



# Memo

FROM THE DESK OF THE ZONING ADMINISTRATOR

To: Planning Commission

Date: April 12, 2013

Re: April 16 meeting notes

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SPA 1665 - Site Plan Amendment for Central Concrete. This plan is for a refueling tank, pump and canopy. The use is not open to the public, but for their private use. Gas stations for the public are to be in business zones. There will be no signs for the use, in line with it being private. Fishers has indicated that they will partner with Isabella Corporation and McGuirk Sand and Gravel to share the facility. This is a permitted use in the Industrial zone they occupy see Section 27.2.C – “water and gas tank holders,” . While I do not think there are any restrictions on using May Street, it is a new opening to the site that had only been using the Bradley street entrance off M-20. The engineer for the applicant indicated he had a discussion with the road commission, and it is a public road and they do not have a problem with a new driveway there. I do not have their write up at this point. I have discussed the site with the county engineer as it relates to Stormwater. He has determined that the area for concern is the Northern portion of the site, and a plan has been turned in. I would recommend approval with compliance with outside letters of review.

SPR 1670 – Leasing Office for Campus Crest Apartments. This use is on the Business portion of the Campus Crest Property. As a leasing office, it is a permitted use in B5 as an Office, see 23.2.A and 22.2.C. I note that these are “modular’s”. We have approved them in the past for offices, Burch Tank and the International RV office on Pickard. I would like you to have the applicant submit a landscape plan for my approval. I do not have the outside letters as of today, the transmittal cover letters from the applicant are included in the packet.

Sidewalks- They are provided on Chandler from the apartment section to Isabella Rd. They do not show them on Isabella frontage. I have spoken to the owner about granting easements over the easterly 12’ of the entire property so that when we do the planned 8’ sidewalks for the next phase of our sidewalk assessment district. If it is your desire is to require them at this time, they need to be 8’ wide.

SPR 1676 - Campus Crest Apartments. We have looked at this plan before, and it has changed very little. It has been designed to meet our requirements. I recommend approval contingent on MPFD, ICRC and Drain Office requirements.

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

**Date: April 16, 2013**  
**Time: 7:00 p.m.**  
**Place: Union Township Hall**

**Pledge of Allegiance**

**Roll Call**

**Minutes of March 19, 2013 regular meeting**

**Correspondence**

**Approval of Agenda**

**Public Comment: restricted to three (3) minutes regarding issues not on this agenda**

**NEW BUSINESS**

- 1.) SPA - 1665: Site Plan Amendment for private on site fueling facility for Fisher Transportation fleet. Owner: Central Concrete Products.
- 2.) SPR – 1670: Site Plan Review for a Marketing/ Leasing Office for the Grove on Commercial Portion of Campus Crest property. Owner: Campus Crest
- 3.) SPR – 1676: Site Plan Review for Multi-Family Apartments of five or more units. Owner: Collegiate Way LLC

**OTHER BUSINESS**

**None**

**Extended Public Comment**

**Adjournment**



Deerfield Township  
3032 S. Winn Road  
Mt. Pleasant, MI 48858  
(989) 779-7557

To: Union Township

Re: Deerfield Township Five-Year review

Deerfield Township is working on its Five-year Review of its ordinances and Master Plan. The current plan and ordinances are found on our web site at [www.deerfieldtownship.net](http://www.deerfieldtownship.net) or we can mail one if you request that service.

We are currently finalizing the documents and will accept input and/or suggestions on any portion of the plan or ordinances. When the documents are finalized and approved by our attorneys, they will be put on our web site before the public hearing expected in a few months. Again you can request printed copies of the proposed final product if you are interested by contacting the Deerfield Township office between 8 a.m. and noon Monday through Friday at (989) 779-7557. Email address for the office is [officemanager@deerfieldtownship.net](mailto:officemanager@deerfieldtownship.net) and the mailing address is 3032 S. Winn Road, Mt. Pleasant, MI 48858.

Feel free to contact me if you have any questions or input.

Sincerely,

A handwritten signature in blue ink that reads 'Roger Lintemuth'. The signature is fluid and cursive.

Roger Lintemuth  
Office Manager/Zoning Administrator

## COE TOWNSHIP, ISABELLA COUNTY, MICHIGAN NOTICE OF INTENT TO AMEND THE MASTER PLAN

Pursuant to the Michigan Planning Enabling Act (Public Act 33 of 2008), this notice is being sent to inform you that Coe Township, Isabella County intends to amend its existing Master Plan. In accordance with the law, this notice is being sent to the following:

- The planning commission, or if there is no planning commission, the legislative body, of each municipality located within or contiguous to Coe Township, Isabella County.
- The county planning commission, or if there is no planning commission, the county board of commissioners for each county located contiguous to Coe Township, Isabella County.
- The county planning commission, or if there is no planning commission, the county board of commissioners for the county that Coe Township is located.
- Each public utility company and railroad company owning or operating a public utility or railroad in Coe Township, Isabella County, and any government entity that registers its name and mailing address for this purpose with the planning commission.
- East Michigan Council of Governments (EMCOG)

Coe Township is requesting your cooperation and comments during this process. As required by law the proposed draft and final plan will be provided for your review. **If possible, these documents along with all future notifications will be provided via electronic mail unless you respond by objecting to the use of electronic mail.** As always if you have any questions or comments, please feel free to contact Tim Nieporte in his office at (989) 772-0911, ext. 371 or email Tim at [tnieporte@isabellacounty.org](mailto:tnieporte@isabellacounty.org)

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

A regular meeting of the Charter Township of Union Planning Commission was held on March 19, 2013.

**Meeting was called to order at 7:01 p.m.**

**Roll Call**

**Squatrito, Jankens, Henley, Shingles, Wagner, Primeau** present. **Fuller, Mielke** excused absent. **McGuirk** excused absent due to conflict of interest.

**Others Present**

Woody Woodruff

**Approval of Minutes**

**Shingles** moved and **Jankens** supported to approve the February 20, 2013 meeting minutes with the amendments in the minutes. **Ayes: All. Motion carried.**

**Correspondence**

No Correspondence was offered.

**Approval of Agenda**

**Primeau** moved and **Henley** supported to approve the agenda as prepared. **Ayes: All. Motion carried.**

**Public Comment**

No Public Comment was offered.

**NEW BUSINESS**

- 1.) **SUP - 1659: Special Use Permit for Multi-family Apartments in Section 26 east of 4300 Collegiate Way. Owner: Collegiate Way LLC**

Alex Eyssen, Director of Development for Campus Crest Communities presented a PowerPoint presentation showing the projected high end, fully furnished student housing complex. He introduced his team: Hal Grayson, Chris Brookshire, Tim Beebe, Gordon Bloem, Dana Laris, and Keith Simons.

**Public Comment**

No Public Comment was offered.

Keith Simons, a traffic consultant did a traffic study in the area and concluded the anticipated traffic would be less than a typical multi-family housing or commercial use.

Tim Beebe commented on how the traffic would be more evenly distributed with student housing rather than commercial use.

Russ Alwood, the Township Supervisor stated the Township will be putting out bids for 8 foot sidewalks in the spring which will allow students more accessibility.

**Henley** moved and **Wagner** supported the recommendation to the board for approval Special Use Permit – 1659. **Ayes: All. Motion carried.**

**Extended Public Comment**

No Extended Public Comment was offered.

**Adjournment**

**The Chair adjourned the meeting at 8:22 p.m.**

**APPROVED BY:**

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**Mary Henley, Pro-Tem Secretary**

*(Recorded by Kathy Lee)*





**TRANSPORTATION CO.**

900 S. BRADLEY • BOX 389 • MT. PLEASANT, MI 48804-0389  
PHONE (989) 773-1376 • FAX: (989) 773-7640

*"AN EQUAL OPPORTUNITY EMPLOYER"*

April 2, 2013

Charter Township of Union  
ATTN: Woody Woodruff  
2010 South Lincoln Road  
Mt. Pleasant, MI 48858-9036

RE: Letter of Understanding – Fisher Transportation Company – Fuel Pumps

Dear Mr. Woodruff,

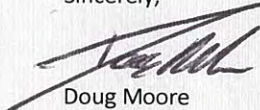
Pursuant to our recent conversations this correspondence shall serve as a Letter of Understanding (LOU) pertaining to the above named business and Union Township. From our discussion the installation of new fuel pumps on our site did not require any zoning action as this activity fits squarely within the Industrial zoning of this property. However, facilitation and coordination would still need to be made with the Township Building Inspector, MDEQ and a site plan prepared for review.

One area of our discussion prompted this LOU, namely, who would be using our new fuel pumps. It is Fisher Transportation's desire to allow a limited number of outside entities use of our new fuel pumps. These entities would be customers and contractors who routinely conduct business with us and who are in our yard on a regular basis. Fisher Transportation has no desire or plan to allow these pumps to be used by the general public and agrees pursuant to this LOU that such pumps will not be open to the general public. Fisher Transportation acknowledges that our current zoning does not allow for these new fuel pumps to be open to the general public. Another concern raised was the use of signs and/or advertising. Fisher Transportation agrees that there will be no signs or other advertising used to promote the use of the new fuel pumps to the general public.

The following are agreed:

- 1) Site Plan. A site plan for the new fuel pumps will be submitted in accordance with Township policy.
- 2) Use. A limited number of entities, outside of the Fisher Companies, (Fisher Transportation Company, Mt. Pleasant Central Concrete Products Company, Central Asphalt, Inc., Fisher Contracting Company, Fisher Sand and Gravel Company and Bay Aggregates, Inc.) will be allowed to use the new fuel pumps. The new fuel pumps will not be open to the general public.
- 3) Signs. There will be no signs or other advertising used to promote the use of the new fuel pumps to the general public.

Sincerely,



Doug Moore  
President

## Union Township Site Plan Review Application

FILL OUT THE FOLLOWING

- I. This application is for (circle one) Preliminary Site Plan Review **Final Site Plan Review**
- II. Applicant Name FISHER TRANSPORTATION
- III. Applicant Address 900 S. BRADLEY MT PLEASANT, MI 48858
- IV. Applicant Phone 989 773 1376 Owner DOUG MOORE (PRESIDENT)
- V. Applicant is (circle) Contractor Architect/Engineer Developer **Land Owner** (skip 5 & 6)  
Other
- VI. Land Owner Name \_\_\_\_\_
- VII. Land Owner Address \_\_\_\_\_
- VIII. Project/Business Name Central Asphalt Fueling Center
- 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 example, under sidewalks write "none" in the comment area if you are not installing any sidewalks). 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>	Submitted	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>	Submitted	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 Rick Belnick (989) 779-5122, (2) copies
<b>Isabella Co Transportation Commission (ICTC)</b>	/	Denny Adams (989) 773 2913 Ext 106, (2) copies
<b>SITE PLAN REQUIREMENTS</b>		
	√ Off	<b>Comments - (also indicate any features which will not be included in the development or are not applicable)</b>
Name and addresses of <u>Property Owner</u> Name and Address of <u>Applicant</u>	/	
Provide Construction Type (per Mi Building Code) and if sprinkled, (assume Type IVb, un-sprinkled if not provided)	/	
The <u>date</u> , <u>north arrow</u> and <u>scale</u> . 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.	/	



## Union Township Site Plan Review Application

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. -	/	None shown existing or proposed Waive NO signs See pg 3 view G of BMC report NA NA NA
Elevation of building front, side, and back. Include Sign size, height, and design. Canopy heights extending over driveways accommodate Public Transportation	/	See pg 3, view G of 8 1/2 x 11
Source of utilities. Public water and sewer approval by Union Township Utility Coordinator prior to application.  OK      No services proposed	/	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 (773 5921)
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)	/	None proposed OK
The location and right-of-way width of all abutting roads, streets, alleys and easements.	/	OK
A locational sketch drawn to scale giving the section number and the nearest crossroads.	/	OK
The zoning of the subject property and the abutting properties.	/	J1, B 4 North of May St
The location, height and type of fences and walls.	/	None existing 6' chain link



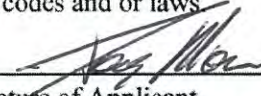
## Union Township Site Plan Review Application

The location and detailed description of landscaping.	✓	No Additional proposed
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.	NA	
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.	NA	

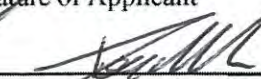
### COMMENTS

This will have a lot of Fire Dept requirements.
Approve contingent on compliance with MPFD,
DCRC & Esabella's drain office

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

4-1-13  
 \_\_\_\_\_  
 Date

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

4-1-13  
 \_\_\_\_\_  
 Date

PLEASE PLACE OUR REVIEW ON THE April 16, 2013 (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

<u>Township use</u>	<u>Comments</u>
File # <u>SPA 1665</u>	<u>Cont. sign on outside</u>
Fee Paid initial <u>VJK</u>	<u>approved prior to issuing</u>
Receipt # <u>pd wk</u>	<u>a building Perm. t.</u>
Date received <u>9/12/13</u>	_____
Date review completed by Zoning Administrator _____	
Place on the <u>9/14/13</u> Planning Commission Agenda	
Planning Commission Decision _____	_____

NO DIGITAL COPY OF SITE PLAN AVAILABLE  
AT THIS TIME.

## Union Township Site Plan Review Application

FILL OUT THE FOLLOWING

- I. This application is for (circle one) Preliminary Site Plan Review **Final Site Plan Review**
- II. Applicant Name Campus Crest at Mt Pleasant, LLC
- III. Applicant Address 2100 Rexford Rd #414 Charlotte NC 28211
- IV. Applicant Phone 704-496-2581 Owner \_\_\_\_\_
- V. Applicant is (circle) Contractor Architect/Engineer **Developer** Land Owner(skip 5& 6)  
Other
- VI. Land Owner Name Collegiate Way LLC
- VII. Land Owner Address 4060 Springer Way Unit 717 East Lansing MI 48823
- VIII. Project/Business Name The Grove - Marketing Trailer
- 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 example, under sidewalks write "none" in the comment area if you are not installing any sidewalks). 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 Rick Beltnick (989) 779-5122, (2) copies
<b>Isabella Co Transportation Commission (ICTC)</b>	✓	Denny Adams (989) 773 2913 Ext 106, (2) copies
<b>SITE PLAN REQUIREMENTS</b>	√ Off	<b>Comments - (also indicate any features which will not be included in the development or are not applicable)</b>
Name and addresses of <u>Property Owner</u> Name and Address of <u>Applicant</u>	✓ ✓	
Provide Construction Type (per Mi Building Code) and if sprinkled, (assume Type IVb, un-sprinkled if not provided)	✓	
The <u>date</u> , <u>north arrow</u> and <u>scale</u> . 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.	✓	



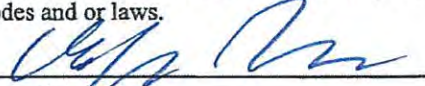


## Union Township Site Plan Review Application

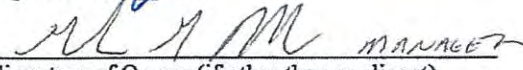
The location and detailed description of landscaping.	✓	
For multiple family and mobile home parks, contour intervals shall be shown (two foot intervals for average slopes ten percent and under and five foot intervals for slopes over ten percent). Topography, however, is encouraged to be shown on all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

### COMMENTS


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

3/28/13  
 \_\_\_\_\_  
 Date

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

3/26/13  
 \_\_\_\_\_  
 Date

PLEASE PLACE OUR REVIEW ON THE April 16, 2013 (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**

Township use _____	Comments <u>per MPFD, Drain off IL E</u>
File # <u>1070</u>	<u>Road Commission review requirements</u>
Fee Paid initial <u>✓</u>	<u>Isabella Rd Sidewalk Easement (12')</u>
Receipt # <u>40740</u>	_____
Date received <u>3/26/13</u>	_____
Date review completed by Zoning Administrator _____	
Place on the _____ Planning Commission Agenda	
Planning Commission Decision _____	

# THE GROVE MODEL MARKET OFFICE SITE PLAN

**CMS & D**  
SURVEYING / ENGINEERING  
1985 PARKLAND DRIVE, SUITE B  
MT. PLEASANT, MI 48858  
MT. PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: info@cms-d.com



COVER SHEET  
THE GROVE - MODEL MARKETING OFFICE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

SHEET INDEX	
SHEET 1.....	COVER SHEET
SHEET 2.....	EXISTING TOPOGRAPHY SURVEY
SHEET 3.....	SITE & HORIZONTAL PLAN
SHEET 4.....	GRADING, STORM WATER & SOIL EROSION PLAN
SHEET 5.....	CONSTRUCTION DETAILS #1

**BEARING BASIS:**  
PER GEODETIC OBSERVATION WGS-84 THE BEARING BETWEEN THE EAST 1/4 CORNER AND THE NORTHEAST CORNER WAS DETERMINED TO BE N.00°-20'-05"W.

**BENCHMARKS AND CONTROL POINTS:**

BM #1 (CONTROL POINT 1) - SET CAPPED IRON 114"± WEST OF ISABELLA ROAD AND CHANDLER ROAD INTERSECTION ON THE NORTH SIDE OF CHANDLER ROAD. ELEVATION 783.27.			
N:	3960.8592	E:	8247.5562
Z:	783.27		
<b>CONTROL POINT 6</b>		<b>CONTROL POINT 7</b>	
N:	3794.4398	N:	3728.8658
E:	7904.9635	E:	7399.3699
Z:	786.80	Z:	789.67
<b>CONTROL POINT 10</b>		<b>CONTROL 12</b>	
N:	4326.7982	N:	4786.6975
E:	7148.9532	E:	7049.1330
Z:	792.73	Z:	790.47



**LOCATION SKETCH**  
NOT TO SCALE

CURRENT ZONING: B-5	
MINIMUM FRONT YARD SETBACK	50 FT (A,B)
MINIMUM SIDE YARD SETBACK	20 FT (B)
MINIMUM REAR YARD SETBACK	25 FT (A,B)
MAXIMUM BUILDING HEIGHT	35 FT
MINIMUM LOT AREA	12,000 SFT
MINIMUM LOT WIDTH	100 FT
MINIMUM LOT COVERAGE (%)	30%

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.

B. A lot in the B-4 and B-5 District will provide a side and rear yard of at least forty (40) feet when abutting a residential District.

**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.

**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.

**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	[Hatch]	ASPHALT - EXISTING
—PHONE—	BURIED TELEPHONE CABLE	[Hatch]	ASPHALT - PROPOSED
---DITCH---	CENTERLINE OF DITCH	[Hatch]	CONCRETE
—FM—	FORCE MAIN	[Hatch]	GRAVEL
—GAS---	GAS MAIN	[Hatch]	LANDSCAPING
—RD-CL---	ROAD CENTERLINE	[Hatch]	RIP-RAP
—8" SAN---	SANITARY SEWER	[Hatch]	EXISTING BUILDING
—12" SS---	STORM SEWER		
---EX-TOS---	TOE OF SLOPE		
---EX-TOP---	TOP OF BANK		
—OHE---	UTILITIES - OVERHEAD		
—UTL---	UTILITIES - UNDERGROUND		
—12" WM---	WATER MAIN		

**PROPERTY DESCRIPTION:**  
A PARCEL OF LAND IN THE NORTHEAST 1/4 OF SECTION 26, T.14 N.- R.4 W., UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS: TO FIX THE POINT OF BEGINNING, COMMENCE AT THE EAST 1/4 CORNER OF SAID SECTION 26; THENCE N.00°-20'-27"W., ON AND ALONG SAID EAST SECTION LINE, 1277.82 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE S.89°-39'-51"W., ON THE NORTHERLY RIGHT-OF-WAY LINE OF CHANDLER DRIVE AND ITS EASTERLY EXTENSION THEREOF, 132.82 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 166.00 FEET; THENCE CONTINUING ON SAID NORTHERLY RIGHT-OF-WAY LINE AND SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, 44.98 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING S.81°-54'-05"W., 44.84 FEET TO SAID POINT OF TANGENCY; THENCE S.74°-08'-18"W., CONTINUING ON SAID NORTHERLY RIGHT-OF-WAY LINE, 127.60 FEET; THENCE N.00°-20'-27"W., PARALLEL WITH AND 300.00 FEET, MEASURED AT RIGHT ANGLES, WEST OF THE EAST LINE OF SAID SECTION, 632.74 FEET; THENCE N.89°-39'-51"E., PARALLEL WITH THE NORTH LINE OF SAID SECTION 26, 300.00 FEET TO A POINT ON THE EAST LINE OF SAID SECTION; THENCE S.00°-20'-27"E., ON AND ALONG SAID EAST SECTION LINE, 592.55 FEET BACK TO THE POINT OF BEGINNING, CONTAINING 4.15 ACRES OF LAND AND SUBJECT TO HIGHWAY USE OF THE EAST 33.00 FEET THEREOF AND ALSO SUBJECT TO AND TOGETHER WITH ANY OTHER EASEMENTS AND/OR RESTRICTIONS OF RECORD.

**DEVELOPER:** CAMPUS CREST DEVELOPMENT  
2100 REXFORD ROAD #414  
CHARLOTTE, NC 28211  
CONTACT: CHRIS BROOKSHIRE  
PHONE: (704) 496-2500  
FAX: (704) 973-9565  
EMAIL: chris.brookshire@campuscrest.com

**OWNER:** COLLEGIATE WAY, LLC  
4060 SPRINGER WAY, UNIT 717  
EAST LANSING, MI 48823  
CONTACT: GORDON HUNSAKER  
PHONE: (517) 641-2041  
FAX: (517) 641-2038  
EMAIL: ghunsaker@atlantisam.com

**CONSULTANT:** CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC.  
1985 PARKLAND DRIVE, SUITE B  
MT. PLEASANT, MI 48858  
CONTACT: TIMOTHY E BEBEE  
PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: info@cms-d.com

**CHARTER COMMUNICATIONS**  
915 E. BROOMFIELD ROAD  
MT. PLEASANT, MI 48858  
(989) 775-6846  
SCOTT VANHOOSE  
svanhoose@chartercom.com

**CHARTER TOWNSHIP OF UNION**  
PUBLIC WATER/PUBLIC SEWER  
2010 N. LINCOLN ROAD  
MT. PLEASANT, MI 48858  
(989) 772-4600 EXT 24  
KIM SMITH

**CONSUMERS ENERGY**  
1325 WRIGHT AVENUE  
ALMA, MI 48801  
(989) 466-4247  
JOSH DALTON

**DRAIN COMMISSIONERS OFFICE**  
ISABELLA COUNTY BUILDING  
200 NORTH MAIN STREET ROOM 140  
MT. PLEASANT, MI 48857  
(989) 772-0911 EXT 247  
BRUCE ROHRE

**FRONTIER**  
345 PINE STREET  
ALMA, MI 48801  
(989) 463-0392  
JEFFREY JAMES

**ISABELLA COUNTY ROAD COMMISSION**  
2261 EAST REMUS ROAD  
MT. PLEASANT, MI 48858  
(989) 773-7131 EXT 115  
PATRICK GAFFNEY

**DTE ENERGY**  
4420 44TH ST., S.E., SUITE B  
KENTWOOD, MI 49512  
616-954-4623  
MARY JO SAMOTIS

**CHARTER TOWNSHIP OF UNION**  
PLANNING/ZONING  
2010 NORTH LINCOLN ROAD  
MT. PLEASANT, MI 48858  
(989) 772-4600 EXT 41  
WILLIAM (WOODY) WOODRUFF

SUBMITTALS: SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER: 1211-115

DRAWN BY: RLL

DESIGNED BY: TELB

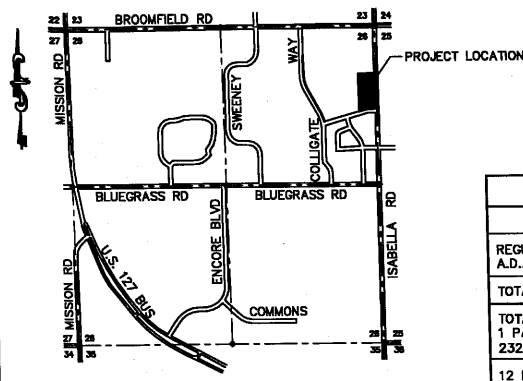
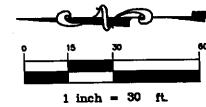
CHECKED BY: TELB

SCALE: 1" = 60'

SHEET NUMBER: 1 of 5

NORTHEAST COR.  
 REC. IRON COR.  
 PER LORC L. 1, P. 282  
 FND. N&T IN UTILITY POLE  
 C/A TOP BOLT FIRE MOUNTANT  
 N37°E 68.76'  
 S21°E 77.09'  
 S62°W 53.33'  
 N42°W 57.86'

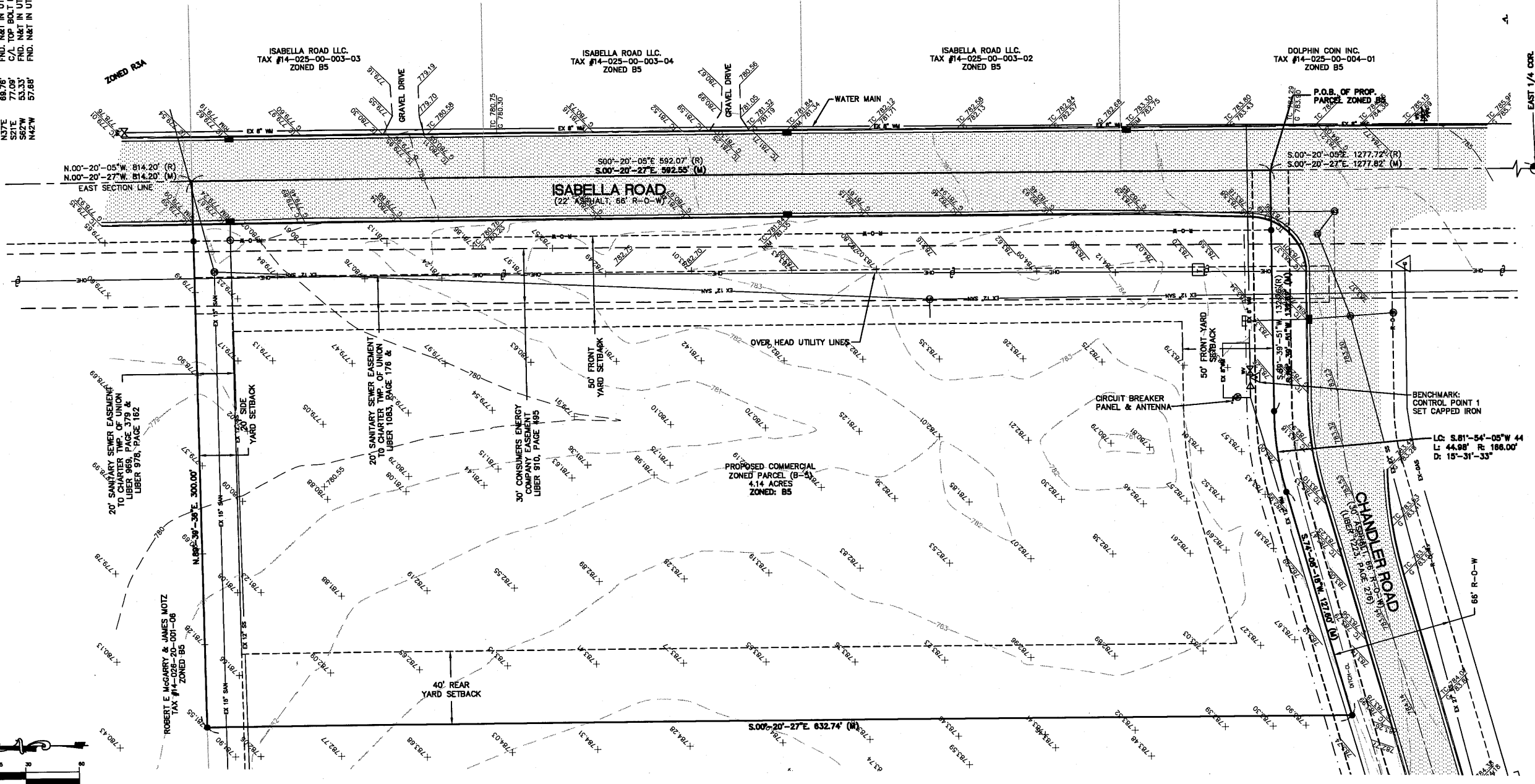
EAST 1/4 COR.  
 REC. IRON COR.  
 PER LORC L. 2, P. 311  
 FND. PK NAIL IN POWER POLE  
 SW. COR. BLOCK FOUNDATION HOUSE #497  
 N19°E 130.32'  
 N78°E 88.47'  
 S82°E 33.24'  
 S89°W 52.80'



LOCATION SKETCH  
 SCALE: 1" = 1500'

PARKING TABLE		
	REQUIRED	PLANNED
REGULAR SPACES	11	12
A.D.A. SPACES	1	2
<b>TOTAL SPACES</b>	<b>12</b>	<b>14</b>
TOTAL OFFICE SPACE 2320 SQ. FT. 1 PARKING SPACE FOR EACH 200 SQ. FT. OF OFFICE SPACE. $2320/200 = 11.6 = 12$ REQUIRED PARKING SPACES		
12 PARKING SPACES REQUIRED	14 PARKING SPACES PLANNED	

NOTES:  
 1. THE PROPOSED BUILDINGS ARE MOBILE UNITS AND ARE EQUIPPED WITH TANKS FOR WATER AND SANITARY SEWER.  
 2. THE SITE IS FOR A TEMPORARY USE. 90 DAYS AFTER FINAL CONSTRUCTION OF THE PROPOSED APARTMENT DEVELOPMENT TO THE WEST, THE BUILDINGS, DECKS, FENCES AND ASPHALT PARKING LOT AND DRIVEWAY ON THIS SITE SHALL BE REMOVED. THE PROPOSED SIDEWALK WILL REMAIN IN PLACE.



**CMS & D**  
 SURVEYING / ENGINEERING  
 1985 PARKLAND DRIVE - SUITE B  
 MT. PLEASANT, MICHIGAN 48858  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5012  
 EMAIL: info@cms-d.com



TOPOGRAPHIC SURVEY OFFICE  
 THE GROVE - MODEL MARKETING OFFICE  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

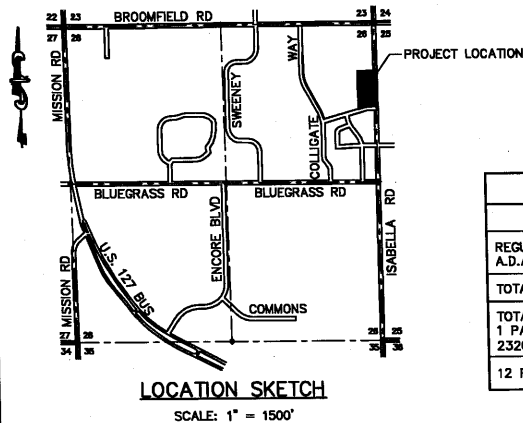
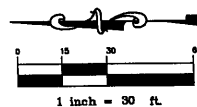
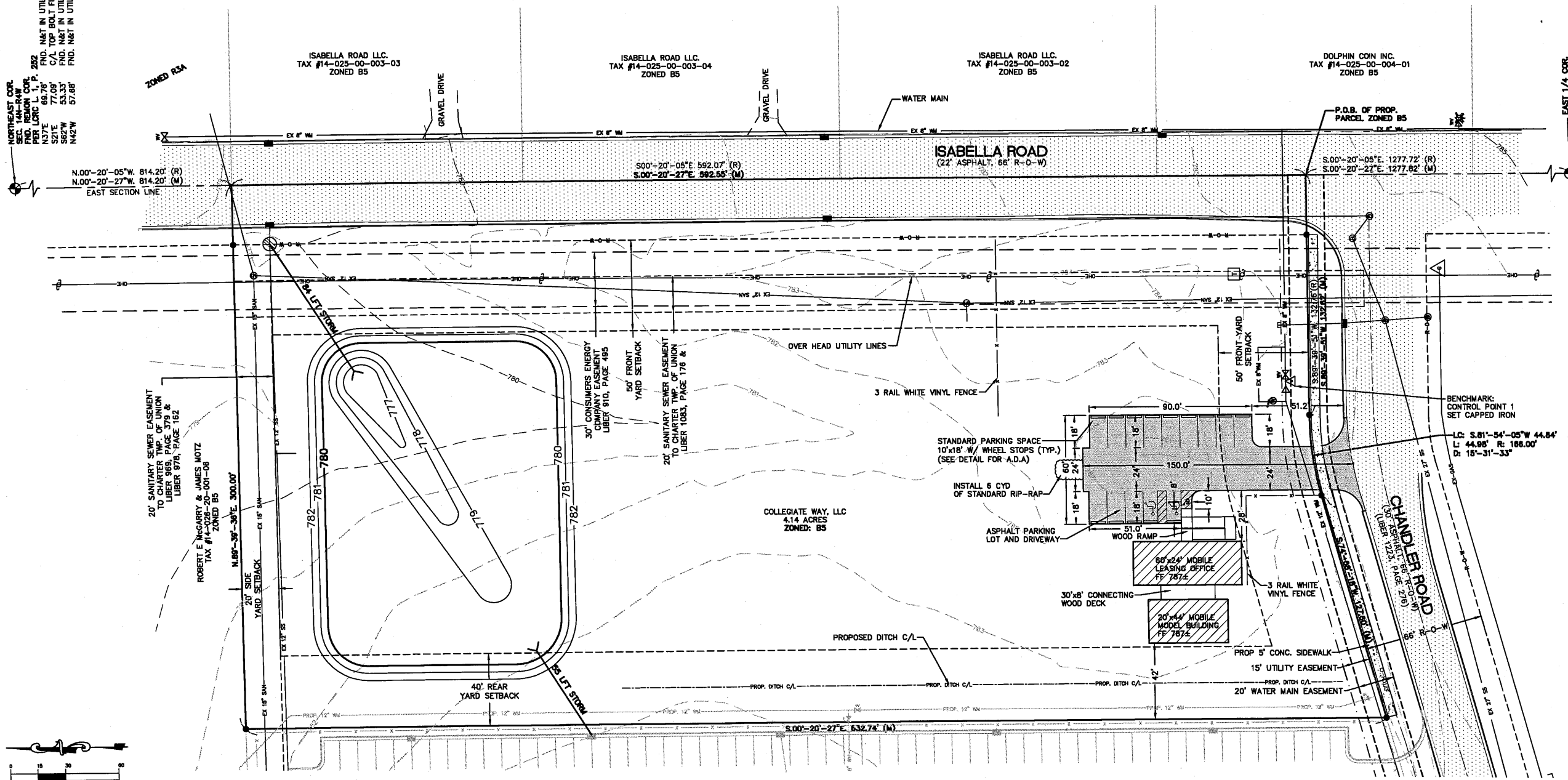
REVISIONS:	JOB NUMBER: 1211-115	SCALE: 1" = 30'
SUBMITTALS: SUBMITTAL TO UNION TOWNSHIP 4-3-13	DRAWN BY: RLI	SHEET NUMBER: 2 of 5
	DESIGNED BY: TELB	
	CHECKED BY: TELB	



SCALE	1" = 30'
SHEET NUMBER	3 of 5
JOB NUMBER:	1211-115
DRAWN BY:	RLI
DESIGNED BY:	TELB
CHECKED BY:	TELB
REVISIONS:	
SUBMITTALS:	SUBMITTAL TO UNION TOWNSHIP 4-3-13

NORTHEAST COR.  
 SEC. 26, T14N-R4W  
 PER LORIC L.P. 282  
 FND. N&T IN UTILITY POLE  
 C/L TOP BOLT FIRE HYDRANT  
 N37°E 68.78' FND. N&T IN UTILITY POLE  
 S21°E 77.09' FND. N&T IN UTILITY POLE  
 S62°W 53.33' FND. N&T IN UTILITY POLE  
 N42°W 57.66'

EAST 1/4 COR.  
 SEC. 26, T14N-R4W  
 PER LORIC L.P. 311  
 FND. PK NAIL IN POWER POLE  
 N19°E 130.32' SW. COR. BLOCK FOUNDATION HOUSE #487  
 N78°E 88.47' FND. NAIL IN LIGHT POLE  
 S62°E 33.24' FND. NAIL IN LIGHT POLE  
 S69°W 52.80' TOP C/L TELEPHONE RISER

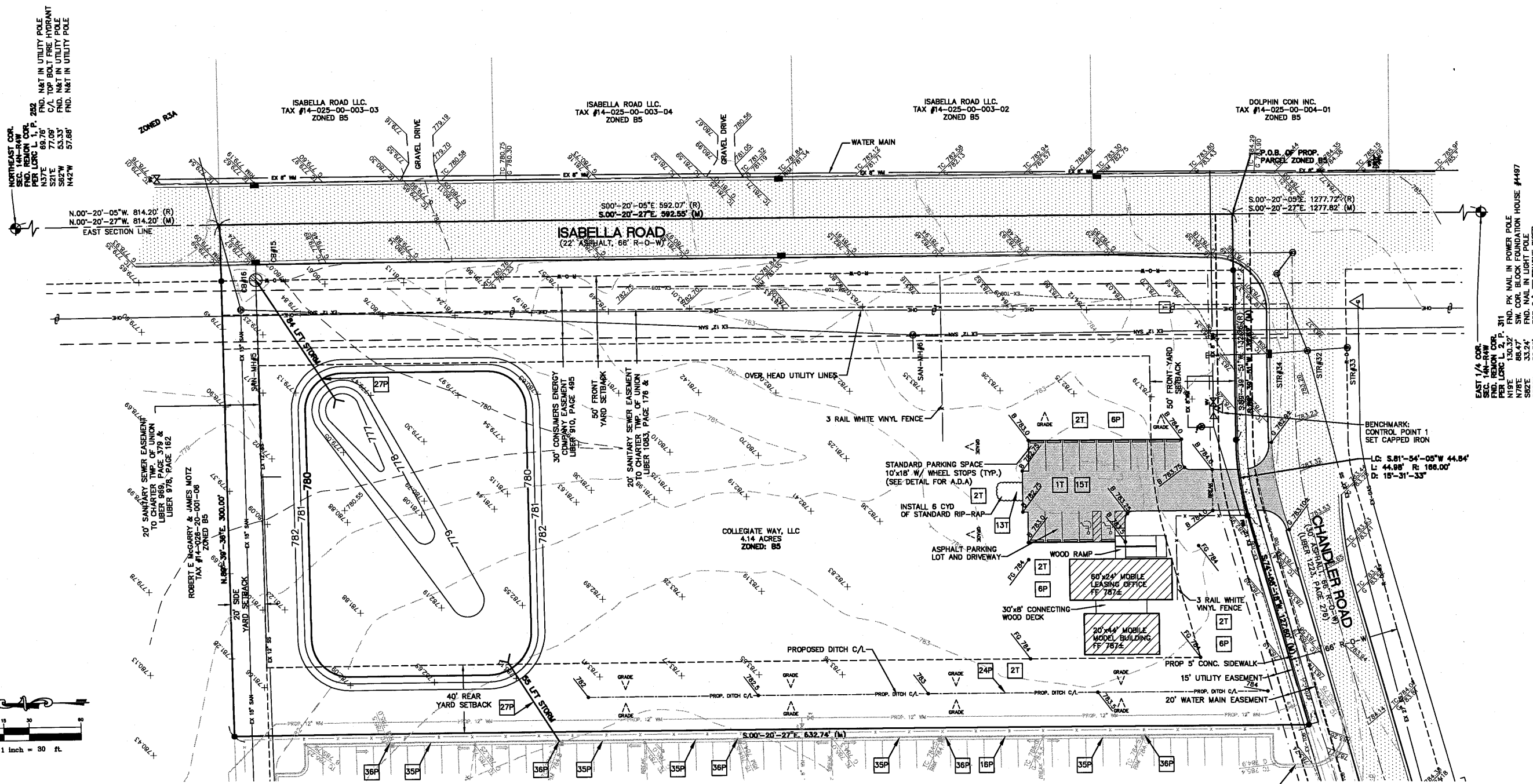


	REQUIRED	PLANNED
REGULAR SPACES	11	12
A.D.A. SPACES	1	2
TOTAL SPACES	12	14

TOTAL OFFICE SPACE 2320 SQ. FT.  
 1 PARKING SPACE FOR EACH 200 SQ. FT. OF OFFICE SPACE.  
 2320/200 = 11.6 = 12 REQUIRED PARKING SPACES

12 PARKING SPACES REQUIRED	14 PARKING SPACES PLANNED
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- NOTES:
1. THE PROPOSED BUILDINGS ARE MOBILE UNITS AND ARE EQUIPPED WITH TANKS FOR WATER AND SANITARY SEWER AND DO NOT REQUIRE CONNECTION TO THE MUNICIPAL SYSTEM.
  2. THE SITE IS FOR A TEMPORARY USE. NO MORE THAN 180 DAYS AFTER FINAL OCCUPANCY CERTIFICATION OF THE PROPOSED APARTMENT DEVELOPMENT TO THE WEST, THE BUILDINGS, DECKS, FENCES AND ASPHALT PARKING LOT AND DRIVEWAY ON THIS SITE SHALL BE REMOVED. THE PROPOSED SIDEWALK, DITCH AND DETENTION POND WILL REMAIN IN PLACE.



- NOTES:
1. ALL DISTURBED AREAS ARE TO BE STABILIZED WITH A MINIMUM OF 3" OF TOPSOIL AND SEEDING. STRAW MAT MAY BE REQUIRED FOR SLOPE PROTECTION.
  2. STANDARD RIP-RAP SHALL BE CRUSHED ANGULAR STONE WITH A MINIMUM DIAMETER OF 8 INCHES.
  3. THE SITE IS FOR A TEMPORARY USE. NO MORE THAN 180 DAYS AFTER FINAL OCCUPANCY CERTIFICATION OF THE PROPOSED APARTMENT DEVELOPMENT TO THE WEST, THE BUILDINGS, DECKS, FENCES AND ASPHALT PARKING LOT AND DRIVEWAY ON THIS SITE SHALL BE REMOVED. THE PROPOSED SIDEWALK, DITCH AND DETENTION POND WILL REMAIN IN PLACE.

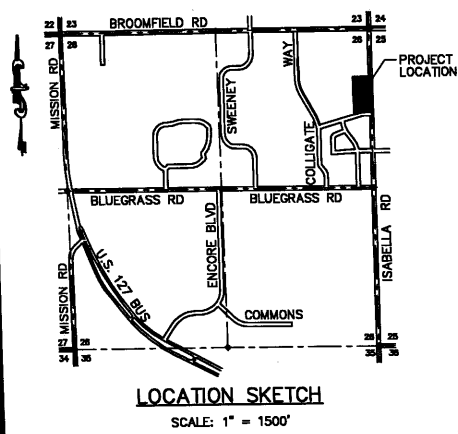
**MICHIGAN UNIFIED KEYING SYSTEM  
 SOIL EROSION & SEDIMENTATION CONTROL MEASURES**

KEY	DETAIL	CHARACTERISTICS	KEY	DETAIL	CHARACTERISTICS
1	Stripping & Stockpiling Topsoil	Topsoil may be stockpiled above borrow areas to act as a diversion. Stockpiles should be temporarily seeded.	35	Storm Sewer	System removes collected runoff from site, 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	Selective Grading & Shaping	Water can be diverted to minimize erosion. Factor slopes away from erosion problems.	36	Catch Basins, Drop Inlet	Collects high velocity concentrated runoff. * Must use filter bag in inlet as a temporary measure.
6	Seeding w/ Mulch and/or Matting	Facilitates establishment of vegetative cover. Effective for drainage areas with low velocity. Easily placed in small quantities by hand-pumped personnel. Should include prepared topsoil bed.	55	Detachable Silt Fence	Controls and detains sediment from sheet flow conditions. Fabric must be "loose" into the soil 6" or more to prevent underflow. Must be constructed of adequate strength. Use fabric and stakes.
13	Riprap, Rubble, Cobble	Used where vegetation is not easily established. Effective for high velocities or high concentration. Permits runoff to infiltrate soil. Dissipates energy flow at system outfalls.			
15	Fencing	Protects areas which cannot otherwise be protected, but increases runoff volume and velocity. Irregular surface will help slow velocity.			
16	Curb & Gutter	Keeps high velocity runoff on paved areas from leaking paved surfaces. Collects and conducts runoff to enclosed drainage system or prepared drainage.			
24	Grassed Waterway	Much more stable form of drainage than bare channel. Grass tends to slow runoff and filter out sediment. Used where bare channel would be eroded.			
27	Slope Drain (Subsurface Pipe)	Prevents erosion on slopes when runoff cannot be diverted to edge of slope area. Usually permanent. Can be constructed as grading progresses.			

NOTE: 35P 36P  
 TYPICAL FOR ENTIRE STORM SEWER SYSTEM

NOTE: XXT XXP  
 T = TEMPORARY P = PERMANENT

- SOIL EROSION GENERAL NOTES:**
1. 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.
  2. 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.
  3. CONTRACTOR TO STOCKPILE SOIL ONSITE AT A MAXIMUM SLOPE OF 1 ON 3. ALL SPOIL PILES ARE TO BE SEED TO MAINTAIN SLOPE STABILITY.
  4. 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.
  5. ALL STOCKPILES THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN 30 DAYS ARE TO BE SEED AND STABILIZED.
  6. 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.
  7. SOIL EROSION MAY ALSO OCCUR WHEN SOILS ARE DRY. SOIL EROSION DUE TO BLOWING WINDS MUST BE MINIMIZED BY USE OF WATER TANK TRUCKS.
  8. AS SOON AS POSSIBLE SOILS WILL BE COMPACTED TO MINIMIZE SOIL EROSION. IF SOILS ARE LEFT UNCOMPACTED FOR LENGTHY PERIODS THEY MUST BE SEED TO MINIMIZE SOIL EROSION.
  9. UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR MUST CLEAN ALL SUMPS AND SEDIMENTATION TRAPS.
  10. TEMPORARY MEASURES SHALL STAY IN PLACE UNTIL THE CONSTRUCTION ACTIVITIES HAVE ENDED AND/OR THE PERMANENT MEASURES ARE COMPLETED.
  11. CONTRACTOR IS TO ENSURE THAT ALL CONTROL MEASURES ARE ADEQUATELY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.



**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 HEADERS 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 SURFACE AND GUTTER PAN ELEVATIONS, UNLESS OTHERWISE NOTED.

ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE UNION TOWNSHIP STANDARDS.

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

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.

PARKING SPACES SHALL BE 9 FEET BY 20 FEET OR 10 FEET BY 18 FEET. THE SPACES ARE TO BE INDICATED BY 4 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 FOR UNION TOWNSHIP.

**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 SPRED 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 SPRED 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.

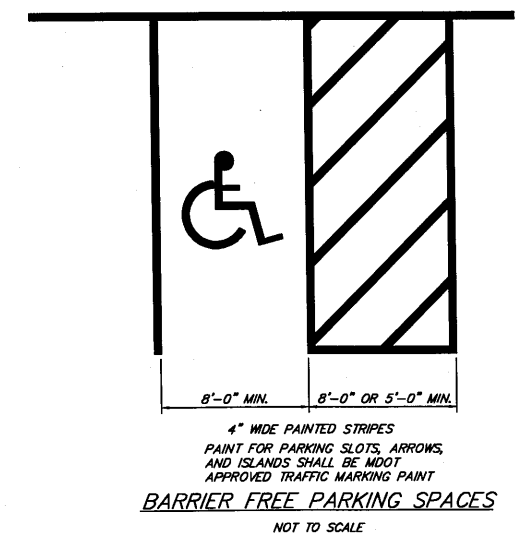
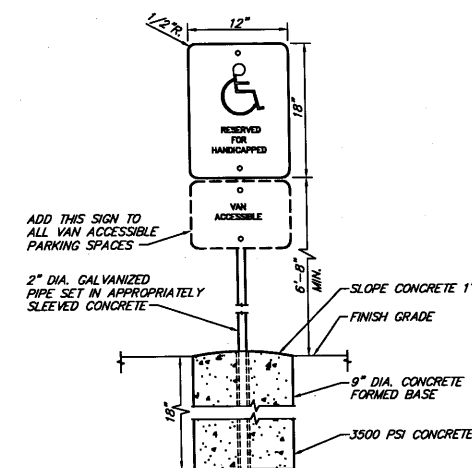
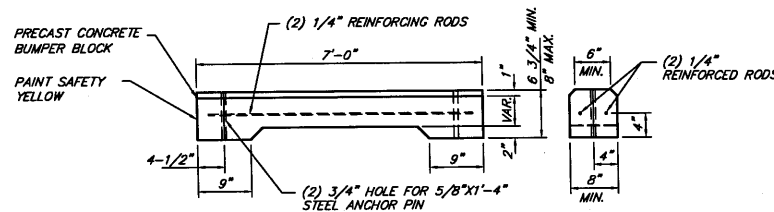
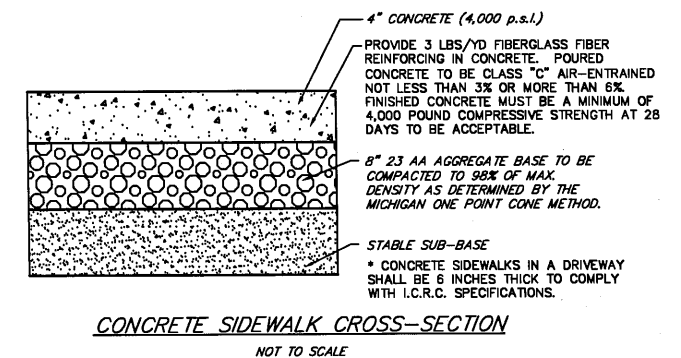
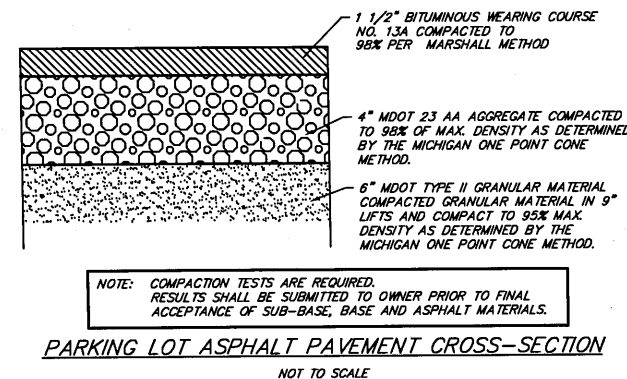
BROKEN CONCRETE AND DEBRIS SHALL BE CONSIDERED WASTE TO BE DISPOSED OF BY THE CONTRACTOR.

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:			
SUBMITTALS:			
JOB NUMBER:	1211-115		
DRAWN BY:	RL		
DESIGNED BY:			
TELL			
CHECKED BY:			
TELL			
SCALE	1" = 30'		
SHEET NUMBER	5 of 5		

CAMPUS CREST COMMUNITIES

the grove

MARKETING TRAILER  
MULTI-FAMILY  
STUDENT HOUSING

CB  
3/22/13



PROJECT TEAM

CHRIS RUSS  
(OWNERS REPRESENTATIVE)  
CAMPUS CREST DEVELOPMENT  
2100 REXFORD ROAD  
SUITE 414  
CHARLOTTE, NC 28211  
PHONE: 704-496-2500

GARY B. COURSEY  
ARCHITECT OF RECORD  
GARY B. COURSEY & ASSOCIATES  
2849 PACES FERRY ROAD, SUITE 220  
ATLANTA, GEORGIA 30339  
PHONE: 770-432-2727  
FAX: 770-432-2773

DRAWING INDEX

SHEET #	SHEET NAME	DATE	DATE
	CIVIL DRAWINGS		
	ARCHITECTURAL DRAWINGS		
A0.0	COVER SHEET	08.17.2012	
A1.0	GENERAL NOTES & CODE ANALYSIS	08.17.2012	
A2.0	ARCHITECTURAL SITE PLAN	08.17.2012	
A2.1	FIRST FLOOR PLAN, RCP, DOOR/WINDOW SCHEDULE	08.17.2012	
A3.0	ELEVATIONS	08.17.2012	
S2.0	FOUNDATION PLAN	08.17.2012	
S2.1	FRAMING PLAN	08.17.2012	

DATE

DATE

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DATE: JUN 22, 2013  
COMMISSION # 2013-24  
DRAWN BY: R. LEE  
CHECKED BY: G. COURSEY

THE GROVE  
MODEL MARKETING COMPOUND

grove  
gogrove.com

COVER PAGE

SHEET  
A-0.0

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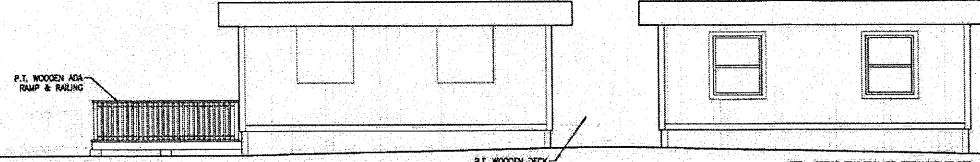
2849 PACES FERRY ROAD  
OVERHOLT, SUITE 220  
ATLANTA, GEORGIA 30339  
770-432-2777  
770-432-2773  
www.garybcourseyarchitects.com

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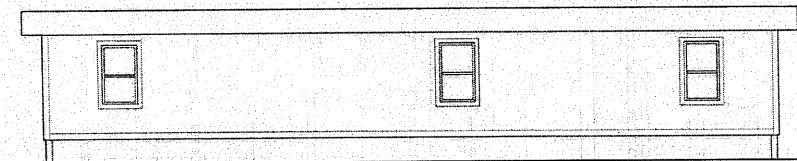
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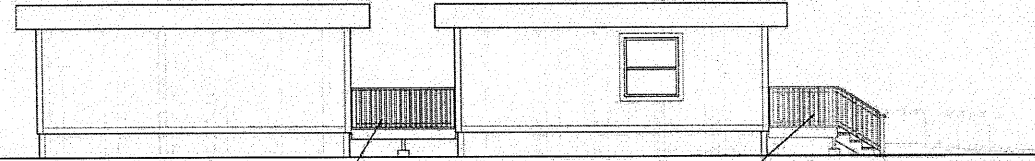
1  
A3.0  
FRONT ELEVATION  
3/16" = 1'-0"



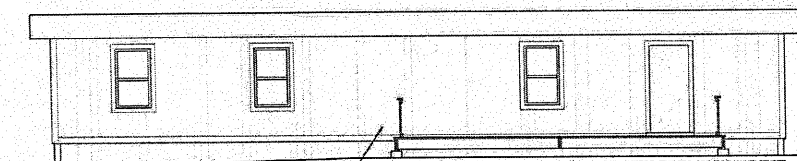
2  
A3.0  
RIGHT SIDE ELEVATION  
3/16" = 1'-0"



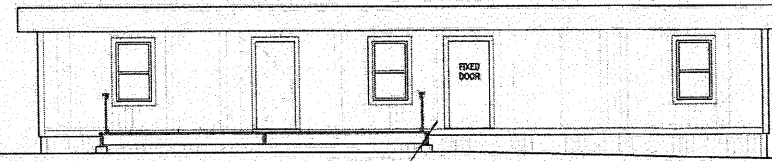
3  
A3.0  
REAR ELEVATION  
3/16" = 1'-0"



4  
A3.0  
LEFT SIDE ELEVATION  
3/16" = 1'-0"



5  
A3.0  
COURTYARD ELEVATION  
3/16" = 1'-0"



6  
A3.0  
COURTYARD ELEVATION  
3/16" = 1'-0"

NOTE - TRAILER SIZES & RAMPS MAY VARY PER LOCATION. CONSTRUCTION DETAILS, ADA REQUIREMENTS & MAX. SLOPE OF 1:12 MUST BE MET AT EACH SITE. SEE SITE PLAN FOR PROPOSED LAYOUT.

DATE	
ISSUE	
DATE	MARCH 22, 2013
COMMISSION #	2013-24
DRAWN BY	R. LEE
CHECKED BY	G. COURSEY
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<p>THE GROVE MODEL MARKETING COMPOUND</p>	
<p>MARKETING TRAILER ELEVATIONS</p>	
<p>SHEET A3.0</p>	



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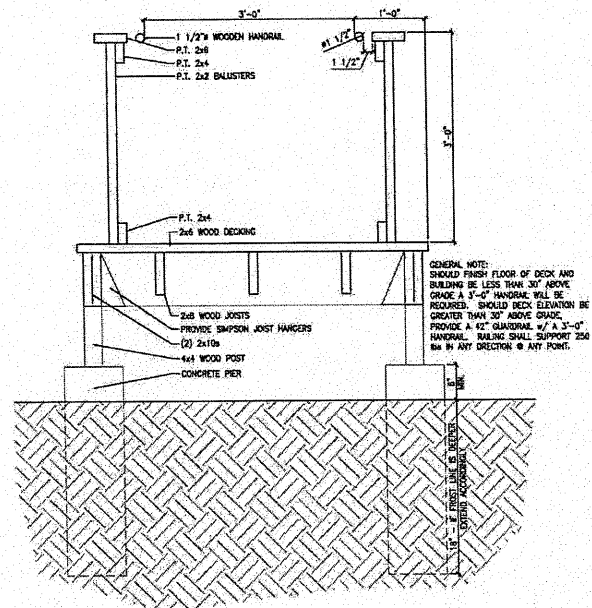


2518 Peachtree Dunwoody Road  
Atlanta, Georgia 30328  
770.433.2777  
www.garybcoursey.com

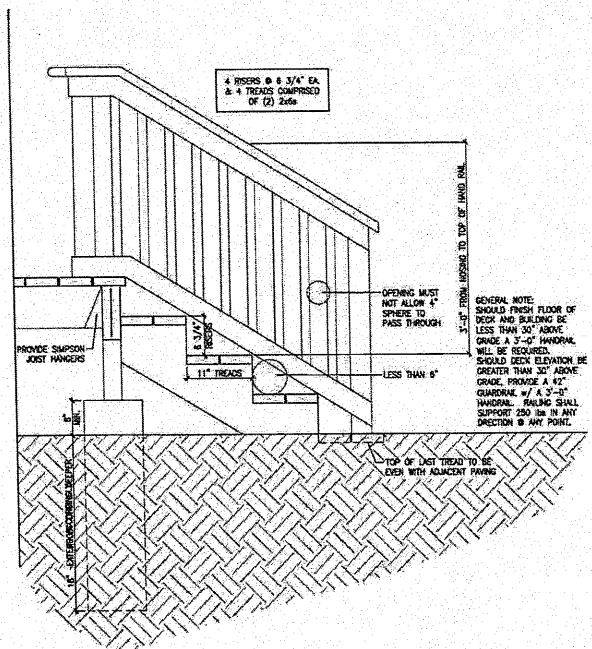
architectural  
interior design  
planning



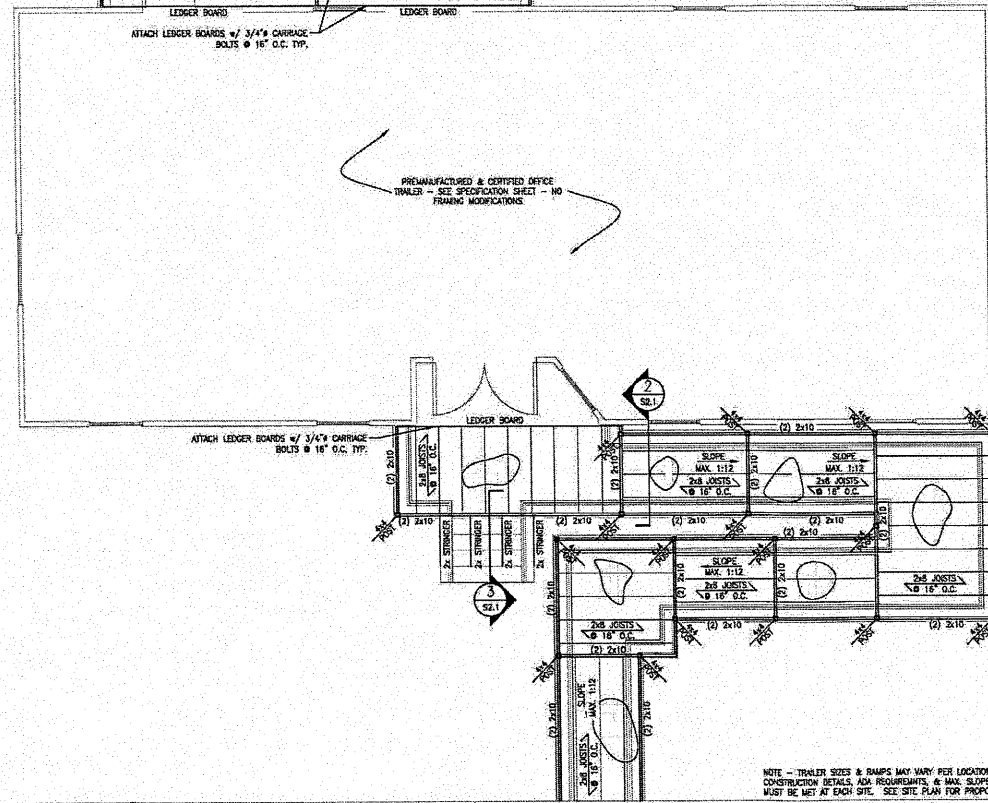
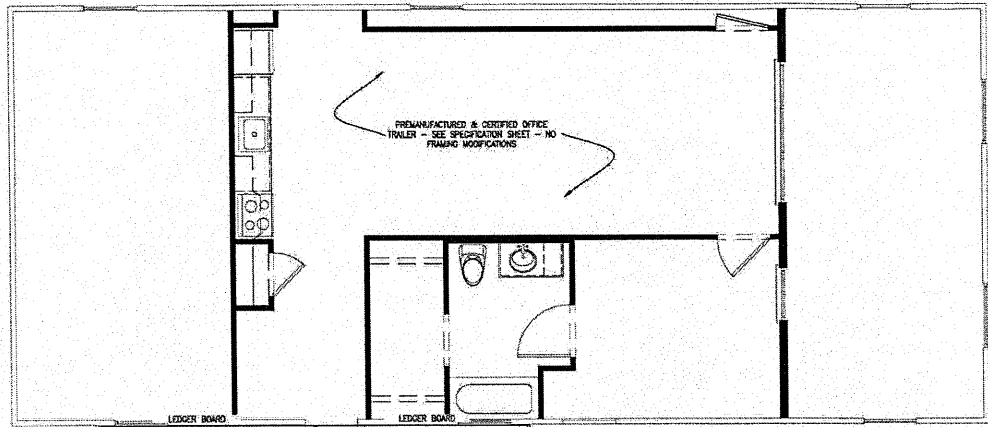
3/25/2013 4:40:13 PM



2  
S2.1  
RAMP DETAIL  
1/4" = 1'-0"



3  
S2.1  
STAIR DETAIL  
1/4" = 1'-0"



1  
S2.1  
FRAMING PLAN  
1/4" = 1'-0"

DATE: \_\_\_\_\_

ISSUE: \_\_\_\_\_

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date: MARCH 22, 2013  
 commission # 2013-24  
 drawn by: P. LEE  
 checked by: G. COURSEY

THE GROVE  
 MODEL MARKETING COMPOUND

grove  
 groveva.com

MARKETING TRAILER FRAMING PLAN & DETAILS

SHEET  
**S2.1**

gary b. coursey & associates · architects · inc · aia

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 oremont, oregon 97139  
 770.632.2272  
 www.garybcourseyarchitects.com

architecture  
 interior design  
 planning

gc&a

## Union Township Site Plan Review Application

FILL OUT THE FOLLOWING

- I. This application is for (circle one) Preliminary Site Plan Review Final Site Plan Review
- II. Applicant Name Campus Crest at Mt Pleasant, LLC
- III. Applicant Address 2100 Rexford Rd #414 Charlotte NC 28211
- IV. Applicant Phone 704-496-2581 Owner \_\_\_\_\_
- V. Applicant is (circle) Contractor Architect/Engineer Developer Land Owner (skip 5& 6)  
Other
- VI. Land Owner Name Collegiate Way LLC
- VII. Land Owner Address 4060 Springer Way Unit 717 East Lansing MI 48823
- VIII. Project/Business Name The Grove
- 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 example, under sidewalks write "none" in the comment area if you are not installing any sidewalks). 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 Rick Beltnick (989) 779-5122, (2) copies
<b>Isabella Co Transportation Commission (ICTC)</b>	✓	Denny Adams (989) 773 2913 Ext 106, (2) copies
SITE PLAN REQUIREMENTS	√ Off	Comments - (also indicate any features which will not be included in the development or are not applicable)
Name and addresses of <u>Property Owner</u> Name and Address of <u>Applicant</u>	✓ ✓	OK
Provide Construction Type (per Mi Building Code) and if sprinkled, (assume Type IVb, un-sprinkled if not provided)	✓	OK sheet 3 on Bldg foot print
The <u>date</u> , <u>north arrow</u> and <u>scale</u> . 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.	✓	OK

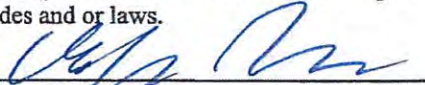


## Union Township Site Plan Review Application

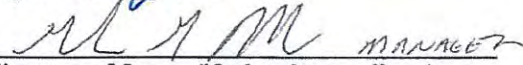
The location and detailed description of landscaping.	✓	
For multiple family and mobile home parks, contour intervals shall be shown (two foot intervals for average slopes ten percent and under and five foot intervals for slopes over ten percent). Topography, however, is encouraged to be shown on all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

### COMMENTS


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

3/28/13  
 \_\_\_\_\_  
 Date

  
 \_\_\_\_\_  
 Signature of Owner (if other than applicant)  
 GORDON G. HUNSAKER  
 CW RETAIL, LLC

3/26/13  
 \_\_\_\_\_  
 Date

PLEASE PLACE OUR REVIEW ON THE April 16, 2013 (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**

Township use _____	Comments <u>Approve per MPFD,</u>
File # <u>1676</u>	<u>ICRC &amp; Drain office Requirements</u>
Fee Paid initial <u>MM</u>	_____
Receipt # <u>70739</u>	_____
Date received <u>3/26/13</u>	_____
Date review completed by Zoning Administrator _____	
Place on the <u>4/14/13</u> Planning Commission Agenda	
Planning Commission Decision _____	



# THE GROVE SITE PLAN

SHEET INDEX	
SHEET 1.....	COVER SHEET
SHEET 2.....	EXISTING TOPOGRAPHY SURVEY
SHEET 3.....	SITE & HORIZONTAL PLAN
SHEET 4.....	GRADING PLAN
SHEET 5.....	STORM SEWER & SOIL EROSION PLAN
SHEET 6.....	CONSTRUCTION DETAILS #1
SHEET 7.....	CONSTRUCTION DETAILS #2
SHEET 8.....	CONSTRUCTION DETAILS #3
SHEET 9.....	CONSTRUCTION DETAILS #4
SHEET 10.....	ENTRANCE DRIVE DETAIL
SHEET 11.....	TRASH COMPACTOR DETAIL
SHEET 12.....	POOL DETAIL
SHEET 13.....	MONUMENT SIGN DETAIL
SHEET 14.....	BAR B-Q GRILL DETAIL
SHEET 15.....	FIRE PIT DETAIL
SHEET 16.....	BASKETBALL COURT DETAIL
SHEET 17.....	VOLLEYBALL COURT DETAIL

**CMS & D**  
SURVEYING / ENGINEERING  
1985 PARKLAND DRIVE - SUITE B  
MT. PLEASANT, MICHIGAN 48858  
PHONE: (989) 775-0756  
FAX: (989) 775-9012  
EMAIL: info@cms-d.com



**COVER SHEET**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R14W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

PROPOSED ZONING: R3A	BLDG. UNDER 35'	PROP. 50' BLDG.
MINIMUM FRONT YARD SETBACK	35 FT	50 FT
MINIMUM SIDE YARD SETBACK	30 FT	45 FT
MINIMUM REAR YARD SETBACK	25 FT	40 FT
MAXIMUM BUILDING HEIGHT	35 FT (F)	50 FT (F)
MINIMUM LOT AREA	(G)	(G)
MINIMUM LOT WIDTH	-	-
MINIMUM LOT COVERAGE (%)	-	-

F. No building or structure shall exceed a height of thirty-five (35) feet, except apartments may be increased not to exceed a maximum height of seventy (70) feet; provided that any required yard shall be increased by one (1) foot for each in height the structure exceeds thirty-five (35) feet.

G. Multi Family

Required Ground Area (SF) Per Unit, Multi-Family No. of Units	R3A	R3B
3 and 4	4,000	9,400
5 and 6	3,500	8,000
7 to 24	3,200	8,500
25 or more	2,900	8,300

**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.

**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.



**LOCATION SKETCH**  
NOT TO SCALE

**BEARING BASIS:**  
PER GEODETIC OBSERVATION WGS-84 THE BEARING BETWEEN THE EAST 1/4 CORNER AND THE NORTHEAST CORNER WAS DETERMINED TO BE N.00°-20'-05"W.

**BENCHMARKS AND CONTROL POINTS:**

BM #1 (CONTROL POINT 1) - SET CAPPED IRON 114± WEST OF ISABELLA ROAD AND CHANDLER ROAD INTERSECTION ON THE NORTH SIDE OF CHANDLER ROAD. ELEVATION 783.27.	
N: 3980.8592	E: 8247.5562
Z: 783.27	
CONTROL POINT 6	CONTROL POINT 7
N: 3794.4398	N: 3728.8658
E: 7904.9635	E: 7399.3699
Z: 786.80	Z: 789.67
CONTROL POINT 10	CONTROL POINT 12
N: 4326.7982	N: 4786.6975
E: 7148.9532	E: 7049.1330
Z: 792.73	Z: 790.47

**DEVELOPER:** CAMPUS CREST DEVELOPMENT  
2100 REXFORD ROAD #414  
CHARLOTTE, NC 28211  
CONTACT: CHRIS BROOKSHIRE  
PHONE: (704) 496-2500  
FAX: (704) 973-9565  
EMAIL: chris.brookshire@campuscrest.com

**OWNER:** COLLEGIATE WAY, LLC  
4080 SPRINGER WAY, UNIT 717  
EAST LANSING, MI 48823  
CONTACT: GORDON HUNSAKER  
PHONE: (517) 641-2041  
FAX: (517) 641-2038  
EMAIL: ghunsaker@atlantisam.com

**CONSULTANT:** CENTRAL MICHIGAN SURVEYING & DEVELOPMENT CO., INC.  
1985 PARKLAND DRIVE, SUITE B  
MT. PLEASANT, MI 48858  
CONTACT: TIMOTHY E BEBEE  
PHONE: (989) 775-0756  
FAX: (989) 775-5012  
EMAIL: info@cms-d.com

**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--- CENTERLINE OF DITCH	▨ CONCRETE
---FM--- FORCE MAIN	▨ GRAVEL
---GAS--- GAS MAIN	▨ LANDSCAPING
---RD-CL--- ROAD CENTERLINE	▨ RIP-RAP
---6" 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	

**PROPOSED MULTIPLE FAMILY ZONING (R-3A):**  
A PARCEL OF LAND IN THE NORTHEAST 1/4 OF SECTION 26, T14 N.- R.4 W., UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS; TO FIX THE POINT OF BEGINNING, COMMENCE AT THE EAST 1/4 CORNER OF SAID SECTION 26; THENCE N.00°-20'-27"W., ON AND ALONG SAID EAST SECTION LINE, 1277.82 FEET; THENCE S.89°-39'-51"W., ON THE NORTHERLY RIGHT-OF-WAY LINE OF CHANDLER DRIVE AND ITS EASTERLY EXTENSION THEREOF, 132.62 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE LEFT HAVING A RADIUS OF 186.00 FEET; THENCE CONTINUING ON SAID NORTHERLY RIGHT-OF-WAY LINE AND SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, 44.98 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING S.81°-54'-05"W., 44.84 FEET TO SAID POINT OF TANGENCY; THENCE S74°-08'-18"W., CONTINUING ON SAID NORTHERLY RIGHT-OF-WAY LINE, 127.60 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE CONTINUING S74°-08'-18"W., ON SAID NORTHERLY RIGHT-OF-WAY LINE, 624.03 FEET TO THE INTERSECTION OF SAID NORTHERLY RIGHT-OF-WAY LINE OF CHANDLER DRIVE AND THE EASTERLY RIGHT-OF-WAY LINE OF COLLEGIATE WAY AND TO A POINT ON A CURVE TO THE LEFT HAVING A RADIUS OF 566.00 FEET; THENCE NORTHWESTERLY, ON SAID EASTERLY RIGHT-OF-WAY LINE AND ALONG THE ARC OF SAID CURVE, 153.92 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING N.21°-07'-26"W., 153.45 FEET TO SAID POINT OF TANGENCY; THENCE N.28°-54'-50"W., CONTINUING ON SAID EASTERLY RIGHT-OF-WAY LINE, 473.68 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 500.00 FEET; THENCE NORTHWESTERLY CONTINUING ON SAID EASTERLY RIGHT-OF-WAY LINE AND ON THE ARC OF SAID CURVE, 250.04 FEET TO THE POINT OF TANGENCY, SAID ARC BEING SUBTENDED BY A CHORD BEARING N.14°-35'-16"W., 247.44 FEET TO SAID POINT OF TANGENCY; THENCE N.00°-15'-58"W., CONTINUING ON SAID EASTERLY RIGHT-OF-WAY LINE, 304.71 FEET; THENCE N.00°-20'-27"W., PARALLEL WITH SAID EAST SECTION LINE AND CONTINUING ON SAID EASTERLY RIGHT-OF-WAY LINE, 8.90 FEET; THENCE N.89°-39'-36"E., PARALLEL WITH THE NORTH LINE OF SAID SECTION, 337.01 FEET; THENCE S.00°-20'-27"E., PARALLEL WITH SAID EAST SECTION LINE, 313.20 FEET; THENCE N.89°-39'-36"E., PARALLEL WITH SAID NORTH SECTION LINE, 606.00 FEET; THENCE S.00°-20'-27"E., PARALLEL WITH AND 300.00 FEET, MEASURED AT RIGHT ANGLES, WEST OF THE EAST LINE OF SAID SECTION, 632.74 FEET BACK TO THE POINT OF BEGINNING, CONTAINING 15.77 ACRES OF LAND AND BEING SUBJECT TO AND TOGETHER WITH ANY OTHER EASEMENTS, RESTRICTIONS OR RIGHTS OF WAY OF RECORD.

REVISIONS:

NO.	DATE	DESCRIPTION

JOB NUMBER: 1211-115  
DRAWN BY: RLL  
DESIGNED BY: TELB  
CHECKED BY: TELB

SCALE: 1" = 60'  
SHEET NUMBER: 1 of 17

**CHARTER COMMUNICATIONS**  
915 E. BROOMFIELD ROAD  
MT. PLEASANT, MI 48858  
(989) 775-8848  
SCOTT VANHOOSE  
svanhoose@chartercom.com

**CHARTER TOWNSHIP OF UNION**  
PUBLIC WATER/PUBLIC SEWER  
2010 N. LINCOLN ROAD  
MT. PLEASANT, MI 48858  
(989) 772-4600 EXT 24  
KIM SMITH

**CONSUMERS ENERGY**  
1325 WRIGHT AVENUE  
ALMA, MI 48801  
(989) 463-4247  
JOSH DALTON

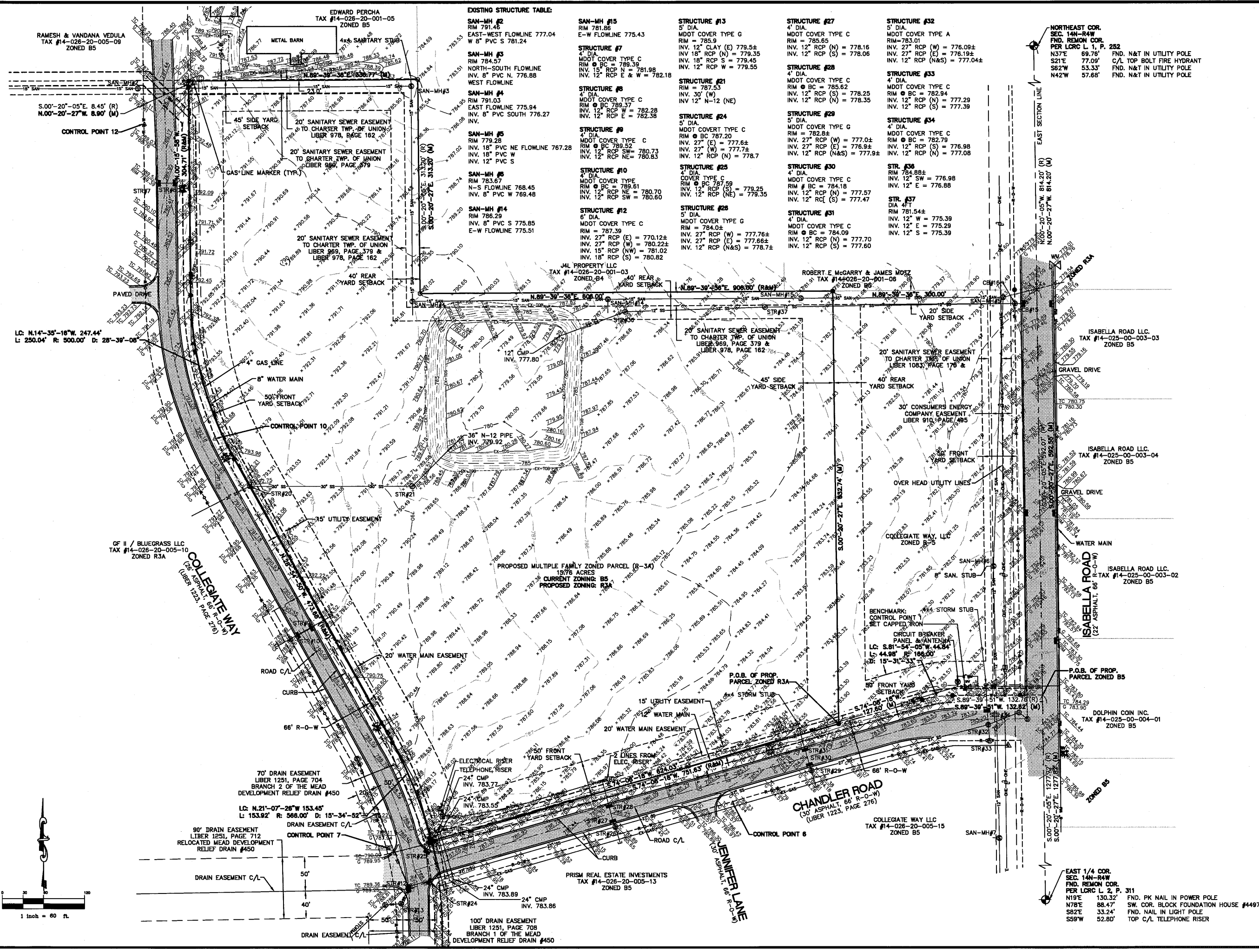
**DRAIN COMMISSIONERS OFFICE**  
ISABELLA COUNTY BUILDING  
200 NORTH MAIN STREET ROOM 140  
MT. PLEASANT, MI 48858  
(989) 772-0911 EXT 247  
BRUCE ROHRER

**FRONTIER**  
345 PINE STREET  
ALMA, MI 48801  
(989) 463-0392  
JEFFREY JAMES

**ISABELLA COUNTY ROAD COMMISSION**  
2261 EAST REMUS ROAD  
MT. PLEASANT, MI 48858  
(989) 773-7131 EXT 115  
PATRICK GAFFNEY

**DTE ENERGY**  
4420 44TH ST., S.E., SUITE B  
KENTWOOD, MI 49512  
616-954-4623  
MARY JO SAMOTIS

**CHARTER TOWNSHIP OF UNION**  
PLANNING/ZONING  
2010 NORTH LINCOLN ROAD  
MT. PLEASANT, MI 48858  
(989) 772-4600 EXT 41  
WILLIAM (WOODY) WOODRUFF



**EXISTING STRUCTURE TABLE**

<b>SAN-MH #2</b> RIM 791.45 EAST-WEST FLOWLINE 777.04 W 8" PVC S 781.24	<b>SAN-MH #15</b> RIM 781.86 E-W FLOWLINE 775.43	<b>STRUCTURE #13</b> 5' DIA. MDOT COVER TYPE G RIM = 785.9 INV. 12" CLAY (E) = 779.5± INV. 18" RCP (N) = 779.35 INV. 18" RCP S = 779.45 INV. 12" RCP W = 779.55	<b>STRUCTURE #27</b> 5' DIA. MDOT COVER TYPE C RIM = 785.65 INV. 12" RCP (N) = 778.16 INV. 12" RCP (S) = 778.06	<b>STRUCTURE #32</b> 5' DIA. MDOT COVER TYPE A RIM = 783.01 INV. 27" RCP (W) = 776.09± INV. 27" RCP (E) = 776.19± INV. 12" RCP (N&S) = 777.04±
<b>SAN-MH #3</b> RIM 784.57 NORTH-SOUTH FLOWLINE INV. 8" PVC N 776.88 WEST FLOWLINE	<b>STRUCTURE #7</b> 4' DIA. MDOT COVER TYPE C RIM = 789.35 INV. 15" RCP N = 781.98 INV. 12" RCP E & W = 782.18	<b>STRUCTURE #21</b> RIM = 787.53 INV. 30" RCP (S) = 778.25 INV. 12" RCP (N) = 778.35	<b>STRUCTURE #28</b> 4' DIA. MDOT COVER TYPE C RIM = 782.85 INV. 30" RCP (S) = 778.25 INV. 12" RCP (N) = 778.35	<b>STRUCTURE #33</b> 4' DIA. MDOT COVER TYPE C RIM = 783.01 INV. 27" RCP (W) = 776.09± INV. 27" RCP (E) = 776.19± INV. 12" RCP (N) = 777.29 INV. 12" RCP (S) = 777.39
<b>SAN-MH #4</b> RIM 791.03 EAST FLOWLINE 775.94 INV. 8" PVC SOUTH 776.27 INV.	<b>STRUCTURE #8</b> 4' DIA. MDOT COVER TYPE C RIM = 789.37 INV. 15" RCP W = 782.28 INV. 12" RCP E = 782.58	<b>STRUCTURE #24</b> 5' DIA. MDOT COVER TYPE C RIM = 787.20 INV. 27" (E) = 777.6± INV. 27" (W) = 777.7± INV. 12" RCP (N) = 778.7	<b>STRUCTURE #29</b> 4' DIA. MDOT COVER TYPE G RIM = 782.85 INV. 27" RCP (W) = 777.0± INV. 27" RCP (E) = 776.9± INV. 12" RCP (N&S) = 777.9±	<b>STRUCTURE #34</b> 4' DIA. MDOT COVER TYPE C RIM = 782.79 INV. 12" RCP (S) = 776.98 INV. 12" RCP (N) = 777.08
<b>SAN-MH #5</b> RIM 779.28 MDOT COVER TYPE C RIM = 789.52 INV. 18" PVC NE FLOWLINE 767.28 INV. 18" PVC W INV. 12" PVC S	<b>STRUCTURE #9</b> 4' DIA. MDOT COVER TYPE C RIM = 789.52 INV. 18" RCP SW = 780.73 INV. 12" RCP NE = 780.83	<b>STRUCTURE #25</b> 4' DIA. COVER TYPE C RIM = 787.59 INV. 27" RCP (W) = 779.25 INV. 12" RCP (SE) = 779.35	<b>STRUCTURE #30</b> 4' DIA. MDOT COVER TYPE C RIM = 784.18 INV. 12" RCP (N) = 777.57 INV. 12" RCP (S) = 777.47	<b>STR. #36</b> RIM 784.88± INV. 12" SW = 776.98 INV. 12" E = 776.88
<b>SAN-MH #6</b> RIM 783.67 N-S FLOWLINE 768.45 INV. 8" PVC W 769.48	<b>STRUCTURE #10</b> 4' DIA. MDOT COVER TYPE C RIM = 789.61 INV. 12" RCP NE = 780.70 INV. 12" RCP SW = 780.60	<b>STRUCTURE #26</b> 5' DIA. MDOT COVER TYPE G RIM = 784.0± INV. 27" RCP (W) = 777.76± INV. 27" RCP (E) = 777.66± INV. 12" RCP (N&S) = 778.7±	<b>STR. #37</b> DIA 4.1 RIM 781.54± INV. 12" W = 775.39 INV. 12" E = 775.29 INV. 12" S = 775.39	
<b>SAN-MH #14</b> RIM 786.29 INV. 8" PVC S 775.85 E-W FLOWLINE 775.51	<b>STRUCTURE #12</b> 5' DIA. MDOT COVER TYPE C RIM = 787.39 INV. 27" RCP (E) = 770.12± INV. 27" RCP (W) = 780.22± INV. 15" RCP (NW) = 781.02 INV. 18" RCP (S) = 780.82			

**CMS & D**  
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EMAIL: info@cms-d.com

**TOPOGRAPHIC SURVEY**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W,  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

JOB NUMBER:	1211-115
DRAWN BY:	RL
DESIGNED BY:	TELB
CHECKED BY:	TELB

SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

SCALE:  
1" = 60'

SHEET NUMBER:  
2 of 17

RAMESH & VANDANA VEDULA  
TAX #14-028-20-005-09  
ZONED B5

EDWARD PERCHA  
TAX #14-026-20-001-05  
ZONED B5

BUILDING-UNIT SCHEDULE:			
BUILDING COUNT	UNIT TYPE	UNIT COUNT	BEDROOMS PER UNIT TYPE TOTAL
(1)	8 - 3 B.R. UNITS - BUILDING AC-3.0	(8) 3 B.R.	24 B.R.
(4)	16 - 2 B.R. UNITS - BUILDING AA-3.0 16 - 3 B.R. UNITS - BUILDING AA-3.0	(64) 2 B.R. (64) 3 B.R.	128 B.R. 192 B.R.
(5)	16 - 3 B.R. UNITS - BUILDING AB-3.0	(80) 3 B.R.	240 B.R.
(1)	POOL PAVILION - BUILDING AP-3.0	NONE	NONE
TOTAL PROPOSED BUILDINGS: 11			
TOTAL PROPOSED UNITS: 216			
TOTAL PROPOSED BEDROOMS: 584			

NORTHEAST COR.  
SEC. 14N-R4W  
FND. REMON COR.  
PER LCRC L. 1, P. 252  
N37°E 69.76' FND. N&T IN UTILITY POLE  
S21°E 77.09' C/L TOP BOLT FIRE HYDRANT  
S62°W 53.33' FND. N&T IN UTILITY POLE  
N42°W 57.68' FND. N&T IN UTILITY POLE

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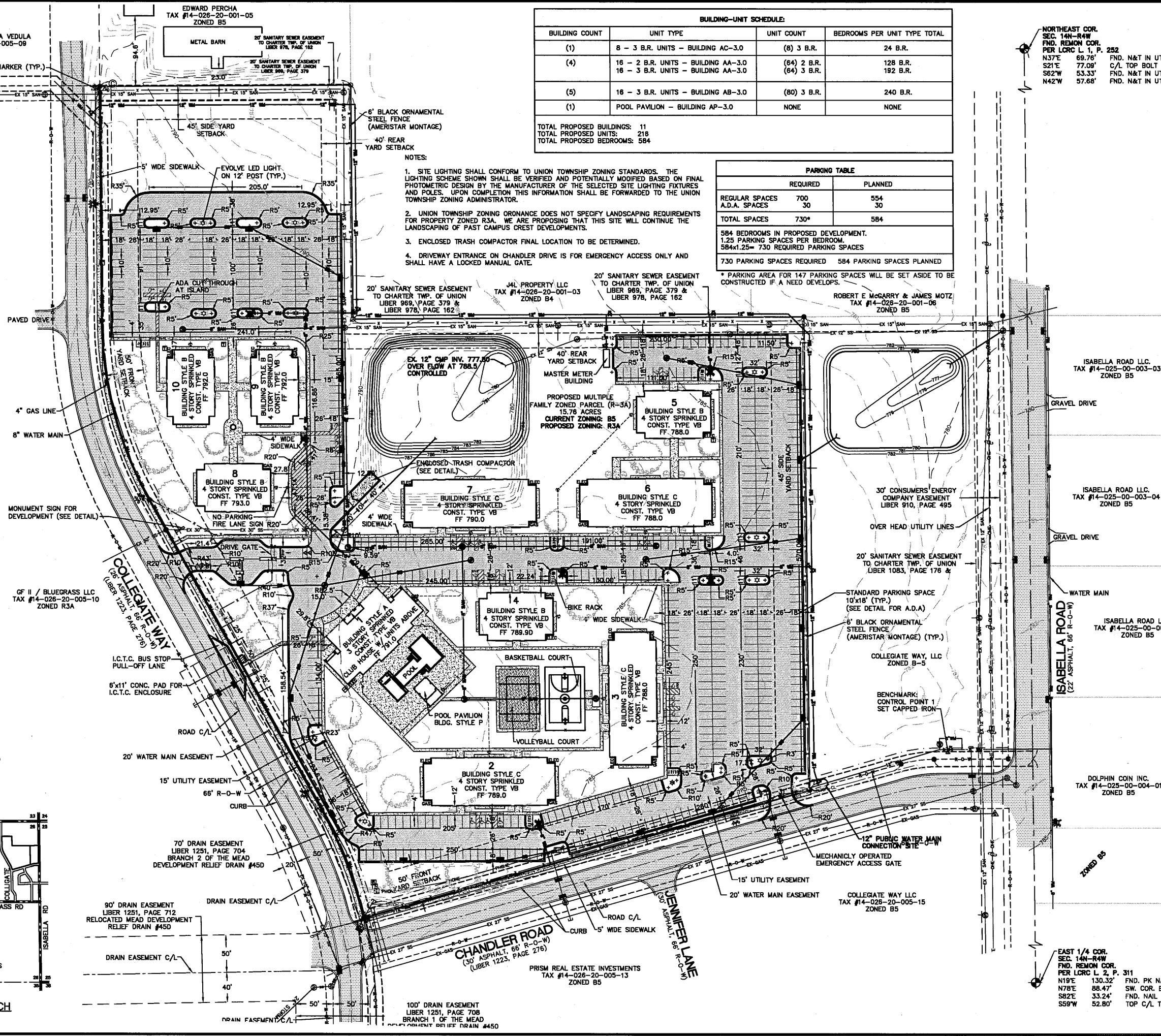
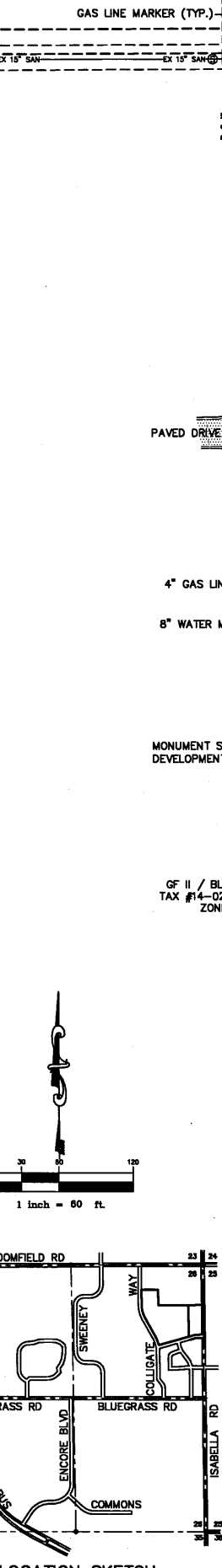
**SITE PLAN**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER:  
1211-115  
DRAWN BY:  
RLL  
DESIGNED BY:  
TELB  
CHECKED BY:  
TELB

SCALE:  
1" = 60'  
SHEET NUMBER:  
3 of 17



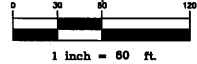
- NOTES:
1. SITE LIGHTING SHALL CONFORM TO UNION TOWNSHIP ZONING STANDARDS. THE LIGHTING SCHEME SHOWN SHALL BE VERIFIED AND POTENTIALLY MODIFIED BASED ON FINAL PHOTOMETRIC DESIGN BY THE MANUFACTURER OF THE SELECTED SITE LIGHTING FIXTURES AND POLES. UPON COMPLETION THIS INFORMATION SHALL BE FORWARDED TO THE UNION TOWNSHIP ZONING ADMINISTRATOR.
  2. UNION TOWNSHIP ZONING ORDINANCE DOES NOT SPECIFY LANDSCAPING REQUIREMENTS FOR PROPERTY ZONED R3A. WE ARE PROPOSING THAT THIS SITE WILL CONTINUE THE LANDSCAPING OF PAST CAMPUS CREST DEVELOPMENTS.
  3. ENCLOSED TRASH COMPACTOR FINAL LOCATION TO BE DETERMINED.
  4. DRIVEWAY ENTRANCE ON CHANDLER DRIVE IS FOR EMERGENCY ACCESS ONLY AND SHALL HAVE A LOCKED MANUAL GATE.

PARKING TABLE	
REQUIRED	PLANNED
REGULAR SPACES 700	554
A.D.A. SPACES 30	30
TOTAL SPACES 730*	584

584 BEDROOMS IN PROPOSED DEVELOPMENT.  
1.25 PARKING SPACES PER BEDROOM.  
584x1.25= 730 REQUIRED PARKING SPACES  
730 PARKING SPACES REQUIRED 584 PARKING SPACES PLANNED

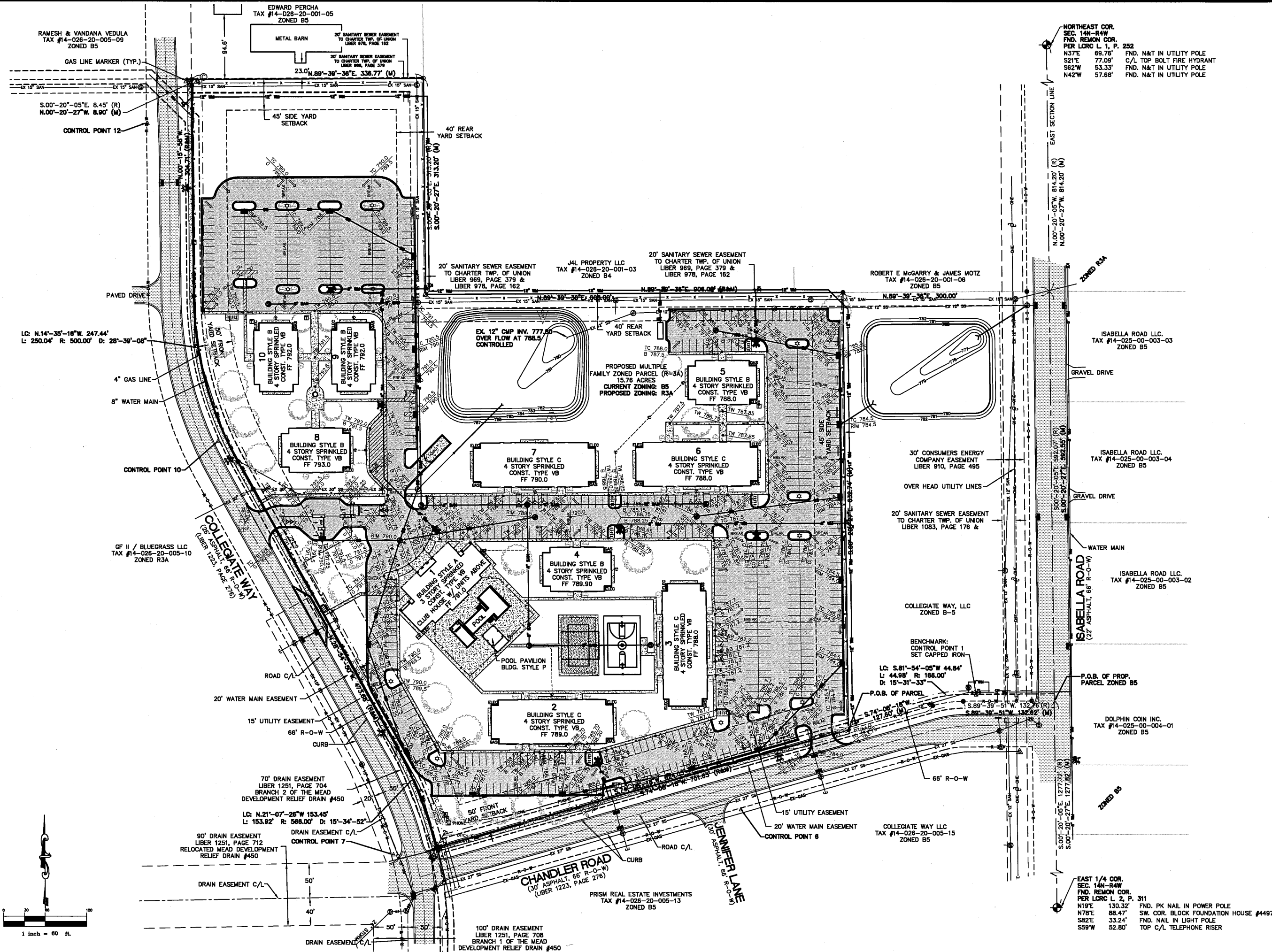
\* PARKING AREA FOR 147 PARKING SPACES WILL BE SET ASIDE TO BE CONSTRUCTED IF A NEED DEVELOPS.

EAST 1/4 COR.  
SEC. 14N-R4W  
FND. REMON COR.  
PER LCRC L. 2, P. 311  
N19°E 130.32' FND. PK NAIL IN POWER POLE  
N78°E 88.47' SW. COR. BLOCK FOUNDATION HOUSE #4497  
S82°E 33.24' FND. NAIL IN LIGHT POLE  
S59°W 52.80' TOP C/L TELEPHONE RISER



LOCATION SKETCH  
SCALE: 1" = 1500'





NORTHEAST COR.  
 SEC. 14N-R4W  
 FND. REMON COR.  
 PER LCRC L. 1, P. 252  
 N37°E 69.78' FND. N&T IN UTILITY POLE  
 S21°E 77.09' C/L TOP BOLT FIRE HYDRANT  
 S62°W 53.33' FND. N&T IN UTILITY POLE  
 N42°W 57.68' FND. N&T IN UTILITY POLE

EAST SECTION LINE  
 N.00°-20'-05"W. 814.20' (R)  
 N.00°-20'-27"W. 814.20' (M)

S.00°-20'-05"E. 829.97' (R)  
 S.00°-20'-27"E. 829.97' (M)

S.00°-20'-05"E. 1277.72' (R)  
 S.00°-20'-27"E. 1277.82' (M)

S.00°-20'-05"E. 1277.72' (R)  
 S.00°-20'-27"E. 1277.82' (M)

EAST 1/4 COR.  
 SEC. 14N-R4W  
 FND. REMON COR.  
 PER LCRC L. 2, P. 311  
 N19°E 130.32' FND. PK NAIL IN POWER POLE  
 N78°E 88.47' SW. COR. BLOCK FOUNDATION HOUSE #4497  
 S82°E 33.24' FND. NAIL IN LIGHT POLE  
 S59°W 52.80' TOP C/L TELEPHONE RISER

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**GRADING PLAN**  
**THE GROVE**  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

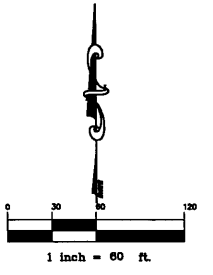
REVISIONS

NO.	DATE	DESCRIPTION

SUBMITTALS:

NO.	DATE	DESCRIPTION
1		
2		
3		

JOB NUMBER:	1211-115
DRAWN BY:	RLM
DESIGNED BY:	TBL
CHECKED BY:	TBL
SCALE:	1" = 60'
SHEET NUMBER:	4 of 17



RAMESH & VANDANA VEDULA  
TAX #14-026-20-005-09  
ZONED B5

EDWARD PERCHA  
TAX #14-026-20-001-05  
ZONED B5

**SOIL EROSION GENERAL NOTES:**

1. 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.
2. 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.
3. CONTRACTOR TO STOCKPILE SOIL ON SITE AT A MAXIMUM SLOPE OF 1 ON 3. ALL SOIL PILES ARE TO BE SEEDED TO MAINTAIN SLOPE STABILITY.
4. 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.
5. ALL STOCKPILES THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN 30 DAYS ARE TO BE SEEDED AND STABILIZED.
6. CONTRACTOR WILL TAKE ALL NECESSARY STEPS TO ELIMINATE SOILS/SEDIMENT FROM LEAVING THE PROJECT SITE.
7. THE CONTRACTOR MUST KEEP STREETS FREE OF SEDIMENTATION OR TAKE STEPS TO CLEAN STREETS.
8. SOIL EROSION MAY ALSO OCCUR WHEN SOILS ARE DRY. SOIL EROSION DUE TO BLOWING WINDS MUST BE MINIMIZED BY USE OF WATER TANK TRUCKS.
9. AS SOON AS POSSIBLE SOILS WILL BE COMPACTED TO MINIMIZE SOIL EROSION. IF SOILS ARE LEFT UNCOMPACTED FOR LENGTHY PERIODS THEY MUST BE SEEDED TO MINIMIZE SOIL EROSION.
10. TEMPORARY MEASURES SHALL STAY IN PLACE UNTIL THE CONSTRUCTION ACTIVITIES HAVE ENDED AND/OR THE PERMANENT MEASURES ARE COMPLETED.
11. UPON COMPLETION OF CONSTRUCTION THE CONTRACTOR MUST CLEAN ALL SUMPS AND SEDIMENTATION TRAPS.
12. CONTRACTOR IS TO ENSURE THAT ALL CONTROL MEASURES ARE ADEQUATELY MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT.

NORTHEAST COR.  
SEC. 14N-R4W  
FND. REMON COR.  
PER LCRC L. 1, P. 252

N37E 69.76' FND. N&T IN UTILITY POLE  
S21E 77.09' C/L TOP BOLT FIRE HYDRANT  
S62W 53.33' FND. N&T IN UTILITY POLE  
N42W 57.68' FND. N&T IN UTILITY POLE

**CMS & D**  
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**STORM WATER AND SOIL EROSION PLAN**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

SUBMITTALS:  
SUBMITTAL

JOB NUMBER:  
1211-115

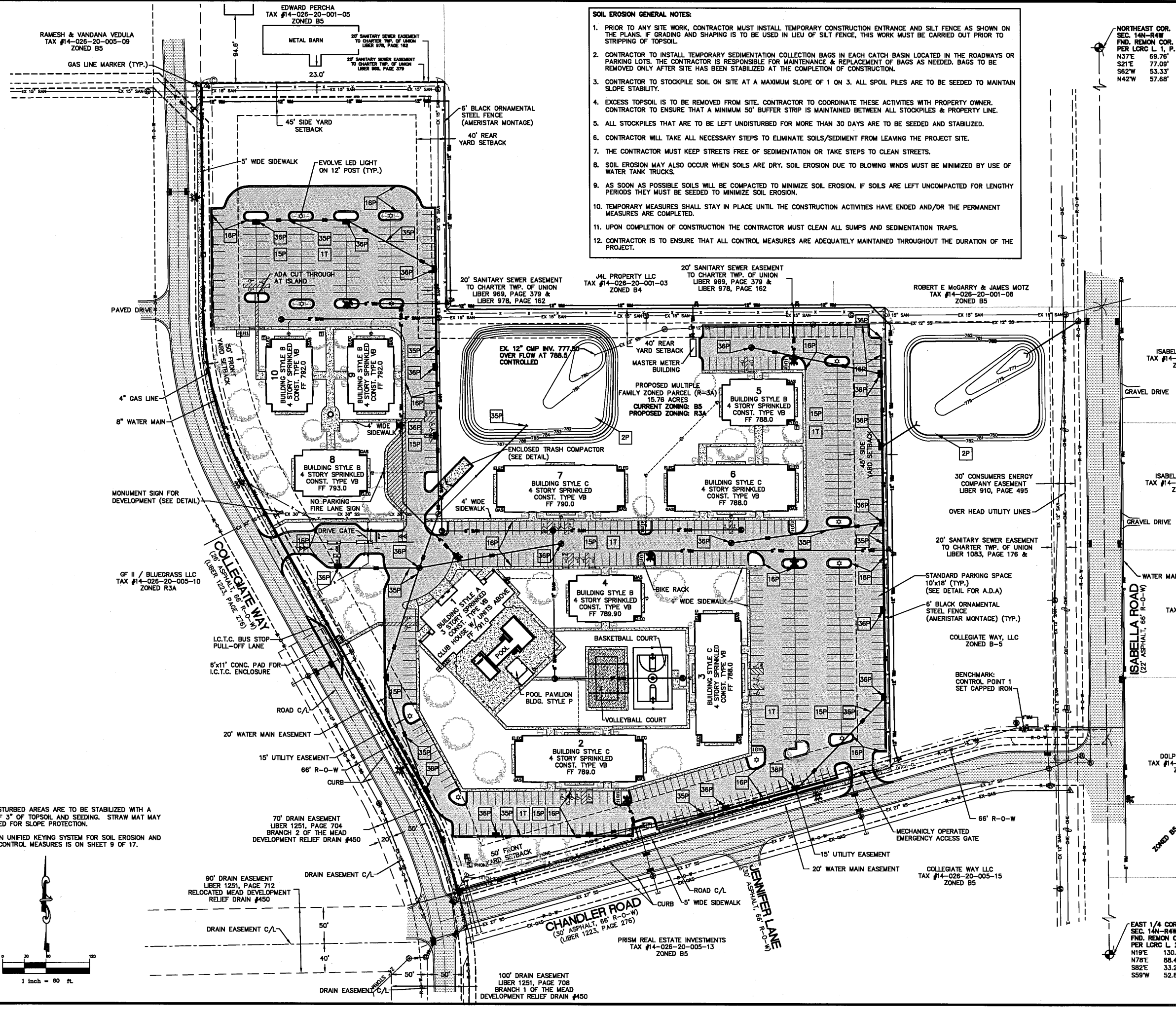
DRAWN BY:  
RLL

DESIGNED BY:  
TELB

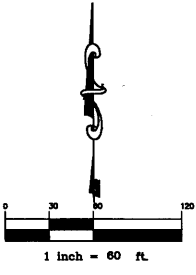
CHECKED BY:  
TELB

SCALE:  
1" = 60'

SHEET NUMBER:  
5 of 17



- NOTES:
1. ALL DISTURBED AREAS ARE TO BE STABILIZED WITH A MINIMUM OF 3" OF TOPSOIL AND SEEDING. STRAW MAT MAY BE REQUIRED FOR SLOPE PROTECTION.
  2. MICHIGAN UNIFIED KEYING SYSTEM FOR SOIL EROSION AND SEDIMENT CONTROL MEASURES IS ON SHEET 9 OF 17.



EAST 1/4 COR.  
SEC. 14N-R4W  
FND. REMON COR.  
PER LCRC L. 2, P. 311

N19E 130.32' FND. PK NAIL IN POWER POLE  
N78E 88.47' SW. COR. BLOCK FOUNDATION HOUSE #4497  
S82E 33.24' FND. NAIL IN LIGHT POLE  
S59W 52.80' TOP C/L TELEPHONE RISER

GF II / BLUEGRASS LLC  
TAX #14-026-20-005-10  
ZONED R3A

70' DRAIN EASEMENT  
LIBER 1251, PAGE 704  
BRANCH 2 OF THE MEAD  
DEVELOPMENT RELIEF DRAIN #450

90' DRAIN EASEMENT  
LIBER 1251, PAGE 712  
RELOCATED MEAD DEVELOPMENT  
RELIEF DRAIN #450

100' DRAIN EASEMENT  
LIBER 1251, PAGE 708  
BRANCH 1 OF THE MEAD  
DEVELOPMENT RELIEF DRAIN #450

CHANDLER ROAD  
(30' ASPHALT, 66' R-O-W)  
(LIBER 1223, PAGE 276)

PRISM REAL ESTATE INVESTMENTS  
TAX #14-026-20-005-13  
ZONED B5

COLLEGIATE WAY LLC  
TAX #14-026-20-005-15  
ZONED B5

DOLPHIN COIN INC.  
TAX #14-025-00-004-01  
ZONED B5

ISABELLA ROAD LLC.  
TAX #14-025-00-003-02  
ZONED B5

ISABELLA ROAD LLC.  
TAX #14-025-00-003-04  
ZONED B5

ISABELLA ROAD LLC.  
TAX #14-025-00-003-03  
ZONED B5

ROBERT E MCGARRY & JAMES MOTZ  
TAX #14-026-20-001-08  
ZONED B5

J4L PROPERTY LLC  
TAX #14-026-20-001-03  
ZONED B4

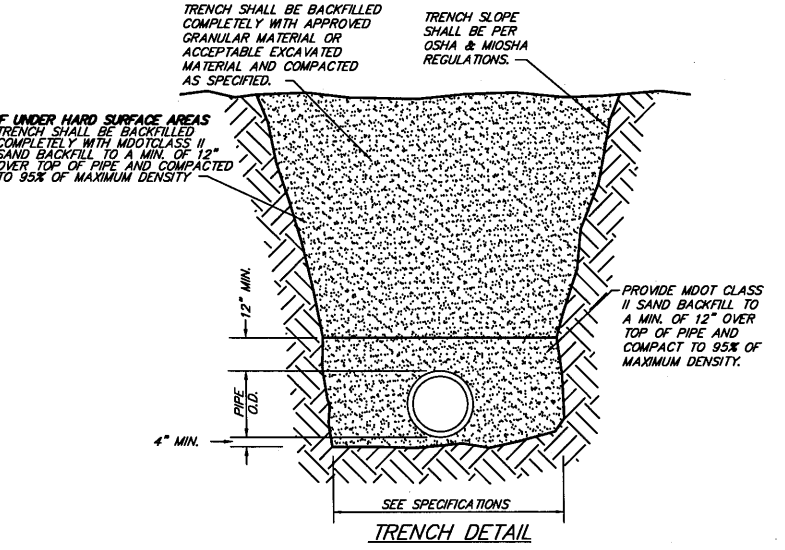
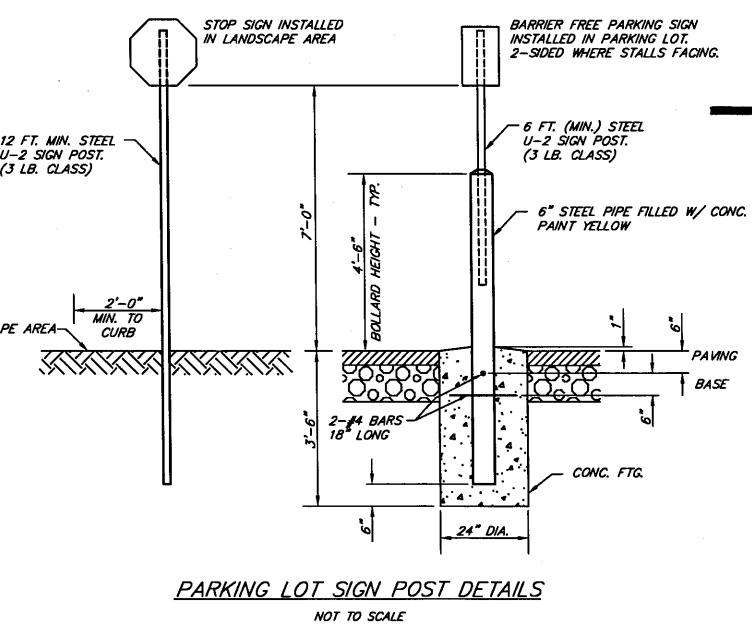
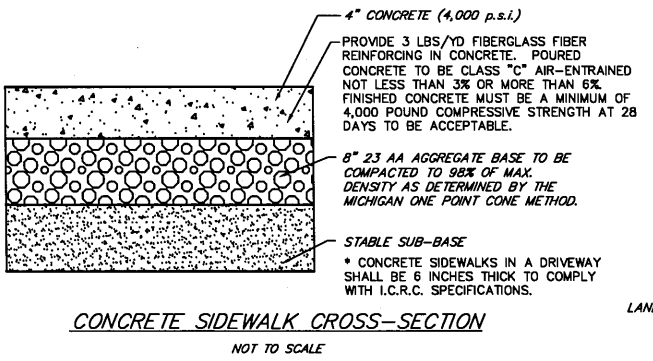
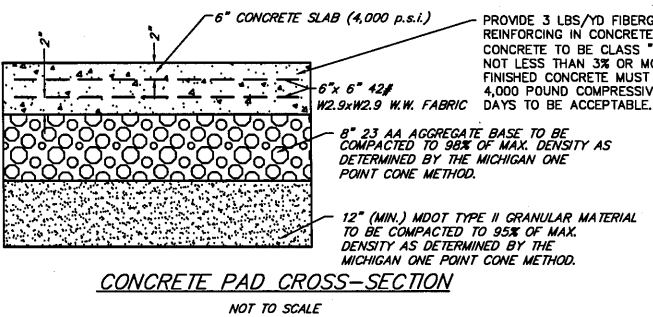
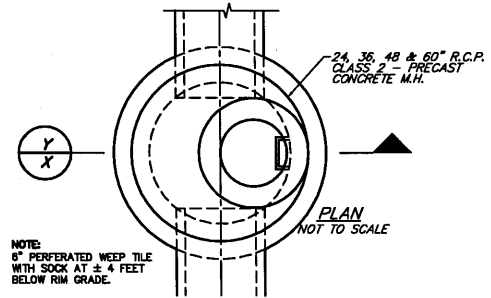
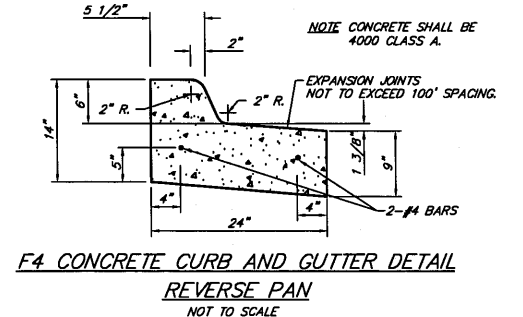
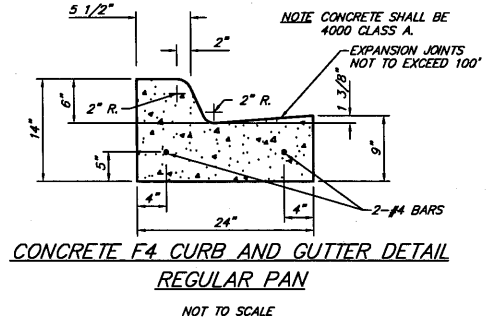
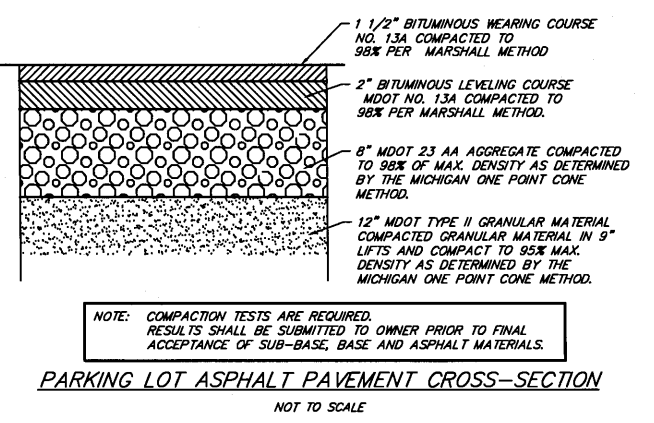
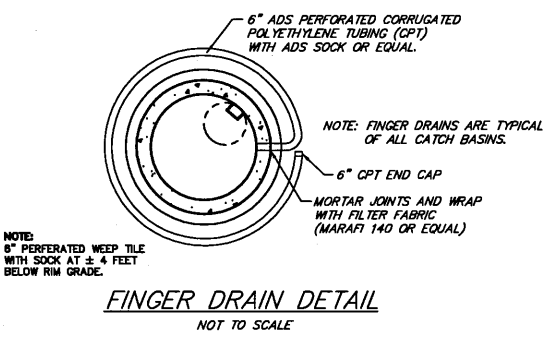
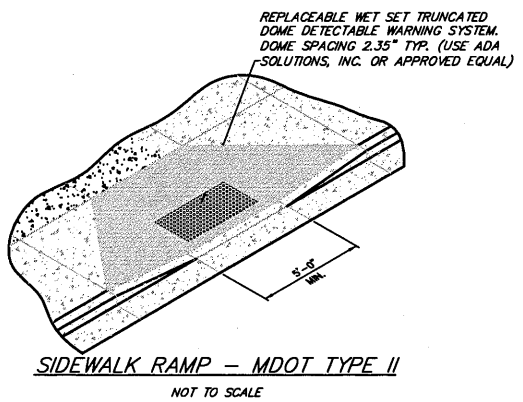
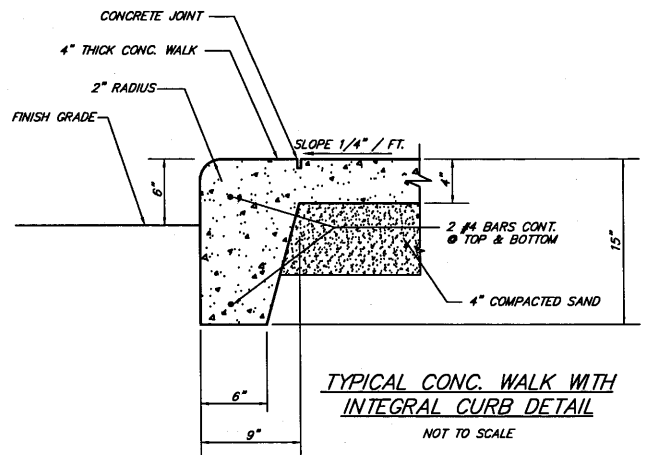
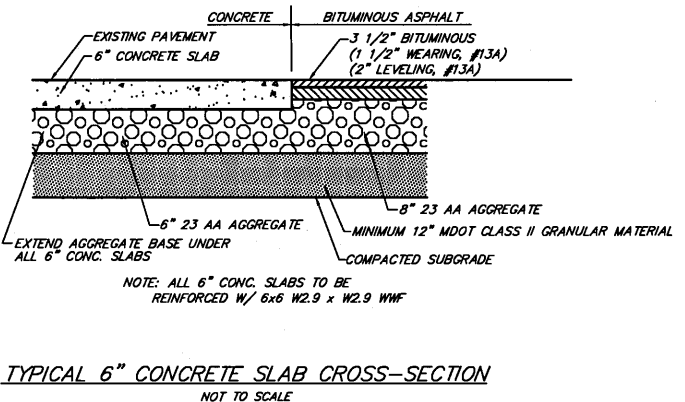
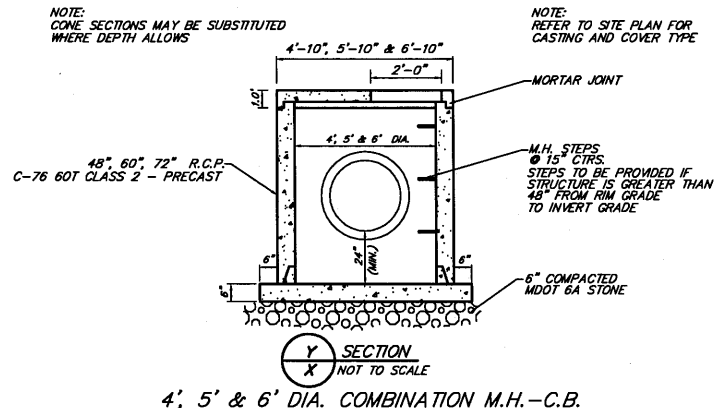
20' SANITARY SEWER EASEMENT  
TO CHARTER TWP. OF UNION  
LIBER 969, PAGE 379 &  
LIBER 978, PAGE 162

20' SANITARY SEWER EASEMENT  
TO CHARTER TWP. OF UNION  
LIBER 969, PAGE 379 &  
LIBER 978, PAGE 162

20' SANITARY SEWER EASEMENT  
TO CHARTER TWP. OF UNION  
LIBER 976, PAGE 162

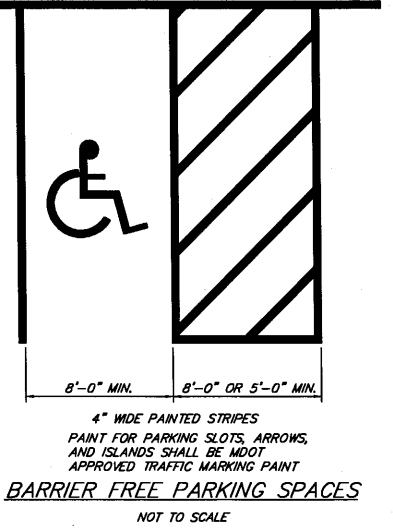
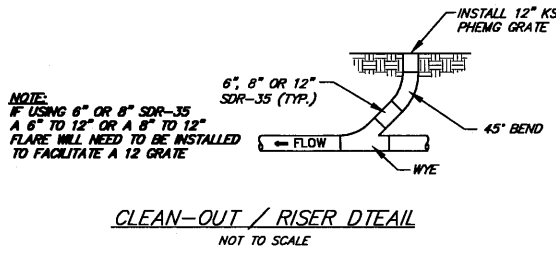
20' SANITARY SEWER EASEMENT  
TO CHARTER TWP. OF UNION  
LIBER 969, PAGE 379





TRENCH WIDTH CHART

PIPE SIZE	MINIMUM	MAXIMUM
8" & 10"	24"	30"
12" & 15"	30"	36"
18"	36"	42"
21"	36"	42"
24"	42"	48"
27"	42"	48"
30"	48"	54"
36"	54"	60"
LARGER THAN 36"	I.D. +20"	I.D. +24"



**CMS & D**  
SURVEYING / ENGINEERING  
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CONSTRUCTION DETAILS #1  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

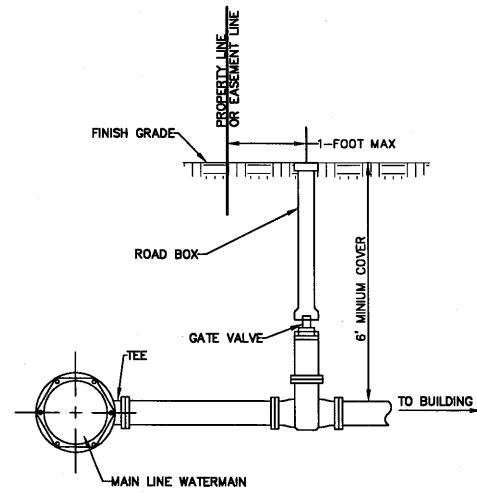
REVISIONS:

JOB NUMBER:	1211-115
DRAWN BY:	RL
DESIGNED BY:	TELB
CHECKED BY:	TELB

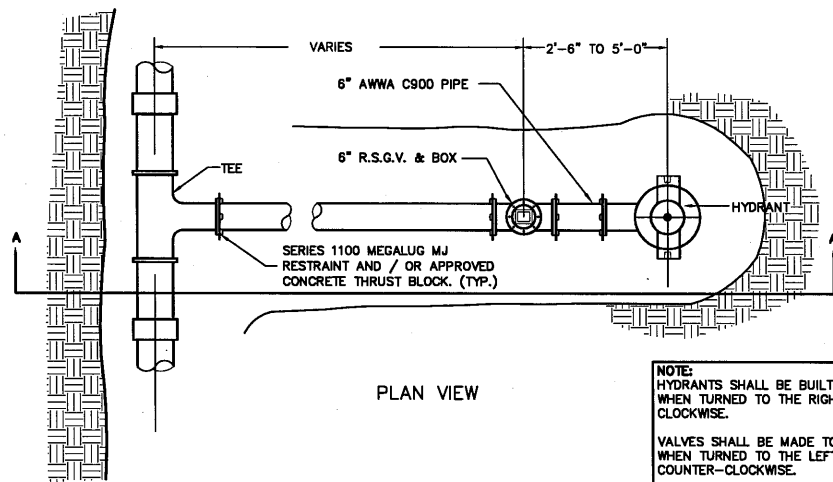
SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

SCALE: 1" = 60'

SHEET NUMBER: 6 of 17

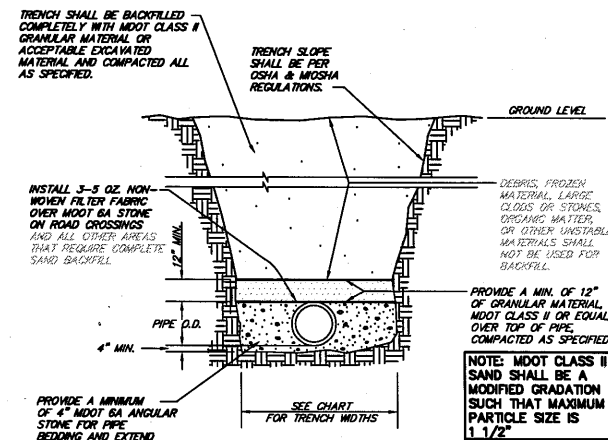


**TEE CONNECTION**  
3 INCH OR LARGER WATER SERVICE  
(INSTALLATION BY CONTRACTOR)



PLAN VIEW

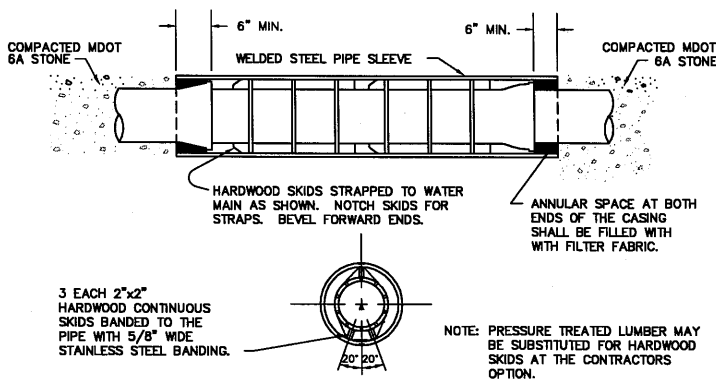
NOTE:  
HYDRANTS SHALL BE BUILT TO OPEN WHEN TURNED TO THE RIGHT OR CLOCKWISE.  
VALVES SHALL BE MADE TO OPEN WHEN TURNED TO THE LEFT OR COUNTER-CLOCKWISE.



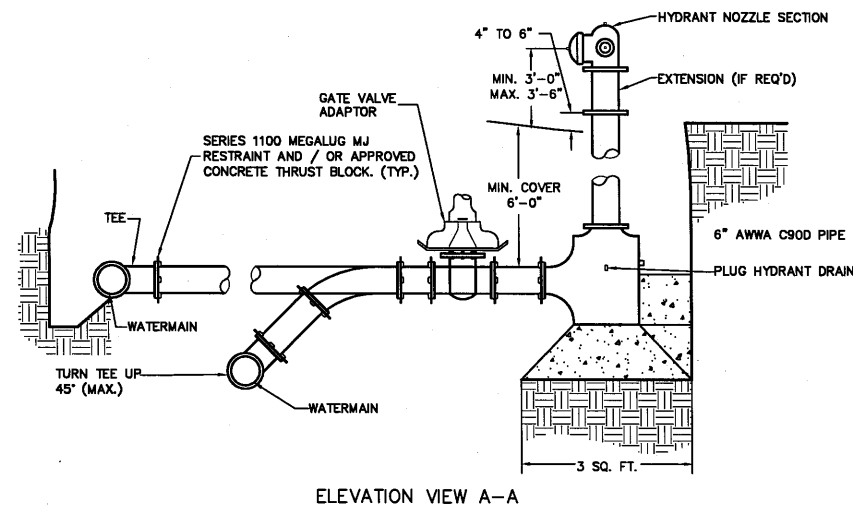
**P.V.C. PIPE TRENCH DETAIL**  
NOT TO SCALE

**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"	48"	53"
36"	54"	60"
LARGER THAN 36"	I.D. + 20"	I.D. + 24"

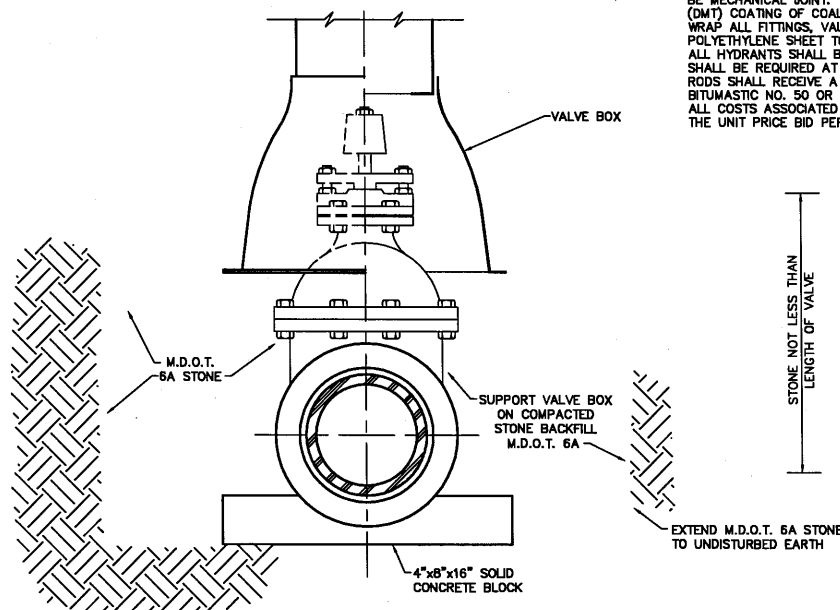


**WATER MAIN IN SLEEVE DETAIL**  
NOT TO SCALE



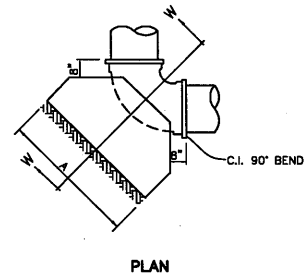
ELEVATION VIEW A-A

**TYPICAL HYDRANT CONNECTION**  
NOT TO SCALE

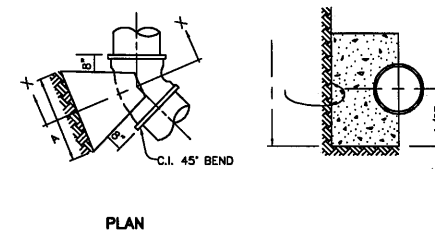
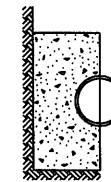


**DETAIL OF SETTING OF VALVE BOXES**  
NOT TO SCALE

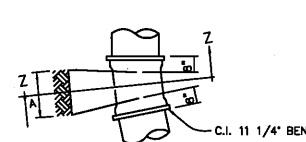
PIPE SIZE	90° BEND OR TEE			45° BEND			22 1/2° BEND			11 1/4° BEND			PLUG							
	A	B	C	Q	A	B	C	Q	A	B	C	Q	A	B	C	Q				
6", 8" & 10"	3'-0"	2'-0"	1'-3"	0.3	2'-0"	1'-6"	1'-3"	0.1	1'-6"	1'-0"	1'-3"	0.1	1'-0"	1'-0"	1'-6"	0.1	2'-0"	2'-0"	1'-6"	0.2
12"	3'-0"	2'-6"	1'-6"	0.4	2'-0"	2'-0"	1'-6"	0.2	2'-0"	1'-0"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



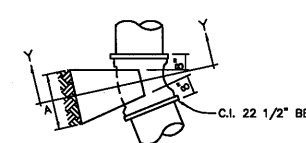
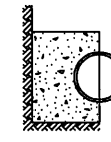
**DETAIL OF BLOCK FOR 90° BEND OR TEE**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



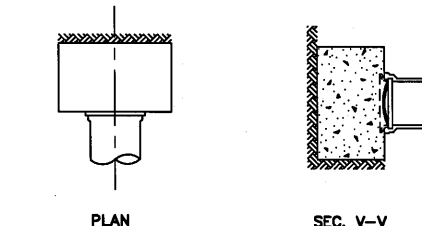
**DETAIL OF BLOCK FOR 45° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



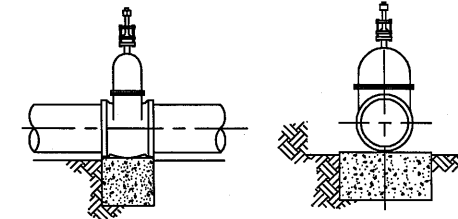
**DETAIL OF BLOCK FOR 11 1/4° BEND**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



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

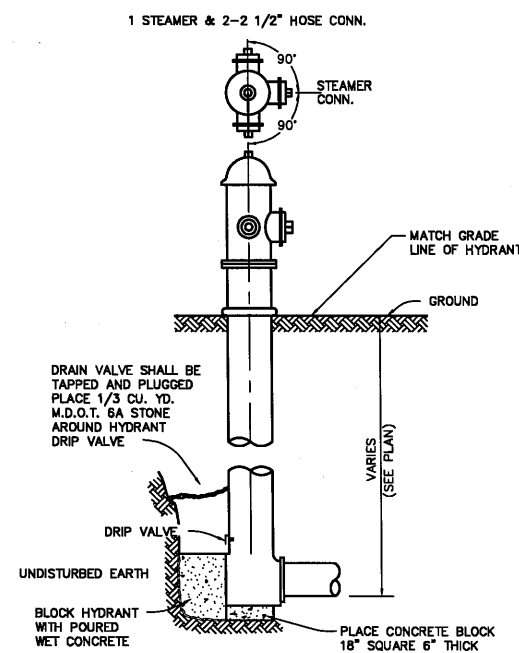


**DETAIL OF BLOCK FOR PLUG**  
Q - MIN. CU. YD. CONCRETE PER BLOCK  
NOT TO SCALE



**DETAIL OF BLOCK FOR GATE VALVES**  
NOT TO SCALE  
5" VALVE OPENING

NOTE:  
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 PER FITTING TO 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 RODDED. THREADED RESTRAINING RODS SHALL BE REQUIRED AT ALL HYDRANTS IN ADDITION TO ALL BLOCKING. RODS SHALL RECEIVE A MINIMUM DRY FILM OF 15 MILS KOPPERS BITUMASTIC NO. 50 OR EQUAL. ALL COSTS ASSOCIATED WITH THIS WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER EACH HYDRANT INSTALLED.



**DETAIL OF SETTING HYDRANT**  
NOT TO SCALE

**CMS & D**  
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**CONSTRUCTION DETAILS #2**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER:  
1211-115

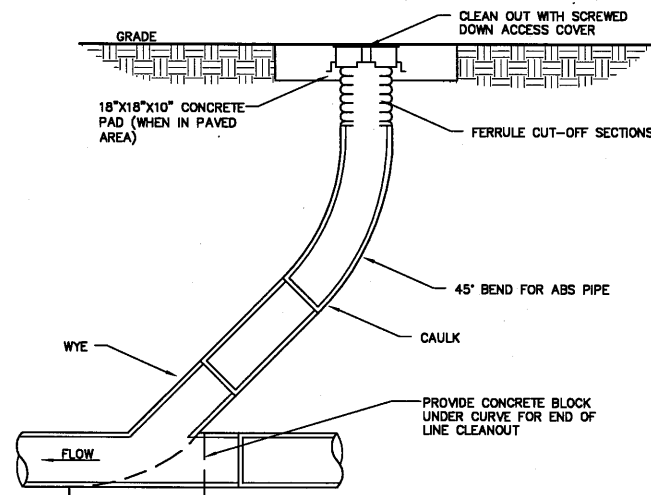
SCALE:  
1" = 60'

DRAWN BY:  
RLL

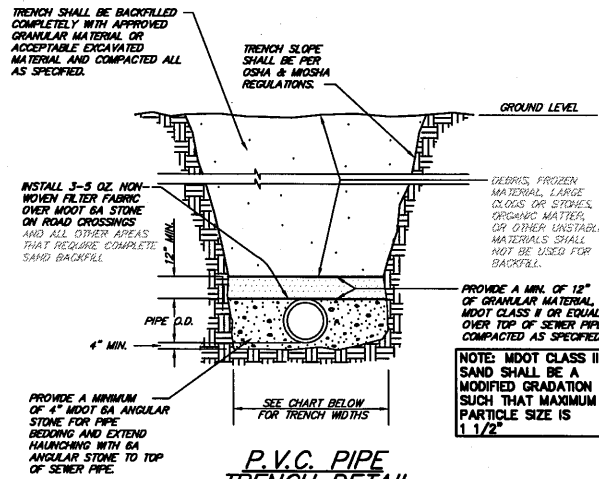
SHEET NUMBER:  
7 of 17

DESIGNED BY:  
TELB

CHECKED BY:  
TELB



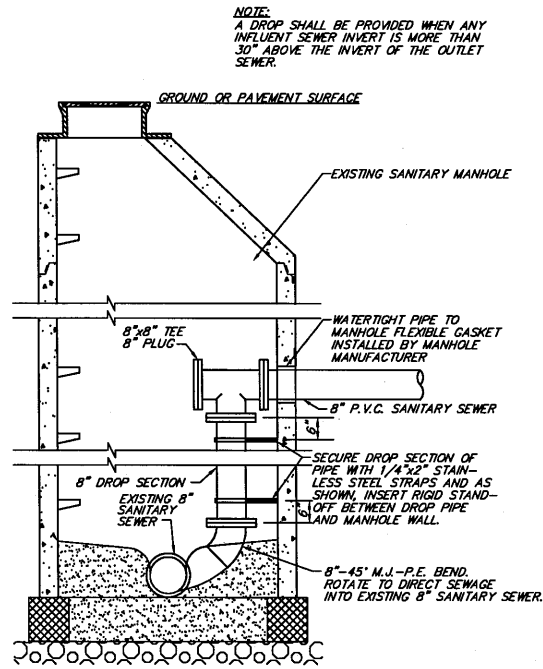
**CLEAN OUT DETAIL**  
NOT TO SCALE



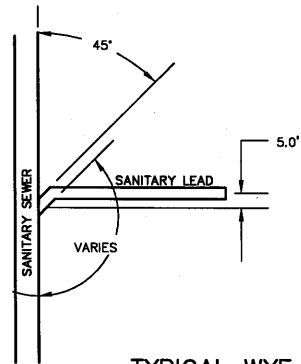
**P.V.C. PIPE TRENCH DETAIL**  
NOT TO SCALE

**TRENCH WIDTH CHART**

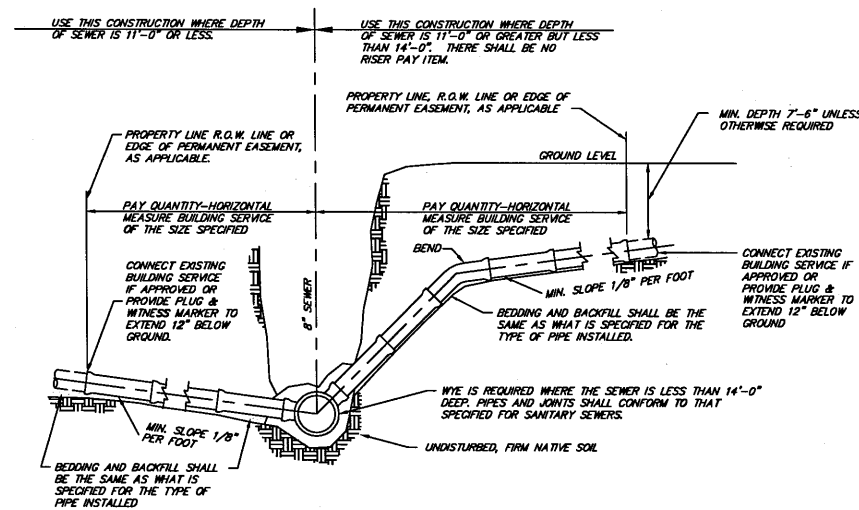
PIPE SIZE	MINIMUM	MAXIMUM
8" & 10"	24"	30"
12" & 15"	30"	36"
18"	36"	42"
24"	42"	48"
30"	48"	54"
36"	54"	60"
LARGER THAN 36"	I.D. +20"	I.D. +24"



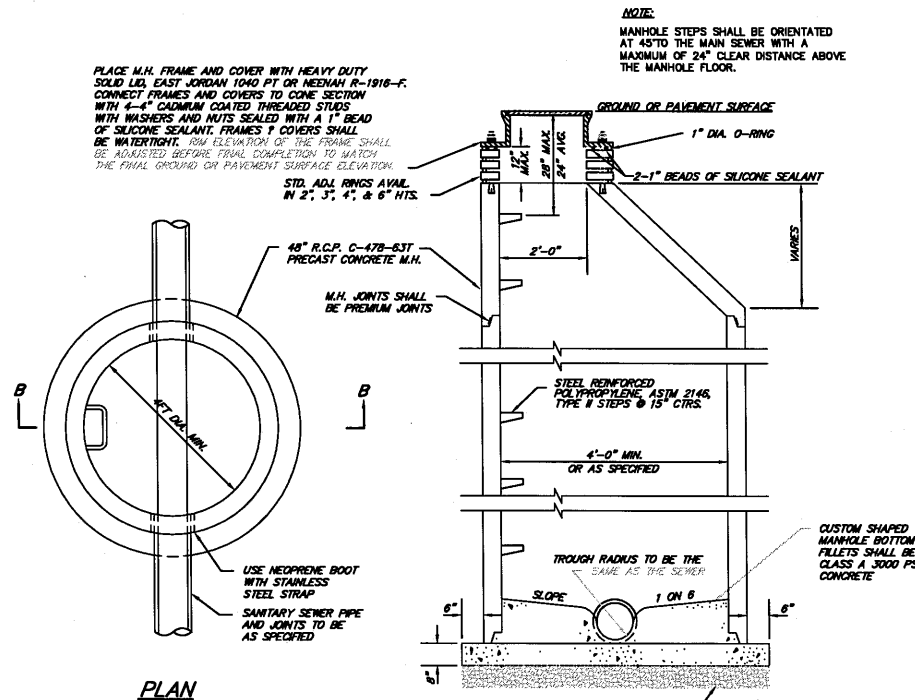
**DROP CONNECTION IN EXISTING DROP MANHOLE DETAIL**  
NOT TO SCALE



**TYPICAL WYE CONNECTION**  
NOT TO SCALE



**SEWER SHALLOWER THAN 14'-0" SERVICE DETAIL**  
NOT TO SCALE



**STANDARD MANHOLE**  
NOT TO SCALE

**SANITARY SEWER GENERAL NOTES:**

- ALL SANITARY SEWER IS TO BE INSTALLED IN ACCORDANCE WITH THE PROJECTS PLANS AND SPECIFICATIONS. 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 OR 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).
- BACKFILL SHALL BE PLACED IN 9 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 MDOT 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 MDOT 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.

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**CONSTRUCTION DETAILS #3**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

SUBMITTALS: SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER: 1211-115  
DRAWN BY: RLL  
DESIGNED BY: TELB  
CHECKED BY: TELB

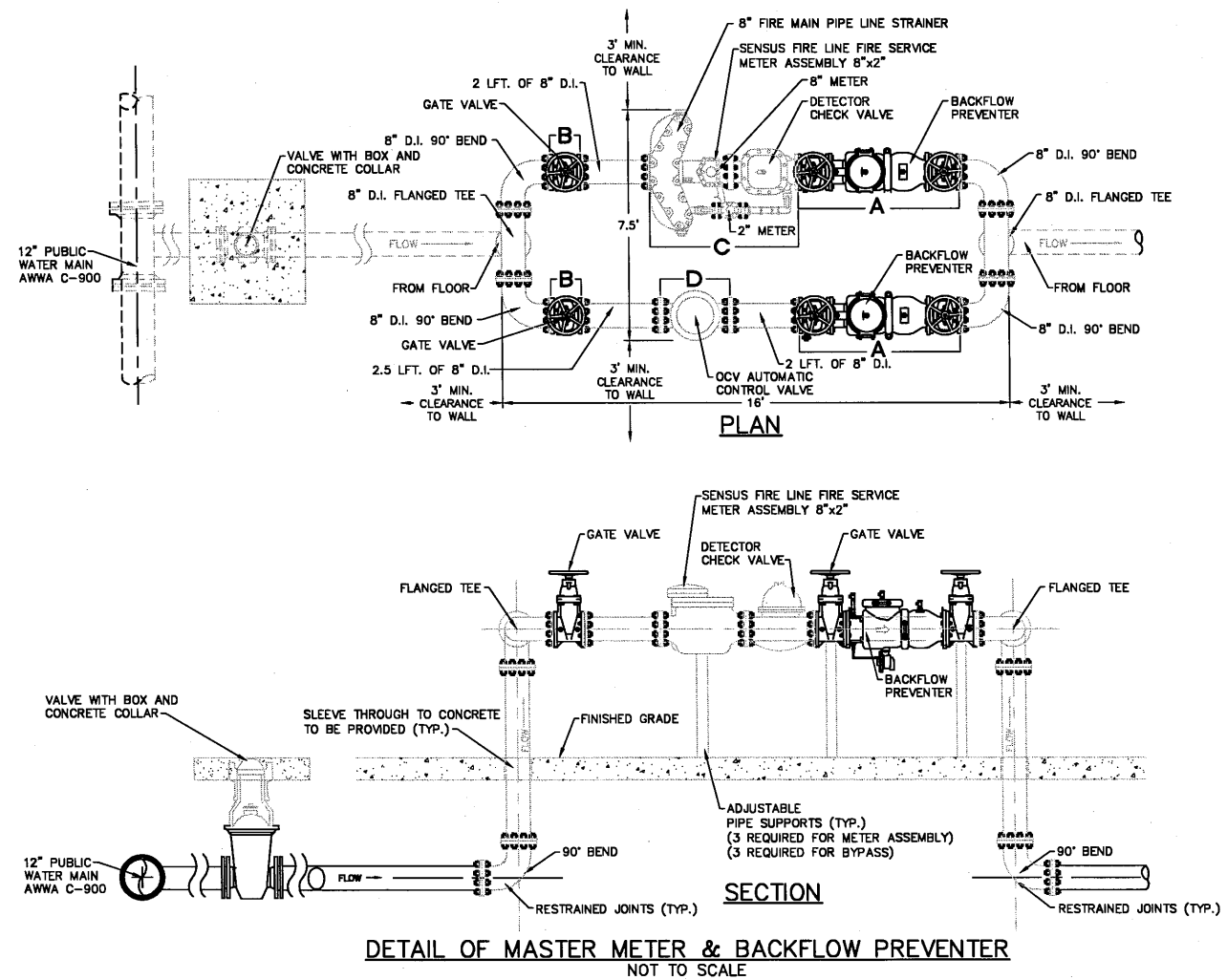
SCALE: 1" = 60'  
SHEET NUMBER: 8 of 17

**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. Stockpiles should be temporarily seeded.	35		System removes collected runoff from site, 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. Better slopes cause 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.	55		Controls and contains sediment from sheet flow conditions. Fabric must be "tied" into the soil 8" or more to prevent underflow. Must be constructed of adequate strength filter fabric and stakes.
13		Used where vegetation is not easily established. Effective for high velocities or high concentration. Permits runoff to infiltrate soil. Dissipates energy flow at system outlet.			
15		Protects areas which cannot otherwise be protected, but increases runoff volume and velocity. Irregular surfaces will help slow velocity.			
16		Keeps high velocity runoff on paved areas from leaving paved surface. Collects and conducts runoff to enclosed drainage system or precast drainageway.			
24		Much more stable form of drainage than bare channel. Grass tends to slow runoff and filter out sediment. Used where bare channel would be eroded.			
27		Prevents erosion on slopes when runoff cannot be diverted to edge of slope area. Usually permanent. Can be constructed as grading progresses.			

NOTE: 35P 36P  
TYPICAL FOR ENTIRE STORM SEWER SYSTEM

NOTE: XXT XXP  
T = TEMPORARY P = PERMANENT



**NOTES:**

THE OWNER/CUSTOMER, AT HIS OR HER OWN EXPENSE, SHALL INSTALL, OPERATE, TEST AND MAINTAIN APPROVED BACKFLOW PREVENTION ASSEMBLIES, AS DIRECTED BY THE WATER AND SEWER DEPARTMENT OF UNION TOWNSHIP. ALL PIPE AND FITTINGS, LABOR AND APPURTENANCES SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.

EIGHT (8) INCH METERS AND ABOVE SHALL BE ABOVE GROUND INSTALLATIONS WITH BYPASS AND SHALL MEET TOWNSHIP SPECIFICATIONS.

ALL PIPE AND FITTINGS SIX (6) INCHES AND LARGER SHALL BE RESTRAINED JOINT AWWA C-900. ABOVE GRADE JOINTS SHALL BE FACTORY-FLANGED DUCTILE IRON, BELOW GRADE SHALL BE MECHANICAL RESTRAINED JOINT ENDS.

THE ABOVE GROUND BYPASS LINE SHALL BE SIZED FOR FIRE FLOW REQUIREMENTS.

BACKFLOW PREVENTER REQUIREMENTS AND TYPE AS REQUIRED BY UNION TOWNSHIP.

IF REQUIRED, PAINT ASSEMBLY WITH RED OXIDE PRIMER AND FINISH WITH 2 COATS OF EXTERIOR ENAMEL (COLOR COORDINATED WITH UNION TOWNSHIP AND OWNER). LABELS MUST BE PROTECTED.

PIPING SHALL BE ENCLOSED. BUILDING PAD SHALL EXTEND MIN. 3 FT. OUT FROM OUTSIDE EDGE OF ABOVE GROUND PIPING, ALL AROUND, AND SHALL BE MONOLITHIC AND CONTINUOUS.

DUAL DOMESTIC-FIRE FLOW MASTER METERS SHALL BE THE COMPOUND TYPE.

DOMESTIC WATER MASTER METERS SHALL BE EITHER COMPOUND OR TURBINE TYPE AS DETERMINED FROM THE PROPOSED USAGE.

UNION TOWNSHIP'S LINE OF RESPONSIBILITY, AFTER SYSTEM IS ACCEPTED AND APPROVED FOR USE BY REGULATORY AUTHORITY, DOWNSTREAM OF METER IS THE OWNER/CUSTOMERS RESPONSIBILITY.

PARTS LIST		
LABEL	QUANTITY	DESCRIPTION
A	2	ZURN WILKINS 8" BACK FLOW PREVENTER MODEL 350 DOUBLE CHECK VALVE ASSEMBLY
B	2	AMERICAN FLOW CONTROL VALVE 2500-1 WITH HAND WHEEL CLOW FSCT RW 8" FLG OL HW W/ TAPPED 3/4" HOLE IN RH BODY
C	1	SENSUS FIRE LINE FIRE SERVICE METER ASSEMBLY 8"x2" W/ 8" "W" SERIES TURBO METER W-3500 DR AND MODEL W-160 2" TURBO METER
D	1	OCV 8" DIFFERENTIAL ON-OFF AUTOMATIC CONTROL VALVE MODEL 101-D

**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 HEADERS 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 SURFACE AND GUTTER PAN ELEVATIONS, UNLESS OTHERWISE NOTED.

ALL DRIVEWAY APPROACHES SHALL BE CONSTRUCTED IN ACCORDANCE UNION TOWNSHIP STANDARDS.

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

SITE CONCRETE PADS SHALL BE 4000 PSI AND REINFORCED WITH 6X8 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.

PARKING SPACES SHALL BE 9 FEET BY 20 FEET OR 10 FEET BY 18 FEET. THE SPACES ARE TO BE INDICATED BY 4 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 FOR UNION TOWNSHIP.

**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.

**CMS & D**  
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EMAIL: info@cms-d.com

**CONSTRUCTION DETAILS #4**  
THE GROVE  
PART OF THE NORTHEAST 1/4  
SECTION 26, T14N-R4W  
UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

REVISIONS:

NO.	DATE	DESCRIPTION

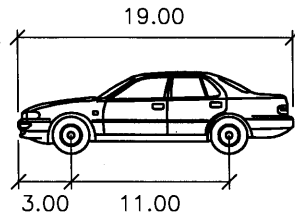
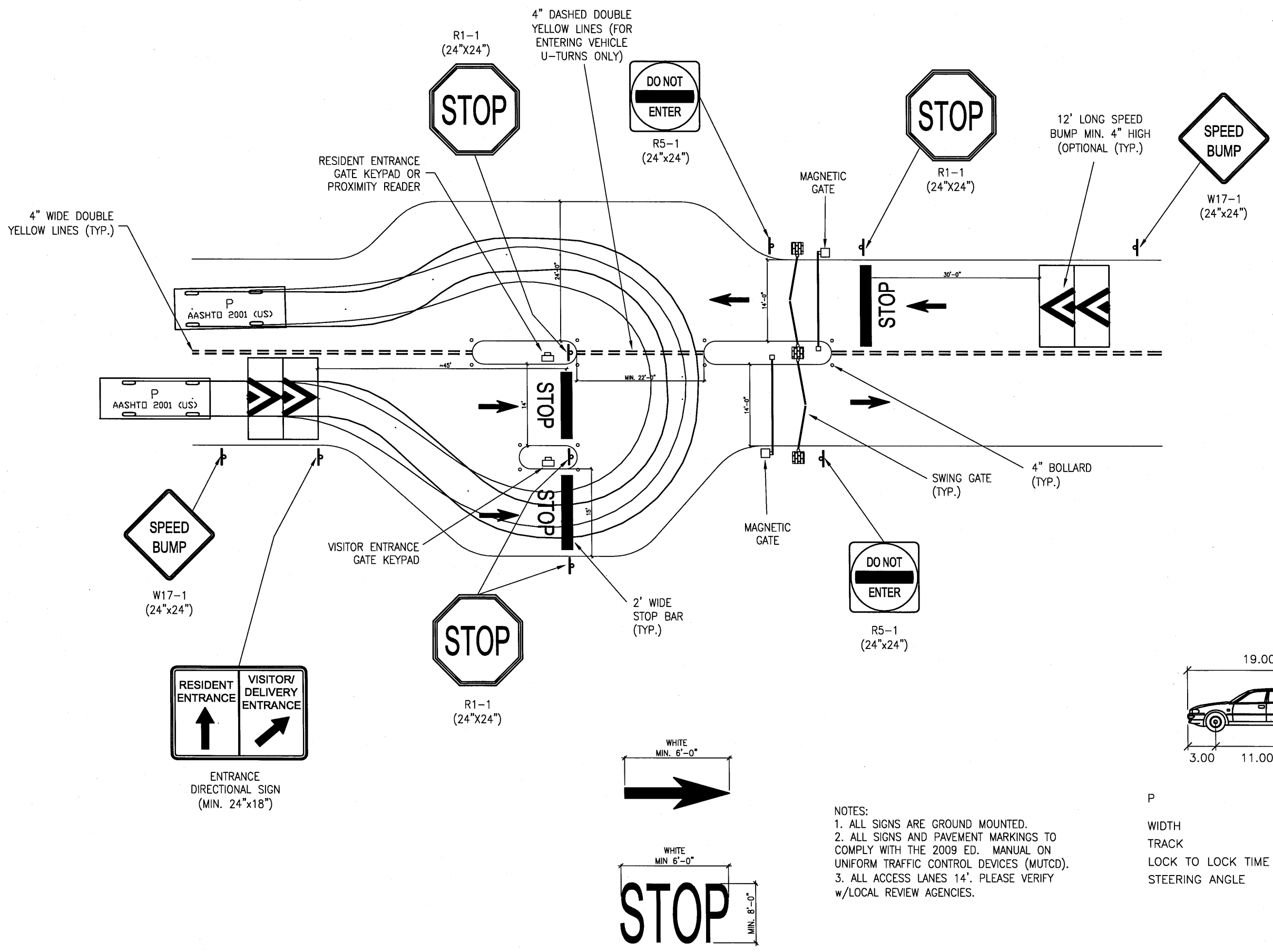
SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

SCALE: 1" = 60'

JOB NUMBER: 1211-115  
DRAWN BY: RLL  
DESIGNED BY: TELB  
SHEET NUMBER: 9 of 17  
CHECKED BY: TELB

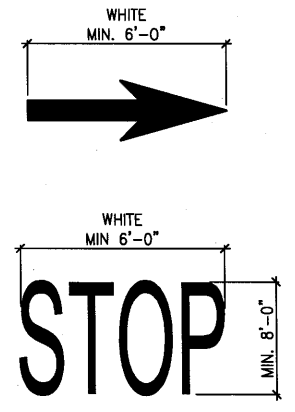


**ENTRANCE DRIVE DETAIL**  
 THE GROVE  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN



P	FEET
WIDTH	: 7.00
TRACK	: 6.00
LOCK TO LOCK TIME	: 6.00
STEERING ANGLE	: 31.60

- NOTES:**
1. ALL SIGNS ARE GROUND MOUNTED.
  2. ALL SIGNS AND PAVEMENT MARKINGS TO COMPLY WITH THE 2009 ED. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
  3. ALL ACCESS LANES 14'. PLEASE VERIFY w/LOCAL REVIEW AGENCIES.



REVISIONS:

SUBMITTALS:  
 SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER: 1211-115  
 DRAWN BY: RLL  
 DESIGNED BY: TELB  
 CHECKED BY: TELB

SCALE: SHOWN  
 SHEET NUMBER: 10 of 17



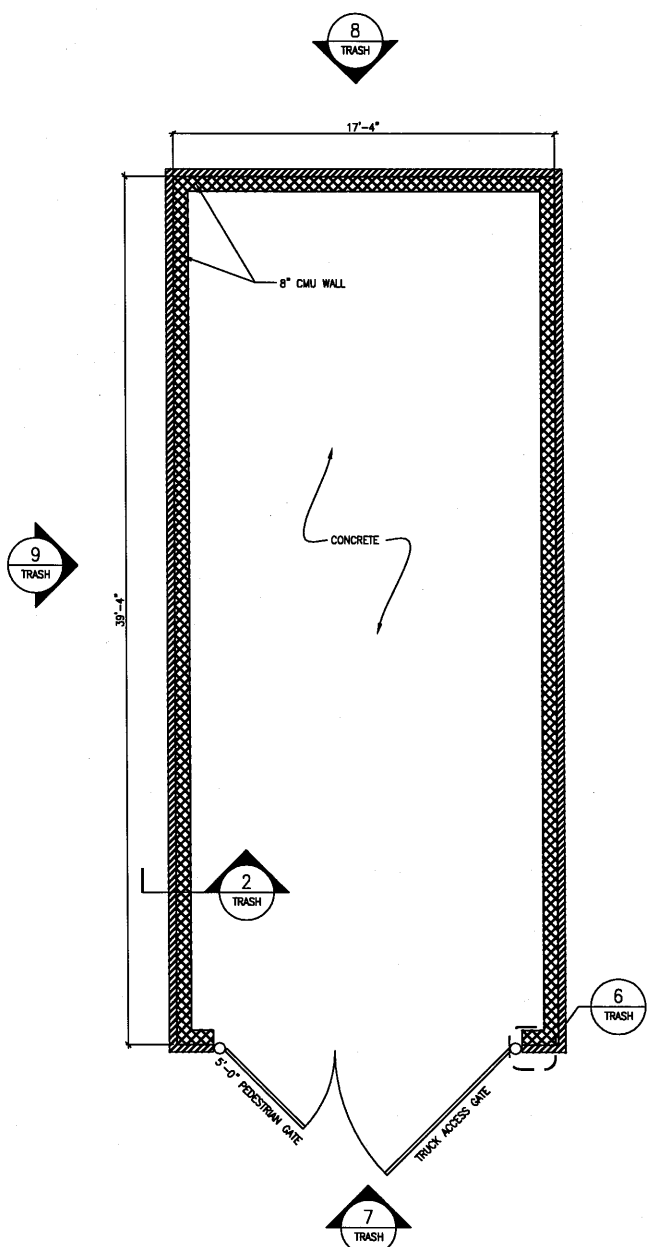


**TRASH COMPACTOR DETAILS**  
 THE GROVE  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

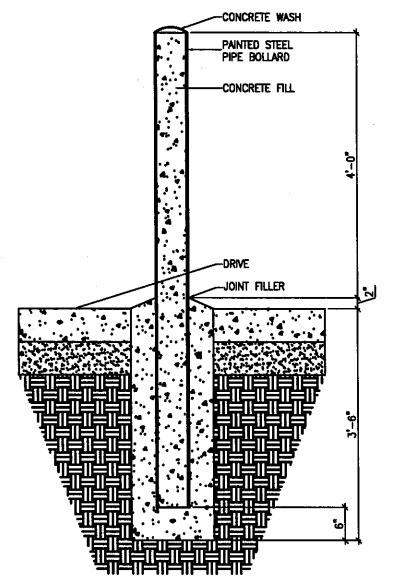
REVISIONS:  
 SUBMITTALS: SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER: 1211-115  
 DRAWN BY: RLL  
 DESIGNED BY: TELB  
 CHECKED BY: TELB

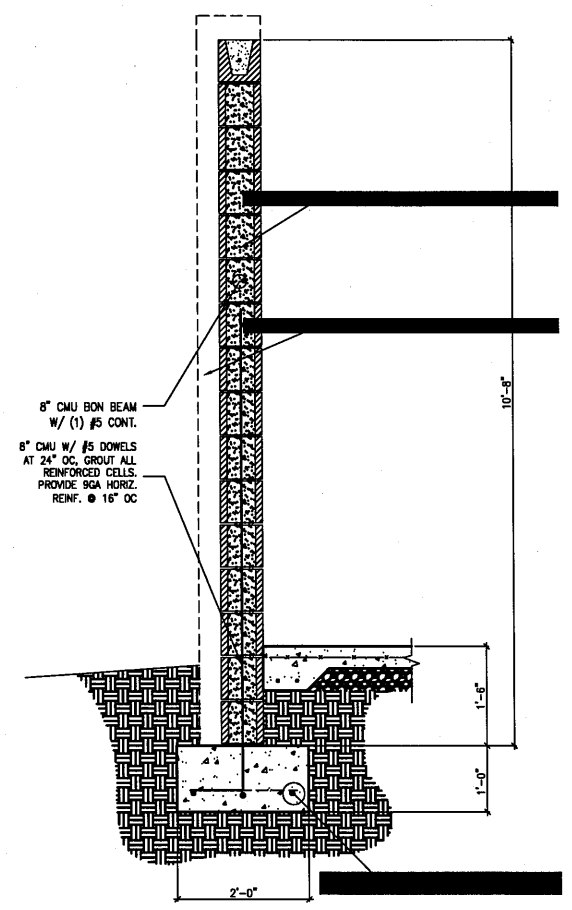
SCALE: SHOWN  
 SHEET NUMBER: 11 of 17



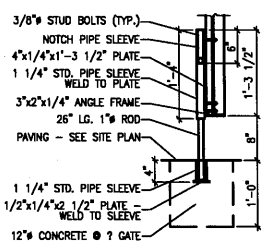
**3 TRASH**  
**TRASH ENCLOSURE PLAN**  
 1/4" = 1'-0"



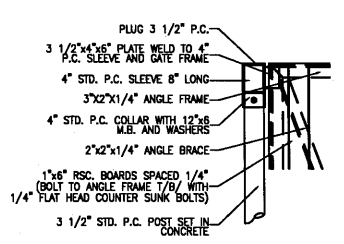
**1 TRASH**  
**BOLLARD DETAIL**  
 3/4" = 1'-0"



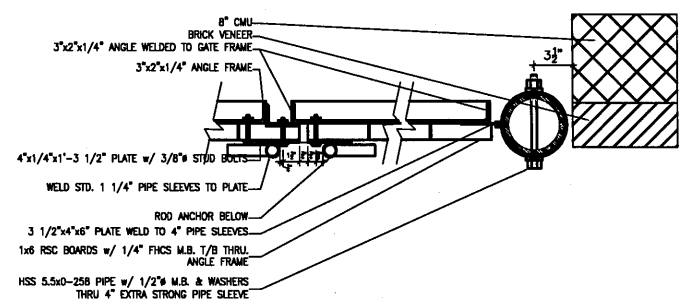
**2 TRASH**  
**TRASH ENCLOSURE SECTION**  
 3/4" = 1'-0"



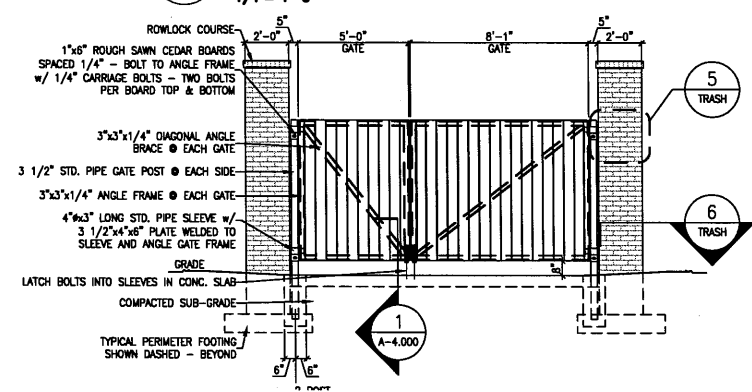
**4 TRASH**  
**ROD ANCHOR DTL.**  
 3/4" = 1'-0"



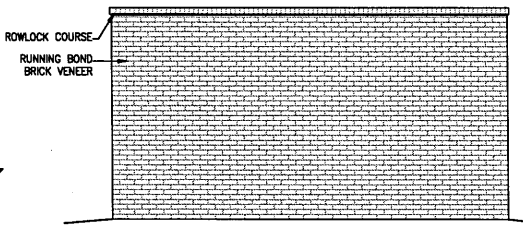
**5 TRASH**  
**DETAIL**  
 3/4" = 1'-0"



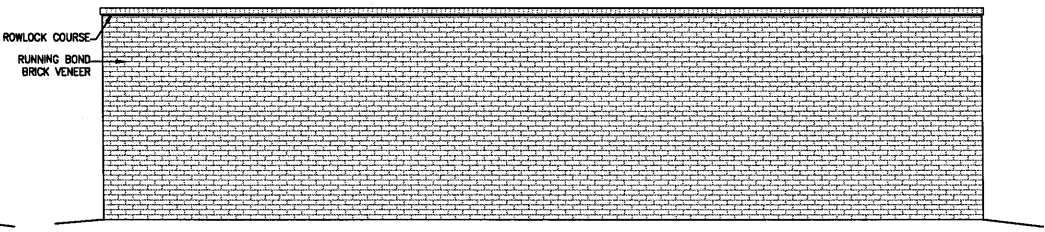
**6 TRASH**  
**GATE & HINGE DTL.**  
 1 1/2" = 1'-0"



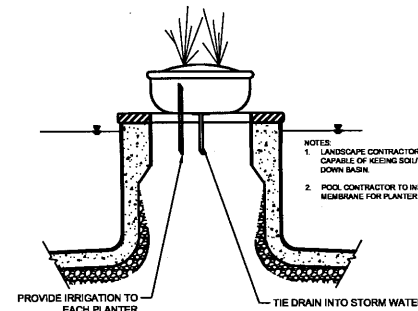
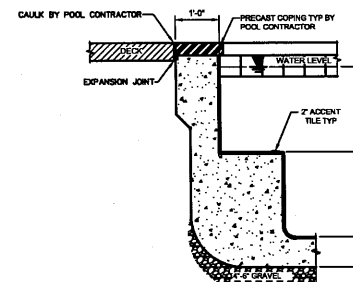
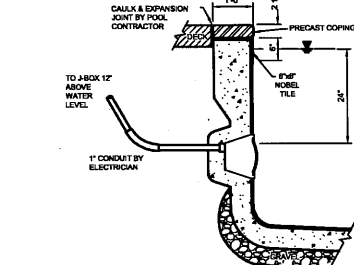
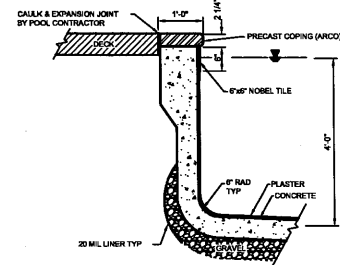
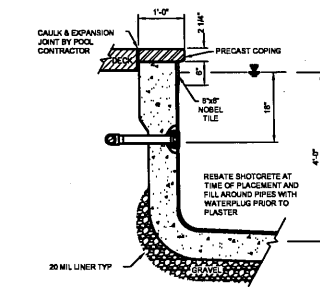
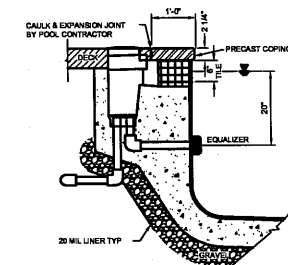
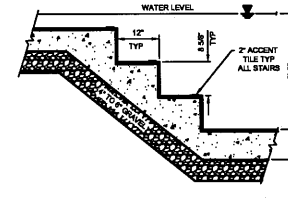
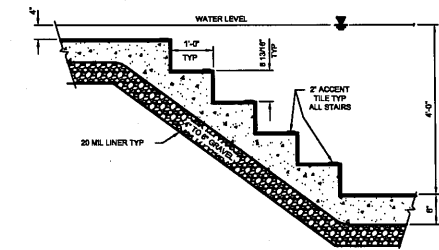
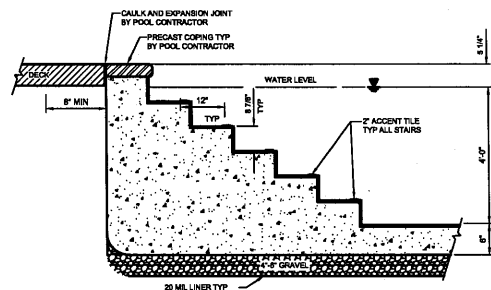
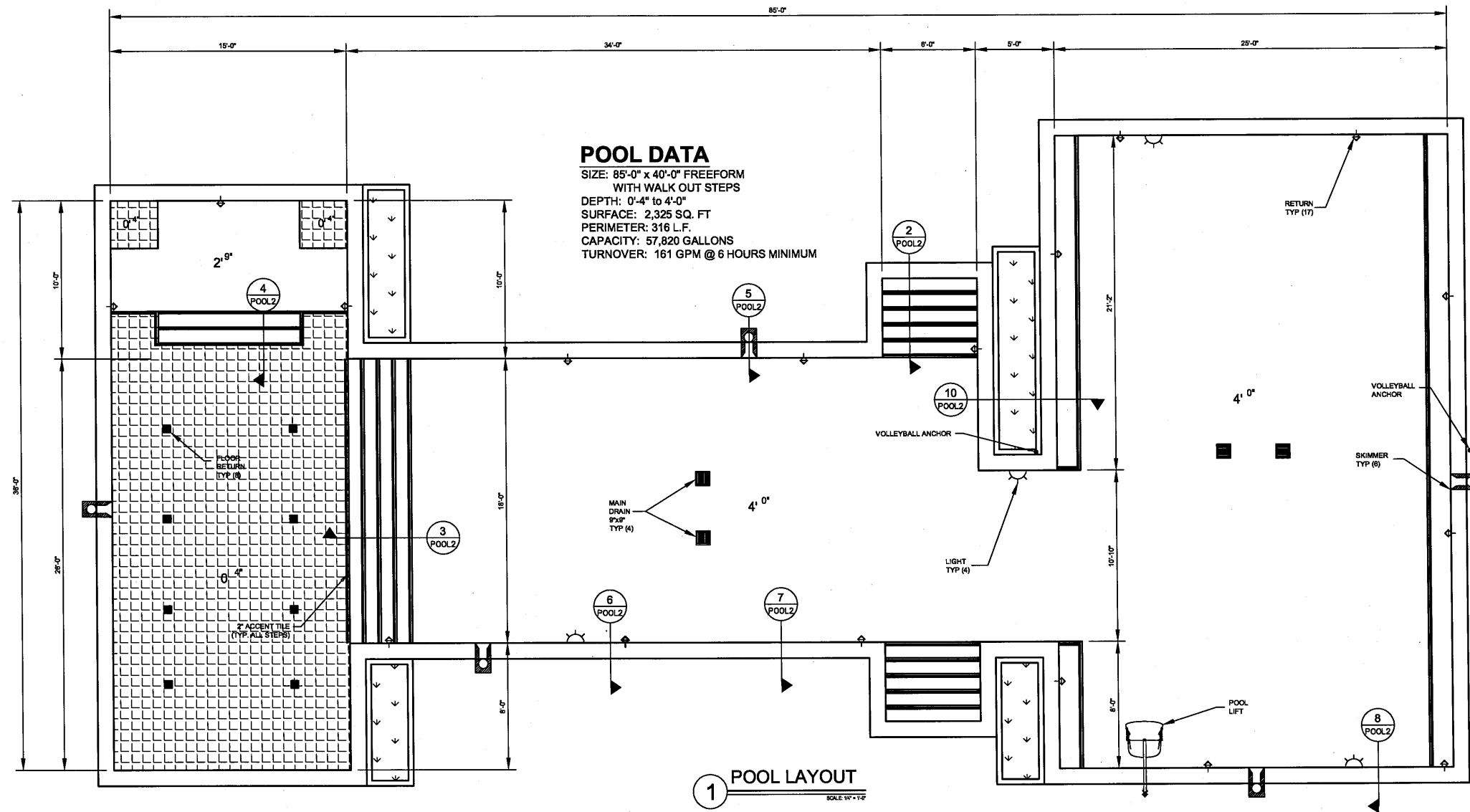
**7 TRASH**  
**TRASH- GATE ELEVATION**  
 1/4" = 1'-0"



**8 TRASH**  
**TRASH- REAR ELEVATION**  
 1/4" = 1'-0"



**9 TRASH**  
**TRASH- SIDE ELEVATION**  
 1/4" = 1'-0"



**NOTES:**

1. THESE PLANS WERE PREPARED BY NORTHERN ENGINEERING AT THE DIRECTION OF CAMPUS CREST. NORTHERN ENGINEERING DOES NOT TAKE ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THESE PLANS.
2. THESE PLANS ARE INTENDED TO SHOW LAYOUT & OWNER SPECIFICATIONS
3. POOL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING POOL PERMIT(S) & TO PROVIDE ANY DOCUMENTATION OR INFORMATION REQUIRED

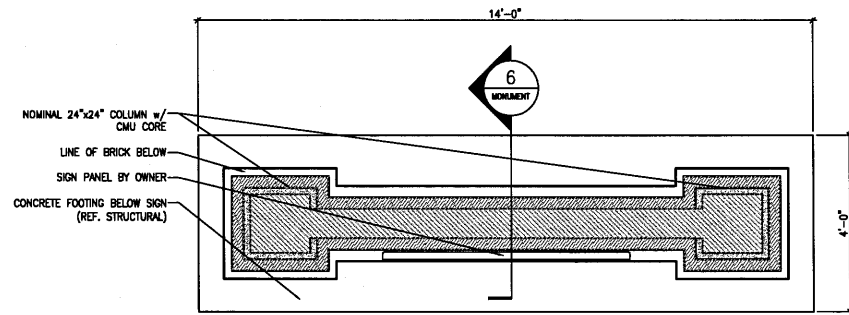


REVISIONS:

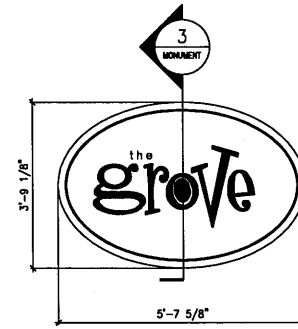
SUBMITTALS:  
 SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER:  
 1211-115  
 DRAWN BY:  
 RLL  
 DESIGNED BY:  
 TELB  
 CHECKED BY:  
 TELB

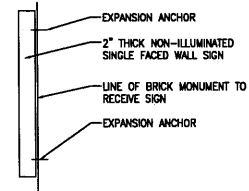
SCALE:  
 SHOWN  
 SHEET NUMBER:  
 12 OF 17



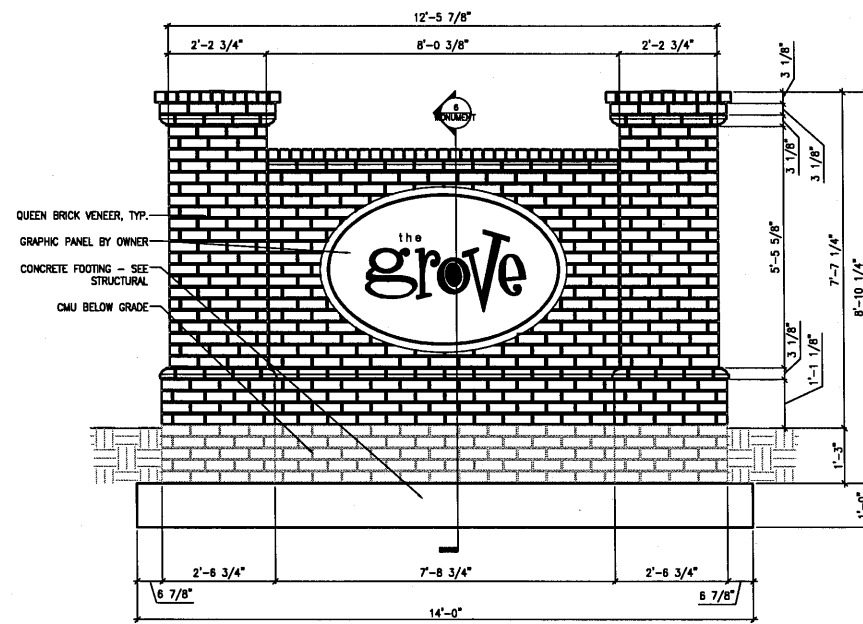
1 SIGN PLAN  
MONUMENT 1/2" = 1'-0"



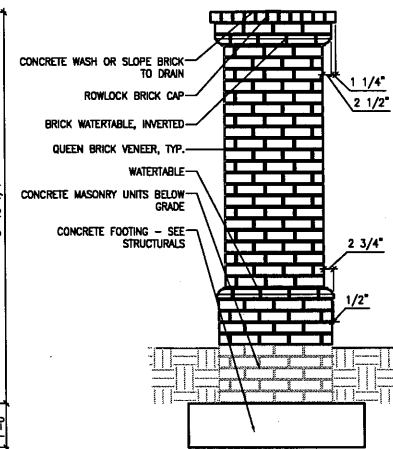
2 SIGN DETAIL  
MONUMENT 1/2" = 1'-0"



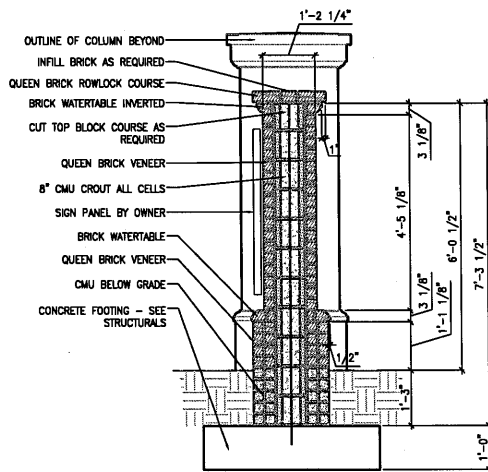
3 SECTION  
MONUMENT 1/2" = 1'-0"



4 SIGN ELEVATION  
MONUMENT 1/2" = 1'-0"

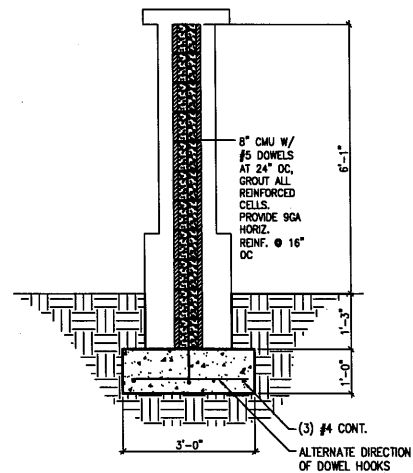


5 SIGN ELEVATION  
MONUMENT 1/2" = 1'-0"



6 SECTION  
MONUMENT 1/2" = 1'-0"

NOTE:  
LOCATE ONE ENTRANCE SIGN STRUCTURE ON EACH SIDE OF ENTRY.  
VERIFY DEPTH OF FOOTING TO DEPTH OF FROST LINE AT PROJECT LOCATION



7 STRUCTURAL DRAWING  
MONUMENT 1/2" = 1'-0"

8 MANUFACTURER CUT SHEET  
MONUMENT NOT TO SCALE

C:\DRAWINGS\2011\2011-58 Campus Crest, Fort Collins, Colorado\Documents\Building Signage\Monument Signage.jpg

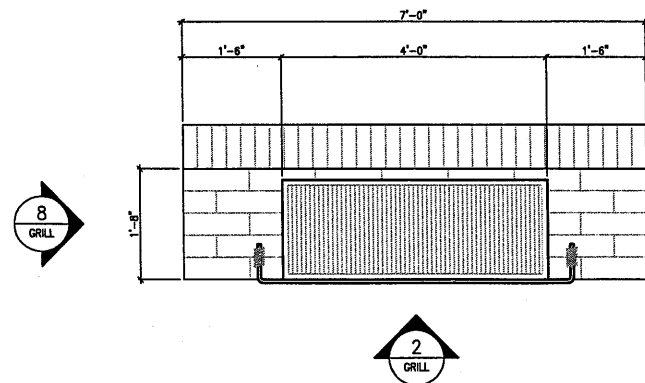


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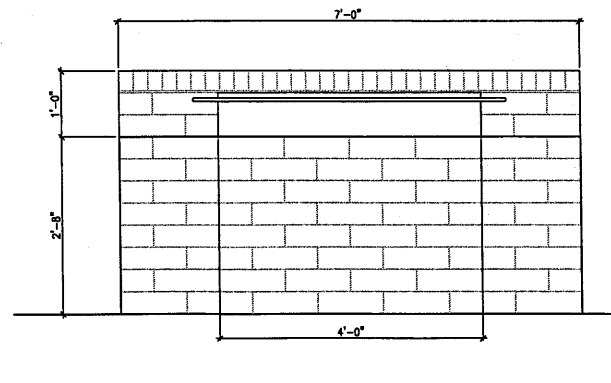
SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

JOB NUMBER:  
1211-115  
DRAWN BY:  
RLI  
DESIGNED BY:  
TELB  
CHECKED BY:  
TELB

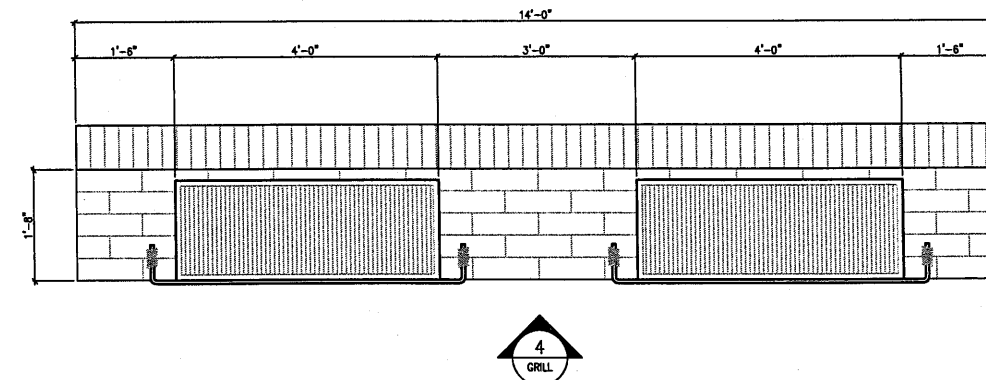
SCALE:  
SHOWN  
SHEET NUMBER:  
13 of 17



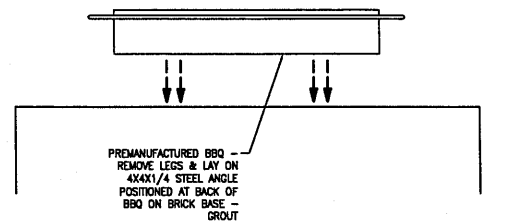
**1 GRILL BBQ PLAN**  
 1 GRILL  
 3/4" = 1'-0"



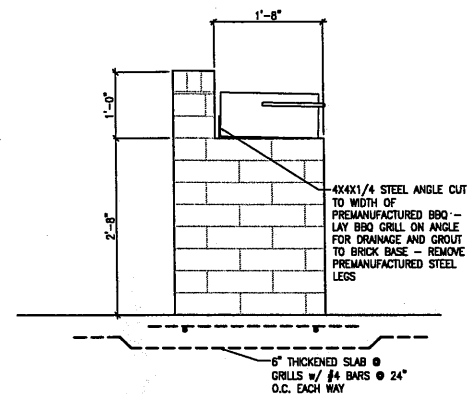
**1 GRILL BBQ ELEVATION**  
 2 GRILL  
 3/4" = 1'-0"



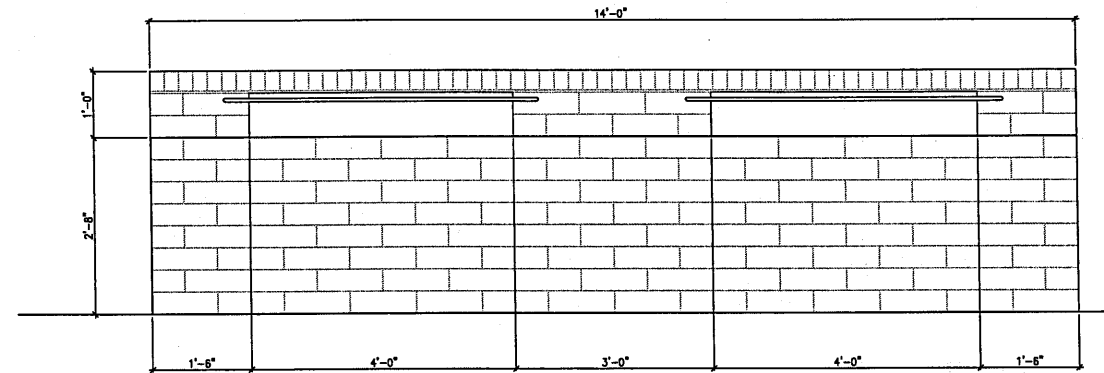
**2 GRILL BBQ PLAN**  
 3 GRILL  
 3/4" = 1'-0"



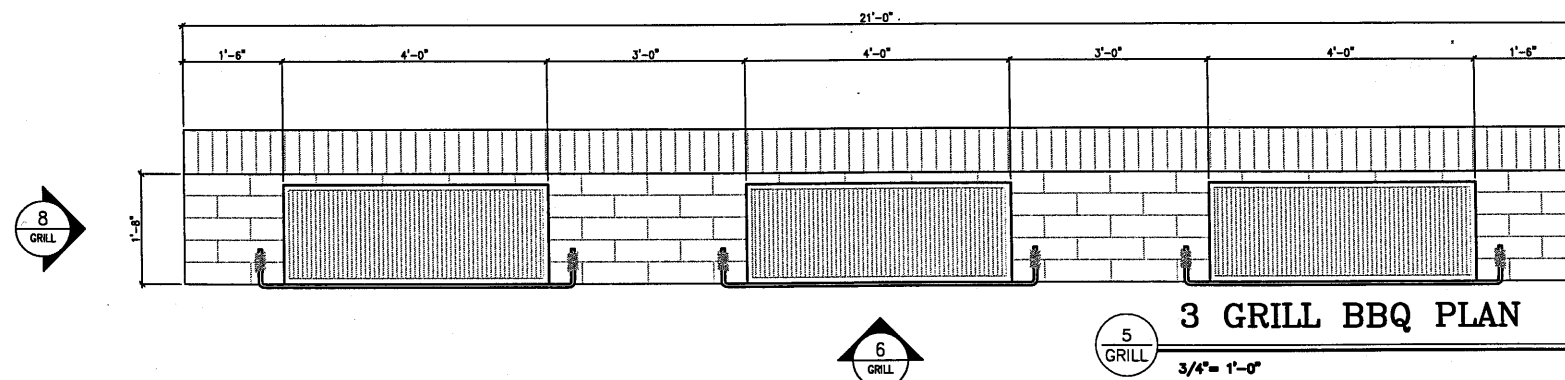
**BBQ SECTION**  
 7 GRILL  
 3/4" = 1'-0"



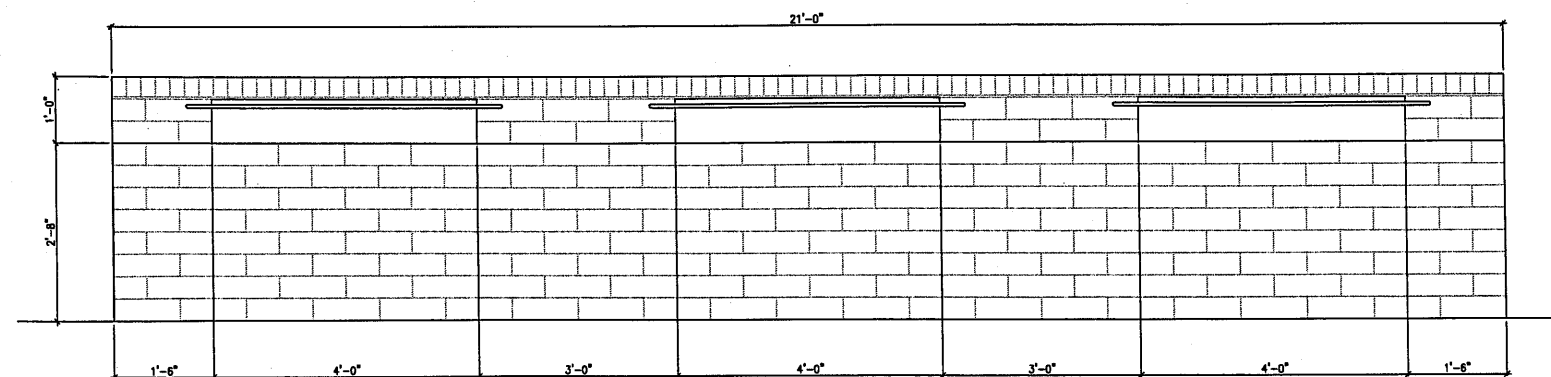
**SIDE BBQ ELEVATION**  
 8 GRILL  
 3/4" = 1'-0"



**2 GRILL BBQ ELEVATION**  
 4 GRILL  
 3/4" = 1'-0"



**3 GRILL BBQ PLAN**  
 5 GRILL  
 3/4" = 1'-0"

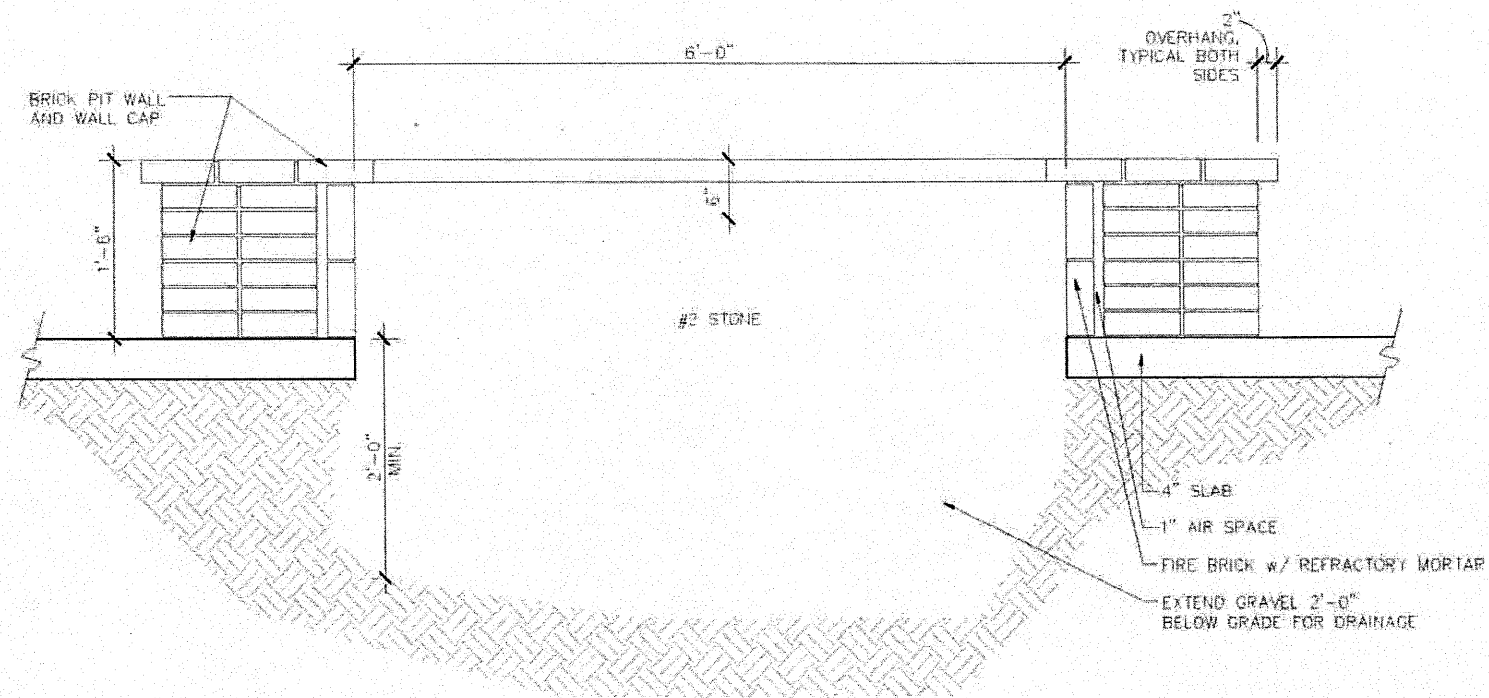


**3 GRILL BBQ ELEVATION**  
 6 GRILL  
 3/4" = 1'-0"

**CMS & D**  
 SURVEYING / ENGINEERING  
 1985 PARKLAND DRIVE - SUITE B  
 MT. PLEASANT, MICHIGAN 48856  
 PHONE: (989) 775-0756  
 FAX: (989) 775-5072  
 EMAIL: info@cms-d.com

**BAR B-Q GRILL DETAILS**  
 THE GROVE  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

SCALE	SHOWN	SHEET NUMBER	14 of 17
JOB NUMBER:	1211-115	DESIGNED BY:	TELB
DRAWN BY:	RL	CHECKED BY:	TELB
REVISIONS:	SUBMITTAL TO UNION TOWNSHIP 4-3-13		



6'-0" DIAMETER FIRE PIT

1  
ASI

1/2" = 1'-0"

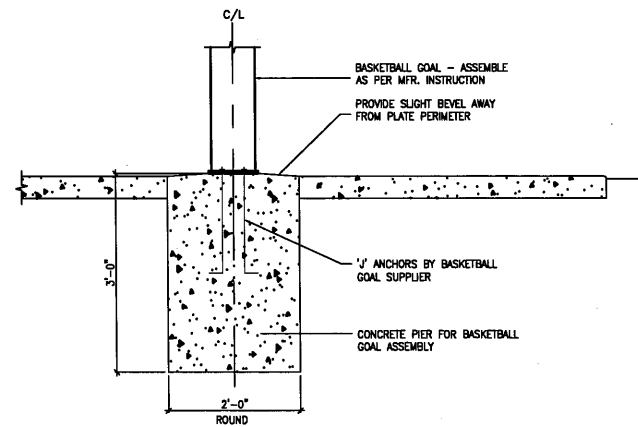
# E - 6'-0" FIRE PIT

CAMPUS  CREST  
COMMUNITIES



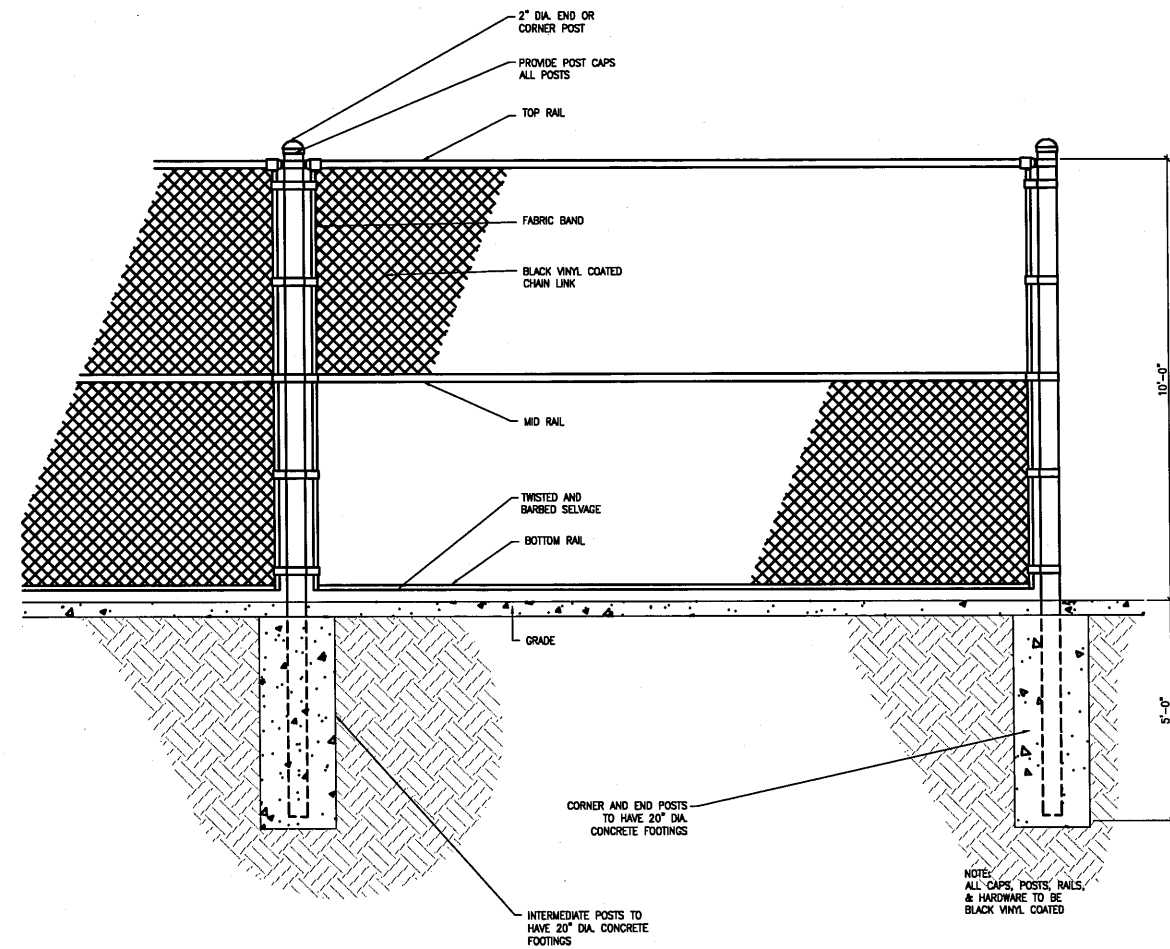
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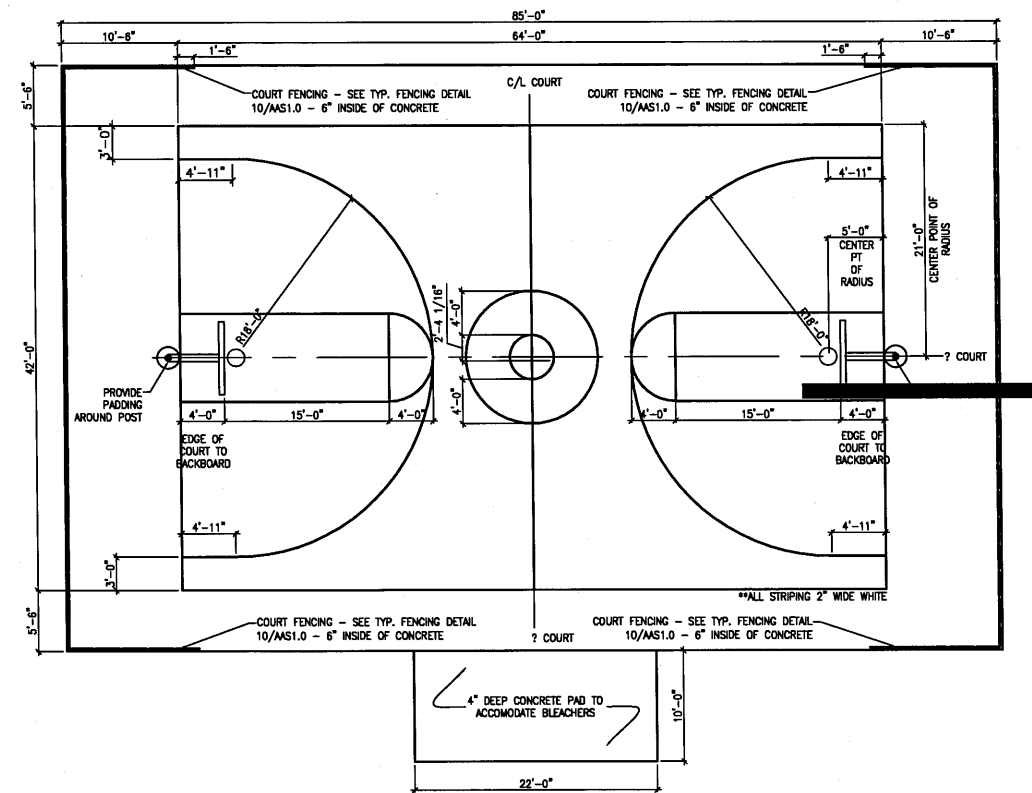
**BASKETBALL GOAL**

1  
BASKETBALL  
1/2" = 1'-0"



**BASKETBALL FENCE**

2  
BASKETBALL  
1/2" = 1'-0"



**BASKETBALL PLAN**

3  
BASKETBALL  
1/8" = 1'-0"



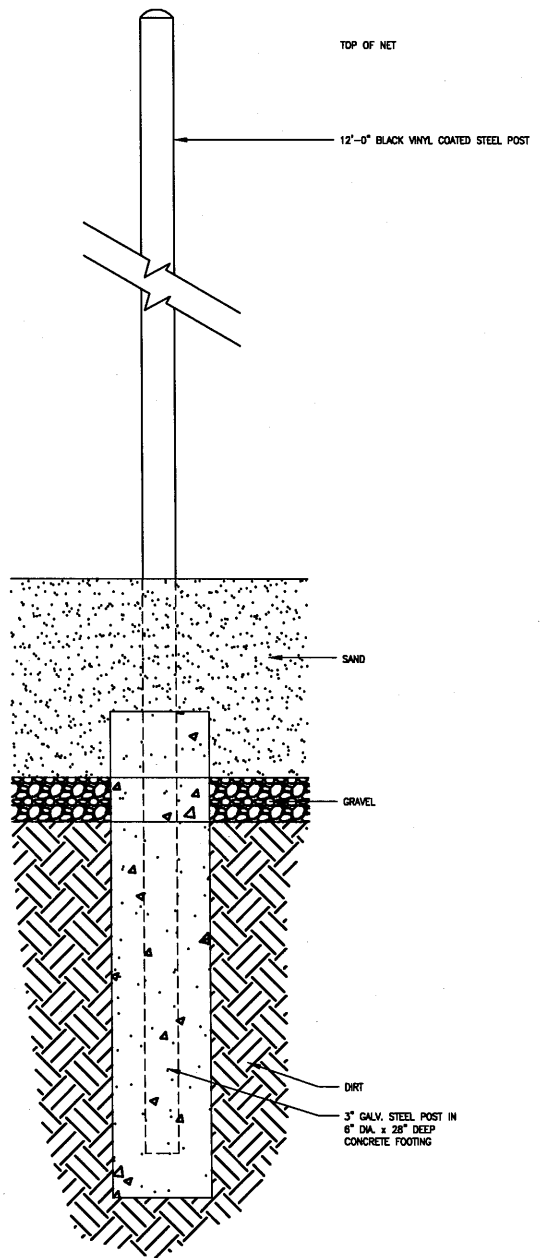
REVISIONS:

SUBMITTALS:  
SUBMITTAL TO UNION TOWNSHIP 4-3-13

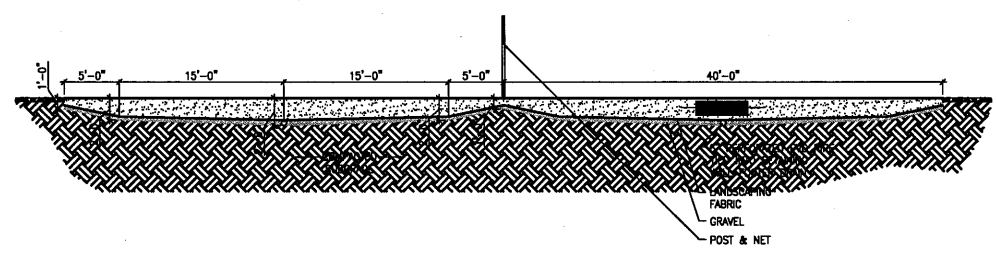
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1211-115  
DRAWN BY:  
RL  
DESIGNED BY:  
TELB  
CHECKED BY:  
TELB

SCALE:  
SHOWN  
SHEET NUMBER  
16 OF 17

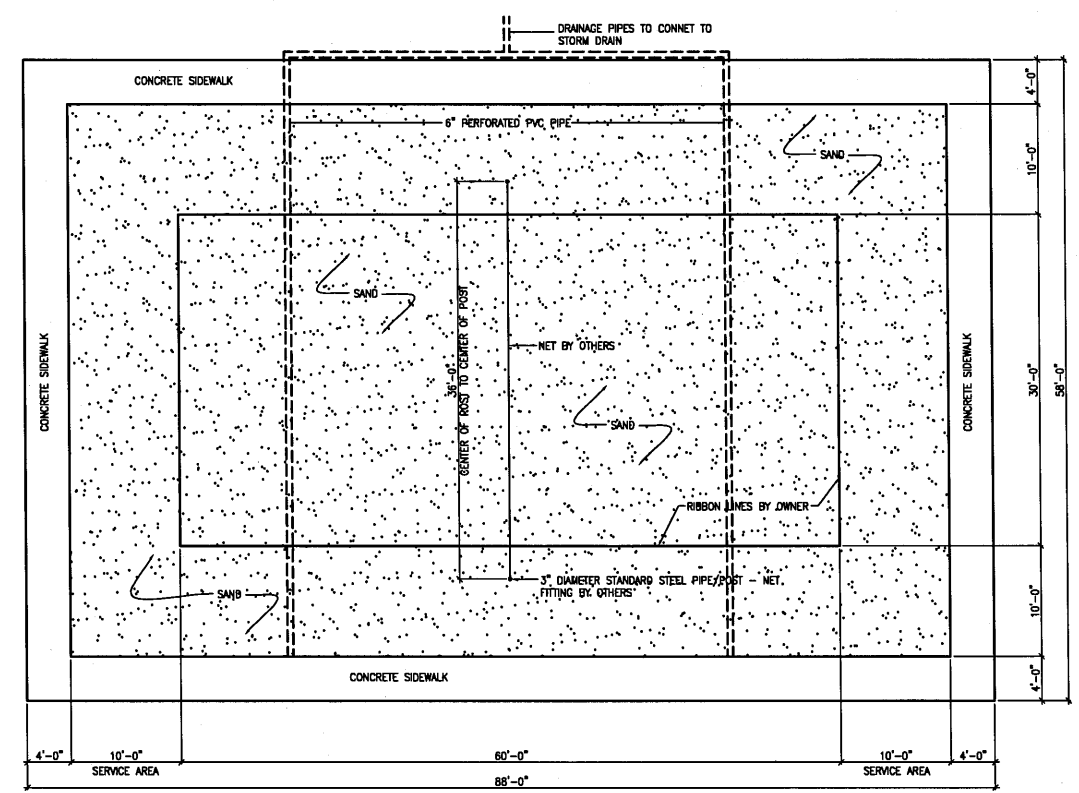
NOTE:  
 MEN'S NET HEIGHT - 7'-11 5/8"  
 WOMEN'S NET HEIGHT - 7'-4 1/8"



1 VOLLEYBALL NET DETAIL  
 1 1/2" = 1'-0"



3 VOLLEYBALL DRAINAGE DETAIL  
 1/8" = 1'-0"



NOTE: REFER TO CIVIL PLAN FOR DRAINAGE & STEWORK DETAILS

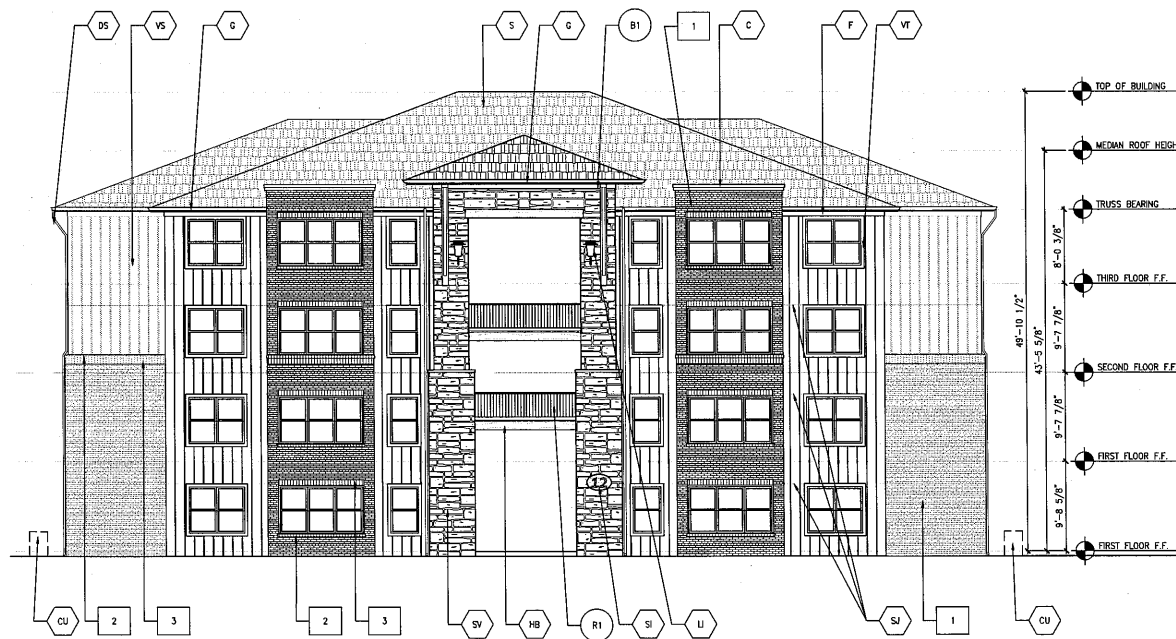
2 VOLLEYBALL COURT  
 1/8" = 1'-0"



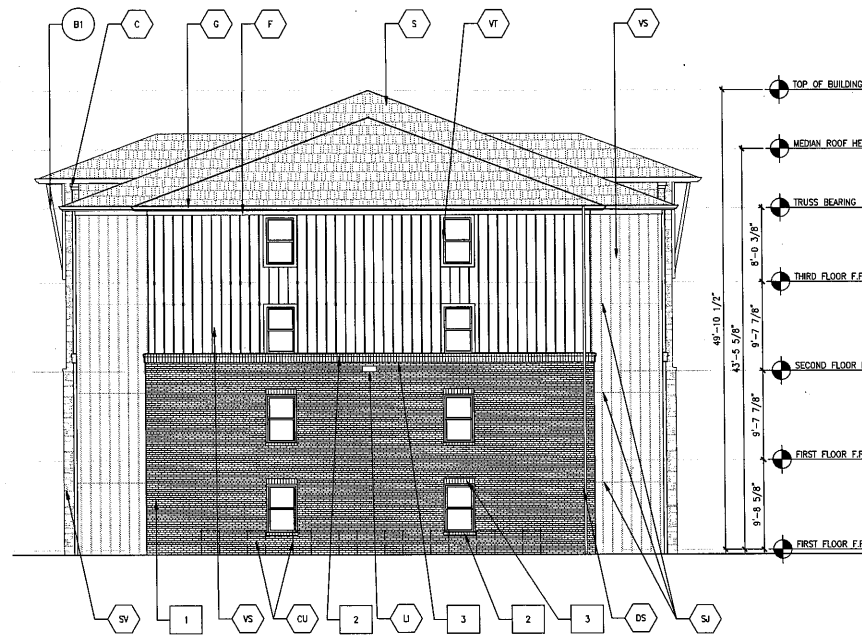
**VOLLEYBALL COURT DETAILS**  
**THE GROVE**  
 PART OF THE NORTHEAST 1/4  
 SECTION 26, T14N-R4W  
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

SCALE	SHOWN	JOB NUMBER	1211-115	REVISIONS:	
		DRAWN BY:	RLI		
		DESIGNED BY:	TELB		
		CHECKED BY:	TELB		
		SHEET NUMBER	17 of 17		
		SUBMITTALS:	SUBMITTAL TO UNION TOWNSHIP 4-3-13		





1 FRONT/REAR ELEVATION  
AB-3.0  
1/8" = 1'-0"



2 SIDE ELEVATION  
AB-3.0  
1/8" = 1'-0"

ELEVATION LEGEND						
<b>BRICK</b>	SV → STONE VENEER BY ENVIRONMENTAL STONWORKS - LEDGESTONE	VS → VERTICAL VINYL BOARD AND BATTEN SIDING	CD → ROLL UP COILING DOOR	CU → CONDENSER UNIT	SI → BUILDING SIGN	<b>RAILINGS</b>
1 → RUNNING BOND VENEER	DS → 4x5 ALUMINUM PREFINISH DOWNSPOUT	HB → (2) LAYERS 1"x11.25" CEMENT FIBER TRIM	G → ALUMINUM GUTTER	SJ → SIDING JOINT	U → LIGHT FIXTURE - SEE ELECTRICAL DRAWINGS	R1 → 42" PREFINISHED ALUMINUM GUARDRAIL
2 → ROWLOCK COURSE	S → ARCHITECTURAL SHINGLES	F → 6" VINYL FASCIA	VT → 1"x5.5" CEMENT FIBER TRIM	WB → BEAM WRAPPED IN WOOD VENEER		<b>BRACKET</b>
3 → SOLDIER COURSE						B1 → STAINED OR PAINTED WOOD

DATE

ISSUE

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date: FEBRUARY 26, 2013  
commission # 2013-10  
drawn by: C. SHARPE  
checked by: G. COURSEY

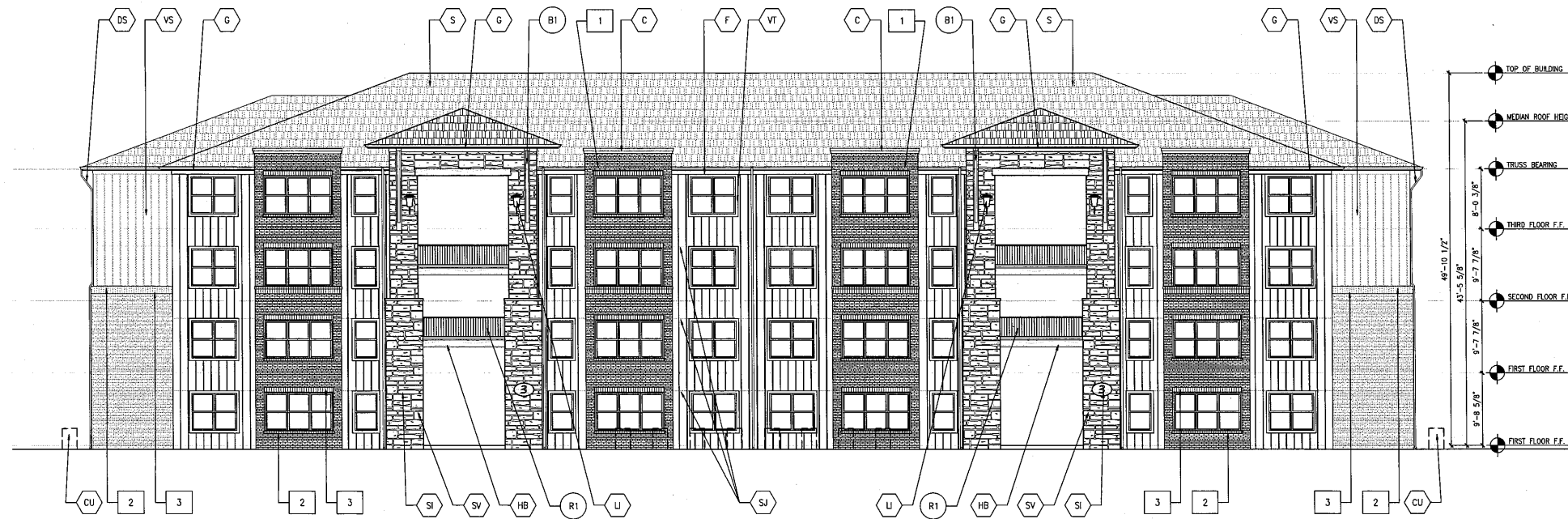
CAMPUS CREST - THE GROVE  
MOUNT PLEASANT, MICHIGAN

grove  
gogrove.com

SCHEMATIC DESIGN

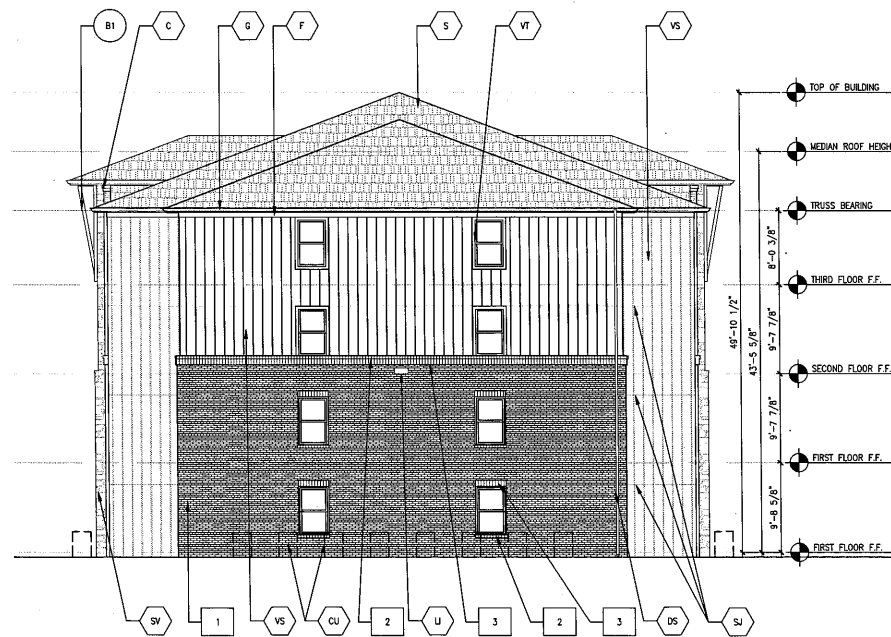
BUILDING 'B' ELEVATIONS

SHEET  
AB-3.0



1 FRONT/REAR ELEVATION

AC-3.0  
1/8" = 1'-0"



2 SIDE ELEVATION

AC-3.0  
1/8" = 1'-0"

ELEVATION LEGEND		
<b>BRICK</b>		
1	→	RUNNING BOND VENEER
2	→	ROWLOCK COURSE
3	→	SOLDIER COURSE
<b>RAILINGS</b>		
R1	→	42" PREFINISHED ALUMINUM GUARDRAIL
<b>BRACKET</b>		
BI	→	STAINED OR PAINTED WOOD
SV	→	STONE VENEER BY ENVIRONMENTAL STONEWORKS - LEDGESTONE
DS	→	4x5 ALUMINUM PREFINISH DOWNSPOUT
S	→	ARCHITECTURAL SHINGLES
C	→	EPS FOAM CORNICE BAND
G	→	ALUMINUM GUTTER
VT	→	1"x5.5" CEMENT FIBER TRIM
VS	→	VERTICAL VINYL BOARD AND BATTEN SIDING
HB	→	(2) LAYERS 1"x11.25" CEMENT FIBER TRIM
F	→	6" VINYL FASCIA
CU	→	CONDENSER UNIT
SI	→	BUILDING SIGN
U	→	LIGHT FIXTURE - SEE ELECTRICAL DRAWINGS

DATE	
ISSUE	

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date: FEBRUARY 26, 2013  
commission # 2013-10  
drawn by: C. SHARPE  
checked by: G. COURSEY

**CAMPUS CREST - THE GROVE**  
MOUNT PLEASANT, MICHIGAN



gogrove.com

SCHEMATIC DESIGN

**BUILDING 'C'  
ELEVATIONS**

SHEET  
**AC-3.0**



