



SPECIAL TOWNSHIP BOARD MEETING
LOCATION: 7527 HIGHLAND ROAD, WHITE LAKE - ANNEX BOARD ROOM
TUESDAY, JANUARY 25, 2022 – 6:00 PM

White Lake Township | 7525 Highland Rd | White Lake, MI 48383 | Phone: (248) 698-3300 | www.whitelaketwp.com

AGENDA

1. **CALL TO ORDER**
2. **PLEDGE OF ALLEGIANCE**
3. **ROLL CALL**
4. **APPROVAL OF AGENDA**

5. **NEW BUSINESS**
 - A. REQUEST TO HIRE OFFICER FOR SPECIAL OPERATIONS UNIT

6. **PRESENTATIONS**
 - A. SWEARING IN CEREMONY OF NEW OFFICERS
 - B. AWARD PRESENTATIONS

7. **CLOSED SESSION**
 - A. APPROVAL TO RECESS INTO CLOSED SESSION TO CONSIDER ATTORNEY/CLIENT PRIVILEGED COMMUNICATIONS, IN ACCORDANCE WITH MCL 15.268(h)

8. **OLD BUSINESS**
 - A. [REQUEST TO RESCIND AND RECONSIDER PRELIMINARY SITE PLAN - FOUR CORNERS OUT LOT](#)

9. **ADJOURNMENT**

Procedures for accommodations for persons with disabilities: The Township will follow its normal procedures for individuals with disabilities needing accommodations for effective participation in this meeting. **Please contact the Township Clerk's office at (248) 698-3300 X-164 at least two days in advance of the meeting.** An attempt will be made to make reasonable accommodations.

**WHITE LAKE TOWNSHIP
INTER-OFFICE MEMORANDUM**

COMMUNITY DEVELOPMENT DEPARTMENT

DATE: December 13, 2021

TO: Rik Kowall, Supervisor
Township Board of Trustees

FROM: Sean O'Neil, AICP
Community Development Director

**SUBJECT: 4 Corners Square Retail Outlot
Preliminary and Final Site Plan Approval**
Property described under parcel number 12-36-476-032 (1449 Union Lake Road) located on the east side of Union Lake Road north of Cooley Lake Road, consisting of approximately 0.71 acres, and is currently zoned Neighborhood Mixed Use (NMU).

The above request is now ready for Township Board Consideration. The matter was considered by the Planning Commission at their regular meeting of December 2, 2021 at which time the **Planning Commission recommended approval** of the proposed preliminary and final site plan. The matter was then considered by the Zoning Board of appeals at their regular meeting of December 9, 2021, at which time the **Zoning Board of Appeals approved** two of the four requested variances, modified one variance and denied the fourth variance.

Please find enclosed the following related documents:

- Draft minutes from the Planning Commission meeting held on December 2, 2021.
- Draft minutes from the Zoning Board of Appeals meeting held on December 9, 2021.
- Review letter prepared by the Township Engineering Consultant, Mr. Mike Leuffgen, dated November 22, 2021.
- Review letter prepared by Justin Quagliata, WLT Staff Planner, dated November 19, 2021.
- Email prepared by the White Lake Township Fire Chief dated November 5, 2021.
- Review letter prepared by the White Lake Township Assessing Department, dated October 26, 2021.
- 4 Corners Retail Center Construction/Site Plans prepared by Nowak & Fraus, dated June 25, 2021.
- Elevations prepared by GAV Associates, dated October 22, 2021.

Please place this matter on the next available Township Board agenda. Do not hesitate to contact me should you require additional information.

**WHITE LAKE TOWNSHIP
PLANNING COMMISSION**
Township Annex, 7527 Highland Road
White Lake, MI 48383
December 2, 2021 @ 7:00 p.m.

Chairperson Anderson called the meeting to order at 7:04 p.m. and led the Pledge of Allegiance. Roll was called.

ROLL CALL: Steve Anderson
Rhonda Grubb
Matt Slicker
Debbie Dehart
Joe Seward
Scott Ruggles
Mark Fine

Absent: Merrie Carlock

Also Present: Sean O'Neil, Community Development Director
Michael Leuffgen, DLZ
Ammar Al-Khafaji, 4 Corners
Hannah Micallef, Recording Secretary

Visitors: None

Approval of Agenda

Commissioner Seward moved to approve the agenda as presented. Commissioner Dehart supported and the MOTION CARRIED with a voice vote: 8 yes votes.

Approval of Minutes

- a. November 18, 2021

Commissioner Fine moved to approve the minutes of November 18, 2021 as presented. Commissioner Grubb supported and the MOTION CARRIED with a voice vote: 7 yes votes.

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

No members of the public were present.

Public Hearing:

None.

Continuing Business

None.

New Business

4 Corners Retail Outlot

Located on the northeast corner of Union Lake Road and Cooley Lake Road, currently zoned Neighborhood Mixed Use (NMU), identified as parcel number 12-36-476-032 consisting of approximately 1.02 acres.

Request:

i) Preliminary Site Plan Approval

ii) Final Site Plan Approval

Applicant: 4 Corners Square, LLC
29580 Northwestern Hwy, Suite 1000
Southfield, MI 48034

Mr. Leuffgen stated that his review covered the preliminary and final site plan. A lot of the engineering was already taken care of on the site when the apartments and strip center were constructed. The proposed patio area was to be over the sanitary sewer easement by 6' on the northern side. He mentioned a hold harmless letter would be needed so the sanitary sewer could be repaired if needed in the future. The majority of the remaining comments were minor in nature and could be addressed at the pre-construction meeting.

He added there was clarification needed for a proposed external grease trap that could hold 1000 gallons for each food service provider. The trap was demonstrated on the site plan, but there needed to be clarification as the plans initially stated a retail use.

Commissioner Meagher asked if the grease trap was required. Mr. Leuffgen said the grease trap was required for food service uses.

Commissioner Slicker asked how old the sewer was in the area. Mr. Leuffgen said the sewer was put in around 2006. Commissioner Slicker asked if the parcel would be receiving an easement. Director O'Neil said easements were granted during the original construction on the site. The parking spaces were taken into account during the initial site plan process for 4 Corners. He added usually when the parking requirements are met, the Township wouldn't get involved further on how parking spaces are allocated; it would be the owner's responsibility.

Mr. Al-Khafaji said there was common ownership between the buildings, and there would not be common shared parking for the uses. There were some cross access easements.

Trustee Ruggles asked what the minimum parking spaces were for the site. Director O'Neil said the requirement was 88 parking spaces, but a variance was received and the total parking spaces is 69. Commissioner Slicker said he would like to see the spaces for the retail out lot specified.

Director O'Neil said the Fire Department didn't have any issues, but would be looking at life safety requirements at time of occupancy. Many of the improvements to the site have already been made. He added that what was originally wanted for the site was a sit down restaurant, but due to the state of the world and restaurant industry right now, it was harder to find that occupant. In the future, the building could be altered. The tenants would be Detroit Wings, Beyond Juice, and another possible retail tenant. He added originally the building was to be shifted to the north for buffering purposes, and this proposed building would be in the same location. It would be a miniature version of the retail building next door.

The proposed building would only be a one-story building at 22' tall. The loading zone was not standard, but would still be acceptable as the tenants wouldn't be getting deliveries from a big truck. There will be a variance requested for a smaller sign on the east side of the building.

Mr. Al-Khafaji said there was efforts to try to get a sit-down restaurant at the site, but again, due to the world right now, it was hard to find that kind of food service tenant. He said he strived to find tenants that complimented the entire development, and wanted to add to the walkability of the site in regards to the commercial uses for the tenants in the residential building.

Planning Director O'Neil added that the outdoor eating that was previously desired would be included with this proposed site plan.

Commissioner Slicker asked if the outdoor seating was for only one of the food vendors. Mr. Al-Khafaji said it would be a shared patio. The operator of both restaurants would be the same person. Director O'Neil added that this new development completes the corner of one of the gateway quadrants in the Township.

Commissioner Dehart asked if the restaurants had indoor seating. Mr. Al-Khafaji confirmed.

Commissioner Seward moved to approve the preliminary site plan for the 4 Corners Outlot subject to all the conditions of the consultants and staff. Commissioner Meagher supported, and the MOTION CARRIED with a roll call votes (8 yes votes): (Meagher/yes, Anderson/yes, Fine/yes, Ruggles/yes, Seward/yes, Dehart/yes, Slicker/yes, Grubb/yes)

Commissioner Seward moved to approve the final site plan for the 4 Corners Outlot contingent on approval of the preliminary site plan by the Township Board and contingent on the applicant receiving the required variances by the Zoning Board of Appeals. Commissioner Fine supported, and the motion carried with a roll call vote (8 yes votes): (Meagher/yes, Anderson/yes, Fine/yes, Ruggles/yes, Seward/yes, Dehart/yes, Slicker/yes, Grubb/yes).

Liaison's Report:

There was nothing to report from ZBA or Parks and Recreation.

Trustee Ruggles said there was a special Township Board meeting today and the Board approved the first amendment to the River Caddis' agreement. There will be a concept plan coming soon, along with a cost estimate and timelines for future updates. In June, the Township entered into a contract with River Caddis. River Caddis had a proposal where they would construct the Township buildings, and the

Township could lease it from them. That proposal was very expensive. River Caddis was now researching the benefits of the Township building their own buildings. The hope was to own the Township Building, and the Township could sell out lots to private buyers for mixed uses that would work with the vision of the Civic Center. Director O’Neil said River Caddis was working on a land use design.

Planning Consultant’s Report

No report.

Director’s Report:

Director O’Neil said that the grant for Stanley Park was ranking 14 out of 44 applications received. The Planning Department was waiting on preliminary results.

Communications:

There would most likely not be a December 16th Planning Commission meeting.

Next Meeting Dates: December 16, 2021
January 6, 2021

Adjournment:

Commissioner Dehart moved to adjourn the meeting at 8:15 p.m. Commissioner Meagher supported and the MOTION CARRIED with a voice vote: 8 yes votes.

DRAFT

- D. Applicant: 4 Corners Square LLC
29580 Northwestern Hwy STE 100
Southfield, MI 48034
- Location: **1449 Union Lake Road**
White Lake, MI 48386 identified as 12-36-476-032
- Request: The applicant requests to construct a building, requiring variances from Article 3.1.13.D, Neighborhood Mixed Use Build-to-Line coverage and Minimum building height. A variance from Article 5.11.P.i, Off-Street Loading Requirements is required for the dimensions of the off-street loading space. A variance from Article 5.9.J.ii.b is required to exceed the allowed number of wall signs.

Chairperson Spencer noted for the record 146 owners within 300 feet were notified. 0 letters were received in favor, 0 letters were received in opposition, and 0 letters were returned undeliverable from the U.S. Postal Service.

Staff Planner Quagliata presented his staff report.

Member Aselyne asked staff why the previous variances were granted. Staff Planner Quagliata stated part of the issue at the time was contamination on the property. The Township created a Commercial Rehabilitation District to address the site issues. Member Aselyne asked staff if there were remediation compliance documents for the site. Staff Planner Quagliata noted the State had such documentation.

Amar AlKhafaji was present to speak on behalf of the case. He said there was a vision for the subject site years ago when it was first being developed. There was the idea to create urban walkability in a suburban area. In regards to this project, there was originally hopes for a sit-down restaurant, but due to the COVID pandemic, he was unable to find a full-service restaurant tenant. The two proposed fast-food tenants were excited to come to the Township. He wanted to create a physical buffer for residents on the lake, which was why the building was proposed to be setback. To keep the building cohesive with the other shopping center, it would be one-story and use the same materials in construction.

Detroit Wing Company would be closest to Tim Horton's, and Beyond Juice would be closest to Union Lake Road. Detroit Wing Company would like a small sign on the east side of the building to capture customers. The "Welcome to White Lake" sign would be improved, and Mr. AlKhafaji was proposing to build a nicer sign with 4 Corners verbiage included.

The tenants would not receive deliveries from full semi-trucks in the loading area. The depth needed a variance, but the width of the area was wider than required.

Member Powell stated he was hoping to see a sit-down restaurant on the site. Mr. AlKhafaji said there would be indoor seating at both restaurants.

Member Powell asked Mr. AlKhafaji why the loading zone could not be extended west. Mr. AlKhafaji said there was a light pole, as well as landscaping.

Chairperson Spencer opened the public hearing at 8:45 P.M. Seeing no public comment, she closed the public hearing at 9:45 P.M.

Member Seiber asked staff if the Ordinance Officer would ticket a truck delivery at the site if a truck was sticking out of the loading area. Staff Planner Quagliata said it would be more of a Fire Department issue with blocking access.

Member Dehart said the Township Engineer discussed the depth of the loading area at the December 2, 2021 Planning Commission meeting.

Member Powell asked staff about the patio. Staff Planner Quagliata asked Mr. AlKhafaji about the patio surface. Mr. AlKhafaji said it would be concrete.

Member Powell asked Mr. AlKhafaji what signs would be on the south side of the building versus the proposed sign on the east side. Mr. AlKhafaji said the south side would have the three tenant signs, and the east side would have one Detroit Wing Company sign. The tenant was adamant about the sign on the east side.

Member Seiber said the tenants in the adjacent shopping center did not have corner signs, and because of the way the building was situated, the east side sign would not be visible from travelers on the road. He added the floor plan was inconsistent with the elevation as there was a door shown on the east side elevation, but not on the floor plan. Mr. AlKhafaji said a door was not proposed on the east side of the building and the elevation was incorrect.

The ZBA discussed the standards from Article 7, Section 37 of the ClearZoning Ordinance:

In regards to variance #1, regarding build- to-line coverage:

- A. Practical Difficulty
 - Chairperson Spencer said a similar variance for this site was granted before.
 - Member Powell said he liked the building being setback instead of up to the property line.
- B. Unique Situation
- C. Not Self-Created
 - Chairperson Spencer said the problem was not self-created.
- D. Substantial Justice
- E. Minimum Variance Necessary

In regards to variance #2, minimum building height:

- A. Practical Difficulty
 - Chairperson Spencer said none of the other commercial buildings on the site were two stories, so it would be in line with the existing commercial buildings.
- B. Unique Situation
- C. Not Self-Created
- D. Substantial Justice
- E. Minimum Variance Necessary

In regards to variance #3, off-street loading requirements:

- A. Practical Difficulty
 - Member Powell said he did not want a truck to stick out of the loading space.
 - Member Seiber said a 10–15-foot variance would allow a box truck and trash hauler.
- B. Unique Situation
 - Chairperson Spencer said she could see a practical difficulty if the length of the loading space was extended.
- C. Not Self-Created
- D. Substantial Justice
 - By increasing the length of the loading space, adverse impact would be reduced.
- E. Minimum Variance Necessary

In regards to variance #4, maximum number of signs.

- A. Practical Difficulty
 - Chairperson Spencer did not see a practical difficulty.
- B. Unique Situation
 - Member Powell said it was a corner lot, so a sign on the west facade was permitted. He added a sign on the east elevation was not needed.
- C. Not Self-Created
 - Chairperson Spencer said this problem was self-created by the applicant.
- D. Substantial Justice
- E. Minimum Variance Necessary
 - Chairperson Spencer said by eliminating the wall sign on the east elevation, the minimum variances necessary would be granted.

Member Powell MOVED to approve the variances requested by 4 Corners Square LLC from Article 3.1.13.D and Article 5.11.P.i of the Zoning Ordinance for Parcel Number 12-36-476-032, identified as 1449 Union Lake Road, in order to allow construction of a one-story, 22'–11" tall building with a zero (0) percent build-to-line, and a 10-foot variance from the required loading space length. This approval will have the following conditions:

- **The exterior elevations be revised to remove the east side door.**
- **The Applicant shall obtain all necessary permits from the White Lake Township Building Department.**
- **The Applicant shall receive preliminary site plan approval from the Township Board.**
- **For the purpose of administrating the sign ordinance, signs on the subject property shall be treated as those in the RB (Restricted Business) zoning district and meet the requirements of Article 5, Section 9.J of the zoning ordinance.**
- **No additional signage shall be permitted on the building or site, except for the Township's "Welcome to White Lake" sign. The "Welcome to White Lake" sign is to be designed to meet the requirements of the ClearZoning Ordinance.**
- **Any future modification to signage on the building or site, except for eliminating signage, shall require approval of the Zoning Board of Appeals.**

- **The outdoor seating area (patio) shall at a minimum be stamped, stained, and sealed concrete.**
- **The site plan shall be revised to clearly show the outdoor seating area (patio) as accessible from the parking lot.**
- **There shall be a 14-foot minimum ceiling height inside the building.**

**Member Dehart SUPPORTED, and the motion CARRIED with a roll call vote (5 yes):
(Powell/yes, Dehart/yes, Spencer/yes, Aseltyne/yes, Seiber/yes).**

Member Powell MOVED to deny the variance requested by 4 Corners Square LLC from Article 5.9.J.ii.b the Zoning Ordinance for Parcel Number 12-36-476-032, identified as 1449 Union Lake Road, for one wall side on the east elevation of the building.

**Member Dehart SUPPORTED and the motion CARRIED with a roll call vote (5 yes votes):
(Powell/yes, Dehart/yes, Spencer/yes, Aseltyne/yes, Seiber/yes).**

The Zoning Board of Appeals took a recess at 9:21 P.M. The ZBA returned from recess at 9:23 P.M.

OTHER BUSINESS

A. Zoning Ordinance Discussion

Member Powell said he brought up amending the zoning ordinance at the Township Board, and it was suggested the discussion begin at the ZBA before taking it up with the Planning Commission. He added Article 7.28.A, Repairs and Maintenance to Nonconforming Structures, was an ordinance section he would like to discuss.

Chairperson Spencer said it was rare for the ZBA to deny a case solely based on Article 7.28.A of the ordinance.

Member Powell mentioned the sign ordinance and would like to review the text and see if there was a more modern way to interpret signs. Member Dehart agreed.

Staff Planner Quagliata said there were other ordinance sections that should be revisited, and the ZBA could take its time and review them individually. He said he would prepare a summary of the cases over the past two-five years, and go from there.

ADJOURNMENT

**MOVED by Member Aseltyne, SUPPORTED by Member Seiber to adjourn the meeting at 10:07 P.M.
The motion CARRIED with a voice vote (5 yes votes).**

NEXT MEETING DATE: January 27, 2022 Regular Meeting



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

November 22, 2021

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

RE: Four Corners Outlot- Preliminary Site Plan, Final Site Plan/Final Engineering Plan Review – 2nd Review

Ref: DLZ No. 2145-7233-17 Design Professional: Nowak & Fraus Engineers

Dear Mr. O’ Neil,

Our office has performed the above mentioned Plan Reviews for the plan dated November 8, 2021. The plans were reviewed for feasibility based on general conformance with the Township Engineering Design Standards.

General Site Information

This site is located at the northeast corner of Cooley Lake and Union Lake Roads and is an outlot of the established and previously approved 4 Corners Square development. Total site acreage is 1.017 acres.

Site Improvement Information:

- Construction of a (1) one story building totaling 4,169 square feet.
- Associated paved and curbed parking including ADA accessible parking spaces and maneuvering aisles were established and built as part of the overall 4 Corners Square development.
- Associated loading space is proposed.
- Site to be serviced by watermain and sanitary sewer.
- Storm water runoff is proposed to be pretreated and detained in an existing underground detention facility.



INNOVATIVE IDEAS
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UNMATCHED CLIENT SERVICE

WLT-4 Corners Outlot- PSP, FSP/FEP Review.02

November 22, 2021

Page 2 of 5

We offer the following comments:

Note that comments from our review dated November 5, 2021 are in *italics*. Responses to those comments are in **bold**. New comments are in standard typeface.

The following items should be noted with respect to Planning Commission review:

- a) *The plans indicate that the proposed transformer and pad will be screened by landscaping. Please note the slope of the ground in this area may make screening with the proposed ornamental grasses difficult. We defer further comment to the Planning Department if this meets the intent of Zoning Ordinance 5.19 N. ii. a.* **Comment addressed. The design engineer has noted that the transformer location has now been moved and the screening has been changed to Arborvitae.**
- b) *The proposed transformer location will conflict with the connection of the building to the existing water supply line for fire department use. Although it is indicated on the plan that this connection is not required, it should be considered as to whether a future change in the use of the building may require the connection of this line; this would not be feasible due to the current proposed transformer location.* **Comment addressed. The transformer location has been moved such that the conflict with the water supply line no longer exists.**
- c) *The proposed patio encroaches on the existing 33-foot-wide sanitary sewer easement (Liber 24814, Page 271). The original development plans showed the patio further away from the Right-of-Way and outside of this easement. Plans will need to be revised to show the patio outside of this easement or the Township would need to agree to modify the easement to accommodate this configuration.* **The owner intends to provide a hold harmless letter to the effect that the owner shall be responsible for removal and replacement of proposed patio and retaining wall in the event that maintenance and repair for the sanitary sewer are necessary. DLZ recommends the Township work with the Township Attorney to determine sufficient language for this agreement.**

Final Site Plan/Final Engineering Plan Comments-

General

1. *Plan shall contain notes per White Lake Township Engineering Design Standards Section A. 8. a.-d.* **Comment addressed.**



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-4 Corners Outlot- PSP, FSP/FEP Review.02

November 22, 2021

Page 3 of 5

Paving/Grading

1. *The topo survey shows existing asphalt pavement south of the proposed retail building; however, this pavement does not exist. The curbs have been poured but the pavement has not been placed, please update plans accordingly. **Comment addressed. Design engineer has indicated that the area south of proposed building shall be asphalt paved per original construction plans.***
2. *The existing grade of 946.17 shown adjacent to the southeast corner of the proposed building is shown on the as built plan for 4 Corners as 947.17. Please verify and adjust grade(s) as needed. **Comment addressed. Design engineer notes that grade of 947.17 on as built plan for Four Corners Square appears to be in error.***
3. *Clarify the existing grades shown for the area adjacent to the northeast corner of the proposed building. The as built plan for 4 Corners shows what appears to be an existing ramp in this area with associated as built grades. **Comment addressed. The design engineer states that the existing curb grades do not indicate that there is a curb height drop and thus no existing ramp.***
4. *Although a retaining wall is proposed around the outdoor seating area, it appears that the grades at the bottom of the wall to the north will greatly exceed the allowable grade of 33%. We note that the slopes in these areas will be difficult to maintain and request clarification regarding the proposed grading and ground cover in this area to minimize maintenance and to minimize potential soil erosion. **Comment addressed. The landscape plan has been revised and indicates vegetation proposed in these areas that will minimize maintenance and erosion, per the design engineer.***
5. *The bollards for the dumpster enclosure shown on Sheet C7 will need to be 6" diameter instead of 4" diameter and also on Sheet A.502 where 5" diameter bollards are proposed. **Comment partially addressed. The bollard diameter is now correct (6") on Sheet C8; note that we did not receive Sheet A.502 as part of this submittal. The diameter of the bollard shall be revised on Sheet A.502 as well.***
6. *The plans show stairs with a handrail extending out to the sidewalk along Union Lake Road. Please note the Road Commission for Oakland County may require these items not extend into the public Right-of-Way as shown on the plans. **Comment addressed. Handrail and sidewalk have been pulled back to outside of ROW.***

Watermain

1. *We defer to the Fire Department with regard to items related to fire suppression and whether the proposed building will need to connect to the existing 6" fire suppression stub that was previously planned. **Comment remains as a notation.***



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-4 Corners Outlot- PSP, FSP/FEP Review.02

November 22, 2021

Page 4 of 5

2. *The Estimated Quantities for watermain on Sheet C5 will need to be revised as the quantities shown do not match the utility plan. **Comment addressed.***

Sanitary Sewer

1. *The Estimated Quantities for sanitary sewer on Sheet C5 will need to be revised as the quantities shown do not match the utility plan. **Comment addressed.***
2. *The previous plan set indicated a proposed grease interceptor be installed for this outlot assuming that the use would include food service. The proposed grease interceptor was not installed which appears consistent with the proposed retail use as identified. Please note that if use changes to include food service an external grease interceptor would be required for each food service establishment. **Comment addressed. An external grease interceptor is now shown on the plans. Please note the previous review comment did not require the grease interceptor be added but indicated that one WOULD be required if the retail use were changed to food service for any of the units. DLZ did not receive any indication that food service is planned for this building, but the plans now indicate it will be possible to fit the required 1000-gallon grease interceptor if the intent changes.***

Stormwater Management

1. *The Estimated Quantities for storm sewer on Sheet C5 will need to be revised as the quantities shown do not match the utility plan. **Comment addressed.***
2. *Verify the slope of the proposed downspout for the section that runs north/south; we calculate <1.00%. In addition, provide length and size for the section of unlabeled downspout on the Utility Plan. **Comment addressed.***
3. *Provide the as built rim elevation for MH 29 (where the proposed downspout is connecting to). **Comment outstanding. Please place the as built rim elevation of 945.36 for the above mentioned structure on the plan.***
4. *It appears there is storm sewer pipe proposed between MH29 and the catch basin to the east. Please clarify as the 4 Corners as built indicates there is 7' of 15" existing pipe in this area. **Comment addressed.***

Landscape Plan

1. *It is not clear as to whether the two trees north of the proposed transformer location are proposed or existing. The trees as shown on the plan are too close to the proposed water and sanitary sewer lead extensions and will need to be relocated preferably at a distance of 10' horizontally from the proposed leads. **Comment addressed.***



INNOVATIVE IDEAS
EXCEPTIONAL DESIGN
UNMATCHED CLIENT SERVICE

WLT-4 Corners Outlot- PSP, FSP/FEP Review.02

November 22, 2021

Page 5 of 5

2. *It should be verified with the easement owner of the pipeline as to whether trees are allowed within the easement.* **Comment addressed.**

Recommendation

The majority of our previous comments have been addressed. A Hold Harmless agreement between the Applicant and the Township will be required for construction of the patio within the existing sanitary sewer easement. DLZ recommends approval of the Preliminary/Final Site Plans subject to this agreement and cleanup of any remaining items referenced in this letter.

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

Sincerely,

DLZ Michigan

Michael Leuffgen, P.E.
Department Manager

Victoria Loemker, P.E.
Senior Engineer

- Cc: Justin Quagliata, Community Development, *via email*
Hannah Micallef, Community Development, *via email*
Aaron Potter, DPS Director, White Lake Township, *via email*
John Holland, Fire Chief, White Lake Township, *via email*
Jason Hanifen, Fire Marshal, White Lake Township, *via email*

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WHITE LAKE TOWNSHIP PLANNING COMMISSION

REPORT OF THE COMMUNITY DEVELOPMENT DEPARTMENT

TO: Planning Commission

FROM: Sean O’Neil, AICP, Planning Director
Justin Quagliata, Staff Planner

DATE: November 19, 2021

RE: Four Corners Square – Retail Center #2
Preliminary and Final Site Plan – Review #2

Staff reviewed the revised site plan prepared by Nowak & Fraus Engineers dated August 25, 2021 (revision date November 8, 2021). The following comments from the first review letter dated November 4, 2021 are listed below. Responses to those comments are provided in **(red)**.

Veritas (Shakir W. Alkhafaji) has requested site plan approval to construct a retail center at 1449 Union Lake Road (Parcel Number 12-36-476-032), located on the east side of Union Lake Road, north of Cooley Lake Road. The approximate 0.714 acre (excluding road right-of-way) subject site is zoned NMU (Neighborhood Mixed Use) and contains 201.61 feet of total frontage on Cooley Lake Road and 220 feet of total frontage on Union Lake Road. A parking area and landscaping are located on the site.

The subject parcel is part of the Four Corners Square development, which consists of three other parcels containing an 81-unit, three-story apartment building with underground parking, 9,375 square foot five-tenant retail building with a drive-thru restaurant (Tim Hortons), and 2,139 square foot Taco Bell drive-thru restaurant. At its meeting on August 3, 2017 the Planning Commission approved the final site plan for the already constructed portion of the development. On May 4, 2017 the Planning Commission granted special land use approval for the Taco Bell and Tim Hortons drive-thrus, with conditions. At the same meeting, the Planning Commission also granted special land use approval for outdoor seating at Taco Bell, the retail plaza, and “the future restaurant pad.” At its meeting on March 23, 2017 the Zoning Board of Appeals approved variances required for the already constructed portion of the project.

The final site plan approved by the Planning Commission showed a proposed 3,600 square foot full-service restaurant building with a 1,200 square foot patio on the subject property. The proposed one-story, three-tenant retail center would contain 4,169 square feet. **The note stating 3,893 square feet of gross floor area on Sheet A.001 of the site plan (architectural plans) shall be revised to correctly indicate 4,169 square feet of gross floor area. (Comment outstanding. Revised architectural plans were not provided).** The submitted plans show Beyond Juice is intended to occupy the westerly tenant space and Detroit Wings is intended to occupy the easterly tenant space. A prospective tenant for the middle unit has not been identified.

Master Plan

The Future Land Use Map from the Master Plan designates the subject site in the Planned Community category, and the property is located in the Four Towns Focus Area. Retail, dining, and personal service establishments are typical commercial uses within Planned Community. The Master Plan envisions the Four Towns area as a mixed-use core of activity for retail and residential utilizing pedestrian-oriented design. This Focus Area encourages ground floor retail and office with upper floor residential. The Master Plan states a corner feature at Union Lake Road and Cooley Lake Road is desired to define the area. At the March 23, 2017 Zoning Board of Appeals meeting, the applicant’s representative at the time stated the “Welcome to White Lake” sign would be relocated to the corner of the property. The sign has not been relocated; any relocation of the sign would require approval by the Township.

FUTURE LAND USE MAP

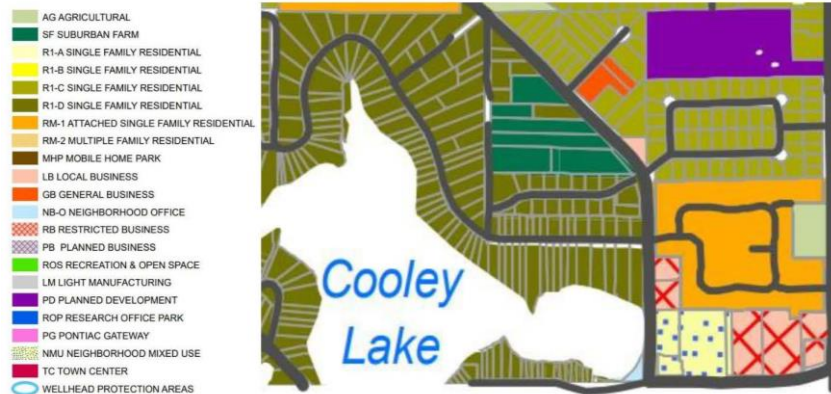


Zoning

At its meeting on October 18, 2016 the Township Board approved rezoning the parcels within the Four Corners Square development from Restricted Business (RB) to NMU (Neighborhood Mixed Use), which requires a minimum lot area of 5,000 square feet. There is not a minimum lot width requirement in the NMU district.

The parcels within Four Corners Square are the only properties in the Township zoned NMU. The intent of the NMU district is to create small centers of neighborhood life which encourage a mix of compatible retail, service, office, and residential uses in a walkable environment.

ZONING MAP



Physical Features

The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Wetland Map and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map indicate neither wetlands nor floodplain are present on or near the site. Currently landscaping and parking associated with Four Corners Square occupies the site. American & Import, a vehicle service and repair facility, formerly occupied the site. Precipitated by a request for a Rehabilitation Exemption Certificate, the Township Board created a Commercial Rehabilitation District in 2016. Plumes of contamination were present and posed a potential adverse impact to water in the vicinity. After establishing the district, in 2018 the Township received a \$250,000 grant from the Michigan Economic Development Corporation (MEDC) to assist in funding the clean-up of the contaminated area. In 2019, the Township and the developer signed an agreement to transfer the grant funds to the developer to reimburse incurred costs associated with the remediation activities on the property.

In 2016 the Township Board approved the developer’s Commercial Rehabilitation Exemption Certificate application for Four Corners Square. The seven-year tax abatement ends December 30, 2023. At its meeting on October 19, 2021 the Township Board approved a three-year extension of the tax abatement for only the subject parcel, with an ending date of December 30, 2026. This addition of three years allows the exemption for the maximum total of 10 years. The proportioned frozen taxable value on the certificate for the subject parcel is \$44,119.

Access

The retail center would be accessed from existing driveways on Wadi Boulevard (private drive) and Cooley Lake Road (this driveway is right-out only and serves the existing Four Corners Square retail center). **The applicant will be required to dedicate (if not already completed) the additional portion of the future right-of-way at the east side of Union Lake Road to the Road Commission for Oakland County (RCOC).** (Comment remains as a notation).

An existing eight-foot-wide pathway along Union Lake Road and six-foot-wide pathway along Cooley Lake Road border the property frontages. Internal sidewalks are five-feet-wide at the rear (north) and along the east side of the building. Along the front (south side) of the building, a seven-foot-wide sidewalk is shown on the plans. **The note stating “Pr. 4” concrete sidewalk (TYP)” on Sheet C3 of the site plan appears to be an error and shall be revised to correctly indicate a seven-foot-wide concrete sidewalk (noted on Sheet C4 of the site plan).** (Comment addressed. A note has been added to Sheet C3 indicating a seven-foot-wide sidewalk is proposed).

Utilities

Municipal water and sanitary sewer are available to serve the retail center. Utilities are located on the Four Corners Square property since installation to serve the already constructed portion of the development. The Township Engineering Consultant will perform an analysis of stormwater, utilities, and grading to ensure compliance with all applicable ordinances as well as the Township Engineering Design Standards.

Staff Analysis

The development standards for the NMU district allow for zero-foot front and side yard building setbacks, and a five-foot setback from a service drive located at the rear of the site. The ordinance also requires a building to occupy 60 percent of the front build-to-line of a site, which is defined as its front right-of-way line. Four Corners Square was not developed in this manner, and a variance from this requirement for the already constructed portion of the project was granted by the Zoning Board of Appeals on March 23, 2017, reducing the 60 percent requirement to 0 percent. The layout of the development is consistent with the variance granted. As the building would utilize traditional setbacks, **a variance from this standard is required to construct the proposed retail center.** (Comment outstanding; however, the applicant has filed a variance application and a public hearing is scheduled at the December 9, 2021 Zoning Board of Appeals meeting).

The NMU district requires a minimum building height of two stories, 25 feet, with a maximum height of three stories, 40 feet. A first floor must be at least 14 feet in height, and upper floors are required to be at least 10 feet in height. The previously constructed retail center and Taco Bell are one-story buildings, and a variance from the minimum height standard of the district was granted by the Zoning Board of Appeals on March 23, 2017. The proposed building is one-story and 22’-1” in height. **A variance from the minimum building height standard is required to construct the proposed retail center.** (Comment outstanding; however, the applicant has filed a variance application and a public hearing is scheduled at the December 9, 2021 Zoning Board of Appeals meeting).

Building Architecture and Design

Generally, exterior building materials should be composed primarily of high quality, durable, low maintenance material, such as masonry, stone, brick, glass, or equivalent materials. Buildings should be completed on all sides with acceptable materials. In the NMU district, the design of buildings should relate to and blend with the facades of adjacent buildings and complement streetscape improvements in the area. The proposed building materials for the project are a mix of light and dark four-inch brick veneer, and pre-finished burnished CMU (concrete masonry unit) veneer with a cast stone veneer accent band three feet up around the base of the building. **The Material Legend on Sheet A.202 of the architectural plans shall be revised to relabel the CMU improperly identified as split face; burnished block is proposed. (Comment outstanding. Revised architectural plans were not provided).** The dark brick veneer would wrap around the upper 3.5 feet of the building. Pre-finished metal (aluminum) coping would be located on top of the walls around the building. **The address (street number) location shall be shown on the building. Six-inch-tall numbers visible from the street shall be required. The address location is subject to approval of the Township Fire Marshall. (Comment outstanding. Revised architectural plans were not provided).** Two, 4'-4" tall, 25' wide steel trellises are proposed 34 feet apart on the roof of the building, fronting on the south elevation. Pre-finished metal (aluminum) canopies would be located on the front (south) and both sides of the building, using tension rods with turnbuckles anchored to wall plates to attach to the building. The light color brick veneer with a cast stone sill is proposed to cover the 6'-4" retaining wall below the patio.

While elevations of the building were submitted showing the different building materials for the project, finalized colors were not noted on the elevations. Staff requested a sample board of building materials to be displayed at the Planning Commission meeting. Elevations in color are also required by the ordinance and were not submitted. The applicant stated these items were not provided because the proposed materials match the existing retail building (light and dark gray materials). **The Planning Commission should require these items to be submitted. (Comment outstanding. The Planning Commission may require these items be provided).**

The outdoor patio is 12-feet-wide, approximately 660 square feet in size, and located on the west side of the building. **It appears the western portion of the patio is located within an existing 33-foot-wide sanitary sewer easement. The Planning Department defers to the Director of Public Services and Township Engineering Consultant on this matter. (Comment outstanding. The response letter provided to the first review indicates the applicant would provide a letter to the effect the applicant would be responsible for removal and replacement of the proposed patio if removal was necessary for sanitary sewer maintenance/repair. Approval of the Director of Public Services is required to allow the patio to encroach on the existing sanitary sewer easement).**

Accessory items such as railings, benches, trash receptacles, outdoor seating (such as tables and chairs), or sidewalk planters located in the vicinity of sidewalks and/or outdoor seating areas are required to be of commercial quality and complement the building design and style. The submitted architectural plans show a 3.5-inch decorative cast iron guard rail with posts surrounding the patio. **Details were not provided for the proposed concrete steps with handrails to the Union Lake Road sidewalk or the materials of items to be located on the patio; such details shall be provided for Planning Commission review and approval. Details shall also be provided for the patio surfacing; an ornamental paving treatment should be required by the Planning Commission.** (Comment partially addressed. Stair details have been added to the landscape plan. However, the handrail detail shall be updated to specify the proposed color. The Township Engineering Consultant shall provide comment on the stairs' accessibility and compliance with the Americans and Disabilities Act. Furthermore, details were not provided for the items to be located on the patio, nor were details provided for the patio surfacing. Revised architectural plans were not provided). The paving treatment should be something either decorative or something to provide aesthetic quality to the patio. Potential options for ornamental paving treatments include, but are not limited to, CMU pavers; brick; stone; or stamped, stained, and sealed concrete.

Parking

The parking layout for this site was approved with the site plan for the already constructed portion of Four Corners Square. Parking calculations for the previously proposed full-service restaurant and patio indicated 80 spaces were required. In 2017 the Zoning Board of Appeals granted an 11-space variance to allow 69 parking spaces to serve the subject site. 42 of the 69 spaces are located on the subject site; the remaining 27 spaces are located on the adjoining property to the east. Two barrier-free parking spaces are shown along the front of the building. A barrier-free parking sign detail is provided on Sheet C3 of the site plan. **A “Van Accessible” sign detail shall also be provided on Sheet C3 of the site plan.** (Comment partially addressed. While the response letter provided to the first review indicates a van accessible sign detail was added to Sheet C3, a boxed area was added to the previously supplied barrier free parking sign detail with a note stating a sign indicating “van accessibility” shall be provided. The requested “Van Accessible” sign detail was not provided).

Off-Street Loading Requirements

The zoning ordinance requires one loading space for a development of this size. Such loading and unloading space must be an area 10 feet by 50 feet, with a 15-foot height clearance. The proposed loading area is located at the rear (north side) of the building and 10 feet by 40 feet; **therefore, a 10-foot variance from the required loading space length shall be required. Also, a note shall be added to the site plan indicating there will be a 15-foot height clearance for the loading space. As a condition of site plan approval, the proposed screen wall on the north and west sides of the loading area shall match the same brick veneer as the facade of the building. A wall detail shall be provided on Sheet C3 of the site plan to show a four-inch brick face on the outside walls of the enclosure.** (Comment partially addressed. The applicant has filed a variance application and a public hearing is scheduled at the December 9, 2021 Zoning Board of Appeals meeting. The dumpster enclosure was relocated to the west end of the loading area. However, the applicant shall clarify the size of the loading area; Sheet C3 indicates the area is 31.3 feet by 17.8 feet and Sheet C4 indicates the area is 31 feet by 17 feet. The plans shall be revised for consistency. A 15-foot height clearance note has been added to Sheet C3, and the dumpster enclosure detail was revised on Sheet C8 to note brick veneer would be utilized on the outside walls).

Trash Receptacle Screening

The zoning ordinance requires dumpsters to be surrounded by a six-foot-tall wall on three sides and an obscuring wood gate on a steel frame on the fourth side, located on a six-inch concrete pad extending 10 feet in front of the gate, with six-inch concrete-filled steel bollards to protect the rear wall and gates. The proposed enclosure is located at the rear (north side) of the building. A six-foot-tall concrete screen wall is proposed around three sides of the dumpster enclosure, with a steel backed wood gate on the east side of the structure. The zoning ordinance states dumpsters and trash storage enclosures shall be constructed of the same decorative masonry materials as the buildings to which they are accessory. Brickform concrete (simulated brick pattern) or stained, decorative CMU block are not permitted where the principal building contains masonry. Plain CMU block is also prohibited. **As a condition of site plan approval, the dumpster enclosure shall match the same brick veneer as the facade of the building with a steel backed wood gate painted a complementary color to the brick veneer. The dumpster enclosure detail on Sheet C7 of the site plan shall be revised to show a four-inch brick face on the outside walls of the concrete enclosure and indicate the color of the gate.** (Comment partially addressed. The dumpster enclosure detail was revised on Sheet C8 to note brick veneer would be utilized on the outside walls. While the plan notes the gate would be painted a complimentary color to the brick veneer, the color was not indicated as requested).

Landscaping and Screening

The landscape layout for this site was approved with the site plan for the already constructed portion of Four Corners Square. Variances were granted by the Zoning Board of Appeals in 2017 to reduce the required greenbelt for nonresidential parking areas abutting road right-of-way. A condition of such approval allowed the Planning Commission to retain the authority to require a 30-inch screen wall in conjunction with a five-foot greenbelt. A landscape plan was submitted showing the relocation of some of the existing plant material to screen the proposed transformer, dumpster enclosure, and loading area. **If any plant materials required by site plan approval dies or becomes diseased during construction or from transplanting, the applicant shall be required to replace the plant materials. Additionally, all lawn areas shall be sodded. All applicable notes on the landscape plan, including the General Landscape Notes and General Seed Note, shall be revised accordingly to indicate the required installation of sod in lawn areas.** (Comment addressed. The General Seed Note was replaced with a General Sod Note. Also, five trees planted as part of the original approval are proposed to be transplanted. The Plant Material Note indicates all existing plant material on-site shall be transplanted as shown or elsewhere on-site at the direction of the applicant. Any and all transplant locations, as well as a stockpile location, shall receive prior review and approval by the Township). The landscape plan notes five Spruce trees would be transplanted on-site at the direction of the owner. **The landscape plan shall be revised to show where the five transplanted Spruce trees are proposed to be relocated.** (Comment addressed. A note has been added to the landscape plan stating the Spruce trees were temporary landscape screening installed as a part of the original approval and would be removed to facilitate construction).

Signs

A variance was granted by the Zoning Board of Appeals in 2017 to permit nonresidential signs at Four Corners Square in accordance with the RB (Restricted Business) district standards. One wall sign is permitted per tenant; total sign area per tenant cannot exceed 10 percent of the front facade for the individual tenant space. The submitted building elevations show one wall sign per tenant on the front (south) facade of the building. A wall sign is shown on the west elevation, which would be permitted up to one-half the size of the primary sign for the westerly tenant since the building contains frontage on Union Lake Road. **A wall sign is shown on the east elevation, which is not permitted and shall be removed from the plan.** (Comment outstanding. Revised architectural plans were not provided. However, the applicant has filed a variance application and a public hearing is scheduled at the December 9, 2021 Zoning Board of Appeals meeting).

The site plan shows an unidentified object at the southwest corner of the site; this shall be labeled. Staff believes the symbol likely depicts the location of a sign. The applicant shall specify if this is the proposed location for the “Welcome to White Lake” sign. Comment outstanding. The response letter provided to the first review indicates the object appears to be the “Welcome to White Lake” sign. The applicant shall confirm and the plans revised to label accordingly).

Lighting

The applicant stated the proposed building would contain the same wall-mounted fixtures as the existing retail center. However, photometrics on the luminaries located on the existing retail building were not provided for review and approval in 2017. The submitted electrical plan shows luminaries on all sides of the building, with a note stating all light fixture selections and colors will be approved by the owner; **light fixture selections and colors are subject to review and approval by the Township. No wall-mounted decorative or architectural lighting shall be installed on the north (rear) facade of the building. Up-lighting or outward shining lighting are also not permitted on the building. An outdoor lighting plan (photometric plan) shall be required specifying the type of fixtures to be used, light intensity, and method of shielding the fixtures so light does not project onto adjoining properties or on any public or private street or right-of-way. Catalog details (lighting fixture specification sheets) for all proposed fixtures shall be provided. Outdoor lights must meet the performance standards of Article 5, Section 18.G of the zoning ordinance.** (Comment outstanding. Architectural plans are not acceptable for the purpose of reviewing outdoor lighting. A lighting (photometric) plan is required and was requested, along with lighting fixture specification sheets for all proposed fixtures. The requested information was not provided. Outdoor lighting cannot be installed on the building or site without prior review and approval by the Township).

Planning Commission Options / Recommendation

The applicant has requested preliminary and final site plan approval. As the site is considered part of Four Corners Square, and the general layout/engineering of the property was previously considered by the Township, proceeding in this manner would not compromise the review of development on the site. The Planning Commission may recommend approval, approval with conditions, or denial of the preliminary site plan to the Township Board; action on the final site plan is determined by the Planning Commission. **Staff recommends approval of the preliminary and final site plan, subject to the items identified in this memorandum being addressed prior to a pre-construction meeting, and the necessary variances being received.**

The following notations summarize the site plan review:

- Recommendation of approval is in accordance with the plans prepared by Nowak & Fraus Engineers dated August 25, 2021 (revision date ~~October 14, 2021~~ **November 8, 2021**), subject to revisions as required. The utility, grading, and storm drainage plans for the site are subject to the approval of the Township Engineer and shall be completed in accordance with the Township Engineering Design Standards.
- Recommendation of approval is in accordance with the plans prepared by G.A.V. & Associates, Inc. dated October 21, 2021, subject to revisions as required.

- Transformer and mechanical equipment (heating, ventilation, air conditioning, and similar systems) shall be screened in accordance with Article 5, Section 19.N.ii of the zoning ordinance. **(Comment addressed. The transformer has been relocated and screened, and such relocation allows the existing arborvitae buffer to remain. Furthermore, five arborvitae have been added to the west side to screen both the transformer and dumpster enclosure from Union Lake Road).**
- Six-inch straight-faced (vertical) curb of concrete construction shall be used around landscape and parking areas. The standard Michigan Department of Transportation (MDOT) detail for six-inch straight-faced curb shall be provided on Sheet C7 of the site plan. **(Comment partially addressed. Curb details have been added to Sheet C8. However, the standard MDOT detail was not provided as requested).**

From: [John Holland](#)
To: [Hannah Micallef](#)
Cc: [Jason Hanifen](#); [Sean O'Neil](#)
Subject: Four Corners
Date: Friday, November 5, 2021 11:22:10 AM

Hey Sean,

With regards to Four Corners - the Fire Department has no further comments until the construction plans are submitted. At that time the occupancy classification, use, and overall square footage will be reviewed as it pertains to the life safety requirements for the building.

If you need anything else, let me know,



John Holland
Fire Chief
(248) 698-3993
jholland@whitelaketwp.com

Assessing Department

Memo

To: Sean O'Neil, Planning

From: Jeanine A Smith

Date: October 26, 2021

Re: Project Name: 4 Corners Retail File No: Parcel Number:12-36-476-032
Center

Comments: No comments

White Lake Township, Oakland County, Michigan

CONSTRUCTION/SITE PLAN DOCUMENTS

Prepared For 4 Corners Square LLC

PART OF THE SE 1/4 OF SECTION 36,
WHITE LAKE TOWNSHIP,
OAKLAND COUNTY, MICHIGAN

Owner / Developer

VERITAS
29580 Northwestern Hwy, Suite 1000
Southfield, Michigan 48075
Tel: (248) 559-5555

CONTACT: Shakir W. Alkhafaji, President

Architect

GAV & Associates
24001 Orchard Lake Rd., Suite 180A
Farmington, MI 48336
Tel. (248) 985-9101

CONTACT: David Ganezer

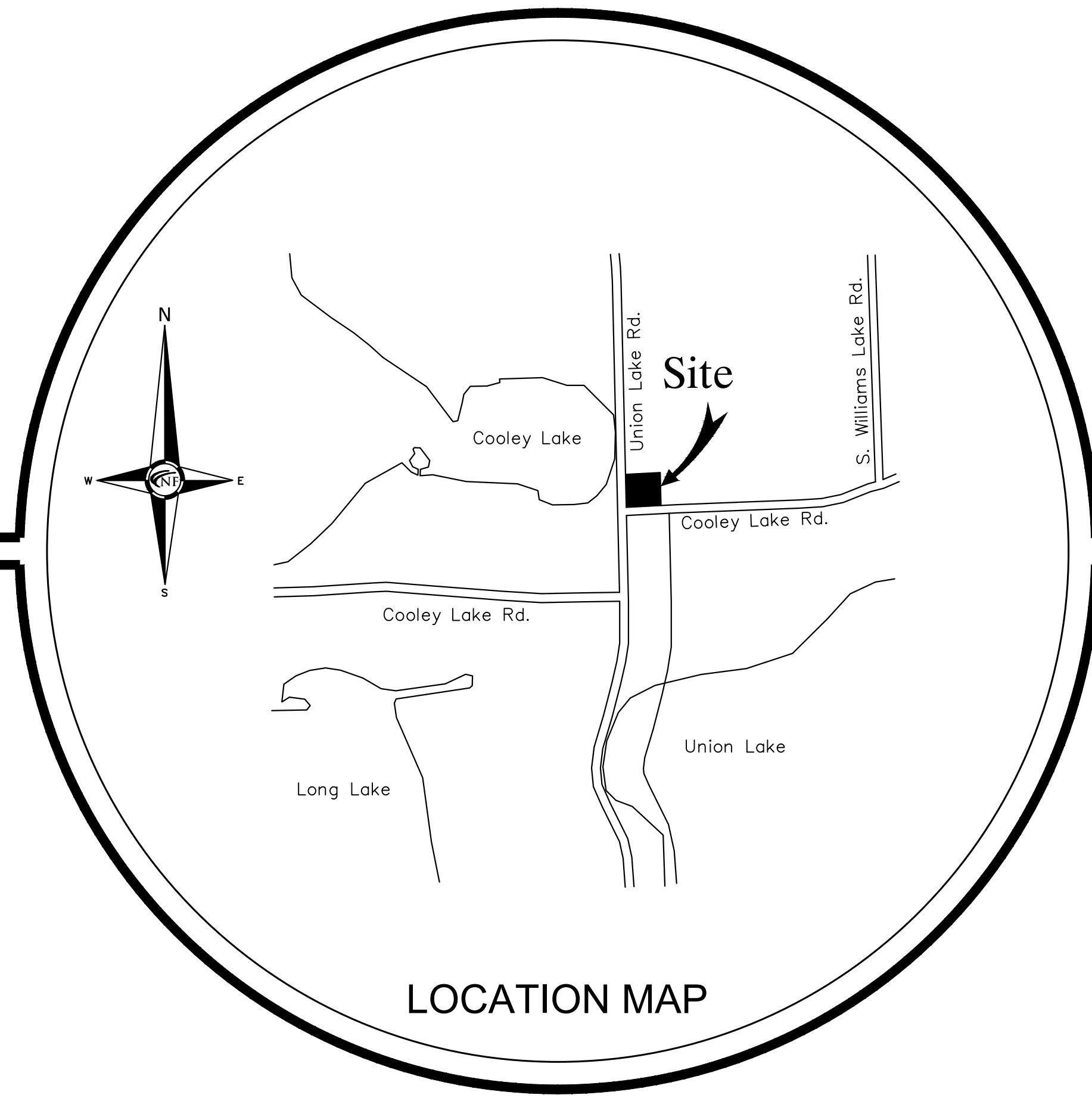
Civil Engineer

Nowak & Fraus Engineers
46777 Woodward Ave.
Pontiac, MI 48342-5032
Tel. (248) 332-7931
Fax. (248) 332-8257

CONTACT: Michael D. Peterson, P.E.

WHITE LAKE TOWNSHIP STANDARD SITE CONSTRUCTION NOTES

1. All construction shall be in accordance with the current standards and specifications of White Lake Charter Township.
2. The developer shall contact the Township Planning Department at (248) 698-3300 to schedule a pre-construction meeting. The developer's prime site contractor shall attend. A copy of all permits must be submitted to the Planning Department prior to scheduling the meeting.
3. The contractor shall contact the Township Engineer at (248) 681-7800 48 hours prior to the beginning of construction. The contractor shall keep the inspector apprised of the need for inspection on a day by day basis. Lacking specific scheduling with the inspector, the contractor shall give 48 hours notice to the Township Engineer prior to re-commencing work requiring inspection. Failure to inform the inspector or the Township Engineer of a work cancellation may result in a one half day inspection charge to the developer.
4. All water main or sanitary sewer work will require full time inspection. Full time inspection will generally be required for underground storm sewer construction with intermittent inspection for retaining walls, concrete curbing and paving operations. Site grading and detention basin construction will generally be inspected on an infrequent basis.
5. The contractor shall contact MISS DIG at (800) 482-7171 72 hours in advance of construction to have existing underground facilities located. Contractor shall contact the White Lake Township Water Department at (248) 698-3300 (ext 8) a minimum of 72 hours in advance of construction to have water utilities located.



LEGAL DESCRIPTION

A PARCEL OF LAND BEING A PART OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 36, T.3N, R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 36; THENCE PROCEEDING ALONG THE SOUTH LINE OF SAID SECTION 36, AND THE NOMINAL CENTERLINE OF COOLEY LAKE ROAD, N 89° 57' 40" W, 726.90 FEET; THENCE N 00° 00' 00" E, 43.00 FEET TO A POINT ON THE NORTH LINE OF COOLEY LAKE ROAD AS DEDICATED TO THE ROAD COMMISSION OF OAKLAND COUNTY, RECORDED IN LIBER 4601 OF PLATS, PAGES 224 AND 225 O.C.R.; THENCE PROCEEDING ALONG THE 43' RIGHT OF WAY LINE, N 89° 57' 40" W., 403.00 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING ALONG THE NORTH LINE OF COOLEY LAKE ROAD, N 89° 57' 40" W, 201.61 FEET TO A POINT ON THE WEST LINE OF THE EAST 1/2 OF THE SOUTHEAST 1/4 AND THE NOMINAL CENTERLINE OF UNION LAKE ROAD; THENCE PROCEEDING ALONG THE WEST LINE OF THE EAST 1/2 OF THE SOUTHEAST 1/4 AND THE NOMINAL CENTERLINE OF UNION LAKE ROAD N 00° 05' 45" E, 220.00 FEET; THENCE S 89° 57' 40" E, 201.24 FEET; THENCE S 00° 00' 00" W, 220.00 FEET TO THE POINT OF BEGINNING. CONTAINING 44,313 GROSS SQUARE FEET OR 1.017 GROSS ACRES OF LAND MORE OR LESS.

OR CONTAINING 31,113 NET SQUARE FEET, 0.714 NET (MINUS FUTURE 60' R.O.W.)

ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND OR ANY OTHER GOVERNMENTAL UNIT THEREOF IN THAT PART OF UNION LAKE ROAD, USED, TAKEN OR DEEDED FOR STREET, ROAD OR HIGHWAY PURPOSES, ALSO BEING SUBJECT TO ANY EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD.

PARCEL NO.: 12-36-476-032

SHEET INDEX

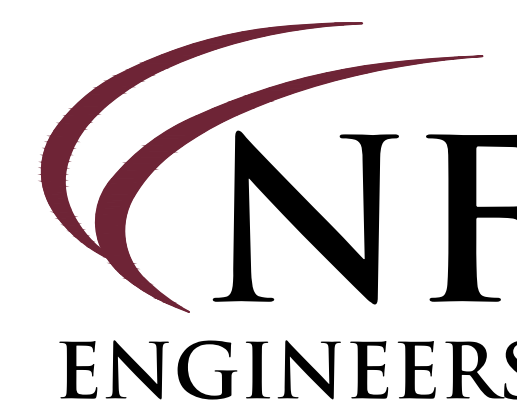
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- C1 Topographic Survey
- C2 Demolition Plan
- C3 Stringer Dimension Plan
- C4 Paving & Grading Plan
- C5 Utility Plan
- C6 Utility Details Plan
- C7 Soil Erosion / Sedimentation Control Plan
- C8 General Construction Requirements, Contractor's Duties, Notes and Details Plan
- L1 Landscape Plan

Standard Details
White Lake Township Sanitary Sewer Standard Details
White Lake Township Storm Sewer Standard Details
White Lake Township Water Main Standard Details
Oakland County WRC Soil Erosion & Sedimentation Control Details

Project Name

4 Corners Retail Center

| | |
|-------------------|------------------------------|
| REVISIONS: | |
| 10-14-21 | ISSUED FOR SITE PLAN REVIEW |
| 11-08-21 | REVISED PER SITE PLAN REVIEW |

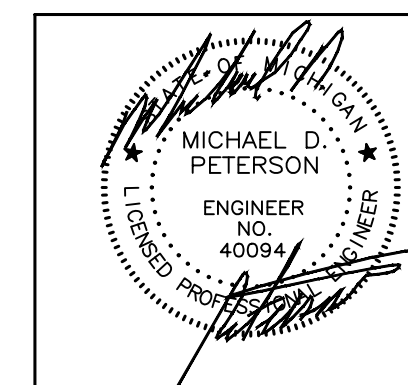


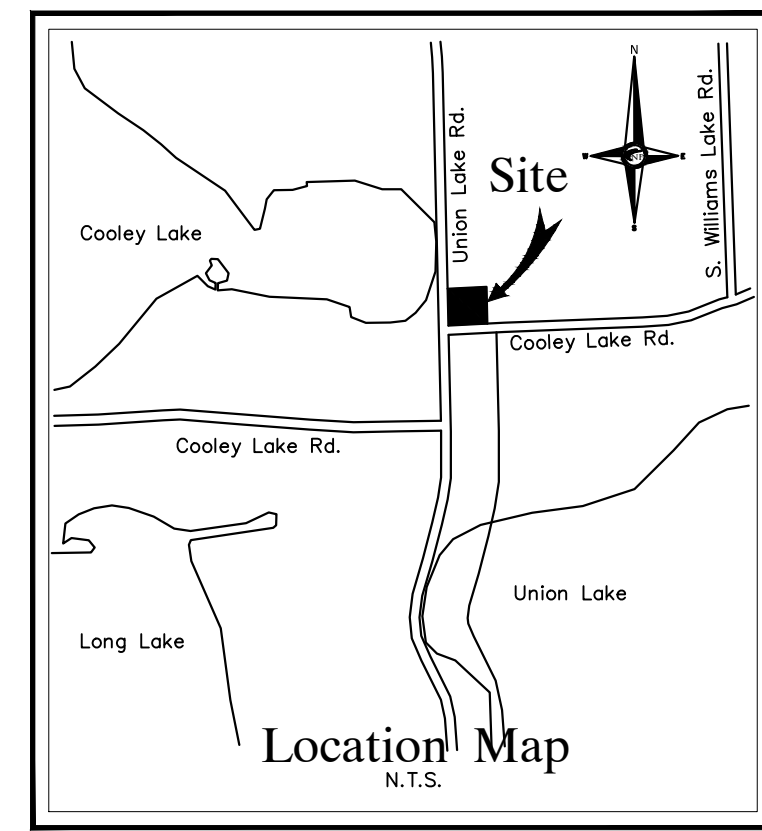
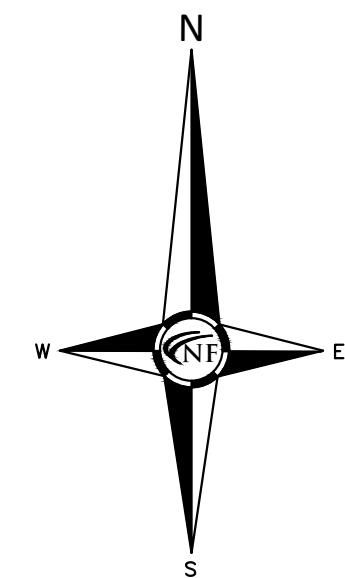
CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM



N & F JOB #J635-03

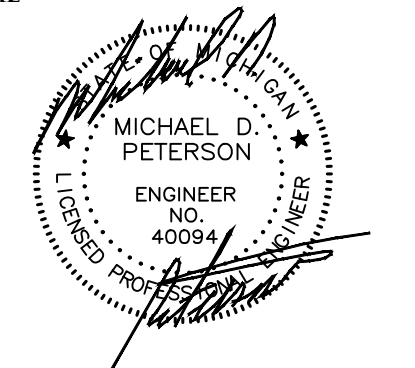




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 TEL. (248) 332-7931
 FAX. (248) 332-8257
 WWW.NOWAKFRAUS.COM

SEAL



PROJECT
 4 Corners Retail Center
 1449 Union Lake Road
 White Lake Township

CLIENT
 VERITAS
 29580 Northwestern Hwy,
 Suite 1000
 Southfield, Michigan 48075

Contact: Shakir W. Alkhafaji, President
 Phone: (248) 559-5555

PROJECT LOCATION
 Part of the E. 1/2 of the SE. 1/4 of Section 8
 T.3N., R.8E.
 White Lake Township,
 Oakland County, Michigan

SHEET
 Topographic Survey



DATE ISSUED/REVISED
 10-14-21 ISSUED FOR SITE PLAN REVIEW
 11-08-21 REVISED PER SITE PLAN REVIEW

DRAWN BY:
 N. Naoum
 DESIGNED BY:

APPROVED BY:
 K. Navaroli

DATE:
 08-25-2021

SCALE: 1" = 20'

NFE JOB NO. SHEET NO.
J635-03 C1

LEGAL DESCRIPTION: PARCEL A

A PARCEL OF LAND BEING A PART OF THE EAST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 36, T.3N., R.8E., WHITE LAKE TOWNSHIP, OAKLAND COUNTY MICHIGAN, BEING MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 36; THENCE PROCEEDING ALONG THE SOUTH LINE OF SAID SECTION 36, AND THE NOMINAL CENTERLINE OF COOLEY LAKE ROAD, N 89° 57' 40" W, 726.90 FEET; THENCE N 00° 00' 00" E, 43.00 FEET TO A POINT ON THE NORTH LINE OF COOLEY LAKE ROAD AS DEDICATED TO THE ROAD COMMISSION OF OAKLAND COUNTY, RECORDED IN LIBER 4601 OF PLATS, PAGES 224 AND 225, O.C.R.; THENCE PROCEEDING ALONG THE EAST 1/2 OF THE SOUTHWEST 1/4 AND THE NOMINAL CENTERLINE OF UNION LAKE ROAD; THENCE CONTINUING ALONG THE WEST LINE OF THE EAST 1/2 OF THE SOUTHWEST 1/4 AND THE NOMINAL CENTERLINE OF UNION LAKE ROAD N 00° 05' 45" E, 220.00 FEET; THENCE S 89° 57' 40" E, 201.24 FEET; THENCE S 00° 00' 00" W, 220.00 FEET TO THE POINT OF BEGINNING, CONTAINING 44,313 GROSS SQUARE FEET OR 1.017 GROSS ACRES OF LAND MORE OR LESS.

OR CONTAINING 31,113 NET SQUARE FEET, 0.714 NET (MINUS FUTURE 60' R.O.W.)

ALSO BEING SUBJECT TO THE RIGHTS OF THE PUBLIC AND OR ANY OTHER GOVERNMENTAL UNIT THEREOF IN THAT PART OF UNION LAKE ROAD, USED, TAKEN OR DEEDED FOR STREET, ROAD OR HIGHWAY PURPOSES, ALSO BEING SUBJECT TO ANY EASEMENTS, RESTRICTIONS OR CONDITIONS OF RECORD.

COVID-19 PANDEMIC CONDITION

DUE TO THE UNPRECEDENTED COVID-19 PANDEMIC CONDITION AND RESTRICTIONS THE STANDARD DATA WHICH IS OBTAINED FROM MISS DIG / CALL 811 HAS BEEN RESTRICTED TO CRITICAL INFRASTRUCTURE ONLY. NFE WILL MAKE EVERY EFFORT TO OBTAIN CURRENT REFERENCE DATA FROM THE GOVERNING AGENCIES. HOWEVER, THIS DATA MAY BE PARTIAL OR INCOMPLETE. NFE WILL ISSUE THIS SURVEY WITH THE BEST AVAILABLE INFORMATION FROM OUR FIELD SURVEY AND OTHER AVAILABLE REFERENCE DATA. NFE WILL NOT BE RESPONSIBLE FOR INCOMPLETE OR PARTIAL DATA PROVIDED BY THIRD PARTY FACILITY OWNERS.

ALL SURVEYS BEING UTILIZED FOR DESIGN PURPOSES BY OTHERS; IT WILL BE THE CLIENT'S OBLIGATION TO UPDATE THE UTILITY INFORMATION AS IT BECOMES AVAILABLE. NFE IS NOT RESPONSIBLE FOR BURIED UTILITIES FOR WHICH PLANS WERE NOT FURNISHED OR CANNOT BE OBSERVED IN THE FIELD.

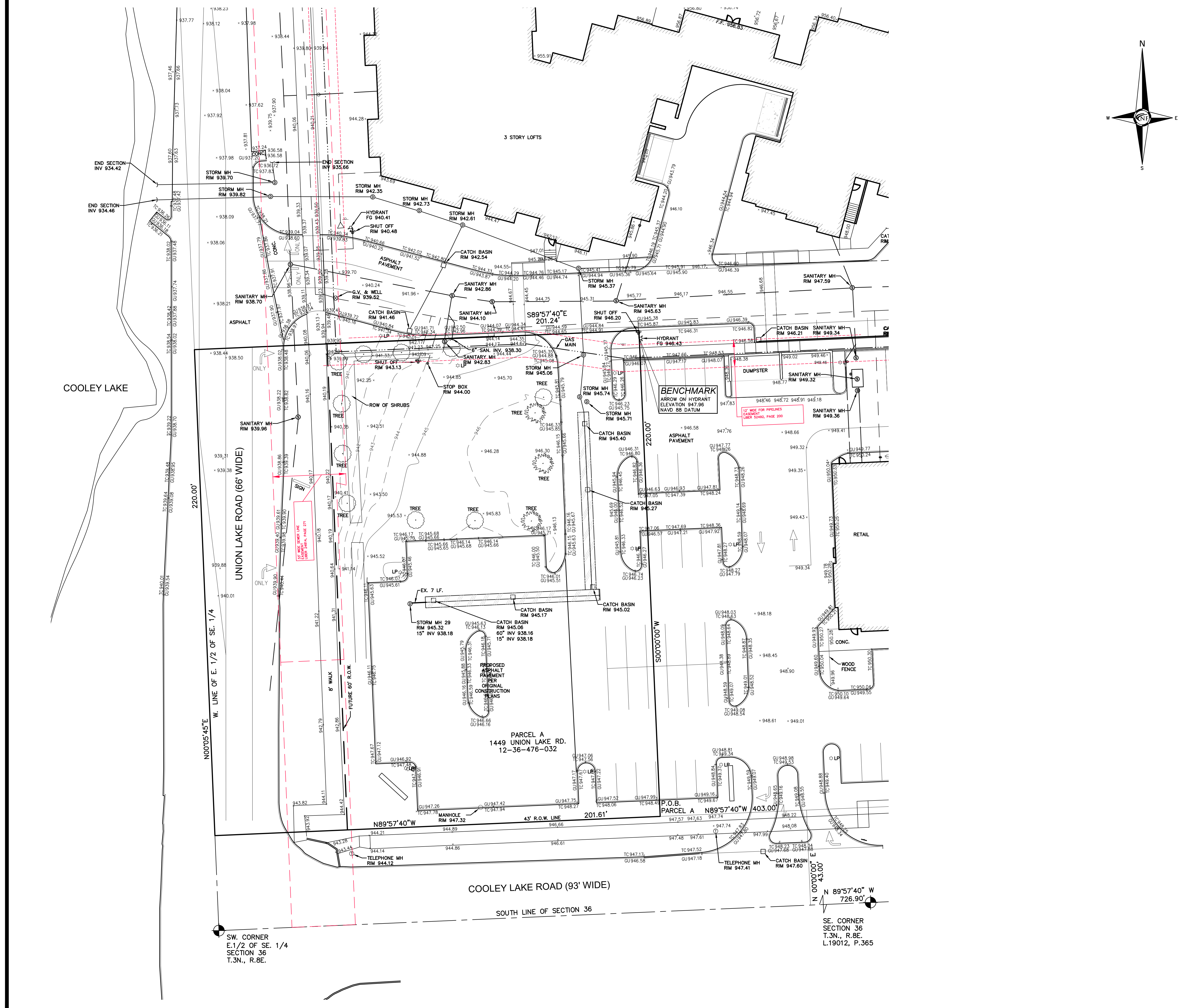
MISS DIG / UTILITY DISCLAIMER NOTE

A MISS DIG TICKET NUMBER PURSUANT TO MICHIGAN PUBLIC ACT 174 WAS ENTERED FOR THE SURVEYED PROPERTY, DUE TO THE EXTENDED REPORTING PERIOD FOR UNDERGROUND FACILITY OWNERS TO PROVIDE THEIR RECORDS, THE SURVEY MAY NOT REFLECT ALL THE UTILITIES AT THE TIME THE SURVEY WAS ISSUED ON. THE SURVEY ONLY REFLECTS THOSE UTILITIES WHICH COULD BE OBSERVED BY THE SURVEYOR IN THE FIELD OR AS DEPICTED BY THE UTILITY COMPANY RECORDS FURNISH PRIOR TO THE DATE THIS SURVEY WAS ISSUED. THE CLIENT AND/OR THEIR AUTHORIZED AGENT SHALL VERIFY WITH THE FACILITY OWNERS AND/OR THEIR AUTHORIZED AGENTS, THE COMPLETENESS AND EXACTNESS OF THE UTILITIES LOCATION.

TOPOGRAPHIC SURVEY NOTES

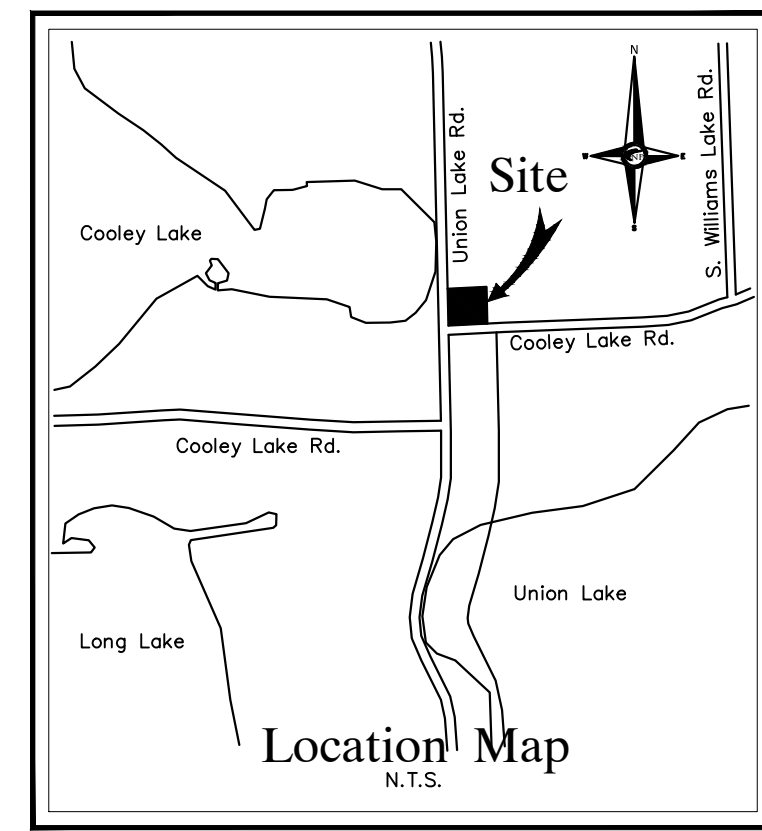
ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.
 UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS, OR EXACTNESS OF LOCATION.
 THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER.

| LEGEND | |
|--------|-------------------------|
| | MANHOLE |
| | HYDRANT |
| | MANHOLE |
| | UTILITY POLE |
| | GUY WIRE |
| | LIGHT POLE |
| | SIGN |
| | EXISTING GAS MAIN |
| | EXISTING SANITARY SEWER |
| | EXISTING SAN. CLEAN OUT |
| | EXISTING WATER MAIN |
| | EXISTING STORM SEWER |
| | EX. R.Y. CATCH BASIN |
| | EXISTING BURIED CABLES |
| | OVERHEAD LINES |
| | EXISTING GAS MAIN |



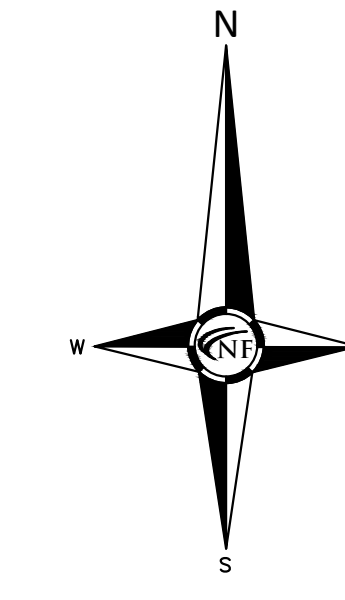
SW CORNER
 E.1/2 OF SE. 1/4
 SECTION 36
 T.3N., R.8E.

SE CORNER
 SECTION 36
 T.3N., R.8E.
 L.19012, P.365



NF ENGINEERS
 CIVIL ENGINEERS
 LAND SURVEYORS
 LAND PLANNERS

NOWAK & FRAUS ENGINEERS
 46777 WOODWARD AVE.
 PONTIAC, MI 48342-5032
 TEL. (248) 332-7931
 FAX. (248) 332-8257
 WWW.NOWAKFRAUS.COM



DEMOLITION NOTES

DEMOLITION OF SITE IMPROVEMENTS SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE PUBLIC AGENCY HAVING JURISDICTION OVER SAID DEMOLITION. FOR ANY DEMOLITION WITHIN PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR, AND SECURE, ALL NECESSARY PERMITS AND LICENSES AND MAKE ARRANGES FOR ALL SITE INSPECTIONS.

SITE DEMOLITION INCLUDES THE COMPLETE REMOVAL OF SITE IMPROVEMENTS AND OFF-SITE DISPOSAL. DEBRIS SHALL BE TRANSPORTED TO AN APPROPRIATE DISPOSAL FACILITY THAT IS LICENSED FOR THAT TYPE OF DEBRIS.

THE CONTRACTOR SHALL COORDINATE TRUCK ROUTES WITH THE MUNICIPALITY PRIOR TO COMMENCEMENT OF SITE DEMOLITION. ALL TRUCKS SHALL BE TARPED OR PROPERLY SECURED TO CONTAIN DEMOLITION DEBRIS PRIOR TO LEAVING SITE.

EXISTING ON-SITE UNDERGROUND UTILITIES AND BUILDING SERVICES HAVE BEEN INDICATED BASED UPON THE BEST AVAILABLE UTILITY RECORDS AND/OR ON-SITE INSPECTION. NO GUARANTEE IS MADE BY THE DESIGN ENGINEER, AS TO THE COMPLETENESS OR ACCURACY OF UTILITY DATA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF UTILITY INFORMATION (THE DESIGN ENGINEER MAKES NO GUARANTEE NOR ASSUMES ANY LIABILITY AS TO THE COMPLETENESS AND/OR ACCURACY OF UTILITY DATA).

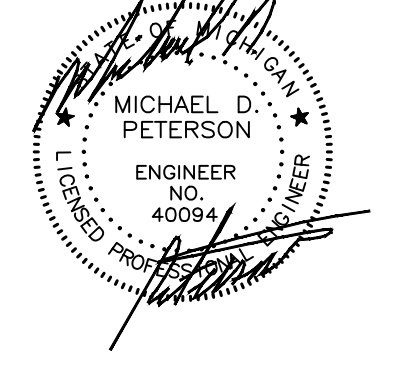
PRIOR TO THE REMOVAL OR ABANDONMENT OF ANY EXISTING UNDERGROUND UTILITY OR BUILDING SERVICE LINES CALLED FOR IN THE PLANS OR DISCOVERED DURING EXCAVATION, THE CONTRACTOR MUST DETERMINE IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE. IF THE UTILITY LINE OR BUILDING SERVICE IS STILL IN USE/ACTIVE THE CONTRACTOR MUST TAKE ALL THE NECESSARY STEPS TO GUARANTEE THAT THE UTILITY LINE OR BUILDING SERVICE IS RECONNECTED WITHOUT AN INTERRUPTION IN SERVICE. THE RECONNECTION OF THE UTILITY LINE OR BUILDING SERVICE MUST BE IN ACCORDANCE WITH THE STANDARDS AND REQUIREMENTS OF THE APPROPRIATE GOVERNMENTAL AGENCY OR PRIVATE UTILITY COMPANY.

SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO SITE DEMOLITION.

GENERAL TREE PROTECTION NOTES

- APPROVED TREE PROTECTION SHALL BE ERECTED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL THE IN PLACE UNTIL CONSTRUCTION IS COMPLETE.
- ALL UNDERSTORY VEGETATION WITHIN THE LIMITS OF PROTECTIVE FENCING SHALL BE PRESERVED.
- NO PERSON MAY CONDUCT ANY ACTIVITY WITHIN THE DRIP LINE OF ANY TREE DESIGNATED TO REMAIN, INCLUDING BUT NOT LIMITED TO, PLACING SOLVENTS, BUILDING MATERIALS, CONSTRUCTION EQUIPMENT, OR SOIL DEPOSITS WITHIN THE DRIP LINE. WHERE GROUPINGS OF TREES ARE TO REMAIN, TREE FENCING SHALL BE PLACED AT THE LIMITS OF GRADING LINE.
- DURING CONSTRUCTION, NO PERSON SHALL ATTACH ANY DEVICE OR WIRE TO ANY TREE, SCHEDULED TO REMAIN.
- ALL UTILITY SERVICE REQUESTS MUST INCLUDE NOTIFICATION TO THE INSTALLER THAT PROTECTED TREES MUST BE AVOIDED. ALL TRENCHING SHALL OCCUR OUTSIDE OF THE PROTECTIVE FENCING.
- SMALLS SHALL BE ROUTED TO AVOID THE AREA WITHIN THE DRIP LINES OF PROTECTED TREES.
- TREES LOCATED ON ADJACENT PROPERTIES THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITIES MUST BE PROTECTED.
- ROOT ZONES OF PROTECTED TREES SHOULD BE SURROUNDED BY RIGIDLY STAKED FENCING.
- THE PARKING OF IDLE AND RUNNING EQUIPMENT SHALL BE PROHIBITED UNDER THE DRIP LINE OF PROTECTED TREES.
- THE STRIPPING OF TOPSOIL FROM AROUND PROTECTED TREES SHALL BE PROHIBITED.
- ALL TREES TO BE REMOVED SHALL BE CUT AWAY FROM TREES TO REMAIN.
- THE GRUBBING OF UNDERSTORY VEGETATION WITHIN CONSTRUCTION AREAS SHOULD BE CLEARED BY CUTTING VEGETATION AT THE GROUND WITH A CHAIN SAW OR MINIMALLY WITH A HYDRO-AXE.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT PER ORDINANCE GUIDELINES, FOR THE DAMAGE OR REMOVAL OF ANY TREE DESIGNATED TO REMAIN.
- TREES TO BE REMOVED SHALL BE FIELD VERIFIED, EVALUATED AND FLAGGED FOR REMOVAL, BY THE LANDSCAPE ARCHITECT OR FORESTER, ONLY AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.

SEAL



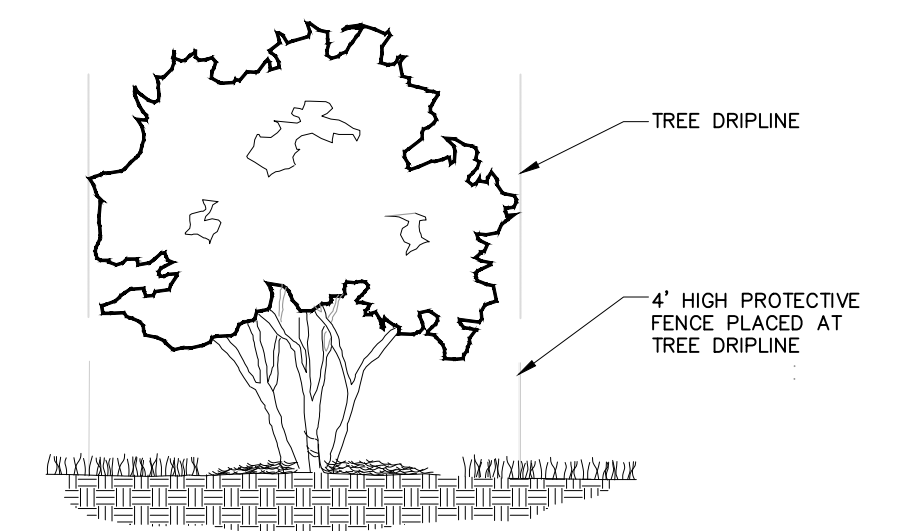
PROJECT
 4 Corners Retail Center
 1449 Union Lake Road
 White Lake Township

CLIENT
 VERITAS
 29580 Northwestern Hwy,
 Suite 1000
 Southfield, Michigan 48075

Contact: Shkir W.
 Alkhafaji, President
 Phone: (248) 559-5555

PROJECT LOCATION
 Part of the E. 1/2
 of the SE. 1/4 of Section 8
 T.3N., R.8E.
 White Lake Township,
 Oakland County, Michigan

SHEET
 Demolition Plan



TREE PROTECTION DETAIL-SECTION NTS

* THE CONTRACTOR SHALL NOTIFY MISS DIG (1-800-482-7171) A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO THE START OF THE SITE DEMOLITION.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES ELECTRICAL SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH THE UTILITY COMPANY. REMOVAL OF THE UTILITY COMPANIES COMMUNICATION SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE UTILITY COMPANY.

THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITY POLES AND BUILDING SERVICES WITH THE APPROPRIATE CABLE MEDIA COMPANY. REMOVAL OF CABLE SERVICES SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND REQUIREMENTS OF THE CABLE COMPANY.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION OF PRIVATE UTILITY COMPANIES AND COORDINATE UTILITY SERVICE SHUT OFF/DISCONNECT, PRIOR TO DEMOLITION OF EXISTING STRUCTURES OR PROPERTIES.

ALL UTILITY METERS SHALL BE REMOVED BY THE APPROPRIATE UTILITY COMPANY.

ANY ON-SITE STORM SEWER FACILITIES LOCATED DURING DEMOLITION SHALL BE REMOVED AND BULK HEADED AT THE PROPERTY LINE IF INDICATED FOR REMOVAL ON THE PLANS.

PRIOR TO BUILDING DEMOLITION, ALL HAZARDOUS MATERIAL SHALL BE REMOVED BY OTHERS. THE DEMOLITION CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER SHOULD ANY SUSPICIOUS MATERIAL BE FOUND.

WATER SERVICES AND/OR STOP-BOX SHALL BE PRESERVED AND BULK HEADED AT THE PROPERTY LINE OR AS DIRECTED BY THE OWNER'S REPRESENTATION.

WHERE EXISTING BUILDINGS PLANNED FOR DEMOLITION FALL WITHIN PROPOSED BUILDING FOOT PRINTS, BASEMENT FLOOR SLABS, FOUNDATION WALLS AND FOOTINGS SHALL BE COMPLETELY REMOVED AND BACK FILLED WITH MOST CLASS II GRANULAR MATERIAL AND BE MACHINE COMPACTED TO A MINIMUM OF 98% OF MATERIALS MAXIMUM DENSITY.

NOTE: PROTECTION FENCING TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD

5/8" x 6" RE-ROD, OR EQUAL, SUPPORT POSTS EVERY 10' O.C. INSTALL POSTS A MIN. 24" INTO GROUND, TYPICAL

4" HIGH FENCING TO BE PLACED AT DRIP LINE OR LIMITS OF GRADING, AS INDICATED ON PLAN, TYPICAL

NOTE: PROTECTION FENCING TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD

INDICATES EXISTING TREE TO BE REMOVED

INDICATES AREAS OF PAVEMENT, BUILDINGS, ETC. TO BE REMOVED

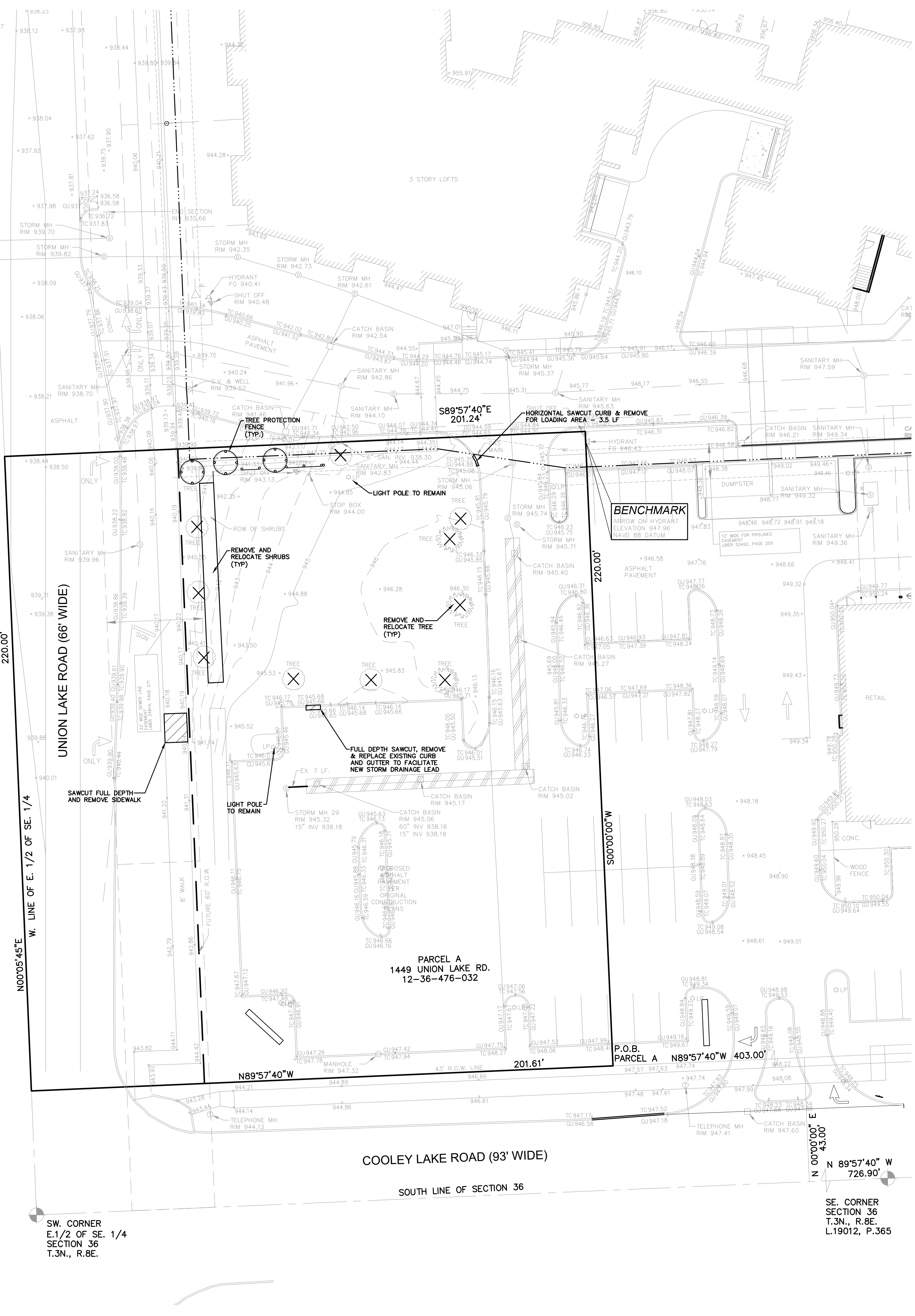
12" MAPLE

INDICATES EXISTING TREE TO BE REMOVED

INDICATES AREAS OF PAVEMENT, BUILDINGS, ETC. TO BE REMOVED

NOTE: PROTECTION FENCING TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD

TREE PROTECTION DETAIL-PLAN NTS



COOLEY LAKE

SW CORNER
 E.1/2 OF SE. 1/4
 SECTION 36
 T.3N., R.8E.

COOLEY LAKE ROAD (93' WIDE)

SOUTH LINE OF SECTION 36

SE CORNER
 SECTION 36
 T.3N., R.8E.
 L.19012, P.365



TOPOGRAPHIC SURVEY NOTES

ALL ELEVATIONS ARE EXISTING ELEVATIONS, UNLESS OTHERWISE NOTED.

UTILITY LOCATIONS WERE OBTAINED FROM MUNICIPAL OFFICIALS AND RECORDS OF UTILITY COMPANIES, AND NO GUARANTEE CAN BE MADE TO THE COMPLETENESS OR EXACTNESS OF LOCATION.

THIS SURVEY MAY NOT SHOW ALL EASEMENTS OF RECORD UNLESS AN UPDATED TITLE POLICY IS FURNISHED TO THE SURVEYOR BY THE OWNER

| LEGEND | |
|--------|--|
| | MANHOLE |
| | HYDRANT |
| | MANHOLE |
| | UTILITY POLE |
| | GUY WIRE |
| | GATE VALVE |
| | CATCH BASIN |
| | EXISTING STORM SEWER |
| | EX. R. Y. CATCH BASIN |
| | EXISTING BURIED CABLES |
| | LIGHT POLE |
| | SIGN |
| | EXISTING GAS MAIN |
| | EXISTING UTILITY TO BE REMOVED |
| | EXISTING UTILITY TO BE ABANDONED |
| | INDICATES EXISTING TREE TO BE REMOVED |
| | INDICATES AREAS OF PAVEMENT, BUILDINGS, ETC. TO BE REMOVED |

DATE ISSUED/REVISED
 10-14-21 ISSUED FOR SITE PLAN REVIEW
 11-08-21 REVISED PER SITE PLAN REVIEW

DATE
 08-25-2021

SCALE: 1" = 20'

SCALE: 1" = 20'

NFE JOB NO. SHEET NO.

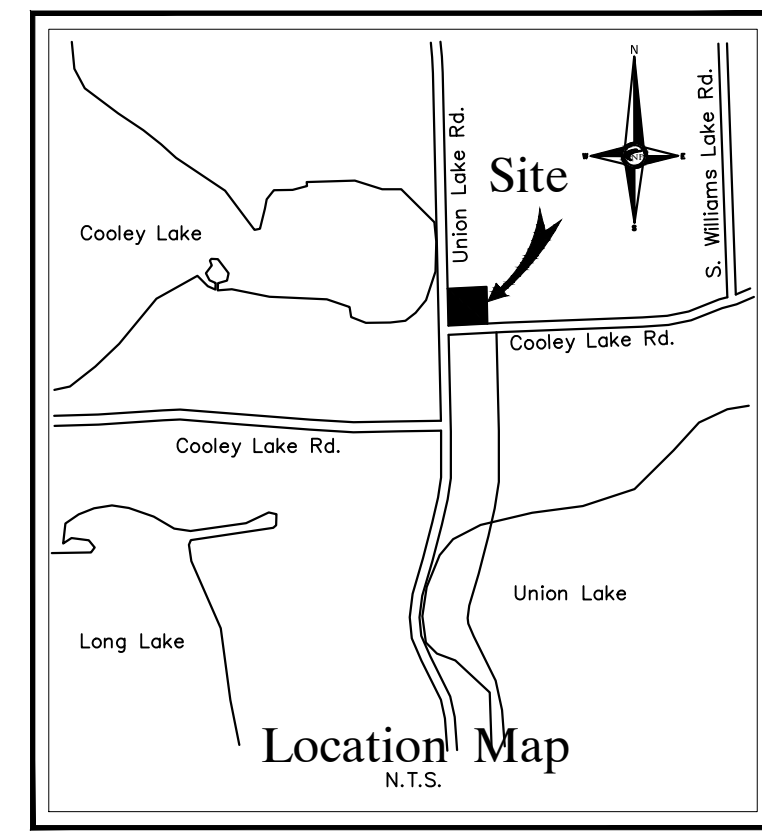
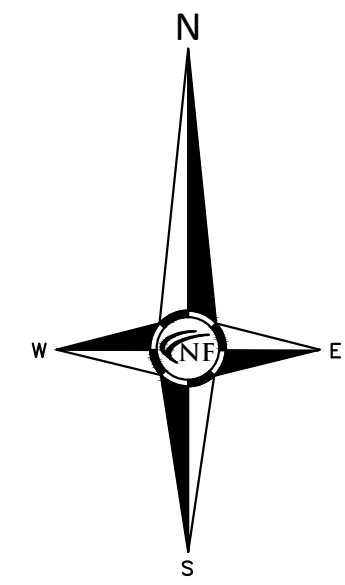
J635-03 C2

DATE: 08-25-2021

APPROVED BY: M. Peterson

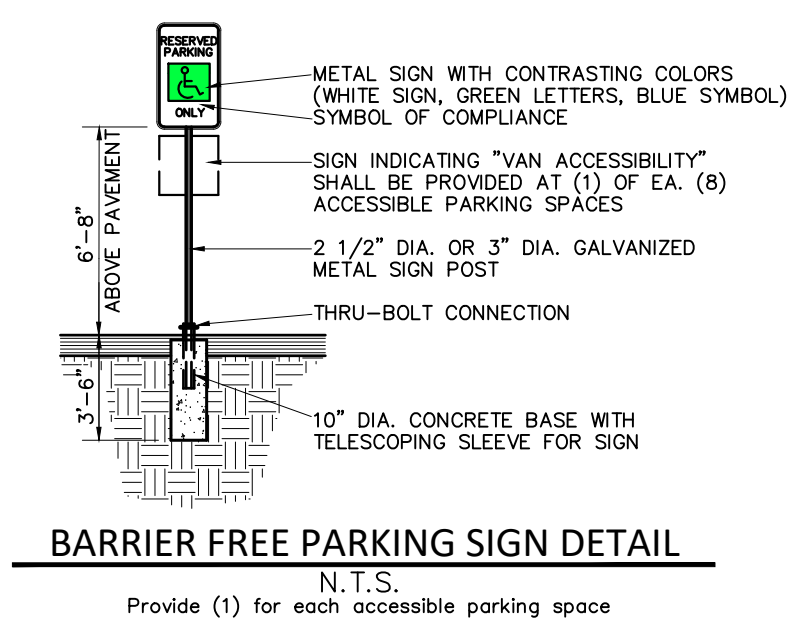
DESIGNED BY: M. Kurmas

DRAWN BY: N. Naoum

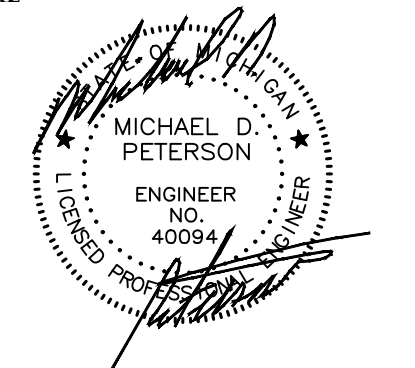


NF ENGINEERS
 CIVIL ENGINEERS
 LAND SURVEYORS
 LAND PLANNERS

NOWAK & FRAUS ENGINEERS
 46777 WOODWARD AVE.
 PONTIAC, MI 48342-5032
 TEL. (248) 332-7931
 FAX. (248) 332-8257
 WWW.NOWAKFRAUS.COM



SEAL



PROJECT
 4 Corners Retail Center
 1449 Union Lake Road
 White Lake Township

CLIENT
 VERITAS
 29580 Northwestern Hwy,
 Suite 1000
 Southfield, Michigan 48075

Contact: Shakir W.
 Alkafaji, President
 Phone: (248) 559-5555

PROJECT LOCATION
 Part of the E. 1/2
 of the SE. 1/4 of Section 8
 T.3N., R.8E.
 White Lake Township,
 Oakland County, Michigan

SHEET
 Stringer Dimension Plan



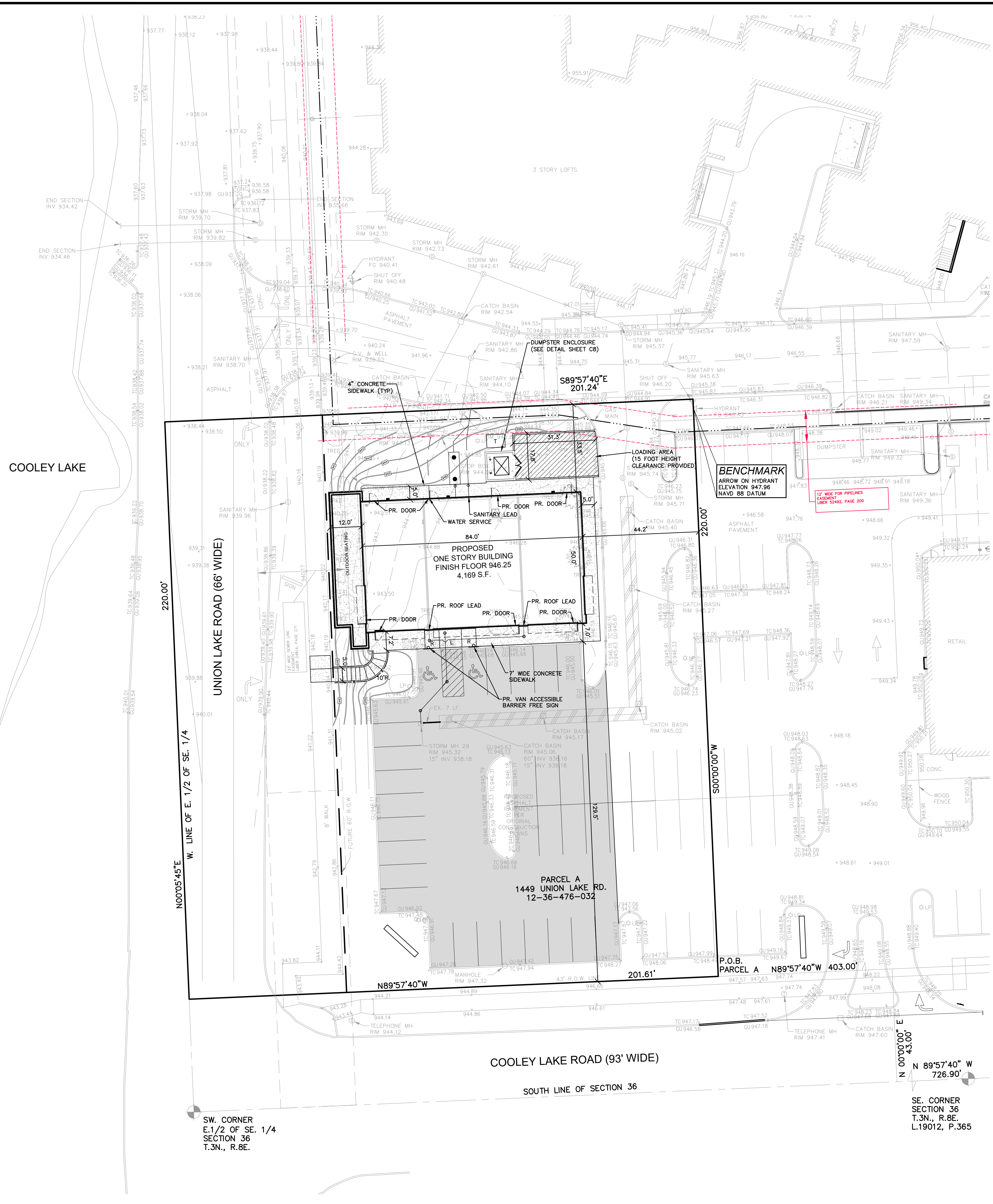
DATE ISSUED/REVISED
 10-14-21 ISSUED FOR SITE PLAN REVIEW
 11-08-21 REVISED PER SITE PLAN REVIEW

DRAWN BY:
 N. Naoum
 DESIGNED BY:
 M. Kurmas
 APPROVED BY:
 M. Peterson

DATE:
 08-25-2021

SCALE: 1" = 20'

NFE JOB NO. SHEET NO.
J635-03 C3



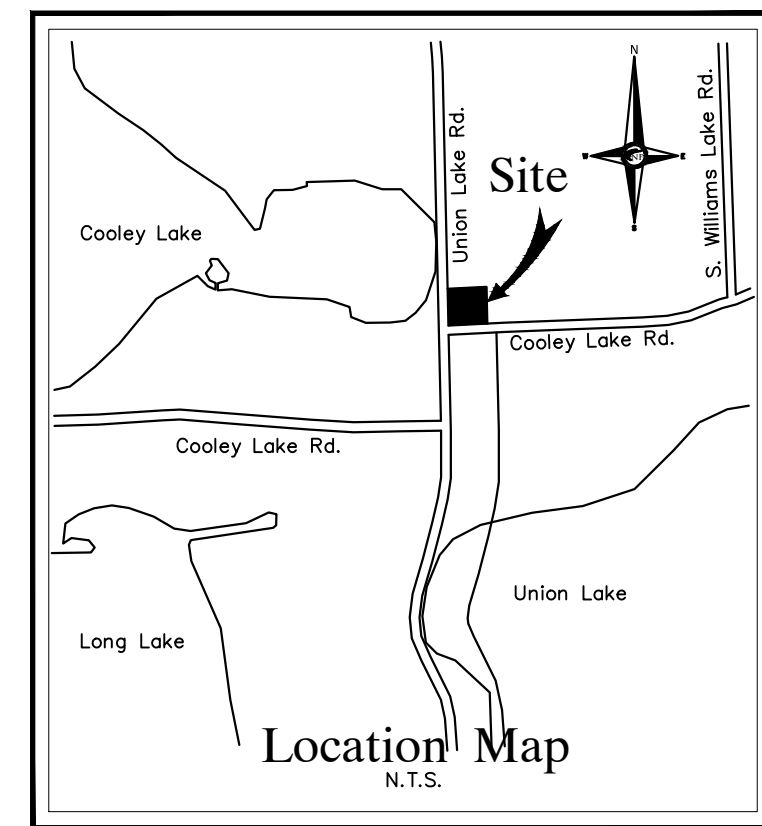
SITE DATA
 Zoned: NMU Neighborhood Mixed Use
 Building Setbacks:
 Front= 0'
 Sides= 0'
 Rear= 5'

PAVING LEGEND

| | |
|--|----------------------------|
| | PROPOSED CONCRETE PAVEMENT |
| | PROPOSED ASPHALT PAVEMENT |

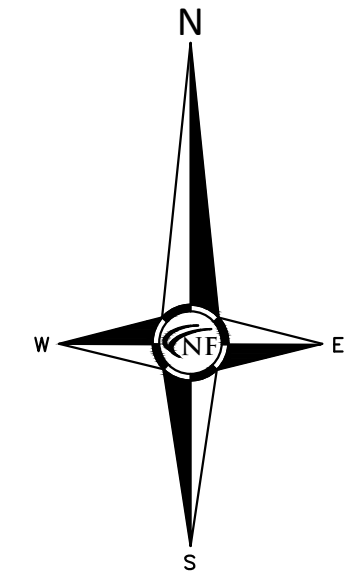
LEGEND

| | | | |
|--|---------------------|--|-------------------------|
| | MANHOLE | | EXISTING SANITARY SEWER |
| | HYDRANT | | GATE VALVE |
| | MANHOLE CATCH BASIN | | EXISTING WATERMAIN |
| | UTILITY POLE | | EXISTING STORM SEWER |
| | GUY POLE | | EX. R. Y. CATCH BASIN |
| | GUY WIRE | | EXISTING BURIED CABLES |
| | LIGHT POLE | | OVERHEAD LINES |
| | SIGN | | EXISTING GAS MAIN |
| | C.O. MANHOLE | | PR. SANITARY SEWER |
| | HYDRANT | | PR. WATER MAIN |
| | INLET | | PR. STORM SEWER |
| | C.B. MANHOLE | | PR. R. Y. CATCH BASIN |
| | PROPOSED LIGHT POLE | | |

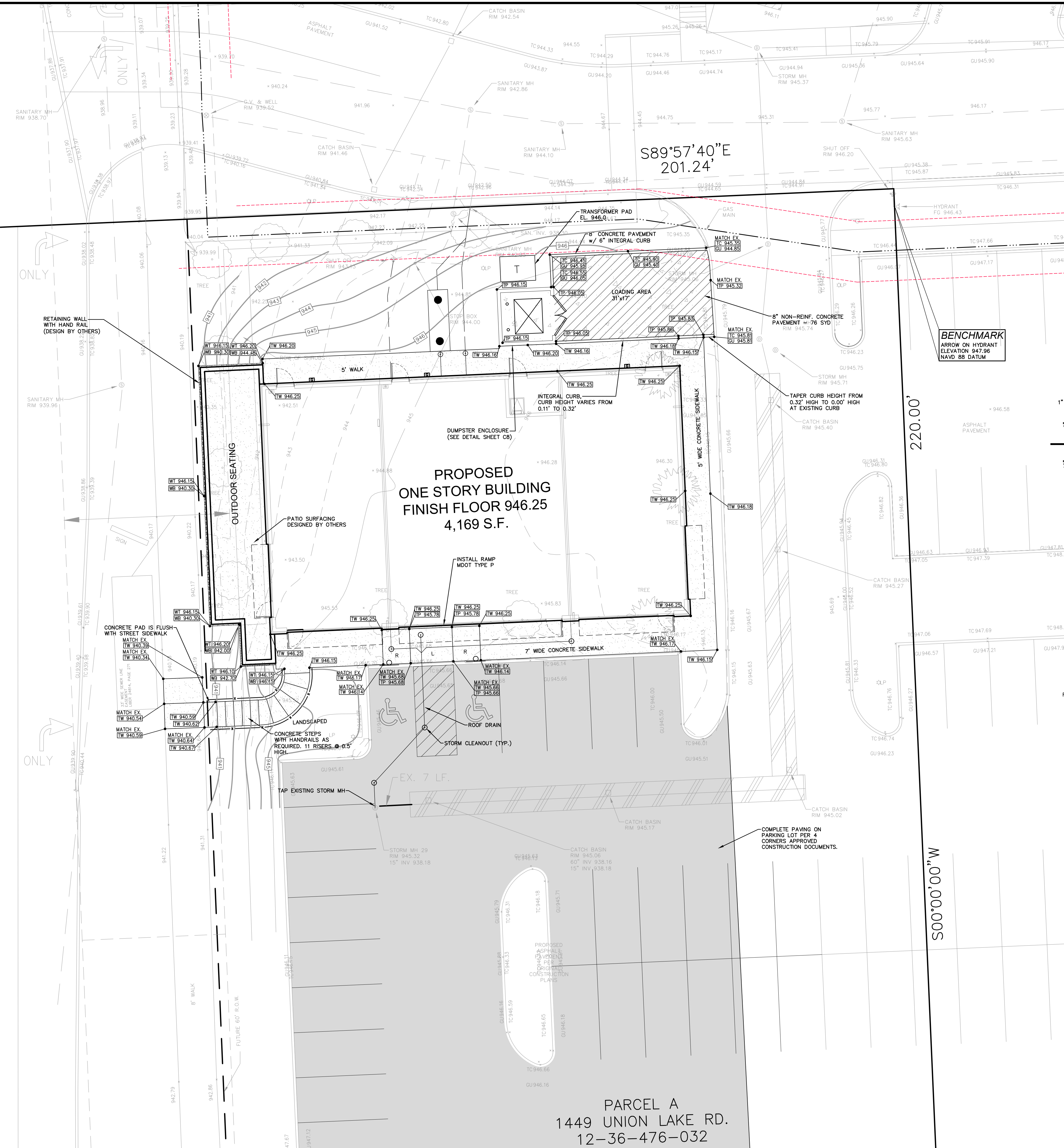


NF ENGINEERS
 CIVIL ENGINEERS
 LAND SURVEYORS
 LAND PLANNERS

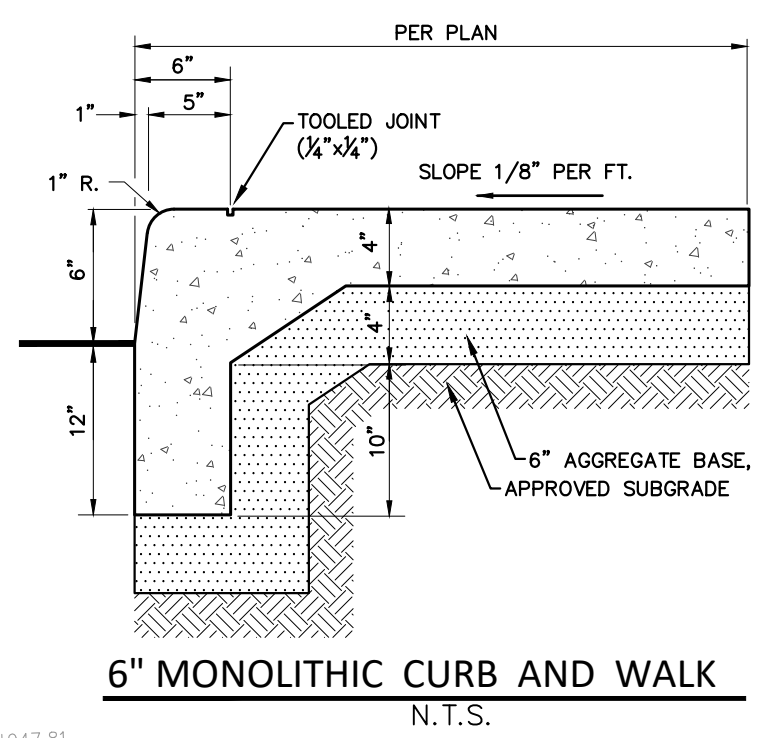
NOWAK & FRAUS ENGINEERS
 4677 WOODWARD AVE.
 PONTIAC, MI 48342-5032
 TEL. (248) 332-7931
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 WWW.NOWAKFRAUS.COM



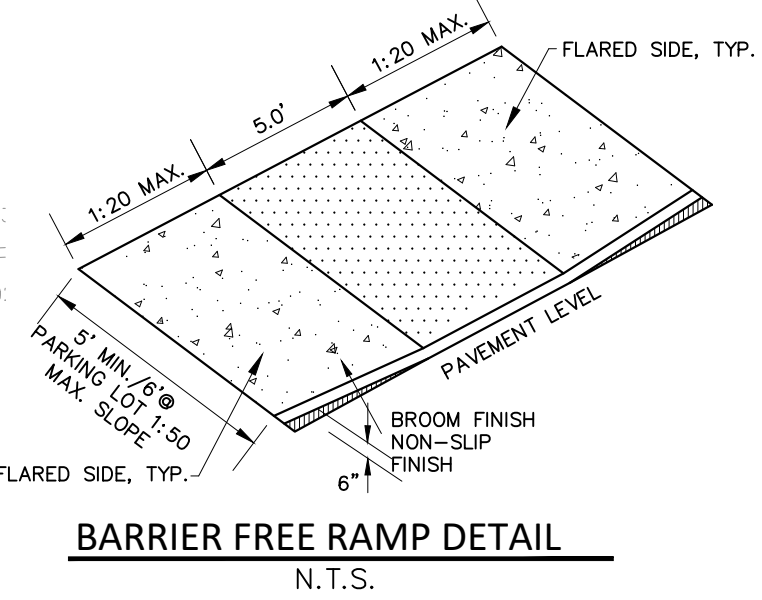
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201.24'



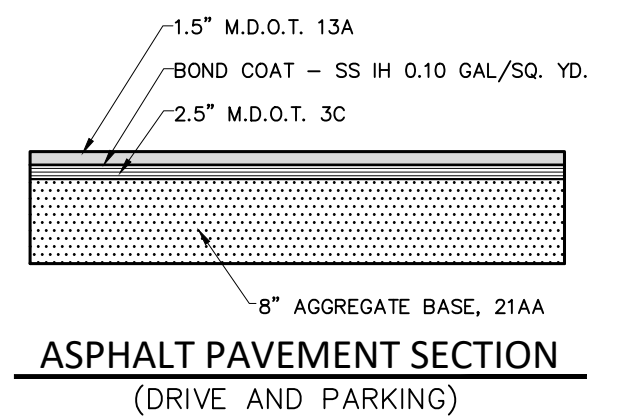
BENCHMARK
ARROW ON HYDRANT
ELEVATION 947.96
NAVD 88 DATUM



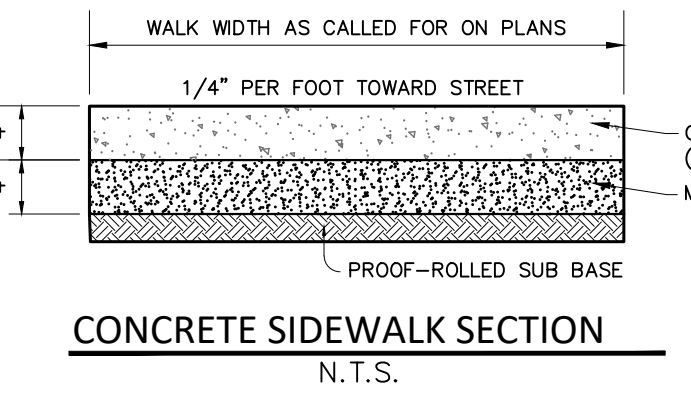
6" MONOLITHIC CURB AND WALK
N.T.S.



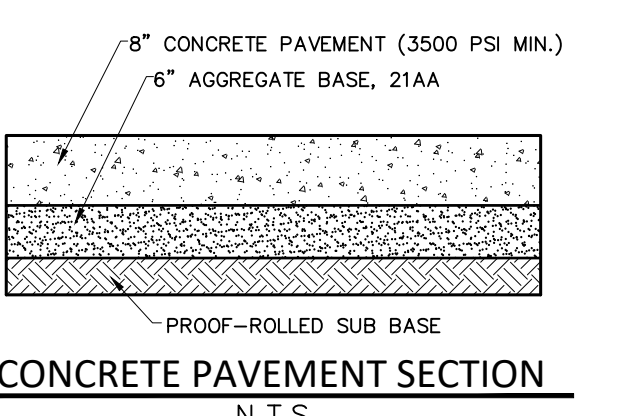
Barrier Free Ramp Detail
N.T.S.



ASPHALT PAVEMENT SECTION
(DRIVE AND PARKING)



CONCRETE SIDEWALK SECTION
N.T.S.



CONCRETE PAVEMENT SECTION
N.T.S.

GENERAL PAVING NOTES

PAVEMENT SHALL BE OF THE TYPE, THICKNESS AND CROSS SECTION AS INDICATED ON THE PLANS AND AS FOLLOWS:

CONCRETE: PORTLAND CEMENT TYPE IA (AIR-ENTRAINED) WITH A MINIMUM CEMENT CONTENT OF SIX SACKS PER CUBIC YARD, MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,500 PSI AND A SLUMP OF 1 1/2 TO 3 INCHES.

ASPHALT: BASE COURSE - MDT BITUMINOUS MIXTURE HMA 4E1, 20AA; SURFACE COURSE - MDT BITUMINOUS MIXTURE HMA 5E1, 20AA; ASPHALT CEMENT PENETRATION GRADE 85-100, BOND COAT - MDT SS-1H EMULSION AT 0.10 GALLON PER SQUARE YARD; MAXIMUM 2 INCH LIFT.

PAVEMENT BASE SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT. EXISTING SUB-BASE SHALL BE PROOF-ROLLED IN THE PRESENCE OF THE ENGINEER TO DETERMINE STABILITY.

ALL CONCRETE PAVEMENT, DRIVEWAYS, CURB & GUTTER, ETC., SHALL BE SPRAY CURED WITH WHITE MEMBRANE CURING COMPOUND IMMEDIATELY FOLLOWING FINISHING OPERATION.

ALL CONCRETE PAVEMENT JOINTS SHALL BE FILLED WITH HOT POURED RUBBERIZED ASPHALT JOINT SEALING COMPOUND IMMEDIATELY AFTER SAWCUT OPERATION. FEDERAL SPECIFICATION SS-5164.

ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY AND THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, CURRENT EDITION.

ALL TOP OF CURB ELEVATIONS, AS SHOWN ON THE PLANS, ARE CALCULATED FOR A 6" CONCRETE CURB UNLESS OTHERWISE NOTED.

ALL SIDEWALK RAMP, CONFORMING TO PUBLIC ACT NO. 8, 1993, SHALL BE INSTALLED AS INDICATED ON THE PLANS.

CONSTRUCTION OF A NEW OR RECONSTRUCTED DRIVE APPROACH CONNECTING TO AN EXISTING STATE OR COUNTY ROADWAY SHALL BE ALLOWED ONLY AFTER AN APPROVED PERMIT HAS BEEN SECURED FROM THE AGENCY HAVING JURISDICTION OVER SAID ROADWAY.

FOR ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY, THE CONTRACTOR SHALL PAY FOR AND SECURE ALL NECESSARY PERMITS AND LIKewise ARRANGE FOR ALL INSPECTION.

EXISTING TOPSOIL, VEGETATION AND ORGANIC MATERIALS SHALL BE STRIPPED AND REMOVED FROM PROPOSED PAVEMENT AREA PRIOR TO PLACEMENT OF BASE MATERIALS.

EXPANSION JOINTS SHOULD BE INSTALLED AT THE END OF ALL INTERSECTION RADII.

SIDEWALK RAMP, CONFORMING TO PUBLIC ACT NO. 8, 1973, SHALL BE INSTALLED AS SHOWN AT ALL STREET INTERSECTIONS AND AT ALL BARRIER FREE PARKING AREAS AS INDICATED ON THE PLANS.

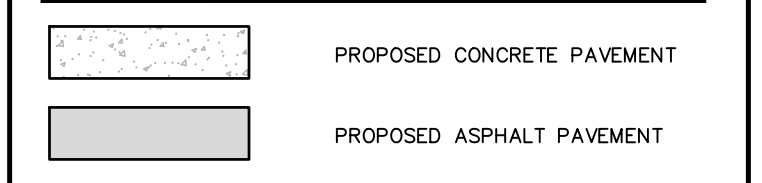
ALL PAVEMENT AREAS SHALL BE PROOF-ROLLED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER PRIOR TO THE PLACEMENT OF BASE MATERIALS AND PAVING MATERIALS.

FILL AREAS SHALL BE MACHINE COMPACTED IN UNIFORM LIFTS NOT EXCEEDING 9 INCHES THICK TO 98% OF THE MAXIMUM DENSITY (MODIFIED PROCTOR) PRIOR TO PLACEMENT OF PROPOSED PAVEMENT.

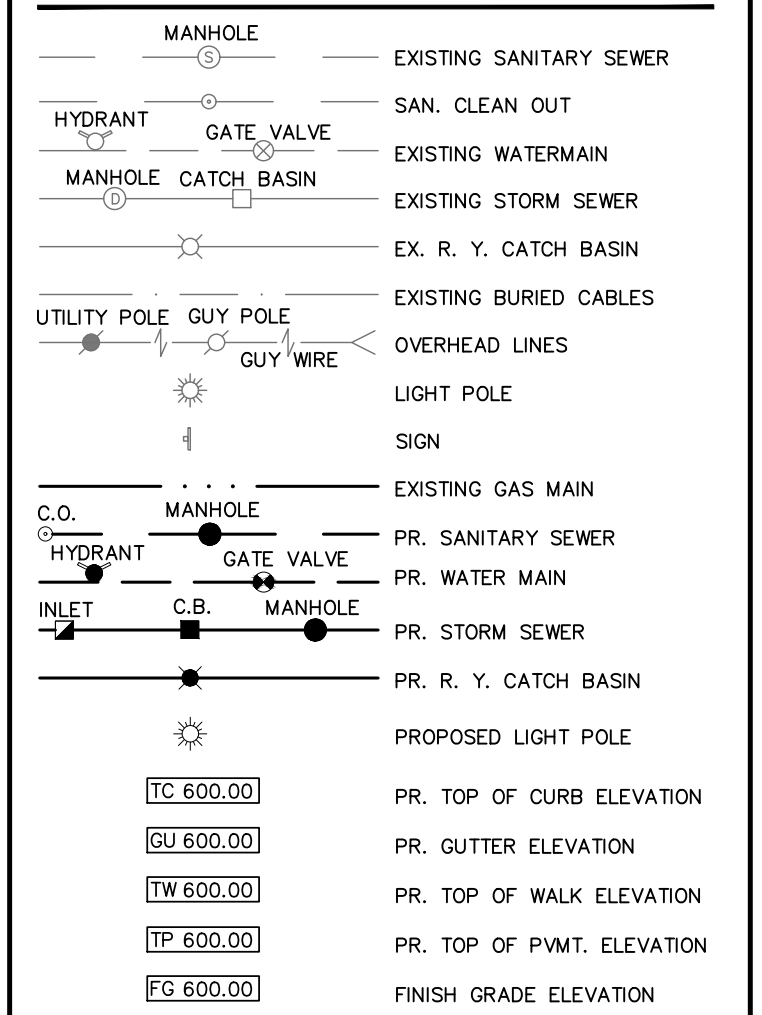
ESTIMATED QUANTITIES PAVING

| DESCRIPTION | QUANTITY | UNITS |
|----------------------------|----------|-------|
| 4" ASPHALT ON 8" 21AA BASE | 20 | S.Y. |
| 4" CONCRETE SIDEWALK | 1,527 | S.F. |
| 8" NON-REINFORCED CONCRETE | 96 | S.Y. |

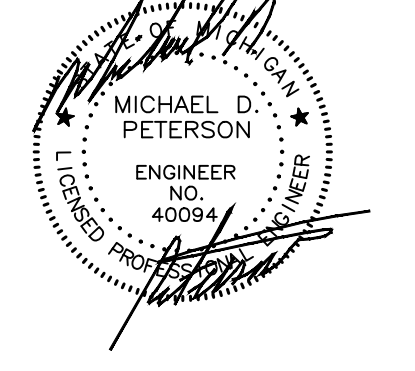
PAVING LEGEND



LEGEND



SEAL



PROJECT
4 Corners Retail Center
1449 Union Lake Road
White Lake Township

CLIENT
VERITAS
29580 Northwestern Hwy,
Suite 1000
Southfield, Michigan 48075

Contact: Shkir W. Alkhafaji, President
Phone: (248) 559-5555

PROJECT LOCATION
Part of the E. 1/2 of the SE. 1/4 of Section 8 T.3N. , R.8E.
White Lake Township, Oakland County, Michigan

SHEET
Paving & Grading Plan



DATE ISSUED/REVISED
10-14-21 ISSUED FOR SITE PLAN REVIEW
11-08-21 REVISED PER SITE PLAN REVIEW

DRAWN BY:
N. Naoom
DESIGNED BY:
M. Kurmas
APPROVED BY:
M. Peterson

DATE:
08-25-2021

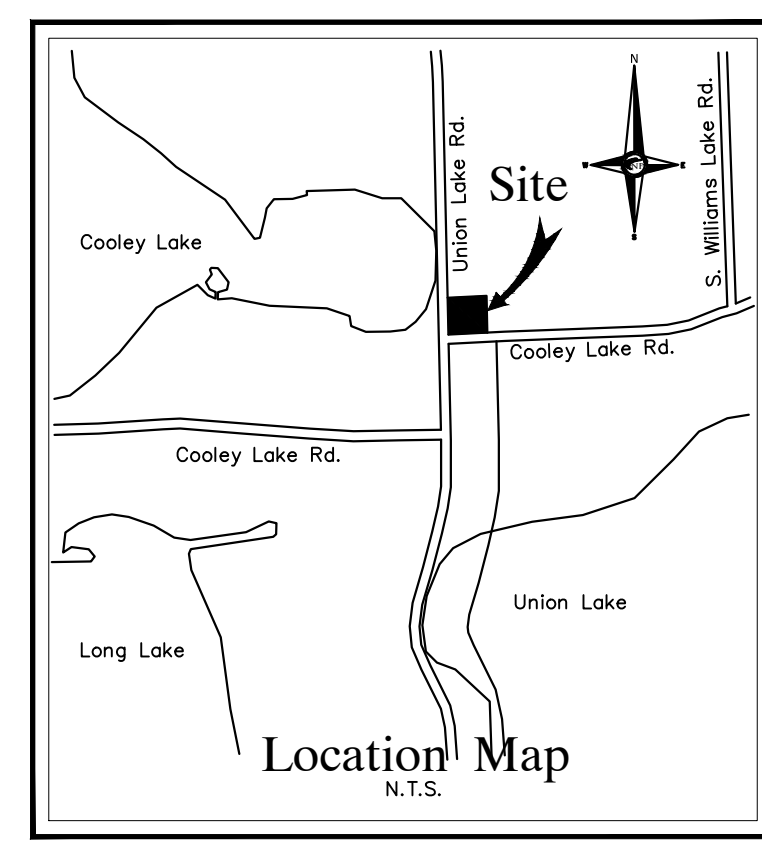
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10 5 0 5 10 5

NFE JOB NO. SHEET NO.
J635-03 C4

PARCEL A
1449 UNION LAKE RD.
12-36-476-032

**CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS**

NOWAK & FRAUS ENGINEERS
4677 WOODWARD AVE.
PONTIAC, MI 48342-5032
TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM



SEAL

MICHAEL D. PETERSON
ENGINEER
NO. 400394
STATE OF MICHIGAN

PROJECT
4 Corners Retail Center
1449 Union Lake Road
White Lake Township

CLIENT
VERITAS
29580 Northwestern Hwy,
Suite 1000
Southfield, Michigan 48075

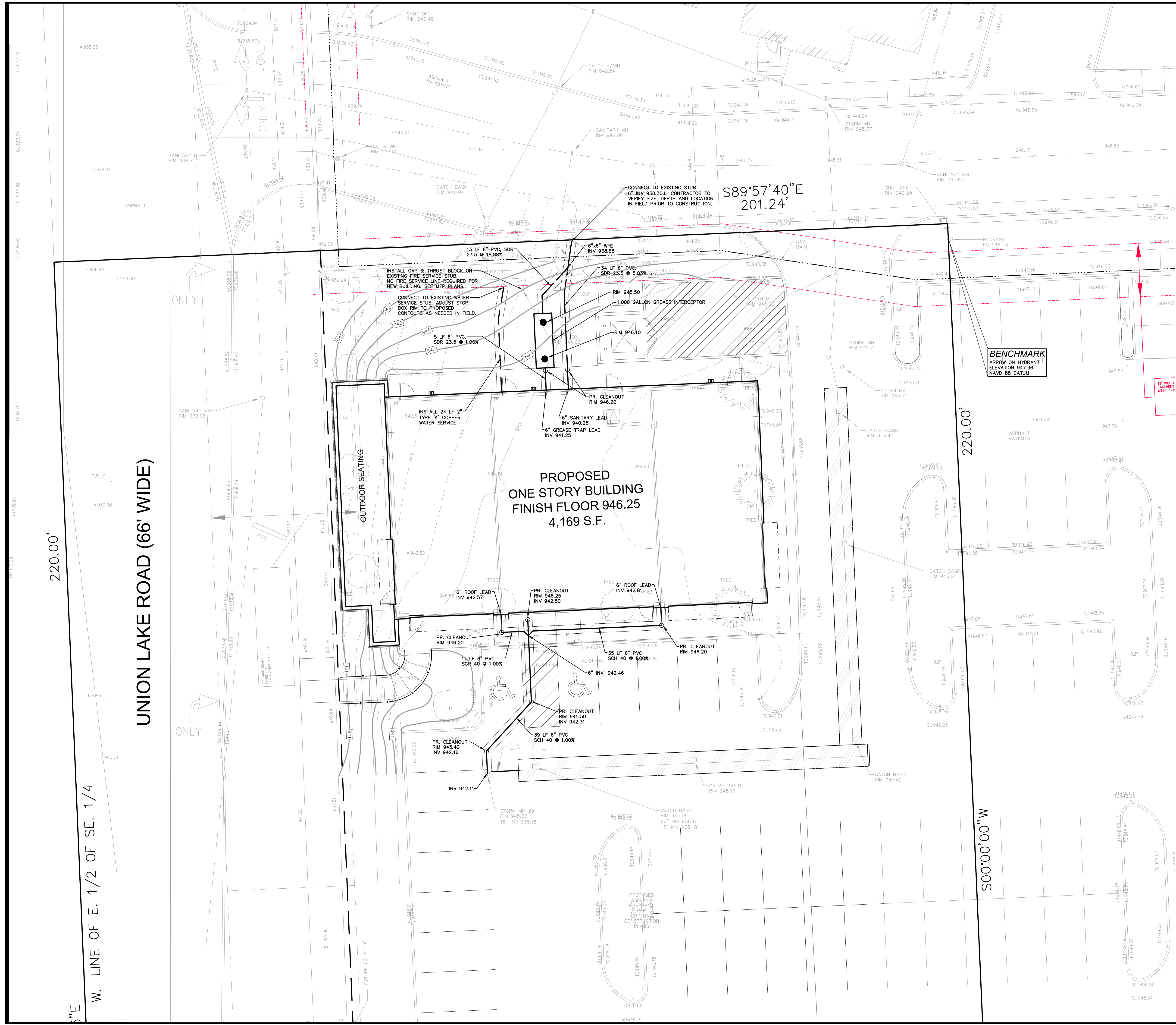
Contact: Shakir W. Alkafaji, President
Phone: (248) 559-5555

PROJECT LOCATION
Part of the E. 1/2 of the SE. 1/4 of Section 8 T.3N., R.8E. White Lake Township, Oakland County, Michigan

SHEET
Utility Plan

DATE ISSUED/REVISED
10-14-21 ISSUED FOR SITE PLAN REVIEW
11-08-21 REVISED PER SITE PLAN REVIEW

DRAWN BY: M. Kurmas
DESIGNED BY: M. Kurmas
APPROVED BY: M. Peterson
DATE: 08-25-2021
SCALE: 1" = 10'
10 5 0 5 10 5
NFE JOB NO. J635-03 **SHEET NO.** C5



Project: 4 Corners Outlot
Date: 9-07-2021
Revised:

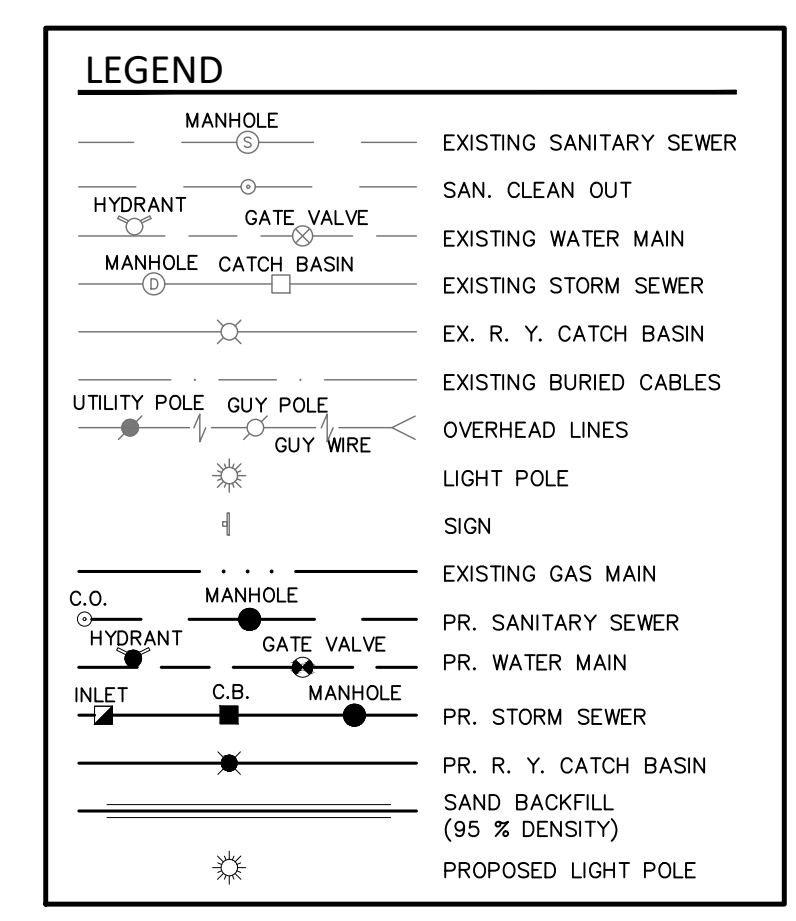
SANITARY SEWER/WATER MAIN BASIS OF DESIGN

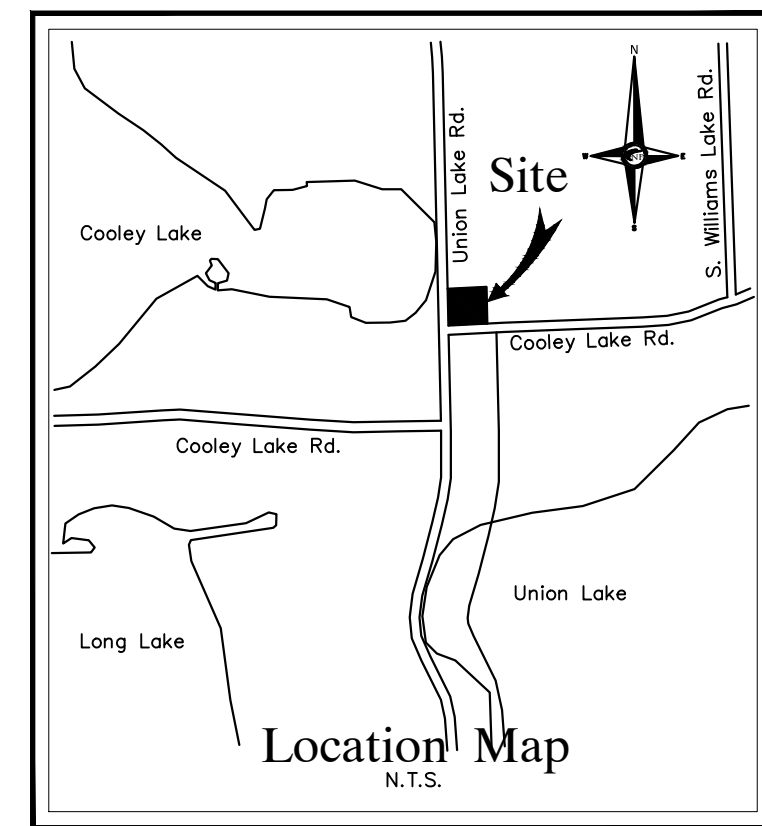
| | |
|---|----------------------|
| Retail | |
| 0.04 per 1,000 sq. ft. | |
| 4,169 sq. ft. total | |
| 0.04 x 4,169/1000 = | 0.17 REU |
| Total: | 0.17 Total REU |
| 1 retail building with 4,169 sq. ft. total = | 0.17 Total REU |
| *Note: 1 REU Equals 100 G.P.D. | |
| 3.5 Persons per REU x Total REU = | 0.5835 Persons Total |
| Ave Q = (100 GPD * 3.5 People * Total REU) / 1000000 | = 6E-05 mgpd |
| Peaking = 18 + (# of Persons/1000) ^ 0.50 | = 4.48 |
| Factor = 4 + (# of Persons/1000) ^ 0.50 | = 1.00% |
| PEAK Q = Ave Flow * Peaking Factor | = 0.0003 mgpd |
| | = 0.0004 cfs |
| SIZE OF SANITARY SEWER | = 6 inch |
| PIPE SLOPE | = 1.00 % |
| PIPE CAPACITY | = 0.56 cfs. |

WRC REU Table Assumptions:
Stores (other than specifically listed) = 0.04 REU per 1,000 sq. ft.

ESTIMATED QUANTITIES

| DESCRIPTION | QUANTITY | UNITS |
|---------------------------------|----------|-------|
| STORM SEWER | | |
| 6" PVC, SCH 40, SEWER PIPE | 85 | L.F. |
| CLEANOUT | 5 | EA. |
| TAP/CONNECTION | 1 | EA. |
| SANITARY SEWER | | |
| 6" PVC, SDR 23.5, BUILDING LEAD | 52 | L.F. |
| 1,000 GALLON GREASE INTERCEPTOR | 1 | EA. |
| CLEANOUT | 2 | EA. |
| TAP/CONNECTION | 1 | EA. |
| WATER MAIN | | |
| 2" X" COPPER BUILDING SERVICE | 24 | L.F. |
| WATER MAIN CONNECTION | 1 | EA. |

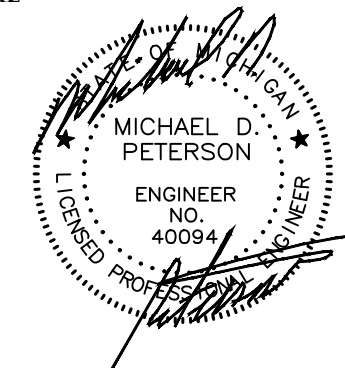




NF ENGINEERS
 CIVIL ENGINEERS
 LAND SURVEYORS
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SEAL



PROJECT
 4 Corners Retail Center
 1449 Union Lake Road
 White Lake Township

CLIENT
 VERITAS
 29580 Northwestern Hwy,
 Suite 1000
 Southfield, Michigan 48075

Contact: Shakir W.
 Alkhafaji, President
 Phone: (248) 559-5555

PROJECT LOCATION
 Part of the E. 1/2
 of the SE. 1/4 of Section 8
 T.3N. , R.8E.
 White Lake Township,
 Oakland County, Michigan

SHEET
 Soil Erosion Control /
 Drainage Area Plan



DATE ISSUED/REVISED
 10-14-21 ISSUED FOR SITE PLAN REVIEW
 11-08-21 REVISED PER SITE PLAN REVIEW

SOIL DATA
 THIS SITE CONSISTS OF
 15% SPINKS LOAMY SAND, 6 TO 12 PERCENT SLOPES
 59% URBAN LAND

BASED ON DATA PROVIDED BY THE UNITED STATES DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE.

ESTIMATED QUANTITIES

| DESCRIPTION | QUANTITY | UNITS |
|------------------------------|----------|-------|
| SILT FABRIC FENCING | 199 | L.F. |
| SILT SACK OR EQUAL | 6 | EA. |
| SOIL EROSION CONTROL BLANKET | 105 | S.Y. |

DRAWN BY:
 N. Naoum

DESIGNED BY:
 M. Kurmas

APPROVED BY:
 M. Peterson

DATE:
 08-25-2021

SCALE: 1" = 20'

NFE JOB NO. SHEET NO.
J635-03 C7

SEE OAKLAND COUNTY WRC SOIL EROSION AND SEDIMENTATION CONTROL STANDARD DETAILS

| CONSTRUCTION SEQUENCE / TIMING SCHEDULE | |
|---|---------------|
| 1. INSTALL PERIMETER FILTER FABRIC FENCING AND STONE FILTER WHERE REQUIRED. | OCTOBER 2021 |
| 2. MASS GRADE SITE. | OCTOBER 2021 |
| 3. COMMENCE UNDERGROUND UTILITY WORK. | NOVEMBER 2021 |
| 4. INSTALL INLET FILTERS ON PROPOSED DRAINAGE STRUCTURES. | NOVEMBER 2021 |
| 5. FILL IN SEDIMENTATION TRAPS AND PAVE SITE. | MARCH 2022 |
| 6. COMPLETE ALL BUILDINGS AND LANDSCAPE ACTIVITY. | MARCH 2022 |
| 7. JET VAC NEW STORM SEWER SYSTEM AS REQUIRED. | MAY 2022 |
| 8. REMOVE ALL TEMPORARY SOIL EROSION MEASURES. | MAY 2022 |

NOTES

REFER TO THE WRC SOIL EROSION AND SEDIMENTATION CONTROL DETAIL SHEET FOR ALL ADDITIONAL NOTES & DETAILS (TYP)
 A DISTANCE OF 66' TO THE NEAREST BODY OF WATER IS COOLEY LAKE.
 THE TOTAL AREA OF EARTH DISRUPTION IS 0.22 ACRES.
 THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY THE CONTRACTOR
 A SOIL EROSION PERMIT IS REQUIRED FROM THE OAKLAND COUNTY COUNTY.

SOIL DATA

THIS SITE CONSISTS OF
 15% SPINKS LOAMY SAND, 6 TO 12 PERCENT SLOPES
 59% URBAN LAND

ESTIMATED QUANTITIES

| DESCRIPTION | QUANTITY | UNITS |
|------------------------------|----------|-------|
| SILT FABRIC FENCING | 199 | L.F. |
| SILT SACK OR EQUAL | 6 | EA. |
| SOIL EROSION CONTROL BLANKET | 105 | S.Y. |

LEGEND

| | |
|--|---|
| | INDICATES LIMITS OF SILT FABRIC FENCE |
| | INDICATES LIMITS OF DRAINAGE DISTRICT AREA |
| | INDICATES LIMITS OF SOIL DISRUPTION |
| | INDICATES LOW POINT INLET FILTER OR PROPOSED DRAINAGE STRUCTURE |
| | INDICATES SILT SACK OR EQUAL ON EXISTING DRAINAGE STRUCTURE |
| | INDICATES DRAINAGE DISTRICT AREA |

SOIL EROSION CONTROL

CUTTING, FILLING AND GRADING SHALL BE MINIMIZED AND THE NATURAL TOPOGRAPHY OF THE SITE SHALL BE PRESERVED TO THE MAXIMUM POSSIBLE EXTENT, EXCEPT WHERE SPECIFIC FINDINGS DEMONSTRATE THAT MAJOR ALTERATIONS WILL STILL MEET THE PURPOSES AND REQUIREMENTS OF THIS ORDINANCE.

DEVELOPMENT SHALL BE STAGED TO KEEP THE EXPOSED AREAS OF SOIL AS SMALL AS PRACTICABLE.

SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED BETWEEN THE DISTURBED AREA AND ANY WATERCOURSES, INCLUDING RIVERS, STREAMS, CREEKS, LAKES, PONDS AND OTHER WATERCOURSES, WETLANDS, OR ROADWAYS ON OR NEAR THE SITE.

SEDIMENT RESULTING FROM ACCELERATED SOIL EROSION SHALL BE REMOVED FROM RUNOFF WATER BEFORE THAT WATER LEAVES THE SITE.

TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF WATER AROUND, THROUGH, OR AWAY FROM THE SITE SHALL BE DESIGNED TO LIMIT THE WATER FLOW TO A NON-EROSIVE VELOCITY.

TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE REMOVED AFTER PERMANENT SOIL EROSION CONTROL MEASURES HAVE BEEN IMPLEMENTED. ALL SITES SHALL BE STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES.

IF LAKES, PONDS, CREEKS, STREAMS, OR WETLANDS ARE LOCATED ON OR NEAR THE SITE, EROSION CONTROL MEASURES WHICH DIVERT RUNOFF AND TRAP SEDIMENT MUST BE PROVIDED AT STRATEGIC LOCATIONS. STRAW BALE BERMS MAY BE USED AS TEMPORARY STORMWATER DIVERSION STRUCTURES, BUT WILL NOT BE CONSIDERED SUFFICIENT FOR TRAPPING SEDIMENT. THE USE OF SEDIMENT BASINS, FILTER FABRIC, VEGETATED BUFFER STRIPS, AND ROCK FILTERS IN LIEU OF STRAW BALE BERMS SHALL BE STRONGLY ENCOURAGED. OTHER MEASURES MAY BE REQUIRED IF REASONABLY DETERMINED TO BE NECESSARY TO PROTECT A WATERCOURSE OR WETLAND.

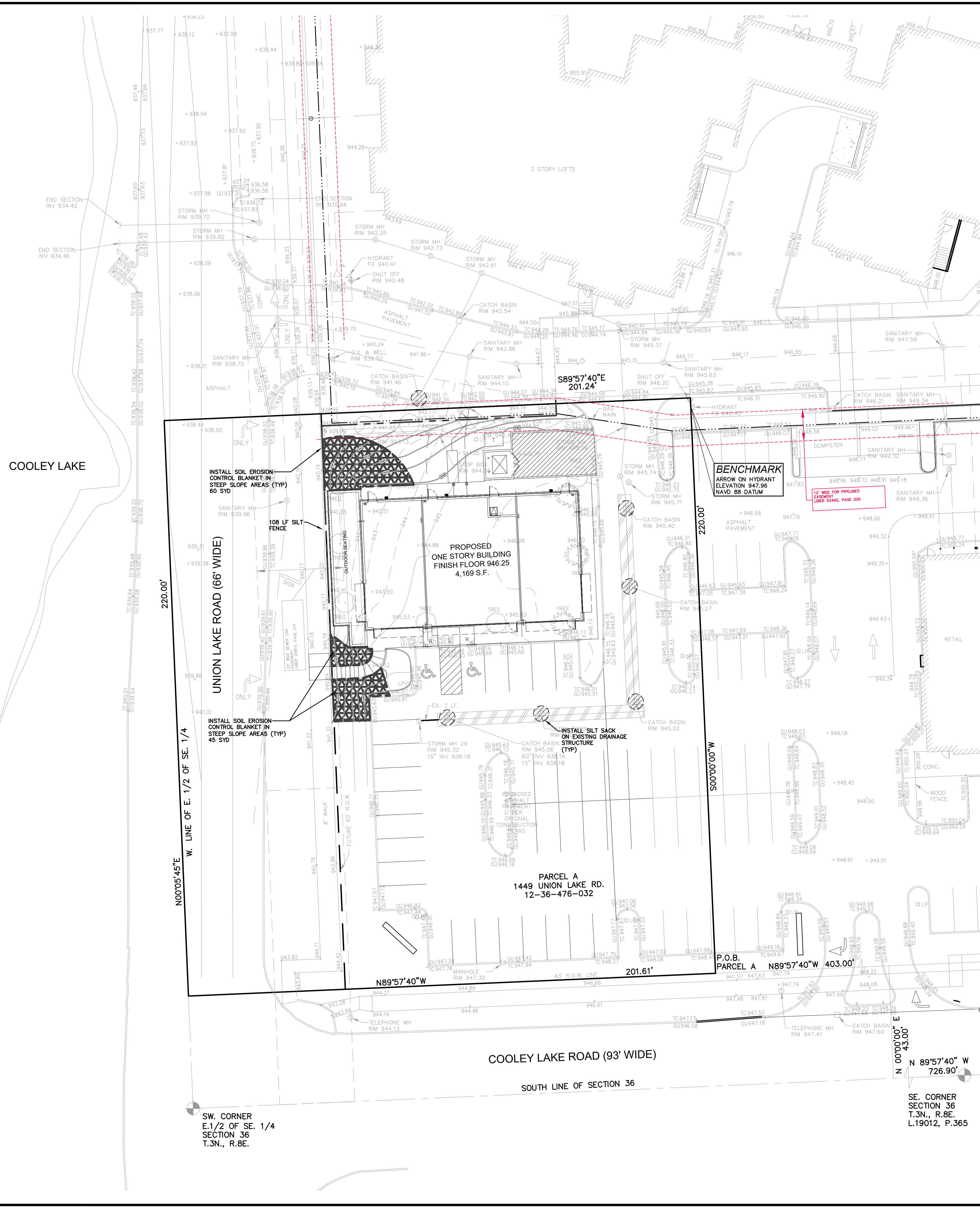
WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHEN SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED.

PERMANENT EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 15 (FIFTEEN) CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.

VEGETATED BUFFER STRIPS SHALL BE CREATED OR RETAINED ALONG THE EDGES OF ALL LAKES, PONDS, CREEKS, STREAMS, OTHER WATERCOURSES, OR WETLANDS.

EROSION AND SEDIMENTATION CONTROL MEASURES SHALL RECEIVE REGULAR MAINTENANCE TO ASSURE PROPER FUNCTIONING.

ALL GRADING PLANS AND SPECIFICATIONS, INCLUDING EXTENSIONS OF PREVIOUSLY APPROVED PLANS, SHALL INCLUDE PROVISIONS FOR EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH, BUT NOT LIMITED TO, THE STANDARDS CONTAINED IN THE "STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", PUBLISHED BY THE OAKLAND SOIL CONSERVATION DISTRICT.



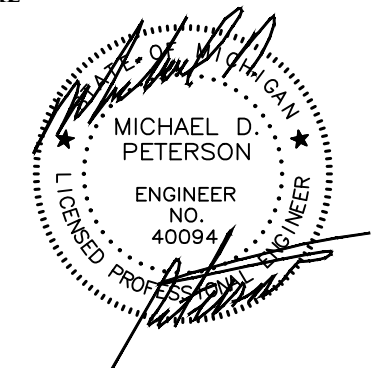
SW CORNER
 E.1/2 OF SE. 1/4
 SECTION 36
 T.3N., R.8E.

SE CORNER
 SECTION 36
 T.3N., R.8E.
 L.19012, P.365



NOWAK & FRAUS ENGINEERS
46777 WOODWARD AVE.
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TEL. (248) 332-7931
FAX. (248) 332-8257
WWW.NOWAKFRAUS.COM

SEAL



PROJECT

4 Corners Retail Center
1449 Union Lake Road
White Lake Township

CLIENT

VERITAS
29580 Northwestern Hwy,
Suite 1000
Southfield, Michigan 48075

Contact: Shkir W.
Alkhafaji, President
Phone: (248) 559-5555

PROJECT LOCATION

Part of the E. 1/2
of the SE. 1/4 of Section 8
T.3N. , R.8E.
White Lake Township,
Oakland County, Michigan

SHEET

General Construction
Requirements, Contractor's
Duties, Notes and Details



Know what's below
Call before you dig.

DATE ISSUED/REVISED

10-14-21 ISSUED FOR SITE PLAN REVIEW
11-08-21 REVISED PER SITE PLAN REVIEW

DRAWN BY:

M. Kurmas

DESIGNED BY:

M. Kurmas

APPROVED BY:

M. Peterson

DATE:

08-25-2021

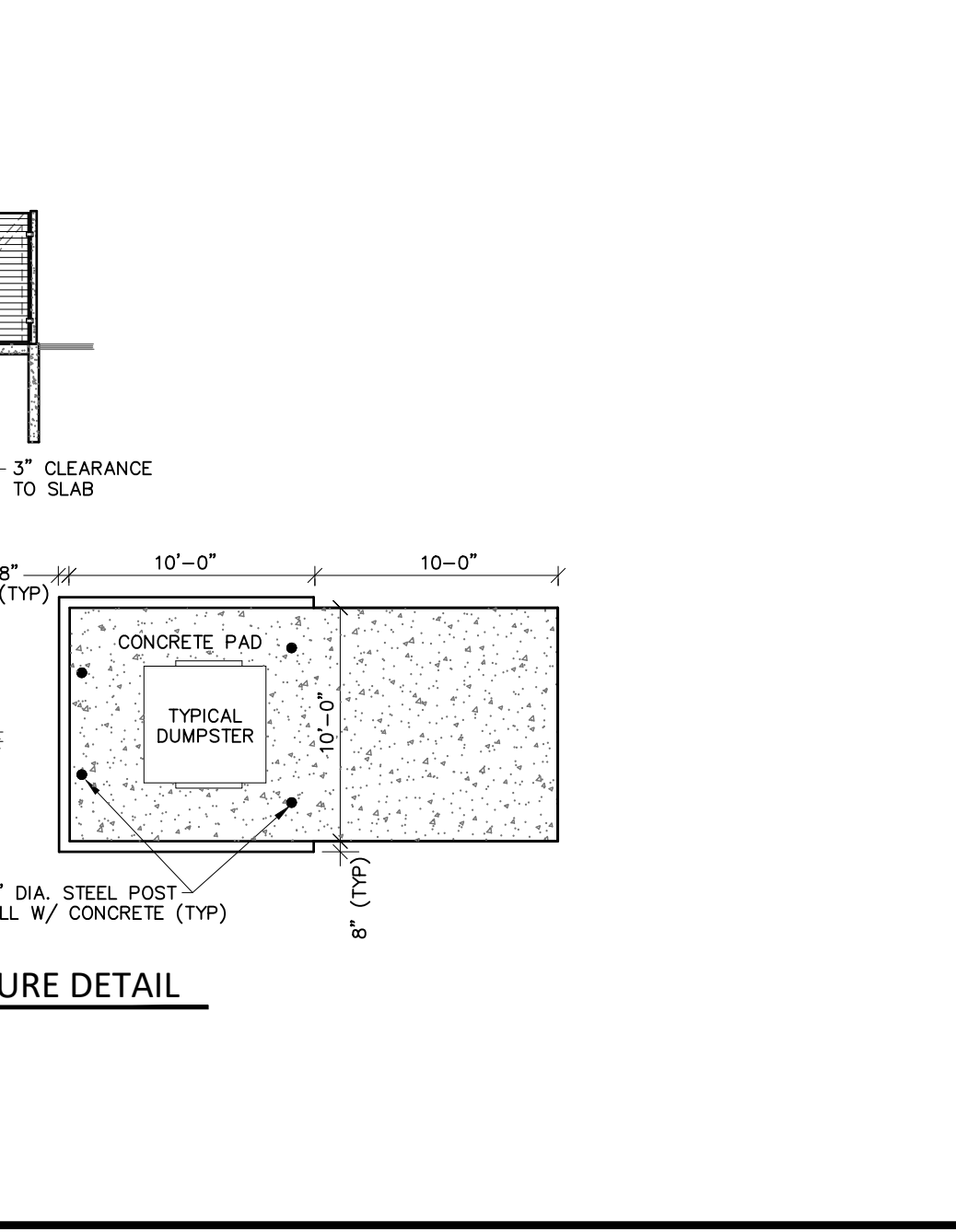
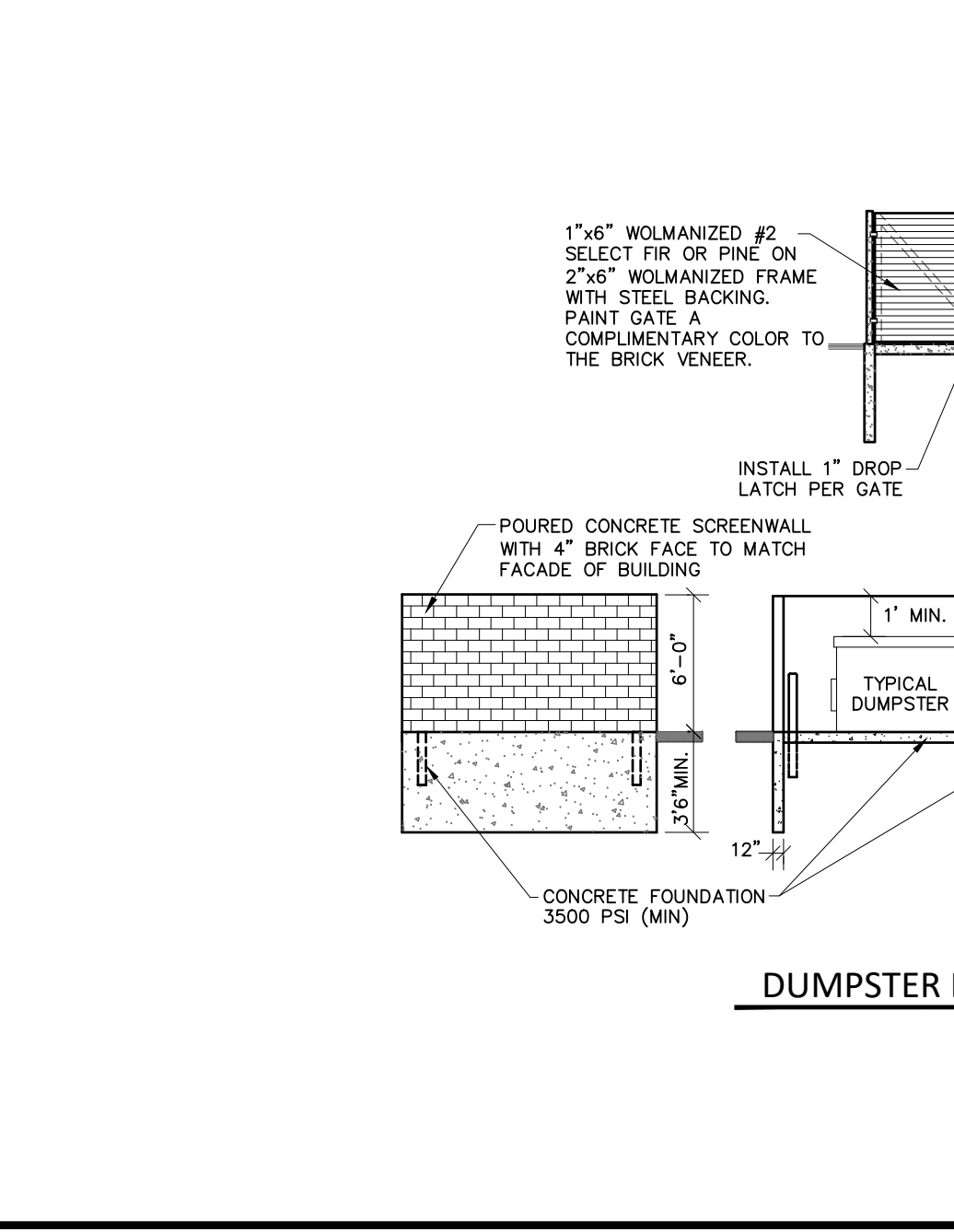
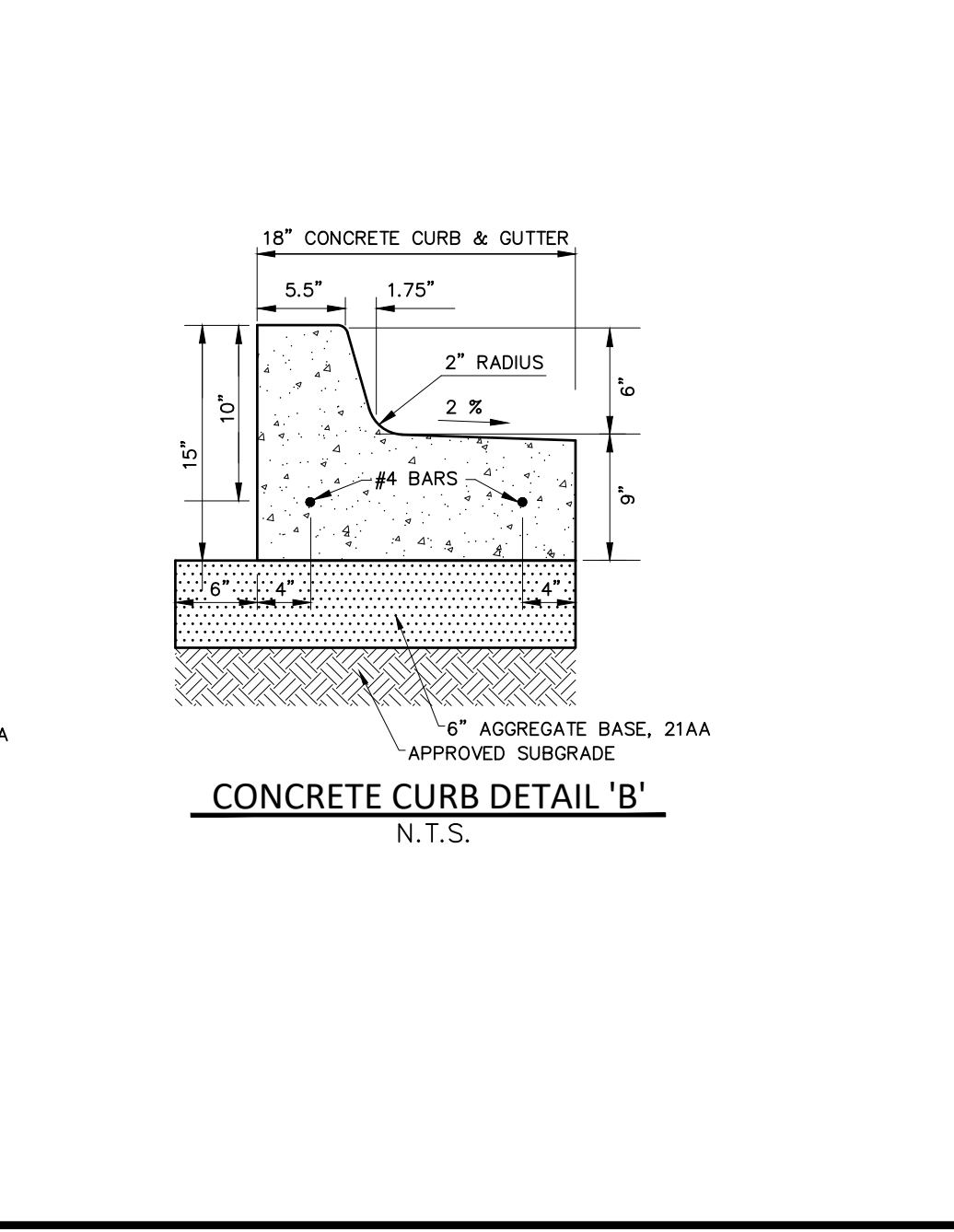
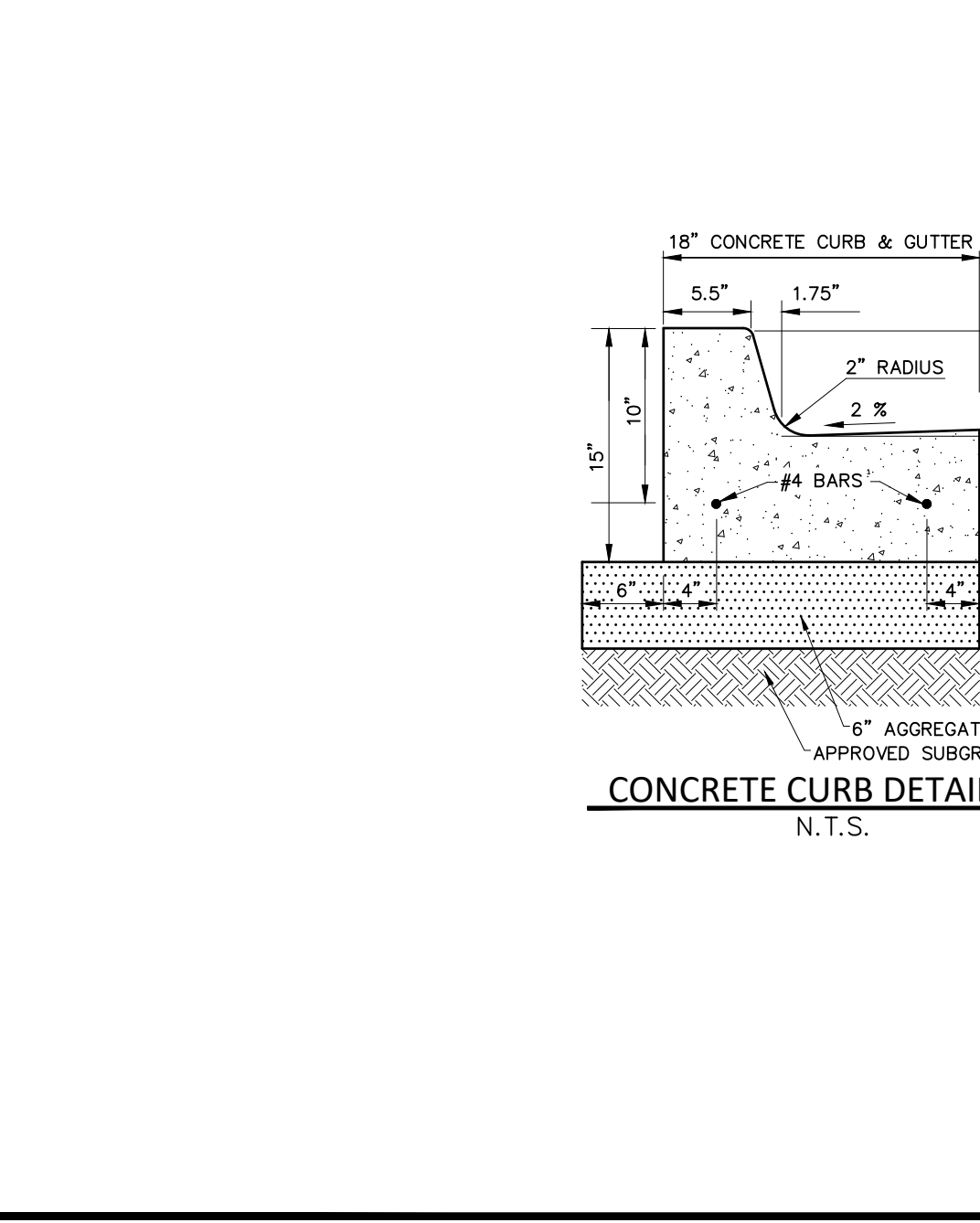
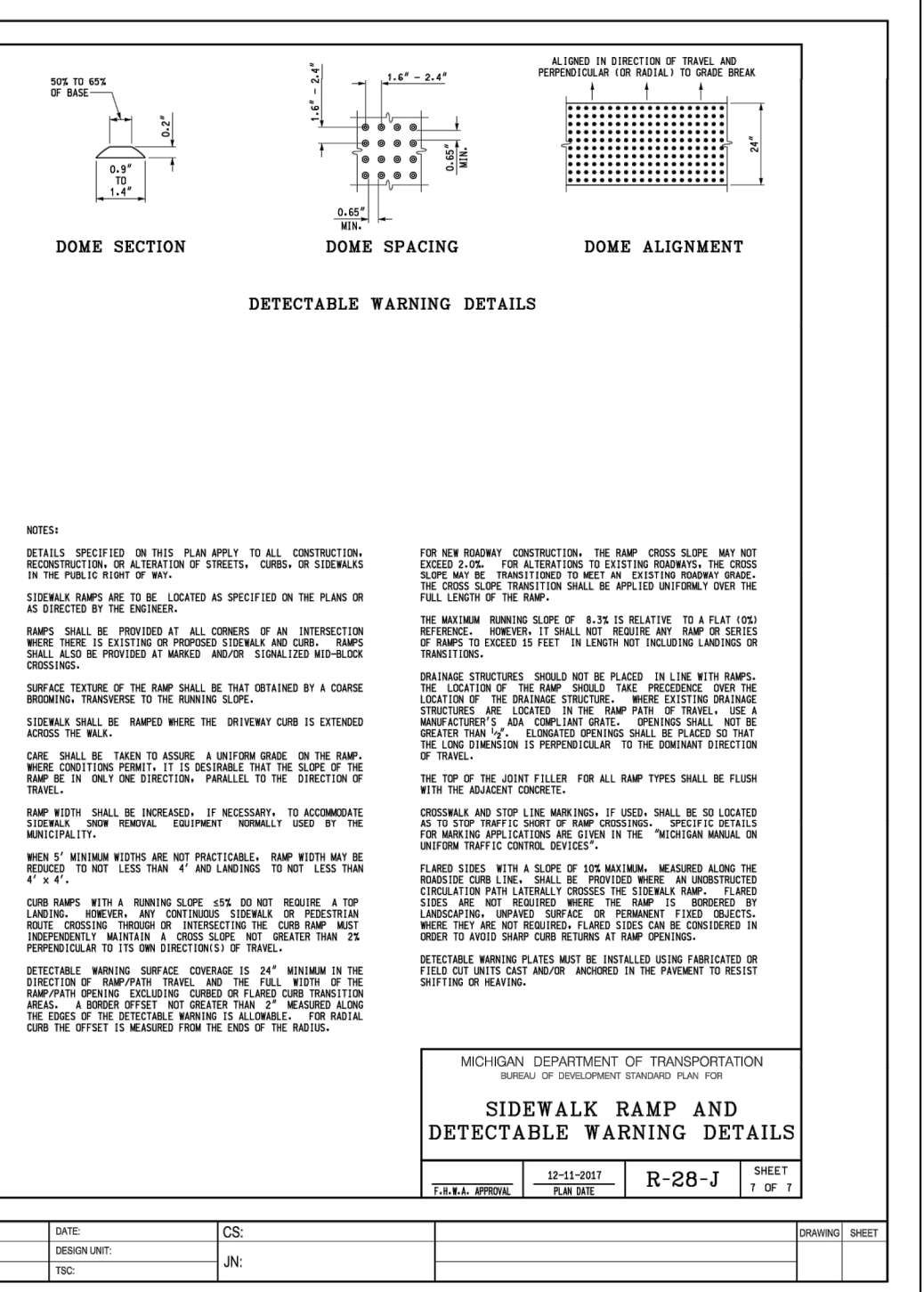
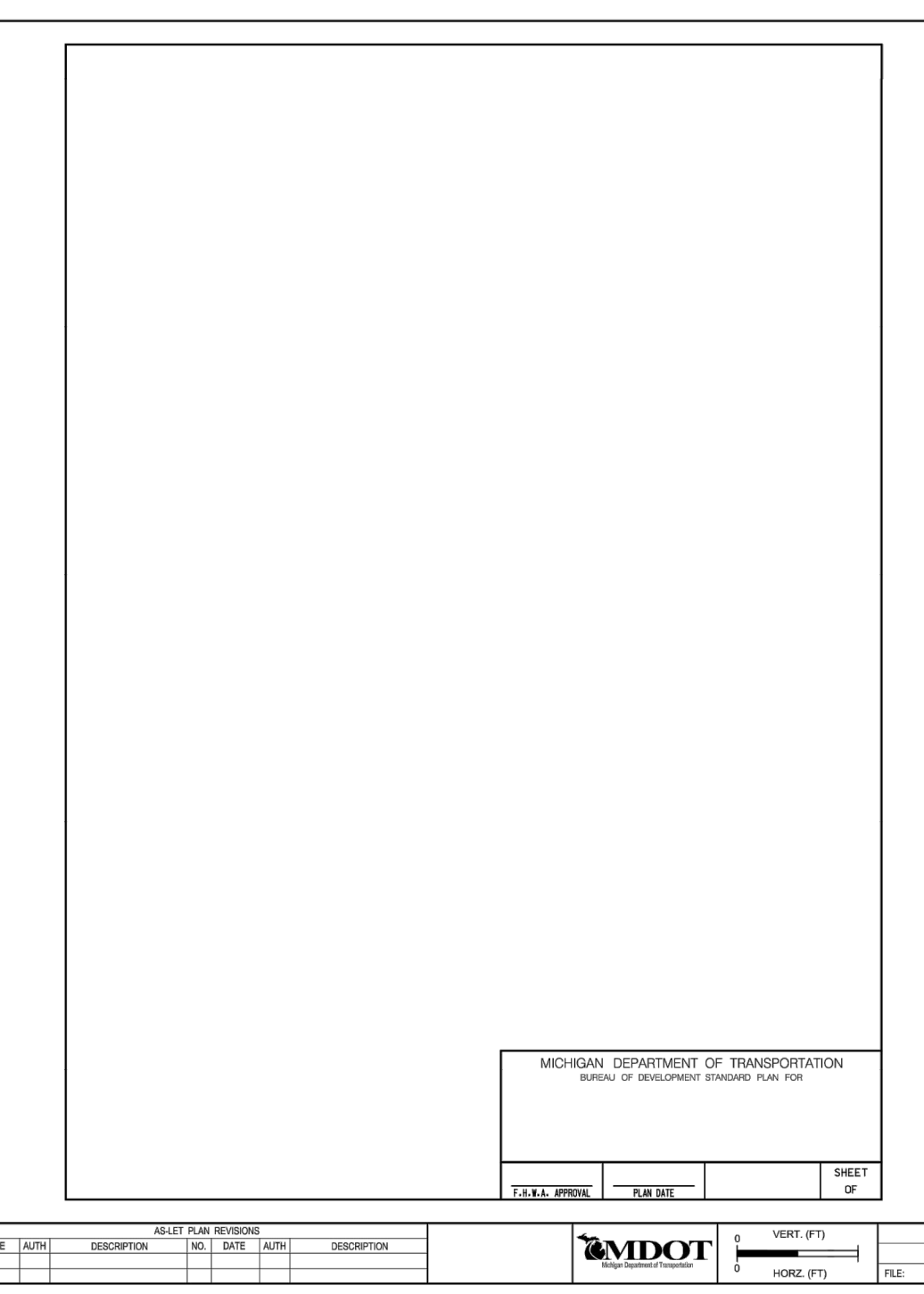
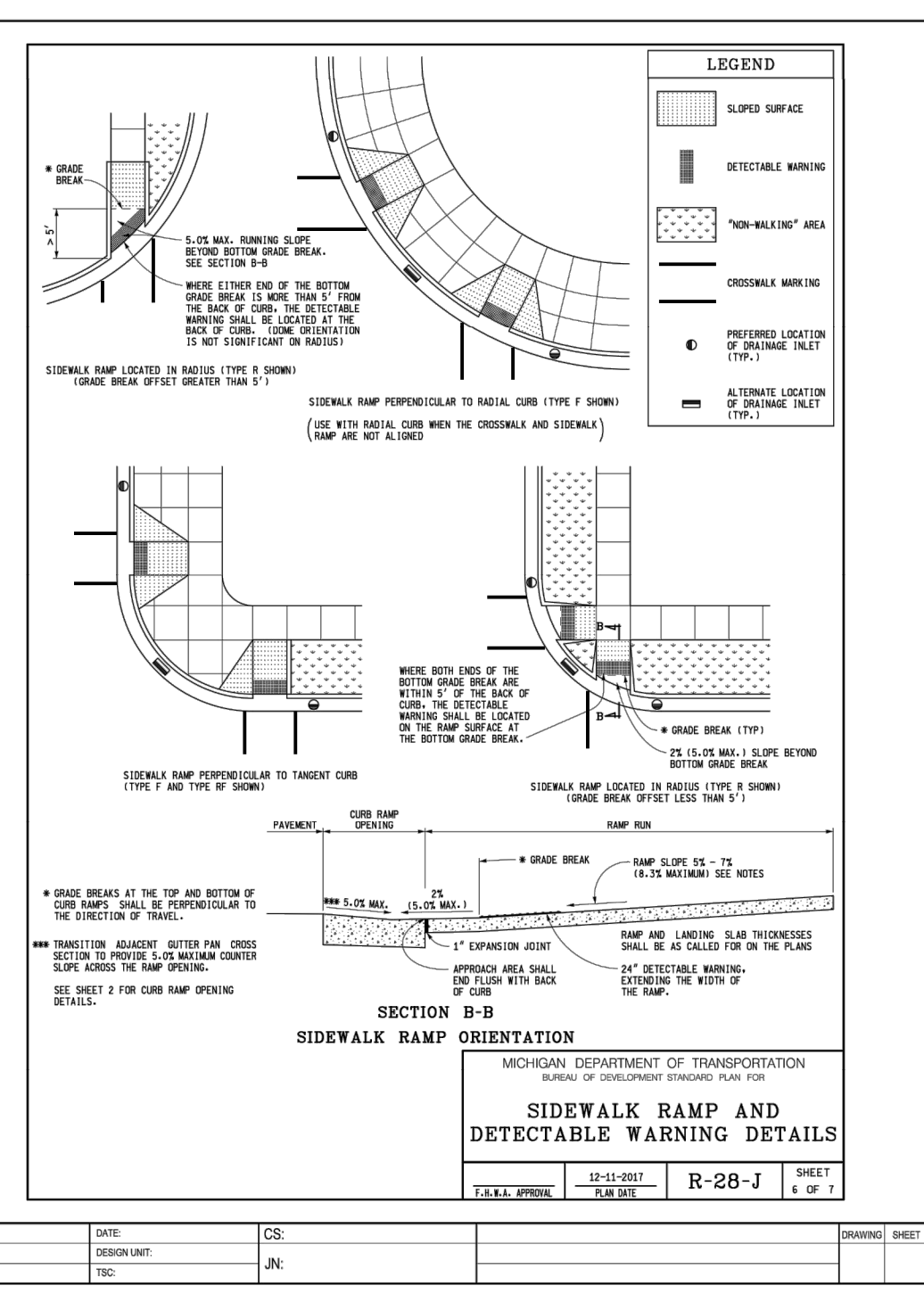
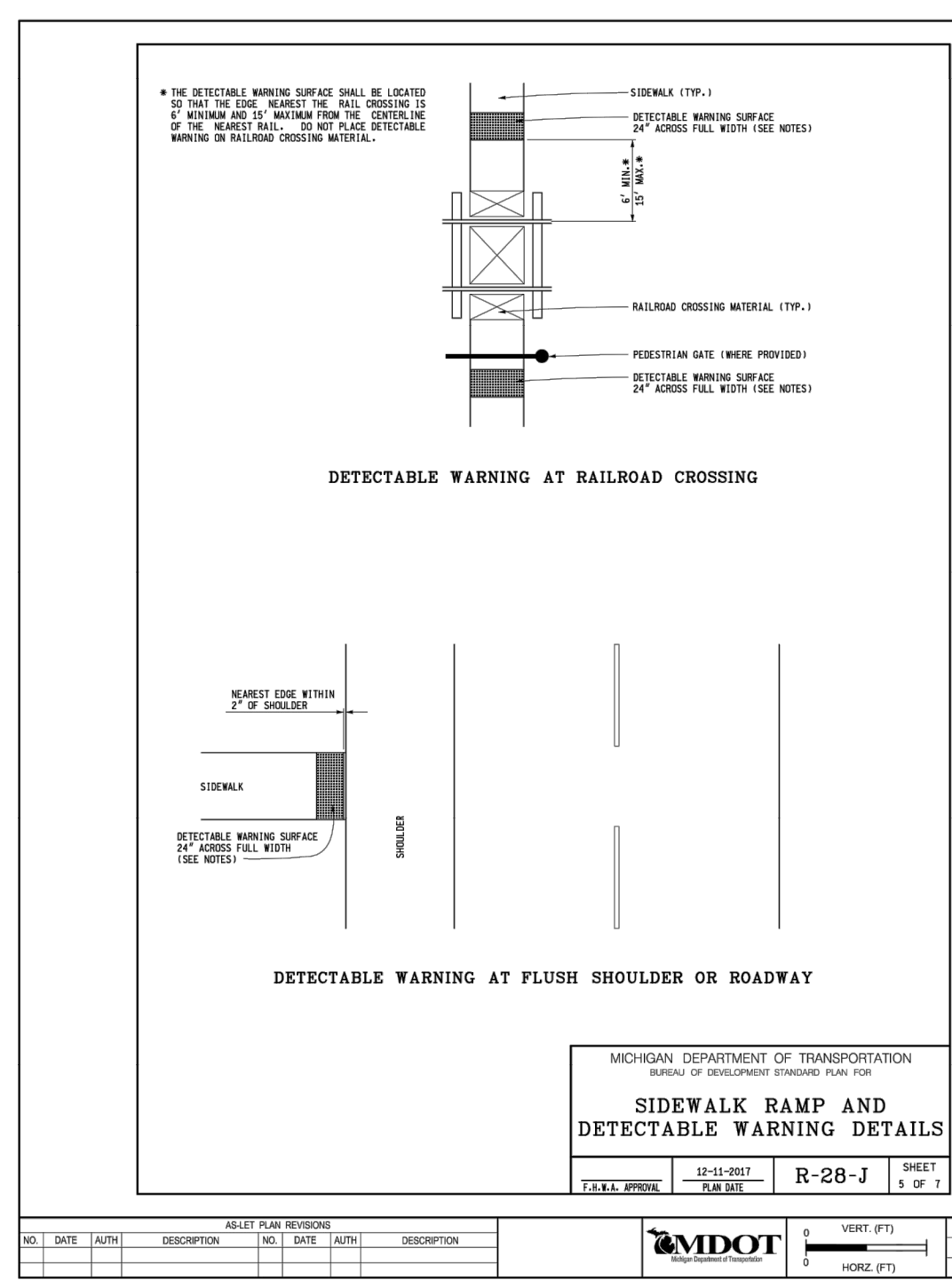
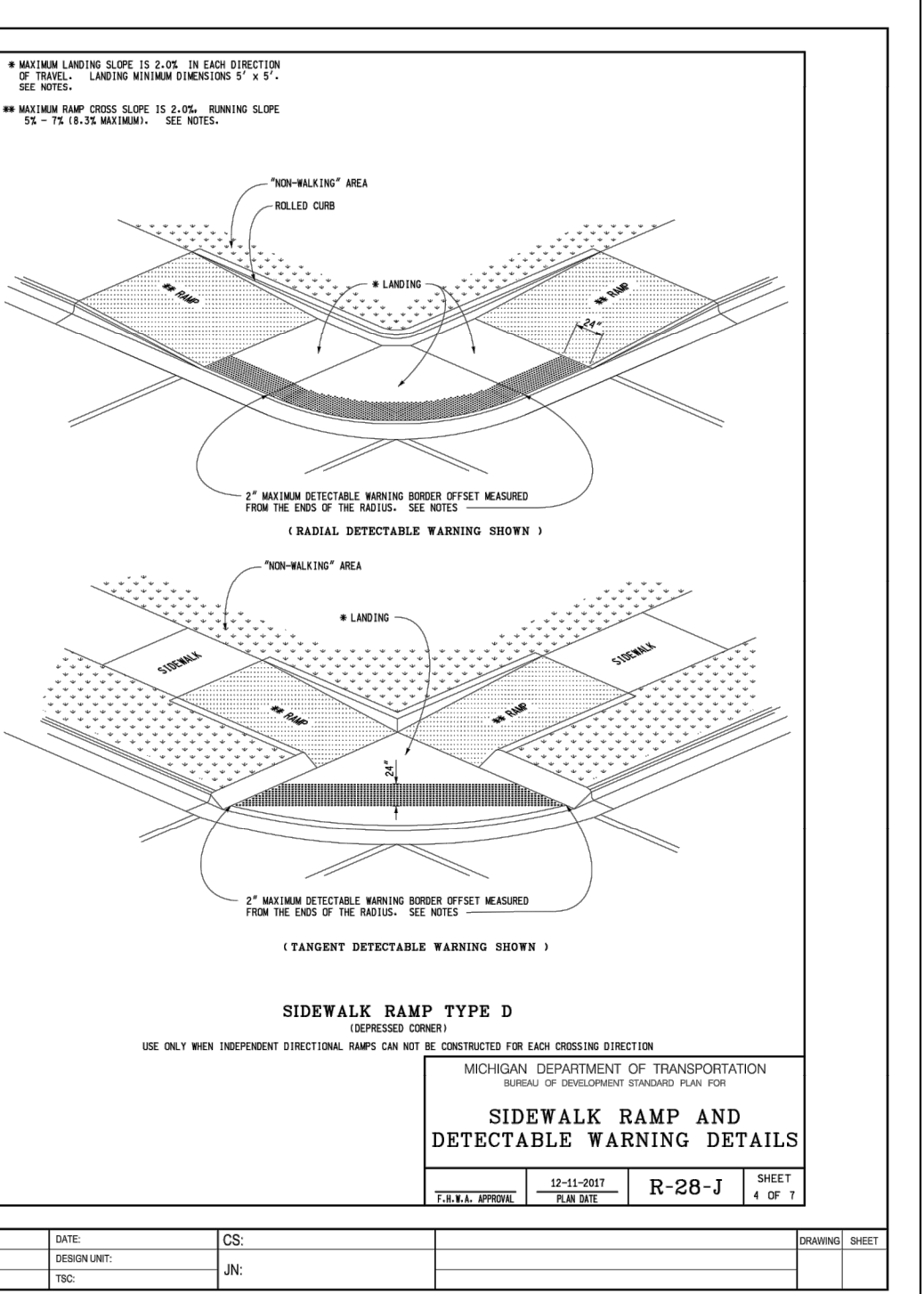
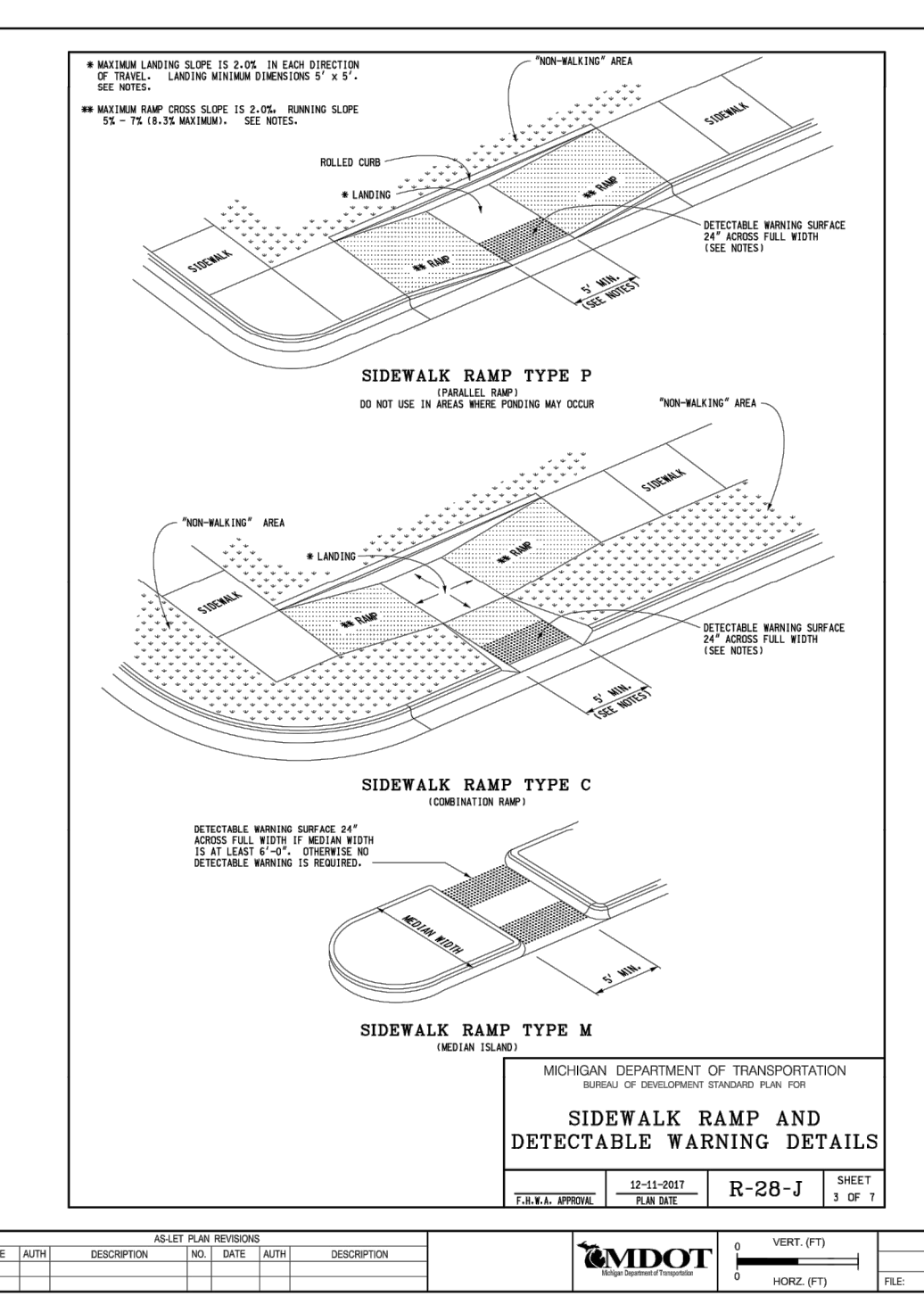
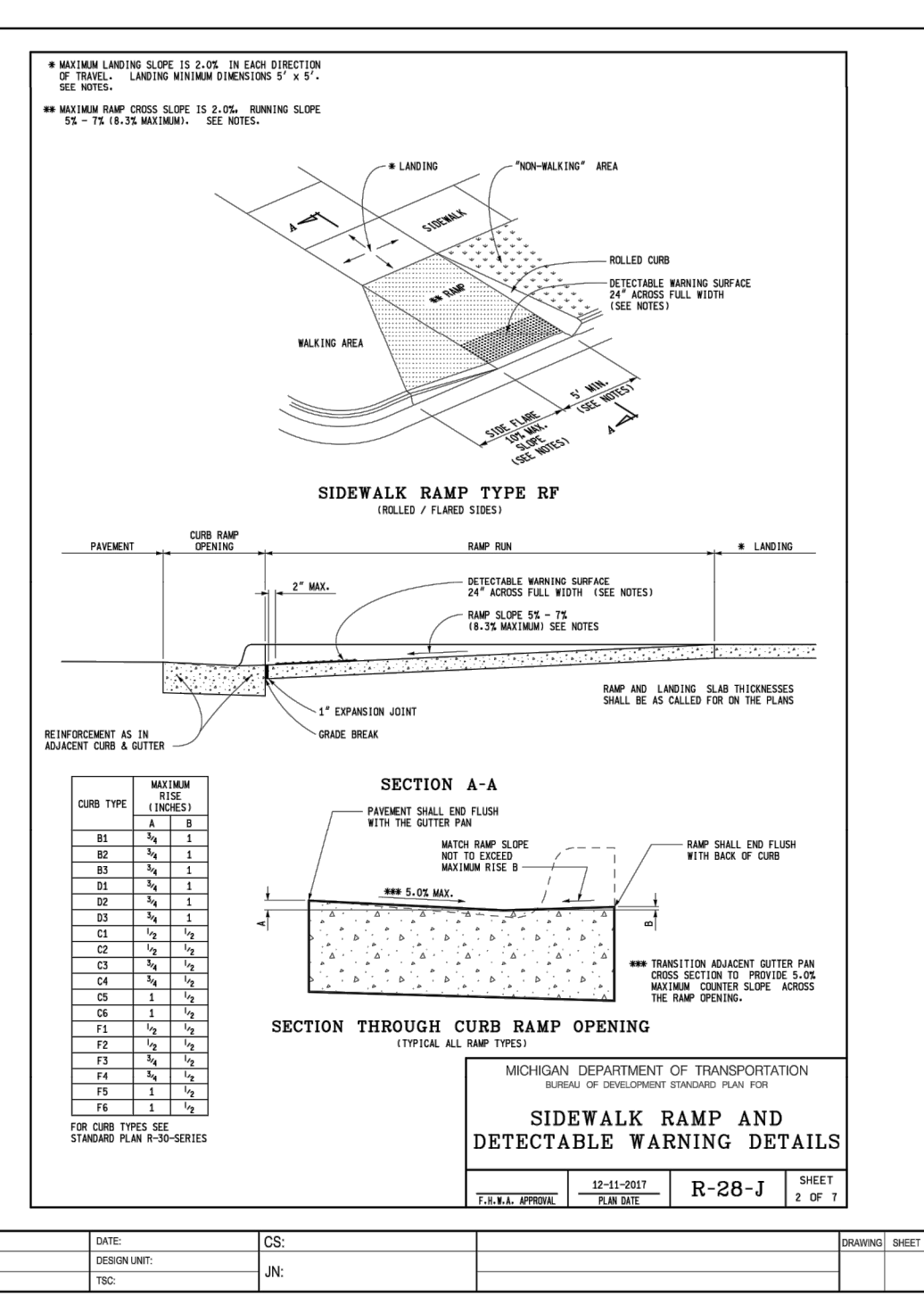
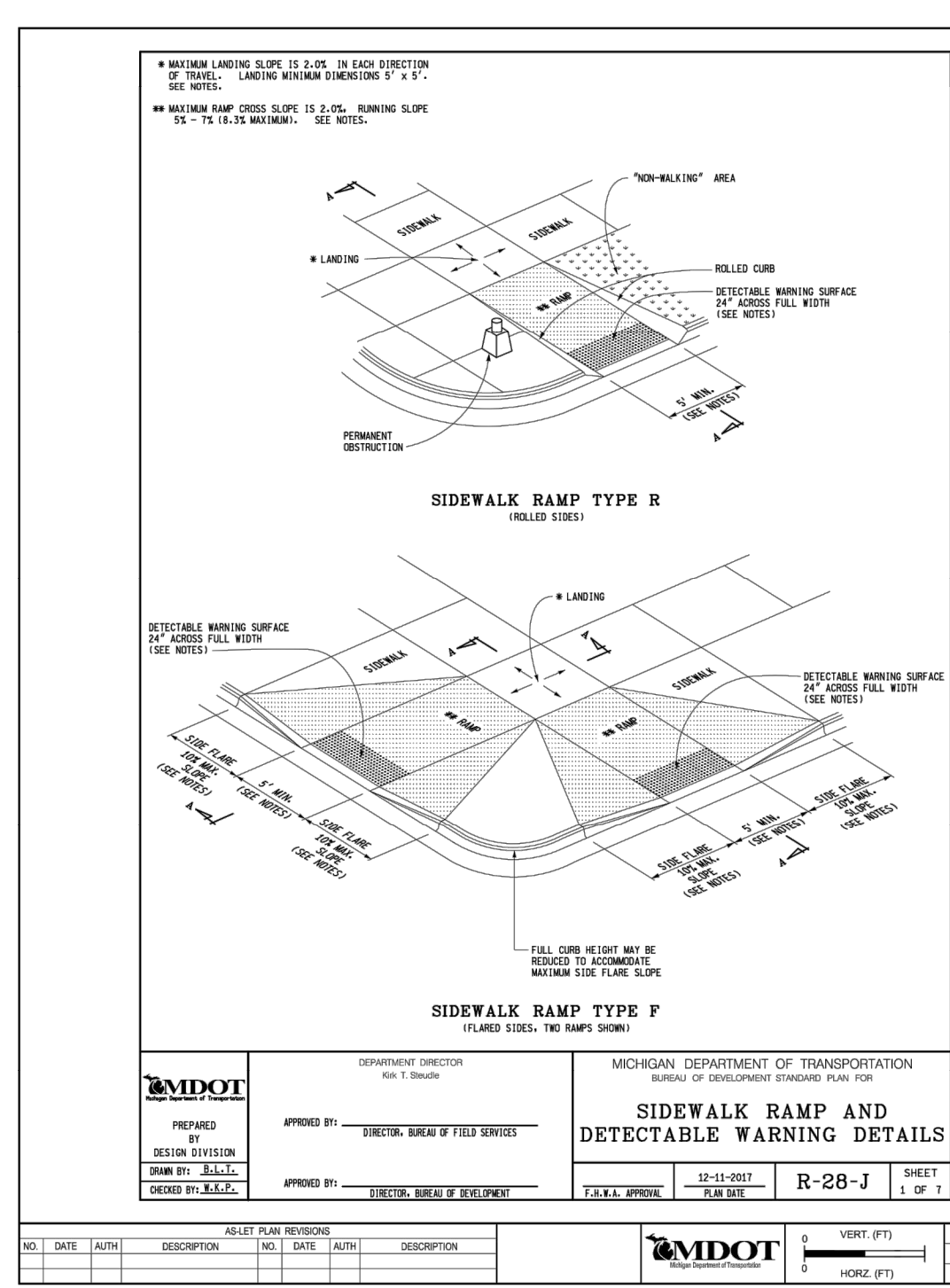
SCALE: N.T.S.

NFE JOB NO.

J635-03

SHEET NO.

C8



SEAL



PROJECT
 4 Corners Square LLC
 1449 Union Lake Road
 White Lake Township

CLIENT
 VERITAS
 29580 Northwestern Hwy,
 Suite 1000
 Southfield, Michigan 48075

Contact: Shakir W.
 Alkhafaji, President
 Phone: (248) 559-5555

PROJECT LOCATION
 Part of the E. 1/2
 of the SE. 1/4 of Section 8
 T.3N., R.8E.
 White Lake Township,
 Oakland County, Michigan

SHEET
 Landscape Plan



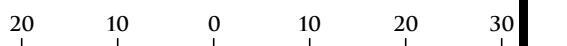
Know what's below
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DATE ISSUED/REVISED
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 11-08-21 REVISED PER SITE PLAN REVIEW

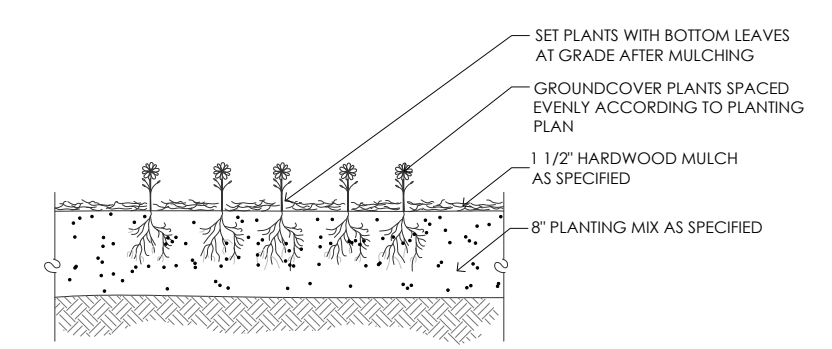
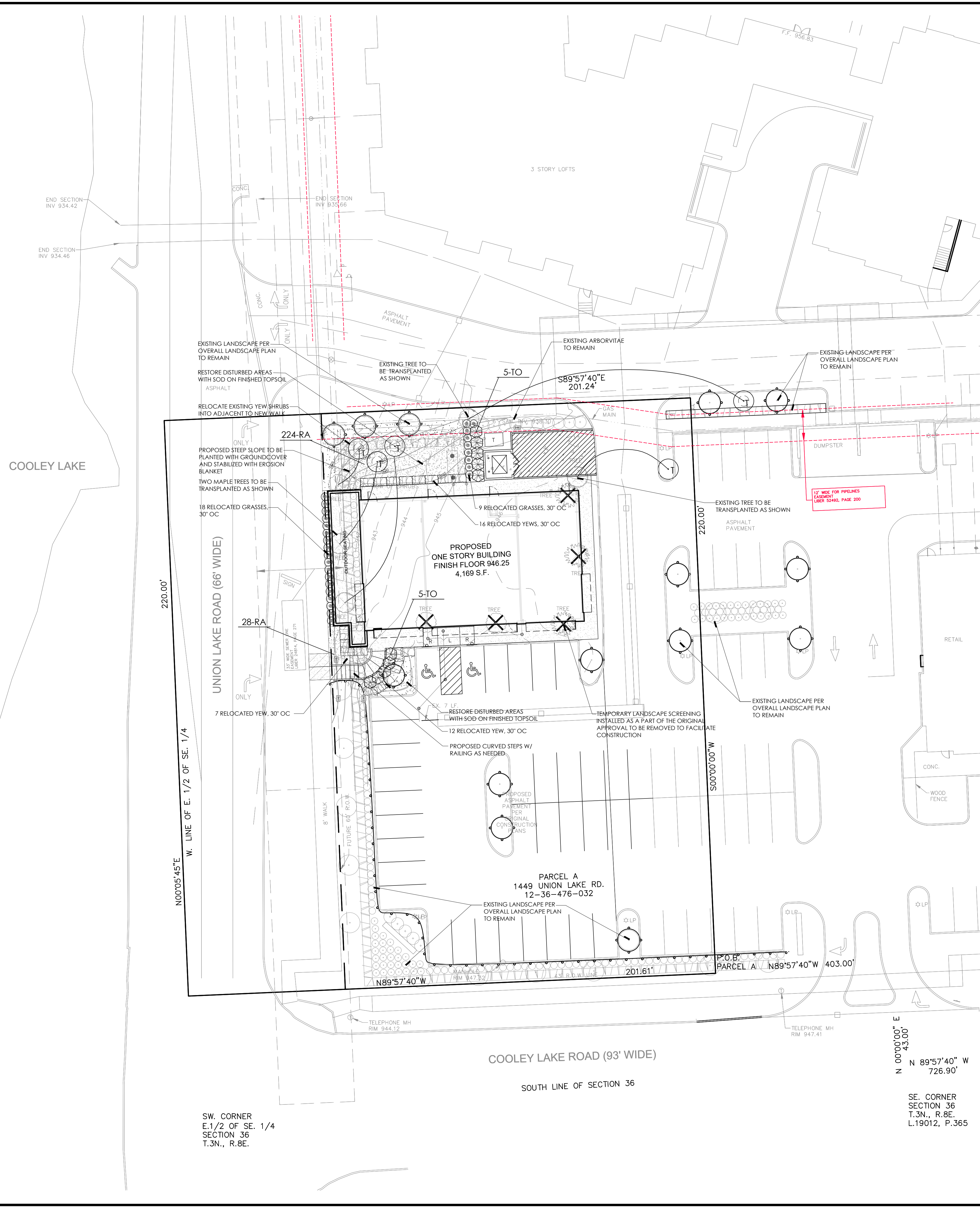
DRAWN BY:
 G. Ostrowski
 DESIGNED BY:
 G. Ostrowski
 APPROVED BY:
 G. Ostrowski

DATE:
 08-25-2021

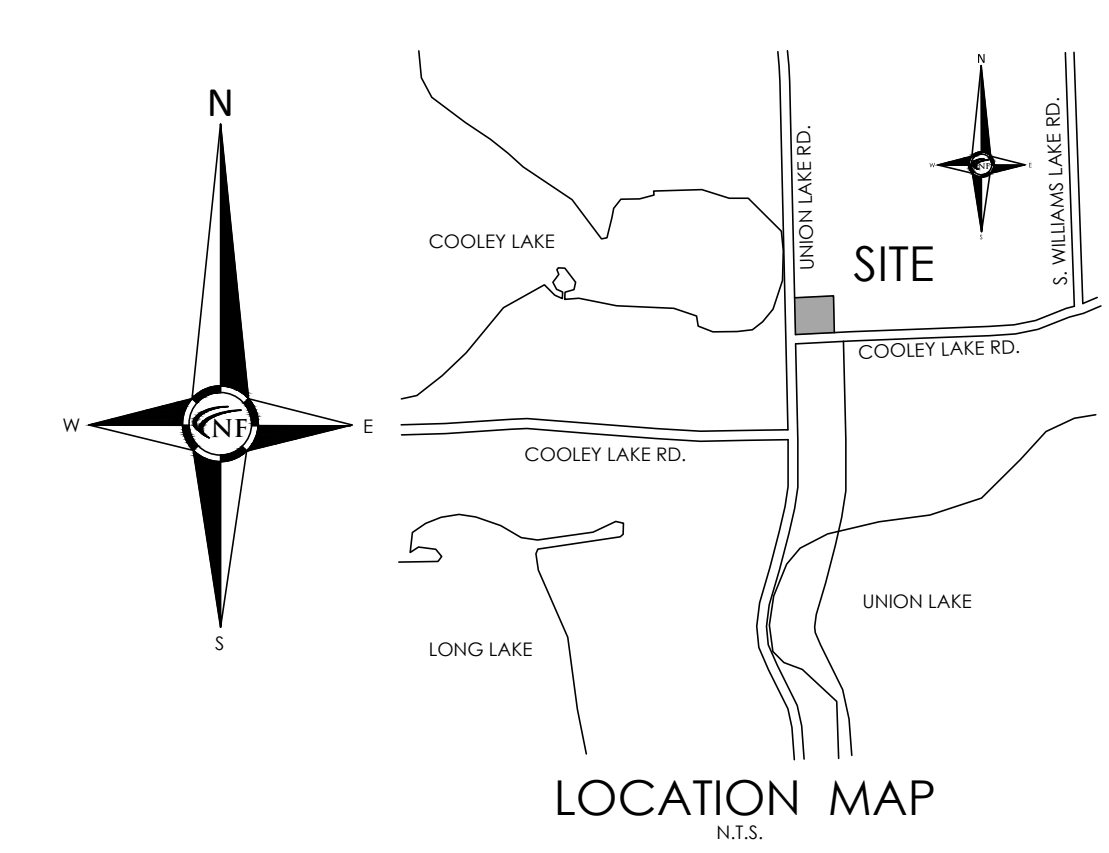
SCALE: 1" = 20'



NFE JOB NO. SHEET NO.
J635-03 L1



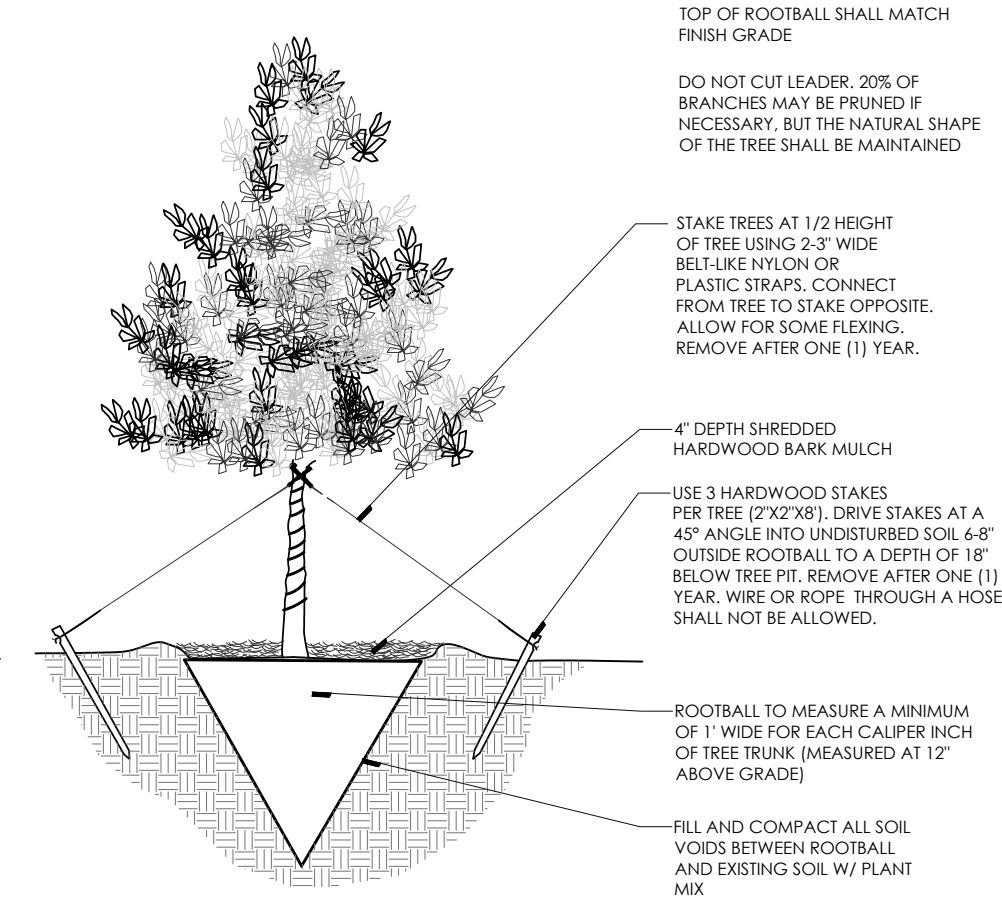
GROUNDCOVER PLANTING DETAIL



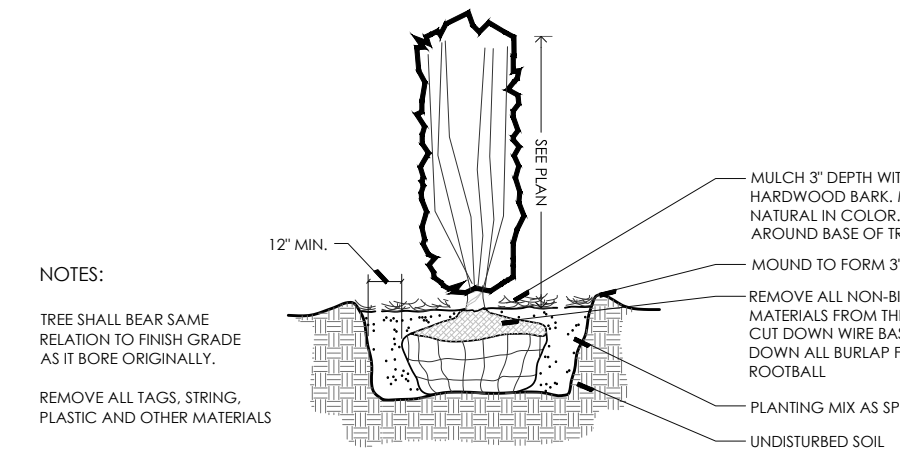
LOCATION MAP

GENERAL NOTES
 WATER TRANSPANTED TREES THOROUGHLY WITHIN 24 HOURS AFTER TRANSPANTING
 ROOT PRUNE ALL PROTRUDING ROOTS FROM SIDES OF ROOTBALL BEFORE PLANTING
 SCARIFY THE SIDES OF THE PLANTING HOLE WHEN HEAVY CLAY SOILS EXIST
 PLANT 6" HIGHER IN POORLY DRAINED SOILS AND FEATHER TO GRADE WITH WELL-DRAINED TOPSOIL
 FORM A 6" HIGH SAUCER OVER THE EDGE OF THE ROOTBALL

| TRUNK SIZE | SPACE SIZE |
|-------------|------------|
| 2 3/4" CAL. | 44" |
| 3 1/2" CAL. | 55" |
| 4" CAL. | 60" |
| 6" CAL. | 90" |



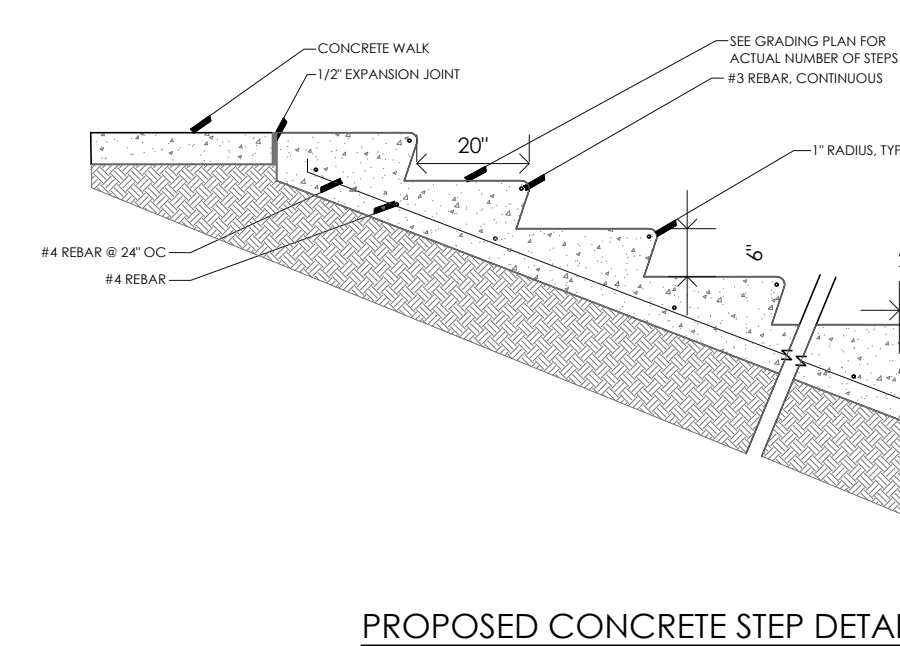
TREE TRANSPANTING DETAIL



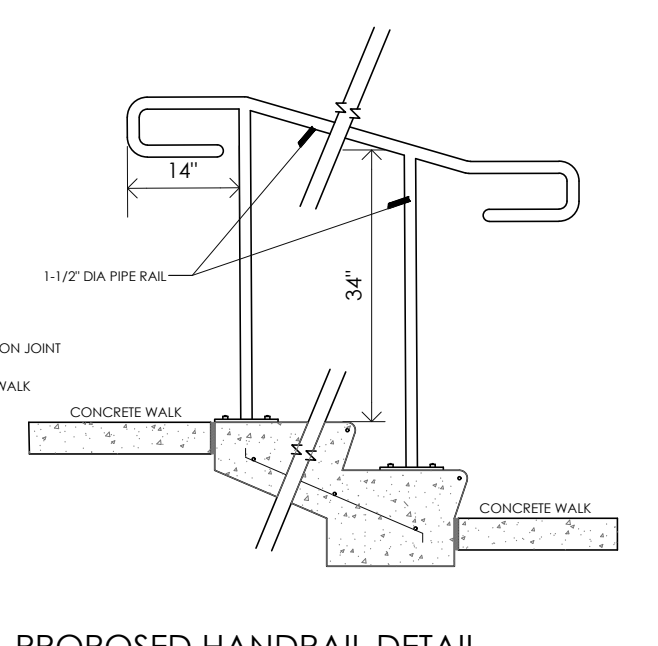
UPRIGHT EVERGREEN SHRUB PLANTING DETAIL

GENERAL SOD NOTE:
 ALL LAWN AREAS DESIGNATED TO BE SODDED, SHALL BE SODDED WITH A BLENDED DURABLE BLUEGRASS SOD, TYPICALLY GROWN IN THE REGION. ALL TURF SHALL BE PLACED ON A MINIMUM 3" PREPARED TOPSOIL AND WATERED DAILY UNTIL ESTABLISHMENT. IN AREAS SUBJECT TO EROSION, SODDED LAWN SHALL BE STABILIZED WHERE NECESSARY, AND LAID PERPENDICULAR TO SLOPES
 SOD INSTALLATION SHALL OCCUR ONLY:
 SPRING: APRIL TO JUNE
 FALL: AUGUST 15 TO OCTOBER 15

PLANT MATERIAL NOTE:
 ALL EXISTING PLANT MATERIAL ON-SITE SHALL BE TRANSPANTED AS SHOWN OR ELSEWHERE ON-SITE AT THE DIRECTION OF OWNER OR OWNER'S REPRESENTATIVE. WHERE EXISTING PLANT MATERIAL IS IN GOOD CONDITION AND DIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING THE MATERIAL IN-KIND. THE CONTRACTOR SHALL FAMILIARIZE HIM/HERSELF WITH SITE AND PROPOSED LOCATIONS, AND PLAN AND COORDINATE A STOCKPILE LOCATION WITH THE GENERAL CONTRACTOR.



PROPOSED CONCRETE STEP DETAIL



PROPOSED HANDRAIL DETAIL

PLANT SCHEDULE

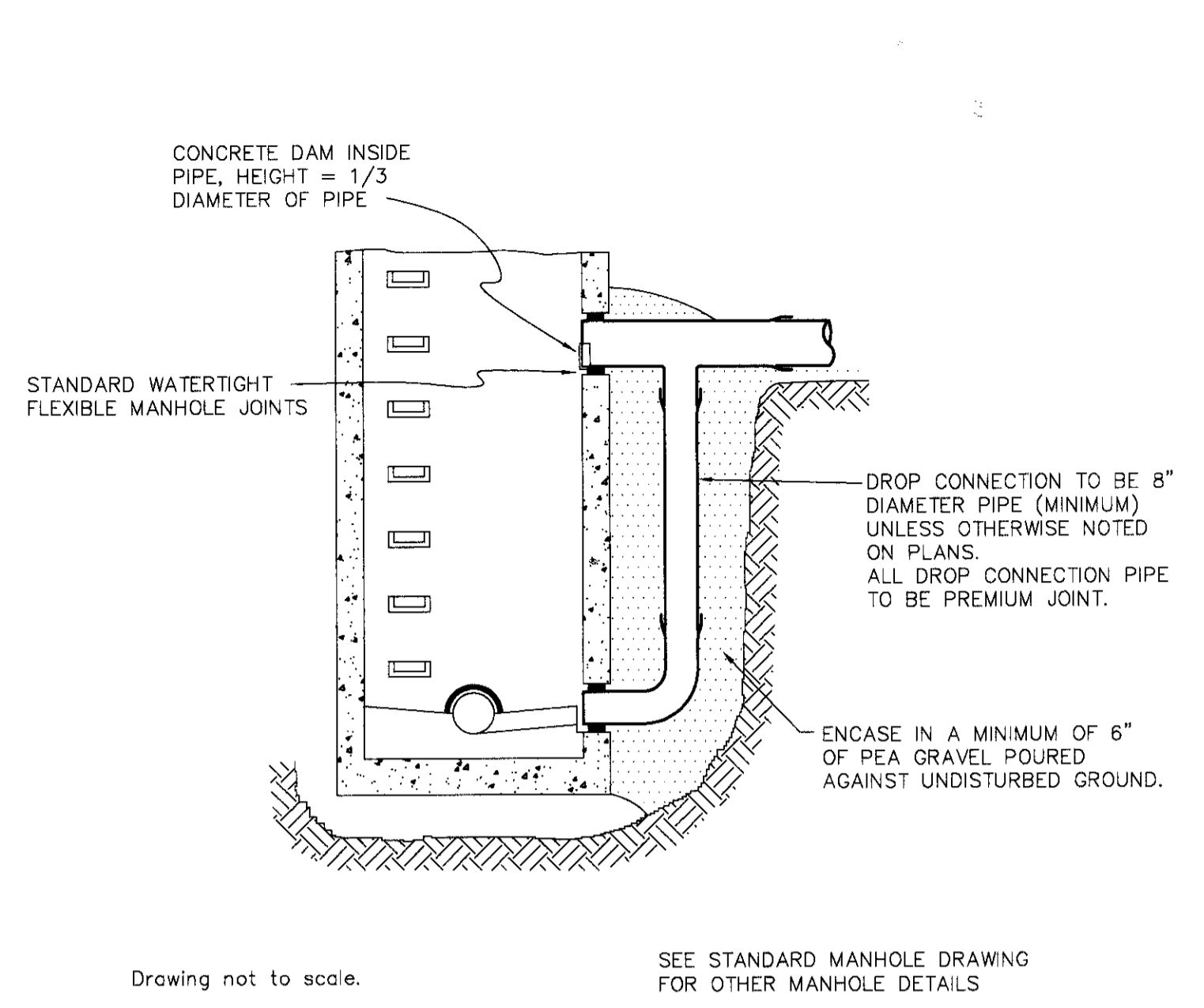
| KEY | QTY | BOTANICAL/COMMON NAME | SIZE | SPACING | ROOT | COMMENT |
|---------------------|-----|--|-------|---------|------|--------------------|
| SHRUBS | | | | | | |
| TO | 10 | <i>Thuja occidentalis</i> 'Smaragd' Emerald Green Arborvitae | 6' HT | 30" OC | B&B | |
| GROUND COVER | | | | | | |
| RA | 252 | <i>Rhus aromatica</i> 'Low-Grow' Low-Grow Fragrant Sumac | 3 GAL | 24" OC | CONT | TRIANGULAR SPACING |

SW. CORNER SECTION 36
 E. 1/2 OF SE. 1/4 SECTION 36
 T.3N., R.8E.

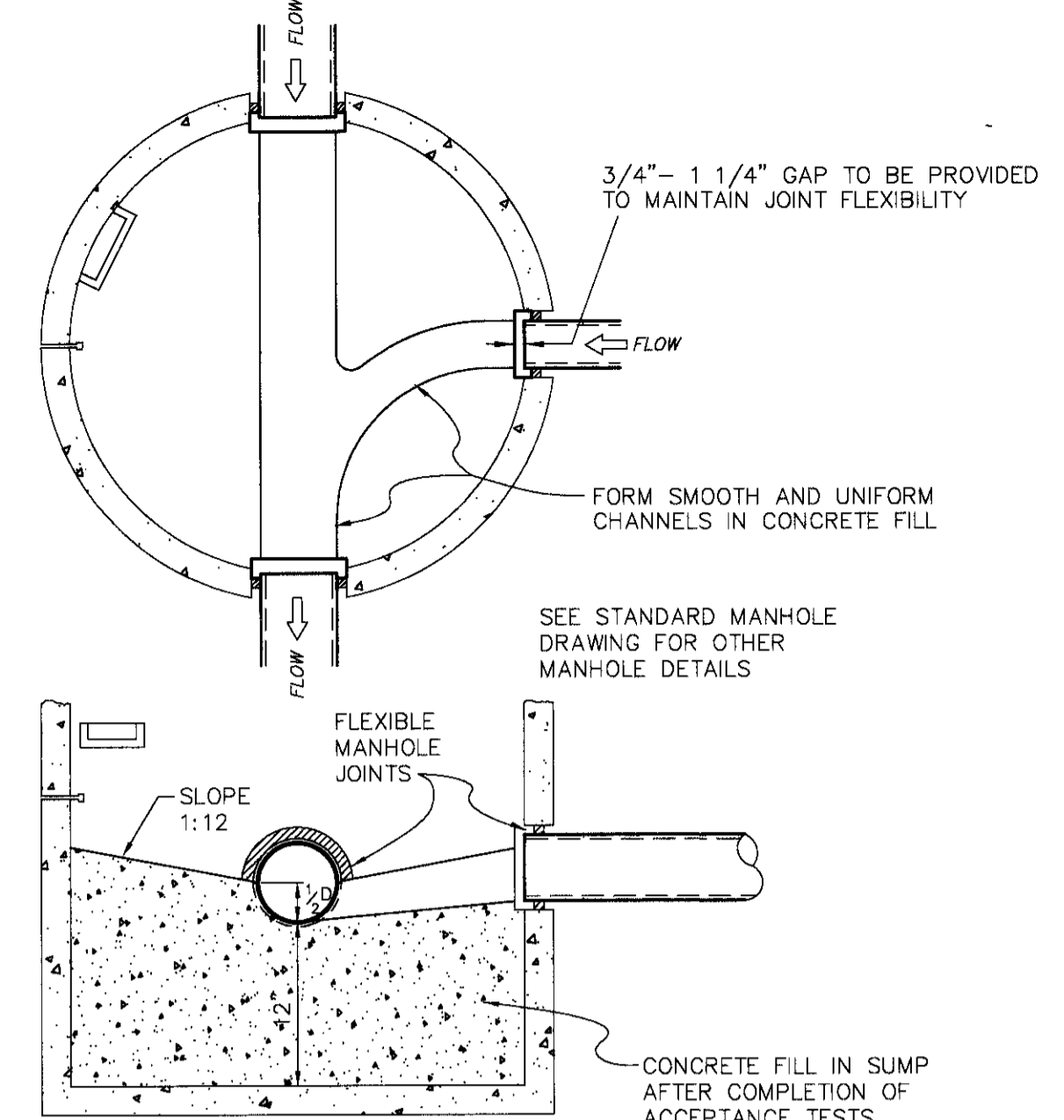
SE. CORNER SECTION 36
 T.3N., R.8E.
 L.19012, P.365

SANITARY SEWER CONSTRUCTION NOTES

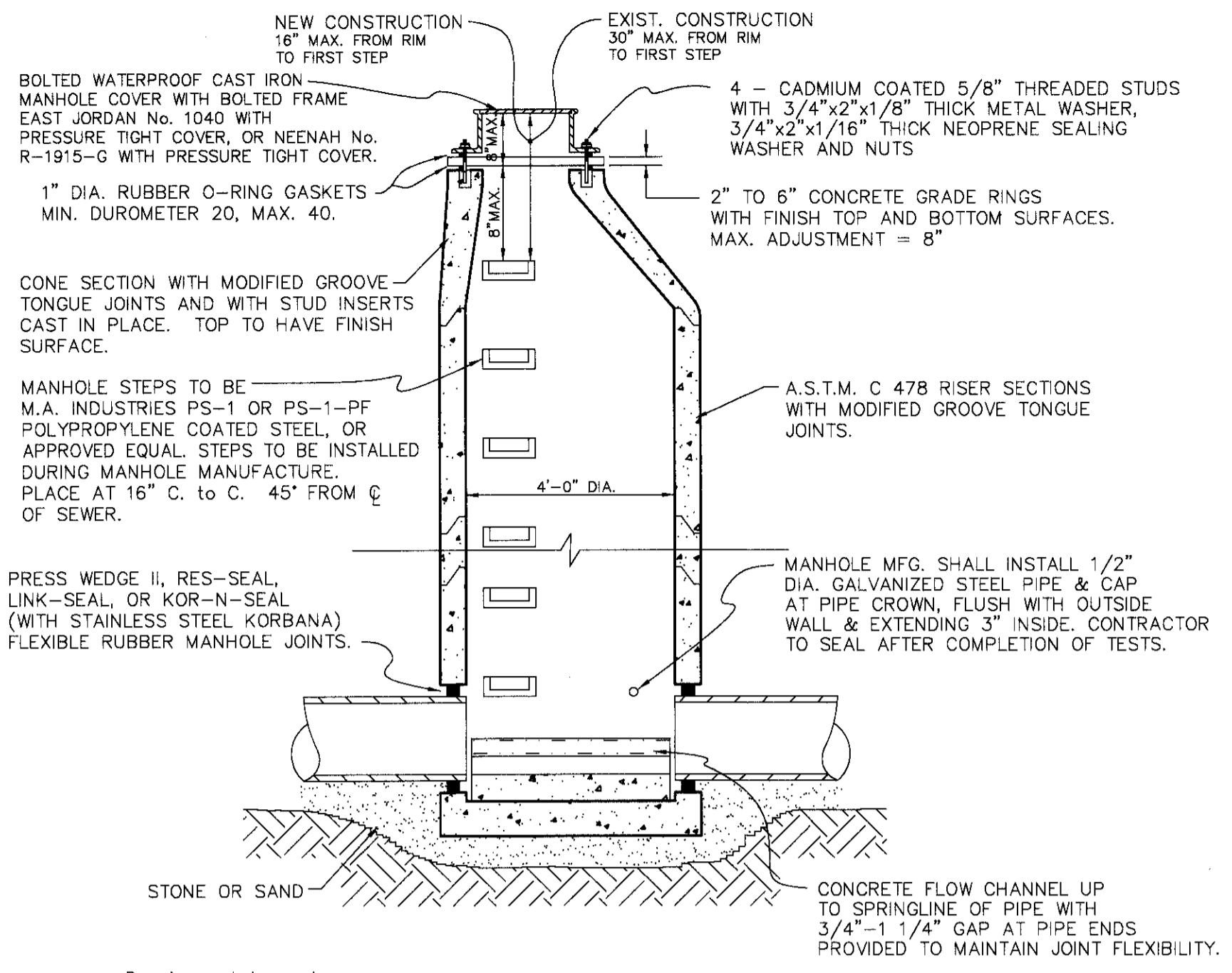
- All construction shall conform to the current standards and specifications of the local unit of government and the Oakland County Drain Commissioner (O.C.D.C.). All sanitary sewer construction shall have full time inspection supervised by a professional engineer provided by or caused to be provided by the local unit of government.
- At all connections to Oakland County Drain Commissioner's sewers or extensions, and before start of construction, the Contractor must obtain a Sewer Inspection Permit issued by the O.C.D.C. Gravity sewer permit charges are \$150.00 for each connection plus \$15.00 for each manhole constructed. Pressure sewer permit charges are \$250.00 per 2460 l.f. of force main with a minimum permit fee of \$250.00. Failure to pass any test segment will result in an additional charge to the Contractor for each retest in accordance with the above price schedule. The Contractor shall also have posted with the O.C.D.C. a \$5,000.00 surety bond and \$500.00 cash deposit. The Contractor shall notify the local unit of government and the O.C.D.C. 24 hours prior to the beginning of any construction. Final air tests must be witnessed by County personnel and must be scheduled in advance.
- No sewer installation shall have an infiltration exceeding 200 gallons per inch diameter per mile of pipe in a 24 hour period, and no single run of sewer between manholes shall exceed 250 gallons per inch diameter per mile. Air tests in lieu of infiltration tests shall be as specified in the O.C.D.P.W. "Acceptance Tests", dated September, 1972. Only pipe and pipe joints approved by the Oakland County Drain Commissioner may be used for sanitary sewer construction.
- At all connections to an existing Oakland County Drain Commissioner sewer or extension thereto a watertight bulkhead with a capped 1-inch diameter pipe to permit measuring infiltration shall be provided. A temporary 12-inch deep sump shall also be provided in the first manhole above the connection which will be filled in after such successful completion of any infiltration test up to the standard fillet provided for the flow channel.
- All building leads and risers shall be 6-inch S.D.R. 23.5 ABS OR PVC pipe with chemically fused joints, or an approved equal pipe and joint. Sewer pipe wye or tee openings shall contain factory installed premium joint material of an approved type compatible with that of the building lead pipe used. Building leads to be furnished with removable air tight and water-tight stoppers.
- All rigid sewer pipe shall be installed in Class "B" bedding or better. All flexible, semi-flexible or composite sewer pipe shall be installed in conformance to the Oakland County Drain Commissioner specifications.
- All new manholes shall have Oakland County Drain Commissioner approved flexible, water-tight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Precast manhole cone sections shall be Oakland County Drain Commissioner approved modified eccentric cone type. All manholes shall be provided with bolted, water-tight covers.
- At all connections to manholes on Oakland County Drain Commissioner's sewers or extensions thereto drop connections will be required when the difference in invert elevations exceeds 18-inches. Outside drop connections only will be approved.
- Taps to existing manholes shall be made by coring. The Contractor shall place a KOR-N-SEAL boot (or O.C.D.C. approved equal) after coring is completed. Blind drilling will not be permitted in lieu of coring.
- New manholes constructed directly on Oakland County Drain Commissioner's sewers shall be provided with covers reading "Oakland County - Sanitary" in raised letters. New manholes built over an existing sanitary sewer shall have monolithic poured bottoms.
- No ground water, storm water, construction water, downspout drainage or weep tile drainage shall be allowed to enter any sanitary sewer installation.
- Prior to excavation, the Contractor shall telephone MISS DIG (647-7344) for the location of underground pipeline and cable facilities, and shall also notify representatives of other utilities located in the vicinity of the work.
- 18" minimum vertical separation and 10' minimum horizontal separation must be maintained between sanitary sewer and water main.
- Manhole frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #R-1642 manhole frame. Solid lid cover shall be non-rocking and marked "WHITE LAKE TOWNSHIP SEWER DEPARTMENT."



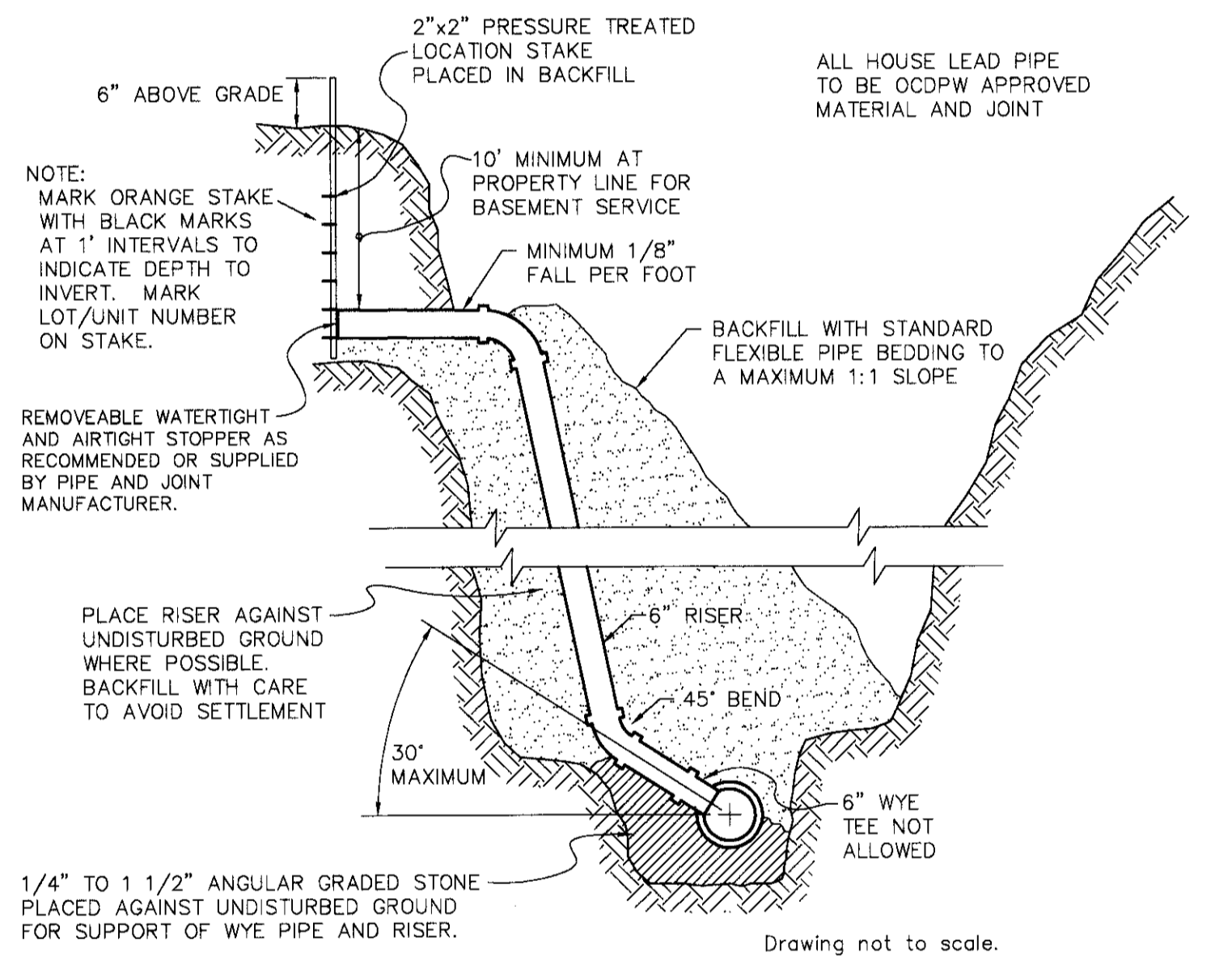
EXTERIOR DROP CONNECTION



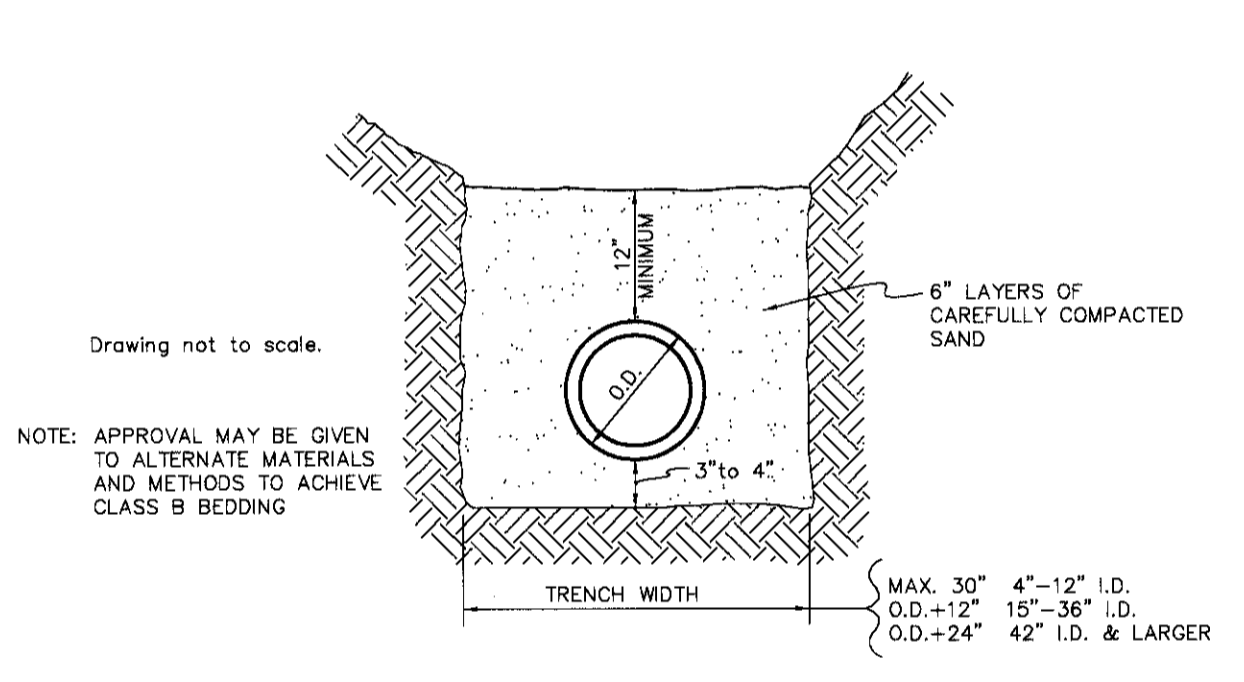
SUMP MANHOLE FOR TESTING, CLEANING, AND DEWATERING



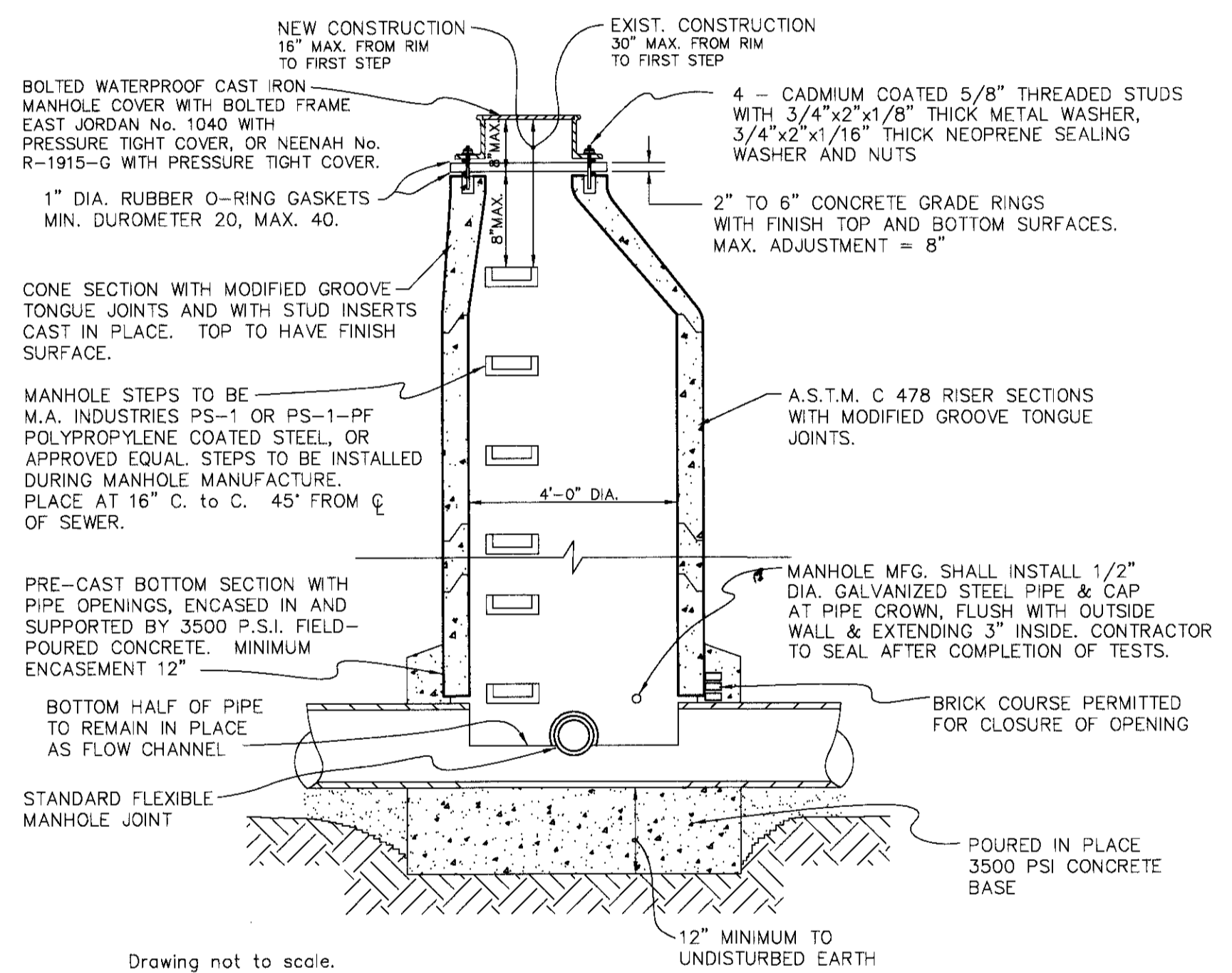
STANDARD MANHOLE ON 8" THROUGH 24" DIAMETER SEWERS



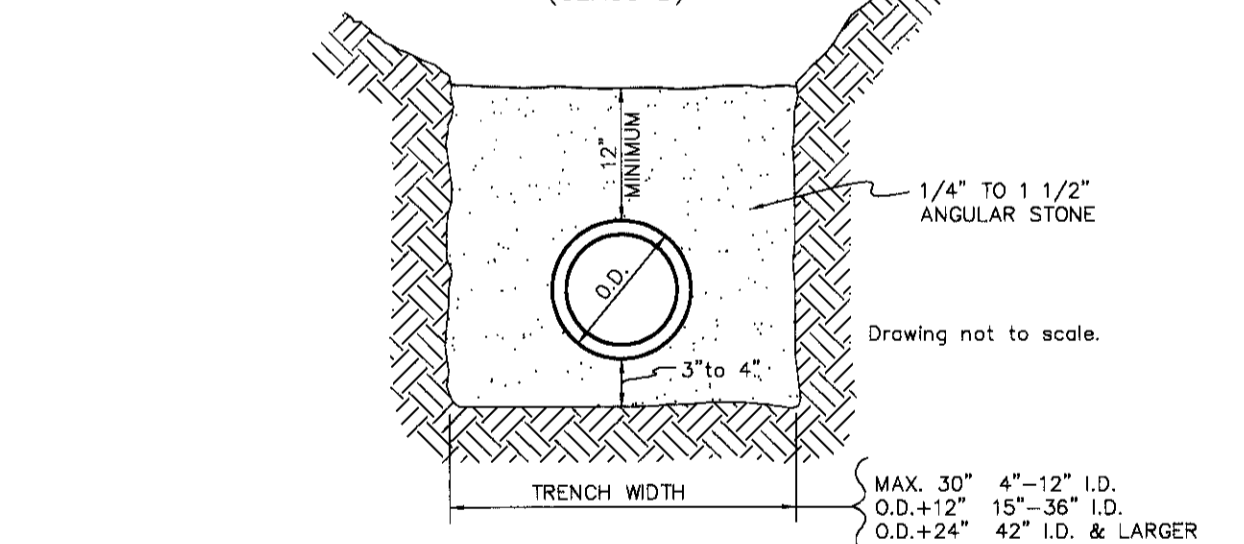
HOUSE/BUILDING LEAD DETAIL



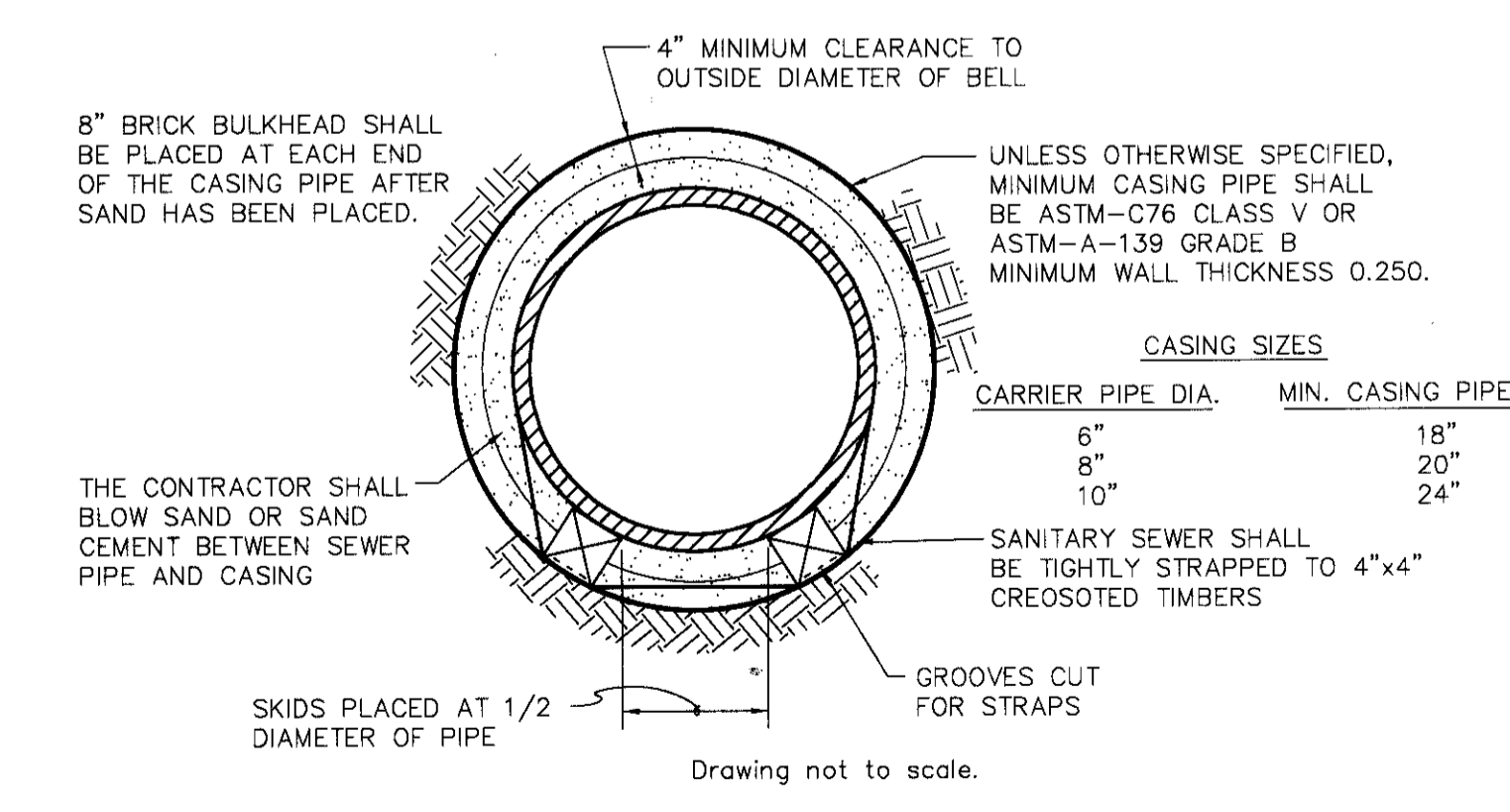
BEDDING DETAIL FOR RIGID PIPE (CLASS B)



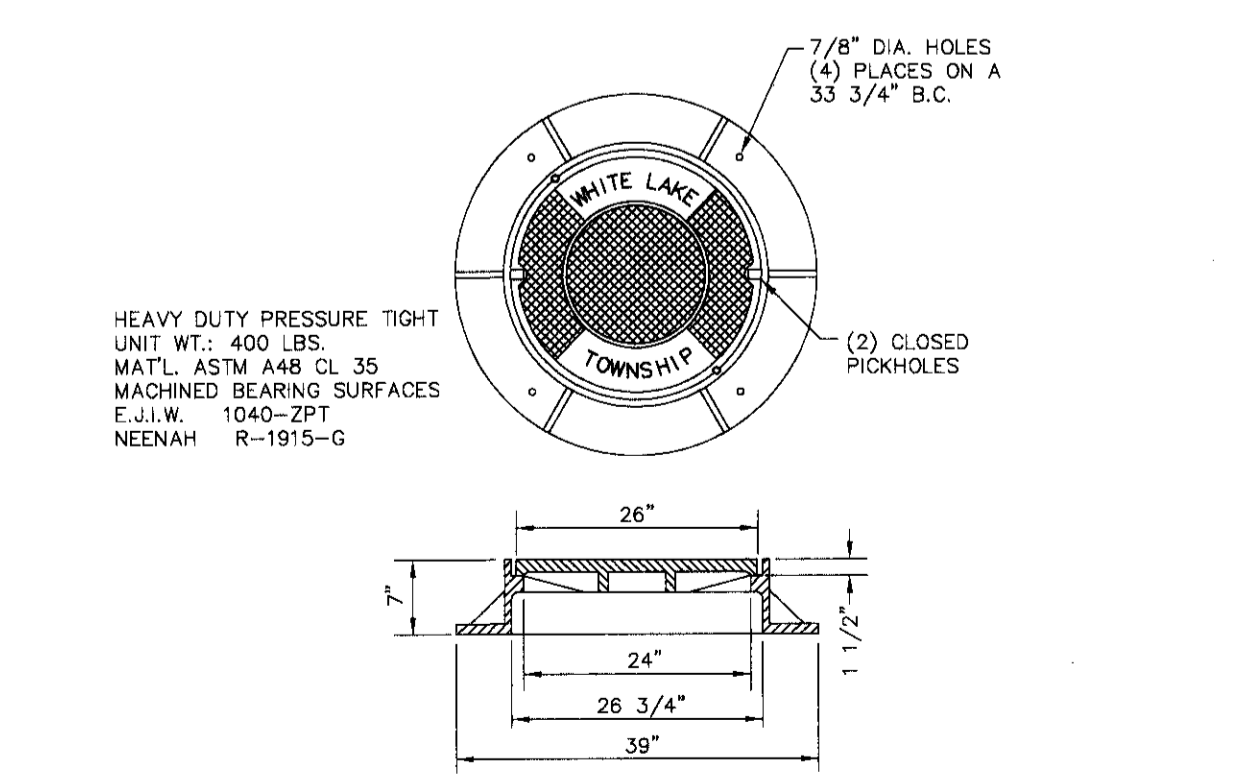
SKETCH OF MINIMUM MANHOLE REQUIREMENTS ON MANHOLES CONSTRUCTED OVER EXISTING SEWERS



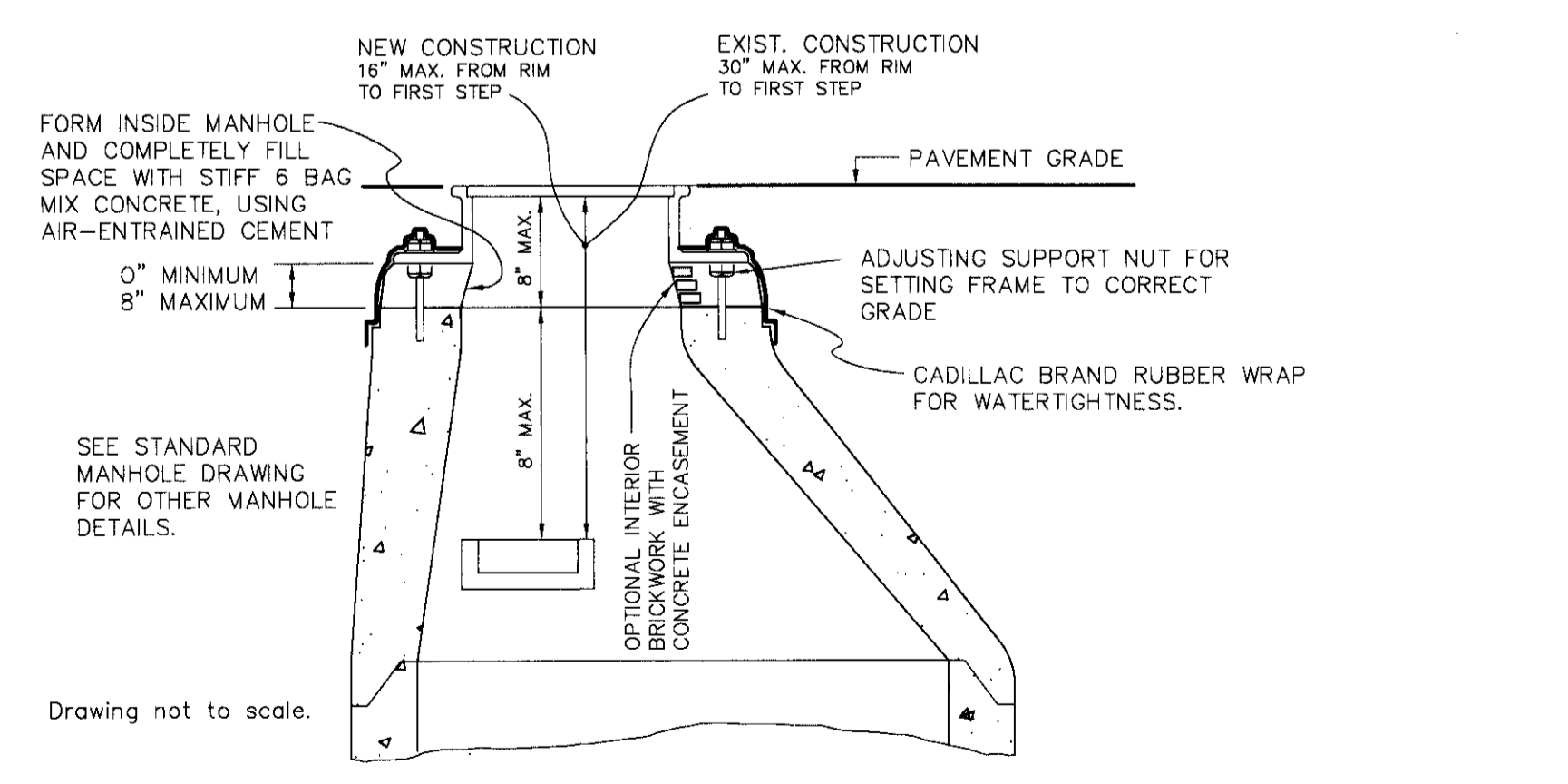
BEDDING DETAIL FOR FLEXIBLE PIPE



PIPE BARREL SUPPORT FOR SEWER



MANHOLE COVER & FRAME



OPTIONAL CONSTRUCTION DETAILS

DRAWN: CAD
DESIGN: OA
CHECKED:

SCALE: VERT. AS NOTED
HORZ.

| REVISIONS | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE |
|-----------|------|-----------------------|---------|------|-----------------------|------|------|-----------------------|------|
| | | FIRST ISSUE | 9-11-97 | | | | | | |

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White Lake Charter Township
7525 Highland Road, White Lake, Michigan 48383-2900
(248) 698-3300

SANITARY SEWER STANDARD DETAILS

JOB NO. _____
DATE ISSUED 9-11-97
SHEET NO. _____

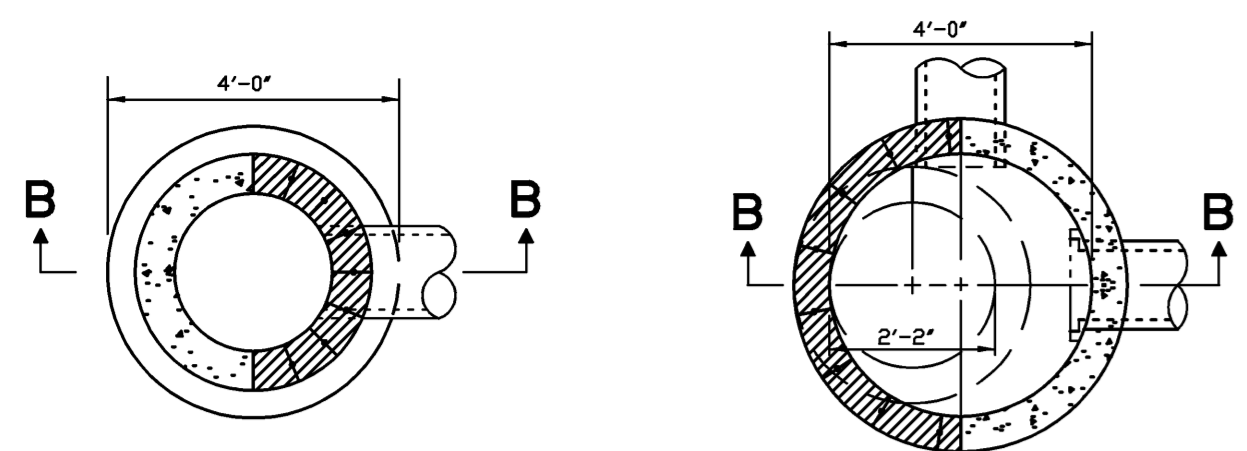
C:\Drawings\Std-Detail\Std-Detail-Sanitary.dwg Thu Sep 11 13:55:50 1997 rdl

BRD24X36

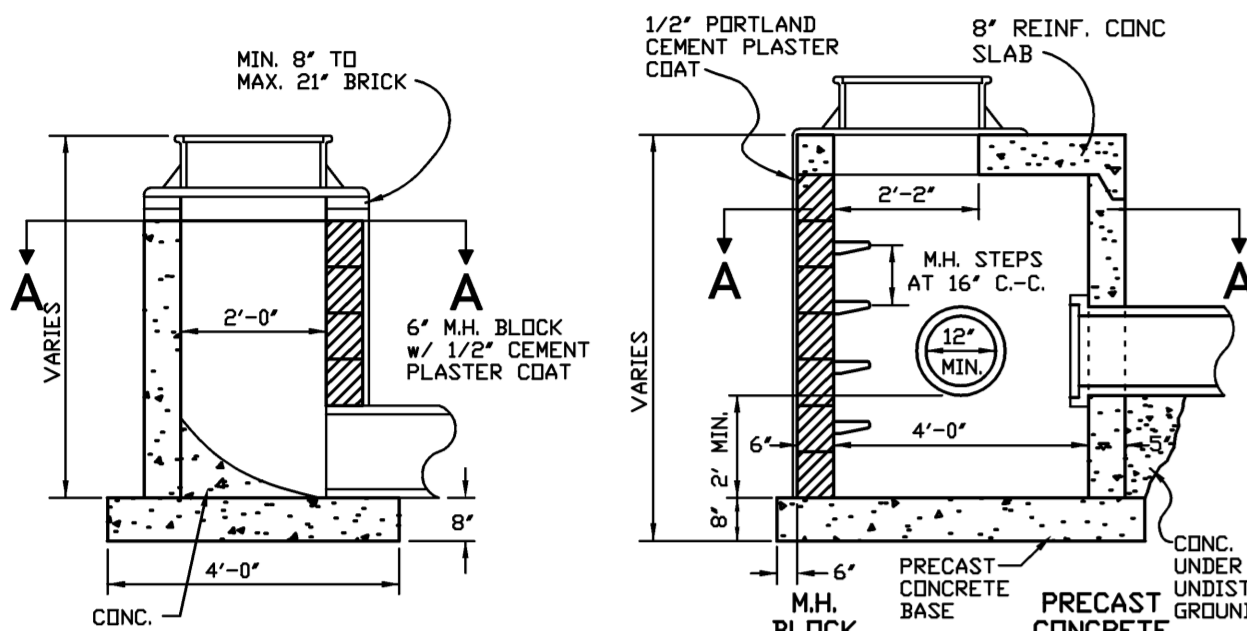
STORM SEWER NOTES

- PRECAST CONC. RISERS SHALL MEET A.S.T.M. C478
- DIAMETER OF CONC. BASE: I.D. + 2(WALL) + 8"
- MANHOLE STEP SPACING SHALL MEET MIOSHA REQUIREMENTS. NO MORE THAN 21" FROM RIM TO FIRST STEP. MAX. 16" O.C. STEPS SHALL BE CAST POLYPROPYLENE REINFORCED WITH A 1/2" STEEL ROD.
- WALL THICKNESS OF BLOCK STRUCTURES SHALL BE:
DEPTH THICKNESS
0-8' 6"
8-15' 8"
OVER 15' 12"
- MINIMUM I.D. OF STRUCTURE FOR: 36" to 42" = 5'-0"
48" to 54" = 6'-0"
LARGER DIAMETER STRUCTURES MAY BE REQUIRED DEPENDING ON PIPING CONFIGURATION.
- ALL LIFTING HOLES AND VOIDS IN INTERIOR JOINTS SHALL BE FILLED BY MORTAR.
- THE FINGER DRAIN DETAIL SHALL BE USED AT ALL LOW POINT CATCH BASINS IN PAVEMENT AREAS. THE DETAIL MAY BE OMITTED WITH THE APPROVAL OF THE TOWNSHIP ENGINEER IN AREAS WITH VERY POROUS SOILS AND NO GROUNDWATER PROBLEMS.
- PRECAST ONE PIECE BASES AND RISERS ARE ACCEPTABLE FOR INLETS, CATCH BASINS AND MANHOLES
- FRAMES & COVERS WITH INLET CAPACITY
-TRAFFIC AND PARKING AREAS: MDOOT "D" (EJW 5105) 1.9 CFS
-REAR YARD AND DITCH INLETS: MDOOT "E" (EJW 6508) 3.1 CFS
-MANHOLES: MDOOT "A" (EJW 1060)
-CURB AND GUTTER INLETS: MDOOT "K" (EJW 7045) 1.8 CFS
-MOUNTABLE CURB & GUTTER: MDOOT "C" (EJW 7066) 2.2 CFS
- CONTACT THE TOWNSHIP ENGINEER 48 HOURS PRIOR TO CONSTRUCTION TO SCHEDULE INSPECTION. FULL TIME INSPECTION WILL BE REQUIRED FOR ALL UNDERGROUND STORM SEWER CONSTRUCTION. PHONE (248) 334-9901
- THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
- PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY THE OAKLAND COUNTY DRAIN COMMISSIONER.
- A 2' DEEP SUMP SHALL BE USED IN ANY STRUCTURE SUBJECT TO A WATER DROP GREATER THAN 2.0' FROM AN INLET PIPE.
- ALLOWABLE STORM SEWER PIPE TYPES:
-12" AND UP: RCP ASTM C-76 MIN. CLASS 3, MIN. CLASS 4 UNDER TRAFFIC AREAS, RUBBER JOINT
-6" TO 15" SCH 40 PVC OR SDR 23.5 PVC WITH RUBBER OR GLEE JOINT
-6" TO 48" SMOOTH BORE CORRUGATED HIGH DENSITY POLYETHYLENE WITH NEOPRENE LINED JOINTS OR BETTER
- THE MINIMUM PIPE SIZE IN PUBLIC RIGHT-OF-WAY OR EASEMENTS AND FOR PIPES CARRYING OFF-SITE STORM WATER SHALL BE 12"
- ALL PIPE ENDS NOT WITHIN A STRUCTURE SHALL HAVE A CONCRETE OR METAL FLARE END SECTION (FES) WITH A BAR SCREEN ON PIPES 18" AND LARGER EXCEPT THOSE WITHIN A SECURE FENCED AREAS/NEED NO BAR SCREEN.
- ALL DRAINAGE STRUCTURES WITHIN THE ROAD SHALL BE SEALED WITH WRAPPED GEOTEXTILE PER RDCD STANDARDS

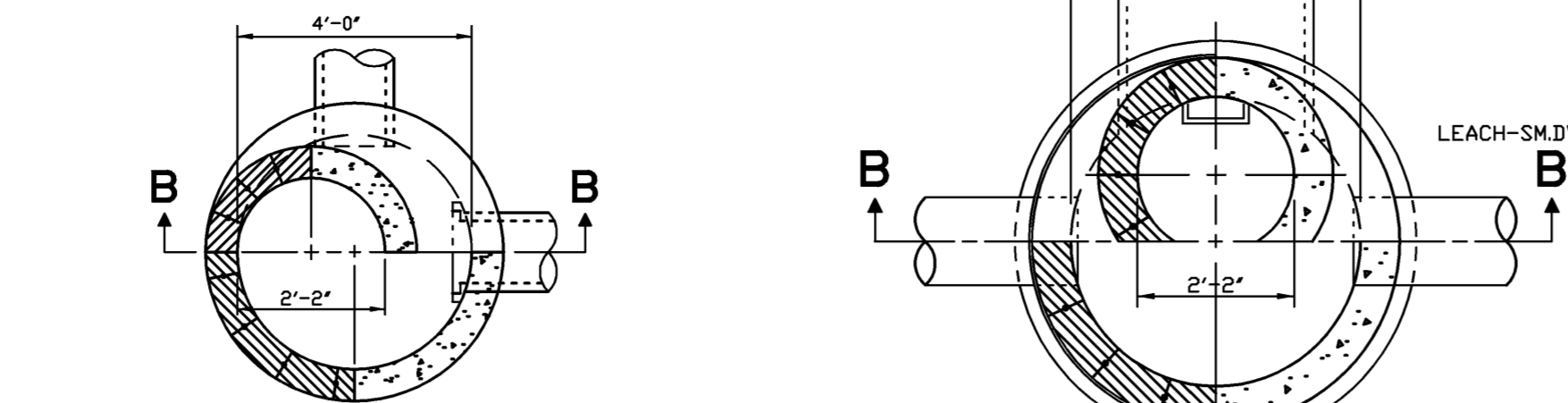
| PIPE DIA. | "D" | "E" | "F" | S.Y. |
|-----------|--------|--------|-------|------|
| 12" | 5'-0" | 6'-6" | 3'-0" | 4 |
| 15" | 5'-0" | 7'-0" | 3'-0" | 4 |
| 18" | 5'-0" | 7'-6" | 3'-6" | 4 |
| 21" | 5'-6" | 8'-0" | 4'-0" | 5 |
| 24" | 6'-0" | 8'-6" | 4'-6" | 6 |
| 27" | 6'-6" | 9'-0" | 5'-0" | 6 |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



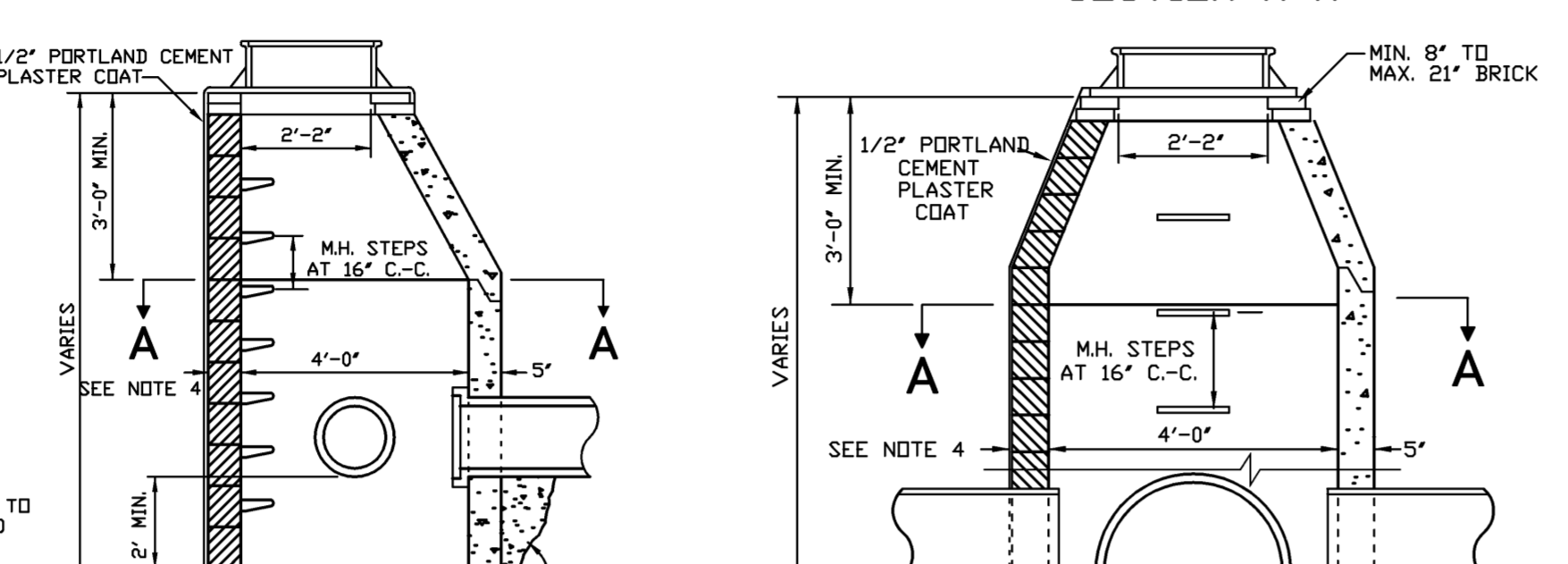
SECTION A-A
SECTION A-A



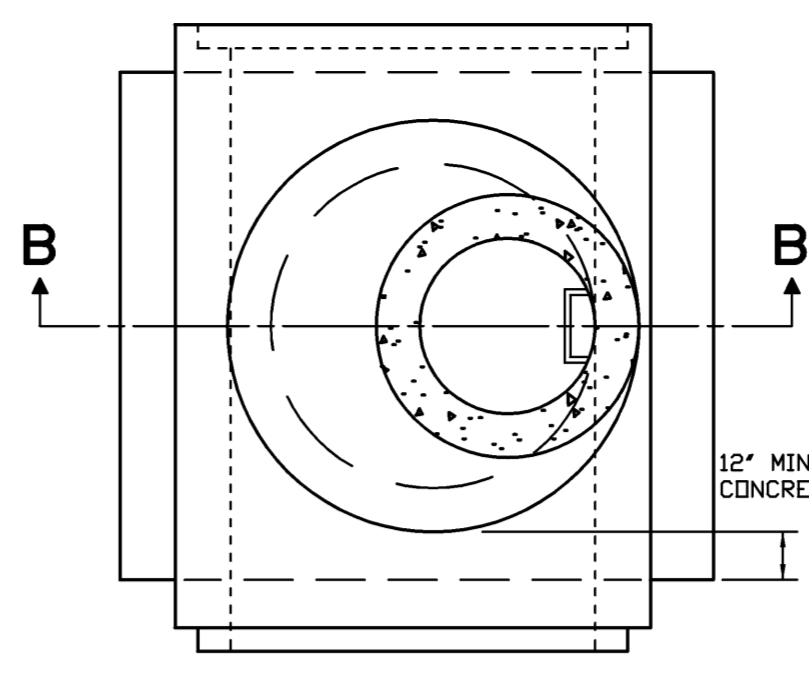
SECTION B-B
24" INLET
SECTION B-B
STRUCTURE WITH
SLAB COVER
(CATCH BASIN SHOWN)



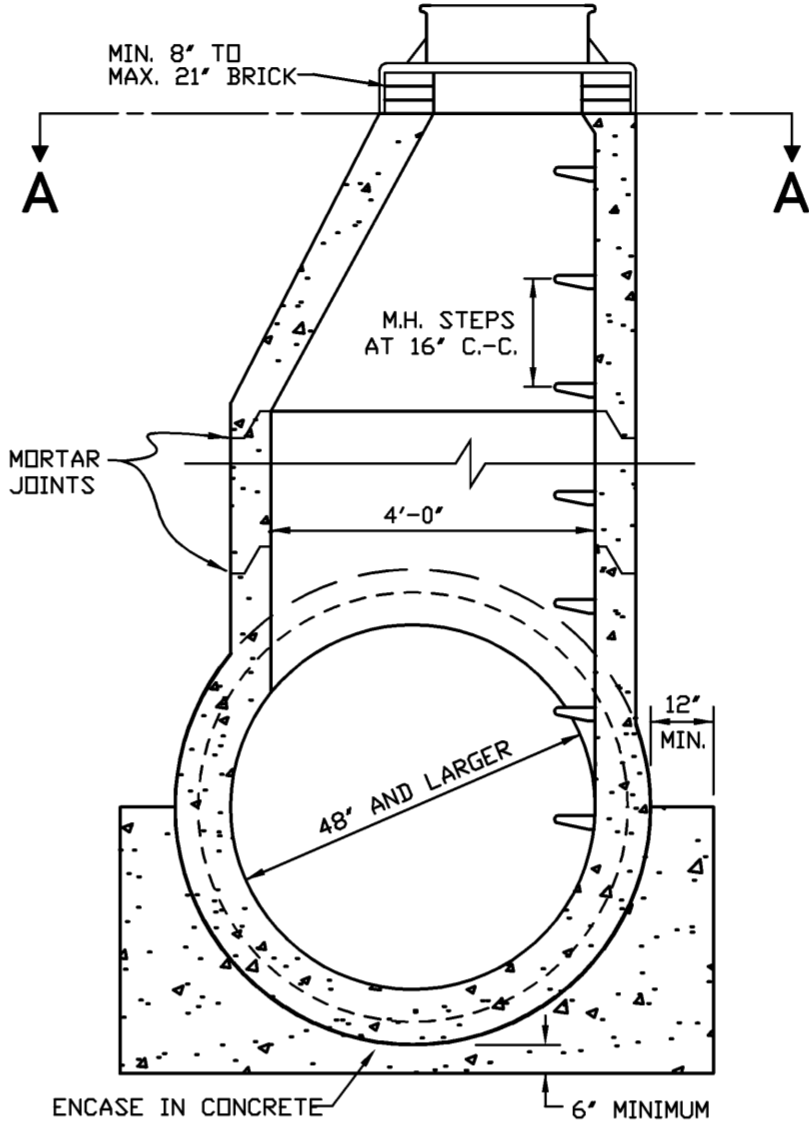
SECTION A-A
SECTION A-A



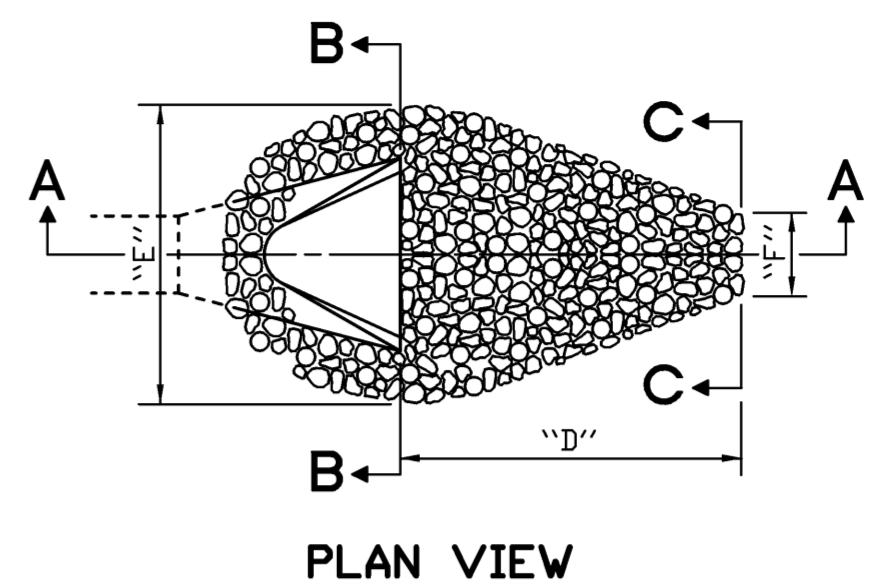
SECTION B-B
STANDARD CATCH BASIN
SECTION B-B
STANDARD STORM MANHOLE



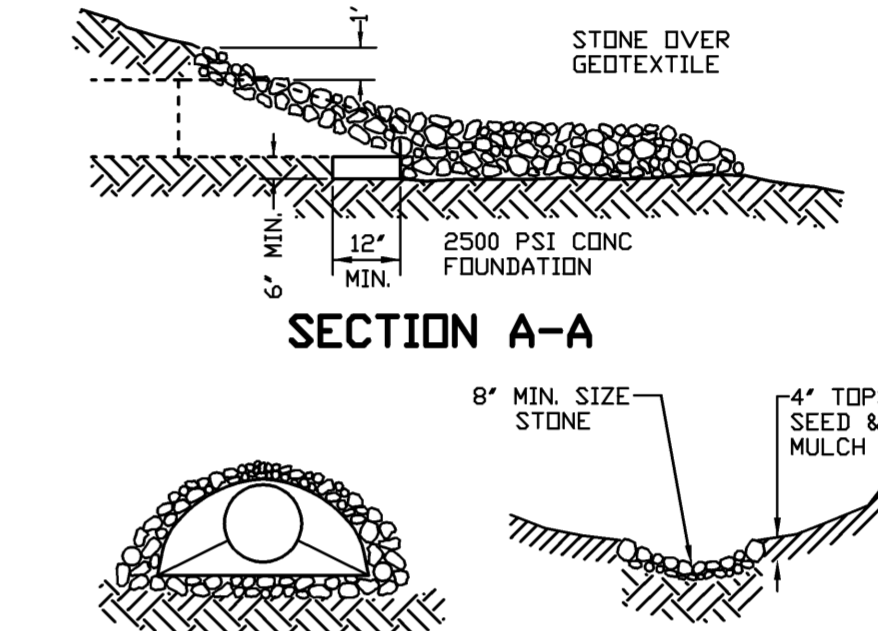
SECTION A-A



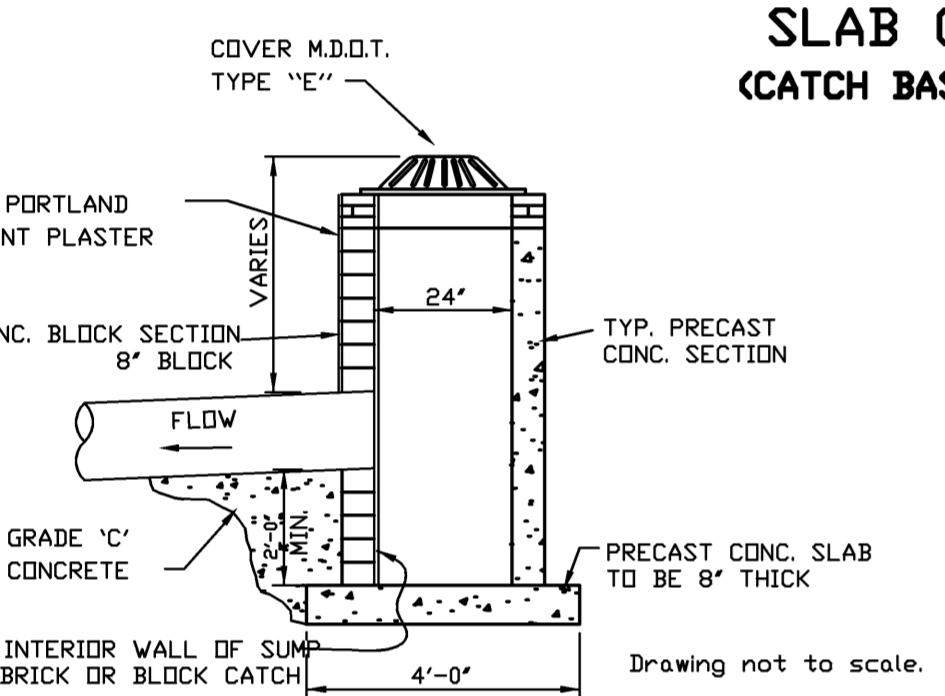
SECTION B-B
STANDARD PRECAST CONCRETE
MANHOLE TEE



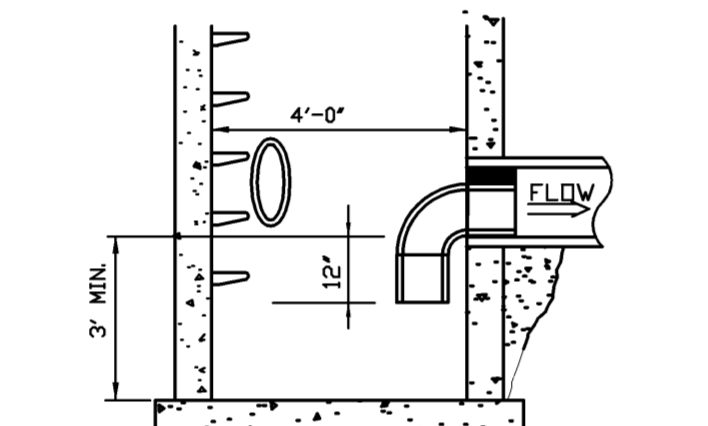
PLAN VIEW



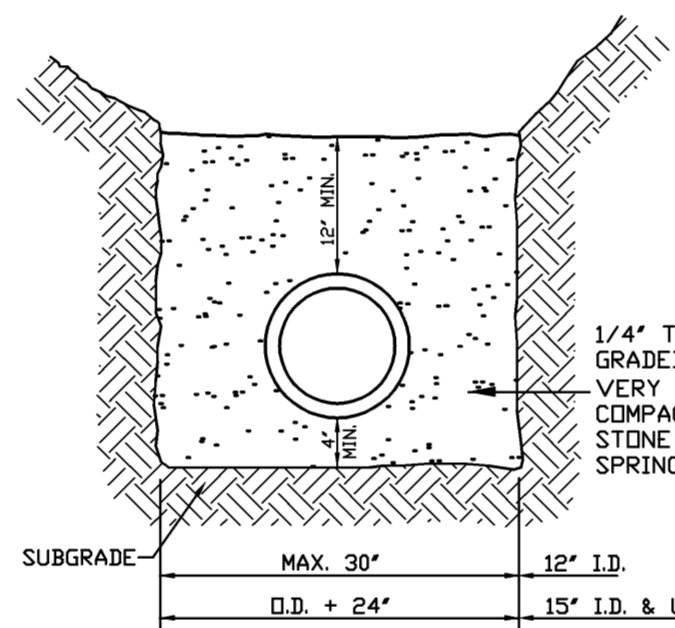
SECTION A-A
SECTION C-C
PLAIN STONE RIP-RAP



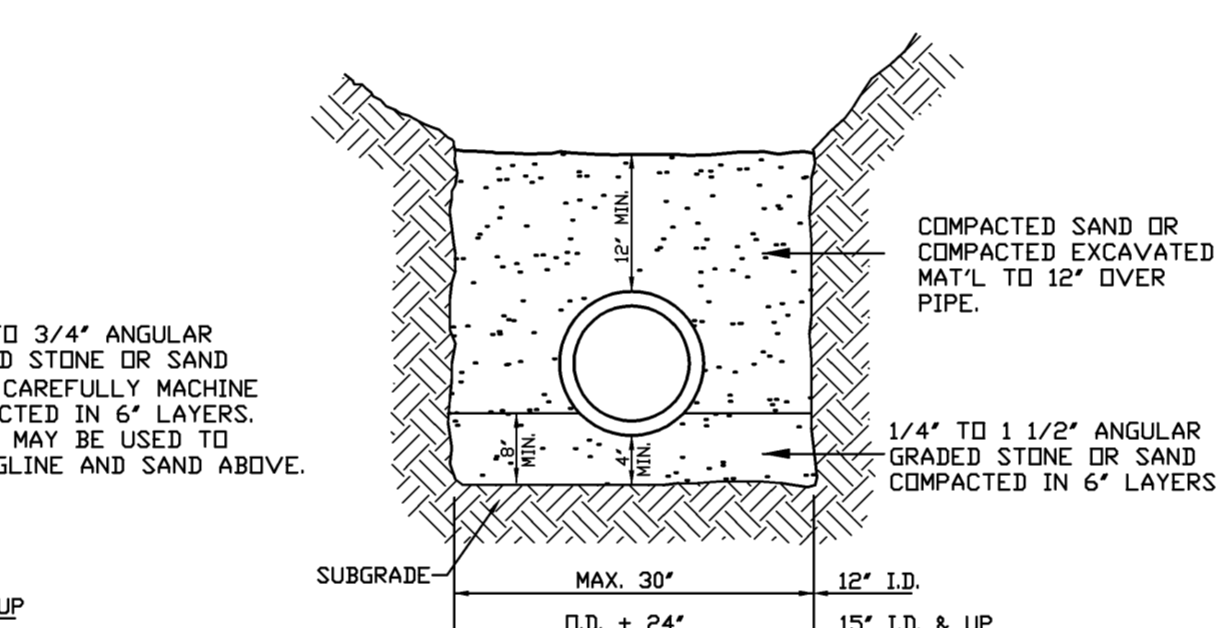
STANDARD REAR YARD CATCH BASIN



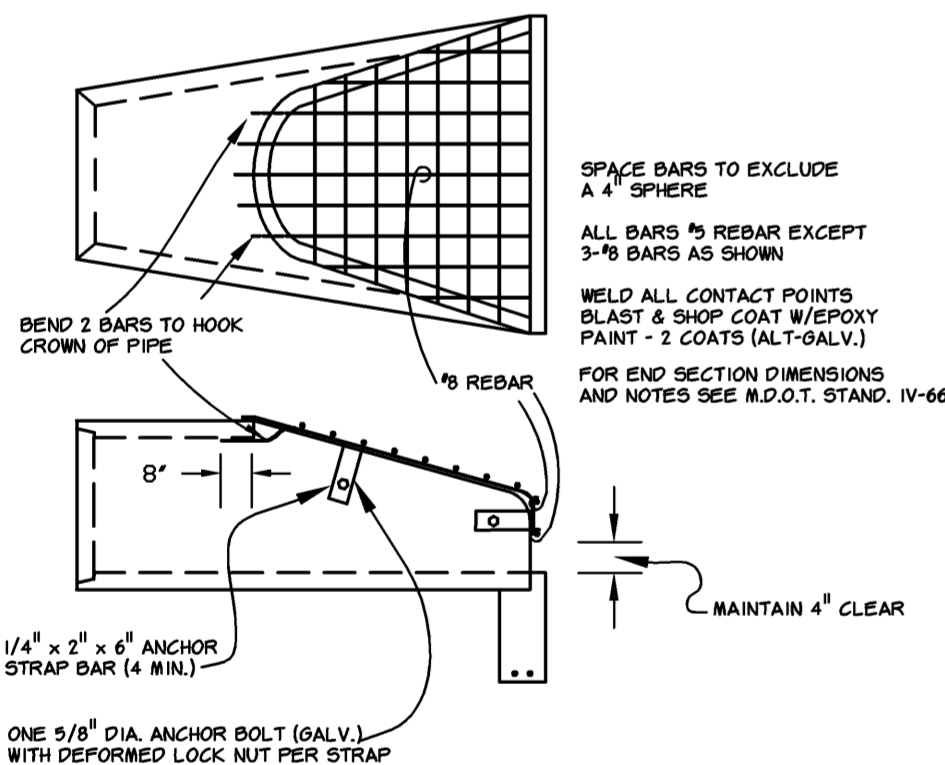
TRAPPED CATCH BASIN



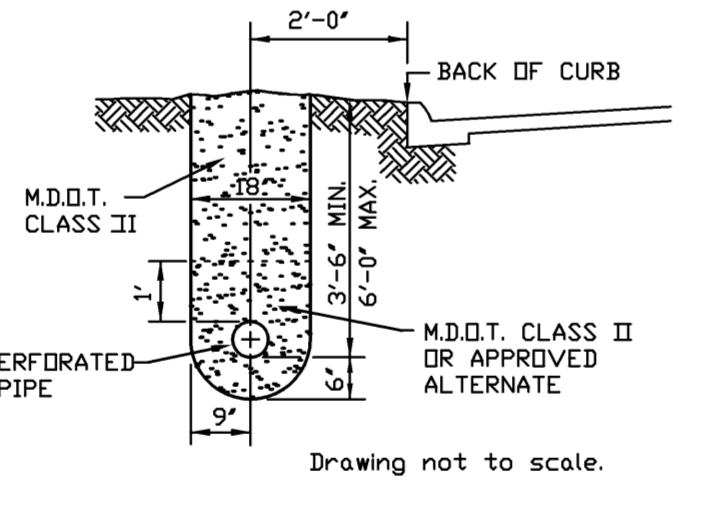
PIPE BEDDING
FOR PLASTIC PIPE



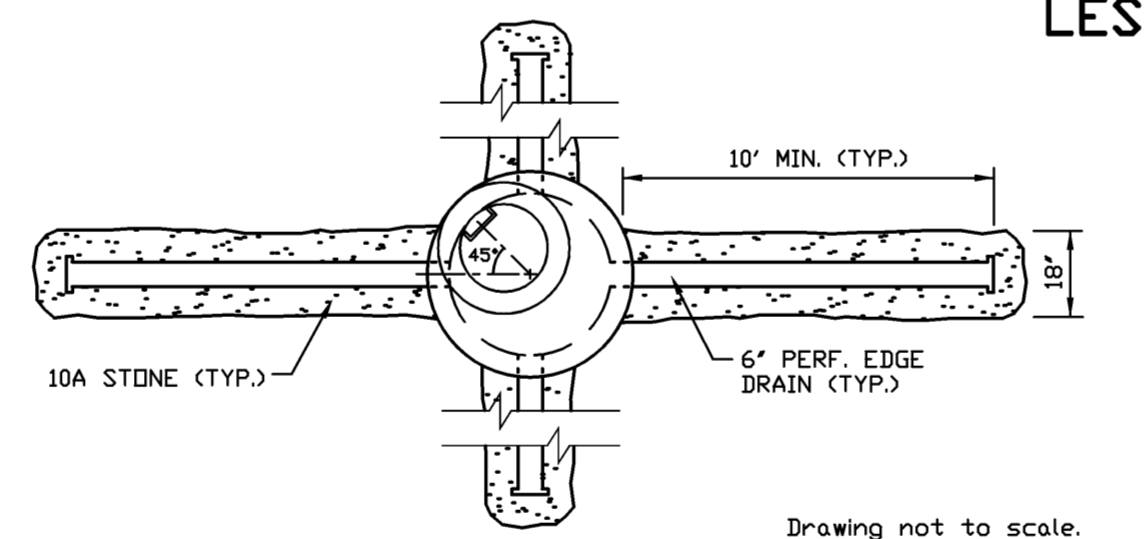
CLASS "B" BEDDING
FOR SEWER PIPE
LESS THAN 48"



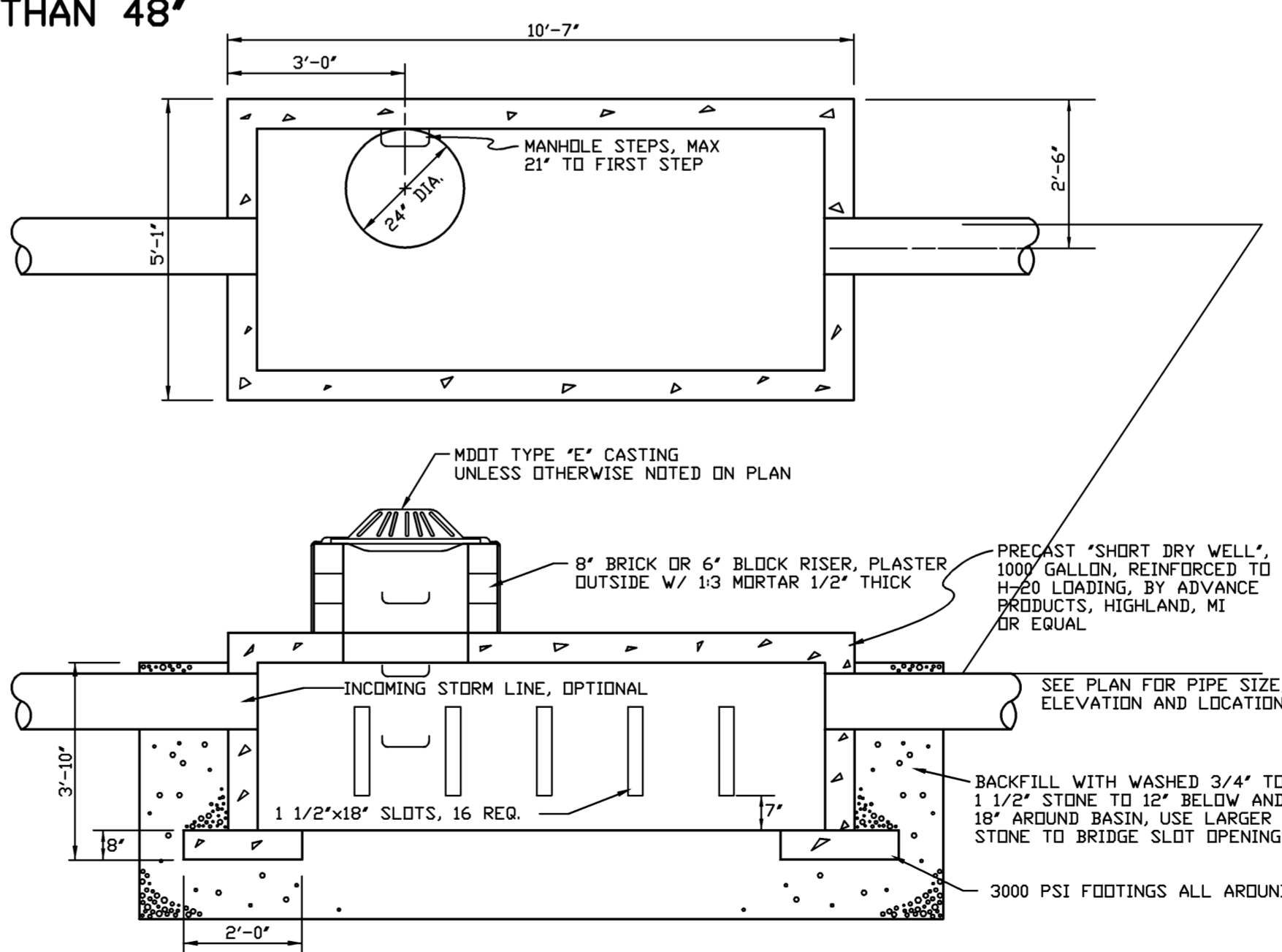
BAR SCREEN DETAIL



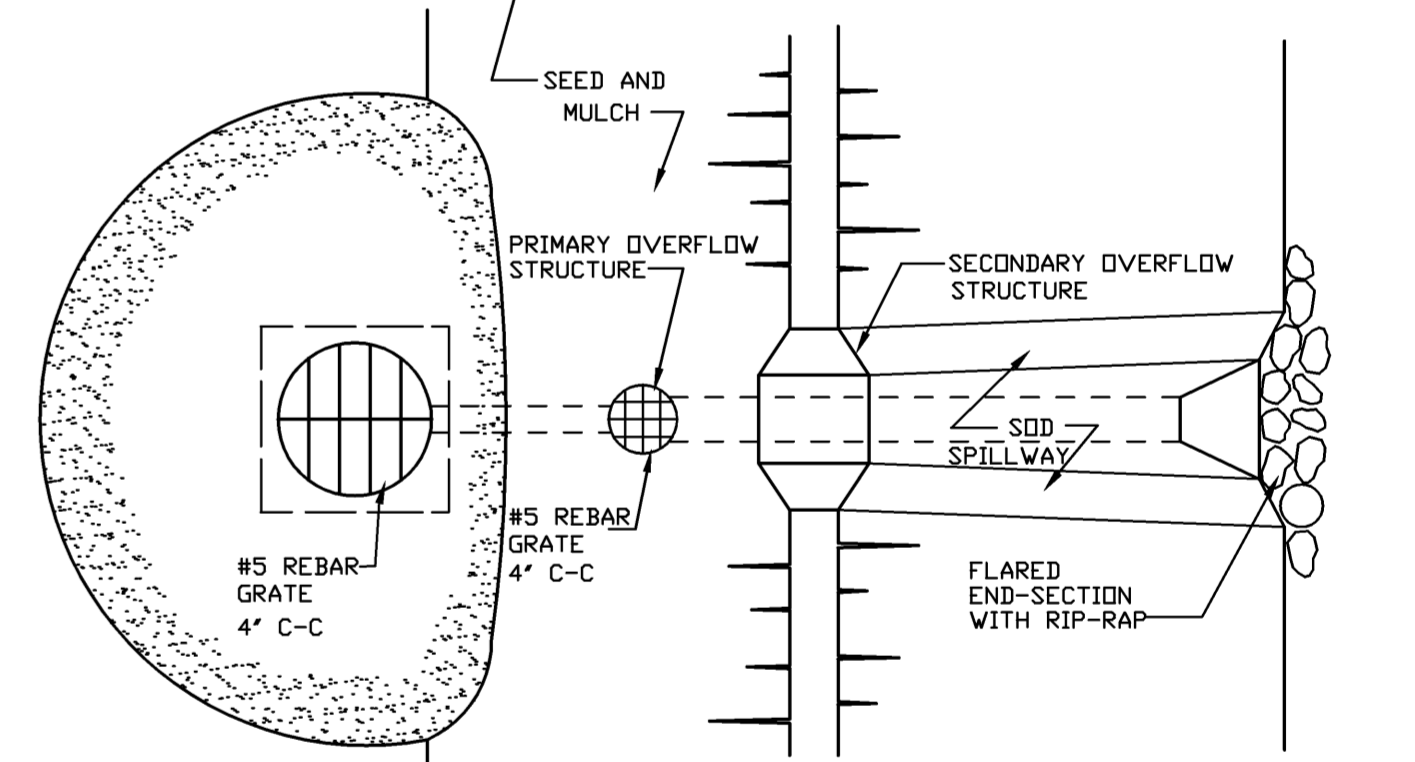
EDGE DRAIN DETAIL



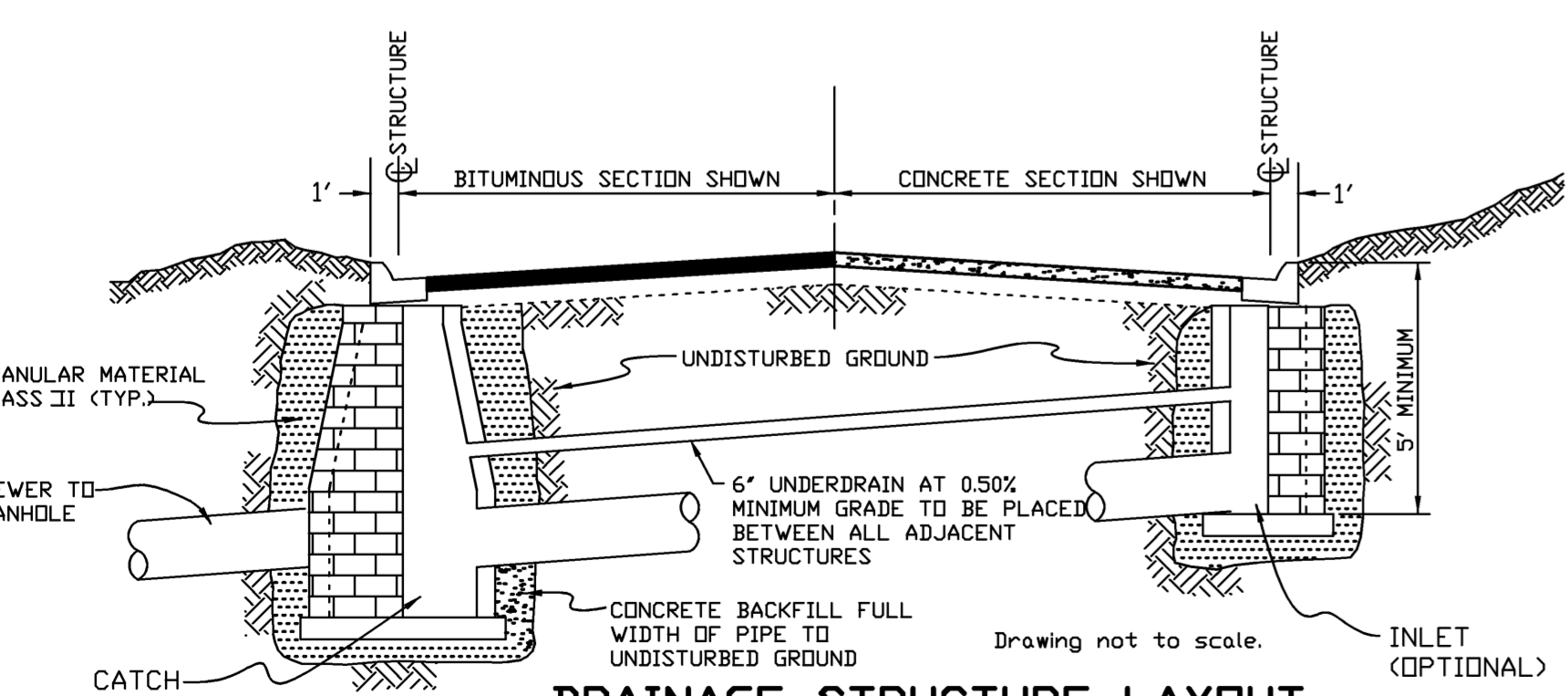
DETAIL
STANDARD LEACHING BASIN



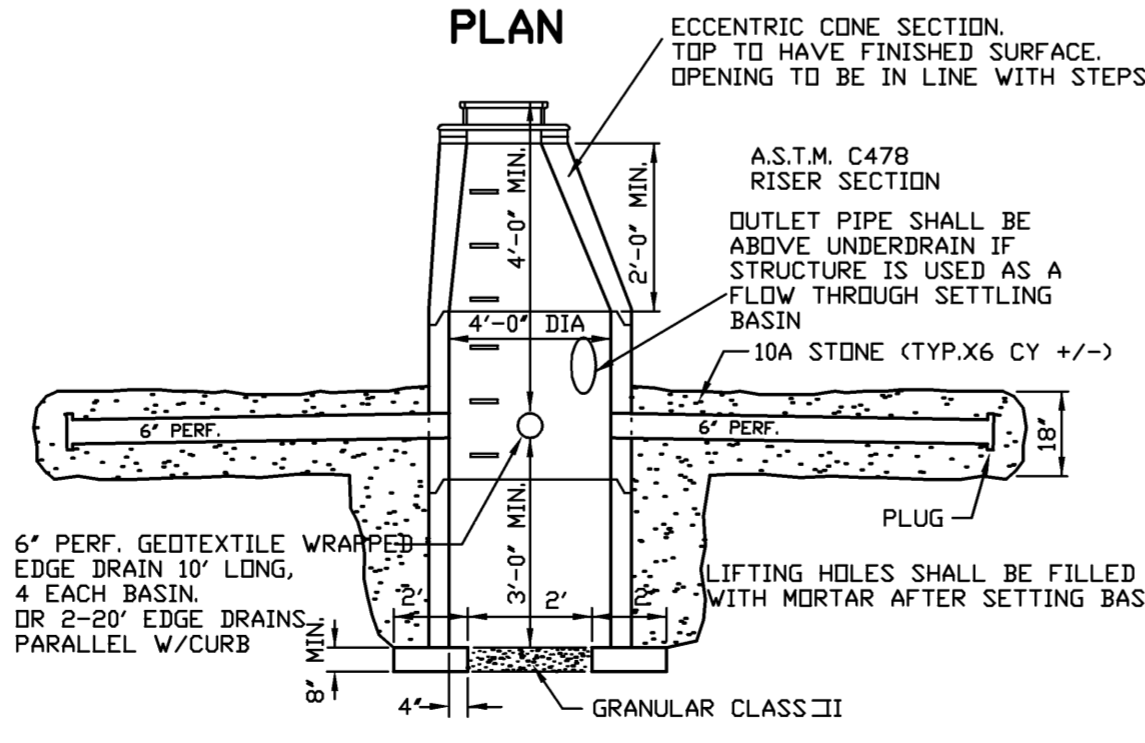
1000 GALLON LEACHING/SETTLING BASIN



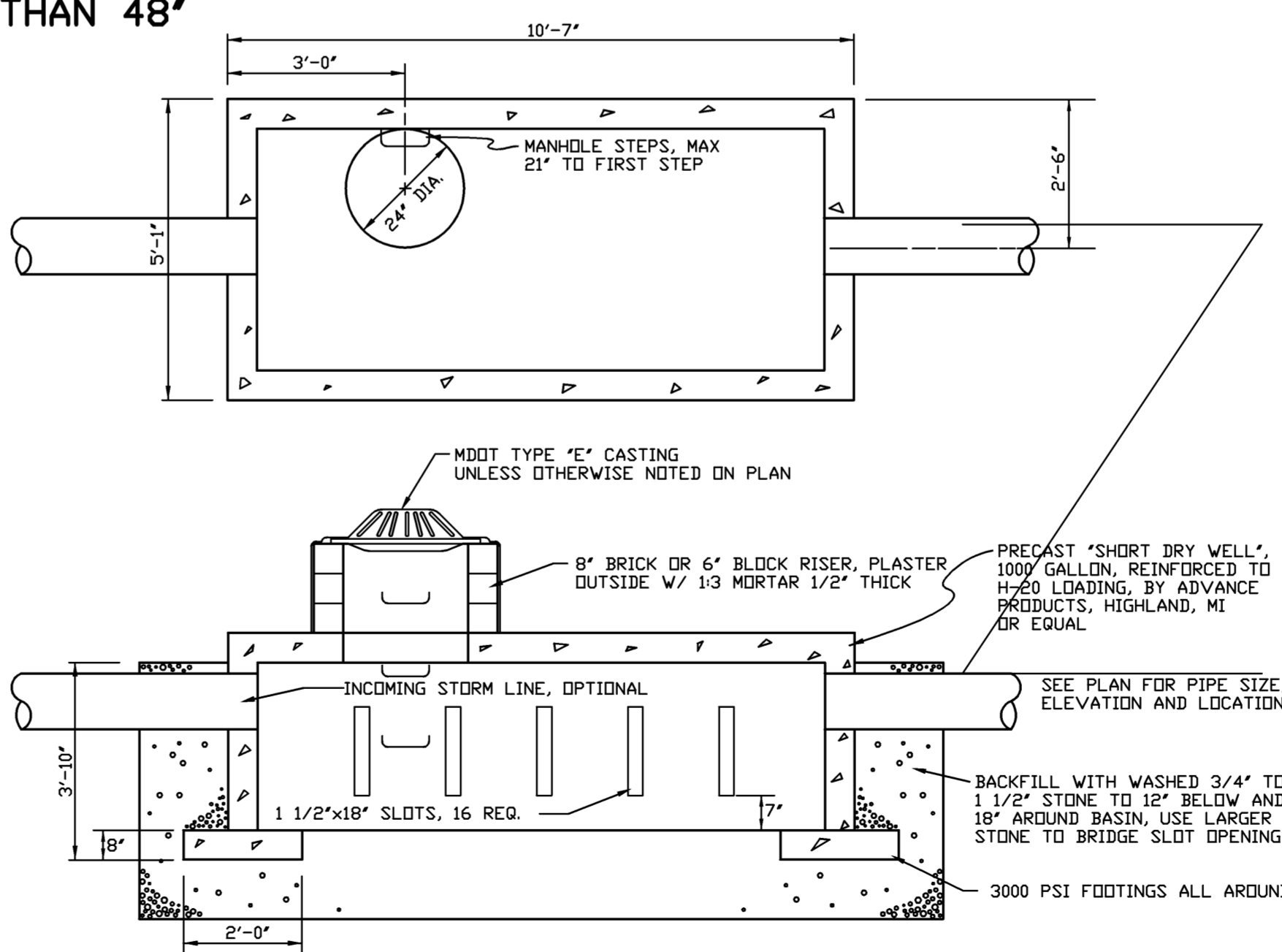
SO-2 DETENTION BASIN OUTLET FILTER (CMP)
(SEE ODCD STANDARD DETAILS FOR SEDIMENT BASIN OUTLET STRUCTURE)



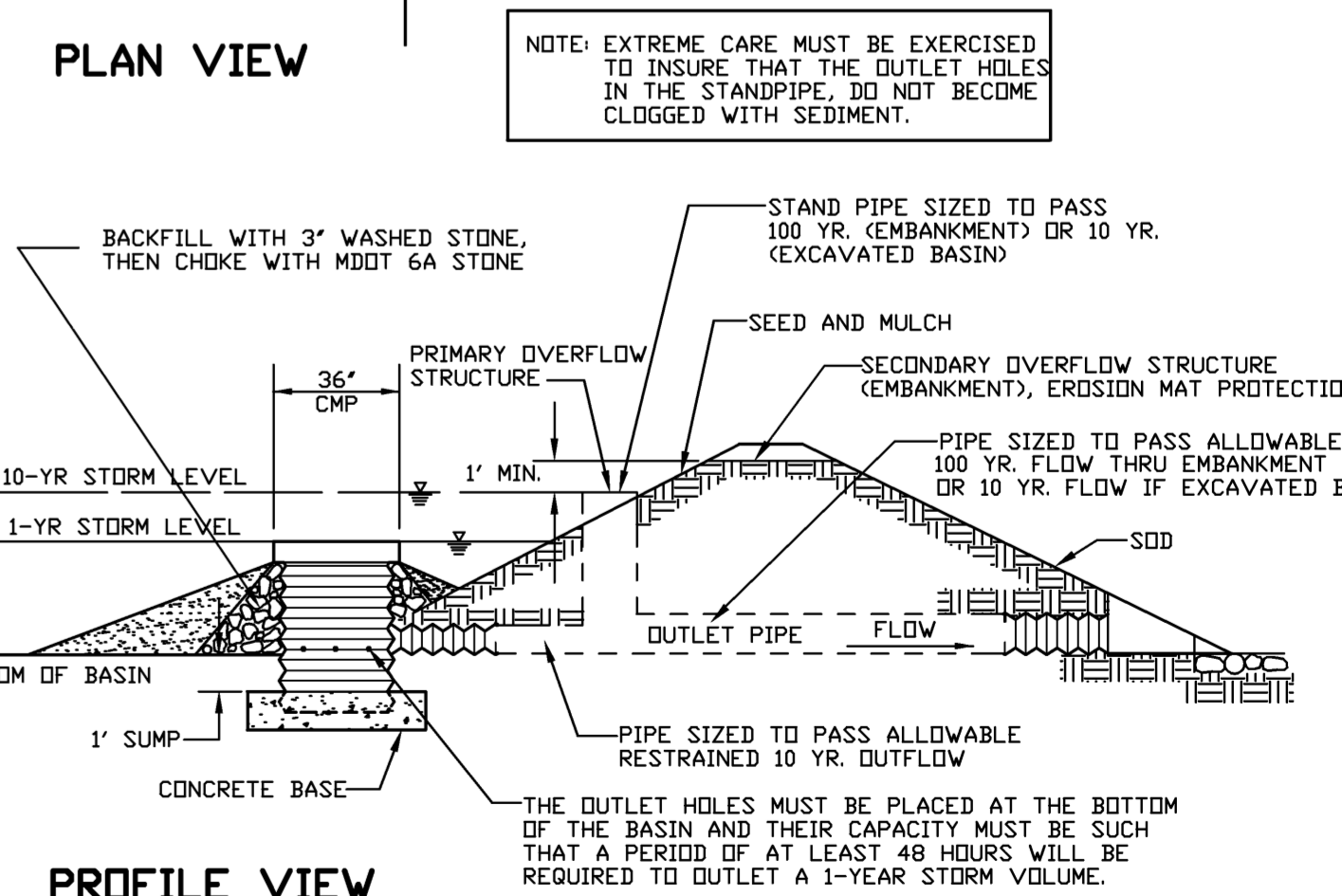
DRAINAGE STRUCTURE LAYOUT



DETAIL
STANDARD LEACHING BASIN



1000 GALLON LEACHING/SETTLING BASIN



PROFILE VIEW

SO-2 DETENTION BASIN OUTLET FILTER (CMP)
(SEE ODCD STANDARD DETAILS FOR SEDIMENT BASIN OUTLET STRUCTURE)

BRD24X36

DRAWN: CAD
DESIGN: OA
CHECKED:

| REVISIONS | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE |
|-----------|---------------|-----------------------|---------|--------|-----------------------|---------|------|-----------------------|------|
| | FIRST ISSUE | | 8-16-99 | REVISE | | 10-3-02 | | | |
| | ADD SO-1 | | 6-17-96 | | | | | | |
| | NEW BAR GRATE | | 11-3-97 | | | | | | |

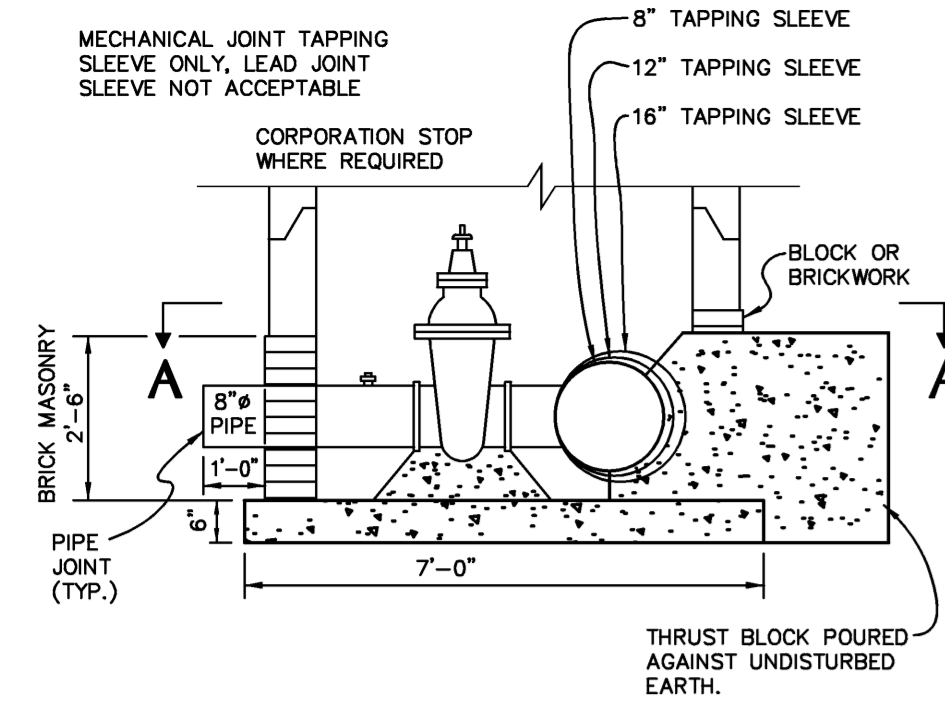
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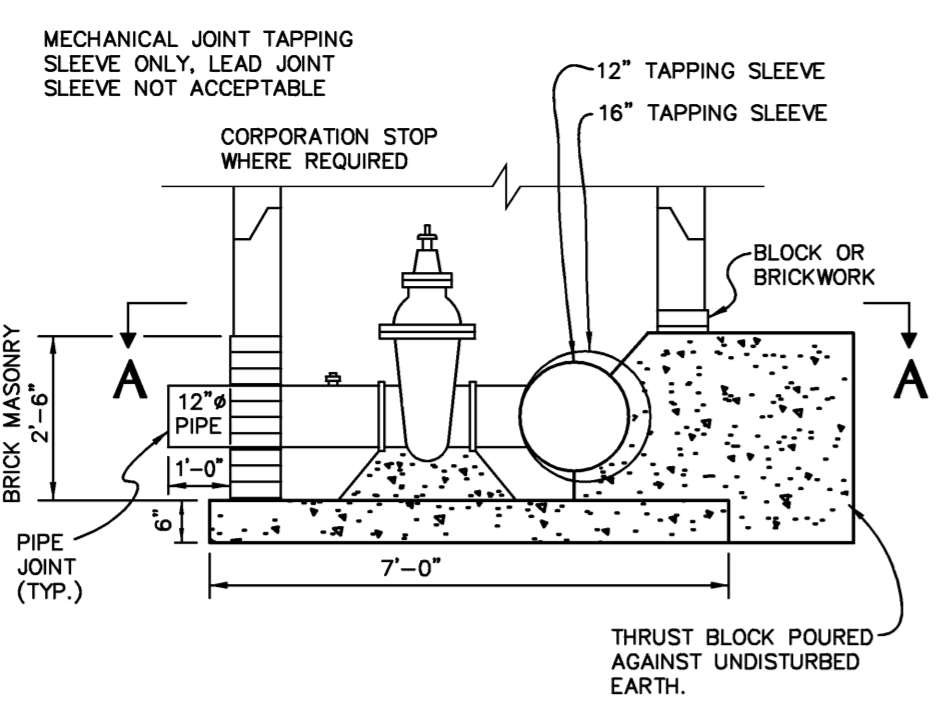
**STORM SEWER
STANDARD DETAILS**

SCALE: VERT. AS NOTED
HORIZ.

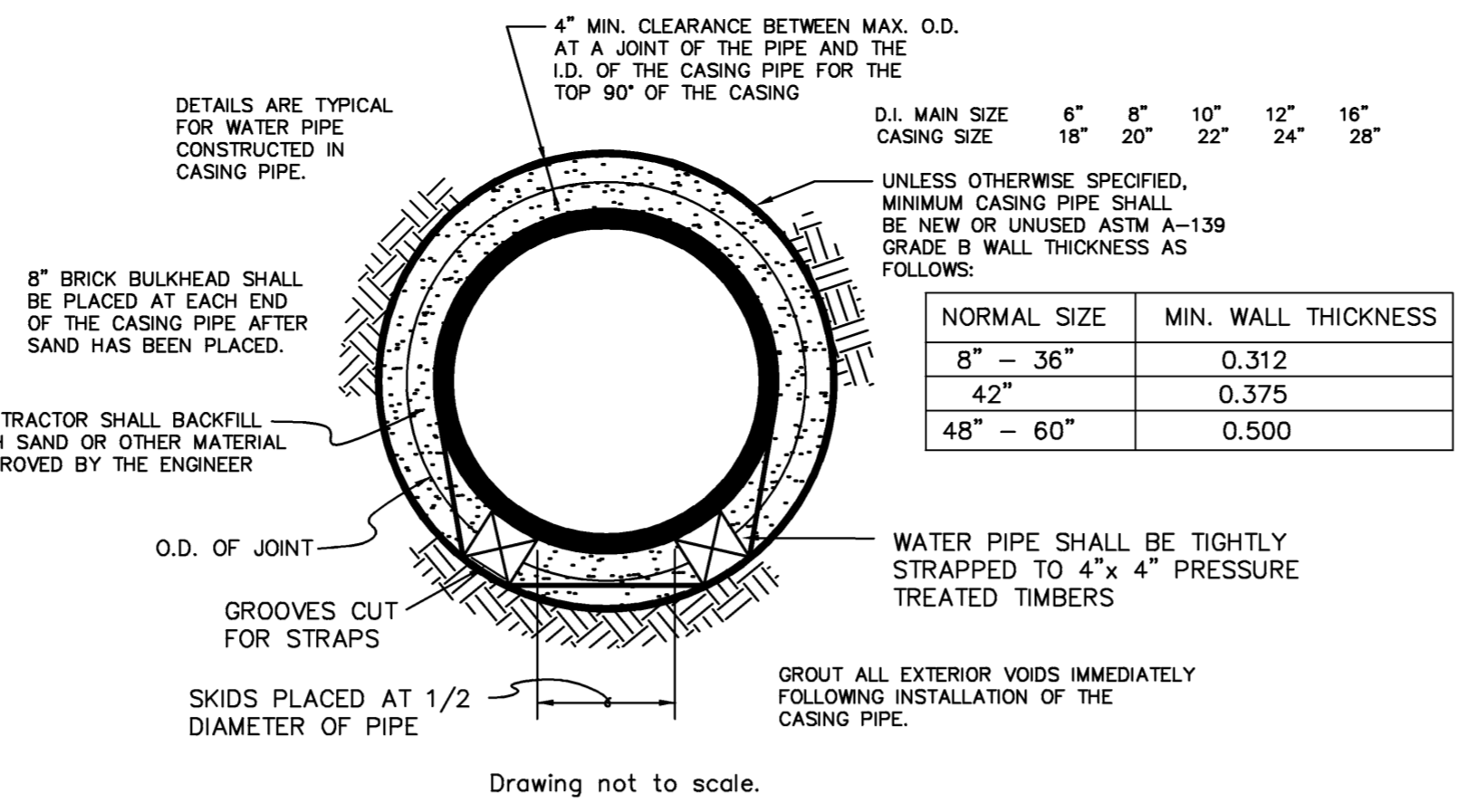
JOB NO.
DATE ISSUED
SHEET NO. 39



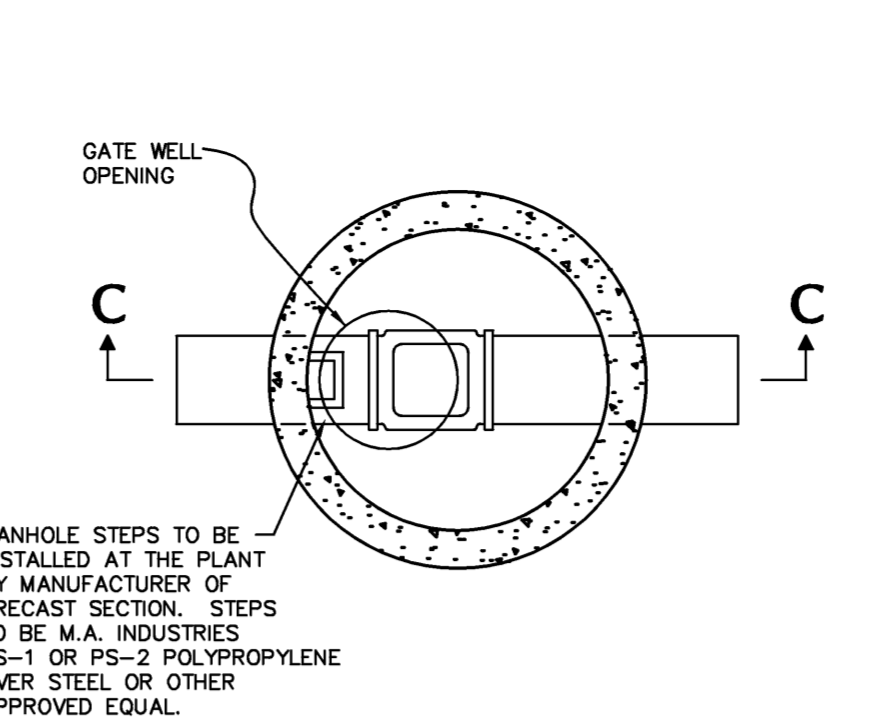
16" X 8", 12" X 8", 8" X 8" TAPPING SLEEVE, VALVE & WELL (B-B)



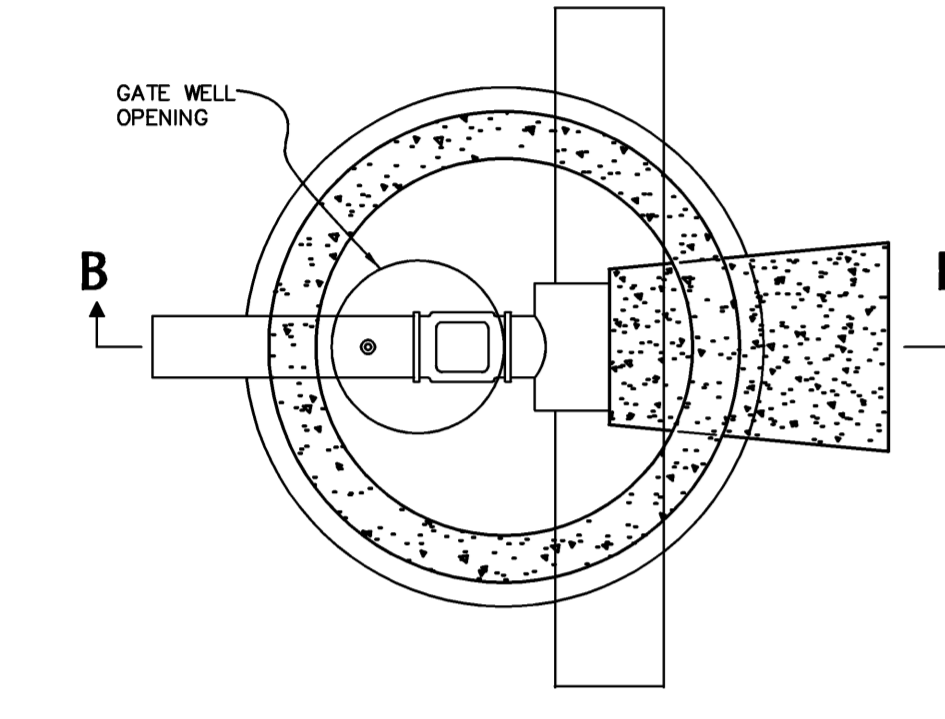
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



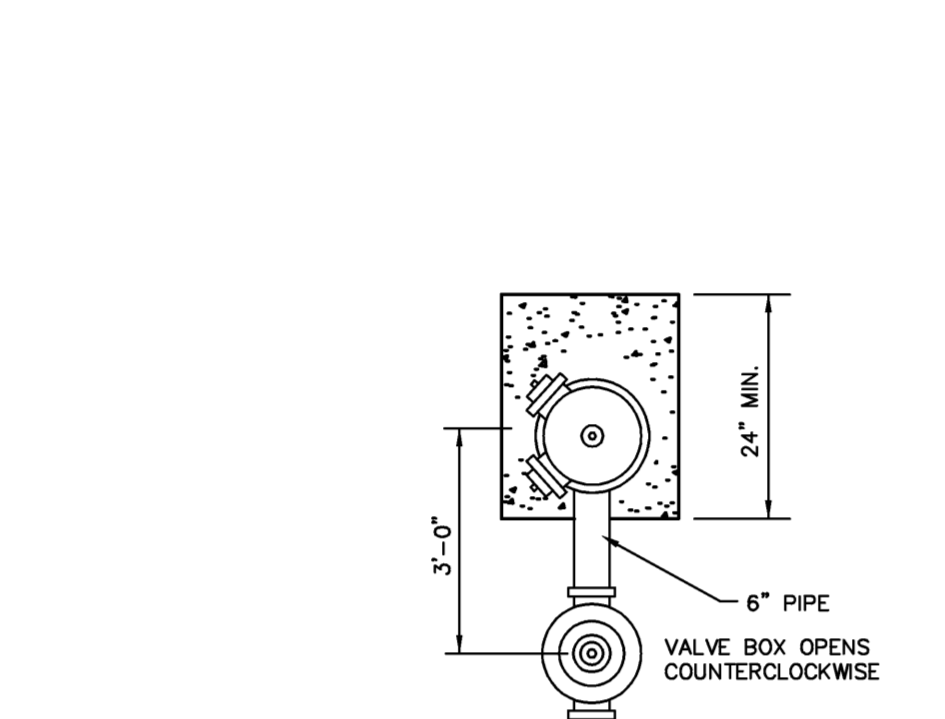
PIPE BARREL SUPPORT FOR WATERMAIN CONSTRUCTED IN CASING



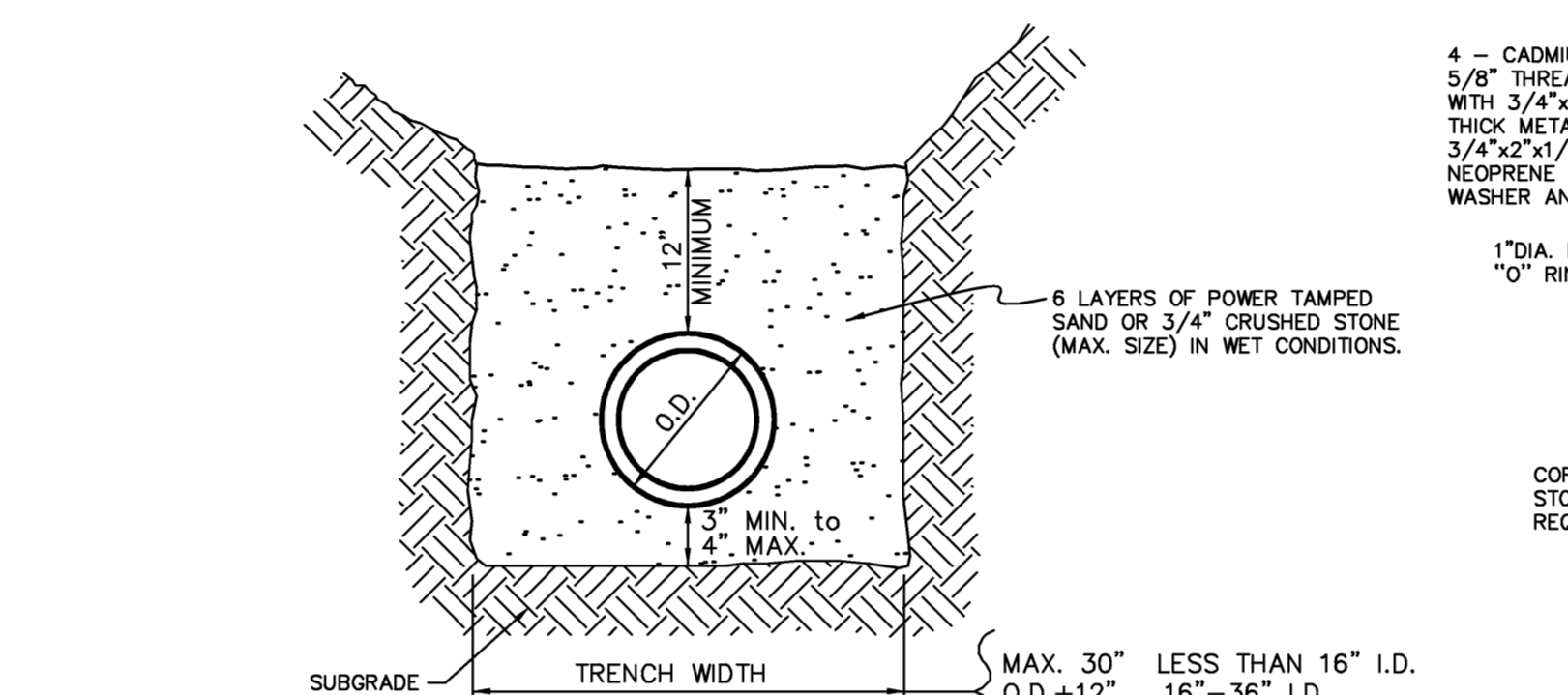
PLAN GATE WELL - TYPICAL (D-D)



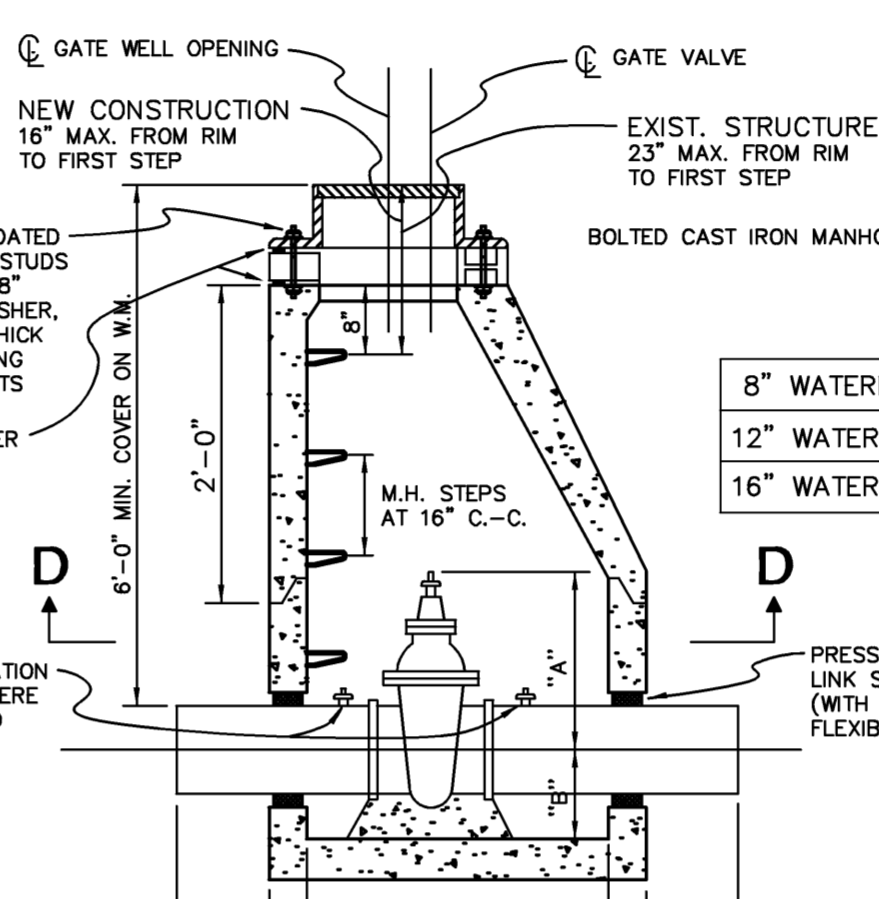
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



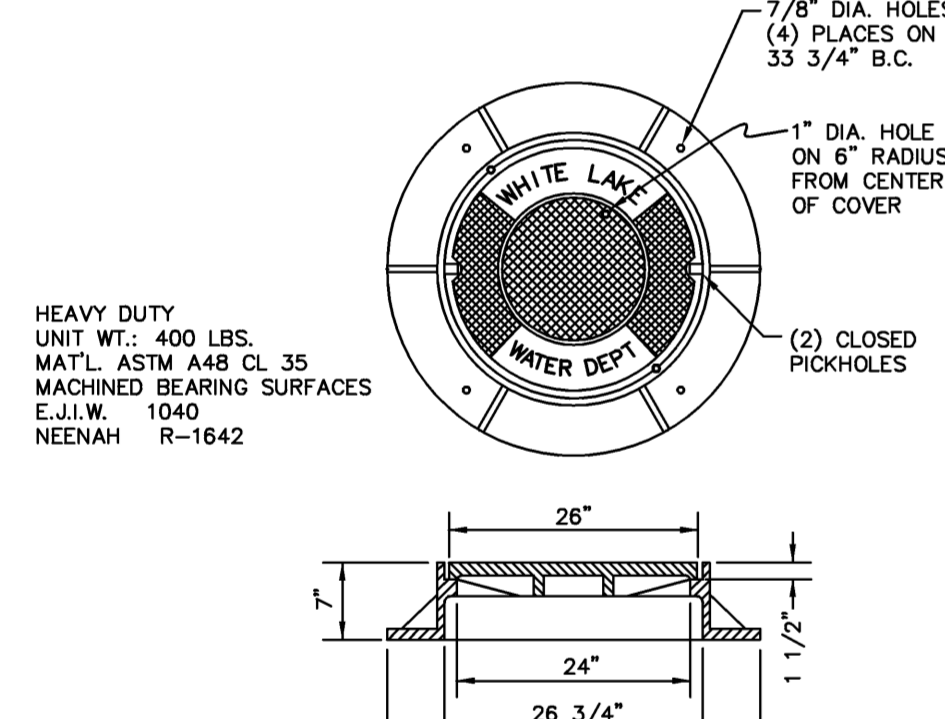
DETAIL OF HYDRANT SETTINGS



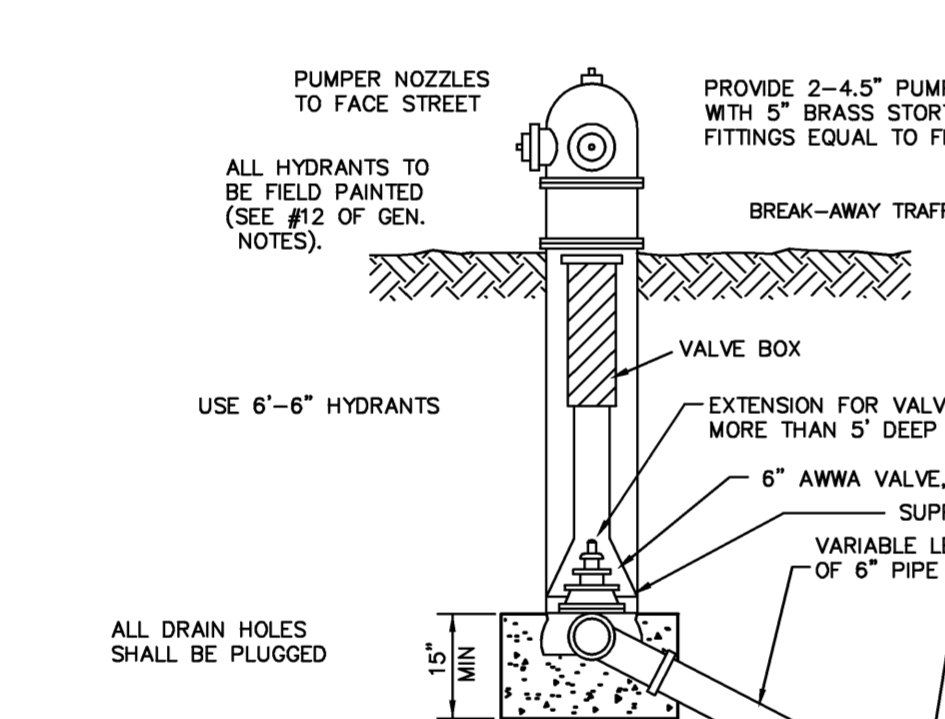
STANDARD BEDDING FOR WATER PIPE



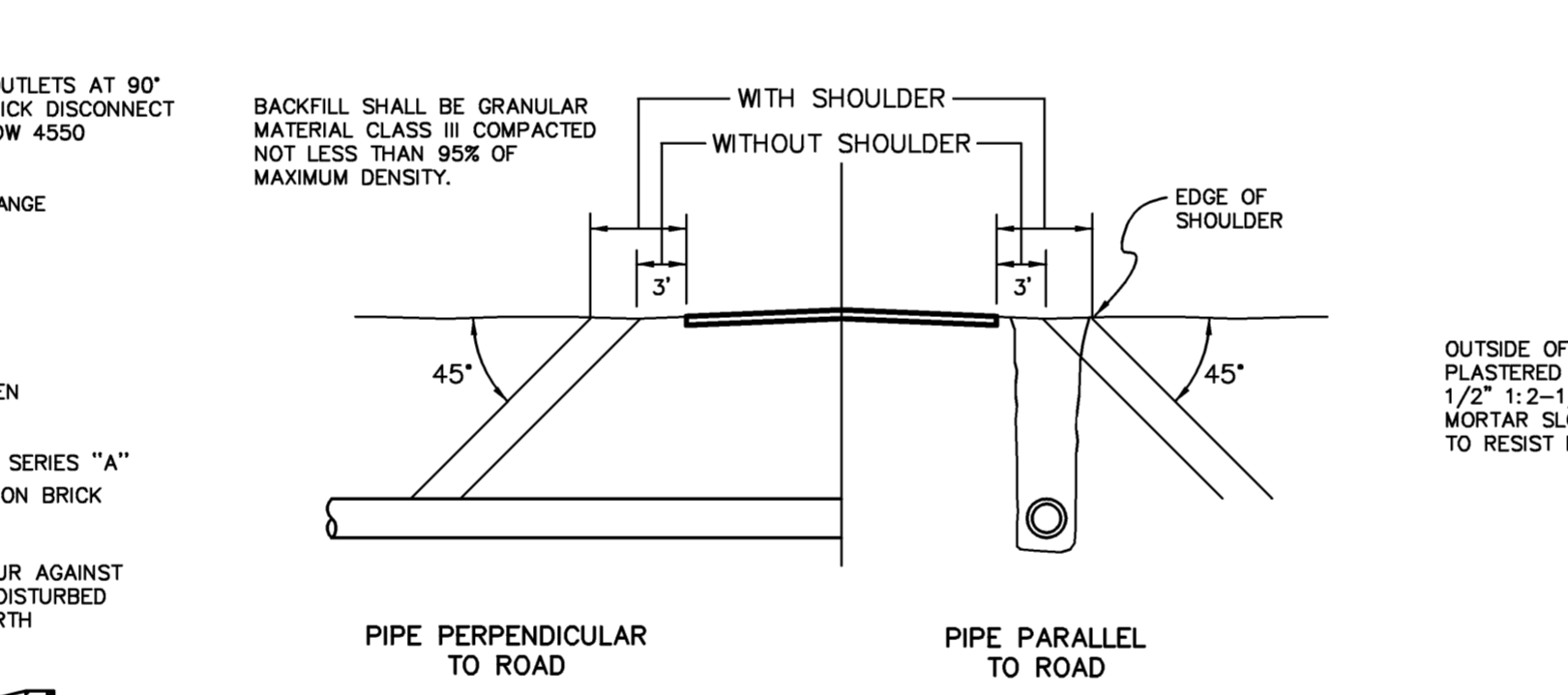
GATE WELL (C-C)



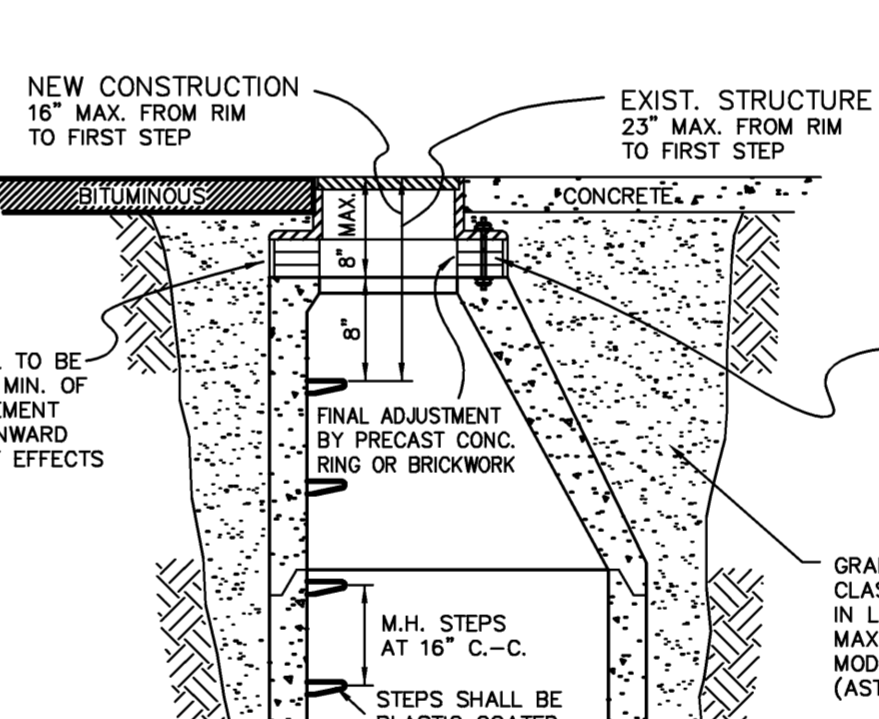
GATE WELL COVER & FRAME



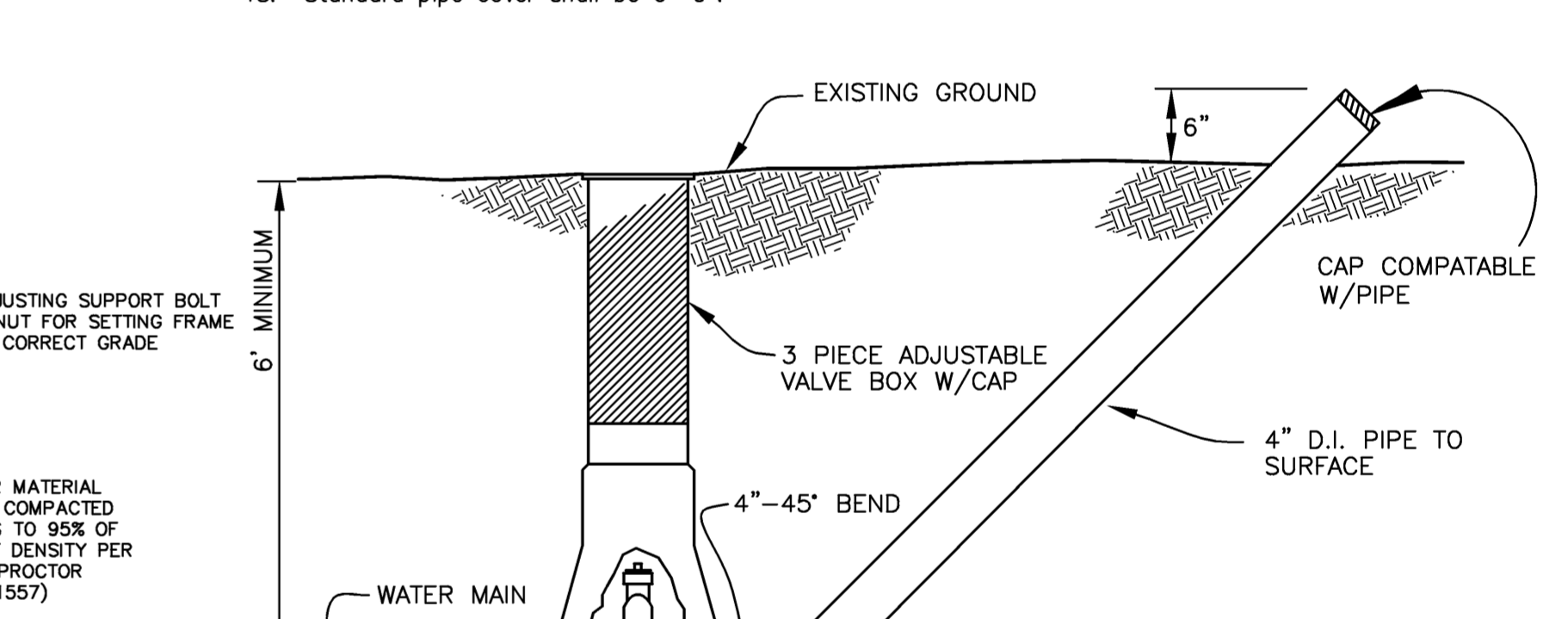
TEMPORARY BLOWOFF ASS'Y



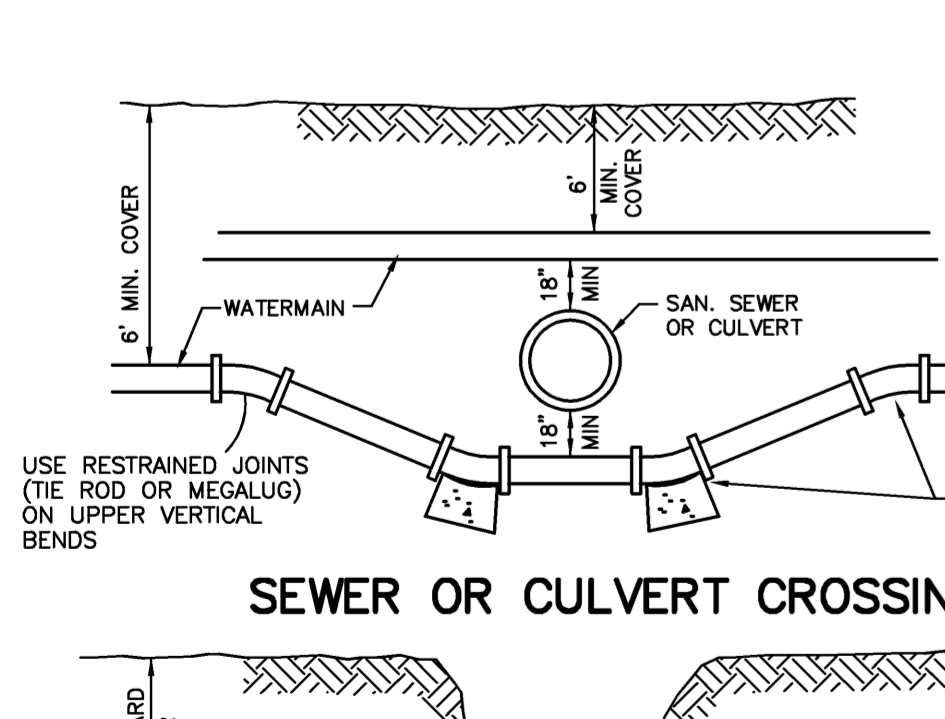
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



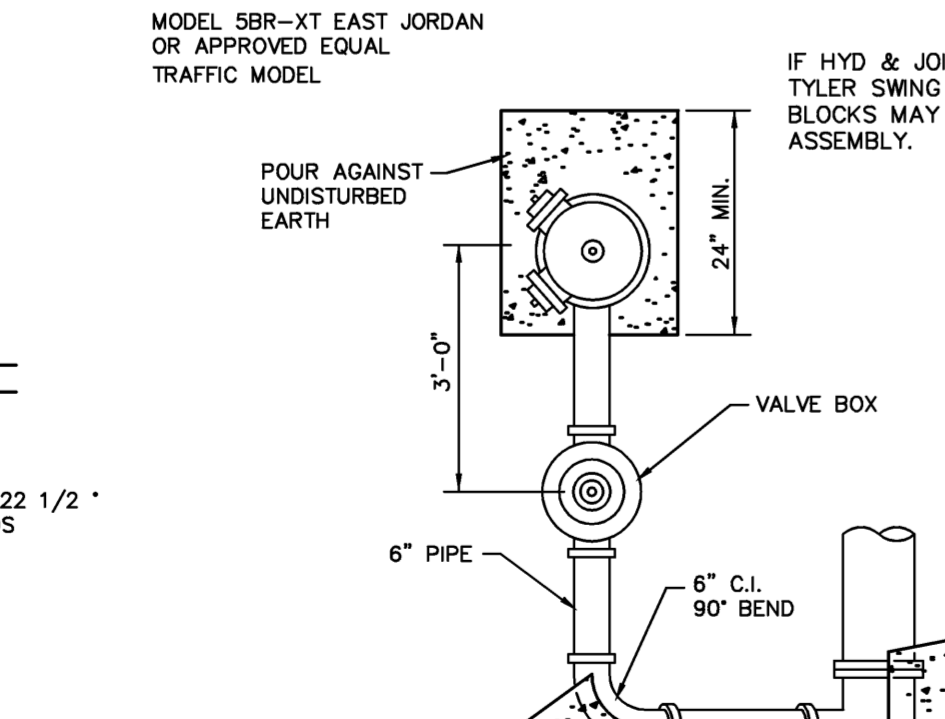
GATE WELL TOPS WITHIN PAVEMENT AREAS



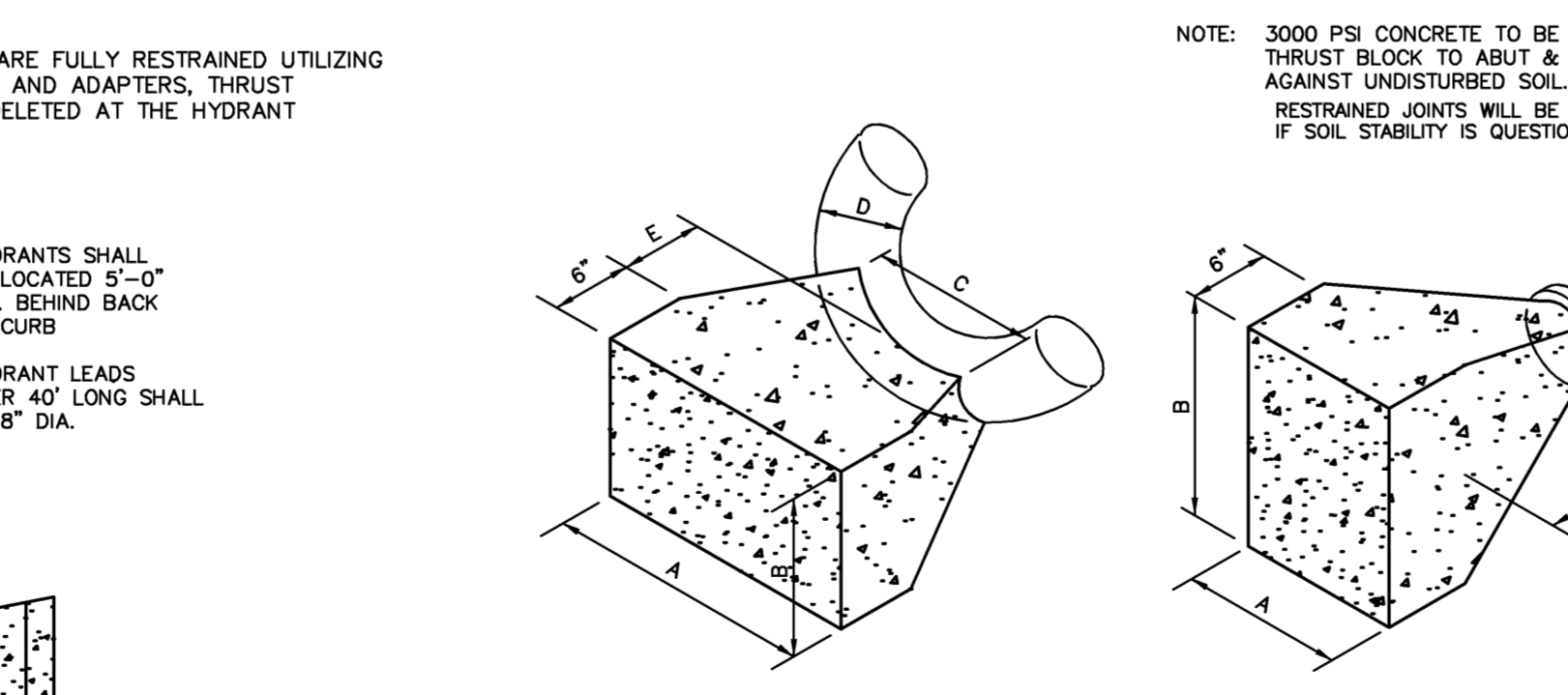
DITCH ENCLOSURE AT GATE WELL



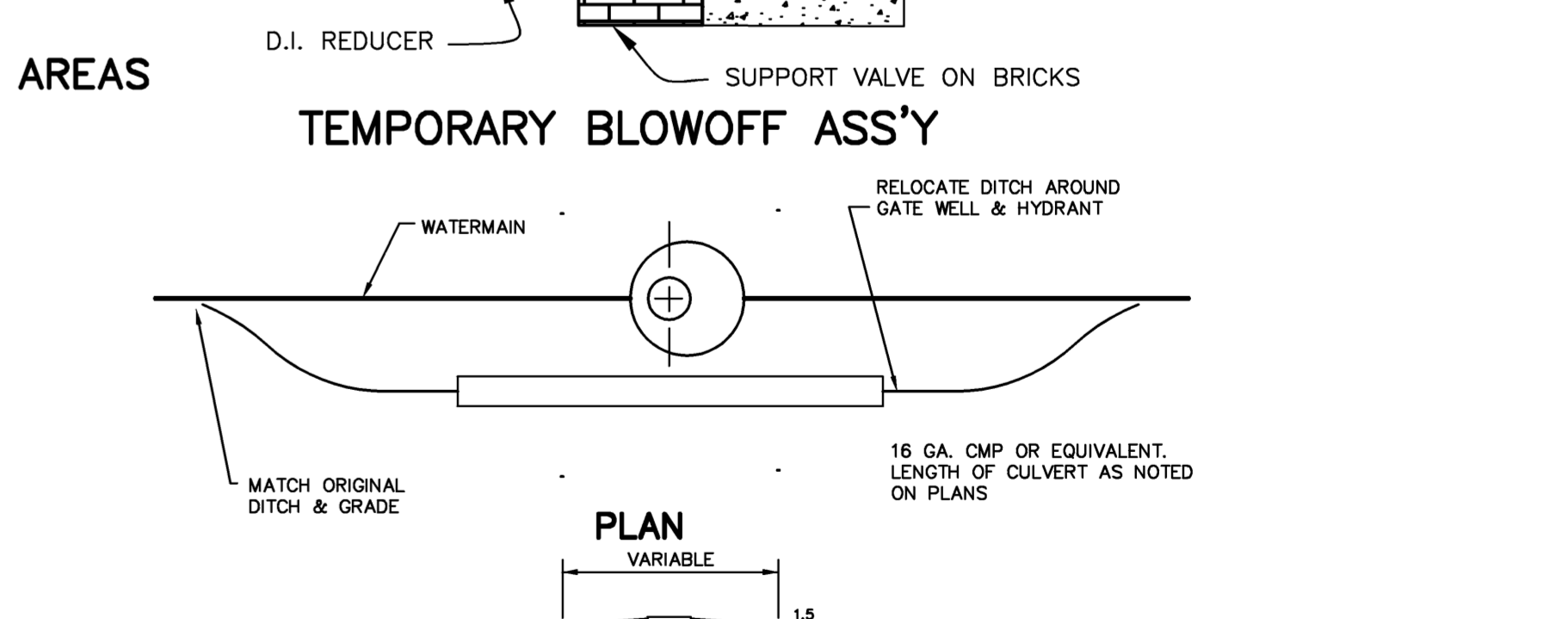
SEWER OR CULVERT CROSSING



DITCH AND STREAM CROSSING



THRUST BLOCK DETAILS



PROFILE DITCH ENCLOSURE AT GATE WELL

- WATER MAIN NOTES**
- All construction procedures and materials used on this project shall conform to White Lake Township current standards and specifications.
 - All hydrants shall be East Jordan Iron Works 5-BR-XT traffic model. Self-draining hydrants shall not be used. Valve shall open counter-clockwise. Provide 2-4.5" pumper outlets with "Fire Flow Nozzle" model 4550 as manufactured by RLS Group, Inc. with 1-1/2" pentagon nuts. Caps to be color coded with a reflective sticker, color corresponding to NFPA 291 guidelines.
 - All watermains shall be ductile iron pipe Class 54, cement lined with push on joints. Mechanical joints allowed only for tapping sleeves, hydrants & hydrant valves. All joints at bends, tees, valves and hydrants shall have a poured concrete thrust block as detailed on this sheet. Joints which have thrust blocks bearing on soil of questionable stability shall be fully restrained utilizing Tyler swivel ells and adapters or a system approved by the Township Engineer.
 - Tapping sleeve shall be mechanical joint or approved equal. Leaded jointed sleeve shall not be used.
 - Specifications shall include direction of operation of all valves. All valves shall be counter clockwise open.
 - All necessary easements shall be provided in the name of White Lake Township before acceptance of the water distribution system.
 - The design engineer shall furnish White Lake Township with one reproducible sets of "As-Built" watermain plans or an AutoCAD file upon completion of the job.
 - All required cross-connection devices shall be installed as required by the local plumbing inspector and in accordance with the standards of the Michigan Department of Public Health.
 - Gate well frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #R-1642 Manhole frame, solid lid cover shall be non-rocking and marked "White Lake Water Department"
 - All gate valves with operating nuts greater than 5' below ground surface shall be provided with an extension stem. The length of the extension shall be such that it will be within 5' of the ground surface when an extension is used it shall be held in place by an extension stem guide suitably fastened to the wall of the gate well.
 - 1" corporation stops are to be placed at such locations as may be required by the engineer.
 - All hydrants shall be painted federal red polyurethane or alkyd gloss enamel. A round sticker, color coded per NFPA guidelines via a flow test or as determined by the Township Engineer from a computer model, shall be affixed to one nozzle cap of each hydrant.
 - All pipe and fittings shall be subjected to a hydro-static pressure test of 150 PSI for a 2 hour duration; Township Engineer must be present. Maximum segment 2000 feet except that longer segments may be tested with allowable leakage based on 2000 feet.
 - 2 consecutive safe bacteria samples shall be taken from the water system approx. 24 hours apart at points established by the Township Engineer. Samples shall be taken by the Township Engineer.
 - Filling, flushing and sampling of watermain can only be performed with a "Jumper" Line, maximum 1" diameter. The jumper shall be equipped with an approved RPZ type of backflow preventer.
 - Adjustments on gate wells and sanitary manholes shall be limited to 23" maximum from top of rim to first step in accordance with MIOSHA Rule 341.
 - Service leads shall be 1" minimum size, Copper type "K" and shall be installed with stop box to the property line prior to acceptance of the water main. Stop shall be 1" regular pattern ball valve equivalent A. Y. McDonald Mfg. 6100 Flare. Curb box shall have 1" riser pipe with 2 hole Erie pattern cover equivalent to A. Y. McDonald 5601L. Stop box shall be protected with a 2"x4" painted blue extending 4 feet above ground.
 - Standard pipe cover shall be 6'-0".

| REVISIONS | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE | MARK | ADDENDUM/CHANGE ORDER | DATE |
|-----------|------|-------------------------|----------|------|--------------------------|----------|------|-----------------------|---------|
| | | GENERAL REVISION TO CAD | 12-29-99 | | GW & NUT SIZE | 7-23-98 | | CLARIFY HYD SPEC | 2-7-01 |
| | | ADD NOTE IT | 11-4-97 | | PIPE COVER & FLANGE TAPE | 12-12-99 | | 5-BR HYD. WS STAKE | 2-27-02 |
| | | REVISE HYD & THRUSTING | 5-18-98 | | ADD BLOWOFF | 7-6-99 | | | |

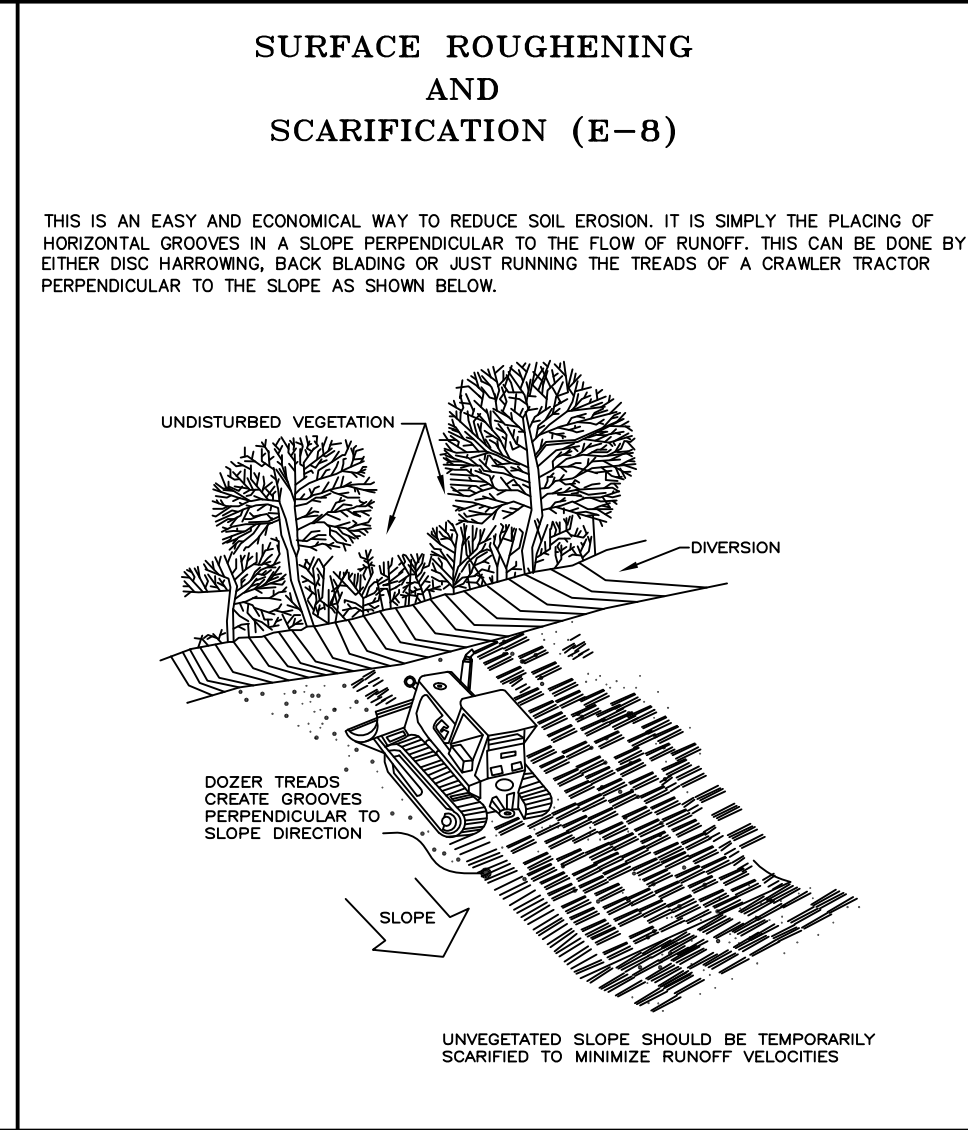
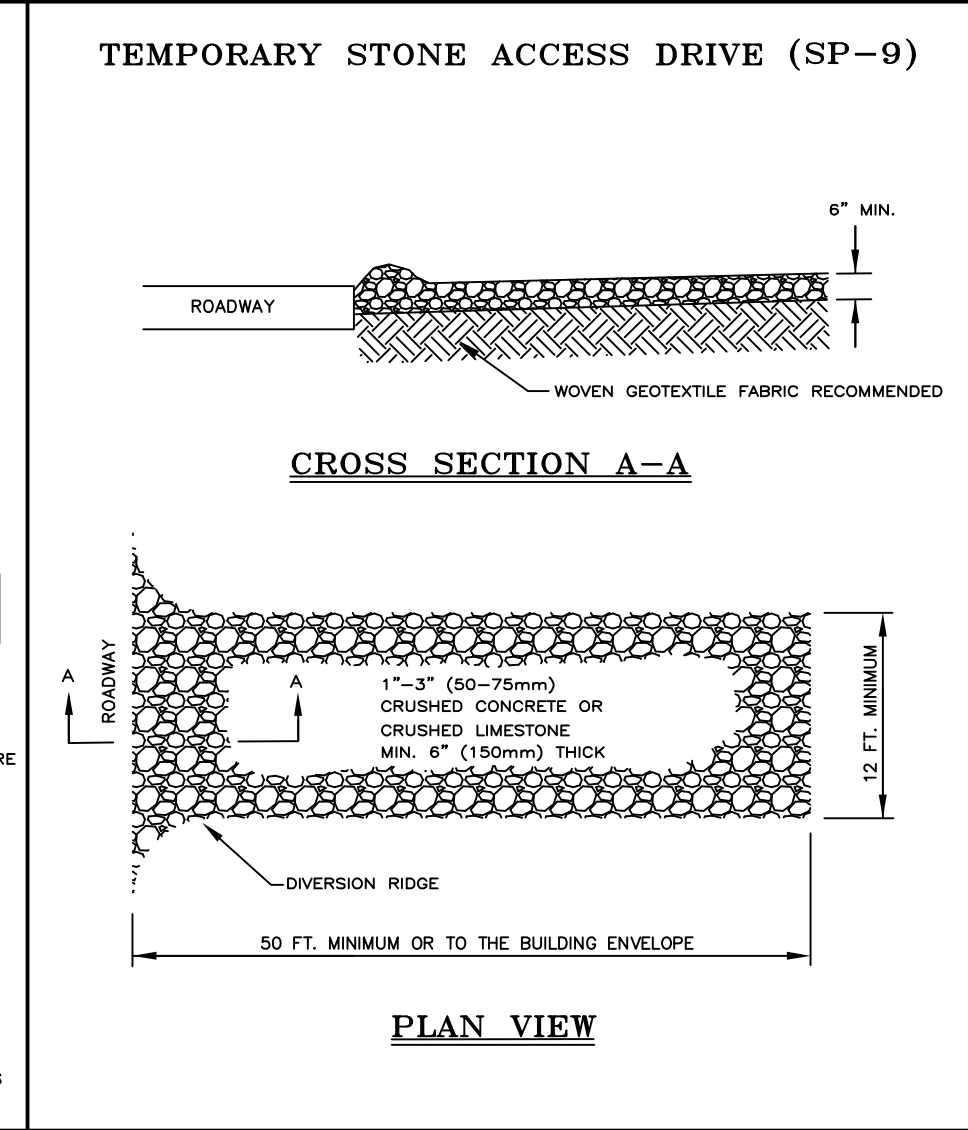
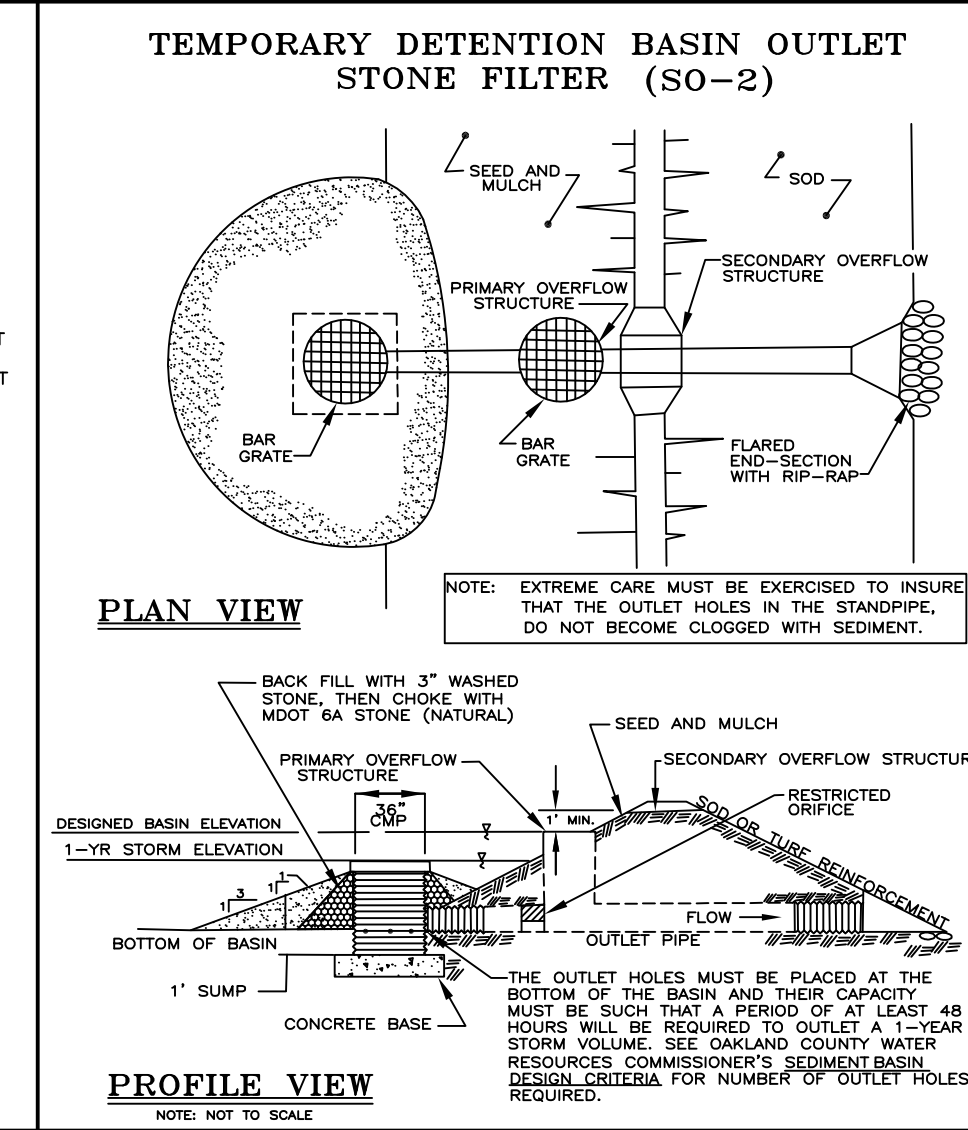
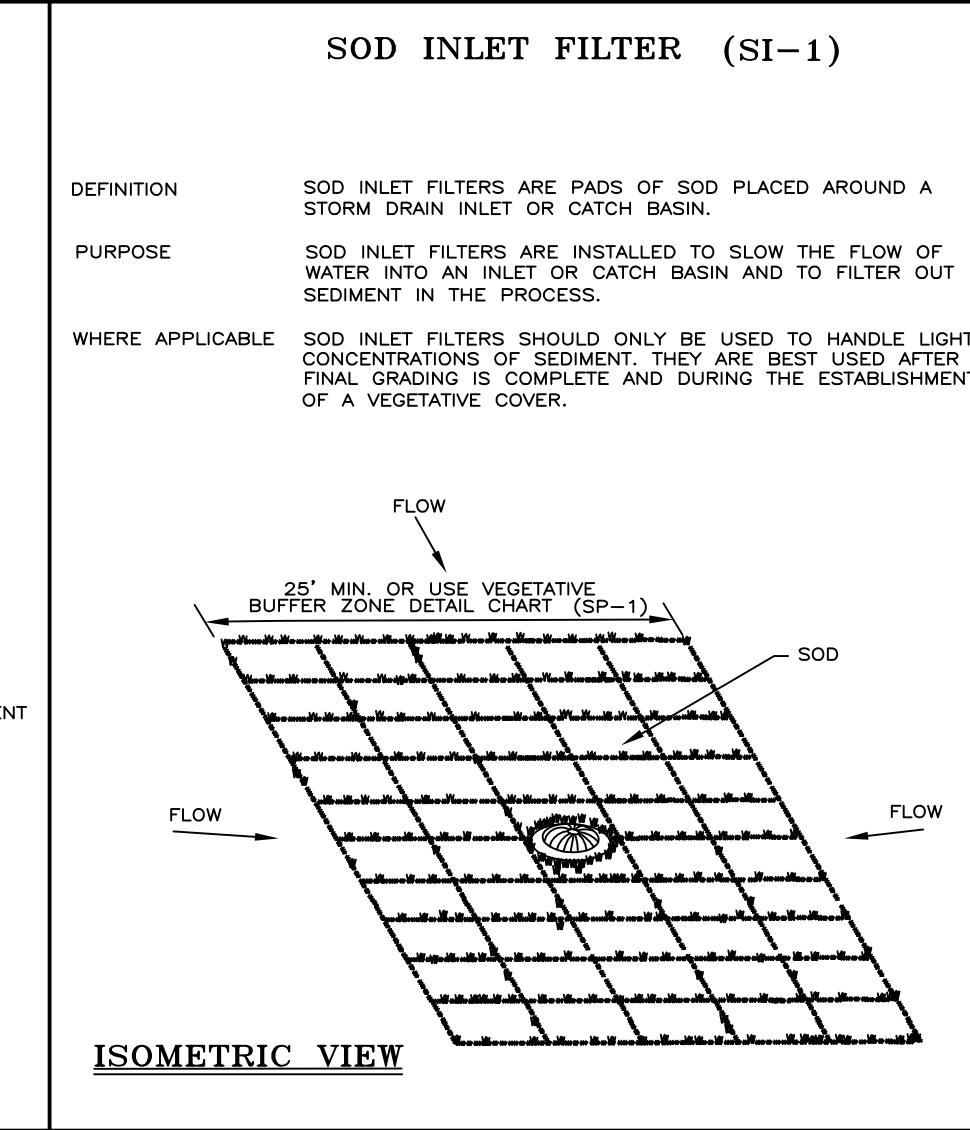
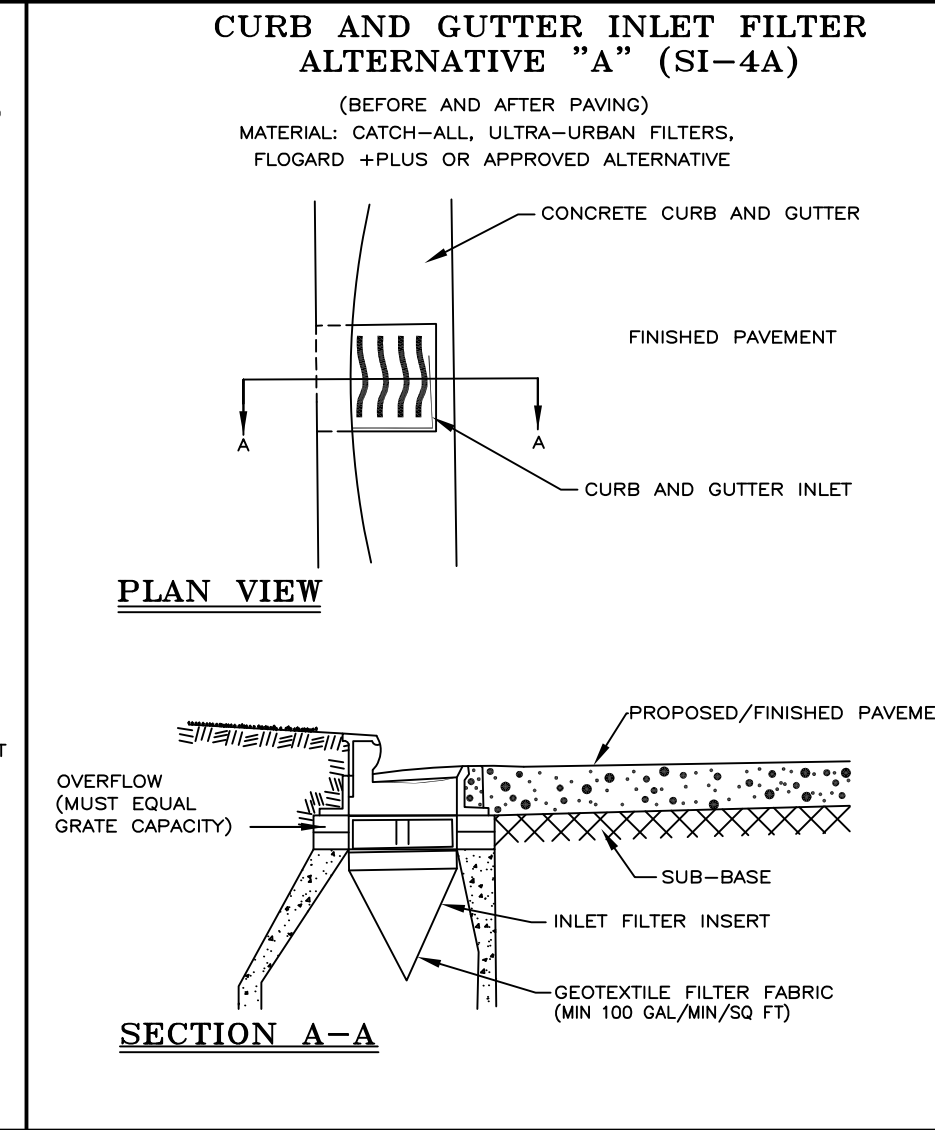
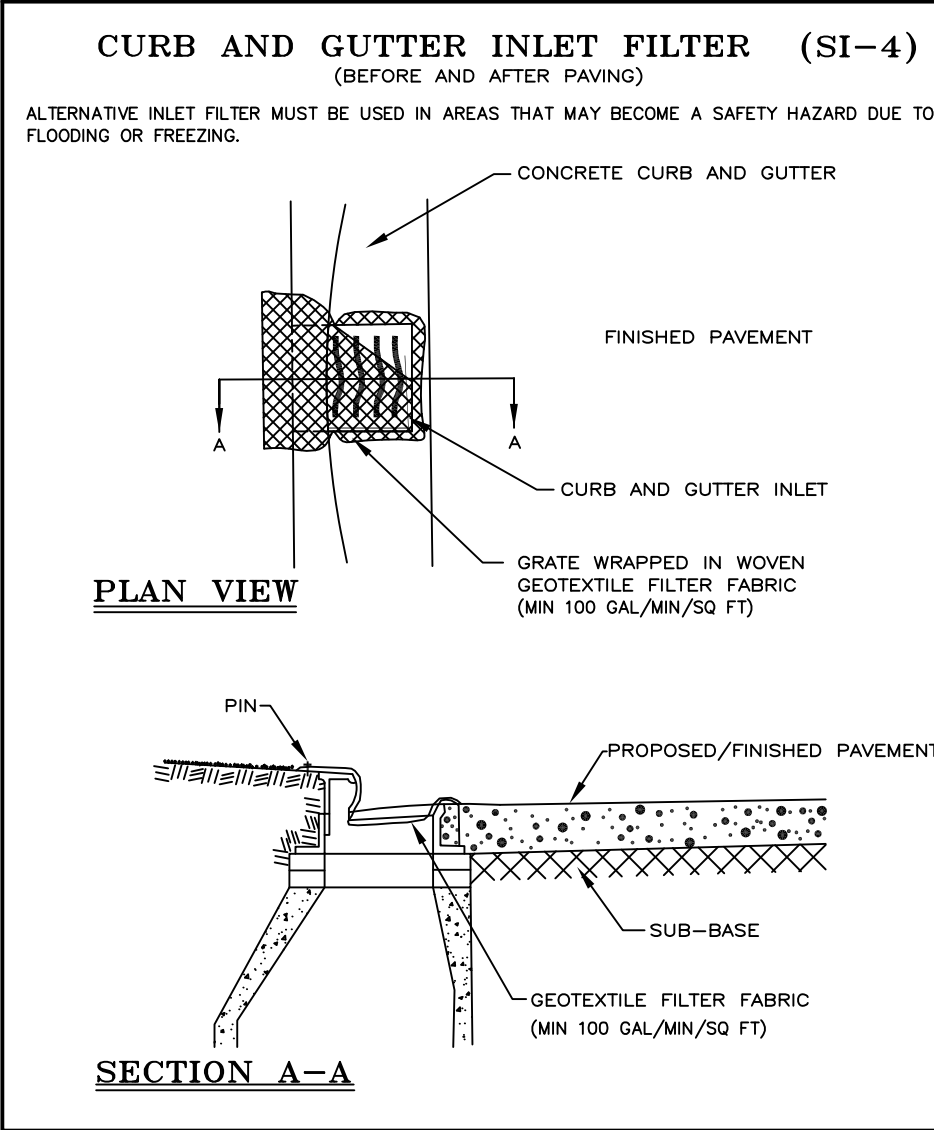
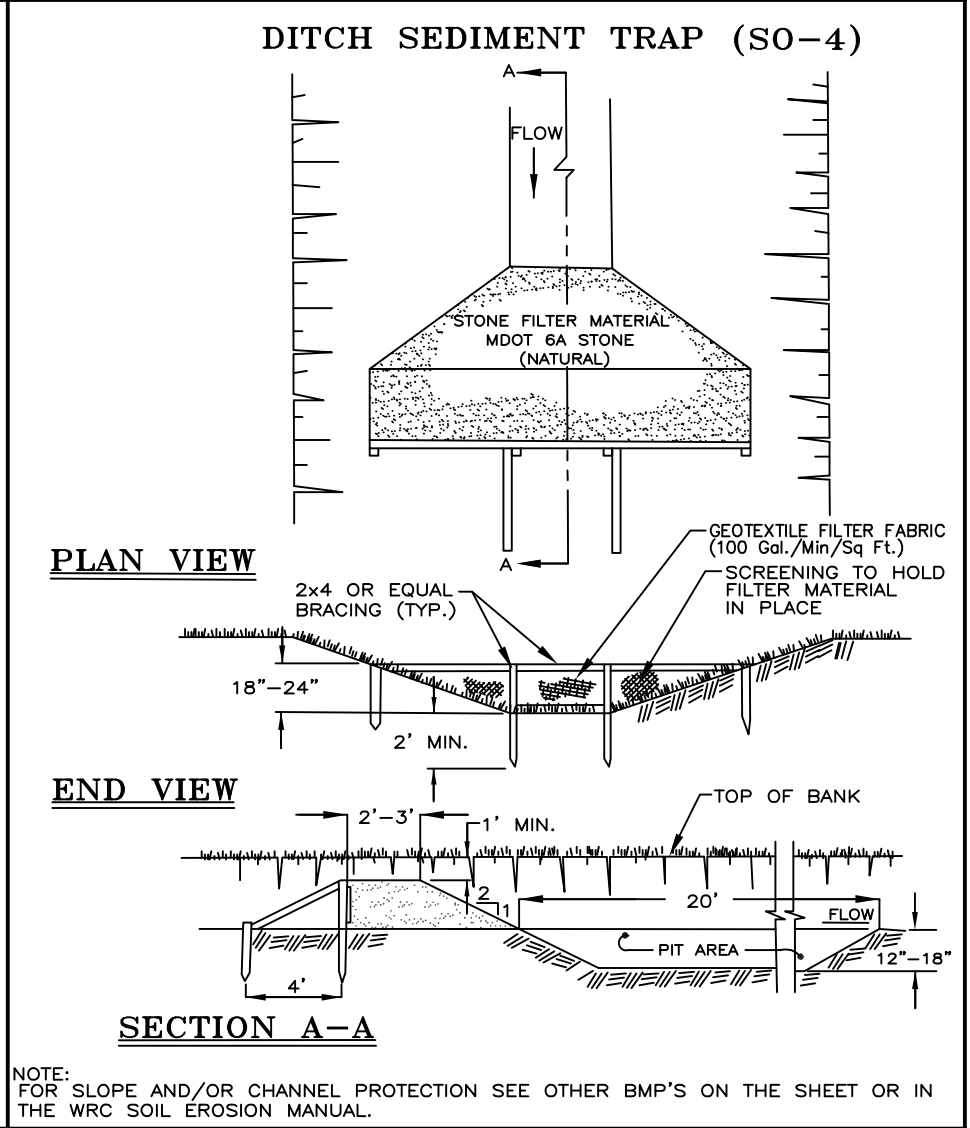
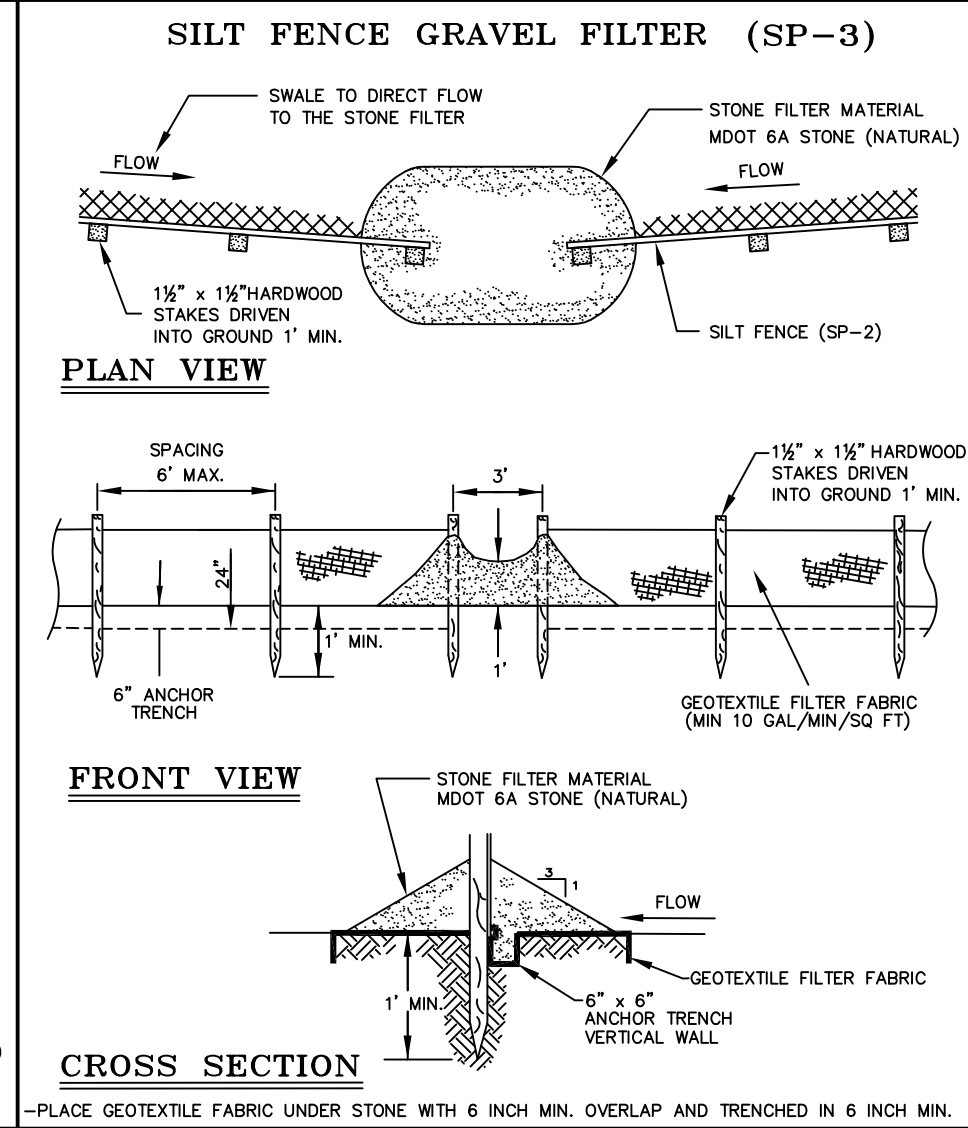
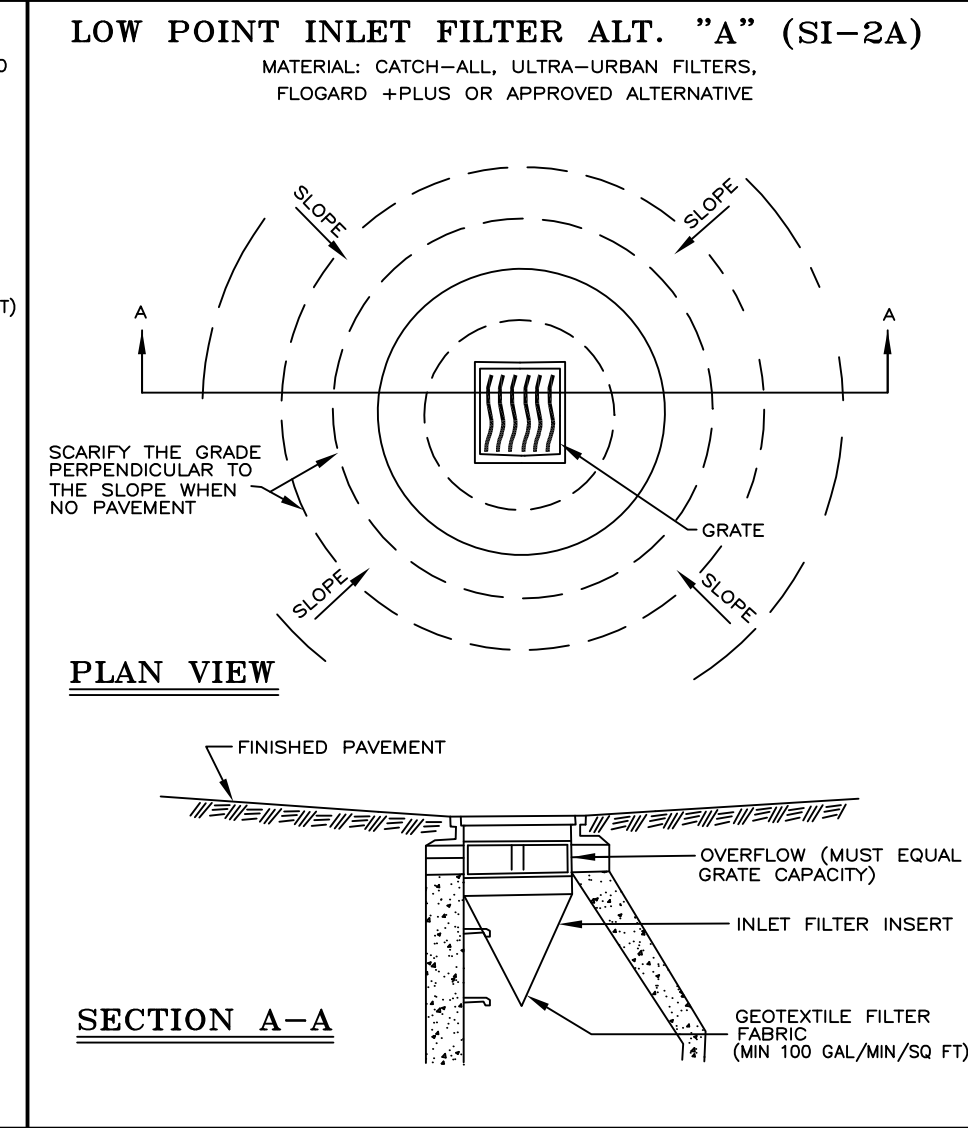
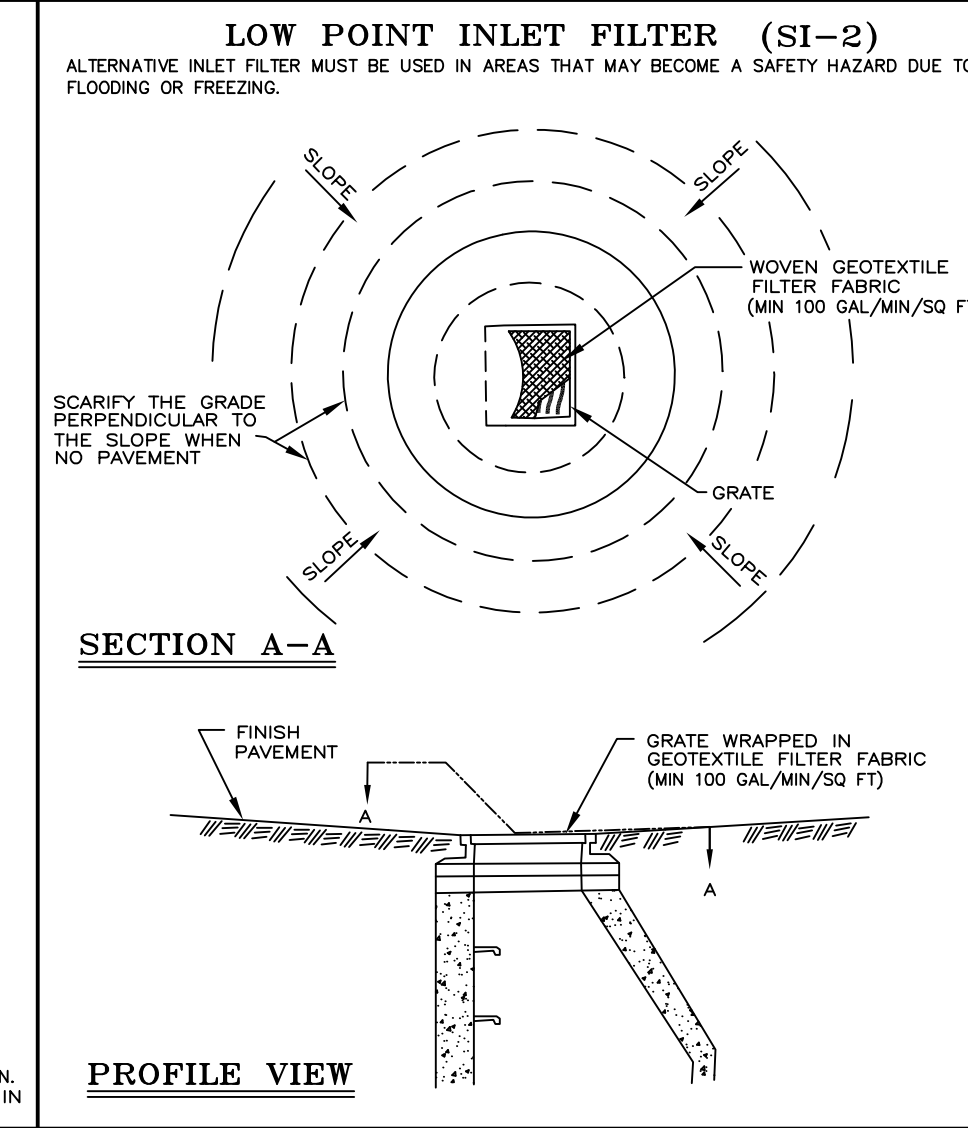
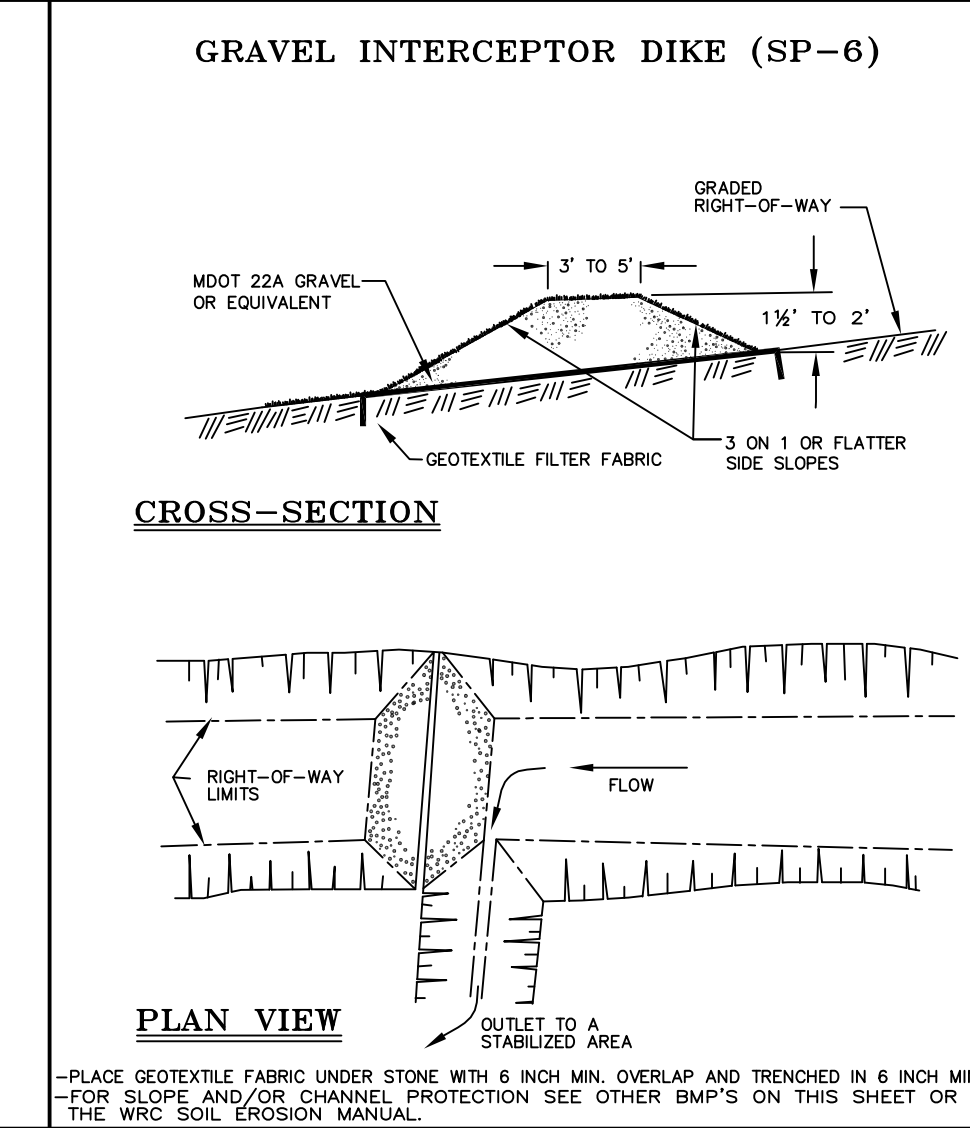
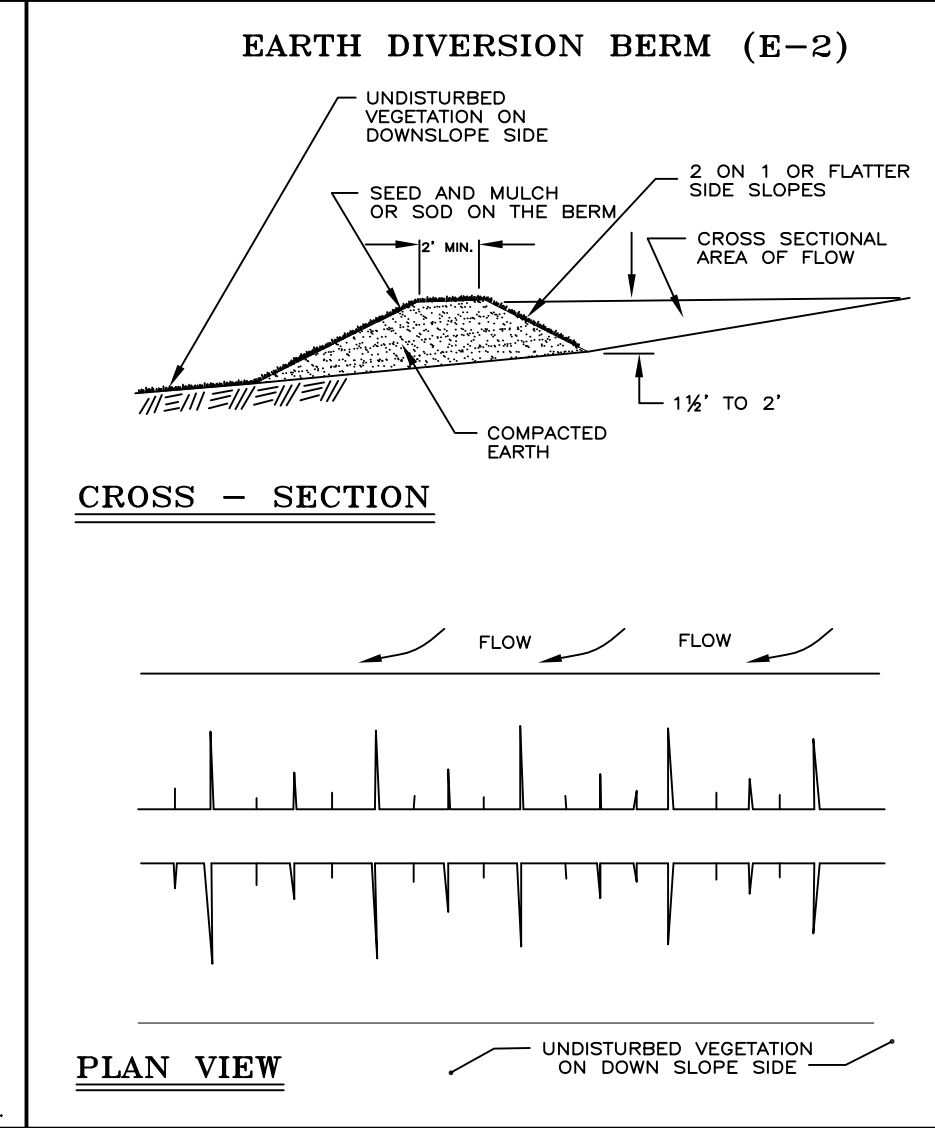
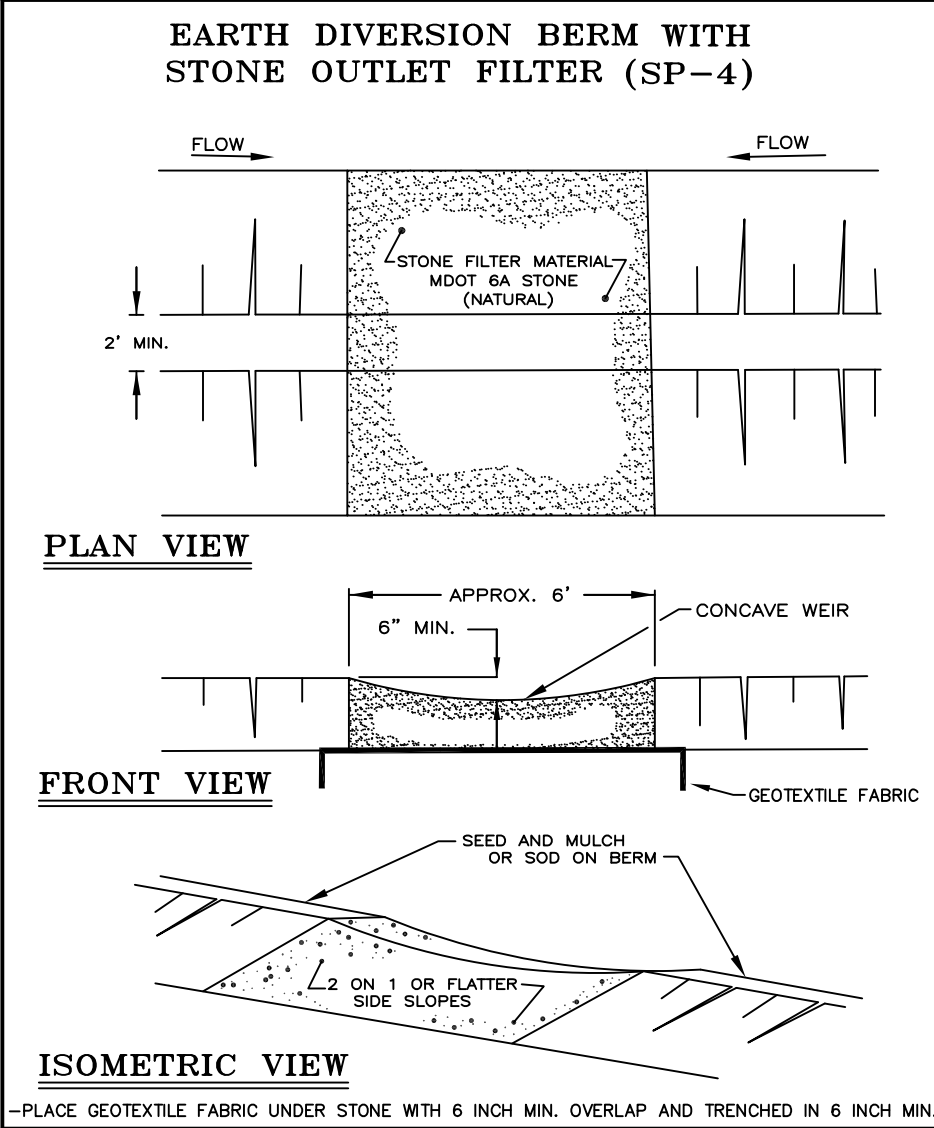
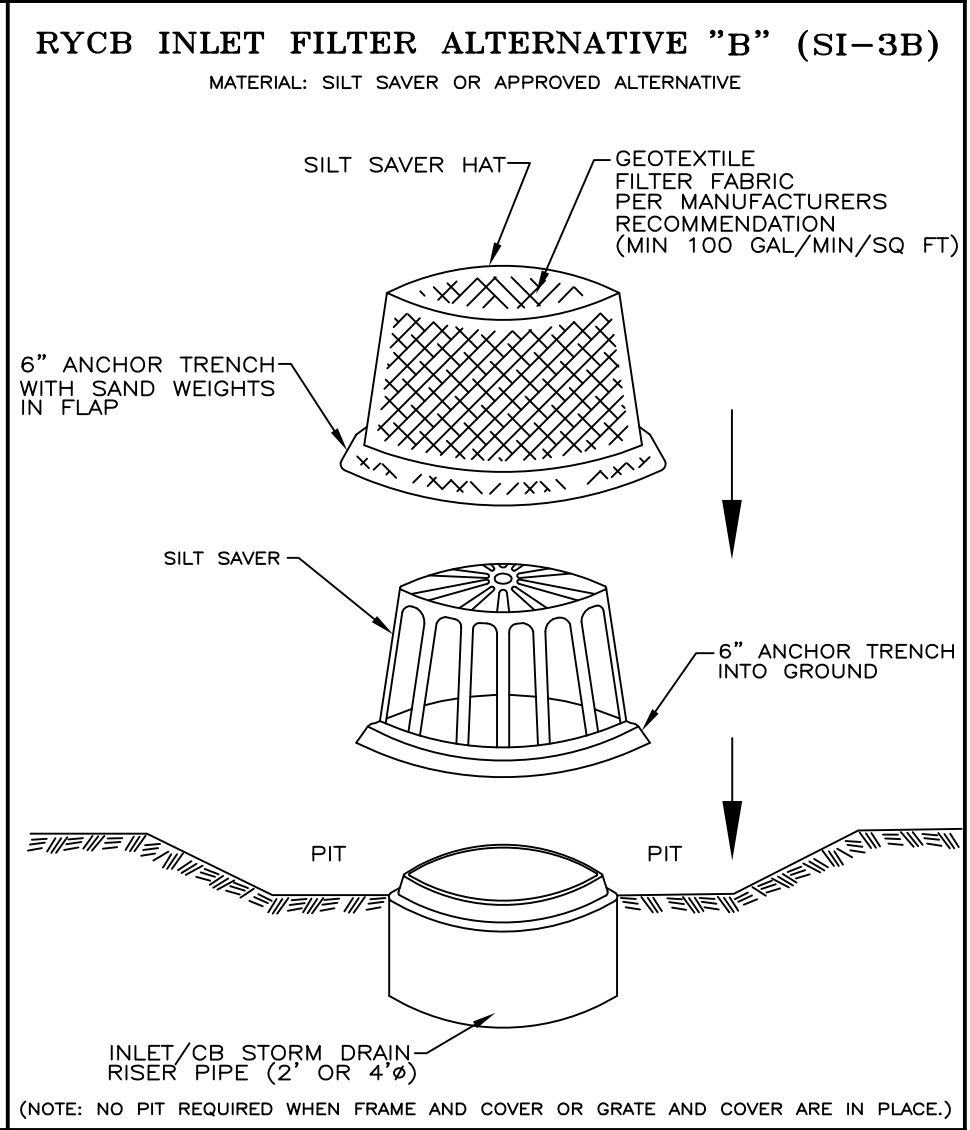
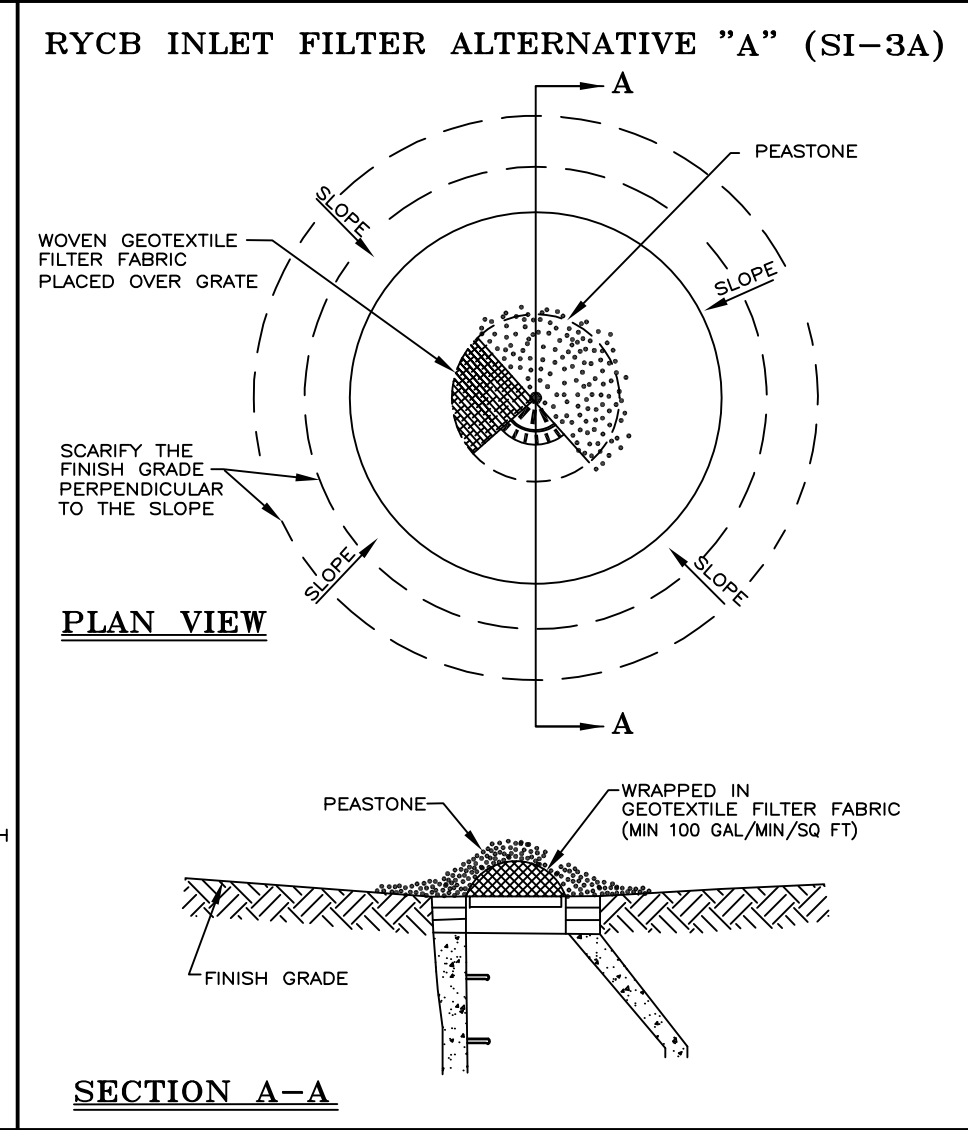
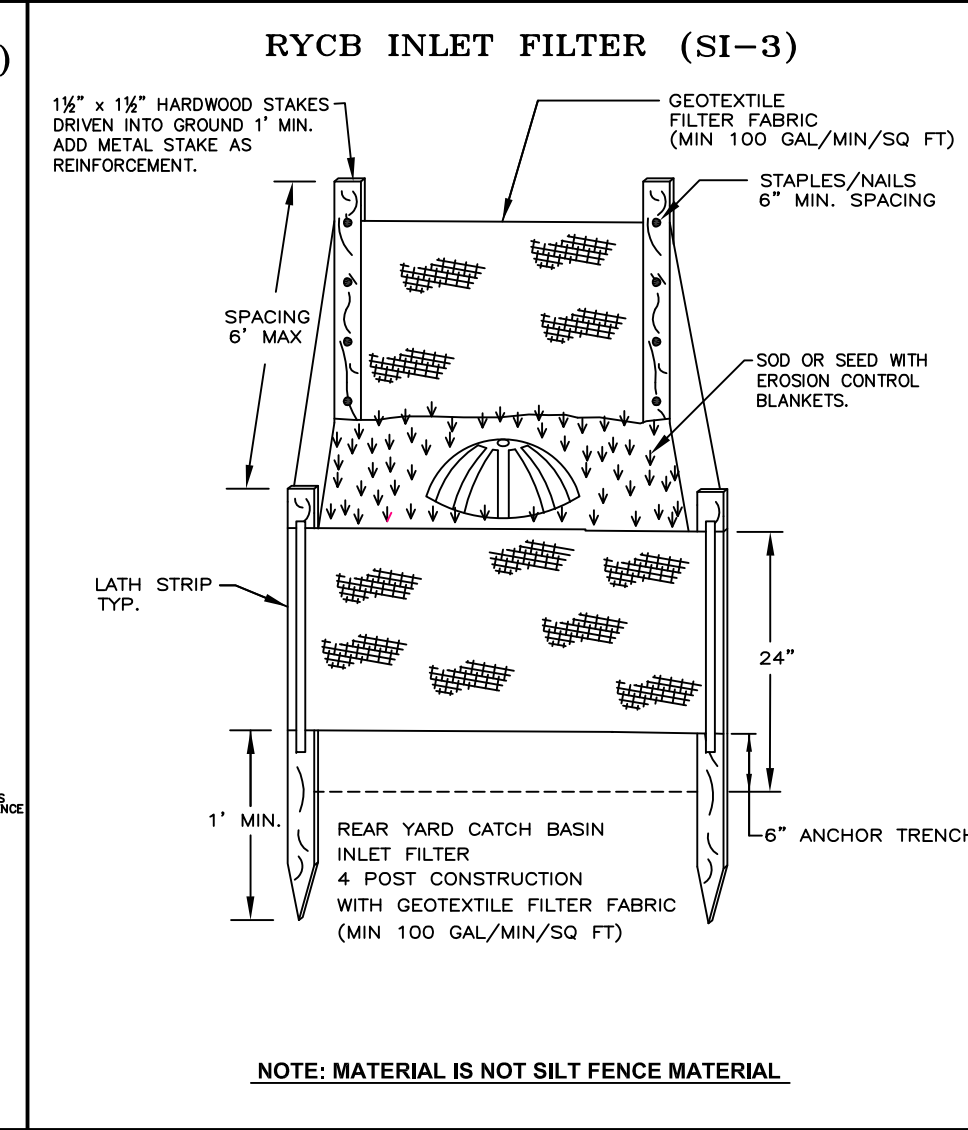
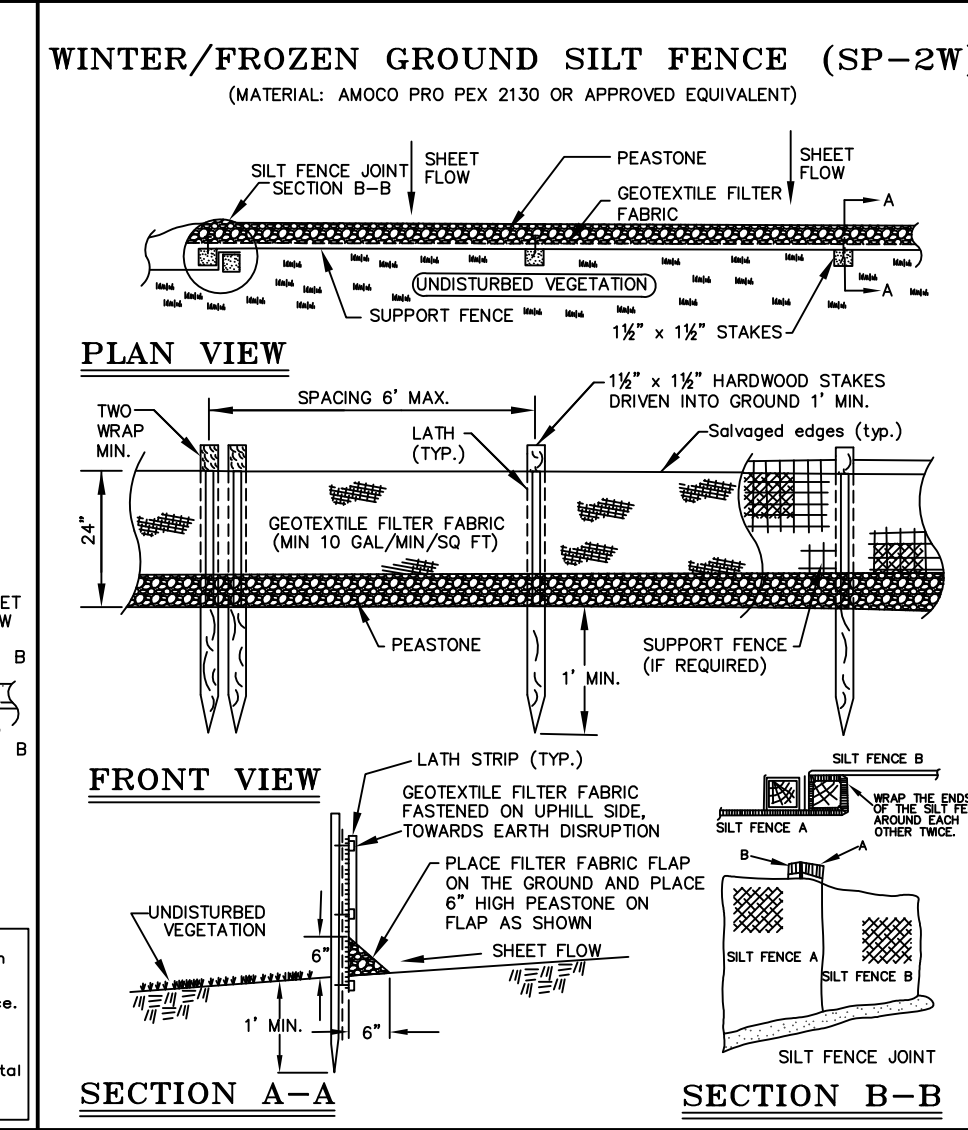
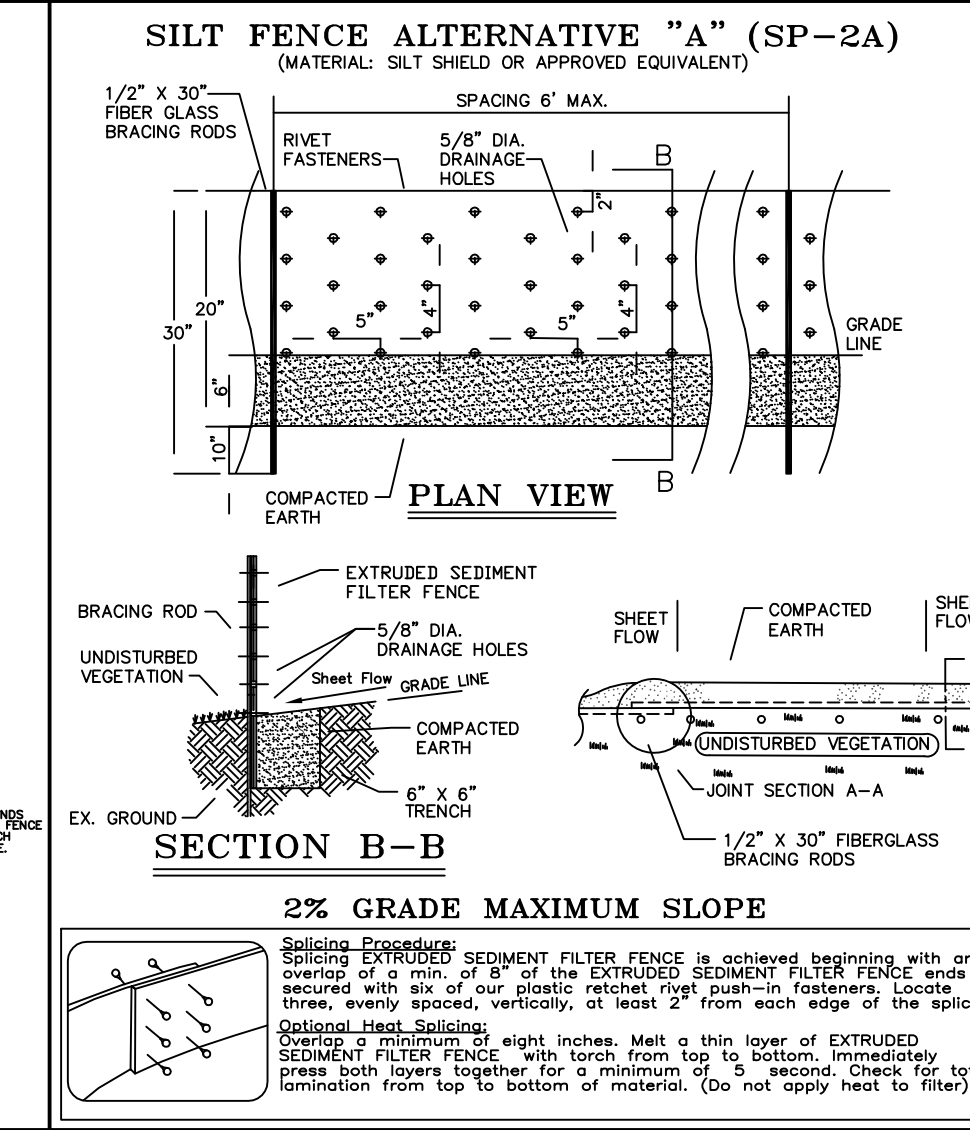
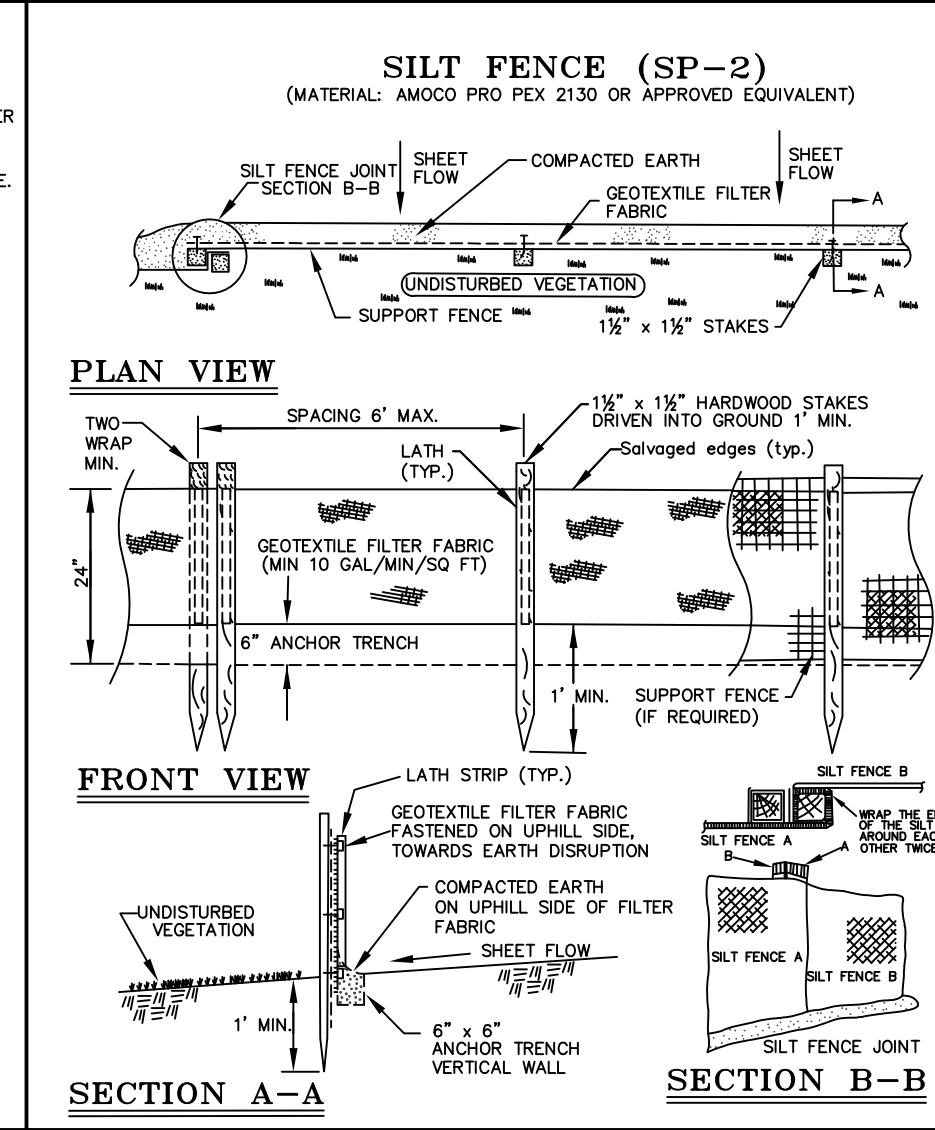
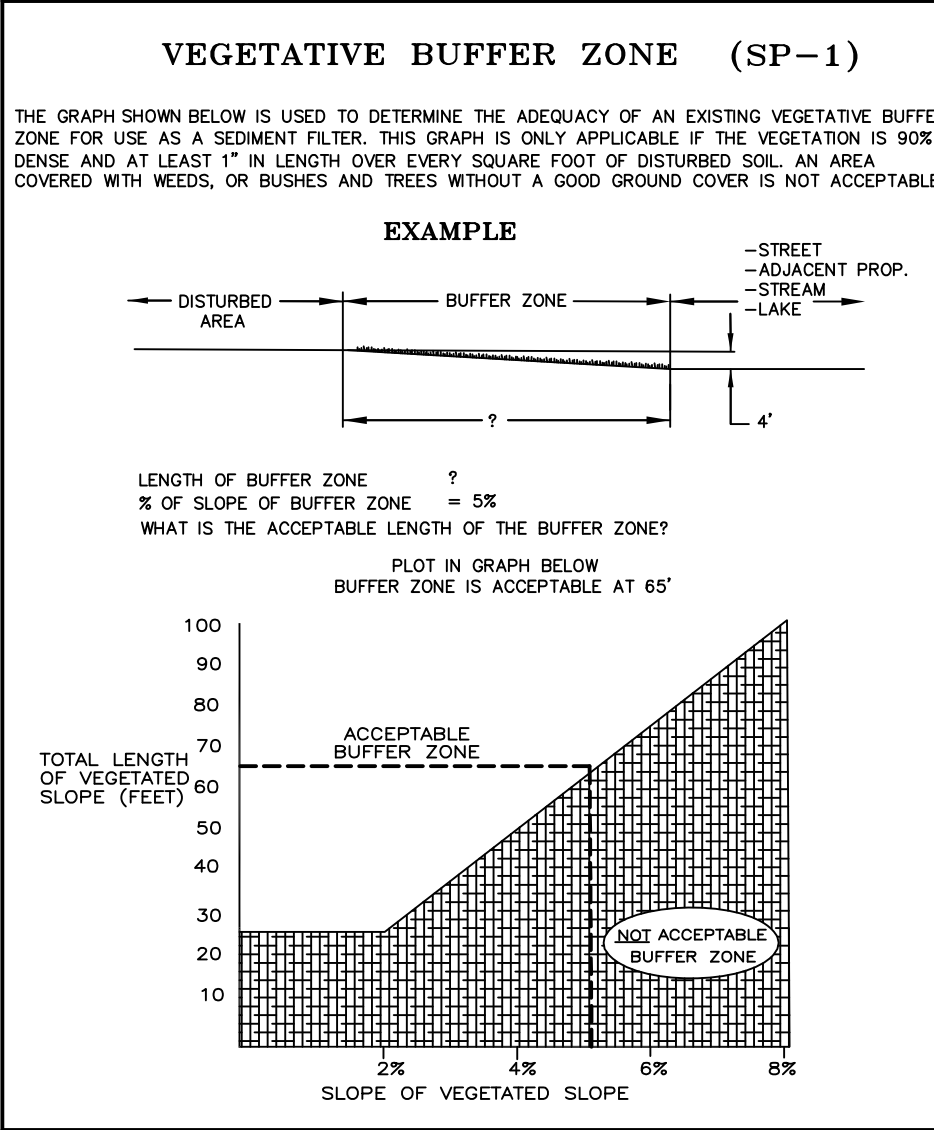
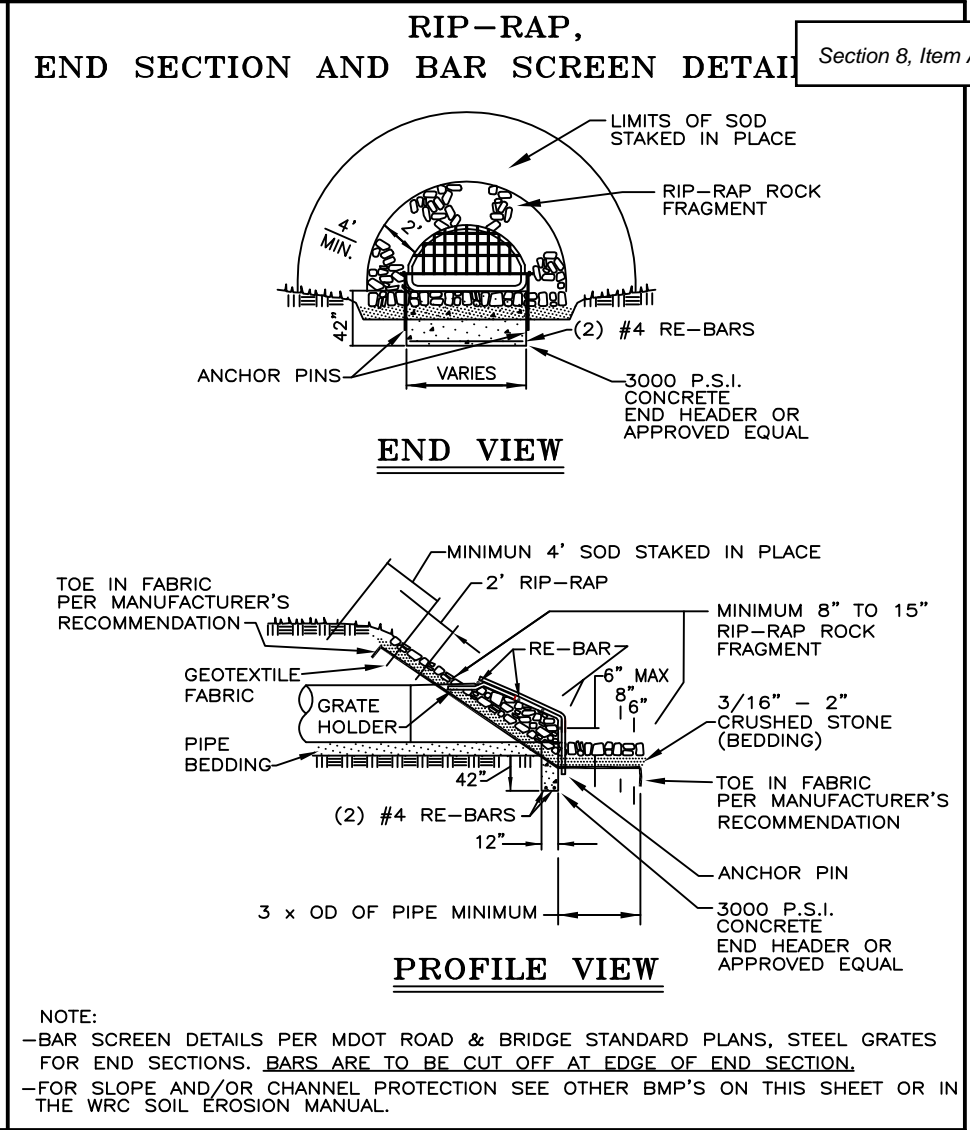
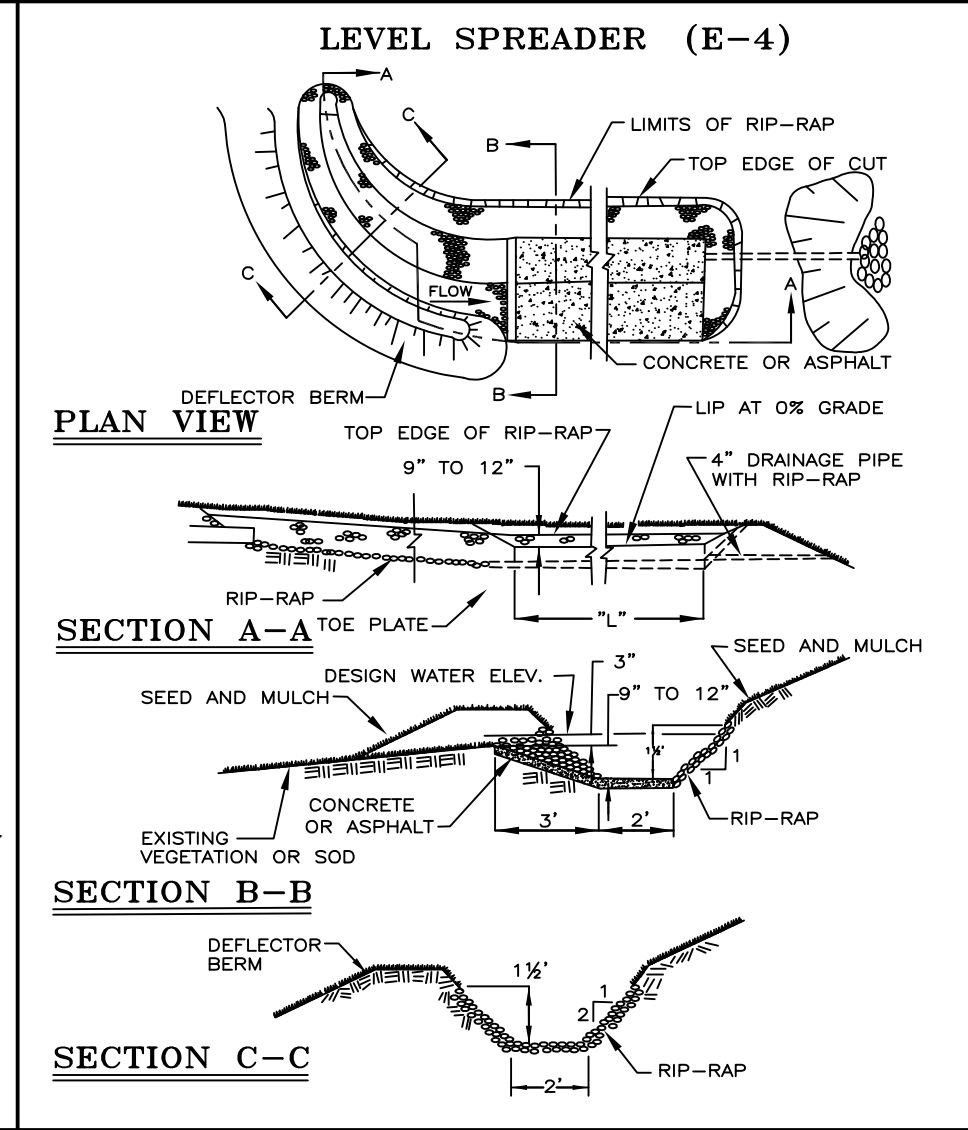
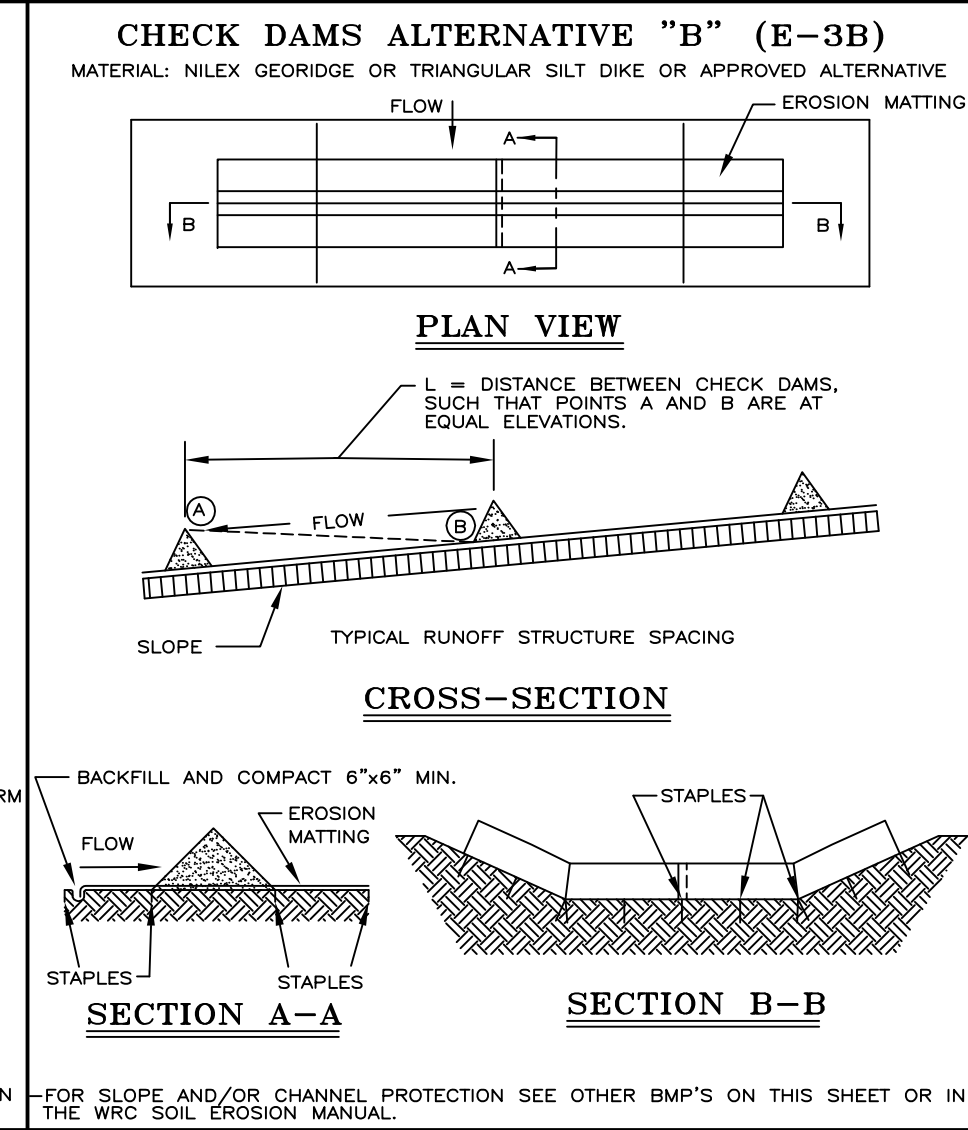
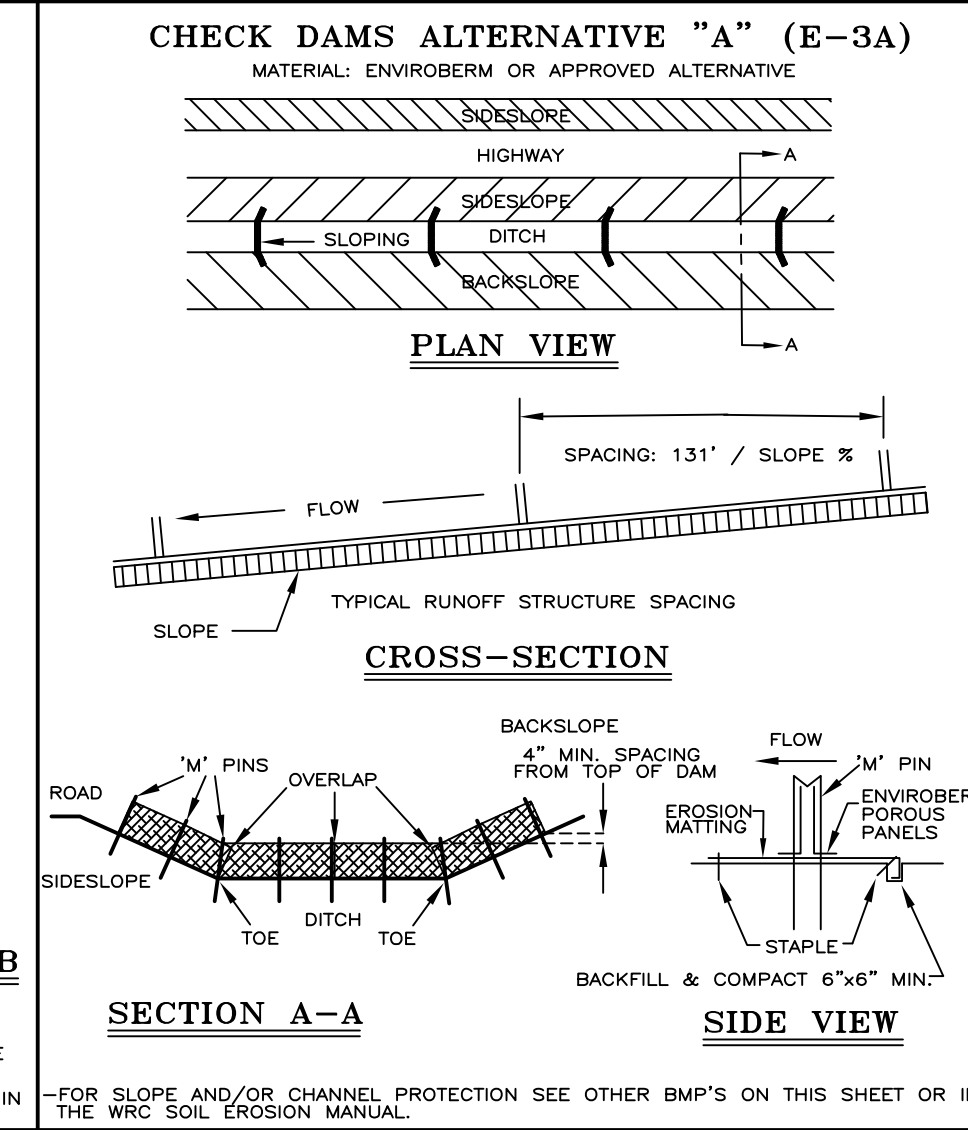
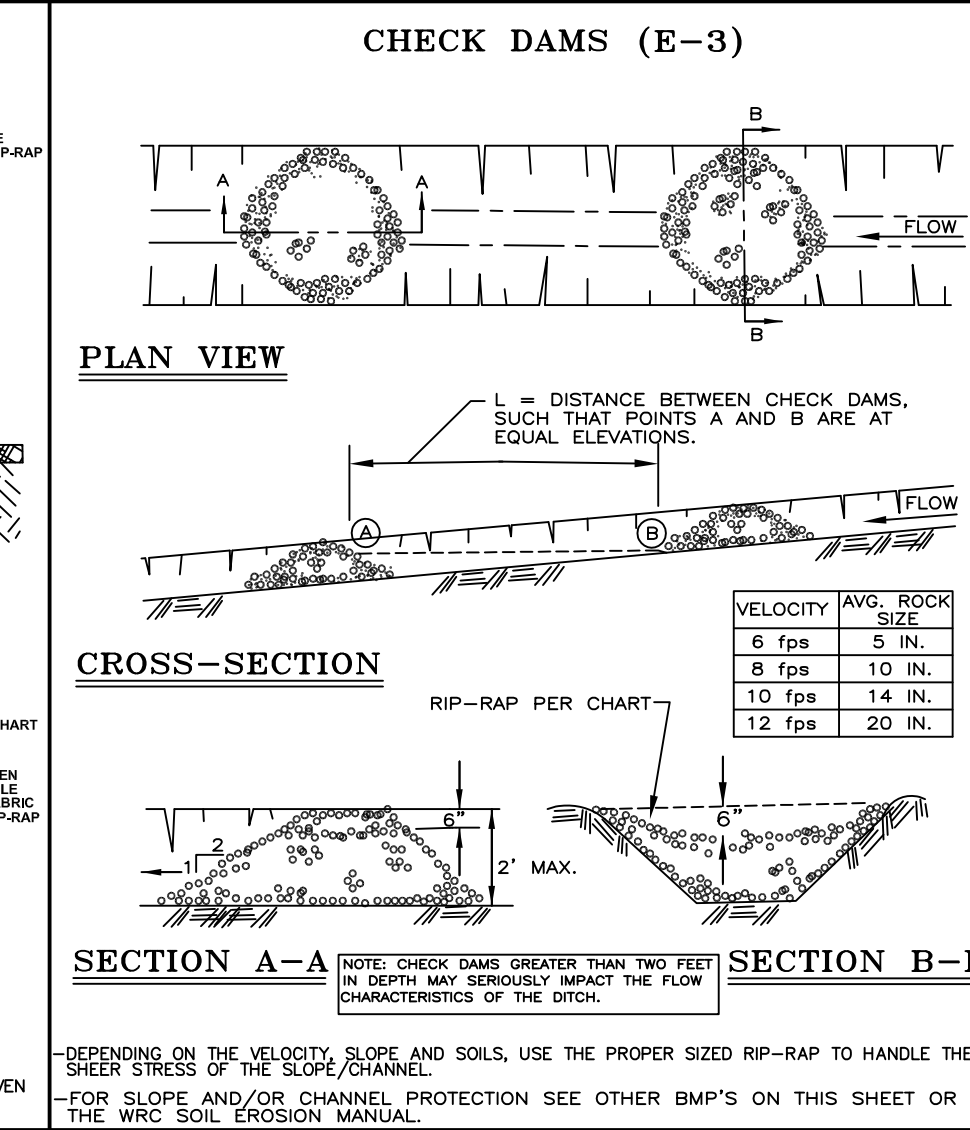
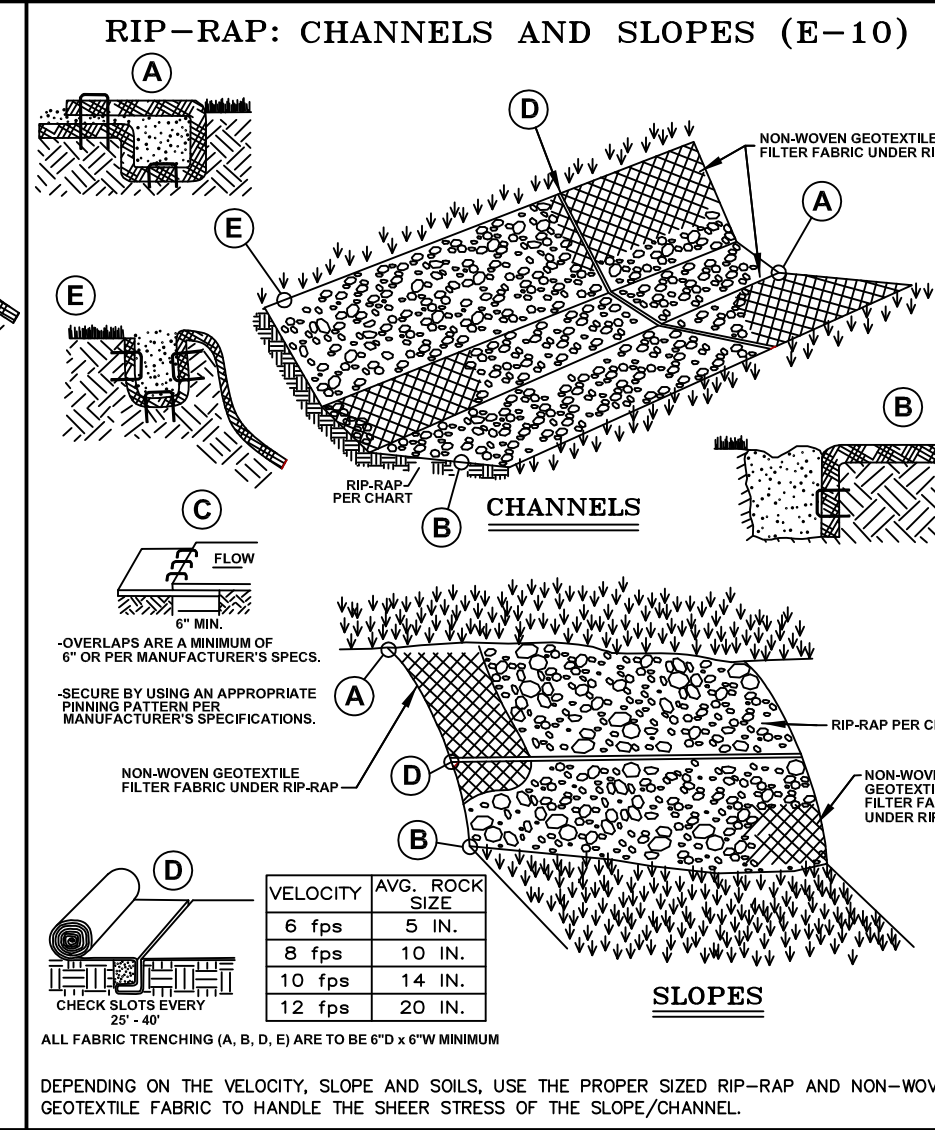
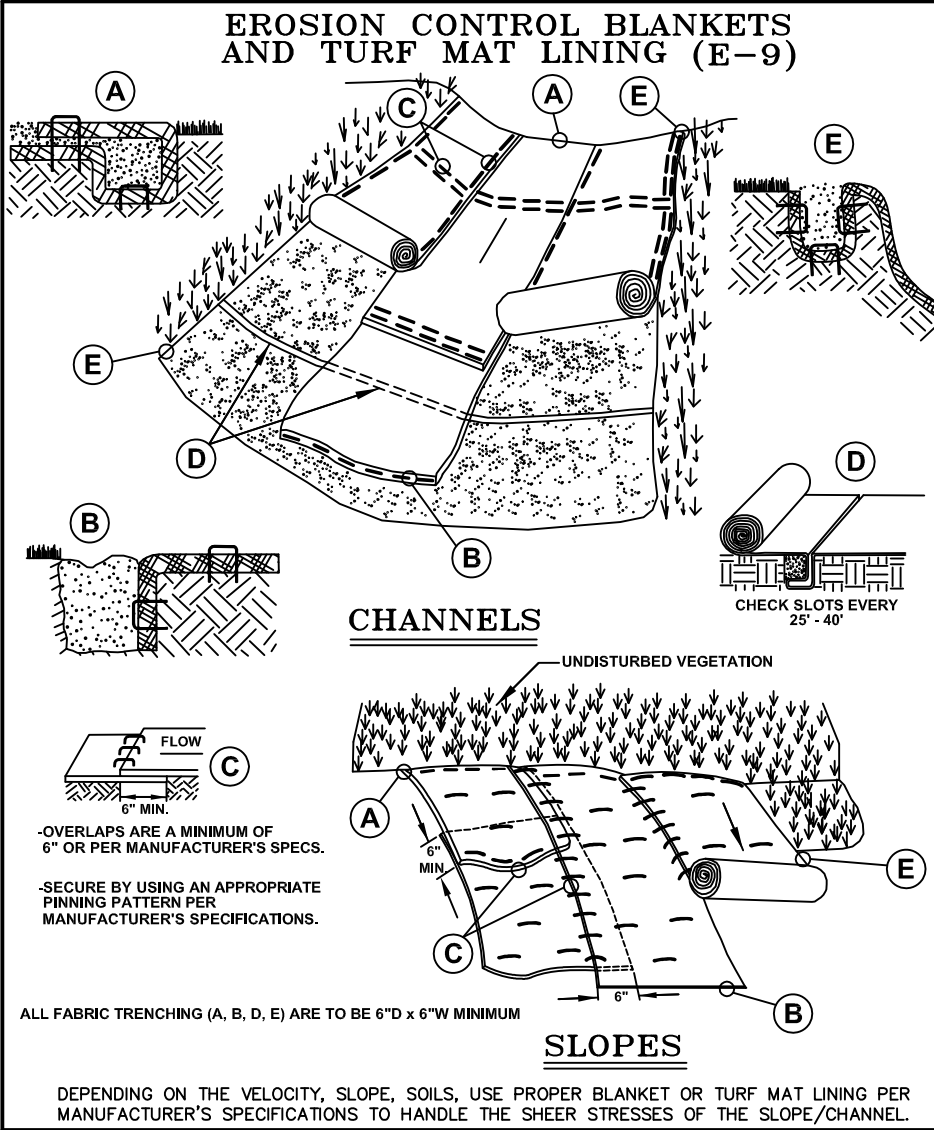
Johnson & Anderson, Inc.
 CONSULTING ENGINEERS
 4479 DIXIE HIGHWAY
 WATERFORD, MICHIGAN 48329
 (248) 334-9901

White Lake Charter Township
 7525 Highland Road, White Lake, Michigan 48383-2900
 (248) 698-3300

WATER MAIN STANDARD DETAILS

SCALE: VERT. AS NOTED
 HORIZ.

| | |
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| JOB NO. | |
| DATE ISSUED | |
| SHEET NO. | 40 |



NOTE:

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

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

| REV. | DATE | DESCRIPTION |
|------|----------|---|
| 1 | 01/01/01 | PROPOSED DETAIL |
| 2 | 02/01/01 | FOR CONSTRUCTION APPROVAL, NAME CHANGES |
| 3 | 03/01/01 | FOR CONSTRUCTION APPROVAL, NAME CHANGES |
| 4 | 04/01/01 | FOR CONSTRUCTION APPROVAL, NAME CHANGES |

ORIG. DATE: 01/01/01

SCALE: NONE

DESIGNED BY: WRC

DRAWN BY: Mapping

WRC WATER RESOURCES COMMISSIONER

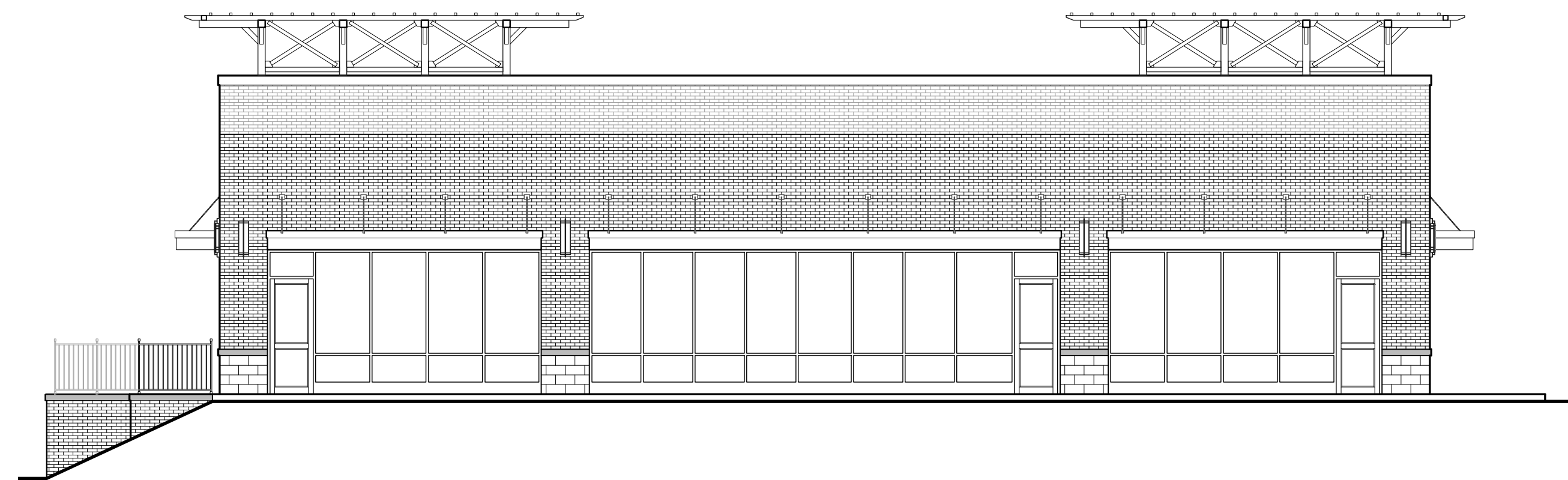
ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD MICHIGAN 48326-1907

SHEET NO.: 1 of 41

NEW RETAIL CENTER SHELL FOR: WHITE LAKE DEVELOPMENT

COOLEY LAKE AND UNION LAKE ROADS WHITE LAKE, MICHIGAN

PHASE 3 PERMITS



CIVIL



CIVIL ENGINEERS
LAND SURVEYORS
LAND PLANNERS

NOWAK & FRAUS ENGINEERS

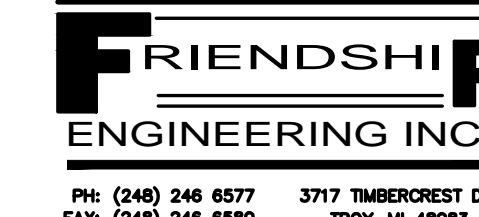
46777 Woodward Ave.
Pontiac, MI 48342-5032
Tel. (248) 332-7931
Fax. (248) 332-8257

ARCHITECTURAL



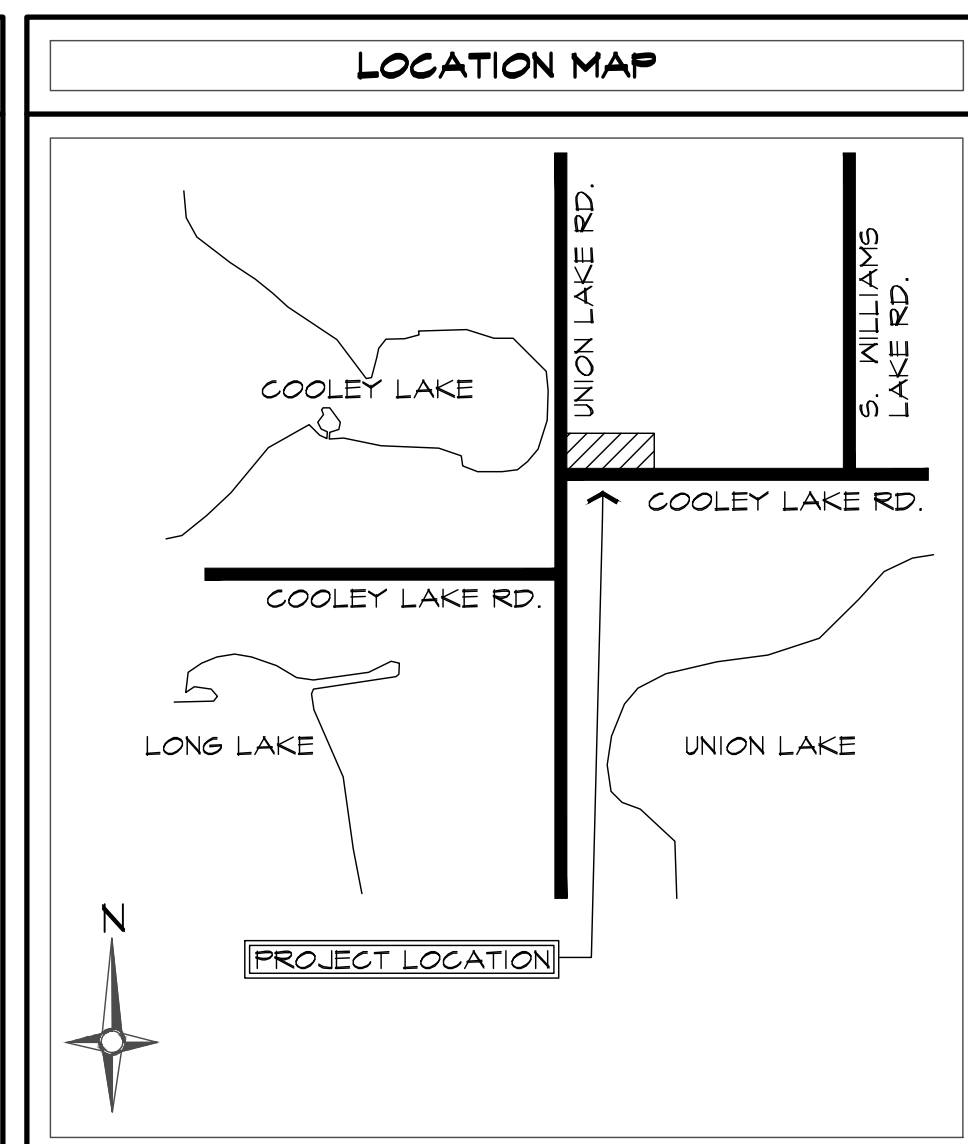
ARCHITECTURAL DESIGN
RESIDENTIAL
COMMERCIAL
INDUSTRIAL
G.A.V. & ASSOCIATES, INC.
24001 ORCHARD LAKE RD., SUITE #180A
FARMINGTON, MICHIGAN 48336
PHONE (248) 985-9101

STRUCTURAL



CONSULTING ENGINEER
STRUCTURE
FRIENDSHIP ENGINEERING
3717 TIMBERCREST DRIVE
TROY, MICHIGAN, 48063
PHONE (248) 246-6577
FAX (248) 246-6580

| PROJECT INFORMATION | |
|---|--|
| PROJECT NUMBER: | 21096 |
| PROJECT LOCATION: | COOLEY LAKE & UNION LAKE ROADS WHITE LAKE, MICHIGAN |
| DESIGN FIRM: | GAV & ASSOCIATES, INC. 24001 ORCHARD LAKE RD FARMINGTON, MI 48336 PHONE: (248) 985-9101 |
| 1. THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: | SAMIR M. KARIM, M. LIC. #180108452 |
| 2. THESE CONSTRUCTION DOCUMENTS WERE PREPARED FOR COMPLIANCE WITH THE MICHIGAN CONSTRUCTION CODES IN EFFECT AT THE TIME OF PERMIT SUBMITTAL. ALL ENGINEERS, CONTRACTORS AND SUPPLIERS INVOLVED WITH THIS PROJECT SHALL COMPLY WITH THE SAME CODES, ISSUED AND APPROVED CODE MODIFICATIONS AND/OR WHITE LAKE TOWNSHIP / STATE OF MICHIGAN CONSTRUCTION BOARDS OF APPEALS RULINGS AND WHENEVER REQUIRED SHALL PROVIDE SHOP DRAWINGS AND SUBMITTALS CLEARLY DESCRIBING COMPLIANCE TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR REVIEW AND APPROVAL. | |
| 3. ALL APPLICABLE GOVERNMENTAL AGENCIES, SUCH AS MDOT, OAKLAND COUNTY, UTILITY SERVICES, ETC. SHALL HAVE DRAWINGS SUBMITTED FOR REVIEW FOR ENGINEERING APPROVAL AT THE TIME OF PERMIT SUBMITTAL. | |



| SHEET INDEX | |
|----------------------|--|
| CIVIL | NOT INCLUDED |
| ARCHITECTURAL | T.001 TITLE SHEET & PROJECT INFORMATION A.001 GENERAL INFORMATION AND SPECIFICATIONS A.101 FLOOR PLAN A.102 ROOF PLAN A.201 BUILDING ELEVATIONS A.202 BUILDING ELEVATIONS A.301 WALL SECTIONS A.401 WALL SECTIONS A.402 WALL SECTIONS A.501 DETAILS AND SCHEDULES A.502 DETAILS A.503 DETAILS A.601 REFLECTED CEILING PLAN |
| STRUCTURAL | S.101 FOUNDATION PLAN S.102 ROOF FRAMING PLAN S.103 ENLARGED FRAMING PLANS S.104 SECTIONS AND DETAILS |

| SHEET INDEX (CONTINUED) | |
|--|---|
| MECHANICAL | M.000 SYMBOLS AND ABBREVIATIONS M.101 FLOOR PLAN - MECHANICAL |
| ELECTRICAL | E.100 ELECTRICAL SYMBOLS & NOTES E.102 ELECTRICAL PLAN E.103 ELECTRICAL RISER DIAGRAM & SCHEDULES |
| DEFERRED SUBMITTALS | |
| DEFERRED SUBMITTALS AND SPECIAL INSPECTIONS | |
| 1. CIVIL AND SITE DESIGN. 2. SIGNAGE. 3. INTERIOR BUILDOUTS FOR FUTURE RESTAURANT. 4. FINISHES. | |

| ABBREVIATIONS: | | | |
|----------------|------------------------------|----------|---|
| AFF | ABOVE FINISH FLOOR | DN | DOWN |
| ALUM | ALUMINUM | DS | DOWN SPOUT |
| ANOD | ANODIZED | DWS | DRAWING |
| ACT | ACOUSTICAL TILE | EA | EACH |
| BC | BOTTOM CHORD | EG | ELEG. CONTRACTOR |
| BRD | BOARD | EF | EACH FACE |
| BFF | BELOW FINISH FLOOR | EJ | EXPANSION JOINT |
| BLK | BLOCK | ELEC | ELECTRICAL |
| BM | BEAM | ELEV | ELEVATION |
| B.O. | BOTTOM OF | EXH | EXHAUST |
| BOF | BOTTOM OF FOOTING | EX/EXIST | EXISTING |
| BU | BUILT UP | EXT | EXTERIOR |
| CAB | CABINET | EW | EACH WAY |
| C.B. | CATCH BASINS | F#1 | FURNISH AND INSTALL |
| C | COLD | FD | FLOOR DRAIN |
| CER | CERAMIC | FFE | FINISH FLOOR |
| C.J. | CONTROL JOINT | FND | FOUNDATION |
| C.L. | CENTER LINE | FO | FINISHED OPENING |
| CLS | CELLING | FOF | FACE OF FINISH |
| CLOS | CLOSET | FOG | FACE OF GYPSUM |
| C.O. | CLEAN OUT | FOM | FACE OF MASONRY |
| CM | CONSTRUCTION MANAGER | FTG | FOOTING |
| COL | COLUMN | FS | FLOOR SINK |
| CONC | CONCRETE | GALV | GALVANIZED |
| CONT | CONTINUOUS | GC | GENERAL CONTRACTOR |
| DEFS | DIRECT APPLIED FINISH SYSTEM | GL | GLASS |
| DET | DETAIL | GB | GRAB BAR |
| DIM | DIMENSION | GYP | GYPSUM |
| DIA | DIAMETER | HM | HOLLOWED METAL |
| DL | DEAD LOAD | HVAC | HEATING & VENT. |
| DN | DOWN | INSUL. | INSULATION |
| DS | DOWN SPOUT | IST | JOIST |
| DWS | DRAWING | JT | JOINT |
| EA | EACH | LD | LIVE LOAD |
| EG | ELEG. CONTRACTOR | LP | LIGHT POLE |
| EF | EACH FACE | MAS | MASONRY |
| EJ | EXPANSION JOINT | MAX | MAXIMUM |
| ELEC | ELECTRICAL | MCM | METAL COMPOSITE MATERIAL |
| ELEV | ELEVATION | MECH. | MECHANICAL |
| EXH | EXHAUST | MIN | MINIMUM |
| EX/EXIST | EXISTING | MTL | METAL |
| EXT | EXTERIOR | ND | NOT TO SCALE |
| EW | EACH WAY | OPH | OPPOSITE HAND |
| F#1 | FURNISH AND INSTALL | NTS | NOT TO SCALE |
| FD | FLOOR DRAIN | PL | PLATE |
| FFE | FINISH FLOOR | PSF | POUNDS PER SQUARE |
| FND | FOUNDATION | PSI | POUNDS PER SQUARE |
| FO | FINISHED OPENING | RA | RETURN AIR |
| FOF | FACE OF FINISH | RD | ROOF DRAIN |
| FOG | FACE OF GYPSUM | REIN | REINFORCEMENT |
| FOM | FACE OF MASONRY | REQ | REQUIRED |
| FTG | FOOTING | RO | ROUGH OPENING |
| FS | FLOOR SINK | SA | SUPPLY AIR |
| GALV | GALVANIZED | SIM | SIMILAR |
| GC | GENERAL CONTRACTOR | STL | STEEL |
| GL | GLASS | STOR | STORAGE |
| GB | GRAB BAR | TE | TOWEL BAR |
| GYP | GYPSUM | | |
| HM | HOLLOWED METAL | | |
| HVAC | HEATING & VENT. | | |
| INSUL. | INSULATION | TC | TOP CHORD |
| IST | JOIST | T & B | TOP AND BOTTOM |
| JT | JOINT | TBL | TOP OF BRICK LEDGE |
| LD | LIVE LOAD | T.O.S. | TOP OF TOP OF STEEL |
| LP | LIGHT POLE | T.O.P. | TOP OF PIER |
| MAS | MASONRY | T.O.W. | TOP OF WALL |
| MAX | MAXIMUM | TYF | TYPICAL |
| MCM | METAL COMPOSITE MATERIAL | U.N.O. | UNLESS NOTED OTHERWISE |
| MECH. | MECHANICAL | VIF | VERIFY IN FIELD |
| MIN | MINIMUM | W | WITH |
| MTL | METAL | W/ | WOOD |
| ND | NOT TO SCALE | WNF | WELDED WIRE FABRIC |
| OPH | OPPOSITE HAND | | |
| NTS | NOT TO SCALE | | |
| PL | PLATE | | |
| PSF | POUNDS PER SQUARE | AASHO | AMERICAN ASSOCIATION OF STATE HIGHWAY OFFICIALS |
| PSI | POUNDS PER SQUARE | A.I.A. | AMERICAN INSTITUTE FOR ARCHITECTS |
| PT | PAINT | ASTM | AMERICAN SOCIETY FOR TESTING MATERIALS |
| RA | RETURN AIR | AISC | AMERICAN INSTITUTE OF STEEL CONSTRUCTION |
| RD | ROOF DRAIN | CRSI | CONCRETE REINFORCING SOCIETY INSTITUTE. |
| REIN | REINFORCEMENT | MEC | MICHIGAN BUILDING CODE |
| REQ | REQUIRED | MHC | MICHIGAN MECHANICAL CODE |
| RO | ROUGH OPENING | MPC | MICHIGAN PLUMBING CODE |
| SA | SUPPLY AIR | MEC | MICHIGAN ELECTRICAL CODE |
| SIM | SIMILAR | NFPA | NATIONAL FIRE PROTECTION ASSOCIATION |
| STL | STEEL | UL | UNDERWRITERS LABORATORIES |
| STOR | STORAGE | | |
| TE | TOWEL BAR | | |

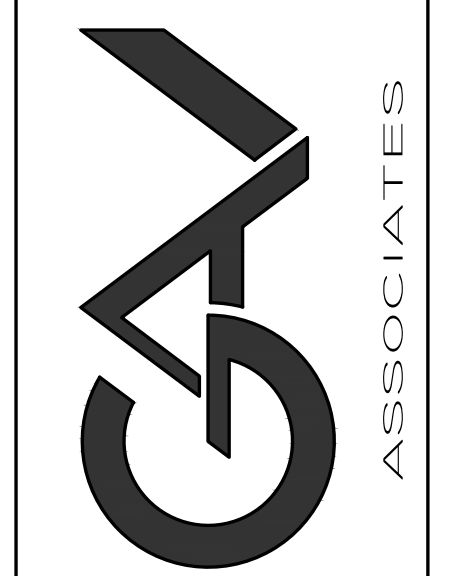
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| PERMITS | 10.22.2021 |
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| ISSUED | Section 8, Item A. |
| OWNER REVIEW | 08.21.2021 |
| PERMITS | 10.22.2021 |
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ARCHITECTURAL DESIGN

RESIDENTIAL
COMMERCIAL
INDUSTRIAL

G.A.V. ASSOCIATES, INC.
38051 ORCHARD LAKE RD., STE. 100A
FARMINGTON, MICHIGAN 48336
PH: (248) 985-9191
WEB: WWW.GAVASSOCIATES.COM



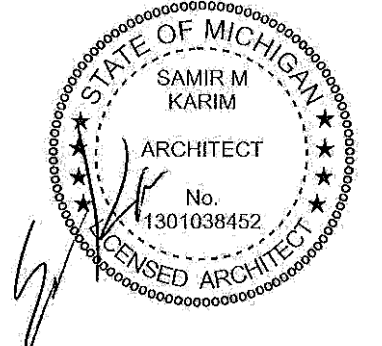
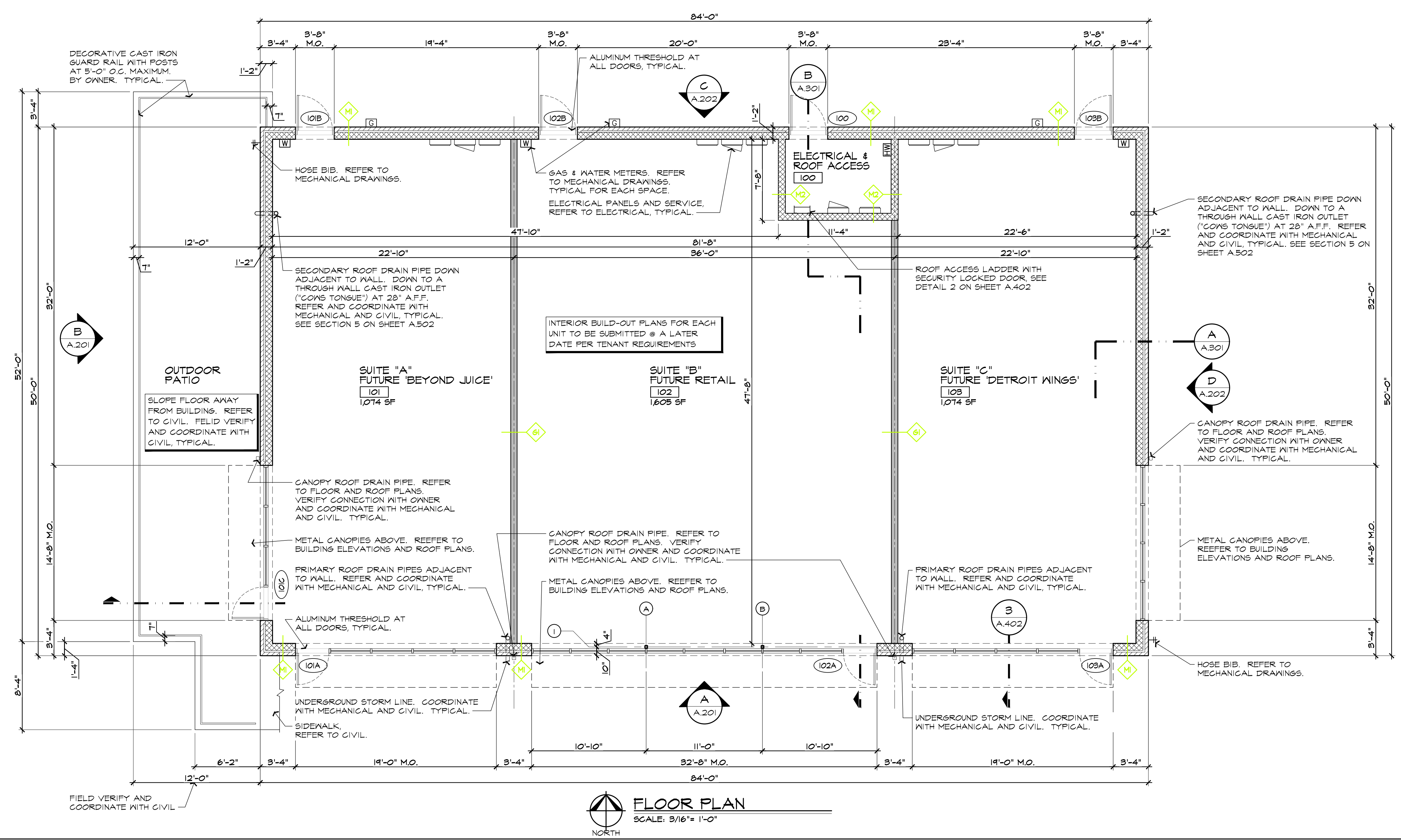
4 CORNERS

NEW RETAIL CENTER SHELL FOR:
UNION LAKE & COOLEY LAKE ROADS
COOLEY LAKE ROAD
WHITE LAKE, MICHIGAN

| | | |
|------------------------|-----------|----------|
| DRAWN: | DESIGNED: | CHECKED: |
| SSA | GA | GA |
| SCALE : | | |
| FILE NAME : 21096_A101 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| FLOOR PLAN | | |
| SHEET # | | |
| A.101 | | |

- WALL LEGEND:**
- 4" BRICK & 4" PRE-FINISHED BURNISHED FACE CMU VENEER
 - 2 3/4" CAVITY WITH 1-1/2" HIGH R VALUE XPS RIGID BOARD INSULATION (R11 MINIMUM) AND AIR BARRIER
 - 8" CMU WALL
 - REFER TO BUILDING ELEVATION FOR COURSING AND MATERIAL.
 - REINFORCEMENT: #5 VERTICAL @ 48" O.C. DOWELS TO BE 2'-0" INTO FOOTINGS AND 3'-0" ABOVE.
- 8" CMU WALL WITH:
 - #5 VERTICAL @ 48" O.C. DOWELS TO BE 2'-0" INTO FOOTING AND 3'-0" ABOVE.
 - CORES FILLED 1/4" FOAM INSULATION
- 6"-18 GA METAL STUD FRAMING AT 16" O.C WITH 5/8" GYPSUM BOARD ON BOTH SIDES.
 - (COMPOSITE) STUD TYPE C83-600S200-43 (18) OR APPROVED EQUAL TO MEET WALL SPAN AT 10 PSF AND L/360.
 - EXTEND STUDS AND GYPSUM TO UNDERSIDE OF FLOOR / ROOF DECK U.O.
 - DEFLECTION TRACK AT FLOOR DECK TO WALL CONNECTION.
 - DIAGONAL BRACING TO STRUCTURE ABOVE AT 4'-0".

- WALL LEGEND NOTES:**
- PROVIDE 9 GA LADDER TYPE HORIZONTAL JOINT REINFORCEMENT WITH CROSS WIRES @ 16" O.C. SPACED VERTICALLY FOR ALL CMU WALLS.
 - PROVIDE 9 GA LADDER TYPE HORIZONTAL JOINT REINFORCEMENT WITH CROSS WIRES @ 16" O.C. WITH ADJUSTABLE VENEER TIES AT 16" O.C. STAGGERED FOR ALL CMU WITH BRICK, STONE OR CMU VENEER WALLS.
 - PROVIDE STONE ANCHORS AT TOP AND SIDES FOR EVERY PIECE AND PER STONE FABRICATOR.
 - KEEP HOLES: PROVIDE ONE PIECE SINGLE-PLY FLASHING (MINIMUM OF 1 CMU COURSE WITH END DAMS) AND ONE PIECE METAL FLASHING WITH HEMMED DRIP EDGE. PROVIDE PARTIALLY OPEN HEAD JOINT KEEP HOLES @ 24" O.C. MINIMUM OF TWO HOLES OVER WINDOWS AND DOORS. GROUT AIR SPACE SOLID UNDER FLASHINGS. PROVIDE WASHED PEA STONE FOR PROPER DRAINAGE.
 - EXTEND ALL WALLS TO UNDER SIDE OF FLOOR / ROOF METAL DECK FOR SMOKE TIGHT CONSTRUCTION. CLOSE ALL OPENINGS WITH GROUT MATERIAL TO MEET CODE REQUIREMENTS FOR A SMOKE TIGHT CONSTRUCTION OR FIRE RATE CONSTRUCTION AS INDICATED. SEE PLANS FOR LOCATIONS OF SMOKE / FIRE WALLS.
 - GROUT ALL CMU WALLS SOLID AT RE-BARS AND FIRST TWO COURSES OVER EXISTING MASONRY OR FOUNDATIONS. DOWEL INTO EXISTING MASONRY.
 - PROVIDE A MASONRY CONTROL / EXPANSION JOINTS FOR ALL NEW WALLS OVER 20'-0" IN RUN OR MORE. MAXIMUM SPACING OF 25'-0"
 - PROVIDE CONTINUOUS 8"/12" BOND BEAM (B.B.) W/ (2) #5 BARS. VERTICAL WALL BARS TO CONTINUE THRU B.B. & HOOK TO B.B. STEEL FOR UPLIFT CONTINUITY. GROUT ONE COURSE ABOVE AND ONE BELOW B.B. PROVIDE METAL LATH OR WIRE SCREEN UNDER B.B. TO CONFINE GROUT. LAP B.B. MINIMUM OF 48" TO ACCOMMODATE ELEVATION CHANGES FOR THE CORRIDOR WALLS.
 - REFER TO BUILDING ELEVATIONS AND SECTIONS FOR COURSING AND OTHER MATERIALS.



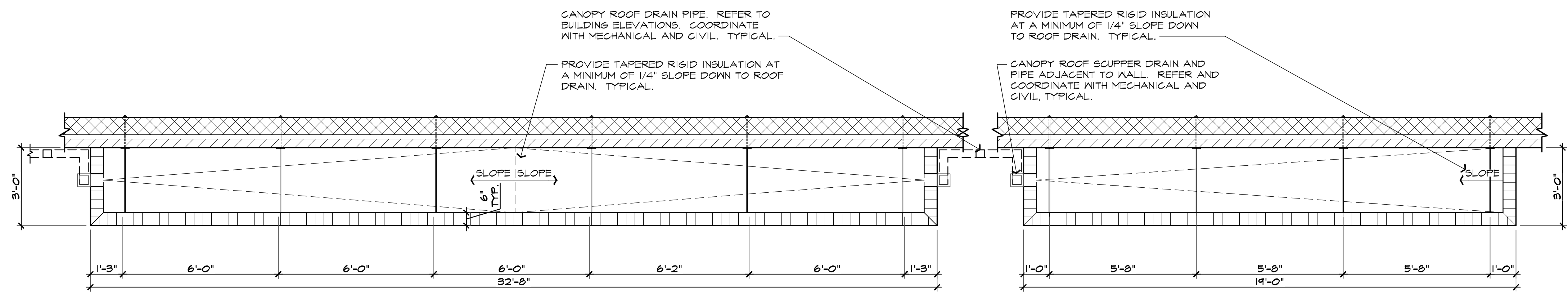
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| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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ROOF PLAN GENERAL NOTES:

- SEE MECHANICAL DRAWINGS FOR ALL ROOF EQUIPMENT
- MAINTAIN MINIMUM OF 10 FEET BETWEEN RTU'S INTAKES AND EXHAUST.
- VERIFY RTU SIZE WITH MANUFACTURER FOR CURB SIZES AND LOCATIONS.
- COORDINATE ROOF CONDUCTORS WITH PLUMBING, STEEL AND CONCRETE FOUNDATION CONTRACTORS.
- COORDINATE WITH MECHANICAL ROOF VENT PIPE LOCATIONS (NOT SHOWN).

STORM DRAINAGE:

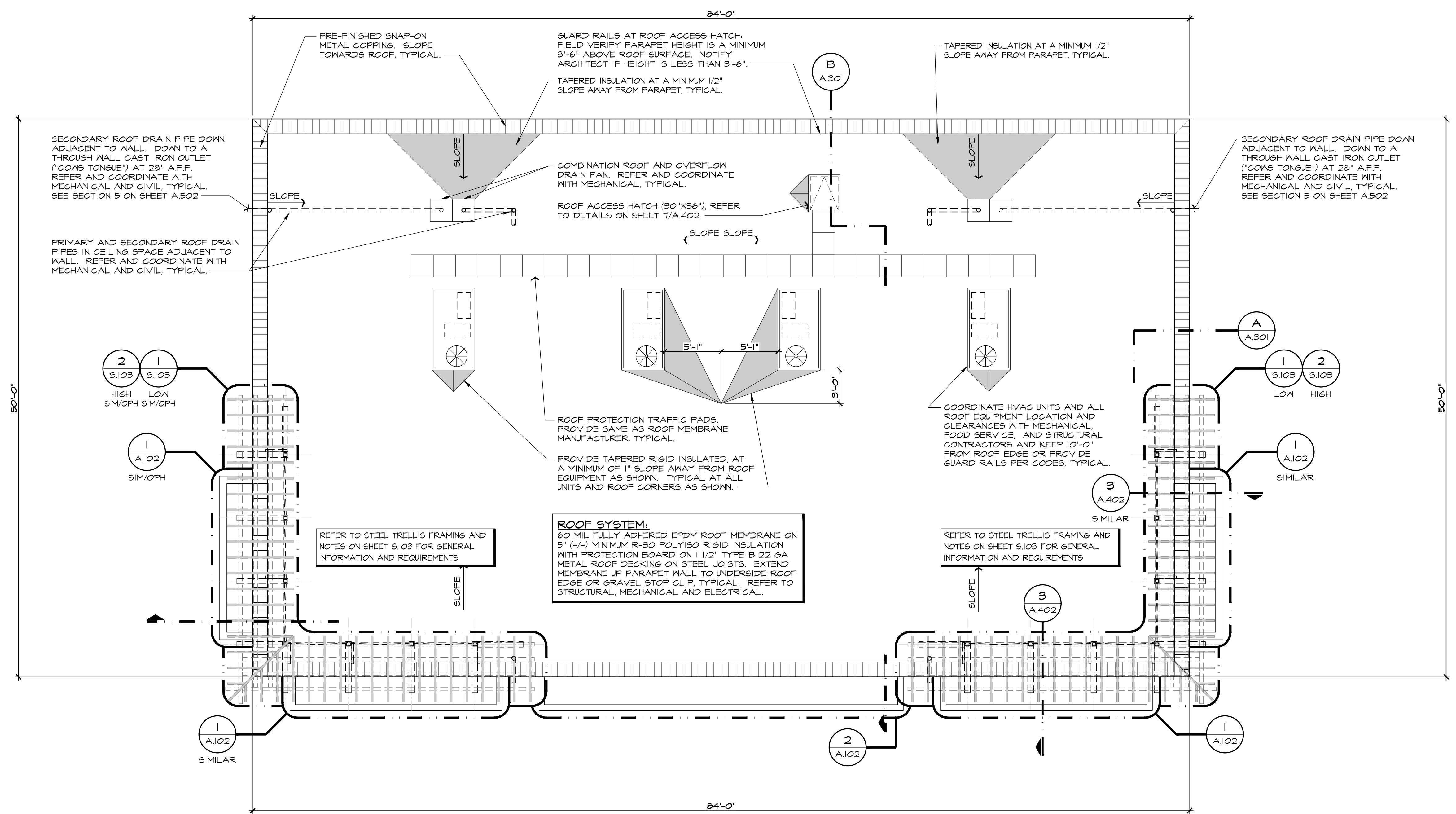
ROOF AREA = 3,850 SF
 VERTICAL WALL AREA = 258 L.F. X 3.0 HT. = 774 SF
 0.0291 GPM/SF X 4624 SF = 135 GPM



2 ENLARGED CANOPY PLAN
 SCALE: 3/8" = 1'-0"

CANOPY ROOF SYSTEM: 60 MIL FULLY ADHERED EPDM ROOF MEMBRANE ON POLYISO TAPERED RIGID INSULATION ON 1 1/2" TYPE B 22 GA METAL ROOF DECKING ON STEEL CHANNELS. EXTEND MEMBRANE UP PARAPET WALL TO UNDERSIDE ROOF EDGE OR GRAVEL STOP CLIP, TYPICAL. REFER TO STRUCTURAL, MECHANICAL AND ELECTRICAL.

1 ENLARGED CANOPY PLAN
 SCALE: 3/8" = 1'-0"



FLOOR PLAN
 SCALE: 3/16" = 1'-0"

4 CORNERS

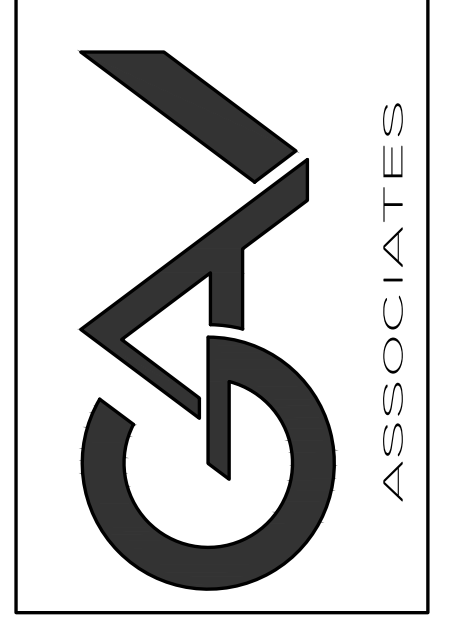
NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

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| DRAWN: | DESIGNED: | CHECKED: |
| SSA | GA | GA |
| SCALE : | | |
| FILE NAME : | 21096_A102 | |
| JOB #: | 21096 | |
| SHEET TITLE | ROOF PLAN | |
| SHEET # | A.102 | |



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| ISSUED | Section 8, Item A. |
| PERMITS | 10/22/2021 |
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ARCHITECTURAL DESIGN
RESIDENTIAL COMMERCIAL INDUSTRIAL
G.A.V. ASSOCIATES, INC.
 38051 ORCHARD LAKE RD., STE. 100A
 FARMINGTON, MICHIGAN 48336
 PH: (248) 985-9191
 WEB: WWW.GAVASSOCIATES.COM



4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

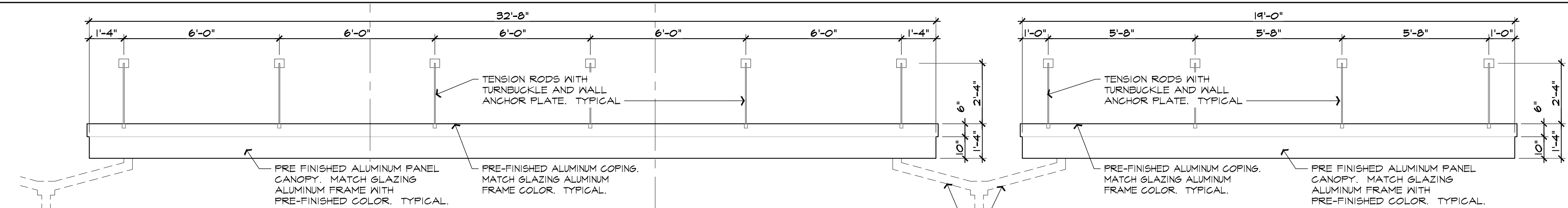
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| SA | SA | SA |
| SCALE : | | |
| FILE NAME : 2106_A201 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| BUILDING ELEVATIONS | | |
| SHEET # | | |
| A.20 | | |

BUILDING ELEVATIONS GENERAL NOTES:

- REFER TO SITE APPROVAL RENDERING FOR COLOR SELECTION AND COORDINATE WITH OWNERS. COLOR MUST MATCH RENDERING AS CLOSE AS POSSIBLE OR BE APPROVED BY THE CITY PRIOR TO CONSTRUCTION.
- REFER TO REFLECTED CEILING PLANS AND ELECTRICAL DRAWINGS FOR LIGHTING AND POWER ON THE ELEVATIONS.
- REFER TO STEEL TRELLIS FRAMING AND NOTES ON SHEET S.103 FOR GENERAL INFORMATION AND REQUIREMENTS.

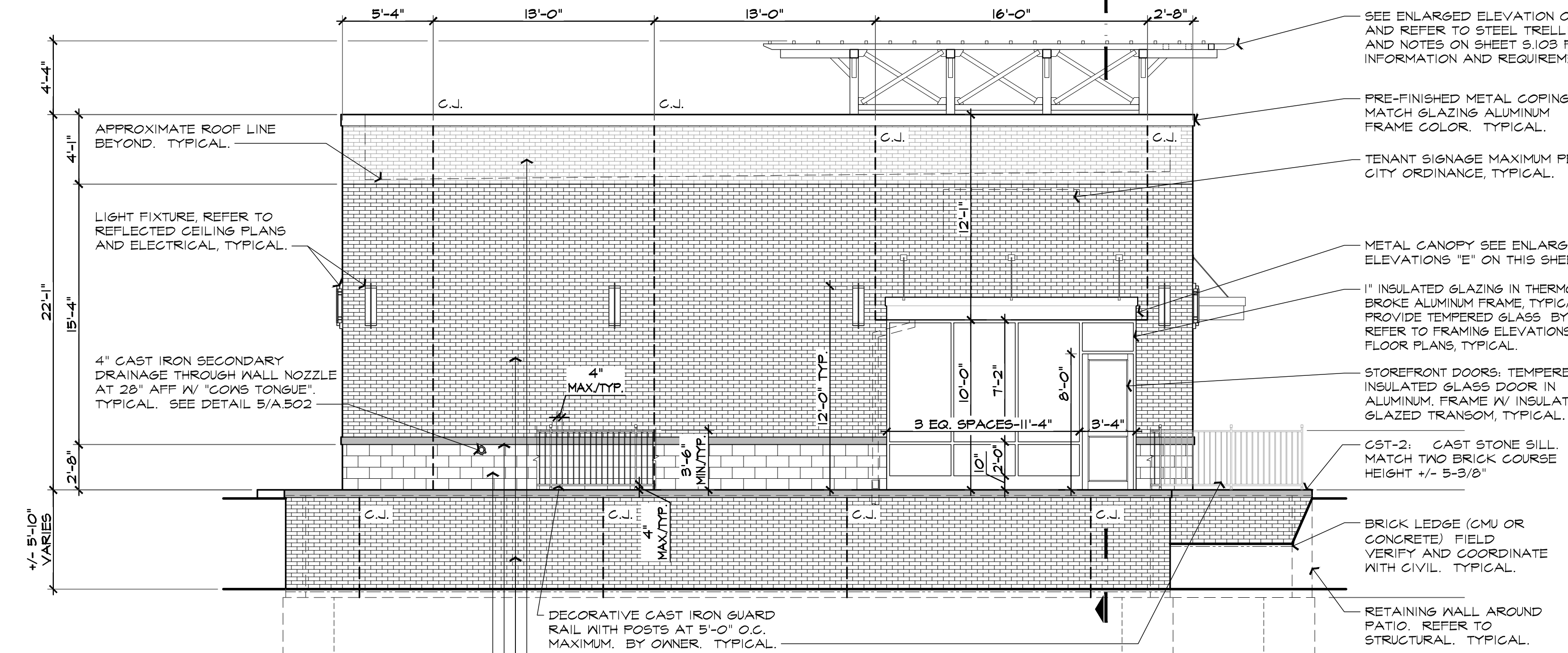
MATERIAL LEGEND:

- COORDINATE ALL SELECTIONS WITH OWNER AND REFER TO WALL SECTIONS AND DETAILS:
- BRK-1: BRICK VENEER - LIGHT COLOR
 - BRK-2: BRICK VENEER - DARK COLOR
 - CMU-1: PRE-FINISH BURNISHED FACE CMU VENEER
 - CST-1: CAST STONE VENEER ACCENT BAND. MATCH TWO BRICK COURSE HEIGHT +/- 5-3/8"
 - CST-2: CAST STONE SILL. MATCH TWO BRICK COURSE HEIGHT +/- 5-3/8"

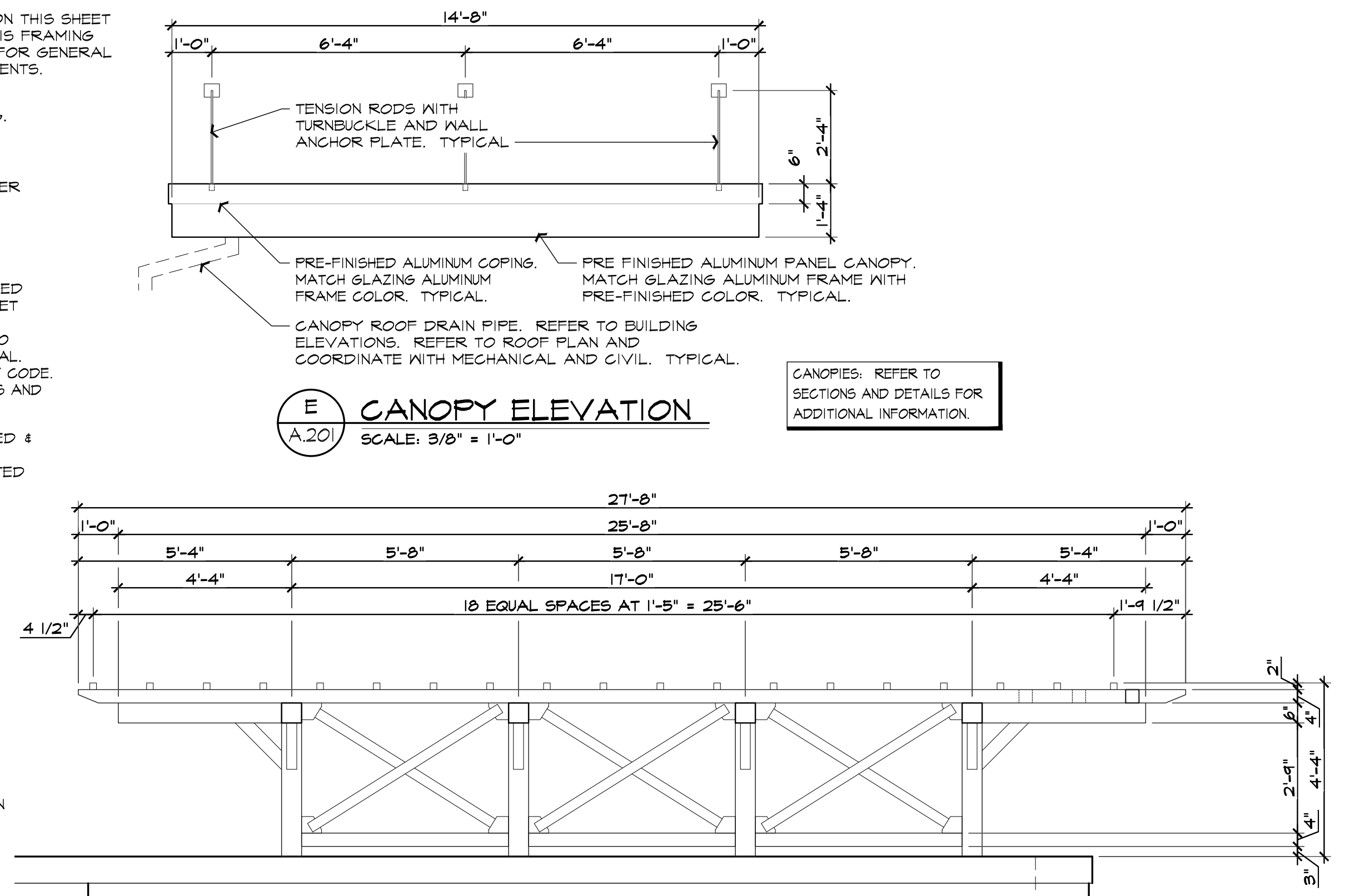


D CANOPY ELEVATION
 SCALE: 3/8" = 1'-0"
 CANOPIES: REFER TO SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.

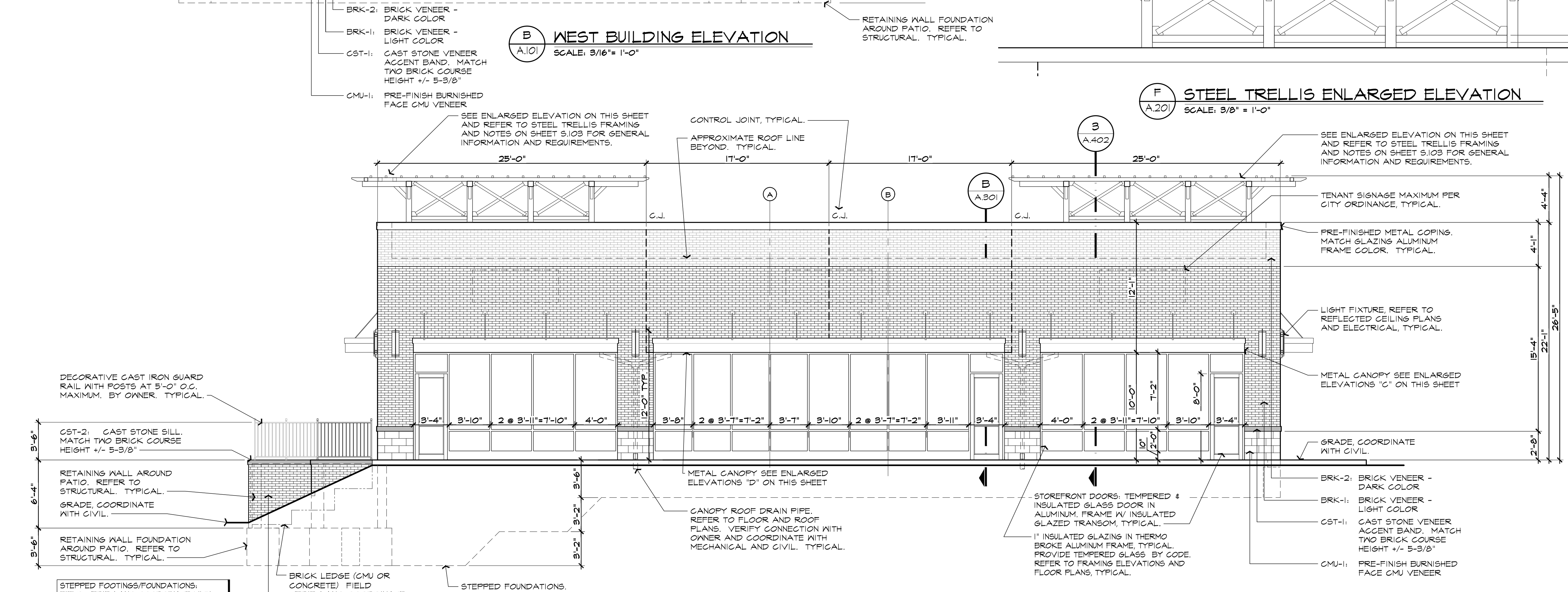
C CANOPY ELEVATION
 SCALE: 3/8" = 1'-0"
 CANOPIES: REFER TO SECTIONS AND DETAILS FOR ADDITIONAL INFORMATION.



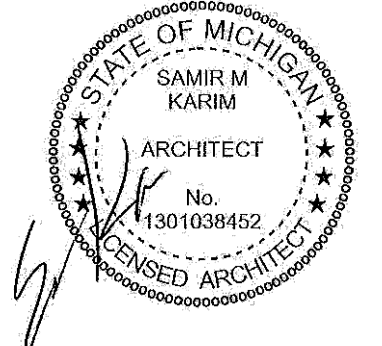
B WEST BUILDING ELEVATION
 SCALE: 3/16" = 1'-0"



F STEEL TRELLIS ENLARGED ELEVATION
 SCALE: 3/8" = 1'-0"



A SOUTH BUILDING ELEVATION
 SCALE: 3/16" = 1'-0"



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| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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BUILDING ELEVATIONS GENERAL NOTES:

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- REFER TO STEEL TRELLIS FRAMING AND NOTES ON SHEET S.103 FOR GENERAL INFORMATION AND REQUIREMENTS.

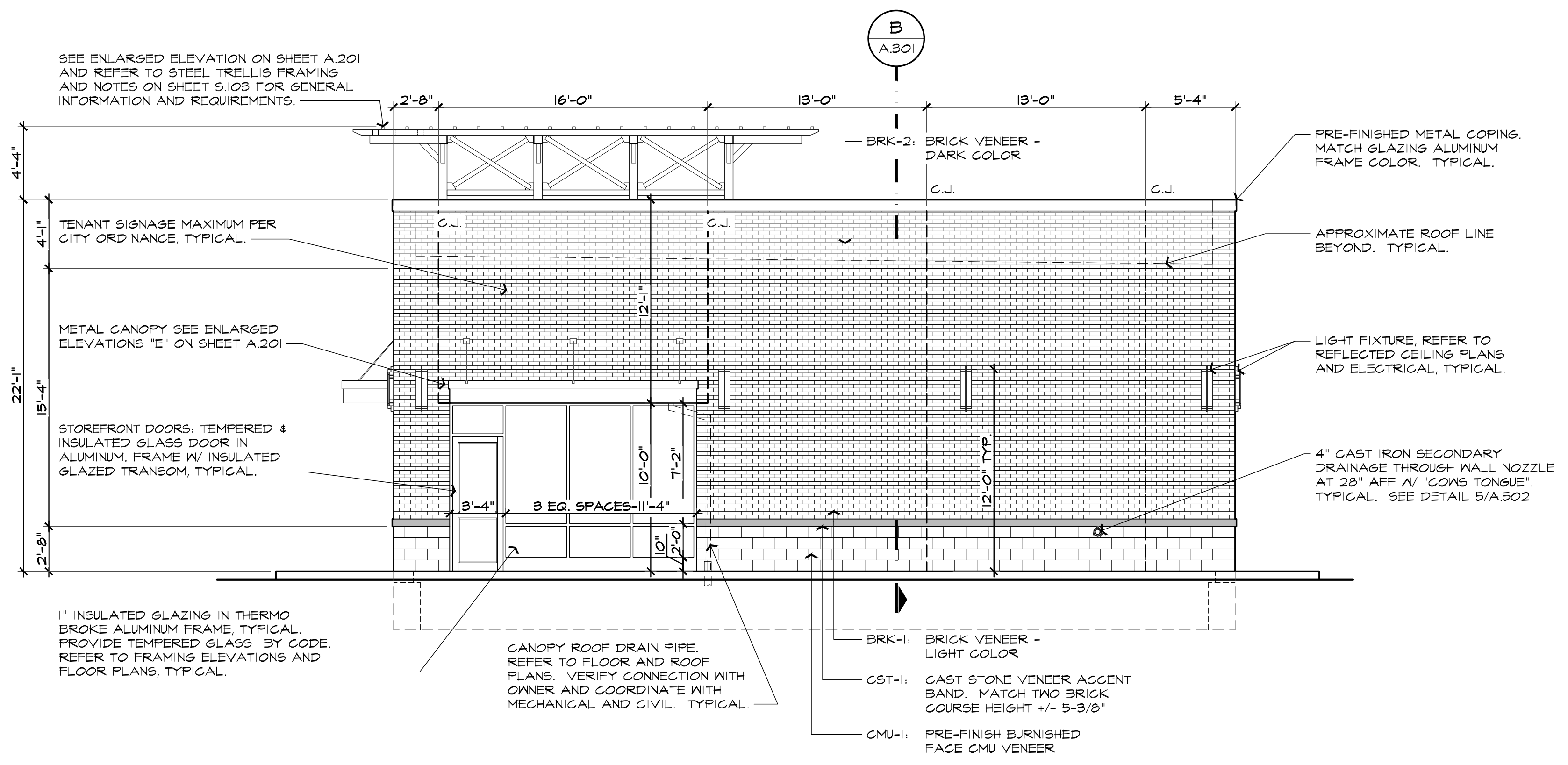
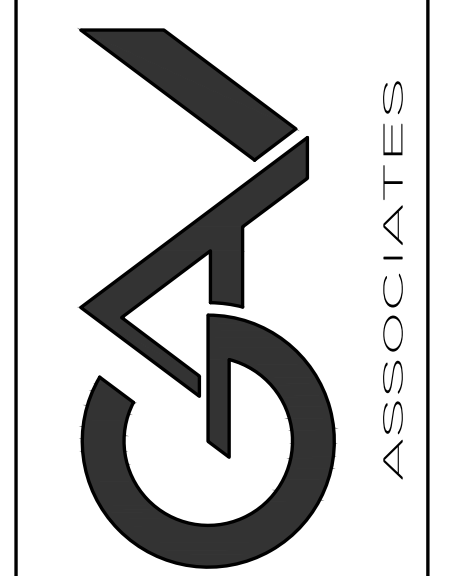
MATERIAL LEGEND:

- COORDINATE ALL SELECTIONS WITH OWNER AND REFER TO WALL SECTIONS AND DETAILS.
- BRK-1: BRICK VENEER - LIGHT COLOR
 - BRK-2: BRICK VENEER - DARK COLOR
 - CMU-1: PRE-FINISH SPLIT FACE CMU VENEER
 - CST-1: CAST STONE VENEER ACCENT BAND. MATCH TWO BRICK COURSE HEIGHT +/- 5-3/8"
 - CST-2: CAST STONE SILL. MATCH TWO BRICK COURSE HEIGHT +/- 5-3/8"

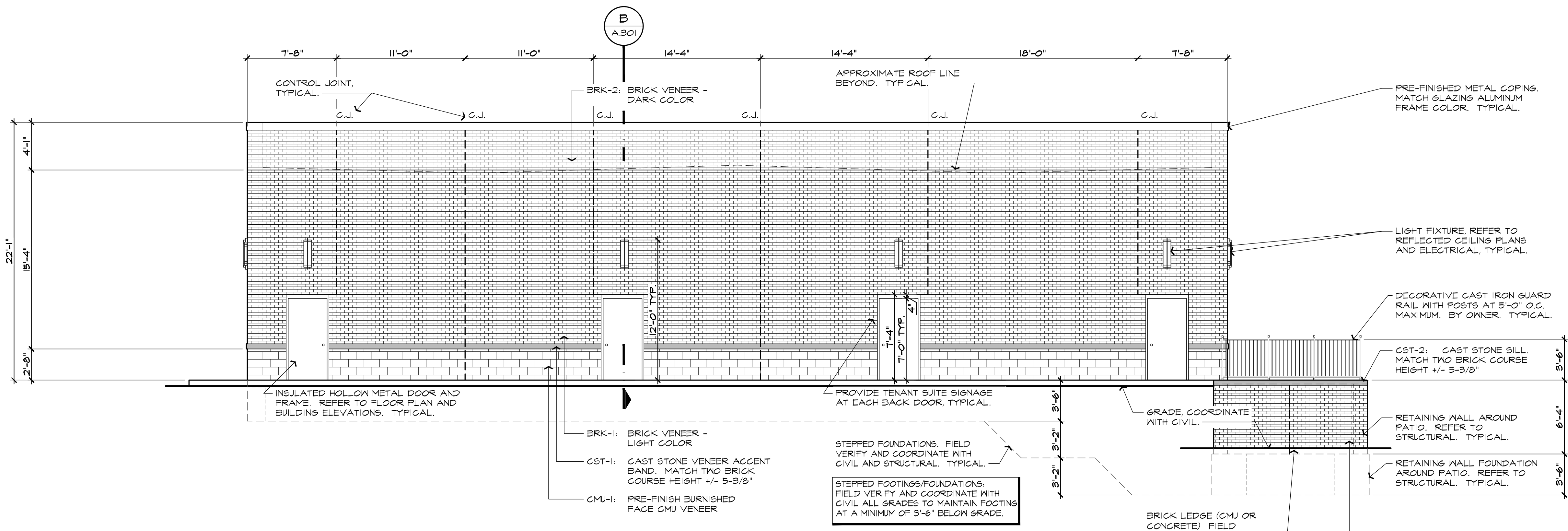
ARCHITECTURAL DESIGN

RESIDENTIAL
COMMERCIAL
INDUSTRIAL

G.A.V. ASSOCIATES, INC.
3801 GARDEN LAKE RD., STE. 100A
FARMINGTON, MICHIGAN 48336
PH: (248) 985-9191
WEB: WWW.GAVASSOCIATES.COM



D EAST BUILDING ELEVATION
SCALE: 3/16" = 1'-0"



C NORTH BUILDING ELEVATION
SCALE: 3/16" = 1'-0"

4 CORNERS

NEW RETAIL CENTER SHELL FOR:
UNION LAKE & COOLEY LAKE ROADS
COOLEY LAKE ROAD
WHITE LAKE, MICHIGAN

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| DRAWN: | DESIGNED: | CHECKED: |
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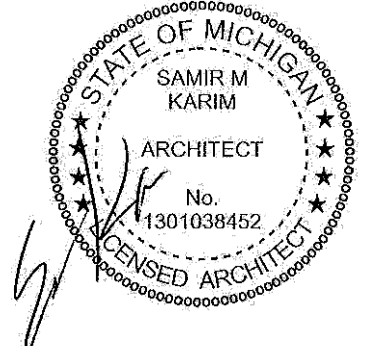
SCALE :

FILE NAME : 21096_A202

JOB # : 21096

SHEET TITLE
BUILDING ELEVATIONS

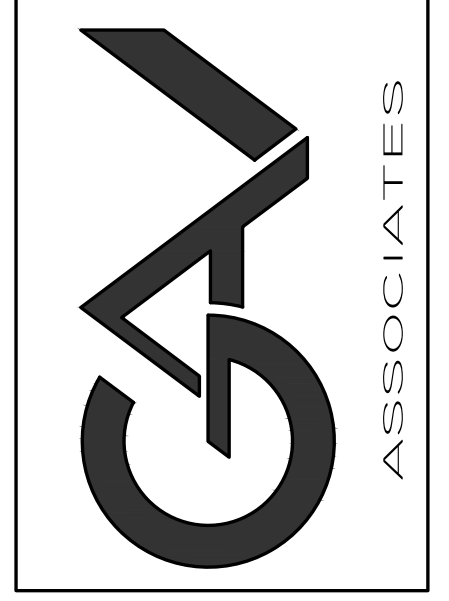
SHEET #
A.202



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| ISSUED | Section 8, Item A. |
| PERMITS | 10/22/2021 |
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ARCHITECTURAL DESIGN
 RESIDENTIAL
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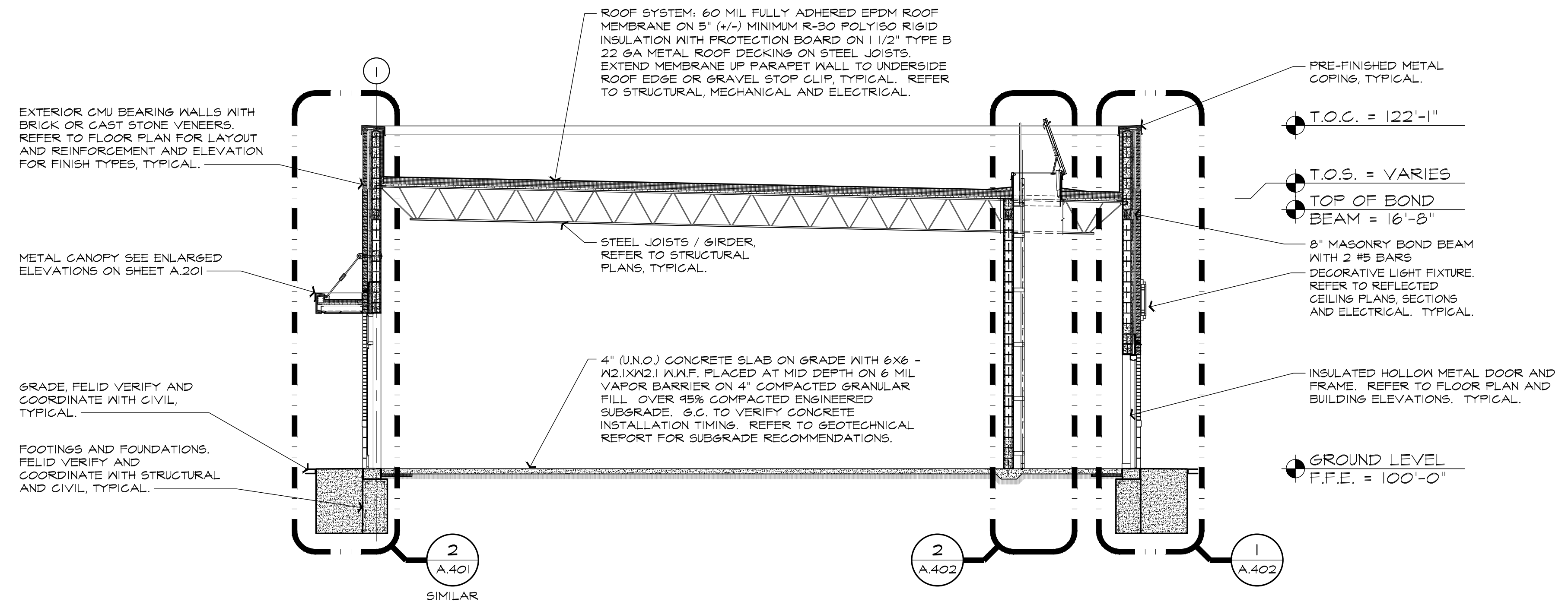
G.A.V. ASSOCIATES, INC.
 24051 ORCHARD LAKE RD., STE. 100A
 FARMINGTON, MICHIGAN 48336
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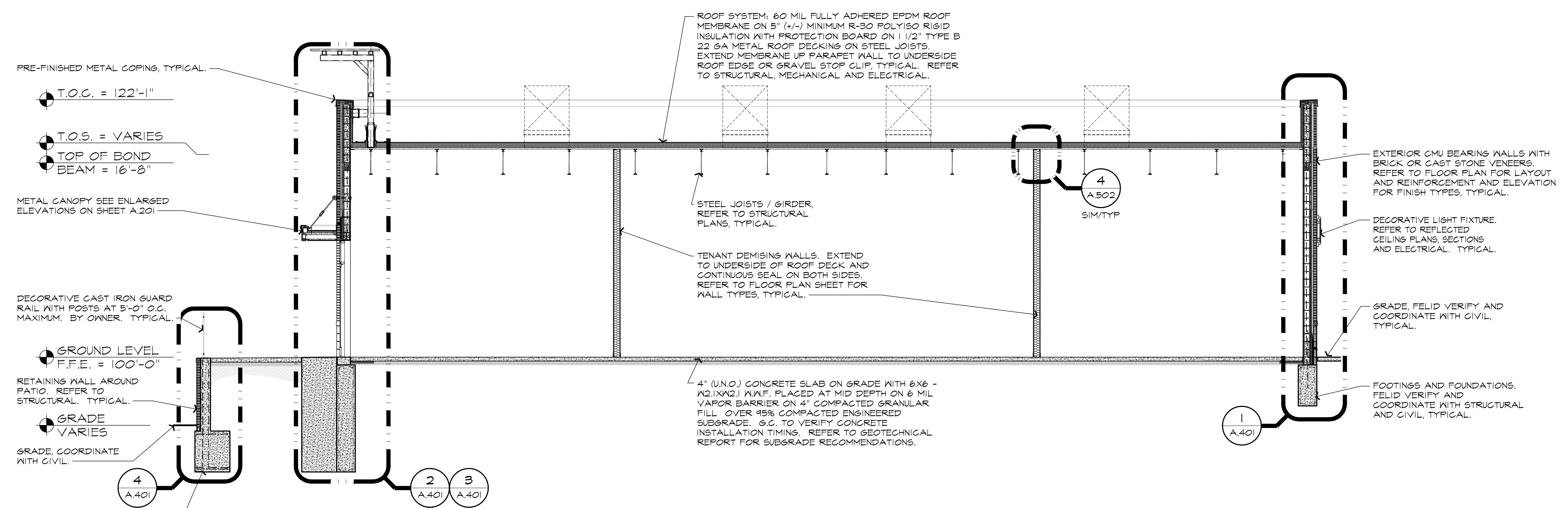
4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

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| DRAWN: | DESIGNED: | CHECKED: |
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| SCALE : | | |
| FILE NAME : 21096_A301 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| BUILDING SECTIONS | | |
| SHEET # | | |
| A.30 | | |



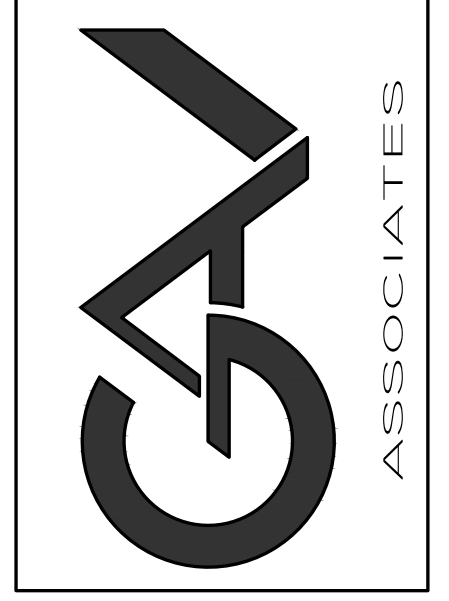
B BUILDING SECTION
 A.101 SCALE: 3/16" = 1'-0"



A BUILDING SECTION
 A.101 SCALE: 3/16" = 1'-0"

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| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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4 CORNERS

NEW RETAIL CENTER SHELL FOR:
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 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

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| DRAWN: | DESIGNED: | CHECKED: |
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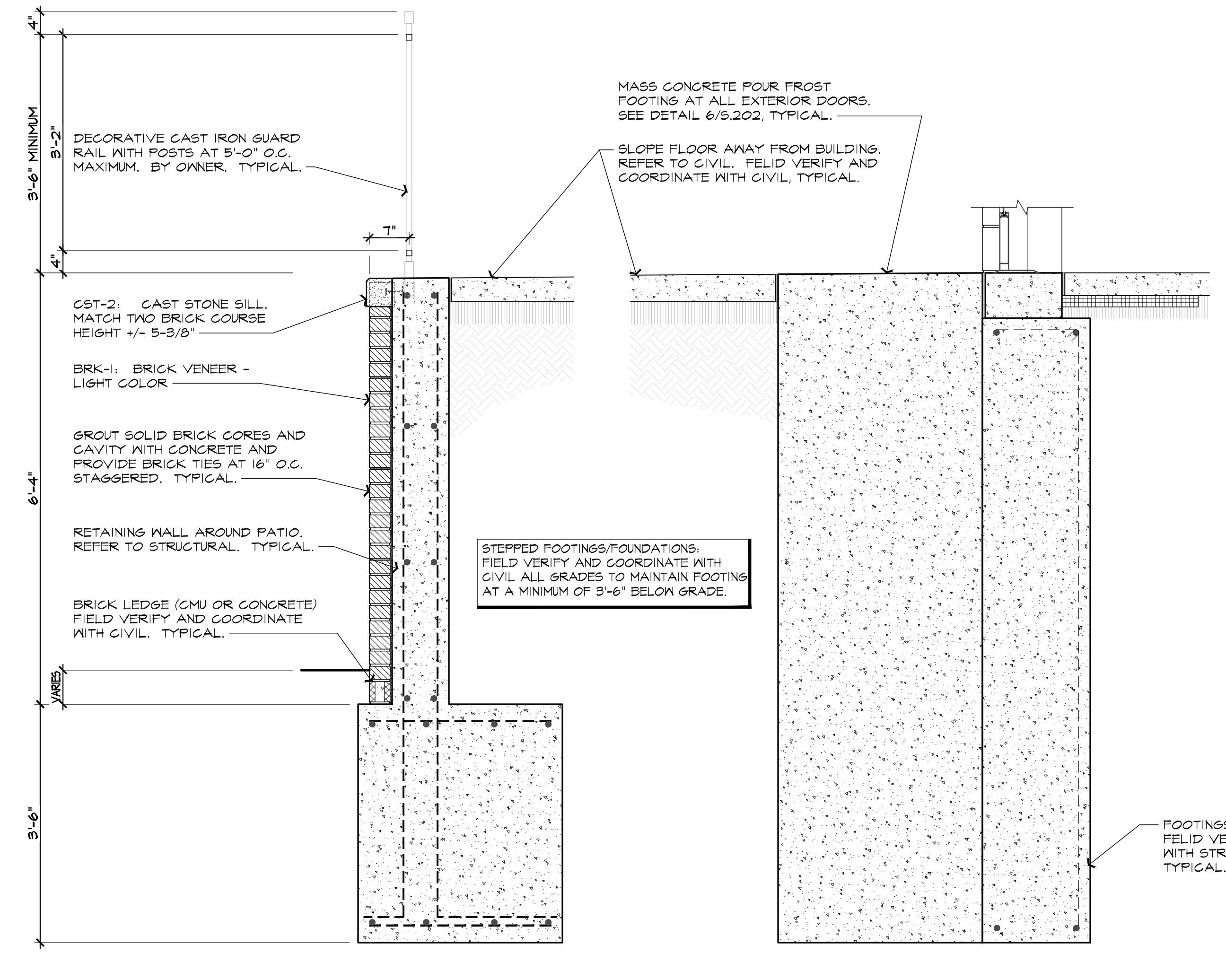
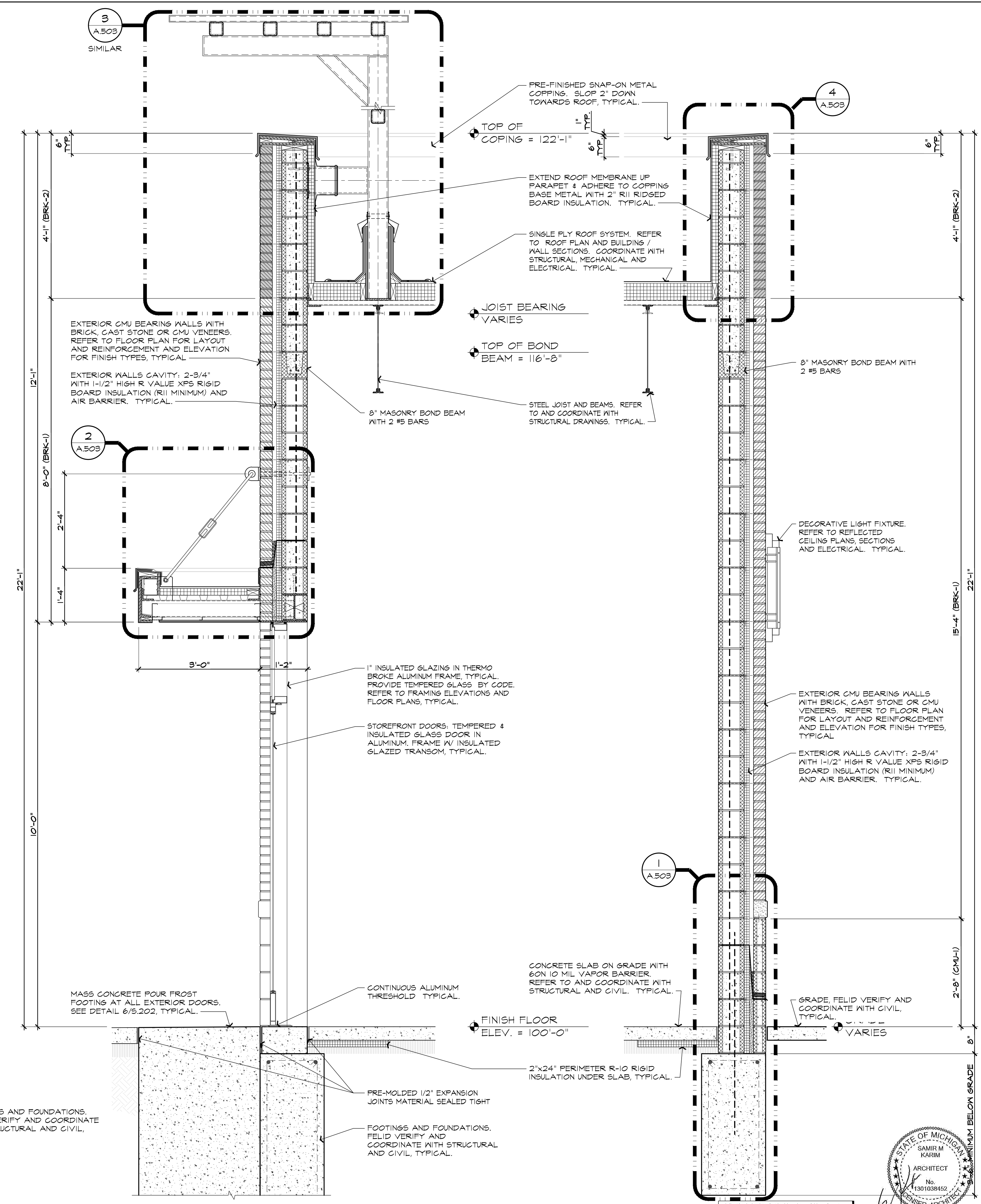
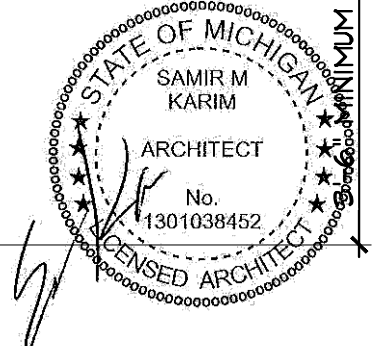
SCALE :

FILE NAME : 21096_A401

JOB # 21096

SHEET TITLE
WALL SECTIONS

SHEET #
A.40



4 WALL SECTION
 SCALE: 3/4" = 1'-0"

3 WALL SECTION
 SCALE: 3/4" = 1'-0"

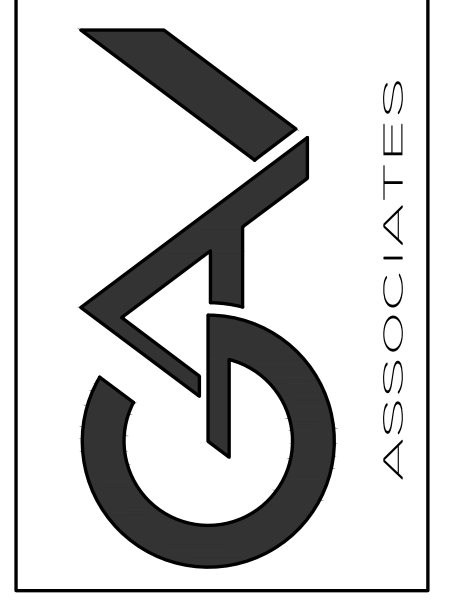
2 WALL SECTION
 SCALE: 3/4" = 1'-0"

1 WALL SECTION
 SCALE: 3/4" = 1'-0"

WHERE ITEMS ARE NOTED AND / OR DIMENSIONED ON ONE SECTION / DETAIL ARE APPLICABLE TO OTHER SECTIONS / DETAILS ON THIS SHEET.

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| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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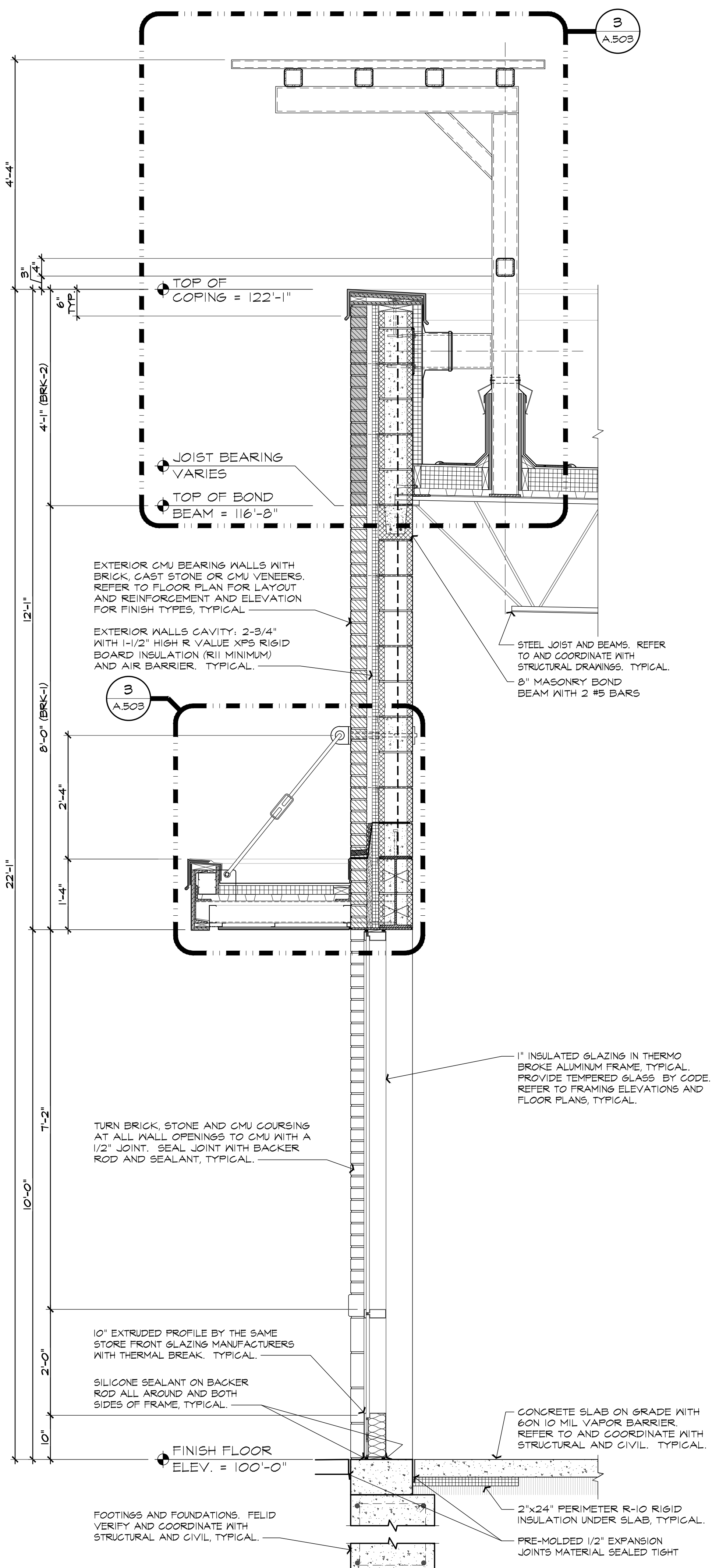
ARCHITECTURAL DESIGN
RESIDENTIAL COMMERCIAL INDUSTRIAL
 G.A.V. ASSOCIATES, INC.
 24051 ORCHARD LAKE RD., STE. 100A
 FARMINGTON, MICHIGAN 48336
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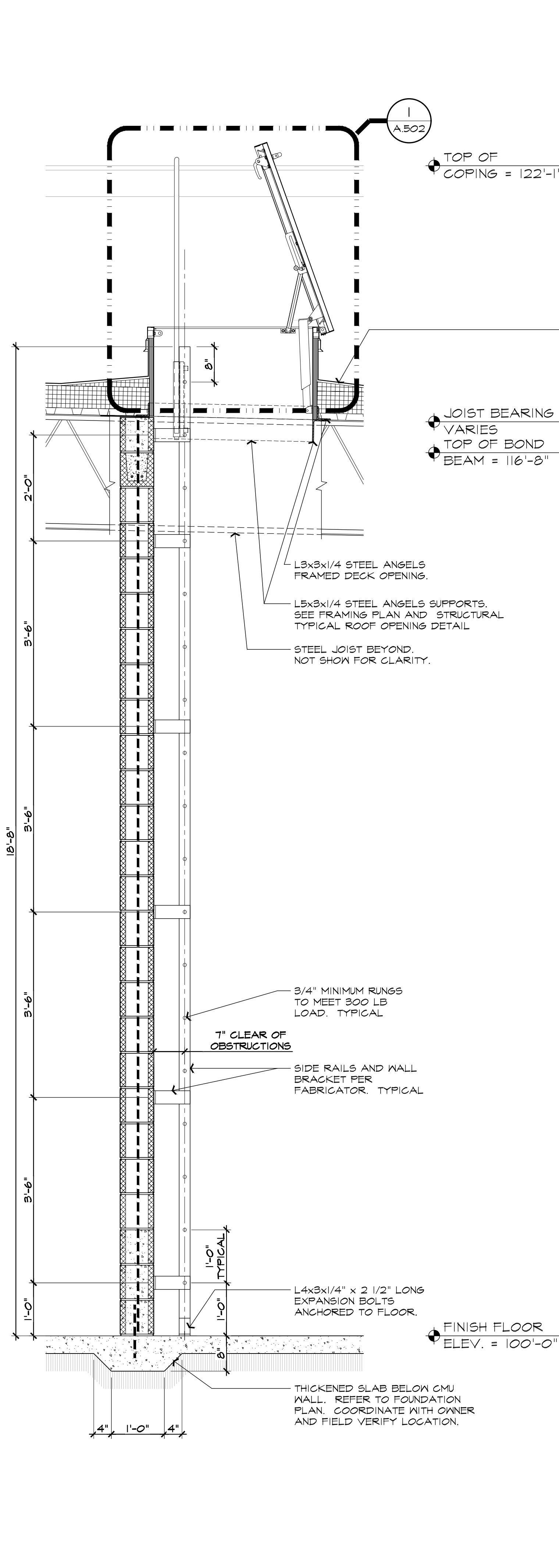
4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

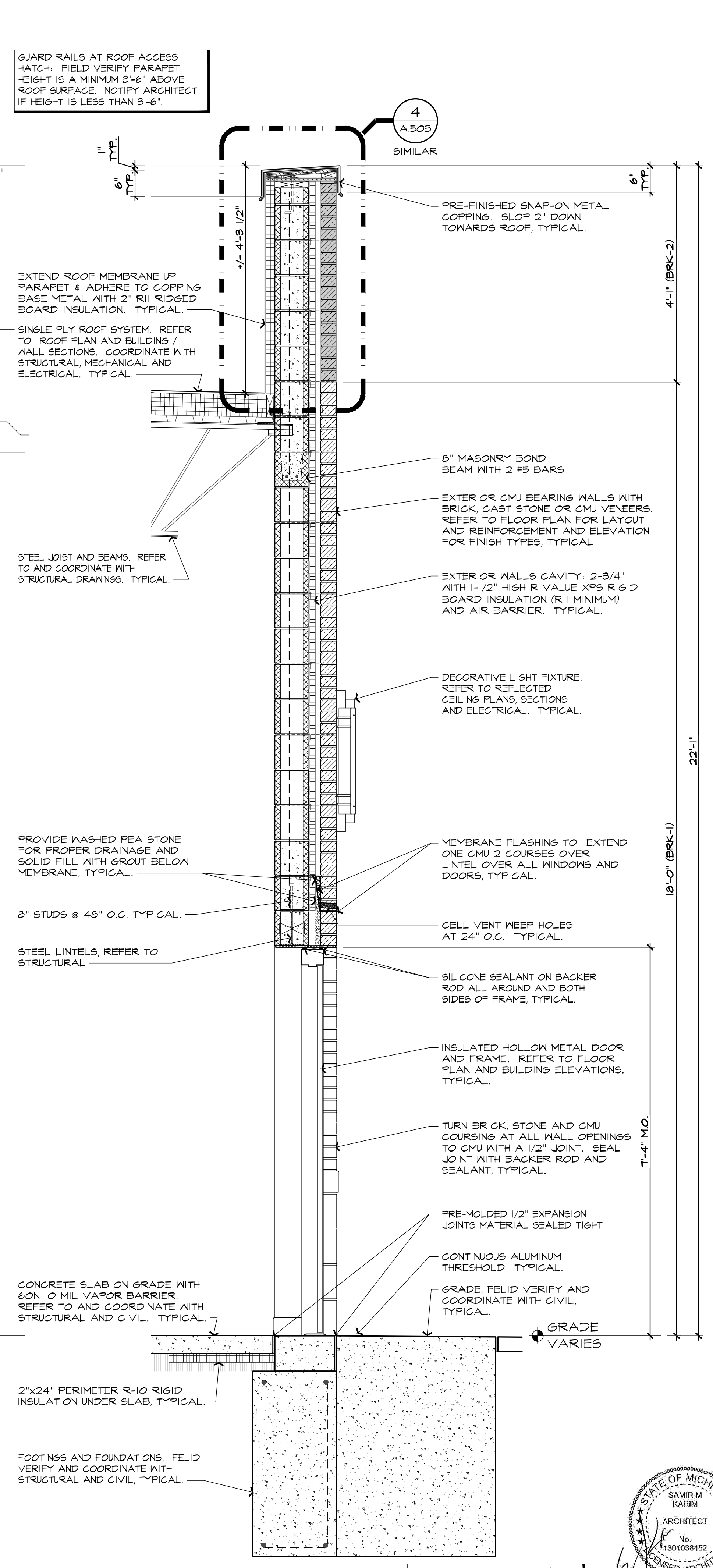
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| DRAWN: | DESIGNED: | CHECKED: |
| SA | SA | SA |
| SCALE : | | |
| FILE NAME : 21096_A402 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| WALL SECTIONS | | |
| SHEET # | | |
| A.402 | | |



3 WALL SECTION
 SCALE: 3/4" = 1'-0"



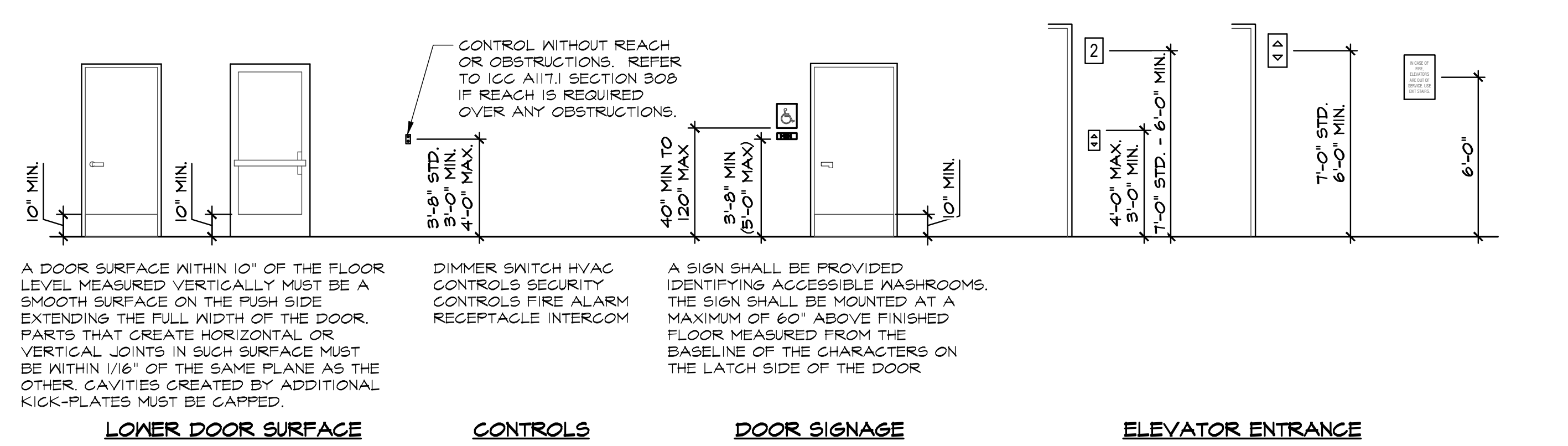
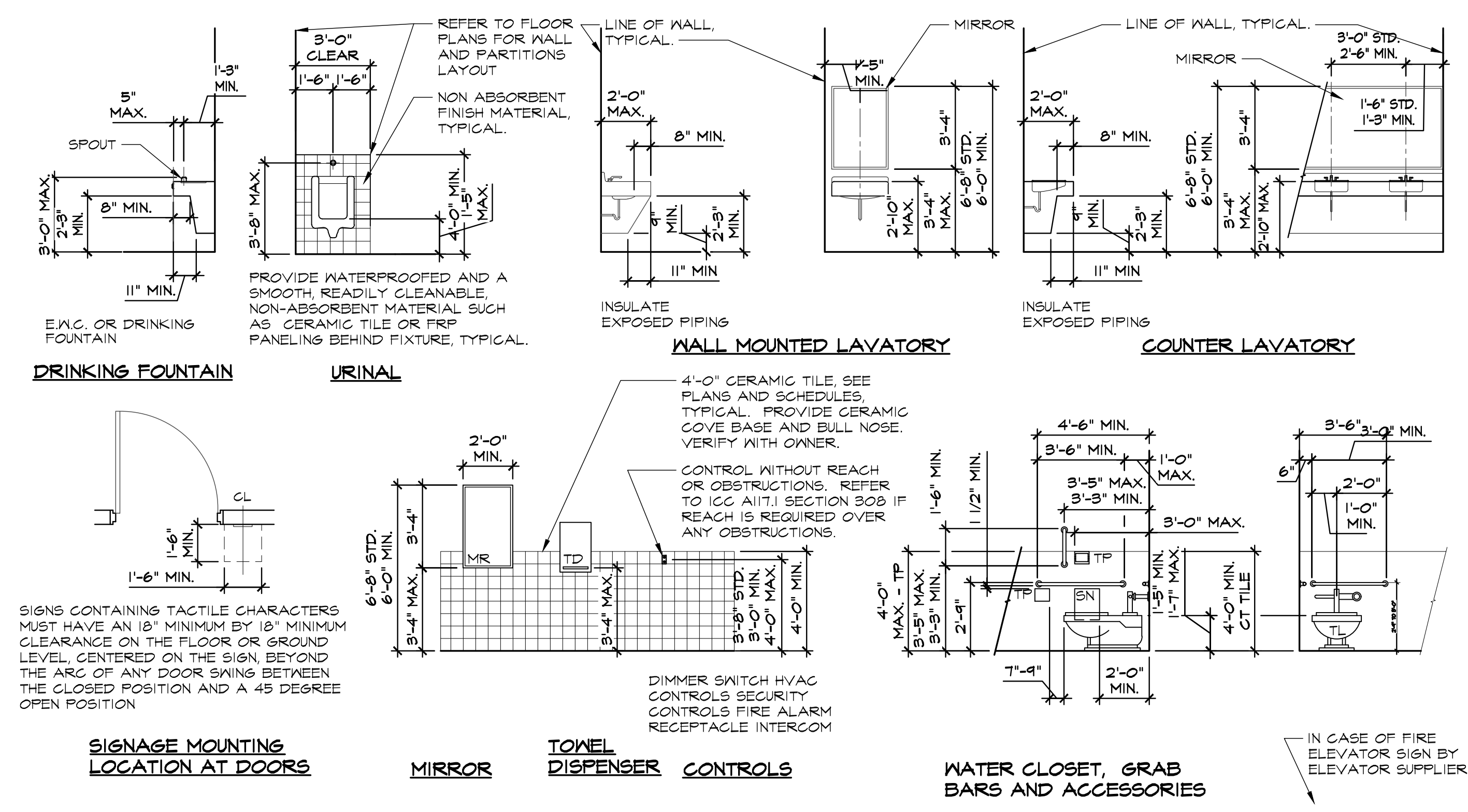
2 WALL SECTION
 SCALE: 3/4" = 1'-0"



1 WALL SECTION
 SCALE: 3/4" = 1'-0"

WHERE ITEMS ARE NOTED AND / OR DIMENSIONED ON ONE SECTION / DETAIL ARE APPLICABLE TO OTHER SECTIONS / DETAILS ON THIS SHEET.





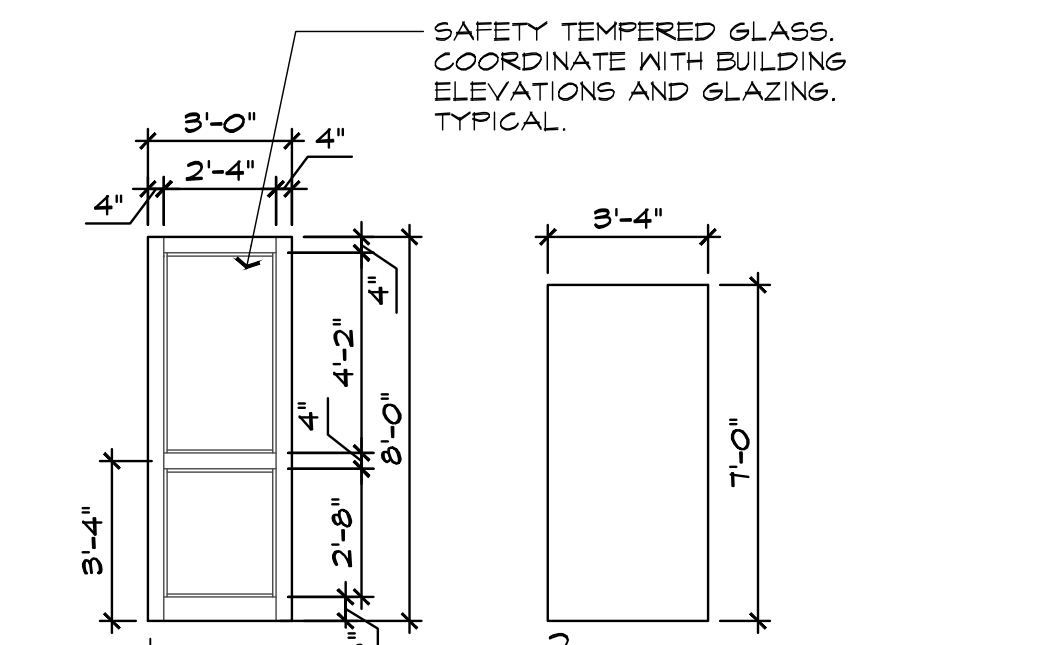
TYPICAL RESTROOMS BARRIER FREE MOUNTING HEIGHTS AND REQUIREMENTS NOT TO SCALE

| DOOR SCHEDULE | | | | | | | | | | | | | | | |
|--|-------------------|-----------|------|--------|------------|------|--------|----------|---|---|---|---|---|------|---------|
| ROOM NAME/TYPE | DOOR SIZE (WxHxT) | DOOR TYPE | MAT. | FINISH | FRAME TYPE | MAT. | FINISH | HARDWARE | | | | | | RTG. | REMARKS |
| | | | | | | | | A | B | C | D | E | F | G | |
| TENANT MAIN ENTRIES SINGLE DOORS - SUITE NO'S A, B & C | 3'-0\"/> | | | | | | | | | | | | | | |
| TENANT REAR ENTRIES DOORS SUITE NO'S 1, 2, 3, 4, 5 & 6 | 3'-4\"/> | | | | | | | | | | | | | | |
| ELECTRICAL / ROOF ACCESS ROOM #100 | 3'-0\"/> | | | | | | | | | | | | | | |

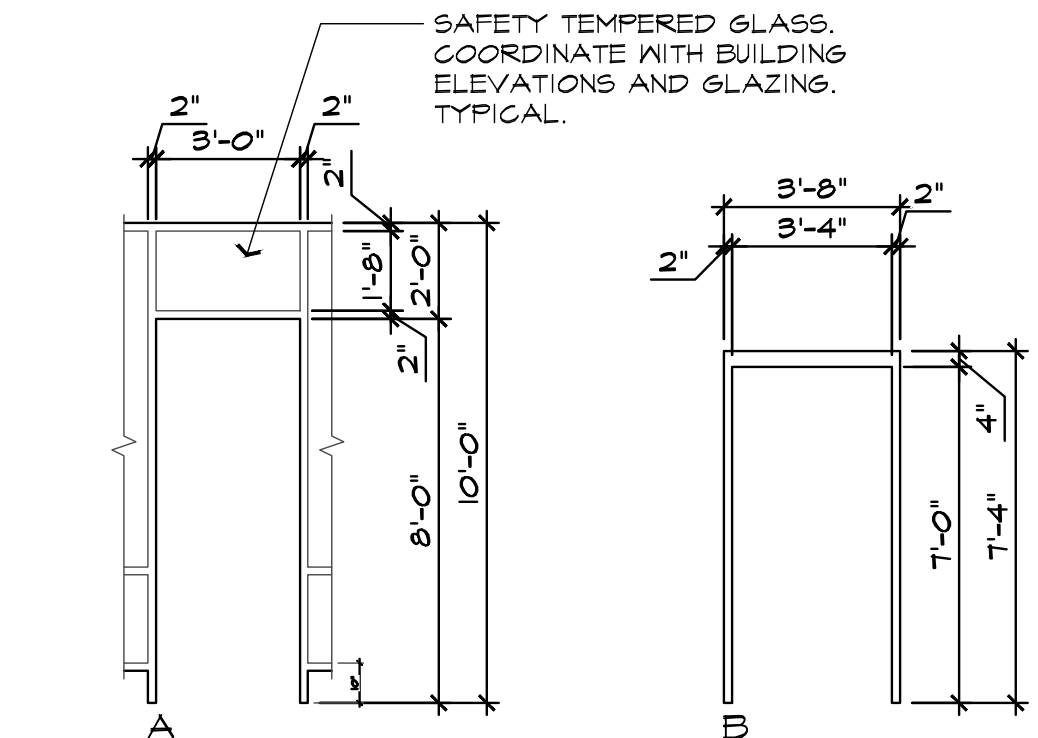
GENERAL DOOR & WINDOW SPECIFICATION

- 6.G. TO COORDINATE DOOR AND FRAME LOCATIONS TO MATCH SIZE AND SWINGS SHOWN ON PLAN. CONTACT ARCHITECT WITH ANY DISCREPANCIES.
- HOLLOW METAL DOORS AND FRAMES SHALL BE: AS FURNISHED BY PIONEER / STEELCRAFT / SPECIALITE (OR EQUAL). FRAMES TO 18-GAUGE, COMMERCIAL GRADE, 'T' SERIES, KNOCK-DOWN WITH ANCHORING AS REQUIRED BY WALL CONDITIONS. REFER TO DETAILS ON THIS SHEET. DOORS SHALL BE 18-GAUGE, COMMERCIAL GRADE, 'VM' SERIES, PREPARED TO RECEIVE MORTISED HARDWARE AS SPECIFIED. ALL HARDWARE MUST BE RECESSED FLUSH WITH NO SHARP EDGES EXPOSED. H.M. DOORS AND FRAMES SHALL PRIME AND PAINTED TO MATCH ROOM COLOR.
- ALL GLASS USED IN DOORS AND SIDE LITES SHALL BE TEMPERED 1/4" GLASS.
- GLASS FRAME IN DOORS SHALL ALSO BE PRE-FINISHED TO MATCH DOOR OR FINISHED IN FIELD.
- COORDINATE ALL DOORS AND FRAMES SIZES WITH MASONRY AND CARPENTRY CONTRACTORS PRIOR TO CONSTRUCTION.
- DOORS AND FRAMES AT THE MAIN ENTRANCE SHALL BE ALUMINUM ENTRANCES OR STOREFRONT MATERIAL WITH THERMAL BREAK EQUAL TO SYSTEMS DESIGNED AND ENGINEERED BY KANNEER CO., INC. OR TUBELITE DIVISION, INDAL INC. FINISH IS TO BE DARK BRONZE (M10-C22-A44).
- ALL EXTERIOR DOORS AND FRAMES, EXCEPT AT MAIN ENTRANCE, SHALL BE CUSTOM HOLLOW METAL CONSTRUCTION PROVIDED WITH HEAVY DUTY COMMERCIAL GRADE HARDWARE. DOOR FACE SHEETS SHALL BE COMMERCIAL QUALITY ROLLER LEVELLED COLD ROLL, 16 GAUGE STEEL WITH 18 GAUGE STIFFENERS AT 6" ON CENTER. PROVIDE POLYSTYRENE OR URETHANE INSULATION CORE FILLER. ALL EXPOSED STEEL SURFACES SHALL BE CLEANED, BONDED AND COATED WITH A BAKED ON ZINC CHROMATE BASED PRIME PAINT. FRAMES SHALL BE PREFABRICATED COMBINATION BUCK, FRAME, AND TRIM TYPE. MITERED JOINTS SHALL HAVE LOCKING TABS AT FRAME RABBETS AND BACKBOARDS. ALL INTERIOR DOOR FRAMES SHALL BE FURNISHED FOR INTERIOR OPENINGS. REINFORCE, DRILL, AND TAP DOORS AND FRAMES FOR FULLY-TEMPLATED MORTISED AND CONCEALED HARDWARE.

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| ABBREVIATION (DOORS): | HARDWARE: |
| AA ANODIZED ALUMINUM | A: LOCK SET |
| AL ALUMINUM | B: PASSAGE SET |
| HM HOLLOW METAL (WELDED FRAME) | C: PUSH/PULL |
| LG LEGACY WOOD DOOR | D: CLOSER |
| GL GLAZING | E: WALL/FLOOR/DOOR STOP |
| RM RED-METAL | F: PUSH BAR/FULL BAR/LOCK SET NON LOCKING AGAINST EGRESS |
| PF PRE FINISHED | G: KICK PLATE |



DOOR PANEL TYPES NOT TO SCALE



DOOR FRAME TYPES NOT TO SCALE

ARCHITECTURAL DESIGN

RESIDENTIAL COMMERCIAL INDUSTRIAL

G.A.V. ASSOCIATES, INC.
 5901 ORCHARD LAKE RD., STE. 100A
 FARMINGTON, MICHIGAN 48336
 PH: (248) 985-9191
 WEB: WWW.GAVASSOCIATES.COM

4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

| | | |
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| DRAWN: | DESIGNED: | CHECKED: |
| | SA | SA |

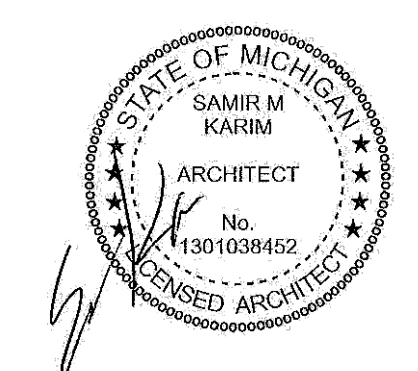
SCALE :

FILE NAME : 21096_A501

JOB # : 21096

SHEET TITLE
 DETAILS AND SCHEDULES
 SHEET #

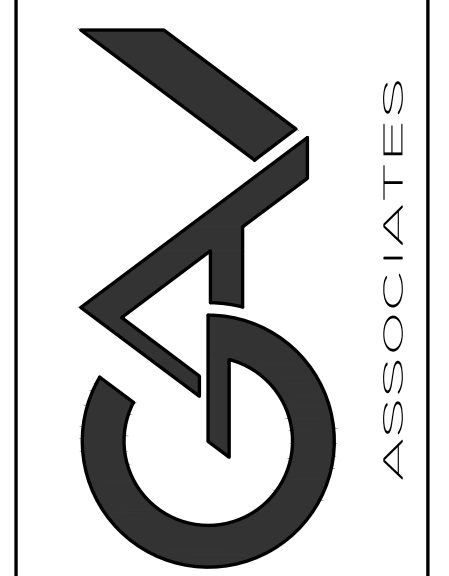
A.50



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| ISSUED | Section 8, Item A. |
| PERMITS | 10/22/2021 |
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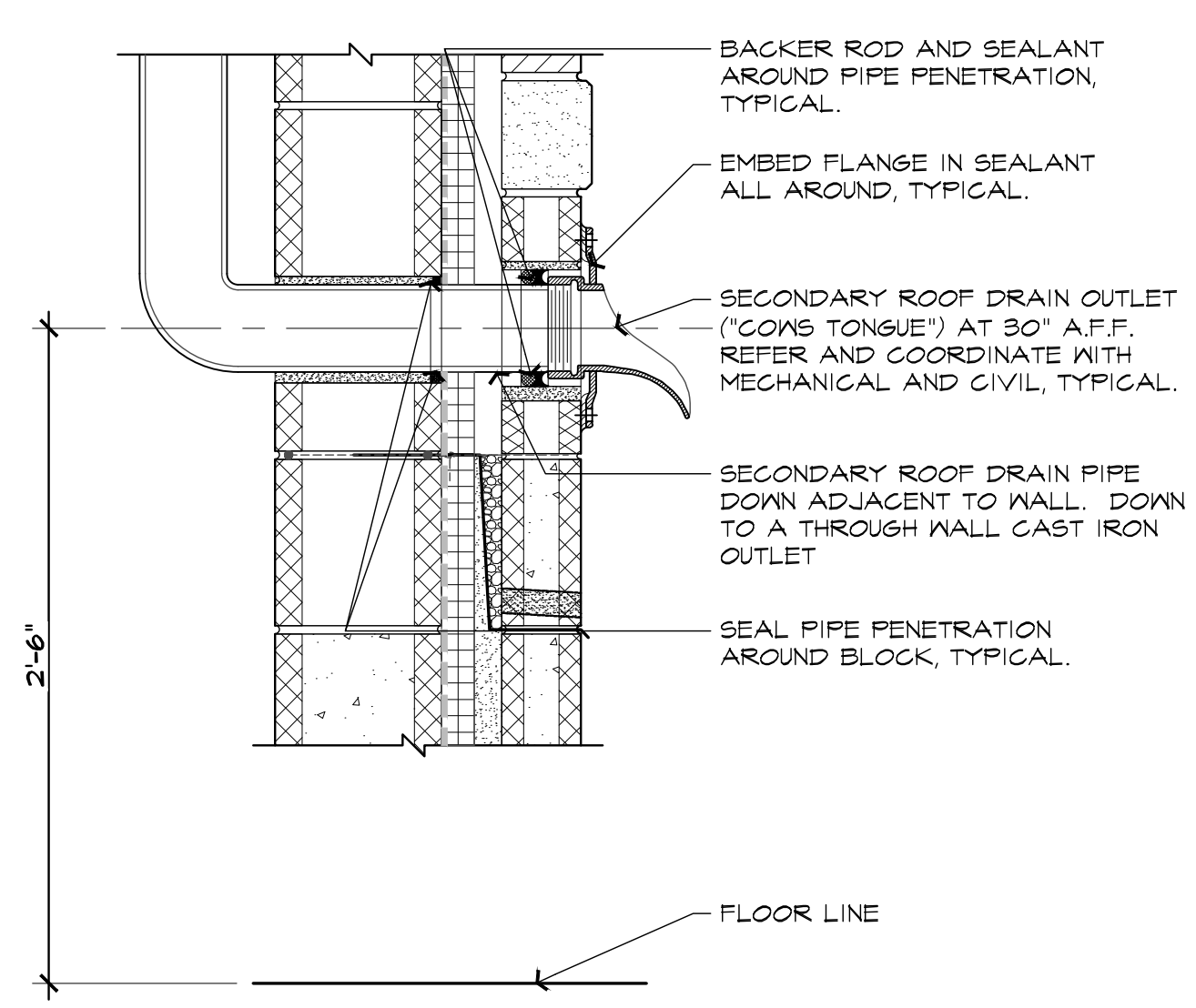
G.A.V. ASSOCIATES, INC.
 24051 ORCHARD LAKE RD., STE. 100A
 FARMINGTON, MICHIGAN 48336
 PH: (248) 985-9191
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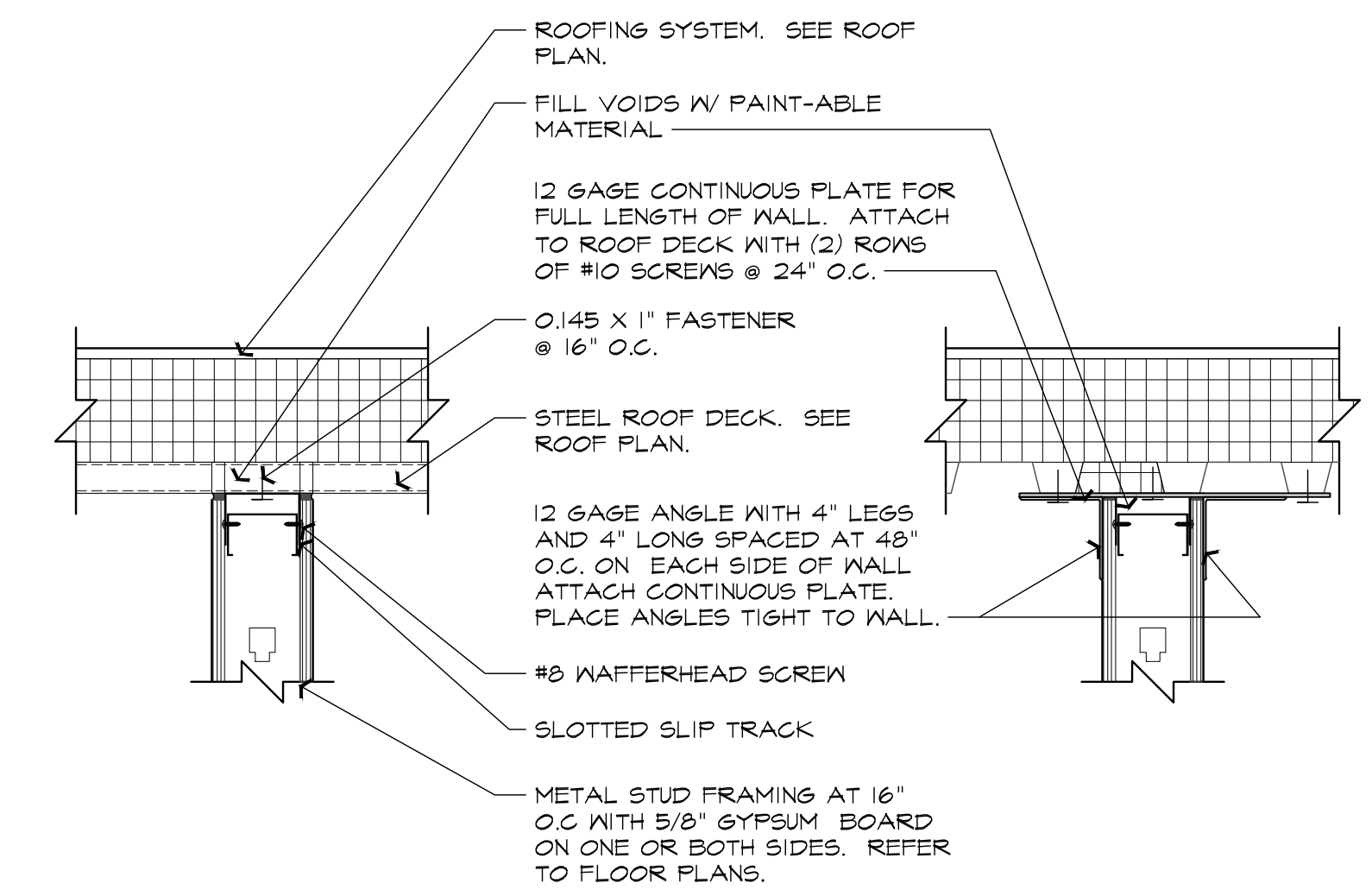
4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

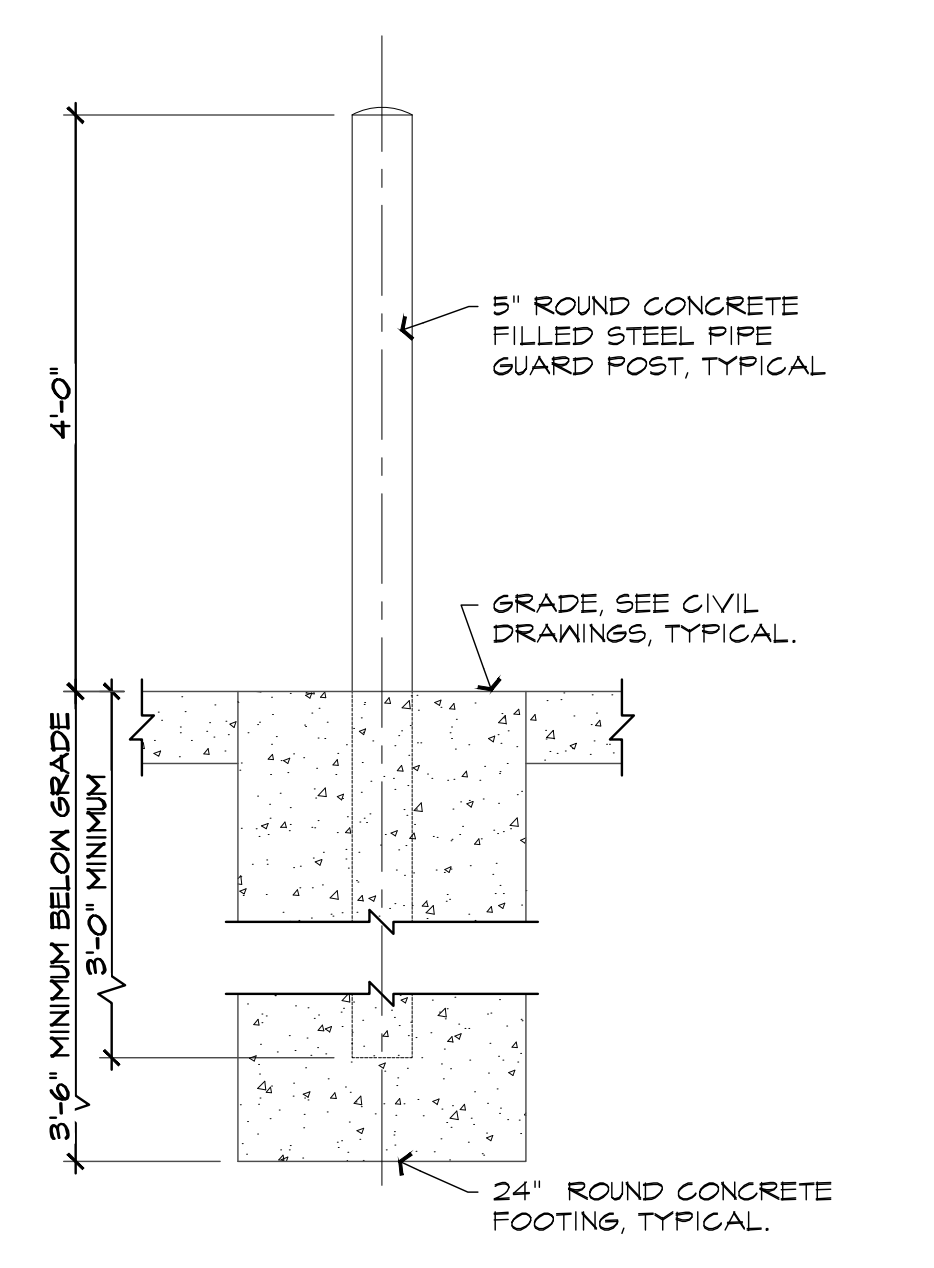
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| DRAWN: | DESIGNED: | CHECKED: |
| | SA | SA |
| SCALE : | | |
| FILE NAME : 21096_A502 | | |
| JOB # : 21096 | | |
| SHEET TITLE DETAILS | | |
| SHEET # A.502 | | |



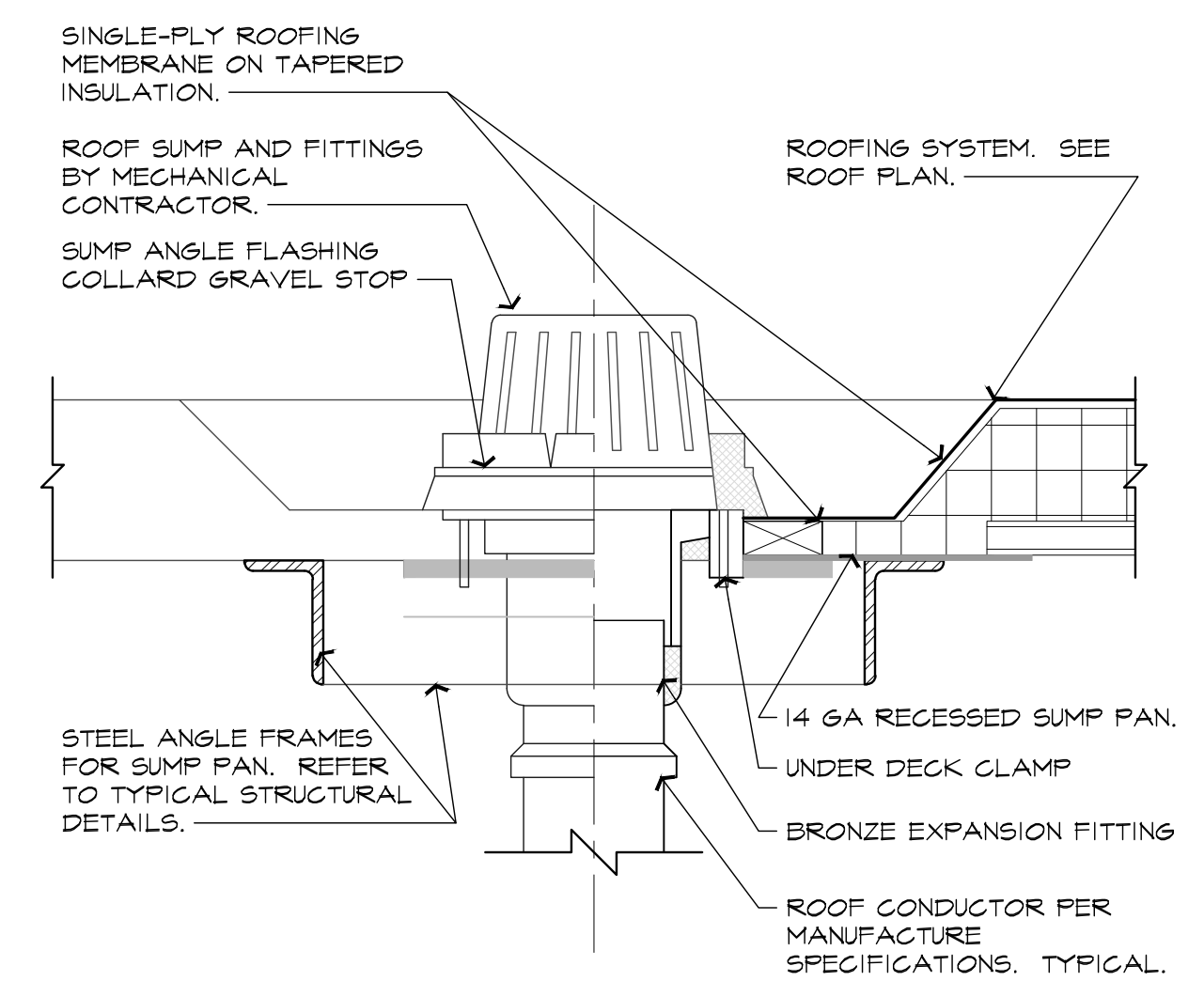
5 SECTION
 A.405 SCALE: 1 1/2" = 1'-0"



4 TYPICAL DEFLECTION TRACK DETAIL
 A.501 NOT TO SCALE

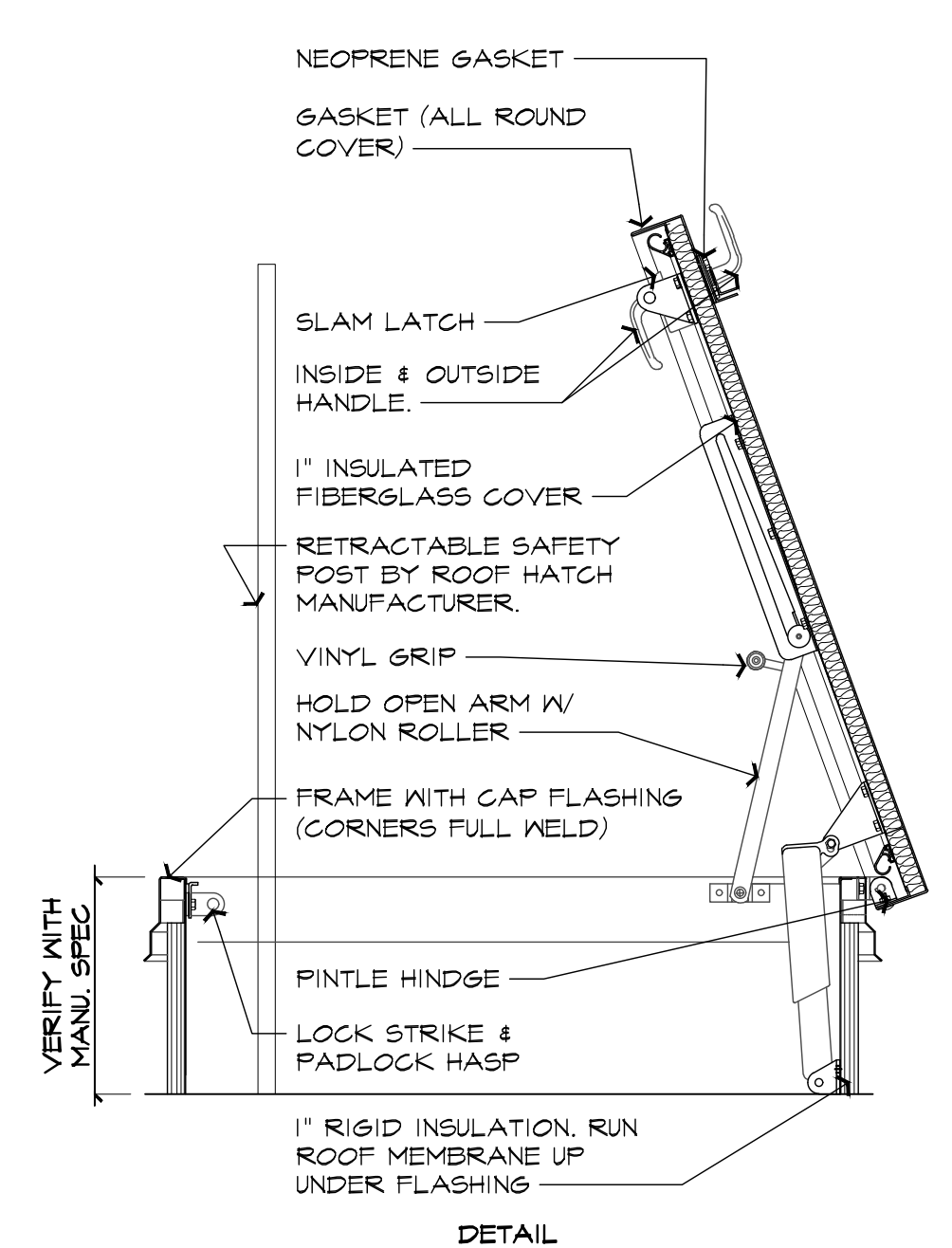


3 TYPICAL BOLLARD DETAIL
 A.501 NOT TO SCALE

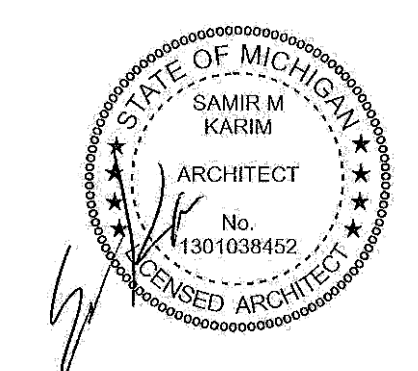
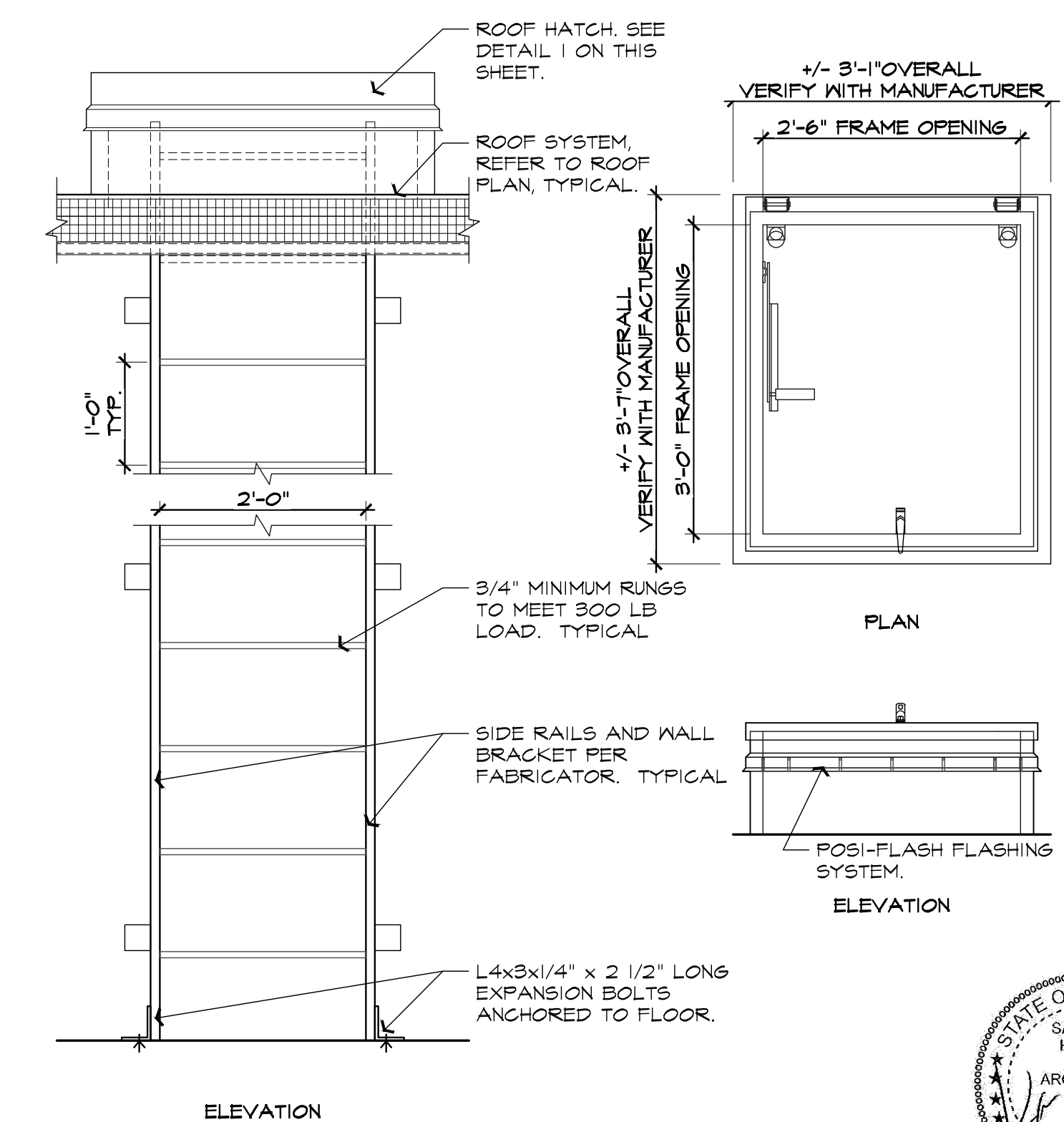


2 TYPICAL PRIMARY AND SECONDARY ROOF DRAIN DETAIL
 A.501 NOT TO SCALE

- G.C. / C.M. TO COORDINATE WITH MECHANICAL ALL REQUIREMENTS TO ENSURE PROPER WATERTIGHT INSTALLATION.
- REFER TO ROOF PLAN AND MECHANICAL FOR PRODUCT TYPE AND.

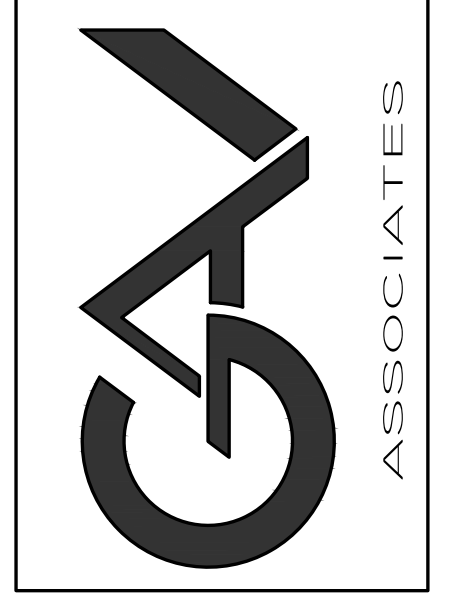


1 ROOF HATCH DETAIL
 A.102 SCALE: 3/4" = 1'-0"



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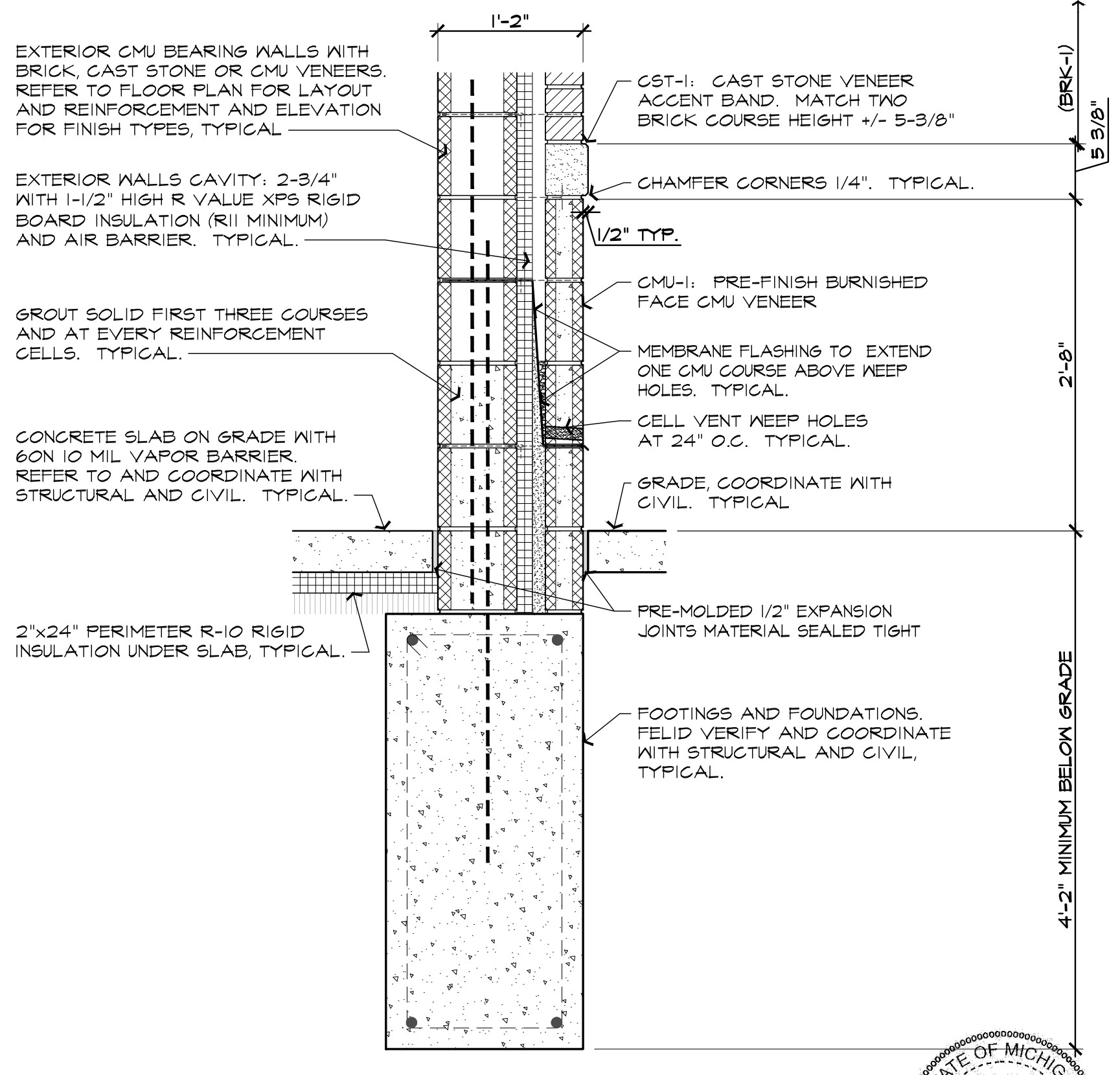
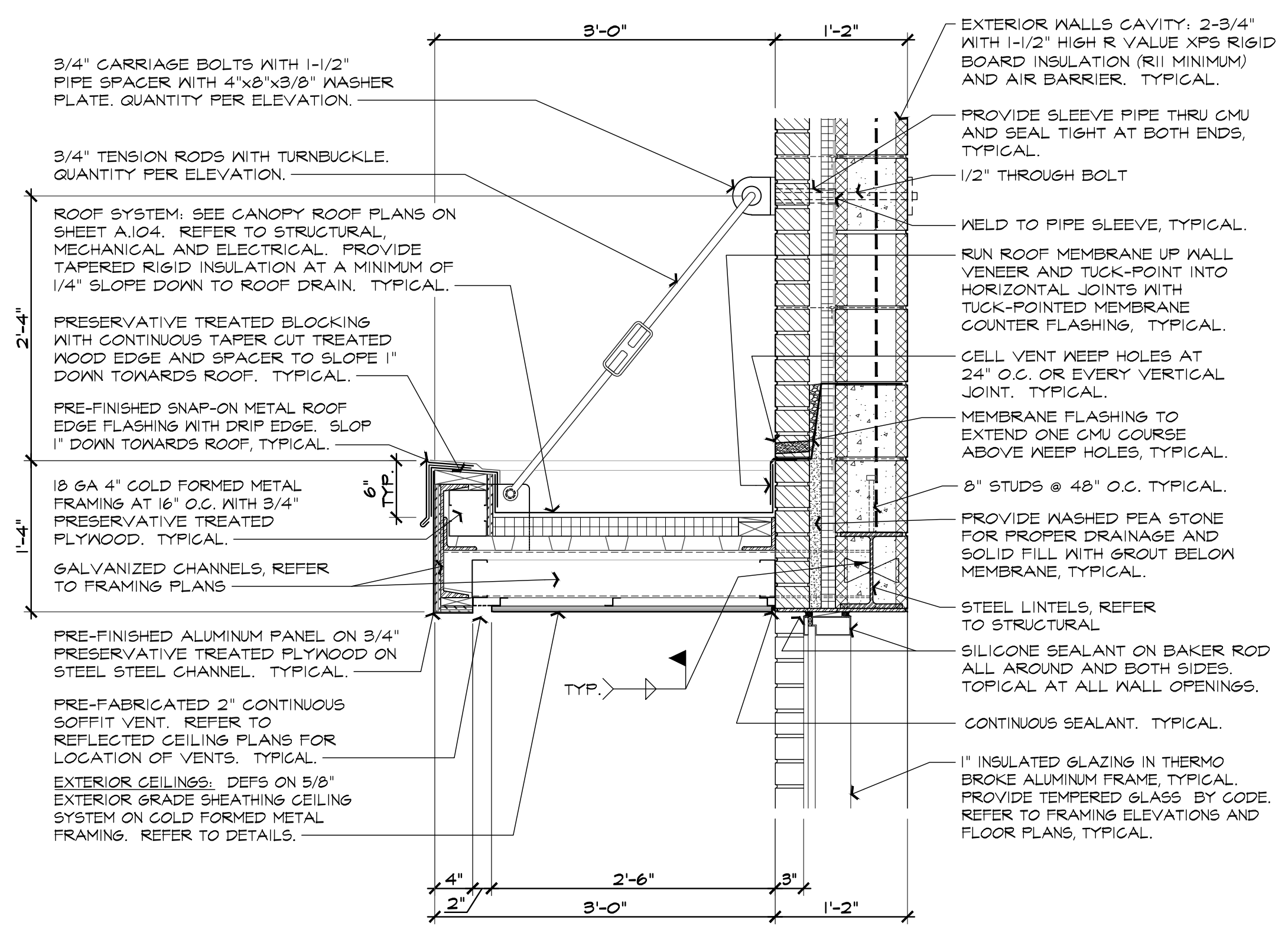
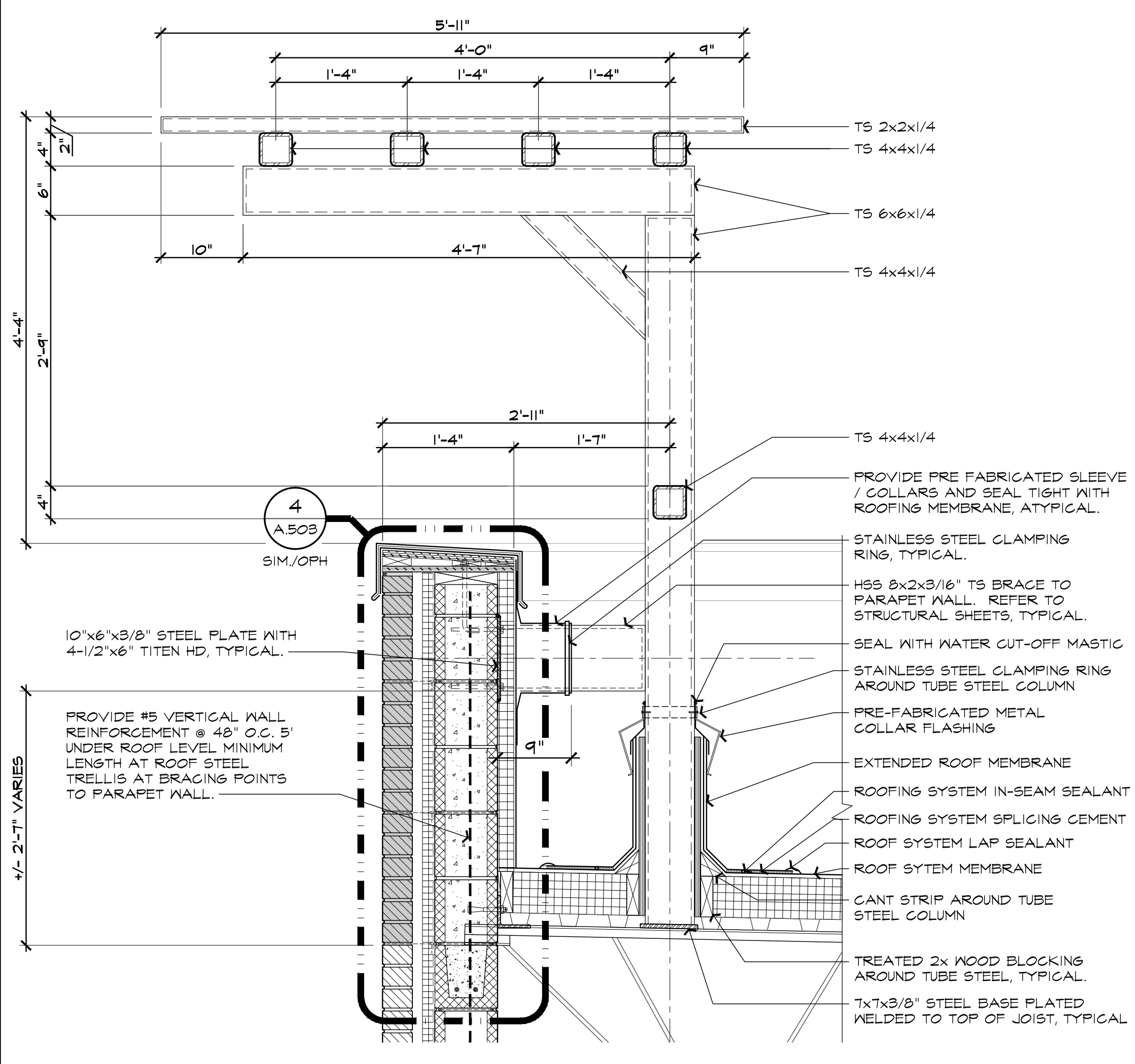
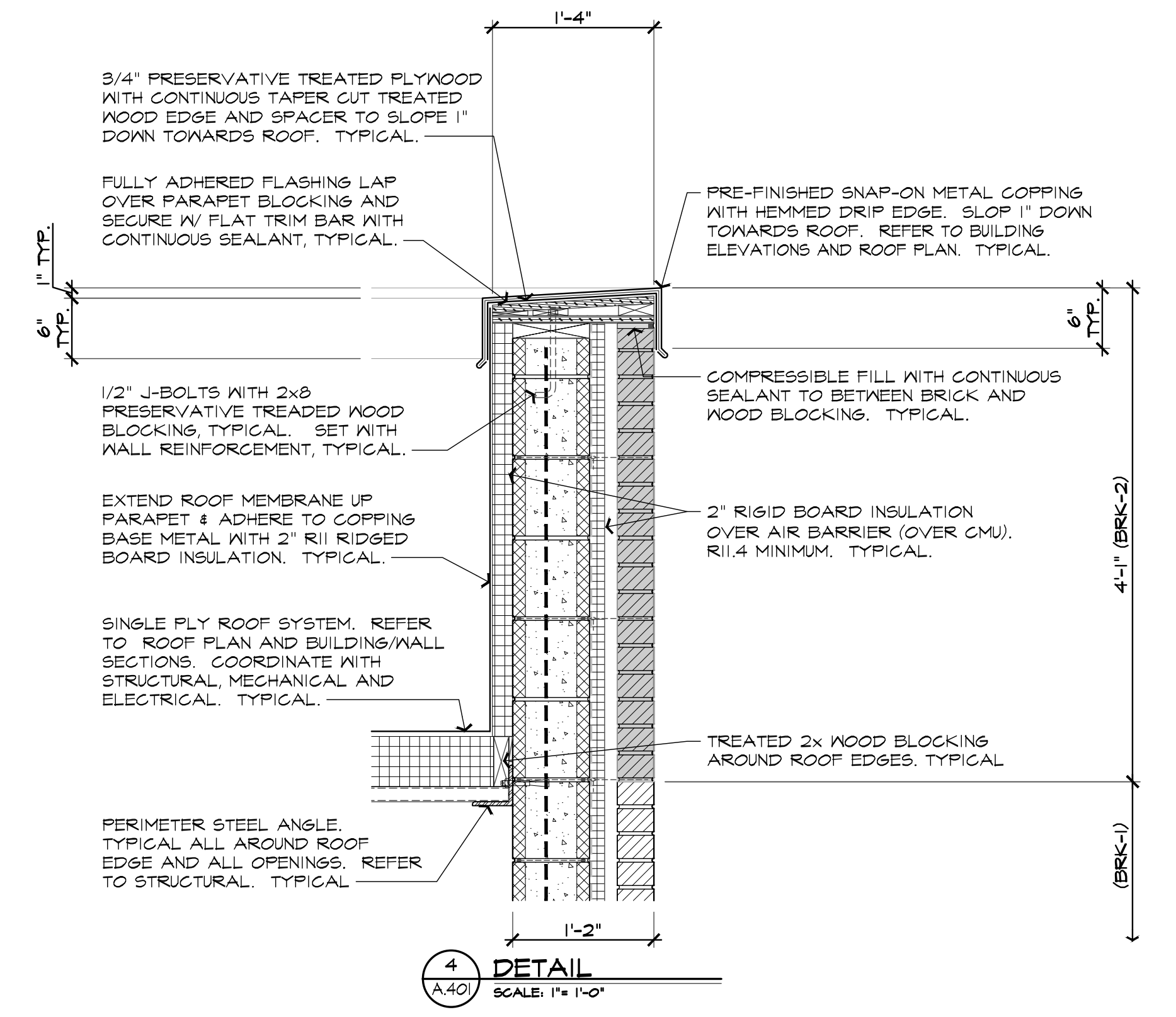
ARCHITECTURAL DESIGN
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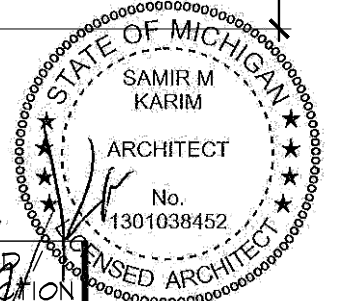
4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

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| SCALE : | | |
| FILE NAME : 21096_A503 | | |
| JOB # : 21096 | | |
| SHEET TITLE DETAILS | | |
| SHEET # A.503 | | |



WHERE ITEMS ARE NOTED AND OR DIMENSIONED ON ONE SECTION / DETAIL ARE APPLICABLE TO OTHER SECTIONS / DETAILS ON THIS SHEET.



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| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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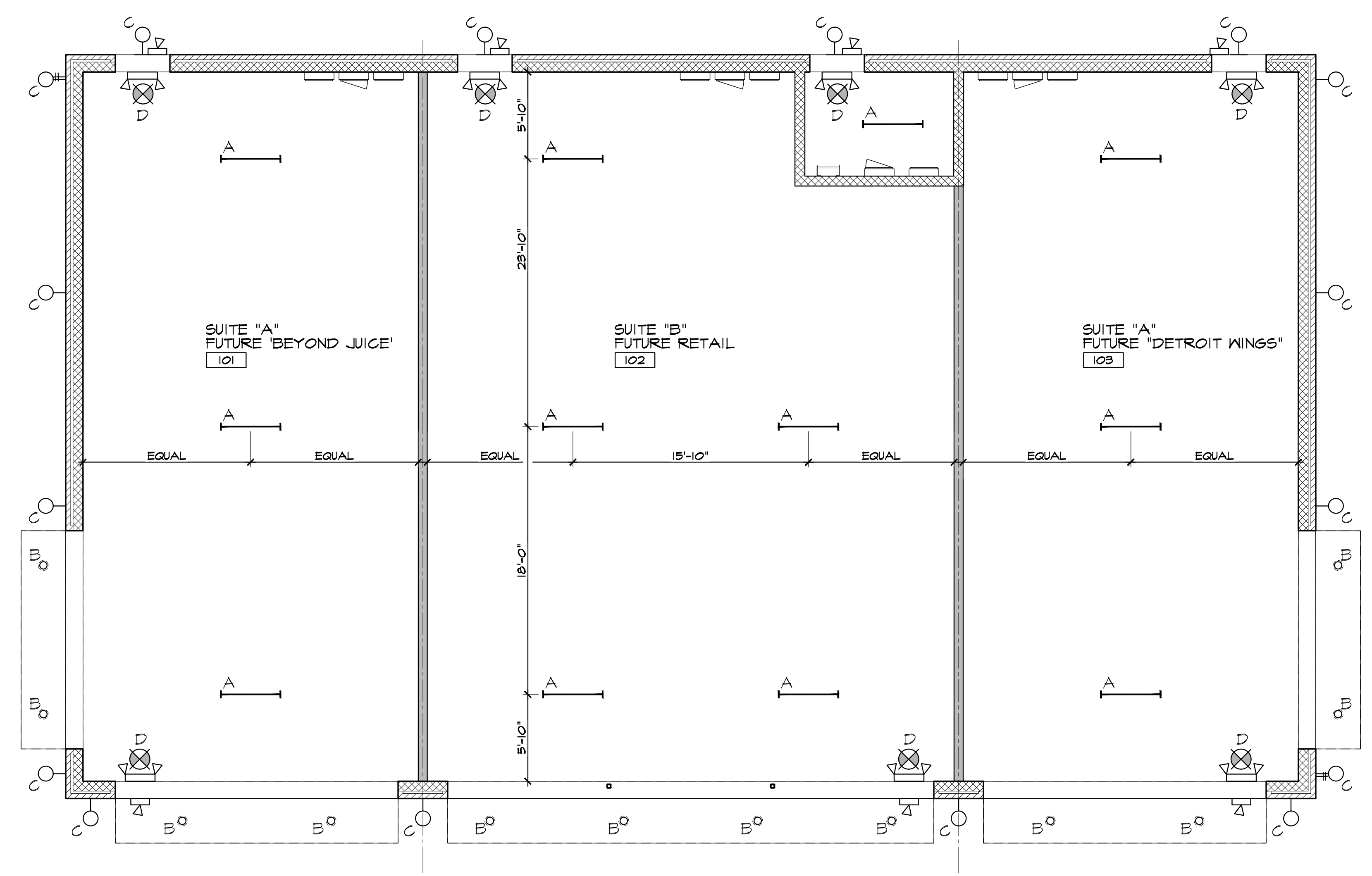
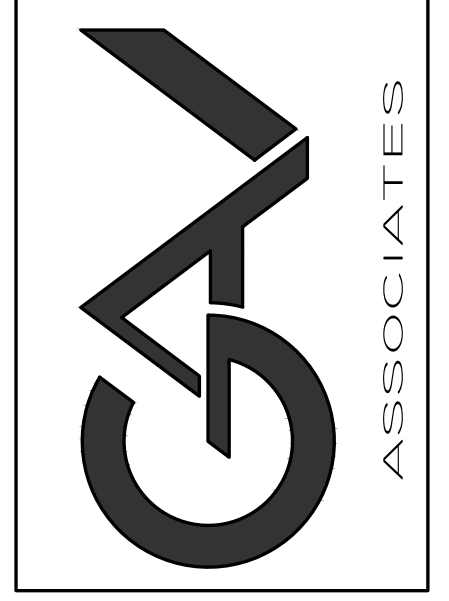
REFLECTED CEILING PLAN LEGEND:

- A — 4' LONG CEILING SUSPENDED LED LIGHT FIXTURE
MODEL: LAMAR LIGHTING DLLR SERIES
 - B ○ ROUND CEILING RECESSED EXTERIOR LED LIGHT FIXTURE.
 - C ○ EXTERIOR WALL MOUNTED DECORATIVE LIGHT FIXTURE MODEL:
674-31-WP SERIES BY COOPER LIGHTING. SIZE 31" IN CG
COLOR (CUSTOM COLOR) WITH LED LAMPS.
 - D □ POLYCARBONATE EXIT UNIT COMBO LIGHTING FIXTURE W/INCAD
BATTERY FOR 90 MINUTES MAINTENANCE FREE IV
SELF-DIAGNOSTIC.
- NOTE: COORDINATE ALL LIGHT FIXTURE SELECTIONS AND COLORS WITH
OWNER FOR APPROVALS. TYPICAL FOR ALL FIXTURES.

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WHITE LAKE, MICHIGAN

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| DRAWN: | DESIGNED: | CHECKED: |
| SSA | GA | GA |

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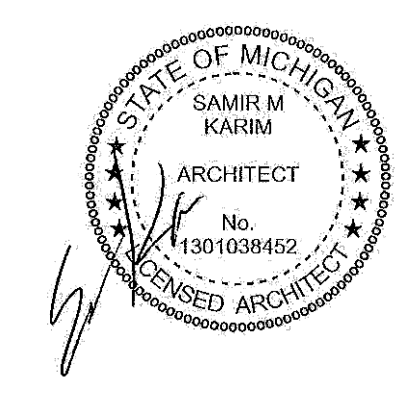
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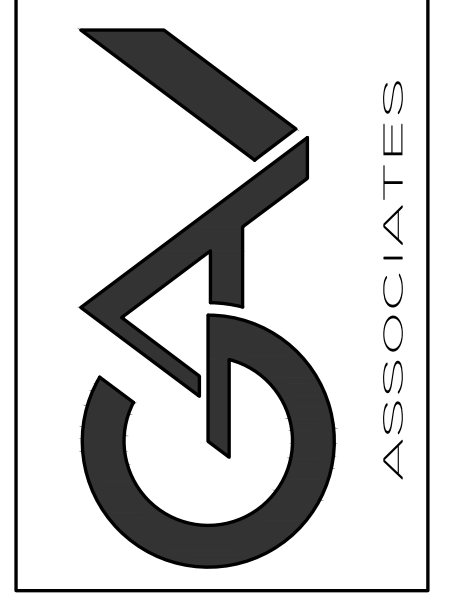
JOB # : 21096

SHEET TITLE
REFLECTED
CEILING PLAN

SHEET #
A.60

REFLECTED CEILING PLAN
SCALE: 3/16" = 1'-0"





4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

DRAWN: SSA DESIGNED: GA CHECKED: GA
 SCALE: FILE NAME: 21096_S101
 JOB #: 21096
 SHEET TITLE: FOUNDATION PLAN
 SHEET #: S.101

FOUNDATIONS NOTES:

1. REFER TO SPECIAL INSPECTIONS NOTES ON SHEET T.002.
2. OVERLAP BAR REINFORCEMENT A MINIMUM OF 3'-0" AT ALL FOOTING CORNERS, UNO.
3. ALL WALL FOOTINGS ARE BASED ON 2,000 LB/FT²
4. COORDINATE WITH UNDERGROUND PLUMBING AND CIVIL.
5. BOTTOM OF EXTERIOR FOOTINGS / FOUNDATIONS SHALL BE A MINIMUM OF 42" BELOW GRADE.
6. COORDINATE ROOF CONDUCTORS WITH PLUMBING, ROOFING AND CONCRETE FOUNDATION CONTRACTORS.
7. PROVIDE MASS POUR FROST FOOTINGS AT ALL ENTRY DOORS.
8. REFER TO GROUND FRAMING PLAN FOR COLUMNS AND BASE PLATES LOCATIONS.

WALL FOOTINGS SCHEDULE:

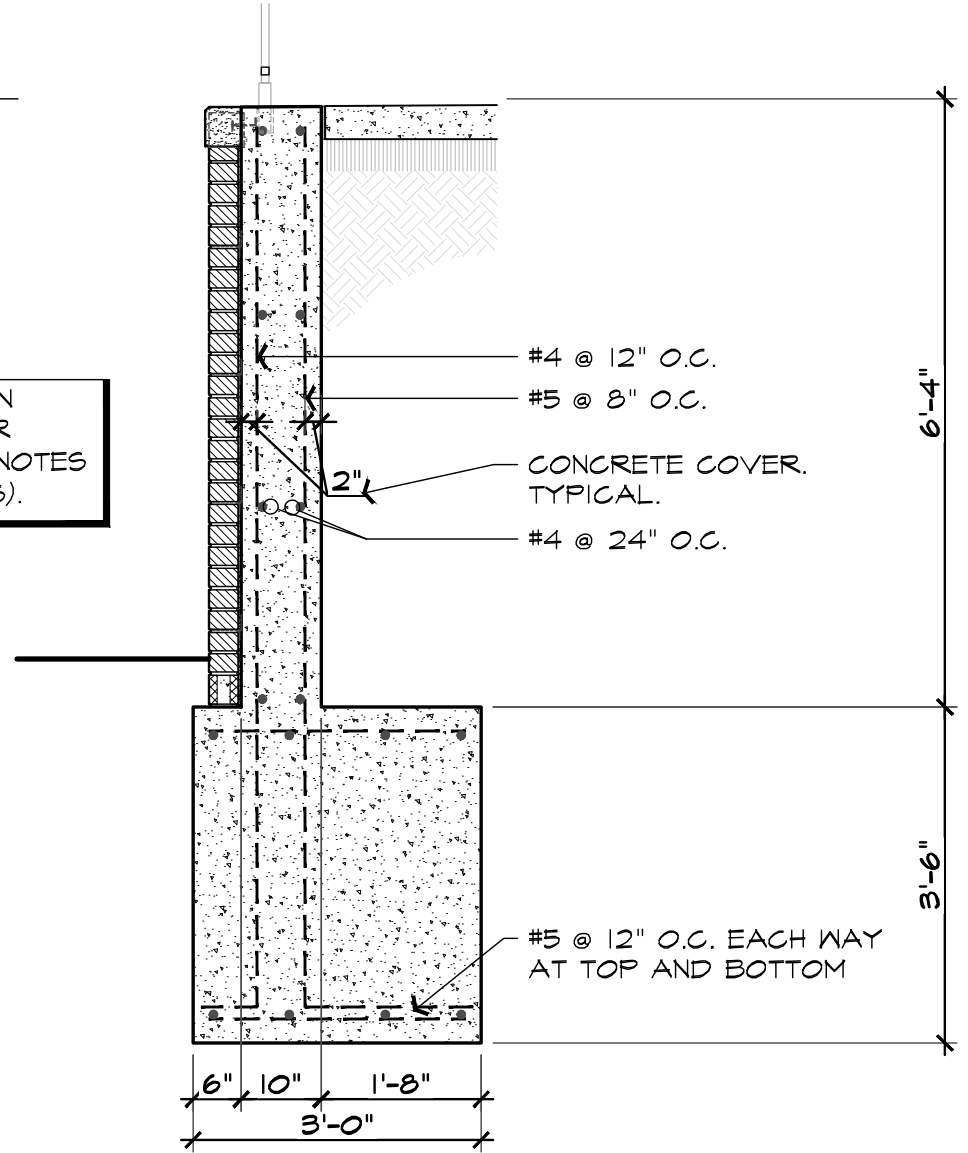
| MARK | SIZE (WxD) | REINFORCEMENT U.NO. |
|------|-------------|----------------------------------|
| WF-1 | 1'-6"X3'-6" | 2 #5 CONTINUOUS @ TOP AND BOTTOM |
| WF-2 | SEE DETAIL | SEE DETAIL |

PROVIDE #5 BARS @ 48" O.C. DOWELS FOR ALL WALL FOOTINGS. BARS SHALL BE 2'-0" INTO FOOTING AND 3'-0" ABOVE.

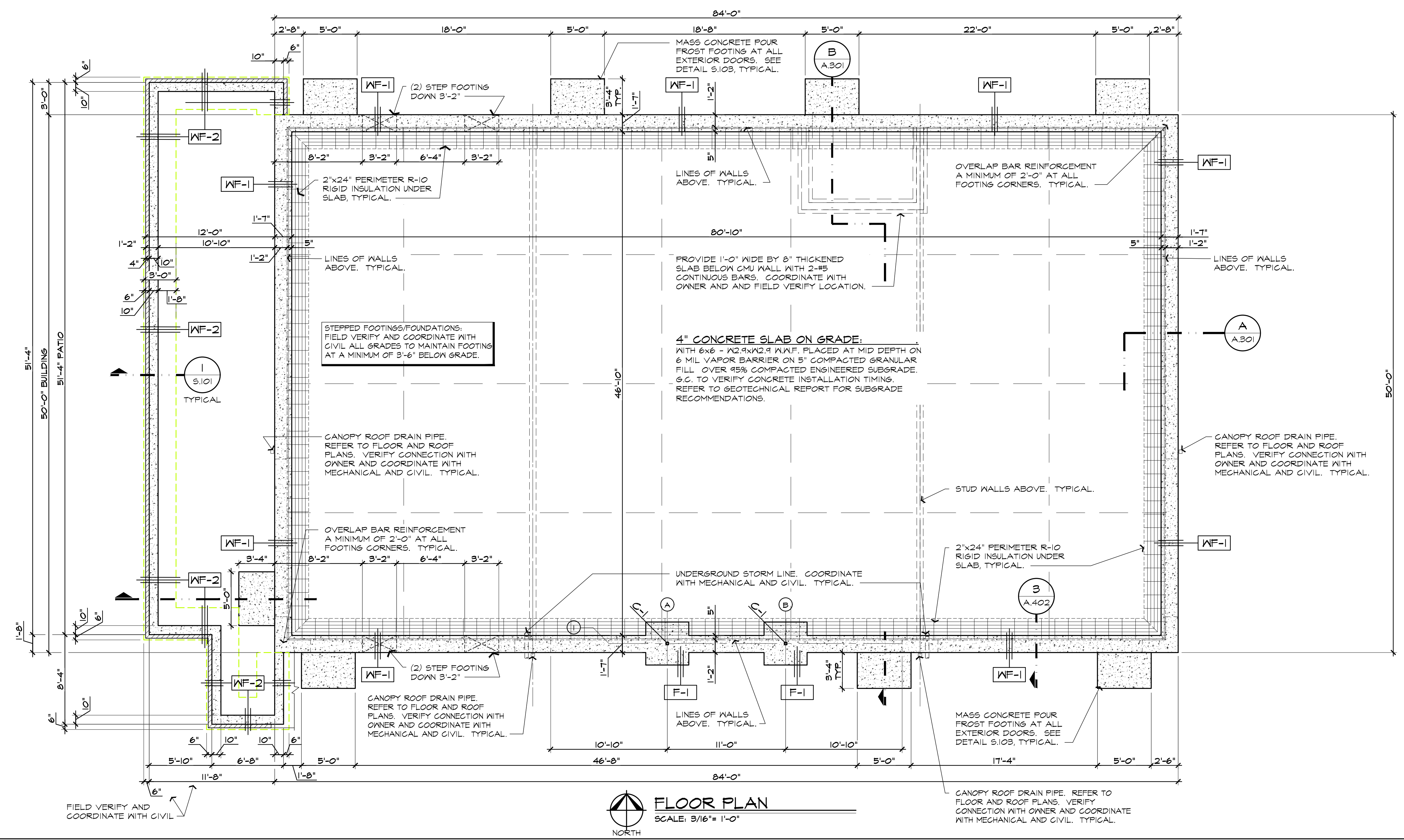
COLUMN FOOTINGS SCHEDULE:

| MARK | SIZE (WxD) | DEPTH | REINFORCEMENT U.NO. |
|------|-------------|-------|---|
| F-1 | 4'-0"X4'-0" | 3'-6" | #5 @ 6" O.C. EACH WAY AT BOTTOM AND #4 @ 12" O.C. EACH WAY AT TOP |

SEE DETAIL 4 ON A.301 SHEET FOR WALL DETAILS (NOTES AND DIMENSIONS).



1
 S.101
 SCALE: 1/2" = 1'-0"



| MARK | SIZE | BASE PLATE | ANCHOR BOLTS |
|------|-------------|------------|--------------|
| C-1 | HSS 3x3x3/8 | 9x9x5/8 | (4) 3/4x16" |

| MARK | SIZE | STEEL PLATE | BASE PLATE |
|------|--------|--------------|------------|
| L-1 | W8x24 | 3/8"x13-1/2" | BP-2 |
| L-2 | W16x50 | 3/8"x13-1/2" | BP-2 |
| L-3 | W8x28 | 3/8"x13-1/2" | BP-1 |
| L-4 | W8x15 | 3/8"x13-1/2" | BP-1 |

1. ALL STEEL LINTELS TO HAVE 5/8"x8" STEEL STUDS AT 48" O.C. WELDED TO TOP FLANGE.
2. REFER FLOOR PLANS, ELEVATIONS AND WALL SECTIONS.
3. COORDINATE BASE PLATE THICKNESS TO MAINTAIN MASONRY COURSING JOINTS.

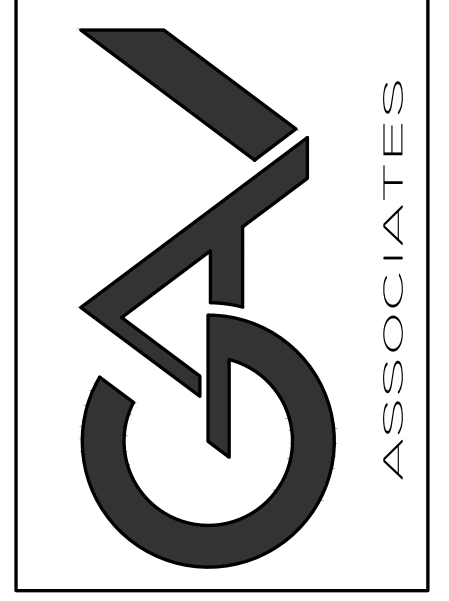
| MARK | SIZE | ANCHORS |
|-------------------|--------------------|--------------------------|
| (JOISTS) BP-1 | 6"x8"x3/8" | 2-1/2"φ x 8" STEEL STUDS |
| (LINTELS) BP-2 | 1 1/2"x1 1/2"x1/2" | 2-1/2"φ x 8" STEEL STUDS |

REFER TO ARCHITECTURAL SECTION DETAILS FOR MISCELLANEOUS GALVANIZED STEEL ANGLES AND BENT PLATES. TYPICAL.

- NOTES:**
1. REFER TO WALL LEGEND ON ARCHITECTURAL PLANS AND SECTIONS FOR MASONRY AND CONCRETE STEEL REINFORCEMENT.
 2. ALL CMU WALLS TO HAVE #5 VERTICAL @ 48" O.C. DONNELS TO BE 2'-0" INTO FOOTING AND 3'-0" ABOVE. COORDINATE WITH FLOOR PLAN LEGEND AND NOTIFY ARCHITECT / ENGINEER OF ANY DISCREPANCIES.
 3. REFER TO ARCHITECTURAL SECTIONS MASONRY WALLS DIMENSIONS AND COORDINATION.
 4. VERIFY AND COORDINATE STEEL ANGLE FRAMING FOR MECHANICAL PENETRATION OPENING SIZE WITH MECHANICAL CONTRACTOR. PROVIDE 2 HOUR FIRE RATED MATERIAL AROUND PENETRATION.
 5. COORDINATE CONCRETE FLOOR AND STEEL FRAMING WITH MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTORS FOR CLEARANCES.

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4 CORNERS

NEW RETAIL CENTER SHELL FOR:
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 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

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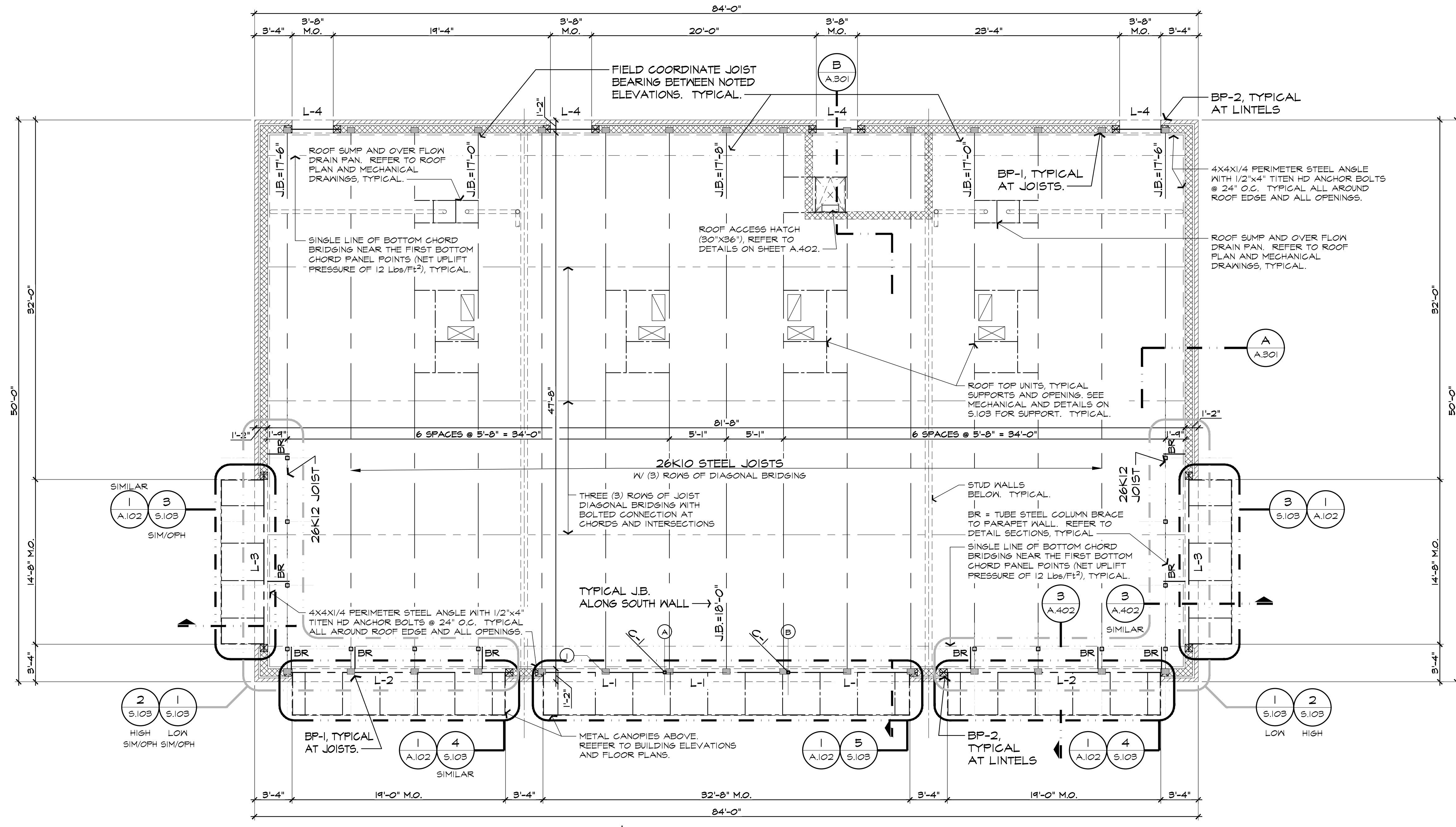
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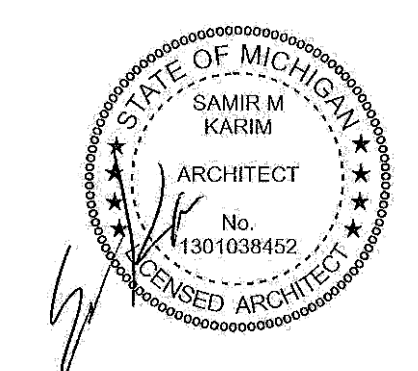
JOB # : 21096

SHEET TITLE
 ROOF
 FRAMING
 PLAN
 SHEET #

S.102



FLOOR PLAN
 SCALE: 3/16" = 1'-0"



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| ISSUED | Section 8, Item A. |
| PERMITS | 10/22/2021 |
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GENERAL NOTES:

REFER TO SHEET S.102 FOR SCHEDULES AND NOTES.

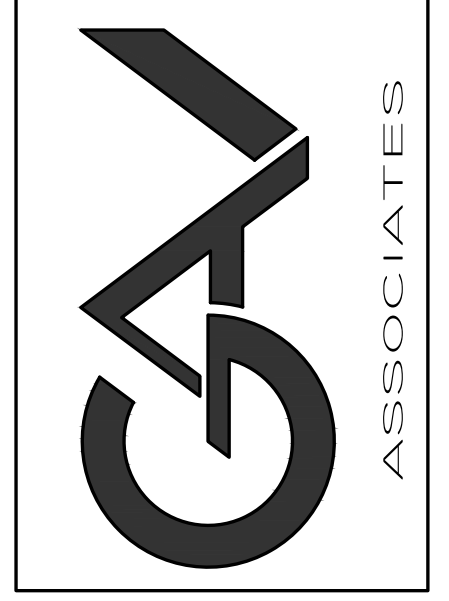
ROOF STEEL TRELLIS FRAMING NOTES:

- ALL EXPOSED STEEL TO RECEIVE SPECIAL PRIMER. SOLVENT BASED TWO PART INORGANIC ETHYL SILICATE ZINC RICH PRIMER.
- SPECIAL PRIMER SHALL BE APPLIED TO ALL ROOF EXPOSED STEEL TRELLIS AND STEEL TOWER. COORDINATE COLOR AND FINISH WITH OWNER AND FINISH PRIME TO ACCEPT PAINT AS REQUESTED BY OWNER.
- SUBMIT A COMPLETE DETAILED SHOP DRAWINGS FOR TRELLIS AND TOWER FOR REVIEW.
- ALL TUBE STEEL MEMBERS TO CAPPED WITH 3/8" WELDED SMOOTH PLATE AT END CAPS.
- WELD CORNERS AND SEAMS CONTINUOUSLY TO COMPLY WITH AISC RECOMMENDATIONS AND THE FOLLOWING:
 - USE MATERIALS AND METHODS THAT MINIMIZE DISTORTION AND DEVELOP STRENGTH AND CORROSION RESISTANCE OF BASE METALS.
 - AT EXPOSED CONNECTIONS, FINISH EXPOSED WELDS AND SURFACES SMOOTH AND BLENDED SO THAT NO ROUGHNESS SHOWS AFTER FINISHING AND CONTOUR OF WELDED SURFACE MATCHES THOSE ADJACENT.
- COORDINATE COLOR / FINISH WITH OWNER.

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4 CORNERS

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| DRAWN: | DESIGNED: | CHECKED: |
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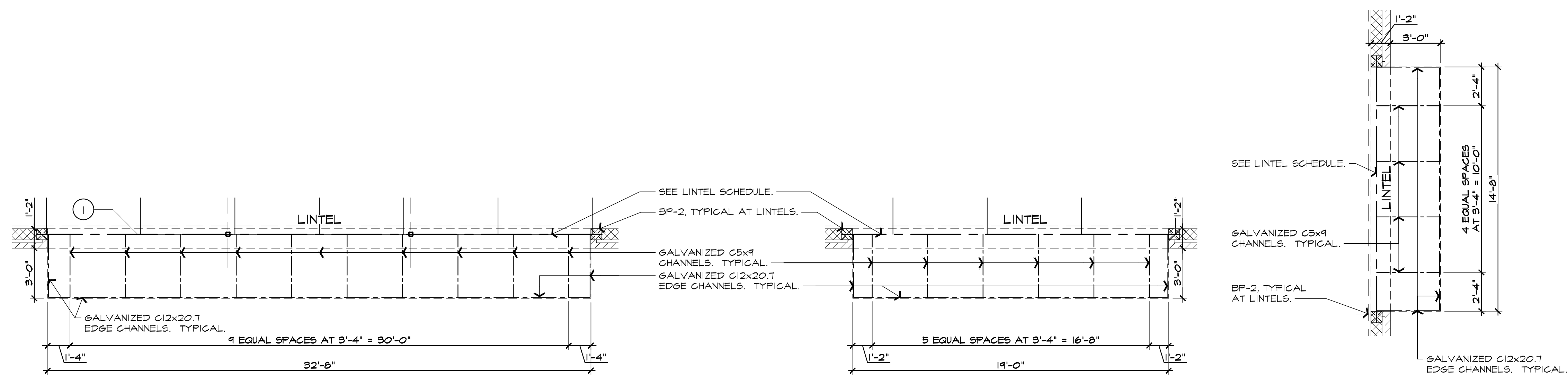
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JOB # : 21096

SHEET TITLE

ENLARGED
FRAMING
PLANS
SHEET #

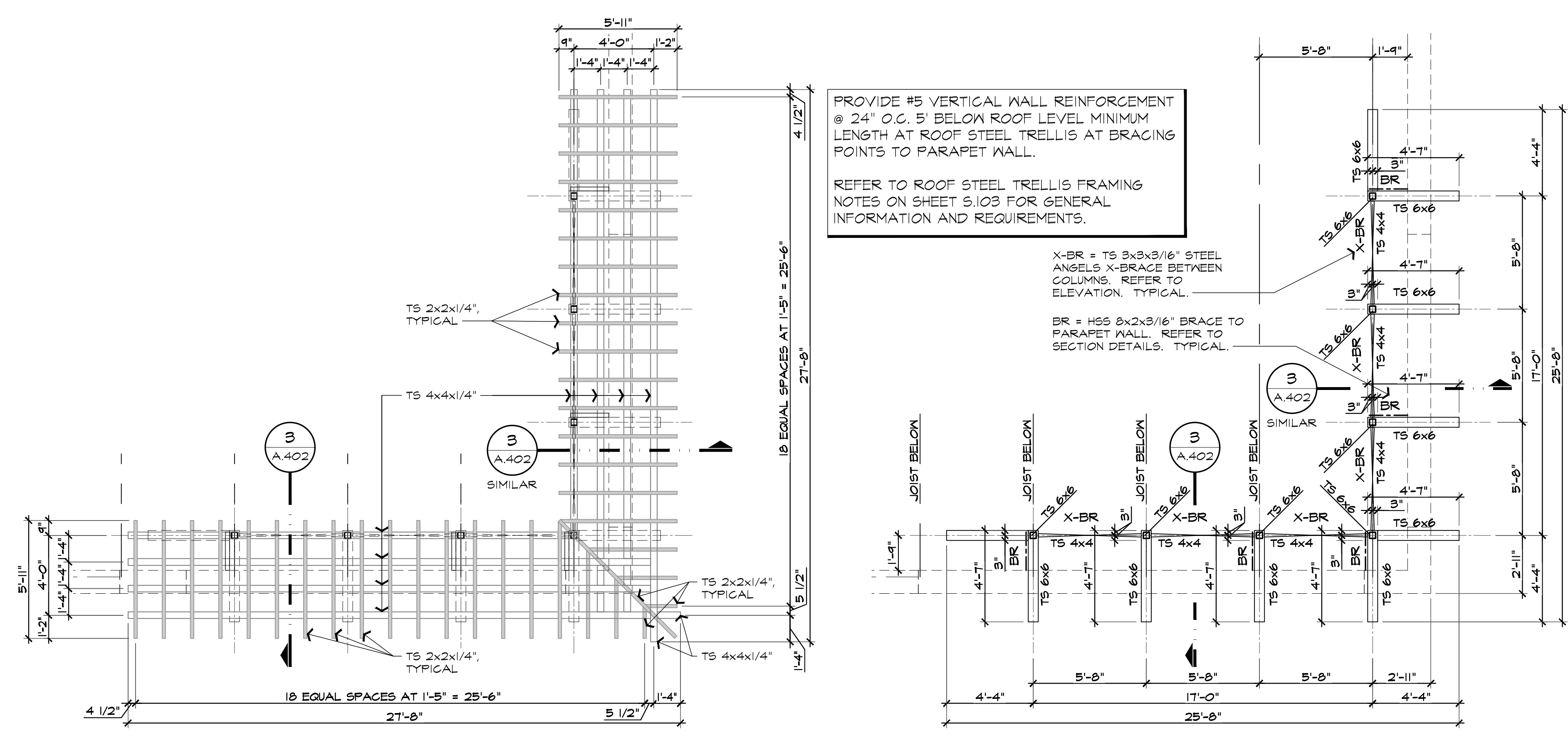
S.103



5 ENLARGED CANOPY FRAMING PLAN
SCALE: 3/8" = 1'-0"

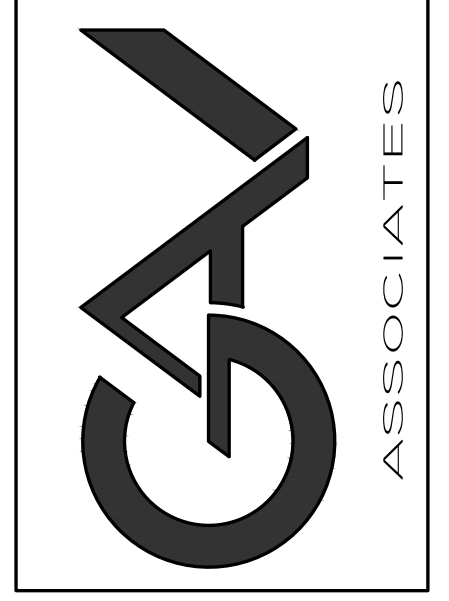
4 ENLARGED CANOPY FRAMING PLAN
SCALE: 3/8" = 1'-0"

3 ENLARGED CANOPY FRAMING PLAN
SCALE: 3/8" = 1'-0"



2 ROOF STEEL TRELLIS FRAMING PLAN - HIGH
SCALE: 3/8" = 1'-0"

1 ROOF STEEL TRELLIS FRAMING PLAN - LOW
SCALE: 3/8" = 1'-0"

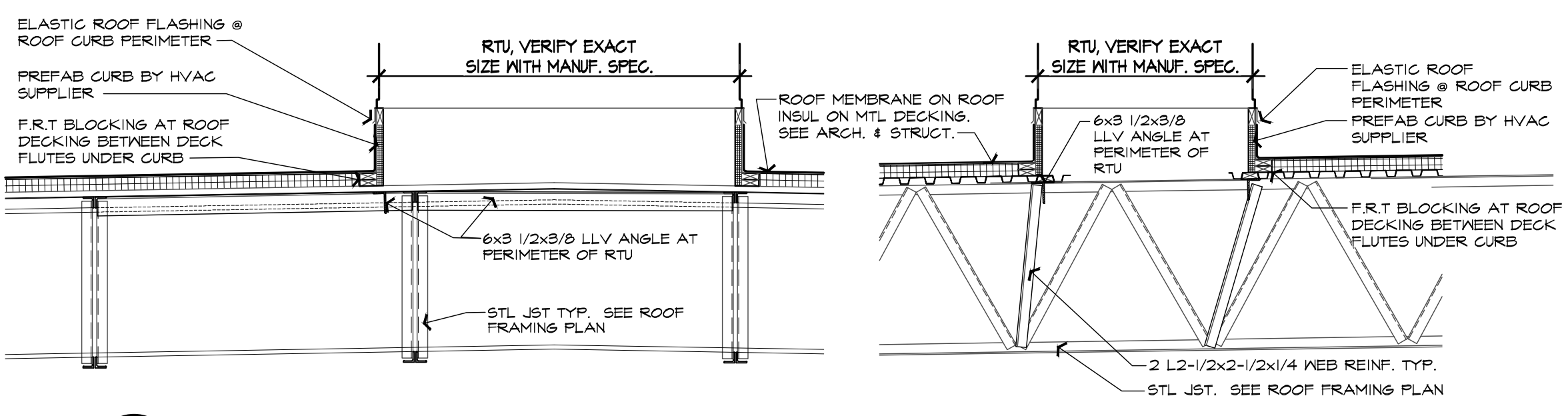


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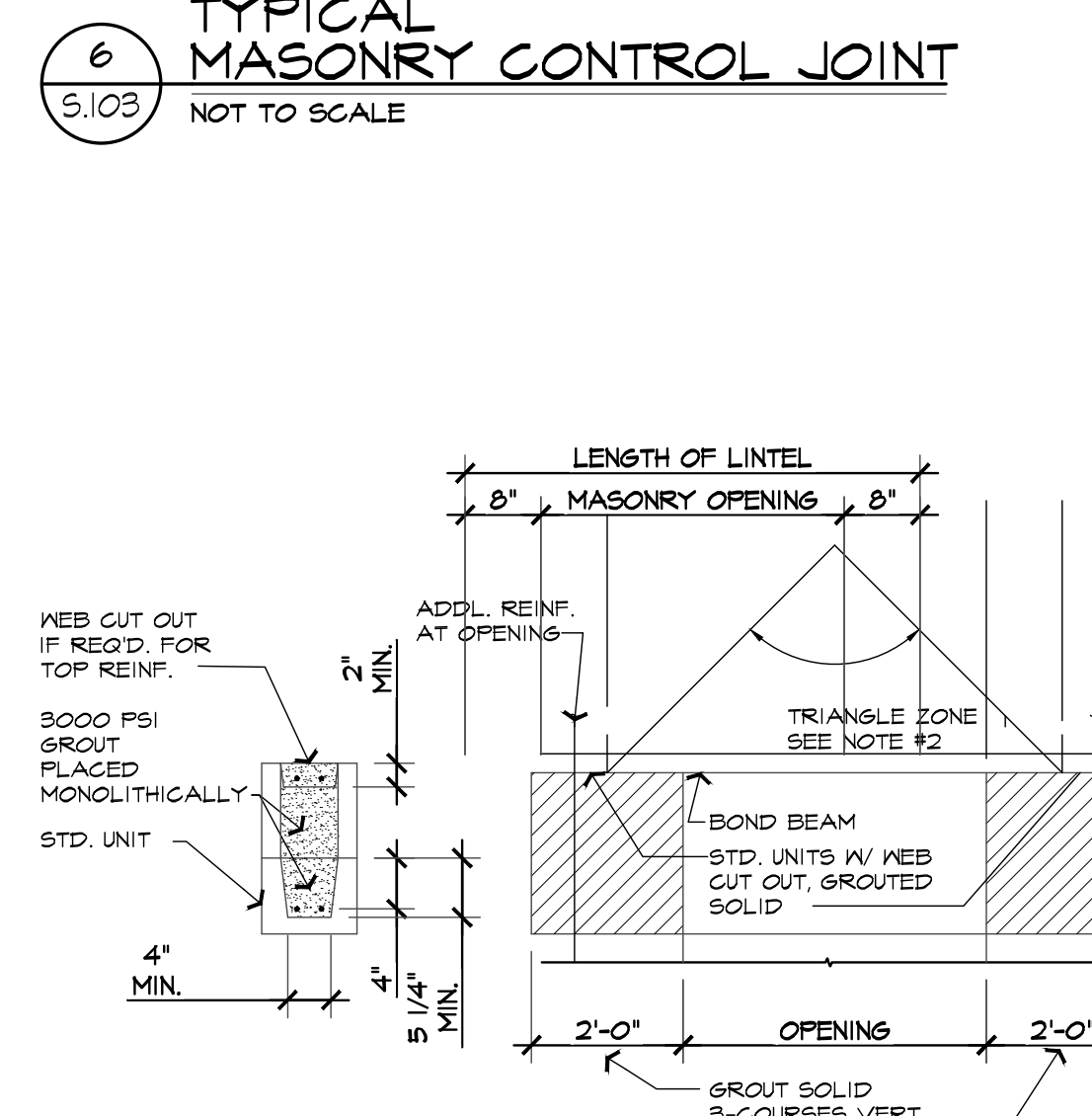
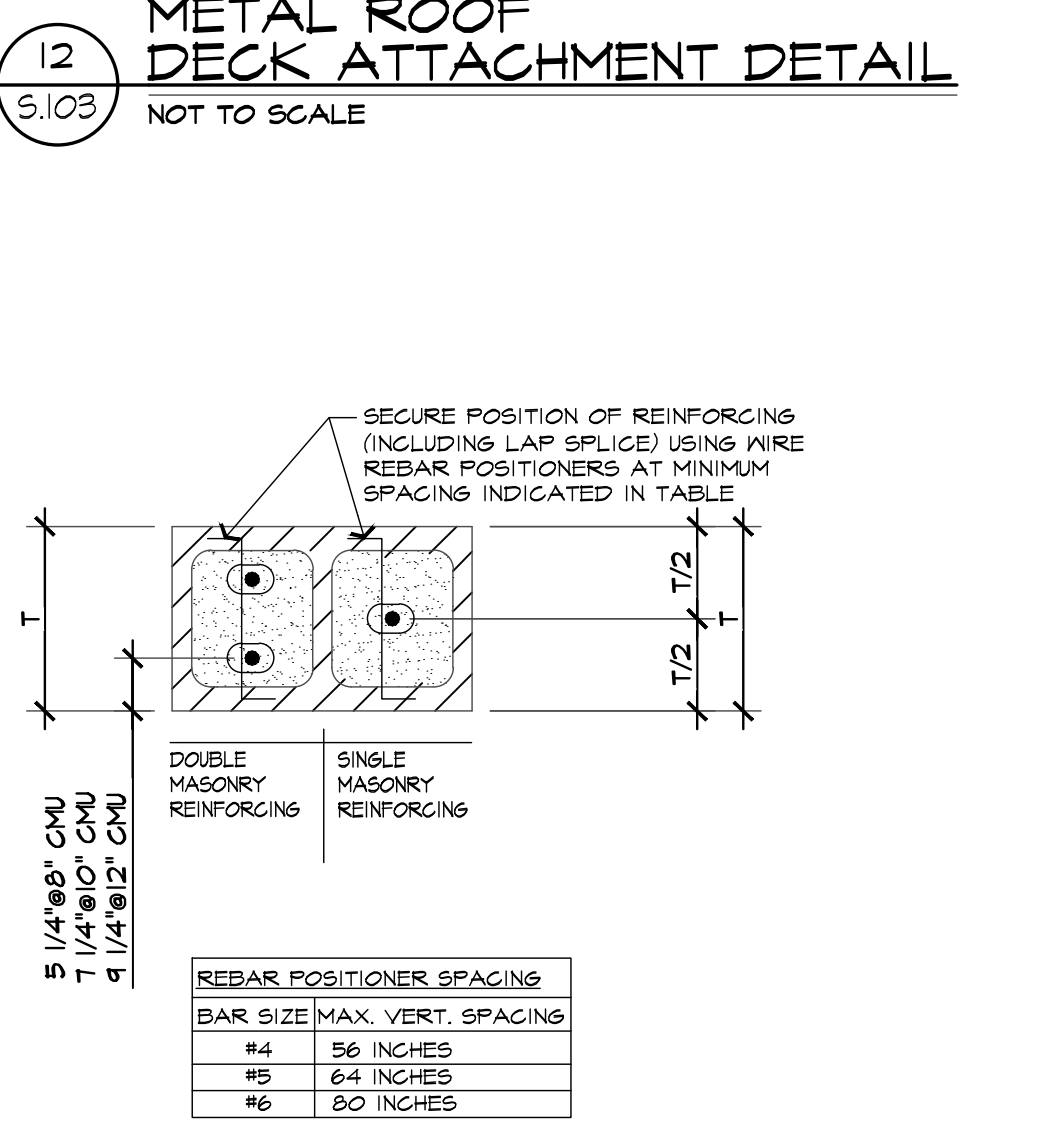
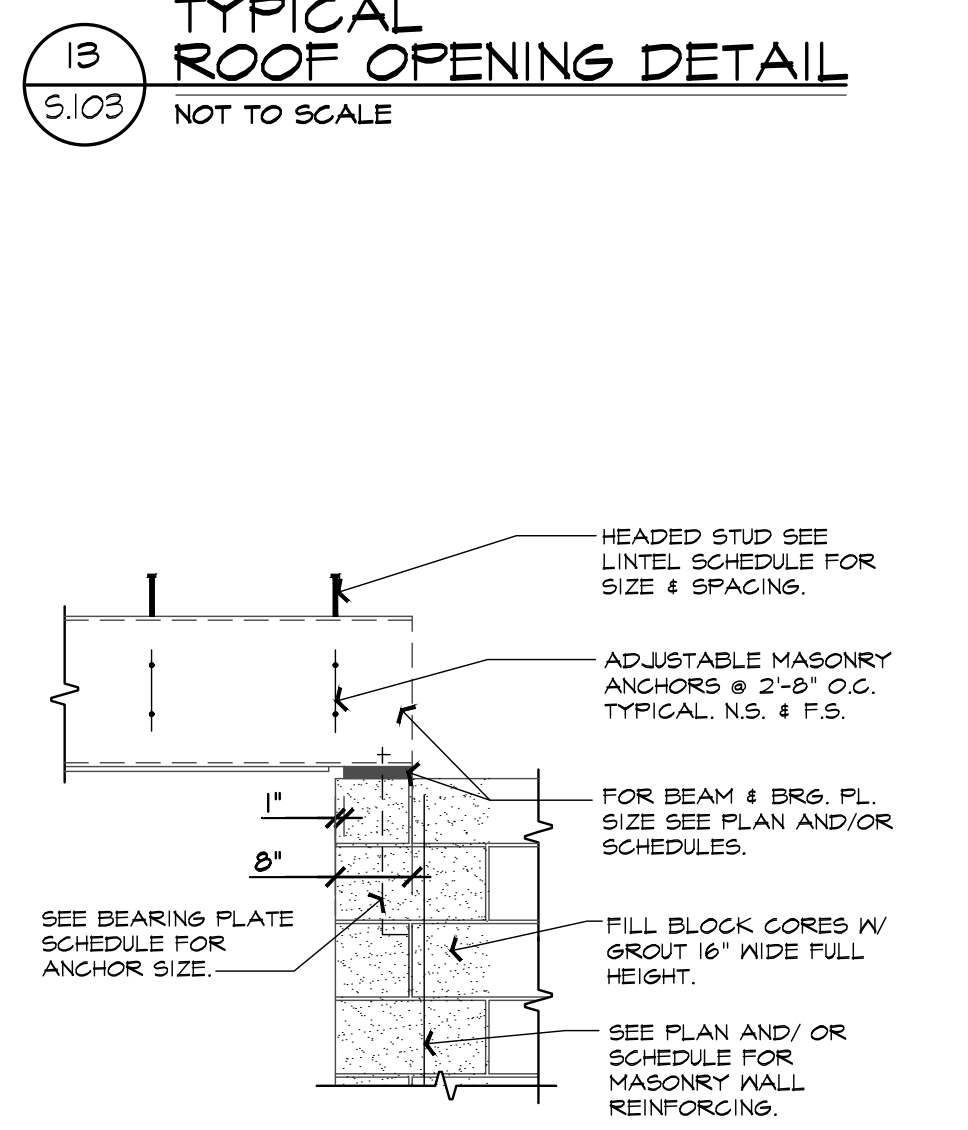
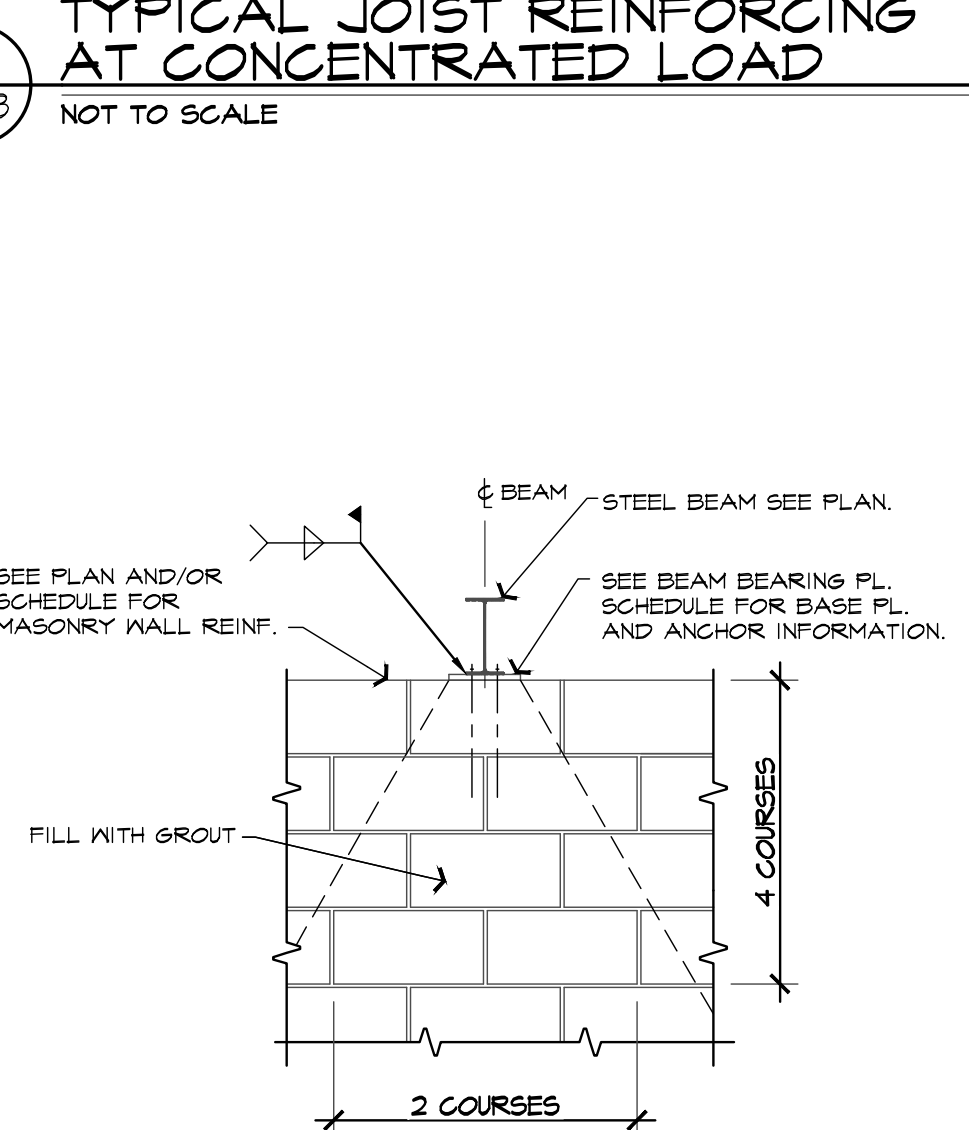
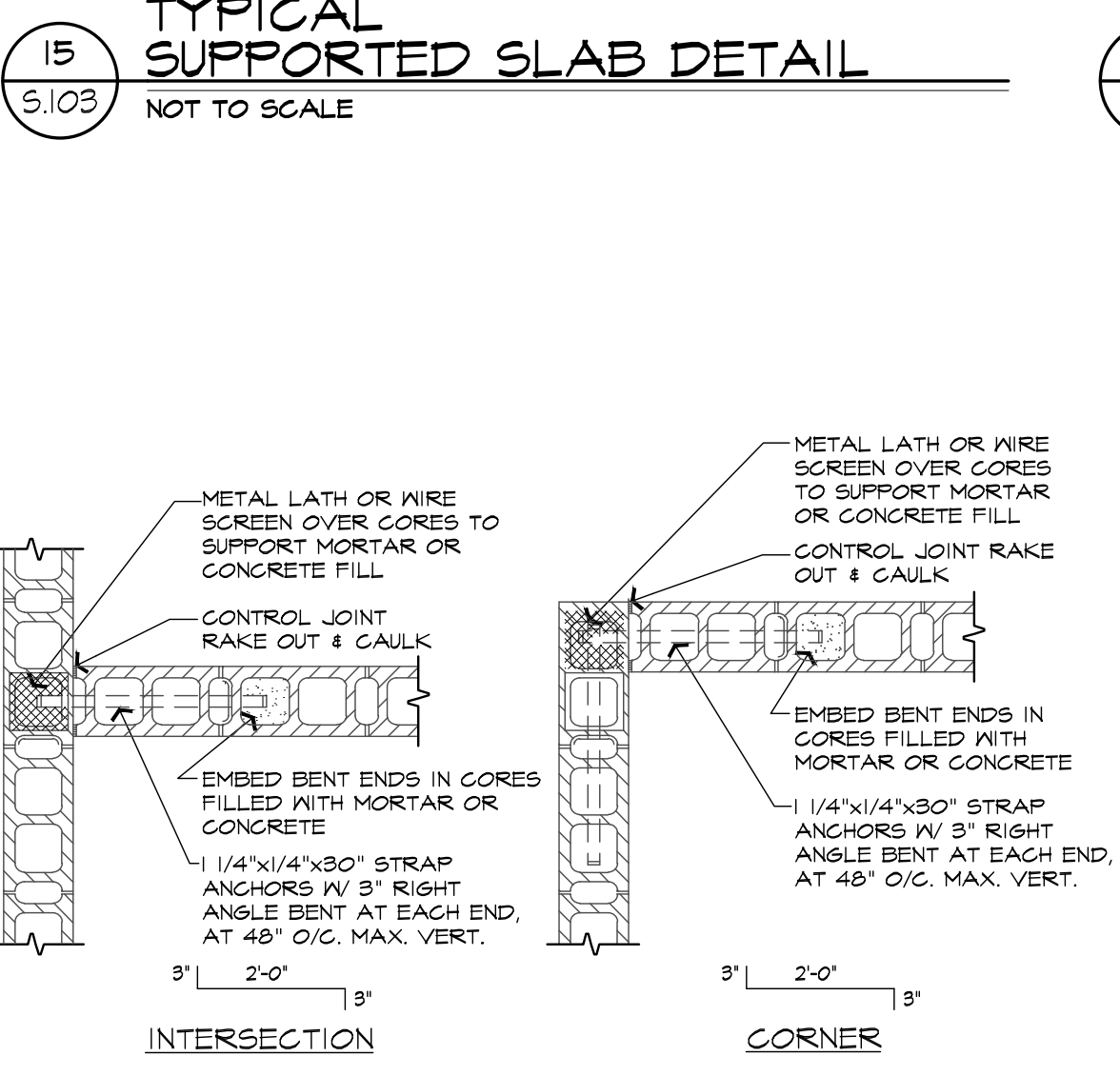
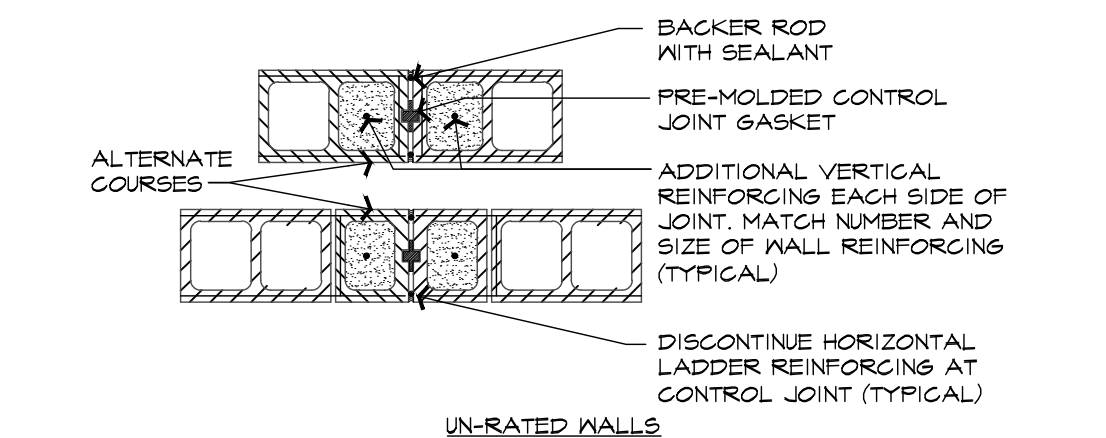
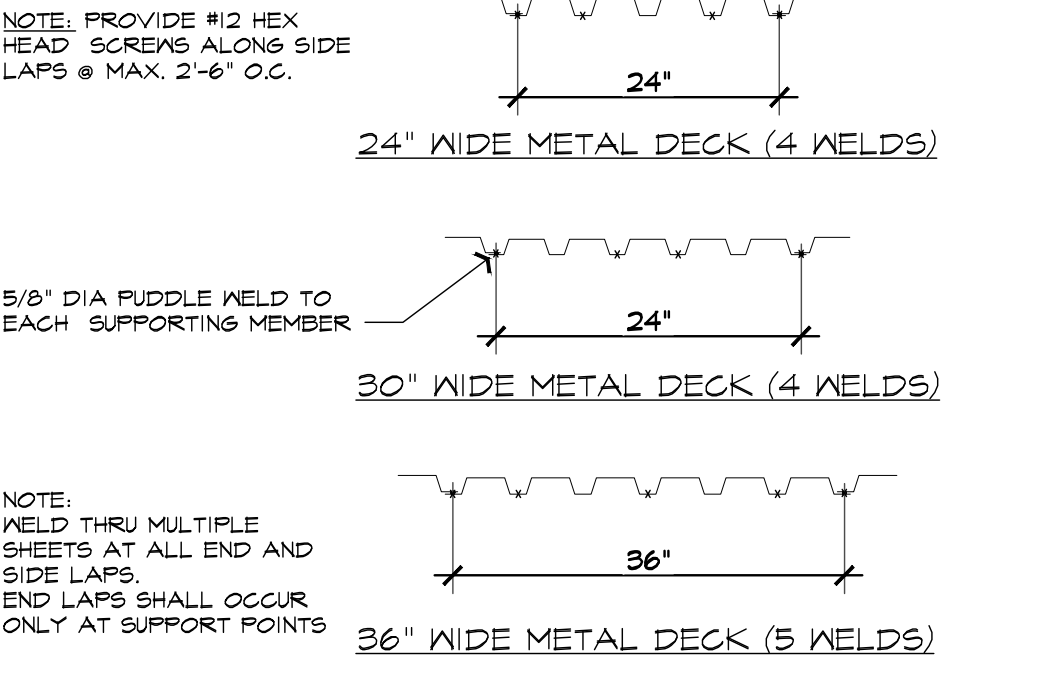
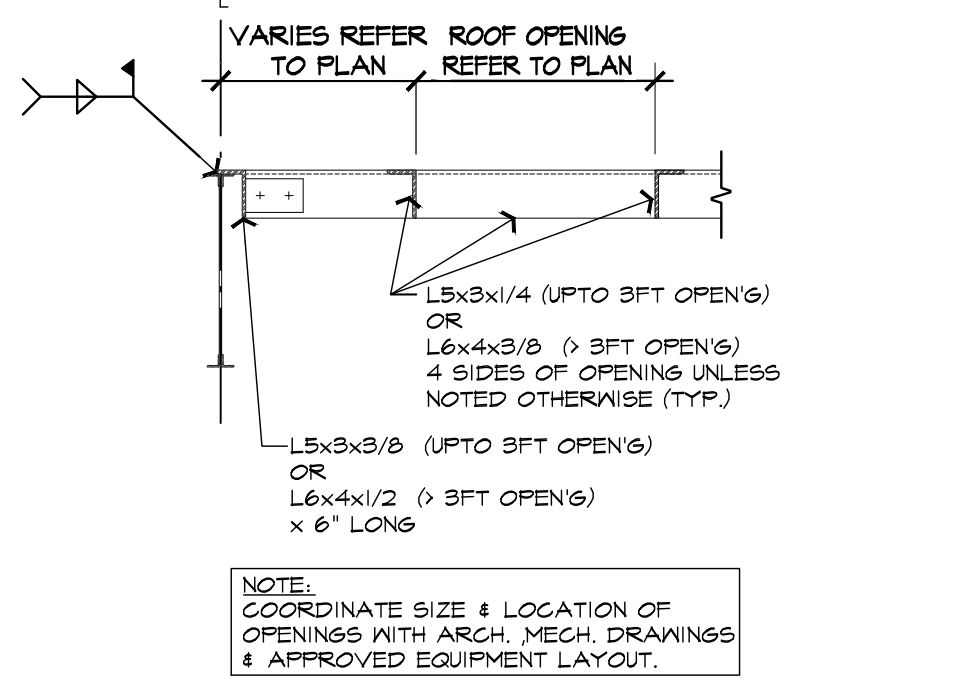
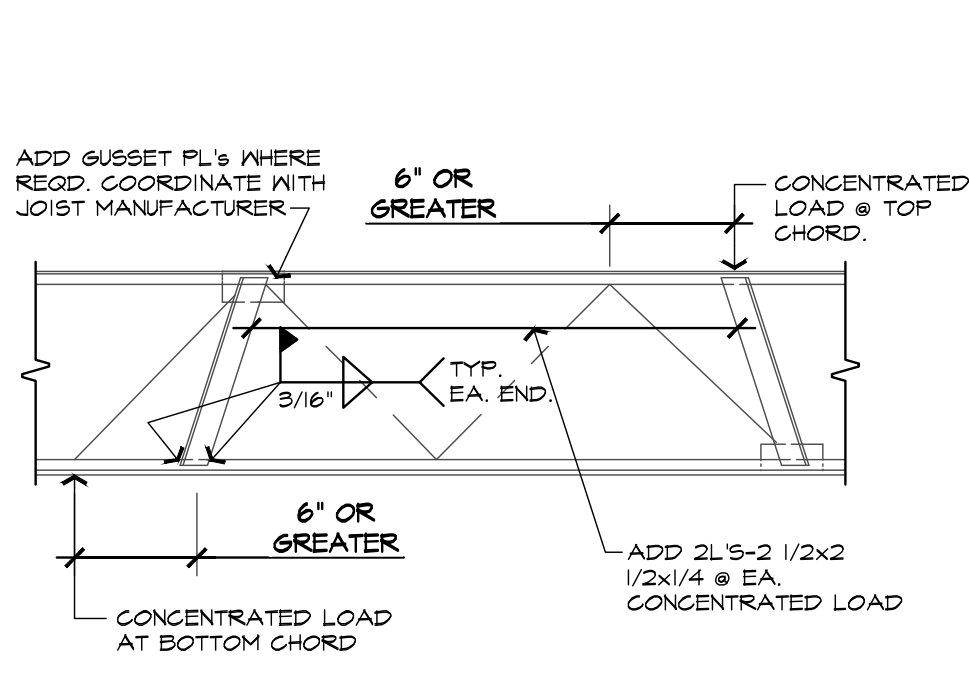
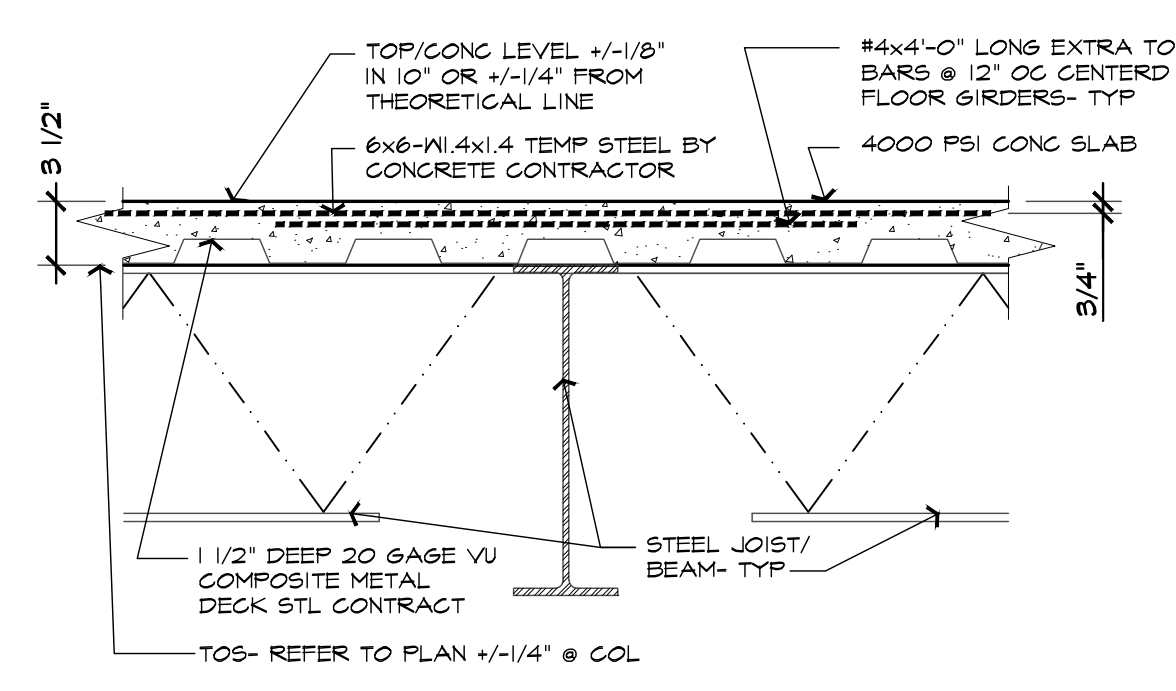
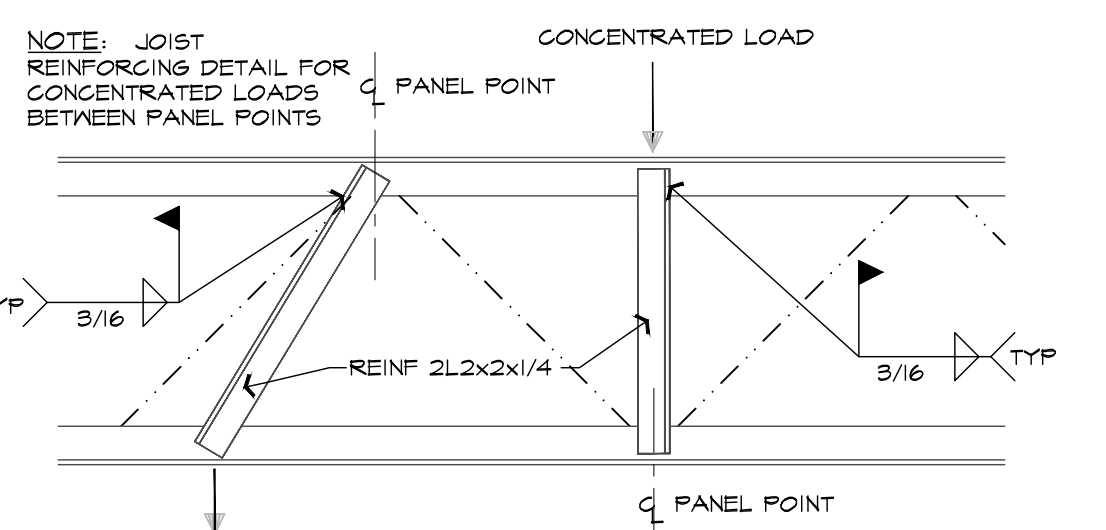
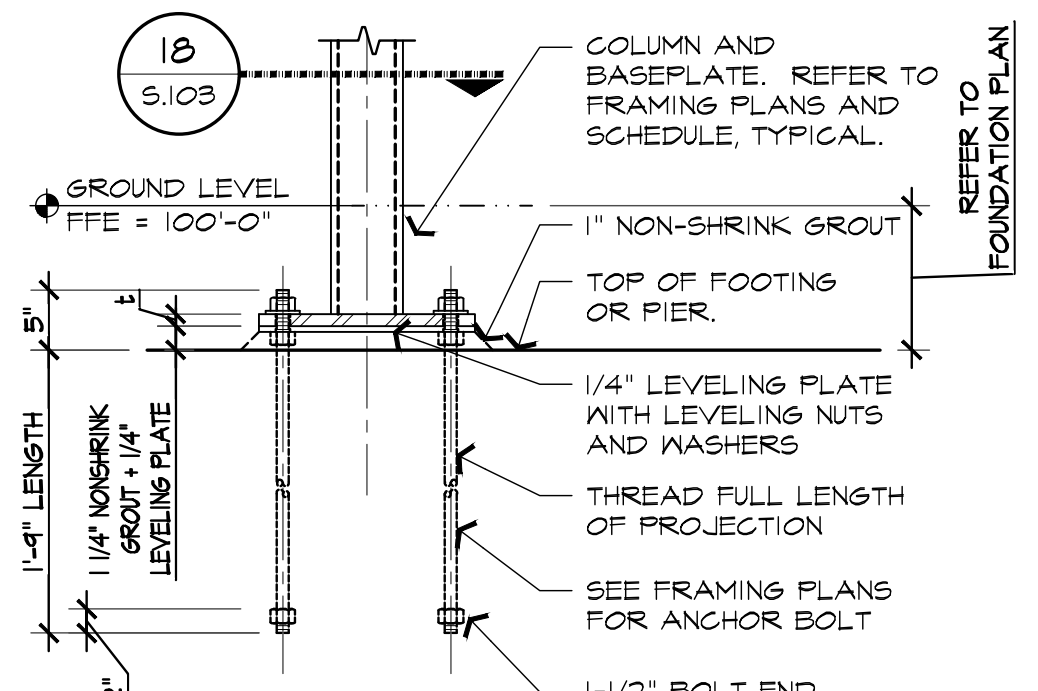
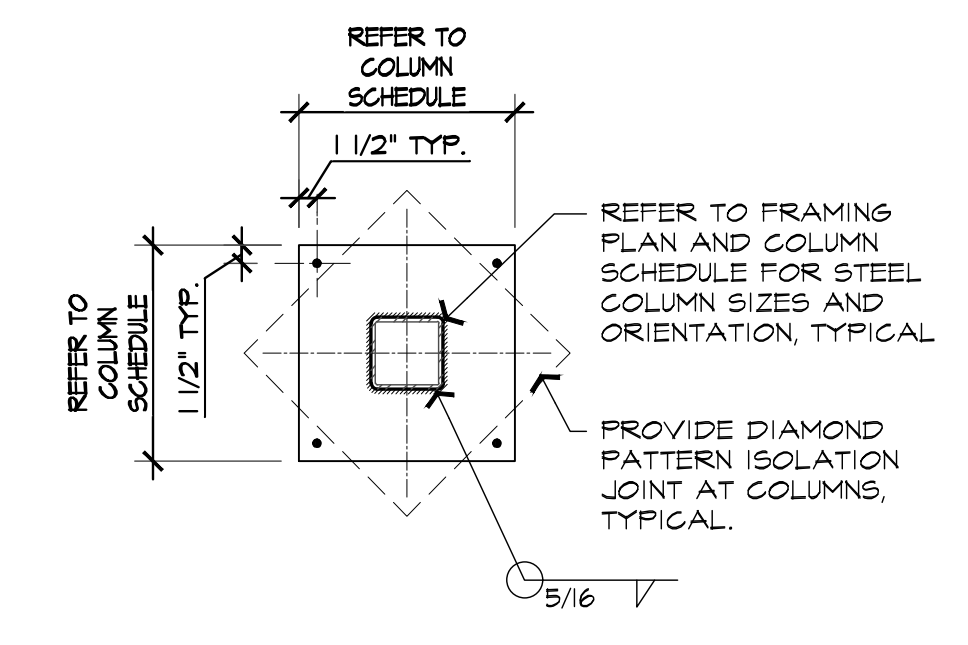
NEW RETAIL CENTER SHELL FOR:
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 JOB #: 21096
 SHEET TITLE
 SECTIONS AND DETAILS
 SHEET #
S.104

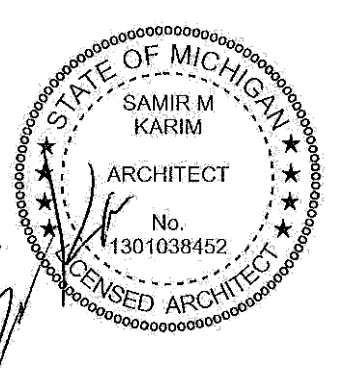
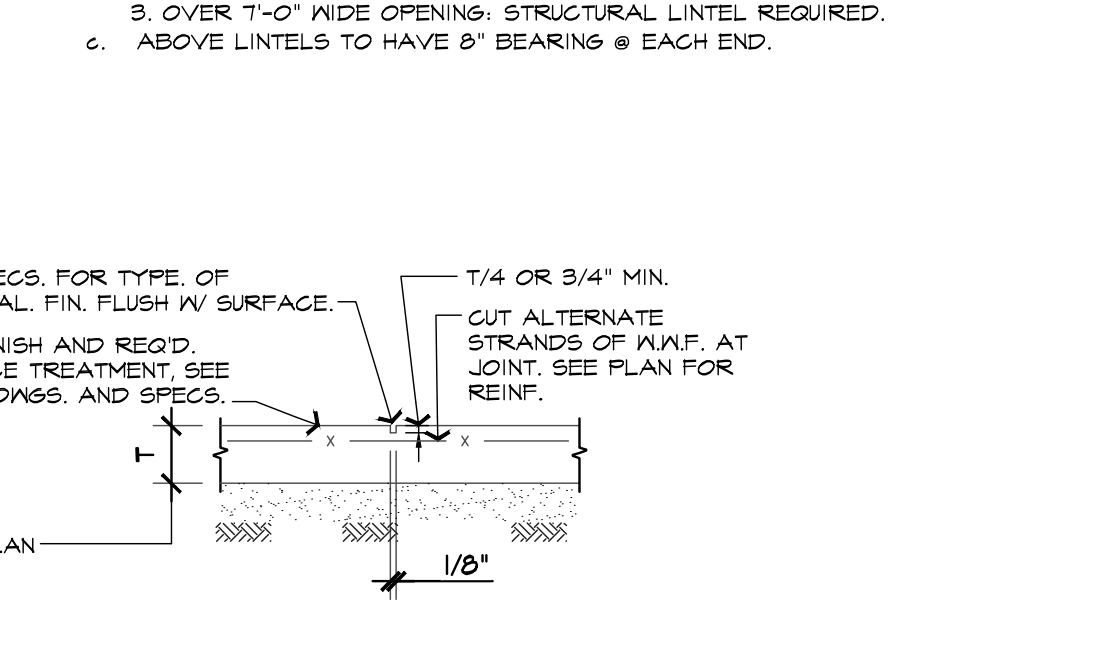
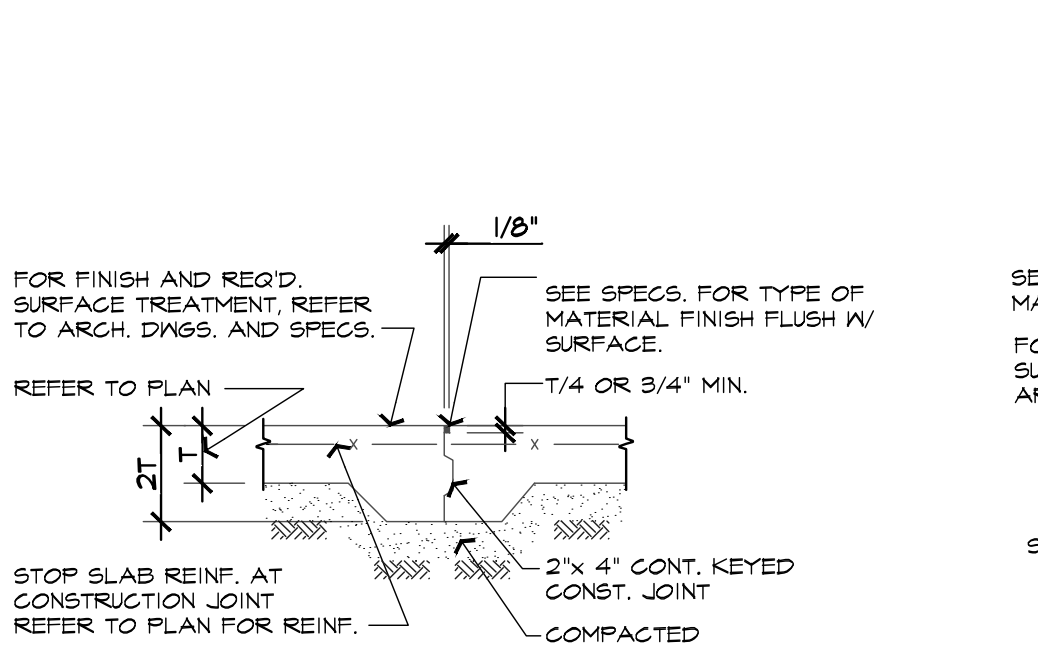
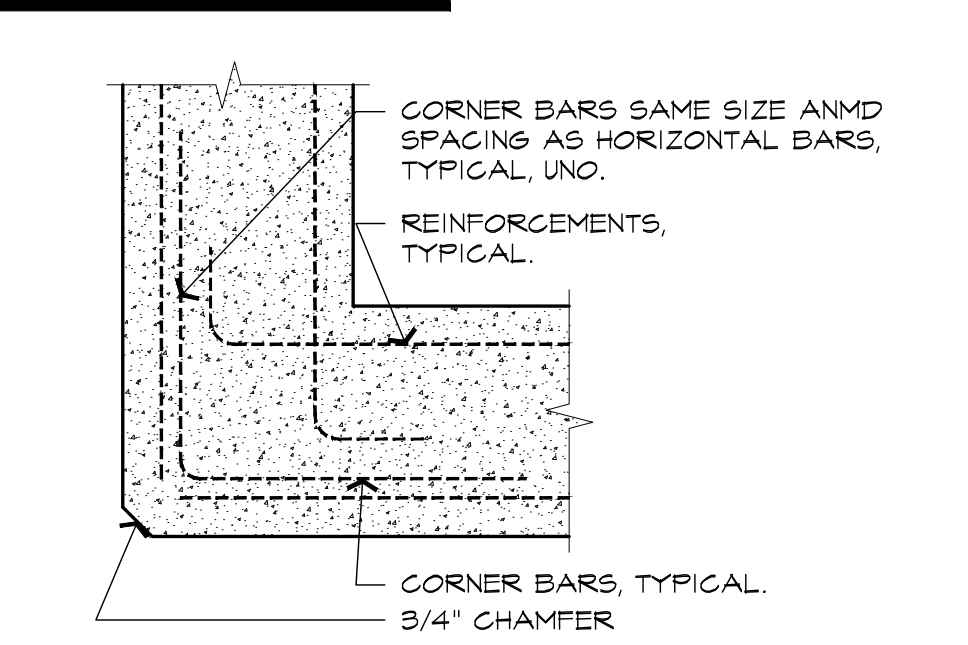
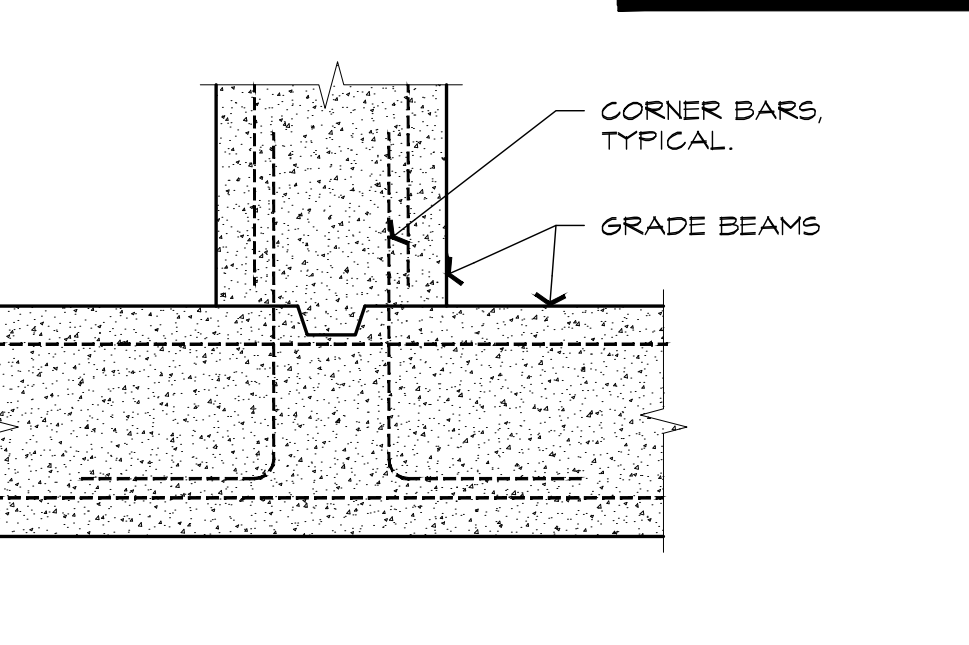
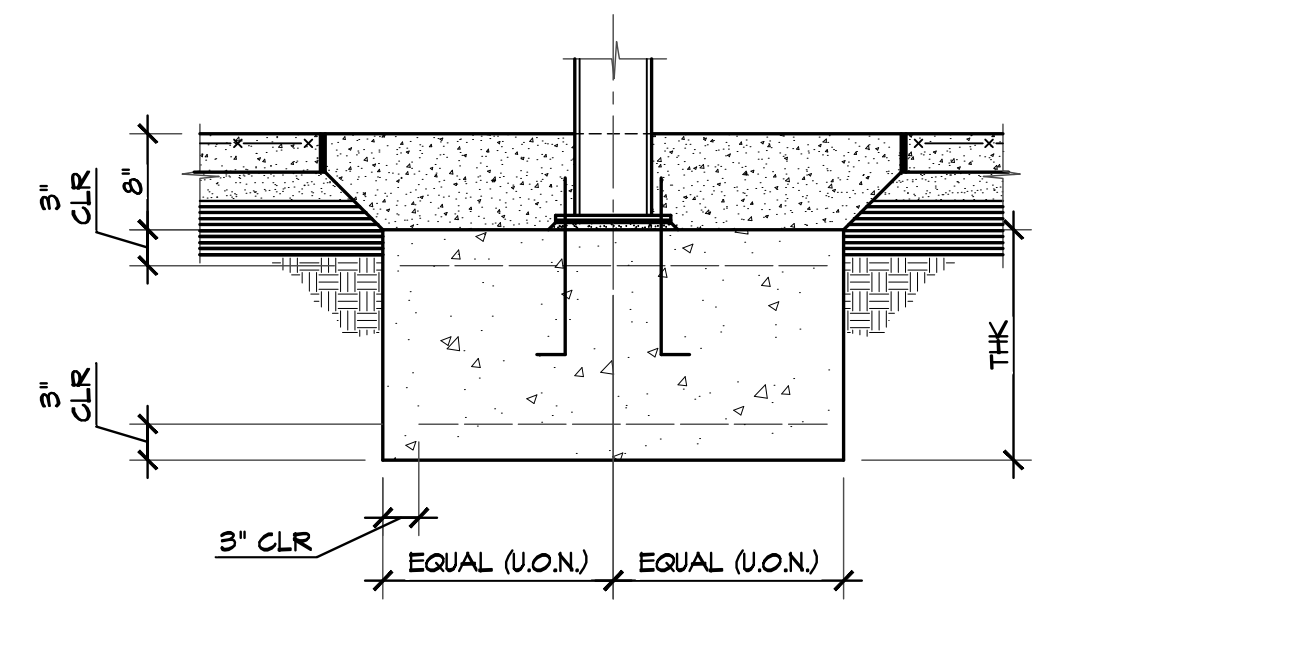


REFER TO FRAMING PLAN AND DETAILS FOR ADDITIONAL REQUIREMENTS THAT ARE NOT DEPICTED ON THESE DETAILS.



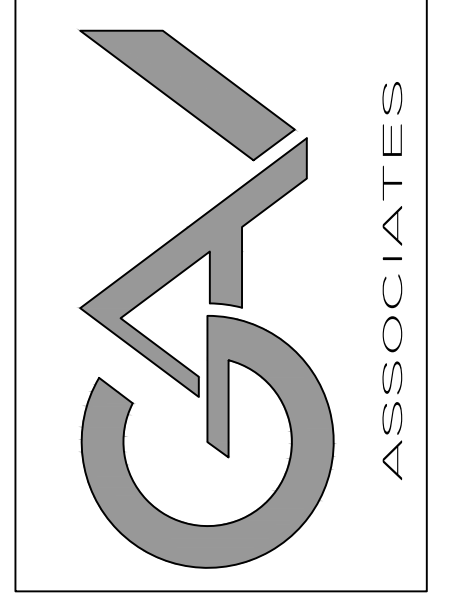
- NOTES:
- PLACE LINTEL BEAMS CENTERED ON BLOCK, UNO.
 - ALL EXTERIOR LINTEL PLATES AND ANGLES TO BE GALVANIZED (690 COATING)
 - LINTELS NOT SPECIFICALLY SIZED BY DRAWINGS AND DETAIL SECTIONS SHALL COMPLY WITH THE FOLLOWING:
 - WALLS OR VENEERS OF 4" OR LESS IN THICKNESS:
 - 5 x 3 1/2 x 3/8 LLV (EXT. WALLS)
 - WALLS 8" OR MORE IN THICKNESS (FOR EA. 4" WIDTH OF MASONRY THICKNESS); STITCH WELD DOUBLE ANGLES TOGETHER @ 12" O.C. MAX. TOP & BOTTOM.
 - UP TO 4'-0" WIDE OPENINGS: LL 3 1/2 x 4 x 5/16 LLV.
 - OVER 4'-0" UP TO 7'-0" WIDE OPENINGS: LL 3 1/2 x 5 x 5/16 LLV.
 - OVER 7'-0" WIDE OPENINGS: STRUCTURAL LINTEL REQUIRED.
 - ABOVE LINTELS TO HAVE 8" BEARINGS @ EACH END.

REFER TO FOUNDATION PLAN AND OTHER DETAILS FOR ADDITIONAL REQUIREMENTS THAT ARE NOT DEPICTED ON THESE DETAILS SUCH AS, BUT LIMITED TO, WATER STOPS AND WATER PROOFING.



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| ISSUED | Section 8, Item A. |
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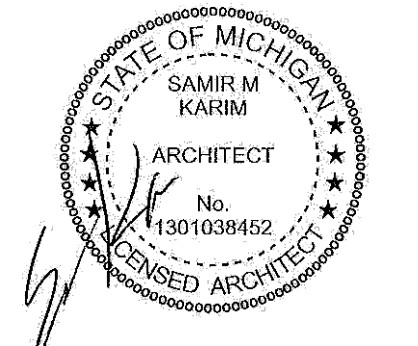
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4 CORNERS

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| DRAWN: | DESIGNED: | CHECKED: |
| DS | GA | GA |
| SCALE : AS NOTED | | |
| FILE NAME : 21096_M000 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| SYMBOLS AND ABBREVIATIONS | | |
| SHEET # | | |
| M.000 | | |



| MECH. SHEET INDEX | |
|-------------------|--------------------------------------|
| SHEET No. | DESCRIPTION |
| M.000 | SYMBOLS AND ABBREVIATIONS |
| M.100 | MECHANICAL PLAN, SCHEDULES & DETAILS |

NOTE:
 NOT ALL SYMBOLS AND ABBREVIATIONS
 ARE APPLICABLE TO THIS PROJECT

H.V.A.C. SYMBOLS

- SPIN-IN FITTING W/DAMPER
- FLEXIBLE DUCT
- RETURN AIR GRILLE
- SUPPLY AIR DIFFUSER
- HORIZONTAL FIRE DAMPER
- VERTICAL FIRE DAMPER
- HORIZONTAL FIRE & SMOKE DAMPER
- VERTICAL FIRE & SMOKE DAMPER
- VOLUME DAMPER
- RECTANGULAR TO ROUND TRANSITION
- MOTORIZED AIR DAMPER
- TRANSFER BOOT

ABBREVIATIONS

- A.F.F ABOVE FINISH FLOOR
- C.S.D. CEILING SUPPLY DIFFUSER
- C.F.M. CUBIC FEET PER MINUTE
- C.O. CLEAN OUT
- COMB. COMBUSTION
- C.P. CIRCULATING PUMP
- DPR. DAMPER
- D.F. DRINKING FOUNTAIN
- E. EXISTING
- E.F. EXHAUST FAN
- ER-# EXHAUST REGISTER
- EXH. EXHAUST
- EWC. ELECTRIC WATER COOLER
- F.C.O. FLOOR CLEANOUT
- F.D. FLOOR DRAIN
- F.D. FIRE DAMPER
- H.B. HOSE BIBB
- IE. INVERT ELEVATION
- LAV. LAVATORY
- N.C. NEW CONNECTION/ NORMALLY CLOSED
- O.A. OUTSIDE AIR
- P.H. PHYSICAL HANDICAPPED
- R.A. RETURN AIR
- R.C. RAIN CONDUCTOR
- E.D.H. ELECTRIC DUCT HEATER
- RG -# RETURN AIR GRILLE
- R.P.B.P. REDUCED PRESSURE BACKFLOW PREVENTER
- RR-# RETURN AIR REGISTER
- S.A. SUPPLY AIR
- S-1 SUPPLY DIFFUSER
- SR-# SUPPLY REGISTER
- S.F. SQUARE FEET
- SAN. SANITARY
- S.S. SERVICE SINK
- SHWR. SHOWER
- ST. STORM
- T.G. TRANSFER GRILLE
- T.P. TRAP PRIMER
- U/GRD. UNDERGROUND
- U.H. UNIT HEATER
- UR. URINAL
- V. VENT
- V.T.R. VENT THRU ROOF
- W. WASTE
- W.C. WATER CLOSET
- W.C.O. WALL CLEANOUT
- W.H. WATER HEATER

PLUMBING SYMBOLS

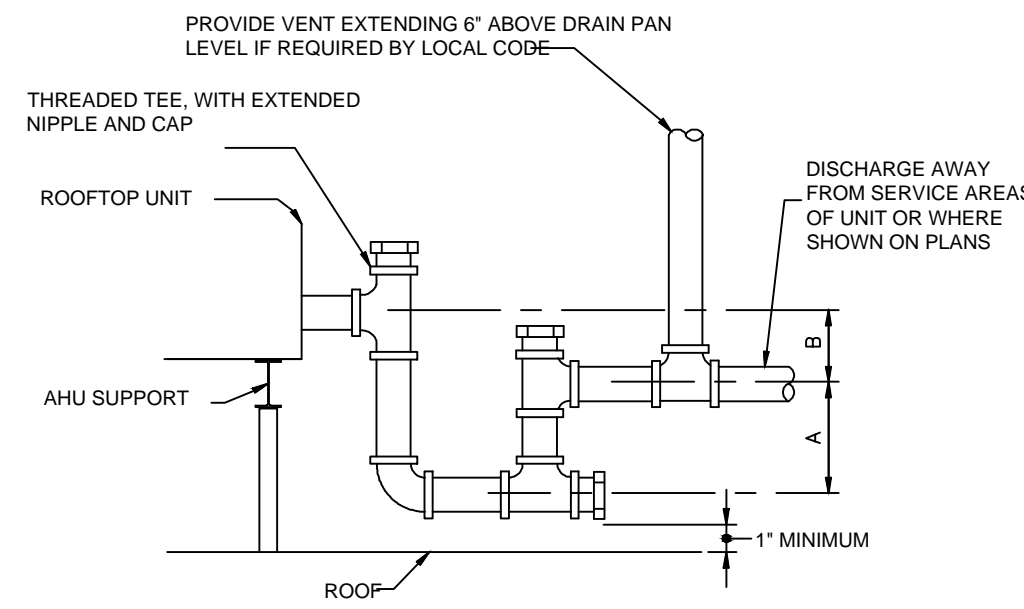
- DOMESTIC COLD WATER (C.W.)
- DOMESTIC HOT WATER (H.W.)
- DOMESTIC HOT WATER RETURN (H.W.R.)
- NATURAL GAS
- SANITARY SEWER
- STORM SEWER
- VENT
- GATE VALVE
- CHECK VALVE
- BALANCING VALVE
- THERMOMETER
- STRAINER
- UNION
- FLEXIBLE CONNECTOR
- BALL VALVE
- THERMOSTAT
- NEW CONNECTION

MECHANICAL AND PLUMBING NOTES

- A. WATER SUPPLY SYSTEM**
- ALL PLUMBING FIXTURES MUST CONFORM TO BUT NOT LIMITED TO SECTION 6 PROTECTION OF POTABLE WATER SUPPLY OF THE 2012 MICHIGAN PLUMBING CODE AND THE STANDARDS OF THE ASSE-AMERICAN SOCIETY OF SANITARY ENGINEERS.
 - ALL PIPING SHALL BE TYPE L COPPER, INSULATED WITH 1 INCH PLENUM RATED FIBERGLASS WRAP.
 - PROVIDE SHUT-OFF VALVE AT TENANT AREA AS INDICATED ON THE PLAN.
- B. SANITARY SEWER SYSTEM**
- ALL SANITARY SEWER PIPING SHALL BE CAST IRON ABOVE FLOOR. PVC PIPING SHALL BE PERMITTED BELOW THE FLOOR SLAB IF APPROVED BY AHJ.
 - SANITARY SEWER PIPING SHALL BE SLOPED PER FOOT. CLEANOUTS SHALL BE IN ACCORDANCE WITH UP TO DATE PLUMBING CODES IN THE LOCATION OF THE BUILDING.
 - PROVIDE SANITARY VENTS AND VTR'S AT INTERIOR WALLS AS REQUIRED.
 - PROVIDE CLEAN OUTS AT EVERY CHANGE OF DIRECTION GREATER THAN 45 DEGREES AND EVERY 50 FEET STRAIGHT RUN.
- C. STORM SEWER SYSTEM**
- STORM SEWER PIPING MAY BE PCV BELOW THE FLOOR SLAB IF APPROVED BY AHJ.
 - METAL ROOF LEADERS SHALL BE CONNECTED TO UNDERGROUND STORM SEWER PIPING.
 - ALL PIPING SHALL BE INSULATED WITH 1 INCH PLENUM RATED FIBERGLASS WRAP.
 - CLEANOUTS ARE TO BE PROVIDED THE SAME AS REQUIRED FOR SANITARY PIPING.
 - OVERFLOW NOZZLE, PER ARCHITECTURAL TRADE.
- D. MECHANICAL HVAC UNITS**
- MECHANICAL ROOF TOP UNITS, CURBS AND ACCESSORIES AS SPECIFIED ARE TO BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR.
 - GAS PIPING FROM GAS METER TO ROOF TOP HVAC UNITS SHALL BE PROVIDED AND INSTALLED PER GAS COMPANY AND ASHRAE STANDARDS.
 - GAS PIPING SHALL BE SIZED BY THE MECHANICAL CONTRACTOR PER UTILITY COMPANY AND ROOF TOP UNIT MANUFACTURER'S REQUIREMENTS.
 - GAS PIPING ON ROOF TO CONNECT TO EACH CORRESPONDING TENANT GAS METER. SEE MEP-200 FOR GAS PIPE ROOF SUPPORT DETAILS.

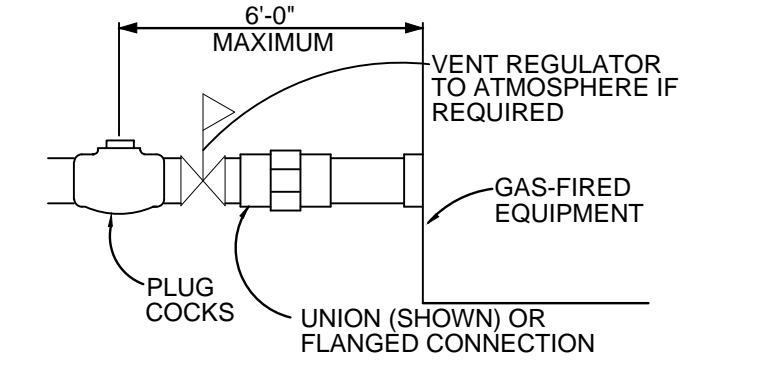
KEYED MECHANICAL NOTES

- GAS SERVICE MAIN COORDINATE WITH CIVIL & UTILITY CO.
- 2 INCH DOMESTIC WATER METER PER THE CITY REQUIREMENTS. SEE DOMESTIC WATER METER RISER DETAIL ON THIS SHEET.
- 6 INCH ROOF SUMP 6 INCH CAST IRON HORIZONTAL TO 6 INCH VERTICAL DOWN FACE OF BACK WALL WITH CLEAN OUT AT BASE. HOLD VERTICAL CONDUCTOR TIGHT TO BACK WALL FACE. REFER TO ARCHITECTURAL DRAWINGS FOR TYPICAL ROOF SUMP DETAIL AND PLUMBING GENERAL NOTES FOR PIPE INSULATION REQUIREMENTS.
- 6 INCH OVERFLOW ROOF SUMP TO 6 INCH HORIZONTAL CAST IRON OVERFLOW CONDUCTOR IN JOIST SPACE. SLOPE AT MINIMUM " " PER L.F. HOLD CONDUCTOR AS HIGH AS POSSIBLE WITHIN JOIST SPACE. REFER TO ARCHITECTURAL DRAWINGS FOR TYPICAL ROOF OVERFLOW NOZZLE DETAIL AND PLUMBING GENERAL NOTES FOR PIPE INSULATION REQUIREMENTS.
- 6 INCH CAST IRON STORM ABOVE. SLOPE AT MINIMUM 1/8" PER L.F.
- 8 INCH BUILDING STORM SEWER LEAD, COORDINATE SITE STORM LEAD SIZE, INVERT ELEVATION AND LOCATION WITH CIVIL.
- 6 INCH SANITARY SEWER UNDERGROUND. PITCH AT MINIMUM " " PER L.F.
- 6 INCH BUILDING SANITARY LEAD-COORDINATE SITE SANITARY SIZE, INVERT ELEVATION AND LOCATION WITH CIVIL.
- GAS SERVICE MAIN COORDINATE WITH CIVIL & UTILITY CO.
- BUILDING HOSE BIBS TO BE ON HOUSE METER. VERIFY EXACT LOCATION IN FIELD W/ OWNER AND CONTRACTOR.



A = GREATER OF 4" OR 1/2" PLUS ROOFTOP UNIT TOTAL PRESSURE IN INCHES-WATER COLUMN.
 B = 1" PLUS FAN SUCTION PRESSURE IN INCHES WATER COLUMN
 NOTES:
 1. 1" MINIMUM PIPE SI E OR SI E PER DRAIN TAP IN ROOFTOP UNIT.

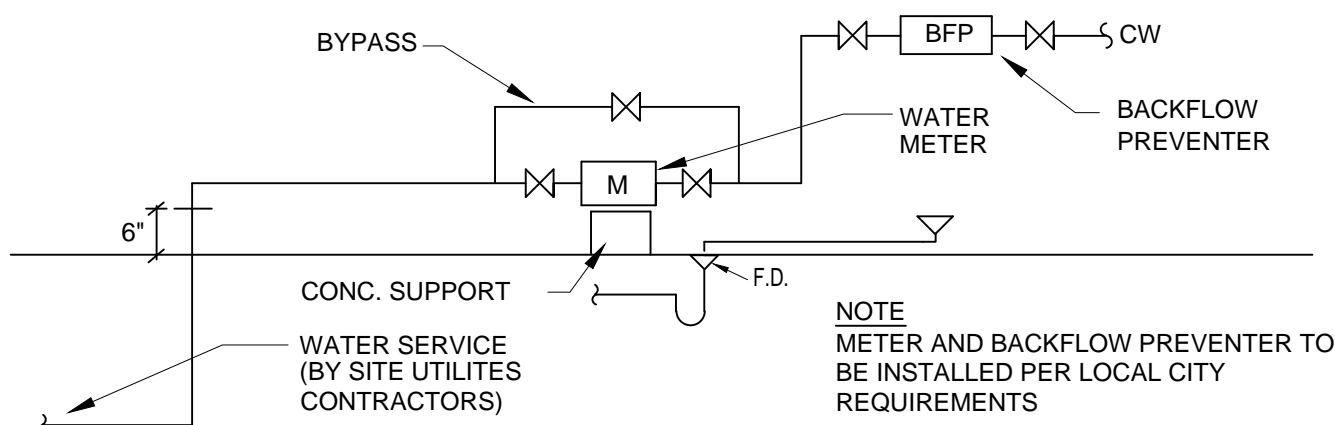
CONDENSATE DRAIN TRAP
NO SCALE



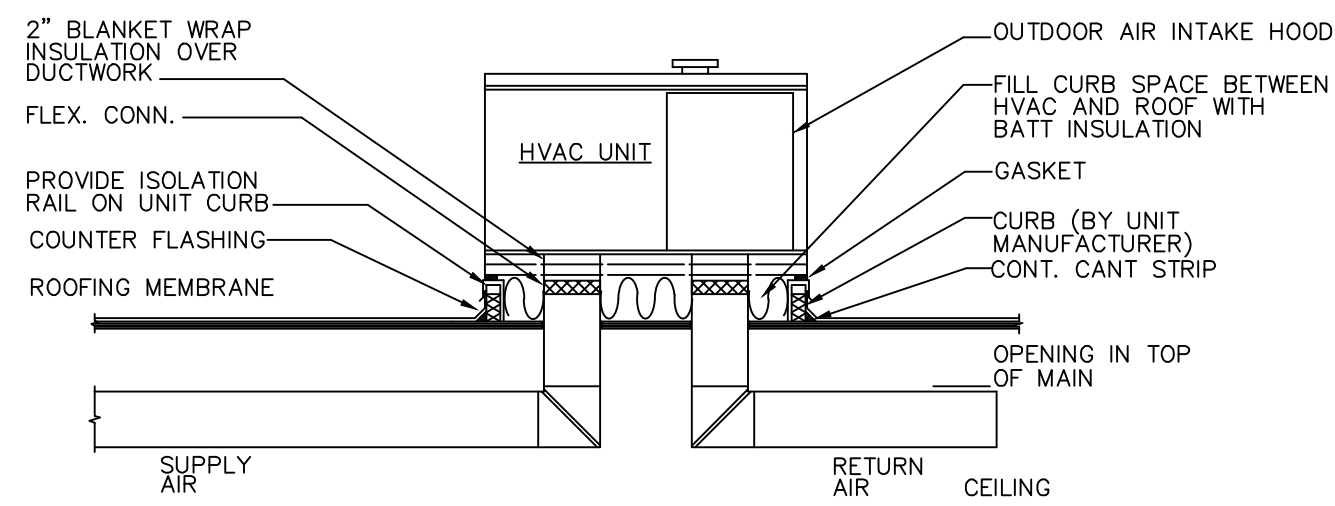
TYPICAL GAS PIPING CONNECTION
NO SCALE

| HVAC UNIT SCHEDULE | | |
|--------------------|--------------|--|
| HVAC UNIT | MANUFACTURER | DESCRIPTION |
| 1,4 | CARRIER | MODEL # 48HC05, NOMINAL 4 TON COOLING: TOTAL= 48.5 MBH, SENSIBLE = 38.1 MBH, 1600 CFM TOTAL, 368 CFM MIN. OUTSIDE AIR, HEATING: GAS INPUT= 150 CFH, GAS OUTPUT= 117 CFH, 208-3-60 4W, 32 MCA, 45A MOCP, STD. UNIT WEIGHT 850 LBS |
| 2,3 | CARRIER | MODEL # 48HC04, NOMINAL 3 TON COOLING: TOTAL= 36 MBH, SENSIBLE = 28.3 MBH, 1200 CFM TOTAL, 276 CFM MIN. OUTSIDE AIR, HEATING: GAS INPUT= 115 CFH, GAS OUTPUT= 89 CFH, 208-3-60 4W, 26 MCA, 30A MOCP, STD. UNIT WEIGHT 700 LBS |

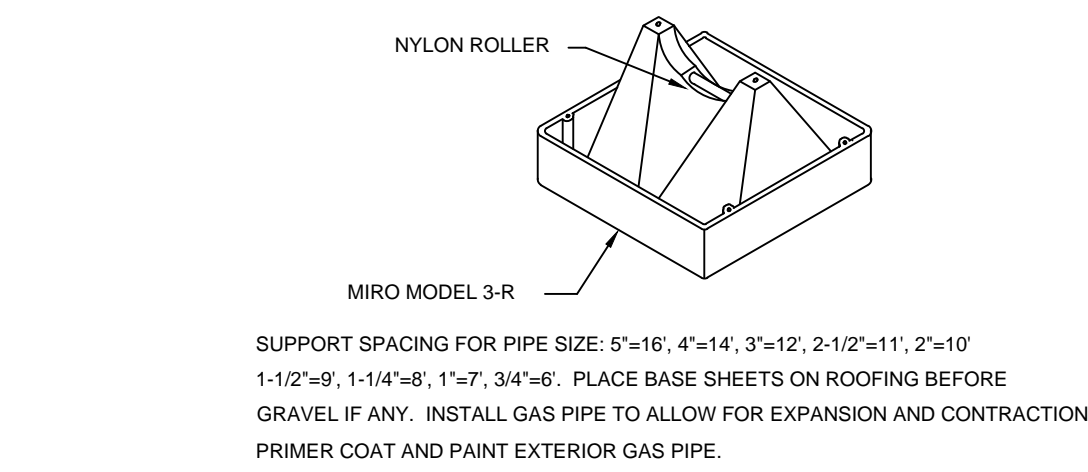
- NOTES:
 PROVIDE AT EACH UNIT:
 1. 18" MANUFACTURER'S ROOF CURB, U.N.O.
 2. ENTHALPY CONTROLLED ECONOMIZER
 3. THROW-AWAY FILTERS
 4. BIRDSCREEN
 5. RETURN AIR SMOKE DETECTORS FOR HVAC UNIT
 6. PROVIDE GENERAL SERVICE DUPLEX ELECTRICAL OUTLET (GFCI) AT EACH HVAC ROOF TOP UNIT. OUTLET BY HVAC MANUFACTURER. CIRCUIT TO FUTURE TENANT PANEL, U.N.O.
 7. PROVIDE PROGRAMMABLE THERMOSTAT AT ALL UNITS.
 8. TRANE AND LENNOX ARE ACCEPTABLE ALTERNATE MANUFACTURERS
 8.1. WHERE AN ALTERNATE HVAC UNIT MANUFACTURER IS PROVIDED, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE ALTERNATE UNITS WEIGHT WITH THE STRUCTURAL FRAMING INCLUDING BUT NOT LIMITED TO ANY ADDITIONAL STRUCTURAL REINFORCING THAT MAY BE REQUIRED TO SUPPORT THE NEW LOADS.



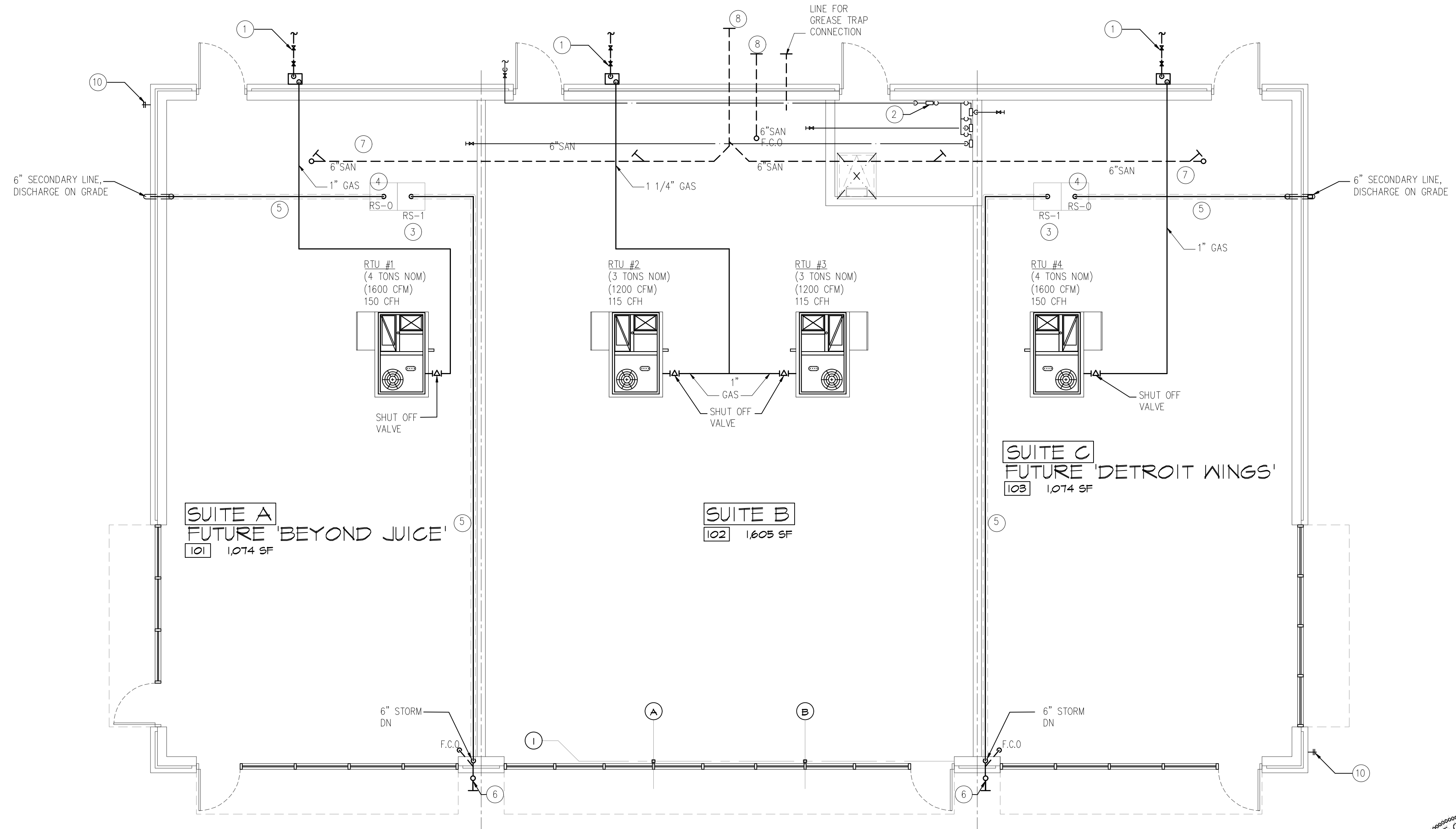
WATER METER INSTALLATION DIAGRAM
NO SCALE



SECTION THROUGH HVAC UNIT
SCALE: N.T.S.



TYPICAL GAS PIPE SUPPORT DETAIL ON ROOF
NO SCALE



ARCHITECTURAL DESIGN
RESIDENTIAL
COMMERCIAL
INDUSTRIAL

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4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE & COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN

| | | |
|--------|-----------|----------|
| DRAWN: | DESIGNED: | CHECKED: |
| DS | DS | MB |

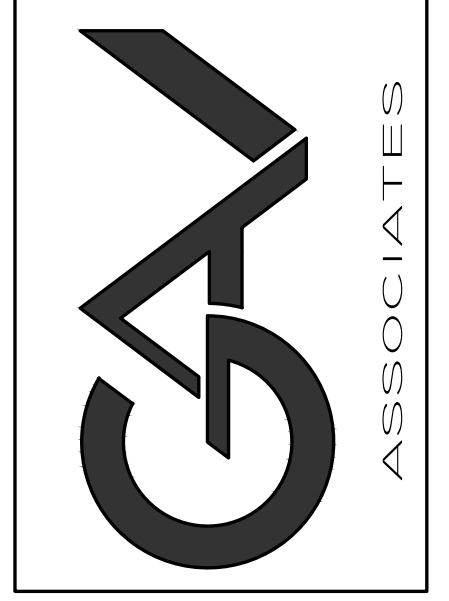
SCALE: 3/16" = 1'-0"

FILE NAME: 21096_M101

JOB #: 21096

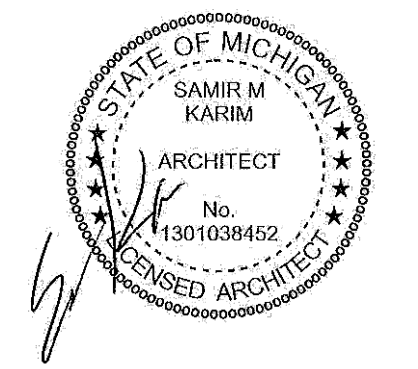
SHEET TITLE
FLOOR PLAN-MECHANICAL

SHEET #
M.101



4 CORNERS

NEW RETAIL CENTER SHELL FOR:
 UNION LAKE AND COOLEY LAKE ROADS
 COOLEY LAKE ROAD
 WHITE LAKE, MICHIGAN



| ELECTRICAL SYMBOLS LIST | |
|---|---|
| SYMBOLS | DESCRIPTION |
| NOTE: NOT ALL ELECTRICAL SYMBOLS SHOWN ARE USED FOR THIS PROJECT. | |
| — | CONDUIT RUN EXPOSED |
| - - - - | CONDUIT RUN CONCEALED |
| → | HOME RUN TO PANEL |
| —○— | FLEXIBLE CONDUIT |
| —●— | CONDUIT TURNED DOWN |
| —○— | CONDUIT TURNED UP |
| A,1 | INDICATES PANEL A, BRANCH CIRCUIT #1 |
| □ | SERVICE TERMINAL CABINET |
| ⊞ | LIGHTING AND POWER PANEL (NORMAL – SURFACE) |
| ⊞ | POWER CONNECTION |
| ⊞ | DUPLEX RECEPTACLE, GROUNDING TYPE, CEILING MOUNTED FLUSH |
| ⊞ | DUPLEX RECEPTACLE, GROUNDING TYPE, WALL MOUNTED 18" AFF |
| GFCI ⊞ | OVER THE COUNTER DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER, WALL MOUNTED 6" ABOVE COUNTER |
| ⊞ | WEATHERPROOF DUPLEX RECEPTACLE |
| ⊞ | SINGLE POLE SWITCH |
| ⊞ | MANUAL START WITH THERMAL OVERLOAD |
| ⊞ | DISCONNECT SWITCH – FUSED |
| ⊞ | DISCONNECT SWITCH – UNFUSED |
| ⊞ | JUNCTION BOX OR PULL BOX – SIZED PER NEC |
| ⊞ | SINGLE PHASE MOTOR |
| ⊞ | THREE PHASE MOTOR |
| ○ | INCANDESCENT OR HID FIXTURE AS INDICATED ON THE LIGHTING FIXTURES SCHEDULE |
| □ | 2'X4' FLUORESCENT LIGHTING FIXTURE AS INDICATED ON THE SCHEDULE |
| □ | 2'X4' NIGHT LIGHT FLUOR. FIXTURE AS INDICATED ON THE SCHEDULE |
| X ⊞ | LED EXIT LIGHT – WALL MOUNTED OR CEILING MOUNTED |
| EM ⊞ | EMERGENCY LIGHT – W/90 MINUTES NICAD BATTERY MAINTENANCE FREE |
| ⊞ | DUCT SMOKE DETECTOR – (COORDINATE WITH MECH. TRADE FOR TYPE) |

| GENERAL REQUIREMENTS | |
|----------------------|---|
| A. CODES: | 1. THE WORK SHALL COMPLY WITH THE CURRENT NATIONAL ELECTRIC CODE AND ALL APPLICABLE CODES. |
| B. COORDINATION: | 1. THE WORK SHALL BE COORDINATED WITH THE WORK OF OTHER TRADES TO AVOID INTERFERENCE. REFER TO CIVIL, ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS FOR CEILING HEIGHTS, ROOM FINISHES, DOOR SWINGS, BUILDING DIMENSIONS, LOCATION AND SIZES OF DUCTS, PIPES AND MECHANICAL EQUIPMENT ETC.. PROVIDE ADDITIONAL SUPPORT FOR RACEWAYS, BOXES, SWITCHES, CIRCUIT BREAKERS, MOTOR CONTROLLERS, FIXTURES AND THE LIKE, WHERE THE BUILDING STRUCTURE IS NOT ADAPTED OR SUITABLE FOR MOUNTING THE SAME DIRECTLY THERE ON. RACEWAYS SHALL NOT BE USED AS SUPPORTS FOR BOXES OR OTHER ELECTRICAL EQUIPMENT. 2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ALL EQUIPMENT FURNISHED UNDER OTHER TRADES IS COMPATIBLE WITH THE ELECTRICAL FEEDER PROVIDED UNDER THE ELECTRICAL TRADE. CASES OF DISCREPENCY MUST BE BROUGHT TO THE ENGINEER ATTENTION. 3. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERALLY THE LOCATIONS OF MATERIALS AND EQUIPMENT. THESE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. |
| C. TESTING: | 1. THE CONTRACTOR SHALL MAKE ALL TESTS, ADJUSTMENTS, AND TRIAL OPERATIONS REQUIRED TO PLACE THE SYSTEM IN BALANCED AND SATISFACTORY OPERATING CONDITION. |

| ABBREVIATIONS | |
|---------------|----------------------------------|
| A | AMPS |
| AC | ALTERNATE CURRENT |
| AFF | ABOVE FINISH FLOOR |
| AMP | AMPLIFIER |
| BKR | BREAKER |
| C, CND | CONDUIT |
| CUH | CABINET UNIT HEATER |
| CAT. NO. | CATALOG NUMBER |
| CKT. | CIRCUIT |
| CLG. | CEILING |
| CONT. | CONTRACTOR |
| C/T | CURRENT TRANSFORMER |
| D | DUCT SMOKE DETECTOR |
| D.E.CO. | DETROIT EDISON COMPANY |
| DN. | DOWN |
| DISC. | DISCONNECT |
| ELECT. | ELECTRICAL |
| EF | EXHAUST FAN |
| EXIST. | EXISTING |
| F | FIRE |
| FIXT. | FIXTURE |
| FL | FLOOR |
| GND., G. | GROUND |
| GFCI | GROUND FAULT CIRCUIT INTERRUPTER |
| HP | HORSE POWER |
| KVA | KILO VOLT AMPERE |
| L.LTG. | LIGHTING |
| M.B. | MAIN BREAKER |
| MECH. | MECHANICAL |
| MIC | MICROPHONE |
| MIN. | MINIMUM |
| MTD | MOUNTED |
| N.T.S. | NOT TO SCALE |
| NO. | NUMBER |
| PNL | PANEL |
| PWR | POWER |
| R | RECEPTACLE |
| RM | ROOM |
| SD | SMOKE DETECTOR |
| SHT | SHEET |
| SW | SWITCH |
| TS | TIMER SWITCH |
| TYP. | TYPICAL |
| UM | UTILITY METER |
| VA | VOLT AMPERE |
| V | VOLT |
| W | WATTS |
| W/ | WITH |
| W/O | WITHOUT |
| WP | WEATHER PROOF |
| XFMR | TRANSFORMER |

| SITE ELECTRICAL NOTES | |
|-----------------------|--|
| 1. | CADWELD #2/0 BARE COPPER GROUND WIRE TO GROUND ROD (3/4" X 10'-0"). TOP OF GROUND ROD SHALL BE 12" MIN. BELOW GRADE. |
| 2. | REFER TO CIVIL DRAWINGS FOR EXACT LOCATION OF EXISTING UTILITY AND THE EXACT LOCATION OF UTILITY CO. CONCRETE PAD MOUNTED TRANSFORMER. |
| 3. | PRIOR TO INSTALLATION OF THE CONCRETE PAD, COORDINATE THE WORK WITH UTILITY CO. FOR SPECIFIC DETAIL OF GROUNDING SYSTEM INSTALLATION OF THE TRANSFORMER. |
| 4. | COORDINATE ALL NEW ELECTRICAL UNDERGROUND WORK WITH NEW AND EXISTING UNDERGROUND UTILITIES BEFORE INSTALLATION. |
| 5. | PROVIDE WATERTIGHT HUBS AT CONDUIT ENTRANCES TO ALL ENCLOSURES MOUNTED OUTDOOR AND TO ALL WATERTIGHT (NEMA 4) ENCLOSURES MOUNTED INDOORS. |
| 6. | ALL EXISTING DUCTS, MANHOLES, ETC. ARE APPROXIMATE LOCATIONS ONLY. THE ELECTRICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS IN THE FIELD. |
| 7. | EXACT LOCATIONS MAYBE ADJUSTED IN THE FIELD TO AVOID EXISTING AND UNEXPECTED CONSTRUCTION OBSTACLES. |
| 8. | IT SHALL BE THE CONTRACTOR RESPONSIBILITY TO EXERCISE EXTREME CAUTION WHILE EXCAVATING TO AVOID DAMAGE TO ANY BURIED UTILITY LINES, PIPING, CONDUIT, ETC.. CONTRACTOR SHALL REPAIR OR REPLACE TO THE OWNER SATISFACTION ANY AND ALL DAMAGED UTILITY LINES, PIPING, CONDUIT, ETC., WHICH MAY BECOME DAMAGED DURING EXCAVATION OF THE NEW WORK AT NO EXTRA COST. |

| GENERAL NOTES & SPECIFICATIONS | |
|--------------------------------|---|
| 1. | CONTRACTOR SHALL VISIT THE JOB SITE AND THOROUGHLY CHECK THE FIELD CONDITIONS PRIOR TO SUBMITTING HIS BID. |
| 2. | CONTRACTOR SHALL BE PREPARED TO WORK CONTINUOUSLY AND EXPEDITIOUSLY TO COMPLETE THE WORK RIGHT ON SCHEDULE FOR A COMPLETE LIGHTING AND POWER SYSTEM. |
| 3. | CONTRACTOR SHALL OBTAIN ALL PERMITS AND PAY ALL FEES. |
| 4. | ALL WORK AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, CODES AND REGULATIONS AS WELL AS APPLICABLE CURRENT STANDARDS. |
| 5. | CABINETS, MOTOR FRAMES, STARTERS, CONDUIT SYSTEM, PANELBOARDS, ETC., SHALL BE GROUNDED IN ACCORDANCE WITH THE LATEST N.E.C. AND LOCAL CODES. |
| 6. | MATERIALS SHALL BE NEW AND BEAR THE U.L. LABEL OR LISTING, WHEREVER STANDARDS HAVE BEEN ESTABLISHED. |
| 7. | COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES AND ELECTRICAL DEVICES WITH OTHER TRADES BEFORE INSTALLATION. |
| 8. | ALL WALL MOUNTED CONTROL DEVICES, LIGHTING SWITCHES SHALL BE 4'-0" A.F.F. UNLESS OTHERWISE NOTED ON THE DRAWINGS. SWITCHES SHALL BE 20A, 120/277V, 1 POLE, 2 POLE, 3 AND 4 WAY AS INDICATED, HUBBELL #1221 SERIES OR EQUAL. |
| 9. | WALL MOUNTED DISCONNECT SWITCHES AND CONTROL PANELS SHALL BE 6'-0" TO TOP ABOVE FINISH FLOOR. |
| 10. | EXPANSION FITTINGS SHALL BE PROVIDED FOR ALL CONDUIT CROSSING BUILDING EXPANSION JOINTS. |
| 11. | ALL WEATHERPROOF (WP) DUPLEX RECEPTACLES SHALL BE INSTALLED HORIZONTALLY SUCH THAT COVER DOORS OPEN UPWARD. |
| 12. | ALL PENETRATIONS OF FIRE WALLS OR FLOORS SHALL BE SEALED AFTER INSTALLATION OF CONDUIT WITH A FIRE RETARDANT SEALANT THAT IS RATED THE SAME AS THE FIRE WALL OR FLOOR. |
| 13. | PROVIDE A GREEN GROUND CONDUCTOR IN ALL SYSTEMS CONDUITS INCLUDING BRANCH CIRCUIT CONDUITS FOR LIGHTING AND RECEPTACLES PER NEC TABLE 250-95. |
| 14. | ALL CONDUIT SHALL BE 3/4" EMT (MIN.) AND THEY SHALL BE OF SIZES REQUIRED TO ACCOMMODATE NUMBER OF CONDUCTORS IN ACCORDANCE WITH NEC WIRING TABLES OR AS INDICATED ON DRAWINGS, WHICHEVER IS LARGER. |
| 15. | FEEDERS SHALL BE TYPE "THW" OR "XHHW", AND ALL 120 VAC LIGHTING AND RECEPTACLE CIRCUITS RUN 2#12 (THWN/THHN) MIN. + GND IN 3/4" C MIN. TO THE LIGHTING PANELBOARD INDICATED UNLESS NOTED OTHERWISE. HOME RUN TO PANEL IF MORE THAN 80' SHALL BE #10 IN 3/4" C. OR CONTRACTOR SHALL USE A CONDUCTOR SO THAT VOLTAGE DROP IS LESS THAN 2%. ALL WIRE SHALL BE COPPER, HAVE 600 VOLT INSULATION AND INSTALLED IN CONDUIT. |
| 16. | RECEPTACLES SHALL BE DUPLEX GROUNDING TYPE 20A, 125V, HUBBELL #5362 OR EQUAL. SPECIAL PURPOSE RECEPTACLES 30A, 40A, 50A-2P OR 3P, ETC., SHALL BE SPECIFICATIONS GRADE. |
| 17. | WALL PLATES FOR SWITCHES, RECEPTACLES AND TELEPHONE OUTLETS SHALL BE SUPER STAINLESS STEEL, TYPE 302, HUBBELL #93000 SERIES OR EQUAL. |
| 18. | SINGLE PHASE MOTOR STARTERS SHALL HAVE MANUAL TOGGLE SWITCH WITH THERMAL OVERLOADS, FLUSH MOUNTED WITH PILOT LIGHT, ALLEN-BRADLEY #600 OR EQUAL. |
| 19. | THREE PHASE MOTOR STARTERS SHALL BE MAGNETIC TYPE, WITH FUSED CONTROL TRANSFORMER (120 VOLT SECONDARY) AND AUXILIARY CONTACTS AS REQUIRED, ALLEN BRADLEY #712 OR EQUAL. |
| 20. | DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, FUSED OR NON-FUSED AS INDICATED, IN A NEMA 1 OR 12 ENCLOSURE, DISCONNECT SWITCHES INSTALLED OUTDOOR SHALL BE NEMA 3R ENCLOSURE, CUTLER-HAMMER, SQUARE D, OR G.E. |
| 21. | METER CENTERS, OR PANELBOARDS SHALL BE SIEMENS, SQUARE D, CUTLER-HAMMER, OR G.E. SIZE ON THE DRAWINGS. |
| 22. | FOR BRANCH CIRCUIT PANELBOARD TERMINATION AND CIRCUITRY, REFER TO PANEL SCHEDULES. |
| 23. | FOR TYPE OF LIGHTING FIXTURES REFER TO LIGHTING FIXTURE SCHEDULE. |
| 24. | ALL ELECTRICAL EQUIPMENT MOUNTED ON EXTERIOR WALLS SHALL HAVE A 1/2" MIN. AIR SPACE BETWEEN WALL AND EQUIPMENT. PROVIDE A NON-CORROSIVE SPACERS AND BRACKETS AS REQUIRED. |
| 25. | VERIFY ALL ROUGH-IN LOCATIONS, FINAL CONNECTIONS, MOUNTING HEIGHTS, VOLTAGES AND PHASES WITH OTHER TRADES EQUIPMENT SUPPLIERS SHOP DRAWINGS PRIOR TO INSTALLATION OF EQUIPMENT. FAILURE TO DO SO SHALL RESULT IN NO EXTRA CHARGE TO THE OWNER. |
| 26. | EXACT LOCATIONS OF ELECTRICAL EQUIPMENT MAYBE ADJUSTED IN THE FIELD TO AVOID EXISTING AND UNEXPECTED CONSTRUCTION OBSTACLES. |
| 27. | VERIFY EXACT LOCATION OF ALL CONTROL PANELS ETC., FOR MECHANICAL EQUIPMENT, AND WIRE ACCORDINGLY FOR A COMPLETE FUNCTIONAL SYSTEM. |
| 29. | WHEN THE JOB IS COMPLETED, THE CONTRACTOR SHALL PROVIDE THE ARCHITECT WITH CERTIFICATE OF APPROVAL FROM THE LOCAL INSPECTION AUTHORITY. THE CONTRACTOR SHALL GIVE THE OWNER A WRITTEN GUARANTEE THAT HE WILL MAKE GOOD, AT HIS OWN EXPENSE, ANY DEFECTS IN MATERIALS OR WORKMANSHIP WHICH MAY DEVELOP WITHIN ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. |

NOTES: (FOR POWER)

1. FOR GENERAL NOTES SEE SHEET E-100
2. ELECT. CONT. TO COORDINATE THE SERVICE ENTRANCE EQUIP'T LOCATIONS & INSTALLATIONS WITH UTILITY COMPANY AND THE OWNER PRIOR TO INSTALLATION.
3. REQUIRE 1000A TO SERVICE METERS MODULE, @ 208/120V, 3Ø, 4W, UNDERGROUND SECONDARY SERVICE ENTRANCE.
4. REQUIRE 600A TO SERVICE ENTRANCE C/T CABINET, @ 208/120V, 3Ø, 4W, UNDERGROUND SECONDARY SERVICE ENTRANCE.
5. ELECTRICAL CONTRACTOR TO COORDINATE ALL MECHANICAL INTERLOCK WITH MECHANICAL TRADE AS REQUIRED.

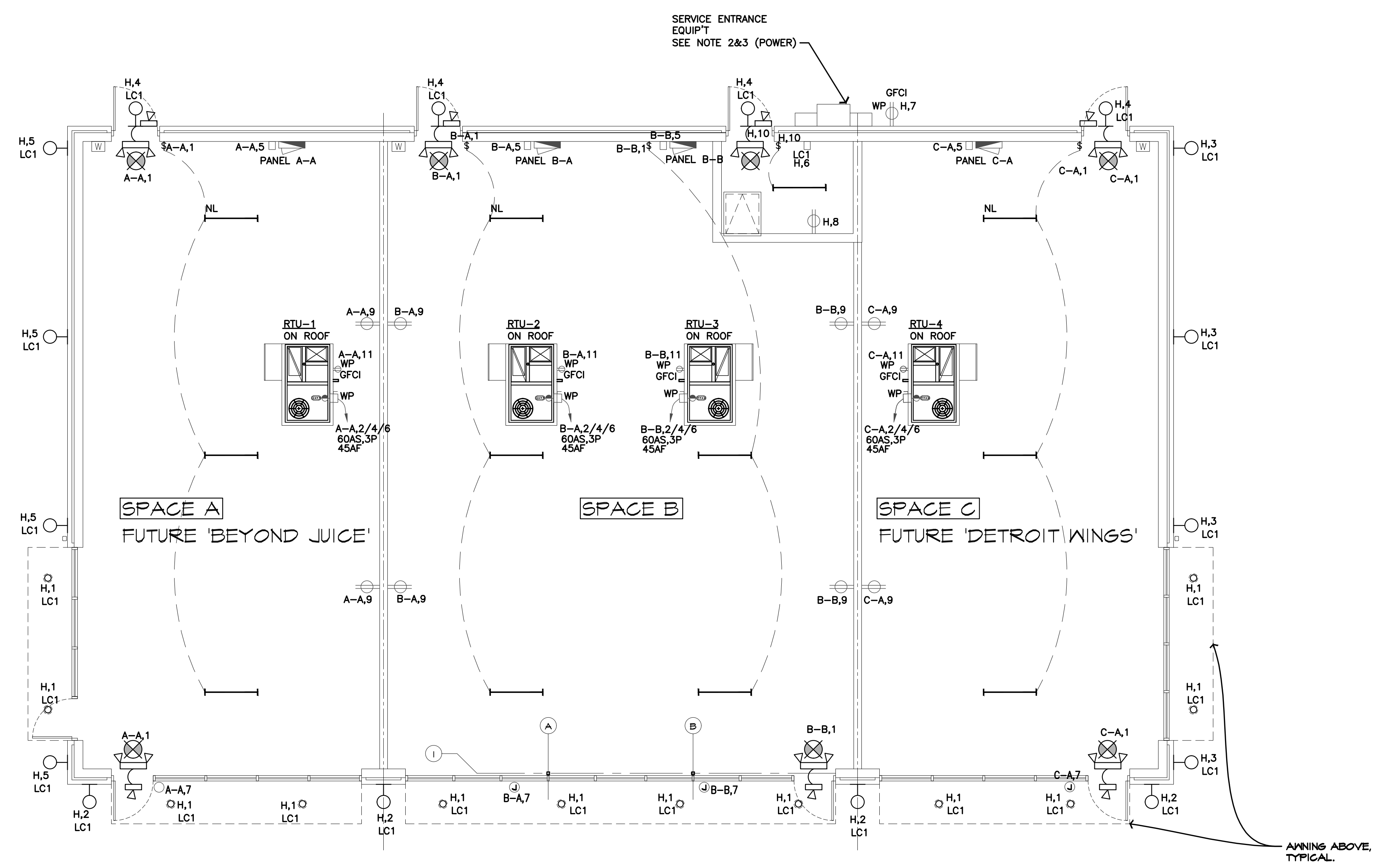
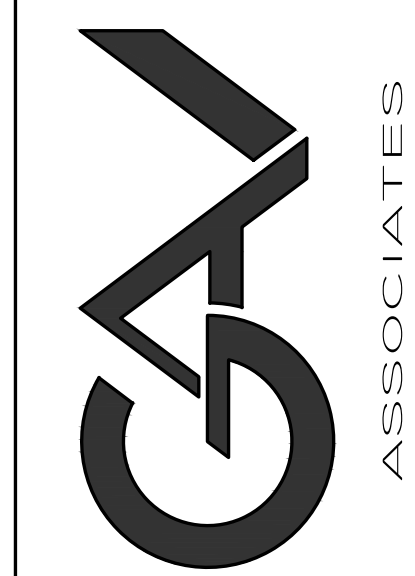
NOTES: (FOR LIGHTING)

1. FOR GENERAL NOTES SEE SHEET E-100.
2. BATTERY BACK-UP EXIT AND EMERGENCY LIGHTS SHALL BE FED FROM THE SAME CIRCUIT AS NORMAL LIGHTING IN THEIR RESPECTIVE AREAS AND BE CONNECTED AHEAD OF ANY LOCAL SWITCHES.
3. PROVIDE A SEPARATE RACEWAY SYSTEM FOR ALL NIGHTLIGHTS, EXIT LIGHTS, AND EMERGENCY LIGHTS AS REQUIRED PER LATEST NEC.

| LIGHTING FIXTURE SCHEDULE | | |
|---------------------------|---|---------------------------------|
| ===== | 1'x4' LED SERIES LUMINAIRE | MOUNTED @ 12'-0" |
| ○ | ARCHITECTURAL WALL LED LUMINAIRE SCENCE, 674-91-WP SERIES BY COOPER LIGHTING. SIZE 31" IN CC COLOR (CUSTOM COLOR) WITH LED LAMPS. | REFER TO ELEVATIONS SHEET A.201 |
| ○ | COMMERCIAL RECESSED EXTERIOR LED LAMP DOWNLIGHT (8" ROUND) | REFER TO ELEVATIONS SHEET A.201 |
| ☐ | POLYCARBONATE EXIT UNIT COMBO LIGHTING FIXTURE W/NI-CAD BATTERY FOR 90 MINUTES MAINTENANCE FREE IV SELF-DIAGNOSTIC | ABOVE DOOR HEAD ON MASONRY |
| ☐ | EXTERIOR REMOTE HEAD EMERGENCY LAMPHEAD WIRED TO ADJACENT EMERGENCY LIGHT AT INTERIOR | ABOVE DOOR HEAD ON MASONRY |
| NOTE: | COORDINATE ALL LIGHT FIXTURE SELECTIONS AND COLORS WITH OWNER FOR APPROVALS. TYPICAL FOR ALL FIXTURES. | |

| | |
|---------|--------------------|
| ISSUED | Section 8, Item A. |
| PERMITS | 10.22.2021 |
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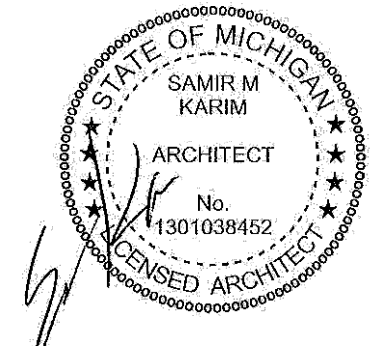
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4 CORNERS

NEW RETAIL CENTER SHELL FOR:
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 WHITE LAKE, MICHIGAN

ELECTRICAL FLOOR PLAN
 SCALE: 3/16" = 1'-0"
 NORTH



| | | |
|------------------------|-----------|----------|
| DRAWN: | DESIGNED: | CHECKED: |
| DS | GA | GA |
| SCALE : 3/16" = 1'-0" | | |
| FILE NAME : 21096_E102 | | |
| JOB # : 21096 | | |
| SHEET TITLE | | |
| ELECTRICAL PLAN | | |
| SHEET # | | |
| E102 | | |

