

# Charter Township Of Union

**Planning Commission  
Regular Meeting  
April 18, 2017  
7:00p.m.**

1. CALL MEETING TO ORDER
2. PLEDGE OF ALLEGIANCE
3. ROLL CALL
4. APPROVAL OF MINUTES
  - 3-21-2017 Regular Planning Commission Meeting
5. CORRESPONDENCE / BOARD REPORTS
  - Boards and Commissions Expiration Dates
6. APPROVAL OF AGENDA
7. PUBLIC COMMENT: Restricted to (3) minutes regarding issues not on this agenda
8. PUBLIC HEARINGS
  - SUP 2017-02 B-4(General Business District) Retail sales of new or used cars, trucks, boats, farm equipment, mobile homes, travel trailers, and motor homes 5594 S. Mission RD. Owner: GWENDALYN OSWALD/CLINT OSWALD
9. NEW BUSINESS
  - A. SUP 2017-02 B-4 Distinct 4531 Corporate Dr. Owner: GWENDALYN OSWALD/CLINT OSWALD *Action: Recommendation to Township Board of Trustees*
  - B. SPR 2017-02 I-1(Light Industrial District) Independence Dr. Office with Industrial Storage. Owner: McGuirk Mini Storage INC. *Action: Review and approve Site Plan*
  - C. SPR 2017-03 OS (Office Service District) Corner of Lincoln and Independence Dr. Office with garage for storage. Owner: McGuirk Mini Storage INC. *Action: Review and approve Site Plan*
10. OTHER BUSINESS
  - A. (Taken off table 2-21-17 postponed 3-21-17) SUP 2017-01 Self Storage Buildings 2420 E. Broomfield Rd. Owner McGuirk Mini Storage INC. *Action: Make recommendation to the Board of Trustees.*
11. EXTENDED PUBLIC COMMENT: Restricted to 5 minutes regarding any issue
12. FINAL BOARD COMMENT
13. ADJOURNMENT

**CHARTER TOWNSHIP OF UNION**  
**Planning Commission**  
**Regular Meeting**

A regular meeting of the Charter Township of Union Planning Commission was held on March 21, 2017 at the Township Hall.

**Meeting was called to order at 7:00 p.m.**

**Roll Call**

**Present:** Buckley, Fuller, Mielke, Robinette, Squattrito, Webster, Woerle, & Zerbe  
**Excused:** Strachan

**Others Present**

Peter Gallinat and Jennifer Loveberry

**Approval of Minutes**

**Mielke moved Zerbe supported the approval of the February 21, 2017 meeting minutes with corrections. Vote: Ayes: 8 Nays: 0. Motion carried.**

The February 28, 2017 special meeting minutes were approved as presented.

**Correspondence / Reports**

Woerle updates on Board of Trustees.

Mielke updates on the Zoning Board of Appeals.

**Approval of Agenda**

**Mielke moved Woerle supported to add under Other Business: Debriefing of the LSL / Boards and Commissions Special Joint Meeting to Discuss the Master Plan Update (Future Land Use Map) to the agenda. Vote: Ayes: 8 Nays 0. Motion carried.**

**Fuller moved Robinette supported approval of the agenda as amended. Vote: Ayes: 8 Nays 0. Motion carried.**

**Public Comment** – Open 7:07 p.m.

Richard Figg, - Commented on extending water/sewer down Broomfield Rd. and suggested that information/directional LED signs needed.

Marty Figg, 810 Ashland – Commented on Roads.

**Public Hearing**

- **REZ 2017-01 I-1 to R-2A: Owner: VanBuskirk, Barry & Delores Action: Recommendation to Township Board of Trustees Location: 4531 Corporate Dr.**

Public Notice was read by Township Planner, Gallinat

Brief description for the rezoning request was given by Township Planner, Gallinat

Public Hearing open 7:16 p.m.

No comments offered.

No written correspondence received.

Public Hearing closed 7:17 p.m.

- **REZ 2017-02 R-4 to B-4 Owner: Michigan Reserve Inc. Action: Recommendation to Township Board of Trustees**  
**Location: 2420 E. Remus Rd.**

Public Notice was read by Township Planner, Gallinat

Brief description for the rezoning request was given by Township Planner, Gallinat

Public Hearing open 7:20 p.m.

Jim Holton, 506 W. Broadway – Commented on possibly expanding Morey Courts if rezone is approved.

No written correspondence received.

Public Hearing closed 7:22 p.m.

### **New Business**

- A. **REZ 2017-01 I-1 to R-2A: Owner: VanBuskirk, Barry & Delores Action: Recommendation to Township Board of Trustees**  
**Location: 4531 Corporate Dr.**

Township Planner, Gallinat read a letter written by the applicant, which was included in the Planning Commissioners' packet, giving reasoning for the rezoning request.

**Tim Beebe was addressed by Chair Squattrito to speak from the audience – He commented on non conforming uses in commercially zoned areas are more difficult to get financing from lending institutions.**

Fuller moved Webster supported to recommend denial of REZ 2017-01 rezoning Barry & Delores VanBuskirk, 4531 Corporate Drive from I-1 to R-2A to the Charter Township Board of Trustees to keep the parcel consistent with the Future Land Use Map and to have Township staff explore options to extend water / sewer to the parcel. **Vote: Ayes: 8 Nays 0. Motion carried.**

- B. **REZ 2017-02 R-4 to B-4 Owner: Michigan Reserve Inc. Action: Recommendation to Township Board of Trustees**  
**Location: 2420 E. Remus Rd.**

Township Planner, Gallinat gave a brief history of the property, stating that the said parcel would be part of a potential expansion if rezoned, still fitting the future land use map. He also stated that this parcel could have mixed neighborhood commercial uses.

Woerle moved Buckley supported to recommend approval of REZ 2017-02 Property #14-013-30. **Vote: Ayes: 8 Nays 0. Motion carried.**

### **Other Business**

- A. **SUP 2017-01 (Tabled 2-21-2017) Self Storage Buildings Owner: McGuirk Mini Storage Inc.**  
**Location: 2420 E. Broomfield Rd.**

Conflict of Interest – Recusal of Planning Commissioner, Alex Fuller, per section 5.005d. There is reasonable appearance of a conflict of interest, as determined by a majority vote of the remaining members of the Planning Commission for SUP 2017-01 Self Storage Buildings, Owner: McGuirk Mini Storage Inc. **Vote: Ayes: 6 Nays 1 Motion carried.**

Woerle moved Mielke supported to remove from the Table SUP 2017-01 Self Storage Buildings Owner: McGuirk Mini Storage Inc. **Vote: Ayes: 7 Nays 0 Motion carried.**

**Webster** moved **Mielke** supported to postpone further discussion of SUP 2017-01 until the April 18, 2017 Planning Commission meeting. Commissioner Mielke stepped out at 8:30 p.m. prior to the vote. **Vote: Ayes: 6 Nays 0 Motion carried.**

**B. Township Lighting Ordinance**

**Robinette** moved **Mielke** supported approval to set the public hearing for the Township Lighting Ordinance, presented by the Township Legal Council at the March 21, 2017 Planning Commission meeting, for April 18, 2017 with the amended changes by the Planning Commission. **Vote: Ayes: 6 Nays 1 Motion carried.**

**C. Debriefing of the LSL / Boards and Commissions Special Joint Meeting to Discuss the Master Plan Update (Future Land Use Map)**

Discussion by the Planning Commission, no action taken.

**Extended Public Comment** –open 9:37 p.m.  
No Comments

**Final Board Comment**

Mielke - passed out Parliamentary Procedures (Robert's Rules) as a helpful tool; commented on Marty Figg's comment regarding Roads / Shoulders of Roads as a future discussion; brought up Chippewa River / septic issues as a future discussion.

**Adjournment** – Chairman Squattrito adjourned the meeting at 9:45 p.m.

**APPROVED BY:**

\_\_\_\_\_  
**Alex Fuller - Secretary**

*(Recorded by Jennifer Loveberry)*

## Board Expiration Dates

Planning Commission Board Members (9 Members) 3 year term			
#	F Name	L Name	Expiration Date
1-BOT Representative	Norm	Woerle	11/20/2020
2-Chair	Phil	Squatrito	2/15/2020
3- Vice Chair	Bryan	Mielke	2/15/2018
4-Secretary	Alex	Fuller	2/15/2020
5-Vice Secretary	John	Zerbe	2/15/2018
6	Ryan	Buckley	2/15/2019
7	Denise	Webster	2/15/2020
8	Erik	Robinette	2/15/2018
9	Dwayne	Strachan	2/15/2018
Zoning Board of Appeals Members (5 Members, 2 Alternates) 3 year term			
#	F Name	L Name	Expiration Date
1-Chair	Tim	Warner	12/31/2019
2-PC Rep / Vice Chair	Bryan	Mielke	2/18/2018
3-Vice Secretary	Jake	Hunter	12/31/2019
4-Secretary	Mike	Darin	12/31/2019
5	Paul	Gross	12/31/2018
Alt. #1	Andy	Theisen	12/31/2019
Alt. #2	Taylor	Sheahan-Stahl	2/15/2018
Board of Review (3 Members) 2 year term			
#	F Name	L Name	Expiration Date
1-Chair	Ronald	Mclvor	12/31/2018
2	James	Thering	12/31/2018
3	Brian	Neyer	12/31/2018
Alt #1	Mary Beth	Orr	1/25/2019
Citizens Task Force on Sustainability (4 Members) 2 year term			
#	F Name	L Name	Expiration Date
1	Laura	Coffee	12/31/2018
2	Mike	Lyon	12/31/2018
3	Jay	Kahn	12/31/2018
4	Phil	Mikus	11/20/2020
Construction Board of Appeals (3 Members) 2 year term			
#	F Name	L Name	Expiration Date
1	Colin	Herron	12/31/2017
2	Richard	Klumpp	12/31/2017
3	Andy	Theisen	12/31/2017
Hannah's Bark Park Advisory Board (2 Members from Township) 2 year term			
1	Mark	Stuhldreher	12/31/2018
2	John	Dinse	12/31/2017
Chippewa River District Library Board 4 year term			
1	Ruth	Helwig	12/31/2019



## Board Expiration Dates

EDA Board Members (11 Members) 4 year term			
#	F Name	L Name	Expiration Date
1	Thomas	Kequom	4/14/2019
2	James	Zalud	4/14/2019
3	Robert	Elmore	2/13/2017
4	Robert	Bacon	1/13/2019
5	Ben	Gunning	11/20/2020
6	Marty	Figg	6/22/2018
7	Sarvijit	Chowdhary	1/20/2018
8	Cheryl	Hunter	6/22/2019
9	Vance	Johnson	2/13/2017
10	Michael	Smith	2/13/2017
11	Mark	Perry	3/26/2018
Mid Michigan Area Cable Consortium (2 Members)			
#	F Name	L Name	Expiration Date
1	Kim	Smith	
2	Vacant		

(989) 666-1595  
clintoswald@Hotmail

### APPLICATION FOR A SPECIAL USE PERMIT

I (we) Gwendalyn Oswald/Clint Oswald OWNERS OF PROPERTY AT 5598 S. Mission Rd. LEGAL DESCRIPTION AS FOLLOWS:

T14N R4W SEC 34 PART OF SE 1/4 COM AT E 1/4 COR OF SEC TH S 03D 41M 38S W 408 FT TH N 87D 04M 22S W 1067.74 FT TH N 03D 41M 38S E 408 FT TO E & W 1/4 LINE TH S 87D 04M 22S E 1067.74 FT TO POB EXC COM AT E 1/4 COR OF SEC TH S 03D 41M 38S W ALG E SEC LINE 220 FT TH N 87D 04M 22S W PAR WITH E & W 1/4 LINE 600 FT TH N 03D 41M 38S E 220 FT TH S 87D 04M 22S E ALG SAID E & W 1/4 LINE 600 FT TO POB 7.00 A M/L . SPLIT FOR 2006 FROM 40-001-03 TO 40-001-04 & 40-001-06 , 40-001-04 RETIRED FOR 2006 TO 40-001-05

Respectfully request that a determination be made by the Township Board on the following request:

- I. Special Use For Auto Dealer License 22.3H
- II. Junk Yard Permit

Note: Use one of the sections below as appropriate. If space provided is inadequate, use a separate sheet.

I. Special Use Permit is requested for Auto Dealer License 22.3H

Give reason why you feel permit should be granted: To be able to purchase wrecked vehicles at auction to repair and sell.

II. Junk Yard Permit requirements are:

Location of property to be used \_\_\_\_\_

Zoning of the area involved is B4

Zoning of the abutting areas AG, B4

Fees \$200 Signature of Applicant Clint Oswald

Date 3-28-17

## UNION TOWNSHIP PUBLIC HEARING NOTICE -SPECIAL USE PERMIT

NOTICE is hereby given that a Public Hearing will be held on Tuesday, April 18, 2017, at 7:00 p.m. at the Union Township Hall located at 2010 South Lincoln Road, Mt. Pleasant, Michigan, before the Union Township Planning Commission for the purpose of hearing any interested persons in the following request for a Special Use Permit, as allowed by the Union Township Zoning Ordinance 1991-5 as amended.

Requested by **Gwendalyn Oswald/Clint Oswald**, a Special Use Permit in a B-4 (General Business District) zone for retail sales of new or used cars, trucks, boats, farm equipment, mobile homes, travel trailers, and motor homes.

Legal Description of property: T14N R4W SEC 34 PART OF SE 1/4 COM AT E 1/4 COR OF SEC TH S 03D 41M 38S W 408 FT TH N 87D 04M 22S W 1067.74 FT TH N 03D 41M 38S E 408 FT TO E & W 1/4 LINE TH S 87D 04M 22S E 1067.74 FT TO POB EXC COM AT E 1/4 COR OF SEC TH S 03D 41M 38S W ALG E SEC LINE 220 FT TH N 87D 04M 22S W PAR WITH E & W 1/4 LINE 600 FT TH N 03D 41M 38S E 220 FT TH S 87D 04M 22S E ALG SAID E & W 1/4 LINE 600 FT TO POB 7.00 A M/L . SPLIT FOR 2006 FROM 40-001-03 TO 40-001-04 & 40-001-06 . 40-001-04 RETIRED FOR 2006 TO 40-001-05

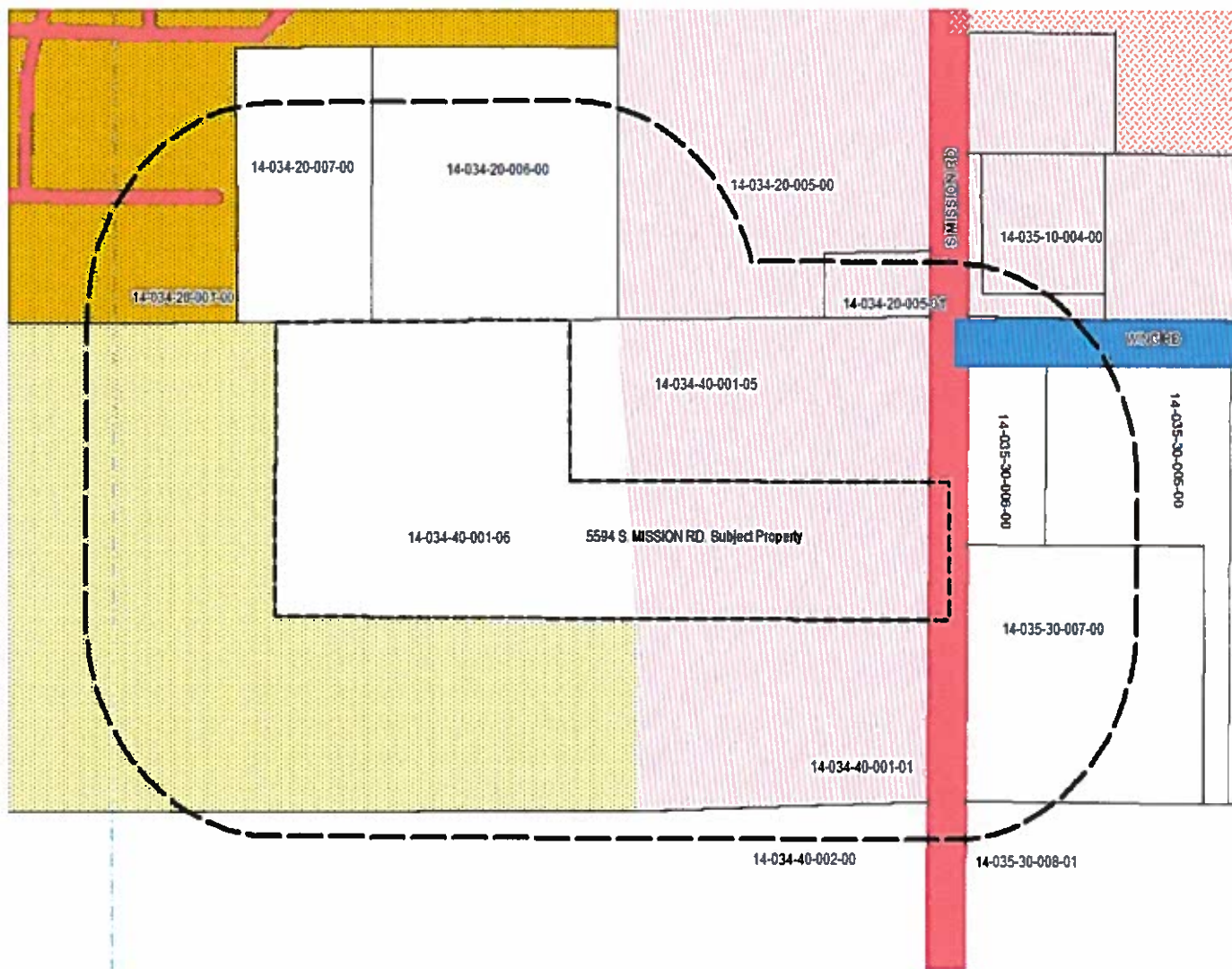
This property is located at: 5594 S MISSION RD MT PLEASANT, MI 48858  
PID 14-034-40-001-06

All interested persons may submit their views in person, in writing, or by signed proxy prior to the public hearing or at the public hearing.

All materials concerning this request may be seen at the Union Township Hall, located at 2010 S. Lincoln Road, Mt. Pleasant, Michigan, between the hours of 8:30 a.m. and 4:30 p.m., Monday through Friday. Phone (989) 772 4600 extension 241.

Peter Gallinat,  
Township Planner





The applicant is 5594 S. Mission Rd. noted as the subject property. The Zoning of the property is AG (Agricultural) in the back and B-4 (General Business) in the front. In the front of the subject property there is an active permitted automobile repair shop. Applicant has requested a special use for retail sales of new or used cars, trucks, boats, farm equipment, mobile homes, travel trailers, and motor homes. The pink colored parcels are zoned B-4, the white AG, Orange R-4 (Mobile Home Park District), and Tan is R-5 (Mobile or Modular Home District).

Oswald Gwenaelyn & Clint Oswald  
5594 S. Mission Rd.  
MT PLEASANT, MI 48858

Kastle Leasing LLC  
3209 E. South Co line Rd  
SHEPHERD, MI 48883

Mike Klumpp  
1955 E. Walton Rd.  
SHEPHERD, MI 48883

Vondoloski Martin J & Sherry A  
4293 E. Millbrook Rd.  
MOUNT PLEASANT, MI 48858

Goffnett Elton & Evelyn Living Trust  
5757 S. Mission Rd  
MOUNT PLEASANT, MI 48858

Crawford Anthony M & Nicole A  
5595 S. Mission Rd.  
MOUNT PLEASANT, MI 48858

Shoemaker Thomas J.  
5505 S. Mission Rd.  
MOUNT PLEASANT, MI 48858

Wiley Robert & Stacy  
4152 E. Wing  
MOUNT PLEASANT, MI 48858

Utterback Lawrence H & Frelyn A  
5419 S. Mission Rd  
MOUNT PLEASANT, MI 48858

Green Joanne M Living Trust  
256 Wilson Dr.  
SAINT LOUIS, MI 48880

Green Richard & Joann  
C/O Superior Heating and Cooling  
256 Wilson Dr.  
SAINT LOUIS, MI 48880

SBA Infrastrue LLC  
8051 Congress Ave  
BOCA RATON, FL 33487

Patriot Communication Serv, INC  
2860 County Road 215  
CLYDE, TX 79510

Pleasant Ridge Estates  
5280 S. Mission Rd.  
MOUNT PLEASANT, MI 48858

I certify that Public Notices for  
file # 802017-02 were  
mailed on 4-3-17 to all persons listed on  
this page. Pete Klumpp (signature)

# digitalfirst M E D I A

MICHIGAN GROUP

## AFFIDAVIT OF PUBLICATION

48 West Huron Street • Pontiac, MI 48342

CHARTER TOWNSHIP OF UNION  
2010 S Lincoln

Mount Pleasant, MI 48858  
Attention: Peter Gallinat

STATE OF MICHIGAN,  
COUNTY OF ISABELLA

*Subscribed*  
*Jake Allport*

The undersigned \_\_\_\_\_, being duly sworn the he/she is the principal clerk of Morning Sun, morningstarpublishing.com, published in the English language for the dissemination of local or transmitted news and intelligence of a general character, which are duly qualified newspapers, and the annexed hereto is a copy of certain order, notice, publication or advertisement of:

### CHARTER TOWNSHIP OF UNION

#### Published in the following edition(s):

Morning Sun	04/03/17
morningstarpublishing.com	04/03/17



Sworn to the subscribed before me this 5<sup>th</sup> April 2017.

*Tina M. Crown*

Notary Public, State of Michigan  
Acting in County of Isabella

#### Advertisement Information

Client Id: 531226

Ad Id: 1298449

PO:

Sales Person: 200307

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This property is located at: 5594 S MISSION RD MT PLEASANT, MI 48858 PID 14-034-40-001-06

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Peter Gallinat,  
Township Planner  
Published April 3, 2017

## Union Township Site Plan Review Application 2015 Revision

**FILL OUT THE FOLLOWING**

- I. This application is for (circle one) Preliminary Site Plan Review **Final Site Plan Review**
- II. Applicant Name McGuirk Mini Storage Inc.
- III. Applicant Address 510 West Pickard Street, Mt. Pleasant, MI 48858
- IV. Applicant Phone 989-772-1309 Owner Phone 989-772-1309
- V. Applicant is (circle) Contractor Architect/Engineer Developer **Land Owner** (skip V& VI)  
Other
- VI. Land Owner Name Same as above
- VII. Land Owner Address \_\_\_\_\_
- VIII. Project/Business Name : Independence Drive Office Site Plan
- IX. Fill out check list that follows. You must check off that each item has been included in the drawing. If an item is not going to be included in the construction, note that in the comment area. For the first three items, check off if you have made the required submittals to other reviewing agencies.

SUBMITTALS TO OTHER AGENCIES		
	Off	
<b>Storm water management plan approval prior to application. Reviewed by the County Engineer</b>	✓	Copy of Union Township Storm Water Management Plan available upon request. Submit (2) copies of plan and calculations directly to the Isabella County Engineer, contact Bruce Rohrer at (989) 772 0911, ext. 231. Any review fees are additional.
<b>All curb cuts, acceleration/deceleration lanes, additional drives, and other matters pertaining to roads to be approved by MDOT or Isabella County Road Commission prior to application.</b>	✓	MDOT (M 20, BR 127 sites) at (989) 773 7756. Contact Isabella County Road Commission (all other county roads) at (989) 773 7131. Submit (3) copies.
<b>Mt. Pleasant Fire Dept.</b>	✓	Sgt Randy Keeler (989) 779-5122, (2) copies
<b>Isabella Co Transportation Commission (ICTC)</b>	✓	Rick (989) 773 2913, (2) copies
<b>WELLHEAD PROTECTION REPORTING FORMS (Required for all Site Plans)</b>		
<b>Hazardous Substances Reporting Form Part I and II</b> (Forms included in this packet)	✓	Kim Smith (989) 772-4600 ext 224 ksmith@uniontownshipmi.com
<b>PERMIT INFORMATION - DEQ Check List</b>	✓	
<b>SITE PLAN REQUIREMENTS</b>	I Of	<b>Comments - (also indicate any features which will not be included in the development or are not applicable)</b>
<b>Name and addresses of Property Owner</b>	✓	
<b>Name and Address of Applicant</b>	✓	
<b>Provide Construction Type (per Mi Building Code) and if sprinkled, (assume Type IVb, un-sprinkled if not provided)</b>		

### Union Township Site Plan Review Application 2015 Revision

The date, north arrow and scale. The scale shall be not less than 1"= 20' for property under three (3) acres and not more than 1"=40' for property greater than three acres.	✓ ✓	
All lot and/or property lines are to be shown and dimensioned, including building setback lines	✓ ✓	
The location and dimensions of all existing and proposed: fire hydrants (within 400 feet of building) - - - -	✓	
drives, -----	✓	
sidewalks, (required ) -----	✓	
curb openings, -----	✓	
acceleration/deceleration lanes, -----	✓	
signs, -----	✓	
exterior lighting on buildings and parking lots, - -	✓	
parking areas (Including handicapped parking spaces, barrier-free building access, unloading areas), -----	✓	
recreation areas, -----	✓	
common use areas, -----	✓	
areas to be conveyed for public use and purpose. -	✓	
Elevation of building front, side, and back. Include Sign size, height, and design. Canopy heights extending over driveways accommodate Public Transportation	✓	
Source of utilities. Public water and sewer approval by Union Township Utility Coordinator prior to application.	✓	Note: Union Township policy is to issue sewer and water permits after application for a building permit. Applicant is advised to contact the utility department for availability prior to site plan review. The township does not coordinate other utility matters. Applicant to assure himself that site is suitable for septic systems, contact Central Michigan District Health Department
All dumpsters shall be screened from public view with an opaque fence or wall no less than six feet in height. Show location. (Note most refuse contractors require concrete pad to place dumpsters upon)	✓	
The location and right-of-way width of all abutting roads, streets, alleys and easements.	✓	
A locational sketch drawn to scale giving the section number and the nearest crossroads.	✓	

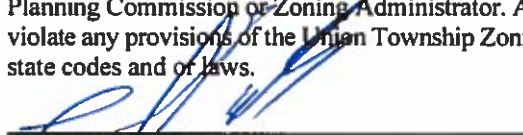
**Union Township Site Plan Review Application** 2015 Revision

The zoning of the subject property and the abutting properties.	✓	
The location, height and type of fences and walls.	✓	
The location and detailed description of landscaping.	✓	
For multiple family and mobile home parks, contour intervals shall be shown (two foot intervals for average slopes ten percent and under and five foot intervals for slopes over ten percent). Topography, however, is encouraged to be shown on all site plans.	✓	
The location of all existing and proposed structures on and within one hundred feet of the subject property's boundary.	✓	
For apartments, provide a count of bedrooms per building and total count of bedrooms for the project.	✓	

APPLICANT COMMENTS


**Union Township Site Plan Review Application 2015 Revision**

I submit the site plan and this application as a true representation of existing and proposed conditions. I agree to install all features as shown and to abide by conditions placed upon approval of this plan by the Union Township Planning Commission . False or inaccurate information placed upon this plan may be cause for revocation of any permits issued pursuant to site plan approval and / or removal of work installed. Any changes to the Site Plan now or in the future must be approved by the Union Township Planning Commission or Zoning Administrator. Approval of this plan shall not constitute the right to violate any provisions of the Union Township Zoning Ordinance 1991-5, or other applicable building or state codes and of laws.

  
\_\_\_\_\_  
Signature of Applicant

3/29/17  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Owner (if other than applicant)

\_\_\_\_\_  
Date

PLEASE PLACE OUR REVIEW ON THE April 18, 2017 (INSERT DATE)  
PLANNING COMMISSION MEETING. An owners representative WILL / WILL NOT attend. You will not receive a reminder of the scheduled meeting.

**Union Township Site Plan Review Application 2015 Revision**

<u>Township use</u>	<u>Review Comments</u>
File # <u>SPR 2017-03</u>	_____
Fee Paid initial <u>225</u>	_____
Receipt # <u>80322</u>	_____
Date received <u>4-3-17</u>	_____
Date review completed by Zoning Administrator _____	
Place on the _____ Planning Commission Agenda	
Planning Commission Decision _____	_____



# CHARTER TOWNSHIP OF UNION

## SITE PLAN REVIEW HAZARDOUS SUBSTANCES REPORTING FORM

This form must be completed and submitted as part of the site plan for facilities which may use, store, or generate hazardous substances or polluting materials (including petroleum-based products)

Name of business: McGuirk

Name of business owner(s): Chuck McGuirk

Street and mailing address: 510 West Pickard Street, Mt. Pleasant MI  
989-772-1309

Telephone: \_\_\_\_\_

Fax: 98-773-4393

Email: chuck@mcguirksand.com

**I affirm that the information submitted is accurate.**

Owner(s) signature and date:

  
\_\_\_\_\_

Information compiled by:

\_\_\_\_\_  
\_\_\_\_\_

## Part 1: Management of Hazardous Substances and Polluting Materials

1. Y N Will the proposed facility store, use or generate hazardous substances or polluting materials (including petroleum-based products) now or in the future? If yes, please complete this form and submit with your site plan. A catalogue and map of natural resources on and near the site, including an assessment of groundwater vulnerability is required to be submitted with your plan.
2. Y N Will the hazardous substances or polluting material be reused or recycled on-site??
3. Y\_N \_ Will any hazardous substances or polluting materials be stored on-site? If yes, identify the storage location on the site plan. Describe the size and type of secondary containment structure here or on an attached page. Submit a map and/or diagram of facilities on the site related to groundwater protection, including secondary containment structures, loading/unloading areas, drinking water wells, septic systems, underground storage tanks and storm drain inlets.
4. Y N Will the new underground storage tanks be located less than 2000 feet from a drinking water well serving more than a single household?
5. Y N Are existing underground storage tanks on-site less than 200 feet from a drinking water well serving more than a single household?
- If the answer to questions 4 or 5 are yes, you may be in violation of the State of Michigan underground storage tank regulations . For specific requirements, please contact the MDEQ Underground Storage Tank Division. District Office Telephone: 989-894-6200 (Saginaw Bay District Office)
6. Y N \_ \_ Will the interior of the facility have general purpose floor drains? (general purpose floor drains should not be connected to a sanitary sewer system, stormwater drainage system, dry well or septic system). If yes, will the floor drain connect to: (circle one)
- a. on-site holding tank
  - b. on-site system
- The on-site system must be approved by the MDEQ.  
Contact: MDEQ Waste Management Division.  
District Office telephone: 989-894-6200 (Saginaw Bay District Office)
7. Y N Will hazardous substances or polluting materials be stored, used, or handled out-of doors near storm drains which discharge to lakes, streams, or wetlands? If yes, describe the type of catch basin or spill containment facilities which will be used (use an attached sheet with diagram if appropriate).

cc: Charter Township of Union Department of Public Works

## Part II: Types and Quantities of Hazardous Substances and Polluting Materials Used, Stored or Generated On-Site

Please list the hazardous substances and polluting materials (including chemicals, hazardous materials, petroleum products, hazardous wastes and other polluting materials) which are expected to be used, stored or generated on-site. Quantities should reflect the maximum volumes on hand at any time. Attach additional pages if necessary to list all hazardous substances and polluting materials.

Common Name	CHEMICAL NAME (components)	Form	MAX QUANTITY ON HAND AT ONE TIME	TYPE OF STORAGE CONTAINERS
	<b>KEY:</b> LQ. = liquid P.LQ = pressurized liquid S = solids G = gas PG = pressurized gas			<b>KEY:</b> AGT = above ground tank = drums DM = underground tank Cy = cylinders CM = metal cylinders CW = wooden or composition container TP = portable tank



## PERMIT INFORMATION

[www.michigan.gov/deqpermits](http://www.michigan.gov/deqpermits)

The Department of Environmental Quality (DEQ) has prepared a list of key questions to help identify what DEQ permits, licenses, or approvals of a permit-like nature may be needed. By contacting the appropriate offices indicated, you will help reduce the possibility that your project or activity will be delayed due to the untimely discovery of additional permitting requirements later in the construction process. While this list covers the existence of permits and approvals required from the DEQ, it is not a comprehensive list of all legal responsibilities. A useful way to learn whether other requirements will apply is to go through the Self-Environmental Assessment in the Michigan Guide to Environmental, Health, and Safety Regulations, online at: <http://www.michigan.gov/ehsguide>. Please call the Environmental Assistance Center at 800-662-9278 to talk with any of the DEQ programs noted below.

KEY QUESTIONS:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	PROGRAM, WEBPAGE AND CONTACTS
<b>MISCELLANEOUS CONSTRUCTION</b>			
<i>Air Quality Permit to Install:</i> Will your business involve the installation or construction of any process equipment that has the potential to emit air contaminants (e.g. dry sand blasting, boilers, standby generators)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Air Quality Division (AQD), <a href="#">Permit Section</a>
<i>Asbestos Notification:</i> Does the project involve renovating or demolishing all or portions of a building? Notification is required for asbestos removal and required for all demolitions even if the structure never contained asbestos.	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <a href="#">Asbestos Program</a>
<i>Land and Water Featured Programs (Water Resources Division) - USACE Consolidated Permits:</i> Please consult the <a href="#">Land and Water Management Decision Tree</a> document to evaluate whether your project needs a land and water management permit (i.e., Does the project involve filling, dredging, placement of structures, draining, or use of a wetland?).	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Water Resources Division (WRD), <a href="#">Joint Permit Application</a>
<i>Soil Erosion and Sedimentation Control:</i> Does the project involve an earth change activity (including land balancing, demolition involving soil movement, and construction)?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	<a href="#">Soil Erosion and Construction Storm Water</a> , or Contact your <a href="#">Local Agency</a>
<i>NPDES Storm Water Discharge from Construction Sites Notice of Coverage:</i> Does the project involve construction which will disturb one or more acres that come into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NPDES Storm Water Permits Program, or appropriate <a href="#">DEQ District Office</a>
<i>Public Swimming Pool Construction (Spas/Hot Tubs) Permits:</i> Will your business involve the construction or modification of a public swimming pool, spa or hot tub?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<a href="#">Public Swimming Pool Program</a> , or appropriate <a href="#">DEQ District Office</a>
<i>Threatened and Endangered Species:</i> Does the project involve activities that would destroy a protected species of plant or animal or disturb a protected animal species?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<a href="#">Endangered Species Assessment, Threatened and Endangered Species Program</a> , 517-373-1552
Does the project involve construction or alteration of any sewage collection or treatment facility?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Appropriate <a href="#">District Office</a> , WRD, Part 41 Construction Permit Program
Does the project involve construction of a facility that landfills, transfers, or processes of any type of solid non-hazardous waste on-site, or places industrial residuals/sludge into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Office of Waste Management and Radiological Protection (OWMRP), <a href="#">Solid Waste</a> , Appropriate <a href="#">DEQ District Office</a>
Does the project involve the construction of an on-site treatment, storage, or disposal facility for hazardous waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, Hazardous Waste Section, <a href="#">Treatment, Storage and Disposal</a>
<b>WATER SUPPLY (More information, see: <a href="http://www.michigan.gov/deqwater">http://www.michigan.gov/deqwater</a>, select "drinking water")</b>			
I am buying water from my community water supply (i.e. city of Detroit or Grand Rapids)	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Contact your <a href="#">Local Water Utility</a>
I have a private or other water supply well (Type III)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Contact your (District or County) <a href="#">Local Health Department</a>
I have a Non-Community Water Supply (Type II)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<a href="#">Guide</a> , Contact your (District or County) <a href="#">Local Health Department</a>
I am a community water supply (Type I)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<a href="#">Community Water Supply</a> , <a href="#">DEQ District Office Community Water Supply Program</a>

<b>WASTEWATER MANAGEMENT</b>			
<i>Storm Water Discharge to Wetlands:</i> Will storm water be collected, stored, or treated in a wetland area from a public road, industrial, commercial, or multi-unit residential development?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Great Lakes:</i> Does the project involve construction, filling, or dredging below the Ordinary High Water Mark of one of the Great Lakes?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Inland Lakes and Streams:</i> Does the project involve any dredging, filling, placement of structures, or the operation of a marina within an inland waterbody (e.g. lake, river, stream, drain, creek, ditch, or canal), enlargement of a waterbody, or excavation of a pond within 500 feet of a waterbody?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Storm Water Ponds and Discharges to Inland Lakes/Streams, or Great Lakes:</i> Will storm water from any road or any other part of the development be discharged either directly or ultimately to an inland waterbody, or one of the Great Lakes; or will a storm water pond be constructed within 500 feet of an inland waterbody?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
Does the project involve placement of fill, earth moving, or placement of structures within the 100-year <i>floodplain</i> of a watercourse?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
Does the project involve construction of a building or septic system in a designated Great Lakes <i>high risk erosion area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Shoreland Management</u>
Does the project involve dredging, filling, grading, or other alteration of the soil, vegetation, or natural drainage, or placement of permanent structures in a designated <i>environmental area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Shoreland Management</u>
Does the project propose any development, construction, silvicultural activities or contour alterations within a designated <i>critical dune area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Sand Dune Management</u>
Does the project involve construction of a <i>dam</i> , weir or other structure to impound flow?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Dam Safety Program</u>
<b>CONSTRUCTION PERMITS (SECTOR SPECIFIC)</b>			
Does the project involve the construction or alteration of a water supply system or sewage disposal system for a manufactured housing project?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Office of Drinking Water &amp; Municipal Assistance (ODWMA)</u>
Does the project involve a subdivision or site condominium project utilizing individual on-site subsurface disposal systems or individual wells?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>ODWMA</u>
Does the project involve the construction or modification of a campground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Campgrounds program</u>
Does the project involve the construction or modification of a public swimming pool?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Swimming pools program</u>
<b>OPERATIONAL PERMITS</b>			
<b>Renewable Operating Permit:</b> Does your facility have the potential to emit any of the following: 100 tons per year or more of any criteria pollutant; 10 tons per year or more of any hazardous air pollutant; or 25 tons per year or more of any combination of hazardous air pollutants?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <u>Permit Section</u>
<b>NPDES:</b> Does the project involve the discharge of any type of wastewater to a storm sewer, drain, lake, stream, or other surface water?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, Appropriate <u>DEQ District Office</u> , or <u>National Pollutant Discharge Elimination (NPDES) Permit Program</u>
Does the facility have industrial activity that comes into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	WRD, <u>Permits Section</u> , or appropriate <u>DEQ District Office</u>
Does the project involve the discharge of wastewaters into or onto the ground (e.g. subsurface disposal or irrigation)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Groundwater Permits Program</u>
Does the project involve the drilling or deepening of wells for waste disposal?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Office of Oil, Gas and Minerals (OOGM)</u>
Does the project involve landfilling, transferring, or processing of any type of solid non-hazardous waste on-site, or placing industrial residuals/sludge into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>OWMRP</u> or Appropriate <u>DEQ District Office</u>

Does the project involve the on-site treatment, storage, or disposal of hazardous waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Hazardous and Liquid Waste</u>
Does the project require a site identification number (EPA number) for regulated waste activities (used oil, liquid waste, hazardous waste, universal waste, PCBs)? ( <u>Web Site</u> )	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, Appropriate <u>DEQ District Office</u>
Does the project involve the receipt, possession, manufacture, use, storage, transport, transfer, release, or disposal of radioactive material in any form?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Radioactive Material and Standards Unit</u>
Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP <u>Radioactive Material and Standards Unit</u>
Do you desire to develop a withdrawal of over 2,000,000 gallons of water per day from any source other than the Great Lakes and their connecting waterways? Or, do you desire to develop a withdrawal of over 5,000,000 gallons of water per day from the Great Lakes or their connecting waterways?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, DWEHS, <u>Source Water Protection Unit</u>
<b>CHEMICAL ADDITION PROJECTS</b>			
Are you using chemicals or materials in, or in contact with, drinking water at any point in the water works system?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, Appropriate DEQ District Office, <u>Public Water Supply Program</u>
Are you applying a chemical treatment for the purpose of aquatic nuisance control (pesticide/herbicide etc) in a water body (i.e. lake, pond or river)? (5.	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Aquatic Nuisance Control</u> and Remedial Action Unit
Are you applying materials to a water body for a water resource management project (i.e. mosquito control treatments, dye testing, or fish reclamation projects)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Surface Water Assessment Section</u>
<b>OPERATIONAL PERMITS (SECTOR SPECIFIC)</b>			
Does the project involve the transport of some other facility's non-hazardous liquid waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Transporter Program</u>
Does the project involve the transport hazardous waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Transporter Program</u>
Does your facility have an electric generating unit that sells electricity to the grid and burns a fossil fuel?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <u>Acid Rain Permit Program</u>
Is the project a dry cleaning establishment utilizing perchloroethylene or a flammable solvent in the cleaning process?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	DEQ, AQD, <u>Dry Cleaning Program</u>
Does your laboratory test potable water as required for compliance and monitoring purposes of the Safe Drinking Water Act?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	DEQ, <u>Laboratory Services Certifications</u>
Does the project involve the generation of medical waste or a facility that treats medical waste prior to its disposal?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Medical Waste Regulatory Program</u>
Does the project involve transport of septic tank, cesspool, or dry well contents or the discharge of septage or sewage sludge into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Septage Program</u>
Do you store, haul, shred or process scrap tires?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Scrap Tire Program</u>
Does the project involve the operation of a public swimming pool?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Public Swimming Pools Program</u>
Does the project involve the operation of a campground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Campgrounds</u>
Do you engage in the business of hauling bulk water for drinking or household purposes (except for your own household use)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Water Hauler Information</u>
<b>PERSONAL LICENSES/CERTIFICATIONS</b>			
Are you designated by your facility to be the Certified Operator to fulfill the requirements of a wastewater discharge permit (NPDES including Storm	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Operator Training, Storm Water Program</u>

<b>Water or Groundwater)?</b>		
Are you a drinking water operator in charge of a water treatment or water distribution system, back-up operator, or shift operator?	Y <input type="checkbox"/> N <input type="checkbox"/>	WRD, <u>Operator Training</u>
Are you a water-well drilling contractor, pump installer, dewatering well contractor or dewatering well pump installer?	Y <input type="checkbox"/> N <input type="checkbox"/>	WRD, <u>Well Construction Unit</u>
<b>OIL, GAS AND MINERALS</b>		
Do you want to operate a central production facility (applies to oil and gas production facilities where products of diverse ownership are commingled)?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Petroleum Geology and Production Unit</u>
Does the project involve the removal of sand from a sand dune area within two (2) miles of a Great Lakes shoreline?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, Minerals and Mapping Unit, <u>Sand Dune Mining Program</u>
Does the project involve the diversion and control of water for the mining and processing of low-grade iron ore?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the surface or open-pit mining of metallic mineral deposits?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the mining of nonferrous mineral deposits at the surface or in underground mines?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve mining coal?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Do you want to change the status of an oil or gas well (i.e. plug the well)?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve drilling of oil, gas, brine disposal, secondary recovery, or hydrocarbon storage wells?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve plugging or deepening of an oil or gas well, or conveying rights in the well as an owner to another person?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve changing the status or plugging of a mineral well?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the drilling or deepening of wells for brine production, solution mining, storage, or as test wells?	Y <input type="checkbox"/> N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background?	Y <input type="checkbox"/> N <input type="checkbox"/>	OWMRP, <u>Radioactive Protection Programs</u>
<b>STORAGE TANKS (CONSTRUCTION AND OPERATION)</b>		
Does the project involve the installation of an aboveground storage tank for a flammable or combustible liquid (under 200 degrees Fahrenheit)?	Y <input type="checkbox"/> N <input type="checkbox"/>	Michigan Department of Licensing and Regulatory Affairs (DLARA) - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a compressed natural gas dispensing station with storage?	Y <input type="checkbox"/> N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a liquefied petroleum gas container filling location or storage location that has a tank with a capacity of more than 2,000 gallons or has two (2) or more tanks with an aggregate capacity of more than 4,000 gallons?	Y <input type="checkbox"/> N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation, removal, or upgrade of an underground storage tank containing a petroleum product or a hazardous substance?	Y <input type="checkbox"/> N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a hydrogen system?	Y <input type="checkbox"/> N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>



**Mount Pleasant Fire Department  
804 E. High Street  
Mount Pleasant, Mi 48858**

**Union Township Site Plan Review**

Friday March 31, 2017

Proposed Office UT Site Plan

Mt. Pleasant, MI 48858

A Site Plan Review was conducted on Friday March 31, 2017 and revealed the following requirements listed below.

ORDER TO COMPLY: Since these conditions are contrary to code, you must correct them upon receipt of this notice. Please provide our department the documentation that verifies compliance with the code.

This list shall not be considered all-inclusive, as other requirements may be necessary, additional requirements are located in Chapter 5 and appendixes B, C, and D of the 2012 Edition of the International Fire Code.

If you have any questions regarding this matter, please feel free to contact me at (989) 779-5122.

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**Violation Code**

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**1 PROPERTY Identification**

Lincoln Commerce Park  
Independence Drive

Scope of Project: Proposed Office Space

Job Number:1703-045

Print Received: 3/28/17

**Recommending Approval**

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**ACCESS AND WATER Road and Water Supply**

When fire apparatus access roads or water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles in accordance with Section 505.2 of the 2012 Edition of the International Fire Code.

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**ACCESS ROAD 150 FT Buildings within 150ft of Access Road**

All portions of a building are required to be within 150 feet of an approved Fire Department access road, in accordance with Chapter 5, Section 503.1.1 of the 2012 Edition of the International Fire Code.



## Union Township Site Plan Review

Site Plan meets requirements.

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### ACCESS ROAD LOAD Designed and Maintained to Support the

All fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities in accordance with Chapter 5, Sections 503.2.3 and 503.4 of the 2012 Edition of the International Fire Code.

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### ACCESS ROAD OBSTRUCTED Dimensions and Clearances

All fire apparatus access roads, including parking lots, shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches in accordance with Chapter 5, Sections 503.2.1, 503.2.2, 503.3 and 503.4 of the 2012 Edition of the International Fire Code. Fire Prevention Ordinance 93.02(D)

Site Plan meets requirements.

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### BUILDING IDENTIFICATION Buildings Shall Have Address

Provide address identification numbers in accordance with Chapter 5, Sections 505.1 of the 2012 Edition of the International Fire Code or applicable to the City of Mt. Pleasant code of ordinances 150.01 Land Usage.

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### DUMPSTERS Dumpster Locations

Dumpster's and containers with an individual capacity of 1.5 cubic yards or more shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines in accordance with Chapter 3, Section 304, and 304.3.3 of the 2012 Edition of the International Fire Code.

Site Plan meets requirements.

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### WATER SUPPLY (GPM) Capable of Supplying the Required Fire

Provide fire hydrants capable of supplying the required fire flow in accordance with Chapter 5, Section 507 of the 2012 Edition of the International Fire Code. The number and spacing of fire hydrants is based on the construction type and square footage of the building in accordance with Appendix B and C and tables B105.1 and C105.1 of the 2012 Edition of the International Fire Code. (Contact Fire Department to verify locations.)

6,672 sq. ft, assuming Type VB construction, 2,250 gpm fire flow - 2 hydrants required, one within 400' of the farthest side of building.

Site Plan meets requirements.

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**Union Township Site Plan Review**

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**Keeler, Randy**  
**Lieutenant**  
**Mount Pleasant Fire Department**

**Sam Ber Engineering**

Bruce E. Rohrer, P.E.  
957 Morey Drive  
Mt. Pleasant, Michigan 48883  
(989) 330-2150

April 3, 2017

Peter Galliant  
Charter Township of Union Planner  
2010 S. Lincoln Road  
Mt. Pleasant, MI 48858

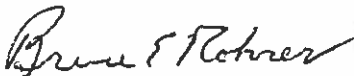
RE: Storm Water Management Plan for McGuirk – Office & Storage Bldg. Site

Dear Mr. Galliant:

I have reviewed the Storm Water Management Plan dated 4-3-17 prepared by CMS & D Surveying & Engineering for the above captioned project located at the Northeast corner of Lincoln Rd & Independence Dr in part of the S ½ of the NW ¼ of Section 21, Union Township. The proposed plan is consistent with the Union Township Storm Water Ordinance.

If you have any questions or need any further information, please feel free to contact me in my office.

Sincerely,



Bruce E. Rohrer, P.E.  
Consulting Engineer  
Isabella County

BER/taw

cc: Tim Beebe  
CMS & D Surveying & Engineering

**Shanee Thayer**

---

**From:** "Rick Collins" <[rcollins@ictcbus.com](mailto:rcollins@ictcbus.com)>  
**Date:** Tuesday, March 28, 2017 10:20 AM  
**To:** "Shanee Thayer" <[info@cms-d.com](mailto:info@cms-d.com)>  
**Subject:** Site Plan McGuirk Mini Storage

ICTC has no issue with the plans for McGuirk Mini Storage



**Rick Collins | Executive Director**  
2100 E. Transportation Dr | Mt. Pleasant, MI 48858  
Phone 989.773.6766 | Fax 989.773.1873  
[rcollins@ictcbus.com](mailto:rcollins@ictcbus.com)  
Visit our website at [ictcbus.com](http://ictcbus.com)

# MCGUIRK MINI-STORAGE, INC.

## SITE PLAN

ZONED I-1 LIGHT INDUSTRIAL	
MINIMUM LOT AREA	45,500 SQ. FT.
MINIMUM LOT WIDTH	100 FT.
MINIMUM STRUCTURE HEIGHT	30 FT.
MINIMUM FRONT YARD SETBACK	25 FT. (1)
MINIMUM SIDE YARD SETBACK	20 FT. (1)
MINIMUM REAR YARD SETBACK	20 FT. (1)
MINIMUM LOT COVERAGE	.40%

- (A) Off-street parking shall be permitted to occupy a portion of the required front yard, provided that there shall be maintained a minimum unobstructed and landscaped setback of ten (10) feet between the nearest point of the off-street parking area, including all access driveways and the nearest right-of-way line as indicated on the Major Transportation Plan.
- (C) A lot in the I-1 or I-2 District shall provide a side and rear yard of at least forty (40) feet in depth when abutting a residential use or District.

### SECTION 26.3 - REGULATORY CONFORMANCE

- (A) Off-street parking in accordance with Section 16 and Signs under Section 11 (Signage to be Submitted Separately)  
**Off-street Parking**  
Section 16.2 C Office Buildings  
(1) Space per 1000 sqft of usable Building Area  
2,500 sqft + Base Loading = 2,173 sqft = 11 Spaces  
Section 16.2 D Industrial Buildings  
(1) Space per (2) Employee of Maximum Shift  
No. Emps./Shift x1.51 (Employee of Maximum Shift Allowed in Residential Area)  
Required Parking = (4) Spaces - (1) of which must be Barrier Free  
Preferred Parking = (2) Standard Space + (1) Barrier Free
- (B) At the time the Outside Storage of Material is being Proposed, Should Outside Storage be Required in the Future, it would only be on the South Side of the Parcel and Enclosed by a Chain Link Fence.
- (C) Setbacks are Shown Above
- (D) Site Plans have been Submitted to City of US Precinct Five Dept. ZONING, ITC, Urban Top Planning and Urban Top OPR
- (E) Coordination with the MI Precinct Five Department and Michigan Department of Labor for any Excessive Hoard or Storage of Flammable Liquids
- (F) No Excessive Combinations
- (G) Discharge or Disposal of Waste shall be in Dumpster
- (H) No Excessive Vibrations
- (I) No Excessive Noise
- (J) Site Lighting shall be Completed by Down Shrouded Wall Poles
- (K) The Site does not Lie Adjacent to any Residential Use or Use



LOT 11 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, LINDEN TOWNSHIP, ISABELLA COUNTY, MICHIGAN  
LOCATION MAP  
SCALE: 1" = 400'

APPROVED 04-04-2017  
DRIVEWAY PERMIT WILL BE REQUIRED

Patrick J. Gaffney, PE

Digitally signed by Patrick J. Gaffney, PE  
DN: cn=Patrick J. Gaffney, PE, o=Isabella C. Eng'g, ou=Engineering, email=pjgaffney@isabellacountymichigan.com, c=US  
Date: 2017.04.04 15:02:57 -0400

**CORRECTION TO CONFORMANCE PLAN**  
LOT 11 OF LINCOLN COMMERCE PARK PLAT ACCORDING TO THE PART RECEIVED IN LINDEN 10 OF PLATE PAGE 567, NORTH TOWNSHIP, ISABELLA COUNTY, MICHIGAN AND A PARCEL OF LAND COMMENCING AT THE SW CORNER OF LOT 11, THENCE S 00°-43'-37"E, 132.46 FEET, THENCE S 89°-43'-21"E, 220 FEET, THENCE N 00°-43'-37"W, 132.36 FEET TO THE SE CORNER OF LOT 11, THENCE S 89°-54'-51"W, 225 FEET ALONG THE SOUTH PLAT LINE TO THE POINT OF BEGINNING, PART OF THE SW 1/4 OF THE NW 1/4 SECTION 21, T14N, R4W, ISABELLA COUNTY, MICHIGAN

**MISS INFO**  
FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL "MISS DIG" 1-800-482-7171 A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY EXCAVATION. ALL "MISS DIG" PARTICIPATING MEMBERS WILL BE APPROPRIATELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

LEGEND		
<b>SYMBOLS</b>		
[ ] BOLLARD	[ ] GAS RISER	[ ] SOIL BORING
[ ] CATCH BASIN (CURB INLET)	[ ] GUY ANCHOR	[ ] STORM SEWER MANHOLE
[ ] CATCH BASIN (ROUND)	[ ] HYDRANT - EXISTING	[ ] TELEPHONE INSET
[ ] CATCH BASIN (SQUARE)	[ ] HYDRANT - PROPOSED	[ ] TREE - CONIFERUS
[ ] CLEAN OUT	[ ] LIGHT POLE	[ ] TREE - DECIDUOUS
[ ] DRAINAGE FLOW	[ ] MAILBOX	[ ] UTILITY POLE
[ ] ELECTRICAL BOX	[ ] MONITORING WELL	[ ] WATER MAIN VALVE
[ ] FOUND CONIC MONUMENT	[ ] SANITARY SEWER MANHOLE	[ ] WATER SHUT-OFF
[ ] FOUND IRON	[ ] SIGN	[ ] FLOOD LIGHT
[ ] GAS MAIN VALVE		[ ] GAS METER
<b>LINE TYPES</b>		
--- BURIED ELECTRICAL CABLE		
--- BURIED TELEPHONE CABLE		
--- CENTERLINE OF BRCH		
--- FORCE MAIN		
--- GAS MAIN		
--- ROAD CENTERLINE		
--- SANITARY SEWER		
--- STORM SEWER		
--- SLOPE		
--- TOP OF BRSH		
--- UNDERHEAD		
--- UTILITY - UNDERGROUND		
--- WATER MAIN		
<b>HATCH PATTERNS</b>		
[ ] ASPHALT - EXISTING		
[ ] ASPHALT - PROPOSED		
[ ] CONCRETE		
[ ] GRAVEL		
[ ] LANDSCAPING		
[ ] RP - RMP		
[ ] EXISTING BUILDING		

### SHEET INDEX

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SHEET 2	TOPOGRAPHIC SURVEY
SHEET 3	SITE & HORIZONTAL PLAN
SHEET 4	STORM/GRADING/DETECTION PLAN
SHEET 5	SOIL EROSION PLAN
SHEET 6	CONSTRUCTION DETAILS #1
SHEET 7	CONSTRUCTION DETAILS #2
SHEET 8	CONSTRUCTION DETAILS #3

**BENCHMARKS:**  
BENCHMARK #1 FOUND AN ALUMINUM MICHIGAN DEPARTMENT OF TRANSPORTATION HEIGHT MODERIZATION MARK DISK SET IN THE TOP OF A 12 BURN DIAMETER CONCRETE POST LOCATION IS AT THE SOUTH EAST CORNER OF THE LINCOLN ROAD AND ROGERS ROAD (10-20) INTERSECTION. ELEVATION 776.82  
BENCHMARK #2 FOUND CAPPED IRON AT THE NORTHWEST CORNER OF ROGERS ROAD AND INTERSECTION WITH ELEVATION 774.19

**BEARING BARS:**  
THE NEXT SECTION LINE BETWEEN THE WEST 1/4 CORNER AND THE SOUTHWEST CORNER HAS TAKEN AN 800'-50'-20"E FROM A PREVIOUS UNPAID SURVEY. JOB NO. 830-159

**UTILITY NOTE:**  
THE UTILITY LOCATIONS AS HEREIN SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BUREAU UTILITY INFORMATION HEREIN SHOWN. THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171) PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELOCATE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND. UNDERGROUND SERVICE LEADS FOR GAS, ELECTRIC, TELEPHONE AND CABLE MAY BE LOCATED ON PROPERTY. NO INFORMATION AVAILABLE PLEASE CALL MISS DIG.

<b>ERC</b>	INDEPENDENCE DRIVE MT. PLEASANT, MI 48850
<b>OWNER</b>	MCGUIRK MINI-STORAGE, INC. 340 WEST PEARSON STREET MT. PLEASANT, MI 48850
<b>CONSULTANT</b>	CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC. 340 E PEARSON STREET - SUITE C MT. PLEASANT, MI 48850 CONTACT PERSON: BRYANT E RENZI PHONE: (517) 772-7776 FAX: (517) 772-3982 EMAIL: info@cmsand.com

**CHARTERED COMMUNICATIONS**  
815 E BROOKFIELD ROAD  
MT. PLEASANT, MI 48850  
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Randy Blair  
rblair@chartercom.com  
http://www.chartercom.com

**COMMERCIAL ENERGY**  
1235 WRIGHT AVENUE  
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lamb@my.charterenergy.com

**FRONTIER**  
345 PINE STREET  
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4420 14TH ST., S.E. SUITE B  
KENTWOOD, MI 49312  
(616) 854-6623  
MARTY ADAMS  
marty@ureenergy.com

**MT. PLEASANT FIRE DEPARTMENT**  
304 EAST HOOD STREET  
MT. PLEASANT, MI 48850  
(517) 772-5400 EXT 5422  
SCOTT SANDY  
ssandy@mt-pleasant.org

**CMS & D**  
SURVEYING/ENGINEERING  
110 N PLEASANT STREET - SUITE C  
MT. PLEASANT, MICHIGAN 48850  
TEL: (517) 772-7932  
FAX: (517) 772-7933  
DURL: info@cmsand.com

**COVER SHEET**  
MCGUIRK MINI-STORAGE, INC.  
LOT 11 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, LINDEN TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS

NO.	DATE	DESCRIPTION
1	04-04-2017	ISSUED FOR PERMITTING

FOR REVIEW 04-04-2017

FOR REVIEW 04-04-2017

FOR REVIEW 04-04-2017

SCALE 1" = 30'

SHEET NUMBER 1 OF 8

## Peter Gallinat

---

**From:** Kim Smith  
**Sent:** Tuesday, April 04, 2017 5:15 PM  
**To:** Peter Gallinat  
**Cc:** Mark Stuhldreher; Timothy Bebee; Shanee Thayer  
**Subject:** FW: Independence Drive office Site Plan - McGuirk Mini Storage

Peter,  
My apologies this review comment is for lot 1 & 2 and not lot 11.

## Kim Smith



Department of Public Works  
Charter Township of Union  
2010 S. Lincoln Road  
Mt. Pleasant, MI 48858  
Phone (989) 772-4600 ext. 224  
Fax (989) 773-1988  
Visit us on the Web at  
<http://www.uniontownshipmi.com>

"This institution is an equal opportunity provider, and employer."

---

**From:** Kim Smith  
**Sent:** Tuesday, April 04, 2017 4:59 PM  
**To:** Peter Gallinat  
**Cc:** Mark Stuhldreher; 'Shanee Thayer'; 'Timothy Bebee'  
**Subject:** Independence Drive office Site Plan - McGuirk Mini Storage

Peter,  
Good afternoon, I have reviewed the site plan for Lot 11 of Lincoln Commerce Park which was forwarded to me by CMS & D on March 28, 2017 and you today. This parcel has water available on the north side of Independence Drive and sewer available on the south side of Independence Drive. The site plan submitted includes the existing water and sewer mains located on Independence Drive and a reference to the approximate location of a sanitary sewer lead for this lot. This site plan does not include and information on water and/or sanitary sewer site/building specific connections. Plans for any water and/or sewer connections will need to be submitted for review and approval by the Township Water and Sewer Department if the site plan is approved.

If you have any questions please let me know.

Thank you,

## Union Township Site Plan Review Application 2015 Revision

**FILL OUT THE FOLLOWING**

- I. This application is for (circle one) Preliminary Site Plan Review Final Site Plan Review
- II. Applicant Name McGuirk Mini Storage Inc.
- III. Applicant Address 510 West Pickard Street, Mt. Pleasant, MI 48858
- IV. Applicant Phone 989-772-1309 Owner Phone 989-772-1309
- V. Applicant is (circle) Contractor Architect/Engineer Developer Land Owner (skip V& VI)  
Other
- VI. Land Owner Name Same as above
- VII. Land Owner Address \_\_\_\_\_
- VIII. Project/Business Name Independence Drive Industrial Building
- IX. Fill out check list that follows. You must check off that each item has been included in the drawing. If an item is not going to be included in the construction, note that in the comment area. For the first three items, check off if you have made the required submittals to other reviewing agencies.

SUBMITTALS TO OTHER AGENCIES	Off	
Storm water management plan approval prior to application. Reviewed by the County Engineer	✓	Copy of Union Township Storm Water Management Plan available upon request. Submit (2) copies of plan and calculations directly to the Isabella County Engineer, contact Bruce Rohrer at (989) 772 0911, ext. 231. Any review fees are additional.
All curb cuts, acceleration/deceleration lanes, additional drives, and other matters pertaining to roads to be approved by MDOT or Isabella County Road Commission prior to application.	✓	MDOT (M 20, BR 127 sites) at (989) 773 7756. Contact Isabella County Road Commission (all other county roads) at (989) 773 7131. Submit (3) copies.
Mt. Pleasant Fire Dept.	✓	Sgt Randy Keeler (989) 779-5122, (2) copies
Isabella Co Transportation Commission (ICTC)	✓	Rick (989) 773 2913, (2) copies
<b>WELLHEAD PROTECTION REPORTING FORMS (Required for all Site Plans)</b>		
Hazardous Substances Reporting Form Part I and II (Forms included in this packet)	✓	Kim Smith (989) 772-4600 ext 224 ksmith@uniontownshipmi.com
PERMIT INFORMATION - DEQ Check List	✓	
<b>SITE PLAN REQUIREMENTS</b>	<b>I Of</b>	<b>Comments - (also indicate any features which will not be included in the development or are not applicable)</b>
Name and addresses of Property Owner	✓	
Name and Address of Applicant	✓	
Provide Construction Type (per Mi Building Code) and if sprinkled, (assume Type IVb, un-sprinkled if not provided)		

**Union Township Site Plan Review Application 2015 Revision**

The date, north arrow and scale. The scale shall be not less than 1"= 20' for property under three (3) acres and not more than 1"=40' for property greater than three acres.	✓ ✓	
All lot and/or property lines are to be shown and dimensioned, including building setback lines	✓ ✓	
The location and dimensions of all existing and proposed: fire hydrants (within 400 feet of building) - - - -	✓	
drives, -----	✓	
sidewalks, (required ) -----	✓	
curb openings, -----	✓	
acceleration/deceleration lanes, -----	✓	
signs, -----	✓	
exterior lighting on buildings and parking lots, - -	✓	
parking areas (Including handicapped parking spaces, barrier-free building access, unloading areas), -----	✓	
recreation areas, -----	✓	
common use areas, -----		
areas to be conveyed for public use and purpose. -		
Elevation of building front, side, and back. Include Sign size, height, and design. Canopy heights extending over driveways accommodate Public Transportation	✓	
Source of utilities. Public water and sewer approval by Union Township Utility Coordinator prior to application.	✓	Note: Union Township policy is to issue sewer and water permits after application for a building permit. Applicant is advised to contact the utility department for availability prior to site plan review. The township does not coordinate other utility matters. Applicant to assure himself that site is suitable for septic systems, contact Central Michigan District Health Department
All dumpsters shall be screened from public view with an opaque fence or wall no less than six feet in height. Show location. (Note most refuse contractors require concrete pad to place dumpsters upon)	✓	
The location and right-of-way width of all abutting roads, streets, alleys and easements.	✓	
A locational sketch drawn to scale giving the section number and the nearest crossroads.	✓	



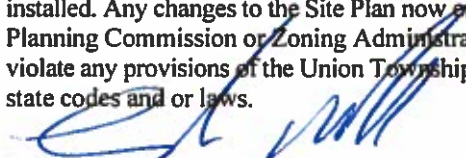
### Union Township Site Plan Review Application 2015 Revision

The zoning of the subject property and the abutting properties.	✓	
The location, height and type of fences and walls.	✓	
The location and detailed description of landscaping.	✓	
For multiple family and mobile home parks, contour intervals shall be shown (two foot intervals for average slopes ten percent and under and five foot intervals for slopes over ten percent). Topography, however, is encouraged to be shown on all site plans.	✓	
The location of all existing and proposed structures on and within one hundred feet of the subject property's boundary.	✓	
For apartments, provide a count of bedrooms per building and total count of bedrooms for the project.	✓	

#### APPLICANT COMMENTS


**Union Township Site Plan Review Application 2015 Revision**

I submit the site plan and this application as a true representation of existing and proposed conditions. I agree to install all features as shown and to abide by conditions placed upon approval of this plan by the Union Township Planning Commission . False or inaccurate information placed upon this plan may be cause for revocation of any permits issued pursuant to site plan approval and / or removal of work installed. Any changes to the Site Plan now or in the future must be approved by the Union Township Planning Commission or Zoning Administrator. Approval of this plan shall not constitute the right to violate any provisions of the Union Township Zoning Ordinance 1991-5, or other applicable building or state codes and or laws.

  
\_\_\_\_\_  
Signature of Applicant

3/29/17  
\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature of Owner (if other than applicant)

\_\_\_\_\_  
Date

PLEASE PLACE OUR REVIEW ON THE April 18, 2017 (INSERT DATE)  
PLANNING COMMISSION MEETING. An owners representative WILL / WILL NOT attend. You  
will not receive a reminder of the scheduled meeting.

**Union Township Site Plan Review Application 2015 Revision**

<u>Township use</u>	<u>Review Comments</u>
File # <sup>SPR</sup> <u>2017-02</u>	_____
Fee Paid initial <u>225</u>	_____
Receipt # <u>80321</u>	_____
Date received <u>4-4-17</u>	_____
Date review completed by Zoning Administrator _____	
Place on the _____ Planning Commission Agenda	
Planning Commission Decision _____	
	_____

# MCGUIRK MINI-STORAGE, INC.

## INDEPENDENCE DRIVE - INDUSTRIAL BUILDING

ZONED I-1 LIGHT INDUSTRIAL	
MINIMUM LOT AREA	43,560 SQ. FT.
MINIMUM LOT WIDTH	100 FT
MAXIMUM STRUCTURE HEIGHT	35 FT
MINIMUM FRONT YARD SETBACK	75 FT (A)
MINIMUM SIDE YARD SETBACK	20 FT (C)
MINIMUM REAR YARD SETBACK	50 FT (C)
MAXIMUM LOT COVERAGE	40%

- (A) Off-street parking shall be permitted to occupy a portion of the required front yard, provided that there shall be maintained a minimum unobstructed and landscaped setback of ten (10) feet between the nearest point of the off street parking areas, exclusive of access driveways and the nearest right-of-way line as indicated on the Major Thoroughfare Plan.
- (C) A lot in the I-1 or I-2 District will provide a side and rear yard of at east sixty (60) feet in depth when abutting a residential use or District.

### SECTION 26.3 - REQUIRED CONDITIONS

- (A) Off-street parking in accordance with Section 10 and Signs under Section 11. (Signage to be Submitted Separately)

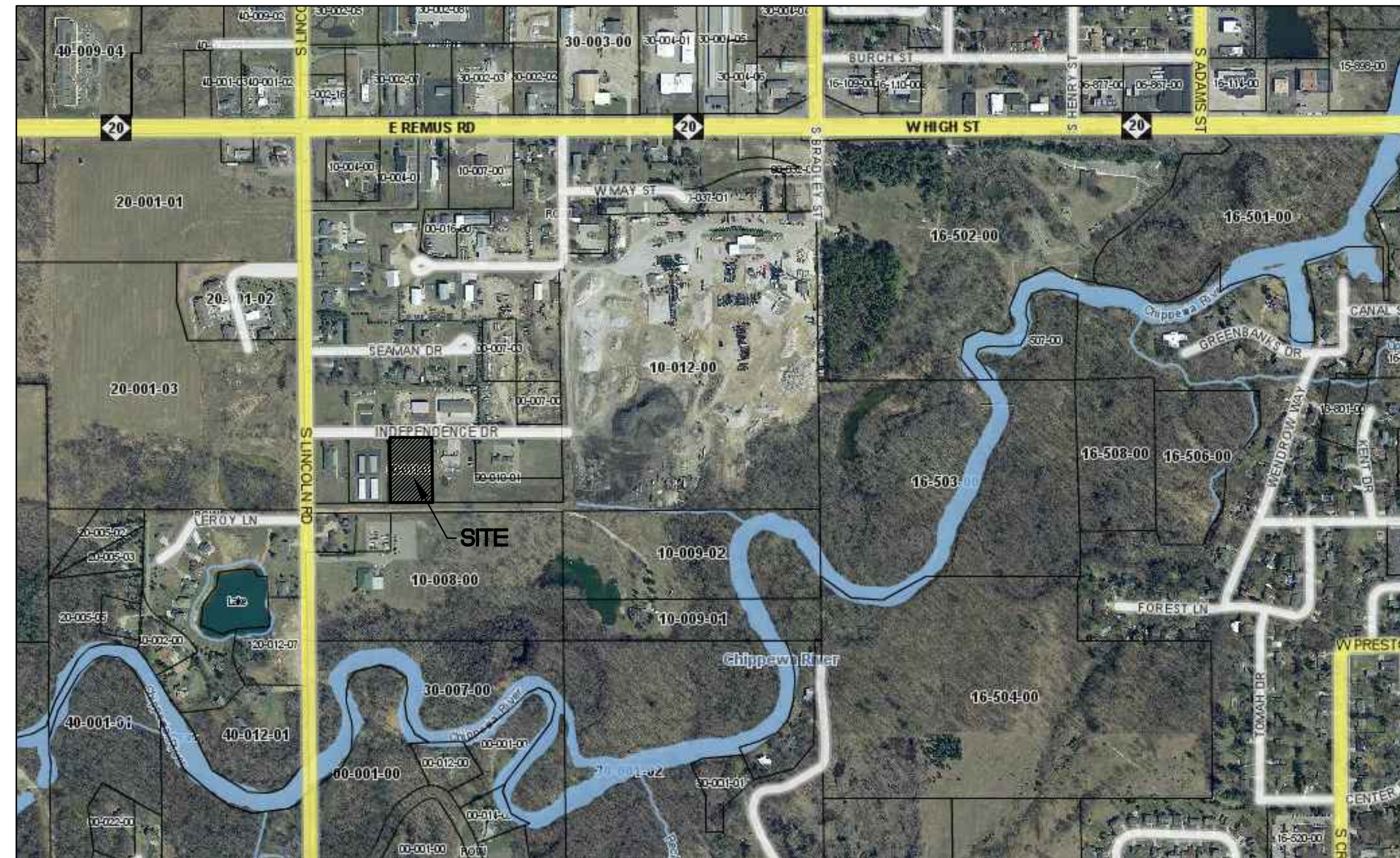
#### Off-street Parking

Section 10.2.C Office Buildings  
 (1) Space per (200) sqft of Usable Building Area  
 2,500 sqft \* 85% Usable = 2,125 sqft = 11 Spaces

Section 10.2.D Industrial Buildings  
 (1) Space per (3) Employees at Maximum Shift  
 \*No More Than (15) Employees at Maximum Shift Allowed in Warehouse Area.

Required Parking = (16) Spaces - (1) of Which Must be Barrier Free  
 Provided Parking = (15) Standard Space & (1) Barrier Free

- (B) At this time No Outside Storage of Material is being Proposed. Should Outside Storage be Required in the Future, it would only be on the South Side of the Parcel and Enclosed by a Chain Link Fence.
- (C) Setbacks Are Shown Above.
- (D) Site Plans have been Submitted to City of Mt. Pleasant Fire Dept., ICDC, ICRC, ICTC, Union Twp Planning and Union Twp DPW.
- (E) Coordination with the Mt. Pleasant Fire Department and Michigan Department of Labor for any Explosion Hazard or Storage of Flammable Liquids.
- (F) No Excessive Emissions.
- (G) Discharge or Disguard of Waste Shall be in Dumpster.
- (H) No Excessive Vibrations.
- (I) No Excessive Noise.
- (J) Site Lighting Shall be Completed by Down Shielded Wall Packs.
- (K) The Site Does Not Lie Adjacent to any Residential Site or Use.



LOT 11 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN  
**LOCATION MAP**  
 SCALE: 1" = 600'

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FOUND CONC. MONUMENT	SANITARY SEWER MANHOLE
FOUND IRON	SET IRON
GAS MAIN VALVE	SIGN
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TREE - DECIDUOUS	UTILITY POLE
WATER MAIN VALVE	WATER SHUT-OFF
FLOOD LIGHT	GAS METER

LINE TYPES		HATCH PATTERNS	
BURIED ELECTRICAL CABLE	ASPHALT - EXISTING	ASPHALT - PROPOSED	
BURIED TELEPHONE CABLE			
CENTERLINE OF DITCH			
FORCE MAIN	CONCRETE		
GAS MAIN			
ROAD CENTERLINE	GRAVEL		
8" SANITARY SEWER			
12" STORM SEWER	LANDSCAPING		
TOE OF SLOPE			
TOP OF BANK	RIP-RAP		
UTILITIES - OVERHEAD			
UTILITIES - UNDERGROUND	EXISTING BUILDING		
12" WATER MAIN			

**PROPERTY DESCRIPTION PROVIDED (WARRANTY DEED, LIBER 1397, PAGE 284):**  
 LOT 11 OF LINCOLN COMMERCE PARK PLAT, ACCORDING TO THE PLAT RECORDED IN LIBER 10 OF PLATS, PAGE 587, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, AND A PARCEL OF LAND COMMENCING AT THE SW CORNER OF LOT 11, THENCE S.00°-43'-37"E., 132.48 FEET; THENCE S.89°-53'-24"E., 225 FEET; THENCE S.00°-43'-37"W., 132.58 FEET TO THE SE CORNER OF LOT 11; THENCE S.89°-51'-51"W., 225 FEET ALONG THE SOUTH PLAT LINE TO THE POINT OF BEGINNING, PART OF THE SW 1/4 OF THE NW 1/4, SECTION 21, T14N, R4W, ISABELLA COUNTY, MICHIGAN.

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 BENCHMARK #2: FOUND CAPPED IRON AT THE NORTHWEST CORNER OF ROGERS ROAD AND INDEPENDENCE DRIVE. ELEVATION 774.19

**BEARING BASIS:**  
 THE WEST SECTION LINE BETWEEN THE WEST 1/4 CORNER AND THE SOUTHWEST CORNER WAS TAKEN AS S00°-50'-26"E FROM A PREVIOUS CMS&D SURVEY, JOB NO. 0309-169.

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<b>SITE:</b>	INDEPENDENCE DRIVE MT. PLEASANT, MI 48858
<b>OWNER:</b>	MCGUIRK MINI-STORAGE, INC. 510 WEST PICKARD STREET MT. PLEASANT, MI 48858
<b>CONSULTANT:</b>	CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC. 510 W. PICKARD STREET - SUITE C MT. PLEASANT, MI 48858 CONTACT PERSON: TIMOTHY E BEBEE PHONE: (989) 775-0756 FAX: (989) 775-5012 EMAIL: info@cms-d.com

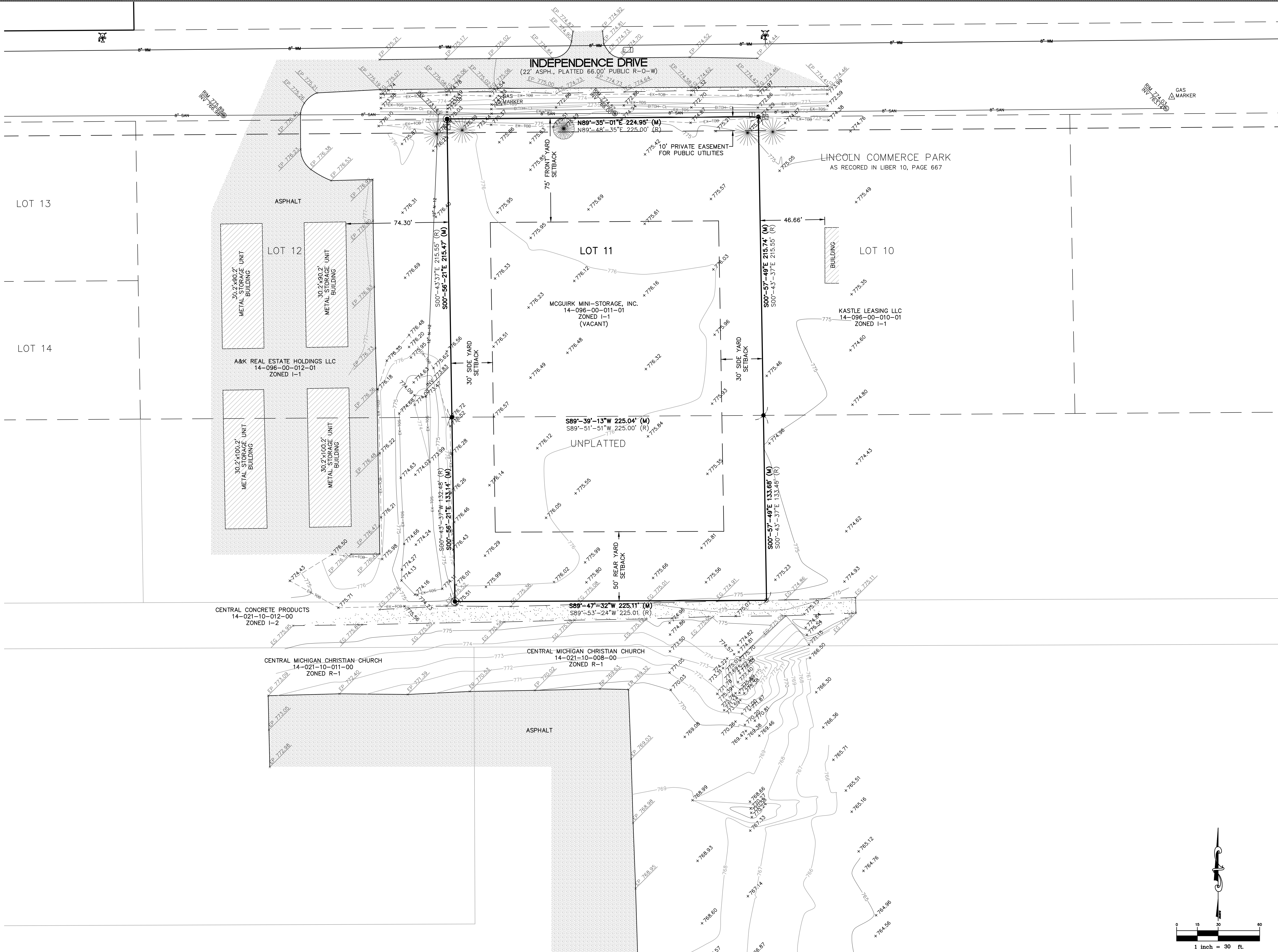
<b>CHARTER COMMUNICATIONS</b> 915 E. BROOMFIELD ROAD MT. PLEASANT, MI 48858 (989) 621-4932 RANDY BUNKER rbunker@chartercom.com	<b>CHARTER TOWNSHIP OF UNION</b> PUBLIC WATER/PUBLIC SEWER 2010 N. LINCOLN ROAD MT. PLEASANT, MI 48858 (989) 772-4600 EXT 24 KIM SMITH ksmith@uniontownshipmi.com
<b>CONSUMERS ENERGY</b> 1325 WRIGHT AVENUE ALMA, MI 48801 (989) 466-4282 KIM STUDDT kimberly.studdt@cmsenergy.com	<b>CHARTER TOWNSHIP OF UNION</b> PLANNING & ZONING 2010 NORTH LINCOLN ROAD MT. PLEASANT, MI 48858 (989) 772-0911 PETER GALLINAT pgallinat@uniontownshipmi.com
<b>FRONTIER</b> 345 PINE STREET ALMA, MI 48801 (989) 463-0392 MARK A. MARSHALL Mark.Marshall@fr.com	<b>DRAIN COMMISSIONERS OFFICE</b> ISABELLA COUNTY BUILDING 200 NORTH MAIN STREET ROOM 140 MT. PLEASANT, MI 48857 (989) 772-0911 RICK JAKUBIEC drain@isabellacounty.org
<b>DTE ENERGY</b> 4420 44TH ST., S.E., SUITE B KENTWOOD, MI 49512 (616) 954-4623 MARY JO MCKERSIE mckersiem@dteenergy.com	<b>ISABELLA COUNTY ROAD COMMISSION</b> 915 E. BROOMFIELD ROAD MT. PLEASANT, MI 48858 (989) 773-7131 EXT 115 PATRICK GAFFNEY P.Gaffney@isabellaroads.com
<b>MT. PLEASANT FIRE DEPARTMENT</b> 804 EAST HIGH STREET MT. PLEASANT, MI 48858 (989) 779-5100 EXT 5122 SGT. RANDY KEELER rkeeler@mt-pleasant.org	

**CMS & D**  
 SURVEYING / ENGINEERING  
 510 W. PICKARD STREET - SUITE C  
 MT. PLEASANT, MICHIGAN 48858  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5012  
 EMAIL: info@cms-d.com



**COVER SHEET**  
 MCGUIRK MINI-STORAGE, INC.  
 LOT 11 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:	
SUBMITTALS:	
JOB NUMBER:	1612-184
SCALE:	1" = 30'
DRAWN BY:	RLM
DESIGNED BY:	TELB
CHECKED BY:	TELB
SHEET NUMBER:	1 OF 8



**CMS & D**  
 SURVEYING / ENGINEERING  
 510 W. PICKARD STREET, SUITE C  
 MT. PLEASANT, MICHIGAN 48856  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5012  
 EMAIL: info@cms-d.com



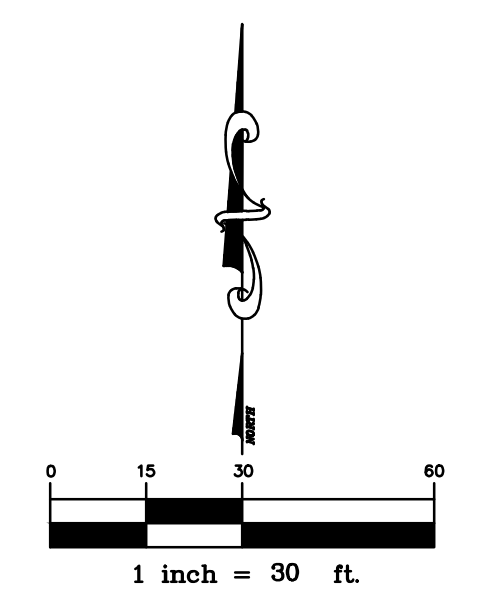
**TOPOGRAPHIC SURVEY**  
 MCGUIRK MINI-STORAGE, INC.  
 LOT 11 OF LINCOLN COMMERCE PARK AND  
 PART OF THE SOUTHWEST 1/4 OF THE  
 NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

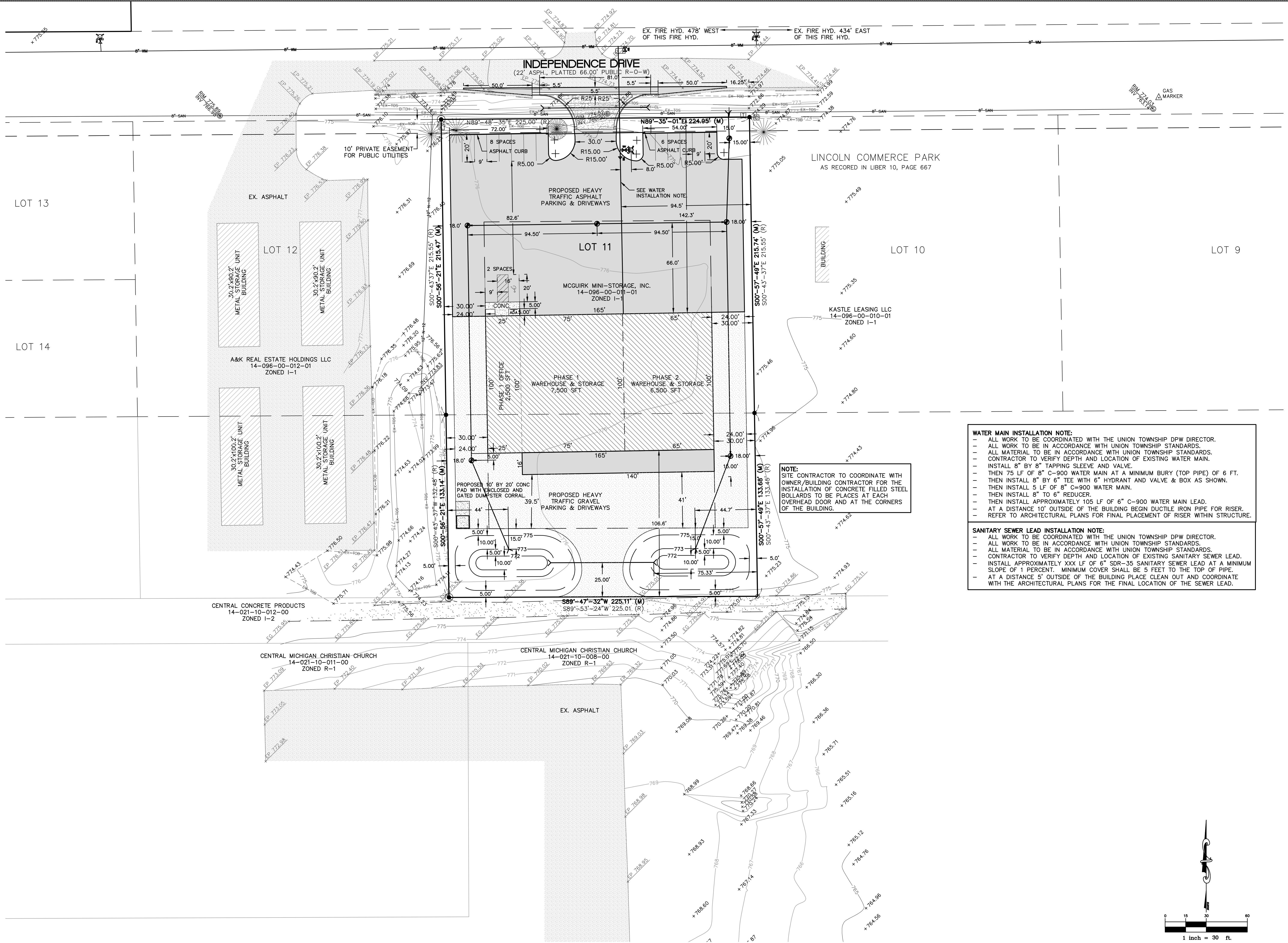
REVISIONS:


SUBMITTALS:

	SUBMITTAL TO REVIEW AGENCIES 3-27-17
	SUBMITTAL TO UNION TOWNSHIP PLANNING COM.

SCALE	JOB NUMBER:
1" = 30'	1612-184
SHEET NUMBER	DRAWN BY:
2 OF 8	RLI
	DESIGNED BY:
	TELB
	CHECKED BY:
	TELB





**WATER MAIN INSTALLATION NOTE:**

- ALL WORK TO BE COORDINATED WITH THE UNION TOWNSHIP DPW DIRECTOR.
- ALL WORK TO BE IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- ALL MATERIAL TO BE IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING WATER MAIN.
- INSTALL 8" BY 8" TAPPING SLEEVE AND VALVE.
- THEN 75 LF OF 8" C-900 WATER MAIN AT A MINIMUM BURY (TOP PIPE) OF 6 FT.
- THEN INSTALL 8" BY 6" TEE WITH 6" HYDRANT AND VALVE & BOX AS SHOWN.
- THEN INSTALL 5 LF OF 8" C=900 WATER MAIN.
- THEN INSTALL 8" TO 6" REDUCER.
- THEN INSTALL APPROXIMATELY 105 LF OF 6" C-900 WATER MAIN LEAD.
- AT A DISTANCE 10' OUTSIDE OF THE BUILDING BEGIN DUCTILE IRON PIPE FOR RISER.
- REFER TO ARCHITECTURAL PLANS FOR FINAL PLACEMENT OF RISER WITHIN STRUCTURE.

**SANITARY SEWER LEAD INSTALLATION NOTE:**

- ALL WORK TO BE COORDINATED WITH THE UNION TOWNSHIP DPW DIRECTOR.
- ALL WORK TO BE IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- ALL MATERIAL TO BE IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING SANITARY SEWER LEAD.
- INSTALL APPROXIMATELY XXX LF OF 6" SDR-35 SANITARY SEWER LEAD AT A MINIMUM SLOPE OF 1 PERCENT. MINIMUM COVER SHALL BE 5 FEET TO THE TOP OF PIPE.
- AT A DISTANCE 5' OUTSIDE OF THE BUILDING PLACE CLEAN OUT AND COORDINATE WITH THE ARCHITECTURAL PLANS FOR THE FINAL LOCATION OF THE SEWER LEAD.

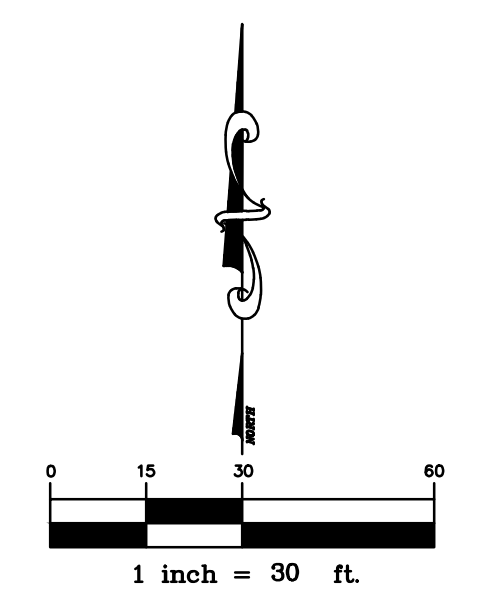
**NOTE:**  
 SITE CONTRACTOR TO COORDINATE WITH OWNER/BUILDING CONTRACTOR FOR THE INSTALLATION OF CONCRETE FILLED STEEL BOLLARDS TO BE PLACED AT EACH OVERHEAD DOOR AND AT THE CORNERS OF THE BUILDING.

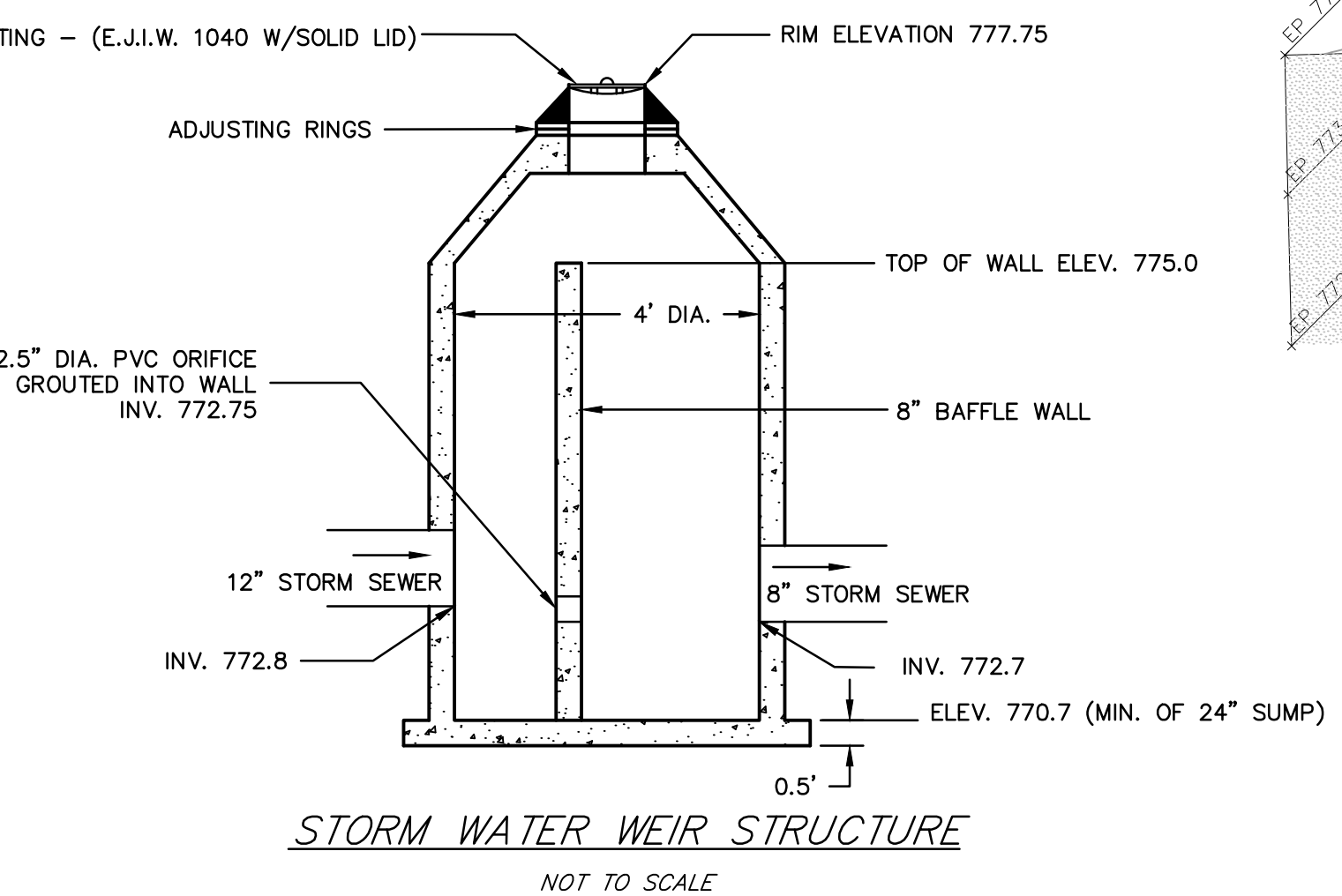
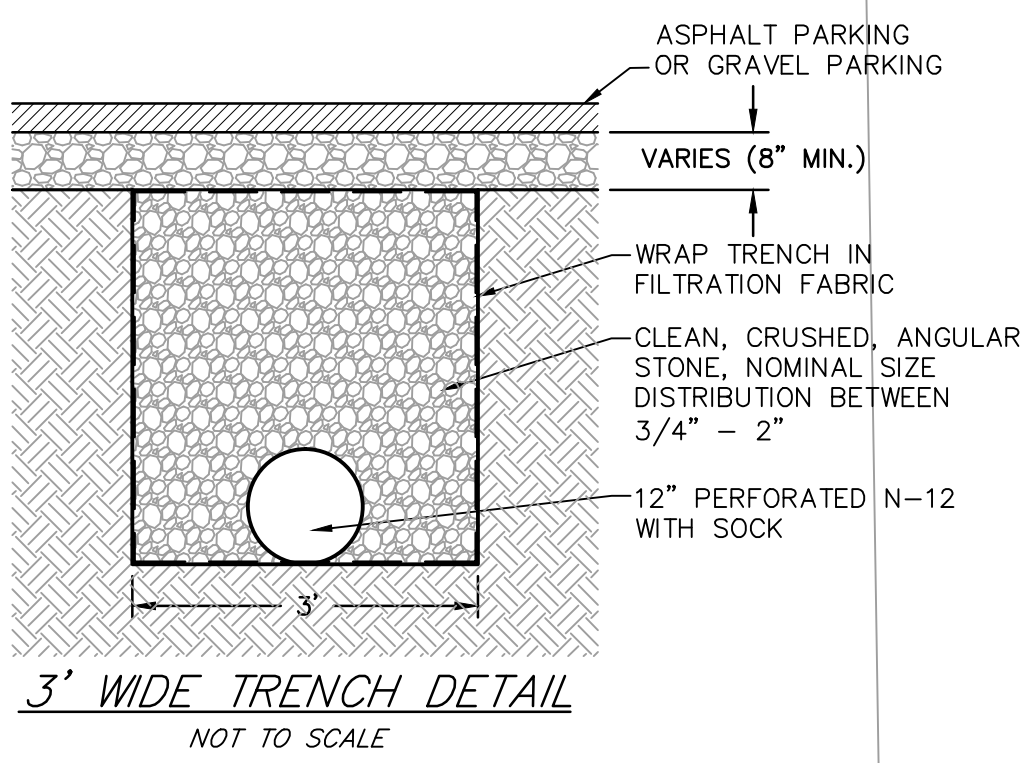
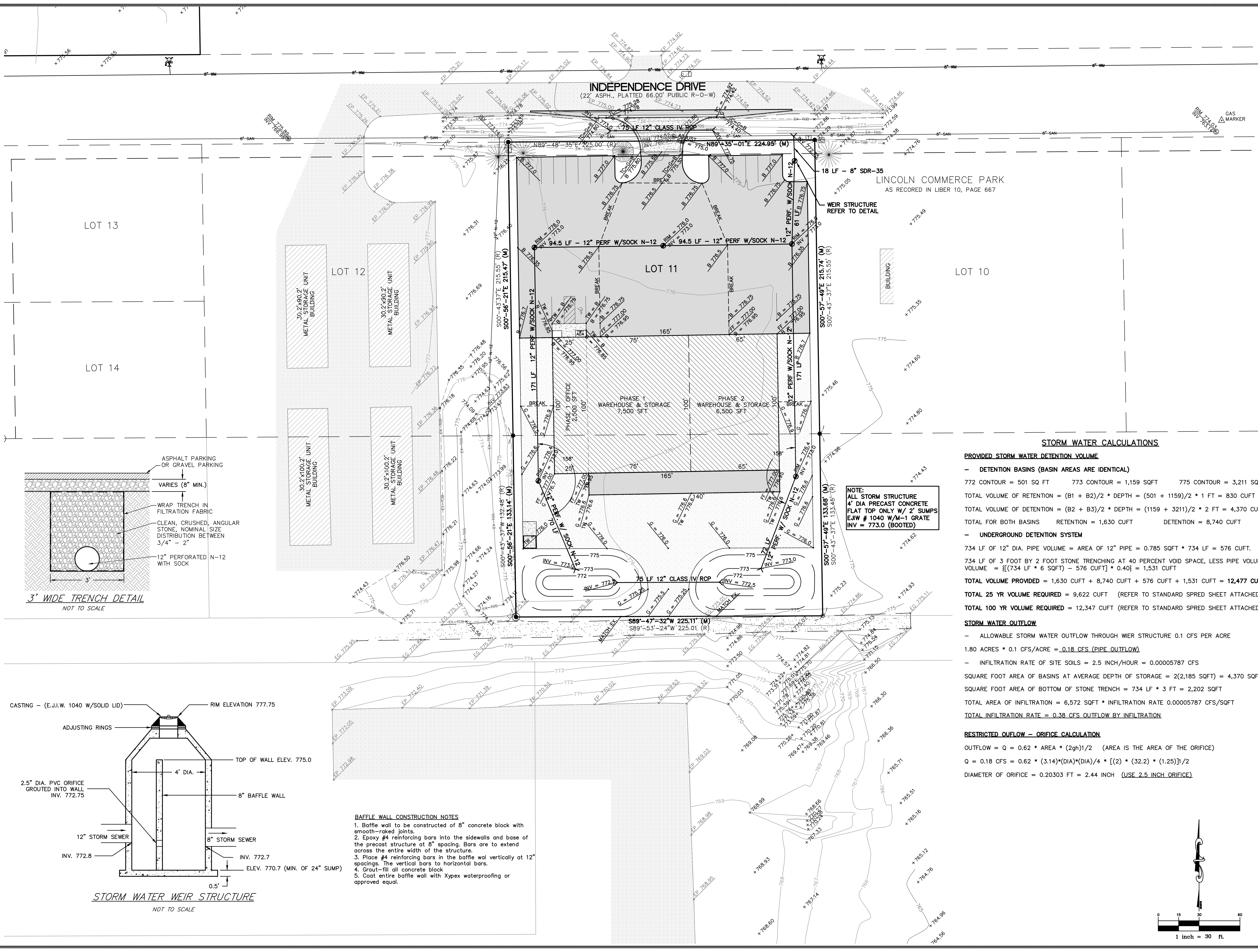
**CMS & D**  
 SURVEYING / ENGINEERING  
 510 W. PICKARD STREET, SUITE C  
 MT. PLEASANT, MICHIGAN 48856  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5012  
 EMAIL: info@cms-d.com



**SITE & HORIZONTAL PLAN**  
 MCGUIRK MINI-STORAGE, INC.  
 LOT 11 OF LINCOLN COMMERCE PARK AND  
 PART OF THE SOUTHWEST 1/4 OF THE  
 NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

SCALE	1" = 30'
SHEET NUMBER	3 OF 8
DESIGNED BY:	TELB
CHECKED BY:	TELB
DRAWN BY:	RLL
JOB NUMBER:	1612-184
SUBMITTALS:	SUBMITTAL TO REVIEW AGENCIES 3-27-17
REVISIONS:	SUBMITTAL TO UNION TOWNSHIP PLANNING COM.





**BAFFLE WALL CONSTRUCTION NOTES**

1. Baffle wall to be constructed of 8" concrete block with smooth-raked joints.
2. Epoxy #4 reinforcing bars into the sidewalls and base of the precast structure at 8" spacing. Bars are to extend across the entire width of the structure.
3. Place #4 reinforcing bars in the baffle wall vertically at 12" spacings. The vertical bars to horizontal bars.
4. Grout-fill all concrete block
5. Coat entire baffle wall with Xypex waterproofing or approved equal.

**STORM WATER CALCULATIONS**

PROVIDED STORM WATER DETENTION VOLUME

- DETENTION BASINS (BASIN AREAS ARE IDENTICAL)

772 CONTOUR = 501 SQ FT      773 CONTOUR = 1,159 SQFT      775 CONTOUR = 3,211 SQFT

TOTAL VOLUME OF RETENTION = (B1 + B2)/2 \* DEPTH = (501 + 1159)/2 \* 1 FT = 830 CUFT

TOTAL VOLUME OF DETENTION = (B2 + B3)/2 \* DEPTH = (1159 + 3211)/2 \* 2 FT = 4,370 CUFT

TOTAL FOR BOTH BASINS      RETENTION = 1,630 CUFT      DETENTION = 8,740 CUFT

- UNDERGROUND DETENTION SYSTEM

734 LF OF 12" DIA. PIPE VOLUME = AREA OF 12" PIPE \* 734 LF = 576 CUFT.

734 LF OF 3 FOOT BY 2 FOOT STONE TRENCHING AT 40 PERCENT VOID SPACE, LESS PIPE VOLUME VOLUME = [(734 LF \* 6 SQFT) - 576 CUFT] \* 0.40 = 1,531 CUFT

TOTAL VOLUME PROVIDED = 1,630 CUFT + 8,740 CUFT + 576 CUFT + 1,531 CUFT = 12,477 CUFT

TOTAL 25 YR VOLUME REQUIRED = 9,622 CUFT (REFER TO STANDARD SPRED SHEET ATTACHED)

TOTAL 100 YR VOLUME REQUIRED = 12,347 CUFT (REFER TO STANDARD SPRED SHEET ATTACHED)

STORM WATER OUTFLOW

- ALLOWABLE STORM WATER OUTFLOW THROUGH WEIR STRUCTURE 0.1 CFS PER ACRE

1.80 ACRES \* 0.1 CFS/ACRE = 0.18 CFS (PIPE OUTFLOW)

- INFILTRATION RATE OF SITE SOILS = 2.5 INCH/HOUR = 0.00005787 CFS

SQUARE FOOT AREA OF BASINS AT AVERAGE DEPTH OF STORAGE = 2(2,185 SQFT) = 4,370 SQFT

SQUARE FOOT AREA OF BOTTOM OF STONE TRENCH = 734 LF \* 3 FT = 2,202 SQFT

TOTAL AREA OF INFILTRATION = 6,572 SQFT \* INFILTRATION RATE 0.00005787 CFS/SQFT

TOTAL INFILTRATION RATE = 0.38 CFS OUTFLOW BY INFILTRATION

RESTRICTED OUTFLOW - ORIFICE CALCULATION

OUTFLOW = Q = 0.62 \* AREA \* (2gh)<sup>1/2</sup> (AREA IS THE AREA OF THE ORIFICE)

Q = 0.18 CFS = 0.62 \* (3.14)\*(DIA)<sup>2</sup>/4 \* [(2) \* (32.2) \* (1.25)]<sup>1/2</sup>

DIAMETER OF ORIFICE = 0.20303 FT = 2.44 INCH (USE 2.5 INCH ORIFICE)

**CMS & D**  
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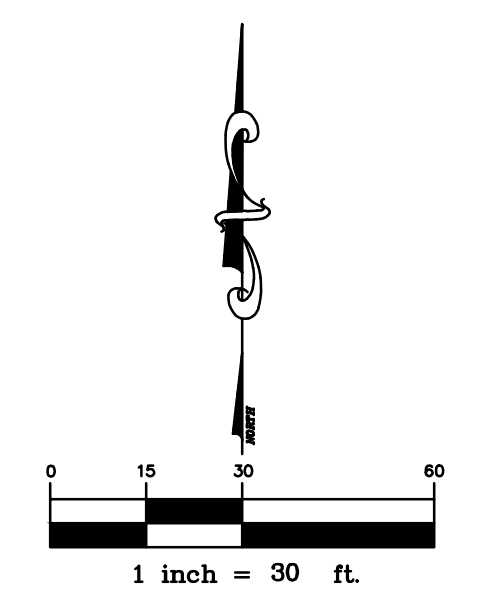


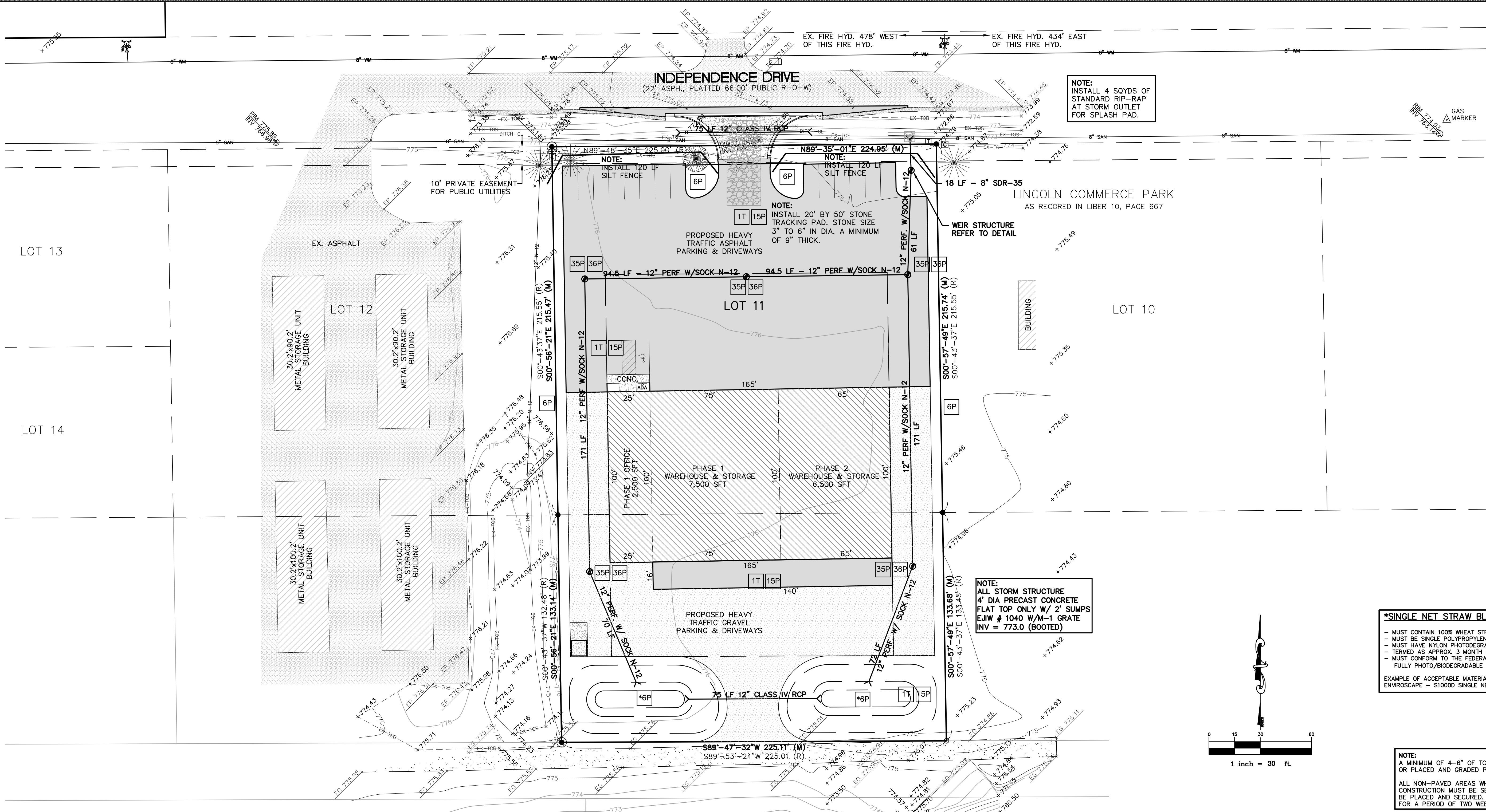
**STORM/GRADING/DETECTION PLAN**  
 MCGUIRK MINI-STORAGE, INC.  
 LOT 11 OF LINCOLN COMMERCE PARK AND  
 PART OF THE SOUTHWEST 1/4 OF THE  
 NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:


SUBMITTALS:


SCALE	1" = 30'
JOB NUMBER:	1612-184
DRAWN BY:	RLI
DESIGNED BY:	TELB
CHECKED BY:	TELB
SHEET NUMBER	4 OF 8





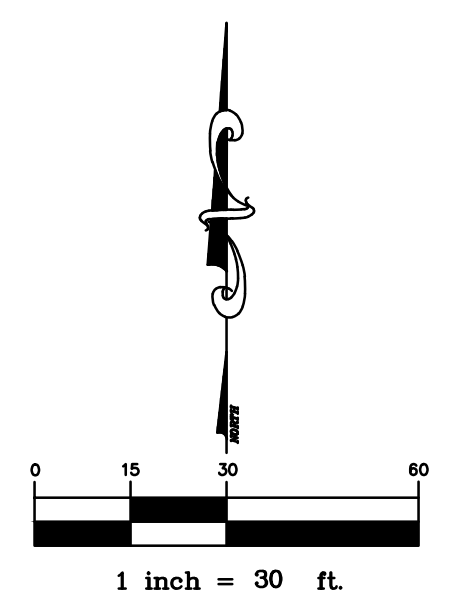
NOTE:  
 INSTALL 4 SQYDS OF  
 STANDARD RIP-RAP  
 AT STORM OUTLET  
 FOR SPLASH PAD.

NOTE:  
 INSTALL 20' BY 50' STONE  
 TRACKING PAD. STONE SIZE  
 3" TO 6" IN DIA. A MINIMUM  
 OF 9" THICK.

NOTE:  
 ALL STORM STRUCTURE  
 4' DIA PRECAST CONCRETE  
 FLAT TOP ONLY W/ 2' SUMPS  
 E/JW # 1040 W/M-1 GRATE  
 INV = 773.0 (BOOTED)

**\*SINGLE NET STRAW BLANKET (90 DAY)\***  
 - MUST CONTAIN 100% WHEAT STRAW.  
 - MUST BE SINGLE POLYPROPYLENE, RAPID PHOTODEGRADABLE NETTING.  
 - MUST HAVE NYLON PHOTODEGRADABLE THREAD.  
 - TERMED AS APPROX. 3 MONTH LIFE SPAN.  
 - MUST CONFORM TO THE FEDERAL HIGHWAY ADM. STANDARDS FOR  
 FULLY PHOTO/BIODEGRADABLE BLANKET MATERIAL.  
 EXAMPLE OF ACCEPTABLE MATERIAL:  
 ENVIROSCAPE - S1000D SINGLE NET STRAW BLANKET.

NOTE:  
 A MINIMUM OF 4-6" OF TOPSOIL MUST BE EITHER IN PLACE  
 OR PLACED AND GRADED PRIOR TO SEEDING.  
 ALL NON-PAVED AREAS WHICH ARE DISTURBED DURING  
 CONSTRUCTION MUST BE SEEDDED AND STRAW BLANKET MUST  
 BE PLACED AND SECURED. THESE AREAS MUST BE IRRIGATED  
 FOR A PERIOD OF TWO WEEKS AFTER PLACEMENT.



**MICHIGAN UNIFIED KEYING SYSTEM**  
**SOIL EROSION & SEDIMENTATION CONTROL MEASURES**

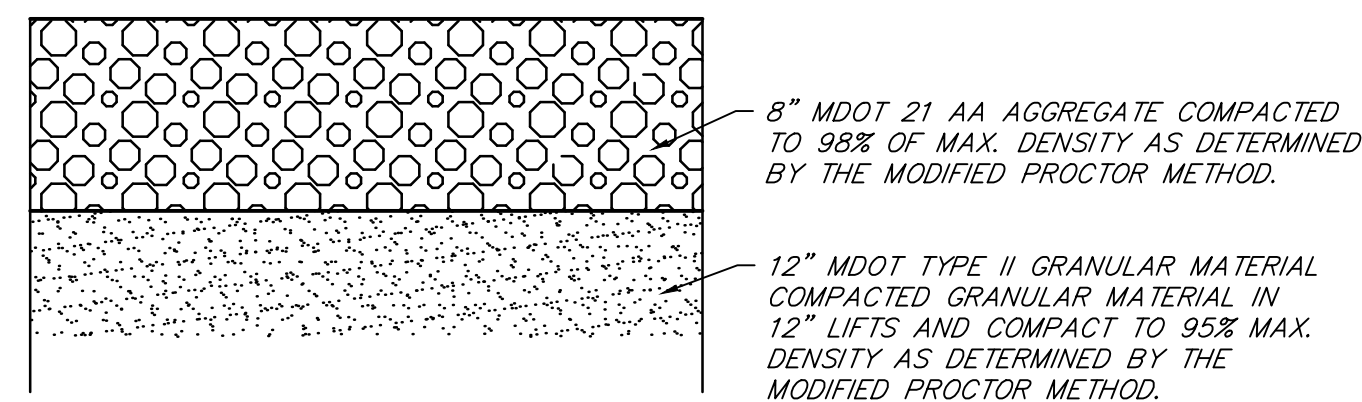
KEY	DETAIL	CHARACTERISTICS	KEY	DETAIL	CHARACTERISTICS
1		Topsoil may be stockpiled above borrow areas to act as a diversion. Stockpile should be temporarily seeded.	35		System removes collected runoff from alleys, particularly from paved areas. Can accept large concentrations of runoff. Conducts runoff to municipal sewer system or stabilized outfall location. Use catch basins to collect sediment.
2		Water can be diverted to minimize erosion. Flatter slopes ease erosion problems.	36		Collects high velocity concentrated runoff. Must use filter bag in inlet as a temporary measure.
6		Facilitates establishment of vegetative cover. Effective for drainage areas with low velocity. Easily placed in small quantities by inexperienced personnel. Should include prepared topsoil bed.	ADD STRUCTURE PROTECTION AS NEEDED		
15		Protects areas which cannot otherwise be protected, but increases runoff volume and velocity. Irregular surface will help slow velocity.	55		Controls and contains sediment from sheet flow conditions. Fabric must be "loaf" into the soil 4" or more to prevent underflow. Must be constructed of adequate strength filter fabric and stakes.
16		Keeps high velocity runoff on paved areas from leaving paved surface. Collects and conducts runoff to enclosed drainage system or prepared drainage way.	ALL NON-HARD SURFACES MUST BE STABILIZED		

NOTE: **XXT** **XXP** NOTE: **35P** **36P**  
 T = TEMPORARY P = PERMANENT TYPICAL FOR ENTIRE STORM SEWER SYSTEM

- SOIL EROSION GENERAL NOTES:**
- PRIOR TO ANY SITE WORK, CONTRACTOR MUST INSTALL TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCE AS SHOWN ON THE PLANS. IF GRADING AND SHAPING IS TO BE USED IN LIEU OF SILT FENCE, THIS WORK MUST BE CARRIED OUT PRIOR TO STRIPPING OF TOPSOIL.
  - CONTRACTOR TO INSTALL TEMPORARY SEDIMENTATION COLLECTION BAGS IN EACH CATCH BASIN LOCATED IN THE ROADWAYS OR PARKING LOTS. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE & REPLACEMENT OF BAGS AS NEEDED. BAGS TO BE REMOVED ONLY AFTER SITE HAS BEEN STABILIZED AT THE COMPLETION OF CONSTRUCTION.
  - CONTRACTOR TO STOCKPILE SOIL ON SITE AT A MAXIMUM SLOPE OF 1 ON 3. ALL SPOIL PILES ARE TO BE SEEDDED TO MAINTAIN SLOPE STABILITY.
  - EXCESS TOPSOIL IS TO BE REMOVED FROM SITE. CONTRACTOR TO COORDINATE THESE ACTIVITIES WITH PROPERTY OWNER. CONTRACTOR TO ENSURE THAT A MINIMUM 50' BUFFER STRIP IS MAINTAINED BETWEEN ALL STOCKPILES & PROPERTY LINE.
  - ALL STOCKPILES THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN 30 DAYS ARE TO BE SEEDDED AND STABILIZED.
  - CONTRACTOR WILL TAKE ALL NECESSARY STEPS TO ELIMINATE SOILS/SEDIMENT FROM LEAVING THE PROJECT SITE.
  - THE CONTRACTOR MUST KEEP STREETS FREE OF SEDIMENTATION OR TAKE STEPS TO CLEAN STREETS.
  - SOIL EROSION MAY ALSO OCCUR WHEN SOILS ARE DRY. SOIL EROSION DUE TO BLOWING WINDS MUST BE MINIMIZED BY USE OF WATER TANK TRUCKS.
  - AS SOON AS POSSIBLE SOILS WILL BE COMPACTED TO MINIMIZE SOIL EROSION. IF SOILS ARE LEFT UNCOMPACTED FOR LENGTHY PERIODS THEY MUST BE SEEDDED TO MINIMIZE SOIL EROSION.
  - TEMPORARY MEASURES SHALL STAY IN PLACE UNTIL THE CONSTRUCTION ACTIVITIES HAVE ENDED AND/OR THE PERMANENT MEASURES ARE COMPLETED.
  - UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR MUST CLEAN ALL SUMPS AND SEDIMENTATION TRAPS.
  - CONTRACTOR IS TO ENSURE THAT ALL CONTROL MEASURES ARE ADEQUATELY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

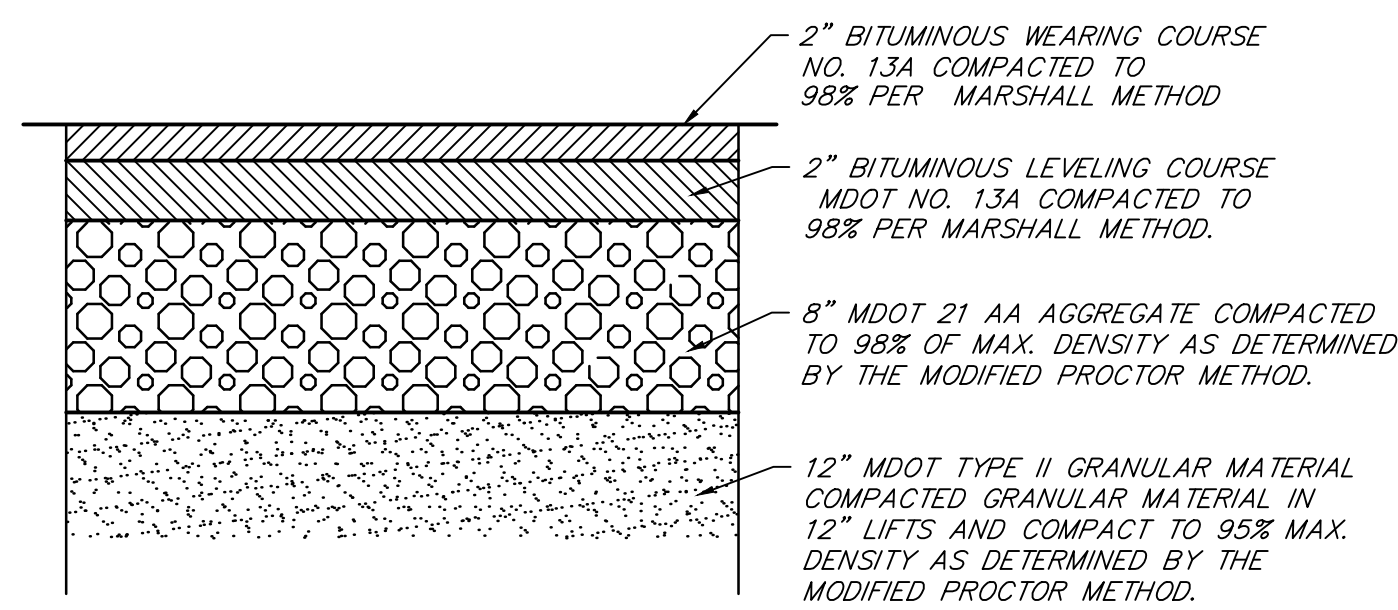
REVISIONS:		
SUBMITTALS:	SUBMITTAL TO REVIEW AGENCIES 3-27-17	
	SUBMITTAL TO UNION TOWNSHIP PLANNING COM.	
JOB NUMBER:	1612-184	
DRAWN BY:	RLL	
DESIGNED BY:	TELB	
CHECKED BY:	TELB	
SCALE:	1" = 30'	
SHEET NUMBER:	5	OF 8





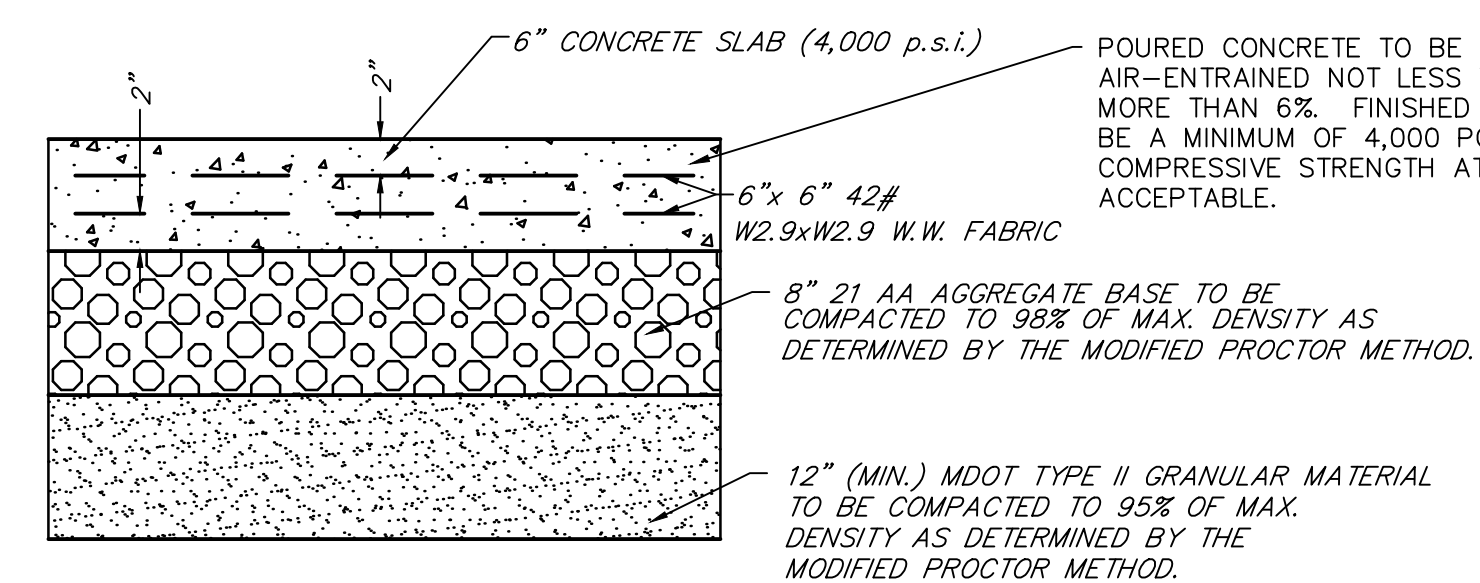
NOTE: COMPACTION TESTS ARE REQUIRED. RESULTS SHALL BE SUBMITTED TO OWNER PRIOR TO FINAL ACCEPTANCE OF SUB-BASE, BASE AND ASPHALT MATERIALS.

PARKING LOT GRAVEL CROSS-SECTION  
NOT TO SCALE

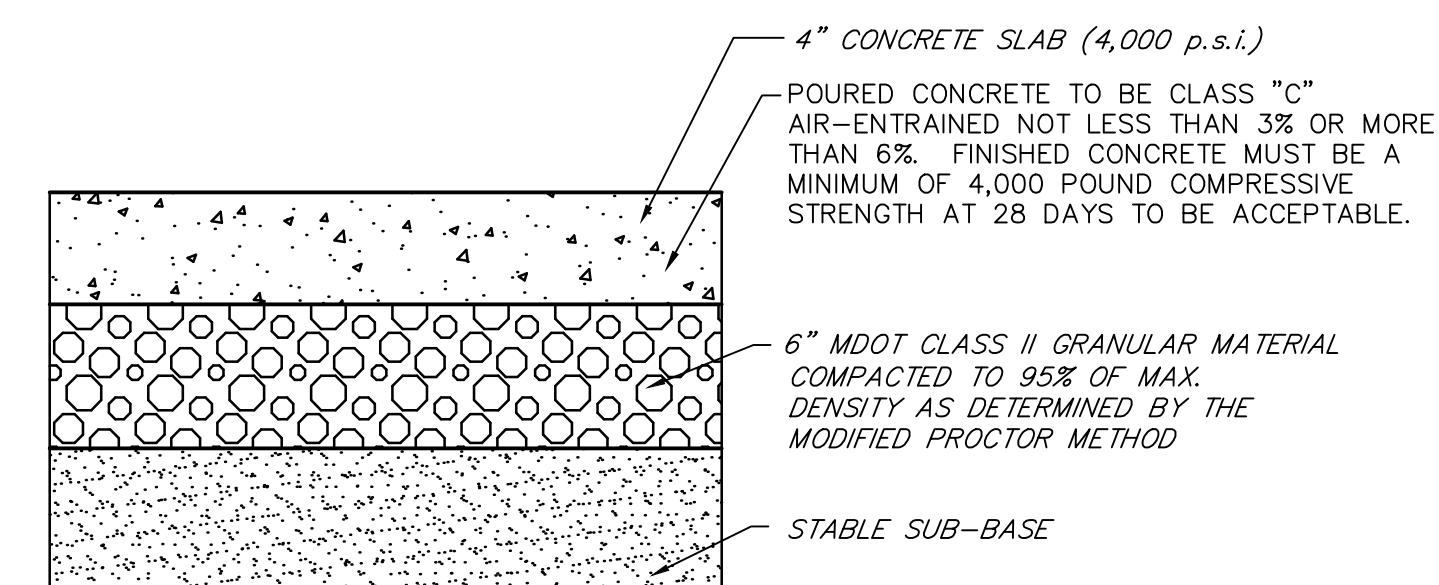


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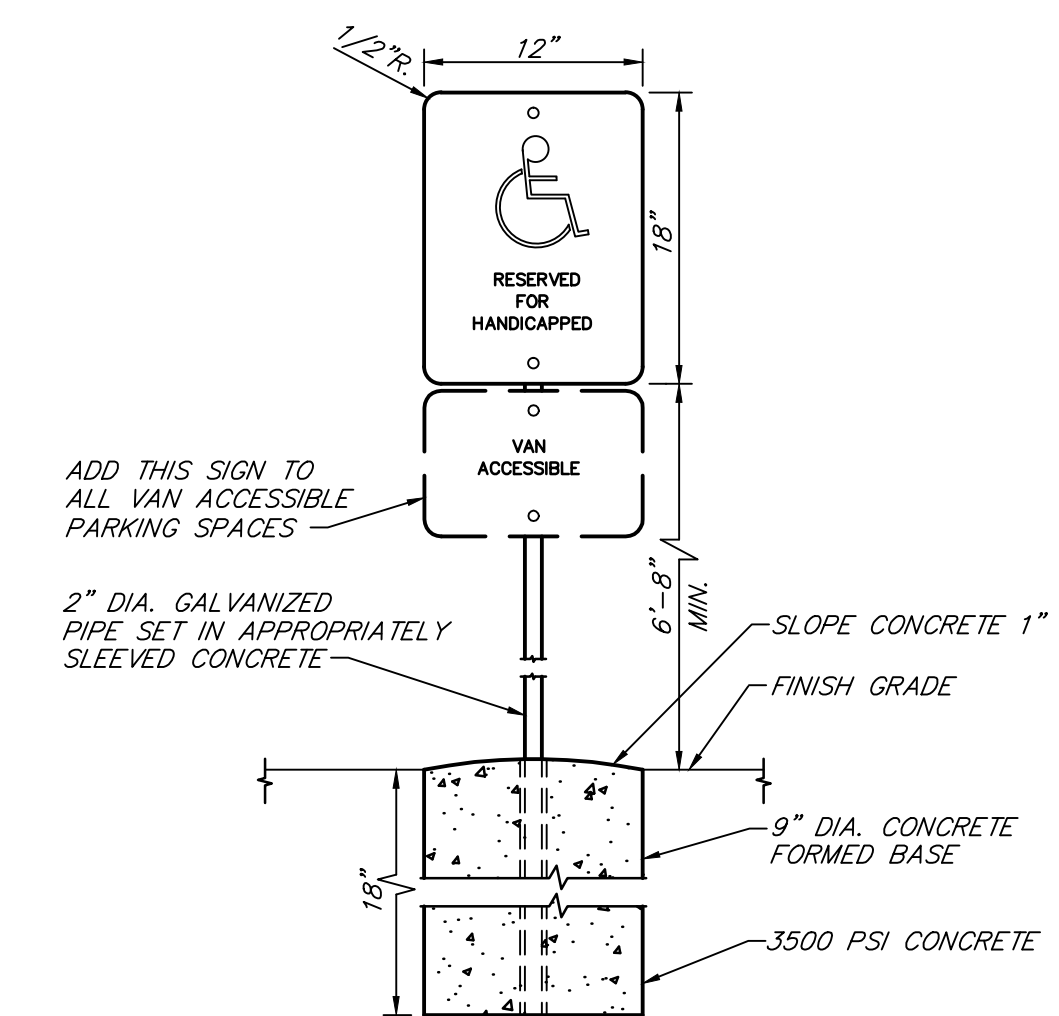
PARKING LOT ASPHALT PAVEMENT CROSS-SECTION  
NOT TO SCALE



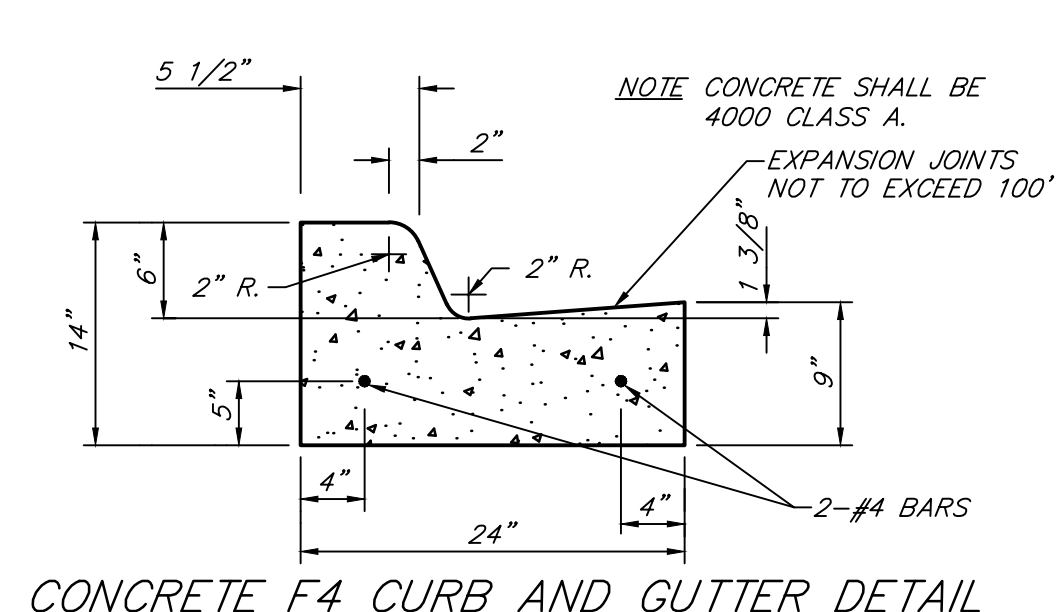
CONCRETE PAD CROSS-SECTION  
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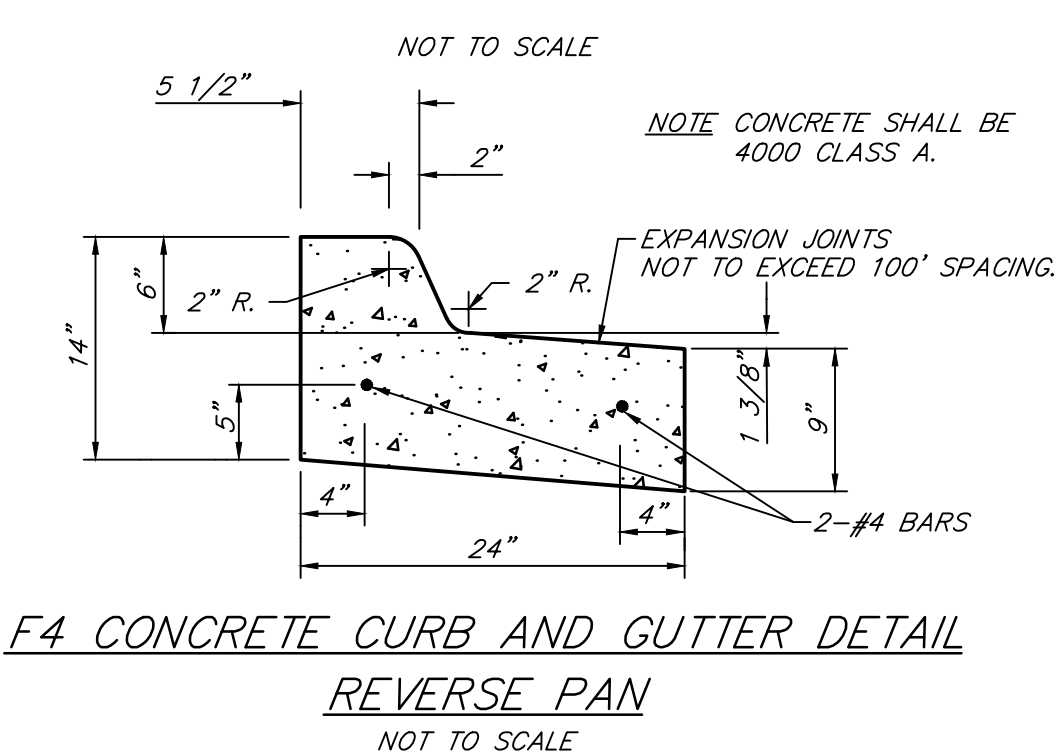
CONCRETE SIDEWALK CROSS-SECTION  
NOT TO SCALE



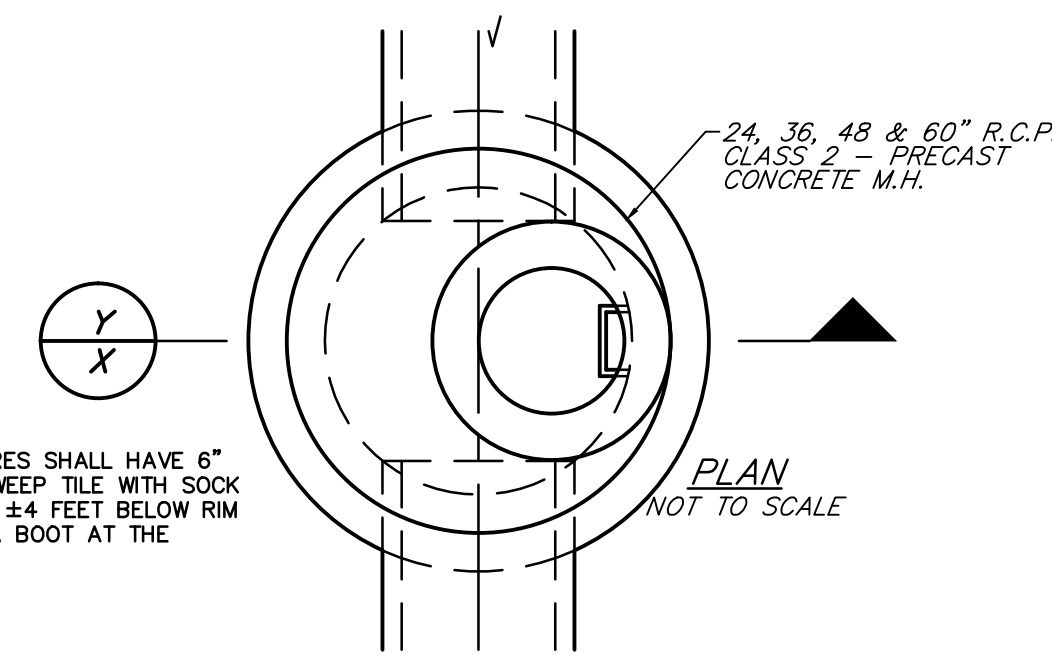
TYP. BARRIER FREE PARKING SIGN  
NOT TO SCALE



CONCRETE F4 CURB AND GUTTER DETAIL  
REGULAR PAN  
NOT TO SCALE



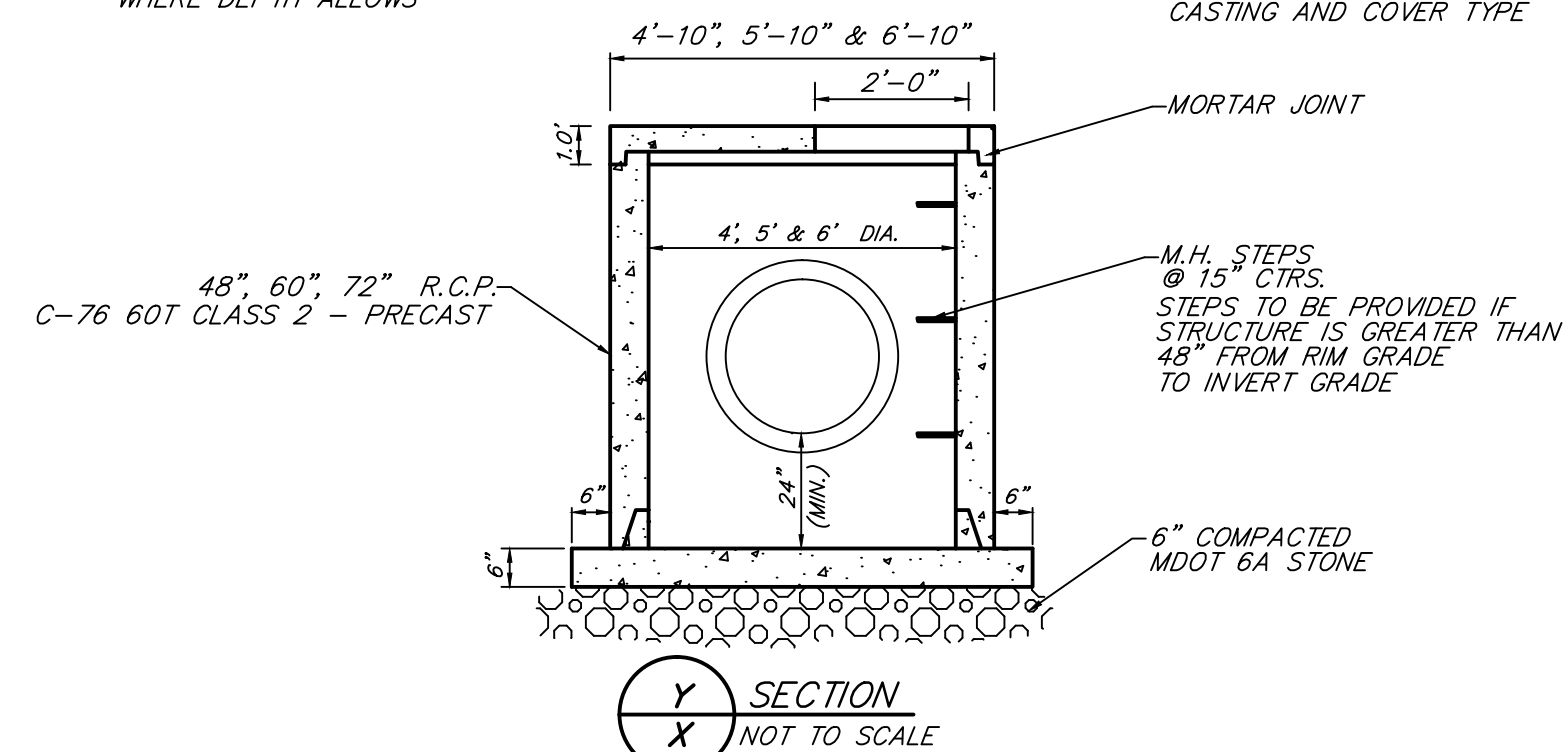
F4 CONCRETE CURB AND GUTTER DETAIL  
REVERSE PAN  
NOT TO SCALE



BOLLARD DETAIL  
NOT TO SCALE

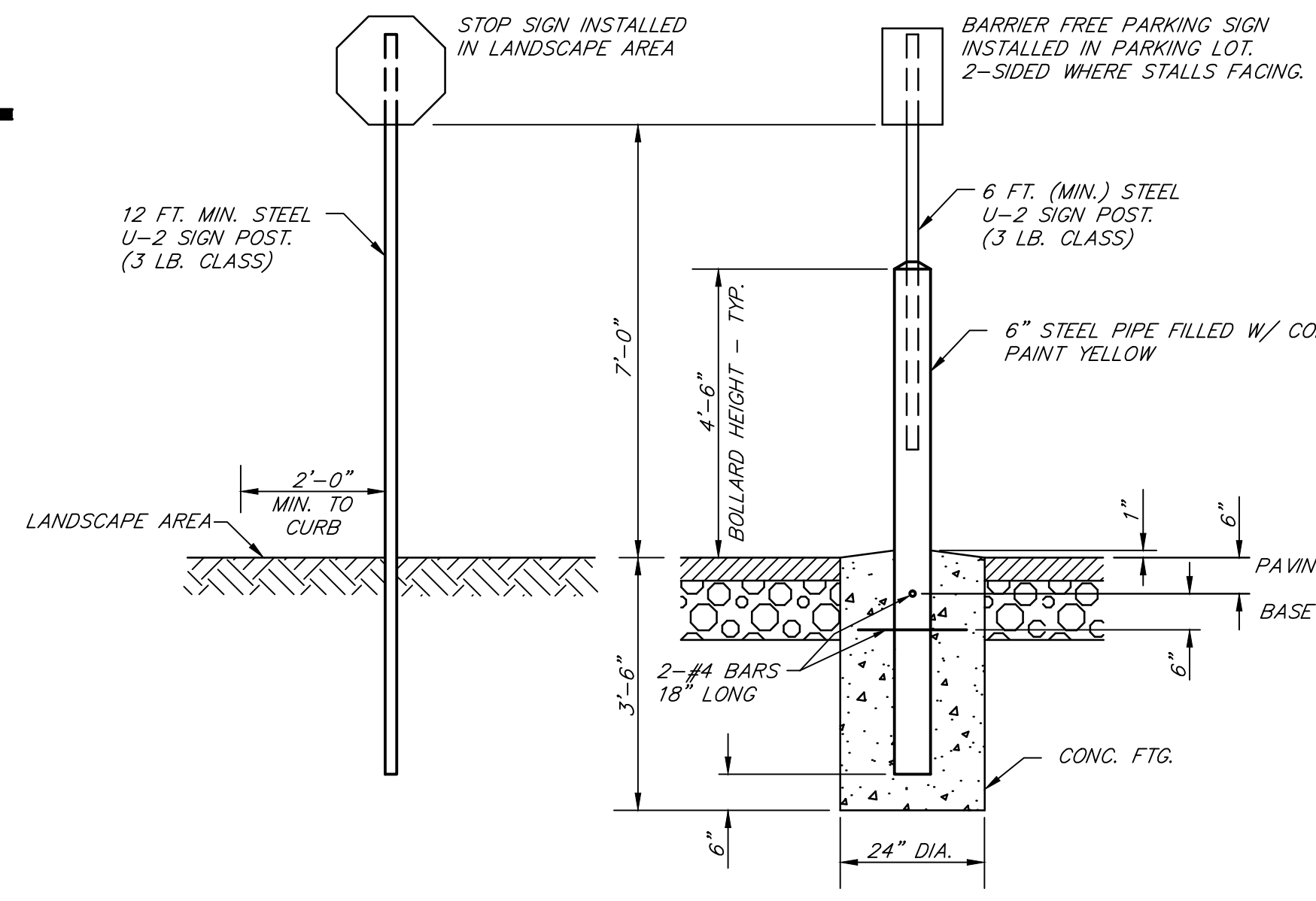
NOTE: ALL STRUCTURES SHALL HAVE 6" PERFORATED WEEP TILE WITH SOCK FINGER DRAIN ± 4 FEET BELOW RIM GRADE WITH A BOOT AT THE STRUCTURE.

NOTE: REFER TO SITE PLAN FOR CASTING AND COVER TYPE



FINGER DRAIN DETAIL  
NOT TO SCALE

4', 5' & 6' DIA. COMBINATION M.H.-C.B.



PARKING LOT SIGN POST DETAILS  
NOT TO SCALE

4" WIDE PAINTED STRIPES  
PAINT FOR PARKING SLOTS, ARROWS,  
AND ISLANDS SHALL BE MDOT  
APPROVED TRAFFIC MARKING PAINT

BARRIER FREE PARKING SPACES  
NOT TO SCALE

GENERAL NOTES:

THE SANITARY SEWER AND WATERMAIN MUST CONFORM TO THE UNION TOWNSHIP STANDARDS AND SPECIFICATIONS. SHOULD THERE BE A CONFLICT BETWEEN THE PLANS, NOTES, DETAILS AND SPECIFICATIONS, THE UNION TOWNSHIP STANDARDS SHALL GOVERN. THE CONTRACTOR WILL NOTIFY THE ENGINEER AS SOON AS A CONFLICT IS FOUND. INSTALLATION OF THESE UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UNION TOWNSHIP DEPARTMENT OF PUBLIC WORKS.

ELECTRIC SERVICES TO THE BUILDING AND PARKING LOT LIGHTING SHALL BE UNDERGROUND. SITE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR IN REGARDS TO CONDUIT SLEEVES.

ALL SERVICE LINES ARE SHOWN FOR REFERENCE ONLY. THE EXACT LOCATIONS TO BE DETERMINED BY THE OWNER AND/OR UTILITY COMPANY.

INSTALLATION OF GAS, ELECTRIC AND TELEPHONE SERVICES (INCLUDING TRANSFORMER PAD LOCATIONS) SHALL BE COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY COMPANIES AND THE ARCHITECT/ENGINEER.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS REQUIRED FOR WORKING WITHIN THE ROAD RIGHT-OF-WAY PRIOR TO COMMENCING CONSTRUCTION, WITHIN THESE AREAS.

ROOF WATER FROM THE PROPOSED BUILDING SHALL BE COLLECTED AND CONNECTED TO THE PROPOSED STORM SYSTEM AND/OR LEADS ABOVE THE BUILDING. COORDINATION WITH THE BUILDING CONTRACTOR PRIOR TO INSTALLATION OF THE HEADERS AND/OR LEADS IS REQUIRED.

THE PROPOSED ELEVATIONS SHOWN ARE TOP OF WALK, TOP OF CURB, FINISHED ASPHALT AND OR GRAVEL SURFACE AND GUTTER PAN ELEVATIONS, UNLESS OTHERWISE NOTED.

ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE UNION TOWNSHIP AND ISABELLA ROAD COMMISSION STANDARDS.

CONSTRUCTION PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF MICHIGAN, COUNTY OF ISABELLA AND UNION TOWNSHIP.

SITE CONCRETE PADS SHALL BE 4000 PSI AND REINFORCED WITH 6X6 W2.9 X W2.9. THICKNESS OF CONCRETE SHALL CONFORM TO THE PLANS. THE CONCRETE PADS ADJACENT TO THE BUILDING SHALL BE TAKEN OFF FROM THE ARCHITECTURAL PLANS AND THE CONSTRUCTION OF THE PADS SHALL BE COORDINATED WITH THE BUILDING CONTRACTOR.

DIMENSIONS SHOWN ON THE PLANS ARE GIVEN TO THE BACK OF CURB, FACE OR BACK OF WALK OR THE BUILDING OUTSIDE LINES.

STANDARD PARKING SPACES SHALL BE 10 FEET BY 20 FEET. THE SPACES ARE TO BE INDICATED BY INCH WIDE WHITE LINES. THE PAINT LINES ON THE SITE, EXCEPT NEAR THE BUILDING, SHALL CONFORM TO THE ENGINEER'S PLAN.

CONCRETE CURBING SHALL BE 4000 PSI CONCRETE.

ALL ABANDONED CURB STOP BOXES SHALL BE REMOVED AND SALVAGED.

GENERAL NOTES:

THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN. THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY CONSTRUCTION OR PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELOCATE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR WHERE POSSIBLE CONFLICTS EXIST PRIOR TO BEGINNING CONSTRUCTION.

THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY GROUND CONDITIONS, EXISTING UTILITIES, LOT AND BUILDING DIMENSIONS PRIOR TO THE START OF CONSTRUCTION. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THE PLANS. ARRANGE TO HAVE UTILITIES IDENTIFIED AND FLAGGED BEFORE STARTING CONSTRUCTION. THE OWNER ASSUMES NO LIABILITY FOR THE LOCATION OF UTILITIES. ALL DAMAGES MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

ALL CONSTRUCTION UNDER EXISTING OR PROPOSED PAVEMENT, EXISTING OR PROPOSED UTILITIES (INCLUDING LEADS), SHALL BE COMPLETELY BACKFILLED WITH SAND IN 12" LAYERS, AND COMPACTED TO NOT LESS THAN 95% OF ITS MAXIMUM UNIT WEIGHT, AS DETERMINED BY THE MODIFIED PROCTOR METHOD. THE COST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EACH ITEM.

THE CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT PART 91 OF PUBLIC ACT 451 OF 1994, AS AMENDED.

GEOTEXTILE FILTER BAGS SHALL BE USED AT ALL CATCH BASINS FOR SOIL AND SEDIMENTATION CONTROL. ALL CATCH BASINS SHALL BE CLEANED UPON COMPLETION OF THE PROPOSED PROJECT. COST FOR CLEANING THE CATCH BASINS SHALL BE INCLUDED IN THE COSTS FOR THE DRAINAGE STRUCTURES.

TOPSOIL SHALL BE STOCKPILED ON THE SITE AND USED AS TOPSOIL SURFACES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. TOPSOIL WILL NEED TO BE SPREAD IN THE BASIN AREA TO A MINIMUM DEPTH OF 6 INCHES. THE BERMS SHOWN ON THE PLANS WILL NEED TO BE TOPSOIL OR TO HAVE A MINIMUM OF 6 INCHES ON TOPSOIL SPREAD OVER THEM. THE CURB ISLANDS WILL BE FILLED AS SPECIFIED WITH TOPSOIL. THE INTENT IS FOR THE CONTRACTOR AND THE LANDSCAPER TO USE THE EXISTING TOPSOIL TO COMPLETE THE PROJECT PRIOR TO HAULING ANY TOPSOIL ONTO THE SITE. UNSUITABLE TOPSOILS MUST BE DISPOSED OF DURING THE CLEANUP, ANY REMAINING STOCKPILES WILL NEED TO BE REMOVED. SOIL EROSION MEASURES MUST BE TAKEN TO ASSURE THAT THESE STOCKPILES ARE STABILIZED.

THE CONTRACTOR SHALL SEED AND FERTILIZE DITCH BANKS, SOILS PILES OR BANKS AND ANY OTHER DISTURBED AREAS AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.

THE CONTRACTOR SHALL BACKFILL, COMPACT AND FINE GRADE ALL AREAS BETWEEN THE CURBS AND PAVEMENT AND THE PROPERTY LINES WITH TOPSOIL SUITABLE FOR LANDSCAPING. THE GRADES IN THESE AREAS WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE UNPAVED AREAS SHALL BE SMOOTHLY GRADED AND THE SURFACE STABILIZED BY SEEDING AS STATED ON THE PLANS. THE MAXIMUM DESIRABLE SLOPE IS 3 HORIZONTAL TO 1 VERTICAL, UNLESS OTHERWISE STATED.

THE CONTRACTOR SHALL FURNISH AND INSTALL PLAIN RIP-RAP BANK PROTECTION IN AREAS WHERE BANK EROSION WILL MOST LIKELY OCCUR OR AS DIRECTED BY THE ENGINEER.

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE TO BE DISPOSED OF BY THE CONTRACTOR.

ALL DEWATERING REQUIRED FOR CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE BID.

ALL JOINTS AT INTERSECTION APPROACHES AND DRIVEWAYS SHALL BE SAWCUT WITH BUTT-JOINTS. THE COST SHALL BE INCLUDED WITH THE PAYMENT FOR EXCAVATION.

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES ON THE PROJECT. THE COST IS TO BE INCLUDED IN THE LUMP SUM FEE.

ALL WATER VALVE BOXES, ELECTRICAL BOXES, GAS VALVES AND ANY OTHER EXISTING UTILITY STRUCTURES ON THE SITE SHALL BE ADJUSTED TO FINISHED GRADE. THE COST SHALL BE INCLUDED IN THE LUMP SUM FEE.

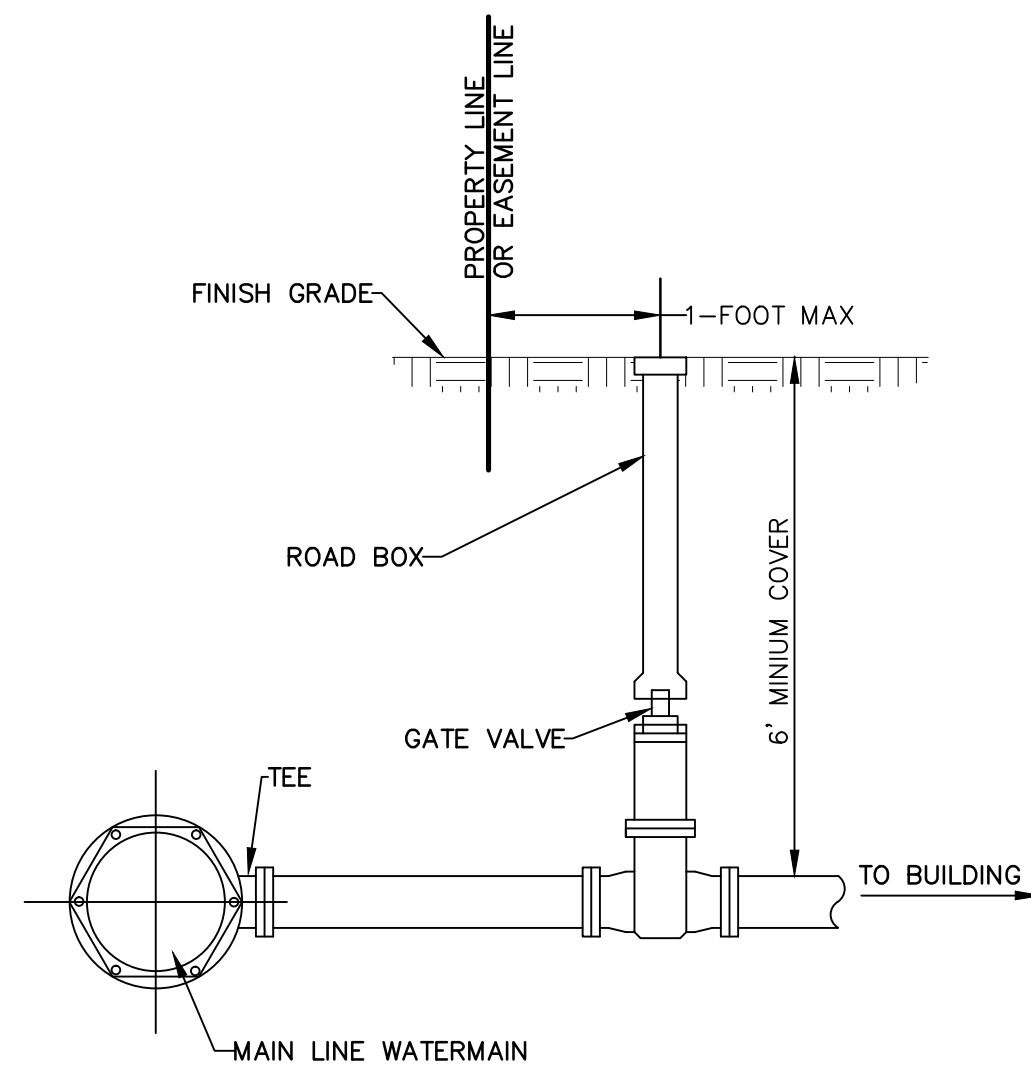


REVISIONS:

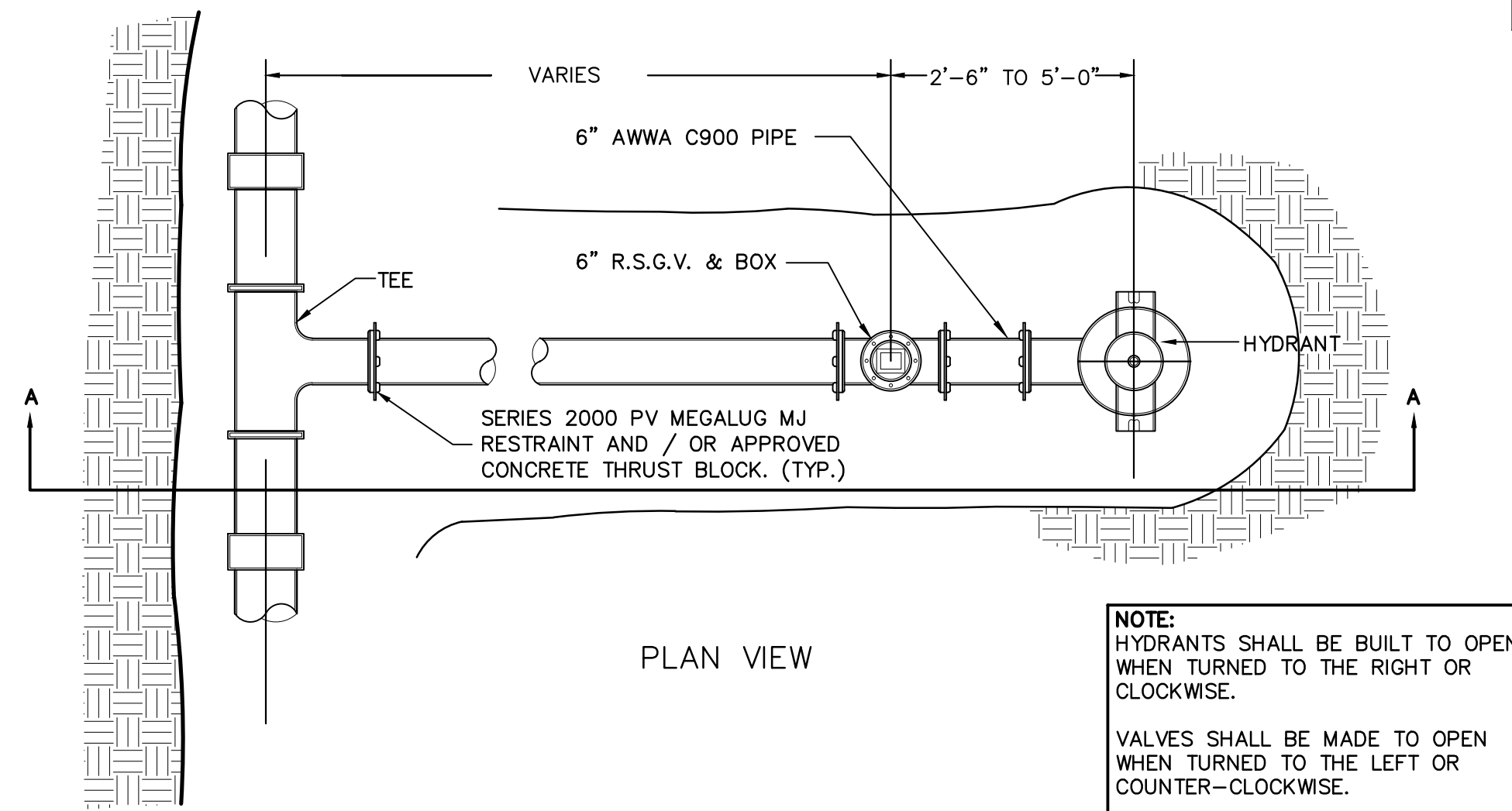
1612-184	3-27-17
1612-184	3-27-17
1612-184	3-27-17

JOB NUMBER:	DESIGNED BY:
DRAWN BY:	CHECKED BY:
TELB	TELB

SCALE:	SHEET NUMBER:
1" = 30'	6 OF 8

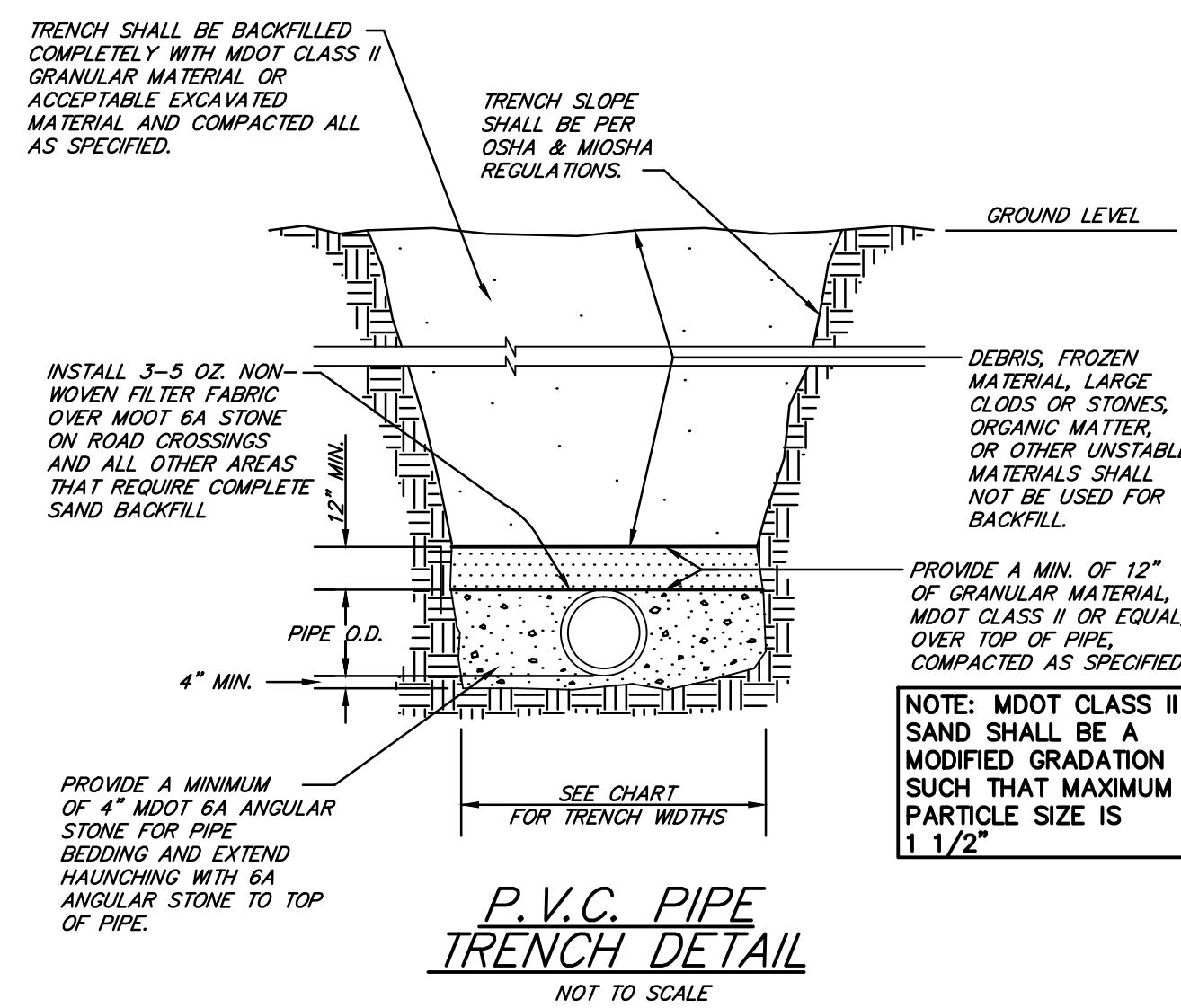


**TEE CONNECTION**  
3 INCH OR LARGER WATER SERVICE  
(INSTALLATION BY CONTRACTOR)



PLAN VIEW

**NOTE:**  
HYDRANTS SHALL BE BUILT TO OPEN WHEN TURNED TO THE RIGHT OR CLOCKWISE.  
VALVES SHALL BE MADE TO OPEN WHEN TURNED TO THE LEFT OR COUNTER-CLOCKWISE.



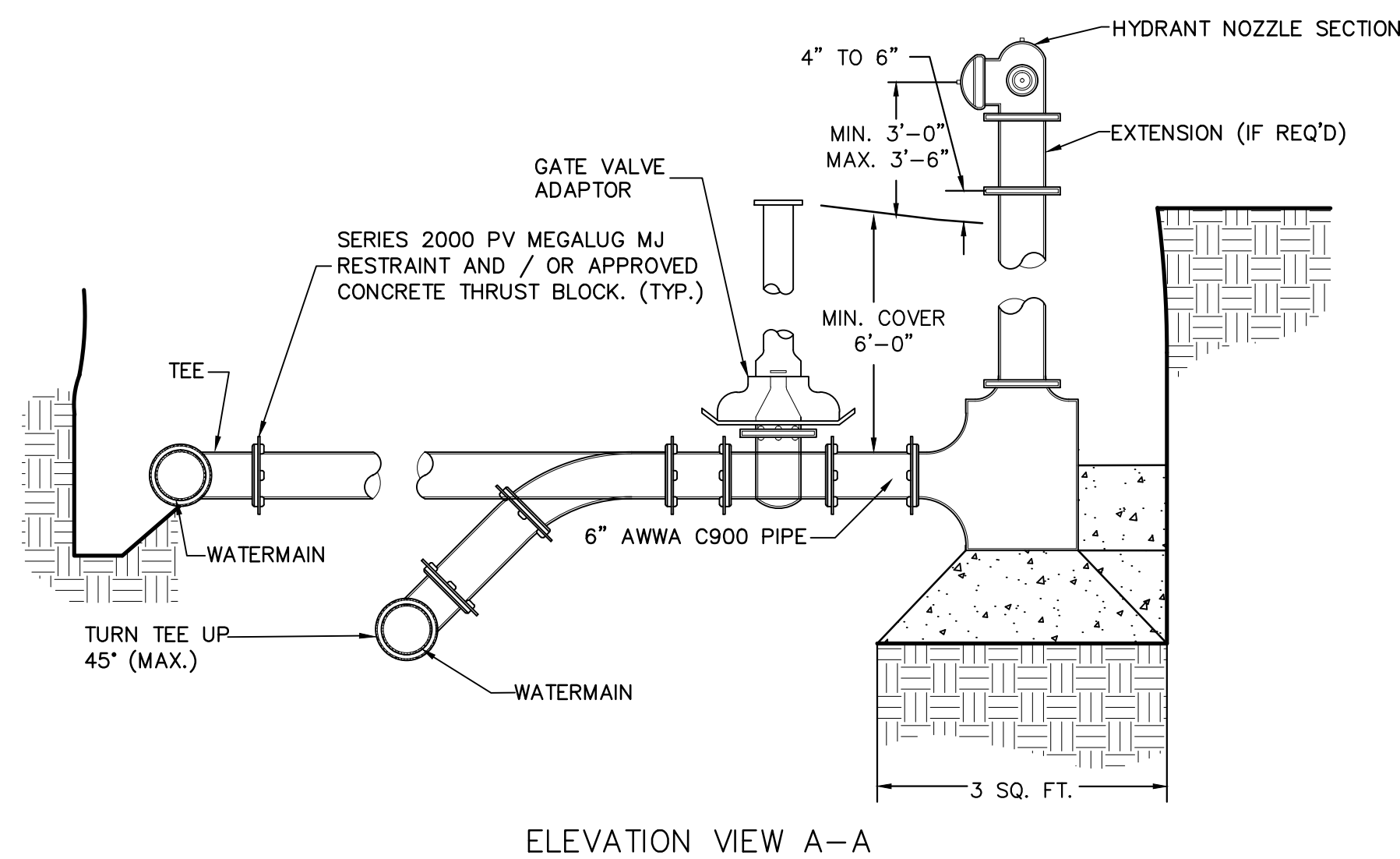
**P.V.C. PIPE TRENCH DETAIL**  
NOT TO SCALE

**TRENCH WIDTH CHART**

PIPE SIZE	MINIMUM	MAXIMUM
8" & 10"	24"	30"
12" & 15"	30"	36"
18"	34"	40"
21"	38"	42"
24"	42"	46"
27"	45"	49"
30"	49"	53"
36"	56"	60"
LARGER THAN 36"	I.D. +20"	I.D. +24"

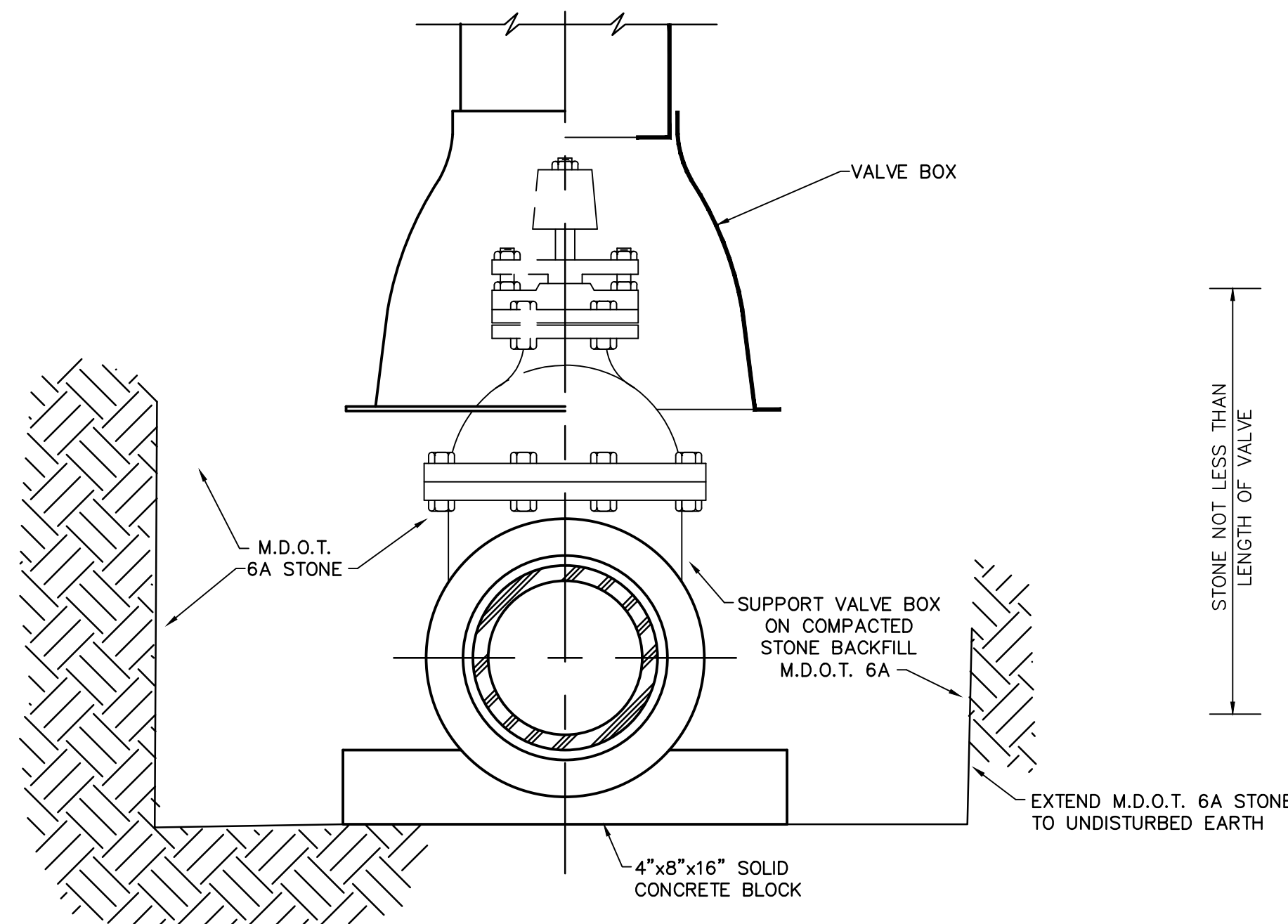
**NOTES:**

- THE CONCRETE USED FOR BLOCKING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
- THE CONTRACTOR SHALL SECURE ALL VERTICAL BENDS WITH A MINIMUM OF 2/3/4" ANCHOR RODS FITTING EITHER CONCRETE BLOCK, WELDED STEEL PIPE SLEEVE OR COLLARS. METHOD USED SHALL BE DETERMINED BY THE ENGINEER.
- ALL BENDS SHALL BE MECHANICAL JOINT.
- ALL FERROUS PARTS SHALL RECEIVE A 10 MIL (DMT) COATING OF COAL TAR EPOXY.
- WRAP ALL FITTINGS, VALVES, HYDRANTS, AND D.I. PIPE IN 8 MIL POLYETHYLENE SHEET TO WITHIN ONE FOOT OF FINISHED GRADE.
- ALL HYDRANTS SHALL BE MEGA LUGGED.
- ALL COST ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH HYDRANT INSTALLED.



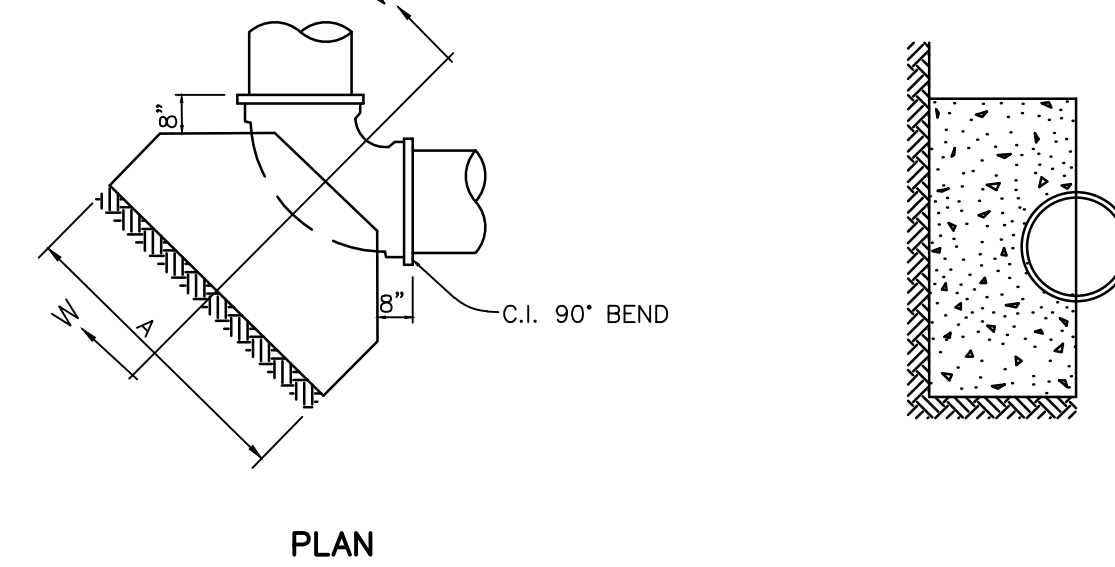
ELEVATION VIEW A-A

**TYPICAL HYDRANT CONNECTION**  
NOT TO SCALE

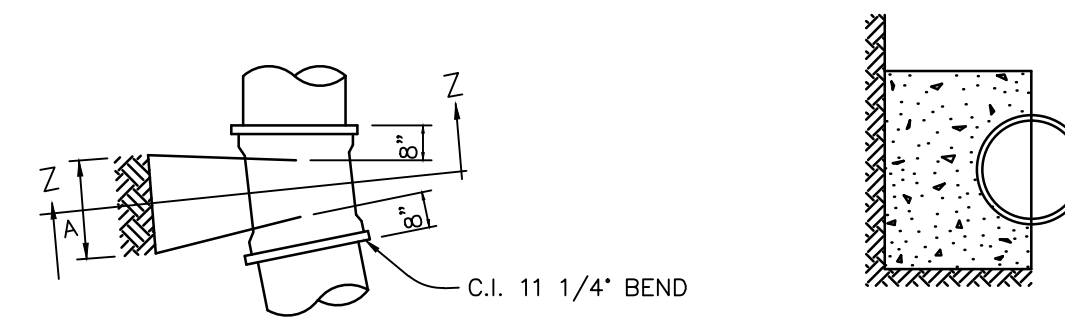


**DETAIL OF SETTING OF VALVE BOXES**  
NOT TO SCALE

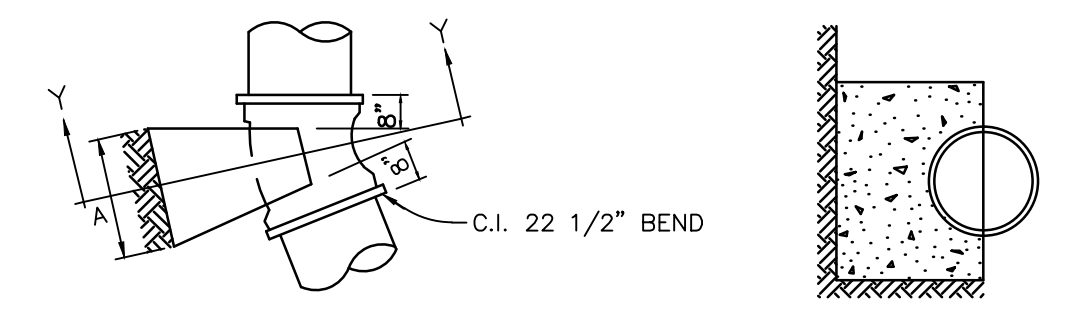
PIPE SIZE	90° BEND OR TEE				45° BEND				22 1/2° BEND				11 1/4° BEND				PLUG			
	A	B	C	Q	A	B	C	Q	A	B	C	Q	A	B	C	Q	A	B	C	Q
6", 8" & 10"	3'-0"	2'-0"	1'-3"	0.3	2'-0"	1'-6"	1'-3"	0.1	1'-6"	1'-0"	1'-3"	0.1	1'-0"	1'-0"	1'-3"	0.1	2'-0"	2'-0"	1'-6"	0.2
12"	3'-0"	2'-6"	1'-6"	0.4	2'-0"	2'-0"	1'-6"	0.2	2'-0"	1'-0"	1'-6"	0.1	1'-0"	1'-0"	1'-6"	0.1	2'-0"	2'-6"	1'-6"	0.3



PLAN  
**DETAIL OF BLOCK FOR 90° BEND OR TEE**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



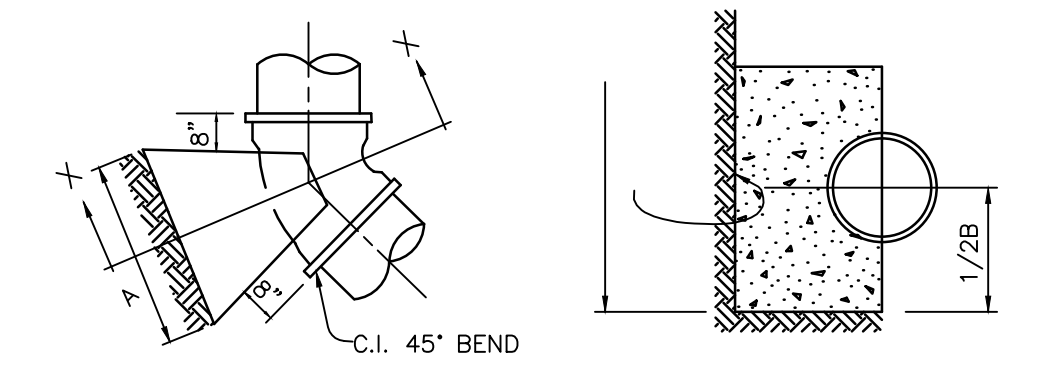
PLAN  
**DETAIL OF BLOCK FOR 45° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



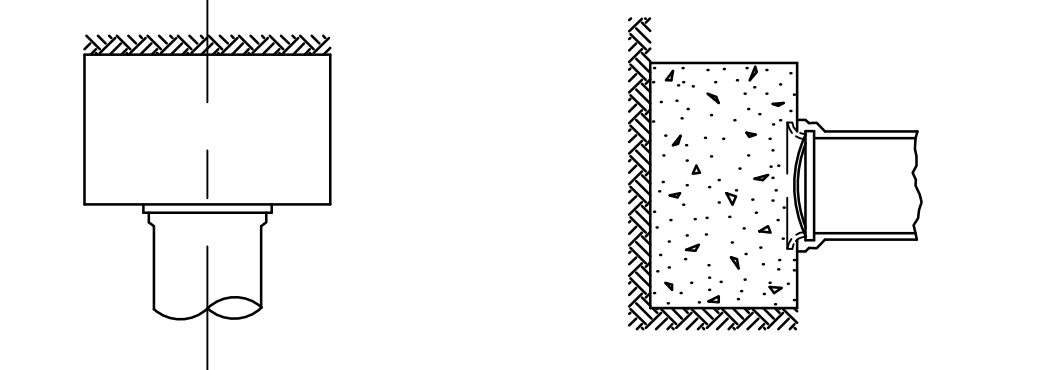
PLAN  
**DETAIL OF BLOCK FOR 11 1/4° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



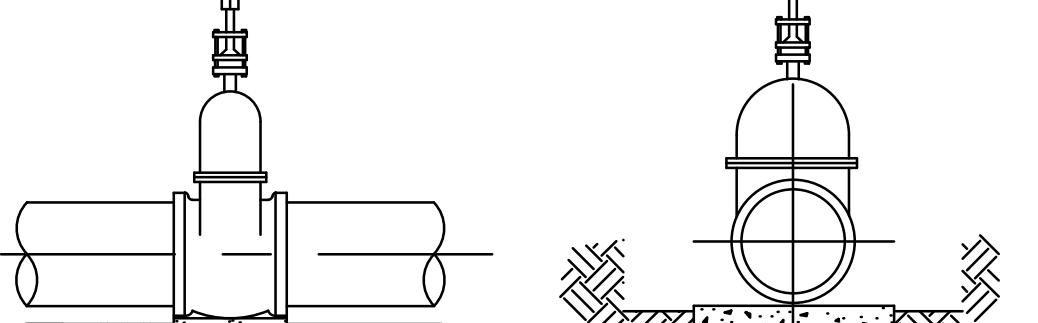
PLAN  
**DETAIL OF BLOCK FOR 22 1/2° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



PLAN  
**DETAIL OF BLOCK FOR GATE VALVES**  
NOT TO SCALE



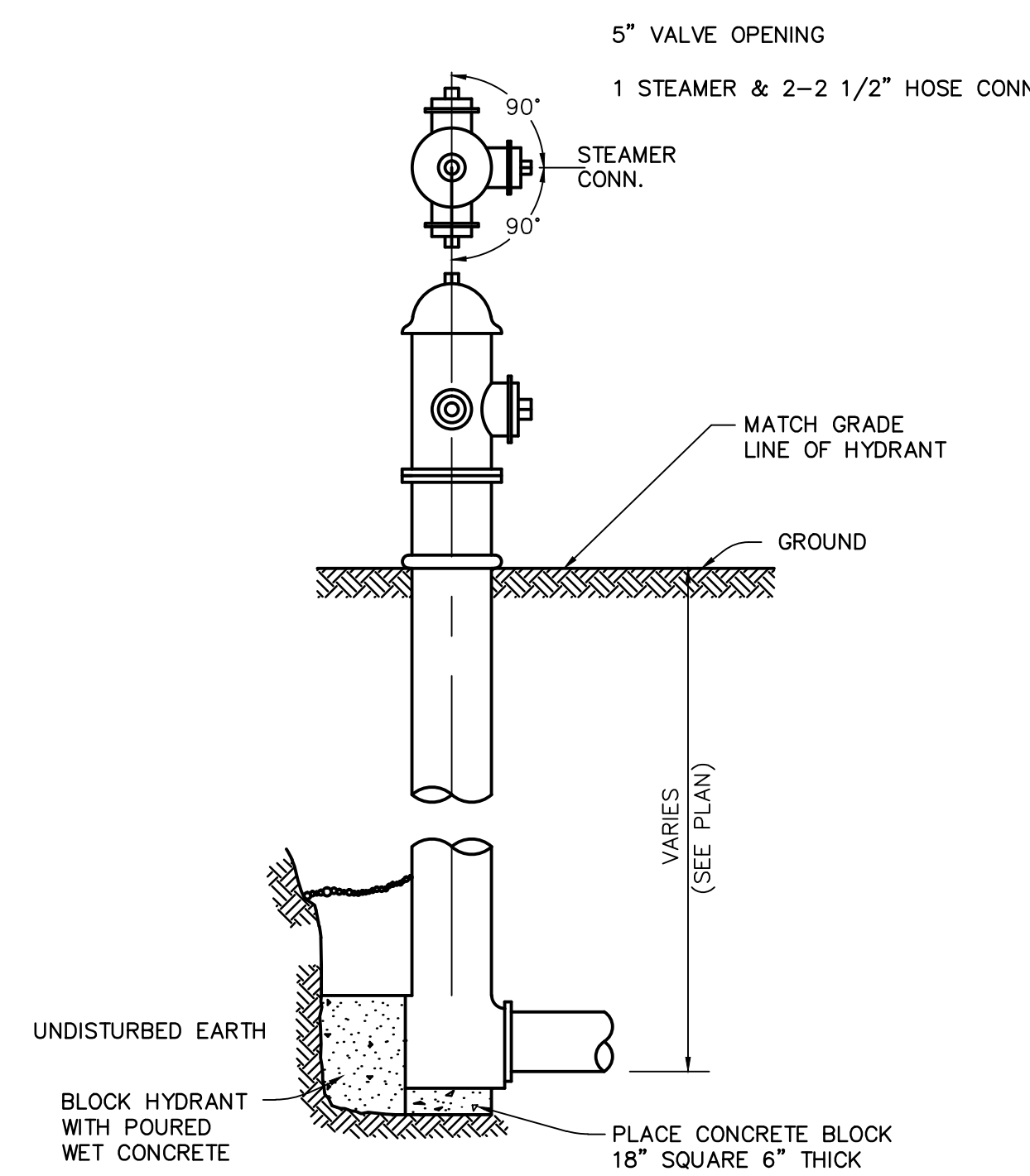
PLAN  
**DETAIL OF BLOCK FOR 11 1/4° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



PLAN  
**DETAIL OF BLOCK FOR 22 1/2° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE

**DETAIL OF BLOCK FOR PLUG**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE

**DETAIL OF BLOCK FOR GATE VALVES**  
NOT TO SCALE



**DETAIL OF SETTING HYDRANT**  
NOT TO SCALE

**CMS & D**  
SURVEYING / ENGINEERING  
510 W. BICKARD STREET, SUITE C  
M.T. PLEASANT, MICHIGAN 48856  
PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: info@cms-d.com



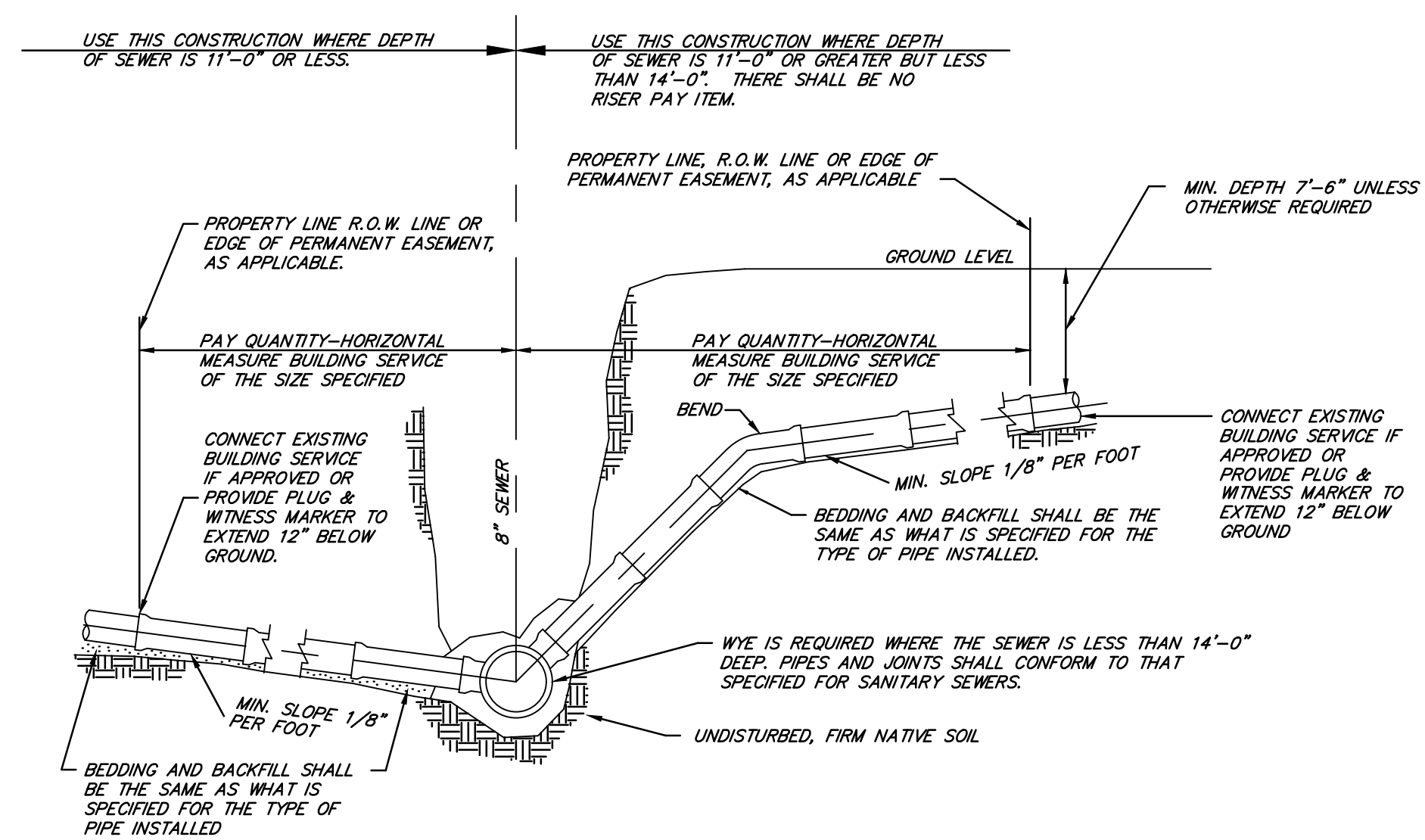
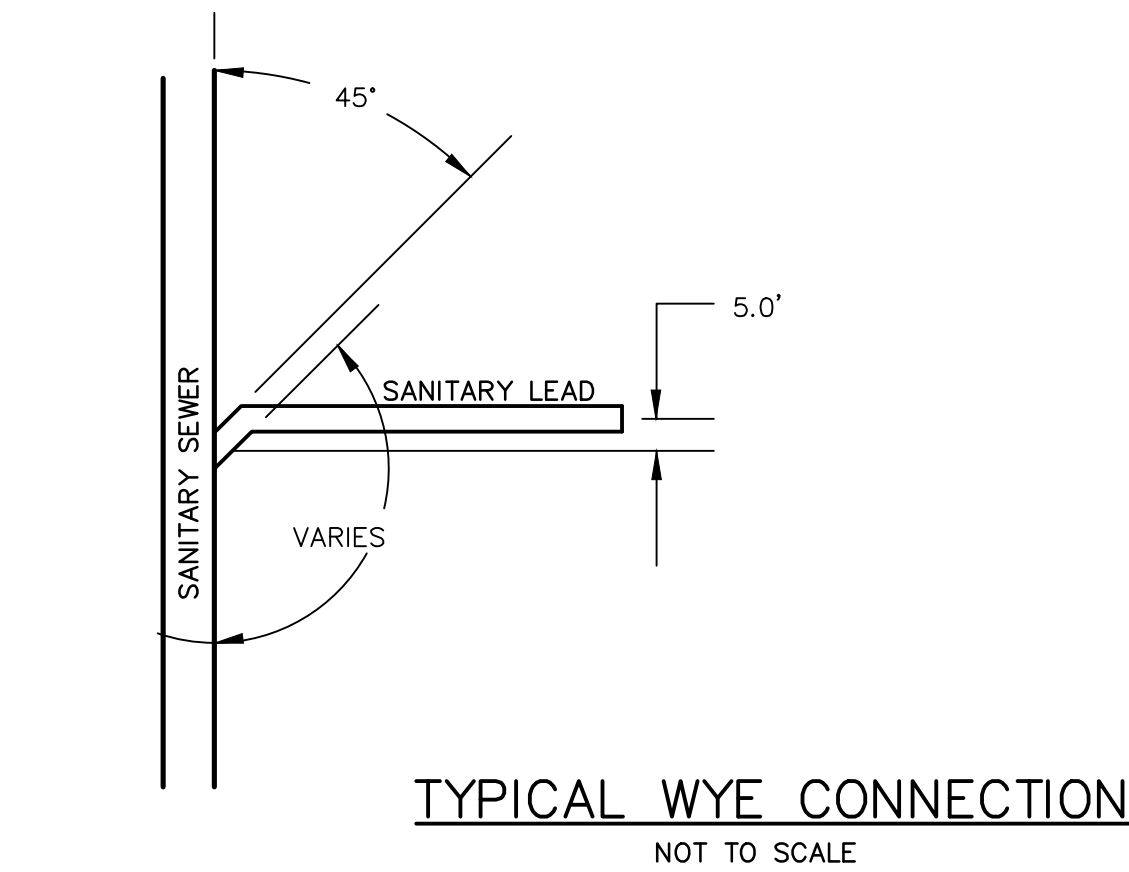
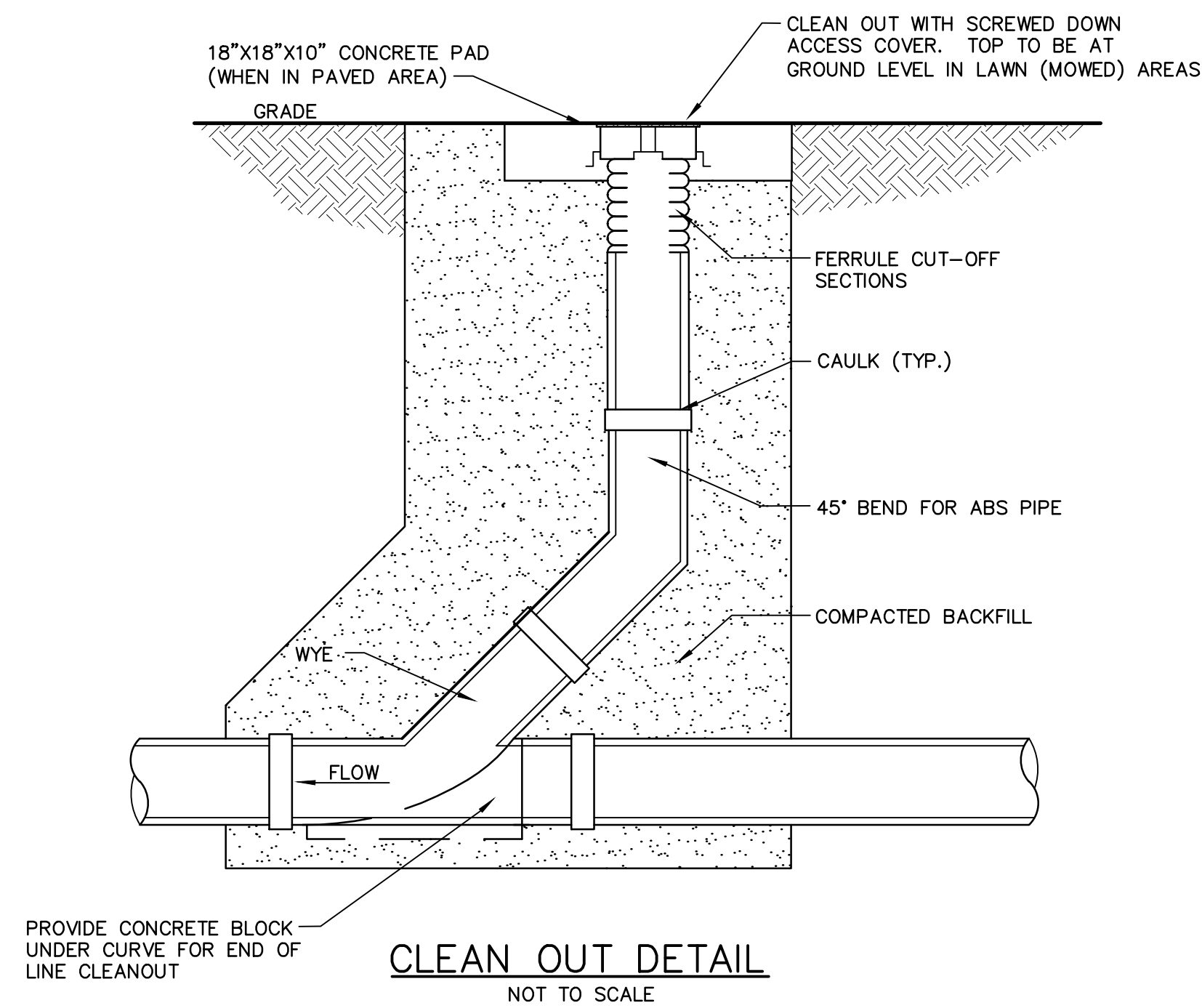
**CONSTRUCTION DETAILS #2**  
MCGUIRK MINI-STORAGE, INC.  
LOT 11 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

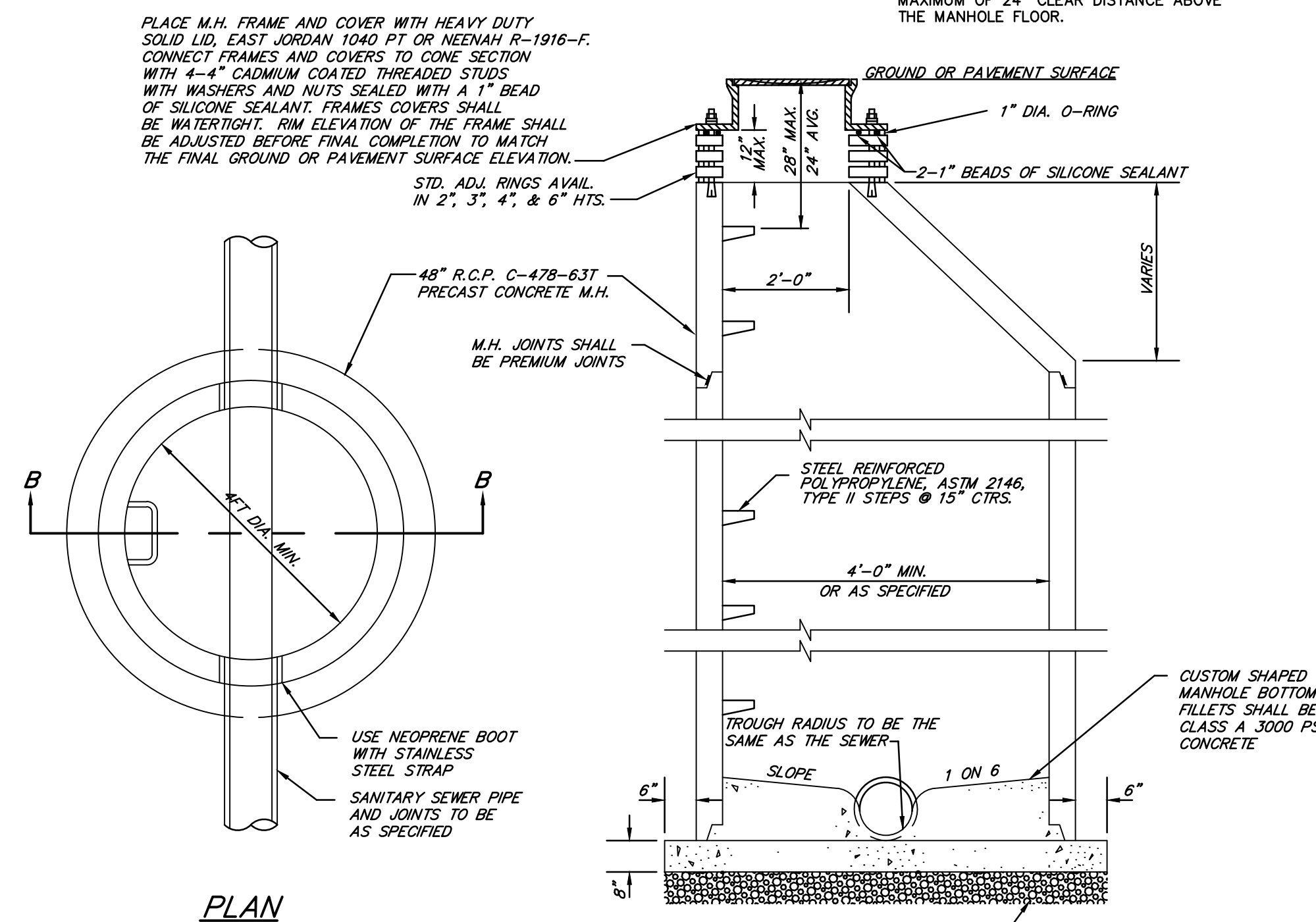
SUBMITTALS:  
SUBMITTAL TO REVIEW AGENCIES 3-27-17  
SUBMITTAL TO UNION TOWNSHIP PLANNING COM.

JOB NUMBER:  
1612-184  
DRAWN BY:  
RLL  
DESIGNED BY:  
TELB  
CHECKED BY:  
TELB

SCALE:  
1" = 30'  
SHEET NUMBER:  
7 OF 8



**SEWER SHALLOWER THAN 14'-0"  
SERVICE DETAIL**



**STANDARD MANHOLE**  
NOT TO SCALE

**SANITARY SEWER GENERAL NOTES:**

ALL SANITARY SEWER IS TO BE INSTALLED IN ACCORDANCE WITH THE PROJECTS PLANS AND UNION TOWNSHIP SPECIFICATIONS ([www.uniontownshipmi.com](http://www.uniontownshipmi.com)). SHOULD DIFFERENCES BETWEEN THE PLANS AND THE SPECIFICATIONS OCCUR THE ENGINEER SHALL BE NOTIFIED.

ALL MANHOLE RIMS SHALL BE SET TO GRADE AS FURNISHED BY THE ENGINEER.

ALL MANHOLES SHALL USE ECCENTRIC CONES PLACED TOWARD THE PROPERTY LINE UNLESS OTHERWISE NOTED.

NO FOOTING DRAINS SHALL BE CONNECTED TO BUILDING LEADS.

DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED 6\".

NO CONNECTION RECEIVING STORM WATER, SURFACE WATER OR GROUNDWATER SHALL BE MADE TO SANITARY SEWERS.

ALL SEWERS SHALL BE SUBJECT TO AIR, INFILTRATION, EXFILTRATION, DEFLECTION TESTING AND VIDEO TAPING TESTS, OR A COMBINATION OF SAME, BEFORE ACCEPTANCE. (REFER TO SPECIFICATIONS)

IN ROADWAYS, STREETS, DRIVES AND PARKING AREAS, THE BASE COURSE SHALL BE REPLACED IMMEDIATELY AFTER BACKFILLING OF THE TRENCH.

NEW SANITARY SEWER BUILDING CONNECTIONS SHALL BE EXTENDED FROM SANITARY SEWER TO BUILDING CLEANOUTS WHERE SHOWN ON THE PLANS. EXISTING SANITARY SEWER SHALL BE KEPT IN SERVICE AT ALL TIMES DURING INSTALLATION OF NEW BUILDING CONNECTIONS.

ALL STUBS SHALL HAVE A WATER TIGHT BULKHEAD (PLUG) AND MARKED WITH 4"x4" POST PAINTED GREEN.

BACKFILL SHALL BE PLACED IN 12 INCH LAYERS TO A MINIMUM OF 95 PERCENT MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHOD, FROM THE BOTTOM OF THE TRENCH TO (1) FOOT ABOVE THE TOP OF PIPE. PIPE BEDDING SHALL BE AS FOLLOWS; A MINIMUM OF (4) INCHES OF 6A STONE PLACED BELOW THE PIPE AND EXTENDED UP TO THE TOP OF THE PIPE. THE REMAINING (1) FOOT SHALL BE MDT CLASS II GRANULAR MATERIAL WITH A MODIFIED GRADATION SUCH THAT MAXIMUM PARTICLE SIZE IS 1 1/2\". ALL TRENCHES IN HARD SURFACE AREAS SHALL CONTINUE THE MDT CLASS II GRANULAR MATERIAL UP TO THE SUBBASE OF THE PAVED AREA. LIFTS MAY NOT EXCEED (12) INCHES. THIS BACKFILL SHALL ALSO BE PLACED TO 95 PERCENT OF ITS MAXIMUM DENSITY.

ALL SERVICE LEADS SHALL RUN AT A MINIMUM GRADE OF ONE PERCENT (1%).

A SEPARATE FLOW CHANNEL SHALL BE PROVIDED FOR ALL 6\" SANITARY LEADS THAT ARE CONNECTED DIRECTLY TO A MANHOLE.

**NOTE:**  
MANHOLE STEPS SHALL BE ORIENTATED AT 45° TO THE MAIN SEWER WITH A MAXIMUM OF 24\" CLEAR DISTANCE ABOVE THE MANHOLE FLOOR.

**NOTES:**

- 18\" MINIMUM VERTICAL CLEARANCE AND 10 FOOT HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN WATER MAIN AND ALL UTILITY CROSSINGS. WHERE LESS VERTICAL CLEARANCE IS PROVIDED, CONCRETE SADDLES WILL BE REQUIRED.
- CONTRACTOR MAY RAISE HYDRANTS TO 6'-6\" BURY BY ADDING MECHANICAL JOINTS, INSTALLED IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- CONTRACTOR SHALL VERIFY THE ELEVATION OF THE EXISTING WATER MAIN PRIOR TO CONSTRUCTION. SHOULD DIFFERENCES BETWEEN THE FIELD MEASUREMENTS AND PLANS OCCUR, THE ENGINEER SHALL BE NOTIFIED.
- ALL WATER MAIN CONSTRUCTED WITHIN THE INFLUENCE OF EITHER PROPOSED OR EXISTING ROADS SHALL BE COMPLETELY BACKFILLED WITH M.D.O.T CLASS II SAND IN MAXIMUM 12\" LIFTS. BACKFILL DENSITY SHALL BE AS SPECIFIED IN THE ASPHALT PAVEMENT CROSS SECTION.
- CARE IS TO BE TAKEN WHEN INSTALLING WATER SERVICE LEAD TO BUILDINGS TO INSURE THAT ACCEPTABLE UTILITY CROSSING CLEARANCES ARE MAINTAINED.
- CONTRACTOR SHALL CALL "MISS DIG" A MINIMUM OF A 3 DAYS PRIOR TO COMMENCING ANY CONSTRUCTION WORK.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN COMPLIANCE WITH UNION TOWNSHIP STANDARDS ([www.uniontownshipmi.com](http://www.uniontownshipmi.com)).
- WATER MAIN TO BE AWWA C-900. IN DIRECTIONAL BORE LOCATIONS USE HDPE, AS SHOWN. WATER MAIN MUST BE STAMPED/MARKED NSF APPROVED ON PIPE.
- THE CONTRACTOR IS REQUIRED TO ADJUST ALL FIRE HYDRANTS, VALVES, AND WATER SHUTOFF TO FINISH GRADE.
- CONTRACTOR TO ENSURE A MINIMUM OF 5'-6\" OF COVER OVER ALL WATER LEADS.
- PRIOR TO CONNECTION OF EXISTING WATER MAIN THE NEW WATER MAIN ALL NEW WATERMAIN SHALL BE FLUSHED, CHLORINATED AND PRESSURE TESTED IN ACCORDANCE TO TOWNSHIP SPECIFICATIONS.
- IF THE PROPOSED BUILDINGS HAVE FIRE SUPPRESSION THERE SHALL BE A 2\" DOMESTIC SERVICE LEAD AND A SEPARATE 6\" FIRE SUPPRESSION LEAD TO BE COORDINATED WITH PLUMBER. REFER TO ARCHITECTURAL PLANS FOR VERTICAL RISER DETAIL.
- ALL FIRE HYDRANTS SHALL BE BURIED 6 FEET FROM THE FINISHED GRADE OF THE FIRE HYDRANT TO THE TOP OF THE PIPE.
- ALL WATER MAINS MUST BE FLUSHED AND CLEANED OF SAND AND DEBRIS USING THE "POLY PIG" METHOD OF FLUSHING.
- ALL SERVICE LEADS ARE TO BE CAPPED 5' FROM PROPOSED BUILDINGS AND/OR COORDINATED WITH PLUMBER.
- PRESSURE TESTING MUST BE DONE IN ACCORDANCE WITH TOWNSHIP SPECIFICATION AND NOT MORE THAN 2,500 LF OF WATER MAIN WILL BE TESTED AT ONE TIME.
- DISINFECTING OF WATER MAINS WILL BE DONE IN ACCORDANCE TO ALL TOWNSHIP SPECIFICATIONS AND WILL BE COMPLETED AFTER ALL WATER MAIN HAS BEEN FLUSHED AND PRESSURE TESTED.
- OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND FOLLOWED WITH WRITTEN DESCRIPTION OF FIELD FINDINGS NOTING SPECIFIC ELEVATIONS AND CONDITIONS THAT DIFFER FROM PLANNED DESIGNS. 2+ FEET OF EXISTING CONDITIONS IS TO BE CORRECTED WITHOUT COST DEVIATION AND ACCEPTED AS FIELD CONDITIONS.
- ANY DIRECTIONAL BORE SHALL BE INSTALLED BY UNION TOWNSHIP.
- INSTALLATION OF ANY WATER MAIN, HYDRANT OR VALVES MUST BE INSPECTED BY UNION TOWNSHIP DURING INSTALLATION AND SCHEDULED WITH UNION TOWNSHIP UTILITY DEPARTMENT, AT (989) 772-4600 EXT. 224, AT LEAST 48 HOURS IN ADVANCE OF ANY WORK COMMENCING.
- BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH STATE OF MICHIGAN CROSS CONNECTION RULES, STATE OF MICHIGAN PLUMBING CODE AND CHARTER TOWNSHIP OF UNION CROSS CONNECTION RULES.

**DIRECTIONAL BORE NOTES:**

- THE HDPE PIPE MUST CONFORM TO ANSI/NSF STANDARDS AND BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S THRUST RESTRAINT REQUIREMENTS. HDPE PIPE MUST BE STAMPED/MARKED NSF APPROVED ON PIPE.
- CONTRACTOR SHALL USE A MIXTURE OF WATER AND BENTONITE CLAY AS THE DRILLING FLUID FOR THE DIRECTIONAL BORE. FLUID SHALL BE KEPT IN THE BORE TUNNEL TO ENSURE STABILITY, REDUCE DRAG ON THE PIPE AND PROVIDE BACKFILL WITHIN THE ANNULUS OF THE PIPE AND TUNNEL.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN CONFORMANCE WITH THE STANDARDS AND REQUIREMENTS OF THE PROJECT SPECIFICATIONS AS ADOPTED BY THE UNION TOWNSHIP.
- EXCESS DRILLING FLUIDS AND SPOILS SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED LOCATION. NO DRILLING FLUIDS OR SPOILS ARE TO BE DISCHARGED INTO SANITARY SEWERS, STORM DRAIN SYSTEMS OR WATERWAYS.
- CONTRACTOR MUST BE ABLE TO DEMONSTRATE THAT THE DRILLING EQUIPMENT TO BE USED IS CAPABLE OF PLACING THE PIPE WITHIN THE LINE AND GRADE SPECIFIED ON THE PLANS.
- THE PROPOSED PIPE BEING PULLED THROUGH THE BORE TUNNEL SHALL BE PROTECTED AND SUPPORTED SO THAT IT MOVES FREELY AND IS NOT DAMAGED DURING INSTALLATION. PULLBACK FORCES SHALL NOT EXCEED THE ALLOWABLE PULLING FORCES FOR THE PRODUCT PIPE.
- THE CONTRACTOR SHALL ALLOW A MINIMUM OF 24 HOURS FOR STABILIZATION OF THE BORE PIPE AFTER INSTALLATION PRIOR TO MAKING CONNECTIONS TO ADJACENT PIPE SECTIONS.
- CONTRACTOR SHALL INSTALL A MECHANICAL JOINT ADAPTER TO CONNECT BORE PIPE TO ADJACENT PIPE SECTIONS. REFER TO SPECIFICATIONS AND MANUFACTURERS REQUIREMENTS.
- TESTING WILL BE REQUIRED FOLLOWING INSTALLATION OF PROPOSED PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.

**CMS & D**  
SURVEYING / ENGINEERING  
510 W. ROCKARD STREET, SUITE C  
MT. PLEASANT, MICHIGAN 48856  
PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: [info@cms-d.com](mailto:info@cms-d.com)



**CONSTRUCTION DETAILS #3**  
MCGUIRK MINI-STORAGE, INC.  
LOT 11 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

NO.	DATE	DESCRIPTION

SCALE	1" = 30'
SHEET NUMBER	8 OF 8
DESIGNED BY:	TELB
CHECKED BY:	TELB
DRAWN BY:	RL
DATE	1612-184
SUBMITTAL TO REVIEW AGENCIES	3-27-17
DESIGNED BY:	TELB
CHECKED BY:	TELB
DRAWN BY:	RL
DATE	1612-184

# CHARTER TOWNSHIP OF UNION

## SITE PLAN REVIEW

### HAZARDOUS SUBSTANCES REPORTING FORM

This form must be completed and submitted as part of the site plan for facilities which may use, store, or generate hazardous substances or polluting materials (including petroleum-based products)

Name of business: McGuirk

Name of business owner(s): Chuck McGuirk

Street and mailing address: 510 West Pickard Street, Mt. Pleasant MI  
989-772-1309

Telephone: \_\_\_\_\_

Fax: 98-773-4393

Email: chuck@mcguirksand.com

**I affirm that the information submitted is accurate.**

Owner(s) signature and date:  \_\_\_\_\_

Information compiled by: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Part 1: Management of Hazardous Substances and Polluting Materials

1. Y N Will the proposed facility store, use or generate hazardous substances or polluting materials (including petroleum-based products) now or in the future? If yes, please complete this form and submit with your site plan. A catalogue and map of natural resources on and near the site, including an assessment of groundwater vulnerability is required to be submitted with your plan.
2. Y N Will the hazardous substances or polluting material be reused or recycled on-site??
3. Y\_N \_ Will any hazardous substances or polluting materials be stored on-site? If yes, identify the storage location on the site plan. Describe the size and type of secondary containment structure here or on an attached page. Submit a map and/or diagram of facilities on the site related to groundwater protection, including secondary containment structures, loading/unloading areas, drinking water wells, septic systems, underground storage tanks and storm drain inlets.
4. Y N Will the new underground storage tanks be located less than 2000 feet from a drinking water well serving more than a single household?
5. Y N Are existing underground storage tanks on-site less than 200 feet from a drinking water well serving more than a single household?
- If the answer to questions 4 or 5 are yes, you may be in violation of the State of Michigan underground storage tank regulations . For specific requirements, please contact the MDEQ Underground Storage Tank Division. District Office Telephone: 989-894-6200 (Saginaw Bay District Office)
6. Y N Will the interior of the facility have general purpose floor drains? (general purpose floor drains should not be connected to a sanitary sewer system, stormwater drainage system, dry well or septic system). If yes, will the floor drain connect to: (circle one)
- —
- a. on-site holding tank  
b. on-site system
- The on-site system must be approved by the MDEQ.  
Contact: MDEQ Waste Management Division.  
District Office telephone: 989-894-6200 (Saginaw Bay District Office)
7. Y N Will hazardous substances or polluting materials be stored, used, or handled out-of doors near storm drains which discharge to lakes, streams, or wetlands? If yes, describe the type of catch basin or spill containment facilities which will be used (use an attached sheet with diagram if appropriate).

cc: Charter Township of Union Department of Public Works

## Part II: Types and Quantities of Hazardous Substances and Polluting Materials Used, Stored or Generated On-Site

Please list the hazardous substances and polluting materials (including chemicals, hazardous materials, petroleum products, hazardous wastes and other polluting materials) which are expected to be used, stored or generated on -site. Quantities should reflect the maximum volumes on hand at any time. Attach additional pages if necessary to list all hazardous substances and polluting materials.

Common Name	CHEMICAL NAME (components)	Form	MAX QUANTITY ON HAND AT ONE TIME	TYPE OF STORAGE CONTAINERS
	<b>KEY:</b> UQ. = liquid P.UQ = pressurized liquid S = solids G = gas PG = pressurized gas			<b>KEY:</b> AGT = above ground tank DM = drums UGT = underground tank Cy = cylinders CM = metal cylinders CW = wooden or composition container TP = portable tank



## PERMIT INFORMATION

[www.michigan.gov/deqpermits](http://www.michigan.gov/deqpermits)

The Department of Environmental Quality (DEQ) has prepared a list of key questions to help identify what DEQ permits, licenses, or approvals of a permit-like nature may be needed. By contacting the appropriate offices indicated, you will help reduce the possibility that your project or activity will be delayed due to the untimely discovery of additional permitting requirements later in the construction process. While this list covers the existence of permits and approvals required from the DEQ, it is not a comprehensive list of all legal responsibilities. A useful way to learn whether other requirements will apply is to go through the Self-Environmental Assessment in the Michigan Guide to Environmental, Health, and Safety Regulations, online at: <http://www.michigan.gov/ehsguide>. Please call the Environmental Assistance Center at 800-662-9278 to talk with any of the DEQ programs noted below.

KEY QUESTIONS:	Yes <input type="checkbox"/>	No <input type="checkbox"/>	PROGRAM WEBPAGE AND CONTACTS
<b>MISCELLANEOUS CONSTRUCTION</b>			
<i>Air Quality Permit to Install:</i> Will your business involve the installation or construction of any process equipment that has the potential to emit air contaminants (e.g. dry sand blasting, boilers, standby generators)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Air Quality Division (AQD), <u>Permit Section</u>
<i>Asbestos Notification:</i> Does the project involve renovating or demolishing all or portions of a building? Notification is required for asbestos removal and required for all demolitions even if the structure never contained asbestos.	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <u>Asbestos Program</u>
<i>Land and Water Featured Programs (Water Resources Division) - USACE Consolidated Permits:</i> Please consult the <u>Land and Water Management Decision Tree</u> document to evaluate whether your project needs a land and water management permit (i.e., Does the project involve filling, dredging, placement of structures, draining, or use of a wetland?).	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Water Resources Division (WRD), <u>Joint Permit Application</u>
<i>Soil Erosion and Sedimentation Control:</i> Does the project involve an earth change activity (including land balancing, demolition involving soil movement, and construction)?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	<u>Soil Erosion and Construction Storm Water</u> , or Contact your <u>Local Agency</u>
<i>NPDES Storm Water Discharge from Construction Sites Notice of Coverage:</i> Does the project involve construction which will disturb one or more acres that come into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	NPDES <u>Storm Water Permits Program</u> , or appropriate <u>DEQ District Office</u>
<i>Public Swimming Pool Construction (Spas/Hot Tubs) Permits:</i> Will your business involve the construction or modification of a public swimming pool, spa or hot tub?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Public Swimming Pool Program</u> , or appropriate <u>DEQ District Office</u>
<i>Threatened and Endangered Species:</i> Does the project involve activities that would destroy a protected species of plant or animal or disturb a protected animal species?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Endangered Species Assessment, Threatened and Endangered Species Program, 517-373-1552</u>
Does the project involve <i>construction</i> or alteration of any <i>sewage collection or treatment</i> facility?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Appropriate <u>District Office</u> , WRD, Part 41 <u>Construction Permit Program</u>
Does the project involve construction of a facility that landfills, transfers, or processes of any type of <i>solid non-hazardous waste</i> on-site, or places <i>industrial residuals/sludge</i> into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Office of Waste Management and Radiological Protection (OWMRP), <u>Solid Waste</u> , Appropriate <u>DEQ District Office</u>
Does the project involve the construction of an on-site treatment, storage, or disposal facility for <i>hazardous waste</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, Hazardous Waste Section, <u>Treatment, Storage and Disposal</u>
<b>WATER SUPPLY (More information, see: <a href="http://www.michigan.gov/deqwater">http://www.michigan.gov/deqwater</a>, select "drinking water")</b>			
I am buying water from my community water supply (i.e. city of Detroit or Grand Rapids)	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	Contact your <u>Local Water Utility</u>
I have a private or other water supply well (Type III)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Contact your (District or County) <u>Local Health Department</u>
I have a Non-Community Water Supply (Type II)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Guide</u> , Contact your (District or County) <u>Local Health Department</u>
I am a community water supply (Type I)	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Community Water Supply, DEQ District Office Community Water Supply Program</u>

WASTEWATER MANAGEMENT			
<i>Storm Water Discharge to Wetlands:</i> Will storm water be collected, stored, or treated in a wetland area from a public road, industrial, commercial, or multi-unit residential development?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Great Lakes:</i> Does the project involve construction, filling, or dredging below the Ordinary High Water Mark of one of the Great Lakes?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Inland Lakes and Streams:</i> Does the project involve any dredging, filling, placement of structures, or the operation of a marina within an inland waterbody (e.g. lake, river, stream, drain, creek, ditch, or canal), enlargement of a waterbody, or excavation of a pond within 500 feet of a waterbody?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
<i>Storm Water Ponds and Discharges to Inland Lakes/Streams, or Great Lakes:</i> Will storm water from any road or any other part of the development be discharged either directly or ultimately to an inland waterbody, or one of the Great Lakes; or will a storm water pond be constructed within 500 feet of an inland waterbody?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
Does the project involve placement of fill, earth moving, or placement of structures within the 100-year <i>floodplain</i> of a watercourse?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Joint Permit Application</u>
Does the project involve construction of a building or septic system in a designated Great Lakes <i>high risk erosion area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Shoreland Management</u>
Does the project involve dredging, filling, grading, or other alteration of the soil, vegetation, or natural drainage, or placement of permanent structures in a designated <i>environmental area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Shoreland Management</u>
Does the project propose any development, construction, silvicultural activities or contour alterations within a designated <i>critical dune area</i> ?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Sand Dune Management</u>
Does the project involve construction of a <i>dam</i> , weir or other structure to impound flow?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Dam Safety Program</u>
CONSTRUCTION PERMITS (SECTOR SPECIFIC)			
Does the project involve the construction or alteration of a water supply system or sewage disposal system for a manufactured housing project?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	Office of Drinking Water & Municipal Assistance (ODWMA)
Does the project involve a subdivision or site condominium project utilizing individual on-site subsurface disposal systems or individual wells?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA
Does the project involve the construction or modification of a campground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Campgrounds program</u>
Does the project involve the construction or modification of a public swimming pool?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Swimming pools program</u>
OPERATIONAL PERMITS			
<b>Renewable Operating Permit:</b> Does your facility have the potential to emit any of the following: 100 tons per year or more of any criteria pollutant; 10 tons per year or more of any hazardous air pollutant; or 25 tons per year or more of any combination of hazardous air pollutants?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <u>Permit Section</u>
<b>NPDES:</b> Does the project involve the discharge of any type of wastewater to a storm sewer, drain, lake, stream, or other surface water?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Appropriate DEQ District Office, or National Pollutant Discharge Elimination (NPDES) Permit Program</u>
Does the facility have industrial activity that comes into contact with storm water that enters a storm sewer, drain, lake, stream, or other surface water?	Y <input checked="" type="checkbox"/>	N <input type="checkbox"/>	WRD, <u>Permits Section</u> , or appropriate <u>DEQ District Office</u>
Does the project involve the discharge of wastewaters into or onto the ground (e.g. subsurface disposal or irrigation)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Groundwater Permits Program</u>
Does the project involve the drilling or deepening of wells for waste disposal?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>Office of Oil, Gas and Minerals (OOGM)</u>
Does the project involve landfilling, transferring, or processing of any type of solid non-hazardous waste on-site, or placing industrial residuals/sludge into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	<u>OWMRP</u> or Appropriate <u>DEQ District Office</u>



Does the project involve the on-site treatment, storage, or disposal of hazardous waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Hazardous and Liquid Waste</u>
Does the project require a site identification number (EPA number) for regulated waste activities (used oil, liquid waste, hazardous waste, universal waste, PCBs)? ( <u>Web Site</u> )	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, Appropriate <u>DEQ District Office</u>
Does the project involve the receipt, possession, manufacture, use, storage, transport, transfer, release, or disposal of radioactive material in any form?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Radioactive Material and Standards Unit</u>
Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP <u>Radioactive Material and Standards Unit</u>
Do you desire to develop a withdrawal of over 2,000,000 gallons of water per day from any source other than the Great Lakes and their connecting waterways? Or, do you desire to develop a withdrawal of over 5,000,000 gallons of water per day from the Great Lakes or their connecting waterways?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, DWEHS, <u>Source Water Protection Unit</u>
<b>CHEMICAL ADDITION PROJECTS</b>			
Are you using chemicals or materials in, or in contact with, drinking water at any point in the water works system?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, Appropriate <u>DEQ District Office, Public Water Supply Program</u>
Are you applying a chemical treatment for the purpose of aquatic nuisance control (pesticide/herbicide etc) in a water body (i.e. lake, pond or river)? (5.	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Aquatic Nuisance Control and Remedial Action Unit</u>
Are you applying materials to a water body for a water resource management project (i.e. mosquito control treatments, dye testing, or fish reclamation projects)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Surface Water Assessment Section</u>
<b>OPERATIONAL PERMITS (SECTOR SPECIFIC)</b>			
Does the project involve the transport of some other facility's non-hazardous liquid waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Transporter Program</u>
Does the project involve the transport hazardous waste?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Transporter Program</u>
Does your facility have an electric generating unit that sells electricity to the grid and burns a fossil fuel?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	AQD, <u>Acid Rain Permit Program</u>
Is the project a dry cleaning establishment utilizing perchloroethylene or a flammable solvent in the cleaning process?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	DEQ, AQD, <u>Dry Cleaning Program</u>
Does your laboratory test potable water as required for compliance and monitoring purposes of the Safe Drinking Water Act?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	DEQ, <u>Laboratory Services Certifications</u>
Does the project involve the generation of medical waste or a facility that treats medical waste prior to its disposal?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Medical Waste Regulatory Program</u>
Does the project involve transport of septic tank, cesspool, or dry well contents or the discharge of septage or sewage sludge into or onto the ground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Septage Program</u>
Do you store, haul, shred or process scrap tires?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	OWMRP, <u>Scrap Tire Program</u>
Does the project involve the operation of a public swimming pool?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Public Swimming Pools Program</u>
Does the project involve the operation of a campground?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Campgrounds</u>
Do you engage in the business of hauling bulk water for drinking or household purposes (except for your own household use)?	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	ODWMA, <u>Water Hauler Information</u>
<b>PERSONAL LICENSES/CERTIFICATIONS</b>			
Are you designated by your facility to be the Certified Operator to fulfill the requirements of a wastewater discharge permit (NPDES including Storm	Y <input type="checkbox"/>	N <input checked="" type="checkbox"/>	WRD, <u>Operator Training, Storm Water Program</u>

<b>Water or Groundwater)?</b>			
Are you a drinking water operator in charge of a water treatment or water distribution system, back-up operator, or shift operator?	Y <input type="checkbox"/>	N <input type="checkbox"/>	WRD, <u>Operator Training</u>
Are you a water-well drilling contractor, pump installer, dewatering well contractor or dewatering well pump installer?	Y <input type="checkbox"/>	N <input type="checkbox"/>	WRD, <u>Well Construction Unit</u>
<b>OIL, GAS AND MINERALS</b>			
Do you want to operate a central production facility (applies to oil and gas production facilities where products of diverse ownership are commingled)?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Petroleum Geology and Production Unit</u>
Does the project involve the removal of sand from a sand dune area within two (2) miles of a Great Lakes shoreline?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, Minerals and Mapping Unit, <u>Sand Dune Mining Program</u>
Does the project involve the diversion and control of water for the mining and processing of low-grade iron ore?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the surface or open-pit mining of metallic mineral deposits?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the mining of nonferrous mineral deposits at the surface or in underground mines?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve mining coal?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Do you want to change the status of an oil or gas well (i.e. plug the well)?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve drilling of oil, gas, brine disposal, secondary recovery, or hydrocarbon storage wells?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve plugging or deepening of an oil or gas well, or conveying rights in the well as an owner to another person?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Permits and Bonding Unit</u>
Does the project involve changing the status or plugging of a mineral well?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve the drilling or deepening of wells for brine production, solution mining, storage, or as test wells?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OOGM, <u>Minerals and Mapping</u>
Does the project involve decommissioning or decontamination of tanks, piping, and/or appurtenances that may have radioactive levels above background?	Y <input type="checkbox"/>	N <input type="checkbox"/>	OWMRP, <u>Radioactive Protection Programs</u>
<b>STORAGE TANKS (CONSTRUCTION AND OPERATION)</b>			
Does the project involve the installation of an aboveground storage tank for a flammable or combustible liquid (under 200 degrees Fahrenheit)?	Y <input type="checkbox"/>	N <input type="checkbox"/>	Michigan Department of Licensing and Regulatory Affairs (DLARA) - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a compressed natural gas dispensing station with storage?	Y <input type="checkbox"/>	N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a liquefied petroleum gas container filling location or storage location that has a tank with a capacity of more than 2,000 gallons or has two (2) or more tanks with an aggregate capacity of more than 4,000 gallons?	Y <input type="checkbox"/>	N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation, removal, or upgrade of an underground storage tank containing a petroleum product or a hazardous substance?	Y <input type="checkbox"/>	N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>
Does the project involve the installation of a hydrogen system?	Y <input type="checkbox"/>	N <input type="checkbox"/>	DLARA - <u>Storage Tank Unit, 517-335-7211</u>



**Mount Pleasant Fire Department  
804 E. High Street  
Mount Pleasant, Mi 48858**

**Union Township Site Plan Review**

Friday March 31, 2017

**Proposed Warehouse/storage**

**Mt. Pleasant, MI 48858**

A Site Plan Review was conducted on Friday March 31, 2017 and revealed the following requirements listed below.

**ORDER TO COMPLY:** Since these conditions are contrary to code, you must correct them upon receipt of this notice. Please provide our department the documentation that verifies compliance with the code.

This list shall not be considered all-inclusive, as other requirements may be necessary, additional requirements are located in Chapter 5 and appendixes B, C, and D of the 2012 Edition of the International Fire Code.

If you have any questions regarding this matter, please feel free to contact me at (989) 779-5122.

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**Violation Code**

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**1 PROPERTY Identification**

Proposed Warehouse/storage Building  
Lincoln Commerce Park  
Independence Drive

Project Scope: Proposed phase 1 and phase 2 warehouse.

Job # 1612-184

Date Received: 3/27/17

Construction Type: IIB/IIB construction

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**ACCESS AND WATER Road and Water Supply**

When fire apparatus access roads or water supply for fire protection is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection when construction of new roadways allows passage by vehicles in accordance with Section 505.2 of the 2012 Edition of the International Fire Code.

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**ACCESS ROAD 150 FT Buildings within 150ft of Access Road**

All portions of a building are required to be within 150 feet of an approved Fire Department access road, in accordance with Chapter 5, Section 503.1.1 of the 2012 Edition of the International Fire Code.

## Union Township Site Plan Review

Building does not meet the 150' requirement above. The limited non-combustible construction type and extra hydrants available will allow for exceptions to the 150' requirement.

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### ACCESS ROAD LOAD Designed and Maintained to Support the

All fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities in accordance with Chapter 5, Sections 503.2.3 and 503.4 of the 2012 Edition of the International Fire Code.

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### ACCESS ROAD OBSTRUCTED Dimensions and Clearances

All fire apparatus access roads, including parking lots, shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches in accordance with Chapter 5, Sections 503.2.1, 503.2.2, 503.3 and 503.4 of the 2012 Edition of the International Fire Code. Fire Prevention Ordinance 93.02(D)

Site Plan meets requirements above.

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### BUILDING IDENTIFICATION Buildings Shall Have Address

Provide address identification numbers in accordance with Chapter 5, Sections 505.1 of the 2012 Edition of the International Fire Code or applicable to the City of Mt. Pleasant code of ordinances 150.01 Land Usage.

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### DUMPSTERS Dumpster Locations

Dumpster's and containers with an individual capacity of 1.5 cubic yards or more shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines in accordance with Chapter 3, Section 304, and 304.3.3 of the 2012 Edition of the International Fire Code.

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### WATER SUPPLY (SPACING) Number and Spacing of Hydrants

Provide fire hydrant locations in accordance with Chapter 5, Section 507.5.1 of the 2012 Edition of the International Fire Code. The number and spacing of fire hydrants is based on the construction type and square footage of the building in accordance with Appendix B and C and tables B105.1 and C105.1 of the 2012 Edition of the International Fire Code.

Hydrant Data is based on Construction Types IIB/IIB.  
Total Building Sq. Ft. 14,000  
2,500 GPM required fire flow  
3 hydrants required @ 450' spacing between hydrants.

## Union Township Site Plan Review

Site Plan meets required hydrant number and spacing.

There is an allowed 50% reduction in fire flow when the building is sprinkled, it would reduce the required number of hydrants to 1.

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### GENERAL STATEMENT List Not All-Inclusive

This list shall not be considered all-inclusive, as other requirements may be necessary, additional requirements are located in Chapter 5 and appendixes B, C, and D of the 2012 Edition of the International Fire Code.

Based on the total proposed square footage the building would be required to have a sprinkler system. Other provisions of the building and fire code would also require a sprinkler system. Sprinklers would be required if there is high pile storage greater than 12 feet and exceeding 500 square feet in diameter or buildings that are greater than 5000 square feet and used for repair or storage of vehicles.

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### FDC LOCATION FDC Location and Distance

Fire Department connections shall be located on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise approved by the fire chief. The fire department connection shall be located within 150 feet of a fire hydrant, in accordance with Chapter 9, Section 912.2.1 of the 2012 Edition of the International Fire Code and the Fire Prevention Ordinance 93.12 Provide a 5" Storz Fire Department Connection with a 30 degree downturn.

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### FDC HORN STROBE Horn Strobe Above FDC

Provide a horn strobe above the Fire Department Connection. Fire Prevention Ordinance 93.12(A)

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### FDC MAINTENANCE FDC Maintained and Unobstructed

Immediate access to fire department connections shall be maintained at all times and without obstruction by fences, bushes, trees, walls or any other fixed or moveable object. Access to fire department connections shall be approved by the fire chief as in accordance with Chapter 9, Section 912.3 of the 2012 Edition of the International Fire Code.

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**Union Township Site Plan Review**

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**Keeler, Randy**  
**Lieutenant**  
**Mount Pleasant Fire Department**

**S**am **B**er **E**ngineering

Bruce E. Rohrer, P.E.  
957 Morey Drive  
Mt. Pleasant, Michigan 48883  
(989) 330-2150

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April 3, 2017

Peter Galliant  
Charter Township of Union Planner  
2010 S. Lincoln Road  
Mt. Pleasant, MI 48858

RE: Storm Water Management Plan for McGuirk Warehouse and Storage Bldg.

Dear Mr. Galliant:

I have reviewed the Storm Water Management Plan dated 3-31-17 prepared by CMS & D Surveying & Engineering for the above captioned project located in part of the S ½ of the NW ¼ of Section 21, Union Township on Independence Drive. The proposed plan is consistent with the Union Township Storm Water Ordinance.

If you have any questions or need any further information, please feel free to contact me in my office.

Sincerely,



Bruce E. Rohrer, P.E.  
Consulting Engineer  
Isabella County

BER/taw

cc: Tim Beebe  
CMS & D Surveying & Engineering

## **Shanee Thayer**

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**From:** "Rick Collins" <[rcollins@ictcbus.com](mailto:rcollins@ictcbus.com)>  
**Date:** Tuesday, March 28, 2017 10:20 AM  
**To:** "Shanee Thayer" <[info@cms-d.com](mailto:info@cms-d.com)>  
**Subject:** Site Plan McGuirk Mini Storage

ICTC has no issue with the plans for McGuirk Mini Storage



**Rick Collins | Executive Director**  
2100 E. Transportation Dr | Mt. Pleasant, MI 48858  
Phone 989.773.6766 | Fax 989.773.1873  
[rcollins@ictcbus.com](mailto:rcollins@ictcbus.com)  
Visit our website at [ictcbus.com](http://ictcbus.com)



# MCGUIRK MINI-STORAGE, INC. LINCOLN ROAD AT INDEPENDENCE DRIVE OFFICE SITE PLAN

MINIMUM OFFICE SERVICE DISTRICT	
MINIMUM LOT AREA	15,000 SQ. FT.
MINIMUM LOT WIDTH	80 FT.
MINIMUM STRUCTURE HEIGHT	25 FT.
MINIMUM FRONT LAID DRIVEWAY	30 FT. (7)
MINIMUM SIDE LAID DRIVEWAY	30 FT.
MINIMUM REAR YARD SETBACK	30 FT.
MINIMUM LOT COVERAGE	3%

(F) Front yards shall be no less than the adjacent front yards. If the adjacent front yards are unoccupied, the minimum front yard shall be the average of the two adjacent lots. In no case shall it be 30 feet to be reduced.

### SECTION 11.3 - PLANNED DEVELOPMENT

(A) Site Plans have been Submitted to City of MI, Proposed Fire Dept.

(B) CIRC, C-3C, Union Tree Planning and Union Tree DPW

(B) The storage of goods and materials for sale or distribution is permitted as long as they are stored within the building. Such storage is to be necessary in nature and is not intended to include warehousing or storage other than that normally associated with the above uses.

(C) No display of any merchandise or products or signs advertising such merchandise or products shall be visible from the exterior of the building.

(D) Off-street parking in accordance with Section 10 and Signs under Section 11 (Signage to be Submitted Separately)

### Off-street Parking

#### Section 10.2.C Office Buildings

(1) Space for (200) sqft of storage building area  
4,800 sqft = 25 Spaces = 4,800 sqft = 25 Spaces

Required Parking = (21) Spaces = (1) of which must be Barrier Free  
Proposed Parking = (22) Standard Spaces & (2) Barrier Free  
(Additional 4 spaces are provided within the garage)

1. Parking and drive shall be hard surface, concrete or asphalt.

2. Parking area shall be in the rear.

3. The parking of any commercial used or towed vehicles with a rated capacity of one ton or more is not permitted other than for normal deliveries of short duration.

(E) If adjacent to residential property, overgrown screening shall be provided with a maximum of 6 feet in height spaced to provide solid screening within three (3) years with and more than 10 feet corners. Two rows with alternating planting may be required as specified in B.32-G.

(F) Manicured lawn/mulch are required.

(G) Lot requirements from Section 29 are noted above.

\*NOTE\* Site Lighting Shall be Completed by Down Shaded that Parks



LOT 1 & 2 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 27, T19N-R4E-W3M UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

LOCATION MAP  
SCALE: 1" = 800'

**SITE PLAN APPROVED AS NOTED  
04-04-2017  
DRIVE CULVERT TO HAVE CONCRETE END  
SECTIONS.  
DRIVEWAY PERMIT WILL BE REQUIRED.**

Patrick J.  
Gaffney, PE

Digitally signed by Patrick J Gaffney, PE  
DN: cn=Patrick J. Gaffney, PE, o=Isabella  
CNC, ou=Engineering,  
email=patrick.gaffney@isabellacountymich.com, c=US  
Date: 2017.04.04 14:50:55 -0400

CORRECTION RECORDATION PROVIDED:  
LOT 1 & 2 OF LINCOLN COMMERCE PARK PLAT, ACCORDING TO THE PLAT RECORDED IN  
LIBER 10 OF PLATS, PAGE 587, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN.

**NOTES:**  
FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL "MISS DIG" 1-800-482-7974 A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY EXCAVATION. ALL "MISS DIG" PARTICIPATING MEMBERS WILL BE APPROPRIATELY NOTICED. "MISS DIG" DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

LEGEND		
SYMBOLS		
○ BOLLARD	○ GAS PIPER	○ SOIL BORING
□ CATCH BASIN (CIRC INLET)	○ GUY ANCHOR	○ STORM SEWER MANHOLE
○ CATCH BASIN (ROUND)	○ HYDRANT - EXISTING	○ TELEPHONE PIPER
○ CATCH BASIN (SQUARE)	○ HYDRANT - PROPOSED	○ TREE - CONIFEROUS
○ CLEAR CUT	○ LIGHT POLE	○ TREE - DECIDUOUS
○ DRAINAGE FLOW	○ MAILBOX	○ UTILITY POLE
○ ELECTRICAL BOX	○ MONITORING WELL	○ WATER MAIN VALVE
○ FOUND CONIC MONUMENT	○ SANITARY SEWER MANHOLE	○ WATER SHUT-OFF
○ FOUND IRON	○ SET IRON	○ FLOOD LIGHT
○ GAS MAIN VALVE	○ SIGN	○ GAS METER
LINE TYPES		
— BURIED ELECTRICAL CABLE	— BURIED TELEPHONE CABLE	— CENTERLINE OF DITCH
— FORCE MAIN	— GAS MAIN	— ROAD CENTERLINE
— SANITARY SEWER	— STORM SEWER	— RISE OF SLOPE
— TOP OF BANK	— UTILITIES - OVERHEAD	— UTILITIES - UNDERGROUND
— WATER MAIN		
MATCH PATTERNS		
— ASPHALT - EXISTING	— ASPHALT - PROPOSED	— CONCRETE
— GRAVEL	— LANDSCAPING	— RP-ROAD
— EXISTING BUILDING		

SHEET INDEX	
SHEET 1	COVER SHEET
SHEET 2	TOPOGRAPHIC SURVEY/SITE PLAN
SHEET 3	GRADING/STORM & SOIL EROSION PLAN
SHEET 4	CONSTRUCTION DETAILS #1
SHEET 5	CONSTRUCTION DETAILS #2
SHEET 6	CONSTRUCTION DETAILS #3

**BENCHMARKS**  
BENCHMARK (1): FOUND AN ALUMINUM MICHIGAN DEPARTMENT OF TRANSPORTATION HEIGHT MODERNIZATION MARK (M) SET IN THE TOP OF A 12 INCH DIAMETER CONCRETE POST. LOCATION IS AT THE SOUTH EAST CORNER OF THE LINCOLN ROAD AND REARUS ROAD (4-20) INTERSECTION. ELEVATION 786.62  
BENCHMARK (2): FOUND CAPPED IRON AT THE NORTHWEST CORNER OF ROCKETS ROAD AND INDEPENDENCE DRIVE. ELEVATION 774.19

**BEARING BARS**  
THE WEST SECTION LINE BETWEEN THE WEST 1/4 CORNER AND THE SOUTHWEST CORNER HAS BEEN AS 300'-20'-25" FROM A PREVIOUS CHASD SURVEY, JOB NO. 6308-165

**UTILITY INFO:**  
THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SHOWN UTILITY INFORMATION HEREON SHOWN. THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-282-7974) PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING BASIC UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELIEVE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND. UNDERGROUND SERVICE LEADS FOR GAS, ELECTRIC, TELEPHONE AND CABLE MAY BE ACROSS PROPERTY. NO INFORMATION AVAILABLE. PLEASE CALL "MISS DIG."

<b>SITE</b>	INDEPENDENCE DRIVE MT PLEASANT, MI 48856
<b>OWNER</b>	MCGUIRK MINI-STORAGE, INC 316 WEST POND AND STREET MT PLEASANT, MI 48856
<b>CONSULTANT</b>	CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC. 508 S. PEARSON STREET - SUITE C MT PLEASANT, MI 48856 CONTACT PERSON: PATRICK J. GAFFNEY PHONE: (586) 772-0796 FAX: (586) 772-9912 EMAIL: info@cms&d.com

**CHARTERED COMMUNICATIONS**  
615 E. BROADFIELD ROAD  
MT PLEASANT, MI 48856  
(586) 837-4932  
EMERGENCY SERVICE  
info@chartercom.com

**CHARTER TOWNSHIP OF UNION**  
PUBLIC WATER PUBLIC SEWER  
2016 N. LINCOLN ROAD  
MT PLEASANT, MI 48856  
(586) 772-4900 EXT 24  
P.M. 5479  
union@chartercom.com

**COMMERCIAL ENERGY**  
1325 WRIGHT AVENUE  
ALMA, MI 48801  
(586) 954-4222  
516 STREET  
LIMBURY STATION@commercialenergy.com

**CHARTER TOWNSHIP OF UNION**  
CHARTER & ZONING  
2016 NORTH LINCOLN ROAD  
MT PLEASANT, MI 48856  
(586) 772-4900 EXT 241  
PETER GALLAGHER  
pgallagher@chartercom.com

**FRONTIER**  
345 PINE STREET  
ALMA, MI 48801  
(586) 954-5076  
ALMA & WASHINGTON  
Mark.Morshuis@frontier.com

**MT PLEASANT FIRE DEPARTMENT**  
604 EAST HIGH STREET  
MT PLEASANT, MI 48856  
(586) 772-3366 EXT 5122  
567 RANDY PLEASANT  
rpleasant@mt-pleasant.org

**CHARTER COMMUNICATIONS**  
300 NORTH GAMA STREET ROOM 140  
MT PLEASANT, MI 48857  
(586) 772-0811  
ROBERT WELLS@chartercom.com

**ISABELLA COUNTY ROAD COMMISSION**  
2281 EAST REARUS ROAD  
MT PLEASANT, MI 48856  
(586) 772-7323 EXT 615  
PATRICK GAFFNEY  
Pgaaffney@isabellacounty.com

**CMS & D**  
SURVEYING/ENGINEERING  
410 S. PEARSON STREET - SUITE C  
MT PLEASANT, MI 48856  
PHONE: (586) 772-0796  
FAX: (586) 772-9912  
EMAIL: info@cms&d.com

**COVER SHEET**  
MCGUIRK MINI-STORAGE, INC.  
LOT 1 & 2 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 27, T19N-R4E-W3M UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

DATE	1703-04-04	SCALE	1" = 20'
DESIGNED BY	TELB	CHECKED BY	TELB
CREATED BY	TELB	SHEET NUMBER	1 OF 6
DATE	1703-04-04	SCALE	1" = 20'
DESIGNED BY	TELB	CHECKED BY	TELB
CREATED BY	TELB	SHEET NUMBER	1 OF 6

## **Peter Gallinat**

---

**From:** Kim Smith  
**Sent:** Friday, April 07, 2017 11:11 AM  
**To:** Peter Gallinat  
**Cc:** Timothy Bebee; Shanee Thayer; Mark Stuhldreher  
**Subject:** Independence Drive Industrial Building Site Plan - McGuirk Sand and Gravel

Peter,

Good morning, I have reviewed the site plan for Lot 11 of Lincoln Commerce Park which was forwarded to me by CMS & D on March 27, 2017 and you on April 4, 2017. This parcel has water available on the north side of Independence Drive and sewer available on the south side of Independence Drive. The site plan submitted includes the existing water and sewer mains located on Independence Drive and a location drawing for the onsite water main. A note regarding the future location of the sanitary sewer lead for this project is also included on the plans. This site plan does not include and information on sanitary sewer site/building specific connections or sealed plans for the water main and hydrant indicated on the plans. Plans for any water and/or sewer connections, and hydrants will need to be submitted for review and approval by the Township Water and Sewer Department if the site plan is approved.

If you have any questions please let me know.

Thank you,

**Kim Smith**



Department of Public Works  
Charter Township of Union  
2010 S. Lincoln Road  
Mt. Pleasant, MI 48858  
Phone (989) 772-4600 ext. 224  
Fax (989) 773-1988  
Visit us on the Web at  
<http://www.uniontownshipmi.com>

**"This institution is an equal opportunity provider, and employer."**

# MCGUIRK MINI-STORAGE, INC.

## LINCOLN ROAD AT INDEPENDENCE DRIVE

### OFFICE SITE PLAN

ZONED OS OFFICE SERVICE DISTRICT	
MINIMUM LOT AREA	15,000 SQ. FT.
MINIMUM LOT WIDTH	80 FT
MAXIMUM STRUCTURE HEIGHT	35 FT
MINIMUM FRONT YARD SETBACK	30 FT (F)
MINIMUM SIDE YARD SETBACK	20 FT
MINIMUM REAR YARD SETBACK	50 FT
MAXIMUM LOT COVERAGE	30%

(F) Front yards shall be no less than the adjacent front yards. If the adjacent front yards are unequal, the minimum front yard shall be the average of the two adjacent lots. In no case shall it be 30 feet or less.

**SECTION 24.3 – REQUIRED CONDITIONS**

(A) Site Plans have been Submitted to City of Mt. Pleasant Fire Dept., ICDC, ICRC, ICTC, Union Twp Planning and Union Twp DPW.

(B) The storage of goods and materials for sale or distribution is permitted as long as they are stored within the building. Such storage is to be accessory in nature and is not intended to include warehousing or storage other than that normally incidental to the above uses.

(C) No display of any merchandise or products or signs advertising such merchandise or products shall be visible from the exterior of the building.

(D) Off-street parking in accordance with Section 10 and Signs under Section 11. (Signage to be Submitted Separately)

**Off-street Parking**

Section 10.2.C Office Buildings  
 (1) Space per (200) sqft of Usable Building Area  
 4,800 sqft \* 85% Usable = 4,080 sqft = **21 Spaces**

Required Parking = (21) Spaces - (1) of Which Must be Barrier Free  
**Provided Parking = (32) Standard Space & (2) Barrier Free**  
 (Additional 4 spaces are provided within the garages)

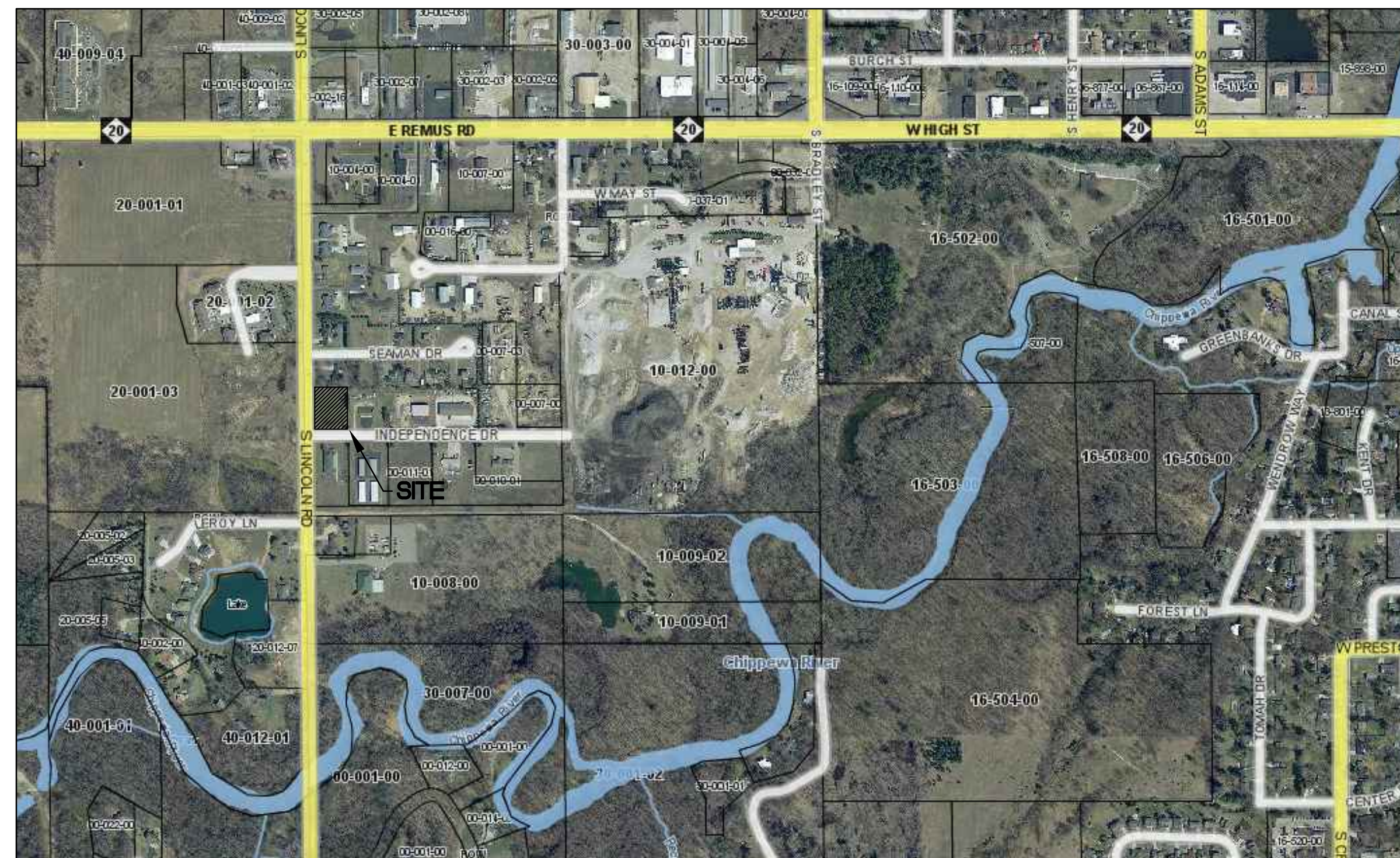
1. Parking and drives shall be hard surface, concrete or asphalt.
2. Parking area shall be in the rear.
3. The parking of any commercially used or licensed vehicles with a rated capacity of one ton or more is not permitted other than for normal deliveries of short duration.

(E) If abutting to residential property, evergreen screening shall be provided with a minimum of 6 feet in height spaced to provide solid screening within three (3) years with not more than 10 foot centers. Two rows with alternating planting may be required as specified in 8.32-G.

(F) Municipal sewer/water are required.

(G) Lot requirements from Section 29 are listed above.

\*NOTE\* Site Lighting Shall be Completed by Down Shielded Wall Packs.



LOT 1 & 2 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

**LOCATION MAP**  
 SCALE: 1" = 600'

**MISS DIG.**  
 FOR PROTECTION OF UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL "MISS DIG" 1-800-482-7171 A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY EXCAVATION. ALL "MISS DIG" PARTICIPATING MEMBERS WILL BE APPROPRIATELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE A PART OF THE "MISS DIG" ALERT SYSTEM.

SHEET INDEX	
SHEET 1.....	COVER SHEET
SHEET 2.....	TOPOGRAPHIC SURVEY/SITE PLAN
SHEET 3.....	GRADING/STORM & SOIL EROSION PLAN
SHEET 4.....	CONSTRUCTION DETAILS #1
SHEET 5.....	CONSTRUCTION DETAILS #2
SHEET 6.....	CONSTRUCTION DETAILS #3

**BENCHMARKS:**  
 BENCHMARK #1: FOUND AN ALUMINUM MICHIGAN DEPARTMENT OF TRANSPORTATION HEIGHT MODERNIZATION MARK DISK SET IN THE TOP OF A 12 INCH DIAMETER CONCRETE POST. LOCATION IS AT THE SOUTH EAST CORNER OF THE LINCOLN ROAD AND REMUS ROAD (M-20) INTERSECTION. ELEVATION 786.62  
 BENCHMARK #2: FOUND CAPPED IRON AT THE NORTHWEST CORNER OF ROGERS ROAD AND INDEPENDENCE DRIVE. ELEVATION 774.19

**BEARING BASIS:**  
 THE WEST SECTION LINE BETWEEN THE WEST 1/4 CORNER AND THE SOUTHWEST CORNER WAS TAKEN AS S00°-50'-26"E FROM A PREVIOUS CMS&D SURVEY, JOB NO. 0309-169.

**UTILITY NOTE:**  
 THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN. THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-282-7171) PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELOCATE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND. UNDERGROUND SERVICE LEADS FOR GAS, ELECTRIC, TELEPHONE AND CABLE MAY BE ACROSS PROPERTY, NO INFORMATION AVAILABLE PLEASE CALL MISS DIG.

<b>SITE:</b>	INDEPENDENCE DRIVE MT. PLEASANT, MI 48858
<b>OWNER:</b>	MCGUIRK MINI-STORAGE, INC. 510 WEST PICKARD STREET MT. PLEASANT, MI 48858
<b>CONSULTANT:</b>	CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC. 510 W. PICKARD STREET - SUITE C MT. PLEASANT, MI 48858 CONTACT PERSON: TIMOTHY E BEBEE PHONE: (989) 775-0756 FAX: (989) 775-5012 EMAIL: info@cms-d.com

<b>CHARTER COMMUNICATIONS</b> 915 E. BROOMFIELD ROAD MT. PLEASANT, MI 48858 (989) 621-4932 RANDY BUNKER rbunker@chartercom.com	<b>CHARTER TOWNSHIP OF UNION</b> PUBLIC WATER/PUBLIC SEWER 2010 N. LINCOLN ROAD MT. PLEASANT, MI 48858 (989) 772-4600 EXT 24 KIM SMITH ksmith@uniontownshipmi.com
<b>CONSUMERS ENERGY</b> 1325 WRIGHT AVENUE ALMA, MI 48801 (989) 466-4282 KIM STUDDT kimberly.studdt@cmsenergy.com	<b>CHARTER TOWNSHIP OF UNION</b> PLANNING & ZONING 2010 NORTH LINCOLN ROAD MT. PLEASANT, MI 48858 (989) 772-4600 EXT 241 PETER GALLINAT pgallinat@uniontownshipmi.com
<b>FRONTIER</b> 345 PINE STREET ALMA, MI 48801 (989) 463-0392 MARK A. MARSHALL Mark.Marshall@fr.com	<b>DRAIN COMMISSIONERS OFFICE</b> ISABELLA COUNTY BUILDING 200 NORTH MAIN STREET ROOM 140 MT. PLEASANT, MI 48857 (989) 772-0911 ROBERT WILLLOUGHBY drain@isabellacounty.org
<b>DTE ENERGY</b> 4420 44TH ST., S.E., SUITE B KENTWOOD, MI 49512 (616) 954-4623 MARY JO MCKERSIE mckersiem@dteenergy.com	<b>ISABELLA COUNTY ROAD COMMISSION</b> 2261 EAST REMUS ROAD MT. PLEASANT, MI 48858 (989) 773-7131 EXT 115 PATRICK GAFFNEY P.Gaffney@isabellaroads.com
<b>MT. PLEASANT FIRE DEPARTMENT</b> 804 EAST HIGH STREET MT. PLEASANT, MI 48858 (989) 779-5100 EXT 5122 SGT. RANDY KEELER rkeeler@mt-pleasant.org	

LEGEND SYMBOLS		
○ BOLLARD	⊠ GAS RISER	● SOIL BORING
⊠ CATCH BASIN (CURB INLET)	⊠ GUY ANCHOR	⊠ STORM SEWER MANHOLE
⊠ CATCH BASIN (ROUND)	⊠ HYDRANT - EXISTING	⊠ TELEPHONE RISER
⊠ CATCH BASIN (SQUARE)	⊠ HYDRANT - PROPOSED	● TREE - CONIFEROUS
⊠ CLEAN OUT	⊠ LIGHT POLE	● TREE - DECIDUOUS
⇒ DRAINAGE FLOW	⊠ MAILBOX	⊠ UTILITY POLE
⊠ ELECTRICAL BOX	⊠ MONITORING WELL	⊠ WATER MAIN VALVE
⊠ FOUND CONC. MONUMENT	⊠ SANITARY SEWER MANHOLE	⊠ WATER SHUT-OFF
○ FOUND IRON	● SET IRON	⊠ FLOOD LIGHT
⊠ GAS MAIN VALVE	⊠ SIGN	⊠ GAS METER

LINE TYPES		HATCH PATTERNS	
—ELEC—	BURIED ELECTRICAL CABLE	▨ ASPHALT - EXISTING	
—PHONE—	BURIED TELEPHONE CABLE	▨ ASPHALT - PROPOSED	
—DITCH-CL—	CENTERLINE OF DITCH	▨ CONCRETE	
—FM—	FORCE MAIN	▨ GRAVEL	
—GAS—	GAS MAIN	▨ LANDSCAPING	
—RD-CL—	ROAD CENTERLINE	▨ RIP-RAP	
—8" SAN—	SANITARY SEWER	▨ EXISTING BUILDING	
—12" SS—	STORM SEWER		
—EX-TOS—	TOE OF SLOPE		
—EX-TOB—	TOP OF BANK		
—OHE—	UTILITIES - OVERHEAD		
—UTL—	UTILITIES - UNDERGROUND		
—12" WM—	WATER MAIN		

**PROPERTY DESCRIPTION PROVIDED:**  
 LOT 1 & 2 OF LINCOLN COMMERCE PARK PLAT, ACCORDING TO THE PLAT RECORDED IN LIBER 10 OF PLATS, PAGE 587, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN.

**CMS & D**  
 SURVEYING / ENGINEERING  
 510 W. PICKARD STREET - SUITE C  
 MT. PLEASANT, MICHIGAN 48858  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5012  
 EMAIL: info@cms-d.com



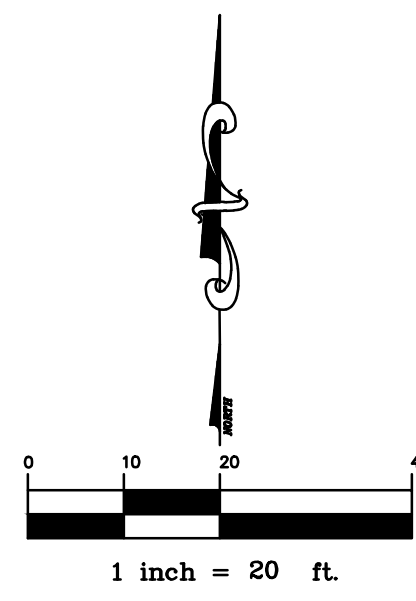
**COVER SHEET**  
 MCGUIRK MINI-STORAGE, INC.  
 LOT 1 & 2 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

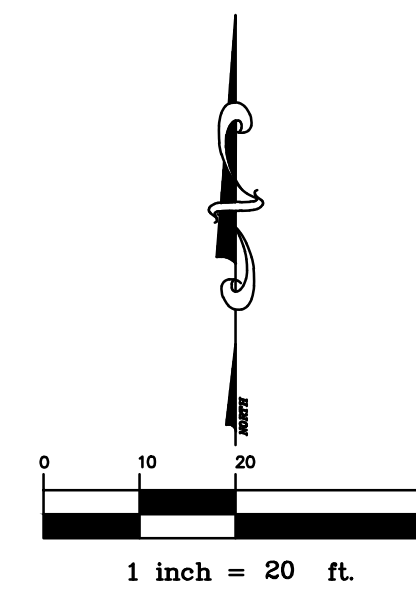
3-28-17	SUBMITTALS TO REVIEW AGENCIES
	SUBMITTAL TO UNION TOWNSHIP PLANNING COM.

SCALE	1" = 20'
JOB NUMBER:	1703-045
DRAWN BY:	TELB
DESIGNED BY:	TELB
CHECKED BY:	TELB
SHEET NUMBER	1 OF 6

# TOPOGRAPHIC SURVEY



# SITE PLAN

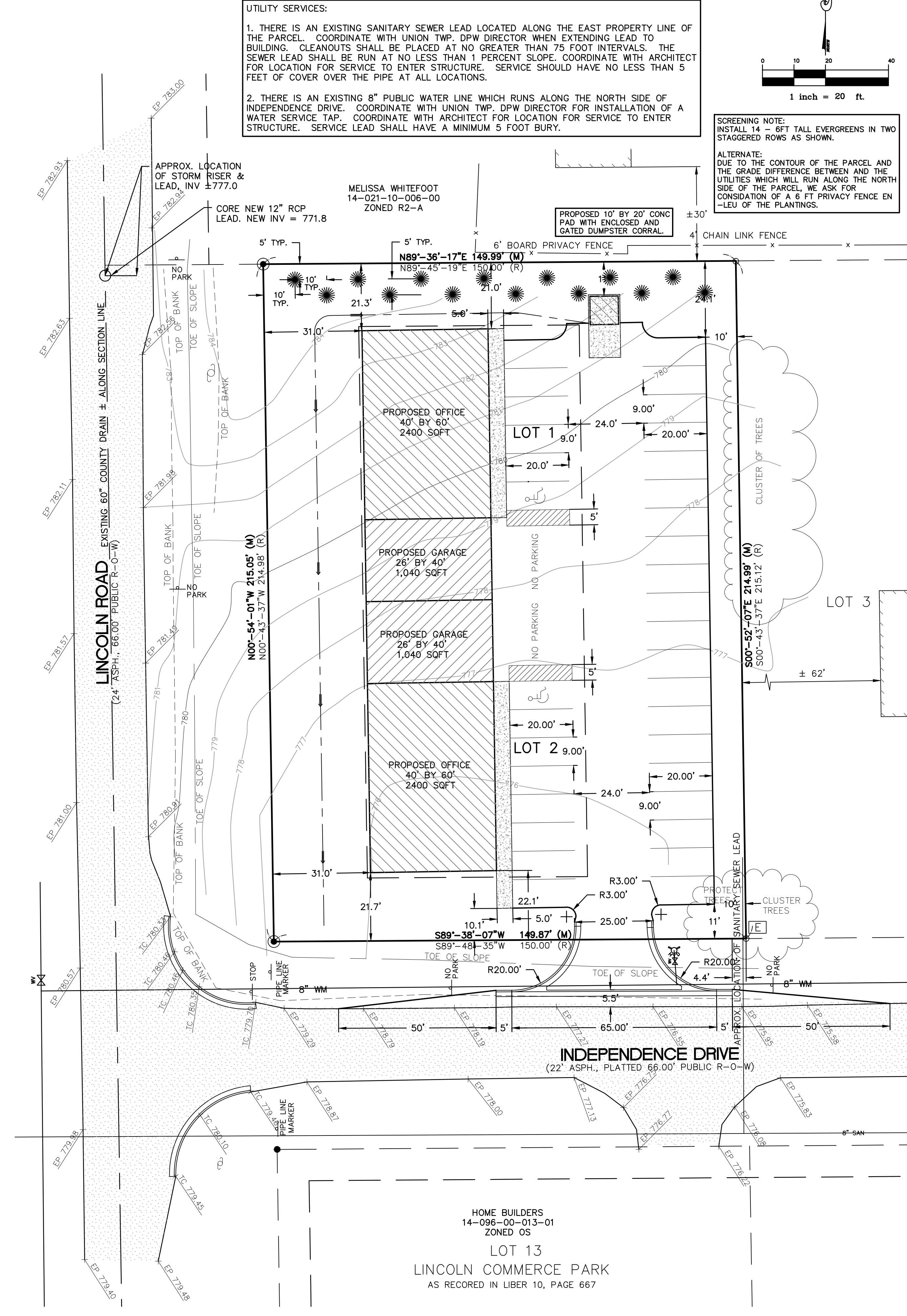
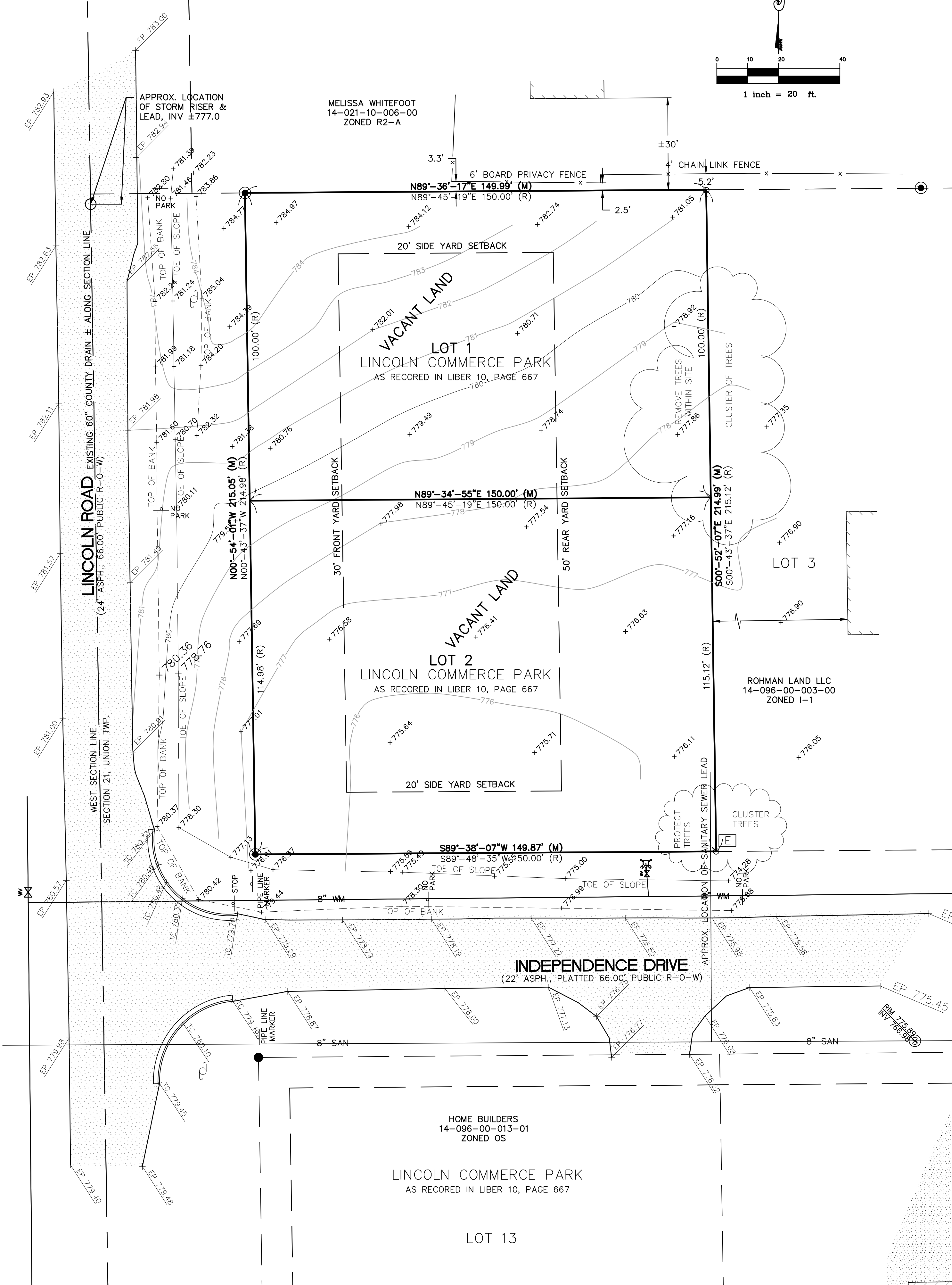


**UTILITY SERVICES:**

1. THERE IS AN EXISTING SANITARY SEWER LEAD LOCATED ALONG THE EAST PROPERTY LINE OF THE PARCEL COORDINATE WITH UNION TWP. DPW DIRECTOR WHEN EXTENDING LEAD TO BUILDING. CLEANOUTS SHALL BE PLACED AT NO GREATER THAN 75 FOOT INTERVALS. THE SEWER LEAD SHALL BE RUN AT NO LESS THAN 1 PERCENT SLOPE. COORDINATE WITH ARCHITECT FOR LOCATION FOR SERVICE TO ENTER STRUCTURE. SERVICE SHOULD HAVE NO LESS THAN 5 FEET OF COVER OVER THE PIPE AT ALL LOCATIONS.
2. THERE IS AN EXISTING 8" PUBLIC WATER LINE WHICH RUNS ALONG THE NORTH SIDE OF INDEPENDENCE DRIVE. COORDINATE WITH UNION TWP. DPW DIRECTOR FOR INSTALLATION OF A WATER SERVICE TAP. COORDINATE WITH ARCHITECT FOR LOCATION FOR SERVICE TO ENTER STRUCTURE. SERVICE LEAD SHALL HAVE A MINIMUM 5 FOOT BURY.

**SCREENING NOTE:**  
INSTALL 14 - 6FT TALL EVERGREENS IN TWO STAGGERED ROWS AS SHOWN.

**ALTERNATE:**  
DUE TO THE CONTOUR OF THE PARCEL AND THE GRADE DIFFERENCE BETWEEN AND THE UTILITIES WHICH WILL RUN ALONG THE NORTH SIDE OF THE PARCEL, WE ASK FOR CONSIDERATION OF A 6 FT PRIVACY FENCE ON LEU OF THE PLANTINGS.



**CMS & D**  
SURVEYING / ENGINEERING  
510 W. PICKARD STREET - SUITE C  
MT. PLEASANT, MICHIGAN 48858  
PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: info@cms-d.com

**TOPOGRAPHIC SURVEY/SITE PLAN**  
MCCUIRK MINI-STORAGE, INC.  
LOT 1 & 2 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

SCALE	1" = 20'
JOB NUMBER:	1703-045
DRAWN BY:	TELB
DESIGNED BY:	TELB
CHECKED BY:	TELB
SHEET NUMBER	2 OF 6
REVISIONS:	SUBMITTAL TO REVIEW AGENCIES 3-28-17 SUBMITTAL TO UNION TOWNSHIP PLANNING COM.

MICHIGAN UNIFIED KEYING SYSTEM

SOIL EROSION & SEDIMENTATION CONTROL MEASURES

Table with 3 columns: KEY, DETAIL, CHARACTERISTICS. Includes items like Erosion & Sedimentation Control, Storm Water, Chain Bank, Drain Wall, etc.

NOTE: XX1, XXP, 35P, 36P. T = TEMPORARY P = PERMANENT. TYPICAL FOR ENTIRE STORM SEWER SYSTEM.

NOTE: A MINIMUM OF 4-6" OF TOPSOIL MUST BE EITHER IN PLACE OR PLACED AND GRADED PRIOR TO SEEDING. ALL NON-PAVED AREAS WHICH ARE DISTURBED DURING CONSTRUCTION MUST BE SEED AND IRRIGATED TO ASSURE GROWTH...

SOIL EROSION GENERAL NOTES:

- 1. PRIOR TO ANY SITE WORK, CONTRACTOR MUST INSTALL TEMPORARY CONSTRUCTION ENTRANCE AND SILT FENCE AS SHOWN ON THE PLANS... 2. CONTRACTOR TO INSTALL TEMPORARY SEDIMENTATION COLLECTION BAGS IN EACH CATCH BASIN... 3. CONTRACTOR TO STOCKPILE SOIL ON SITE AT A MAXIMUM SLOPE OF 1 ON 3...

\*SINGLE NET STRAW BLANKET (90 DAY)\*

- MUST CONTAIN 100% WHEAT STRAW. - MUST BE SINGLE POLYPROPYLENE, RAPID PHOTODEGRADABLE NETTING. - MUST HAVE NYLON PHOTODEGRADABLE THREAD. - TERMED AS APPROX. 3 MONTH LIFE SPAN.

EXAMPLE OF ACCEPTABLE MATERIAL: ENVROSCAPE, S10000 SINGLE NET STRAW BLANKET.

STORM WATER CALCULATIONS

PROVIDED STORM WATER DETENTION VOLUME

- UNDERGROUND DETENTION SYSTEM

182.5 LF OF 12" DIA. PIPE VOLUME = AREA OF 12" PIPE = 0.785 SQFT \* 182.5 LF = 143 CUFT. 52 LF OF 3 FT BY 2 FT STONE TRENCHING AT 40 PERCENT VOID SPACE, LESS PIPE VOLUME VOLUME = [(52 LF \* 6 SQFT) - 49 CUFT] \* 0.40 = 105 CUFT. 390 LF OF 6" DIA. PIPE VOLUME = AREA OF 6" PIPE = 0.20 SQFT \* 390 LF = 78 CUFT. 40 FT BY 135 FT BY 2 FT INFILTRATION AND STORAGE STONE BED AT 40 PERCENT VOID SPACE. VOLUME = [(40 FT \* 135 FT) - 52 CUFT] \* 0.40 = 2,139 CUFT. TOTAL VOLUME PROVIDED = 143 CUFT + 105 CUFT + 78 CUFT + 2,139 CUFT = 2,465 CUFT. TOTAL 25 YR VOLUME REQUIRED = 2,288 CUFT (REFER TO STANDARD SPRED SHEET ATTACHED). TOTAL 100 YR VOLUME REQUIRED = 3,152 CUFT (REFER TO STANDARD SPRED SHEET ATTACHED).

STORM WATER OUTFLOW

- ALLOWABLE STORM WATER OUTFLOW THROUGH WIER STRUCTURE 0.1 CFS PER ACRE. 0.73 ACRES \* 0.1 CFS/ACRE = 0.073 CFS (PIPE OUTFLOW). - INFILTRATION RATE OF SITE SOILS = 2.5 INCH/HOUR = 0.00005787 CFS. SQUARE FOOT AREA OF THE INFILTRATION BED = 5,400 SQFT. SQUARE FOOT AREA OF BOTTOM OF STONE TRENCH = 52 LF \* 3 FT = 156 SQFT. TOTAL AREA OF INFILTRATION = 5,556 SQFT \* INFILTRATION RATE 0.00005787 CFS/SQFT. TOTAL INFILTRATION RATE = 0.322 CFS OUTFLOW BY INFILTRATION.

RESTRICTED OUTFLOW - ORIFICE CALCULATION

OUTFLOW = Q = 0.62 \* AREA \* (2gh)^1/2 (AREA IS THE AREA OF THE ORIFICE). Q = 0.07 CFS = 0.62 \* (3.14)\*(DIA)\*(DIA)/4 \* [(2) \* (32.2) \* (3.15 \* 2/3)]^1/2. DIAMETER OF ORIFICE = 0.111 FT = 1.33" INCH.

\*\*\* IT SHOULD BE NOTED THAT THE MINIMUM ORIFICE SIZE ALLOWED UNDER THE COUNTY'S STORM WATER MANAGEMENT PLAN IS 2 INCH. WE HIGHLY SUGGEST THAT A 2 INCH BE ALLOWED IN THIS SITUATION WITH THE FINAL OUTFALL TO THE CHIPPEWA RIVER ONLY BEING LESS THAN 1000 FEET AWAY. \*\*\*

CMS & D SURVEYING/ENGINEERING 510 W. PICKARD STREET - SUITE C MT. PLEASANT, MICHIGAN 48858 PHONE: (989) 775-0756 FAX: (989) 775-5012 EMAIL: info@cms-d.com



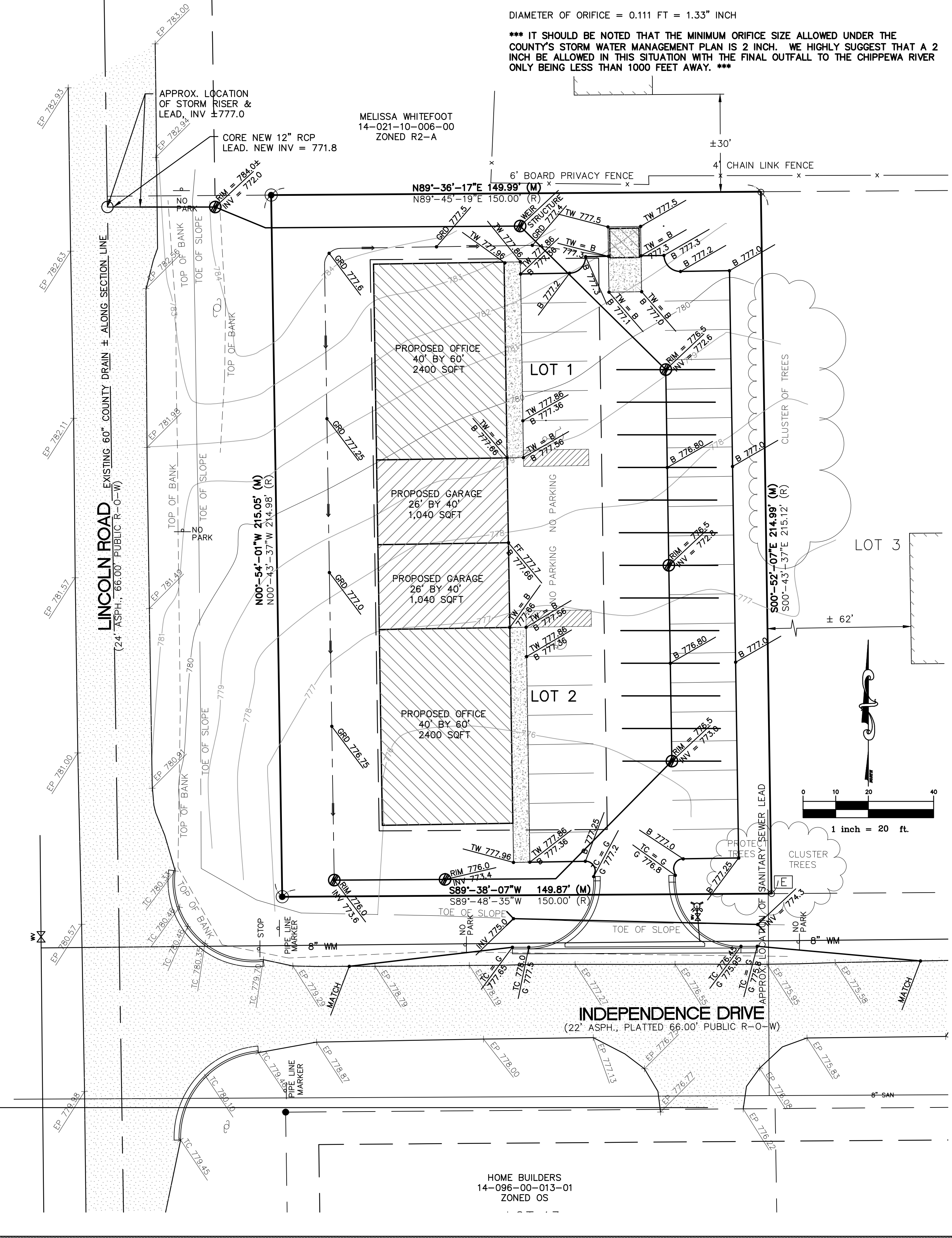
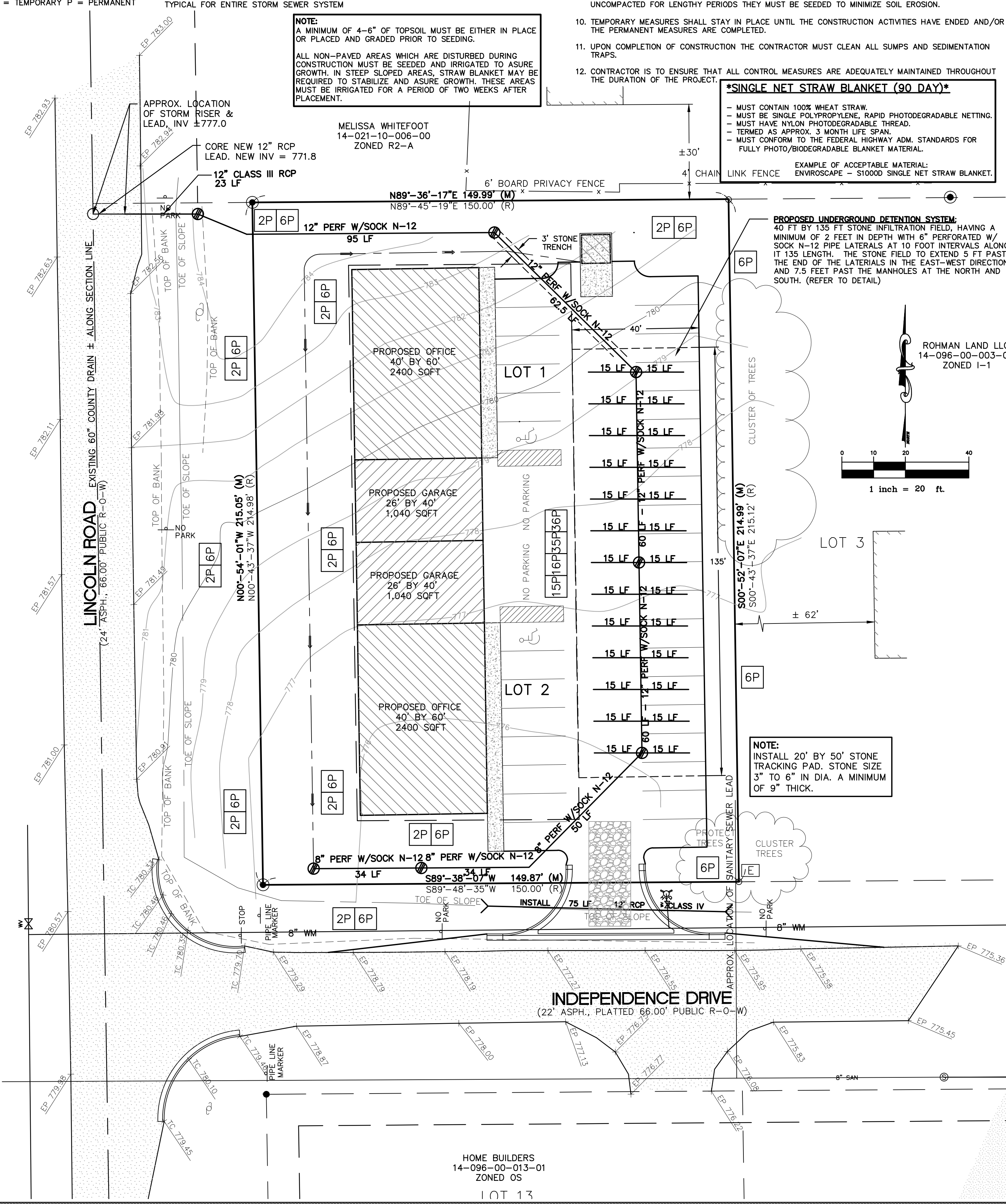
TOPOGRAPHIC SURVEY/SITE PLAN MCGUIRK MINI-STORAGE, INC. LOT 1 & 2 OF LINCOLN COMMERCE PARK AND PART OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 21, T14N-R4W, UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

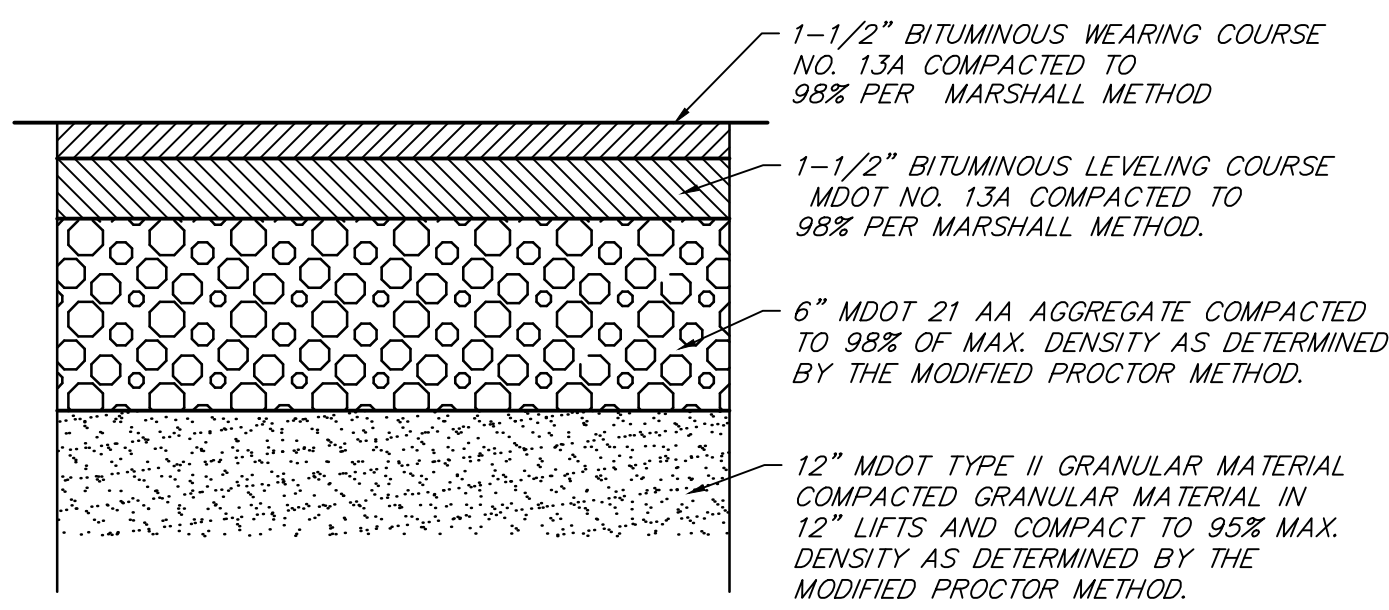
REVISIONS:

SUBMITTAL TO REVIEW AGENCIES 3-28-17 SUBMITTAL TO UNION TOWNSHIP PLANNING COM.

JOB NUMBER: 1703-045 DRAWN BY: TELB DESIGNED BY: TELB CHECKED BY: TELB

SCALE: 1" = 20' SHEET NUMBER: 3 OF 6

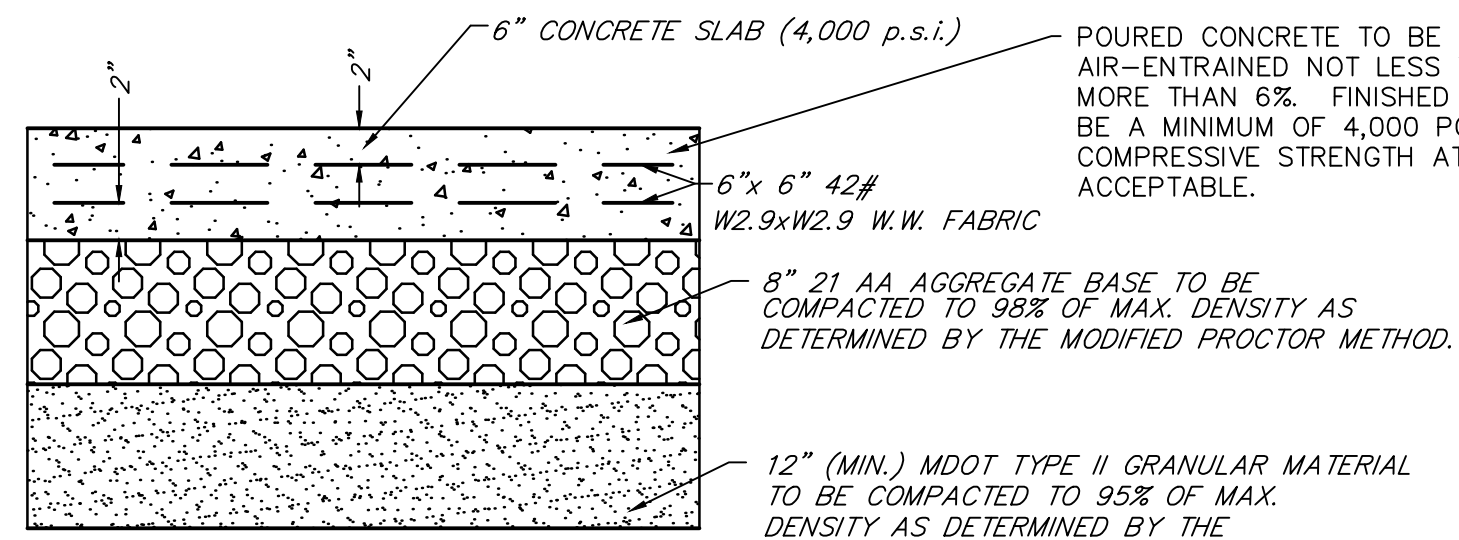




NOTE: COMPACTION TESTS ARE REQUIRED. RESULTS SHALL BE SUBMITTED TO OWNER PRIOR TO FINAL ACCEPTANCE OF SUB-BASE, BASE AND ASPHALT MATERIALS.

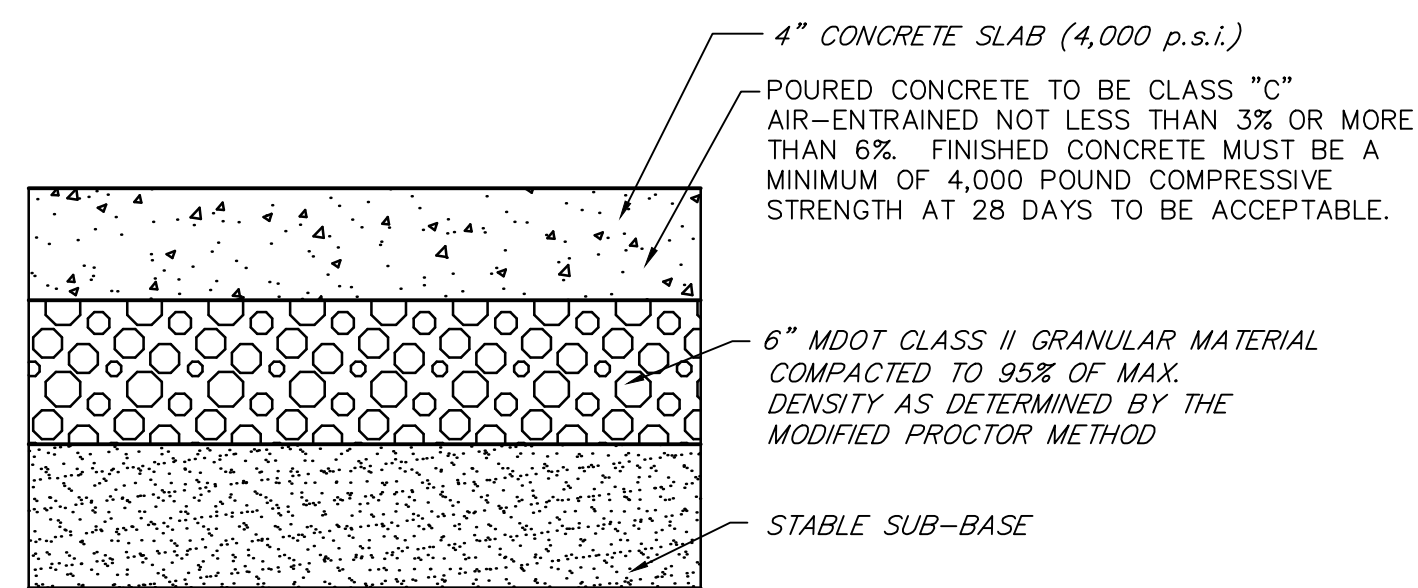
PARKING LOT ASPHALT PAVEMENT CROSS-SECTION

NOT TO SCALE



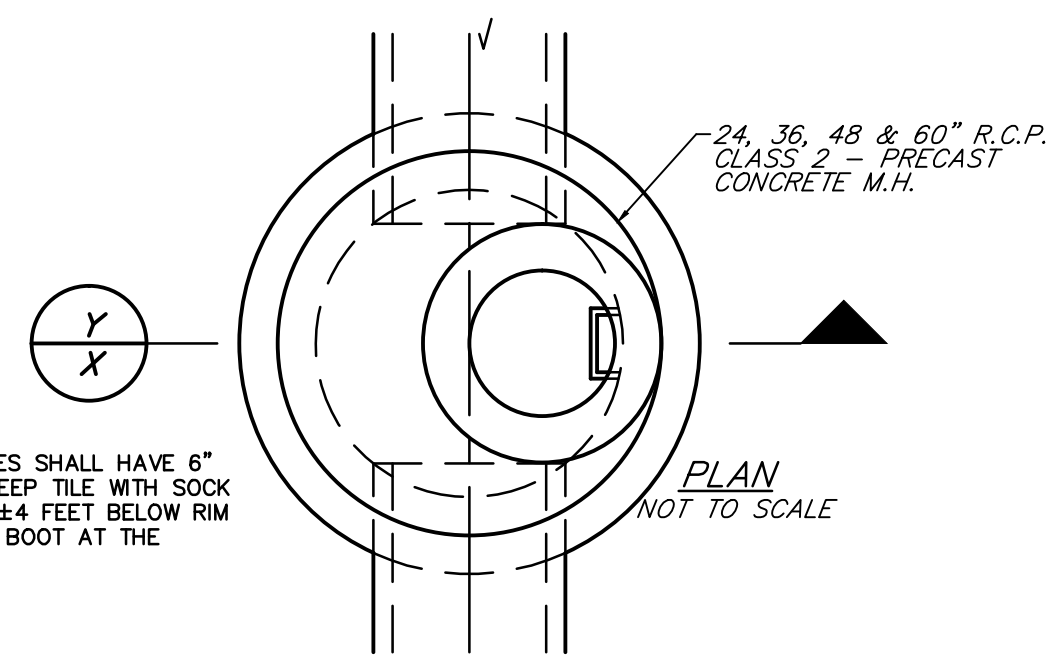
CONCRETE PAD CROSS-SECTION

NOT TO SCALE



CONCRETE SIDEWALK CROSS-SECTION

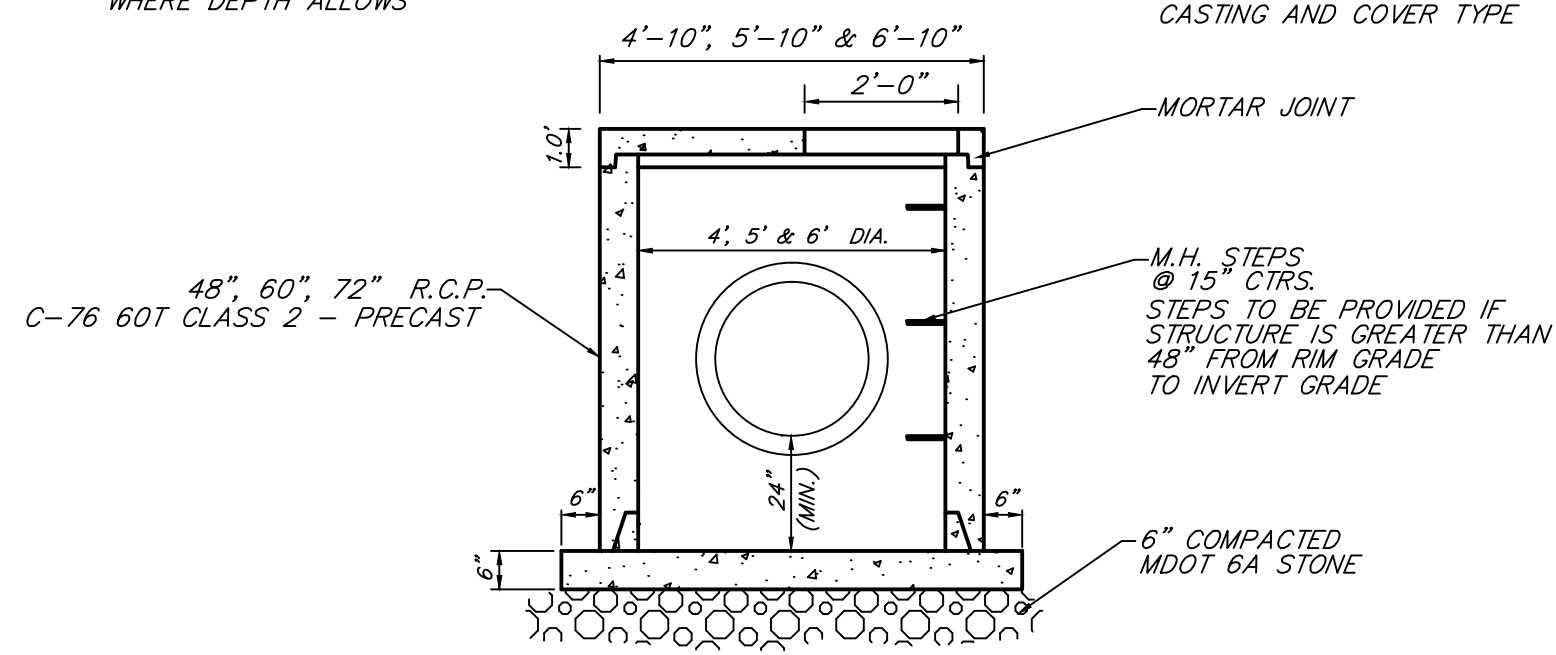
NOT TO SCALE



NOTE: ALL STRUCTURES SHALL HAVE 6" PERFORATED WEEP TILE WITH SOCK FINGER DRAIN ± 4 FEET BELOW RIM GRADE WITH A BOOT AT THE STRUCTURE.

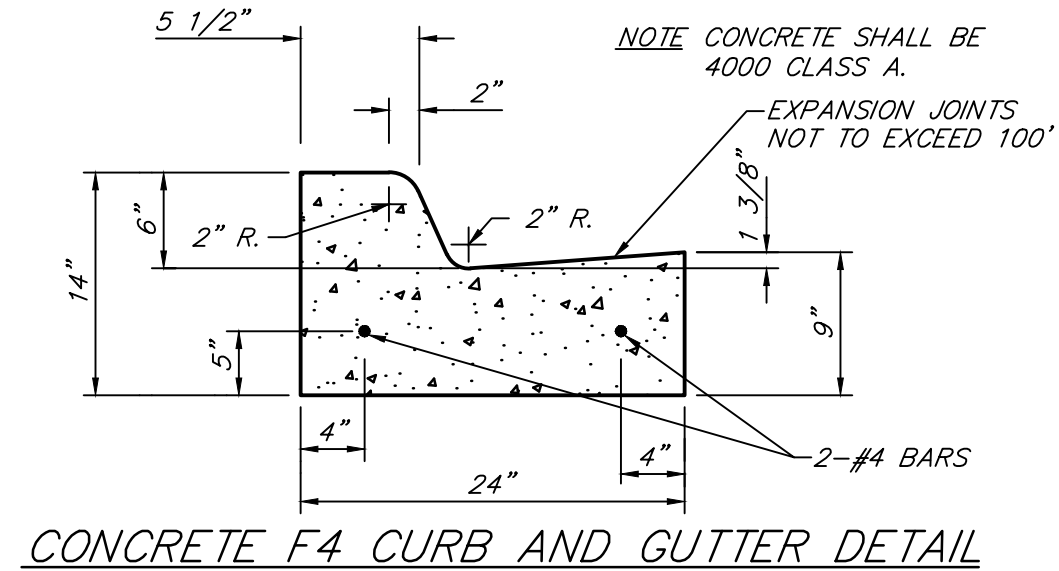
NOTE: CONE SECTIONS MAY BE SUBSTITUTED WHERE DEPTH ALLOWS

NOTE: REFER TO SITE PLAN FOR CASTING AND COVER TYPE



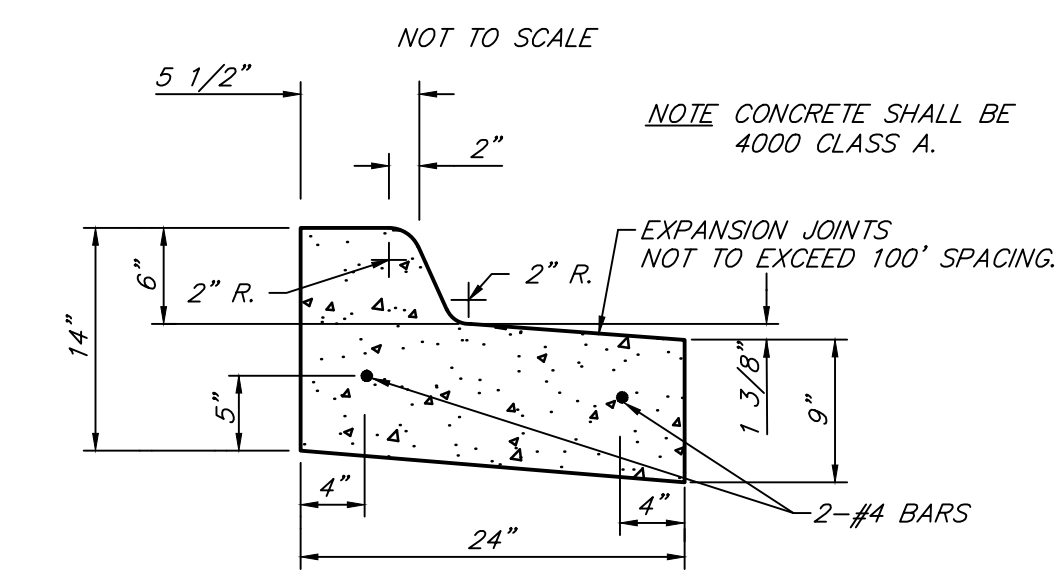
SECTION

4', 5' & 6' DIA. COMBINATION M.H.-C.B.



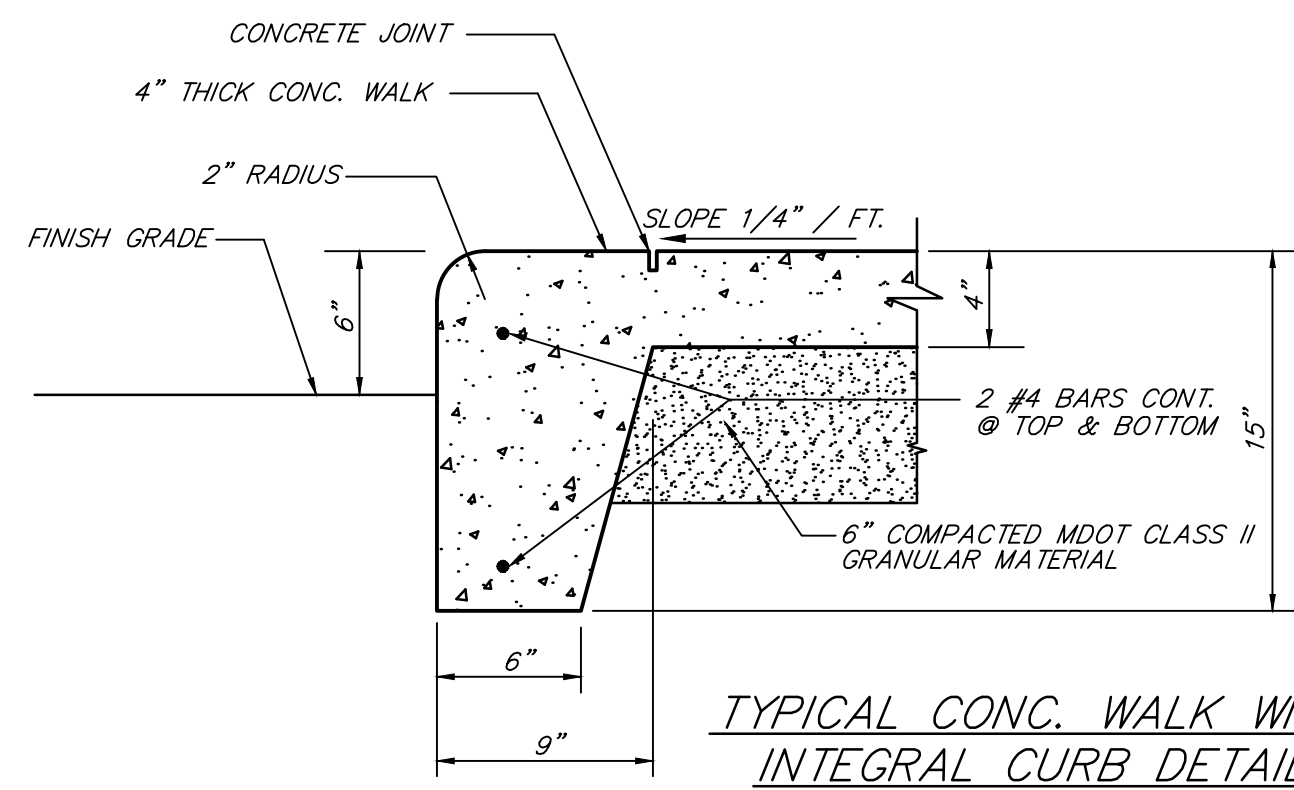
CONCRETE F4 CURB AND GUTTER DETAIL REGULAR PAN

NOT TO SCALE



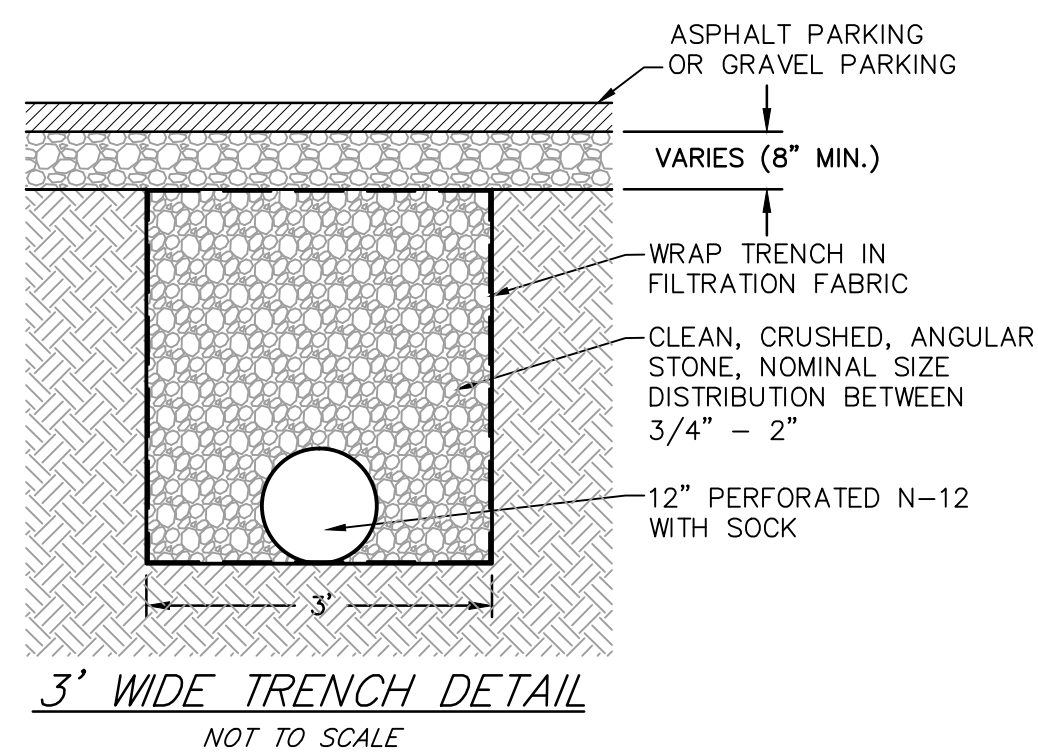
F4 CONCRETE CURB AND GUTTER DETAIL REVERSE PAN

NOT TO SCALE



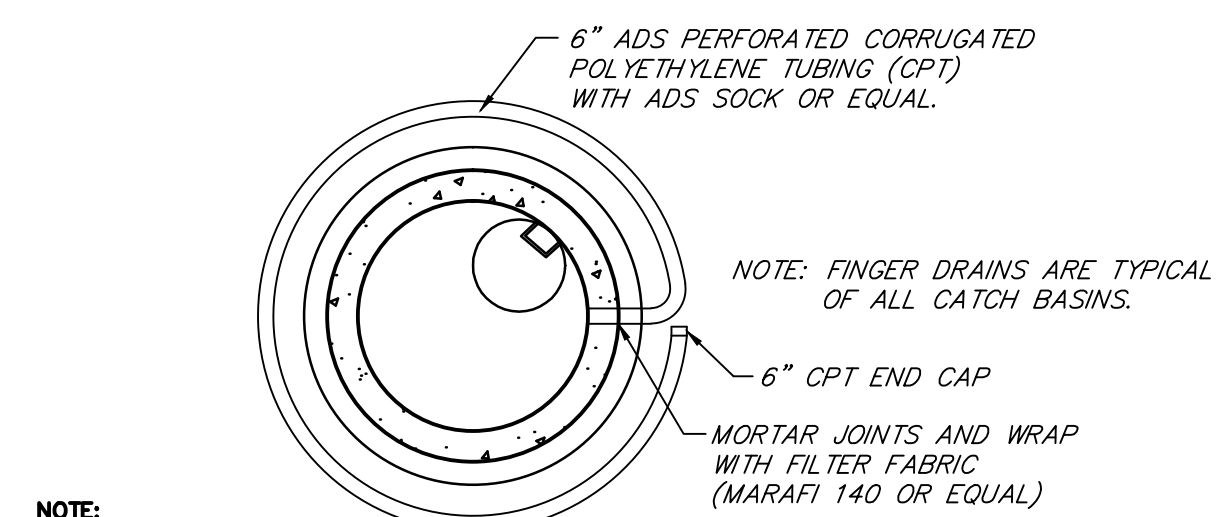
TYPICAL CONC. WALK WITH INTEGRAL CURB DETAIL

NOT TO SCALE



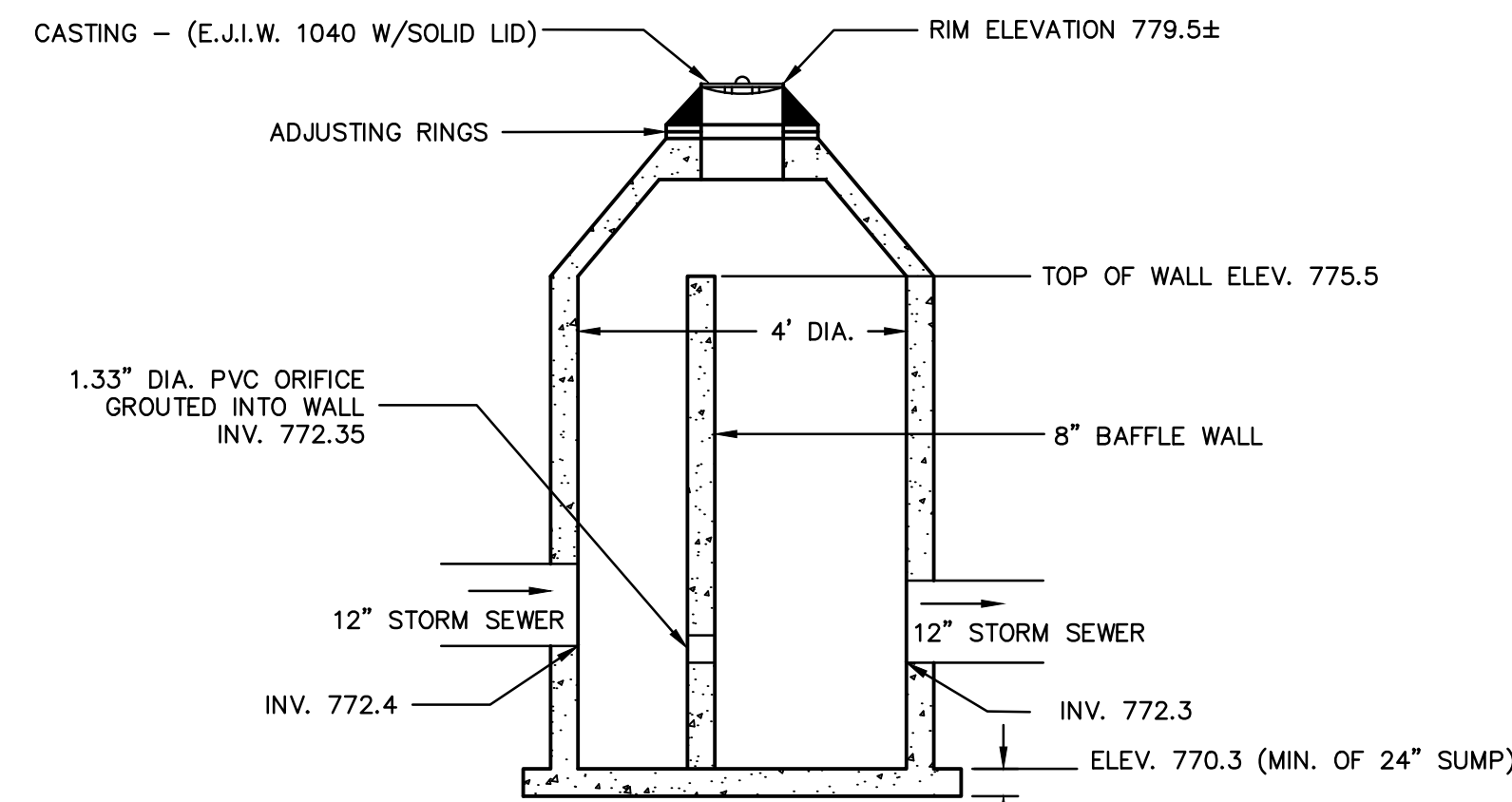
3' WIDE TRENCH DETAIL

NOT TO SCALE



FINGER DRAIN DETAIL

NOT TO SCALE

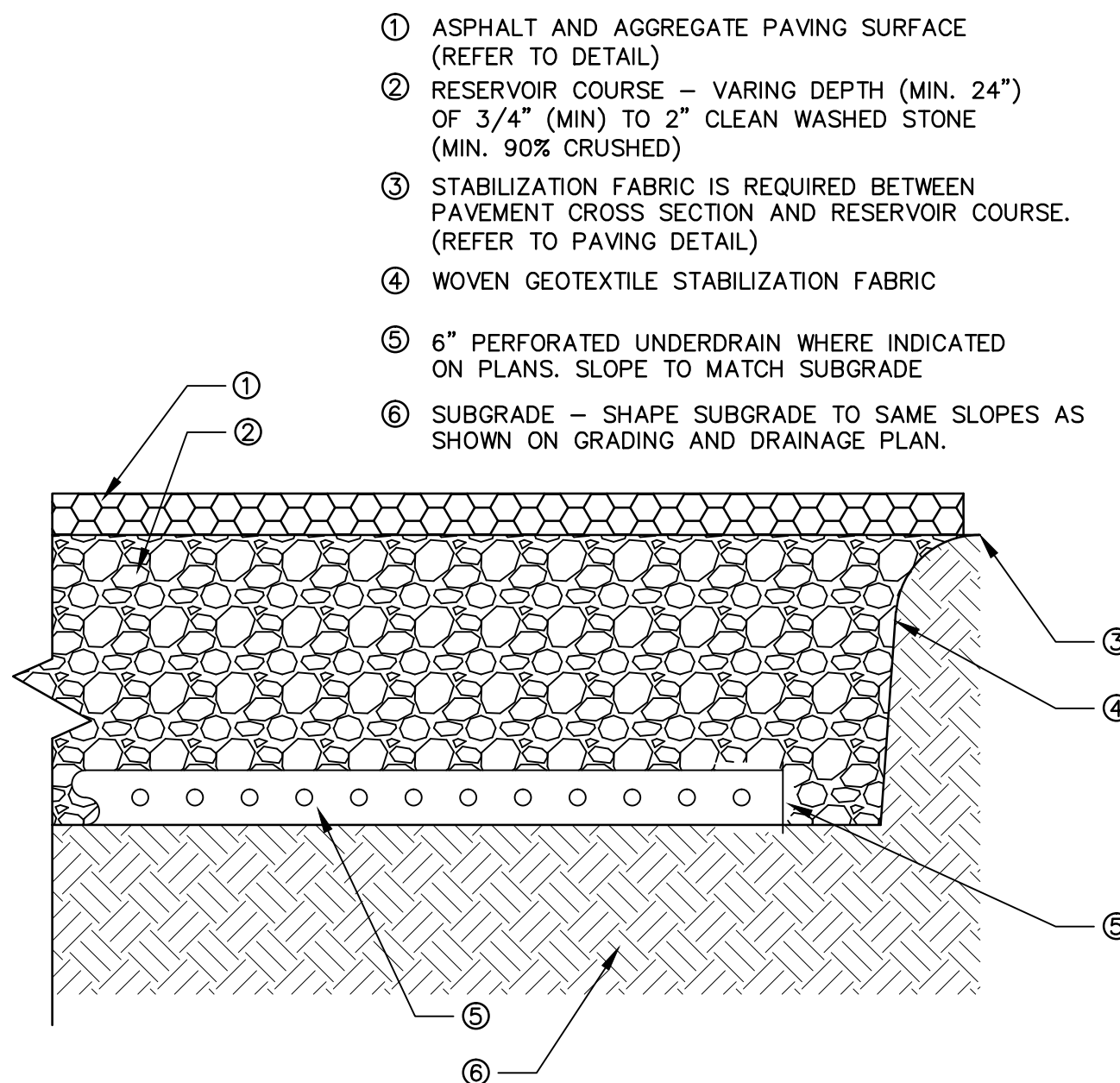


STORM WATER WEIR STRUCTURE

NOT TO SCALE

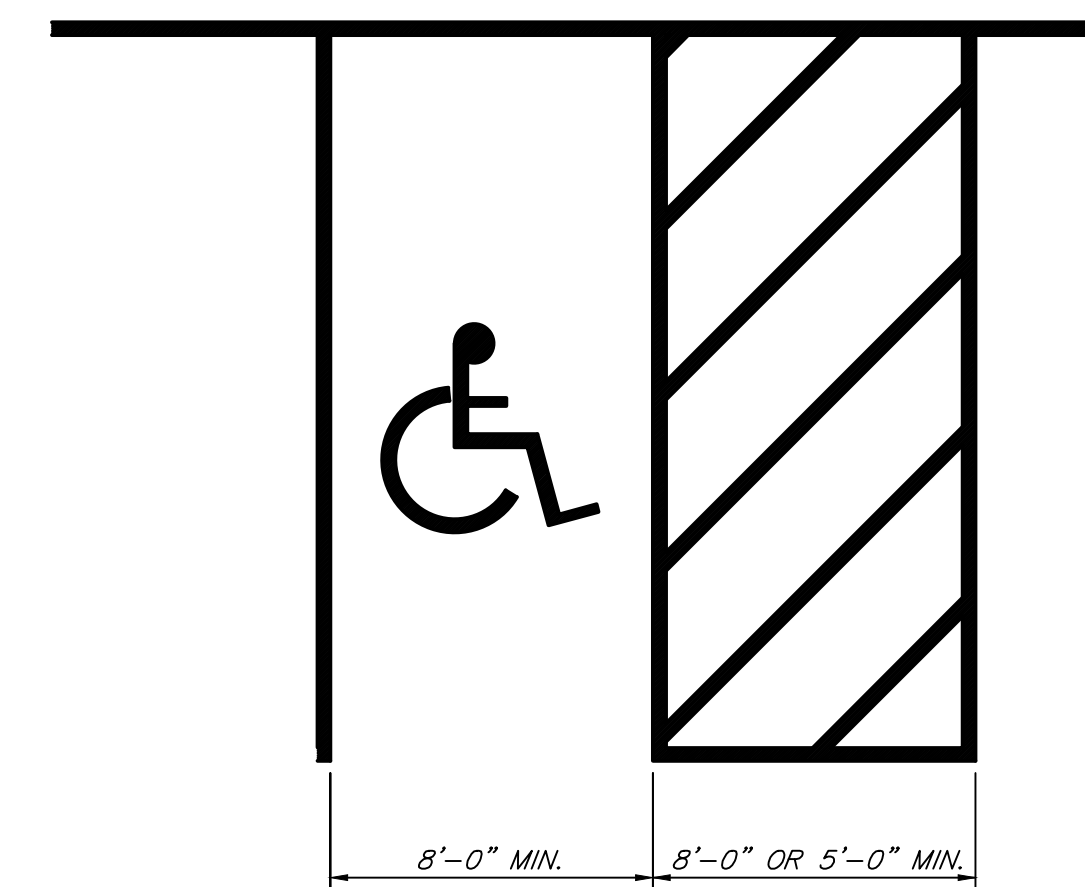
BAFFLE WALL CONSTRUCTION NOTES

- Baffle wall to be constructed of 8" concrete block with smooth-raked joints.
- Epoxy #4 reinforcing bars into the sidewalls and base of the precast structure at 8" spacing. Bars are to extend across the entire width of the structure.
- Place #4 reinforcing bars in the baffle wall vertically at 12" spacings. The vertical bars to horizontal bars.
- Grout-fill all concrete block.
- Coat entire baffle wall with Xypex waterproofing or approved equal.



INFILTRATION AREA CROSS-SECTION

NOT TO SCALE



4" WIDE PAINTED STRIPES PAINT FOR PARKING SLOTS, ARROWS, AND ISLANDS SHALL BE MDOT APPROVED TRAFFIC MARKING PAINT

BARRIER FREE PARKING SPACES

NOT TO SCALE

GENERAL NOTES:

THE SANITARY SEWER AND WATERMAIN MUST CONFORM TO THE UNION TOWNSHIP STANDARDS AND SPECIFICATIONS. SHOULD THERE BE A CONFLICT BETWEEN THE PLANS, NOTES, DETAILS AND SPECIFICATIONS, THE UNION TOWNSHIP STANDARDS SHALL GOVERN. THE CONTRACTOR WILL NOTIFY THE ENGINEER AS SOON AS A CONFLICT IS FOUND. INSTALLATION OF THESE UTILITIES SHALL BE COORDINATED BY THE CONTRACTOR WITH THE UNION TOWNSHIP DEPARTMENT OF PUBLIC WORKS.

ELECTRIC SERVICES TO THE BUILDING AND PARKING LOT LIGHTING SHALL BE UNDERGROUND. SITE CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR IN REGARDS TO CONDUIT SLEEVES.

ALL SERVICE LINES ARE SHOWN FOR REFERENCE ONLY. THE EXACT LOCATIONS TO BE DETERMINED BY THE OWNER AND/OR UTILITY COMPANY.

INSTALLATION OF GAS, ELECTRIC AND TELEPHONE SERVICES (INCLUDING TRANSFORMER PAD LOCATIONS) SHALL BE COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY COMPANIES AND THE ARCHITECT/ENGINEER

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS REQUIRED FOR WORKING WITHIN THE ROAD RIGHT-OF-WAY PRIOR TO COMMENCING CONSTRUCTION, WITHIN THESE AREAS.

ROOF WATER FROM THE PROPOSED BUILDING SHALL BE COLLECTED AND CONNECTED TO THE PROPOSED STORM SYSTEM AND/OR LEADS ALONG THE BUILDING. COORDINATION WITH THE BUILDING CONTRACTOR PRIOR TO INSTALLATION OF THE HEADERS AND/OR LEADS IS REQUIRED.

THE PROPOSED ELEVATIONS SHOWN ARE TOP OF WALK, TOP OF CURB, FINISHED ASPHALT AND OR GRAVEL SURFACE AND GUTTER PAN ELEVATIONS, UNLESS OTHERWISE NOTED.

ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE UNION TOWNSHIP AND ISABELLA ROAD COMMISSION STANDARDS.

CONSTRUCTION PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF THE STATE OF MICHIGAN, COUNTY OF ISABELLA AND UNION TOWNSHIP.

SITE CONCRETE PADS SHALL BE 4000 PSI AND REINFORCED WITH 6X6 W2.9 X W2.9. THICKNESS OF CONCRETE SHALL CONFORM TO THE PLANS. THE CONCRETE PADS ADJACENT TO THE BUILDING SHALL BE TAKEN OFF FROM THE ARCHITECTURAL PLANS AND THE CONSTRUCTION OF THE PADS SHALL BE COORDINATED WITH THE BUILDING CONTRACTOR.

DIMENSIONS SHOWN ON THE PLANS ARE GIVEN TO THE BACK OF CURB, FACE OR BACK OF WALK OR THE BUILDING OUTSIDE LINES.

STANDARD PARKING SPACES SHALL BE 10 FEET BY 20 FEET. THE SPACES ARE TO BE INDICATED BY INCH WIDE WHITE LINES. THE PAINT LINES ON THE SITE, EXCEPT NEAR THE BUILDING, SHALL CONFORM TO THE ENGINEER'S PLAN.

CONCRETE CURBING SHALL BE 4000 PSI CONCRETE.

ALL ABANDONED CURB STOP BOXES SHALL BE REMOVED AND SALVAGED.

GENERAL NOTES:

THE UTILITY LOCATIONS AS HEREON SHOWN ARE BASED ON FIELD OBSERVATIONS AND A CAREFUL REVIEW OF MUNICIPAL AND UTILITY COMPANY RECORDS. HOWEVER, IT IS NOT POSSIBLE TO DETERMINE THE PRECISE LOCATION AND DEPTH OF UNDERGROUND UTILITIES WITHOUT EXCAVATION. THEREFORE, WE CANNOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE BURIED UTILITY INFORMATION HEREON SHOWN. THE CONTRACTOR SHALL CALL "MISS DIG" (1-800-482-7171) A MINIMUM OF 3 WORKING DAYS PRIOR TO ANY CONSTRUCTION OR PRIOR TO ANY EXCAVATION. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THESE UTILITY LOCATIONS PRIOR TO CONSTRUCTION AND SHALL MAKE EVERY EFFORT TO PROTECT AND OR RELOCATE THEM AS REQUIRED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR AS SOON AS POSSIBLE IN THE EVENT A DISCREPANCY IS FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER/SURVEYOR WHERE POSSIBLE CONFLICTS EXIST PRIOR TO BEGINNING CONSTRUCTION.

THE LOCATION OF EXISTING UTILITIES SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY GROUND CONDITIONS, EXISTING UTILITIES, LOT AND BUILDING DIMENSIONS PRIOR TO THE START OF CONSTRUCTION. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THE PLANS. ARRANGE TO HAVE UTILITIES IDENTIFIED AND FLAGGED BEFORE STARTING CONSTRUCTION. THE OWNER ASSUMES NO LIABILITY FOR THE LOCATION OF UTILITIES. ALL DAMAGES MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

ALL CONSTRUCTION UNDER EXISTING OR PROPOSED PAVEMENT, EXISTING OR PROPOSED UTILITIES (INCLUDING LEADS), SHALL BE COMPLETELY BACKFILLED WITH SAND IN 12" LAYERS, AND COMPACTED TO NOT LESS THAN 95% OF ITS MAXIMUM UNIT WEIGHT, AS DETERMINED BY THE MODIFIED PROCTOR METHOD. THE COST IS TO BE INCLUDED IN THE UNIT PRICE BID FOR EACH ITEM.

THE CONTRACTOR SHALL CONFORM TO SOIL EROSION AND SEDIMENTATION CONTROL ACT PART 91 OF PUBLIC ACT 451 OF 1994, AS AMENDED.

GEOTEXTILE FILTER BAGS SHALL BE USED AT ALL CATCH BASINS FOR SOIL AND SEDIMENTATION CONTROL. ALL CATCH BASINS SHALL BE CLEANED UPON COMPLETION OF THE PROPOSED PROJECT. COST FOR CLEANING THE CATCH BASINS SHALL BE INCLUDED IN THE COSTS FOR THE DRAINAGE STRUCTURES.

TOPSOIL SHALL BE STOCKPILED ON THE SITE AND USED AS TOPSOIL SURFACES AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. TOPSOIL WILL NEED TO BE SPREAD IN THE BASIN AREA TO A MINIMUM DEPTH OF 6 INCHES. THE BERMS SHOWN ON THE PLANS WILL NEED TO BE TOPSOIL OR TO HAVE A MINIMUM OF 6 INCHES ON TOPSOIL SPREAD OVER THEM. THE CURB ISLANDS WILL BE FILLED WITH TOPSOIL. THE INTENT IS FOR THE CONTRACTOR AND THE LANDSCAPER TO USE THE EXISTING TOPSOIL TO COMPLETE THE PROJECT PRIOR TO HAULING ANY TOPSOIL ONTO THE SITE. UNSUITABLE TOPSOILS MUST BE DISPOSED OF DURING THE CLEANUP; ANY REMAINING STOCKPILES WILL NEED TO BE REMOVED. SOIL EROSION MEASURES MUST BE TAKEN TO ASSURE THAT THESE STOCKPILES ARE STABILIZED.

THE CONTRACTOR SHALL SEED AND FERTILIZE DITCH BANKS, SOILS PILES OR BANKS AND ANY OTHER DISTURBED AREAS AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE SPECIFICATIONS.

THE CONTRACTOR SHALL BACKFILL, COMPACT AND FINE GRADE ALL AREAS BETWEEN THE CURBS AND PAVEMENT AND THE PROPERTY LINES WITH TOPSOIL SUITABLE FOR LANDSCAPING. THE GRADES IN THESE AREAS WILL BE AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

THE UNPAVED AREAS SHALL BE SMOOTHLY GRADED AND THE SURFACE STABILIZED BY SEEDING AS STATED ON THE PLANS. THE MAXIMUM DESIRABLE SLOPE IS 3 HORIZONTAL TO 1 VERTICAL, UNLESS OTHERWISE STATED.

THE CONTRACTOR SHALL FURNISH AND INSTALL PLAIN RIP-RAP BANK PROTECTION IN AREAS WHERE BANK EROSION WILL MOST LIKELY OCCUR OR AS DIRECTED BY THE ENGINEER.

BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE TO BE DISPOSED OF BY THE CONTRACTOR.

ALL DEWATERING REQUIRED FOR CONSTRUCTION SHALL BE INCLUDED IN THE UNIT PRICE BID.

ALL JOINTS AT INTERSECTION APPROACHES AND DRIVEWAYS SHALL BE SAWCUT WITH BUTT-JOINTS. THE COST SHALL BE INCLUDED WITH THE PAYMENT FOR EXCAVATION.

THE CONTRACTOR SHALL MAINTAIN LOCAL TRAFFIC AT ALL TIMES ON THE PROJECT. THE COST IS TO BE INCLUDED IN THE LUMP SUM FEE.

ALL WATER VALVE BOXES, ELECTRICAL BOXES, GAS VALVES AND ANY OTHER EXISTING UTILITY STRUCTURES ON THE SITE SHALL BE ADJUSTED TO FINISHED GRADE. THE COST SHALL BE INCLUDED IN THE LUMP SUM FEE.

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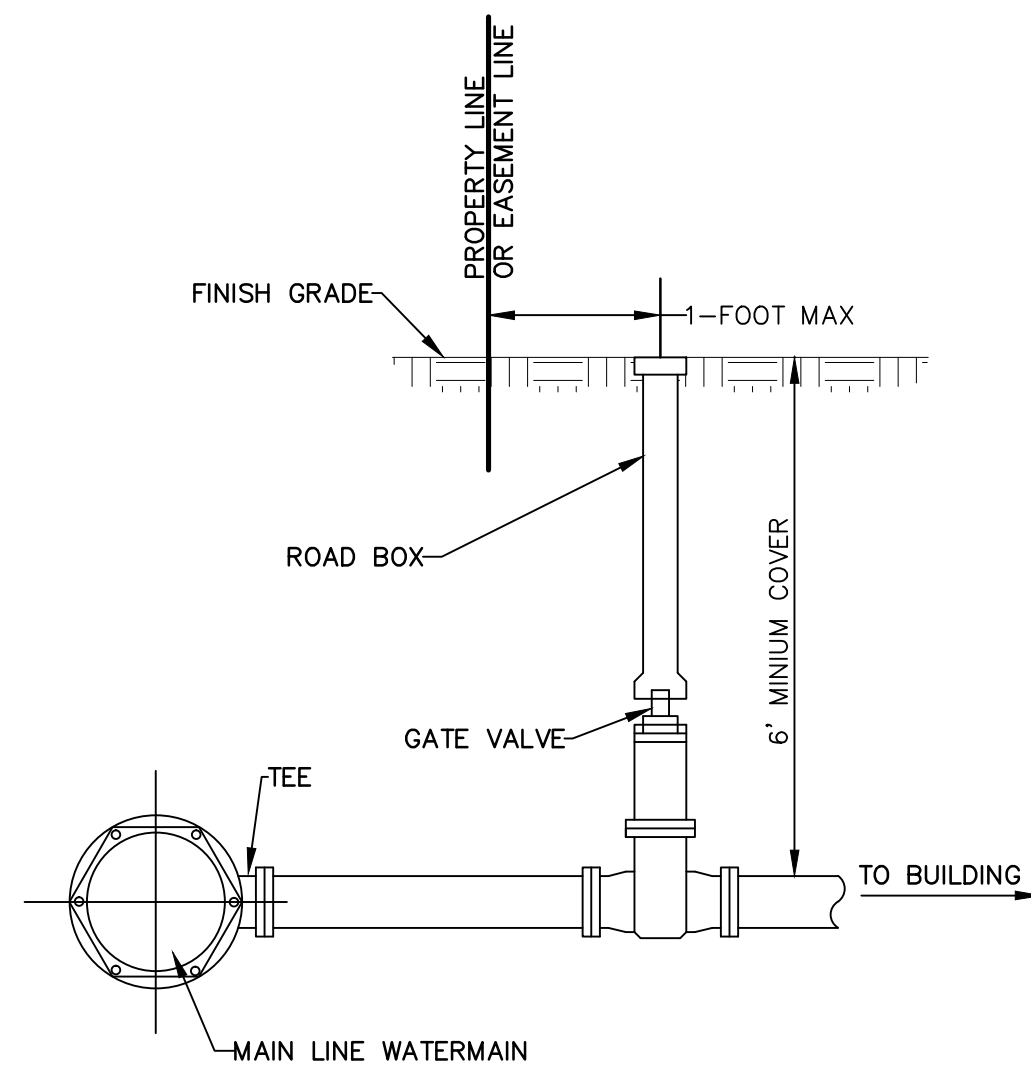


CONSTRUCTION DETAILS #1  
MCGUIRK MINI-STORAGE, INC.  
LOT 1 & 2 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

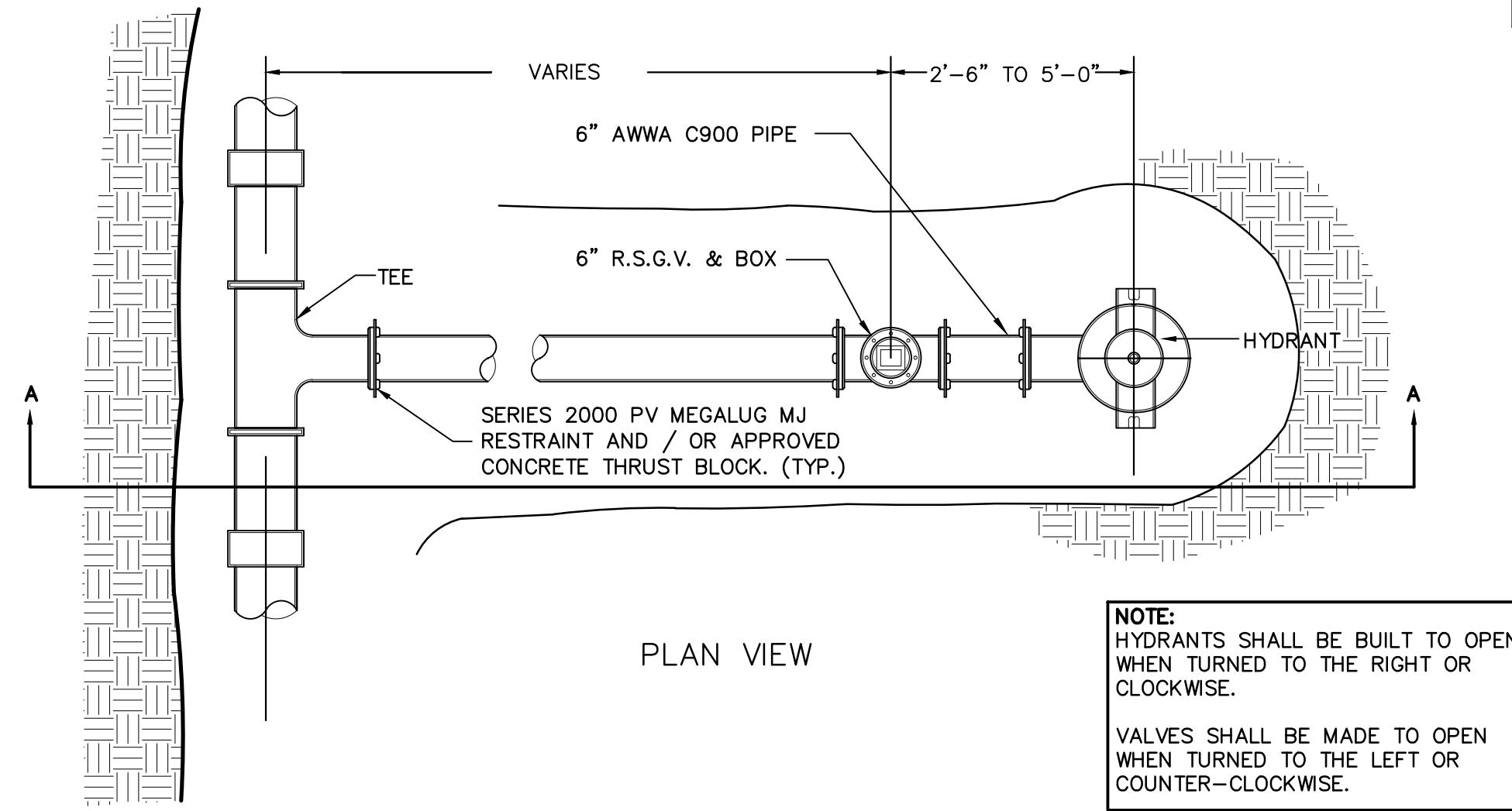
REVISIONS:

DATE	DESCRIPTION

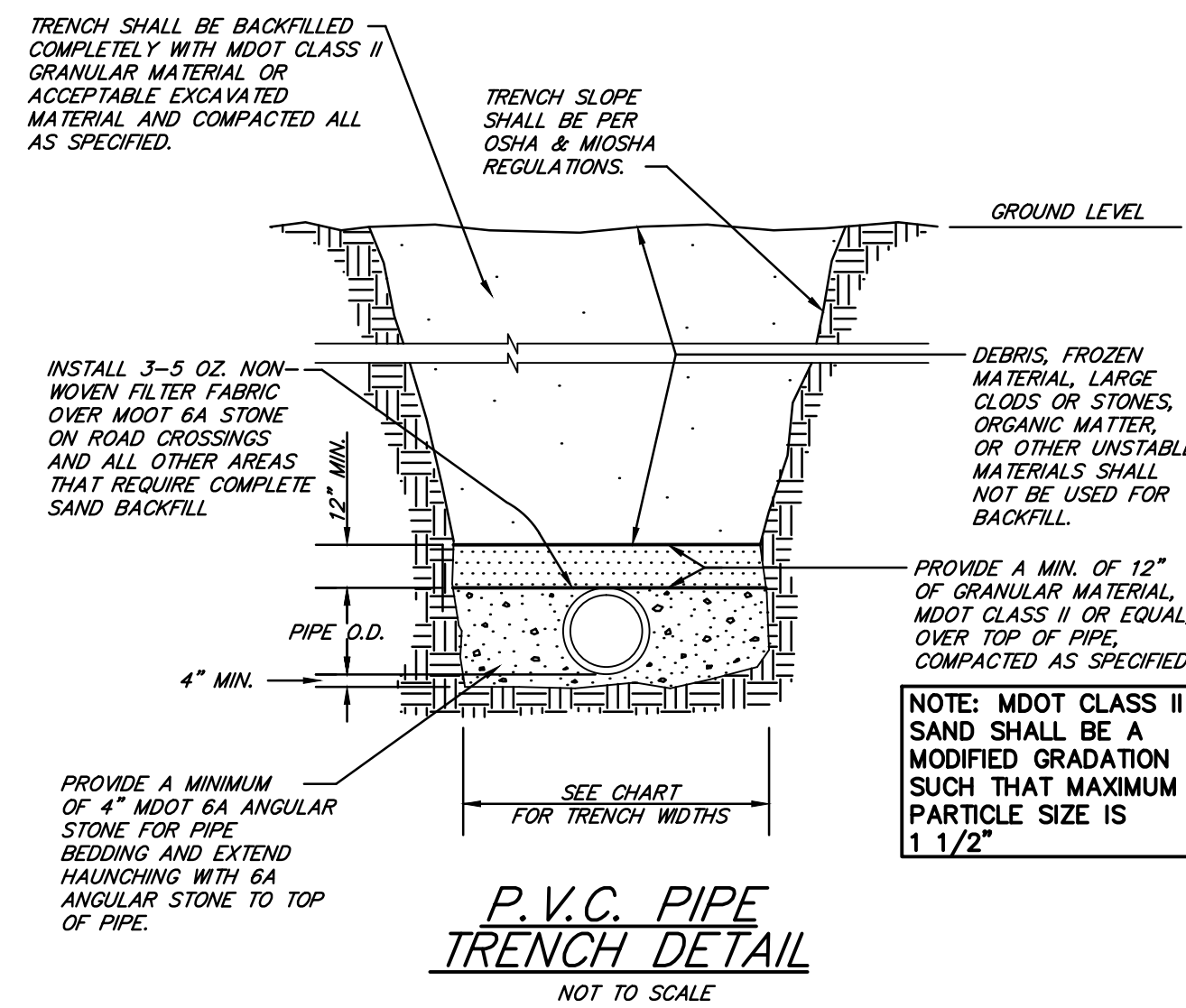
SCALE	1" = 20'
SHEET NUMBER	4 OF 6
JOB NUMBER:	1703-045
DRAWN BY:	TELB
DESIGNED BY:	TELB
CHECKED BY:	TELB
SUBMITTALS:	SUBMITTAL TO REVIEW AGENCIES 3-28-17
	SUBMITTAL TO UNION TOWNSHIP PLANNING COM.



**TEE CONNECTION**  
3 INCH OR LARGER WATER SERVICE  
(INSTALLATION BY CONTRACTOR)



**NOTE:**  
HYDRANTS SHALL BE BUILT TO OPEN WHEN TURNED TO THE RIGHT OR CLOCKWISE.  
VALVES SHALL BE MADE TO OPEN WHEN TURNED TO THE LEFT OR COUNTER-CLOCKWISE.



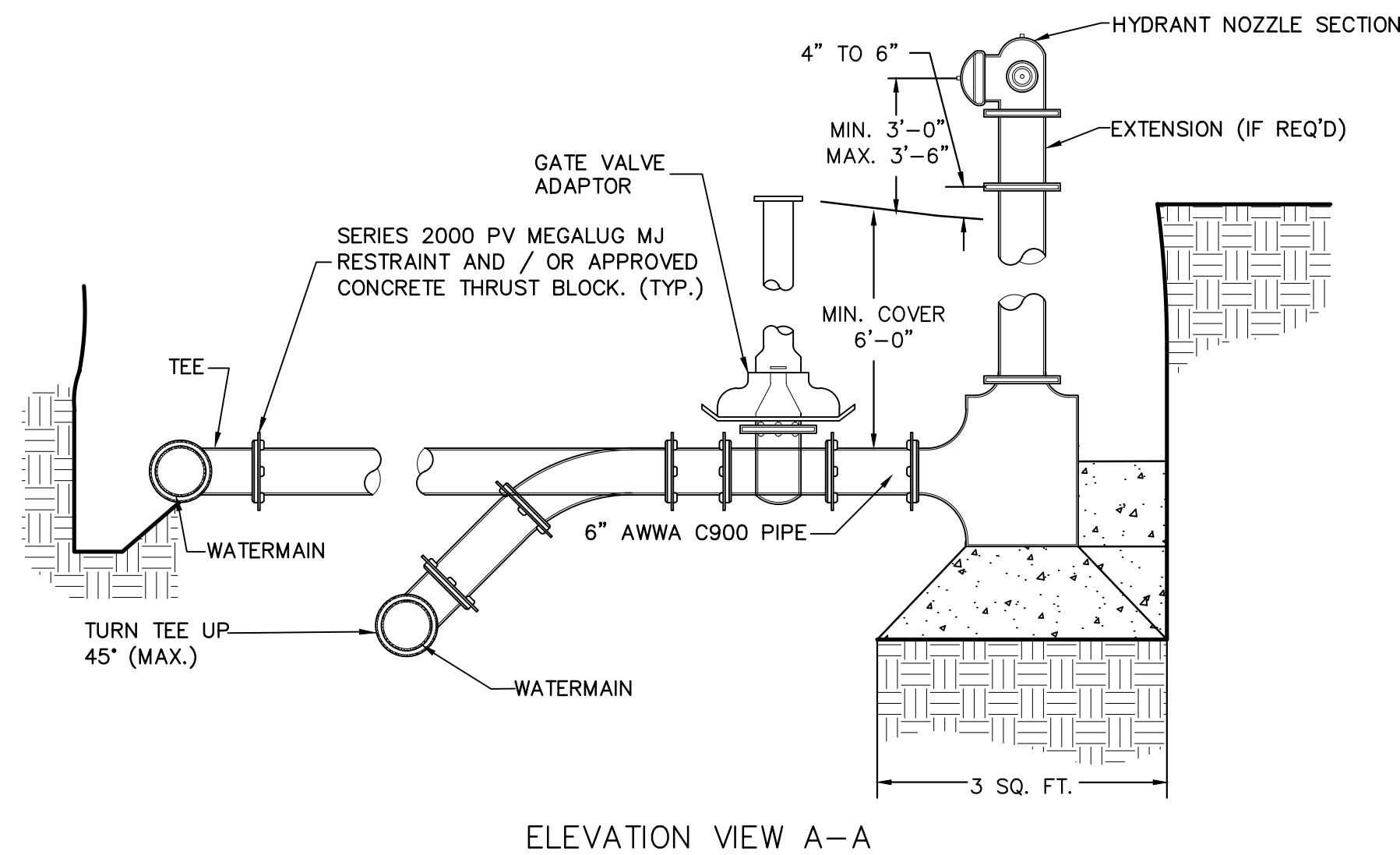
**P.V.C. PIPE TRENCH DETAIL**  
NOT TO SCALE

**TRENCH WIDTH CHART**

PIPE SIZE	MINIMUM	MAXIMUM
8" & 10"	24"	30"
12" & 15"	30"	36"
18"	34"	40"
21"	38"	42"
24"	42"	46"
27"	45"	49"
30"	49"	53"
36"	56"	60"
LARGER THAN 36"	I.D. +20"	I.D. +24"

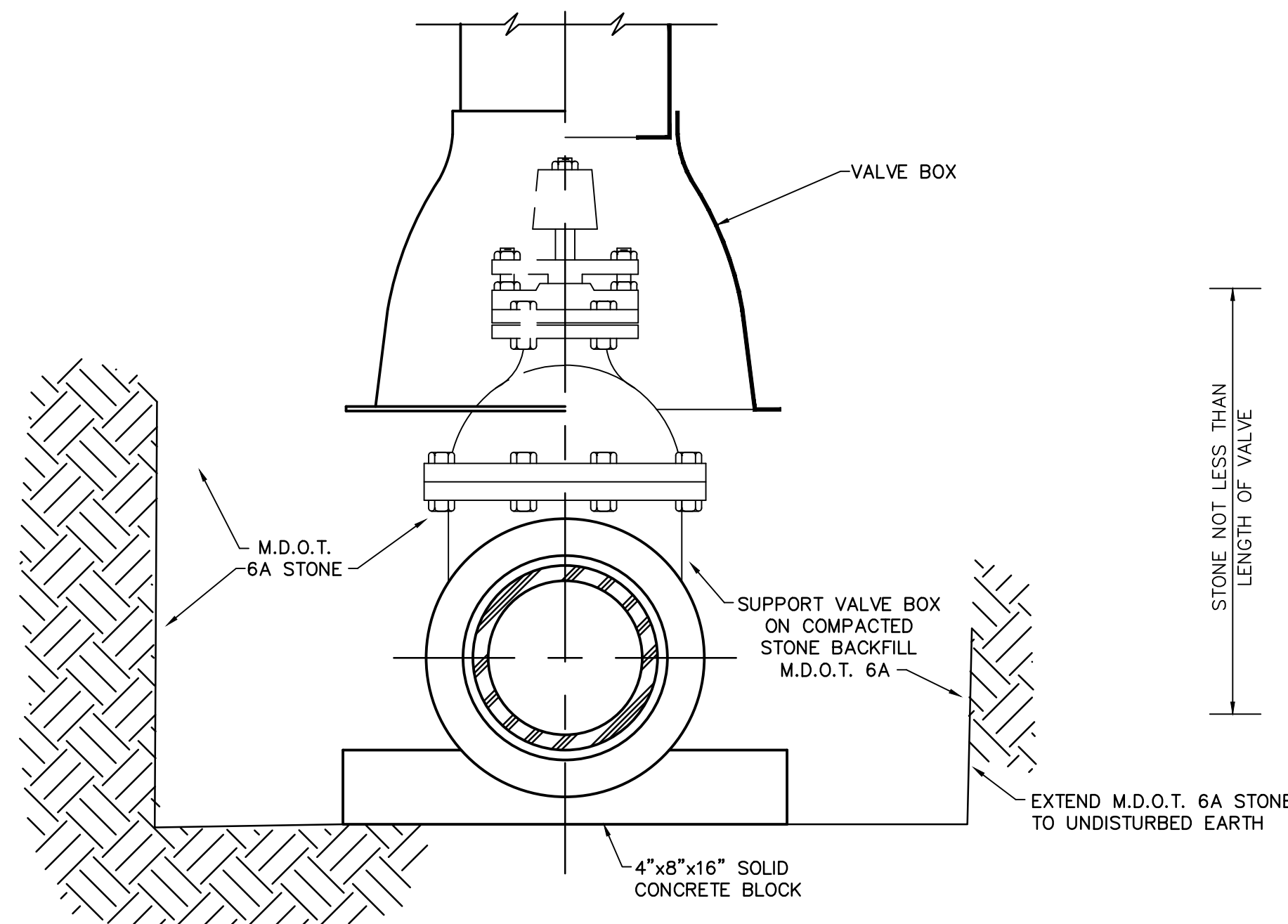
**NOTES:**

1. THE CONCRETE USED FOR BLOCKING SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS.
2. THE CONTRACTOR SHALL SECURE ALL VERTICAL BENDS WITH A MINIMUM OF 2/3/4" ANCHOR RODS FITTING EITHER CONCRETE BLOCK, WELDED STEEL PIPE SLEEVE OR COLLARS. METHOD USED SHALL BE DETERMINED BY THE ENGINEER.
3. ALL BENDS SHALL BE MECHANICAL JOINT.
4. ALL FERROUS PARTS SHALL RECEIVE A 10 MIL (DMT) COATING OF COAL TAR EPOXY.
5. WRAP ALL FITTINGS, VALVES, HYDRANTS, AND D.I. PIPE IN 8 MIL POLYETHYLENE SHEET TO WITHIN ONE FOOT OF FINISHED GRADE.
6. ALL HYDRANTS SHALL BE MEGA LUGGED.
7. ALL COST ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH HYDRANT INSTALLED.



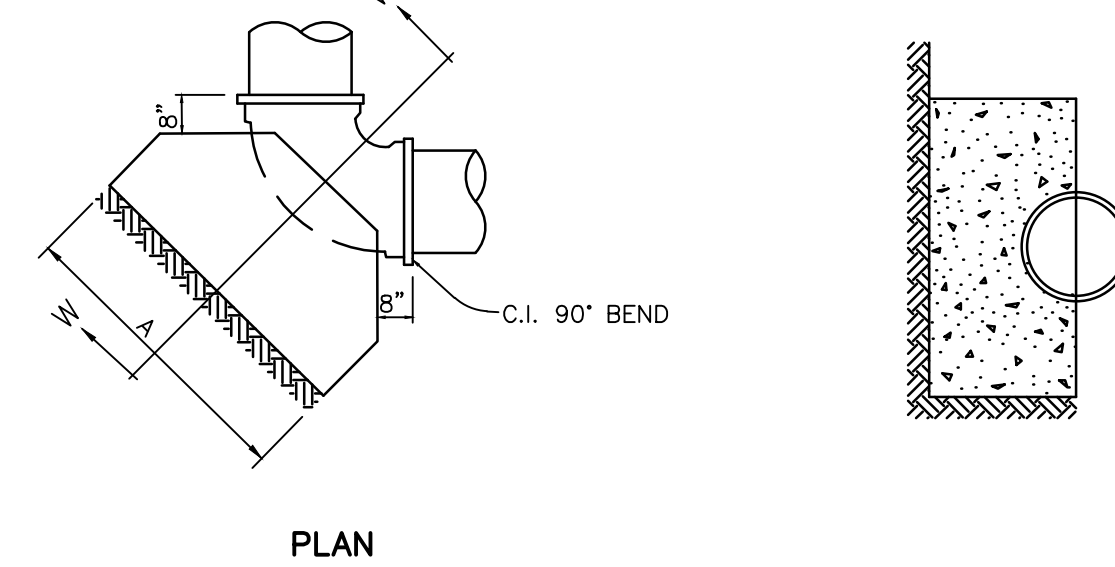
**ELEVATION VIEW A-A**

**TYPICAL HYDRANT CONNECTION**  
NOT TO SCALE

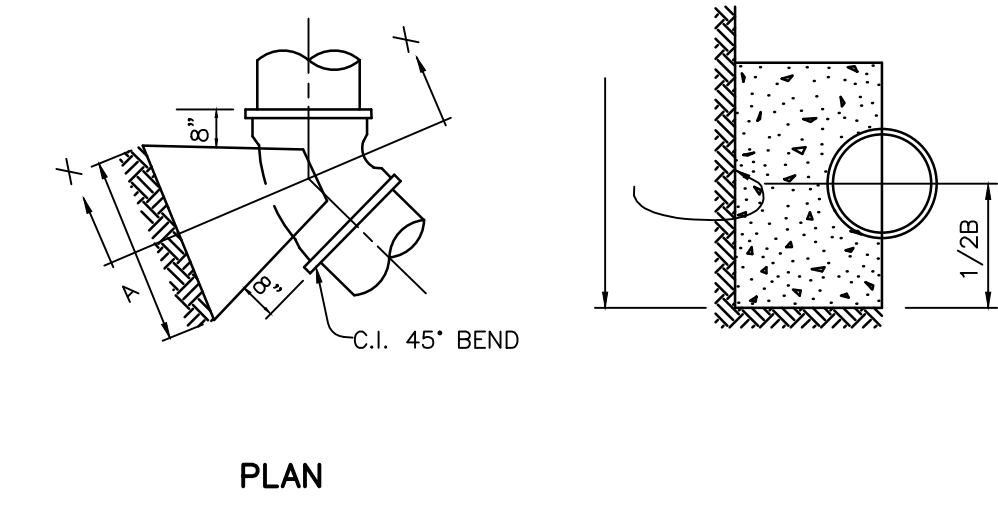


**DETAIL OF SETTING OF VALVE BOXES**  
NOT TO SCALE

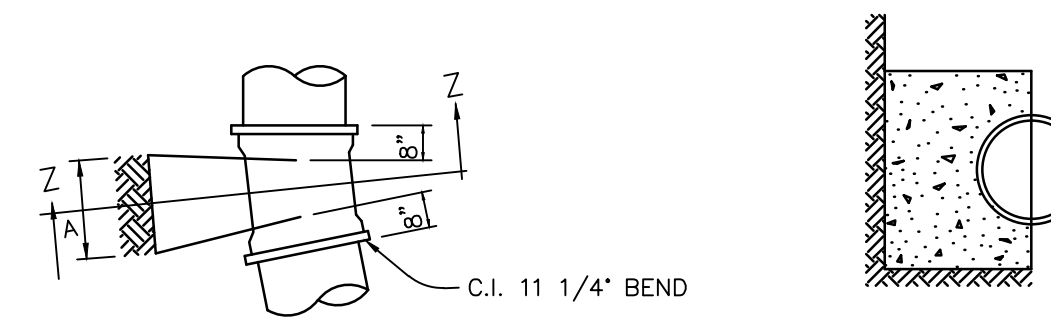
PIPE SIZE	90° BEND OR TEE				45° BEND				22 1/2° BEND				11 1/4° BEND				PLUG			
	A	B	C	Q	A	B	C	Q	A	B	C	Q	A	B	C	Q	A	B	C	Q
6", 8" & 10"	3'-0"	2'-0"	1'-3"	0.3	2'-0"	1'-6"	1'-3"	0.1	1'-6"	1'-0"	1'-3"	0.1	1'-0"	1'-0"	1'-3"	0.1	2'-0"	2'-0"	1'-6"	0.2
12"	3'-0"	2'-6"	1'-6"	0.4	2'-0"	2'-0"	1'-6"	0.2	2'-0"	1'-0"	1'-6"	0.1	1'-0"	1'-0"	1'-6"	0.1	2'-0"	2'-6"	1'-6"	0.3



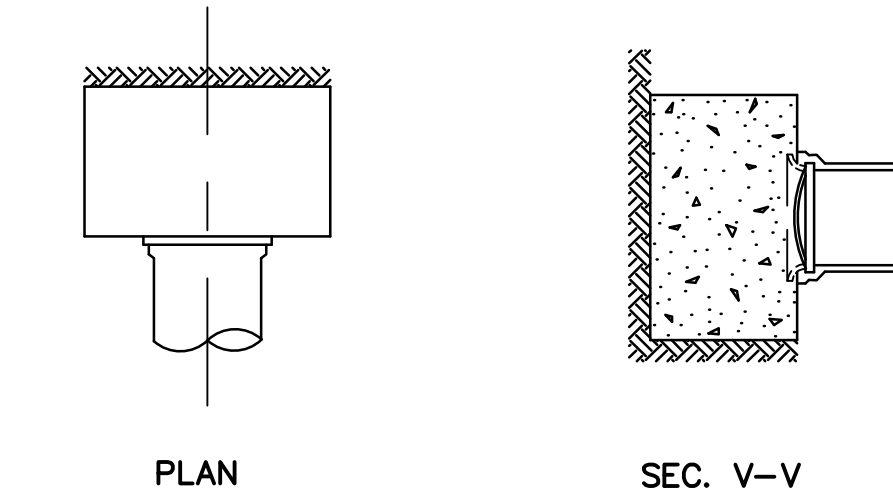
**DETAIL OF BLOCK FOR 90° BEND OR TEE**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



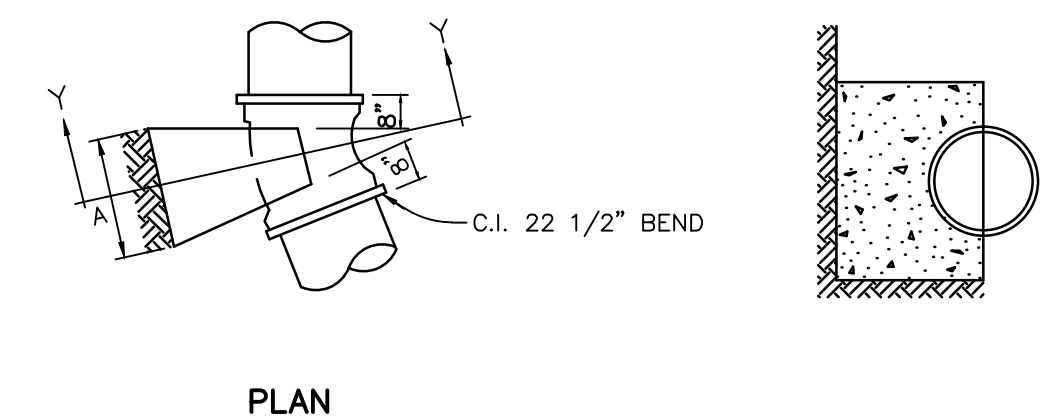
**DETAIL OF BLOCK FOR 45° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



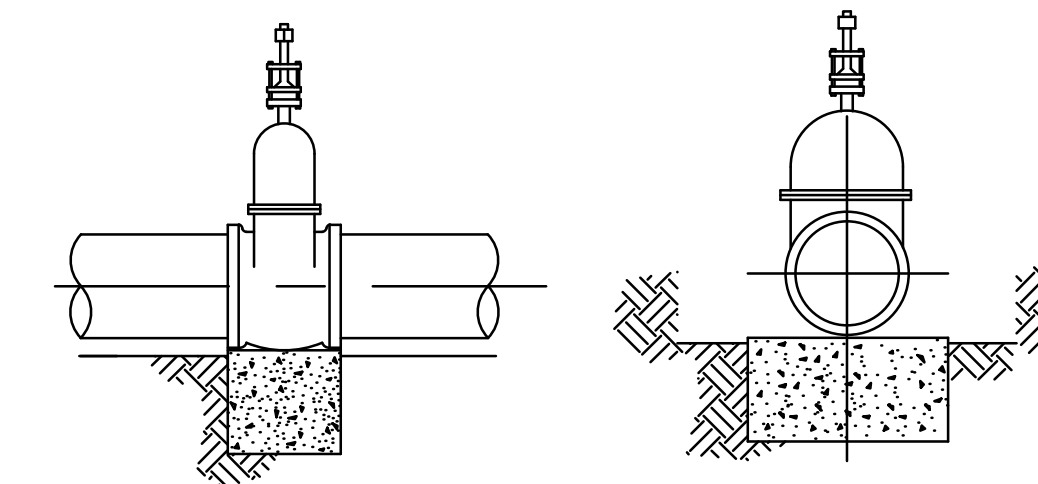
**DETAIL OF BLOCK FOR 11 1/4° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



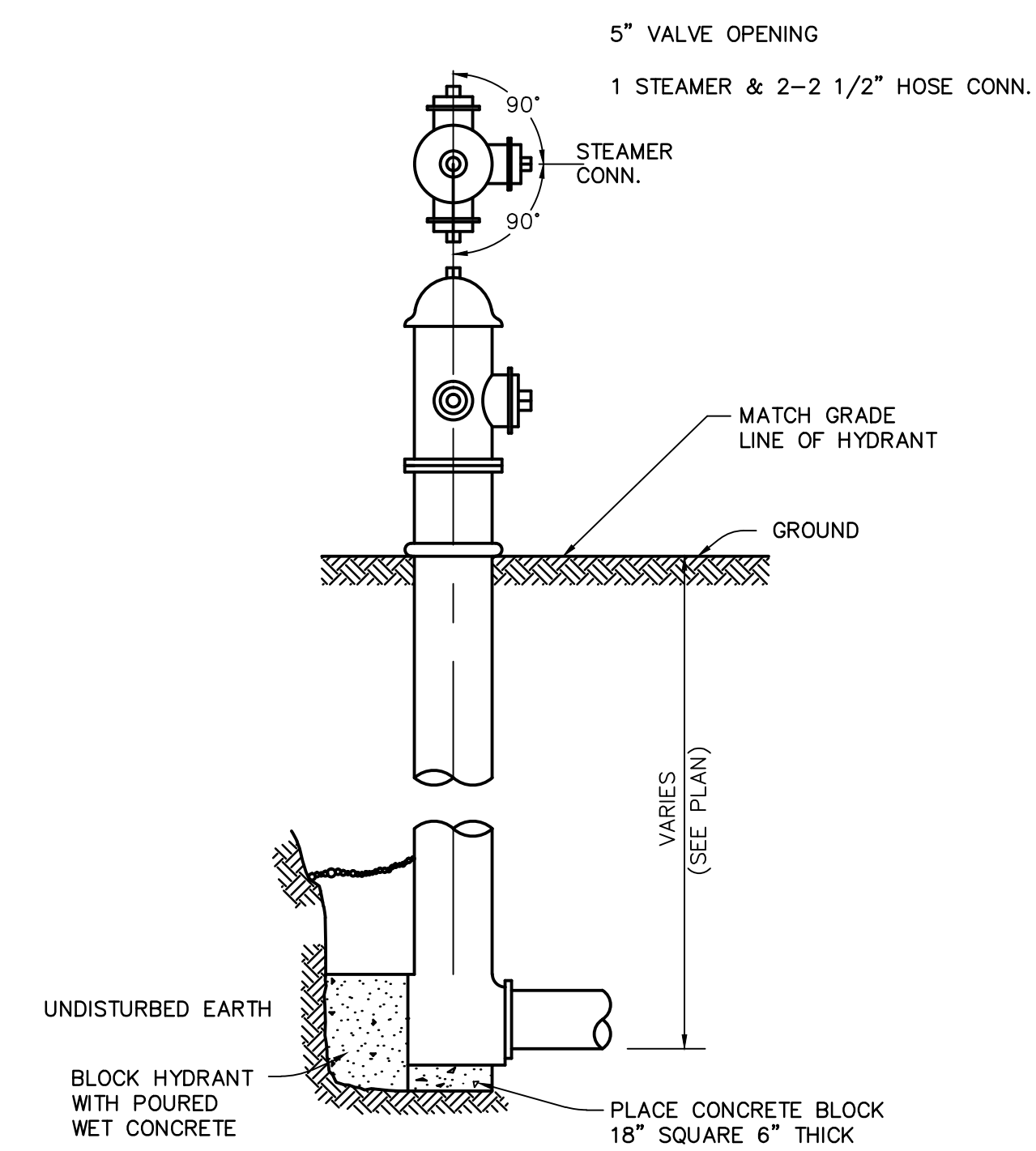
**DETAIL OF BLOCK FOR PLUG**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



**DETAIL OF BLOCK FOR 22 1/2° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



**DETAIL OF BLOCK FOR GATE VALVES**  
NOT TO SCALE



**DETAIL OF SETTING HYDRANT**  
NOT TO SCALE

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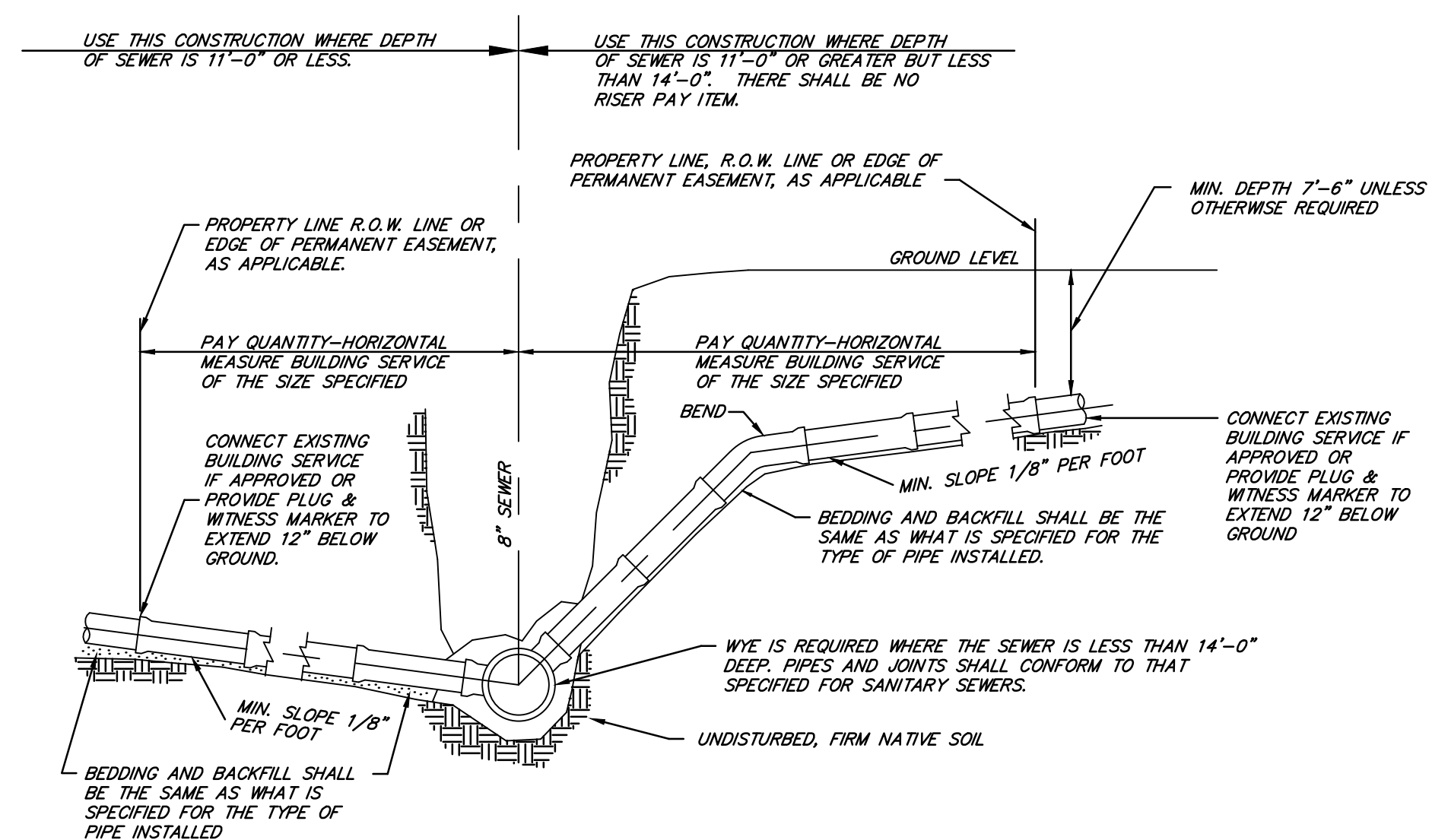
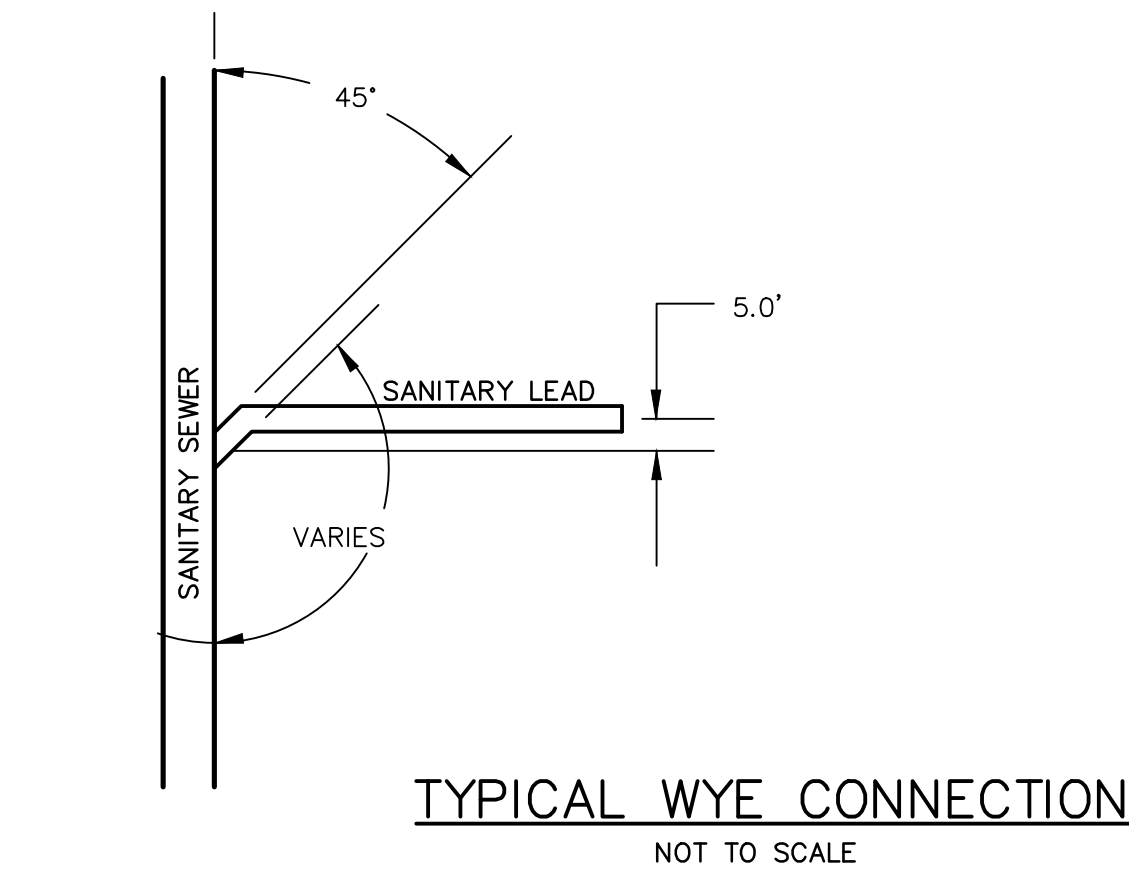
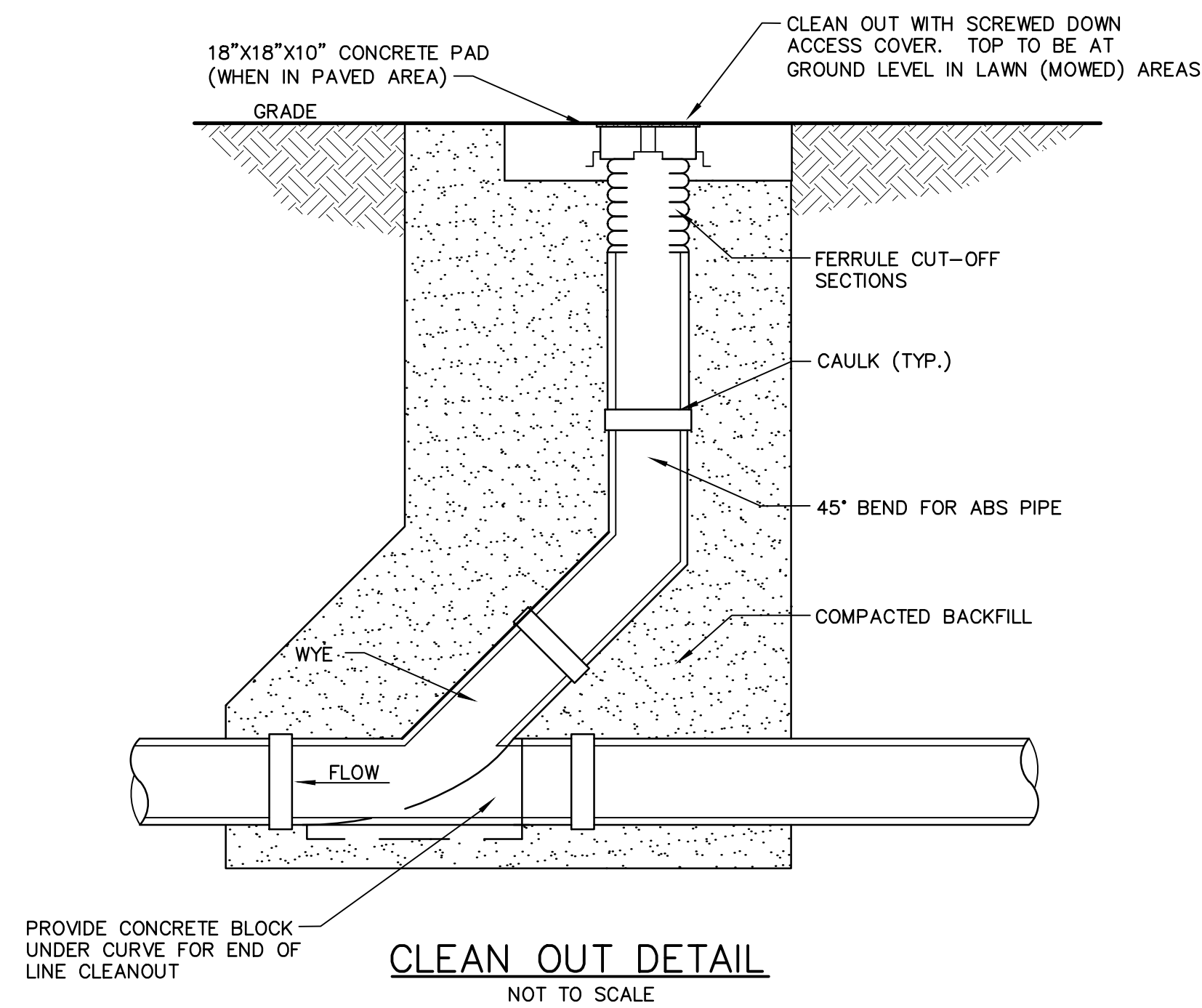


**CONSTRUCTION DETAILS #2**  
MCGUIRK MINI-STORAGE, INC.  
LOT 1 & 2 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

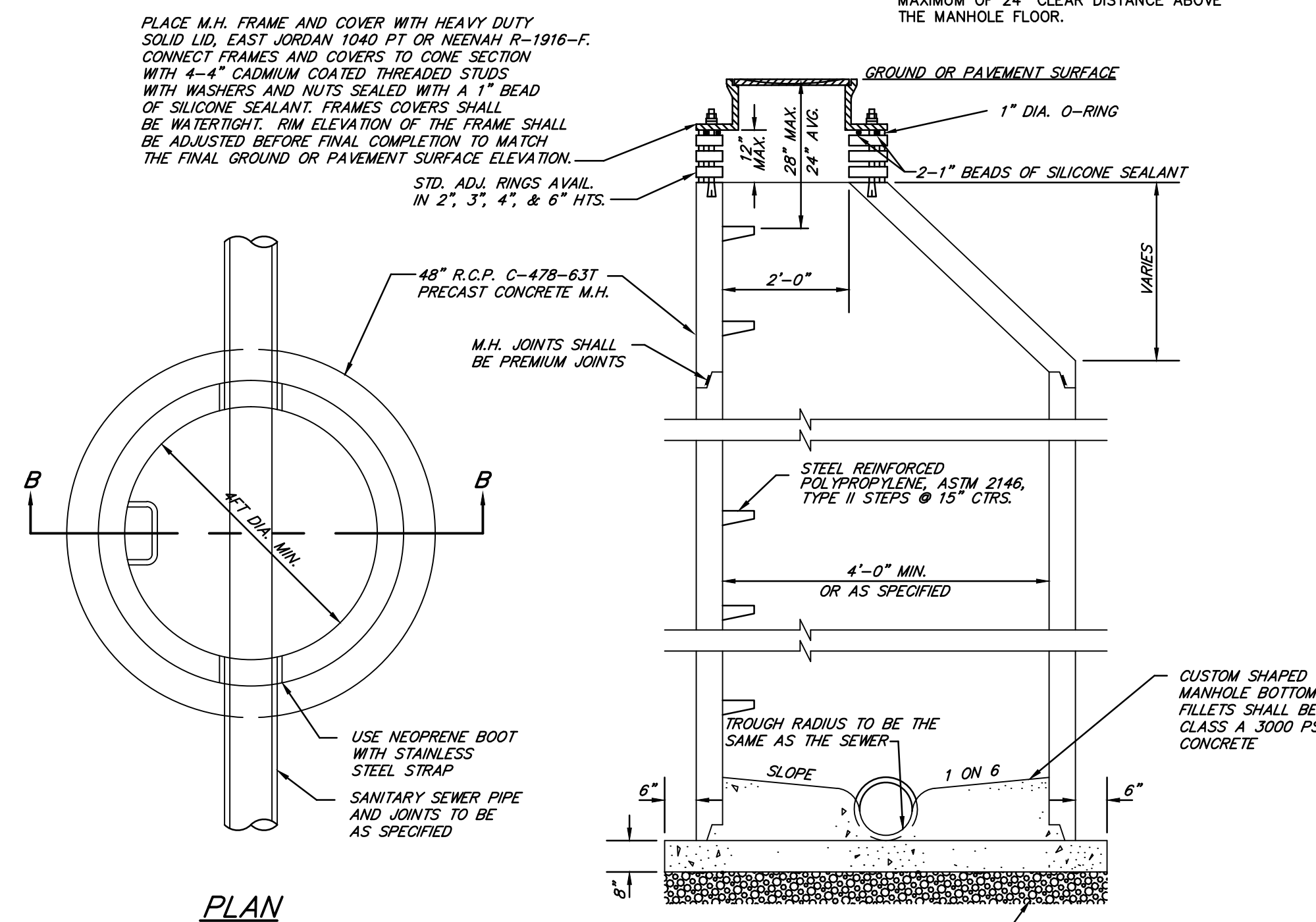
REVISIONS:

SUBMITTALS:	3-28-17
SUBMITTAL TO REVIEW AGENCIES	3-28-17
DESIGNED BY:	TELB
CHECKED BY:	TELB
DRAWN BY:	TELB
DESIGNED BY:	TELB
CHECKED BY:	TELB

JOB NUMBER:	1703-045
SCALE:	1" = 20'
SHEET NUMBER:	5 OF 6



**SEWER SHALLOWER THAN 14'-0"  
SERVICE DETAIL**



**STANDARD MANHOLE**  
NOT TO SCALE

**SANITARY SEWER GENERAL NOTES:**

ALL SANITARY SEWER IS TO BE INSTALLED IN ACCORDANCE WITH THE PROJECTS PLANS AND UNION TOWNSHIP SPECIFICATIONS ([www.uniontownshipmi.com](http://www.uniontownshipmi.com)). SHOULD DIFFERENCES BETWEEN THE PLANS AND THE SPECIFICATIONS OCCUR THE ENGINEER SHALL BE NOTIFIED.

ALL MANHOLE RIMS SHALL BE SET TO GRADE AS FURNISHED BY THE ENGINEER.

ALL MANHOLES SHALL USE ECCENTRIC CONES PLACED TOWARD THE PROPERTY LINE UNLESS OTHERWISE NOTED.

NO FOOTING DRAINS SHALL BE CONNECTED TO BUILDING LEADS.

DIFFERENTIAL OF EXCAVATION AROUND EXISTING MANHOLES SHALL NOT EXCEED 6\".

NO CONNECTION RECEIVING STORM WATER, SURFACE WATER OR GROUNDWATER SHALL BE MADE TO SANITARY SEWERS.

ALL SEWERS SHALL BE SUBJECT TO AIR, INFILTRATION, EXFILTRATION, DEFLECTION TESTING AND VIDEO TAPING TESTS, OR A COMBINATION OF SAME, BEFORE ACCEPTANCE. (REFER TO SPECIFICATIONS)

IN ROADWAYS, STREETS, DRIVES AND PARKING AREAS, THE BASE COURSE SHALL BE REPLACED IMMEDIATELY AFTER BACKFILLING OF THE TRENCH.

NEW SANITARY SEWER BUILDING CONNECTIONS SHALL BE EXTENDED FROM SANITARY SEWER TO BUILDING CLEANOUTS WHERE SHOWN ON THE PLANS. EXISTING SANITARY SEWER SHALL BE KEPT IN SERVICE AT ALL TIMES DURING INSTALLATION OF NEW BUILDING CONNECTIONS.

ALL STUBS SHALL HAVE A WATER TIGHT BULKHEAD (PLUG) AND MARKED WITH 4"x4" POST PAINTED GREEN.

BACKFILL SHALL BE PLACED IN 12 INCH LAYERS TO A MINIMUM OF 95 PERCENT MAXIMUM DENSITY AS DETERMINED BY THE MODIFIED PROCTOR METHOD, FROM THE BOTTOM OF THE TRENCH TO (1) FOOT ABOVE THE TOP OF PIPE. PIPE BEDDING SHALL BE AS FOLLOWS; A MINIMUM OF (4) INCHES OF 6A STONE PLACED BELOW THE PIPE AND EXTENDED UP TO THE TOP OF THE PIPE. THE REMAINING (1) FOOT SHALL BE MDT CLASS II GRANULAR MATERIAL WITH A MODIFIED GRADATION SUCH THAT MAXIMUM PARTICLE SIZE IS 1 1/2". ALL TRENCHES IN HARD SURFACE AREAS SHALL CONTINUE THE MDT CLASS II GRANULAR MATERIAL UP TO THE SUBBASE OF THE PAVED AREA. LIFTS MAY NOT EXCEED (12) INCHES. THIS BACKFILL SHALL ALSO BE PLACED TO 95 PERCENT OF ITS MAXIMUM DENSITY.

ALL SERVICE LEADS SHALL RUN AT A MINIMUM GRADE OF ONE PERCENT (1%).

A SEPARATE FLOW CHANNEL SHALL BE PROVIDED FOR ALL 6" SANITARY LEADS THAT ARE CONNECTED DIRECTLY TO A MANHOLE.

**NOTE:**  
MANHOLE STEPS SHALL BE ORIENTATED AT 45 TO THE MAIN SEWER WITH A MAXIMUM OF 24" CLEAR DISTANCE ABOVE THE MANHOLE FLOOR.

**NOTES:**

- 18" MINIMUM VERTICAL CLEARANCE AND 10 FOOT HORIZONTAL SEPARATION SHALL BE PROVIDED BETWEEN WATER MAIN AND ALL UTILITY CROSSINGS. WHERE LESS VERTICAL CLEARANCE IS PROVIDED, CONCRETE SADDLES WILL BE REQUIRED.
- CONTRACTOR MAY RAISE HYDRANTS TO 6'-6" BURY BY ADDING MECHANICAL JOINTS, INSTALLED IN ACCORDANCE WITH UNION TOWNSHIP STANDARDS.
- CONTRACTOR SHALL VERIFY THE ELEVATION OF THE EXISTING WATER MAIN PRIOR TO CONSTRUCTION. SHOULD DIFFERENCES BETWEEN THE FIELD MEASUREMENTS AND PLANS OCCUR, THE ENGINEER SHALL BE NOTIFIED.
- ALL WATER MAIN CONSTRUCTED WITHIN THE INFLUENCE OF EITHER PROPOSED OR EXISTING ROADS SHALL BE COMPLETELY BACKFILLED WITH M.D.O.T CLASS II SAND IN MAXIMUM 12" LIFTS. BACKFILL DENSITY SHALL BE AS SPECIFIED IN THE ASPHALT PAVEMENT CROSS SECTION.
- CARE IS TO BE TAKEN WHEN INSTALLING WATER SERVICE LEAD TO BUILDINGS TO INSURE THAT ACCEPTABLE UTILITY CROSSING CLEARANCES ARE MAINTAINED.
- CONTRACTOR SHALL CALL "MISS DIG" A MINIMUM OF A 3 DAYS PRIOR TO COMMENCING ANY CONSTRUCTION WORK.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN COMPLIANCE WITH UNION TOWNSHIP STANDARDS ([www.uniontownshipmi.com](http://www.uniontownshipmi.com)).
- WATER MAIN TO BE AWWA C-900. IN DIRECTIONAL BORE LOCATIONS USE HDPE, AS SHOWN. WATER MAIN MUST BE STAMPED/MARKED NSF APPROVED ON PIPE.
- THE CONTRACTOR IS REQUIRED TO ADJUST ALL FIRE HYDRANTS, VALVES, AND WATER SHUTOFF TO FINISH GRADE.
- CONTRACTOR TO ENSURE A MINIMUM OF 5'-6" OF COVER OVER ALL WATER LEADS.
- PRIOR TO CONNECTION OF EXISTING WATER MAIN THE NEW WATER MAIN ALL NEW WATERMAIN SHALL BE FLUSHED, CHLORINATED AND PRESSURE TESTED IN ACCORDANCE TO TOWNSHIP SPECIFICATIONS.
- IF THE PROPOSED BUILDINGS HAVE FIRE SUPPRESSION THERE SHALL BE A 2" DOMESTIC SERVICE LEAD AND A SEPARATE 6" FIRE SUPPRESSION LEAD TO BE COORDINATED WITH PLUMBER. REFER TO ARCHITECTURAL PLANS FOR VERTICAL RISER DETAIL.
- ALL FIRE HYDRANTS SHALL BE BURIED 6 FEET FROM THE FINISHED GRADE OF THE FIRE HYDRANT TO THE TOP OF THE PIPE.
- ALL WATER MAINS MUST BE FLUSHED AND CLEANED OF SAND AND DEBRIS USING THE "POLY PIG" METHOD OF FLUSHING.
- ALL SERVICE LEADS ARE TO BE CAPPED 5' FROM PROPOSED BUILDINGS AND/OR COORDINATED WITH PLUMBER.
- PRESSURE TESTING MUST BE DONE IN ACCORDANCE WITH TOWNSHIP SPECIFICATION AND NOT MORE THAN 2,500 LF OF WATER MAIN WILL BE TESTED AT ONE TIME.
- DISINFECTING OF WATER MAINS WILL BE DONE IN ACCORDANCE TO ALL TOWNSHIP SPECIFICATIONS AND WILL BE COMPLETED AFTER ALL WATER MAIN HAS BEEN FLUSHED AND PRESSURE TESTED.
- OWNER AND ENGINEER SHALL BE NOTIFIED IMMEDIATELY AND FOLLOWED WITH WRITTEN DESCRIPTION OF FIELD FINDINGS NOTING SPECIFIC ELEVATIONS AND CONDITIONS THAT DIFFER FROM PLANNED DESIGNS. 2+ FEET OF EXISTING CONDITIONS IS TO BE CORRECTED WITHOUT COST DEVIATION AND ACCEPTED AS FIELD CONDITIONS.
- ANY DIRECTIONAL BORE SHALL BE INSTALLED BY UNION TOWNSHIP.
- INSTALLATION OF ANY WATER MAIN, HYDRANT OR VALVES MUST BE INSPECTED BY UNION TOWNSHIP DURING INSTALLATION AND SCHEDULED WITH UNION TOWNSHIP UTILITY DEPARTMENT, AT (989) 772-4600 EXT. 224, AT LEAST 48 HOURS IN ADVANCE OF ANY WORK COMMENCING.
- BACKFLOW PREVENTION SHALL BE IN ACCORDANCE WITH STATE OF MICHIGAN CROSS CONNECTION RULES, STATE OF MICHIGAN PLUMBING CODE AND CHARTER TOWNSHIP OF UNION CROSS CONNECTION RULES.

**DIRECTIONAL BORE NOTES:**

- THE HDPE PIPE MUST CONFORM TO ANSI/NSF STANDARDS AND BE INSTALLED IN ACCORDANCE WITH THE PIPE MANUFACTURER'S THRUST RESTRAINT REQUIREMENTS. HDPE PIPE MUST BE STAMPED/MARKED NSF APPROVED ON PIPE.
- CONTRACTOR SHALL USE A MIXTURE OF WATER AND BENTONITE CLAY AS THE DRILLING FLUID FOR THE DIRECTIONAL BORE. FLUID SHALL BE KEPT IN THE BORE TUNNEL TO ENSURE STABILITY, REDUCE DRAG ON THE PIPE AND PROVIDE BACKFILL WITHIN THE ANNULUS OF THE PIPE AND TUNNEL.
- ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN CONFORMANCE WITH THE STANDARDS AND REQUIREMENTS OF THE PROJECT SPECIFICATIONS AS ADOPTED BY THE UNION TOWNSHIP.
- EXCESS DRILLING FLUIDS AND SPOILS SHALL BE DISPOSED OF BY THE CONTRACTOR AT AN APPROVED LOCATION. NO DRILLING FLUIDS OR SPOILS ARE TO BE DISCHARGED INTO SANITARY SEWERS, STORM DRAIN SYSTEMS OR WATERWAYS.
- CONTRACTOR MUST BE ABLE TO DEMONSTRATE THAT THE DRILLING EQUIPMENT TO BE USED IS CAPABLE OF PLACING THE PIPE WITHIN THE LINE AND GRADE SPECIFIED ON THE PLANS.
- THE PROPOSED PIPE BEING PULLED THROUGH THE BORE TUNNEL SHALL BE PROTECTED AND SUPPORTED SO THAT IT MOVES FREELY AND IS NOT DAMAGED DURING INSTALLATION. PULLBACK FORCES SHALL NOT EXCEED THE ALLOWABLE PULLING FORCES FOR THE PRODUCT PIPE.
- THE CONTRACTOR SHALL ALLOW A MINIMUM OF 24 HOURS FOR STABILIZATION OF THE BORE PIPE AFTER INSTALLATION PRIOR TO MAKING CONNECTIONS TO ADJACENT PIPE SECTIONS.
- CONTRACTOR SHALL INSTALL A MECHANICAL JOINT ADAPTER TO CONNECT BORE PIPE TO ADJACENT PIPE SECTIONS. REFER TO SPECIFICATIONS AND MANUFACTURERS REQUIREMENTS.
- TESTING WILL BE REQUIRED FOLLOWING INSTALLATION OF PROPOSED PIPE. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION.

**CMS & D**  
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**CONSTRUCTION DETAILS #3**  
MCGUIRK MINI-STORAGE, INC.  
LOT 1 & 2 OF LINCOLN COMMERCE PARK AND  
PART OF THE SOUTHWEST 1/4 OF THE  
NORTHWEST 1/4 OF SECTION 21, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

DATE	DESCRIPTION

JOB NUMBER:	1703-045
SCALE:	1" = 20'
SUBMITTAL TO REVIEW AGENCIES:	3-27-17
DESIGNED BY:	TELB
CHECKED BY:	TELB
SHEET NUMBER:	6 OF 6
DESIGNED BY:	TELB
CHECKED BY:	TELB
DATE:	