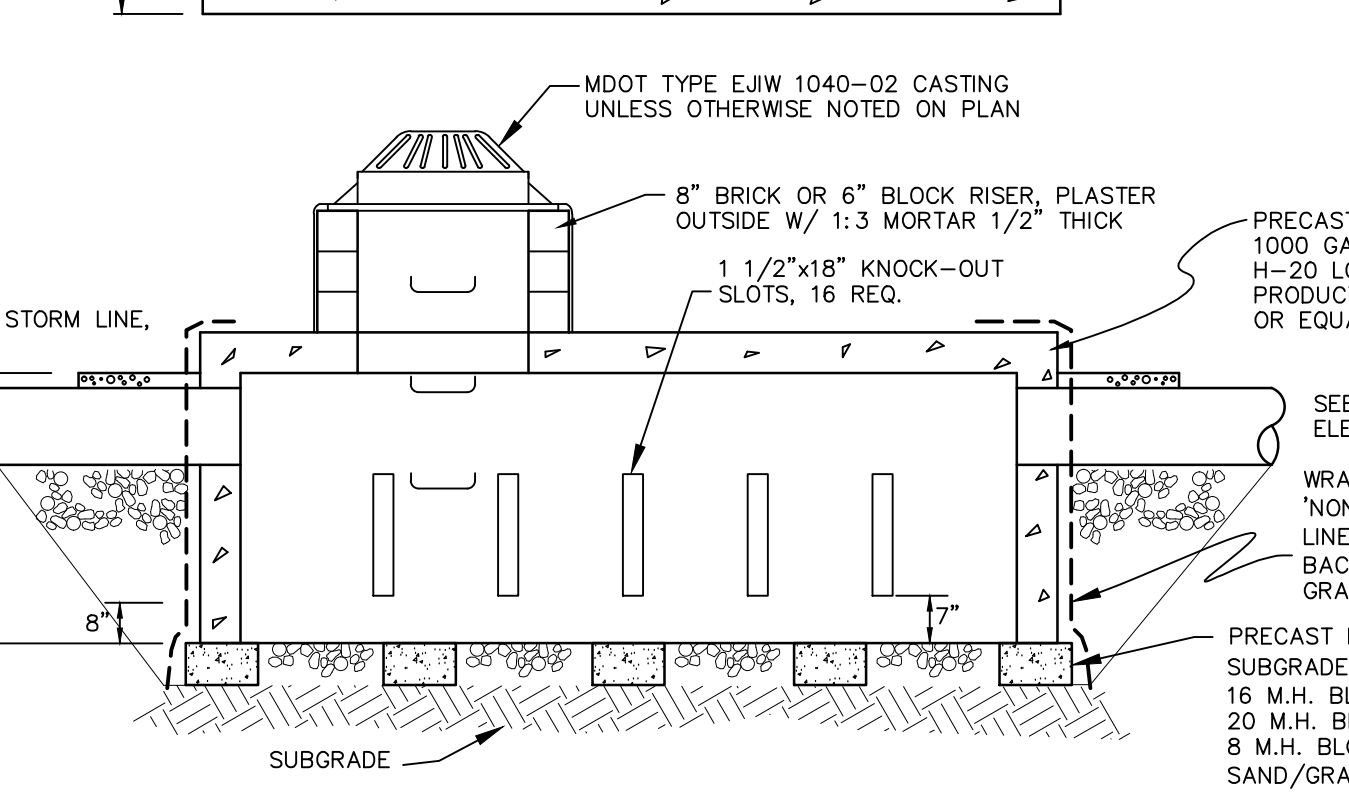
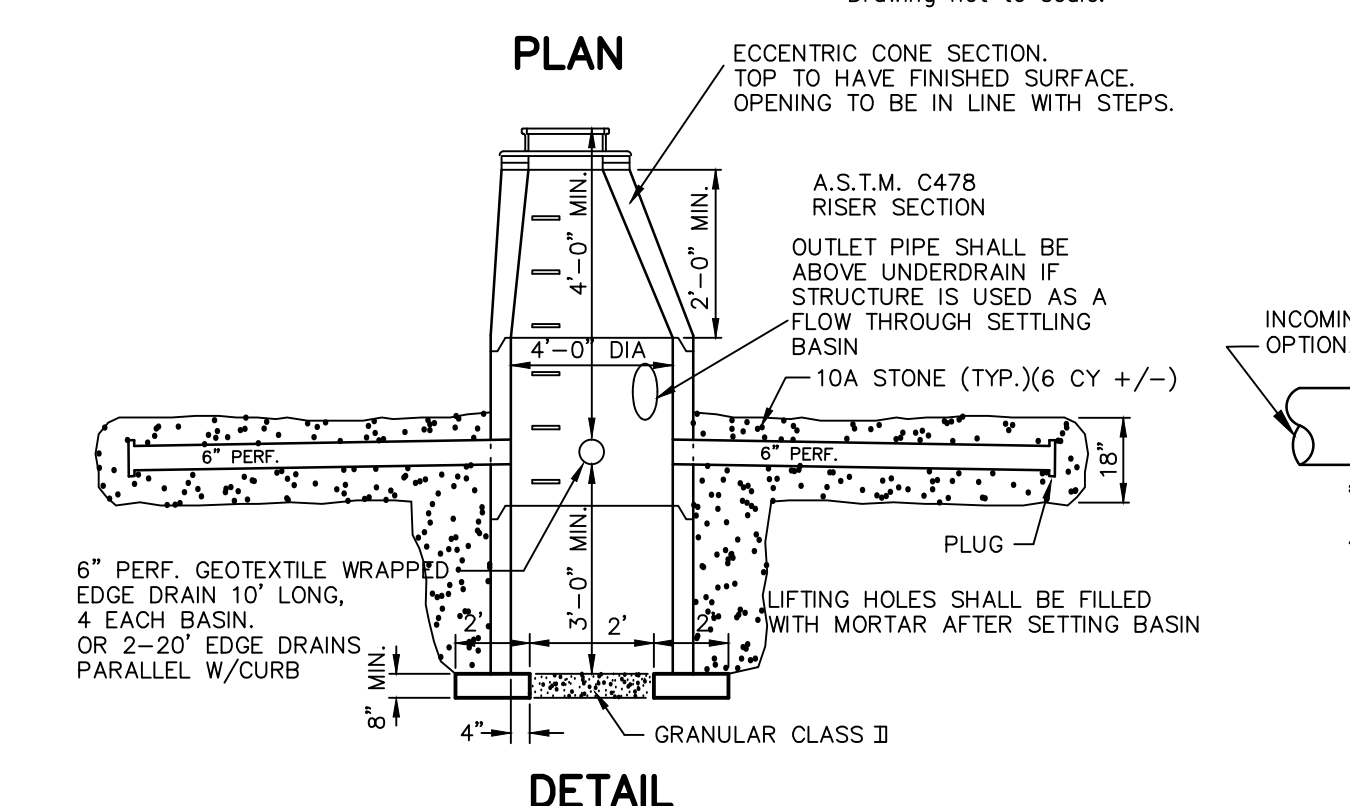
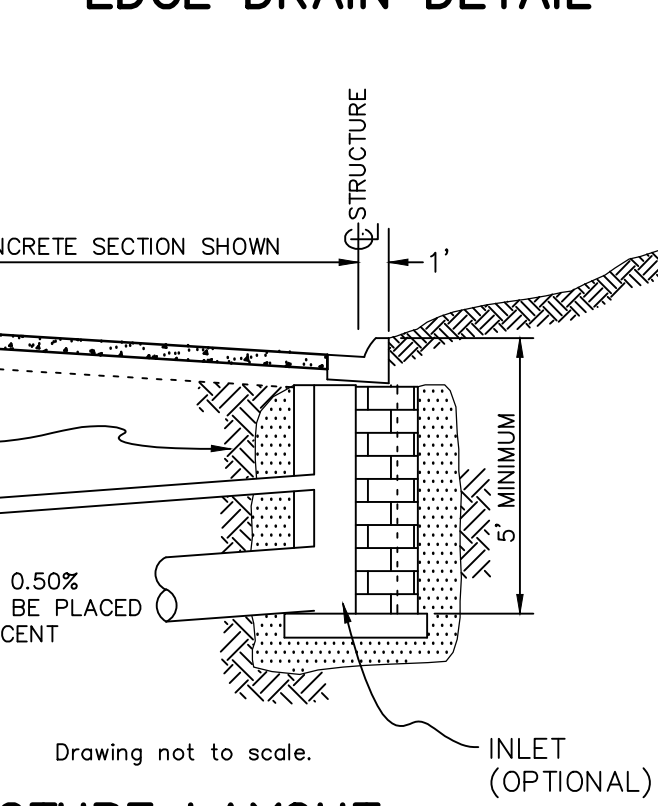
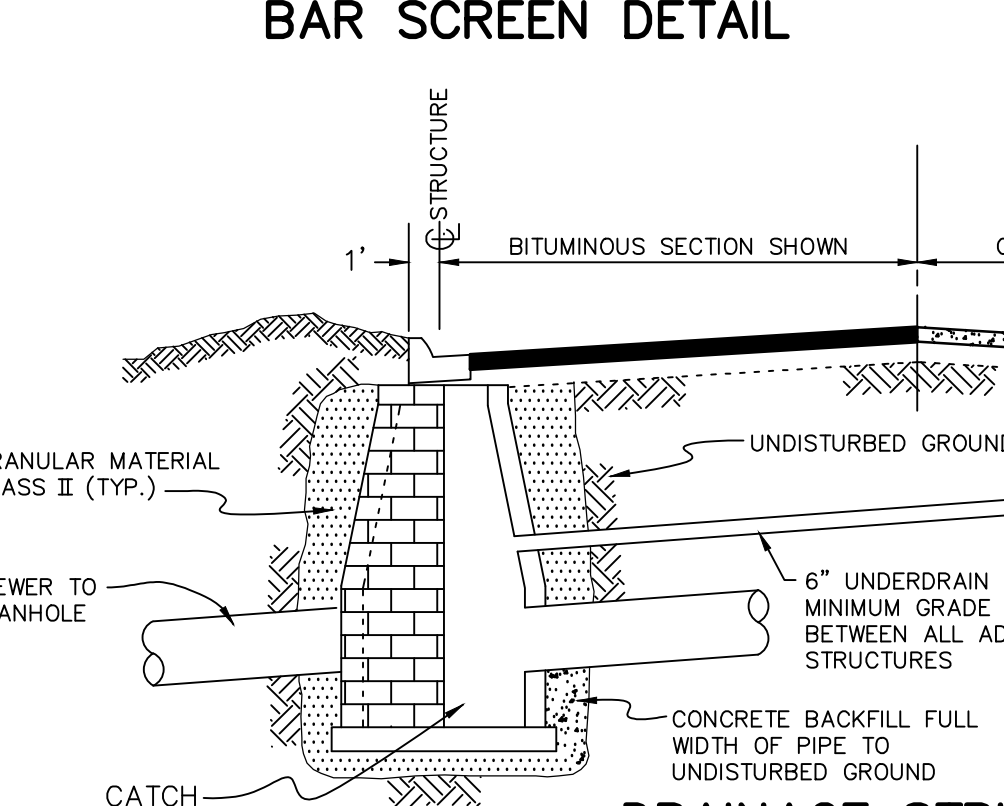
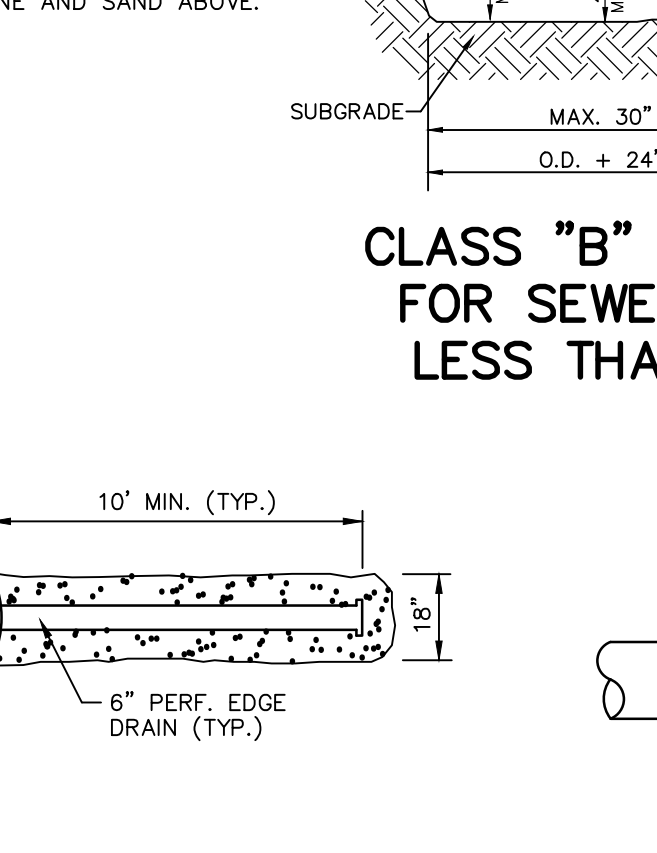
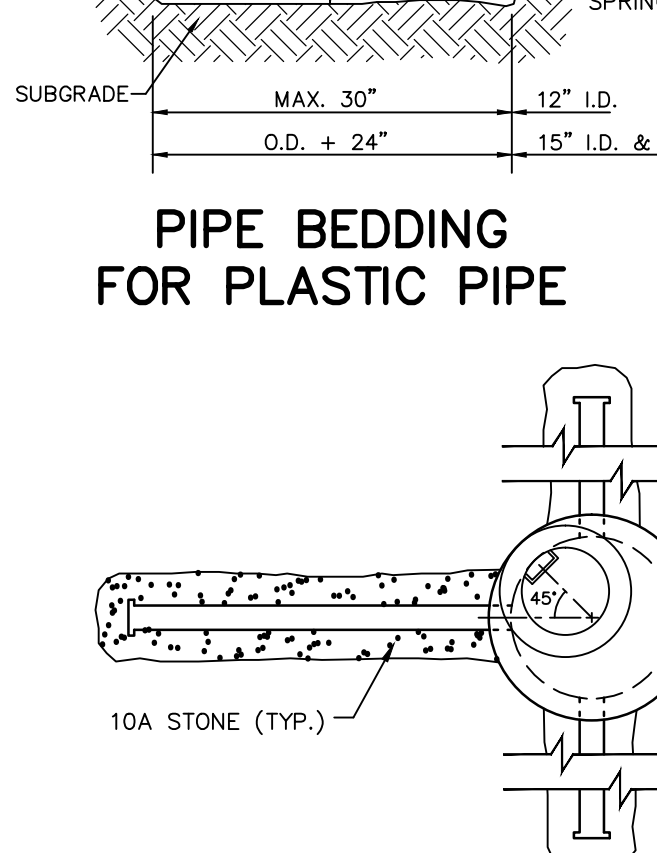
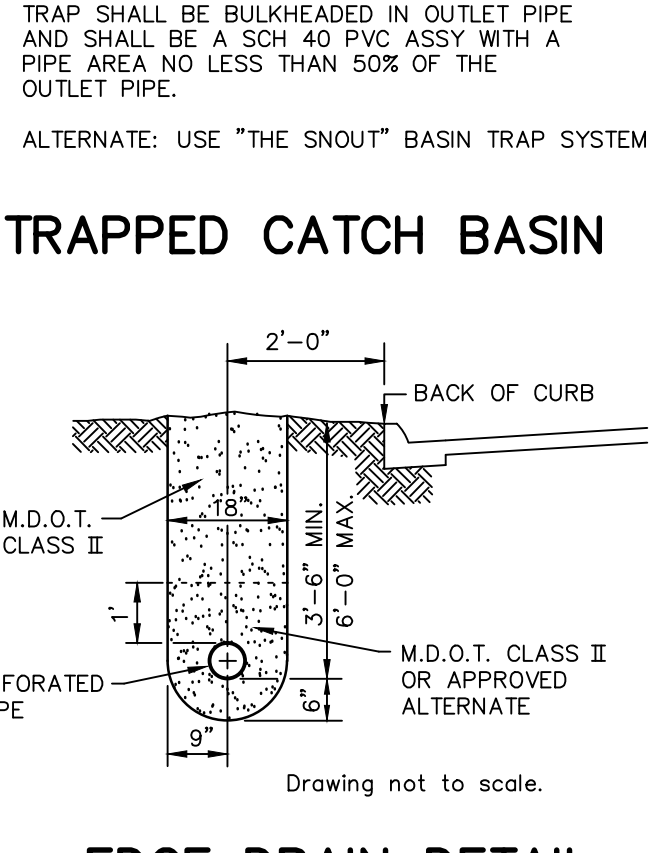
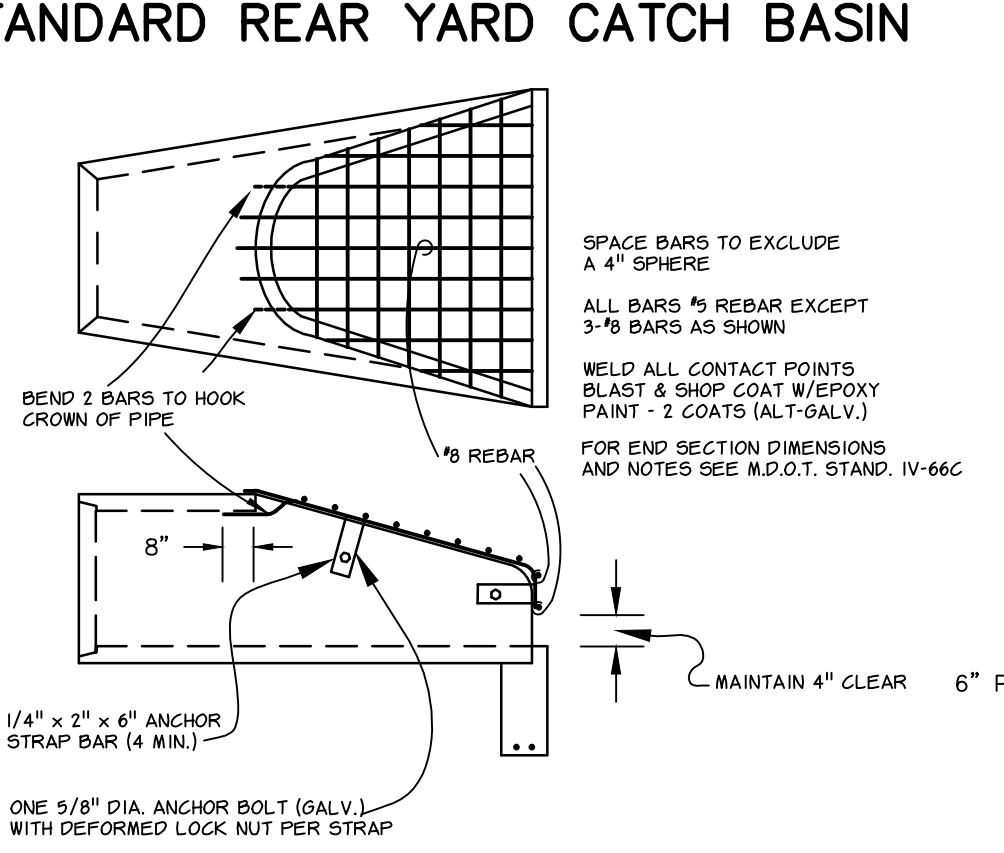
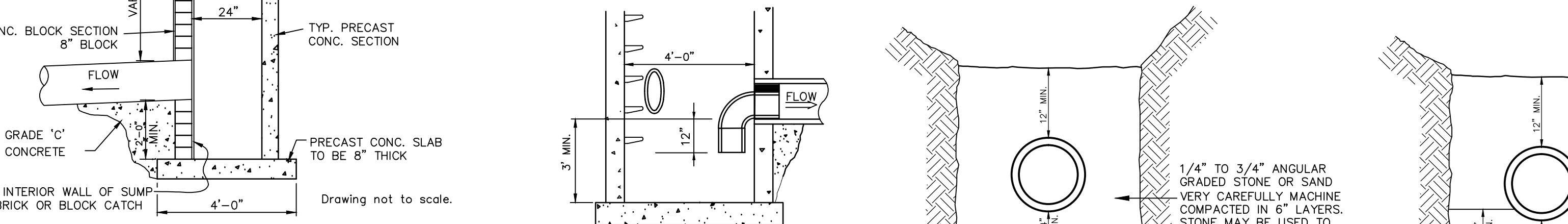
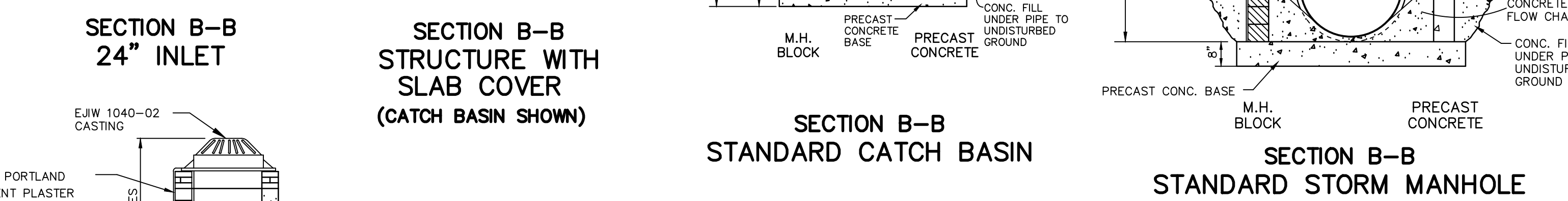
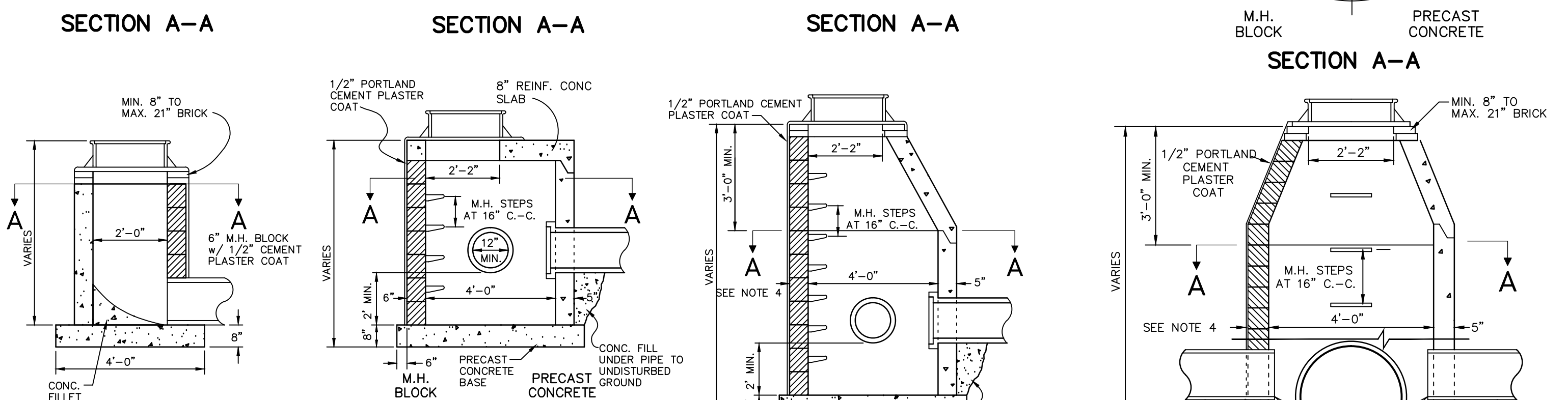
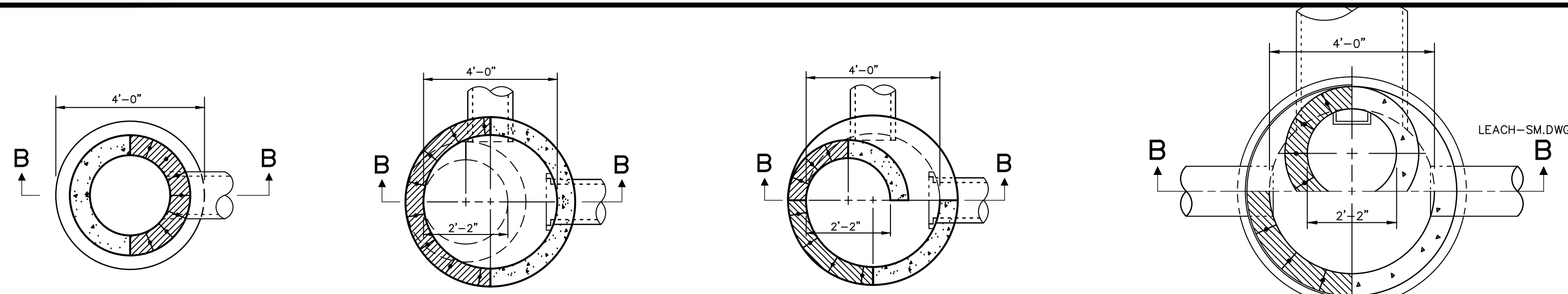
NO.	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
1	GENERAL	REVISION TO CAD	12/29/95	GW & NUT SIZE	07/23/98	CLARIFY HYD. SPEC	02/07/01	REV. HYD. THRUST, AIR REL.	03/29/04
2	ADD NOTE	17	11/04/97	PIPE COVER & FLANGE TAPE	05/12/99	5-BR HYD. WS STAKE	02/27/02	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
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441
 2291 Water Street, Suite 6 Port Huron, Michigan 48060
 (248) 881-7800 fax (248) 881-2680 (231) 780-3100 fax (231) 780-3115 (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. _____



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'-0"	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'-6"	12
48"	10'-0"	13'-0"	7'-0"	14

- ### STORM SEWER NOTES
- PRECAST CONC. RISERS SHALL MEET A.S.T.M. C478
 - DIAMETER OF CONC. BASE: I.D. + 2(WALL) + 8"
 - MANHOLE STEP SPACING SHALL MEET MIOSHA 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.
 - WALL THICKNESS OF BLOCK STRUCTURES SHALL BE:
DEPTH THICKNESS
0-8' 8"
8-15' 8"
OVER 15' 12"
 - 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.
 - ALL LIFTING HOLES AND VOIDS IN INTERIOR JOINTS SHALL BE FILLED BY MORTAR.
 - 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.
 - PRECAST ONE PIECE BASES AND RISERS ARE ACCEPTABLE FOR INLETS, CATCH BASINS AND MANHOLES
 - 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
 - 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
 - THE CONTRACTOR SHALL CONTACT MISS DG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
 - PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
 - A 2' DEEP SUMP SHALL BE USED IN ANY STRUCTURE SUBJECT TO A WATER DROP GREATER THAN 2.0' FROM AN INLET PIPE.
 - 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
 - THE MINIMUM PIPE SIZE IN PUBLIC RIGHT-OF-WAY OR EASEMENTS AND FOR PIPES CARRYING OFF-SITE STORM WATER SHALL BE 12"
 - 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.
 - ALL DRAINAGE STRUCTURES WITHIN THE ROAD SHALL BE SEALED WITH WRAPPED GEOTEXTILE PER ROC STANDARD

DRAWN: CAD
DESIGN: OA
CHECKED: -

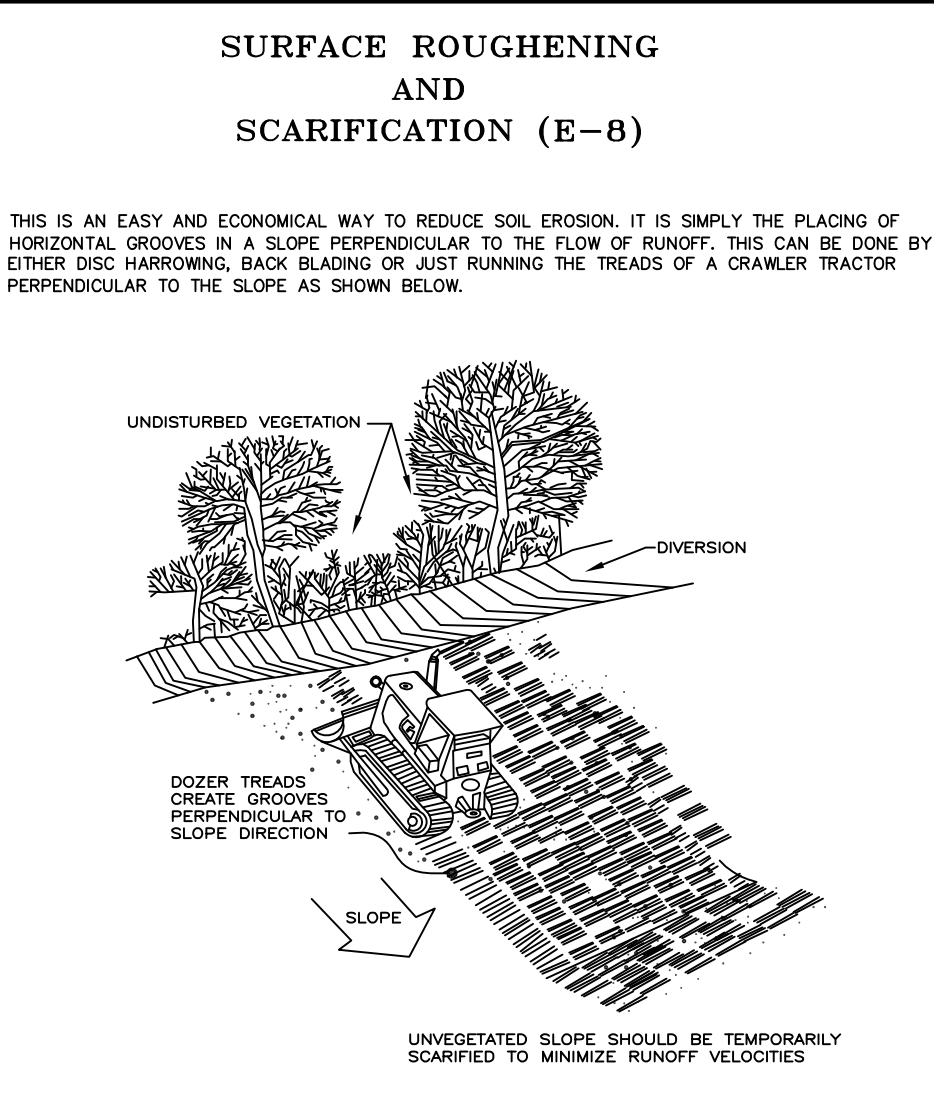
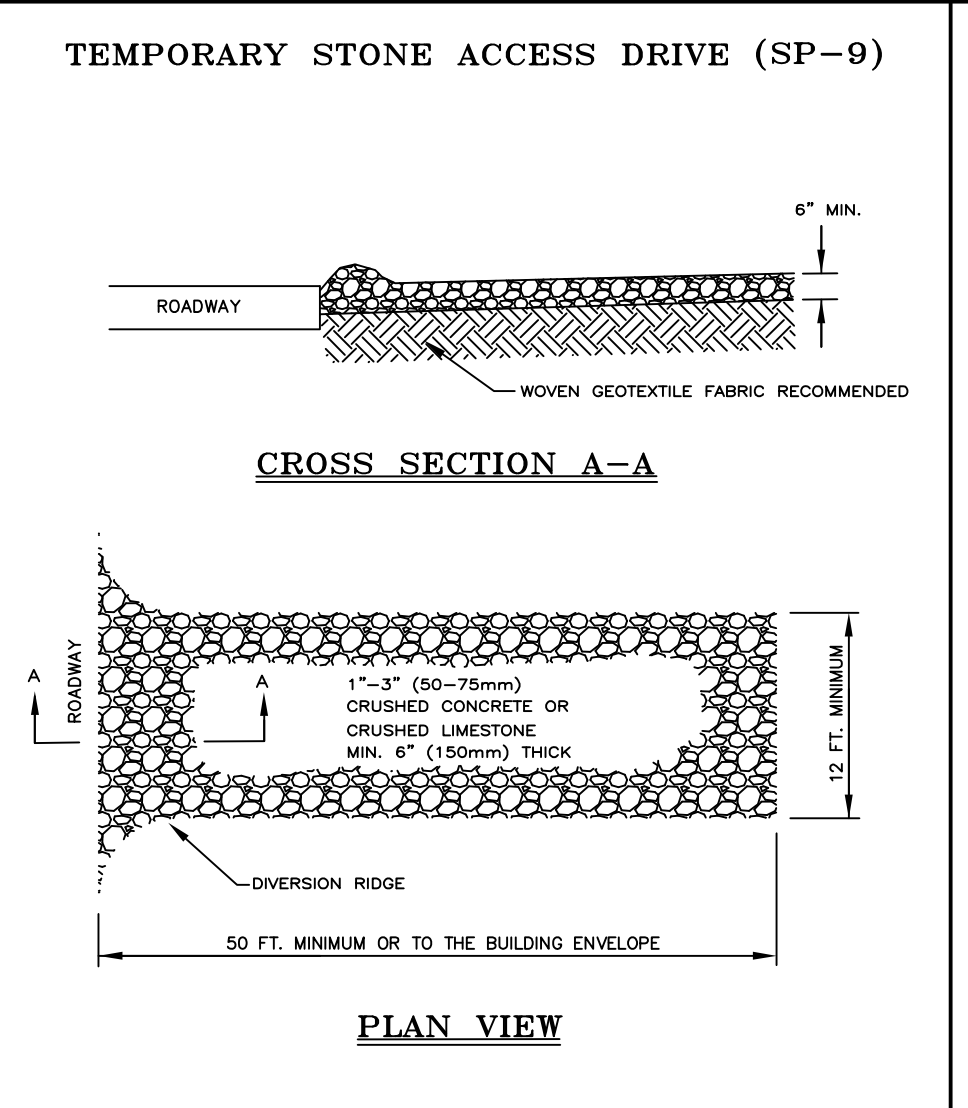
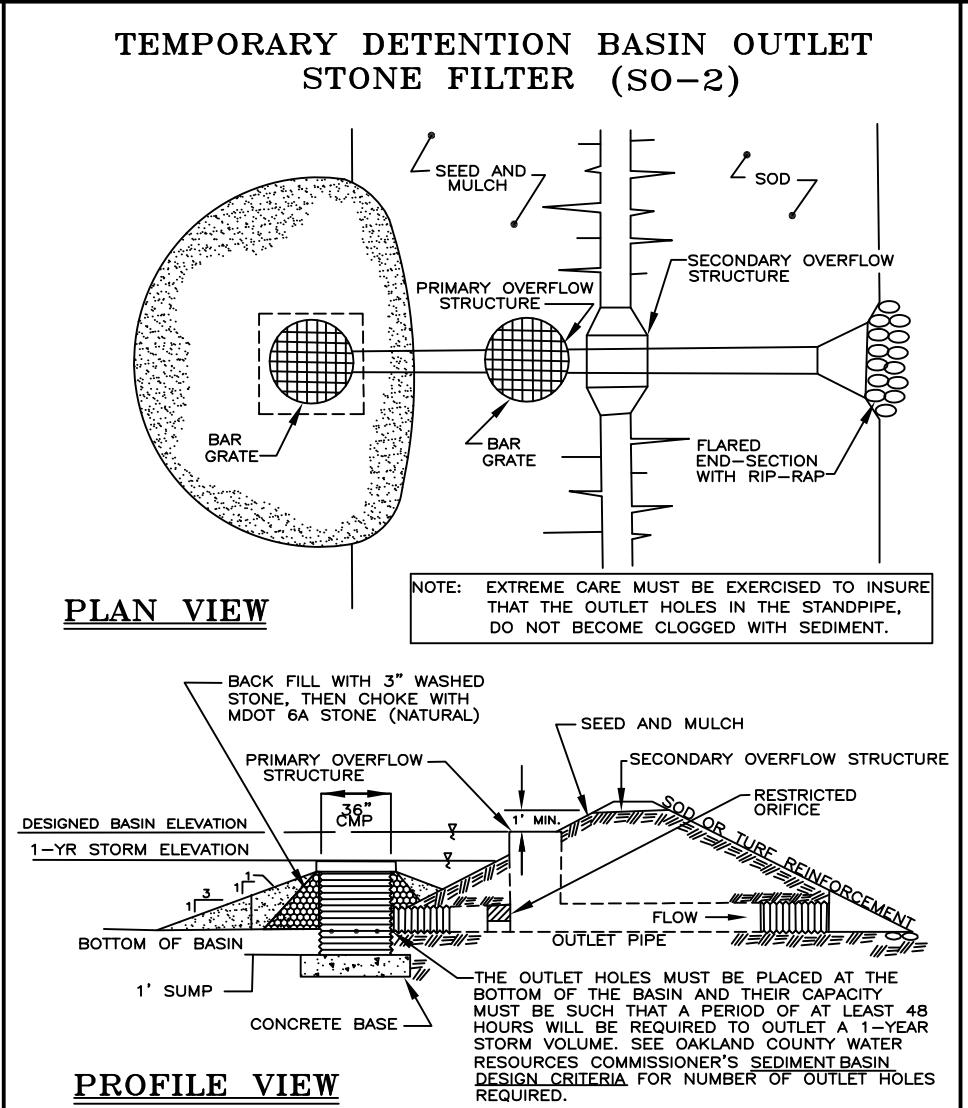
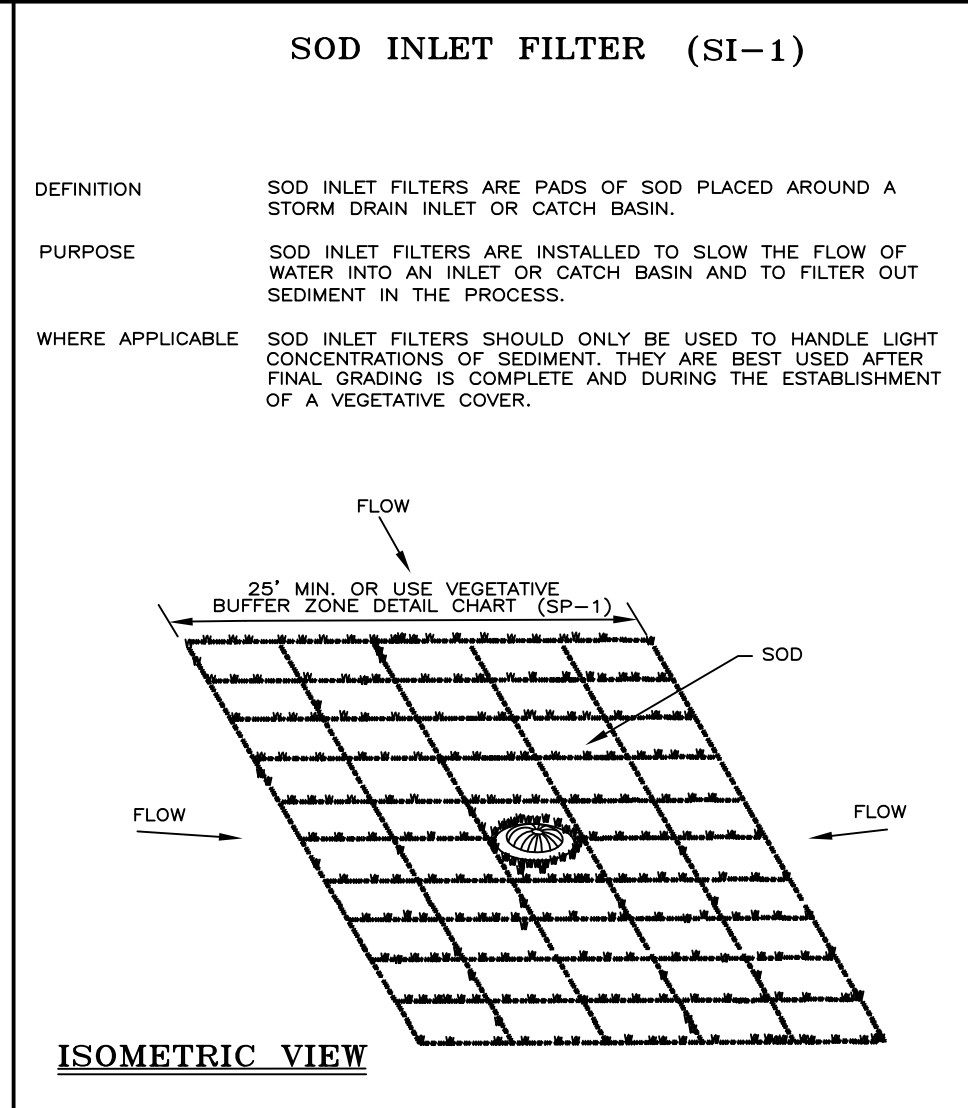
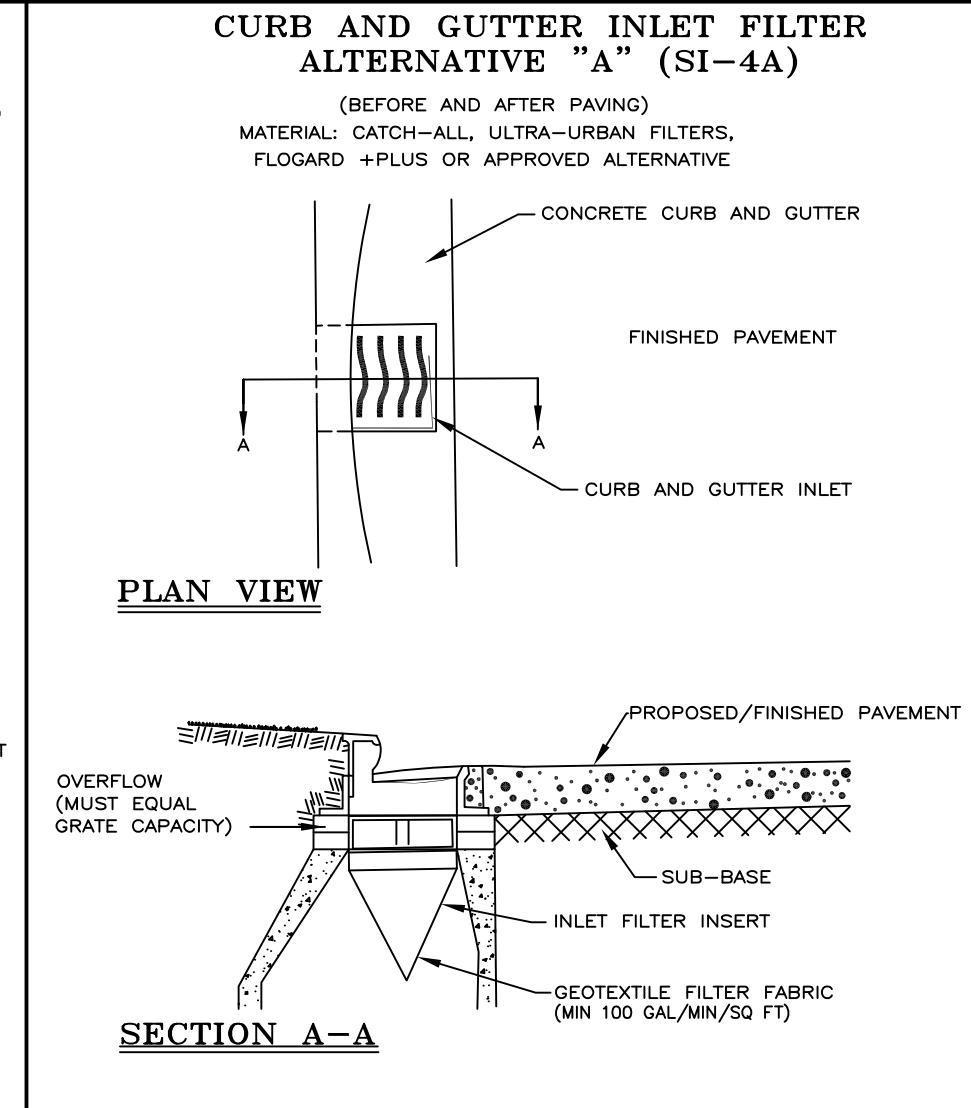
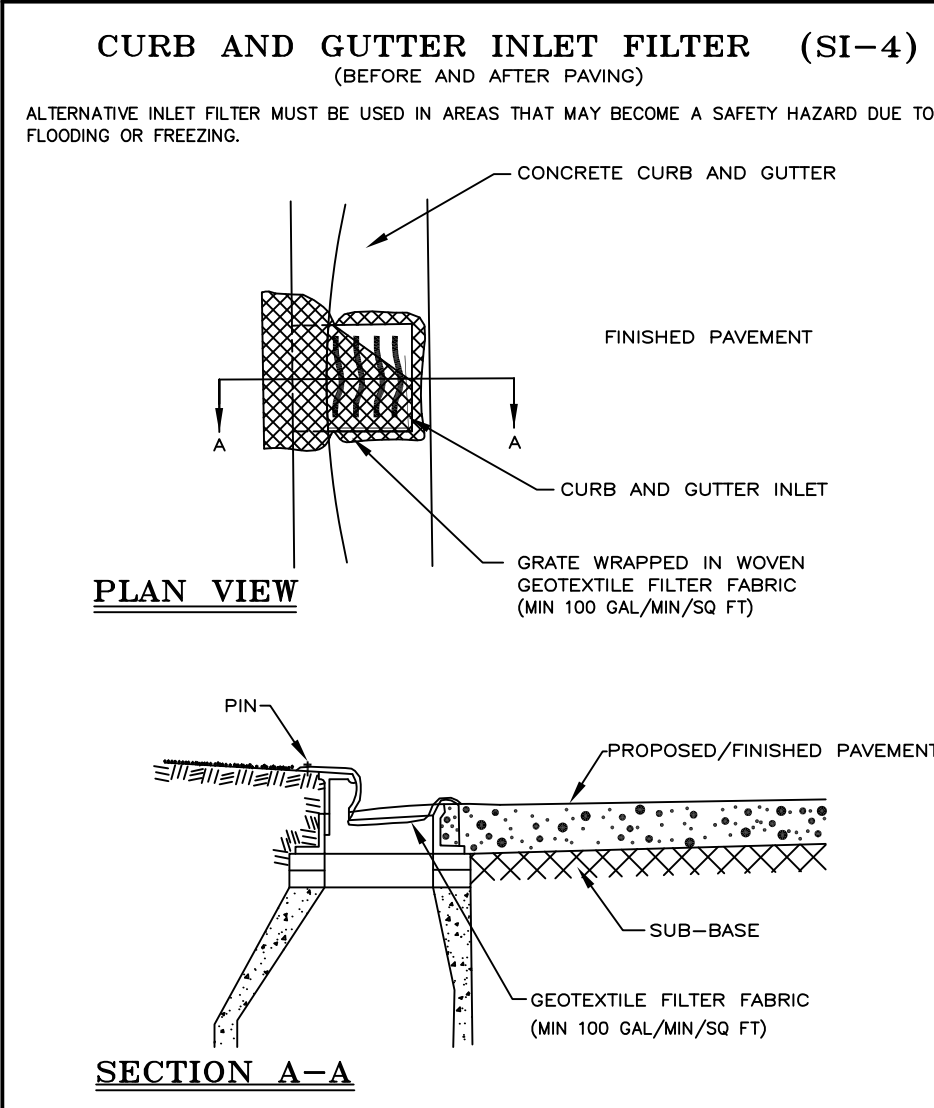
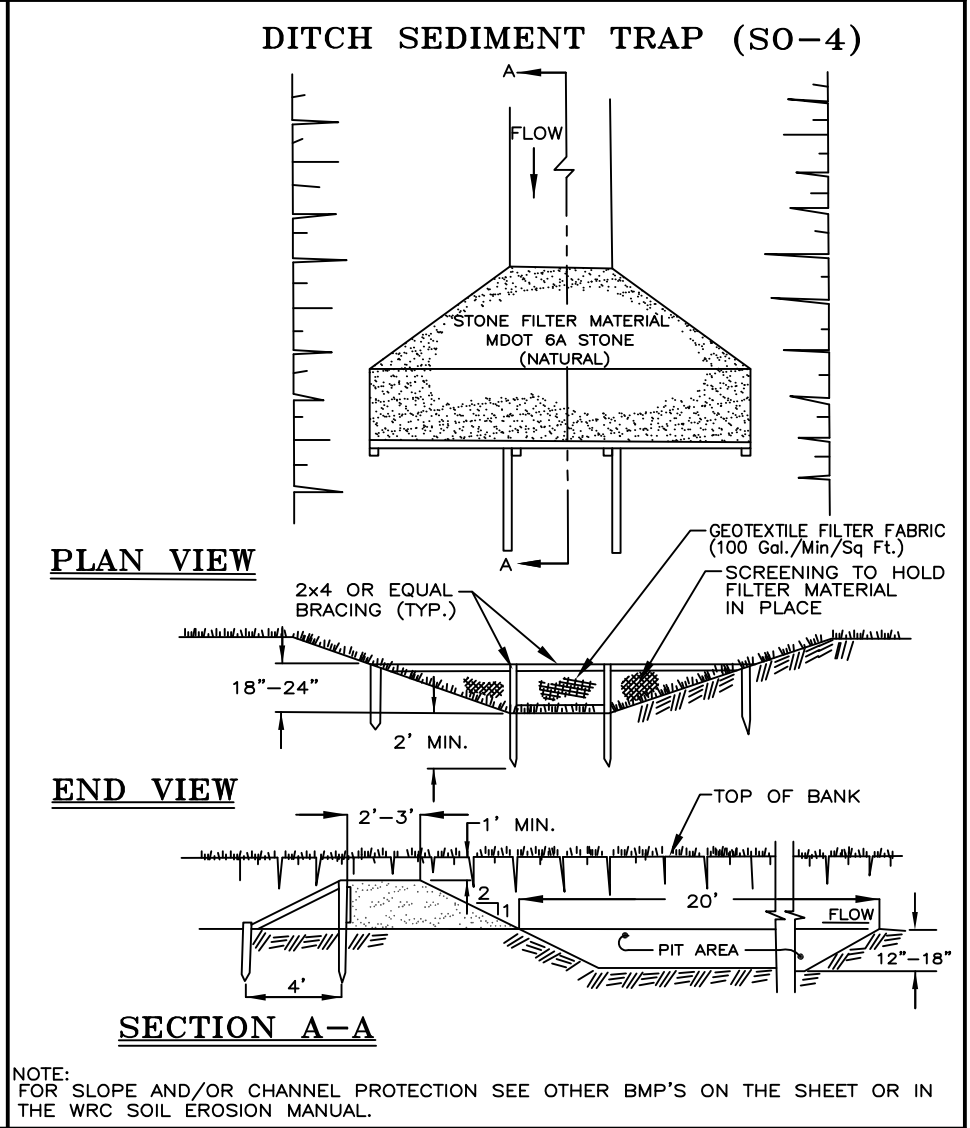
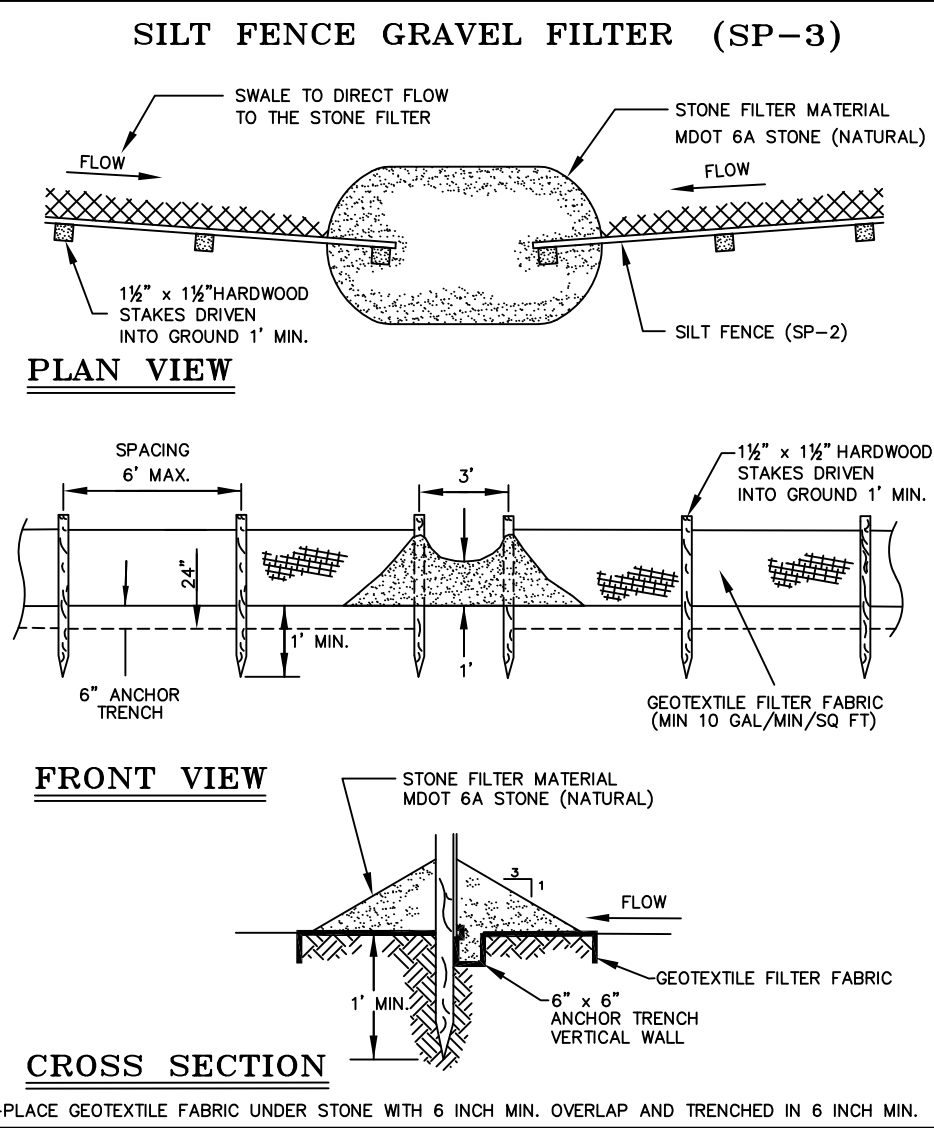
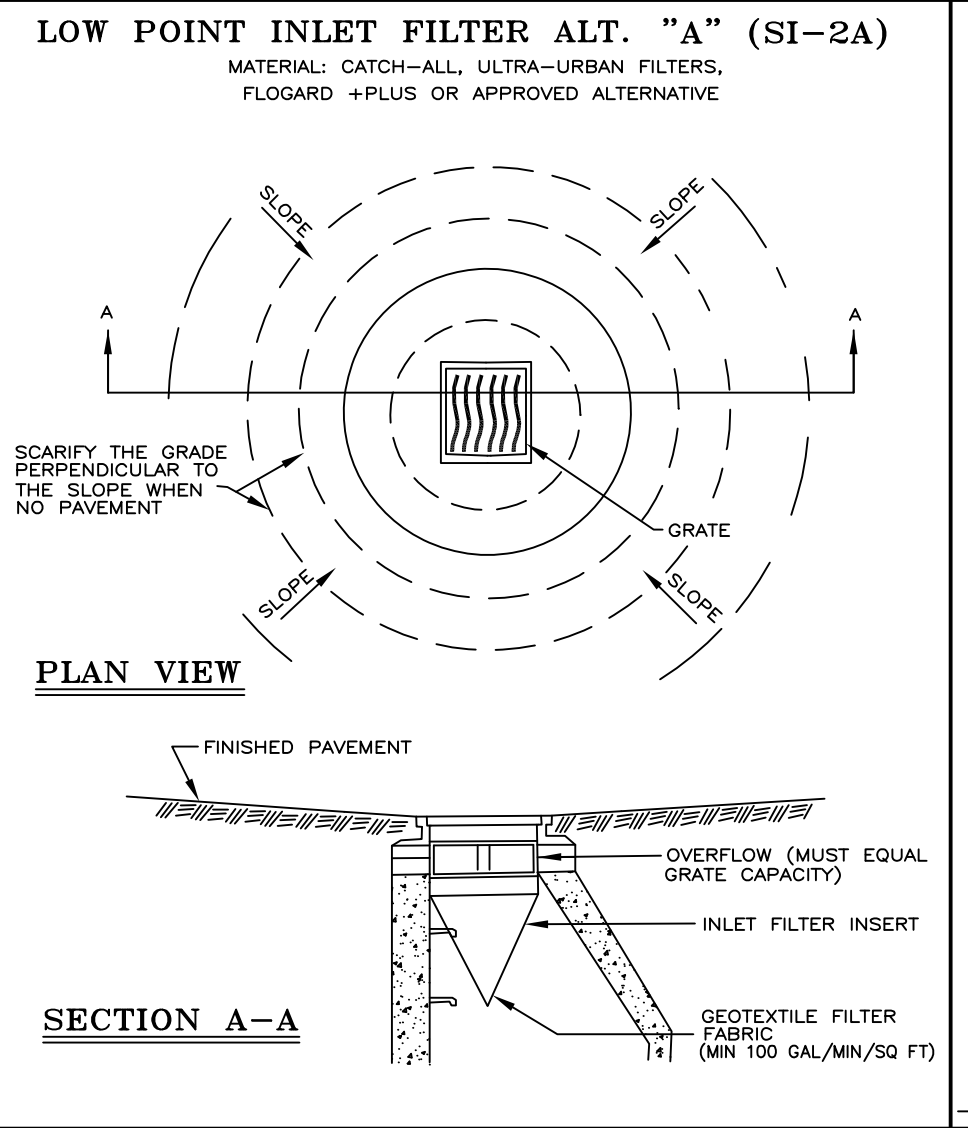
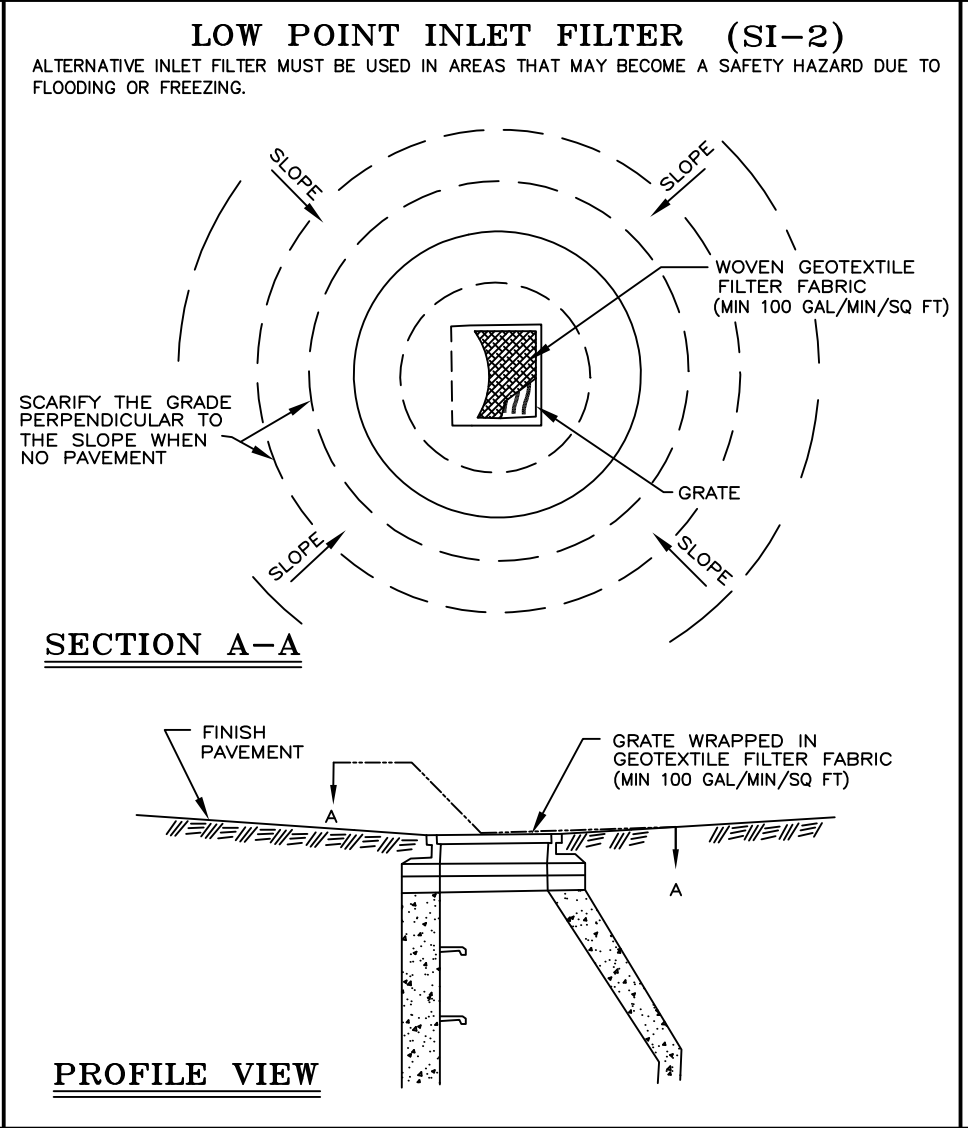
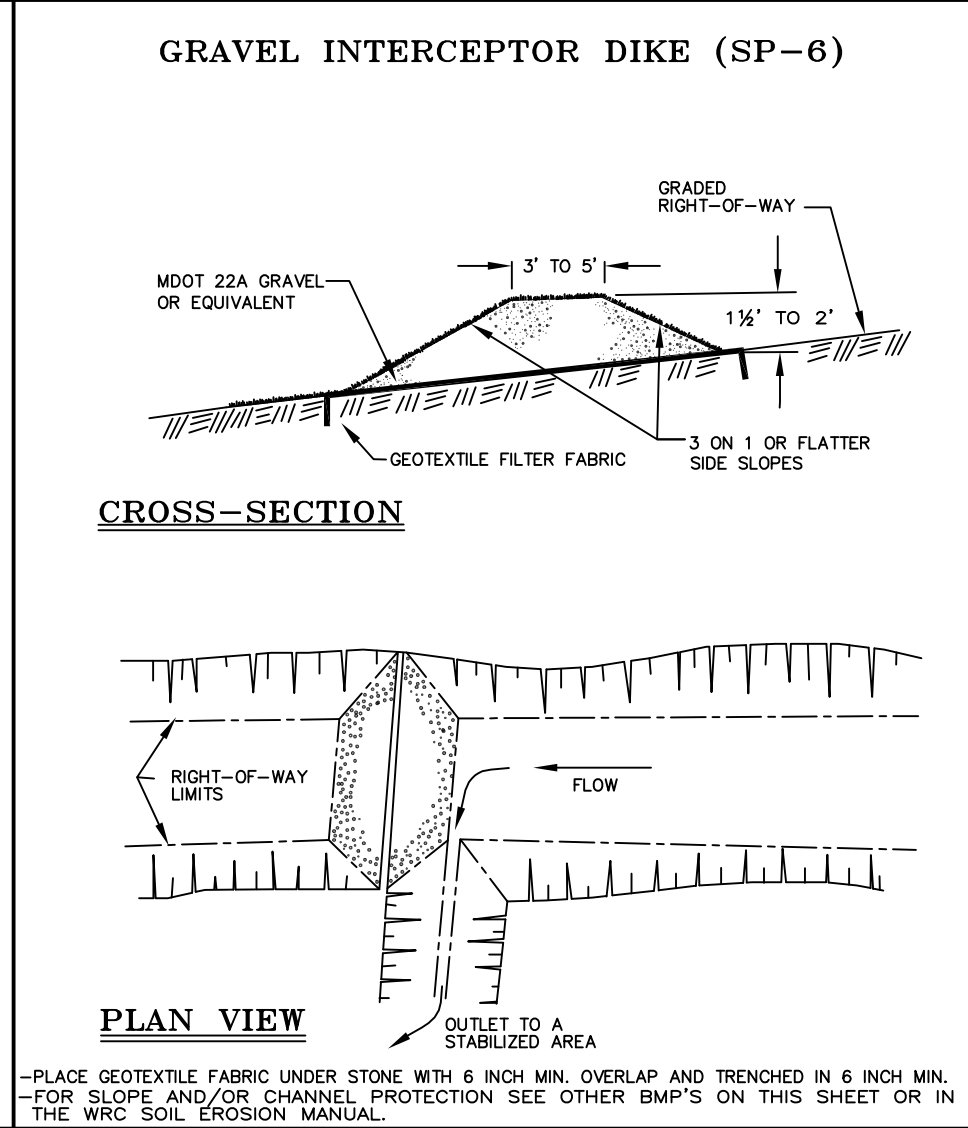
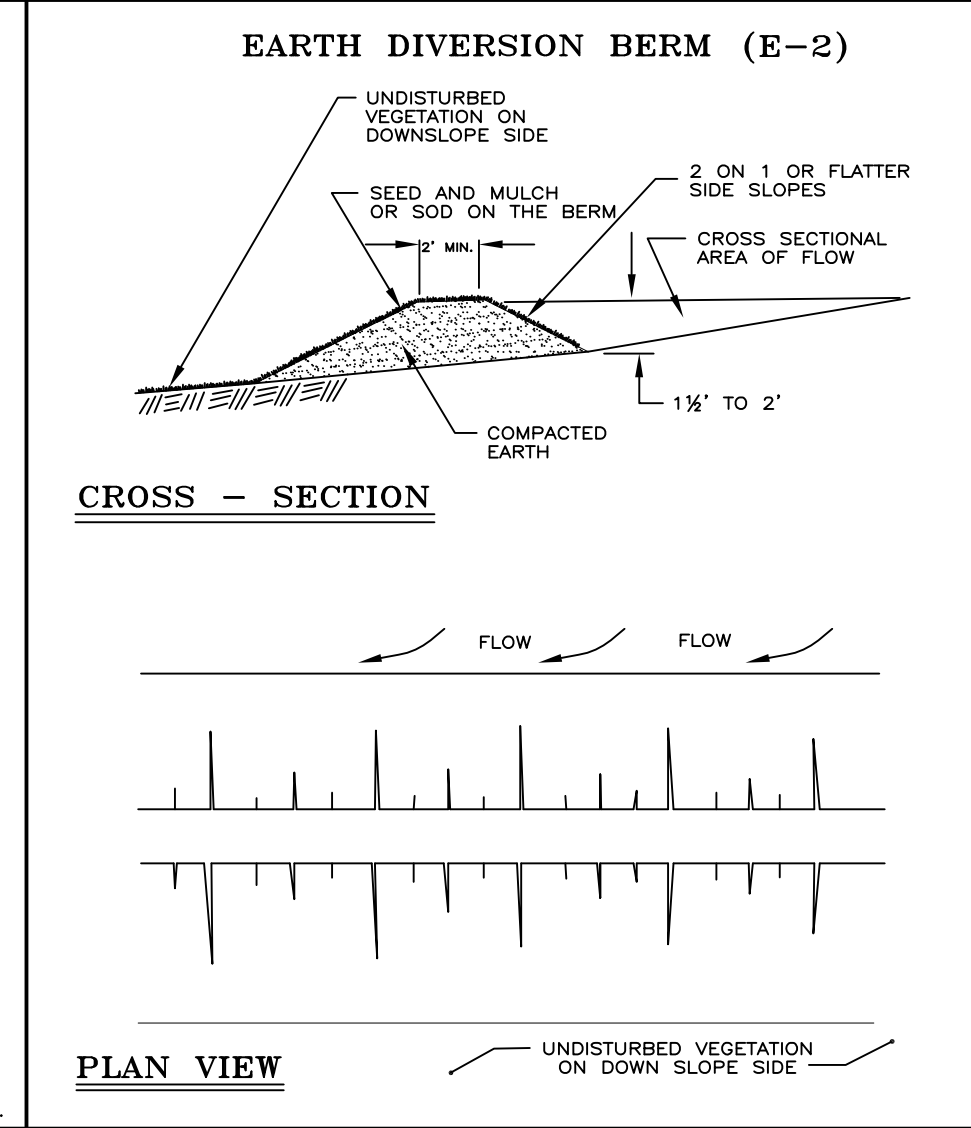
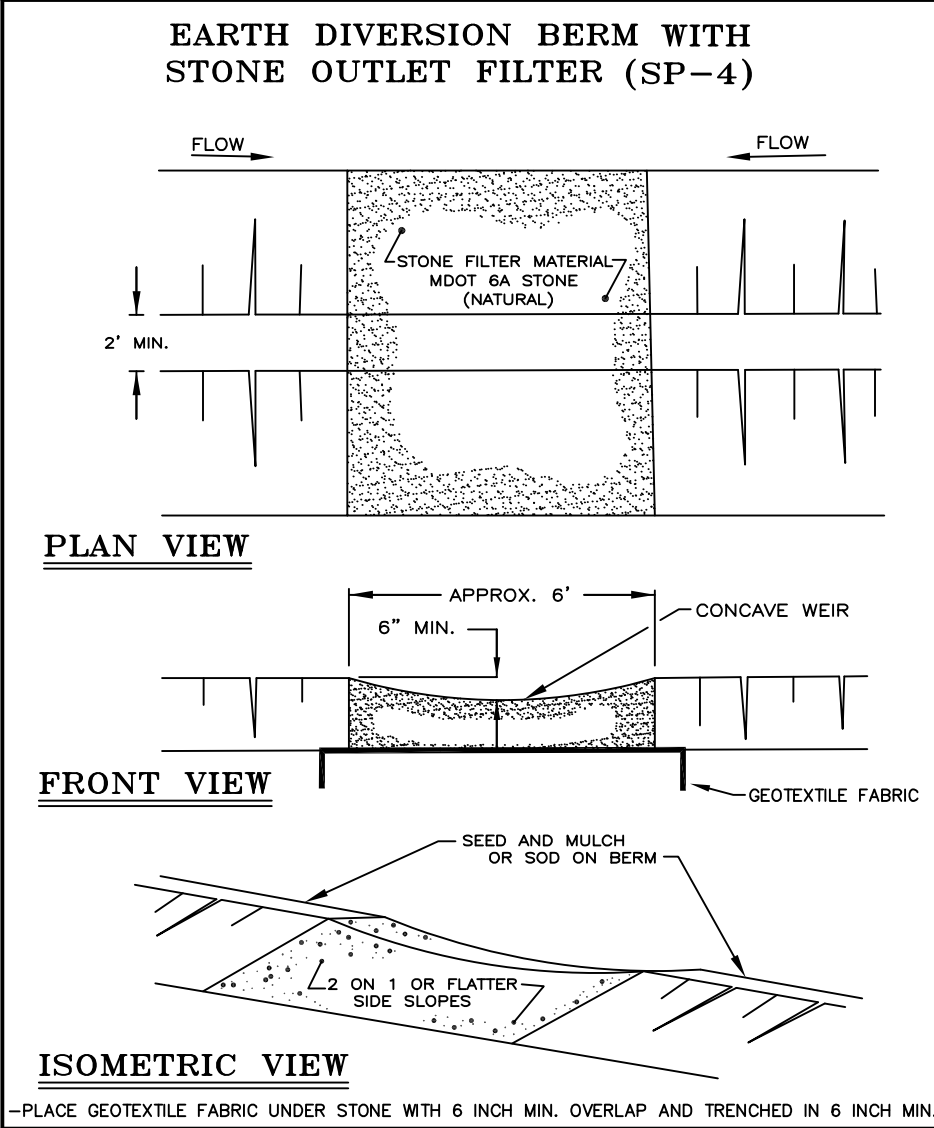
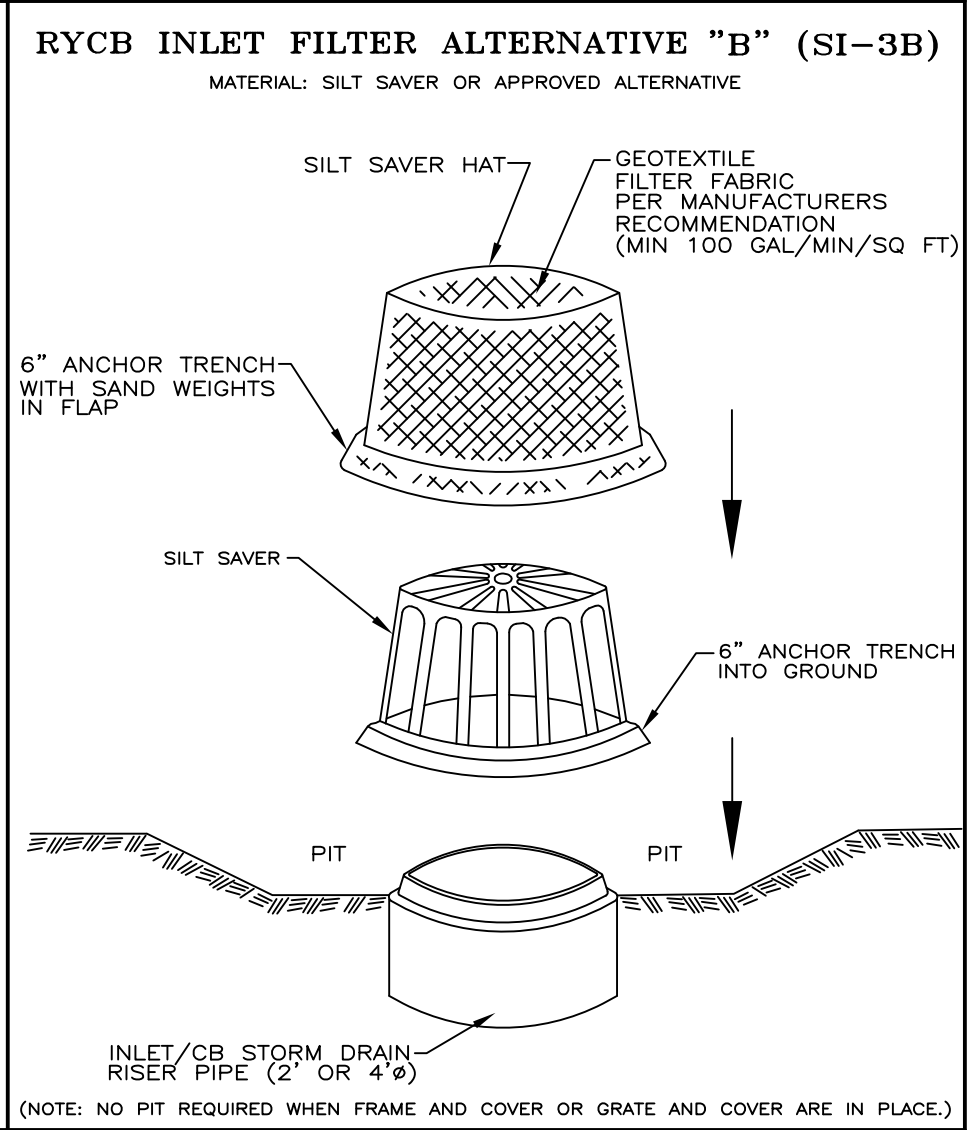
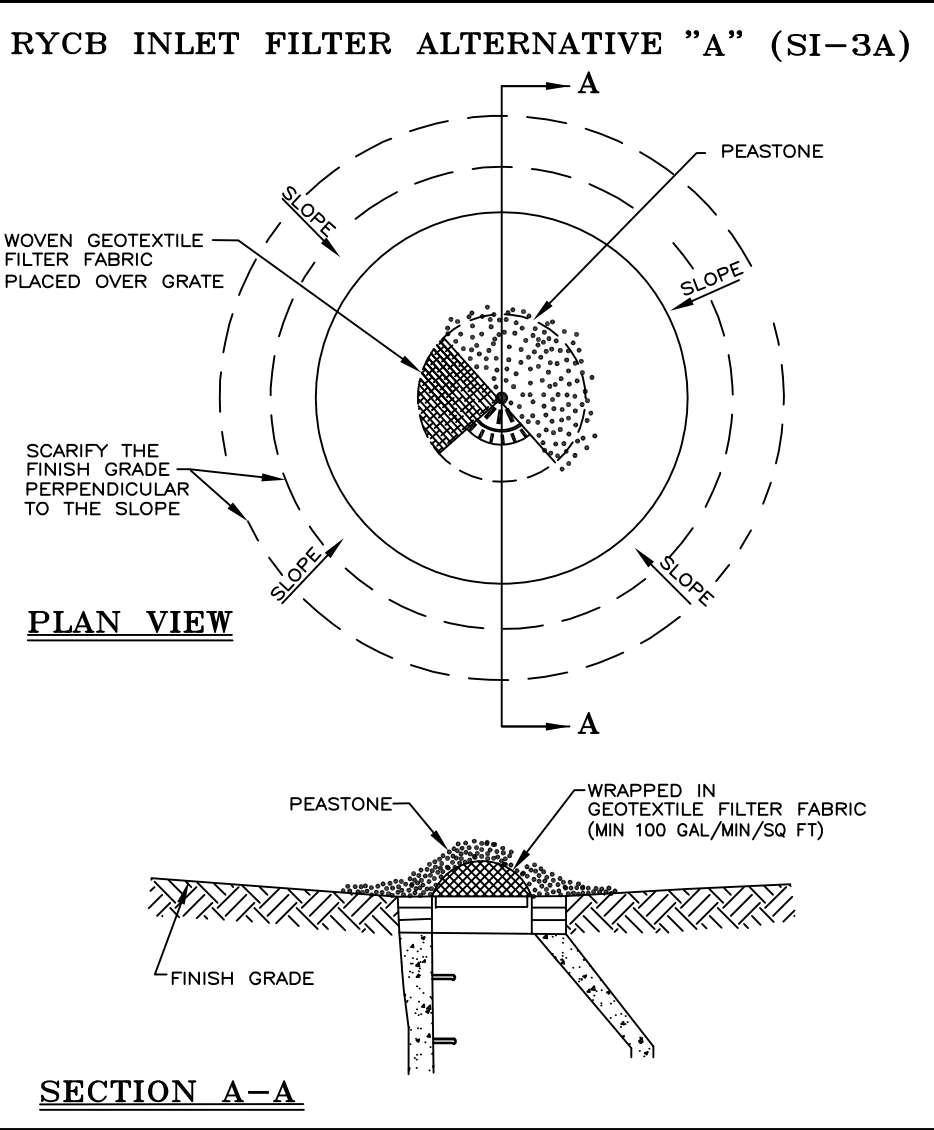
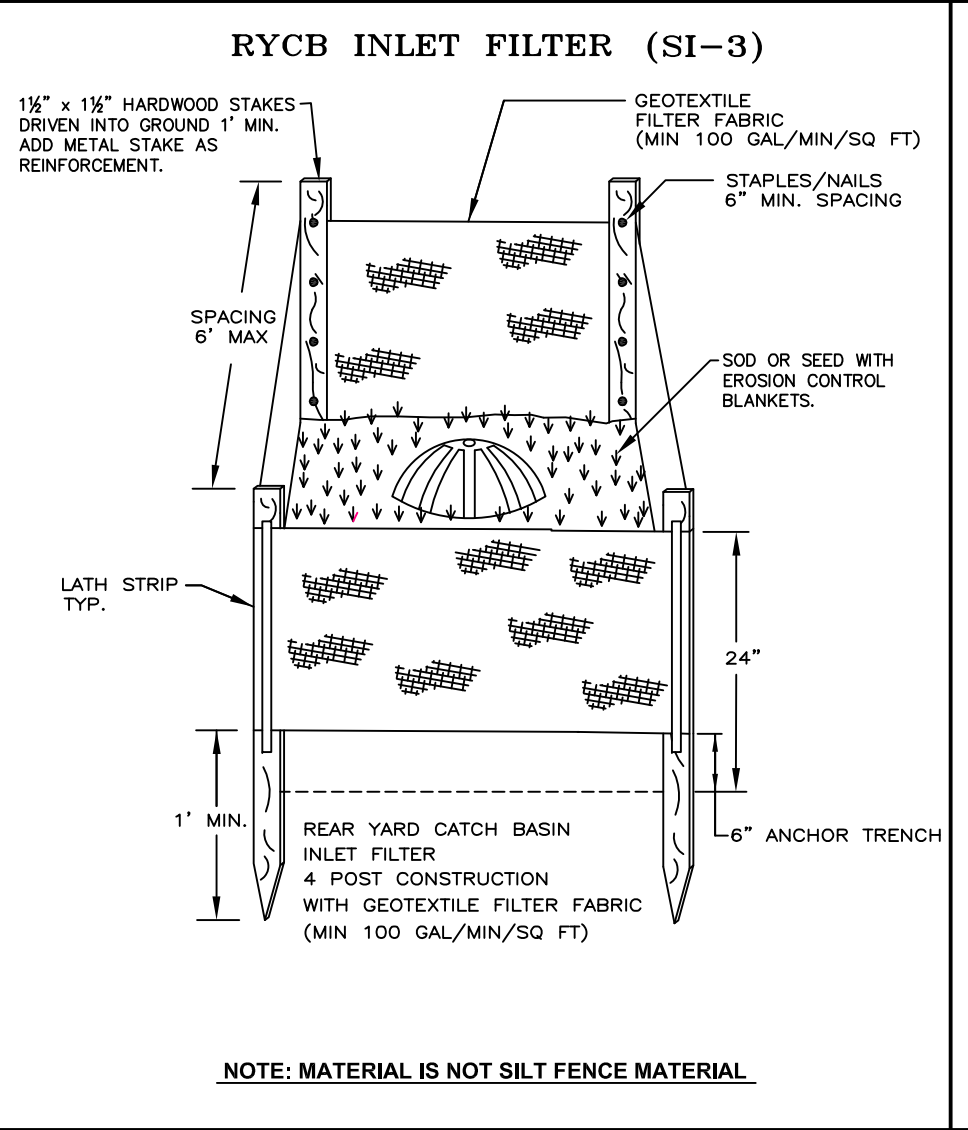
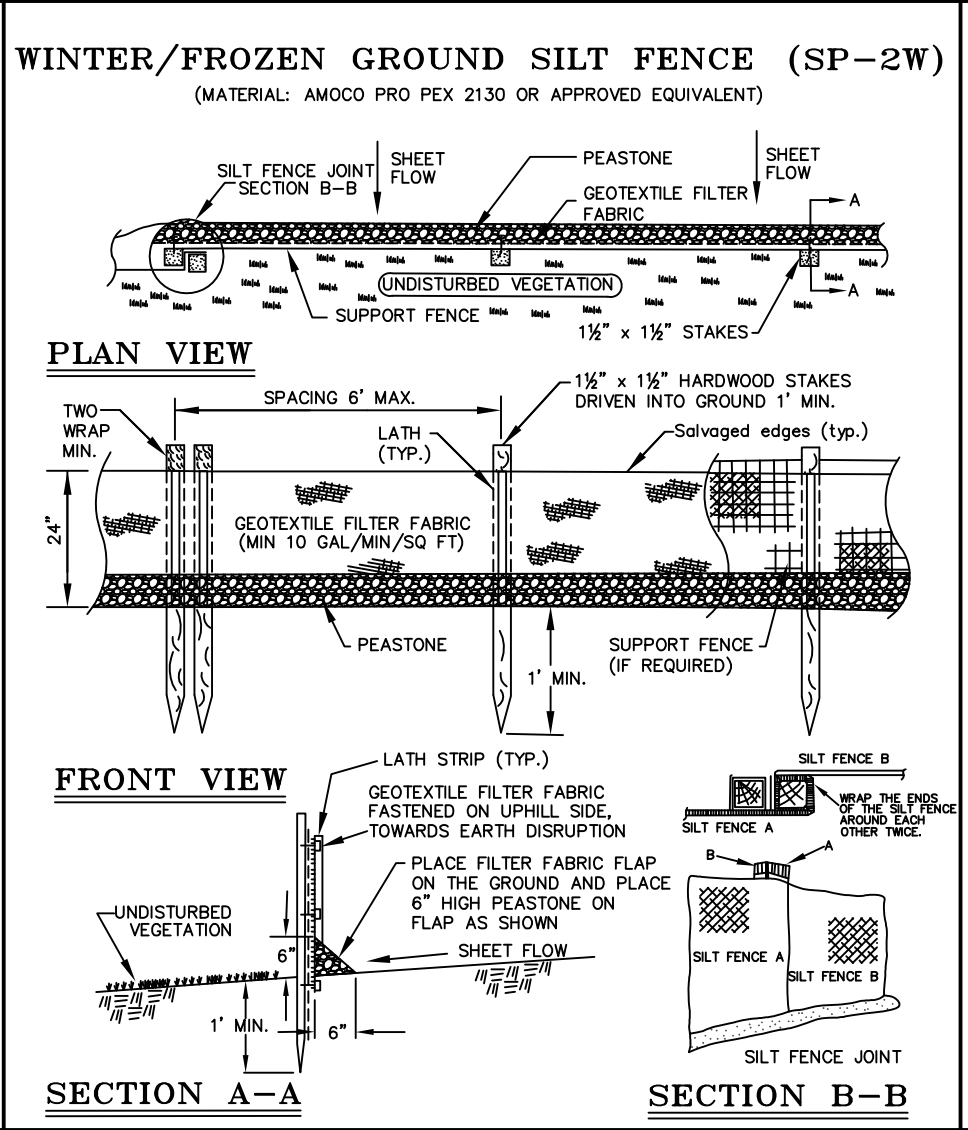
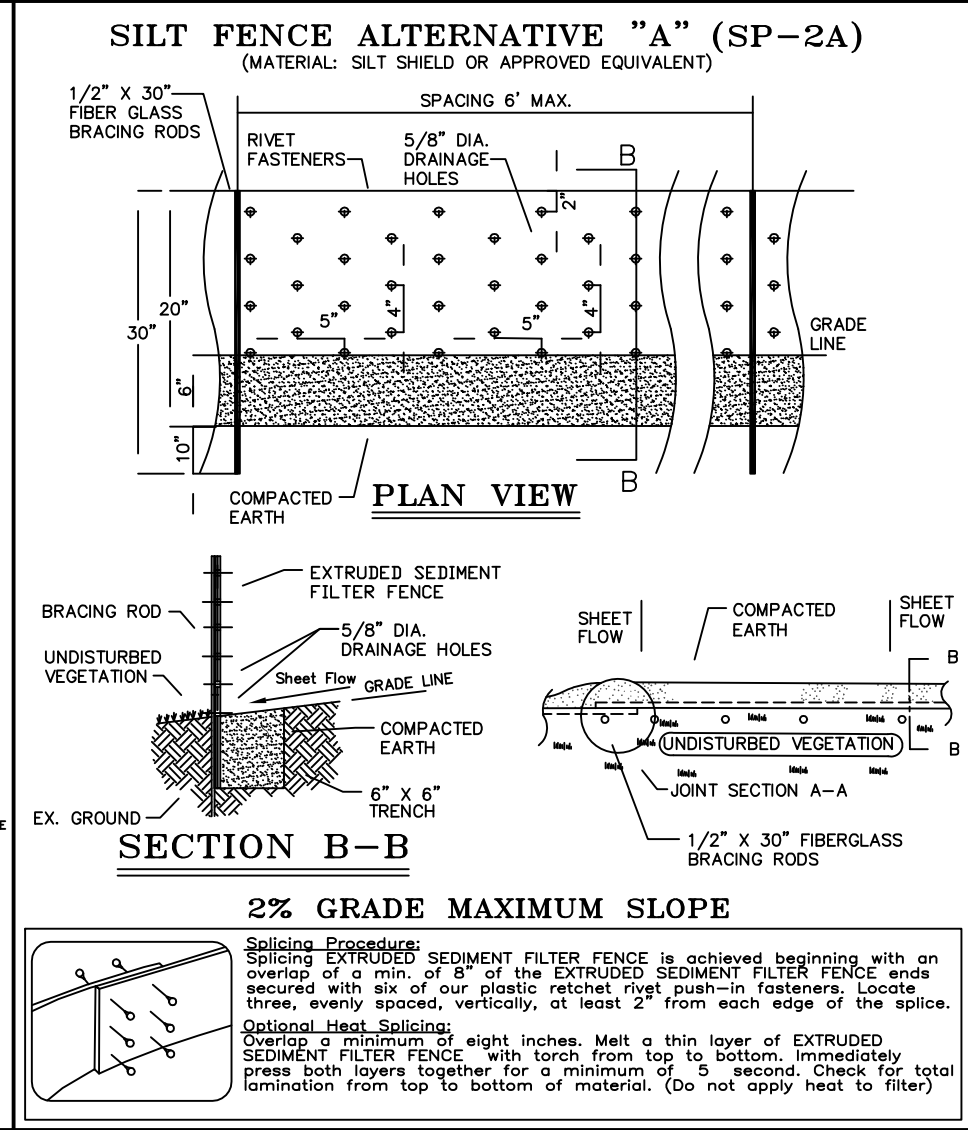
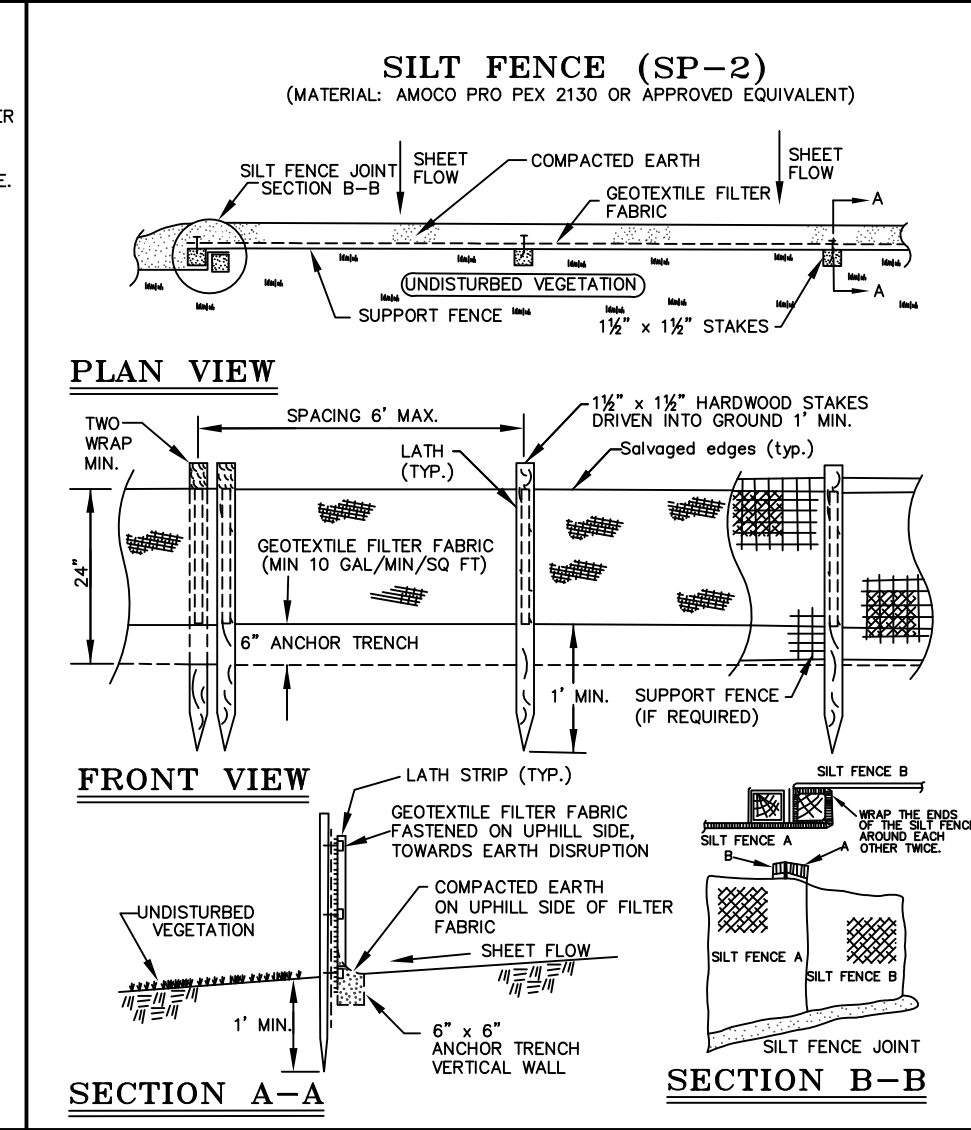
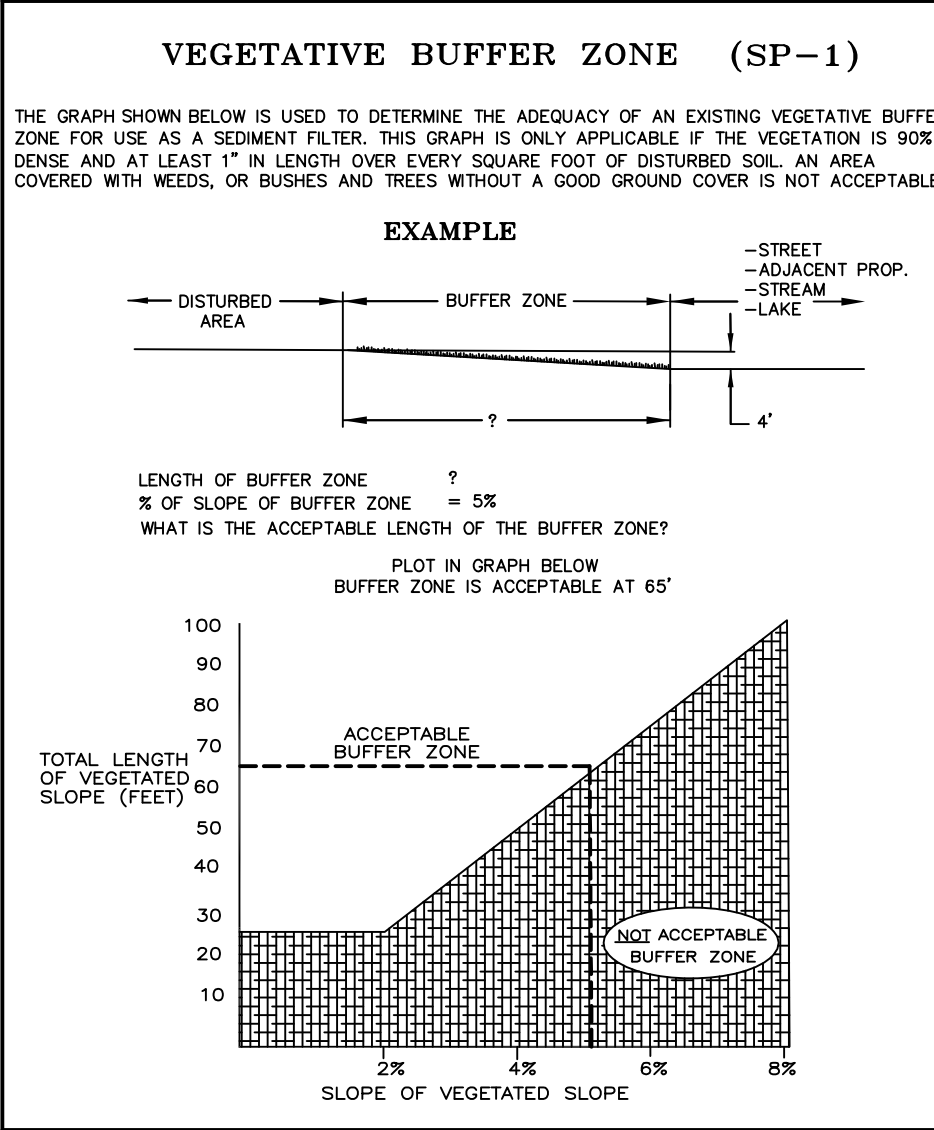
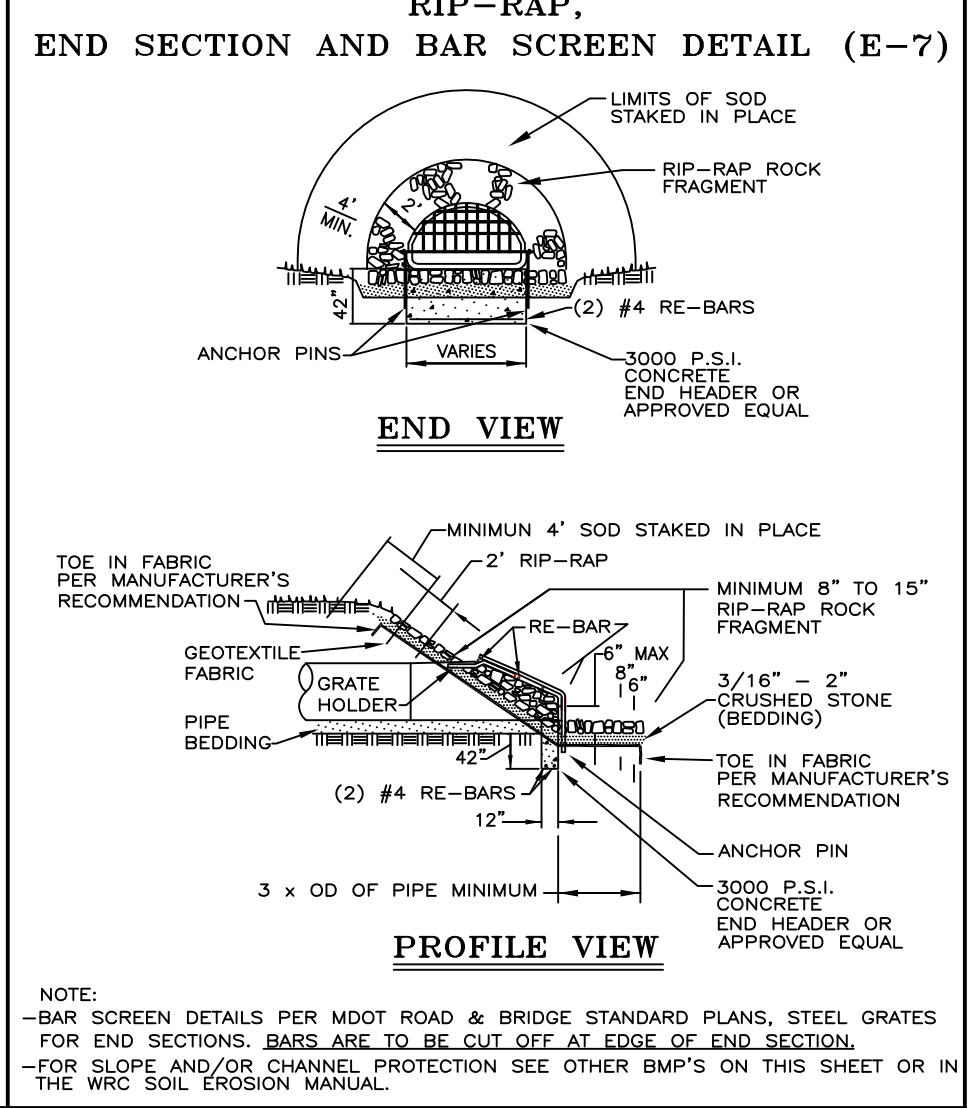
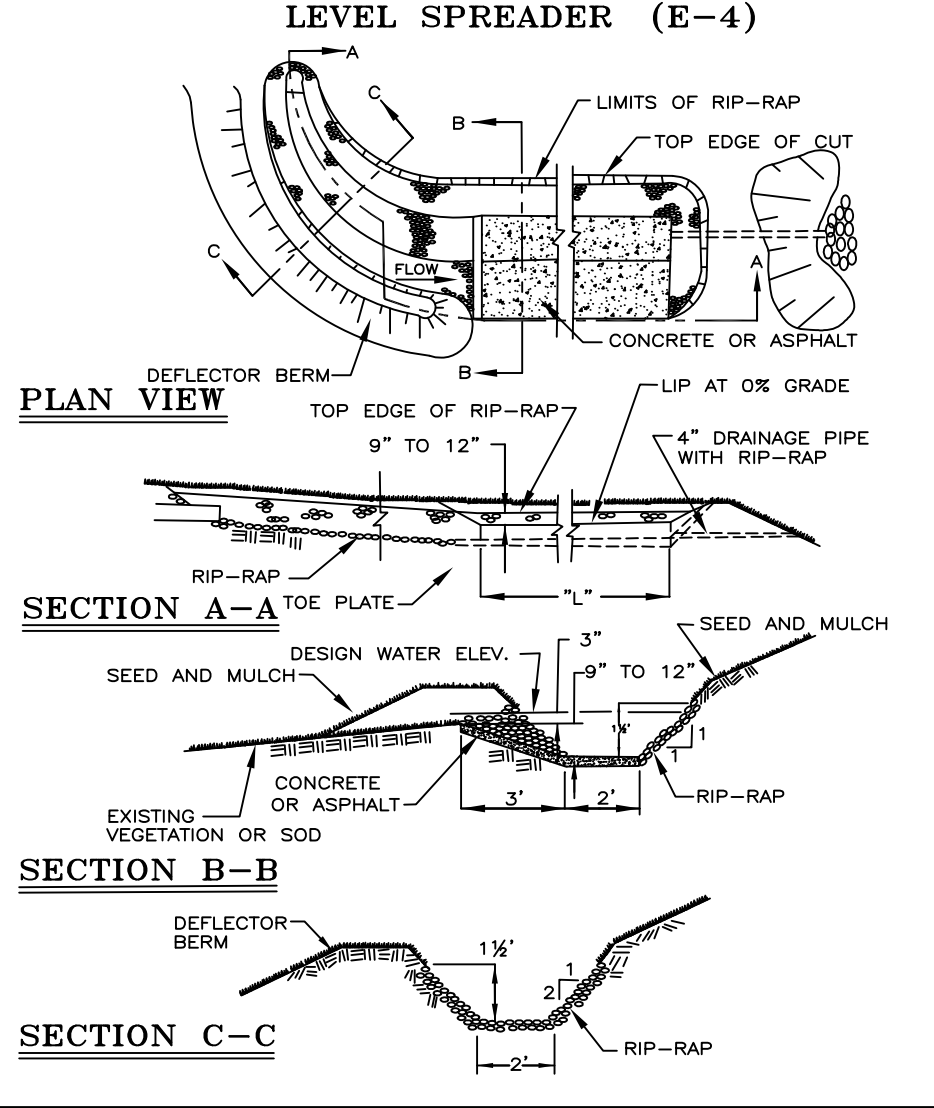
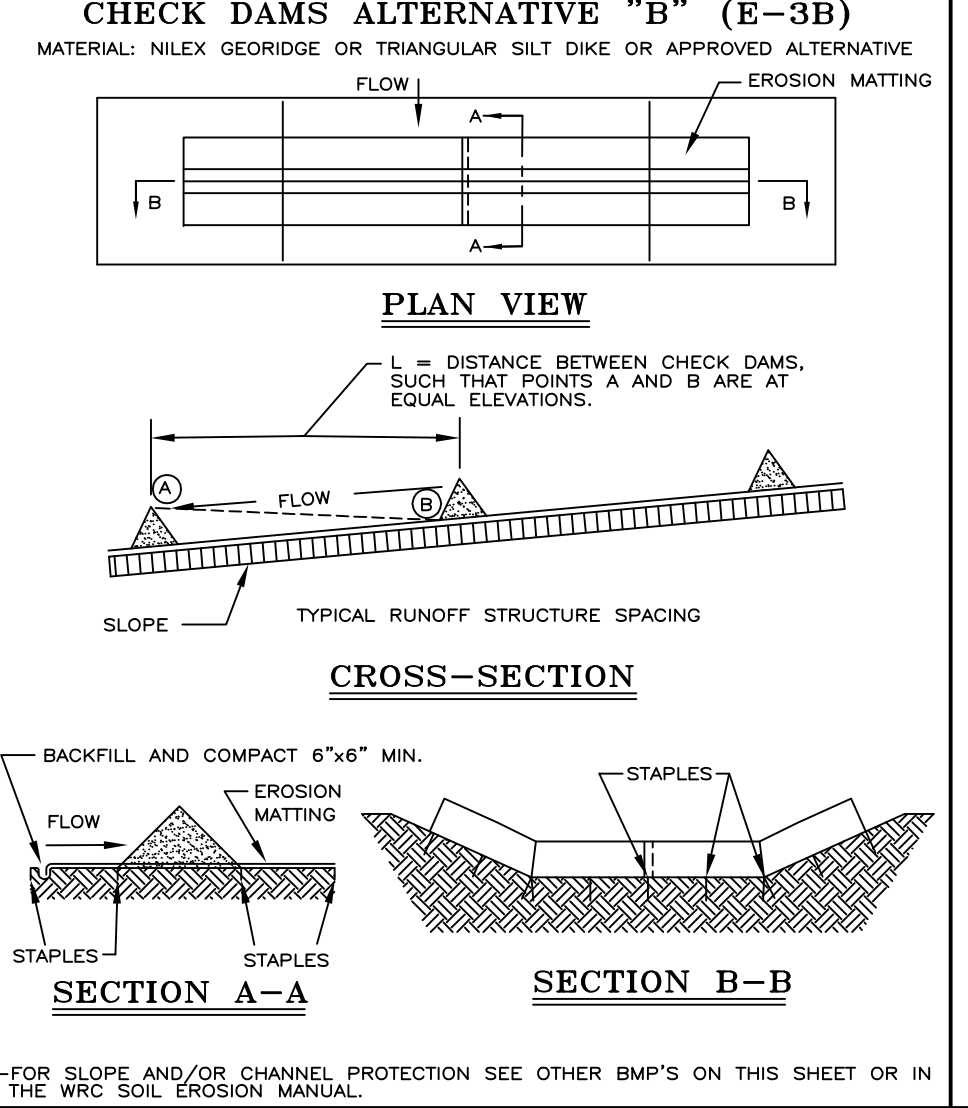
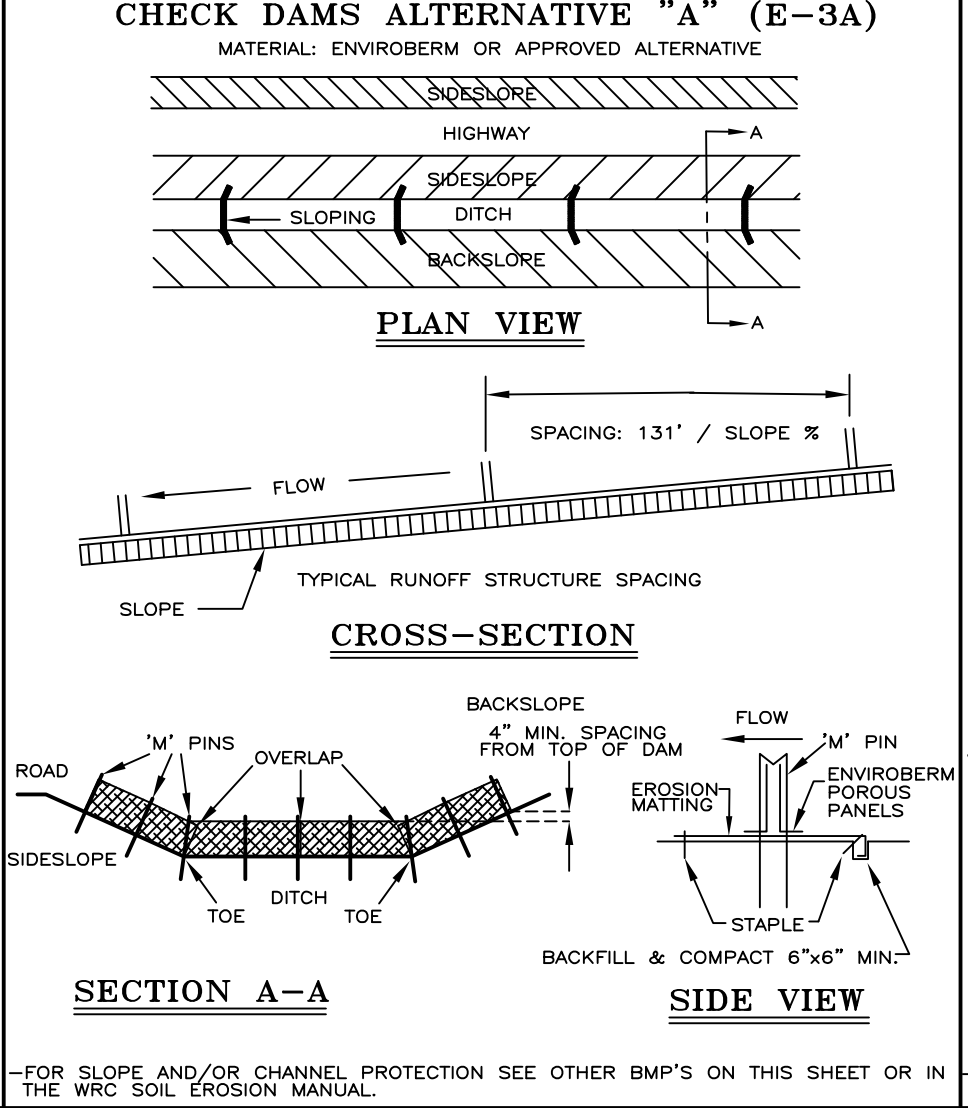
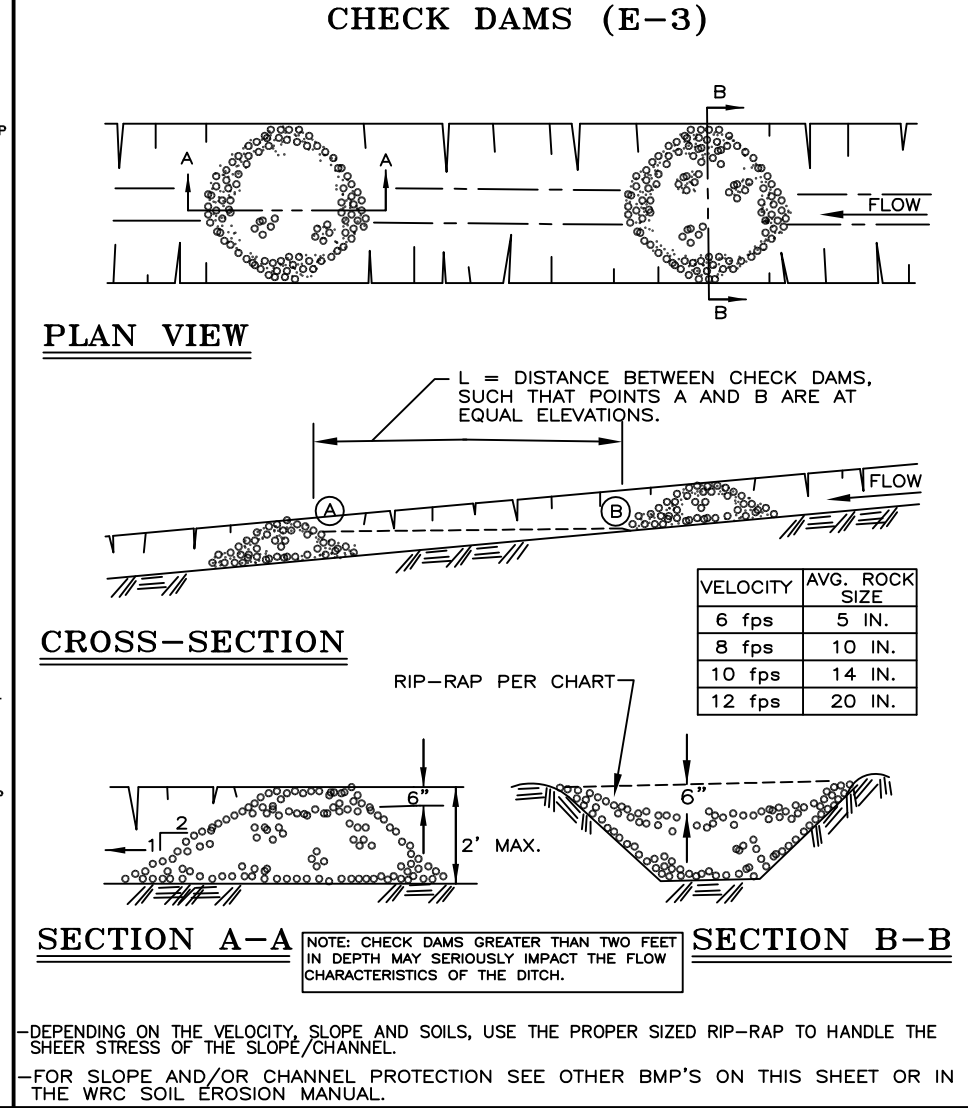
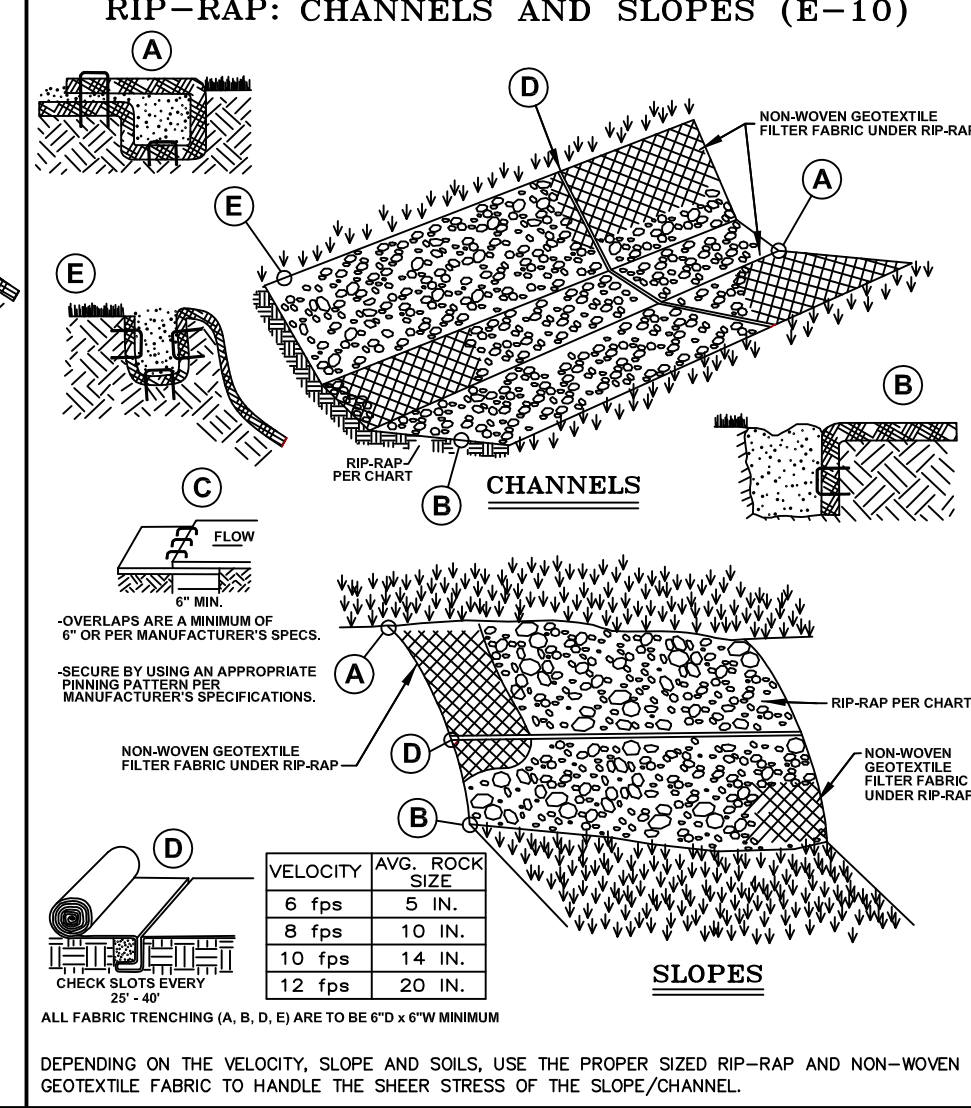
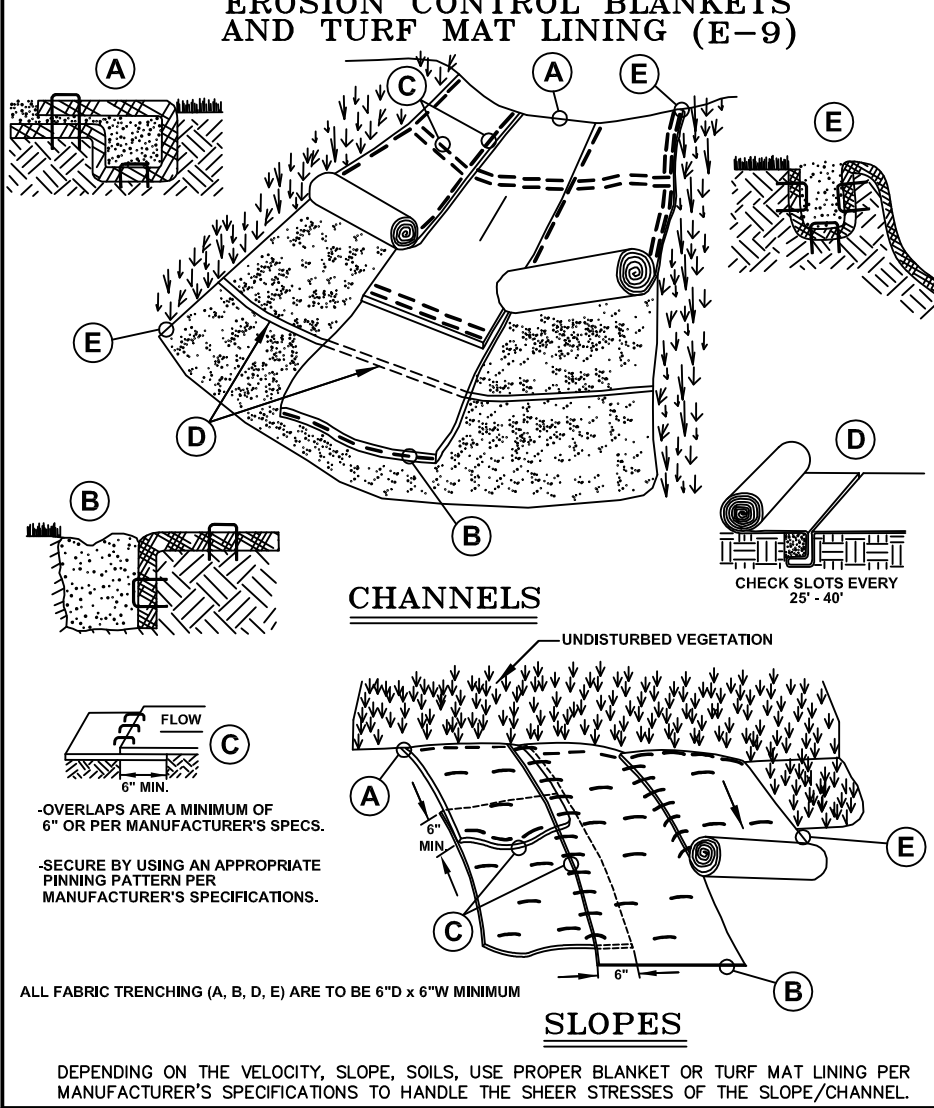
REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	08/16/95		REVISE	10-03-02		REVISE	06-01-07
		ADD SO-1	06-17-96		REVISE	12-17-03		UPDATED TITLE BLOCK	04/30/13
		NEW BAR GRATE	11-03-97		SEC REFERENCE	05-17-05			

Johnson & Anderson
 4694 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115
 3910 Lapeer Road 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

STORM SEWER STANDARD DETAILS
 DATE ISSUED: 08/16/95
 SHEET NO. _____

VERT. -
SCALE: _____
HORZ. AS NOTED



NOTE:

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

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REV.	DATE	DESCRIPTION
1	01/01/01	PROPOSED DETAIL
2	02/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES
3	03/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES
4	04/01/01	FOR CONSTRUCTION APPROVAL, NAME CHANGES

ORIG. DATE: 01/01/01

SCALE: _____

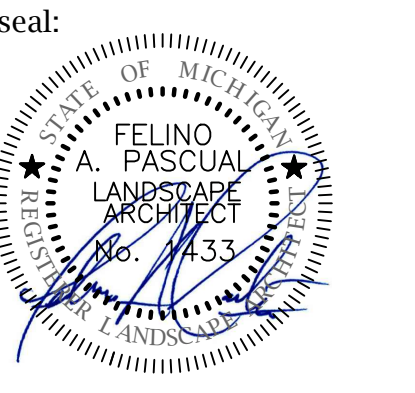
DESIGNED BY: WRC

DRAWN BY: Mapping

WRC WATER RESOURCES COMMISSIONER

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48320-1907

SHEET NO.: 1 of 1



client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

Union Lake Road

sheet title:
OVERALL LANDSCAPE PLAN VIEW

job no./issue/revision date:

LS19.124.11 TWP.	11-12-2019
LS19.124.12 TWP.	12-27-2019
LS20.089.10 TWP.	10-14-2020
LS21.009.01 SPA	1-18-2021
LS21.009.01 SPA	2-02-2021
LS21.009.03 SPA	3-22-2021

drawn by:
JP, DK

checked by:
FP

date:
1-4-2021

notice:
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Do Not scale drawings. Use figured dimensions only.



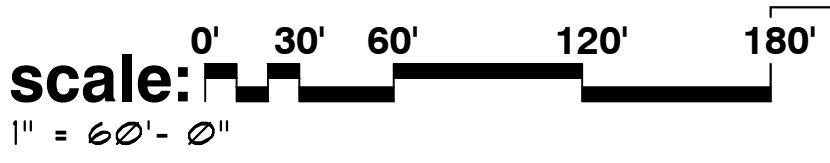
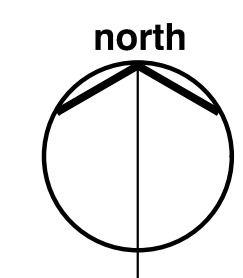
The location and elevations of existing underground utilities as shown on this drawing are only approximate; no guarantee is either expressed or implied as to the completeness of accuracy; contractor shall be exclusively responsible for determining the exact location and elevation prior to the start of construction.

project no:
LS21.009.01

sheet no:
LS-1 of 7

overall view landscape plan for:
Lake Pointe
 a multi-family residential community
 White Lake Township, Michigan

note:
 conceptual landscape plan for graphic presentation purposes only and in no way a construction document or approved for record.



general landscape notes:

- LANDSCAPE CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANTINGS AND RELATED WORK. CONTACT THE OWNER AND/OR LANDSCAPE ARCHITECT WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLAN, PLANT MATERIAL LIST, AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE TO BE LOCATED BY CONTACTING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING.
- NUMERICAL VALUE ON THE LANDSCAPE QUANTITIES SPECIFIED ON THE PLAN TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY ANY CONCERN/DISCREPANCY WITH LANDSCAPE ARCHITECT.
- ALL CONSTRUCTION AND PLANT MATERIAL LOCATION TO BE ADJUSTED ON-SITE IF NECESSARY.
- ALL SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY WHITE LAKE TOWNSHIP AND LANDSCAPE ARCHITECT.
- ALL LARGE TREES AND EVERGREENS TO BE STAKED, GUYED AND WRAPPED AS DETAILED, SHOWN ON PLAN.
- PLANT BEDS TO BE DRESSED WITH MIN. 4" OF FINELY DOUBLE SHREDDED HARD BARK MULCH.
- DIG SHRUB PITS 1' LARGER THAN SHRUB ROOT BALLS AND TREE PITS 2' LARGER THAN ROOT BALL. BACK FILL WITH ONE PART TOP SOIL AND ONE PART SOIL FROM EXCAVATED PLANTING HOLE.
- NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK MULCH REQUIRED FOR ALL PLANTINGS.
- REMOVE ALL TWINE, WIRE AND BURLAP FROM TREE AND SHRUB EARTH BALLS, AND FROM TREE TRUNKS. 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE WITH 3" PULLED AWAY FROM TRUNK. 4" THICK BARK MULCH FOR SHRUBS AND 4" THICK BARK MULCH FOR PERENNIALS.
- PLANT MATERIAL QUALITY & INSTALLATION SHALL BE IN ACCORDANCE WITH THE CURRENT AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS.
- PROVIDE FEAT SOD FOR ALL NEW AND DISTURBED LAWN AREAS UNLESS NOTED OTHERWISE.
- ALL PLANTING AREAS TO BE PREPARED WITH APPROPRIATE SOIL MIXTURES AND FERTILIZER BEFORE PLANT INSTALLATION.
- PLANT TREES AND SHRUBS GENERALLY NO CLOSER THAN THE FOLLOWING DISTANCES FROM SIDEWALKS, CURBS AND PARKING STALLS:
 - SHADE TREES _____ 5 FT.
 - ORNAMENTAL AND EVERGREEN TREES (CRAB, PINE, SPRUCE, ETC.) _____ 10 FT.
 - SHRUBS THAT ARE LESS THAN 1 FOOT TALL AND WIDE AT MATURITY _____ 2 FT.
- NO TREES OR EVERGREENS TO BE INSTALLED OVER ANY PROPOSED OR EXISTING UTILITY LINES AS SHOWN ON THE OVERALL LANDSCAPE PLAN. SEE ENGINEERING PLANS FOR LOCATION AND DETAILS.
- ALL LAWN AREAS AND LANDSCAPE BEDS TO BE FULLY IRRIGATED WITH AN AUTOMATIC UNDERGROUND SYSTEM. IRRIGATION SYSTEM TO HAVE SEPARATE ZONES FOR LAWN AREAS, PARKING ISLANDS, AND SHRUB BEDS WITH DIFFERENT CONTROL MOISTURE LEVEL ADJUSTMENT PER ZONE AS REQUIRED.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN TO RECEIVE EDGING. EDGING SHALL BE 4" X 1/8" METAL (FINISH BLACK OR GREEN) OR APPROVED EQUAL AND TO BE INSTALLED WITH HORIZONTAL METAL STAKES AT 32" O.C. OR PER MANUFACTURER'S SPECIFICATION.
- LANDSCAPE BEDS ADJACENT AND NEXT TO BUILDING SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS A MIN. OF 12" DEPTH. BACK FILL WITH GOOD, MEDIUM TEXTURED PLANTING SOILS. ADD A MIN. 4" OF TOPSOIL OVERFILL TO FINISH GRADE. PROVIDE POSITIVE DRAINAGE.
- WATERING OF ALL PLANTS AND TREES TO BE PROVIDED IMMEDIATELY AND MULCHING WITHIN 24 HOURS AFTER INSTALLATION.
- ALL TREE PITS TO BE TESTED FOR PROPER DRAINAGE PRIOR TO TREE PLANTING. PROVIDE APPROPRIATE DRAINAGE SYSTEM AS REQUIRED IF THE TREE PIT DOES NOT DRAIN SUFFICIENTLY.
- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL LANDSCAPE PLANT MATERIALS AND IRRIGATION INSTALLATION FOR A PERIOD OF TWO YEAR BEGINNING AFTER THE COMPLETION OF LANDSCAPE INSTALLATION DATE APPROVED BY THE TWP. OR LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE DURING AND AT THE END OF THE GUARANTEE PERIOD, ANY DEAD OR UNACCEPTABLE PLANTS, AS DETERMINED BY THE TOWNSHIP OR LANDSCAPE ARCHITECT, WITHOUT COST TO THE OWNER.

sheet index

- LS-1 OVERALL LANDSCAPE PLAN VIEW
- LS-2 GENERAL PLANTING DETAIL
- LS-3 PLANT MATERIAL LIST & PLANTING DETAILS
- LS-4 BUILDING FOUNDATION, CLUBHOUSE & ENTRY PLANTING DETAILS
- LS-5 SITE AMENITY, PERGOLA & ENTRY SIGN DETAILS
- LS-6 POOL DECK PLAN
- LS-7 POOL PERGOLA \ TRELLIS ELEVATIONS & DETAILS

residential landscape requirements:

greenbelt	REQUIRED	PROVIDED
TOTAL LN.FT. OF GREENBELT FRONTAGE	825±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 TREES)	28	28
EIGHT (8) SHRUB PER 30 LN.FT. (825' LN.FT. / 30 LN.FT. = 27.5 x 8 = 220 SHRUBS)	190	255 (A)

interior landscape	REQUIRED	PROVIDED
TOTAL ACRES OF SITE	19.32 AC±	
ACRES OF 60' R.O.M. AREA	5.6 AC±	
ACRES OF INTERNAL ROAD AREA	1.31 AC±	
TOTAL ACRES OF SITE NET AREA	11.45 AC± (498,762 SQ.FT.)	
TOTAL SQ.FT. OF INTERIOR LANDSCAPING AREA (15% OF 11.45 AC± (498,762 SQ.FT.) = 74,814.3±)	74,814.3 SQ.FT.	
ONE (1) DECIDUOUS, ORNAMENTAL OR EVERGREEN TREE PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 TREES)	250	265 (B)
FIVE (5) SHRUB PER 300 SQ.FT. (74,814.3 SQ.FT. / 300 SQ.FT. = 249.4 x 5 = 1,247 SHRUBS)	1247	478 ± (C)

residential buffer	REQUIRED	PROVIDED
TOTAL LN.FT. OF EAST PROPERTY LINE	475±	
ONE (1) DECIDUOUS OR EVERGREEN TREE PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 TREES)	32	32
FOUR (4) SHRUB PER 15 LN.FT. (475 LN.FT. / 15 LN.FT. = 31.7 x 4 = 126.7 SHRUBS)	127	167 (B)

note:
 'A' - 65 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS
 'B' - 40 SUPPLEMENTAL SHRUB PLANTINGS TO BE CREDITED TOWARDS INTERIOR LANDSCAPE PLANTING REQUIREMENTS
 'C' - SUPPLEMENTAL PERENNIAL PLANTINGS TO BE CREDITED TOWARDS INTERIOR SHRUB LANDSCAPE PLANTING REQUIREMENTS
 620- PERENNIALS AND GRASSES
 2500- GROUND COVERS



LAWN AREAS TO RECEIVE IRRIGATION & SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE.
 HATCHING DENOTES EXISTING TREES AND VEGETATION

PROPOSED PERGOLA FEATURE
 DETENTION BASIN - SEE ENGINEERING PLANS FOR LOCATION, SIZE, SIDE SLOPES, WATER ELEVATION, TOP OF BANK AND DETAILS.

5' WIDE MEANDERING PEDESTRIAN WALK.

PROPOSED RETAINING WALL. SEE ENGINEERING PLANS FOR DETAILS.

PROPOSED RESIDENTIAL UNITS. SEE ENGINEERING & ARCHITECTURAL PLANS FOR SITE PLAN, UTILITY LAYOUT, BUILDING ARCHITECTURE & DETAILS.

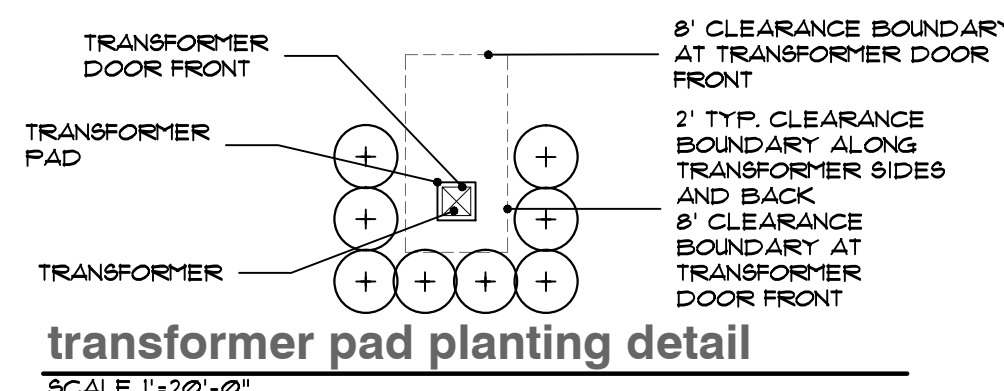
5' WIDE INTERIOR COLLECTOR WALK, TYP.

HATCHING DENOTES EXISTING EVERGREEN TREES ON ADJACENT PROPERTY.

PROPOSED RETAINING WALL. SEE ENGINEERING PLANS FOR DETAILS.

LAWN AREAS TO RECEIVE IRRIGATION & SOD ON FINISH GRADES. PROVIDE POSITIVE DRAINAGE. SEE ENGINEERING PLANS FOR GRADES.

HATCHING DENOTES EXISTING TREES



Landscape maintenance notes:

LANDSCAPE MAINTENANCE PROCEDURES AND FREQUENCIES TO BE FOLLOWED SHALL BE SPECIFIED ON THE LANDSCAPE PLAN, ALONG WITH THE MANNER IN WHICH THE EFFECTIVENESS, HEALTH AND INTENDED FUNCTIONS OF THE VARIOUS LANDSCAPE AREAS ON THE SITE WILL BE ENSURED.

1. LANDSCAPING SHALL BE KEPT IN A NEAT, ORDERLY AND HEALTHY GROWING CONDITION, FREE FROM DEBRIS AND REFUSE.

2. PRUNING SHALL BE MINIMAL AT THE TIME OF INSTALLATION, ONLY TO REMOVE DEAD OR DISEASED BRANCHES. SUBSEQUENT PRUNING SHALL ASSURE PROPER MATURATION OF PLANTS TO ACHIEVE THEIR APPROVED PURPOSE.

3. ALL DEAD OR DISEASED PLANT MATERIAL SHALL BE REMOVED AND REPLACED WITHIN SIX (6) MONTHS AFTER IT DIES OR IN THE NEXT PLANTING SEASON, WHICHEVER OCCURS FIRST. THE PLANTING SEASON FOR DECIDUOUS PLANTS SHALL BE BETWEEN MARCH 15 AND NOVEMBER 15 OR UNTIL THE PREPARED SOIL BECOMES FROZEN. THE PLANTING SEASON FOR EVERGREEN PLANTS SHALL BE BETWEEN MARCH 1 AND JUNE 1. PLANT MATERIAL INSTALLED TO REPLACE DEAD OR DISEASED MATERIAL SHALL BE AS CLOSE AS PRACTICAL TO THE SIZE OF THE MATERIAL IT IS INTENDED TO REPLACE.

Planting landscape notes:

GENERAL NOTES:

- PLANT MATERIALS TO BE INSTALLED ACCORDING TO THE WHITE LAKE TOWNSHIP, AND CURRENT AMERICAN ASSOCIATION OF NURSERYMEN'S STANDARDS.
- PLANT MATERIALS TO BE GUARANTEED FOR 2 YEARS. REPLACE FALLING MATERIAL WITHIN 1 YEAR, OR THE NEXT APPROPRIATE PLANTING PERIOD.
- PLANT MATERIALS TO BE OF PREMIUM QUALITY, NO. 1 GRADE NORTHERN NURSERY GROWN, IN HEALTHY CONDITION, FREE OF PESTS AND DISEASES.
- MULCH IS TO BE NATURAL COLORED, FINELY SHREDDED HARDWOOD BARK OF 4" THICK BARK MULCH FOR TREES IN 4" DIA. CIRCLE W/3" PULLED AWAY FROM TRUNK, 3" THICK BARK MULCH FOR SHRUBS AND 2" THICK BARK MULCH FOR PERENNIALS.
- CALL MISS DIG AT 1-800-482-7171 PRIOR TO ANY CONSTRUCTION.

DECIDUOUS 4 EVERGREEN TREE:

- TREE SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 6" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
- DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
- REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.
- REMOVE TREE STAKES, GUY WIRES AND TREE WRAP AFTER ONE WINTER SEASON.

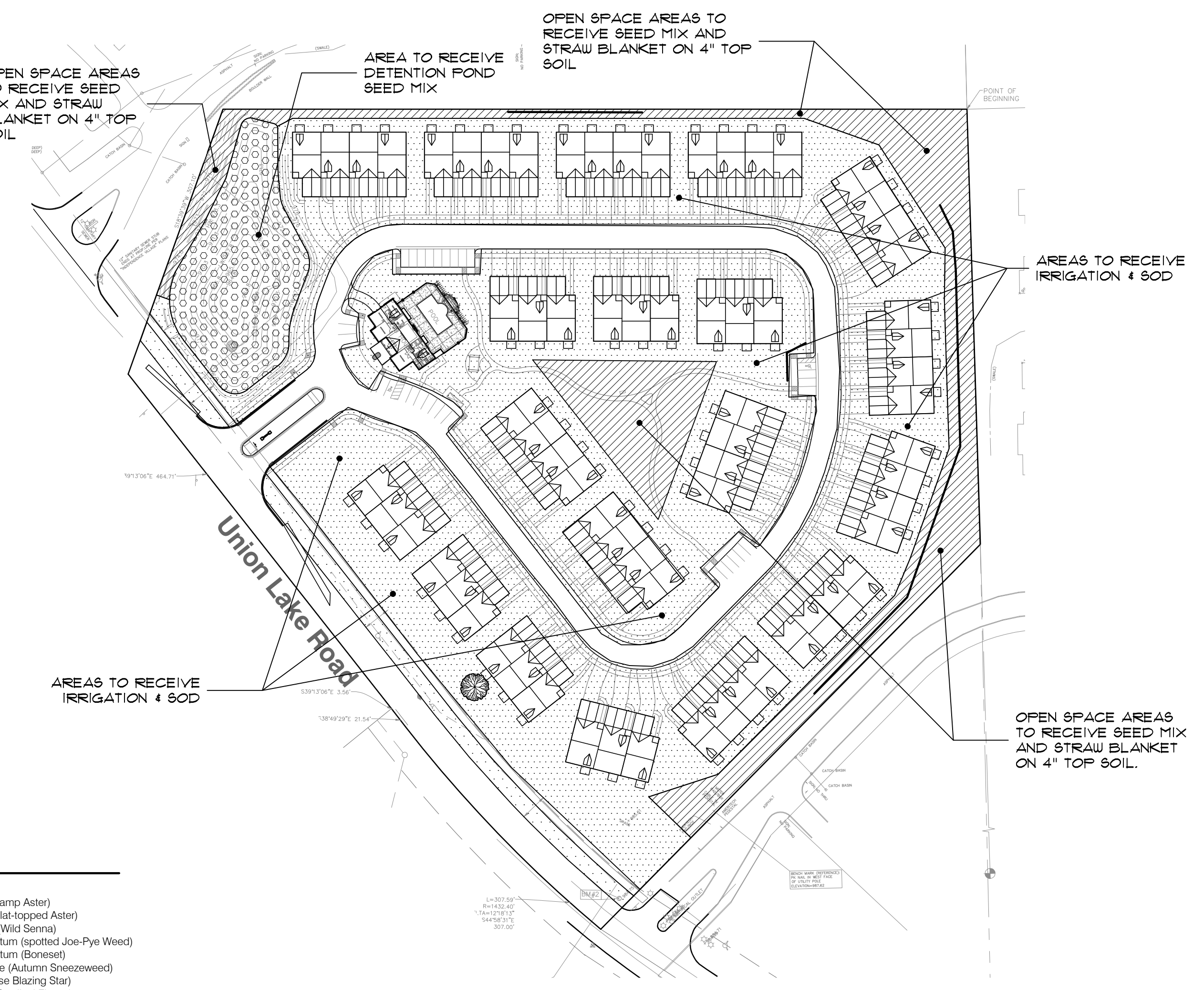
SHRUB:

- SHRUB SHALL BE INSTALLED SAME RELATIONSHIP TO FINISH GRADE AS IT BORE ORIGINALLY OR SLIGHTLY HIGHER THAN FINISH GRADE UP TO 4" ABOVE GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT FOR HEAVY CLAY SOIL AREAS.
- DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
- REMOVE ALL TAGS, STRING, PLASTICS AND OTHER MATERIALS THAT ARE UNSIGHTLY AND COULD CAUSE GIRDLING.

LAWN:

- SOD LAWN AREAS SHALL BE KENTUCKY BLUE GRASS BLEND GRASS IN A SOD NURSERY ON LOAM SOIL, SOD TO BE INSTALLED ON MINIMUM 2" TOPSOIL.
- SEEDDED LAWN AREAS SHALL CONSIST OF THE FOLLOWING TYPES AND PROPORTIONS:
 5% PERENNIAL RYE GRASS
 10% RED FESCUE
 25% CHEWING FESCUE
 60% KENTUCKY BLUE GRASS

SEED MIX SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE AND WEED CONTENT SHALL NOT EXCEED 1% SEED. PROVIDE A MINIMUM 4" TOP SOIL ON ALL SEEDDED LAWN AREA.



plant material list

key	quant. LS-2	botanical name	common name	size	comments
LARGE AND SMALL DECIDUOUS TREES					
GT	5	GLEDTISIA TRI. INERMIS 'SKYCOLE'	SKYLINE LOCUST	2 1/2" BB	
TC	1	TILIA CORDATA 'GREENSPIRE'	GREENSPIRE LINDEN	2 1/2" BB	
LB	6	LIQUIDAMBAR STRACIFLUA	AMERICAN SWEETGUM	2 1/2" BB	
ZS	12	ZELKOVA SERRATE 'VILLAGE GREEN'	VILLAGE GREEN ZELKOVA	2 1/2" BB	
AR	11	ACER R. 'FRANKSRED'	RED SUNSET RED MAPLE	2 1/2" BB	
CO	4	CELTIS OCCIDENTALIS	HACKBERRY	2 1/2" BB	
LT	10	LIRIODENDRON TULIPIFERA	TULIPTREE	2 1/2" BB	
QB	5	QUERCUS 'BICOLOR'	SWAMP WHITE OAK	2 1/2" BB	
AF	35	ACER X FREEMANI 'JEFFERED'	AUTUMN BLAZE RED MAPLE	2 1/2" BB	
APC	3	ACER P. 'CRIMSON KING'	CRIMSON KING NORWAY MAPLE	2 1/2" BB	
AS	2	ACER SACCHARUM	SUGAR MAPLE	2 1/2" BB	
OY	9	OSTRYA VIRGINIANA	AMERICAN HOPHORNBEAM	2 1/2" BB	
CJ	1	CERCIDIPHYLLUM JAPONICUM	KATSURATREE	2 1/2" BB	
CB	4	CARPINUS BETULUS 'FASTIGIATA'	PYRAMIDAL EUROPEAN HORNBEAM	2 1/2" BB	
CC	1	CERCIS CANADENSIS	EASTERN REDBUD (MULTI-STEM)	8' BB	(MULTI-STEM)
AC	6	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	8' BB	(MULTI-STEM)
CK	5	CORNUS KOUSA	KOUSA DOGWOOD	2" BB	
CP	1	CRATAEGUS PHAENOPYRUM	WASHINGTON HAUHORN	2" BB	
MS	6	MALUS 'SNOWDRIFT'	SNOWDRIFT CRABAPPLE	2" BB	
MF	1	MALUS FLORIBUNDA	JAPANESE FLOWERING CRABAPPLE	2" BB	
MJ	1	MAGNOLIA LILIFLORA 'JANE'	JANE MAGNOLIA	8' BB	(MULTI-STEM)
MR	4	STRINGIA RETICULATA 'IVORY SILK'	IVORY SILK JAPANESE TREE LILAC	2" BB	
AP	2	ACER P. 'BLOODGOOD'	BLOODGOOD LACE LEAF JAPANESE MAPLE	11' CONT. T. HIGH	
LARGE AND SMALL EVERGREENS					
AW	16	ABIES CONCOLOR	CONCOLOR WHITE FIR	8' BB	
AWL	36	ABIES CONCOLOR	CONCOLOR WHITE FIR	10' BB O	
PA	22	PICEA ABIES	NORWAY SPRUCE	8' BB	
PAL	13	PICEA ABIES	NORWAY SPRUCE	10' BB O	
PS	12	FINUS STROBUS	EASTERN WHITE PINE	8' BB	
PSL	1	FINUS STROBUS	EASTERN WHITE PINE	10' BB O	
PD	33	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	8' BB	
PDL	19	PICEA GLAUCA 'DENSATA'	BLACK HILL SPRUCE	10' BB O	
SHRUBS					
EA	26	EUONYMUS ALATUS COMPACTA	DWARF WINGED BURNING BUSH	3" BB	60" SPACING O.C.
FI	50	FORSYTHIA X INTERMEDIA	BORDER FORSYTHIA	3" BB	60" SPACING O.C.
CS	28	CORNUS STOLONIFERA	REDTWIG DOGWOOD	3" BB	60" SPACING O.C.
VTK	43	VIBURNUM X B. 'MOHAUK'	MOHAUK VIBURNUM	3" BB	60" SPACING O.C.
RAG	11	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	15 CONT.	48" SPACING O.C.
EF	55	EUONYMUS FORTUNEI 'MOONSHADOW'	DWARF WINGED BURNING BUSH	15 CONT.	48" SPACING O.C.

detention basin seed mix:

Sedge Meadow Mix: (Edge Zone)
 A mix of sedges, grasses and wildflowers recommended for soils that are saturated during most of the growing season. Use just above the normal waterline in the capillary zone in our Lake Edge Enhancement System.

Sedge Meadow Mix oz/acre

1. Carex comosa (Bristly Sedge)	1. Aster puniceus (Swamp Aster)
1. Carex cristatella (Crested Sedge)	1. Aster umbellatus (Flat-topped Aster)
1. Carex frankii (Frank's Sedge)	3. Cassia hebecarpa (Wild Senna)
2. Carex hystericina (Porcupine Sedge)	2. Eupatorium perfoliatum (Boneseal)
4. Carex lurida (Lurid Sedge)	2. Helianthus autumnalis (Autumn Sneezeweed)
2. Carex stipata (Aix-Fruited Sedge)	2. Liatris spicata (Dense Blazing Star)
2. Carex tribuloides (Pointed Oval Sedge)	1. Lobelia cardinalis (Cardinal Flower)
64. Elymus virginicus (Virginia Wild Rye)	1. Lobelia siphilitica (Great Blue Lobelia)
6. Glycyrrhiza striata (Walters Grass)	2. Penstemon digitalis (Frogflowe Beardtongue)
8. Leersia oryzoides (Rice Cut Grass)	1. Pycnanthemum virginianum (Mountain Mint)
8. Panicum virgatum (Switchgrass)	3. Rudbeckia fulgida speciosa (Showy Black-Eyed Susan)
2. Scirpus atrovirens (Dark Green Bulrush)	4. Rudbeckia hirta (Black-Eyed Susan)
	3. Rudbeckia subtomentosa (Sweet Black-Eyed Susan)
	2. Siphium integrifolium (Rosinweed)
	2. Siphium perfoliatum (Cupplant)
	2. Siphium teretifolium (Pianne Dock)
	1. Solidago patula (Swamp Goldenrod)
	2. Solidago riddellii (Riddell's Goldenrod)
	2. Verbena hastata (Blue Vervain)
	2. Vernonia fasciculata (Smooth Ironweed)
	1. Veronicastrum virginicum (Culvers Root)
	1. Zizia aurea (Golden Alexanders)

Forbs oz/acre

1. Alisma subcordatum (Water plantain)	1. Aster novae-angliae (New England Aster)
1. Angelica atropurpurea (Angelica)	
1. Aster novae-angliae (New England Aster)	

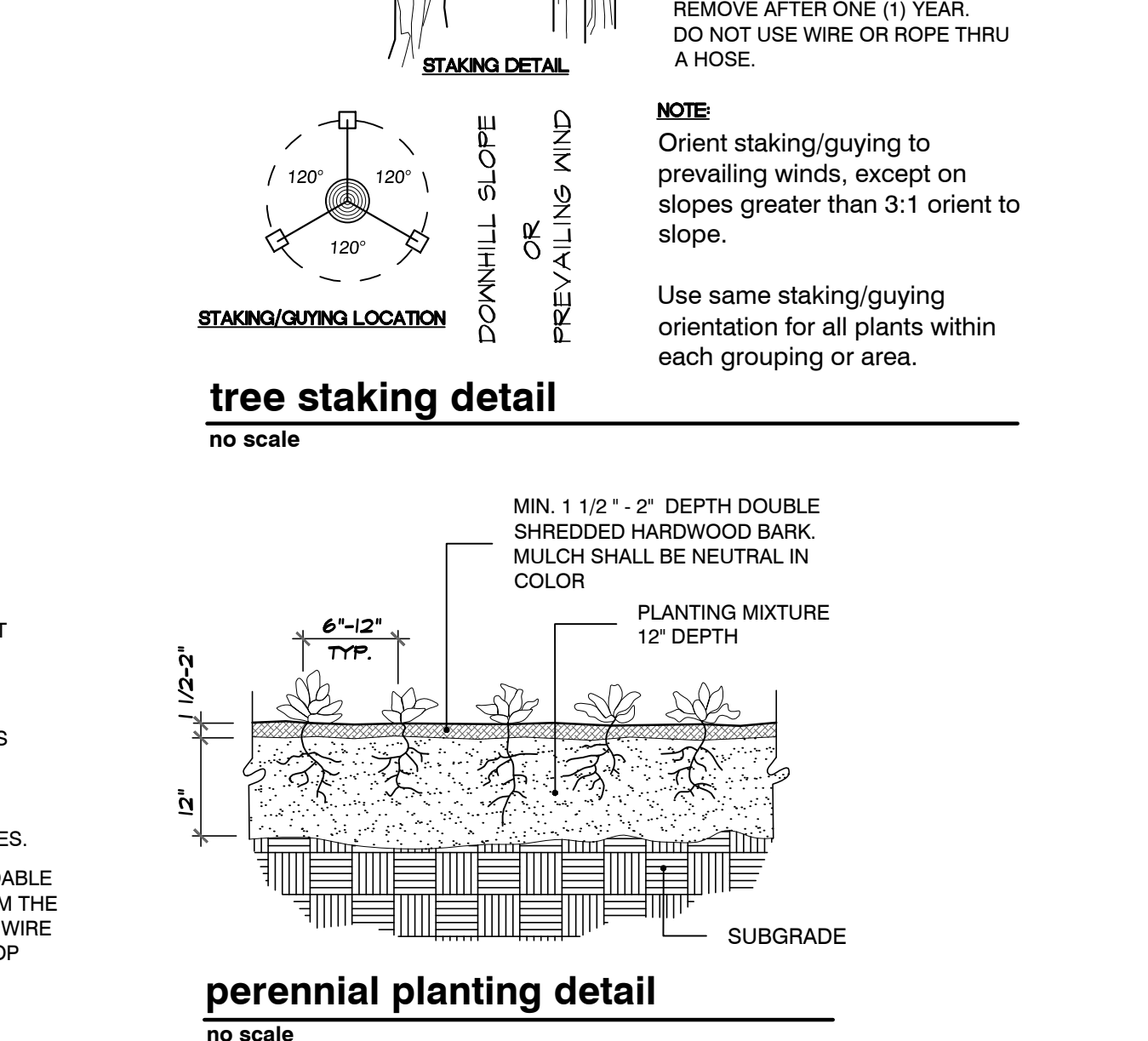
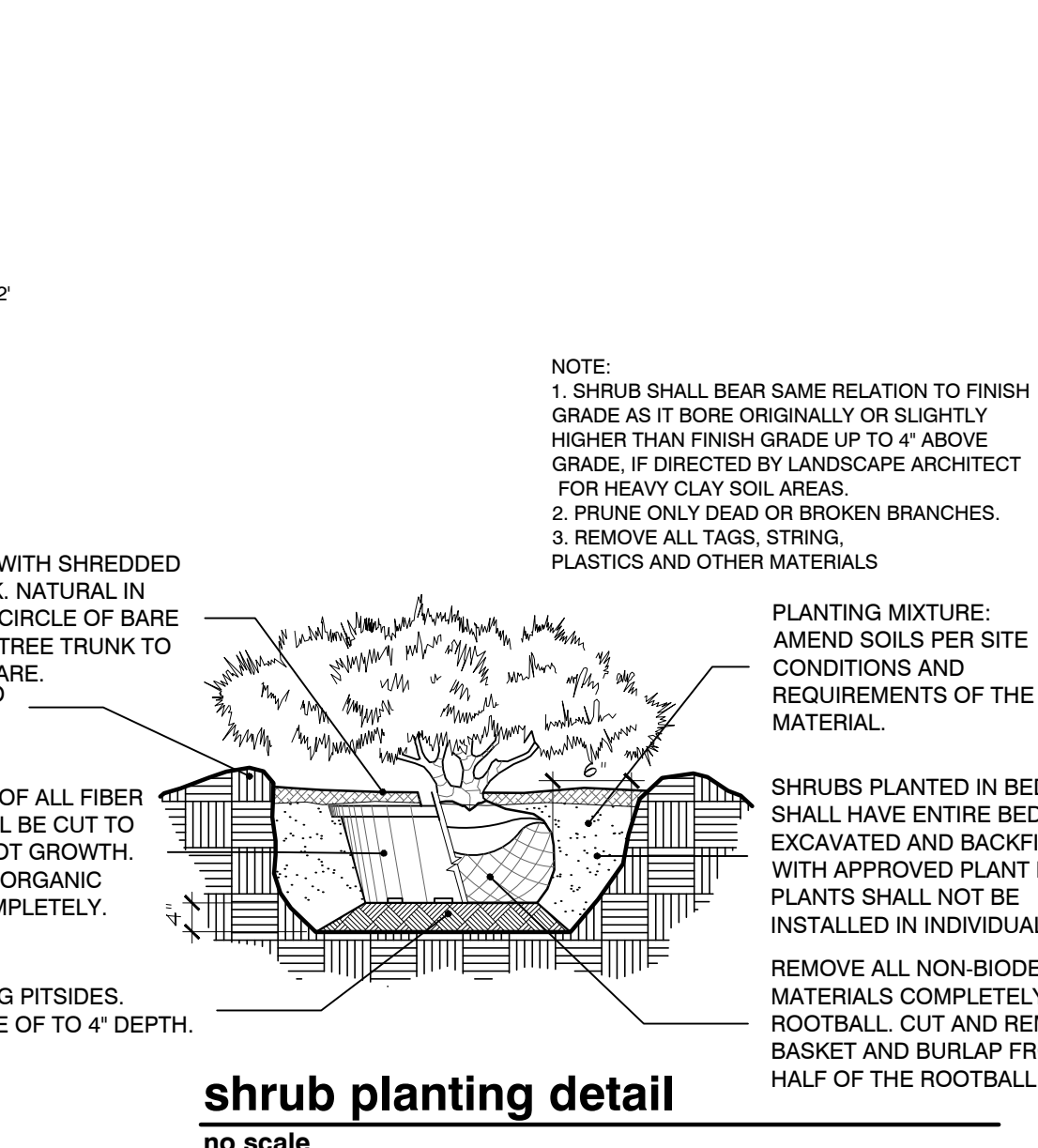
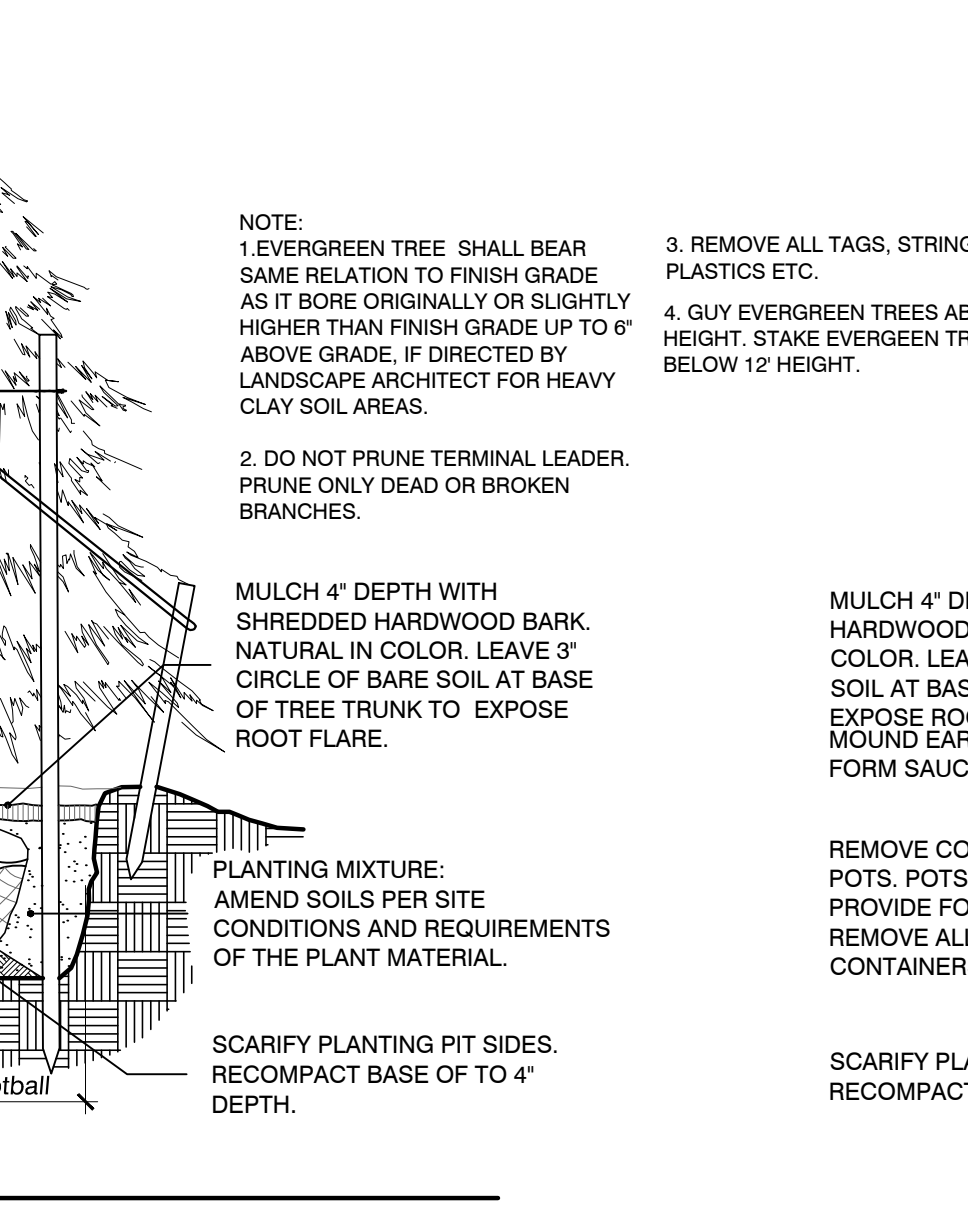
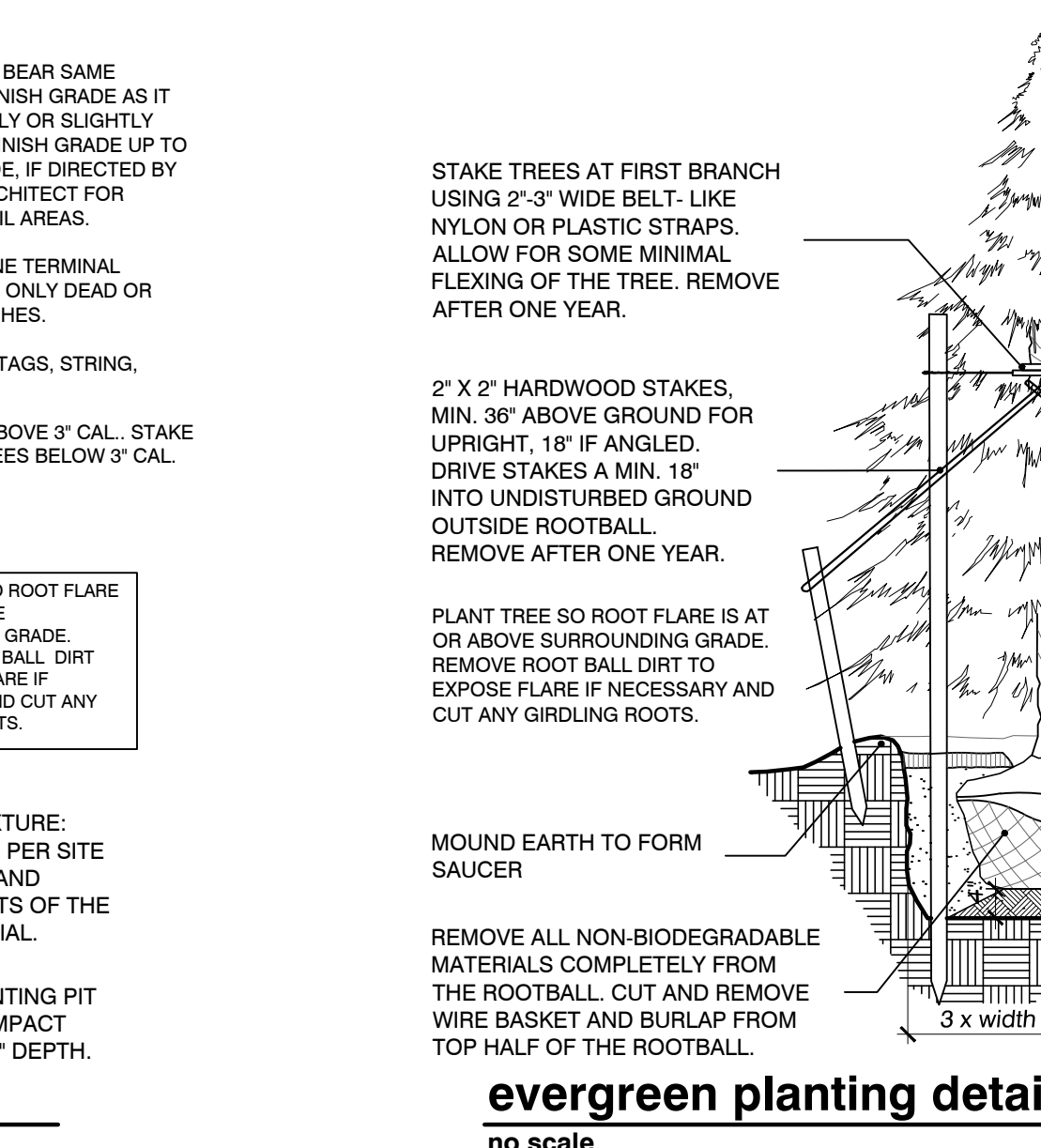
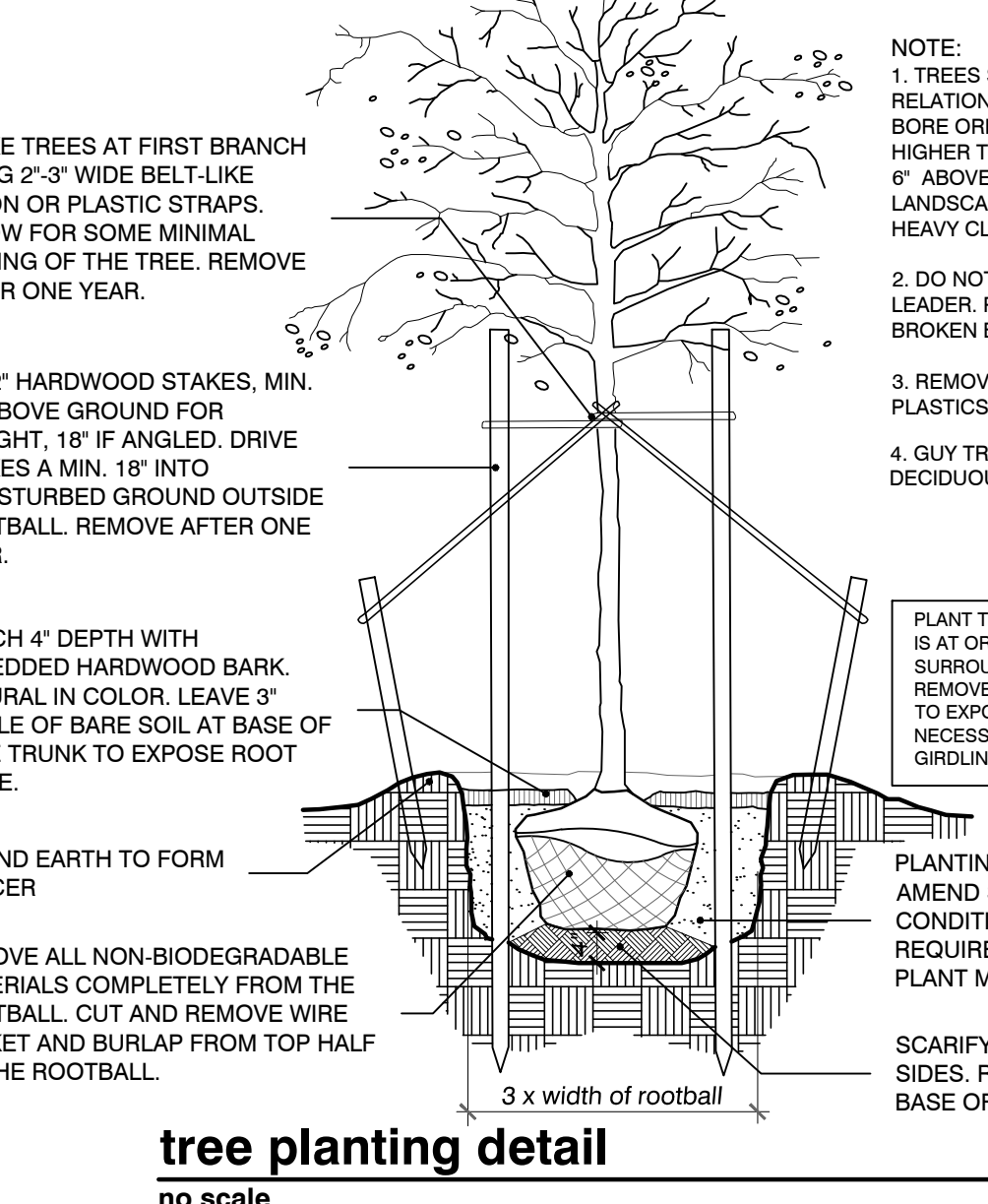
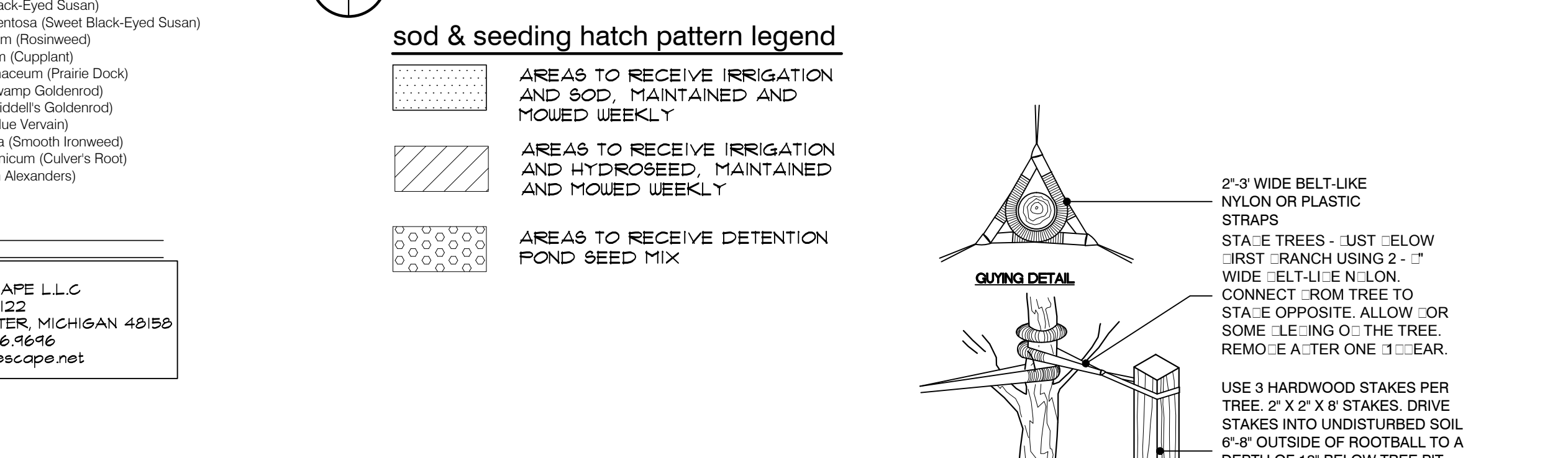
Components per acre
 8 lbs. grasses and sedges, 3 lbs. forbs

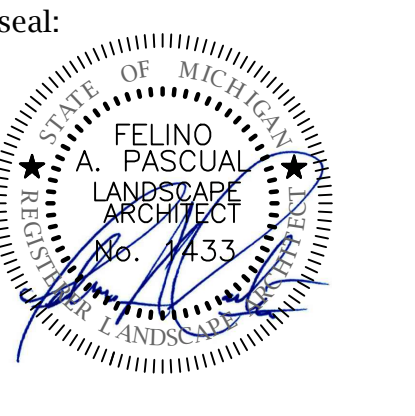
annual cover: (Edge, Upland & Dry Upland Zones)
 50% Temporary Grasses: will contain two of the following species.

Seed Data

Annual Rye	Avena sativa
Winter Wheat	Lolium multiflorum
American Slough Grass	Trifolium aestivum
	Beckmannia syzigachne

SOURCE:
 NATIVESCAPE LLC
 P.O. BOX 122
 MANCHESTER, MICHIGAN 48158
 ph. 517.456.1616
 www.nativescape.net





client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

Union Lake Road
 sheet title:
BLDG. FOUNDATION, CLUBHOUSE AND ENTRY PLANTINGS

job no./issue/revision date:
 LS19.124.11 TWP. 11-12-2019
 LS19.124.12 TWP. 12-27-2019
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drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

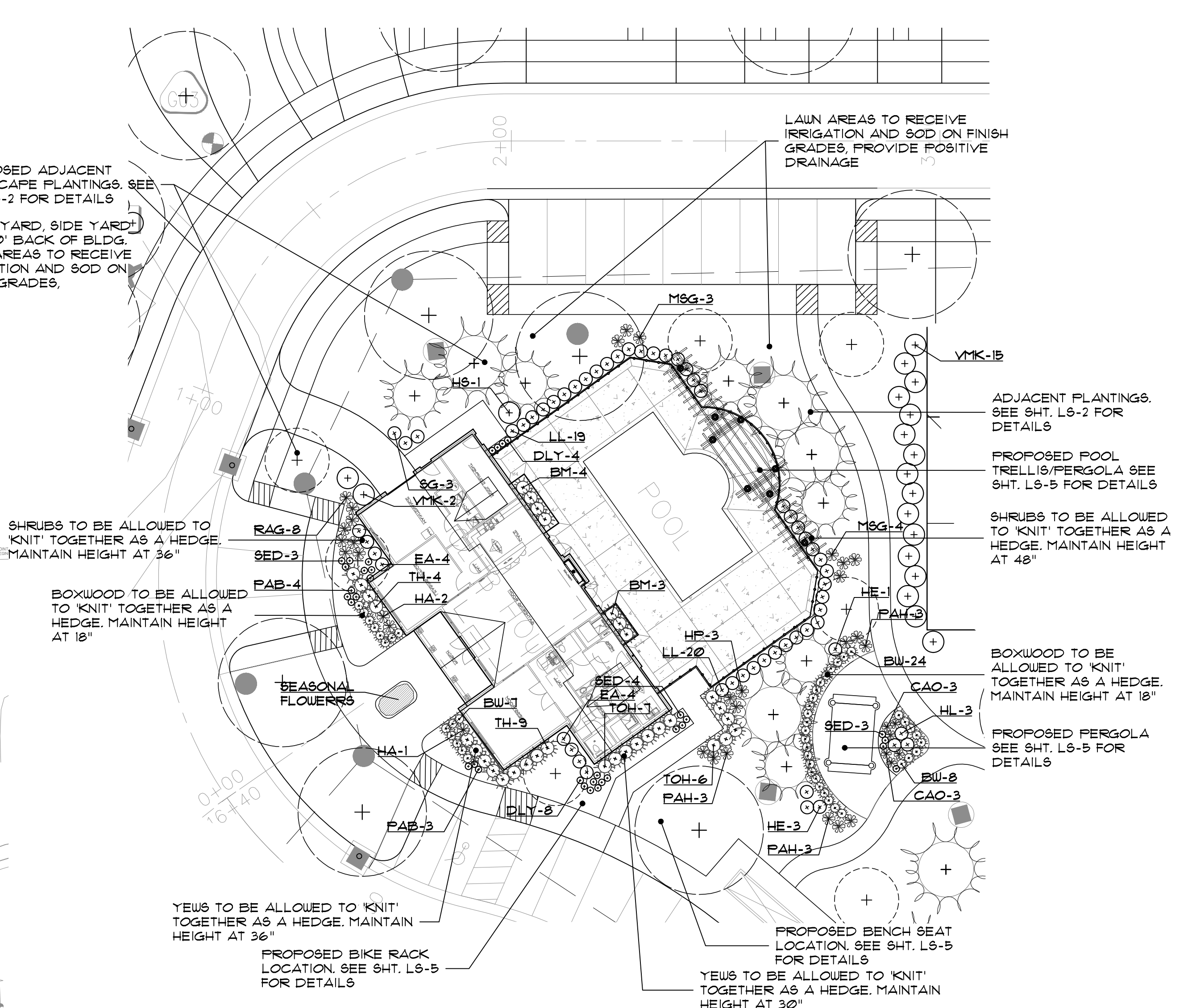
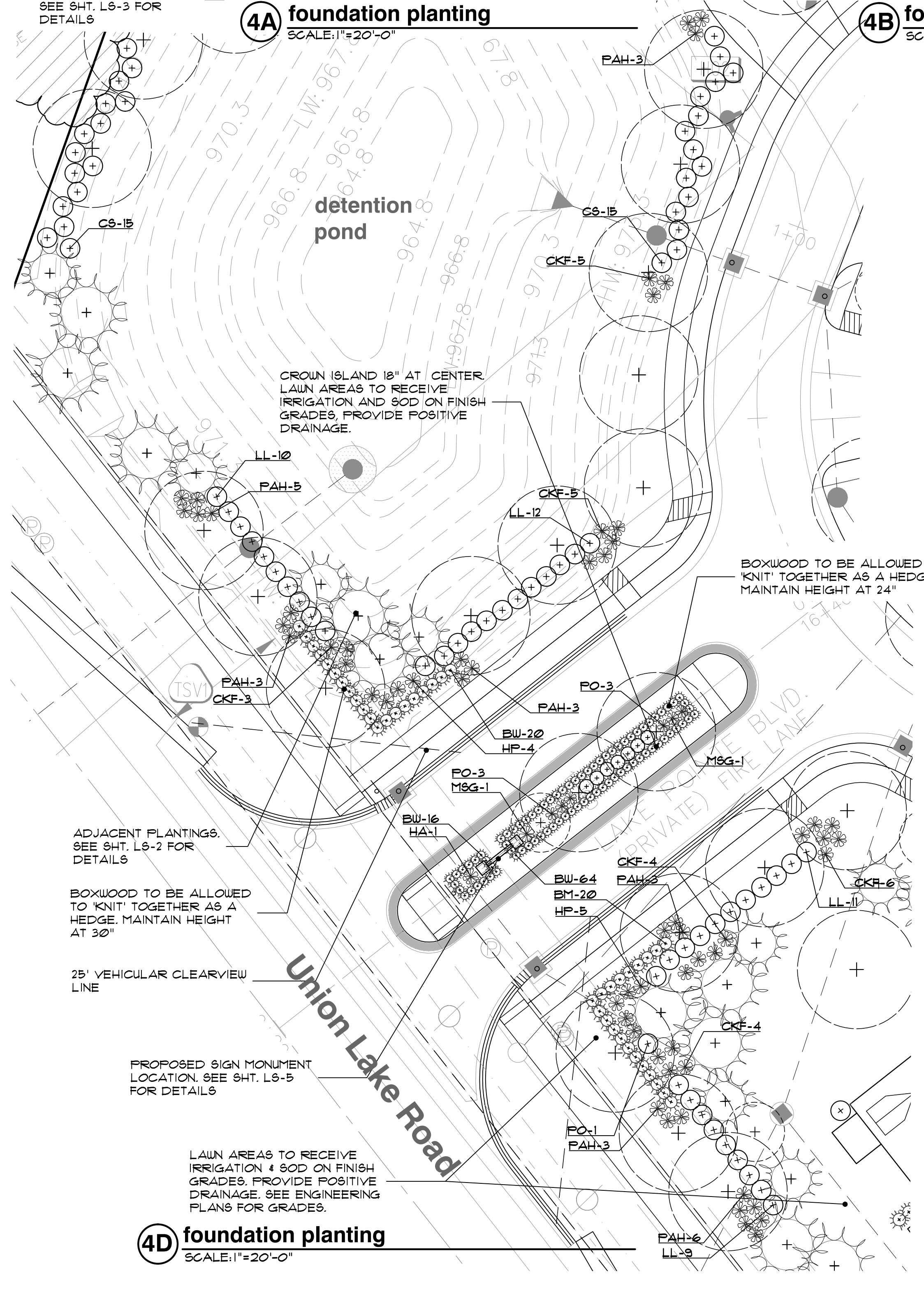
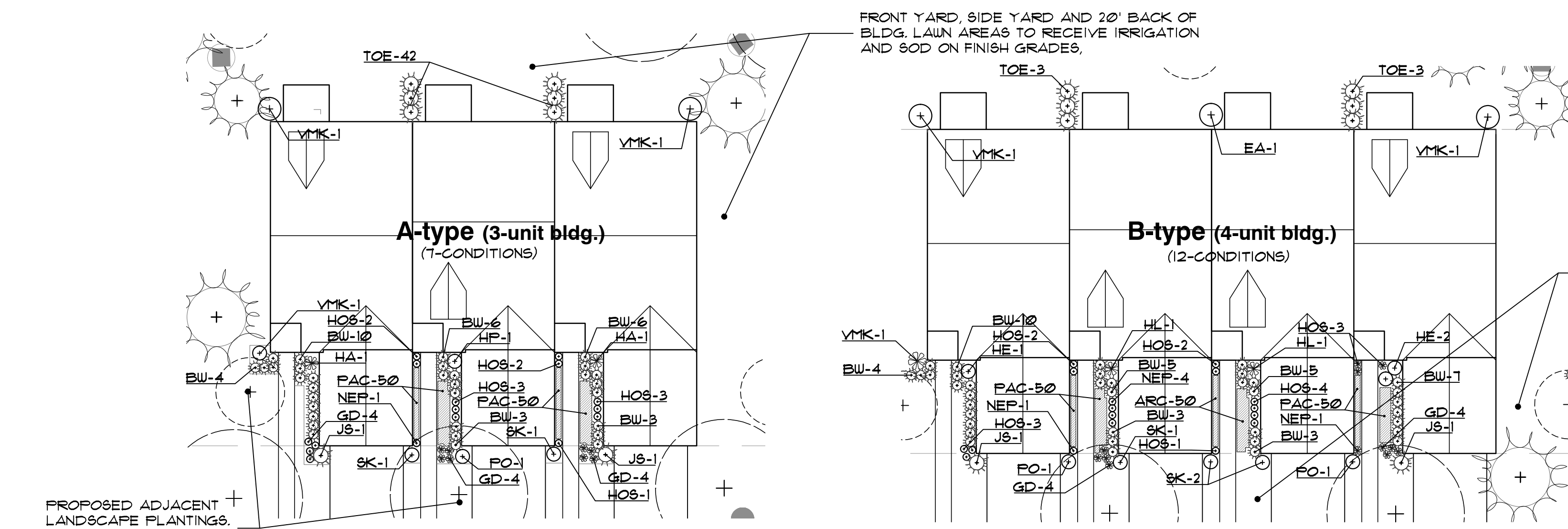
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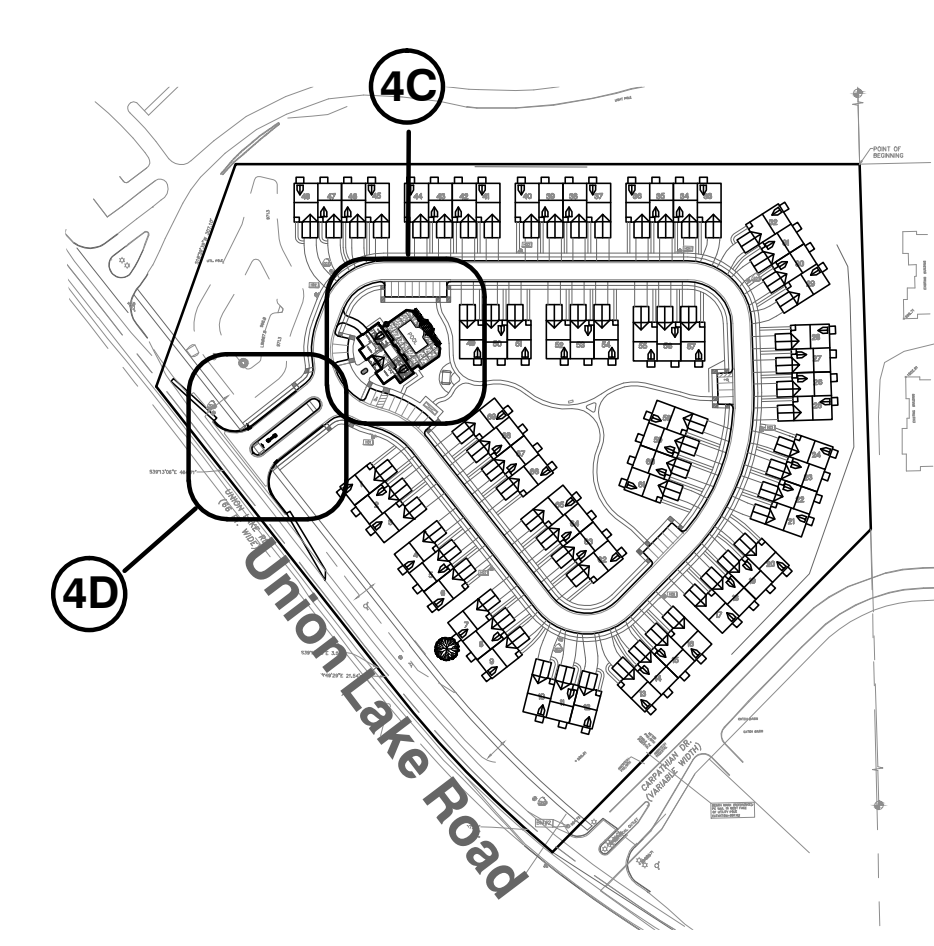
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LS21.009.01

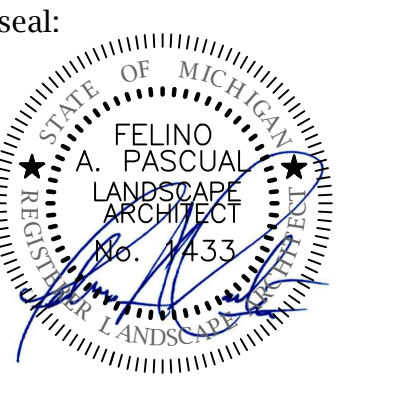
sheet no:
LS-4 of 7



plant material list

key	quant. 4A	quant. 4B	quant. 4C	quant. 4D	botanical name	common name	size	comments
SHRUBS								
SK	14	36	-	-	SYRINGA PATULA 'MISS KIM'	MISS KIM DWARF LILAC	3' BB	
HP	1	-	3	9	HYDRANGEA ANNABELLE	ANNABELLE HYDRANGEA	9" CONT.	
HA	14	-	3	1	HYDRANGEA ANNABELLE	ANNABELLE HYDRANGEA	9" CONT.	
HL	-	24	3	-	HYDRANGEA 'LINDSEY ANN'	LA DREAMIN HYDRANGEA	9" CONT.	
HE	-	36	4	-	HYDRANGEA M. 'GLOWING EMBERS'	GLOWING EMBERS HYDRANGEA	9" CONT.	
FO	1	24	-	1	PHYSOCLARUS OPULIFOLIUS 'SEWARD'	SUMMER WINE NINEBARK	9" CONT.	
SG	-	-	3	-	SPIRAEA X.B. 'BUMALDA 'GOLDFLAME'	GOLDFLAME SPIREA	9" CONT.	
FI	-	-	-	-	FORSYTHIA X INTERMEDIA	BORDER FORSYTHIA	3' BB	60" O.C. SPACING
VMK	21	36	11	-	VIBURNUM X.B. 'MOHAUK'	MOHAUK VIBURNUM	3' BB	
LL	-	-	39	42	LIGUSTRUM X. VICARYI	GOLDEN VICARY PRIVET	9" CONT.	60" O.C. SPACING
RA	-	-	-	-	RIBES ALPIMUM 'GREEN MOUND'	GREEN MOUND ALPINE CURRANT	9" CONT.	
EA	-	12	8	-	EUONYMUS ALATUS COMPACTA	DWARF WINGED BURNING BUSH	3' BB	60" O.C. SPACING
HS	-	-	1	-	HIBISCUS SYRIACUS 'BLUE BIRD ALTHEA'	BLUE BIRD ROSE OF SHARON	3' BB	
RAG	-	-	8	-	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	9" CONT.	
BW	224	144	39	100	BUXUS M. 'GREEN VELVET'	GREEN VELVET BOXWOOD	18" HIGH BB	24" O.C. SPACING
BM	-	-	1	20	BUXUS M. 'GREEN MOUNTAIN'	GREEN MOUNTAIN BOXWOOD	30" HIGH BB	32" O.C. SPACING
TH	-	-	13	-	TAXUS 'HICKSII'	HICK YEW	36" BB	36" O.C. SPACING
TOE	42	12	-	-	THUJA OCCIDENTALIS 'SHARAD'	EMERALD GREEN ARBORVITAE	5' BB	36" O.C. SPACING
TOH	-	-	13	-	THUJA OCCIDENTALIS 'HELTZ'	HELTZ ARBORVITAE	9" CONT.	36" O.C. SPACING
CS	-	-	-	30	CORNUS STOLONIFERA	REDTUNG DOGWOOD	9" CONT.	60" O.C. SPACING
JS	14	24	-	-	JUNIPERUS SKYROCKET	SKYROCKET JUNIFER	5' BB	60" O.C. SPACING
PERENNIALS AND GRASSES								
NEP	1	12	-	-	NEPETA X FAASSENII 'WALKER'S LOW'	WALKER'S LOW NEPETA	1" CONT.	24" O.C. SPACING
GD	84	36	-	-	GERANIUM X. 'ROZANNE'	ROZANNE GERANIUM	32 / FLAT	12" O.C. SPACING
PAC	100	1200	-	-	PAC ASANDRA	ASANDRA	32 / FLAT	12" O.C. SPACING
DLY	-	-	12	-	HEMEROCALLIS 'HAPPY RETURNS'	HAPPY RETURNS DAYLILY	1" CONT.	24" O.C. SPACING
SED	-	-	10	-	SEDUM X. 'NEON'	NEON SEDUM	1" CONT.	12" O.C. SPACING
HOS	11	180	-	-	HOSTA 'PATRIOT'	PATRIOT HOSTA	1" CONT.	24" O.C. SPACING
PAH	-	-	9	26	FENNICETUM ALOPECUROIDES 'HAMELN'	DWARF FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CKF	-	-	-	25	CALAMAGROSTIS X.A. 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	9" CONT.	36" O.C. SPACING
ARC	-	600	-	-	AJUGA REPTAN 'CATLIN'S GAIN'	CATLINS GAIN AJUGA	32 / FLAT	12" O.C. SPACING
M8G	-	-	1	2	MISCANTHUS SINENSIS 'MORNING LIGHT'	MORNING LIGHT JAPANESE SILVER GRASS	9" CONT.	
PAB	-	-	1	-	FENNICETUM ALOPECUROIDES 'LITTLE BUNNY'	LITTLE BUNNY FOUNTAIN GRASS	9" CONT.	36" O.C. SPACING
CAO	-	-	6	-	CALAMAGROSTIS ARUNDINACEA 'OVERDAM'	OVERDAM REED GRASS	9" CONT.	36" O.C. SPACING





client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp., Michigan

sheet title:
SITE AMENITY, PERGOLA AND ENTRY SIGN DETAILS

job no./issue/revision date:
 LS19.124.11 TWP. 11-12-2019
 LS19.124.12 TWP. 12-27-2019
 LS20.089.10 TWP. 10-14-2020
 LS21.009.01 SPA 1-18-2021
 LS21.009.01 SPA 2-02-2021
 LS21.009.03 SPA 3-22-2021

drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

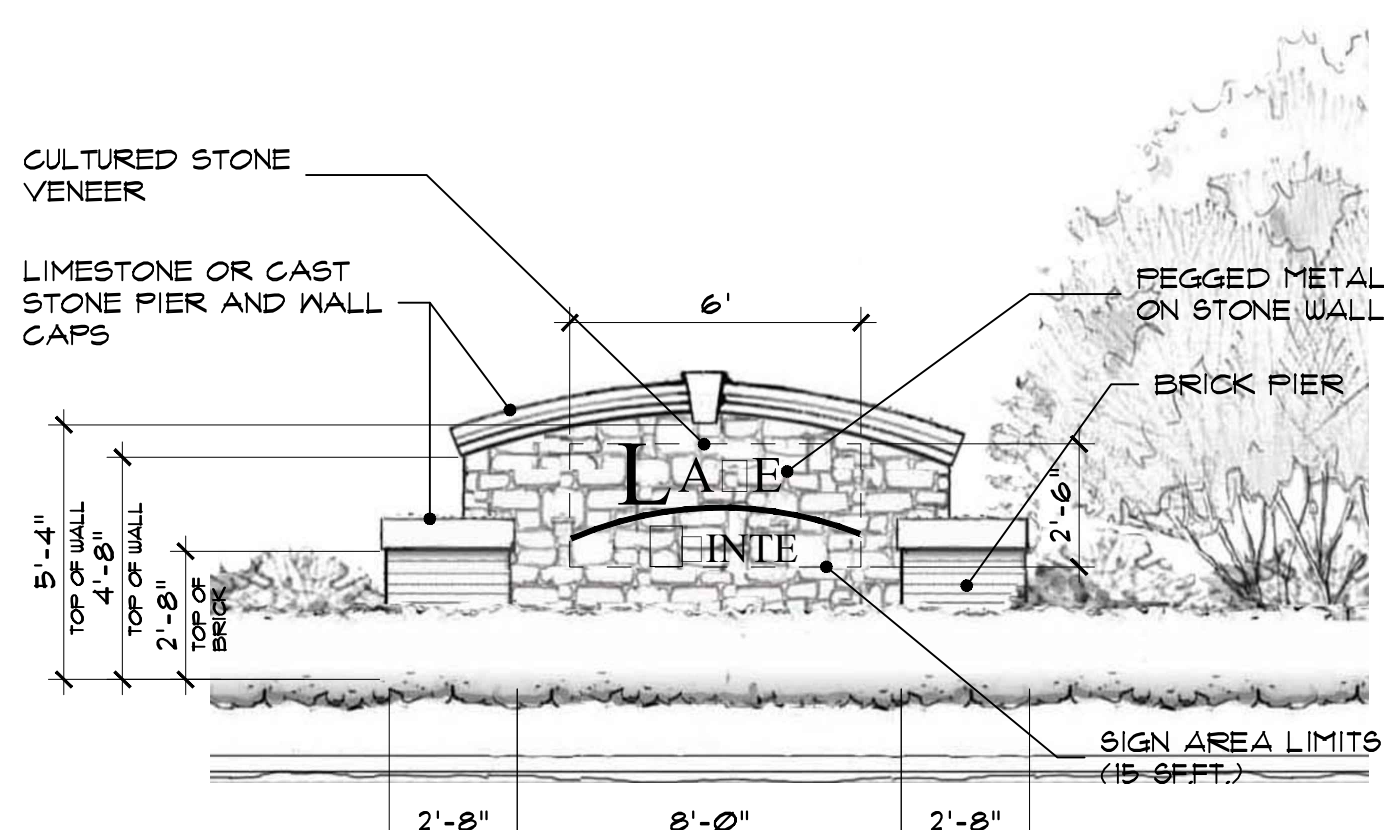
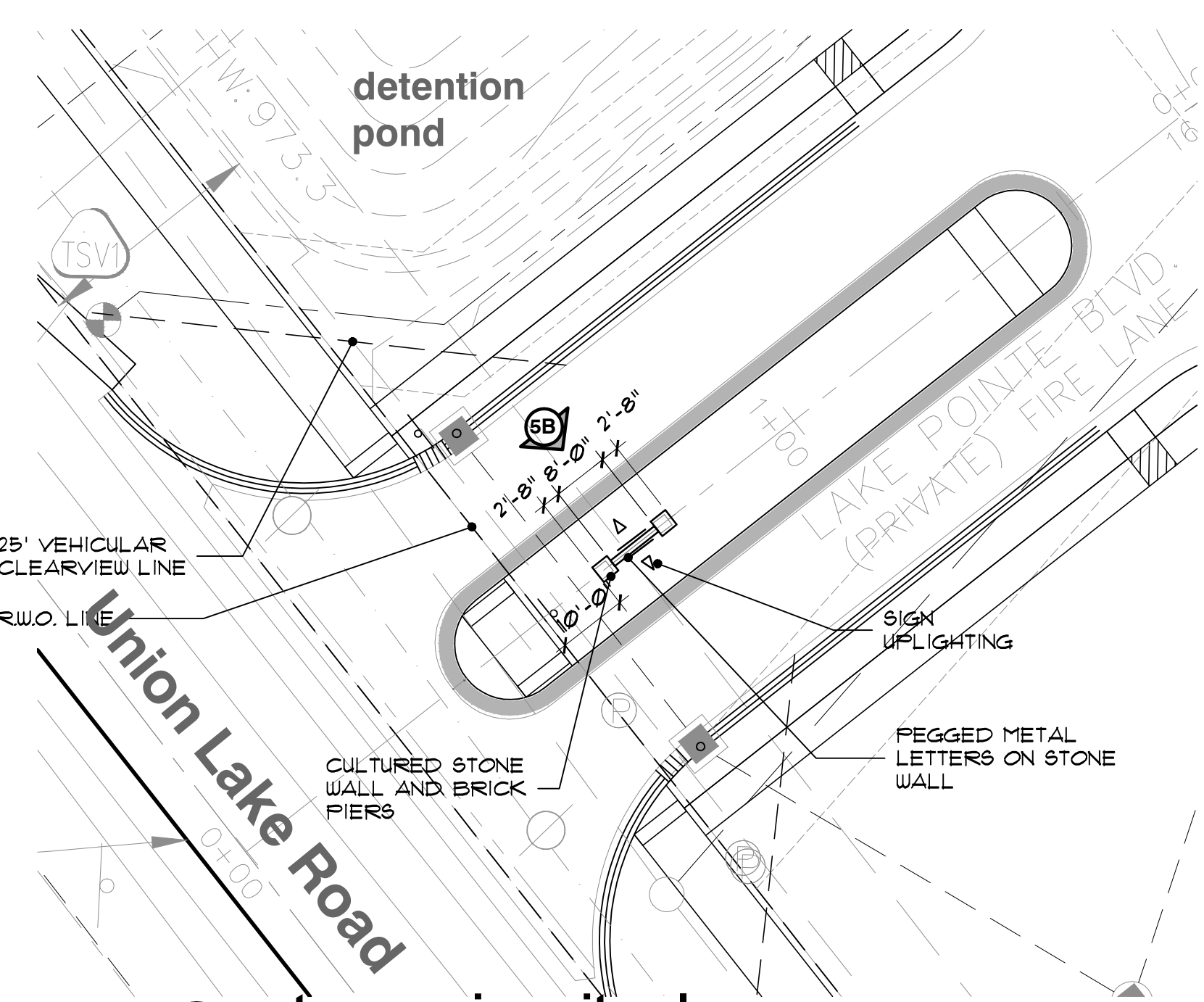
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 CALL MISS DIG
 1-800-482-7171
 For free location of public utility lines.

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project no:
LS21.009.01

sheet no:
LS-5 of 7

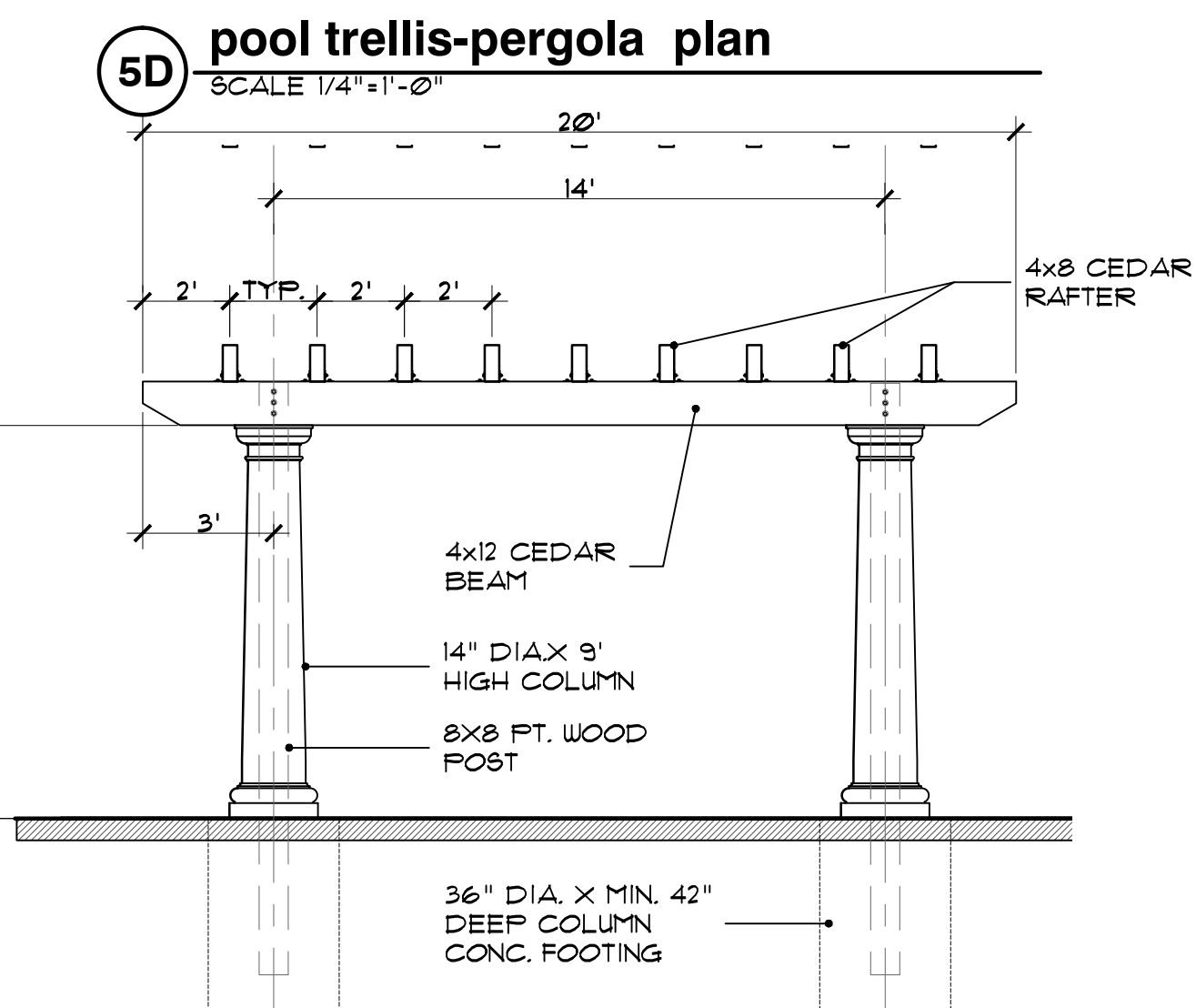
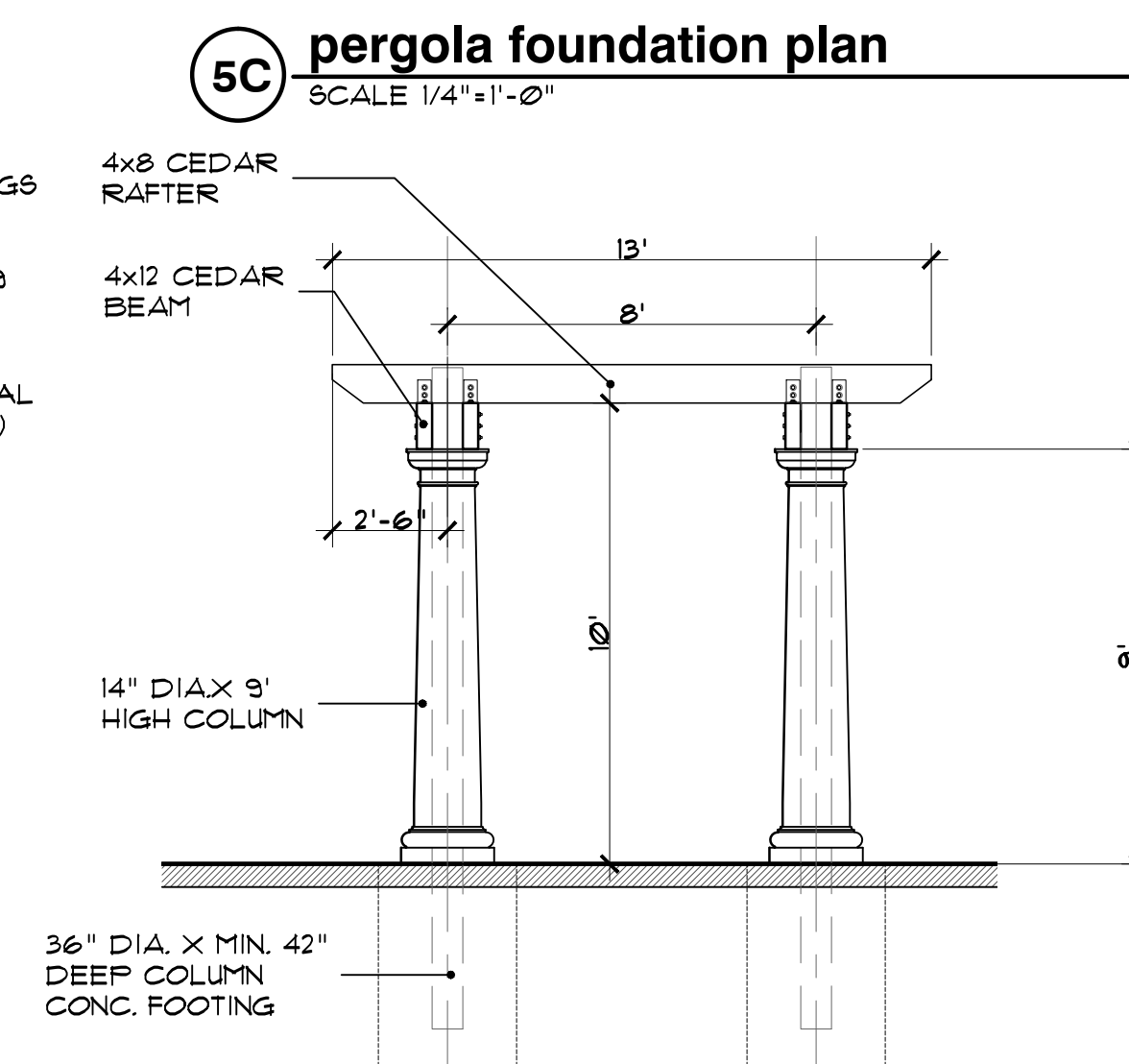
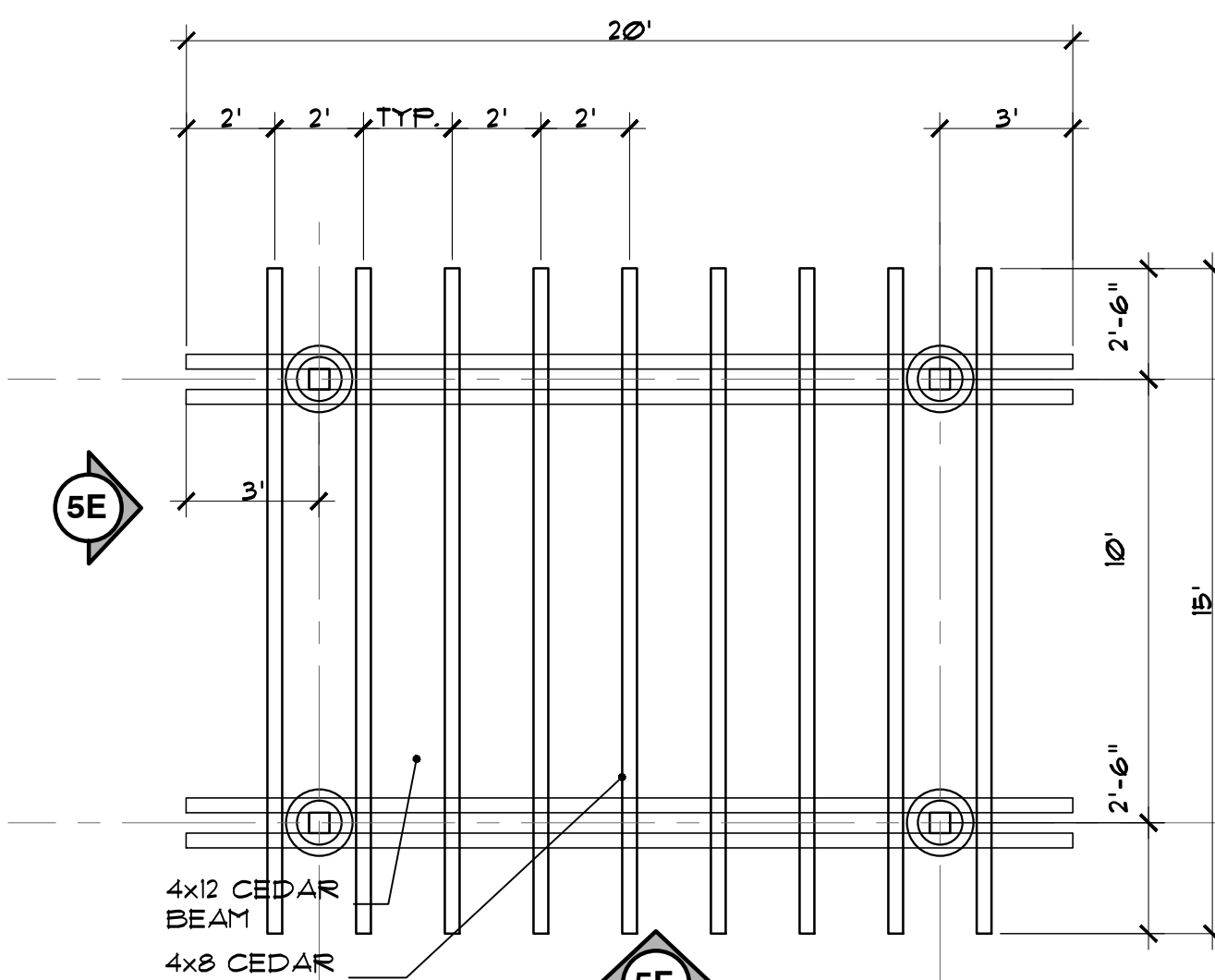
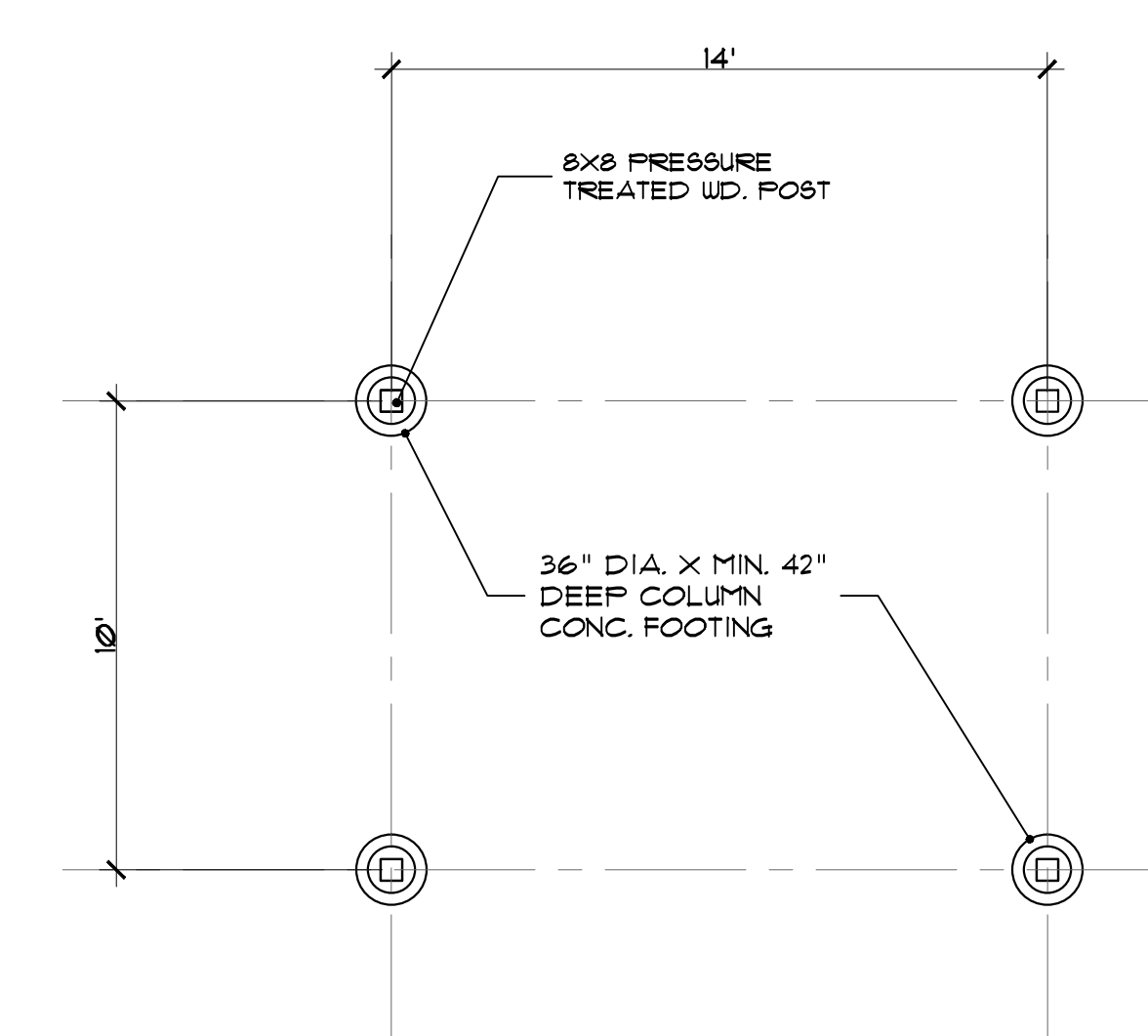


signage monument notes:

1. LOCATE AND STAKE ALL EXISTING AND PROPOSED UTILITIES PRIOR TO CONSTRUCTION. COORDINATE ANY ADJUSTMENTS WITH ARCHITECT.
2. SIGN UP-LIGHTING SHALL BE CONTROLLED WITH A "PHOTO-EYE" SWITCH. ALL LIGHTING SHALL BE SHIELDED FROM PUBLIC ROW'S AND ADJACENT PROPERTIES.
3. SEE LANDSCAPE PLAN FOR PROPOSED PLANTINGS ADJACENT TO PROPOSED ENTRY SIGN MONUMENTS, PIERS & FENCES.
4. VERIFY SOIL BEARING CAPACITY PRIOR TO ENTRY SIGN MONUMENT & PIER CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL ENTRY MONUMENT & PIER FOOTING DESIGN.
5. ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION.

sign panel uplighting
 (2-CONDITIONS)

ACUITY BRANDS LIGHTINGS
 ONE LITHONIA WAY
 CONYERS, GA 30012
 PEACHTREE, GA 30269
 PH. 770-322-3000
 BRAND: HYDREL
 MODEL: 47505F or EQUAL
 (LED 3500K /100 watt)



5G decorative pole & light
 (1-CONDITION)



MANUFACTURED BY ANOVA, INC.
 211 NORTH LINDBERGH BLVD. SUITE 200
 ST. LOUIS, MISSOURI 63141-1804
 TOLL FREE NO. (800)231-1827
 WWW.ANOVA Furnishings.com

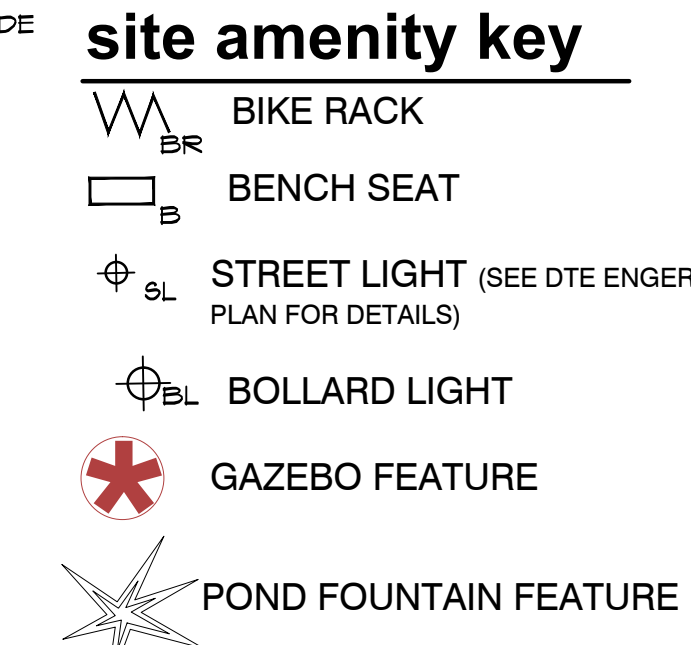
5H bench seat
 (1-CONDITION)



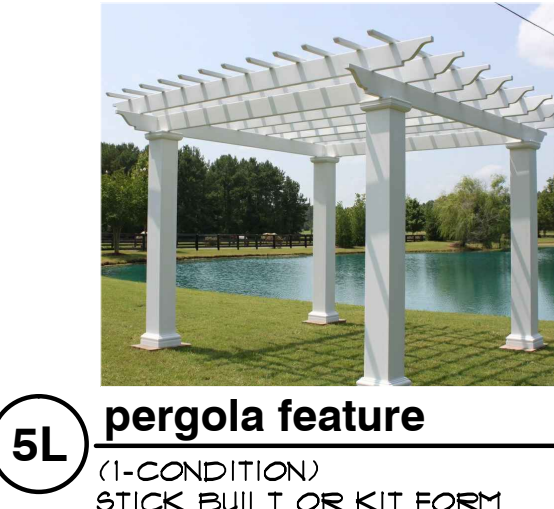
MODEL NO. LENC6
 DESCRIPTION: 6' WIDE CONTOUR BENCH
 FINISH: Black

5I bicycle rack
 (1-CONDITION)

BIKE RACK BY DUMOR INC.
 MODEL NO. 130-20 (8-2 SURFACE PLATE MOUNT) 2 3/8" O.D. BLACK POWDER-COATED LOOP OR EQUAL



site amenity reference location map
 SCALE 100' = 1'-0"



lighting note:
 ALL FRONT PORCH LIGHTS AND COACH LIGHTS WILL UTILIZE 75 WATT BULBS.



client:
JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER
 ROAD SUITE 120
 TROY, MI 48084

project:
LAKE POINTE

project location:
 White Lake Twp.,
 Michigan

Union Lake Road

sheet title:
POOL DECK PLAN

job no./issue/revision date:

LS19.124.11	TWP.	11-12-2019
LS19.124.12	TWP.	12-27-2019
LS20.089.10	TWP.	10-14-2020
LS21.009.01	SPA	1-18-2021
LS21.009.01	SPA	2-02-2021
LS21.009.03	SPA	3-22-2021

drawn by:
JP, DK
 checked by:
FP
 date:
1-4-2021

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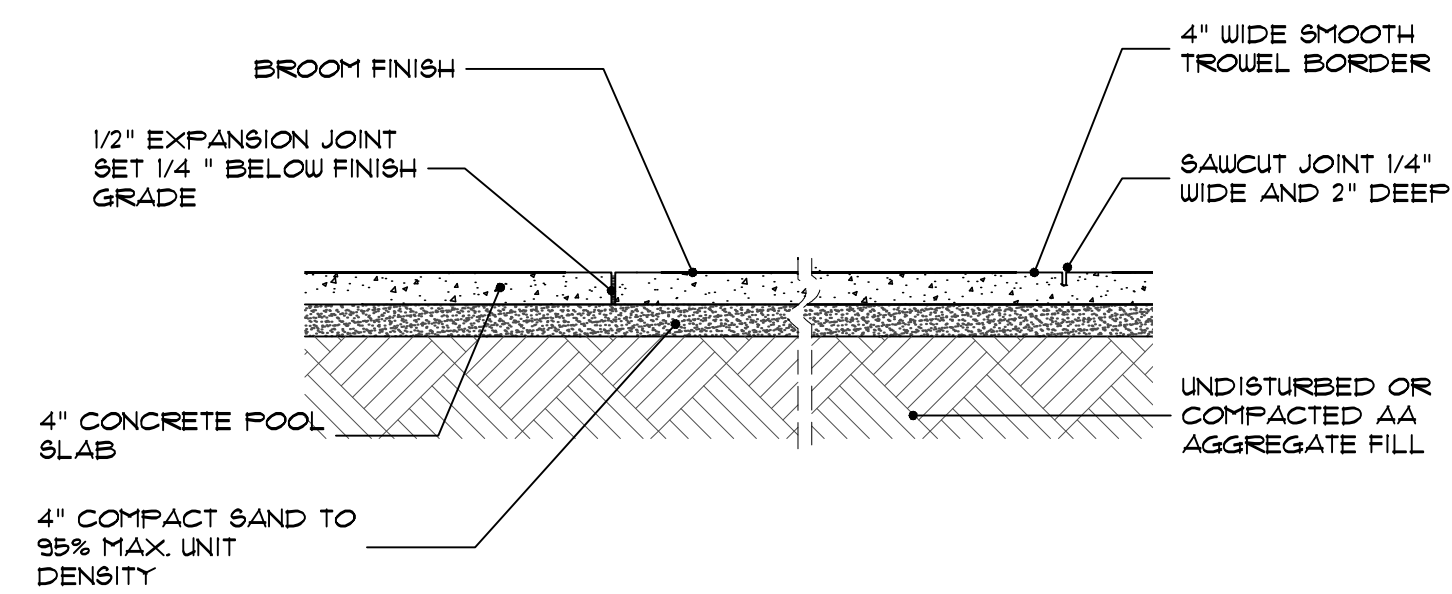
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 of construction

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LS21.009.01

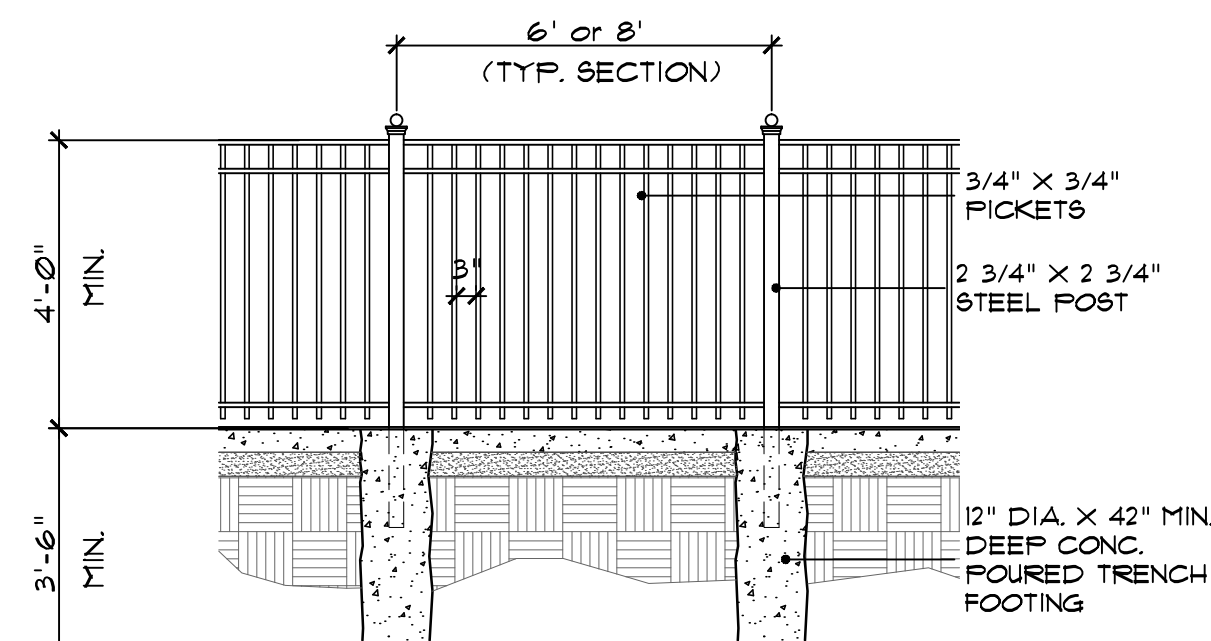
sheet no:
LS-6 of 7

swimming pool notes

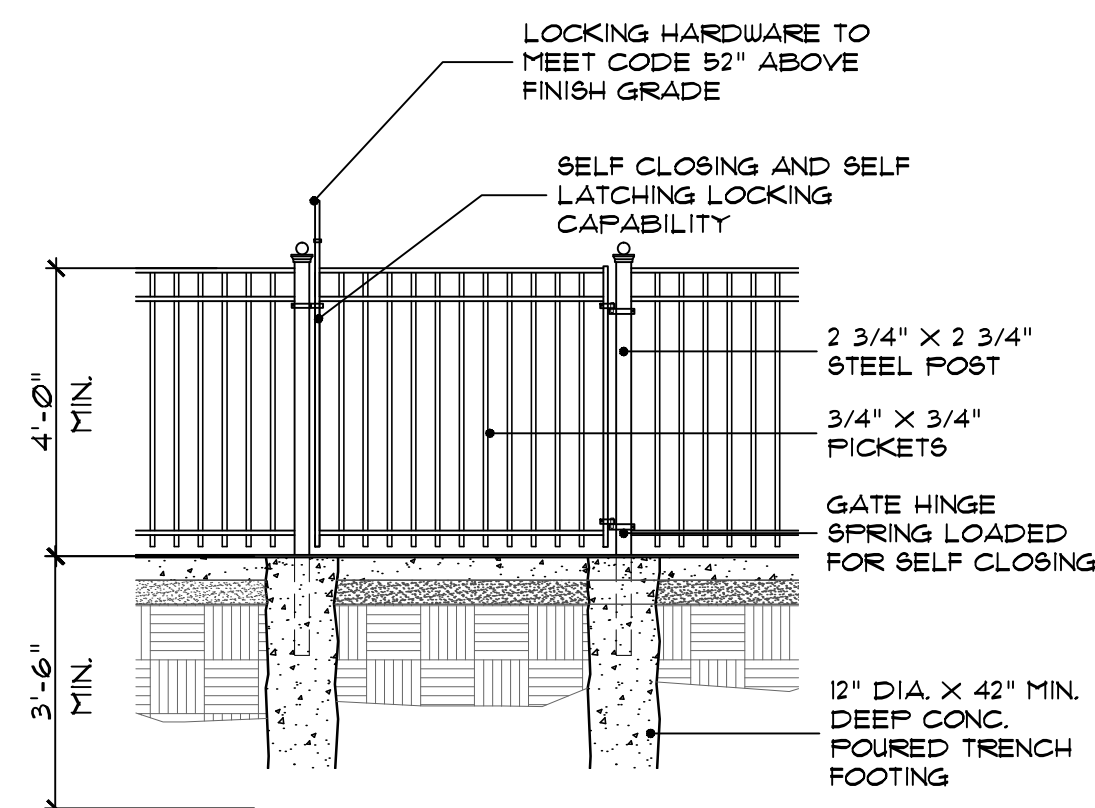
- THIS DRAWING ONLY PROVIDES THE LOCATION AND SHAPE OF THE PROPOSED SWIMMING POOL, DECK, AND / OR SPA. ALL STRUCTURAL AND ELECTRICAL REQUIREMENTS, CONSTRUCTION DETAILS, MATERIAL DETAILS, FINAL POOL FENCE LOCATION, AND OTHER RELATED INFORMATION ARE THE RESPONSIBILITY OF THE DESIGN BUILD FIRM OR CONTRACTOR.
 - THE DESIGN BUILD FIRM / CONTRACTOR SHALL PREPARE DETAILED PLANS, DRAWINGS AND SPECIFICATIONS TO BE SUBMITTED TO THE OWNER FOR REVIEW AND APPROVAL. THE DESIGN BUILD FIRM / POOL CONTRACTOR SHALL BE RESPONSIBLE TO MAKE APPLICATION TO AND OBTAIN POOL CONSTRUCTION PERMITS AND APPROVALS FROM LOCAL GOVERNING MUNICIPALITIES AND THE STATE.
 - CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.
- THIS DRAWING IS NOT FOR CONSTRUCTION PURPOSES, SEE ABOVE.
- POOL DECK TO PITCH AWAY FROM POOL AND WALLS WITH NO PUDDLING TO OCCUR



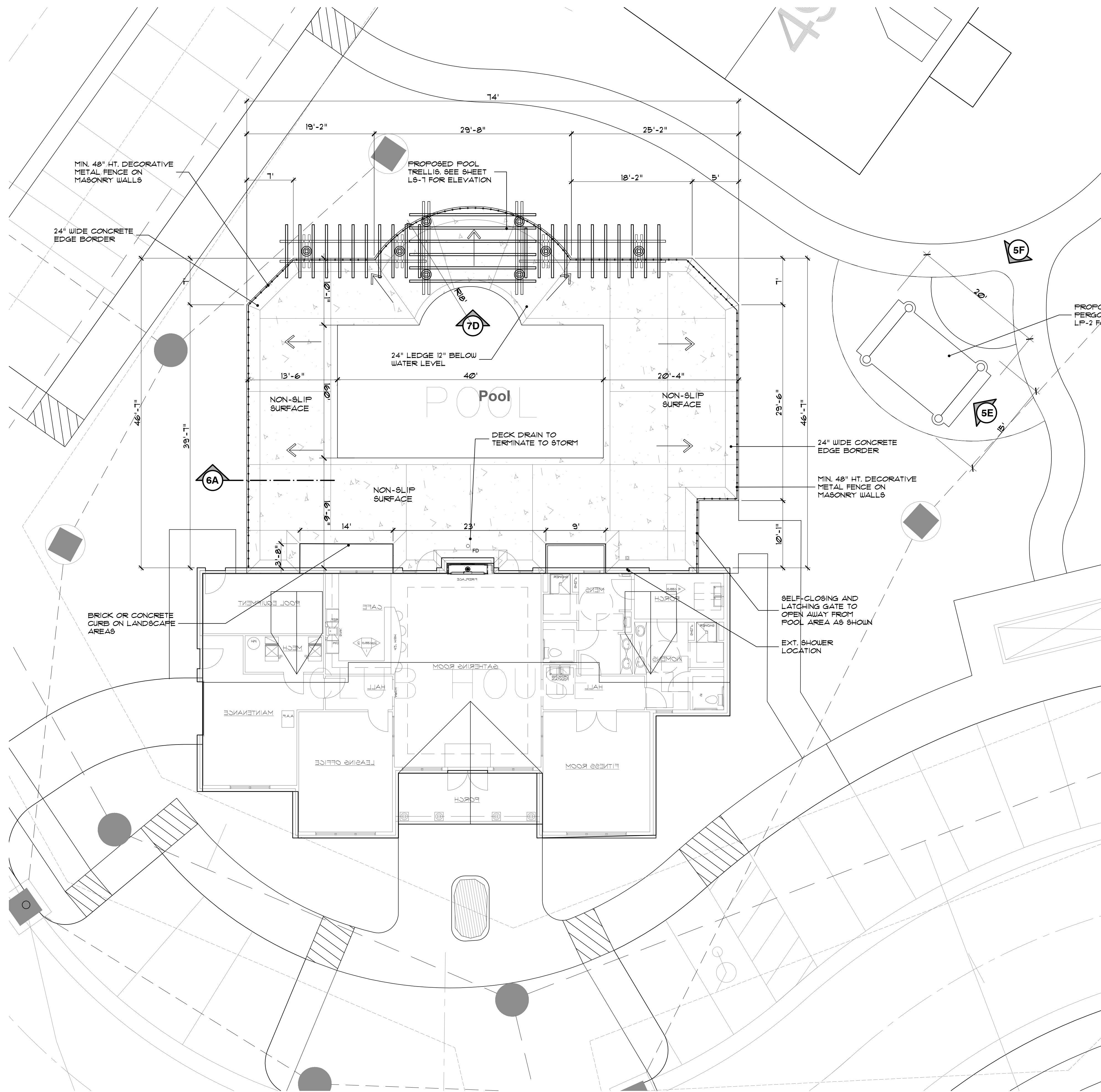
6A concrete pool deck
 SCALE: 1/2"=1'-0"



6B pool fence detail
 SCALE: 3/8"=1'-0"

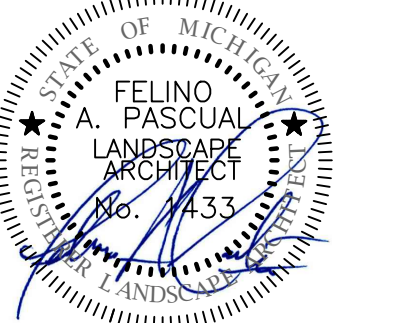


6C pool fence gate detail
 SCALE: 3/8"=1'-0"



6D pool deck plan
 SCALE: 1/8"=1'-0"

seal:



client:

JMF WHITE LAKE, LLC.
 1700 W. BIG BEAVER
 ROAD SUITE 120
 TROY, MI 48084

project:

LAKE POINTE

project location:

White Lake Twp., Michigan

Union Lake Road

sheet title:

**POOL PERGOLA
 \ TRELLIS ELEVATIONS
 & DETAILS**

job no./issue/revision date:

LS19.124.11 TWP.	11-12-2019
LS19.124.12 TWP.	12-27-2019
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drawn by:
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1-4-2021

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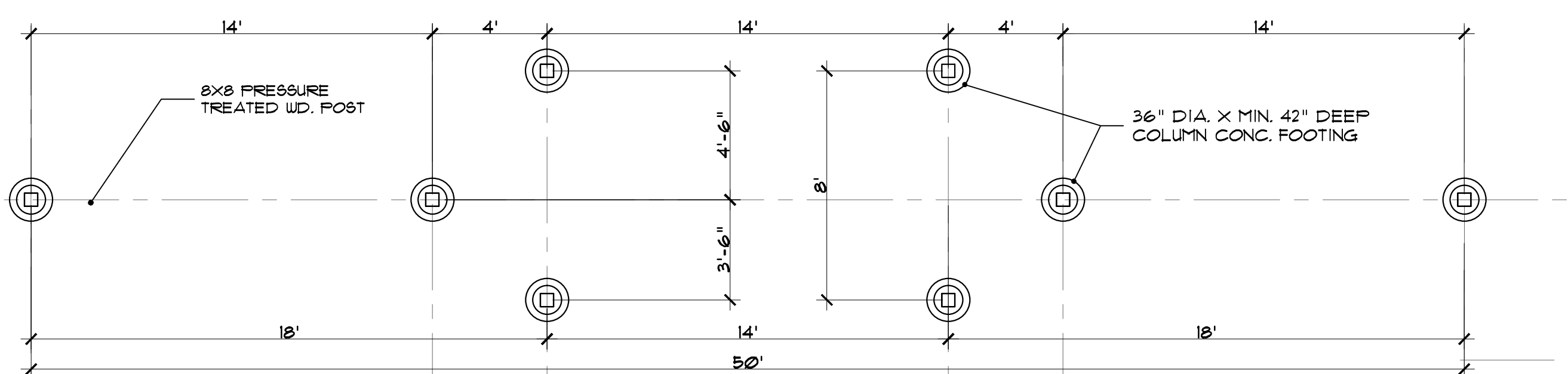
LS21.009.01

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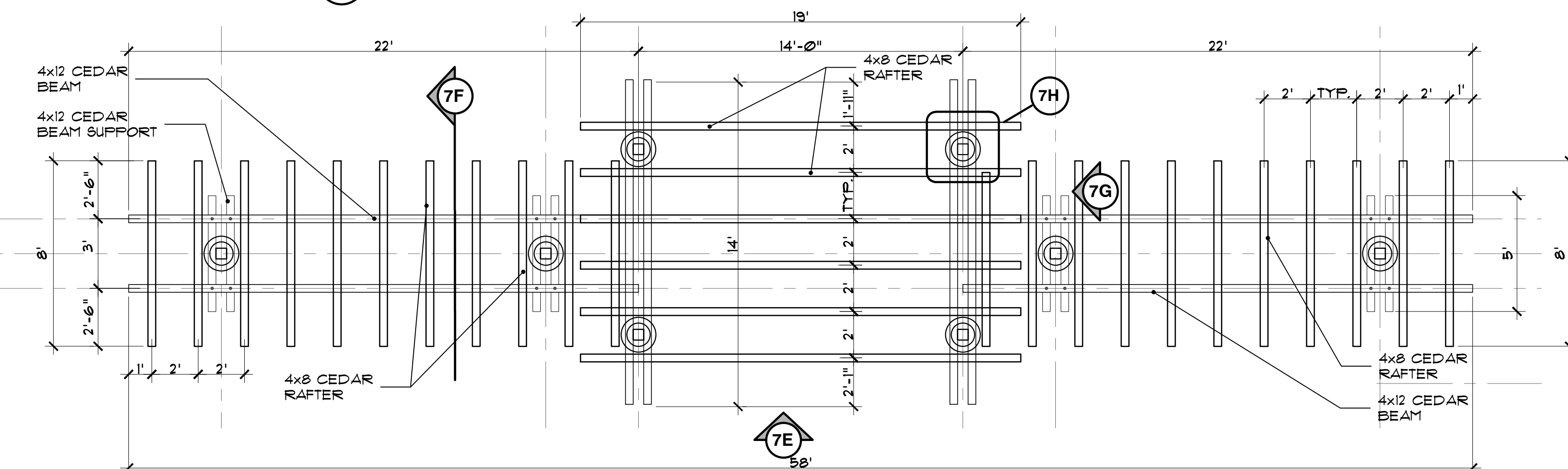
LS-7 of 7

general notes:

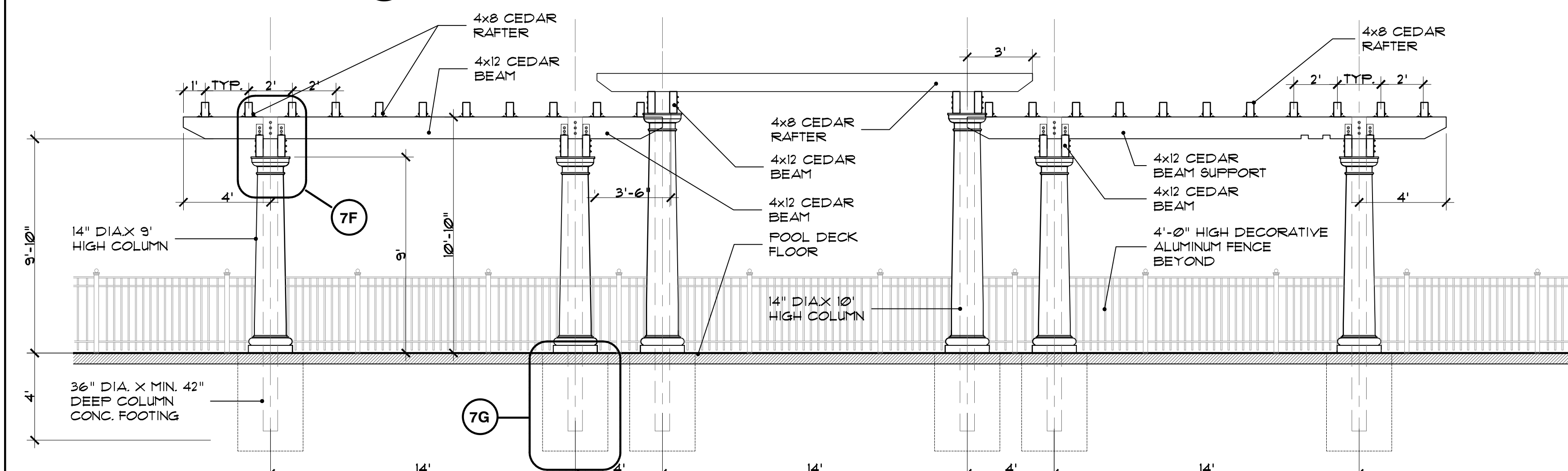
- ALL INFORMATION CONTAINED HEREIN IS SUBJECT TO APPROVAL, AND PERMITS TO BE OBTAINED PRIOR TO CONSTRUCTION FROM ALL NECESSARY AGENCIES.
- CONTRACTOR SHALL VISIT THE SITE, INSPECT EXISTING CONDITIONS, REVIEW PROPOSED PLANS AND RELATED WORK. CONTACT THE OWNER WITH ANY CONCERNS OR DISCREPANCY BETWEEN THE PLANS AND/OR SITE CONDITIONS.
- PRIOR TO BEGINNING OF CONSTRUCTION ON ANY WORK, CONTRACTORS SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES, GAS, ELECTRIC, TELEPHONE, CABLE. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER PRIOR TO COMMENCING. CONTACT MISS DIG AT 811 OR 800-482-7171 BEFORE YOU DIG.
- DO NOT SCALE DRAWINGS. USE FIGURED DIMENSIONS ONLY.
- VERIFY SOIL BEARING CAPACITY PRIOR TO ANY POST FOOTING CONSTRUCTION. IF SOIL BEARING CAPACITY FALLS BELOW STANDARD REQUIREMENTS, CONSULT STRUCTURAL ENGINEER FOR RECOMMENDATION OF FINAL POST FOOTING DESIGN.
- ALL EXPOSED SAW CUT AREAS OF CEDAR WOOD LUMBER TO BE SEALED WITH WOOD PRESERVATIVE AS REQUIRED INCLUDING TRIMMED ENDS PER DRAWINGS.
- ALL BRACKETS, FASTENERS, COMPOSITE SCREWS, NAILS, BOLTS, SHALL BE GALVANIZED OR ZINC COATED WITH ACG AND CBA RATED FORMULATIONS.
- GRADES BY OTHERS. FINAL GRADES TO PROVIDE POSITIVE DRAINAGE.
- CONSTRUCTION SUPERVISION AND SITE SAFETY SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR AND SHALL MEET ALL MUNICIPAL AND STATE REQUIREMENTS AND REGULATIONS.
- FOOTINGS SHALL BEAR ON FIRM, UNDISTURBED SOIL WITH AN ASSUMED SAFE BEARING CAPACITY OF 2000 P.S.I. IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED, FOOTINGS SHALL BE ENLARGED OR LOWERED AT THE DIRECTION OF THE STRUCTURAL ENGINEER. VERIFY FOUNDATION SOIL BEARING PRESSURE IN FIELD BY SOILS ENGINEER.
- PROVIDE NECESSARY SHEETING SHORING BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATIONS.
- MINIMUM CONCRETE STRENGTH TO BE 3000 P.S.I. @ 28 DAYS. U.O.N. ± SLABS SHALL BE 3500 P.S.I. MIN. U.O.N. ± EXPOSED CONCRETE SHALL BE 4000 P.S.I. WITH 6% ± 1% ENTRAINED AIR U.O.N.
- ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST RECOMMENDATIONS OF A.C.I.
- PROVIDE MINIMUM 3" CONCRETE COVER FOR REINFORCEMENT BARS BELOW GRADE AND MINIMUM 2" CONCRETE COVER FOR REINFORCEMENT BARS ABOVE GRADE.



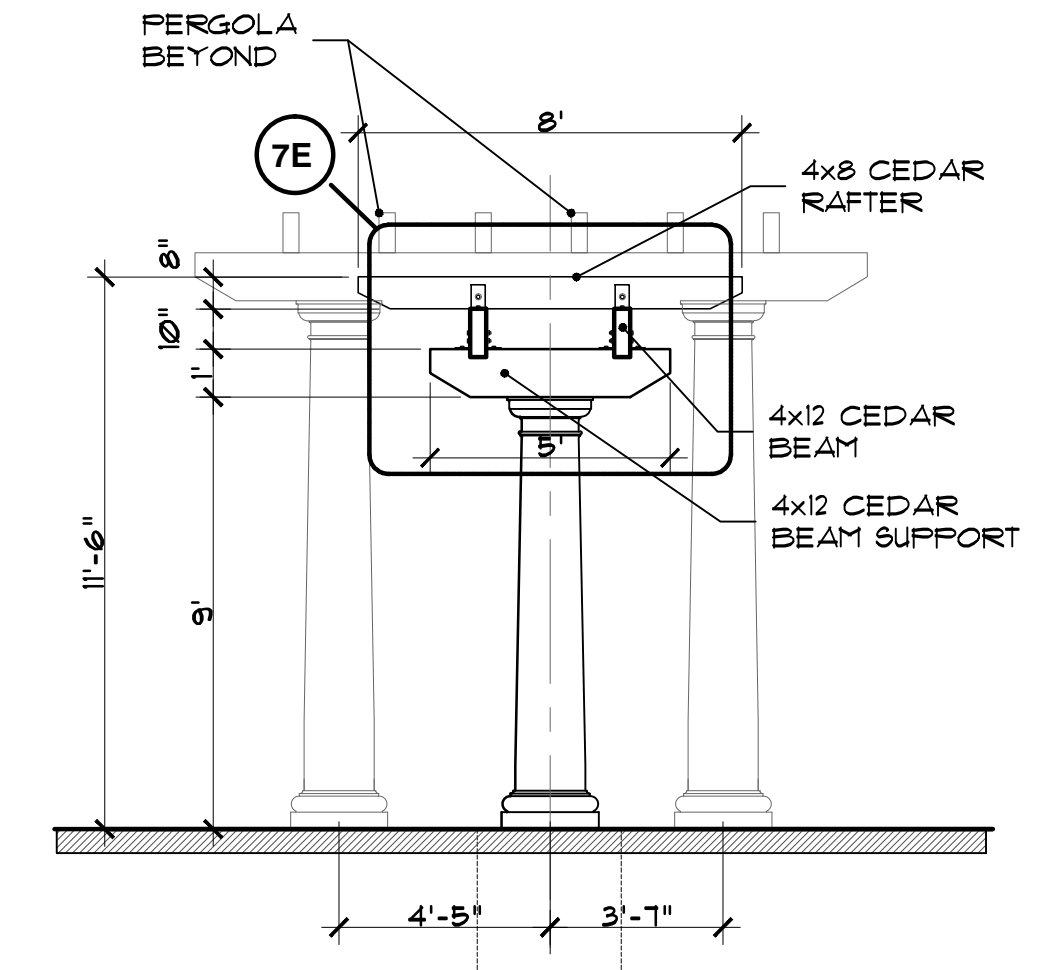
7A pool trellis-pergola foundation plan
 SCALE 1/4" = 1'-0"



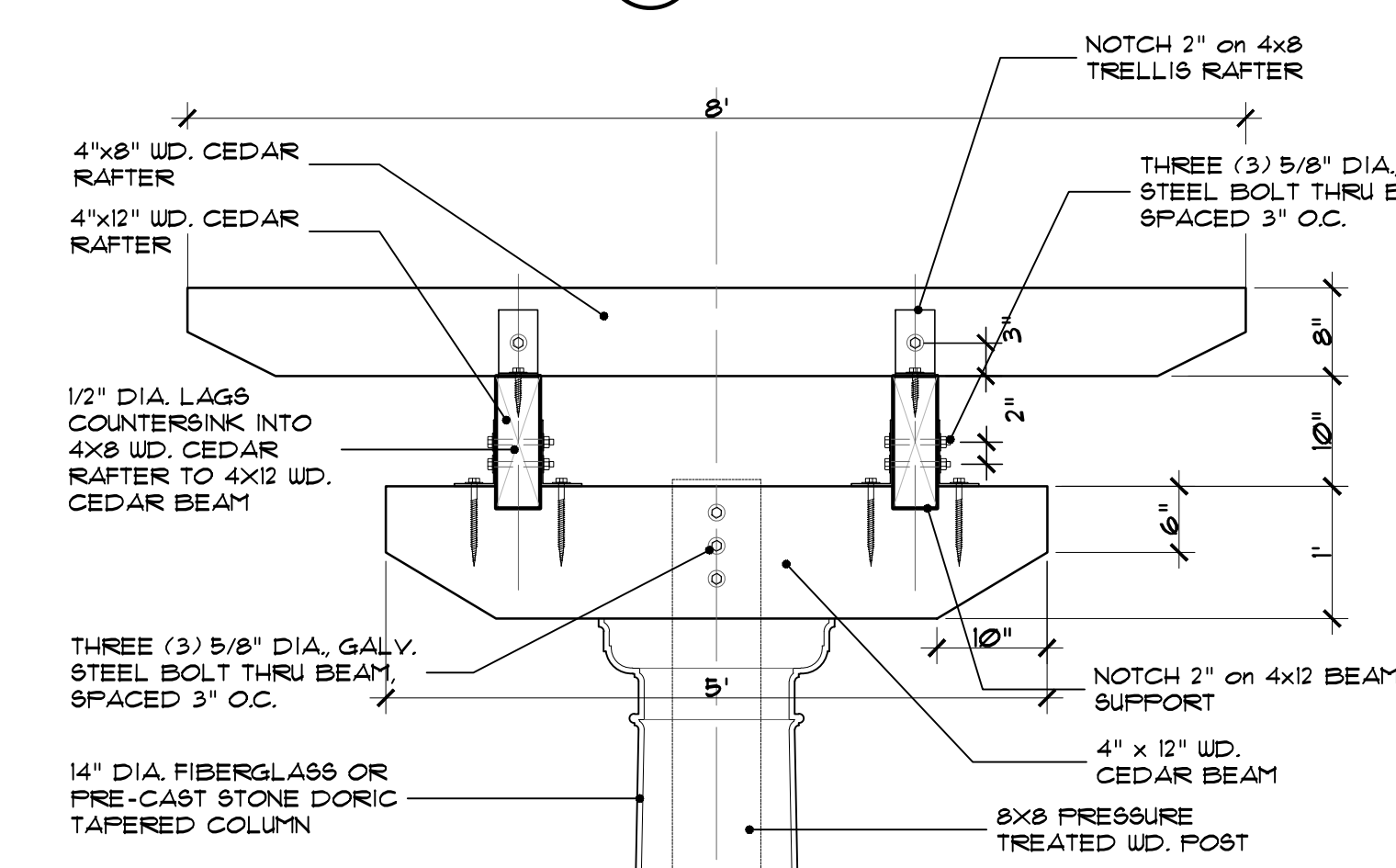
7B pool trellis-pergola plan
 SCALE 1/4" = 1'-0"



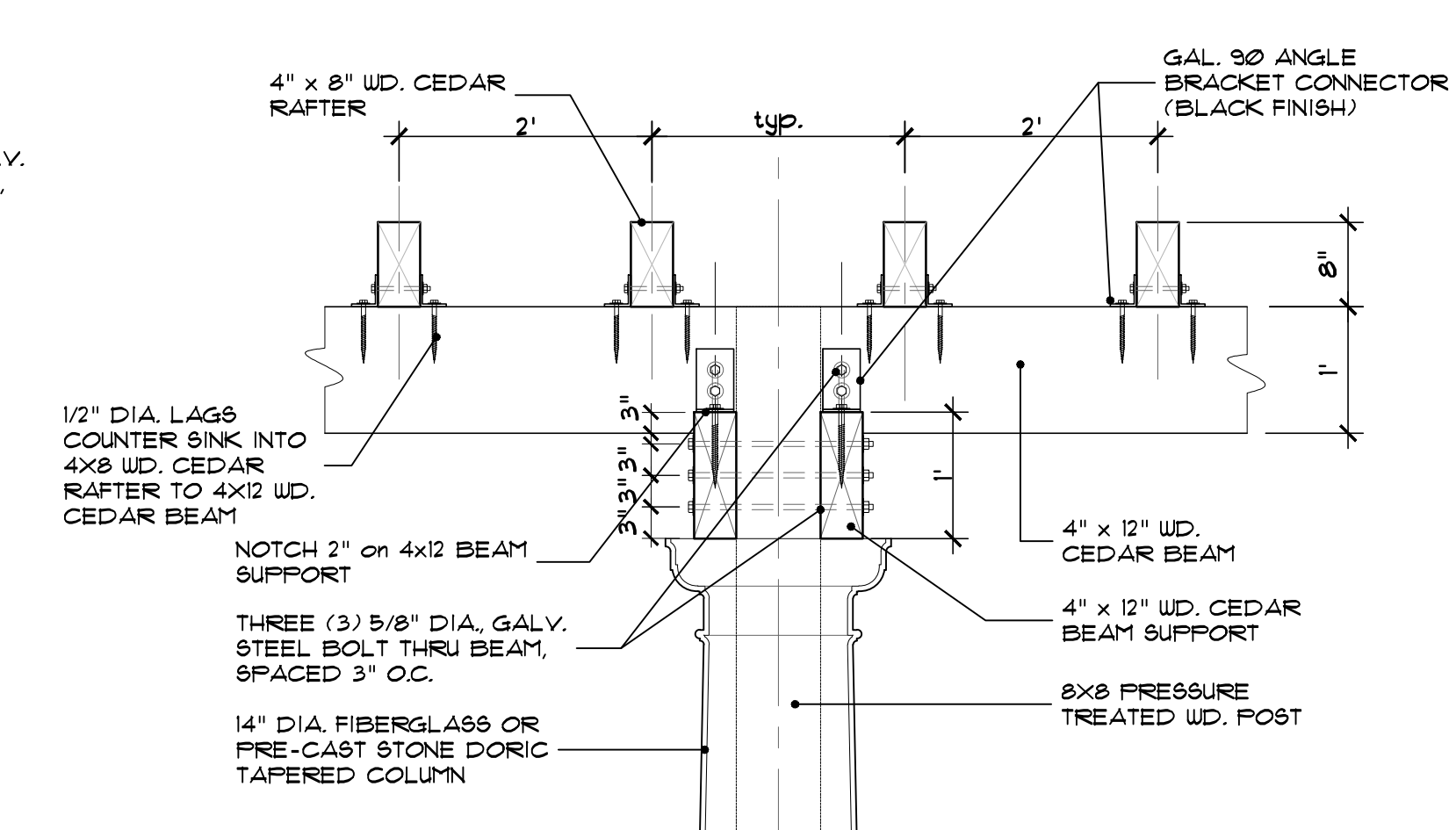
7C pool trellis-pergola elevation view
 SCALE 1/4" = 1'-0"



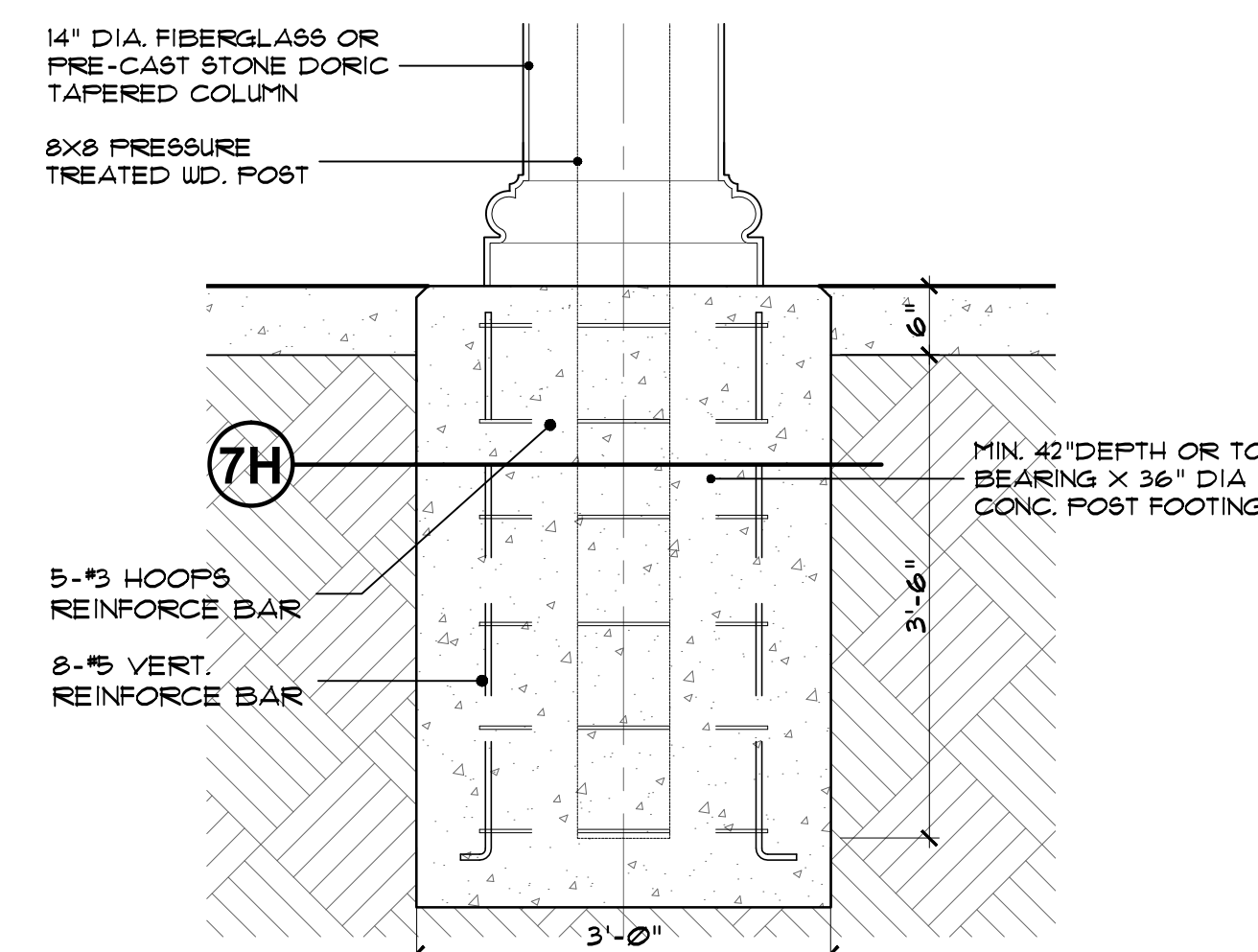
7D pool trellis-pergola elevation view
 SCALE 1/4" = 1'-0"



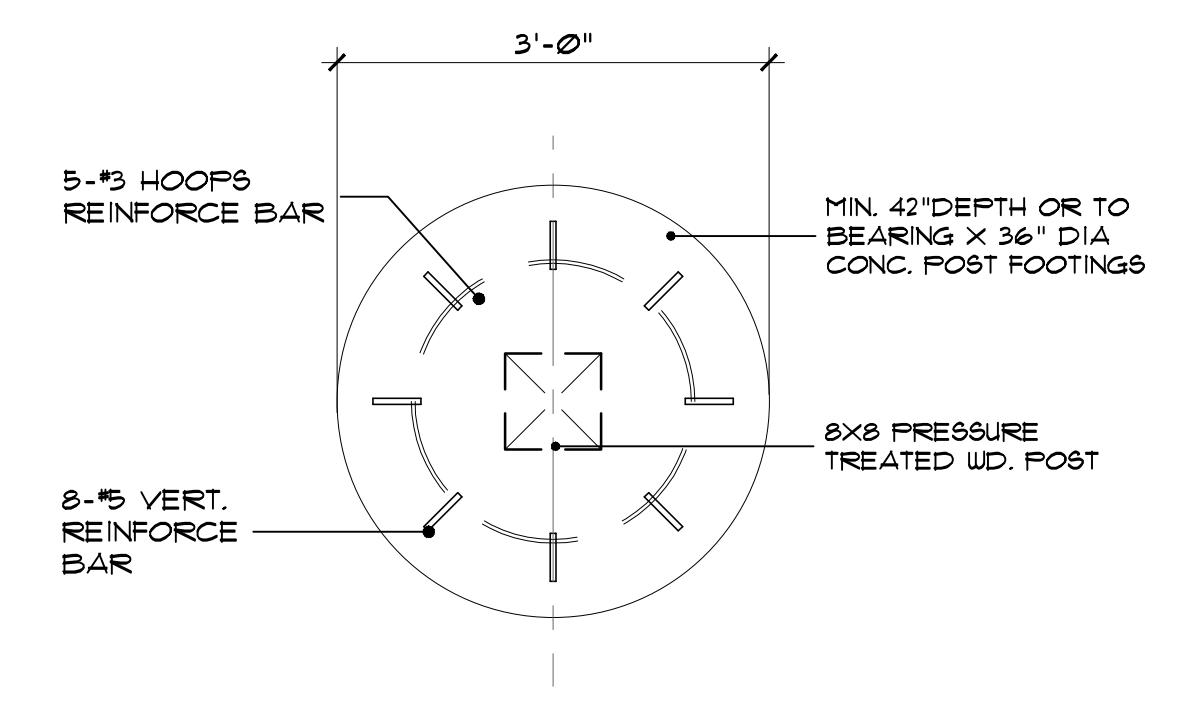
7E trellis connection detail
 SCALE: 3/4" = 1'-0"



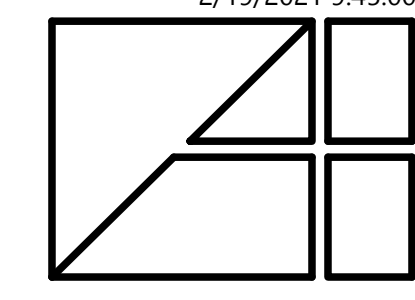
7F pergola connection detail
 SCALE: 3/4" = 1'-0"



7G pergola footing detail
 SCALE: 3/4" = 1'-0"



7H pergola footing detail
 SCALE: 3/4" = 1'-0"



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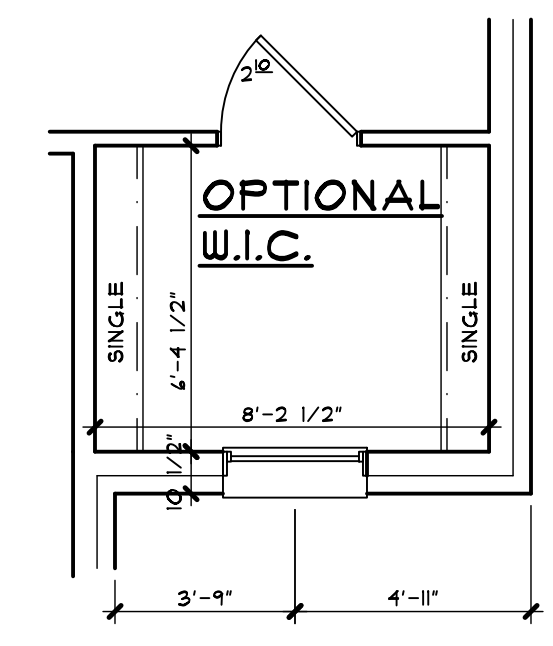
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MULTIFAMILY COMMUNITY
WHITE LAKE, MICHIGAN

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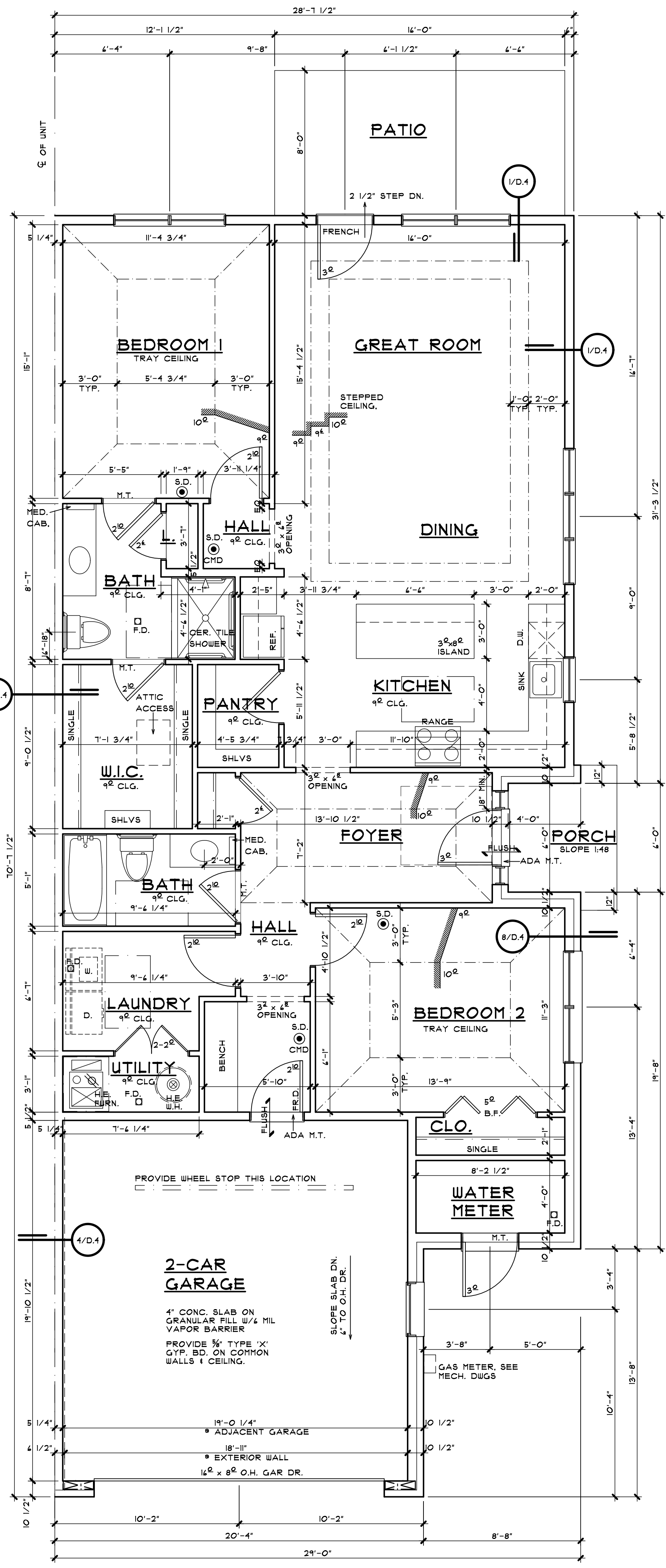
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8140
DATE
SHEET NUMBER
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- NOTES**
- ALL EXTERIOR TRIM TO BE ALUMINUM WRAPPED OR VINYL. VERIFY EXACT LOCATIONS FOR EACH MATERIAL WITH OWNER PRIOR TO CONSTRUCTION.
 - PROVIDE PEEP HOLES AND DEAD BOLTS AT ALL FRONT ENTRY DOORS. SEE BUILDER FOR SPECIFICATIONS.
 - ALL DRYWALL TO BE PREPARED & READY TO BE PAINTED INCLUDING THE GARAGE.
 - BRICK ROWLOCK SILLS MAY BE REPLACED WITH PRECAST STONE OR CONCRETE. VERIFY WITH BUILDER PRIOR TO CONSTRUCTION.
- NOTE:**
FUTURE GRAB BARS SHOWN AT WATER CLOSETS, TUBS & SHOWERS. PROVIDE BLOCKING ONLY AT TIME OF OCCUPANCY.
- NOTE:**
ALL GYP. BOARD INSTALLED IN ROUGH BY ROUGH CARPENTERS MUST BE MOLD/MOISTURE RESISTANT TYPE APPROVED FOR INSTALLATION DURING THE ROUGH FRAMING PROCESS.
- NOTE:**
ROUGH CARPENTER TO VERIFY ALL TUB AND SHOWER SIZES PRIOR TO ROUGH IN.
- NOTE:**
REFER TO STRUCTURAL DESIGN DRAWINGS FOR ALL STRUCTURAL INFORMATION.

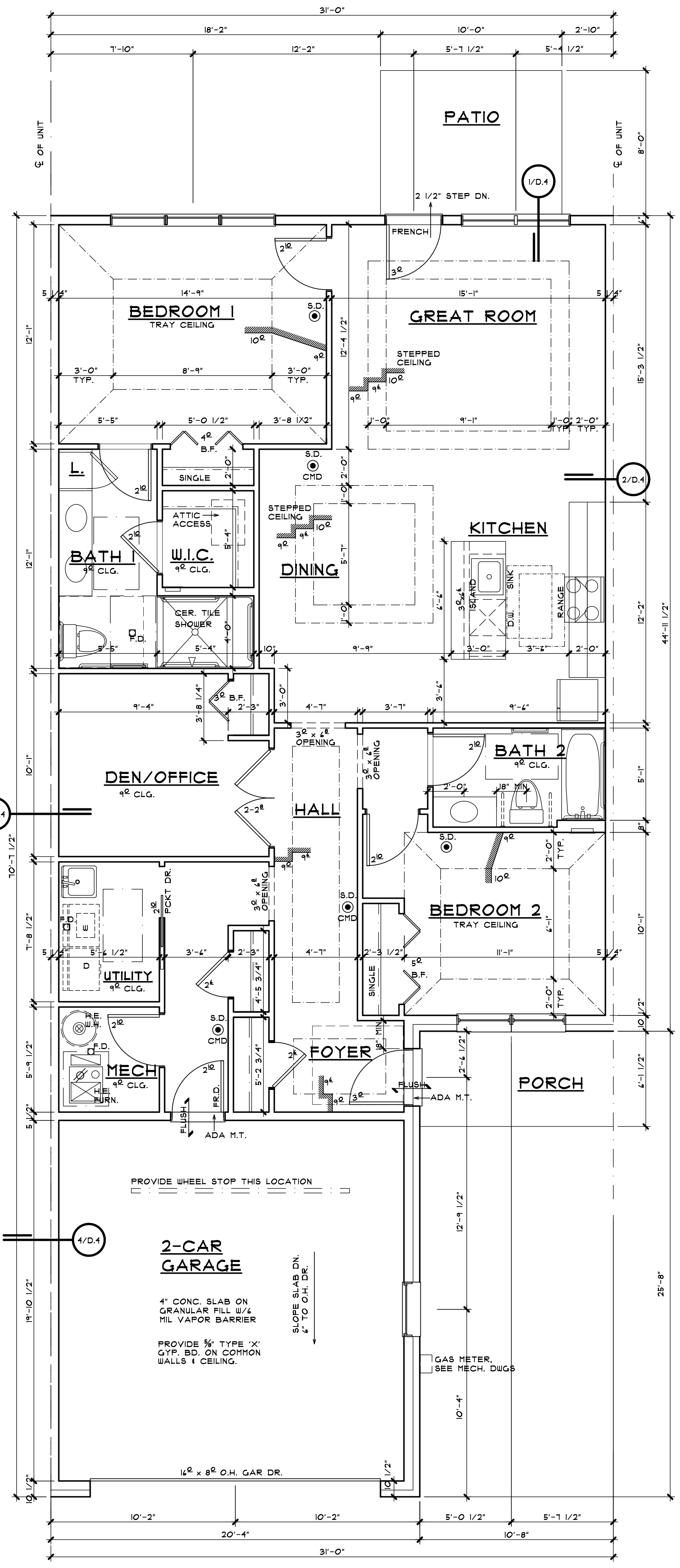


END UNIT GROSS SQUARE FOOTAGE	
1ST FLOOR (FIN.)	1,478 SQ FT
GARAGE	416 SQ FT



1 END UNIT FIRST FLOOR PLAN - TYPE 'B'
A101 SINGLE STORY DWELLING UNIT
SCALE: 1/4" = 1'-0"

INTERIOR UNIT GROSS SQUARE FOOTAGE	
1ST FLOOR (FIN.)	1,494 SQ FT
GARAGE	421 SQ FT



2 INTERIOR UNIT FIRST FLOOR PLAN - TYPE 'B'
A101 SINGLE STORY DWELLING UNIT
SCALE: 1/4" = 1'-0"

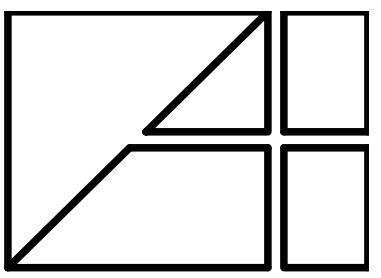
ALL INTERIOR PARTITION DIMENSIONS ARE 3/16" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

SEE SHEETS D-1-D-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.



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SHEET TITLE
TYP. UNIT ELEVATIONS
(1/4" Scale)

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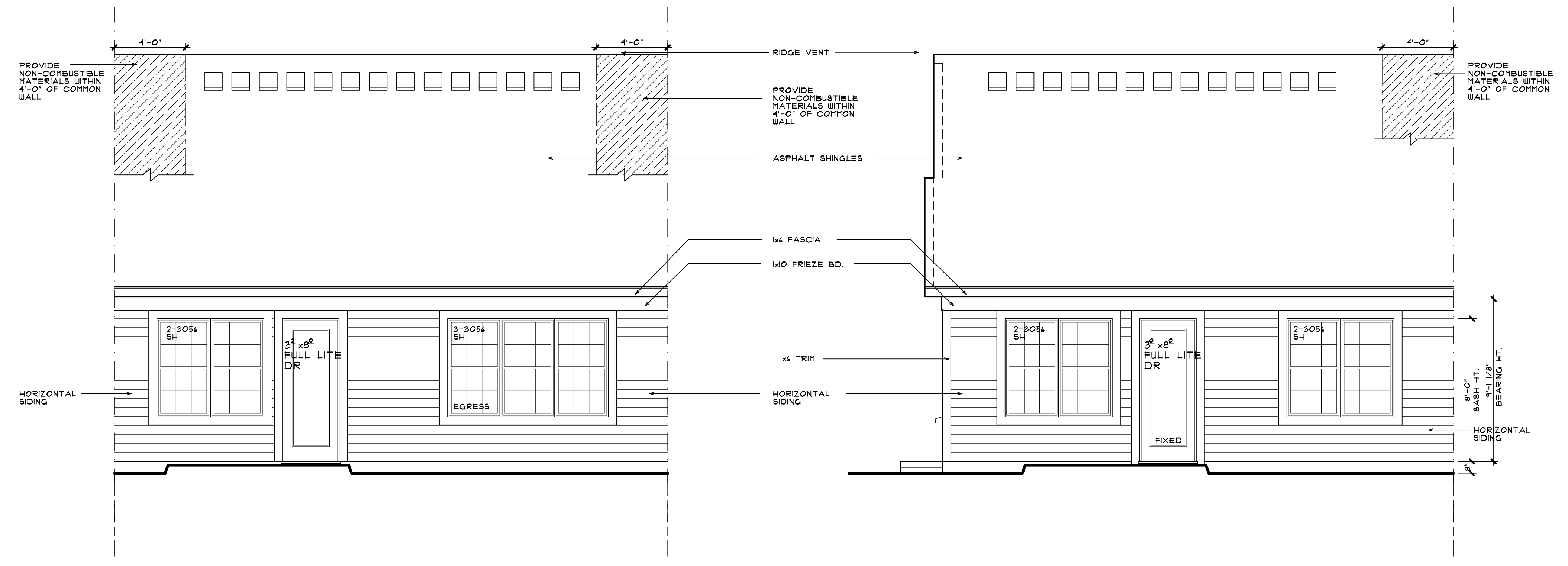
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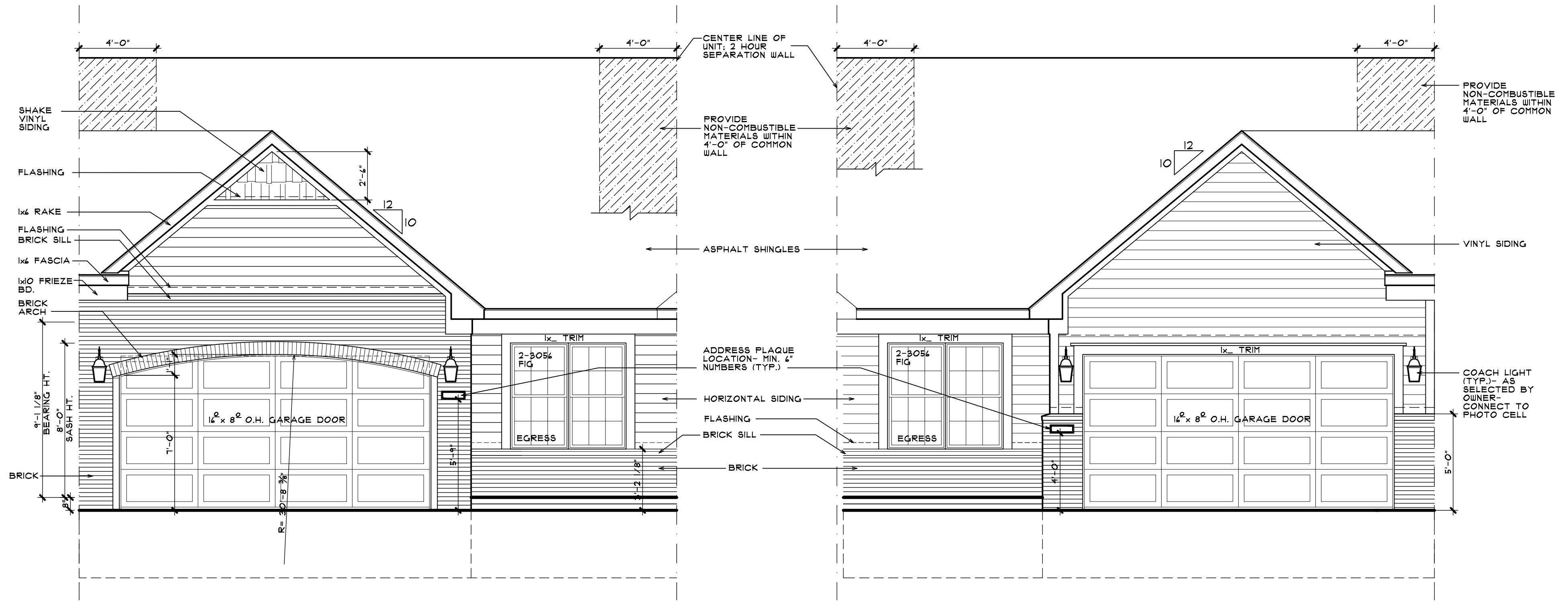
DATE

SHEET NUMBER
A102

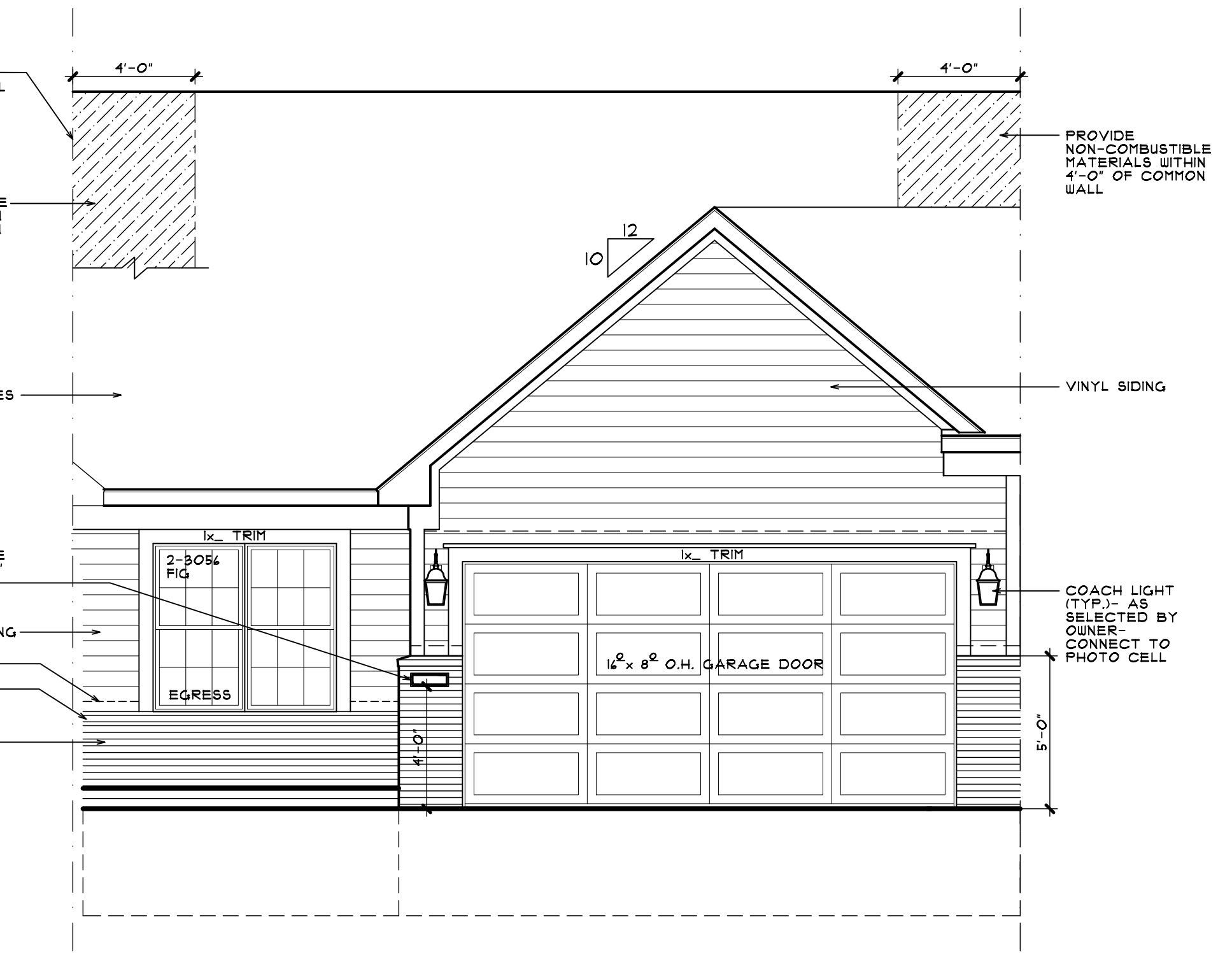


5 REAR ELEVATION - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"

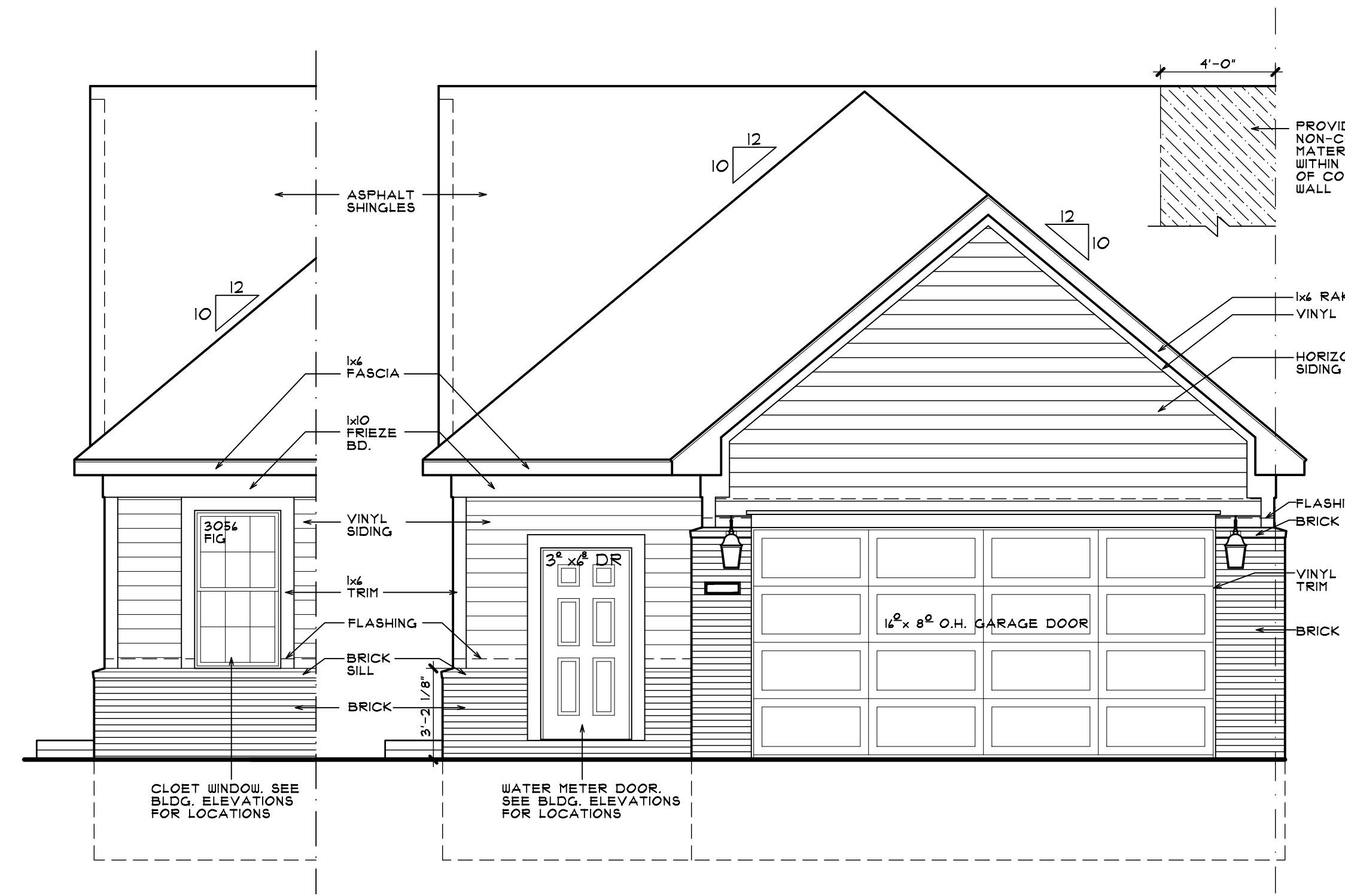
2 REAR ELEVATION - TYP. END UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



4 FRONT ELEVATION B - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



3 FRONT ELEVATION A - TYP. INTERIOR UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"



1 FRONT ELEVATION - TYP. END UNIT
A102 5 AND 6 UNIT SINGLE STORY SCALE: 1/4" = 1'-0"

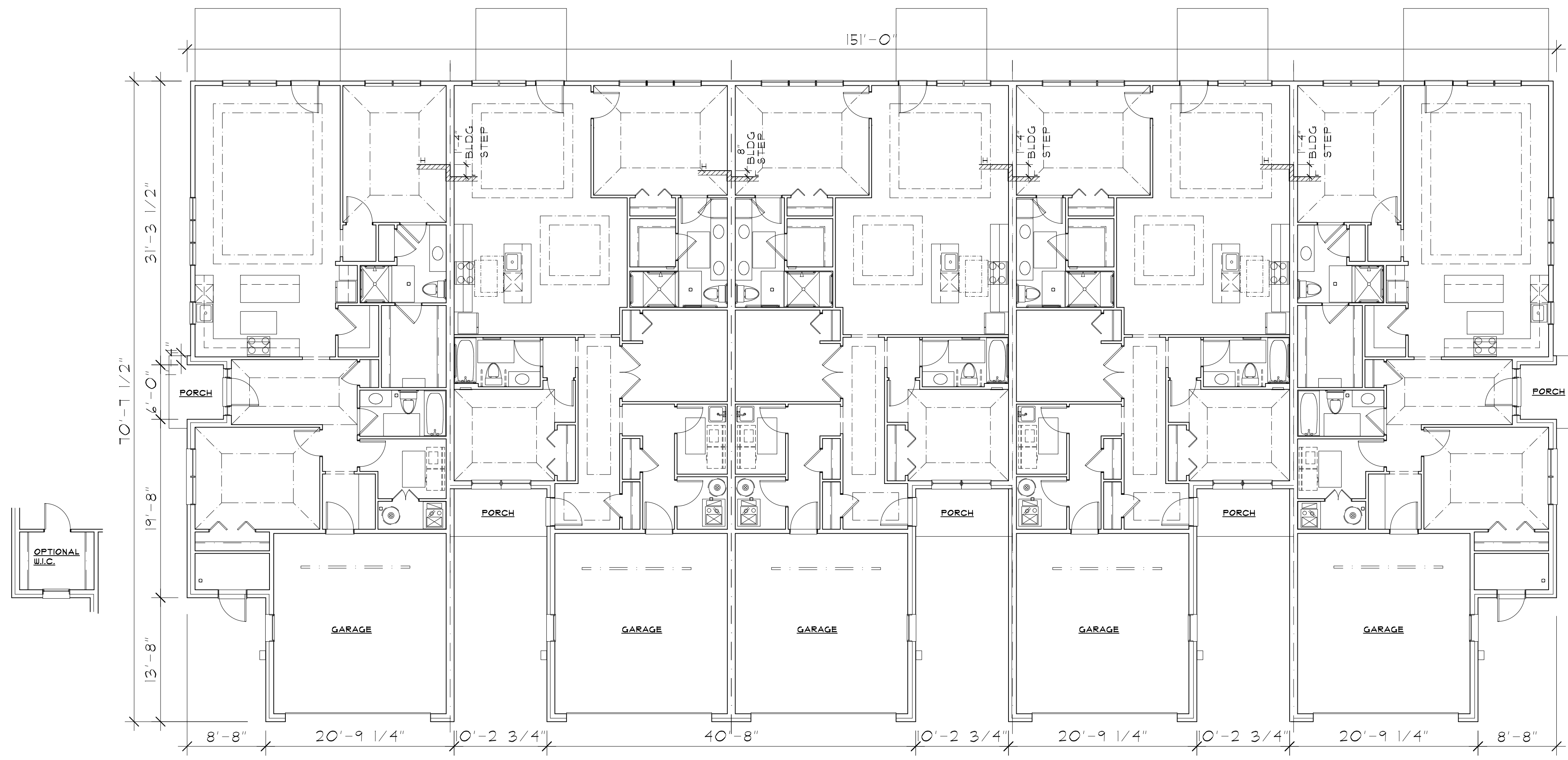
ALL INTERIOR PARTITION DIMENSIONS ARE 3 1/2" UNLESS NOTED OTHERWISE.

BEFORE CONSTRUCTION OBTAIN WINDOW & DOOR ROUGH OPENING SIZES FROM WINDOW/DOOR SUPPLIER.

SEE SHEETS N-1 - N-4 FOR ADDITIONAL DETAILS REGARDING DRAWINGS & CONSTRUCTION.

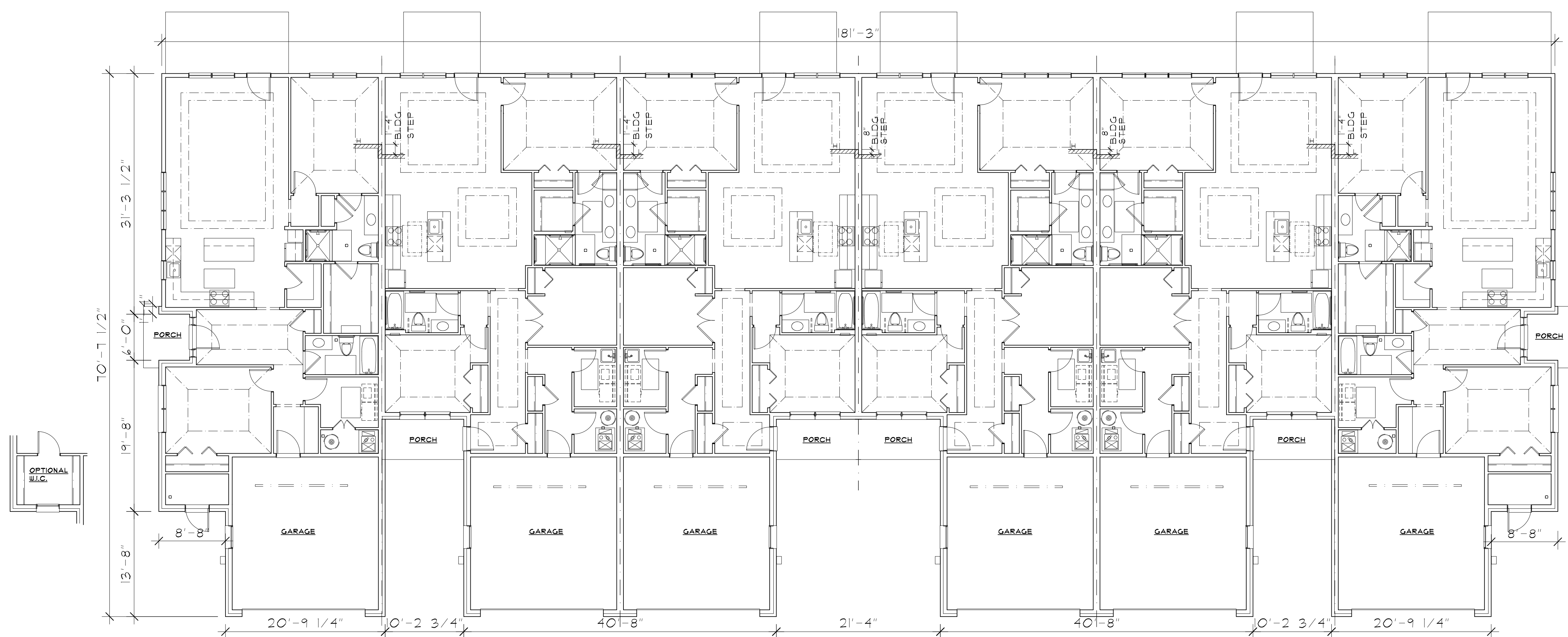
SEE SHEETS DJ-D-4 FOR ADDITIONAL NOTES REGARDING DRAWINGS & CONSTRUCTION.

DO NOT SCALE THESE DRAWINGS. USE CALCULATED DIMENSIONS. IF VARIATIONS OCCUR CONTACT ARCHITECT FOR CLARIFICATION.



2 BUILDING C (UNITS 13-17) - FIRST FLOOR PLAN
 A200 SINGLE STORY DWELLING UNIT

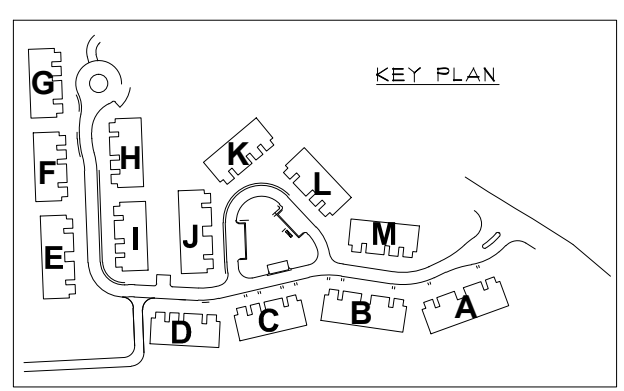
SCALE: 1/8" = 1'-0"



1 BUILDING A (UNITS 1-6) - FIRST FLOOR PLAN
 A200 SINGLE STORY DWELLING UNIT

SCALE: 1/8" = 1'-0"

NOTE:
 • REFER TO 1/4" SCALE UNIT PLANS FOR ALL NOTES, DIMENSIONS, DETAILS AND ALL ADDITIONAL INFORMATION NOT SHOWN.
 • SEE STRUCTURAL ENGINEERING PLANS (BY OTHERS) FOR ALL STRUCTURAL INFORMATION. ALL FOUNDATION INFORMATION REGARDING BEARING CAPACITY OF SOIL CAN VARY ON A BUILDING BY BUILDING BASIS.



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SHEET TITLE
BUILDING PLANS

CLIENT/PROJECT
**WEST VALLEY
 MULTIFAMILY COMMUNITY
 WHITE LAKE, MICHIGAN**

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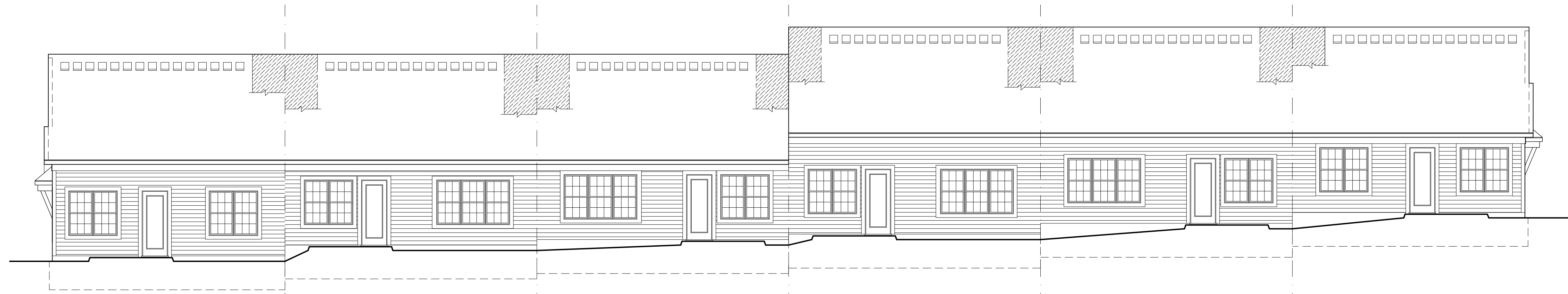
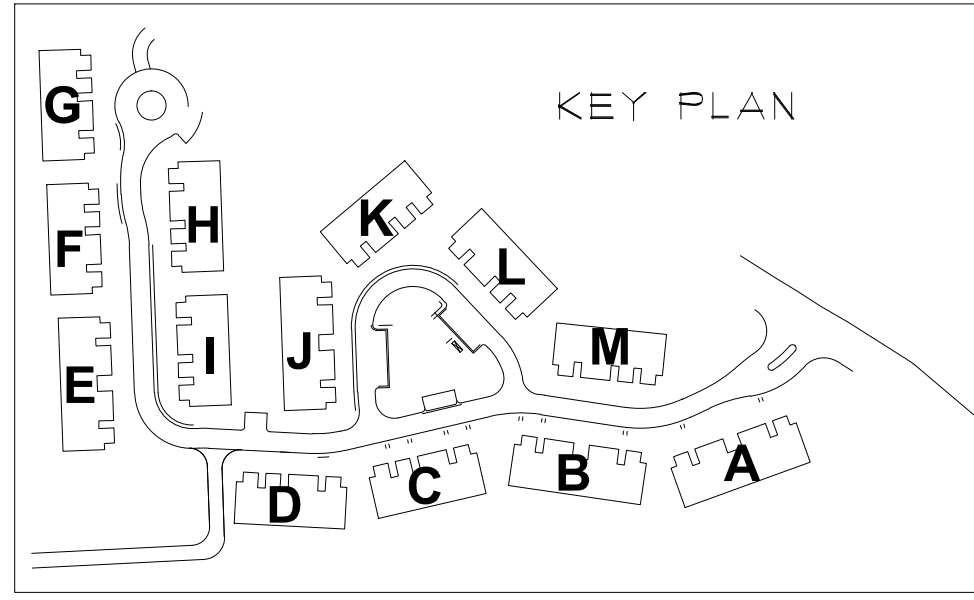
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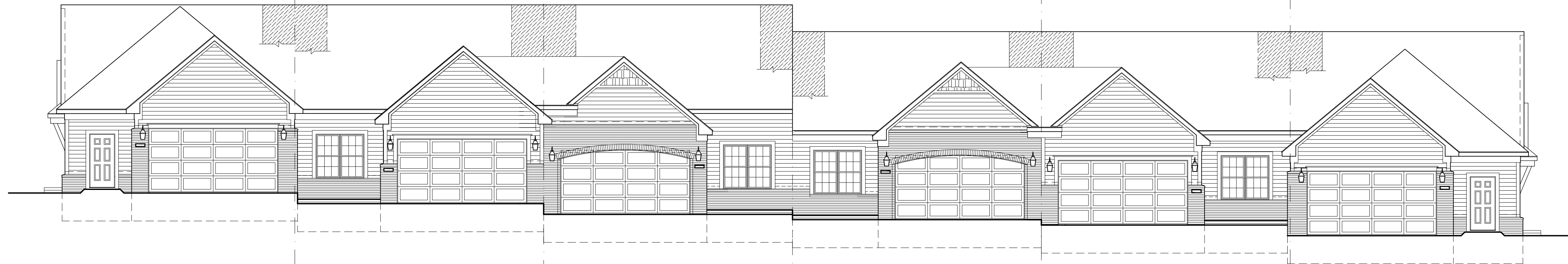
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6 UNIT BUILDING - FRONT ELEVATION (BUILDING A, UNITS 1-6)
 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



6 UNIT BUILDING - FRONT ELEVATION (BUILDING A, UNITS 1-6)
 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



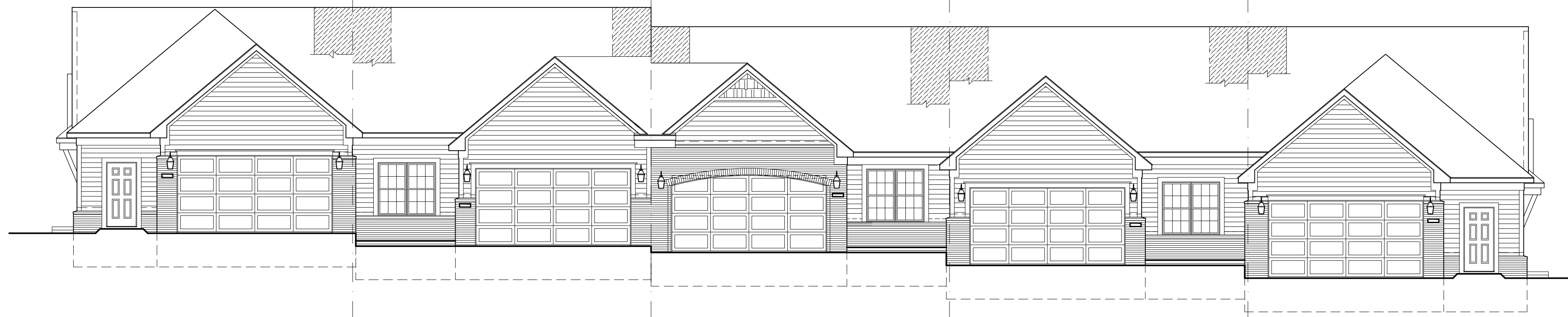
5 UNIT BUILDING - REAR ELEVATION (BUILDING C, UNITS 13-17)
 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



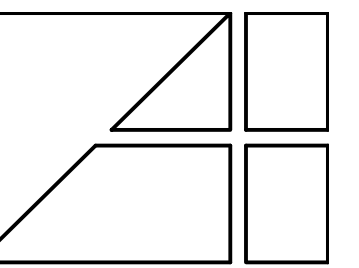
TYPICAL RIGHT SIDE ELEVATION
 LEFT SIDE - OPP. HAND

SCALE: 1/8" □ 1'-0"



5 UNIT BUILDING - FRONT ELEVATION (BUILDING C, UNITS 13-17)
 □ UNIT SINGLE STOR □

SCALE: 1/8" □ 1'-0"



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SHEET TITLE
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CUSTOMER PROJECT
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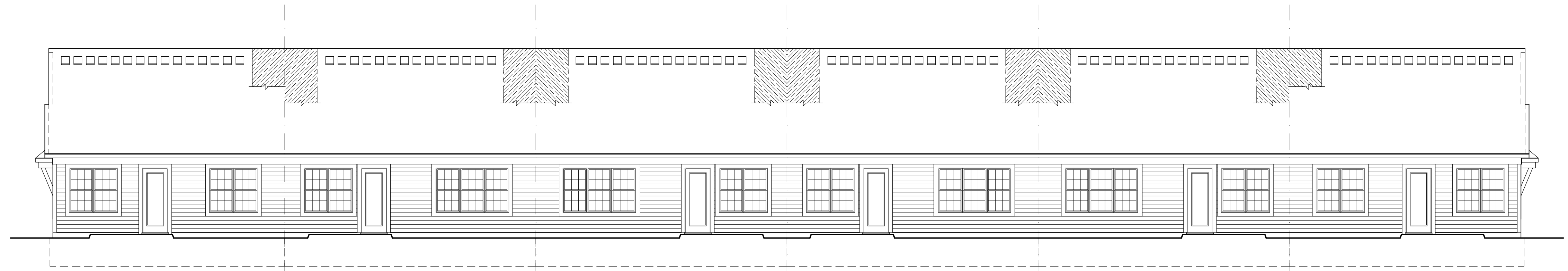
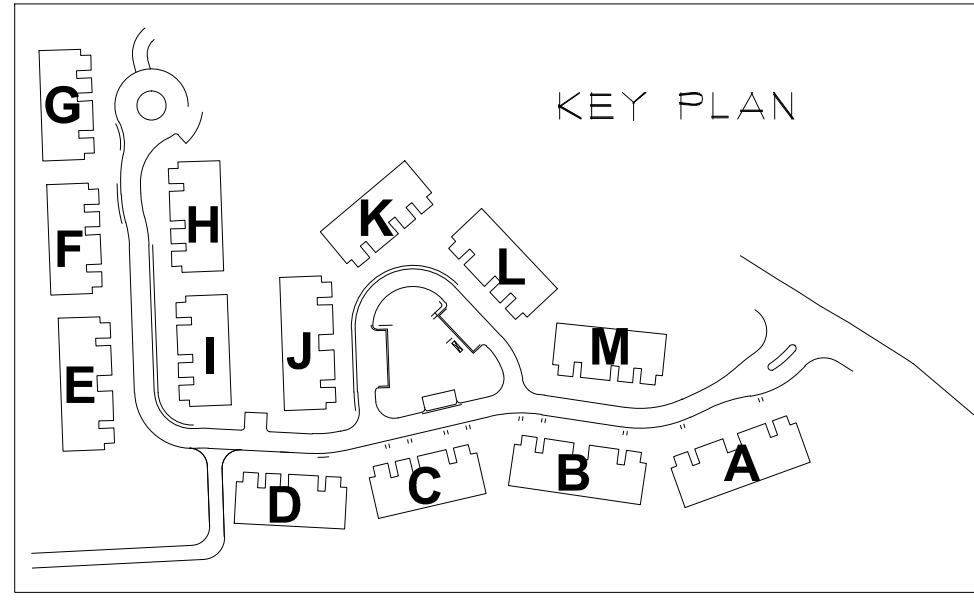
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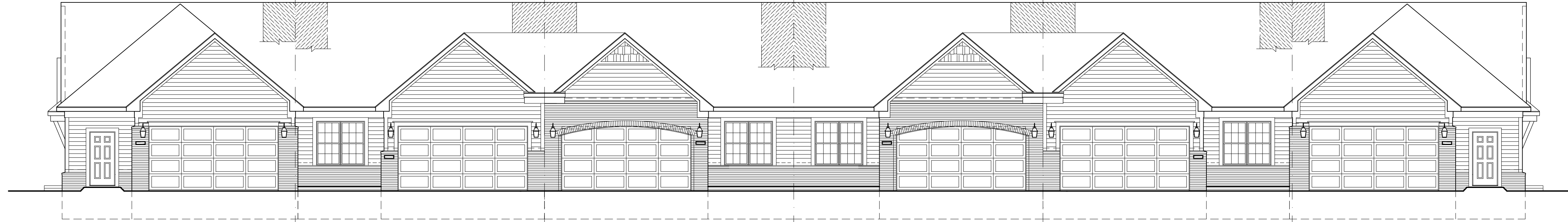
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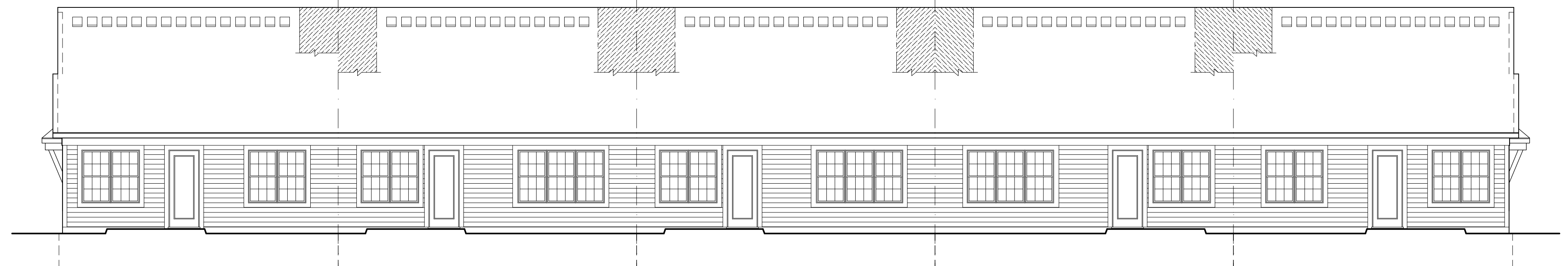
6 UNIT BUILDING - FRONT ELEVATION (BUILDING E, UNITS 23-28)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



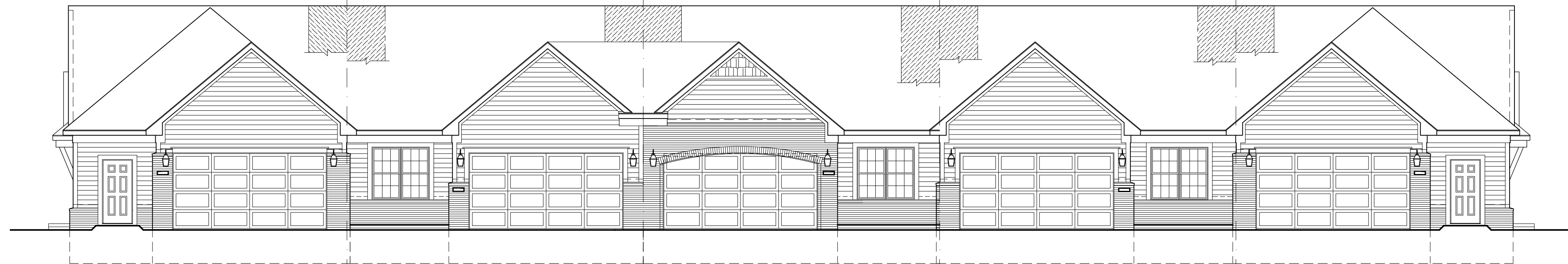
6 UNIT BUILDING - FRONT ELEVATION (BUILDING E, UNITS 23-28)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



5 UNIT BUILDING - REAR ELEVATION (BUILDING C, UNITS 18-22)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



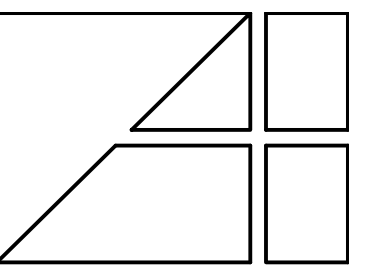
5 UNIT BUILDING - FRONT ELEVATION (BUILDING D, UNITS 18-22)
 UNIT SINGLE STOR

SCALE: 1/8" = 1'-0"



TYPICAL RIGHT SIDE ELEVATION
 LEFT SIDE - OPP. HAND

SCALE: 1/8" = 1'-0"



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BUILDING ELEVATIONS

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2 COLOR SCHEMES

Scale: NONE

A

TRIM/COLUMN/BRACKET: BROWN WOOD / DC-12 "SUPER WHITE"

PAINTED DOORS: ENHANCED DOOR / DC-12 "SUPER WHITE"

ASPHALT SHINGLES: CERTAINTED DIMENSIONAL SHINGLE IN "WEATHERED WOOD"

BRICK: GLEN GARY BRICK "ROSEWOOD"

SOFC: 1/2" HORIZONTAL / VERTICAL / BRASS BRONG / HORIZONTAL "SERRAVALLO"

ALTERNATE SOFC: "SERRAVALLO BRASS"

ITEM NUMBER	MATERIAL
1	BRICK
2	TRIM/HORIZONTAL/VERTICAL / PAINTED DOOR
3	PAINTED DOOR

B

TRIM/COLUMN/BRACKET: BROWN WOOD / DC-12 "SUPER WHITE"

PAINTED DOORS: ENHANCED DOOR / DC-12 "SUPER WHITE"

ASPHALT SHINGLES: CERTAINTED DIMENSIONAL SHINGLE IN "WEATHERED WOOD"

BRICK: FORTERA BRICK "SARAI"

SOFC: 1/2" HORIZONTAL / VERTICAL / BRASS BRONG / HORIZONTAL "SERRAVALLO"

ALTERNATE SOFC: "SERRAVALLO BRASS"

ITEM NUMBER	MATERIAL
1	BRICK
2	TRIM/HORIZONTAL/VERTICAL / PAINTED DOOR
3	PAINTED DOOR

C

TRIM/COLUMN/BRACKET: BROWN WOOD / DC-12 "SUPER WHITE"

PAINTED DOORS: ENHANCED DOOR / DC-12 "SUPER WHITE"

ASPHALT SHINGLES: CERTAINTED DIMENSIONAL SHINGLE IN "WEATHERED WOOD"

BRICK: GLEN GARY BRICK "WINDSOR"

SOFC: 1/2" HORIZONTAL / VERTICAL / BRASS BRONG / HORIZONTAL "SERRAVALLO"

ALTERNATE SOFC: "SERRAVALLO BRASS"

ITEM NUMBER	MATERIAL
1	BRICK
2	TRIM/HORIZONTAL/VERTICAL / PAINTED DOOR
3	PAINTED DOOR

NOTE: ALL MATERIALS TO BE EQUAL OR SIMILAR

2
S1

2 COLOR SCHEMES

Scale: NONE

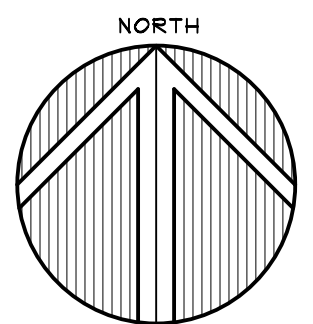


1
S1

1 SITE PLAN

NOTE: SITE PLAN SHOWN FOR REFERENCE ONLY. REFER TO CIVIL ENGINEERING DRAWINGS FOR ALL ADDITIONAL INFORMATION.

Scale: NONE



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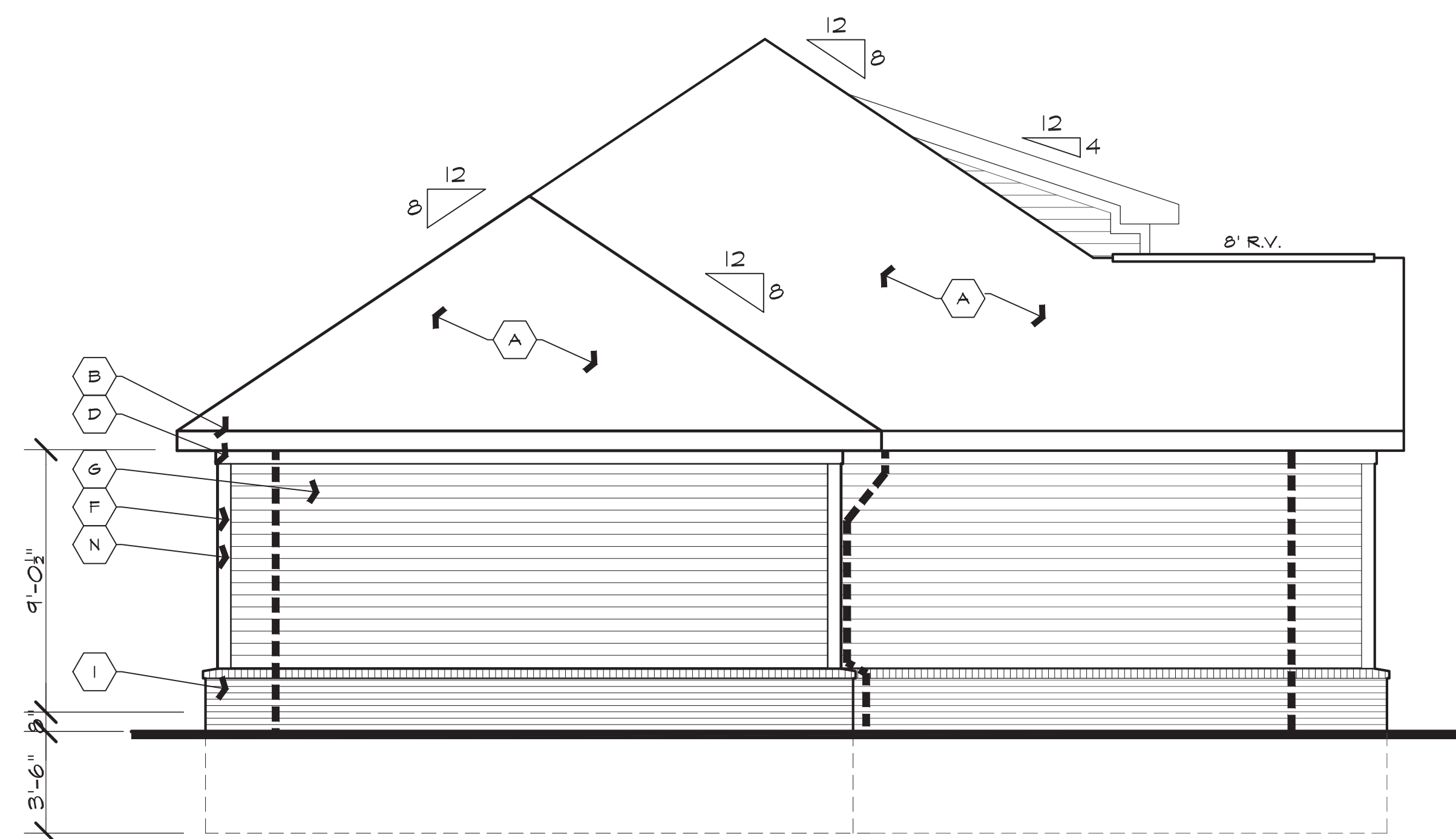
SITE PLAN

LAKE POINTE
MULTIFAMILY COMMUNITY
WHITE LAKE, MICHIGAN

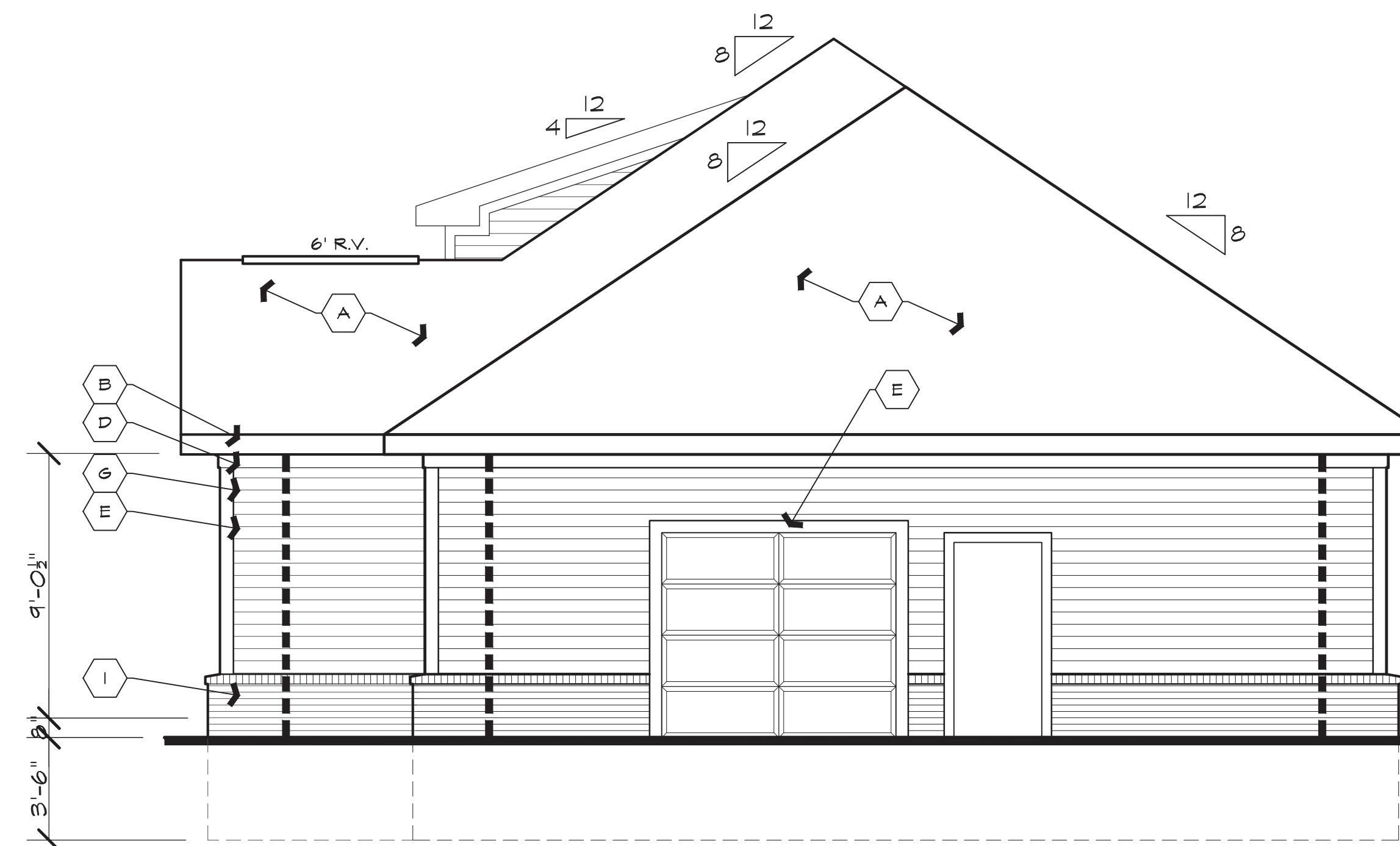
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LAKE POINTE
MULTIFAMILY COMMUNITY
WHITE LAKE, MICHIGAN

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DATE:	
SHEET NUMBER: 5-1	



LEFT ELEVATION
 SCALE: 1/4"=1'-0"



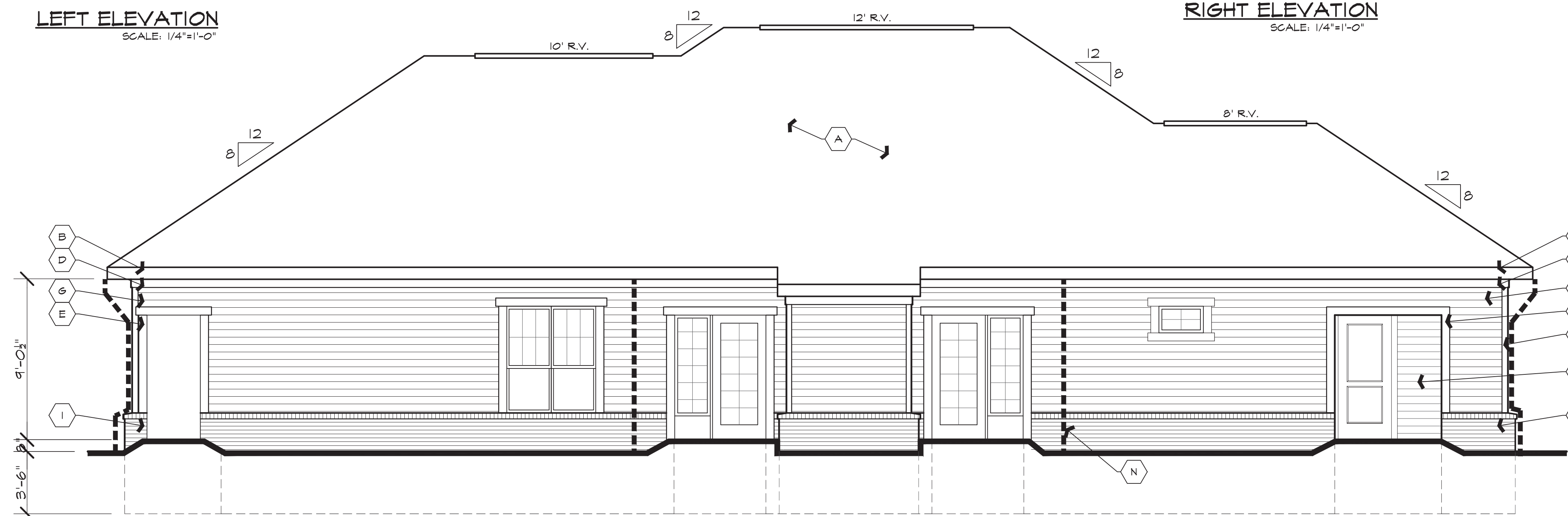
RIGHT ELEVATION
 SCALE: 1/4"=1'-0"

NOTE TO ALL CONTRACTORS :

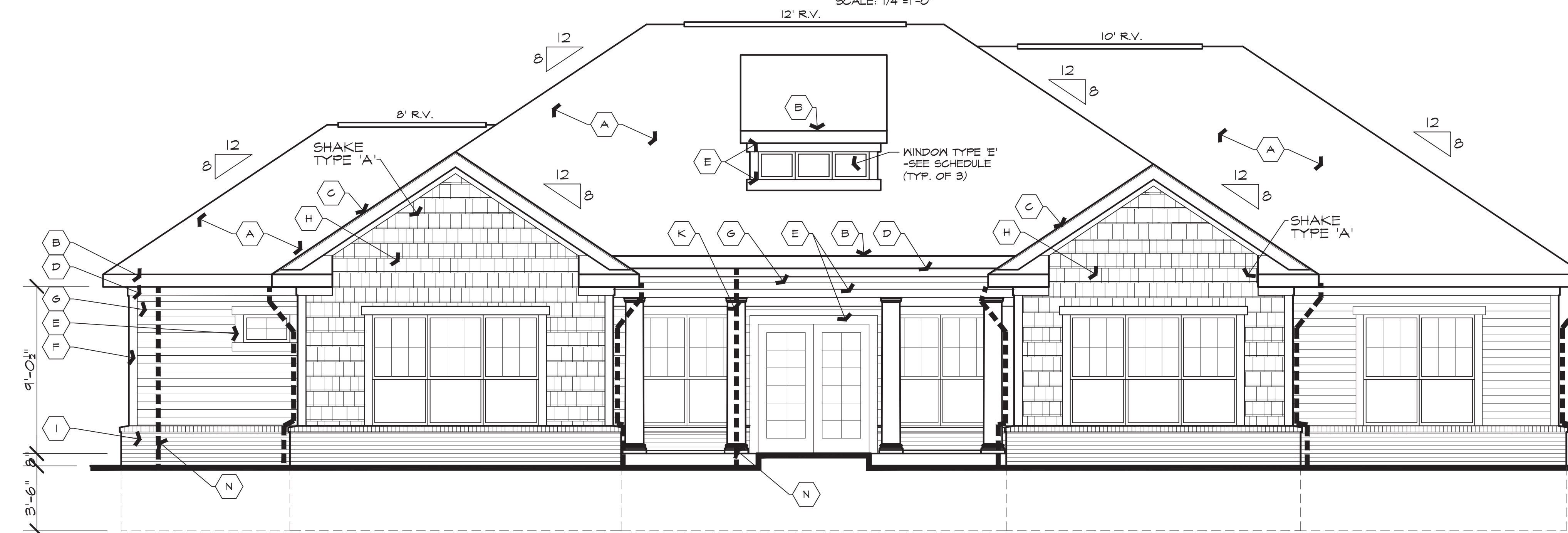
ALL CONTRACTORS SHALL VERIFY & COORDINATE ALL DIMENSIONS ON DRAWINGS, AS WELL AS REVIEW & COORDINATE PLANS W/ EXTERIOR BLDG. ELEVATIONS, SECTIONS, & DETAILS BEFORE COMMENCING WITH THE WORK. IF DIMENSIONAL ERRORS OR CONFLICTS OCCUR BETWEEN PLANS, BLDG. ELEVATIONS, SECTIONS & DETAILS IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT BEFORE PROCEEDING WITH THE WORK. CONTRACTORS WHO FAIL TO VERIFY, REVIEW, & COORDINATE THE WORK, & CONTRACTORS WHO SCALE DRAWINGS TO DETERMINE PLACEMENT OF PART(S) OF THE WORK, SHALL TAKE FULL RESPONSIBILITY SHOULD THAT PORTION OF THE WORK BE IMPROPERLY LOCATED OR CONSTRUCTED.

MATERIAL LEGEND

- A ASPHALT SHINGLES
- B MET. DRIP EDGE & GUTTER ON 2x8 WD. TRIM FASCIA (ALUM. CLAD)
- C MET. DRIP EDGE ON 2x8 WD. TRIM RAKE BD. (ALUM. CLAD)
- D 1x4 WD. TRIM SUB-RAKE BD. (ALUM. CLAD)
- E 1x6 FRIEZE BD W/ ALUM WRAP
- F 1x6 VINYL TRIM
- G VINYL CORNER TRIM
- H HORIZ. VINYL SIDING
- I VINYL SHAKE SIDING
- J BRICK W/ BRICK SILL
- K 12" RD COLUMN
- L MTL FLASHING
- M ROOF JACK
- N DOWNSPOUT



REAR ELEVATION
 SCALE: 1/4"=1'-0"



FRONT ELEVATION
 SCALE: 1/4"=1'-0"

Issued For:

REVIEW

11.11.16

REVISED

7.10.17

REVISED PER COMMENTS

10.12.17

REVISED

12.4.17

Developer:

FAIRVIEW

COMPANIES

1700 W. Big Beaver, Suite 120

Troy, Michigan 48084

Project:

ENCORE

at DEERHILL

Independence Township, Michigan

Sheet Title:

COMMUNITY

BUILDING

ELEVATIONS

Project Number: 16-122

Drawn: RCC

Checked: DT

Date: 9.23.16

Sheet Number:

CB4.0