



PLANNING COMMISSION MEETING

LOCATION: TOWNSHIP ANNEX, 7527 HIGHLAND ROAD, WHITE LAKE, MI 48383
THURSDAY, OCTOBER 03, 2024 – 6:30 PM

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

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE
4. APPROVAL OF AGENDA
5. APPROVAL OF MINUTES
 - A. [September 5, 2024](#)
6. CALL TO THE PUBLIC (FOR ITEMS NOT ON THE AGENDA)
7. PUBLIC HEARING
8. CONTINUING BUSINESS
9. NEW BUSINESS
 - A. [Culver's](#)
[Property described as parcel number 12-20-276-035, located on the north side of Highland Road \(M-59\) and west of Bogie Lake Road, with a project area on the parcel consisting of approximately 1.69 acres, currently zoned \(PB\) Planned Business District.](#)
[Request: 1\) Final site plan approval](#)
[2\) PDA approval recommendation](#)
[Applicant: Katie Schmitt](#)
10. OTHER BUSINESS
11. LIAISON'S REPORT
12. PLANNING CONSULTANT'S REPORT
13. DIRECTOR'S REPORT
14. COMMUNICATIONS
15. NEXT MEETING DATE:
16. 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
PLANNING COMMISSION
SEPTEMBER 5, 2024**

CALL TO ORDER

Chairperson Seward called the meeting to order at 6:30 P.M. He then led the Pledge of Allegiance.

ROLL CALL

Present:

T. Joseph Seward, Chairperson
Debby Dehart
Scott Ruggles, Township Board Liaison
Merrie Carlock, Vice Chairperson
Mona Sevic
Robert Seeley (late arrival)
Pete Meagher (late arrival)
Matt Slicker (late arrival)
Steve Anderson

Others:

Sean O'Neil, Community Development Director
Andrew Littman, Staff Planner
Matteo Passalacqua, Carlisle Wortman Associates, Inc
Kyle Gall, DLZ
Hannah Kennedy-Galley, Recording Secretary

APPROVAL OF AGENDA

MOTION by Commissioner Anderson, seconded by Commissioner Carlock to approve the agenda as presented. The motion carried with a voice vote: (6 yes votes).

APPROVAL OF MINUTES

A. August 15, 2024

MOTION by Commission Anderson, seconded by Commissioner Sevic to approve the minutes of August 15, 2024, as presented. The motion carried with a voice vote: (6 yes votes).

CALL TO THE PUBLIC (FOR ITEMS NOT ON THE AGENDA)

Mike Powell, 4700 Cornerstone, personally thanked the Planning Commission for all their work.

PUBLIC HEARING

- A. **Lasting Impressions Landscape**
Property described as parcel number 12-01-127-002, located on the north side of White Lake Road, west of Old White Lake Road, consisting of approximately 2 acres.
Request: **Preliminary site plan and special land use approvals**
Applicant: Kieft Engineering

Mr. Passalacqua gave a summary of his planning review for the project.

Commissioner Dehart had concerns about salt storage and the potential of the salt leeching into groundwater.

Mr. Gall gave a summary of the engineering review.

Commissioner Carlock asked for clarification on the location of the hoop house. The hoop house would be on concrete, behind the main building.

Casey Leach, Kieft Engineering, was present to speak on behalf of the applicant. The applicant wants to occupy half of the building and offer the other half for lease. There would be storage of outdoor materials and adequate screening. The special land use is for the storage of outdoor materials and fleet vehicles. The use is consistent with other Light Manufacturing uses in the Township. The hoop house will have a concrete foundation and the hoop will be metal framed with a roof. There is room on the site to expand the basin if needed.

Commissioner Ruggles said the use is appropriate for the area and similar to the surrounding properties.

Commissioner Sevic asked Mr. Leach what vehicles would be parked on the gravel. Mr. Leach said the equipment will be an excavator, tri-axel dump, skid steers, and flatbed trailers.

Commissioner Slicker said the basins would be a maintenance issue. Mr. Leach said he met with the DLZ engineers and discussed using 3' sumps in the basins and installing an ADS environmental hood to float debris.

Commissioner Anderson asked for clarification on what would be stored where. Mr. Leach said passenger vehicles will not be stored in the gravel area. The work trucks will be stored on the asphalt south of the gravel area.

Commissioner Carlock asked Mr. Leach for clarification on the landscape buffer. Mr. Leach said the applicant will use the landscape berm as an advertisement for his company, by sprucing up the area with nice plantings.

Commissioner Sevic asked Mr. Leach if additional parking was provided for the future tenant. Mr. Leach confirmed. 15 parking spaces are required; the plan offers 22.

Chairperson Seward opened the public hearing at 6:58 P.M.

Keith Capella, owner of the property north of the subject site, said he had no objections to the project.

Chairperson Seward closed the public hearing at 6:59 P.M.

MOTION by Commissioner Meagher, seconded by Commissioner Ruggles, to recommend the Township approve the preliminary site plan for Lasting Impressions Landscape, identified as parcel number 12-01-127-002, subject to all staff and consultants review comments being addressed. The motion carried with a voice vote: (9 yes votes).

MOTION by Commissioner Anderson, seconded by Commissioner Seeley, to approve the special land use for Lasting Impressions Landscape, identified as parcel 12-01-127-002, subject to the applicant obtaining final site plan approval. The motion carried with a voice vote: (9 yes votes).

B. 2025-2030 Capital Improvement Plan (CIP)

Staff Planner Littman reviewed the 2025-2023 Capital Improvement Plan updates.

Chairperson Seward opened the public hearing at 7:19 P.M. Seeing none, he closed the public hearing at 7:19 P.M.

**MOTION by Commissioner Carlock, seconded by Commissioner Sevic, to adopt the 2025-2030 Capital Improvement Plan. The motion carried with a roll call vote: (9 yes votes).
Meagher/yes, Seeley/yes, Dehart/yes, Carlock/yes, Seward/yes, Anderson/yes, Slicker/yes, Sevic/yes, Ruggles/yes).**

CONTINUING BUSINESS

None.

NEW BUSINESS

A. Gateway Crossing

Property described as parcel numbers 12-20-426-003 (6350 Highland Road) and 12-20402-003 (6340 Highland Road), located at the southwest corner of Bogie Lake Road and Highland Road, consisting of approximately 5.36 acres.
Request: **Final site plan approval**
Applicant: Najor Companies

Mr. Passalacqua reviewed his letter. He discussed the landscape waivers and sidewalk installation in place of the originally proposed boardwalk.

Commissioner Sevic asked if the pathway connection on the south end of the property remained. Director O’Neil said it will need to cross-connect by code.

Mr. Gall reviewed the engineering letter. He added final site plan is recommended.

Scott Tousignant, Boss Engineering, was present. He said the boardwalk was replaced with a sidewalk due to the site's challenges. The continuation of the sidewalk to the south of the property will also be easier to install over a boardwalk. The configuration of the parking on the northeast corner is modified. The EGLE permit for the sidewalk has been issued. The retaining wall requires geotechnical work. The materials for the retaining wall will be discussed with a geotechnical engineer.

Commissioner Carlock asked Mr. Tousignant about the need for the retaining wall. Mr. Tousignant said the wall is installed for when a future user wants to develop at the site. The previous drive-thru user for that side of the property is no longer interested.

MOTION by Commissioner Meagher, seconded by Commissioner Seeley, to approve the final site plan for Gateway Crossing, identified as parcel numbers 12-20-426-003 (6350 Highland Road) and 12-20402-003 (6340 Highland Road), subject to all staff and consultant comments being addressed, and to include the granting of the requested waivers. The motion carried with a voice vote: (9 yes votes).

LIAISON'S REPORT

Commissioner Ruggles said the Township Board adopted the Haley Road rezoning request. The rezoning for 9101 Highland was moved to the second reading. The landscaping bid for the Civic Center buildings was approved. Wage increases for the non-union and elected officials were approved. The Township Board will meet on September 10, 2024, to review the Civic Center building construction bids.

Commissioner Carlock said the Fisk Farm festival was this weekend. Trunk or Treat is scheduled for October 19, 2024, 6:00 P.M. to 8:00 P.M.

PLANNING CONSULTANT'S REPORT

None.

DIRECTOR'S REPORT

The special Township Board meeting on September 10, 2024, to review the bids for the Civic Center buildings. The bid award will be at the September 17 regular Township Board meeting. There are issues with the Stanley Park contractor, the next lowest bidder may have to be contacted. The base course is installed at Elizabeth Lake Road. The final lift will be installed within the next 30 days. The Corridor Improvement met earlier today; \$2,900.00 has been collected in revenue to date.

OTHER BUSINESS

A. Wheels Restaurant - conceptual presentation

Director O'Neil said the applicant is proposing a joint car dealership and restaurant.

Bobb Cobb, applicant, was present. He shared his history and credentials with the Planning Commission. The concept of a car dealership/restaurant interests him. The restaurant would have doors on the ends to move the cars for sale when they were on display. He is interested in a liquor license. He wanted to be able to sell vehicles while the restaurant was under construction. He wants to construct an all-metal building. There will be easements between the property and Genisys Credit Union. No additional storage facilities for the cars will be provided. He wants to sell an assortment of classic cars to new driver vehicles.

Commissioners Dehart and Seeley expressed the need for more restaurants in the Township. Commissioner Meagher could not wrap his head around an all-metal building. Commissioner Seward said he is not sold on the idea.

COMMUNICATIONS

The meeting scheduled for September 19, 2024 will be canceled.

NEXT MEETING DATE: October 3, 2024

ADJOURNMENT

MOTION by Commissioner Seeley, seconded by Commissioner Meagher, to adjourn at 8:28 P.M. The motion carried with a voice vote: (9 yes votes).

Director's Report

Project Name: Culver's
 Description: Final site plan approval and PDA approval recommendation
 Date on Agenda this packet pertains to: October 3, 2024

- Public Hearing
- Initial Submittal
- Revised Plans
- Preliminary Approval
- Final Approval
- Special Land Use
- Rezoning
- Other: PDA

Contact	Consultants & Departments	Approval	Denial	Approved w/Conditions	Other	Comments
Sean O'Neil	CDD Director	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
DLZ	Engineering Consultant	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 09/24/2024.
Matteo Passalacqua	Carlisle Wortman Associates, Inc	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 09/19/2024.
Jason Hanifen	WLT Fire Marshal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	See letter dated 09/17/2024.



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September 24, 2024

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

RE: Culver's- Final Site Plan/Final Engineering Plan Review – 2nd Review

Ref: DLZ No. 2445-7696-04 Design Professional: Griggs Quaderer, Inc.

Dear Mr. O' Neil,

Our office has reviewed the above-mentioned revised plan prepared by Griggs Quaderer, Inc. and dated September 5, 2024. These plans were reviewed for conformance with the Township Engineering Design Standards. We offer the following comments for your consideration:

In addition, the following comments from our Preliminary Site Plan review letter dated March 3, 2024 remain as notations and/or will also need to be addressed:

- a) *Sheet C100- Show existing watermain easement for watermain along Bogie Lake Road frontage. In addition, any work within the existing easement shall require permission from the Township. Comment addressed and remains as a notation regarding permission for work within the existing easement. Regarding work within the existing easement: Per WLT DPS Director, this will be addressed at the preconstruction meeting for this project; the DPS Director has also noted in an email dated August 19, 2024 that no work shall be done within the watermain easement until a preconstruction meeting has been held. The 20' wide recorded watermain easement along Bogie Lake Road has now been shown.*
- b) *Sheet C100- Indicate whether there is an existing easement for the existing on site storm sewer (EX1 to EX2). Comment addressed. Per the design engineer, no easement for storm sewer was found during title search. This portion of the existing storm sewer shall require an easement since it is outside of the existing ROW. Comment outstanding. Although Culver's and Meijer have entered into a nonexclusive stormwater discharge agreement (received and dated August 15, 2024), this agreement only allows for Culver's to utilize the Meijer detention basin; Meijer would not be responsible for maintenance of any of Culver's on-site storm sewer, including the existing section*



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of storm sewer that is on the Culver's site. Any storm sewer on site, including the existing storm sewer segment, will be required to be in easements as part of the stormwater maintenance agreement between Culver's and the Township. Our office has received such an agreement; however, the Exhibit B only shows a sketch of the layout of the storm sewer on site. A metes and bounds description of the onsite storm sewer easements, including the portion of existing on site sewer, shall be provided. This exhibit shall be prepared and signed by a Registered Land Surveyor.

- c) *Sheet C200-The 15' wide one way driveway on the south side of the restaurant does not meet the Township minimum 20' width requirement for one way drives. We defer to the Township Planning Department regarding this item. Comment addressed and remains as a notation. Per the design engineer, Culver's shall be requesting a variance for the reduced drive width. We continue to defer to the Township regarding this item. Design engineer has noted that Culver's received a waiver as part of the WLT Planning Commission approval on May 2, 2024 for the reduced drive width.*
- d) *Sheet C200- Clarify the sidewalk easement intent for the existing sidewalks along the Meijer Service Drive and Bogie Lake Road. Is the easement proposed or existing? In addition, we defer to the Township Planning Department as to whether the existing sidewalk along Bogie Lake Road shall be required to be extended to the northwest along the Bogie Lake Road frontage per Township Zoning Ordinance requirements. Comment addressed and remains as a notation. A portion of the existing sidewalk is within the Culver's property and the design engineer has stated the intent to grant pedestrian access along the existing sidewalk to allow for continued use. We continue to note the requirement for a sidewalk easement for the portion of sidewalk on the Culver's property that is outside the Bogie Lake Road ROW. We continue to defer to the Township as to whether the existing sidewalk along Bogie Lake Road shall be required to be extended to the northwest along the Bogie Lake Road frontage. Per the design engineer response, the exhibit and sidewalk agreement is in process for the existing portions of sidewalk that are outside of the Meijer Drive and Bogie Lake Road ROWs. Once the sidewalk agreement is complete, it shall be sent to our office. We also note that per the May 2, 2024 WLT Planning Commission approval conditions that it appears that the sidewalk along Bogie Lake Road shall not be extended but that a monetary contribution shall be made to the Township for a future park or sidewalk.*
- e) *The applicant will need to provide information detailing whether this site falls under the Meijer Storm Water Management Facilities Easement, Maintenance Agreement and Lien document or if a new agreement will be required for this development. Likely a new agreement in the form of a nonexclusive stormwater discharge agreement (see attached sample) will be required and supporting exhibits will need to be provided. Comment addressed and remains as a notation. The engineer notes that no information was found as to whether the site falls under the Meijer agreement and has thus indicated that a new agreement will be drafted and finalized during the FSP/FEP phase. A new nonexclusive stormwater discharge agreement dated August 15, 2024 between Meijer and Culver's has been provided to our office.*

FSP/FEP Comments-

Note that comments from our July 8, 2024 review are in *italics*. Responses to those comments are in **bold**. New comments are in standard font.

General

1. *Cover Sheet C000- The Topographic Survey Statement references a survey dated September of 2023 while Item 2. under General Notes references a survey date of June of 2021. Were two separate surveys done on these two dates? The statements appear almost identical with the exception of the survey dates. Also reference Note 2 under Demolition Notes on Sheet C101. This references a survey date of September of 2023. Please clarify.* **Comment addressed. All areas referencing survey date have now been updated to survey date of September 2023.**
2. *Sheet C101- Demolition Key- Note 3- Change language such that reference for new cover type is to the WLT Storm Sewer Details sheet and not plan Sheet C300.* **Comment addressed. Language has been updated.**
3. *Sheet C302- Note on this sheet references WRC Standard Detail Sheet for Soil Erosion Control Details. This detail sheet has not been provided. Please attach to plan set.* **Comment addressed. WRC Standard Detail Sheet for SEC has now been attached to plan set.**
4. *Sheet C302- Construction Sequence- Note 9-Add the following language: "...and/or provide topsoil, in a quantity to cover disturbed area to a depth of 3,"* **Comment addressed. Additional language has been added.**

Sanitary Sewer

1. *Sheet C400- Add note regarding compacted backfill for all sanitary under paved areas.* **Comment addressed. A legend for sand backfill has been added to this sheet; all areas within or under paved areas are now shown on plan to have CSB.**
2. *Sheet C400- Sanitary Sewer Notes- Note 2- SDR 23.5 is required per WLT requirements. In addition, please revise on all proposed sanitary piping on this plan sheet to SDR 23.5.* **Comment addressed. Note and pipe material have been revised.**
3. *Sheet C400- CO3- Invert elevation is in error; should be 989.46 in order to achieve the called out 3.00% pipe slopes between CO4 and CO3 as well as CO3 and CO2.* **Comment addressed. Invert has been revised to correct elevation.**

Watermain

1. *Sheet C400- Add note to backfill all water service lead under paved areas. Comment addressed. A legend for sand backfill has been added to this sheet; all areas within or under paved areas are now shown on plan to have CSB.*
2. *Sheet C400- Locate water service line such that it is above both storm sewer and especially sanitary lead at all crossings. 18" vertical separation shall be required to be maintained. Comment addressed. The water service line has been relocated such as to avoid water line crossings under the storm and sanitary sewers.*
3. *Sheet C502-Add note of caution to this sheet where the proposed water service and irrigation line cross near Bogie Lake Road. Comment addressed. A note has been provided on the plan sheet.*

Grading/Paving

1. *Sheet C300- Barrier Free Ramp Legend references Type F ramp. We could not locate this type of ramp on plan. Please verify and revise as necessary. Comment addressed. Reference to Type F ramp has been removed.*
2. *Sheet C300-Rear Building Detailed Grading- Show sanitary sewer cleanout, grease chamber, and sampling MH rim elevations on this detail. Comment addressed. Requested rim elevations have been added to detail.*
3. *Sheet C300-Provide/show ridge lines on grading plan. Comment partially addressed. Ridge line notes have now been provided; however, it appears that the actual ridge lines were accidentally not placed on plan. Please provide/show actual lines.*
4. *Sheet C300- Show sanitary lead clean out elevations on this sheet. Comment addressed. Clean out rim elevations have now been shown.*
5. *Sheet C300- Add the following storm structure rim elevations on this sheet: 1) Cleanouts A, B, C, and D; 2) Stormceptor rim; 3) MH5; 4) MH6. Comment partially addressed. Clean out rim elevations have now been added to this sheet; however, clean out rim (elevation of 998.60) near parking island has been mislabeled as COE; it should be COD.*
6. *Sheet C600- Please revise parking stall length to 18' on Parking Stall Paint Striping Detail. Comment addressed. Parking stall length has been revised.*
7. *Sheet C300- Please add a note to this sheet that sanitary clean outs in paved areas shall not be paved over but instead left exposed.*



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Stormwater Management

1. *Sheets C300 and C301- Storm Sewer Notes- Remove Item 4 as required frames and covers are listed on WLT Storm Sewer Details sheet. **Comment addressed. Note has been revised and now references WLT storm sewer structures.***
2. *Sheet C301- Inlet 8 is specified as a 4' diameter structure. A 2' diameter structure is allowed for this inlet. **Comment addressed. Inlet has been revised to a 2' diameter structure.***
3. *Provide storm sewer profiles showing the following: 1) Pipe crossings (minimum 18" vertical separation); 2) Compacted sand backfill where needed; 3) Rim elevations; 4) Pipe length, slope, type of pipe, and diameter; 5) Invert elevations; 6) HGL. **Comment partially addressed. All items have been provided; however, please change diameter of Stormceptor on Sheet C305 from 4' diameter to 6' diameter as per Stormceptor detail on Sheet C304.***
4. *Provide Stormceptor detail and demonstrate that size is adequate for 80% TSS removal. **Comment partially addressed. Stormceptor detail has been provided; however, Sheet C304 references 'Stormceptor Brief Sizing Report-Page 1 of 2.' Please include Sheet 2 of 2 of this report on this plan sheet.***
5. *Sheet C301- Show electric, gas, water, and sanitary in light shade/background in order to show areas where utilities cross. **Comment addressed. Above mentioned utilities are now shown on this plan sheet.***
6. *Sheet C303- Part D: Water Quality Control (Rate)- Time of concentration shall be 15 minutes for commercial developments; currently 20 minutes is shown. **Comment addressed. Time of concentration has been revised to 15 minutes.***
7. *Sheet C301- Indicate what the dashed line segment to the west of the Culver's site is.*
8. *The following labels for storm sewer structures shall be revised: 1) Sheet C300-Storm rim labeled as 'COE' near parking lot island should be 'COD.'; 2) Sheets C302 and C303-a) 'COD' by building is 'COE.' ;b) Label 'COD' by parking island; c) 'CB7' is 'CB9' (correctly shown as CB9 on site grading plan, site storm sewer plan, and storm sewer profiles).*
9. *Sheet C303- Oakland County Storm Design: Eliminate COD-CB7 line and add the following: a) COE to COD- 77 LF of 6" @ 3.00%; b) COD to CB9-47 LF of 6" @ 3.00%.*
10. *Sheet C303- Oakland County Storm Design- Line CB7 to CB2- Relabel as CB9 to CB2.*

Landscape Plan

1. *Sheet C500-- Please shift the northwesternmost Snowdrift Crabapple that is on the northernmost parking island so as to maintain a minimum of 10' horizontal separation between the tree and storm sewer. **Comment rescinded. Landscape plan has been redesigned.***



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2. *Sheet C500- Shift Redspire Pear tree, located SE of CB7, to the east to provide 10' horizontal separation between storm sewer and tree. **Comment rescinded. Landscape plan has been redesigned.***
3. Sheet C500-There are several areas on the redesigned plan where proposed trees are too close to water main and storm sewer. Please reference enclosed red lined landscape plan sheet.

Required Permits and Approvals

The following permits and approvals will be required:

1. ~~Permit from the Road Commission for all work within the Bogie Lake Road right of way.~~ **No work is proposed in the Bogie Lake Road ROW.**
2. SESC permit from OCWRC. **Per design engineer, application has been submitted and is currently under review.**
3. Permission from White Lake Township for work within the existing watermain easement along Bogie Lake Road. **Per WLT DPS Director, this item will be addressed at the time of the preconstruction meeting.**
4. Executed Stormwater Maintenance Agreement and exhibit, including an easement for the existing on site storm sewer that is outside of Meijer Service Drive ROW. In addition, the Meijer Storm Sewer Agreement will need to be revised. **The stormwater maintenance agreement between Culver's and WLT has been provided; however, revisions are required. Please reference PSP Comment b) above. The storm sewer maintenance agreement between Meijer and Culver's has now been provided.**
5. Sidewalk easement for the portion of sidewalk that is outside of Bogie Lake Road ROW. **In process per the design engineer.**

Recommendation

Although the majority of our previous comments have been addressed, there are still a few remaining comments as well as a couple new comments (in response to plan revisions) that will need to be addressed. Please submit revised plans for a final backcheck ahead of a preconstruction meeting. **In order to streamline the review process, we request a response letter to the above comments be provided by the engineer upon revised plan resubmittal.**



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Please contact our office should you have any questions.

Sincerely,

DLZ Michigan

Michael Leuffgen, P.E.
Department Manager

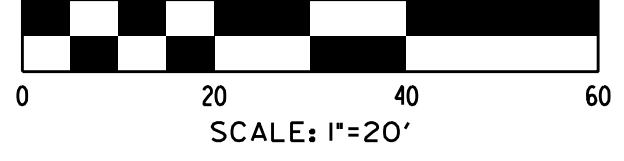
Victoria Loemker, P.E.
Senior Engineer

Attachments-Landscape Sheet C500-Red lined

Cc: Andrew Littman, Community Development, *via email*
Matteo Passalacqua, Carlisle Wortman, *via email*
Hannah Kennedy- Galley, Community Development, *via email*
Aaron Potter, DPS Director, White Lake Township, *via email*
Nick Spencer, Building Official, White Lake Township *via email*
Jason Hanifen, Fire Marshall, White Lake Township, *via email*
Lisa Hamameh, Esq., RSJA Law

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NORTH



**LANDSCAPE PLAN
NOTES TO
ACCOMPANY
FSP/FEP
REVIEW.02.**

PROVIDED BY:
NURSERY & LANDSCAPING
MAN
HOSPITAL RD.
RD, MI 48327
53-6060

TREE SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
AR	ACER RUBRUM	ARMSTRONG	2" CAL	17
LS	LIOUIDAMBAR STYRACIFLUA	SILHOUETTE SWEET GUM	2" CAL	14
MS	MALUS SARGANT TINA	DWARF SERGENT TINE	1.5" CAL	12
PG	PICEA GLAUCA	WHITE SPRUCE	7'-8'	10

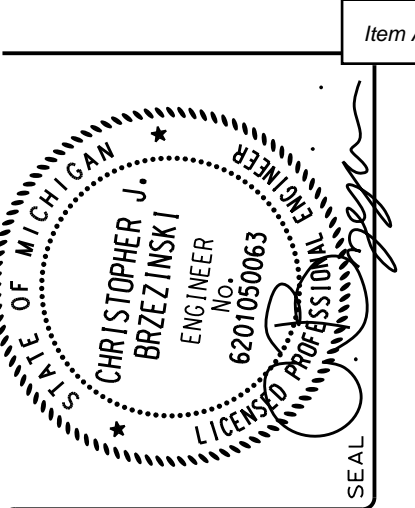
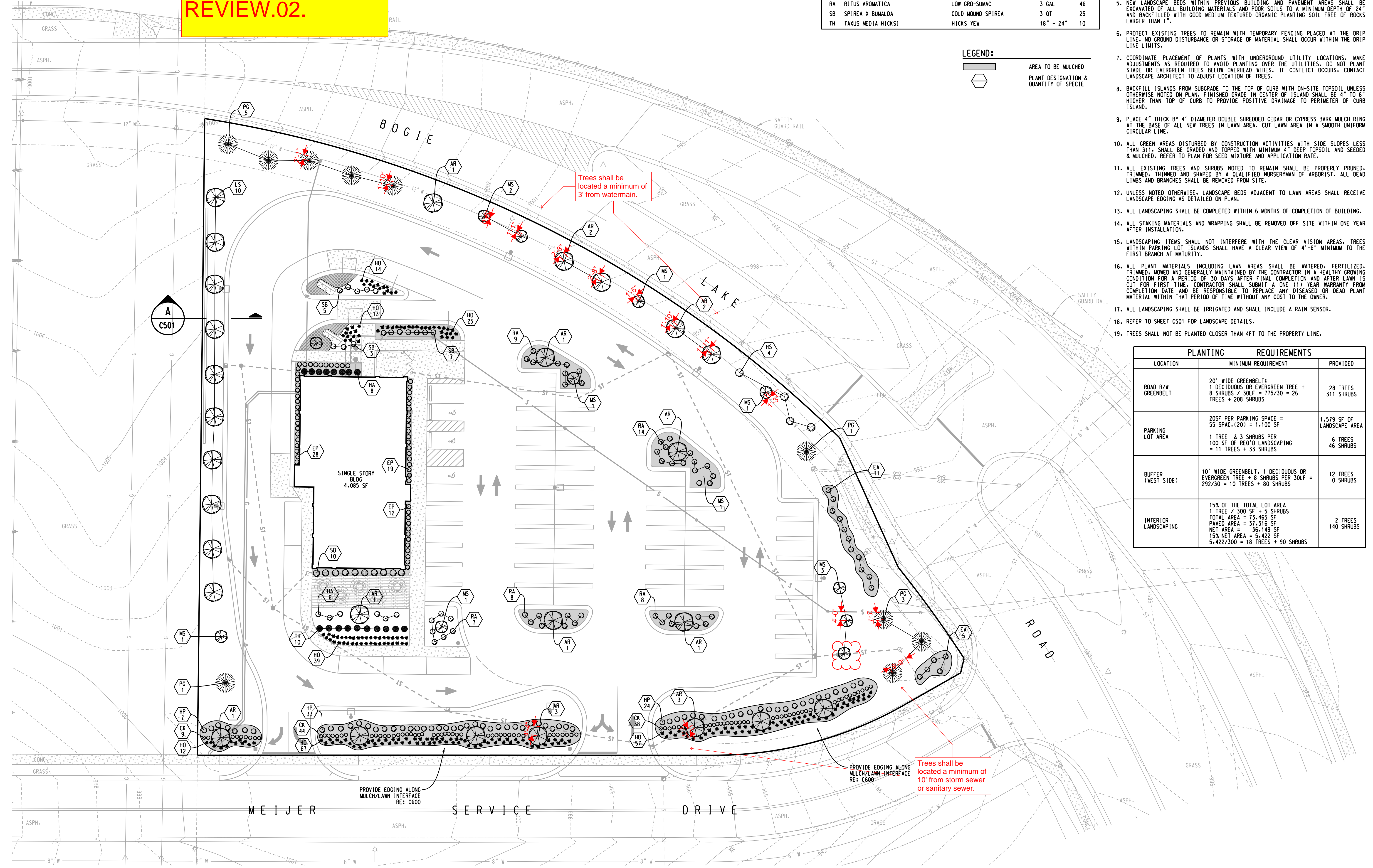
SHRUB / PERENNIAL / GRASS - SCHEDULE				
KEY	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
CK	CALAMAGROSTIS KARL FORESTER	FEATHER REED GRASS	-	91
EA	EUONYMUS ATLAS COMPACTUS	DWARF BURNING BUSH	5 GAL	16
EP	ECHINACEA PURPUREA	PURPLE CONE FLOWER	-	59
HA	HYDRANGEA ANOMALA	ANNABELLE	3 GAL	14
HP	HEMEROCALLIS STELLADORO	STELLADORO DAY LILLY	-	227
HO	HYDRANGEA PANICULATA	MAGICAL CANDLE	5 GAL	64
HS	HIBISCUS SYRIACUS	ROSA OF SHARRON	5 GAL	4
RA	RITUS AROMATICA	LOW GRO-SUMAC	3 GAL	46
SB	SPIREA X BUMALDA	GOLD MOUND SPIREA	3 OT	25
TH	TAXUS MEDIA HICKSI	HICKS YEW	18" - 24"	10

LEGEND:
 AREA TO BE MULCHED
 PLANT DESIGNATION & QUANTITY OF SPECIE

LANDSCAPING NOTES:

- INSTALLATION OF PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS LATEST EDITION.
- PRIOR TO BEGIN OF LANDSCAPE WORK, CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES. CONTRACTOR SHALL CONTACT MISS DIG (811) FOR LOCATIONS OF ALL PRIVATE UTILITIES. ANY DAMAGES OR INTERRUPTIONS OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE WORK CONDITIONS TO OWNER PRIOR TO COMMENCING WORK.
- NUMERICAL VALUE OF PLANT MATERIAL SHOWN SHALL TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY AND REPORT ANY DISCREPANCIES WITH LANDSCAPE ARCHITECT.
- SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND/OR GOVERNING AGENCY PRIOR TO COMMENCING.
- NEW LANDSCAPE BEDS WITHIN PREVIOUS BUILDING AND PAVEMENT AREAS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS TO A MINIMUM DEPTH OF 24" AND BACKFILLED WITH GOOD MEDIUM TEXTURED ORGANIC PLANTING SOIL FREE OF ROCKS LARGER THAN 1".
- PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING PLACED AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
- COORDINATE PLACEMENT OF PLANTS WITH UNDERGROUND UTILITY LOCATIONS. MAKE ADJUSTMENTS AS REQUIRED TO AVOID PLANTING OVER THE UTILITIES. DO NOT PLANT SHADE OR EVERGREEN TREES BELOW OVERHEAD WIRES. IF CONFLICT OCCURS, CONTACT LANDSCAPE ARCHITECT TO ADJUST LOCATION OF TREES.
- BACKFILL ISLANDS FROM SUBGRADE TO THE TOP OF CURB WITH ON-SITE TOPSOIL UNLESS OTHERWISE NOTED ON PLAN. FINISHED GRADE IN CENTER OF ISLAND SHALL BE 4" TO 6" HIGHER THAN TOP OF CURB TO PROVIDE POSITIVE DRAINAGE TO PERIMETER OF CURB ISLAND.
- PLACE 4" THICK BY 4" DIAMETER DOUBLE SHREDDED CEDAR OR CYPRESS BARK MULCH RING AT THE BASE OF ALL NEW TREES IN LAWN AREA. CUT LAWN AREA IN A SMOOTH UNIFORM CIRCULAR LINE.
- ALL GREEN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH SIDE SLOPES LESS THAN 3:1, SHALL BE GRADED AND TOPPED WITH MINIMUM 4" DEEP TOPSOIL AND SEEDED & MULCHED. REFER TO PLAN FOR SEED MIXTURE AND APPLICATION RATE.
- ALL EXISTING TREES AND SHRUBS NOTED TO REMAIN SHALL BE PROPERLY PRUNED, TRIMMED, THINNED AND SHAPED BY A QUALIFIED NURSERYMAN OR ARBORIST. ALL DEAD LIMBS AND BRANCHES SHALL BE REMOVED FROM SITE.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN AREAS SHALL RECEIVE LANDSCAPE EDGING AS DETAILED ON PLAN.
- ALL LANDSCAPING SHALL BE COMPLETED WITHIN 6 MONTHS OF COMPLETION OF BUILDING.
- ALL STAKING MATERIALS AND WRAPPING SHALL BE REMOVED OFF SITE WITHIN ONE YEAR AFTER INSTALLATION.
- LANDSCAPING ITEMS SHALL NOT INTERFERE WITH THE CLEAR VISION AREAS. TREES WITHIN PARKING LOT ISLANDS SHALL HAVE A CLEAR VIEW OF 4'-6" MINIMUM TO THE FIRST BRANCH AT MATURITY.
- ALL PLANT MATERIALS INCLUDING LAWN AREAS SHALL BE WATERED, FERTILIZED, TRIMMED, MOVED AND GENERALLY MAINTAINED BY THE CONTRACTOR IN A HEALTHY GROWING CONDITION FOR A PERIOD OF 30 DAYS AFTER FINAL COMPLETION AND AFTER LAWN IS CUT FOR FIRST TIME. CONTRACTOR SHALL SUBMIT A ONE (1) YEAR WARRANTY FROM COMPLETION DATE AND BE RESPONSIBLE TO REPLACE ANY DISEASED OR DEAD PLANT MATERIAL WITHIN THAT PERIOD OF TIME WITHOUT ANY COST TO THE OWNER.
- ALL LANDSCAPING SHALL BE IRRIGATED AND SHALL INCLUDE A RAIN SENSOR.
- REFER TO SHEET C501 FOR LANDSCAPE DETAILS.
- TREES SHALL NOT BE PLANTED CLOSER THAN 4FT TO THE PROPERTY LINE.

PLANTING REQUIREMENTS		
LOCATION	MINIMUM REQUIREMENT	PROVIDED
ROAD R/W GREENBELT	20' WIDE GREENBELT: 1 DECIDUOUS OR EVERGREEN TREE + 8 SHRUBS / 30LF = 775/30 = 26 TREES + 208 SHRUBS	28 TREES 311 SHRUBS
PARKING LOT AREA	20SF PER PARKING SPACE = 55 SPAC. (201) = 1,100 SF 1 TREE & 3 SHRUBS PER 100 SF OF REQ'D LANDSCAPING = 11 TREES + 33 SHRUBS	1,579 SF OF LANDSCAPE AREA 6 TREES 46 SHRUBS
BUFFER (WEST SIDE)	10' WIDE GREENBELT. 1 DECIDUOUS OR EVERGREEN TREE + 8 SHRUBS PER 30LF = 292/30 = 10 TREES + 80 SHRUBS	12 TREES 0 SHRUBS
INTERIOR LANDSCAPING	15% OF THE TOTAL LOT AREA 1 TREE / 300 SF + 5 SHRUBS TOTAL AREA = 73,465 SF PAVED AREA = 37,316 SF NET AREA = 36,149 SF 15% NET AREA = 5,422 SF 5,422/300 = 18 TREES + 90 SHRUBS	2 TREES 140 SHRUBS



NO.:	DATE:	SUBJECT:
09-05-24	03-18-24	PRELIMINARY SPA
06-06-24		FINAL SPA
03-18-24		FINAL SPA

DRAWN:	DESIGNED:	CHECKED:	FIELD:
BRZEZINSKI	BRZEZINSKI	QUADERER	CREW CB / RO

CULVER'S
 NORTH EAST 1/4 SEC 20
 TOWNSHIP 3N, RANGE 3E
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI
 SITE LANDSCAPE PLAN

Griggs Quaderer, Inc.
 8308 OFFICE PARK DRIVE
 GRAND BLANC, MI 48439
 WWW.GQINCORP.COM
 PH: (810) 695-0154
 FX: (810) 695-0158
 CIVIL ENGINEERING · LAND SURVEYING
 SITE PLANNING



JOB NO.: 230601
 PHASE: F. SPA
 C500



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

September 19th, 2024

**Revised Final Site Plan Review
for
White Lake Charter Township, Michigan**



Applicant:	Griggs Quaderer Inc.
Project Name:	Bogie Lake Road Culvers (Meijer outlot)
Plan Date:	June 6 th , 2024
Revised Date (Revision 1)	September 5 th , 2024
Location:	Between Bogie Lake Road and Meijer Service Drive Parcel ID: 12-20-276-035
Action Requested:	Final site plan approval

PROJECT NARRATIVE

The applicant is requesting final site plan approval for a new Culver’s drive-thru and sit-down restaurant, which is a permitted use in the PB Planned Business zoning district. Drive-thru food establishments have additional use standards as outlined in Section 4.17. The proposed project site is an outlot located along Bogie Lake Drive as it terminates into the Meijer parking lot. The site is currently vacant. Preliminary site plan approval was granted May 21, 2024, by the Township Board.

The applicant has indicated that a land division application was submitted and approved by The Township.

The Planning Review Response letter dated June 6th, 2024, indicates a waiver was provided for the requirement of a Community Impact Statement. The letter also references that the Community/Public Benefit donation of \$10,000 to the Township Corridor Improvement Authority was acceptable. The applicant has stated they understand that both the waiver of the CIS and acceptability of the monetary donation will need to be reconfirmed by the Township.

The purpose of final site plan review is to determine if the proposed use and site are consistent with Township ordinances and other applicable county, state, and federal laws and regulations and to identify reasonable conditions that may be necessary to mitigate potential negative impacts to surrounding properties and the community.

Benjamin R. Carlisle, *President* John L. Enos, *Vice President* Douglas J. Lewan, *Principal*
David Scurto, *Principal* Sally M. Elmiger, *Principal* R. Donald Wortman, *Principal* Craig Strong, *Principal*
Paul Montagno, *Principal* Megan Masson-Minock, *Principal* Laura Kreps, *Senior Associate*
Richard K. Carlisle, *Past President/Senior Principal*

Culver's

Final Site Plan Review (Revision 1)

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Preliminary site plans are reviewed by the Planning Commission with recommendations then provided to the Township Board for approval, approval with conditions or denial. Final site plan review and approval is conducted solely by the Planning Commission.

Since preliminary site approval has been granted, this review focuses on information relating to final site plan review and conformance as well as any noted items of concern from prior reviews requiring attention.

SITE DESCRIPTION

Lot Area:	1.69 acres
Frontage:	Approx. 360 feet along Meijer Service Drive Approx. 475 feet along Bogie Lake Road
Address:	TBD. Sheet A-3 indicates placement and size of address sign.
Current Use:	Vacant

Aerial image of the site

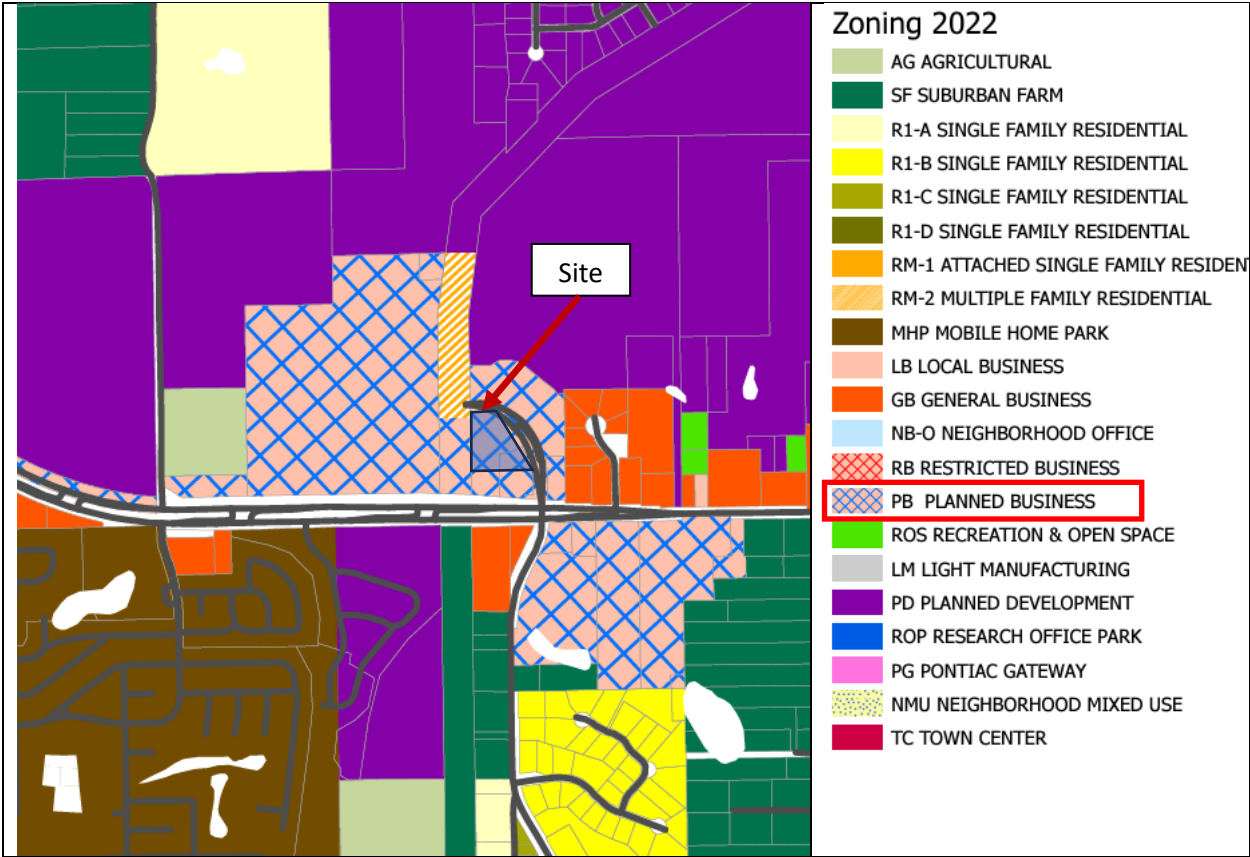


Source: NearMap June 8, 2024

	North	East	South	West
Surrounding Zoning	<i>PB, Planned Business</i>	<i>PB, Planned Business</i>	<i>PB, Planned Business</i>	<i>PB, Planned Business</i>
Surrounding Land Uses	<i>Vacant</i>	<i>Vacant</i>	<i>Vacant</i>	<i>ITC Energy Transmission Lines</i>
Future Land-Use Map	<i>Commercial Corridor</i>	<i>Commercial Corridor</i>	<i>Commercial Corridor</i>	<i>Commercial Corridor</i>

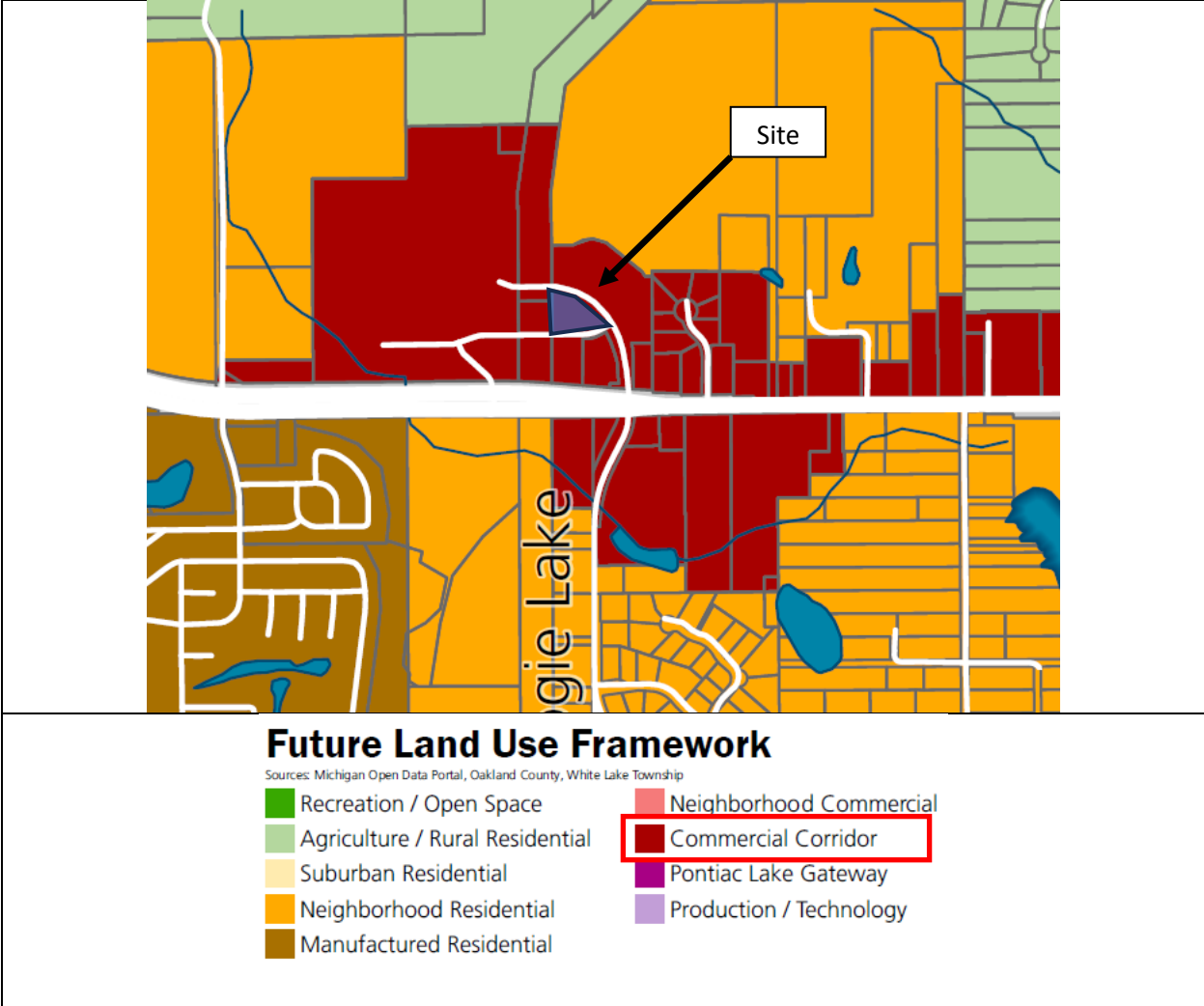
Current Zoning	<p>PB, Planned Business</p> <p><i>The PB Planned Business District is primarily a commercial district intended to permit, with Township approval, private and/or public development in a coordinated and cohesive arrangement which may be more difficult to achieve under more conventional, piecemeal development designed to conform with standard zoning requirements. To that end it becomes possible to permit greater flexibility in the types of land uses, land use arrangements and development requirements than would otherwise apply. It is further intended that the PB District be located along major thoroughfares, such as M-59, as opposed to locations in residential neighborhood areas where conflicts of land uses may arise more easily.</i></p> <p><i>Development standards, as approved in a development plan, in this district shall result in a project that is superior to one constructed under standard zoning requirements and shall be mutually acceptable to the applicant(s) and the Township. Therefore, any PB Plan shall be substantially consistent with the Township Master Plan, desirable principals of land use planning, zoning ordinance standards and other applicable development requirements. In order to achieve these objectives, approval of a PB development requires approval of both a Site Plan and PB Agreement which sets forth specific physical, functional, amenity and design features and other related requirements considered essential to the development.</i></p>
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Culver's
Final Site Plan Review (Revision 1)
September 19, 2024
Current Zoning Map



Future Land Use	Commercial Corridor <i>Provides regional goods and services to residents and non-residents. Includes large box stores and drive-thrus.</i>
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Future Land Use Map



Items to be Addressed: 1.) Confirmation from the Township that the requirement of a Community Impact Statement is waived 2.) Confirmation from the Township that the donation of \$10,000 to the Corridor Improvement Authority is an acceptable community/public benefit.

NATURAL RESOURCES

- Topography:** Sheet C-100 shows existing site topography. The site is relatively flat with a slight slope running east to west. Grading is proposed throughout the central portions of the site to accommodate level surfaces for asphalt and structures.
- Wetlands:** Wetlands are not present on the site.
- Woodland:** The site is clear of any major vegetation.
- Soils:** Sandy Loam soils are predominant on the site.
- Water:** The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map indicates no floodplain is present on the site. The Michigan Department of Environment, Great Lakes, and Energy (EGLE) Wetland Map indicates no wetlands on or adjacent to the site.

Items to be Addressed: Any cited concerns from Township Engineering.

AREA, WIDTH, HEIGHT, SETBACKS

Proposed building envelopes and setback standards are shown on Sheet C-200. Measurements are taken from the property lines. Rear and Side yard setbacks are determined by the Planning Commission.

PB Planned Business District Developmental Standards

	Required:	Proposed:	Complies
Setbacks			
Front	50 feet	85.3 feet (south) Not Provided (east)	Yes
Side	TBD	43 feet (west)	Yes
Rear	TBD	88.8 feet (north)	Yes
Building Height			
	35 feet	23 feet	Yes
	2 stories	1 story	Yes

Certain site layout requirements are determined by the Planning Commission. The preliminary site plan dated March 18th, 2024 was recommended for approval to the Township Board by the Planning Commission. The Township Board approved the preliminary site plan May 21st, 2024. Site layout has not been modified in the final site plan application dated June 6th, 2024.

Items to be Addressed: None.

ACCESS & CIRCULATION

The site is accessed via an ingress/egress drive off the Meijer Service Drive. Another egress only drive is located near the southwest corner of the site. The applicant Planner Review Response dated June 6th, 2024 notes a waiver was granted for a secondary driveway on the west side of the site as well as a waiver to reduce the required drive aisle width for a one-way drive along the south side of the building from twenty (20) feet to fifteen (15) feet. No changes have been proposed to the site access or layout between preliminary and final site plan applications.

Sheet C-200 outlines maneuvering capabilities for fire trucks. We defer to Township Engineering to assess the conformance of lot design and Public Safety to assess the conformance of maneuverability and accessibility for the site.

Items to be Addressed: 1) Any cited concerns from Township Engineering for items related to site traffic design. 2.) Any cited concerns from Township Public Safety for items related to access and maneuverability.

PARKING & LOADING

Section 5.11 outlines requirements for off-street parking. For fast food restaurants, the zoning ordinance requires one (1) space per 75 square feet of gross floor area. The parking calculations within the Parking Data Table on Sheet C-200 indicate fifty-four (54) parking spaces are required. Fifty-two (52) general parking spaces and three (3) barrier-free accessible parking spaces are provided thus fulfilling the ordinance requirements. The site plan meets the dimensional and layout requirements for parking spaces.

Drive-thru stacking requirements are eight (8) vehicles inclusive of the vehicle at the window. Eight (8) and nine (9) stacking spaces are provided as well as seven (7) spaces allocated for vehicles awaiting their order after the pickup window.

A loading zone is shown at the northeast portion of the asphalt area. A note indicates deliveries will be scheduled during off hours to reduce conflict with customer traffic. Per ordinance standards and prior reviews, the site meets loading zone requirements.

Items to be Addressed: None.

ESSENTIAL SERVICES & UTILITIES

The following Sheets provide various utility information proposed for the site:

- Sheet C-301 / Storm Sewer Plan
- Sheet C-303 / Drainage Area Map
- C-400 / Site Utility Plan

Sanitary sewer, water main and storm sewer standard detail specifications are provided in the final site plan application. Sheet C-400 provides the location of water main and sanitary sewer connections to

Culver's

Final Site Plan Review (Revision 1)

September 19, 2024

public utilities. It should be noted that fresh water and sanitary sewer lines cross near the northeastern portion of the proposed building. Notes regarding utility crossings are provided. We defer to the Township Engineer to assess the appropriate methods for allowing crossing water utility lines.

We note the only change on Sheet C-400 between preliminary site plan and final site plan is the proposed location of the private utility lines for gas and electric. Preliminary plans indicated the line would run east of the building and enter via the northeast corner of the structure. Final plans show the line running along the western side of the building and entering via the northwest corner of the structure. We defer to the Township Engineer for the validity of the modification.

Storm water is managed through the collection via catch basins located throughout the site. Proposed storm lines connect to an existing catch basin in the southeastern corner of the site. We defer to the Township Engineer to assess the design and capacity of the proposed and existing storm system via calculations provided on Sheet C-303.

Final site plan reviews require applicants to identify the location of all underground and aboveground storage tanks for such uses as fuel storage, waste, old holding tanks, collection of contaminated stormwater, and similar uses. We do not anticipate the storage of hazardous or contaminated materials onsite.

Items to be Addressed: 1.) Township Engineer to assess the appropriate methods for allowing crossing utility lines and storm water management. 2.) Township Engineer approval of modified location of gas and electric service to the building.

LANDSCAPING & SCREENING

Landscaping plans, details and irrigation are provided on Sheets C-500, 501 and 502. Landscape plans must be prepared by a landscape architect registered in the State of Michigan. The Planning Commission may waive this requirement. Per the approval of the preliminary landscape plan prepared by Griggs Quaderer, this requirement has been waived.

Planting requirements are provided on Sheet C-500 and are in conformance with standards set forth in Section 5.19 with the exception of interior landscaping. A waiver to the required eighteen (18) interior trees was granted at preliminary site plan approval and allows for ten (10) interior trees.

Tree, shrub, perennial and grass schedules, sizes and counts are provided on Sheet C-500. The count and placement of landscaping materials has not been altered between preliminary and final site plan applications. No major structural improvements are proposed to accommodate landscaping features. A 675 square foot outdoor patio area is shown along the southern elevation of the site.

Sheet C-502 provides the layout and information regarding site irrigation. Sheet C-500 notes the system will include a rain sensor.

Items to be Addressed: None

LIGHTING & NOISE

Lighting Requirements

Sheet C-401 provides proposed pole and building mounted lighting fixture locations as well as a photometric layout for the site. Specification sheets for both building and pole mounted lighting were provided. Below is a review of lighting information provided as it relates to the requirements outlined in Section 5.18.G of the zoning ordinance.

- i. The Planning Commission or Building Official shall determine if the proposed light levels meet the minimum necessary to provide safe and secure illumination. We note exterior lighting footcandle ranges only exceed the western property line however the footcandle is shown to be 0.1. This portion of the site abuts a vacant lot and ITC power lines.
- ii. The specification sheets and locations for pole and building mounted light fixtures are provided and conform to lighting standards.
- iii. Light poles located along Bogie Lake Road, Meijer Service Drive and west property line are more than five (5) feet from property lines. All light poles are directed away from neighboring sites.
- iv. Given the containment of footcandles along site property lines, glare does not appear to be an issue.
- v. Specification sheets provided for proposed fixtures indicate LED lighting which meets the intent of utilizing high efficiency lighting.
- vi. A note on Sheet C-401 indicates that all site lighting will be stationary and will not flicker, flash or oscillate.
- vii. The site plan indicates that all pole and building mounted lighting is at or below the maximum allowed height for mounting.
- viii. Sheet C-401 provides a "Statistical Area Summary" table which shows the varying footcandle averages over specific areas of the site. The average footcandles standard for the general site, driveway, parking, walks, building and loading area are below the maximum average footcandle for each respective area.
- ix. No flood lighting is proposed.
- x. No ground signage has been proposed on the final site plan.

Noise Requirements

Final site plan requires details regarding location of loudspeakers and purpose for public address sound systems be submitted for Township review and approval. Specifications were provided on the drive-thru

Culver's

Final Site Plan Review (Revision 1)

September 19, 2024

speaker system and sound decibels it is proposed to create. Noise level regulations are outlined in Section 5.18.A.

Items to be Addressed: *Planning Commission consideration of allowing current footcandle lighting levels per onsite safety.*

SIGNAGE

Sheet C-200 shows proposed signage and pavement marking locations. Sheet AC-1 provides the general dimensions and design of handicap and drive-thru signs.

Signs are reviewed and permitted administratively by the Township however applications may be presented to the Planning Commission for review. The final site plan indicates building signage. No monument signage is indicated.

Items to be Addressed: *None*

ARCHITECTURE & LAYOUT

Architectural information required at final site plan review includes the types of facing materials to be used on structures. Sheet A-3 indicates all elevations will be faced with thin brick, veneered stone, and EIFS. Aluminum canopies will be placed over doorways with canvas awnings over windows. The east and west elevation shows awning accents along the exterior walls. We note that no material board or colored elevations were included in the final site plan however applicant has stated in their Planning Review Response letter dated June 6th, 2024, that such materials will be available at the Planning Commission meeting in which the final site plan is considered.

A note on Sheet A-3 states that window coverage requirements could not be met due to interior layouts. Window coverage has not varied from the preliminary site plan which was previously reviewed and approved.

Gates for the trash receptacle are noted on Sheet AC-1 to match the EIFS finish of "Tiki Hut". Per planning comments regarding the orientation of the trash receptacle facing the front yard, no changes have been made from the approved preliminary site plan to the final site plan thus allowing for the current layout of the trash receptacle to remain.

Items to be Addressed: *Exterior construction material sample boards and colored elevations shall be provided for Building Official and Planning Commission review.*

SPECIFIC USE STANDARDS

Section 4.17 provides for additional standards applicable to drive-in or drive-thru window service establishments. Upon review of these standards, we find the final site plan is in conformance with these requirements with exception to additional information required in the Lighting and Noise portion of this review.

Items to be Addressed: None.

SUMMARY

The final site plan is substantially complete, except as otherwise noted in this report. We recommend the revised final site plan be provided to the Planning Commission for consideration of approval or approval with conditions. Additional potential conditions could also be identified at the Planning Commission meeting.

The Planning Commission and/or Building Official will need to address the following determinations, modification and/or waivers listed below:


Waivers / Modifications / Determinations

1. *Planning Commission consideration of allowing current footcandle lighting levels per onsite safety.*
2. *Confirmation from the Township that the requirement of a Community Impact Statement is waived.*
3. *Confirmation from the Township that the donation of \$10,000 to the Corridor Improvement Authority is an acceptable community/public benefit.*

Recommended Conditions

1. *Any cited concerns from Township Engineering are addressed.*
2. *Any cited concerns from Township Public Safety are addressed.*
3. *Exterior construction material sample boards and colored elevations shall be provided for Building Official and Planning Commission review.*

Respectfully,



CARLISLE/WORTMAN ASSOC., INC.
Matteo Passalacqua
Community Planner



Fire Department
Charter Township of White Lake

7420 Highland Road
White Lake, MI 48383
Office (248) 698-3993
www.whitelaketwp.com/fire

Site / Construction Plan Review

To: Sean O'Neil, Planning Department Director

Date: 9/17/2024

Project: Culver's

Job #: 230601

Date on Plans: 09/05/2024

The Fire Department has the following comments with regards to the Final Site plan review for the project known as Culver's.

1. The Fire Dept. has no further comments at this time

Jason Hanifen
Fire Marshal
Charter Township of White Lake
(248)698-3993
jhanifen@whitelaketwp.com

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

CULVER'S RESTAURANT

NEW RESTAURANT FINAL SITE PLAN APPROVAL

BOGIE LAKE ROAD
WHITE LAKE, MI

PART OF THE NORTHEAST 1/4 OF SECTION 20
TOWNSHIP 3N NORTH, RANGE 8E EAST
WHITE LAKE TOWNSHIP, COUNTY OF OAKLAND, STATE OF MICHIGAN

REQUESTED WAIVERS:

1. A WAIVER TO REMOVE THE REQUIREMENT OF A COMMUNITY IMPACT STATEMENT (CIS)
2. A WAIVER TO ALLOW THE DUMPSTER ENCLOSURE TO PROJECT INTO THE FRONT YARD
3. A WAIVER TO ALLOW A SECONDARY ACCESS POINT TO MEIJER DRIVE
4. A WAIVER TO REDUCE THE REQUIRED DRIVE AISLE WIDTH FROM 20' TO 15' ALONG THE FRONT OF THE BUILDING
5. A WAIVER TO REDUCE THE AMOUNT OF INTERIOR TREE REQUIREMENT FROM 18 TREES TO 10 TREES
6. A WAIVER TO REMOVE THE REQUIREMENT OF A LANDSCAPE ARCHITECT TO SIGN THE LANDSCAPING PLANS AND ALLOW A PROFESSIONAL ENGINEER TO SIGN THE PLAN.
7. A WAIVER TO REDUCE THE REQUIRED AMOUNT OF WINDOW COVERAGE ALONG THE FRONT FACADE FROM 30% TO 13%.

PROPERTY DESCRIPTION:

LAND SITUATED IN THE NORTHEAST 1/4 OF SECTION 20, TOWN 3 NORTH, RANGE 8 EAST, TOWNSHIP OF WHITE LAKE, COUNTY OF OAKLAND, STATE OF MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER POST OF SAID SECTION 20; SAID POINT BEING S89°59'45"W 2635.27 FEET FROM THE EAST 1/4 CORNER OF SAID SECTION 20; THENCE N00°31'08"E 198.92 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 20; THENCE N89°58'09"E, 519.78 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF M-59 (HIGHLAND ROAD, VARIABLE WIDTH); THENCE S13°36' FEET ALONG THE ARC OF A 5821.58 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING S87°30'16"E, 513.20 FEET ALONG THE NORTHERLY RIGHT-OF-WAY LINE OF SAID M-59; THENCE N00°39'06"E, 370.03 FEET TO THE PLACE OF BEGINNING FOR A PLACE OF BEGINNING:

THENCE FROM SAID PLACE OF BEGINNING N00°39'06"E, 292.32 FEET; THENCE S31°37' FEET ALONG AN ARC OF A 534.00 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING S63°18'30"E, 326.08 FEET; THENCE S24°21'04"E, 65.40 FEET; THENCE S1°59' FEET ALONG AN ARC OF A 514.00 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING S35°50'29"E, 51.57 FEET; THENCE S13°28'42"W, 6.80 FEET; THENCE S60°22'37"W, 29.73 FEET; THENCE 90.99 FEET ALONG AN ARC OF 175.00 FOOT RADIUS CIRCULAR CURVE TO THE RIGHT, CHORD BEARING S75°06'16"W, 89.97 FEET; THENCE N90°00'00"W, 237.44 FEET TO SAID PLACE OF BEGINNING; SAID PARCEL CONTAINS 1.687 GROSS AND NET ACRES OF LAND.

DRAWING INDEX:

DATE	DESCRIPTION
09-05-2024	C000 - COVER SHEET
09-05-2024	C100 - TOPOGRAPHIC SURVEY PLAN
09-05-2024	C101 - SITE REMOVAL PLAN
09-05-2024	C200 - SITE LAYOUT PLAN
09-05-2024	C300 - SITE GRADING PLAN
09-05-2024	C301 - SITE STORM SEWER PLAN
09-05-2024	C302 - SOIL EROSION CONTROL PLAN
09-05-2024	C303 - DRAINAGE AREA MAP & STORM CALCULATIONS
09-05-2024	C304 - STORMCEPTOR DETAILS
09-05-2024	C305 - STORM SEWER PROFILES
09-05-2024	C400 - SITE UTILITY PLAN
09-05-2024	C401 - SITE PHOTOMETRIC PLAN
09-05-2024	C500 - SITE LANDSCAPE PLAN
09-05-2024	C501 - SITE LANDSCAPE DETAILS
09-05-2024	C502 - SITE IRRIGATION PLAN
09-05-2024	C600 - SITE DETAILS
-	- SANITARY SEWER DETAILS (TOWNSHIP)
-	- WATER MAIN DETAILS (TOWNSHIP)
-	- STORM SEWER DETAILS (TOWNSHIP)
-	- SOIL EROSION CONTROL DETAILS (COUNTY)
-	A-2 - DIMENSIONED FLOOR PLAN
-	A-3 - EXT. ELEVATIONS, DOOR & WINDOW SCHEDULE
-	AC-1 - ARCHITECTURAL SITE DETAILS

DATE
MOST RECENT ISSUE / REVISION DATE
FILLED CIRCLE INDICATES SUBMITTED DRAWING

BENCHMARKS (DATUM: NAVD88)

- BM#1: TOP ARROW ON FIRE HYDRANT LOCATED APPROXIMATELY 37' SOUTH OF @ BOGIE LAKE ROAD, 35' WEST OF THE BEGINNING OF THE BOULEVARD, 790' NORTH OF @ M-59 & HIGHLAND ROAD AND 250' EAST OF @ OF EASTERLY TOWERED ELECTRICAL TRANSFORMER LINES, ELEVATION = 1003.87
- BM#2: TOP ARROW ON FIRE HYDRANT LOCATED APPROXIMATELY 18' SOUTH OF @ MEIJER SERVICE DRIVE, 370' WEST OF @ BOGIE LAKE ROAD, 180' EAST OF @ OF EASTERLY TOWERED ELECTRICAL TRANSFORMER LINES, ELEVATION = 1003.52

NPDES STATEMENT:

THE OWNER WILL NOT NEED TO OBTAIN AN NPDES STORM WATER DISCHARGE PERMIT FROM THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE). TOTAL DISTURBED AREA: 1.62 ACRES

TOPOGRAPHIC SURVEY STATEMENT:

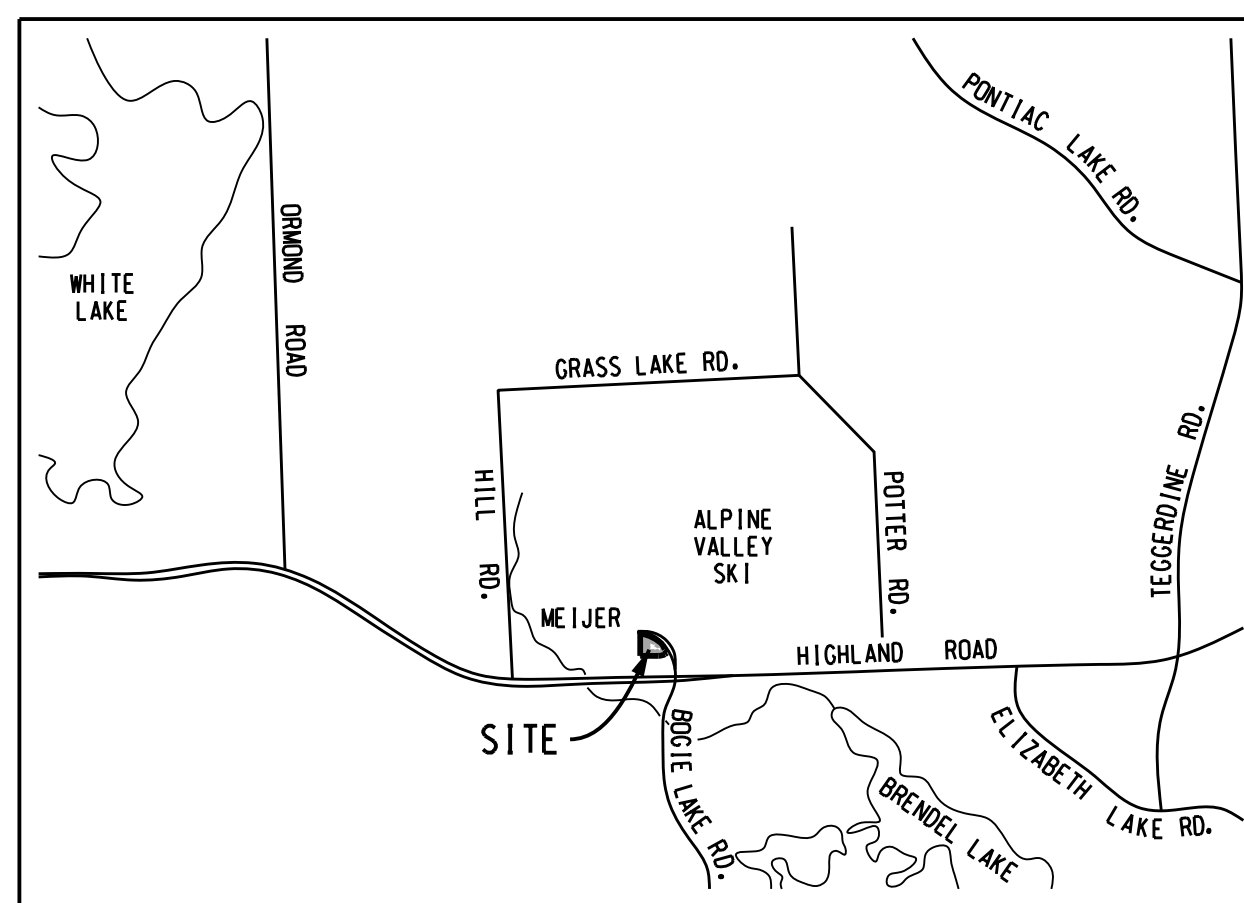
THE EXISTING FEATURES SHOWN ON THIS PLAN ARE FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY GRIGGS QUADERER, INC. IN SEPTEMBER OF 2023. THE UNDERGROUND UTILITIES SHOWN WERE EITHER VERIFIED BY THIS SURVEY OR WERE PLOTTED IN ACCORDANCE WITH THE BEST INFORMATION AVAILABLE. NO EXISTING UTILITIES WERE EXPOSED FOR VERIFICATION OF LOCATION AND ELEVATION. NO GUARANTEES ARE GIVEN THAT THE LOCATIONS ARE ABSOLUTELY ACCURATE OR THAT UTILITIES OTHER THAN THOSE SHOWN ARE NOT PRESENT.

OWNER: KATIE SCHMITT
7734 SOMERHILL LANE
CLARKSTON, MI 48438
(248) 953-5150
KATIESCHMITT4@GMAIL.COM

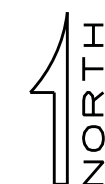
CONTRACTOR: KEVIN JOHNSON
RHOADS & JOHNSON
285 N. ALLOY DR.
FENTON, MI 48430
(810) 750-7630
KEVIN@RHOADSJOHNSON.COM

ARCHITECT: RAY EMBACH
AMAG, INC.
SUITE 200
4488 W. BRISTOL ROAD
FLINT, MI 48507
(810) 230-9311
REMBACH@AMAGARCH.COM

ENGINEER: CHRIS BRZEZINSKI, PE, PS
GRIGGS QUADERER, INC.
8308 OFFICE PARK DRIVE
GRAND BLANC, MI 48439
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EMAIL: CHRIS@GQINCORP.COM



LOCATION MAP
NOT TO SCALE



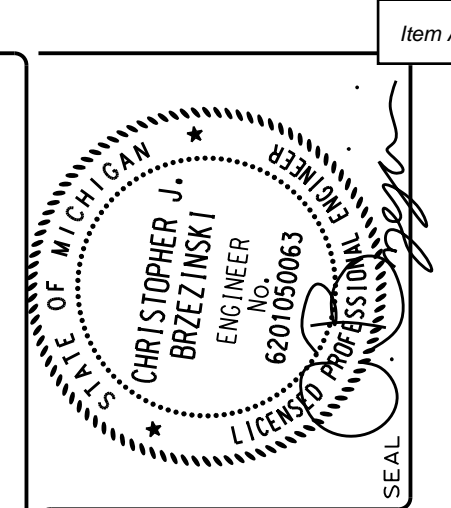
STANDARD LEGEND		
DESCRIPTION	PROPOSED	EXISTING
BUILDING	[Symbol]	[Symbol]
STORM SEWER	--- ST ---	--- ST ---
SANITARY SEWER	--- S ---	--- S ---
WATER	--- W ---	--- W ---
GAS LINE	--- G ---	--- G ---
ELECTRIC LINE	--- E ---	--- E ---
TELEPHONE LINE	--- T ---	--- T ---
MANHOLE	[Symbol]	[Symbol]
CATCH BASIN	[Symbol]	[Symbol]
FIRE HYDRANT	[Symbol]	[Symbol]
GATE VALVE & WELL	[Symbol]	[Symbol]
POWER POLE	[Symbol]	[Symbol]
LIGHT POLE	[Symbol]	[Symbol]
CURB & GUTTER	[Symbol]	[Symbol]
FENCE	[Symbol]	[Symbol]
DECIDUOUS TREE	[Symbol]	[Symbol]
EVERGREEN TREE	[Symbol]	[Symbol]
EASEMENT	[Symbol]	[Symbol]
SIGN	[Symbol]	[Symbol]
ASPHALT SURFACE	[Symbol]	ASPH.
CONCRETE SURFACE	[Symbol]	CONC.
SOIL BORING	[Symbol]	[Symbol]
SPOT ELEVATION	+736.45	+736.45
CONTOUR LINE	736	736

GENERAL NOTES:

1. STANDARD SPECIFICATIONS: ALL MATERIALS AND CONSTRUCTION METHODS FOR THIS PROJECT SHALL CONFORM WITH THE REQUIREMENTS OF ALL GOVERNING AGENCIES HAVING JURISDICTION (LOCAL, COUNTY, STATE). UNLESS OTHERWISE NOTED, CONSTRUCTION MATERIALS SHALL COMPLY WITH THE LATEST EDITION OF THE STATE OF MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION AND PROJECT SPECIFICATIONS. IN CASE OF DISCREPANCIES BETWEEN REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.
2. EXISTING BACKGROUND INFORMATION: THE EXISTING FEATURES SHOWN ON THESE DOCUMENTS ARE FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY GRIGGS QUADERER, INC. IN SEPTEMBER OF 2023. THE UNDERGROUND UTILITIES SHOWN WERE EITHER VERIFIED BY THIS SURVEY OR WERE OBTAINED FROM THE BEST AVAILABLE DOCUMENT INFORMATION. NO GUARANTEES ARE GIVEN TO THE ACCURACY OF ALL UTILITY INFORMATION SHOWN OR THAT ALL UTILITIES ARE INDICATED ON THIS DOCUMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS BEFORE COMMENCING WORK AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. MISS DIG UTILITY PROTECTION SERVICE: THE CONTRACTOR SHALL CONTACT MISS DIG UTILITY SERVICES (811) THREE (3) WORKING DAYS PRIOR TO BEGIN OF CONSTRUCTION TO VERIFY LOCATIONS OF UTILITIES. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ANY UTILITY DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH THE IDENTICAL MATERIAL IN ACCORDANCE WITH THE UTILITY OWNERS REQUIREMENTS. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
4. SUBSURFACE SOIL CONDITIONS: A SOIL INVESTIGATION FOR THIS SITE IS AVAILABLE FOR REVIEW. THE CONTRACTOR IS RESPONSIBLE TO ACQUAINT HIMSELF WITH CURRENT SOIL AND GROUNDWATER CONDITIONS FOR HIS OWN INFORMATION PRIOR TO BIDDING. NO MODIFICATIONS TO UNIT PRICES OR FINAL BID WILL BE MADE DUE TO VARIABLE SUBSURFACE CONDITIONS, Dewatering, IF DETERMINED NECESSARY BY THE CONTRACTOR, WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION COST OF UTILITIES OR STRUCTURES.
5. PERMITS: THE CONTRACTOR IS RESPONSIBLE FOR SECURING ALL PERMITS REQUIRED TO PERFORM ALL WORK SHOWN ON THESE DOCUMENTS. THE CONTRACTOR SHALL PAY FOR AND OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, LOCAL OR PRIVATE AGENCIES INCLUDING REQUIRED BONDS, COSTS INSPECTION AND TESTING SERVICES SHALL BE PAID FOR BY THE CONTRACTOR.
6. SOIL EROSION CONTROL: CONTRACTOR SHALL OBTAIN SOIL EROSION CONTROL PERMIT PRIOR TO BEGIN OF CONSTRUCTION. THE CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS OF ACT 451, PART 91 FOR SOIL EROSION & SEDIMENTATION CONTROL, AND WILL BE RESPONSIBLE FOR ALL MAINTENANCE UNTIL THE FINAL ACCEPTANCE OF THE PROJECT. CONTRACTOR SHALL PROTECT ALL EXISTING AND PROPOSED STORM WATER FACILITIES ON SITE DURING CONSTRUCTION.
7. MICHIGAN SAFETY REQUIREMENTS: ALL WORK, CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE STATE AND FEDERAL SAFETY, OCCUPATIONAL, HEALTH AND ENVIRONMENTAL REGULATIONS AS WELL AS NFPA AND ANSI CODES AS APPLICABLE.
8. PRE-CONSTRUCTION MEETING: CONTRACTOR SHALL ATTEND PRE-CONSTRUCTION MEETING FOR COORDINATION WITH MUNICIPALITY, AGENCIES AND UTILITY COMPANIES. ITEMS FOR DISCUSSION WILL INCLUDE SCHEDULE, INSPECTION SERVICES, TESTING OF PUBLIC UTILITIES AND FINAL AS-BUILT DOCUMENTS.
9. CONSTRUCTION INSPECTIONS & FINAL TESTING: CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL INSPECTION AGENCIES THREE (3) WORKING DAYS PRIOR TO START OF CONSTRUCTION AND ARRANGE FOR ON-SITE INSPECTION. PUBLIC UTILITIES SHALL BE TESTED PER LOCAL AND COUNTY AGENCY REQUIREMENTS WITH INSPECTORS FROM BOTH AGENCIES PRESENT. THE CONTRACTOR SHALL NOT CONNECT TO THE EXISTING PUBLIC UTILITY UNTIL THE NEW UTILITY IS TESTED AND APPROVED BY THE AGENCIES.

WHITE LAKE TOWNSHIP STANDARD NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWNSHIP'S CURRENT STANDARDS AND SPECIFICATIONS.
2. THE CONTRACTOR SHALL NOTIFY THE TOWNSHIP ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION, 48 HOURS PRIOR TO THE BEGINNING OF CONSTRUCTION.
3. CONTRACTOR SHALL CONTACT MISS DIG AT 800-482-7171, 72 HOURS IN ADVANCE OF CONSTRUCTION, FOR EXISTING UNDERGROUND UTILITY LOCATIONS.
4. IN ORDER TO VERIFY COMPLIANCE WITH APPROVED PLANS, FULL-TIME CONSTRUCTION OBSERVATION WILL GENERALLY BE REQUIRED DURING ALL PHASES OF UNDERGROUND SITE CONSTRUCTION INCLUDING INSTALLATION OF SANITARY SEWER, STORM SEWERS, DRAINAGE WATER MAINS AND APPURTENANCES AS WELL AS PRIVATE STREET CURBING AND PAVING CONSTRUCTION. INTERMITTENT OBSERVATIONS WILL BE MADE FOR SITE GRADING, PARKING LOT CURBING AND PAVING, RETAINING WALL CONSTRUCTION AND OTHER SURFACE ACTIVITY.



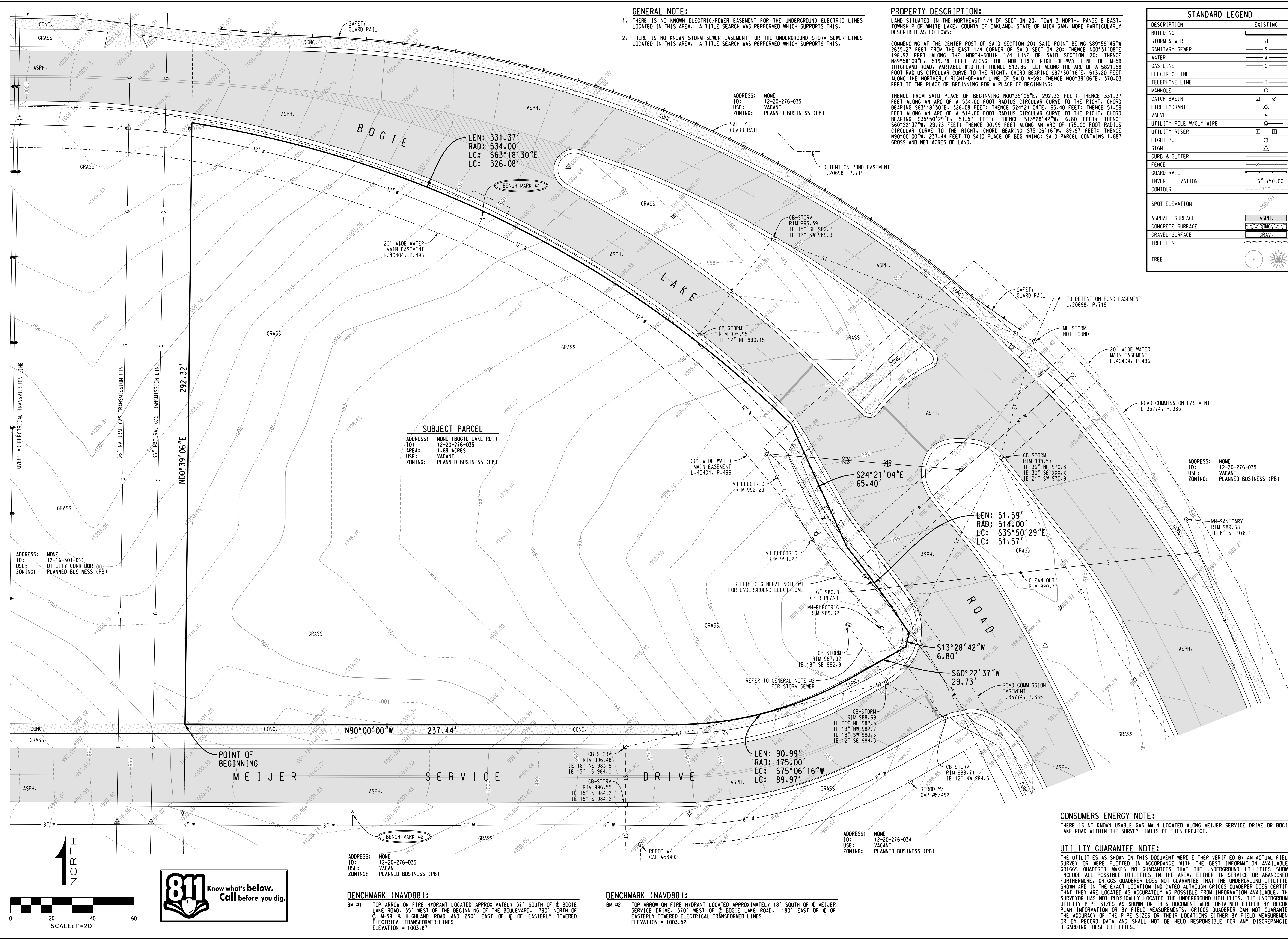
NO.	DATE	REVISION OR ISSUE
01	09-05-24	FINAL SPA
02	06-06-24	FINAL SPA
03	03-18-24	PRELIMINARY SPA

DRAWN	DESIGNED	CHECKED	FIELD
BRZEZINSKI	BRZEZINSKI	QUADERER	GREW CB / RO

CULVER'S
NORTHEAST 1/4 SEC. 20
TOWNSHIP 3N, RANGE 8E
BOGIE LAKE ROAD
WHITE LAKE TWP., MI
COVER SHEET

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CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING
10th ANNIVERSARY 2004 - 2023

JOB NO.:	PHASE:
230601	F · SPA



DRAWN	DESIGNED	CHECKED	FIELD CREW	NO.
BRZEZINSKI	BRZEZINSKI	QUADERER	CB / RO	230601

NORTH EAST 1/4 SEC. 20
TOWNSHIP 3N, RANGE 8E

BOGIE LAKE ROAD
WHITE LAKE TWP., MI

CULVER'S

BOUNDARY & TOPOGRAPHIC SURVEY PLAN

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CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING

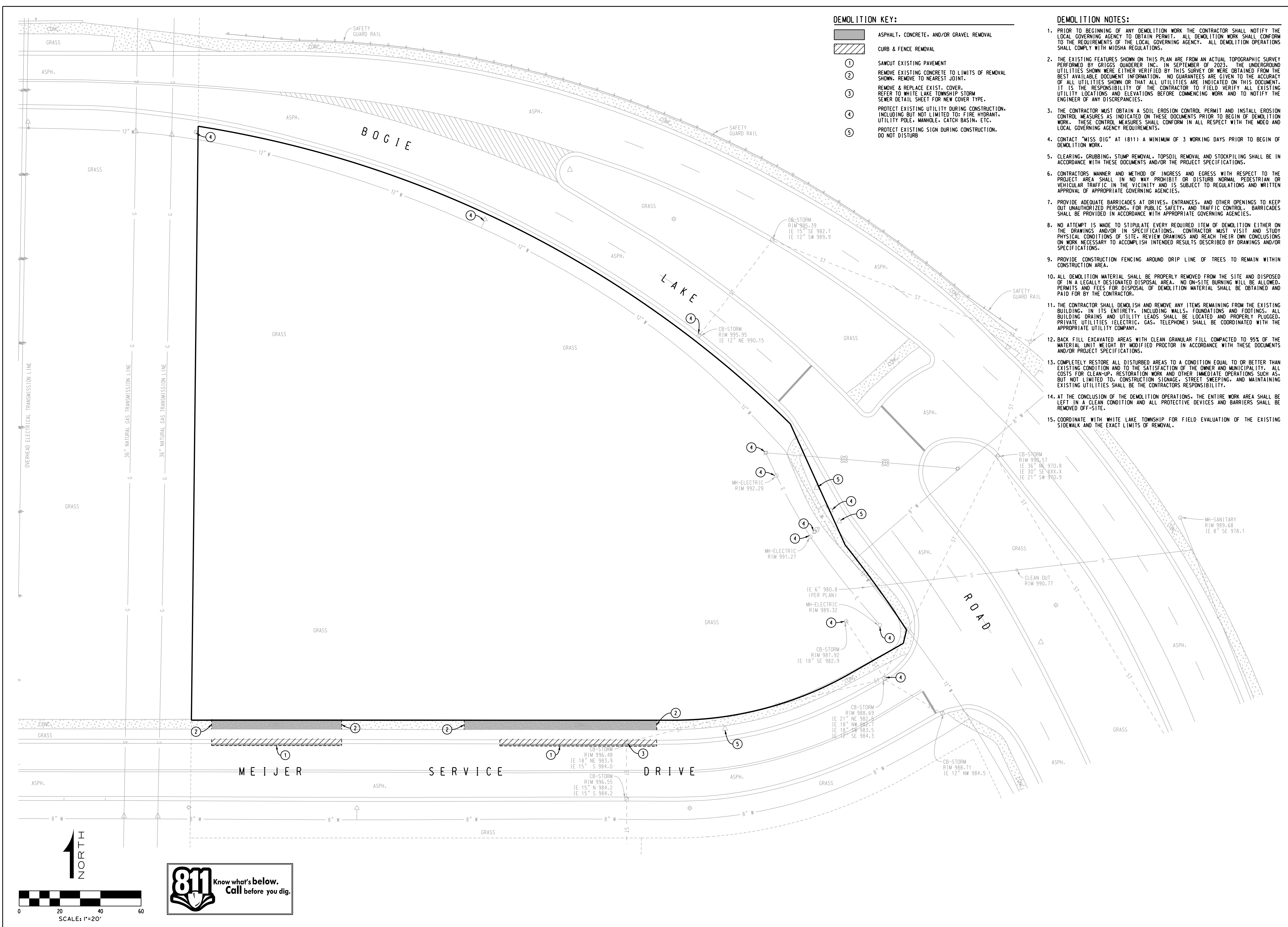
10TH ANNIVERSARY 2004-2023

BENCHMARK (NAVD88):

BM #1 TOP ARROW ON FIRE HYDRANT LOCATED APPROXIMATELY 37' SOUTH OF Q BOGIE LAKE ROAD, 35' WEST OF THE BEGINNING OF THE BOULEVARD, 190' NORTH OF Q M-59 & HIGHLAND ROAD AND 250' EAST OF Q OF EASTERLY TOWERED ELECTRICAL TRANSFORMER LINES ELEVATION = 1003.87

BENCHMARK (NAVD88):

BM #2 TOP ARROW ON FIRE HYDRANT LOCATED APPROXIMATELY 18' SOUTH OF Q MEIJER SERVICE DRIVE, 310' WEST OF Q BOGIE LAKE ROAD, 180' EAST OF Q OF EASTERLY TOWERED ELECTRICAL TRANSFORMER LINES ELEVATION = 1003.52



DEMOLITION KEY:

- ASPHALT, CONCRETE, AND/OR GRAVEL REMOVAL
- CURB & FENCE REMOVAL
- ① SAWCUT EXISTING PAVEMENT
- ② REMOVE EXISTING CONCRETE TO LIMITS OF REMOVAL SHOWN. REMOVE TO NEAREST JOINT.
- ③ REMOVE & REPLACE EXIST. COVER. REFER TO WHITE LAKE TOWNSHIP STORM SEWER DETAIL SHEET FOR NEW COVER TYPE.
- ④ PROTECT EXISTING UTILITY DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO: FIRE HYDRANT, UTILITY POLE, MANHOLE, CATCH BASIN, ETC.
- ⑤ PROTECT EXISTING SIGN DURING CONSTRUCTION. DO NOT DISTURB

DEMOLITION NOTES:

1. PRIOR TO BEGINNING OF ANY DEMOLITION WORK THE CONTRACTOR SHALL NOTIFY THE LOCAL GOVERNING AGENCY TO OBTAIN PERMIT. ALL DEMOLITION WORK SHALL CONFORM TO THE REQUIREMENTS OF THE LOCAL GOVERNING AGENCY. ALL DEMOLITION OPERATIONS SHALL COMPLY WITH MICHIGAN REGULATIONS.
2. THE EXISTING FEATURES SHOWN ON THIS PLAN ARE FROM AN ACTUAL TOPOGRAPHIC SURVEY PERFORMED BY GRIGGS QUADERER INC. IN SEPTEMBER OF 2023. THE UNDERGROUND UTILITIES SHOWN WERE EITHER VERIFIED BY THIS SURVEY OR WERE OBTAINED FROM THE BEST AVAILABLE DOCUMENT INFORMATION. NO GUARANTEES ARE GIVEN TO THE ACCURACY OF ALL UTILITIES SHOWN OR THAT ALL UTILITIES ARE INDICATED ON THIS DOCUMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND ELEVATIONS BEFORE COMMENCING WORK AND TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. THE CONTRACTOR MUST OBTAIN A SOIL EROSION CONTROL PERMIT AND INSTALL EROSION CONTROL MEASURES AS INDICATED ON THESE DOCUMENTS PRIOR TO BEGIN OF DEMOLITION WORK. THESE CONTROL MEASURES SHALL CONFORM IN ALL RESPECT WITH THE MDOE AND LOCAL GOVERNING AGENCY REQUIREMENTS.
4. CONTACT "MISS DIG" AT (811) A MINIMUM OF 3 WORKING DAYS PRIOR TO BEGIN OF DEMOLITION WORK.
5. CLEARING, GRUBBING, STUMP REMOVAL, TOPSOIL REMOVAL AND STOCKPILING SHALL BE IN ACCORDANCE WITH THESE DOCUMENTS AND/OR THE PROJECT SPECIFICATIONS.
6. CONTRACTORS MANNER AND METHOD OF INGRESS AND EGRESS WITH RESPECT TO THE PROJECT AREA SHALL IN NO WAY PROHIBIT OR DISTURB NORMAL PEDESTRIAN OR VEHICULAR TRAFFIC IN THE VICINITY AND IS SUBJECT TO REGULATIONS AND WRITTEN APPROVAL OF APPROPRIATE GOVERNING AGENCIES.
7. PROVIDE ADEQUATE BARRICADES AT DRIVES, ENTRANCES, AND OTHER OPENINGS TO KEEP OUT UNAUTHORIZED PERSONS, FOR PUBLIC SAFETY, AND TRAFFIC CONTROL. BARRICADES SHALL BE PROVIDED IN ACCORDANCE WITH APPROPRIATE GOVERNING AGENCIES.
8. NO ATTEMPT IS MADE TO STIPULATE EVERY REQUIRED ITEM OF DEMOLITION EITHER ON THE DRAWINGS AND/OR IN SPECIFICATIONS. CONTRACTOR MUST VISIT AND STUDY PHYSICAL CONDITIONS OF SITE, REVIEW DRAWINGS AND REACH THEIR OWN CONCLUSIONS ON WORK NECESSARY TO ACCOMPLISH INTENDED RESULTS DESCRIBED BY DRAWINGS AND/OR SPECIFICATIONS.
9. PROVIDE CONSTRUCTION FENCING AROUND DRIP LINE OF TREES TO REMAIN WITHIN CONSTRUCTION AREA.
10. ALL DEMOLITION MATERIAL SHALL BE PROPERLY REMOVED FROM THE SITE AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE ALLOWED. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
11. THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS REMAINING FROM THE EXISTING BUILDING, IN ITS ENTIRETY, INCLUDING WALLS, FOUNDATIONS AND FOOTINGS. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED. PRIVATE UTILITIES (ELECTRIC, GAS, TELEPHONE) SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
12. BACK FILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR IN ACCORDANCE WITH THESE DOCUMENTS AND/OR PROJECT SPECIFICATIONS.
13. COMPLETELY RESTORE ALL DISTURBED AREAS TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION AND TO THE SATISFACTION OF THE OWNER AND MUNICIPALITY. ALL COSTS FOR CLEAN-UP, RESTORATION WORK AND OTHER IMMEDIATE OPERATIONS SUCH AS, BUT NOT LIMITED TO, CONSTRUCTION SIGNAGE, STREET SWEEPING, AND MAINTAINING EXISTING UTILITIES SHALL BE THE CONTRACTORS RESPONSIBILITY.
14. AT THE CONCLUSION OF THE DEMOLITION OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN A CLEAN CONDITION AND ALL PROTECTIVE DEVICES AND BARRIERS SHALL BE REMOVED OFF-SITE.
15. COORDINATE WITH WHITE LAKE TOWNSHIP FOR FIELD EVALUATION OF THE EXISTING SIDEWALK AND THE EXACT LIMITS OF REMOVAL.

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**Civil Engineering - Land Surveying
 Site Planning**

19th Anniversary
 2004 - 2023

CULVER'S
 NORTH EAST 1/4 SEC. 20
 TOWNSHIP 3N, RANGE 3E
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

SITE REMOVAL PLAN

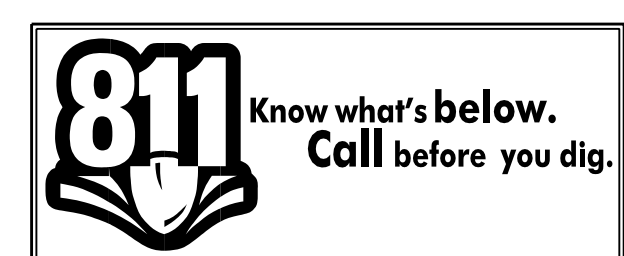
DATE: 06/22/2024 TIME: 12:00:00 PM

DRAWN	BREZTINSKI	09-05-24	FINAL SPA	F	SUBJECT
DESIGNED	QUADERER	06-06-24	FINAL SPA	F	
CHECKED	QUADERER	03-18-24	PRELIMINARY SPA	P	
FIELD CREW	CB / RO				

JOB NO.: 230601

PHASE: F. SPA

C101





GENERAL SITE / LAYOUT NOTES:

- COORDINATES AND/OR DIMENSIONS SHOWN ON THIS DOCUMENT ARE TO EDGE OF METAL (GUTTER PAN), OUTSIDE FACE OF BUILDING FOUNDATIONS, EDGE OF PAVEMENT, CENTER OF STRUCTURE, CENTERLINE OF STRIPING UNLESS NOTED OTHERWISE.
- NO DIMENSIONS SHALL BE SCALED OFF THE DOCUMENTS. REFER UNCLEAR ITEMS TO THE ENGINEER FOR INTERPRETATION.
- REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, SLAB AND UNDERBED THICKNESS.
- CULVER'S (OWNER) SHALL BE REQUIRED TO REPAIR/REPLACE ANY BROKEN SECTIONS OF CONCRETE WITHIN THE FRONTAGE SIDEWALK ADJACENT TO THE SITE ALONG MEIJER DR. AND BOGIE LAKE RD. AS DETERMINED BY THE TOWNSHIP ENGINEERING CONSULTANT.
- DELIVERIES TO THE STORE WILL BE MADE DURING OFF HOURS TO NOT CONFLICT WITH DAILY CUSTOMER TRAFFIC FLOW.

LAND USE INFORMATION:

CURRENT ZONING: PLANNED BUSINESS (PB)
 PROPOSED ZONING: PLANNED BUSINESS (PB)
 CURRENT USE: VACANT
 PROPOSED USE: FAST FOOD RESTAURANT
 TOTAL SITE AREA: 73,495 SF, 1.69 AC.
 TOTAL BUILDING AREA: 4,085 SF
 LOT COVERAGE BY BLDG: 5.6%

BUILDING		PARKING	
FRONT YARD	50LF	FRONT YARD	20LF
SIDE YARD	20LF	SIDE YARD	10LF
REAR YARD	NA	REAR YARD	NA

NOTE: SIDE AND REAR SETBACKS ARE NOT FIXED IN THE ZONING ORDINANCE AND ARE TO BE DETERMINED/APPROVED BY THE PLANNING COMMISSION. THE SETBACKS LISTED ABOVE ARE ESTIMATED FOR THIS PROJECT AND MEET THE MINIMUM ZONING CODE.

PARKING DATA:

USE	REQUIREMENTS	PARKING REQUIRED	PARKING PROVIDED
FAST FOOD RESTAURANT	1 SPACES PER 75 SF GFA 4,085 SF / 75 =	54 SPACES	55 SPACES
BARRIER FREE	51 - 75 SPACES	3 SPACES	3 SPACES
TOTAL		54 SPACES	55 SPACES

PAVEMENT LEGEND:

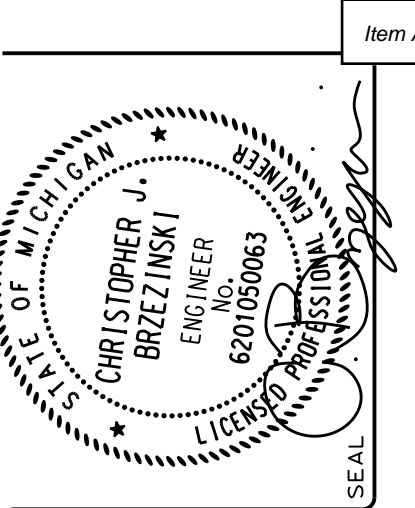
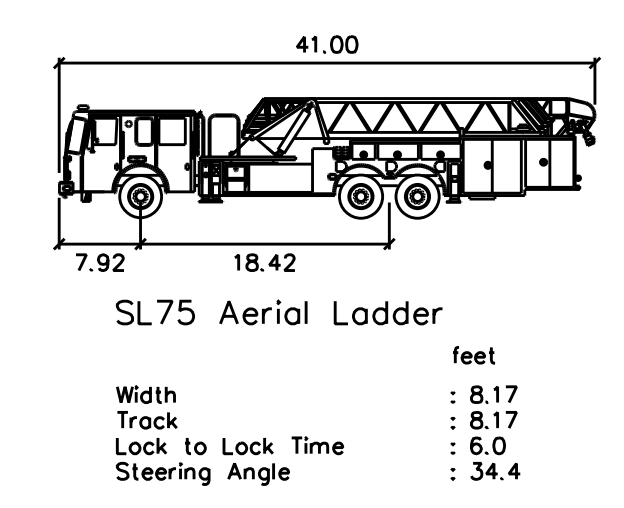
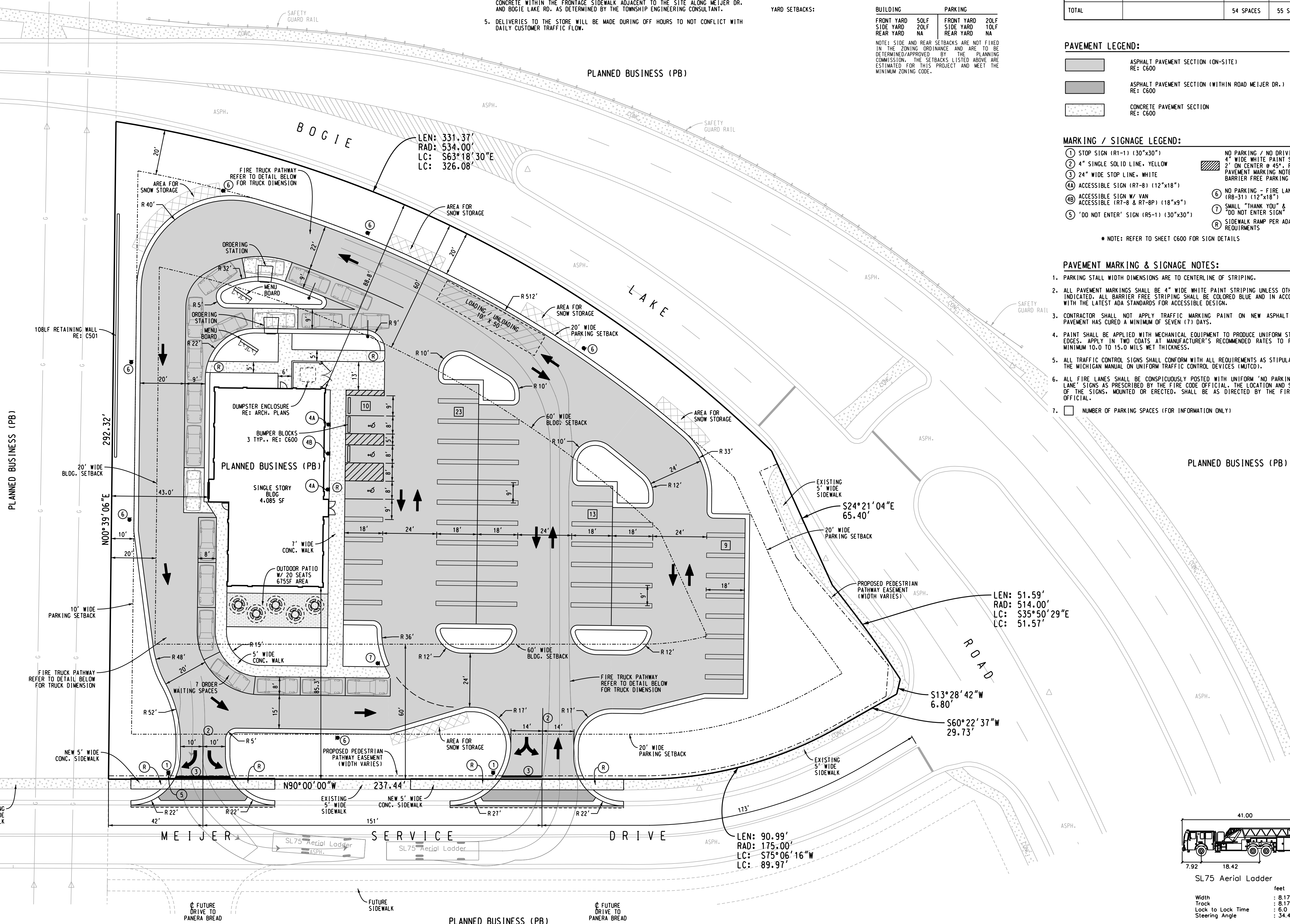
- ASPHALT PAVEMENT SECTION (ON-SITE)
RE: C600
- ASPHALT PAVEMENT SECTION (WITHIN ROAD MEIJER DR.)
RE: C600
- CONCRETE PAVEMENT SECTION
RE: C600

MARKING / SIGNAGE LEGEND:

- STOP SIGN (R1-1) (30"x30")
 - 4" SINGLE SOLID LINE, YELLOW
 - 24" WIDE STOP LINE, WHITE
 - ACCESSIBLE SIGN (R7-8) (12"x18")
 - ACCESSIBLE SIGN W/ VAN (R8-31) (12"x18")
 - ACCESSIBLE SIGN (R7-8 & R7-8P) (18"x9")
 - 'DO NOT ENTER' SIGN (R5-1) (30"x30")
 - NO PARKING / NO DRIVING AREAS 4" WIDE WHITE PAINT STRIPING 2" ON CENTER @ 45'. REFER TO PAVEMENT MARKING NOTE #2 FOR BARRIER FREE PARKING
 - NO PARKING - FIRE LANE (R8-31) (12"x18")
 - SMALL "THANK YOU" & "DO NOT ENTER" SIGN
 - SIDEWALK RAMP PER ADA REQUIREMENTS
- * NOTE: REFER TO SHEET C600 FOR SIGN DETAILS

PAVEMENT MARKING & SIGNAGE NOTES:

- PARKING STALL WIDTH DIMENSIONS ARE TO CENTERLINE OF STRIPING.
- ALL PAVEMENT MARKINGS SHALL BE 4" WIDE WHITE PAINT STRIPING UNLESS OTHERWISE INDICATED. ALL BARRIER FREE STRIPING SHALL BE COLORED BLUE AND IN ACCORDANCE WITH THE LATEST ADA STANDARDS FOR ACCESSIBLE DESIGN.
- CONTRACTOR SHALL NOT APPLY TRAFFIC MARKING PAINT ON NEW ASPHALT UNTIL PAVEMENT HAS CURED A MINIMUM OF SEVEN (7) DAYS.
- PAINT SHALL BE APPLIED WITH MECHANICAL EQUIPMENT TO PRODUCE UNIFORM STRAIGHT EDGES. APPLY IN TWO COATS AT MANUFACTURER'S RECOMMENDED RATES TO PROVIDE MINIMUM 10.0 TO 15.0 MILS WET THICKNESS.
- ALL TRAFFIC CONTROL SIGNS SHALL CONFORM WITH ALL REQUIREMENTS AS STIPULATED IN THE MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL FIRE LANES SHALL BE CONSPICUOUSLY POSTED WITH UNIFORM "NO PARKING FIRE LANE" SIGNS AS PRESCRIBED BY THE FIRE CODE OFFICIAL. THE LOCATION AND SPACING OF THE SIGNS, MOUNTED OR ERECTED, SHALL BE AS DIRECTED BY THE FIRE CODE OFFICIAL.
- NUMBER OF PARKING SPACES (FOR INFORMATION ONLY)



NO.	DATE	REVISION OR ISSUE
09-05-24	F. SPA	FINAL SPA
06-06-24	F. SPA	FINAL SPA
03-18-24	F. SPA	PRELIMINARY SPA

DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD	CREW CB / RO

CULVER'S

BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

NORTH EAST 1/4 SEC. 20
 TOWNSHIP 33N, RANGE 36E

SITE LAYOUT PLAN

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CIVIL ENGINEERING - LAND SURVEYING
 SITE PLANNING

PHASE: F. SPA

JOB NO.: 230601

10th Anniversary 2004-2023

C200



BARRIER FREE RAMP LEGEND:
 (R) TYPE R PER MDT DETAIL R-28-K
 (P) TYPE P PER MDT DETAIL R-28-K

CURB & GUTTER LEGEND:
 (A) STANDARD CURB AND GUTTER.
 (B) STANDARD CURB AND GUTTER WITH REVERSE SLOPE.
 (C) 10 FOOT TRANSITION BETWEEN TYPE (A) AND TYPE (B)
 (D) 5 FOOT CURB END TRANSITION.
 (E) MATCH EXISTING PAVEMENT OR CURB ELEVATION.

REAR BUILDING DETAILED GRADING

SCALE: 1" = 10'

GRADING NOTES:

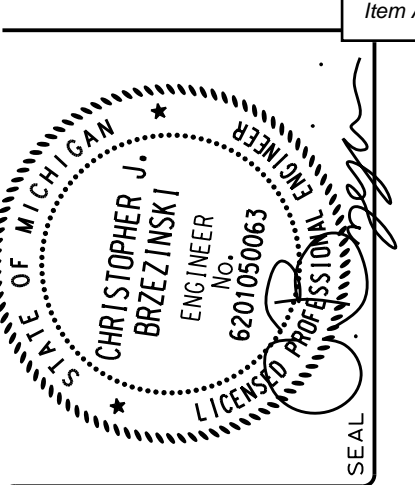
1. ALL PROPOSED SPOT ELEVATIONS IN PAVED AREAS ARE TO TOP OF PAVEMENT UNLESS NOTED OTHERWISE.
2. CONTOURS SHOWN ARE FOR REFERENCE ONLY. BASE CONSTRUCTION EFFORTS ON PROPOSED SPOT ELEVATIONS ONLY.
3. "BARRIER FREE" PARKING AND SIDEWALK RAMPS SHALL CONFORM IN ALL RESPECTS TO THE MICHIGAN ADA (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS.
4. CONTRACTOR SHALL ADJUST ANY UTILITY ELEMENT/STRUCTURE MEANT TO BE FLUSH WITH GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) WHICH ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. NO ADDITIONAL COSTS FOR THIS WORK WILL BE ACCEPTED. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE.
5. CONTRACTOR IS RESPONSIBLE FOR CUT AND FILL QUANTITIES. ADDITIONAL COMPENSATION WILL NOT BE ACCEPTED FOR HAULING OF EXCESS AND BORROW MATERIAL TO AND FROM SITE AS WELL AS LABOR COSTS FOR PLACEMENT AND/OR REMOVAL OF OFF-SITE BORROW MATERIAL WHICH BE CLEAN COMPACTIBLE STRUCTURAL FILL MATERIAL (NO ORGANIC MATERIAL) WHICH WILL BE INSPECTED PRIOR TO USE FOR ON-SITE FILL MATERIAL.
6. SITE CONTRACTOR IS RESPONSIBLE TO PROVIDE A STABLE SUBGRADE AT DESIGN ELEVATIONS. ALL PAVED AREAS INCLUDING BUILDING PAD SHALL BE PROFILESSED & COMPACTED TO MEET 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D1557.
7. CONTRACTOR SHALL STORE SUFFICIENT TOPSOIL MATERIAL ON-SITE FOR RE-USE IN ALL DISTURBED GREEN AREAS AND NEW LANDSCAPE AREAS.
8. PROVIDE POSITIVE DRAINAGE AT ALL TIMES TO ENSURE NO STANDING WATER. MAINTAIN A MINIMUM SLOPE OF 1.00% IN ALL NEW BITUMINOUS AREAS.

STORM SEWER NOTES:

1. ALL MATERIALS SHALL COMPLY WITH MDT STANDARD SPECIFICATIONS AND/OR LOCAL GOVERNING AGENCIES.
2. STORM SEWER CONVEYANCE: STORM SEWER PIPE 12" AND LARGER SHALL BE C76 CLASS IV RCP. ALL CONVEYANCE SEGMENTS PARTIALLY OR COMPLETELY UNDER PAVEMENT SHALL HAVE FLEXIBLE RUBBER COMPRESSION GASKETS CONFORMING TO ASTM C443 PREMIUM JOINTS. STORM SEWER PIPE 10" AND SMALLER SHALL BE PVC-SDR 26 OR AS REQUIRED BY LOCAL GOVERNING AGENCY.
3. STORM SEWER STRUCTURES: REINFORCED CONCRETE IN CONFORMANCE WITH ASTM C478. DEPTH AS INDICATED ON DOCUMENTS. IF MASONRY STRUCTURES ARE ALLOWED, CONCRETE BLOCKS SHALL BE STANDARD 6" x 8" x 12" CURVED UNITS FOLLOWING ASTM C139. CONCRETE BRICK UNITS SHALL BE 2" x 4" x 8" AND FOLLOW ANSI/ASTM C55. GRADE N, TYPE 1.
4. FRAME & COVERS: REFER TO WHITE LAKE TOWNSHIP STORM SEWER DETAILS SHEET.
5. UNDERDRAIN: 4" PERFORATED, FLEXIBLE HDPE TUBING, COUPLING BAND. PIPE SHALL BE FILTER SOCK WRAPPED AND FITTED WITH END CAPS. PERFORATIONS SHALL BE UNIFORMLY DISTRIBUTED ALONG THE TOP OF THE BOTTOM SECTION IN ACCORDANCE WITH AASHTO M252 PERFORATION REQUIREMENTS.

STORM SEWER NOTES:

1. ALL MATERIALS SHALL COMPLY WITH MDT STANDARD SPECIFICATIONS AND/OR WHITE LAKE TOWNSHIP STANDARD DETAILS. REFER TO WHITE LAKE TOWNSHIP STANDARD STORM SEWER DETAIL SHEET ATTACHED WITH THIS SET OF DOCUMENTS FOR DETAILS AND STANDARD NOTES.
2. CONTACT 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.
3. THE CONTRACTOR SHALL CONTACT MISS DIG 72 HOURS BEFORE CONSTRUCTION AT (800) 482-7171 TO LOCATE EXISTING UNDERGROUND UTILITIES.
4. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
5. FOR MATERIAL NOTES, SIZING AND CONSTRUCTION PRACTICES, CONTRACTOR SHALL REFER TO WHITE LAKE TOWNSHIP STANDARD STORM SEWER DETAIL SHEET.



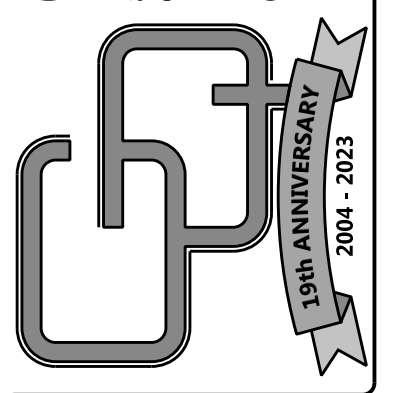
NO.	DATE	REVISION OR ISSUE
09-05-24	FINAL SPA	
06-06-24	FINAL SPA	
03-18-24	PRELIMINARY SPA	

DRAWN	DESIGNED	CHECKED	FIELD CREW
BRZEZINSKI	BRZEZINSKI	QUADERER	CB / RO

CULVER'S
 NORTH EAST 1/4 SEC 20
 TOWNSHIP 3N, RANGE 8E
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

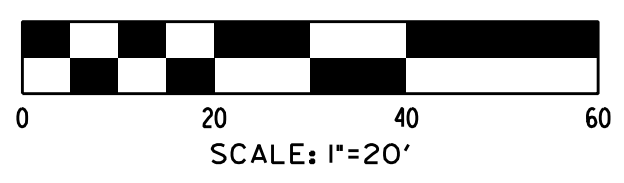
Griggs Quaderer, Inc.
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 GRAND BLANC, MI 48499
 PH: (810) 695-0154
 FX: (810) 695-0158

CIVIL ENGINEERING · LAND SURVEYING
 SITE PLANNING



PHASE: F · SPA
 JOB NO.: 230601
 C300

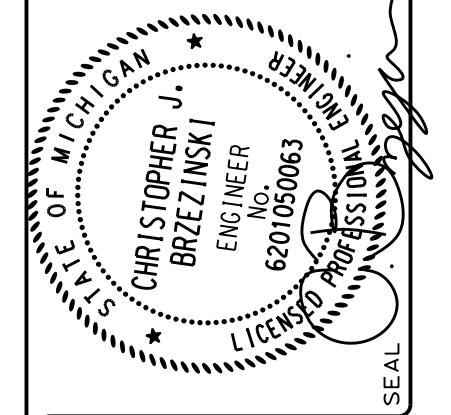
1
NORTH



UTILITY LEGEND:
SAND BACKFILL (MOOT CLASS1) COMPACTED TO 95% DENSITY

- STORM SEWER NOTES:**
- ALL MATERIALS SHALL COMPLY WITH MOOT STANDARD SPECIFICATIONS AND/OR WHITE LAKE TOWNSHIP STANDARD DETAILS. REFER TO WHITE LAKE TOWNSHIP STANDARD STORM SEWER DETAIL SHEET ATTACHED WITH THIS SET OF DOCUMENTS FOR DETAILS AND STANDARD NOTES.
 - CONTACT 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 CONSTRUCTION, CONTRACTOR SHALL HAVE IN HIS POSSESSION A CURRENT SOIL EROSION CONTROL PERMIT AS ISSUED BY WHITE LAKE TOWNSHIP.
 - FOR MATERIAL NOTES, SIZING AND CONSTRUCTION PRACTICES, CONTRACTOR SHALL REFER TO WHITE LAKE TOWNSHIP STANDARD STORM SEWER DETAIL SHEET.

- STORM SEWER NOTES:**
- ALL MATERIALS SHALL COMPLY WITH MOOT STANDARD SPECIFICATIONS AND/OR LOCAL GOVERNING AGENCIES.
 - STORM SEWER CONVEYANCE:
STORM SEWER PIPE 12" AND LARGER SHALL BE C76 CLASS IV RCP. ALL CONVEYANCE SEGMENTS PARTIALLY OR COMPLETELY UNDER PAVEMENT SHALL HAVE FLEXIBLE RUBBER COMPRESSION GASKETS CONFORMING TO ASTM C443 PREMIUM JOINTS.
STORM SEWER PIPE 10" AND SMALLER SHALL BE PVC SDR 26 OR AS REQUIRED BY LOCAL GOVERNING AGENCY.
 - STORM SEWER STRUCTURES:
REINFORCED CONCRETE IN CONFORMANCE WITH ASTM C478. DEPTH AS INDICATED ON DOCUMENTS. IF MASONRY STRUCTURES ARE ALLOWED, CONCRETE BLOCKS SHALL BE STANDARD 6"x 8"x 12" CURVED UNITS FOLLOWING ASTM C139. CONCRETE BRICK UNITS SHALL BE 2"x 4"x 8" AND FOLLOW ANSI/ASTM C55. GRADE N, TYPE 1.
 - FRAME & COVERS:
REFER TO WHITE LAKE TOWNSHIP STORM SEWER DETAILS SHEET.
 - UNDERDRAIN:
4" PERFORATED, FLEXIBLE HDPE TUBING, COUPLING BAND. PIPE SHALL BE FILTER SOCK WRAPPED AND FITTED WITH END CAPS. PERFORATIONS SHALL BE UNIFORMLY DISTRIBUTED ALONG THE TOP OF THE BOTTOM SECTION IN ACCORDANCE WITH AASHTO M252 PERFORATION REQUIREMENTS.



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DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD CREW	CB / RO

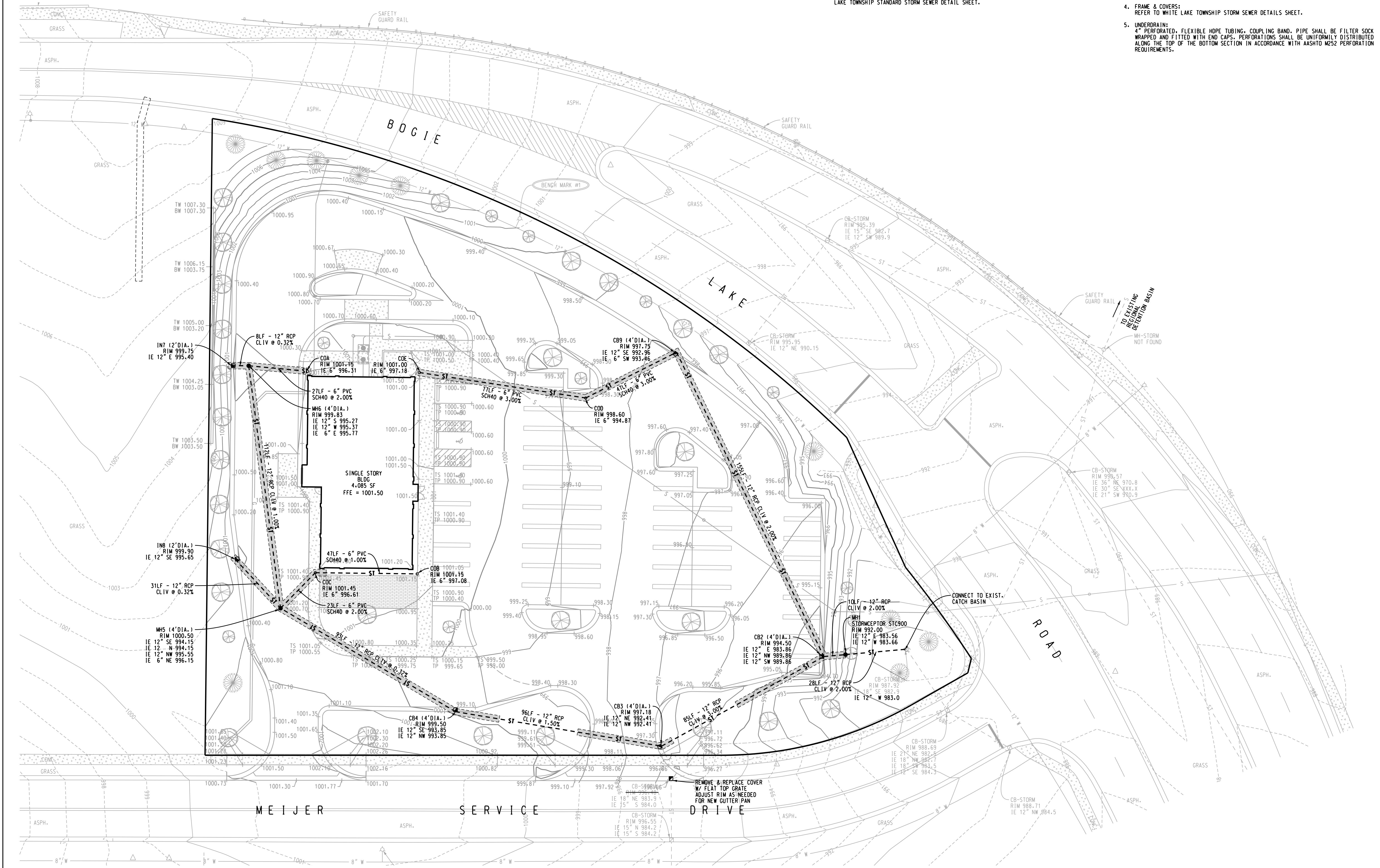
CULVER'S
NORTHEAST 1/4 SEC. 20
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WHITE LAKE TWP., MI

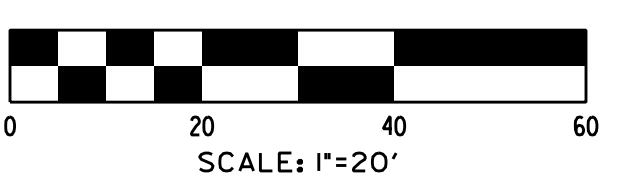
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PHASE: F. SPA
JOB NO.: 230601
C301





CONSTRUCTION SEQUENCE:

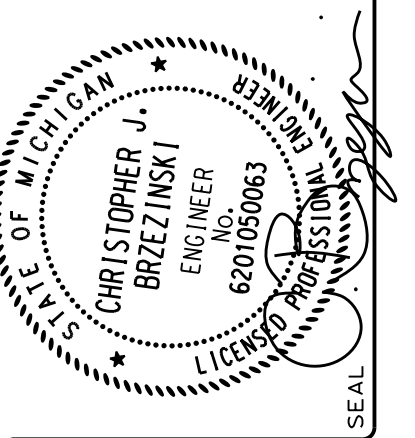
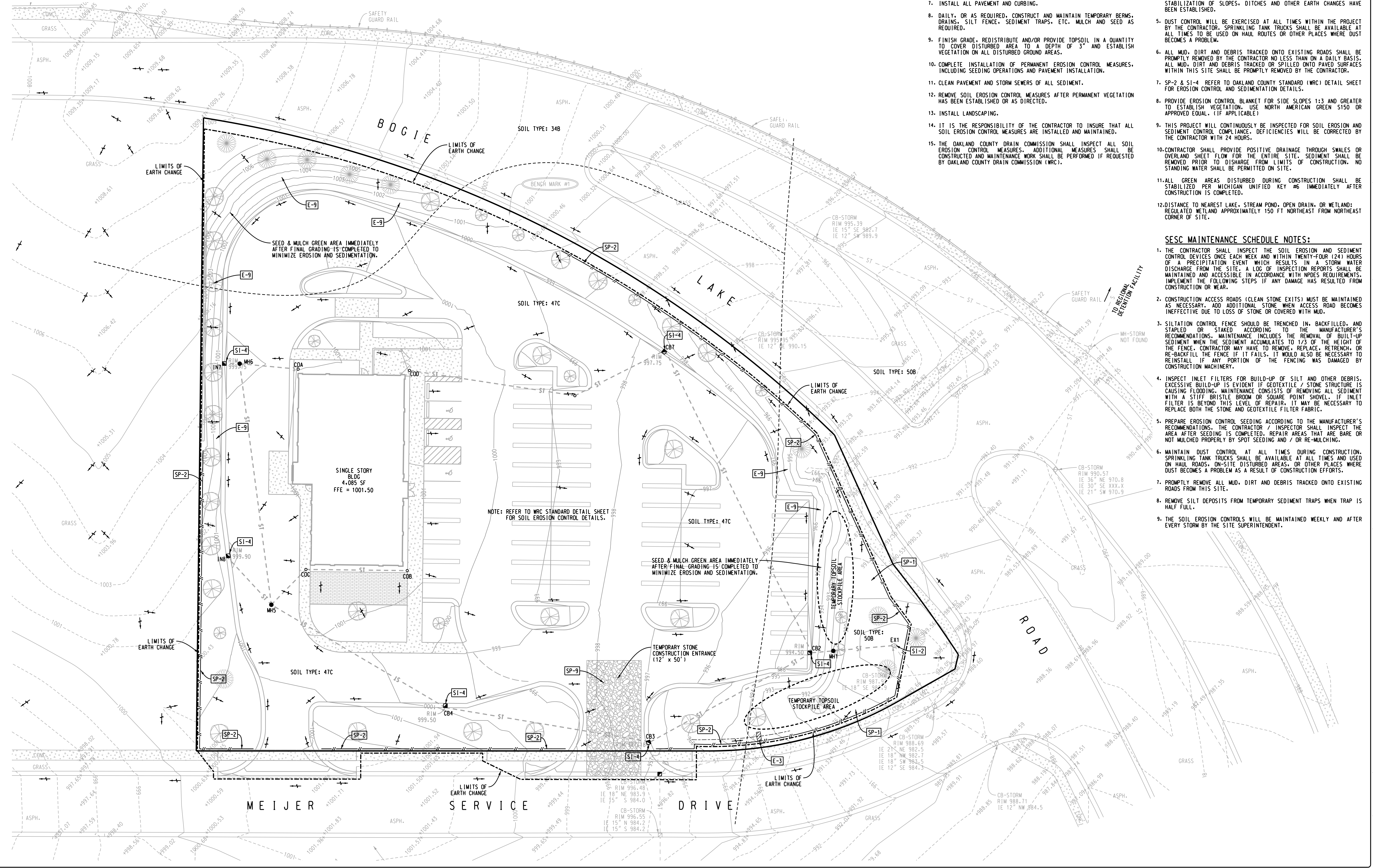
1. PROVIDE EROSION CONTROL MEASURES THAT WILL BE USED AS PART OF THIS WORK. INSTALL ADDITIONAL MEASURES AS REQUIRED BY THESE DRAWINGS AND AS FIELD CONDITIONS DICTATE IN ACCORDANCE WITH OAKLAND COUNTY DRAIN COMMISSION STANDARDS AND SPECIFICATIONS.
2. STRIP TOPSOIL, STOCKPILE ON SITE FOR LATER REUSE.
3. PERFORM MASS GRADING OPERATIONS.
4. BEGIN CONSTRUCTION OF BUILDING PAD AND FOUNDATION.
5. CONSTRUCT STORM SEWER SYSTEM COMPLETE. IMMEDIATELY INSTALL STONE FILTERS ON ALL CATCH BASINS AND INLETS.
6. INSTALL ALL UTILITIES.
7. INSTALL ALL PAVEMENT AND CURBING.
8. DAILY, OR AS REQUIRED, CONSTRUCT AND MAINTAIN TEMPORARY BERMS, DRAINS, SILT FENCE, SEDIMENT TRAPS, ETC. MULCH AND SEED AS REQUIRED.
9. FINISH GRADE, REDISTRIBUTE AND/OR PROVIDE TOPSOIL IN A QUANTITY TO COVER DISTURBED AREA TO A DEPTH OF 3" AND ESTABLISH VEGETATION ON ALL DISTURBED GROUND AREAS.
10. COMPLETE INSTALLATION OF PERMANENT EROSION CONTROL MEASURES, INCLUDING SEEDING OPERATIONS AND PAVEMENT INSTALLATION.
11. CLEAN PAVEMENT AND STORM SEWERS OF ALL SEDIMENT.
12. REMOVE SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED OR AS DIRECTED.
13. INSTALL LANDSCAPING.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL SOIL EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED.
15. THE OAKLAND COUNTY DRAIN COMMISSION SHALL INSPECT ALL SOIL EROSION CONTROL MEASURES. ADDITIONAL MEASURES SHALL BE CONSTRUCTED AND MAINTENANCE WORK SHALL BE PERFORMED IF REQUESTED BY OAKLAND COUNTY DRAIN COMMISSION (WRC).

SOIL EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE OAKLAND COUNTY DRAIN COMMISSION (WRC) REQUIREMENTS AND SPECIFICATIONS.
2. DAILY INSPECTIONS SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
3. ANY EROSION OR SEDIMENT FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT BE ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MANMADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
4. CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES AS REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER EARTH CHANGES HAVE BEEN ESTABLISHED.
5. DUST CONTROL WILL BE EXERCISED AT ALL TIMES WITHIN THE PROJECT BY THE CONTRACTOR. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES TO BE USED ON HAUL ROUTES OR OTHER PLACES WHERE DUST BECOMES A PROBLEM.
6. ALL MUD, DIRT AND DEBRIS TRACKED ONTO EXISTING ROADS SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR NO LESS THAN ON A DAILY BASIS. ALL MUD, DIRT AND DEBRIS TRACKED OR SPILLED ONTO PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
7. SP-2 & SI-4 REFER TO OAKLAND COUNTY STANDARD (WRC) DETAIL SHEET FOR EROSION CONTROL AND SEDIMENTATION DETAILS.
8. PROVIDE EROSION CONTROL BLANKET FOR SIDE SLOPES 1:3 AND GREATER TO ESTABLISH VEGETATION. USE NORTH AMERICAN GREEN S150 OR APPROVED EQUAL. (IF APPLICABLE)
9. THIS PROJECT WILL CONTINUOUSLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE CONTRACTOR WITH 24 HOURS.
10. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE THROUGH SWALES OR OVERLAND SHEET FLOW FOR THE ENTIRE SITE. SEDIMENT SHALL BE REMOVED PRIOR TO DISCHARGE FROM LIMITS OF CONSTRUCTION. NO STANDING WATER SHALL BE PERMITTED ON SITE.
11. ALL GREEN AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED PER MICHIGAN UNIFIED KEY #6 IMMEDIATELY AFTER CONSTRUCTION IS COMPLETED.
12. DISTANCE TO NEAREST LAKE, STREAM POND, OPEN DRAIN, OR WETLAND: REGULATED WETLAND APPROXIMATELY 150 FT NORTHEAST FROM NORTHEAST CORNER OF SITE.

SESC MAINTENANCE SCHEDULE NOTES:

1. THE CONTRACTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENT CONTROL DEVICES ONCE EACH WEEK AND WITHIN TWENTY-FOUR (24) HOURS OF A PRECIPITATION EVENT WHICH RESULTS IN STORM WATER DISCHARGE FROM THE SITE. A LOG OF INSPECTION REPORTS SHALL BE MAINTAINED AND ACCESSIBLE IN ACCORDANCE WITH NPDES REQUIREMENTS. IMPLEMENT THE FOLLOWING STEPS IF ANY DAMAGE HAS RESULTED FROM CONSTRUCTION OR WEAR.
2. CONSTRUCTION ACCESS ROADS (CLEAN STONE EXITS) MUST BE MAINTAINED AS NECESSARY. ADD ADDITIONAL STONE WHEN ACCESS ROAD BECOMES INEFFECTIVE DUE TO LOSS OF STONE OR COVERED WITH MUD.
3. SILTATION CONTROL FENCE SHOULD BE TRENCHED IN, BACK FILLED, AND STAPLED OR STAKED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. MAINTENANCE INCLUDES THE REMOVAL OF BUILD-UP SEDIMENT WHEN THE SEDIMENT ACCUMULATES TO 1/3 OF THE HEIGHT OF THE FENCE. CONTRACTOR MAY HAVE TO REMOVE, REPLACE, RETRENCH, OR RE-BACKFILL THE FENCE IF IT FAILS. IT WOULD ALSO BE NECESSARY TO REINSTALL IF ANY PORTION OF THE FENCING WAS DAMAGED BY CONSTRUCTION MACHINERY.
4. INSPECT INLET FILTERS FOR BUILD-UP OF SILT AND OTHER DEBRIS. EXCESSIVE BUILD-UP IS EVIDENT IF GEOTEXTILE / STONE STRUCTURE IS CAUSING FLOODING. MAINTENANCE CONSISTS OF REMOVING ALL SEDIMENT WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTER IS BEYOND THIS LEVEL OF REPAIR, IT MAY BE NECESSARY TO REPLACE BOTH THE STONE AND GEOTEXTILE FILTER FABRIC.
5. PREPARE EROSION CONTROL SEEDING ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR / INSPECTOR SHALL INSPECT THE AREA AFTER SEEDING IS COMPLETED. REPAIR AREAS THAT ARE BARE OR NOT MULCHED PROPERLY BY SPOT SEEDING AND / OR RE-MULCHING.
6. MAINTAIN DUST CONTROL AT ALL TIMES DURING CONSTRUCTION. SPRINKLING TANK TRUCKS SHALL BE AVAILABLE AT ALL TIMES AND USED ON HAUL ROADS, ON-SITE DISTURBED AREAS, OR OTHER PLACES WHERE DUST BECOMES A PROBLEM AS A RESULT OF CONSTRUCTION EFFORTS.
7. PROMPTLY REMOVE ALL MUD, DIRT AND DEBRIS TRACKED ONTO EXISTING ROADS FROM THIS SITE.
8. REMOVE SILT DEPOSITS FROM TEMPORARY SEDIMENT TRAPS WHEN TRAP IS HALF FULL.
9. THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM BY THE SITE SUPERINTENDENT.



DESIGNED	BRZEZINSKI	09-05-24	FINAL SPA
CHECKED	QUADERER	06-06-24	FINAL SPA
FIELD	CREW CB / RO	03-18-24	PRELIMINARY SPA
NO.	DATE	NO.	DATE
REVISION	OR	ISSUE	

DRAWN	BRZEZINSKI
DESIGNED	BRZEZINSKI
CHECKED	QUADERER
FIELD	CREW CB / RO

CULVER'S
 NORTH EAST 1/4 SEC 20
 TOWNSHIP 3N, RANGE 9E
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

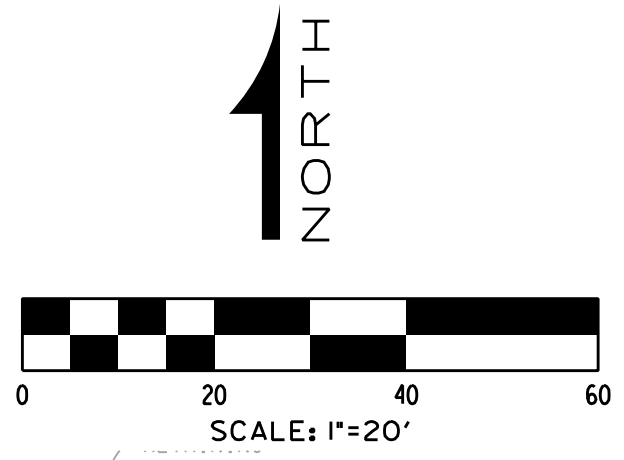
SOIL EROSION CONTROL PLAN

Griggs Quaderer, Inc.
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 GRAND BLANC, MI 48439
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 SITE PLANNING



PHASE: F. SPA
 JOB NO.: 230601
 C302



Runoff Coefficient Calculations													
Drainage Area	Pervious			Impervious			Roof Top			Runoff		Drainage Area	
	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)	C	Area (ft ²)	Area (Acre)		C
A	0.0	0.00	0.25	0.0	0.00	0.95	1290.1	0.03	0.95	1290.1	0.03	0.95	A
B	9495.9	0.22	0.25	4209.4	0.10	0.95	0.0	0.00	0.95	13705.3	0.31	0.46	B
C	0.0	0.00	0.25	0.0	0.00	0.95	737.7	0.02	0.95	737.7	0.02	0.95	C
D	0.0	0.00	0.25	0.0	0.00	0.95	946.5	0.02	0.95	946.5	0.02	0.95	D
E	4495.3	0.10	0.25	2841.2	0.07	0.95	0.0	0.00	0.95	7336.5	0.17	0.52	E
F	4303.5	0.10	0.25	3816.1	0.09	0.95	0.0	0.00	0.95	8119.6	0.19	0.58	F
G	0.0	0.00	0.25	400.9	0.01	0.95	0.0	0.00	0.95	400.9	0.01	0.95	G
H	0.0	0.00	0.25	0.0	0.00	0.95	1112.0	0.03	0.95	1112.0	0.03	0.95	H
I	5145.2	0.12	0.25	7704.7	0.18	0.95	0.0	0.00	0.95	12849.9	0.29	0.67	I
J	3127.3	0.07	0.25	25138.2	0.58	0.95	1.0	0.00	0.95	28266.5	0.65	0.87	J
K	10277.4	0.24	0.25	0.0	0.00	0.95	0.0	0.00	0.95	10277.4	0.24	0.25	K
Total	36844.6	0.85	0.25	44110.5	1.01	0.95	4087.3	0.09	0.95	85042.4	1.95	0.65	Total

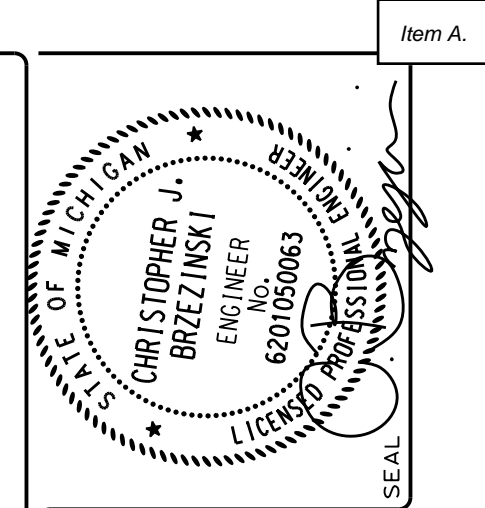
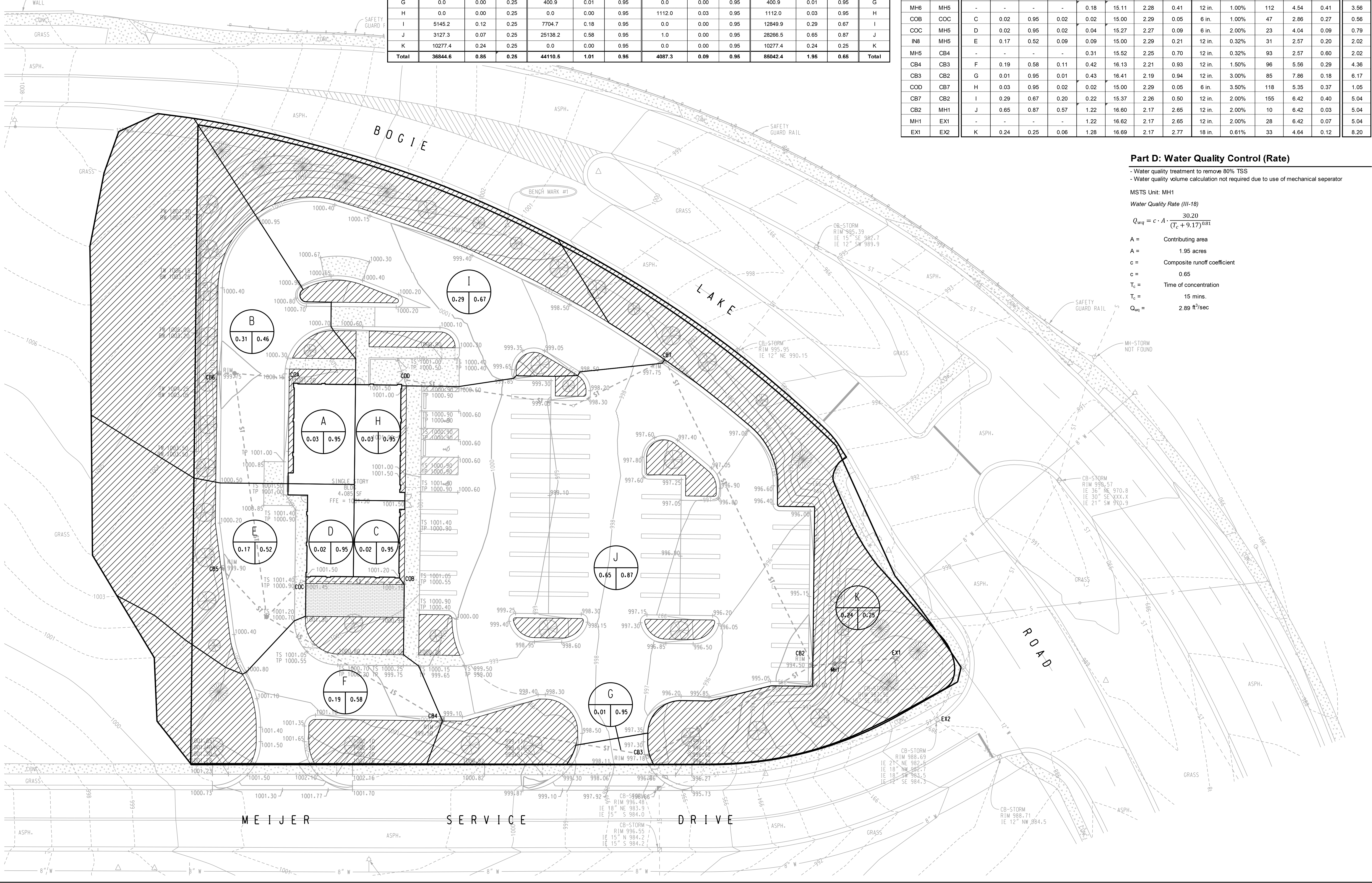
Oakland County Storm Design																	
Runoff Entering Manhole No.	To Downstream Manhole No.	Area Designated For Added Area	Increment of Area (acres) Added	Imperviousness	Equivalent Area	Accumulative Totals of Equivalent Areas	Time of Concentration (min)	Rainfall Rate (Intensity) 15 min	Rainfall Rate (Intensity) 10 yr.	Quantity of Rainfall (cfs)	Diameter (inch) of Pipe Out of Manhole	Slope (%) of Individual Gradient	Length (ft) of Line Between M.H.'s	Velocity (ft/s) Flowing Full	Time (min) of Flow to Next M.H.	Discharge Capacity (cfs)	
																	A
COA	MH6	A	0.03	0.95	0.03	0.03	15.00	2.29	0.07	2.29	0.07	6 in.	2.00%	27	4.04	0.11	0.79
IN7	MH6	B	0.31	0.46	0.15	0.15	15.00	2.29	0.34	12 in.	0.32%	8	2.57	0.05	2.02		
MH6	MH5	-	-	-	-	0.18	15.11	2.28	0.41	12 in.	1.00%	112	4.54	0.41	3.56		
COB	COC	C	0.02	0.95	0.02	0.02	15.00	2.29	0.05	6 in.	1.00%	47	2.86	0.27	0.56		
COC	MH5	D	0.02	0.95	0.02	0.04	15.27	2.27	0.09	6 in.	2.00%	23	4.04	0.09	0.79		
IN8	MH5	E	0.17	0.52	0.09	0.09	15.00	2.29	0.21	12 in.	0.32%	31	2.57	0.20	2.02		
MH5	CB4	-	-	-	-	0.31	15.52	2.25	0.70	12 in.	0.32%	93	2.57	0.60	2.02		
CB4	CB3	F	0.19	0.58	0.11	0.42	16.13	2.21	0.93	12 in.	1.50%	96	5.56	0.29	4.36		
CB3	CB2	G	0.01	0.95	0.01	0.43	16.41	2.19	0.94	12 in.	3.00%	85	7.86	0.18	6.17		
COB	CB7	H	0.03	0.95	0.02	0.02	15.00	2.29	0.05	6 in.	3.50%	118	5.35	0.37	1.05		
CB7	CB2	I	0.29	0.67	0.20	0.22	15.37	2.26	0.50	12 in.	2.00%	155	6.42	0.40	5.04		
CB2	MH1	J	0.65	0.87	0.57	1.22	16.60	2.17	2.65	12 in.	2.00%	10	6.42	0.03	5.04		
MH1	EX1	-	-	-	-	1.22	16.62	2.17	2.65	12 in.	2.00%	28	6.42	0.07	5.04		
EX1	EX2	K	0.24	0.25	0.06	1.28	16.69	2.17	2.77	18 in.	0.61%	33	4.64	0.12	8.20		

Part D: Water Quality Control (Rate)
 - Water quality treatment to remove 80% TSS
 - Water quality volume calculation not required due to use of mechanical separator

MSTS Unit: MH1
 Water Quality Rate (III-18)

$$Q_{WQ} = c \cdot A \cdot \frac{30.20}{(T_c + 9.17)^{0.81}}$$

A = Contributing area
 A = 1.95 acres
 c = Composite runoff coefficient
 c = 0.65
 T_c = Time of concentration
 T_c = 15 mins.
 Q_{WQ} = 2.89 ft³/sec



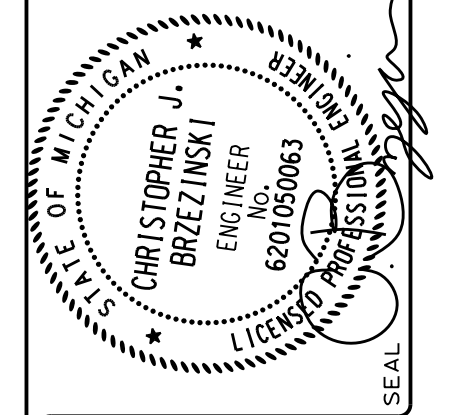
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03-18-24	PRELIMINARY SPA	
REVISION OR ISSUE		

DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD CREW	CB / RO

CULVER'S
 NORTH EAST 1/4 SEC. 20
 TOWNSHIP 3N, RANGE 8E
 DRAINAGE AREA MAP

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 SITE PLANNING

PHASE: F. SPA
 JOB NO.: 230601
 C303



NO.	DATE	REVISION OR ISSUE
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03-18-24	PRELIMINARY SPA	

DRAWN	DESIGNED	CHECKED	FIELD CREW
	BRZEZINSKI	QUADERER	CB / RO

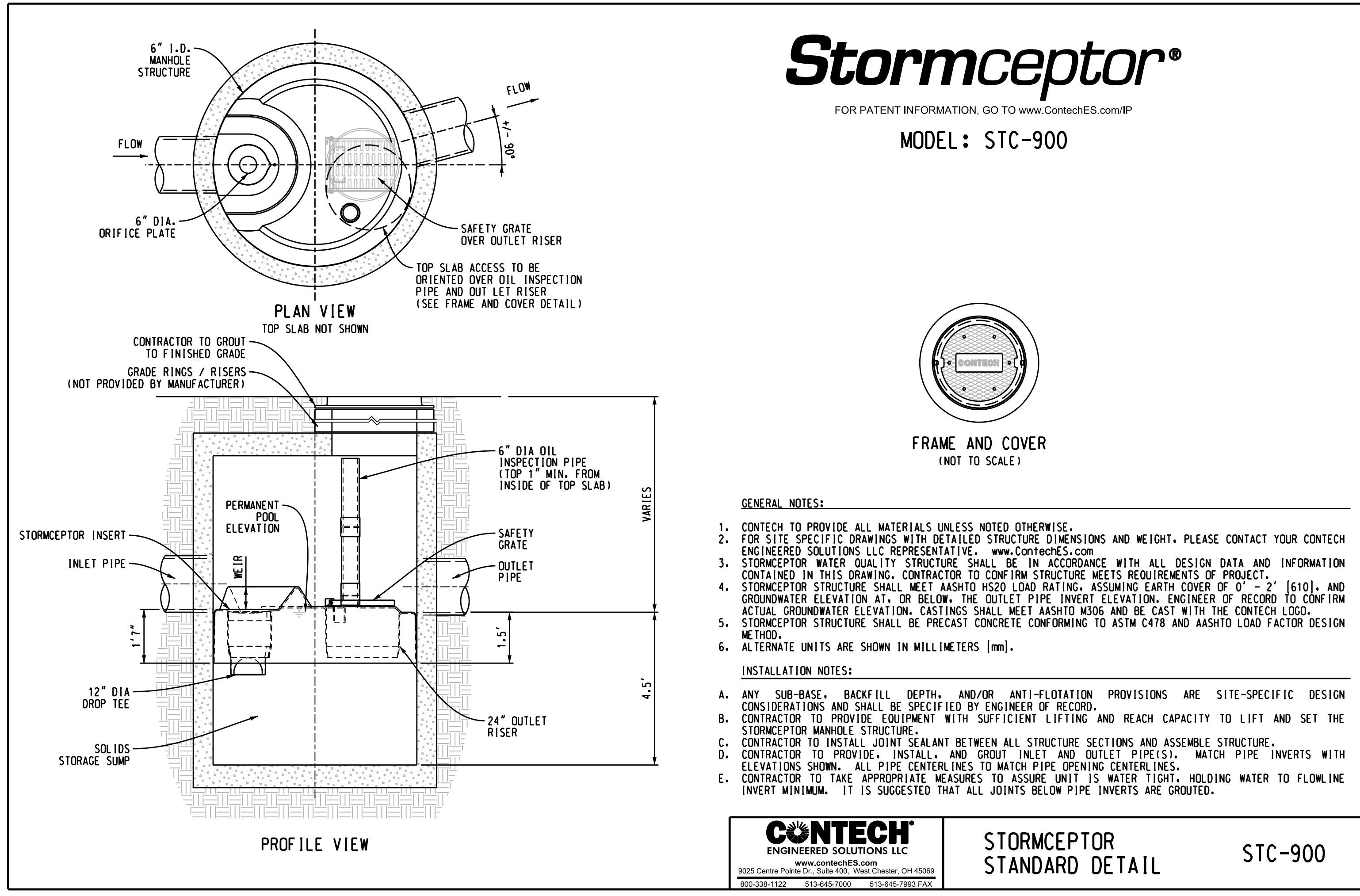
CULVER'S
 NORTH EAST 1/4 SEC. 20
 TOWNSHIP, RANGE-BE
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

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 19th ANNIVERSARY
 2004 - 2023

PHASE: F. SPA
 JOB NO.: 230601
 C304

DATE: 06/27/2024 TIME: 08:53:01 AM

STORMCEPTOR DETAILS



Brief Stormceptor Sizing Report - Culver's

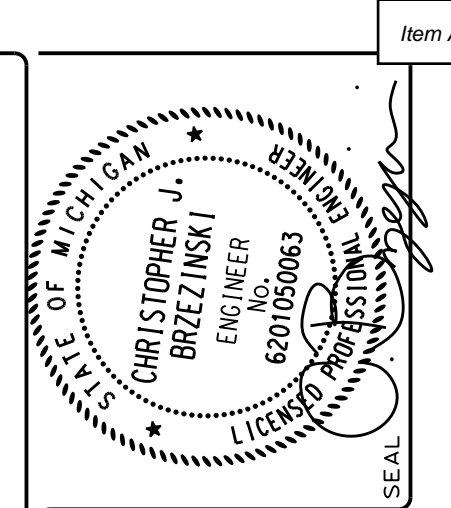
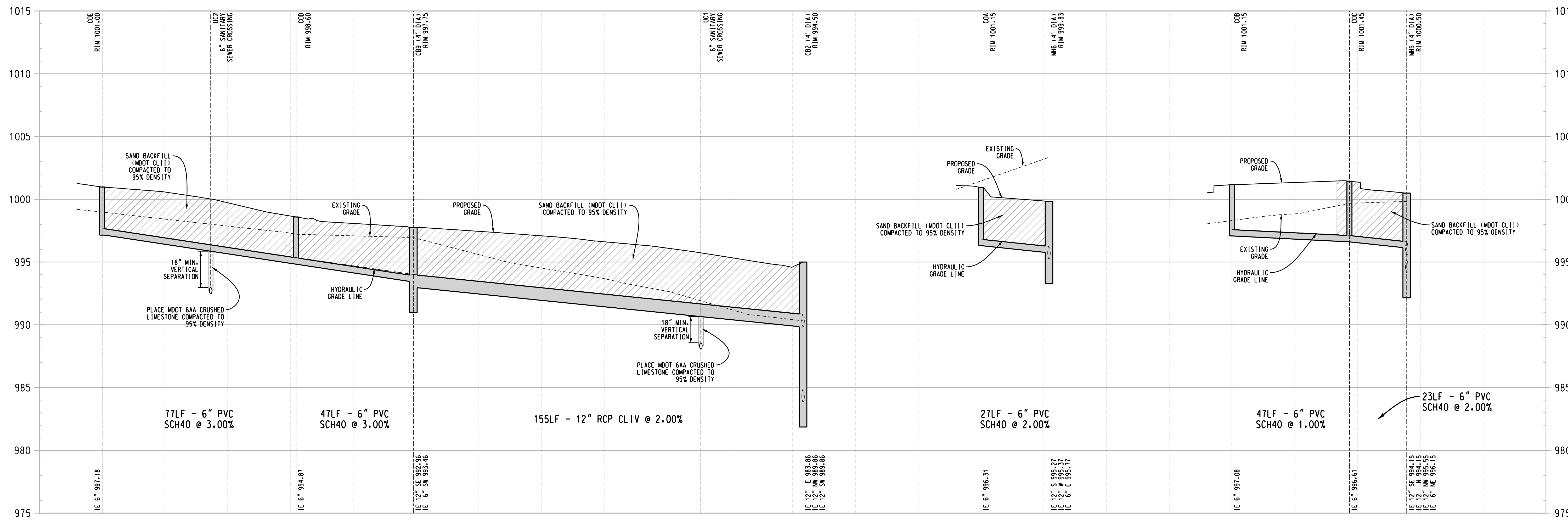
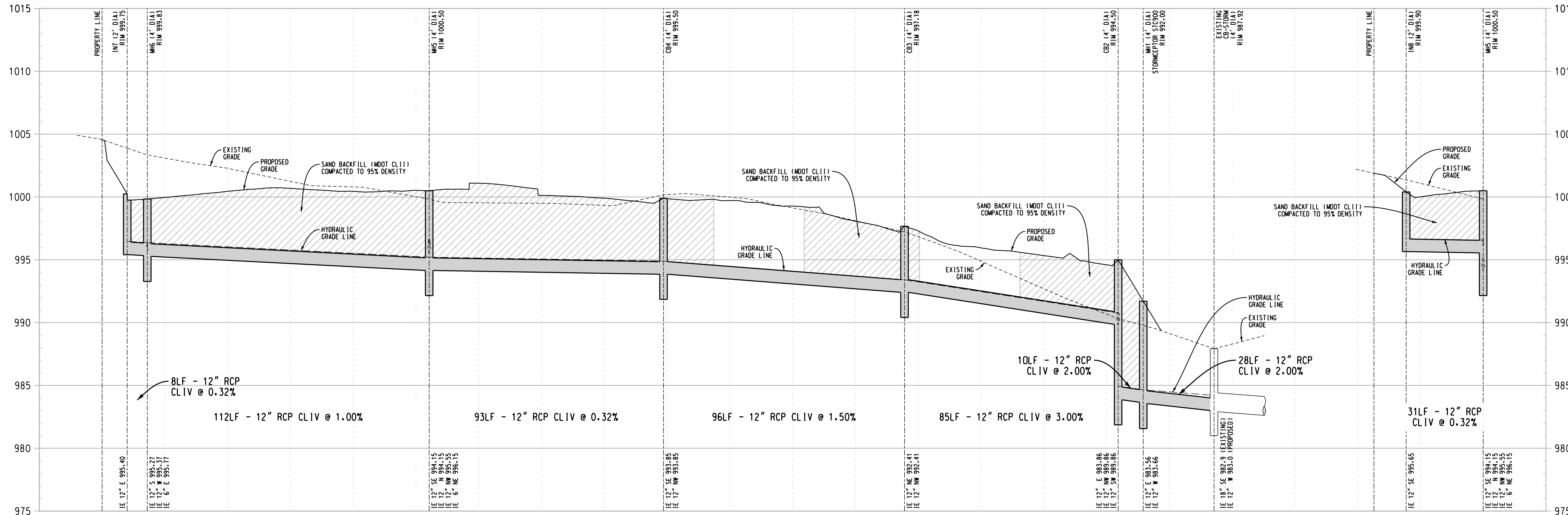
Project Information & Location			
Project Name	Culvers	Project Number	230601
City	White Lake	State/ Province	Michigan
Country	United States of America	Date	1/29/2024
Designer Information		EOR Information (optional)	
Name	Chris Brzezinski	Name	
Company	Griggs Quaderer, Inc.	Company	
Phone #	810-695-0154	Phone #	
Email	chris@gqincorp.com	Email	

Stormwater Treatment Recommendation
 The recommended Stormceptor Model(s) which achieve or exceed the user defined water quality objective for each site within the project are listed in the below Sizing Summary table.

Site Name	Culver's
Target TSS Removal (%)	80
TSS Removal (%) Provided	84
Recommended Stormceptor Model	STC 900

The recommended Stormceptor Model achieves the water quality objectives based on the selected inputs, historical rainfall records and selected particle size distribution.

Stormceptor Sizing Summary	
Stormceptor Model	% TSS Removal Provided
STC 450i	77
STC 900	84
STC 1200	84
STC 1800	85
STC 2400	88
STC 3600	89
STC 4800	91
STC 6000	92
STC 7200	93
STC 11000	95
STC 13000	95
STC 16000	96



NO.	DATE	SUBJECT
09-05-24	FINAL SPA	
06-06-24	FINAL SPA	
03-18-24	PRELIMINARY SPA	

DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD CREW	CB / RO

NORTH EAST 1/4 SEC. 20
TOWNSHIP 3N, RANGE 8E
BOGIE LAKE ROAD
WHITE LAKE TWP., MI

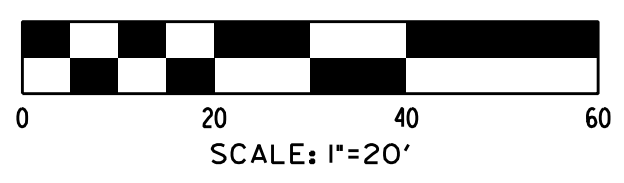
CULVER'S
STORM SEWER PROFILES

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CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING

JOB NO.: 230601
PHASE: F. SPA
19th ANNIVERSARY 2004 - 2023
C305

1 NORTH



UTILITY LEGEND:
SAND BACKFILL (MOOT CLASS1) COMPACTED TO 95% DENSITY
REFER TO WHITE LAKE TOWNSHIP STANDARD DETAILS

WATER MAIN QUANTITIES:

ITEM	UNIT	QUANTITY
2" TYPE 'K' COPPER PIPE	LF	100
2" CORPORATION STOP	EA	1
2" CURB STOP	EA	1

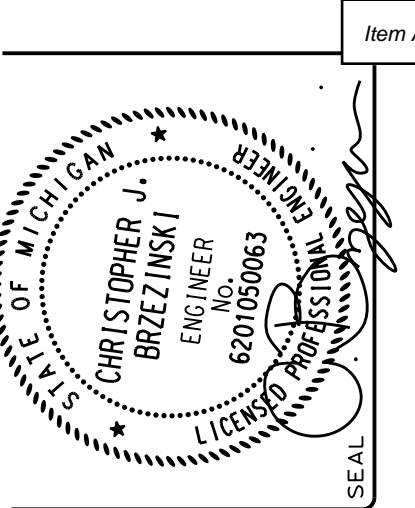
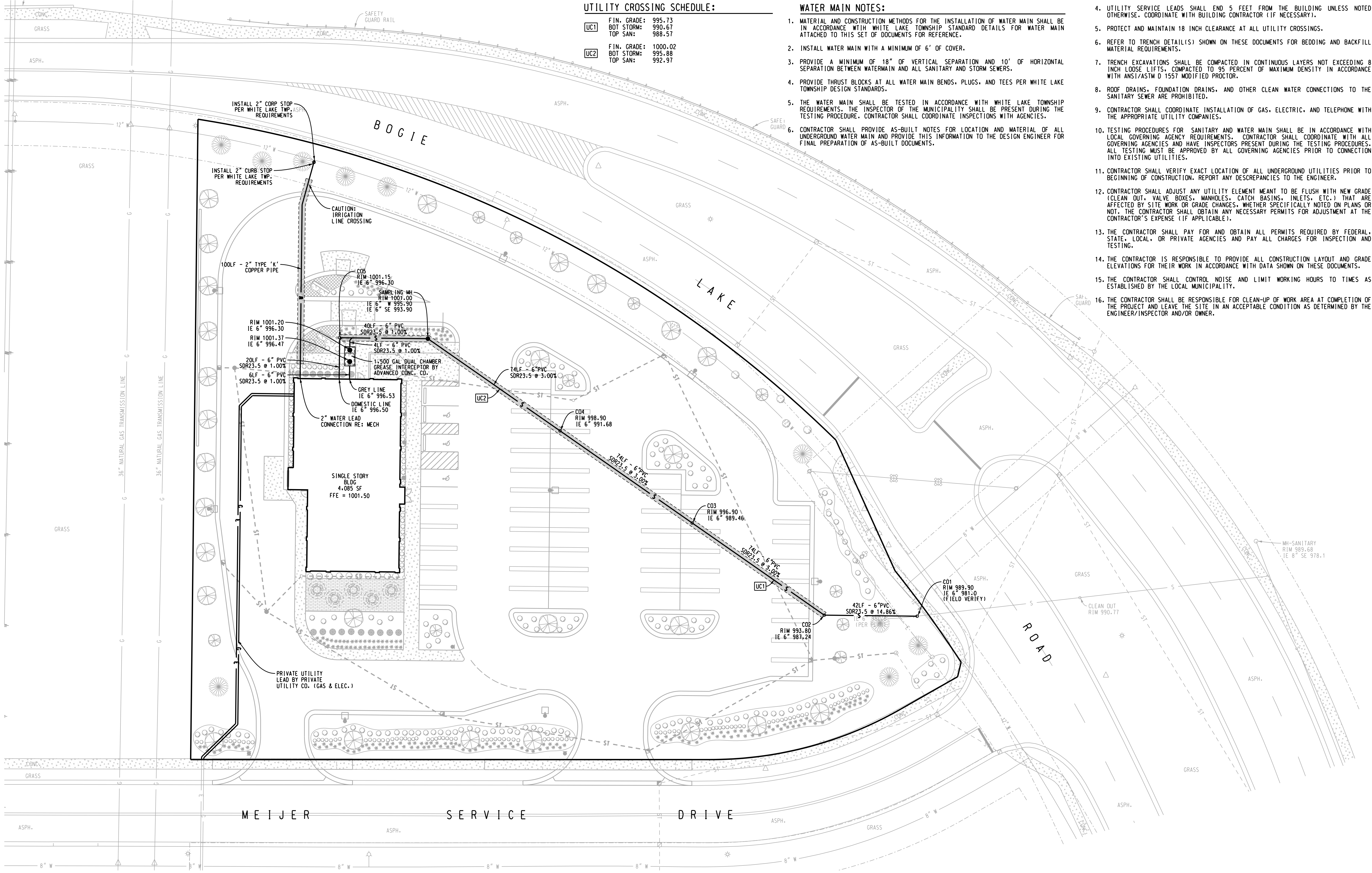
- SANITARY SEWER NOTES:**
1. MATERIAL AND CONSTRUCTION METHODS FOR THE INSTALLATION OF SANITARY SEWER SHALL BE IN ACCORDANCE WITH WHITE LAKE TOWNSHIP STANDARD DETAILS FOR SANITARY SEWER ATTACHED TO THIS SET OF DOCUMENTS FOR REFERENCE.
 2. ALL SANITARY SEWER PIPE SHALL BE PVC SDR 23.5 AND MEET OR EXCEED ASTM D-3034 FOR HEAVY WALL PIPE UNLESS OTHERWISE NOTED.
 3. TESTING PROCEDURE OF NEW SANITARY LINE SHALL BE IN ACCORDANCE WITH WHITE LAKE TOWNSHIP REQUIREMENTS. CONTRACTOR TO COORDINATE INSPECTIONS WITH AGENCIES.
 4. CONTACT MISS DIG (811) 72 HOURS BEFORE CONSTRUCTION FOR LOCATION OF ALL UNDERGROUND UTILITIES.

- GENERAL UTILITY NOTES:**
1. ALL WORKMANSHIP AND MATERIALS FOR WATER MAIN, SANITARY, AND STORM SEWER SHALL CONFORM TO THE LATEST STANDARDS AND SPECIFICATIONS OF ALL LOCAL GOVERNING AGENCIES HAVING JURISDICTION. IN CASE OF DISCREPANCIES, THE CONTRACTOR SHALL COORDINATE WITH THE AGENCIES TO RESOLVE THESE ISSUES.
 2. CONTRACTOR SHALL CONTACT "MISS DIG" (811) FOR LOCATION OF EXISTING UTILITIES WITHIN THE WORK AREA THREE (3) WORKING DAYS PRIOR TO START OF CONSTRUCTION.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND STABILIZING (IF REQUIRED) ALL TRENCH EXCAVATIONS TO ACCOMPLISH WORK INDICATED ON PLANS AND TO ACHIEVE REQUIRED COMPACTION OPERATIONS AS INDICATED IN THE PROJECT SPECIFICATIONS OR ON THESE DOCUMENTS. DEWATERING, IF DETERMINED NECESSARY BY THE CONTRACTOR, WILL BE CONSIDERED INCIDENTAL TO THE INSTALLATION COST OF UTILITIES OR STRUCTURES.
 4. UTILITY SERVICE LEADS SHALL END 5 FEET FROM THE BUILDING UNLESS NOTED OTHERWISE. COORDINATE WITH BUILDING CONTRACTOR (IF NECESSARY).
 5. PROTECT AND MAINTAIN 18 INCH CLEARANCE AT ALL UTILITY CROSSINGS.
 6. REFER TO TRENCH DETAIL(S) SHOWN ON THESE DOCUMENTS FOR BEDDING AND BACKFILL MATERIAL REQUIREMENTS.
 7. TRENCH EXCAVATIONS SHALL BE COMPACTED IN CONTINUOUS LAYERS NOT EXCEEDING 8 INCH LOOSE LIFTS, COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ANSI/ASTM D 1557 MODIFIED PROCTOR.
 8. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER ARE PROHIBITED.
 9. CONTRACTOR SHALL COORDINATE INSTALLATION OF GAS, ELECTRIC, AND TELEPHONE WITH THE APPROPRIATE UTILITY COMPANIES.
 10. TESTING PROCEDURES FOR SANITARY AND WATER MAIN SHALL BE IN ACCORDANCE WITH LOCAL GOVERNING AGENCY REQUIREMENTS. CONTRACTOR SHALL COORDINATE WITH ALL GOVERNING AGENCIES AND HAVE INSPECTORS PRESENT DURING THE TESTING PROCEDURES. ALL TESTING MUST BE APPROVED BY ALL GOVERNING AGENCIES PRIOR TO CONNECTION INTO EXISTING UTILITIES.
 11. CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
 12. CONTRACTOR SHALL ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH NEW GRADE (CLEAN OUT, VALVE BOXES, MANHOLES, CATCH BASINS, INLETS, ETC.) THAT ARE AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT. THE CONTRACTOR SHALL OBTAIN ANY NECESSARY PERMITS FOR ADJUSTMENT AT THE CONTRACTOR'S EXPENSE (IF APPLICABLE).
 13. THE CONTRACTOR SHALL PAY FOR AND OBTAIN ALL PERMITS REQUIRED BY FEDERAL, STATE, LOCAL, OR PRIVATE AGENCIES AND PAY ALL CHARGES FOR INSPECTION AND TESTING.
 14. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL CONSTRUCTION LAYOUT AND GRADE ELEVATIONS FOR THEIR WORK IN ACCORDANCE WITH DATA SHOWN ON THESE DOCUMENTS.
 15. THE CONTRACTOR SHALL CONTROL NOISE AND LIMIT WORKING HOURS TO TIMES AS ESTABLISHED BY THE LOCAL MUNICIPALITY.
 16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN-UP OF WORK AREA AT COMPLETION OF THE PROJECT AND LEAVE THE SITE IN AN ACCEPTABLE CONDITION AS DETERMINED BY THE ENGINEER/INSPECTOR AND/OR OWNER.

UTILITY CROSSING SCHEDULE:

UC1	F.I.N. GRADE: 995.73 BOT STORM: 990.67 TOP SAN: 988.57
UC2	F.I.N. GRADE: 1000.02 BOT STORM: 995.88 TOP SAN: 992.97

- WATER MAIN NOTES:**
1. MATERIAL AND CONSTRUCTION METHODS FOR THE INSTALLATION OF WATER MAIN SHALL BE IN ACCORDANCE WITH WHITE LAKE TOWNSHIP STANDARD DETAILS FOR WATER MAIN ATTACHED TO THIS SET OF DOCUMENTS FOR REFERENCE.
 2. INSTALL WATER MAIN WITH A MINIMUM OF 6' OF COVER.
 3. PROVIDE A MINIMUM OF 18" OF VERTICAL SEPARATION AND 10' OF HORIZONTAL SEPARATION BETWEEN WATERMAIN AND ALL SANITARY AND STORM SEWERS.
 4. PROVIDE THRUST BLOCKS AT ALL WATER MAIN BENDS, PLUGS, AND TEES PER WHITE LAKE TOWNSHIP DESIGN STANDARDS.
 5. THE WATER MAIN SHALL BE TESTED IN ACCORDANCE WITH WHITE LAKE TOWNSHIP REQUIREMENTS. THE INSPECTOR OF THE MUNICIPALITY SHALL BE PRESENT DURING THE TESTING PROCEDURE. CONTRACTOR SHALL COORDINATE INSPECTIONS WITH AGENCIES.
 6. CONTRACTOR SHALL PROVIDE AS-BUILT NOTES FOR LOCATION AND MATERIAL OF ALL UNDERGROUND WATER MAIN AND PROVIDE THIS INFORMATION TO THE DESIGN ENGINEER FOR FINAL PREPARATION OF AS-BUILT DOCUMENTS.



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06-06-24	FINAL SPA	
03-18-24	PRELIMINARY SPA	

DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD CREW	CB / RO

CULVER'S
NORTHEAST 1/4 SEC 20
TOWNSHIP RANGE-BE
BOGIE LAKE ROAD
WHITE LAKE TWP., MI

SITE UTILITY PLAN

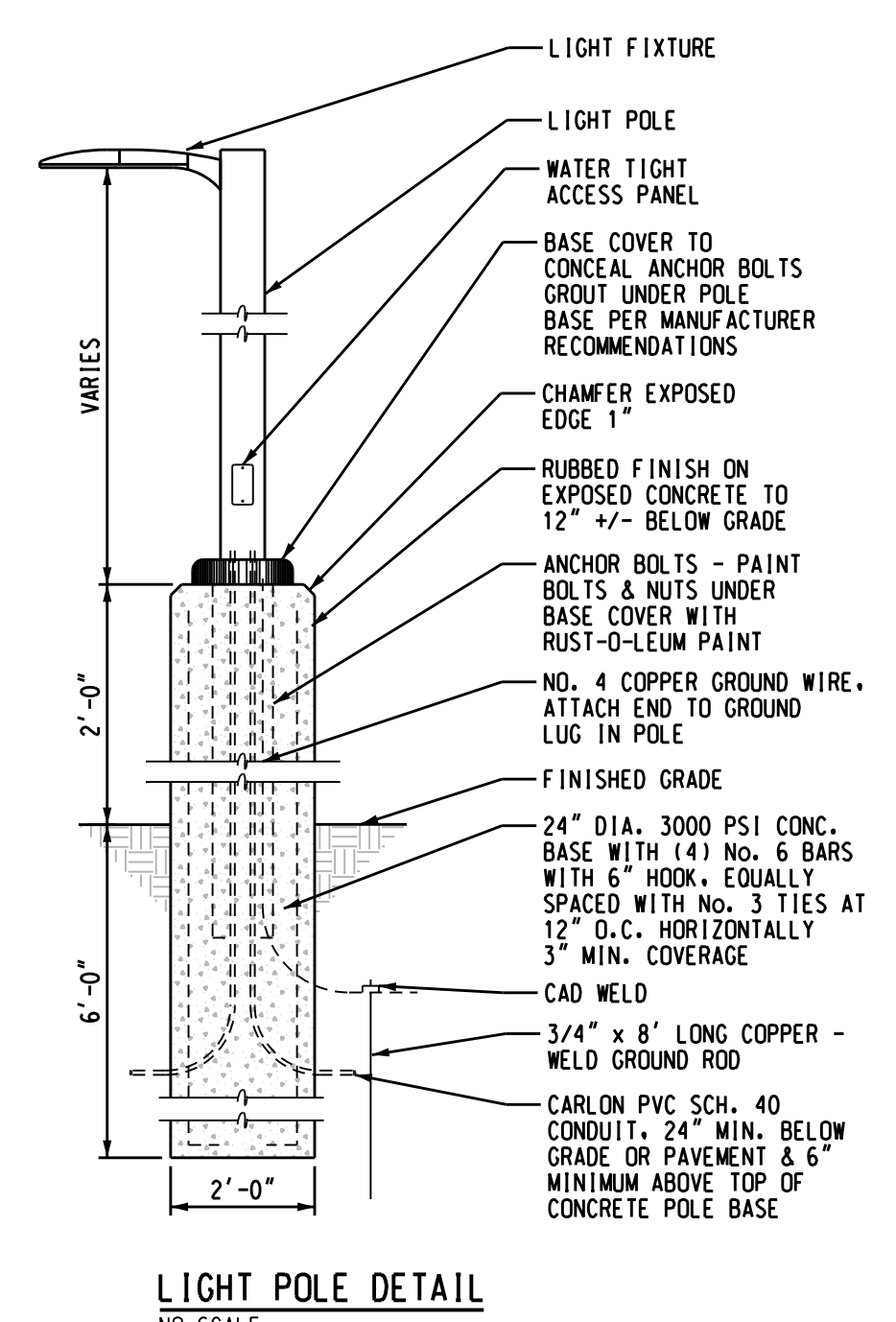
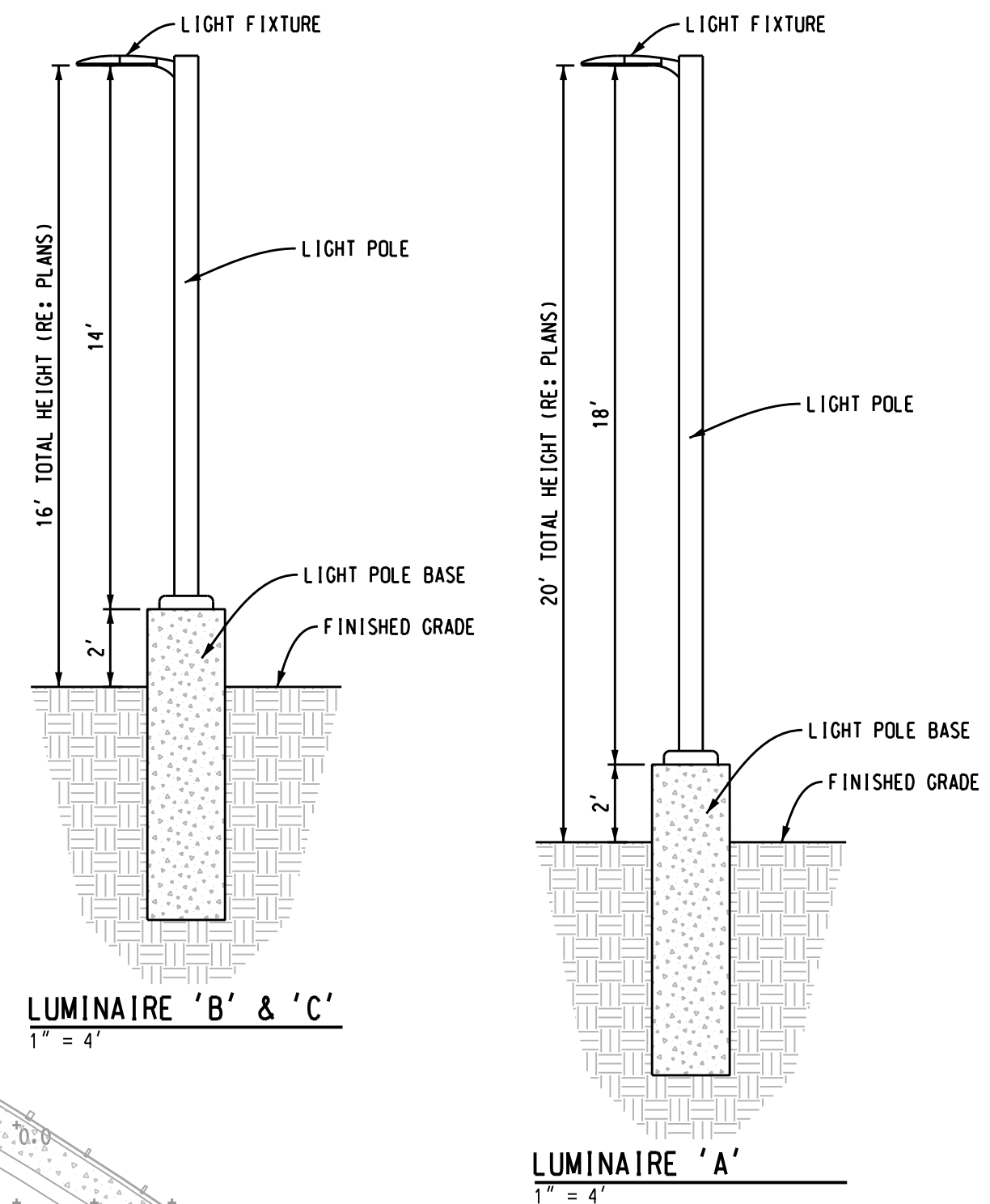
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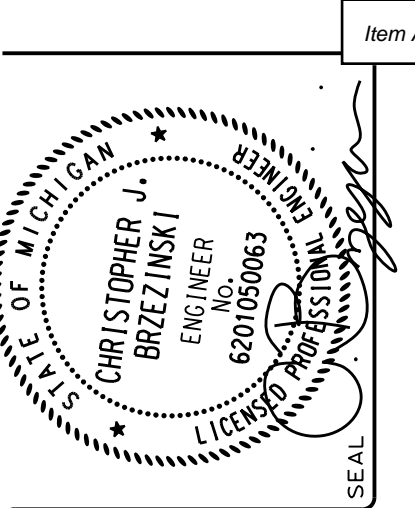
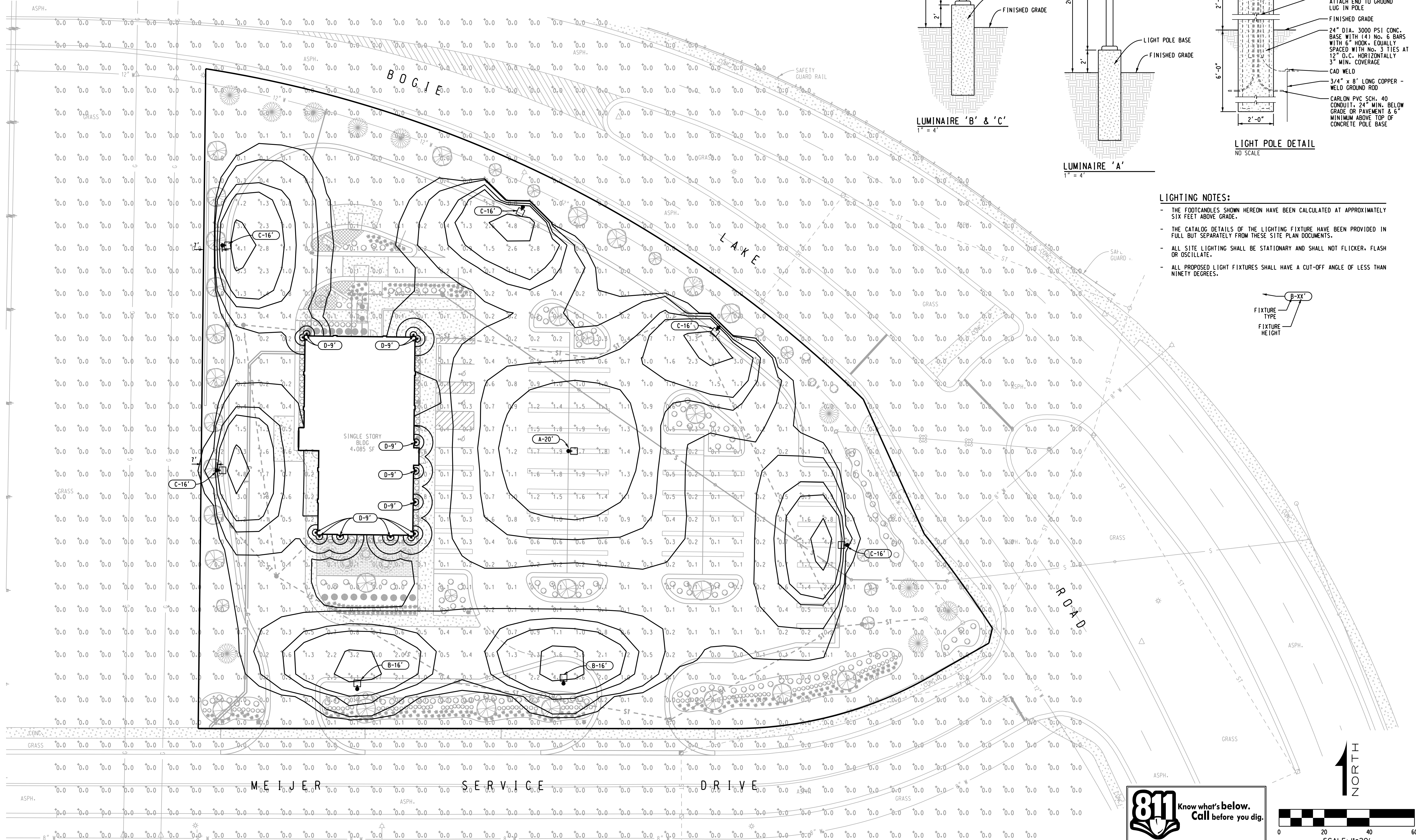
PHASE: F. SPA
JOB NO.: 230601
C400

LUMINAIRE SCHEDULE						
QTY	LABEL	ARRANGEMENT	MANUFACTURER	CATALOG NO.	DESCRIPTION	LAMP WATTAGE
1	A	SINGLE	LITHONIA	DSXO LED P3 30K 70CRI T5M	D-SERIES AREA SIZE 0. POLE MOUNTED, SINGLE (ONE) LIGHT FIXTURE	LED 69
2	B	SINGLE	LITHONIA	DSXO LED P1 30K 70CRI T3M HS	D-SERIES AREA SIZE 0. POLE MOUNTED, SINGLE (ONE) LIGHT FIXTURE, W/ HOUSE SIDE SHIELD	LED 33.2
5	C	SINGLE	LITHONIA	DSXO LED P1 30K 70CRI BLC4	D-SERIES AREA SIZE 0. POLE MOUNTED, SINGLE (ONE) LIGHT FIXTURE, W/ HOUSE SIDE SHIELD	LED 33.2
13	D	SINGLE	LITHONIA	OLLWU LED P1 40K 120 DOB	D-OUTDOOR LED WALL CYLINDER, WALL MOUNTED, SINGLE (ONE) LIGHT FIXTURE, UP/DOWN LIGHT	LED 13.8

STATISTICAL AREA SUMMARY		
AREA	MAX	AVERAGE
GENERAL	5.0	0.5
DRIVEWAY	4.2	0.8
PARKING	3.1	0.7
WALKS	5.0	0.6
PROTECTIVE	-	-
BUILDING	5.0	0.9
LOADING AREAS	2.3	0.4



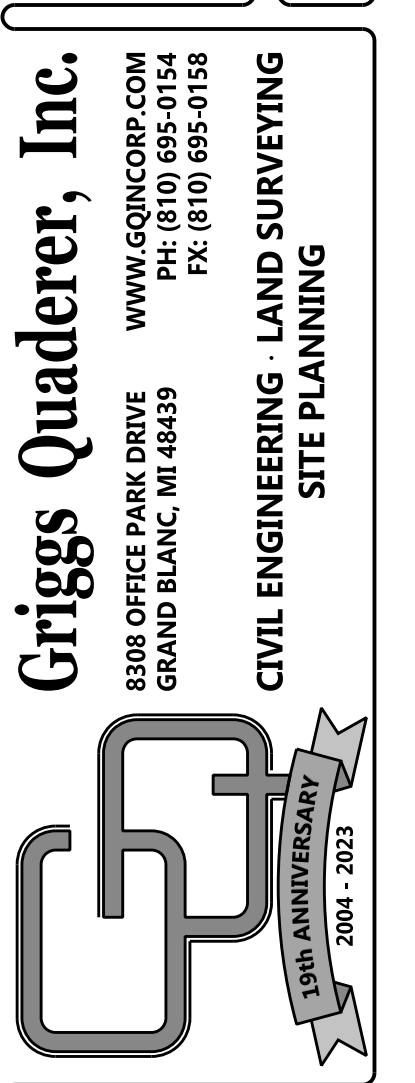
- LIGHTING NOTES:**
- THE FOOTCANDLES SHOWN HEREON HAVE BEEN CALCULATED AT APPROXIMATELY SIX FEET ABOVE GRADE.
 - THE CATALOG DETAILS OF THE LIGHTING FIXTURE HAVE BEEN PROVIDED IN FULL BUT SEPARATELY FROM THESE SITE PLAN DOCUMENTS.
 - ALL SITE LIGHTING SHALL BE STATIONARY AND SHALL NOT FLICKER, FLASH OR OSCILLATE.
 - ALL PROPOSED LIGHT FIXTURES SHALL HAVE A CUT-OFF ANGLE OF LESS THAN NINETY DEGREES.



DRAWN	DESIGNED	CHECKED	FIELD
BRZEZINSKI	BRZEZINSKI	QUADERER	GREW / RO
09-05-24	06-06-24	03-18-24	
FINAL SPA	FINAL SPA	PRELIMINARY SPA	
NO.	DATE	REVISION OR	ISSUE

CULVER'S
 BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

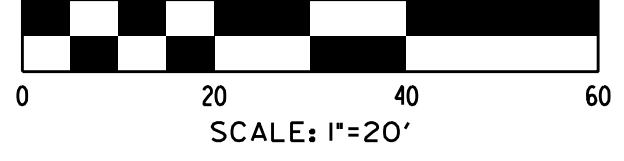
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 SITE PLANNING



PHASE: F. SPA
 JOB NO.: 230601
 SCALE: 1"=20'
 NORTH



NORTH



PLAN PROVIDED BY:
HOFFMAN NURSERY & LANDSCAPING
BOB HOFFMAN
 1255 S. HOSPITAL RD.
 WATERFORD, MI 48327
 (248) 363-6060

TREE SCHEDULE			
KEY BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
AR ACER RUBRUM	ARMSTRONG	2" CAL	17
LS LIQUIDAMBAR STYRACIFLUA	SILHOUETTE SWEET GUM	2" CAL	14
MS MALUS SARGANT TINA	DWARF SERGENT TINE	1.5" CAL	12
PG PICEA GLAUCA	WHITE SPRUCE	7'-8'	10

SHRUB / PERENNIAL / GRASS - SCHEDULE			
KEY BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY
CK CALAMAGROSTIS KARL FORESTER	FEATHER REED GRASS	-	91
EA EUDONYMUS ATLAS COMPACTUS	DWARF BURNING BUSH	5 GAL	16
EP ECHINACEA PURPUREA	PURPLE CONE FLOWER	-	59
HA HYDRANGEA ANOMALA	ANNABELLE	3 GAL	14
HO HEMEROCALLIS STELLADORO	STELLADORO DAY LILLY	-	227
HP HYDRANGEA PANICULATA	MAGICAL CANDLE	5 GAL	64
HS HIBISCUS SYRIACUS	ROSA OF SHARRON	5 GAL	4
RA RITUS AROMATICA	LOW GRO-SUMAC	3 GAL	46
SB SPIREA X BUMALDA	GOLD MOUND SPIREA	3 OT	25
TH TAXUS MEDIA HICKSI	HICKS YEW	18" - 24"	10

LEGEND:

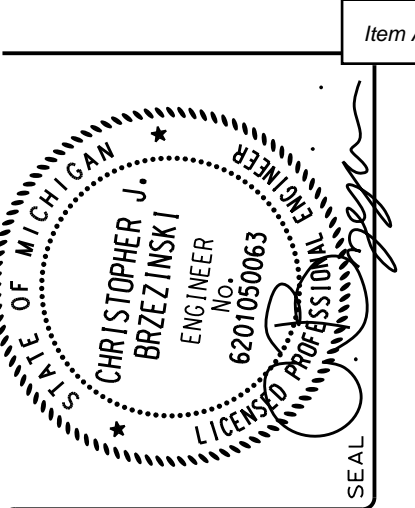
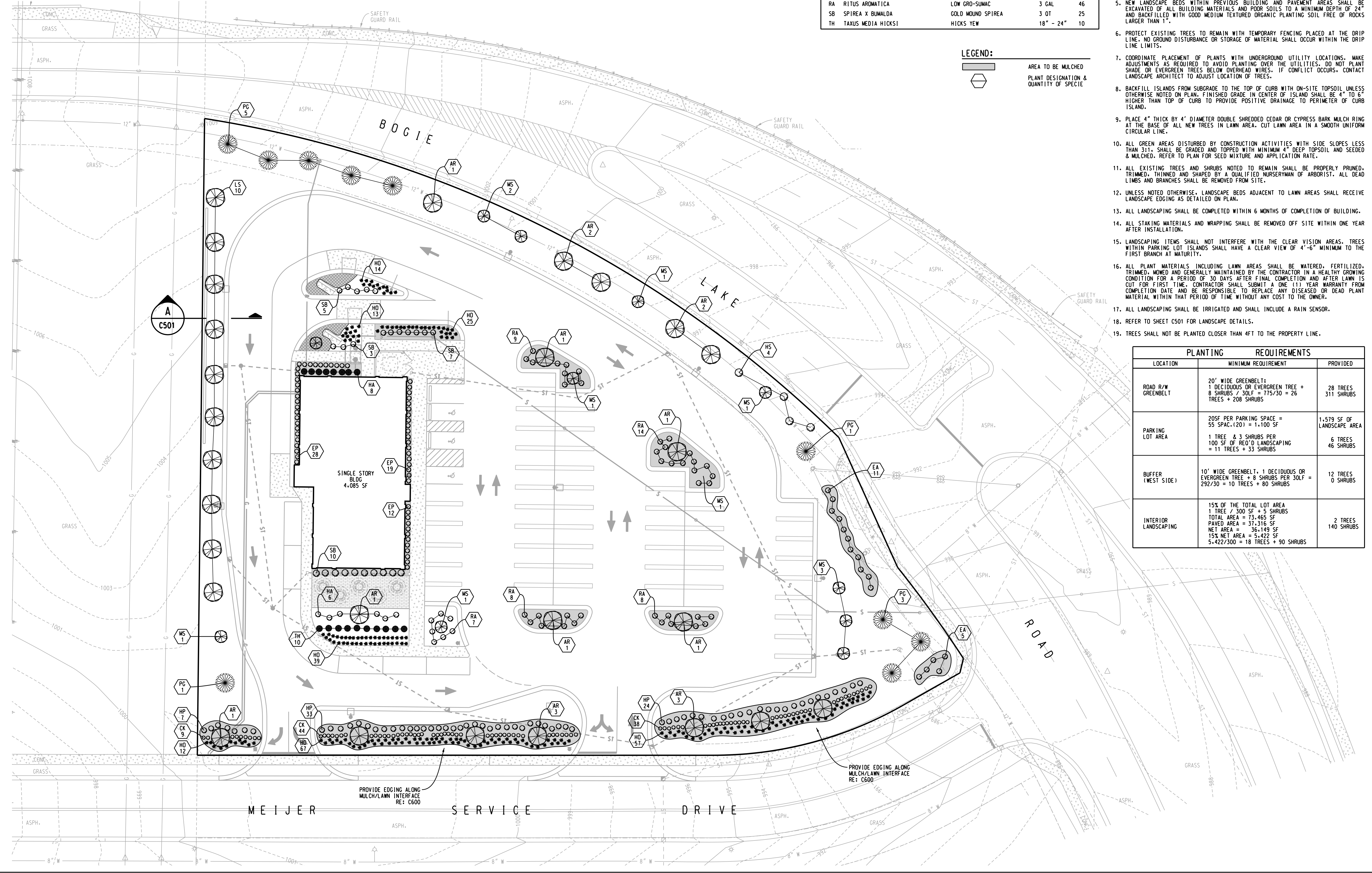
◻ AREA TO BE MULCHED

⬡ PLANT DESIGNATION & QUANTITY OF SPECIE

LANDSCAPING NOTES:

- INSTALLATION OF PLANT MATERIAL SHALL BE IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMEN LANDSCAPE STANDARDS LATEST EDITION.
- PRIOR TO BEGIN OF LANDSCAPE WORK, CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON-SITE UTILITIES. CONTRACTOR SHALL CONTACT MISS DIG (811) FOR LOCATIONS OF ALL PRIVATE UTILITIES. ANY DAMAGES OR INTERRUPTIONS OF SERVICES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. COORDINATE ALL RELATED WORK ACTIVITIES WITH OTHER TRADES AND REPORT ANY UNACCEPTABLE WORK CONDITIONS TO OWNER PRIOR TO COMMENCING WORK.
- NUMERICAL VALUE OF PLANT MATERIAL SHOWN SHALL TAKE PRECEDENCE OVER GRAPHIC REPRESENTATION. VERIFY AND REPORT ANY DISCREPANCIES WITH LANDSCAPE ARCHITECT.
- SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED BY THE MUNICIPALITY AND/OR GOVERNING AGENCY PRIOR TO COMMENCING.
- NEW LANDSCAPE BEDS WITHIN PREVIOUS BUILDING AND PAVEMENT AREAS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND POOR SOILS TO A MINIMUM DEPTH OF 24" AND BACKFILLED WITH GOOD MEDIUM TEXTURED ORGANIC PLANTING SOIL FREE OF ROCKS LARGER THAN 1".
- PROTECT EXISTING TREES TO REMAIN WITH TEMPORARY FENCING PLACED AT THE DRIP LINE. NO GROUND DISTURBANCE OR STORAGE OF MATERIAL SHALL OCCUR WITHIN THE DRIP LINE LIMITS.
- COORDINATE PLACEMENT OF PLANTS WITH UNDERGROUND UTILITY LOCATIONS. MAKE ADJUSTMENTS AS REQUIRED TO AVOID PLANTING OVER THE UTILITIES. DO NOT PLANT SHADE OR EVERGREEN TREES BELOW OVERHEAD WIRES. IF CONFLICT OCCURS, CONTACT LANDSCAPE ARCHITECT TO ADJUST LOCATION OF TREES.
- BACKFILL ISLANDS FROM SUBGRADE TO THE TOP OF CURB WITH ON-SITE TOPSOIL UNLESS OTHERWISE NOTED ON PLAN. FINISHED GRADE IN CENTER OF ISLAND SHALL BE 4" TO 6" HIGHER THAN TOP OF CURB TO PROVIDE POSITIVE DRAINAGE TO PERIMETER OF CURB ISLAND.
- PLACE 4" THICK BY 4" DIAMETER DOUBLE SHREDDED CEDAR OR CYPRESS BARK MULCH RING AT THE BASE OF ALL NEW TREES IN LAWN AREA. CUT LAWN AREA IN A SMOOTH UNIFORM CIRCULAR LINE.
- ALL GREEN AREAS DISTURBED BY CONSTRUCTION ACTIVITIES WITH SIDE SLOPES LESS THAN 3:1, SHALL BE GRADED AND TOPPED WITH MINIMUM 4" DEEP TOPSOIL AND SEEDED & MULCHED. REFER TO PLAN FOR SEED MIXTURE AND APPLICATION RATE.
- ALL EXISTING TREES AND SHRUBS NOTED TO REMAIN SHALL BE PROPERLY PRUNED, TRIMMED, THINNED AND SHAPED BY A QUALIFIED NURSERYMAN OR ARBORIST. ALL DEAD LIMBS AND BRANCHES SHALL BE REMOVED FROM SITE.
- UNLESS NOTED OTHERWISE, LANDSCAPE BEDS ADJACENT TO LAWN AREAS SHALL RECEIVE LANDSCAPE EDGING AS DETAILED ON PLAN.
- ALL LANDSCAPING SHALL BE COMPLETED WITHIN 6 MONTHS OF COMPLETION OF BUILDING.
- ALL STAKING MATERIALS AND WRAPPING SHALL BE REMOVED OFF SITE WITHIN ONE YEAR AFTER INSTALLATION.
- LANDSCAPING ITEMS SHALL NOT INTERFERE WITH THE CLEAR VISION AREAS. TREES WITHIN PARKING LOT ISLANDS SHALL HAVE A CLEAR VIEW OF 4'-6" MINIMUM TO THE FIRST BRANCH AT MATURITY.
- ALL PLANT MATERIALS INCLUDING LAWN AREAS SHALL BE WATERED, FERTILIZED, TRIMMED, MOVED AND GENERALLY MAINTAINED BY THE CONTRACTOR IN A HEALTHY GROWING CONDITION FOR A PERIOD OF 30 DAYS AFTER FINAL COMPLETION AND AFTER LAWN IS CUT FOR FIRST TIME. CONTRACTOR SHALL SUBMIT A ONE (1) YEAR WARRANTY FROM COMPLETION DATE AND BE RESPONSIBLE TO REPLACE ANY DISEASED OR DEAD PLANT MATERIAL WITHIN THAT PERIOD OF TIME WITHOUT ANY COST TO THE OWNER.
- ALL LANDSCAPING SHALL BE IRRIGATED AND SHALL INCLUDE A RAIN SENSOR.
- REFER TO SHEET C501 FOR LANDSCAPE DETAILS.
- TREES SHALL NOT BE PLANTED CLOSER THAN 4FT TO THE PROPERTY LINE.

PLANTING REQUIREMENTS		
LOCATION	MINIMUM REQUIREMENT	PROVIDED
ROAD R/W GREENBELT	20' WIDE GREENBELT: 1 DECIDUOUS OR EVERGREEN TREE + 8 SHRUBS / 30LF = 775/30 = 26 TREES + 208 SHRUBS	28 TREES 311 SHRUBS
PARKING LOT AREA	20SF PER PARKING SPACE = 55 SPAC. (201) = 1,100 SF 1 TREE & 3 SHRUBS PER 100 SF OF REQ'D LANDSCAPING = 11 TREES + 33 SHRUBS	1,579 SF OF LANDSCAPE AREA 6 TREES 46 SHRUBS
BUFFER (WEST SIDE)	10' WIDE GREENBELT. 1 DECIDUOUS OR EVERGREEN TREE + 8 SHRUBS PER 30LF = 292/30 = 10 TREES + 80 SHRUBS	12 TREES 0 SHRUBS
INTERIOR LANDSCAPING	15% OF THE TOTAL LOT AREA 1 TREE / 300 SF + 5 SHRUBS TOTAL AREA = 73,465 SF PAVED AREA = 37,316 SF NET AREA = 36,149 SF 15% NET AREA = 5,422 SF 5,422/300 = 18 TREES + 90 SHRUBS	2 TREES 140 SHRUBS



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DRAWN: BRZEZINSKI
 DESIGNED: BRZEZINSKI
 CHECKED: QUADERER
 FIELD CREW: CB / RO

CULVER'S

NORTH EAST 1/4 SEC 20
 TOWNSHIP 3N, RANGE 3E

BOGIE LAKE ROAD
 WHITE LAKE TWP., MI

SITE LANDSCAPE PLAN

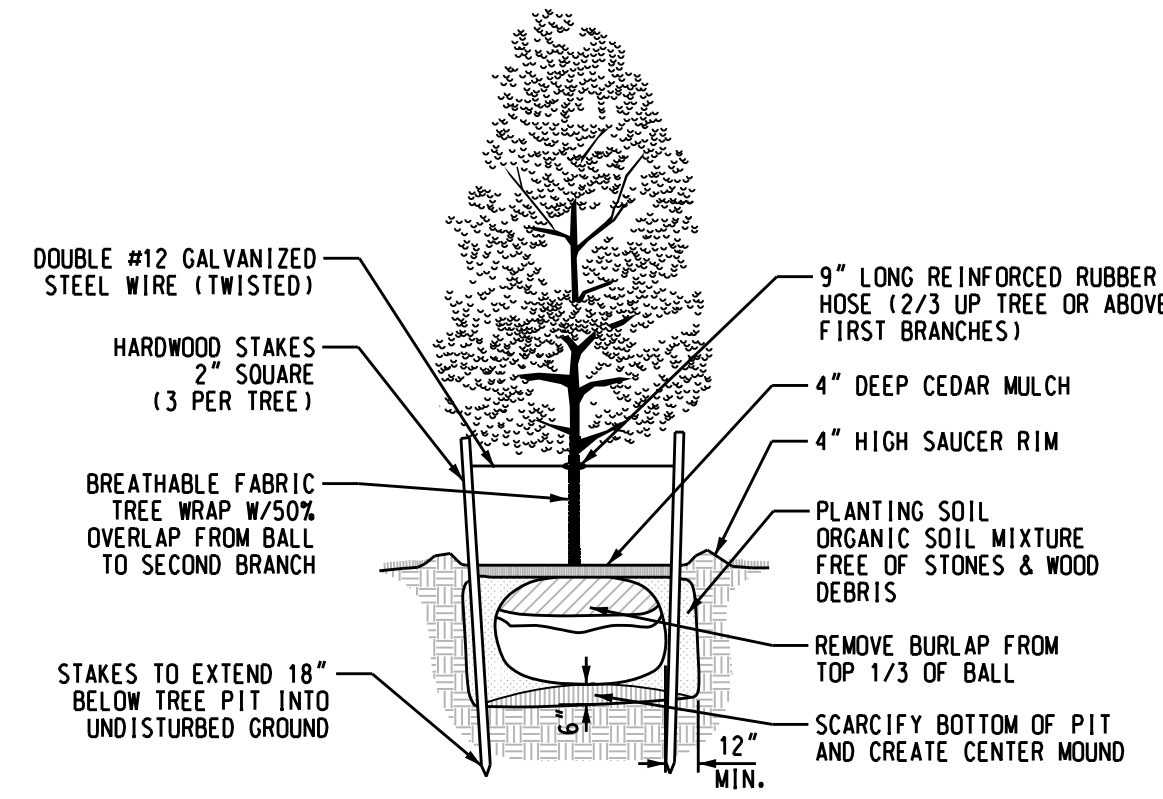
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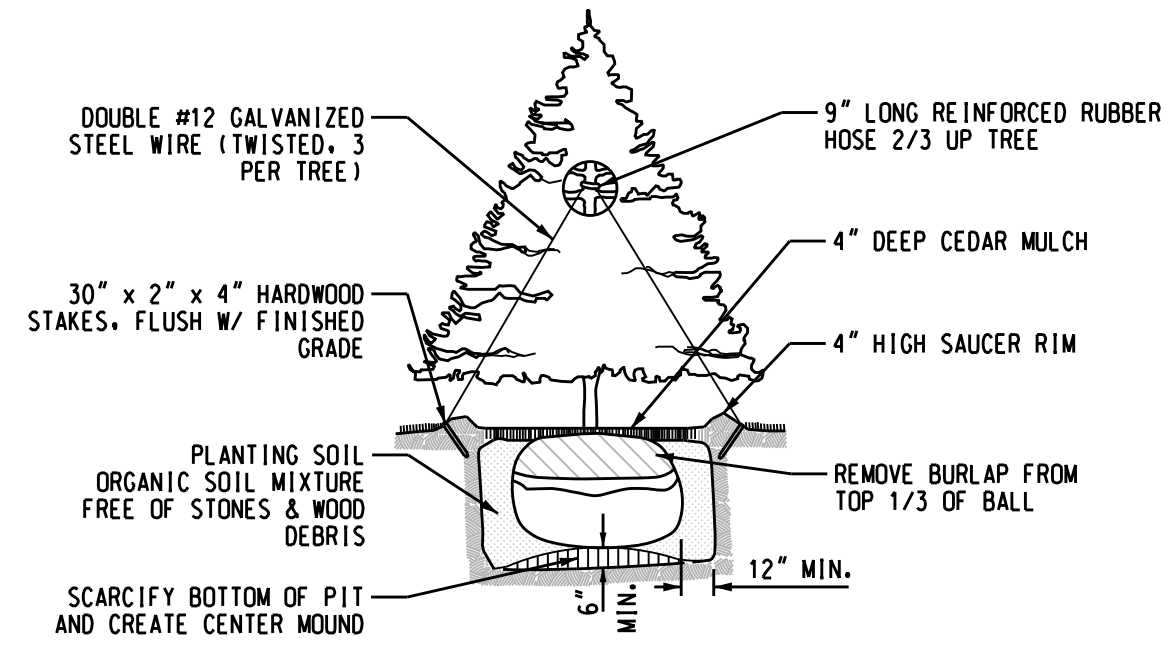
10th ANNIVERSARY
 2004 - 2023

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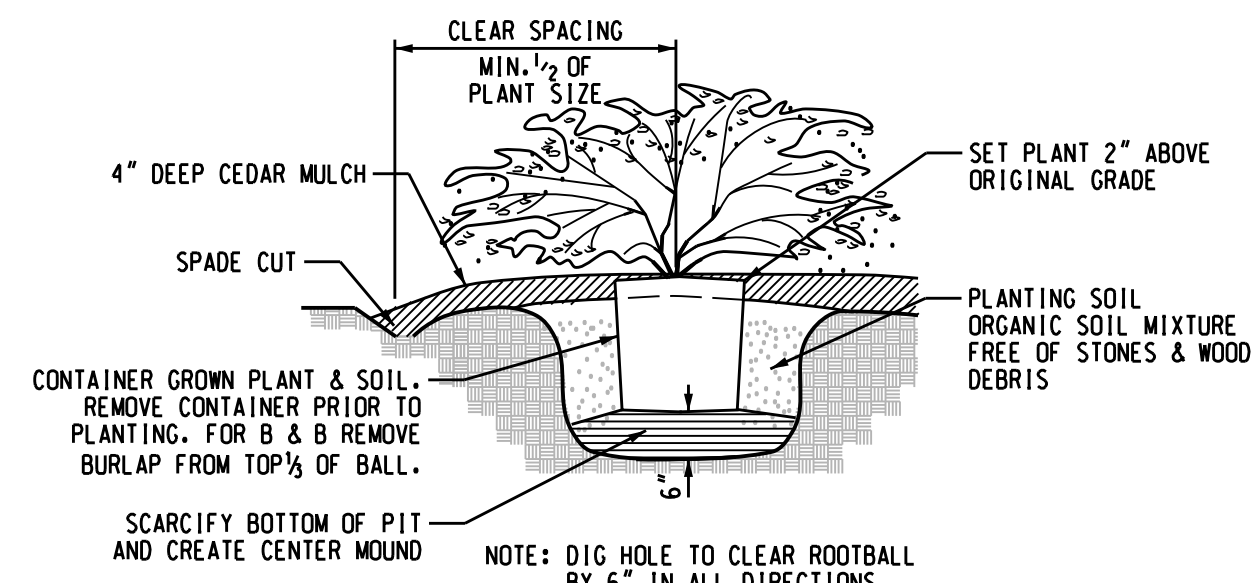
NOTE: TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE. RAISE ROOT BALL 1/3 HIGHER IN CLAY SOILS - BACKFILL & COVER ENTIRE BALL W/ TOPSOIL & MULCH.

TREE PLANTING DETAIL
NO SCALE



NOTE: TREE SHALL BEAR SAME RELATION TO FINISHED GRADE AS IT BORE TO PREVIOUS GRADE. RAISE ROOT BALL 1/3 HIGHER IN CLAY SOILS - BACKFILL & COVER ENTIRE BALL W/ TOPSOIL & MULCH.

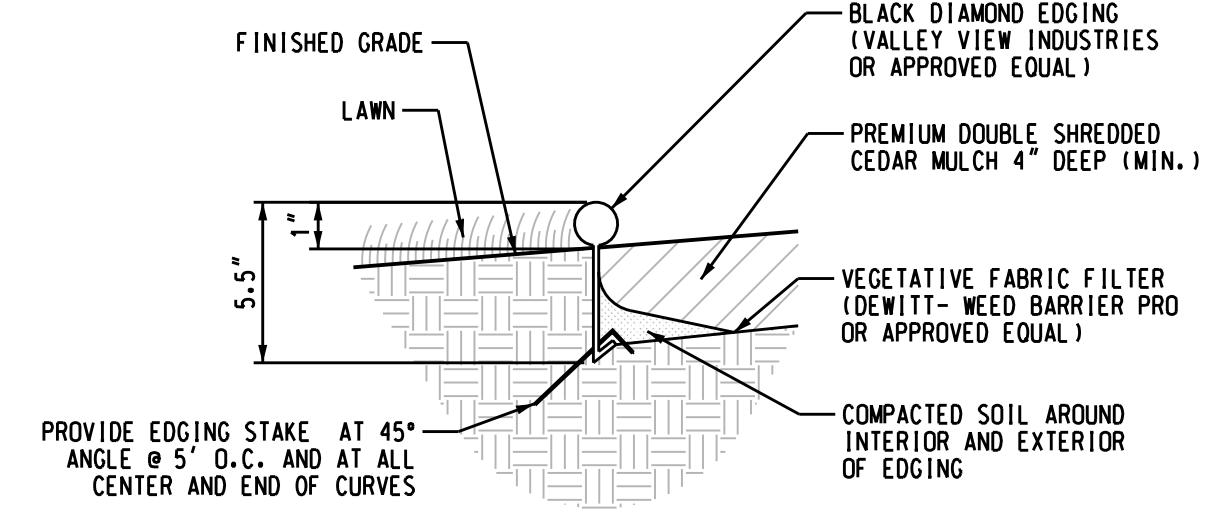
EVERGREEN TREE DETAIL
NO SCALE



CONTAINER GROWN PLANT & SOIL - REMOVE CONTAINER PRIOR TO PLANTING. FOR B & B REMOVE BURLAP FROM TOP 1/3 OF BALL.

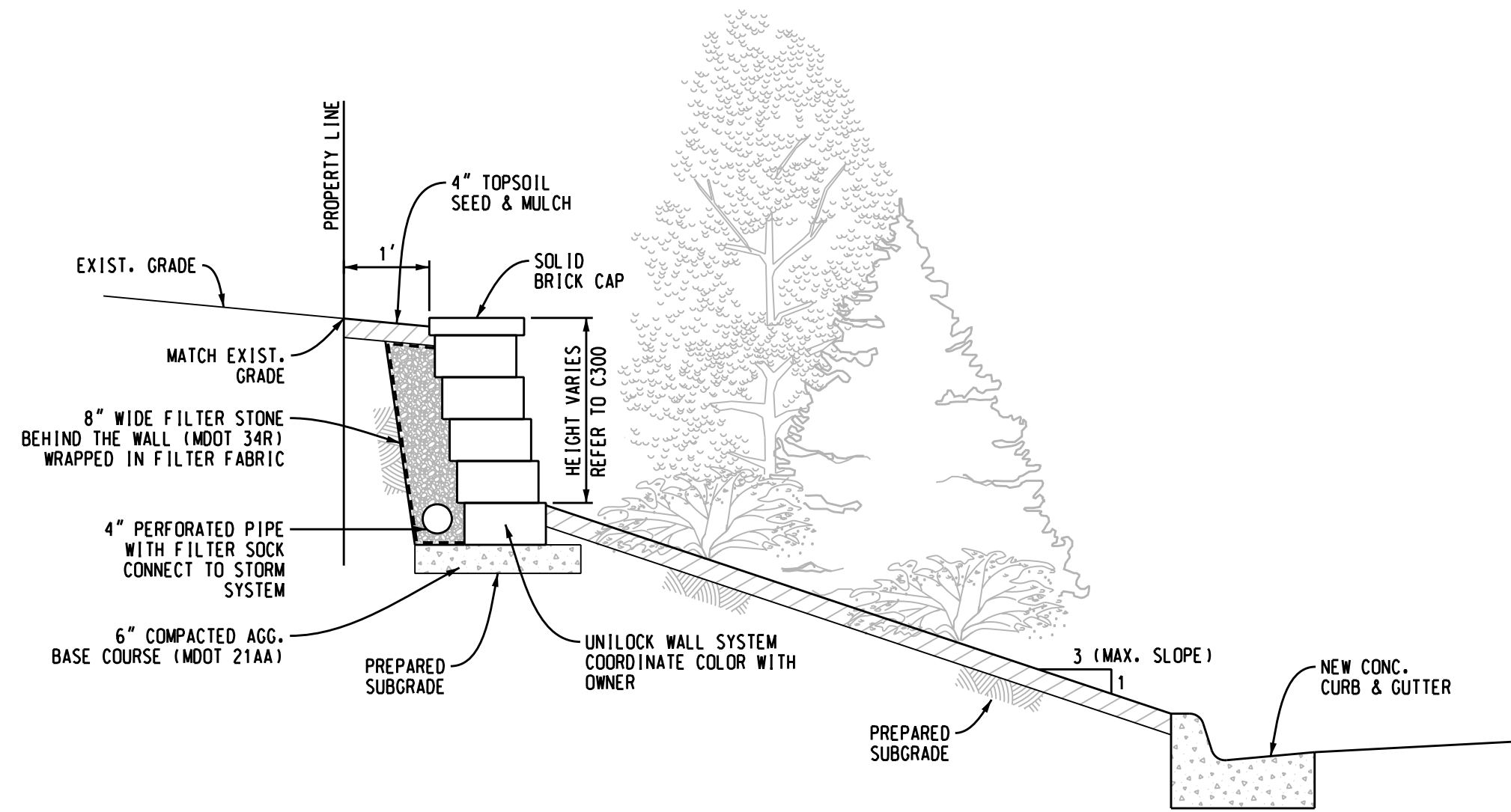
NOTE: DIG HOLE TO CLEAR ROOTBALL BY 6\"/>

SHRUB PLANTING DETAIL
NO SCALE

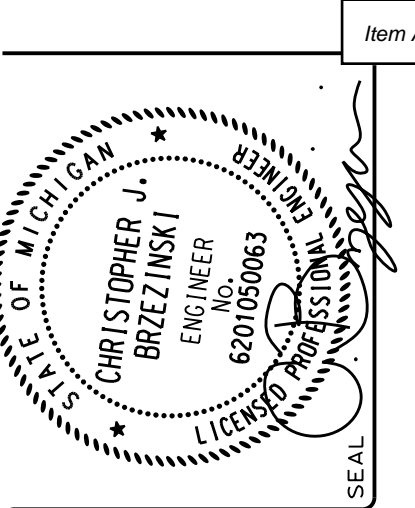


PROVIDE EDGING STAKE AT 45° ANGLE @ 5' O.C. AND AT ALL CENTER AND END OF CURVES

CEDAR MULCH AND EDGING DETAIL
NO SCALE



CROSS SECTION
NO SCALE



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CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING

19th ANNIVERSARY
 2004 - 2023

DATE: 09/24/2024 TIME: 12:51:41 PM

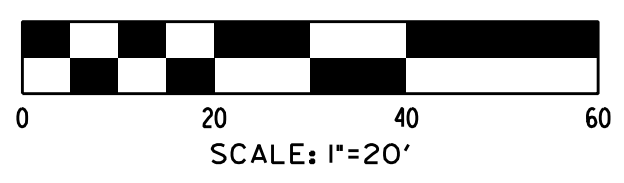
SITE LANDSCAPE DETAILS

PHASE: **F · SPA**

JOB NO.: **230601**

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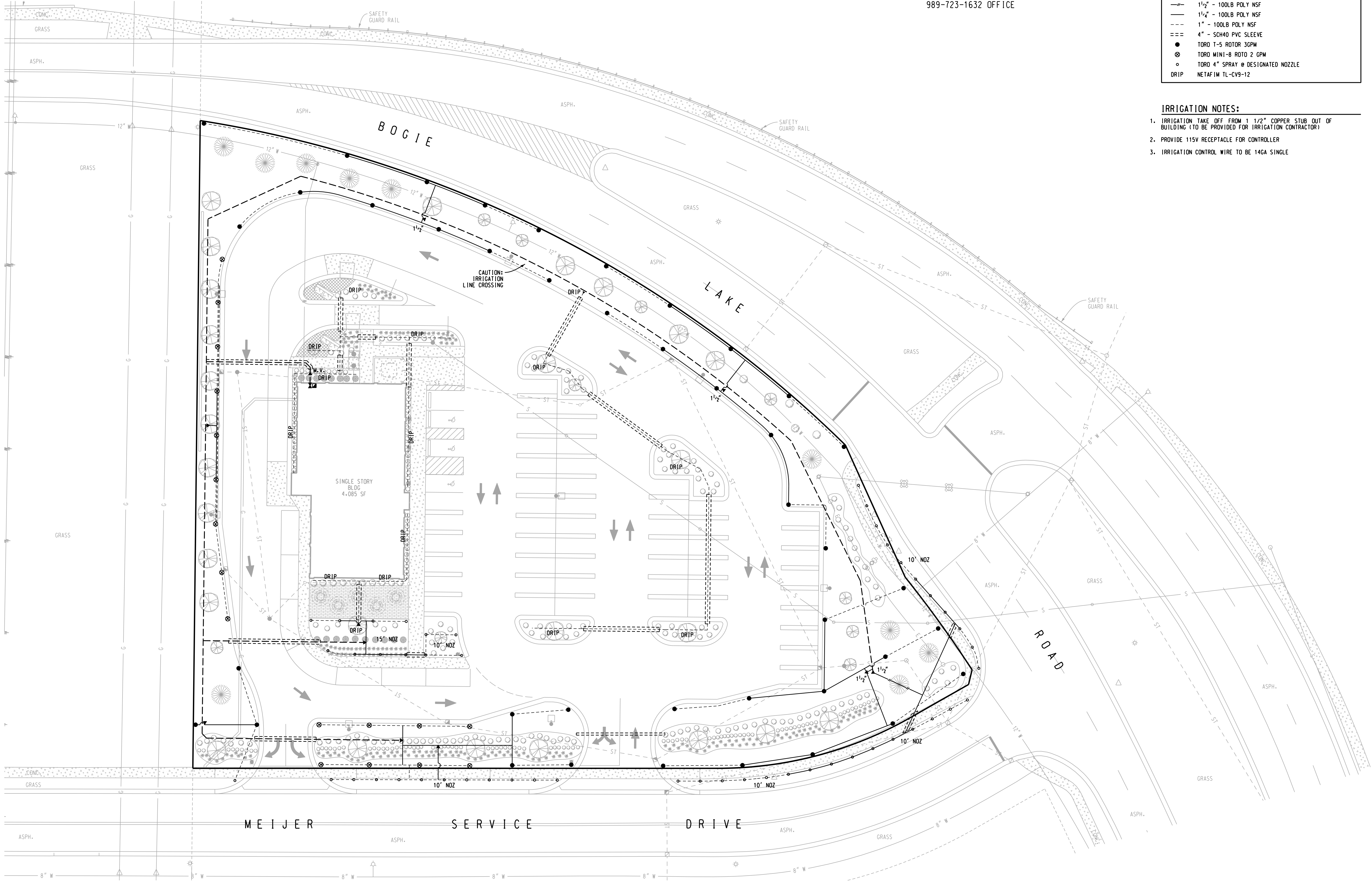
PLEASE CONTACT THE FOLLOWING COMPANY
FOR INSTALLATION:

THOMAS A. GROSS
SUNBURST GARDENS INC.
107 E. NORTH ST
OWOSSO, MI. 48867
989-723-1632 OFFICE

IRRIGATION SCHEDULE	
KEY	NAME
☑	TORO EVO-00 12ST CONTROLLER RAINSENSOR
●	FEBCO 1.5" PVB
▲	TORO 252 1" ELEC VALVE
▲	TORO 252 1 1/2" ELEC VALVE
▲	TORO 1" ELEC VALVE @ 3/4" SCREEN & 3/4" PRESSURE
---	2" - 200LB PVC
---	1 1/2" - 100LB POLY NSF
---	1 1/4" - 100LB POLY NSF
---	1" - 100LB POLY NSF
---	4" - SCH40 PVC SLEEVE
●	TORO T-5 ROTOR 30PM
○	TORO MINI-8 ROTO 2 GPM
○	TORO 4" SPRAY @ DESIGNATED NOZZLE
DRIP	NETAFIM TL-CV9-12

IRRIGATION NOTES:

1. IRRIGATION TAKE OFF FROM 1 1/2" COPPER STUB OUT OF BUILDING (TO BE PROVIDED FOR IRRIGATION CONTRACTOR)
2. PROVIDE 115V RECEPTACLE FOR CONTROLLER
3. IRRIGATION CONTROL WIRE TO BE 14GA SINGLE



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CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING

18th ANNIVERSARY
2004 - 2023

CULVER'S

BOGIE LAKE ROAD
WHITE LAKE TWP., MI

NORTHEAST 1/4 SEC. 20
TOWNSHIP 3N, RANGE 3E

DATE: 8/14/2024 TIME: 8:25:00 AM

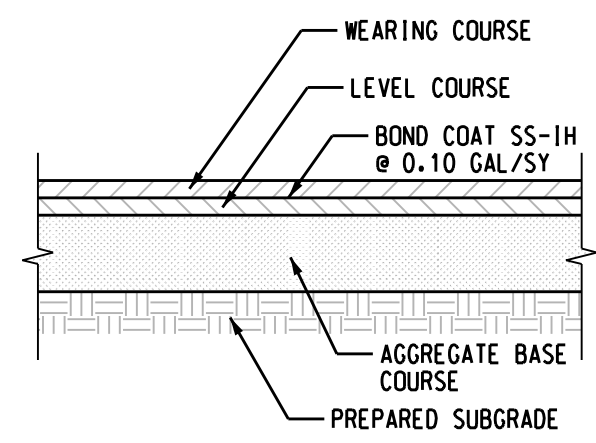
SITE IRRIGATION PLAN

DRAWN	DESIGNED	CHECKED	FIELD	NO.	DATE	SUBJECT	SEAL
	BRZEZINSKI	QUADERER	CREW CB / RO				
				09-05-24		FINAL SPA	
				06-06-24		FINAL SPA	
				03-18-24		PRELIMINARY SPA	

JOB NO.: 230601

PHASE: F. SPA

C502



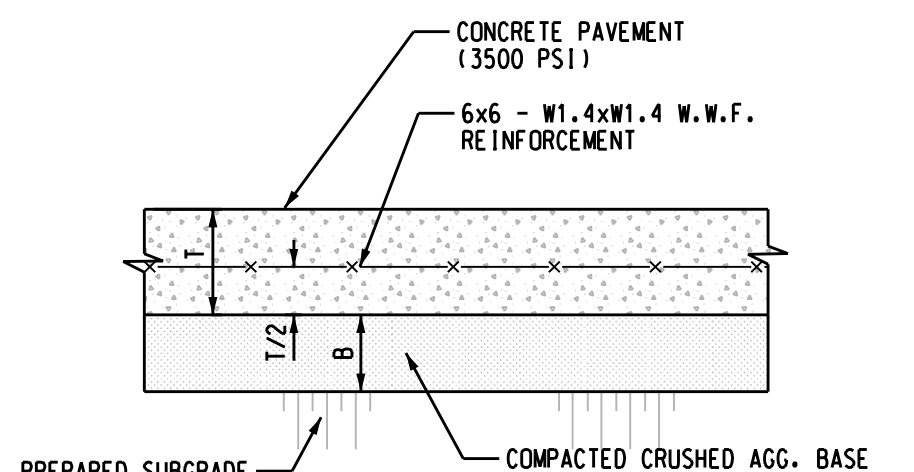
ON-SITE PAVEMENT SECTION
NO SCALE

- WEARING COURSE - 1.5" MDOOT 13A
- LEVEL COURSE - 3" MDOOT 3C
- AGGREGATE BASE - 8" MDOOT 21AA CRUSHED LIMESTONE

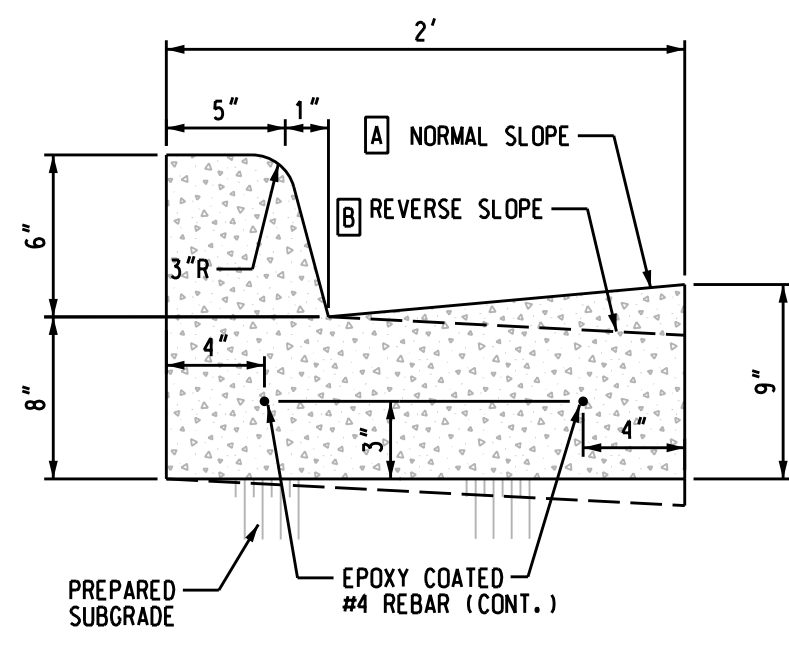
NOTE: AS AN ALTERNATE, CONTRACTOR IS ALLOWED TO SUBSTITUTE MDOOT 21AA CRUSHED CONCRETE FOR ON-SITE AGGREGATE BASE.

MEIJER DRIVE PAVEMENT SECTION
NO SCALE

- (9" OF DEEP STRENGTH ASPHALT SECTION)
- WEARING COURSE - 2" MDOOT 4C
- LEVEL COURSE - 3" MDOOT 3C
- LEVEL COURSE - 4" MDOOT 2C (FIRST LIFT)

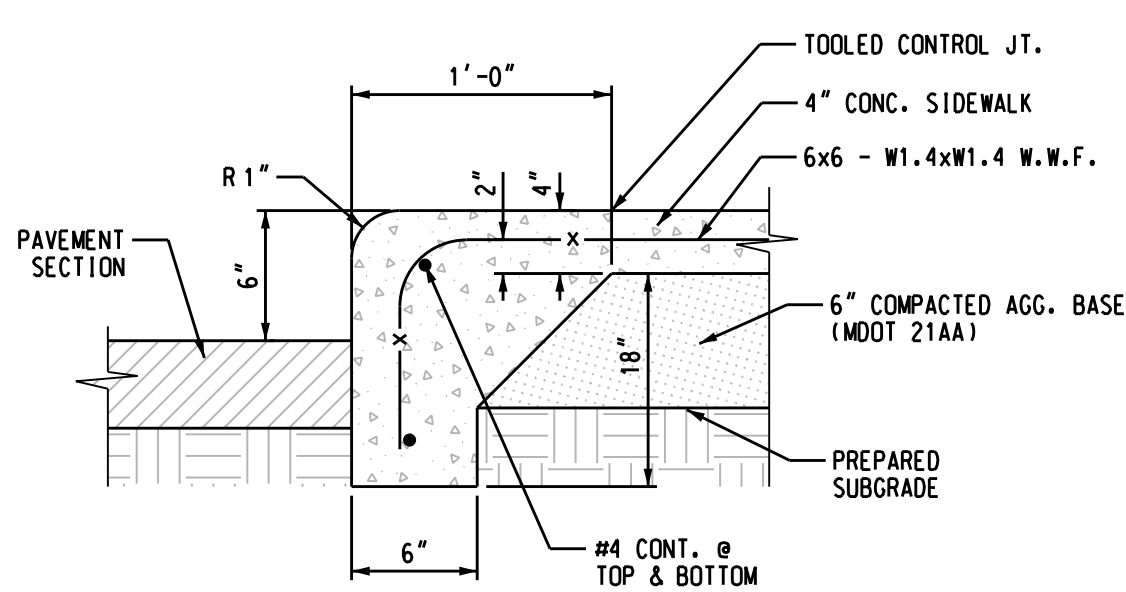


- DESIGN:
- | | | | |
|----------------------|----|----|-----|
| DRIVABLE AREAS | 8" | 8" | YES |
| DUMPSTER ENCLOSURE | 8" | 8" | YES |
| SIDEWALK (PEDS ONLY) | 4" | 6" | YES |
- CONCRETE PAVEMENT SECTION**
NO SCALE

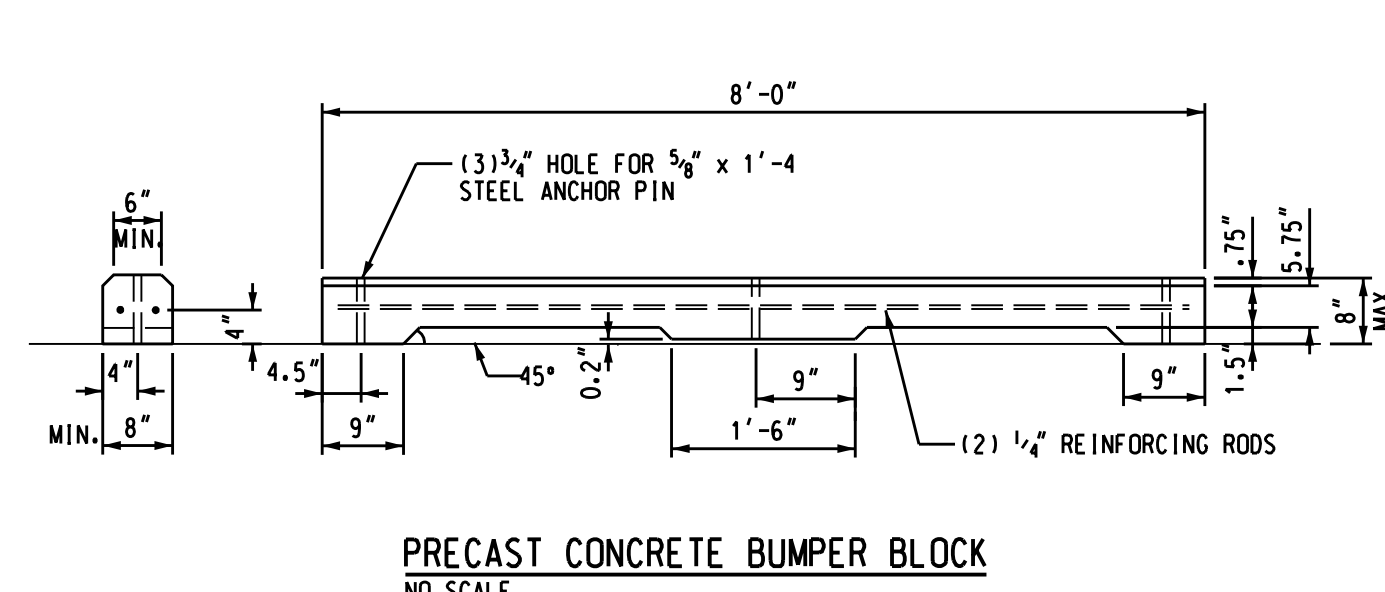


PROVIDE CONTROL JOINTS AT 10 FEET MAXIMUM SPACING AND DOWNED EXPANSION JOINTS AT 100 FEET MAXIMUM INTERVALS AND AT RADIUS POINTS

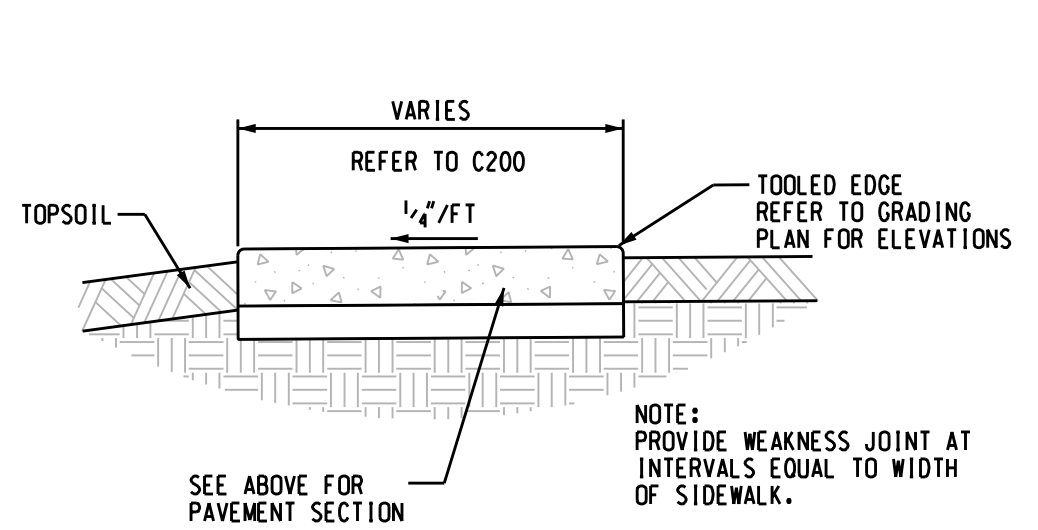
CURB & GUTTER DETAIL
NO SCALE
ON-SITE ONLY



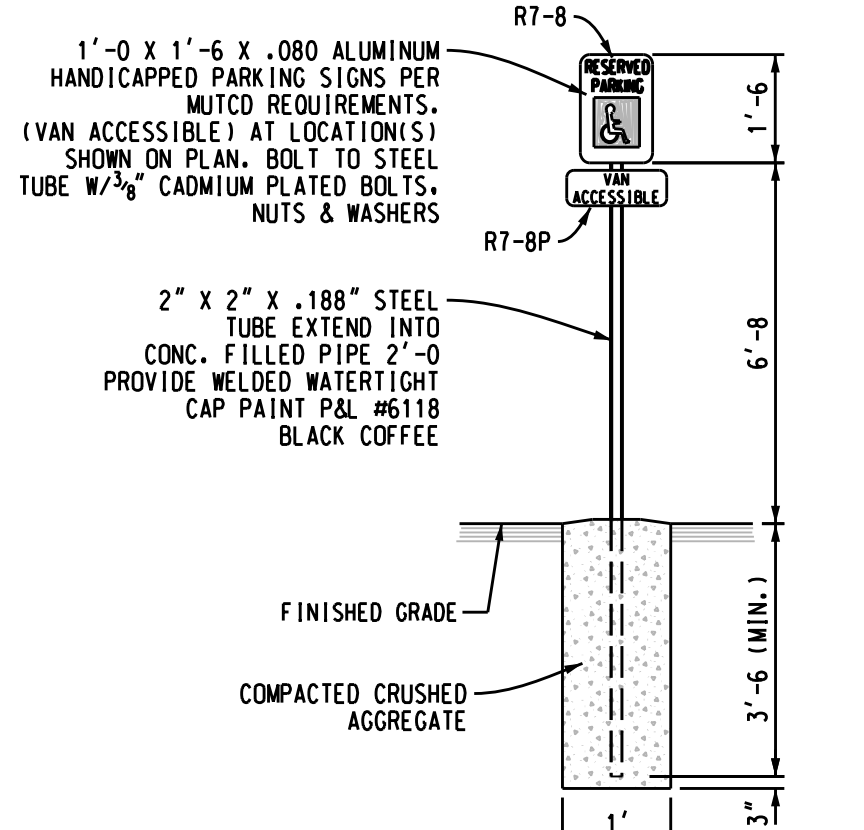
INTEGRAL CURB & SIDEWALK DETAIL
NO SCALE



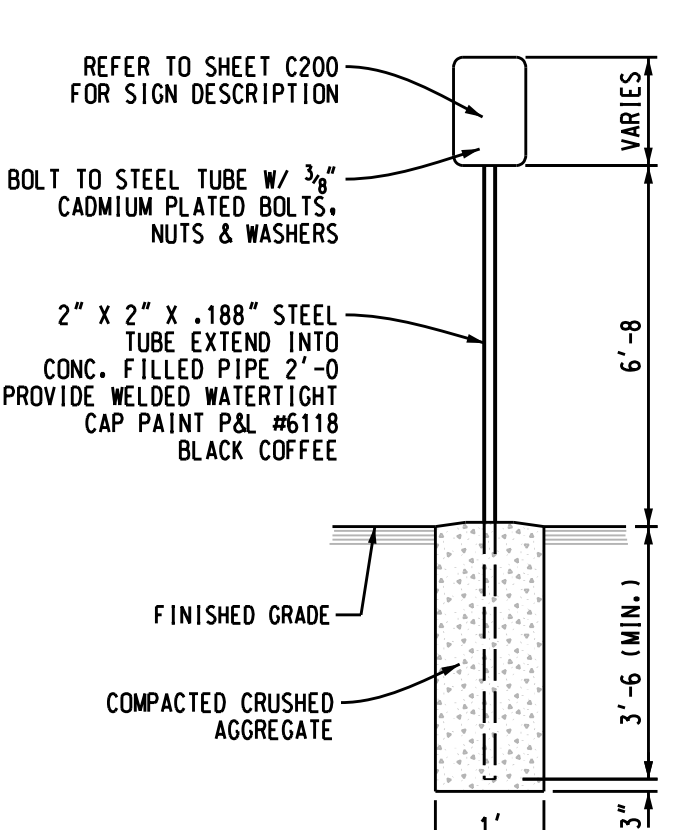
PRECAST CONCRETE BUMPER BLOCK
NO SCALE



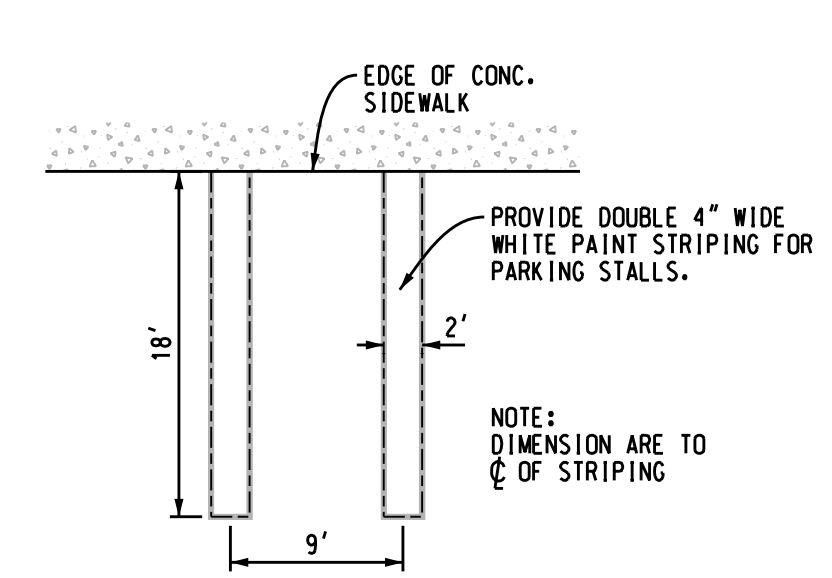
TYP. SIDEWALK DETAIL
NO SCALE



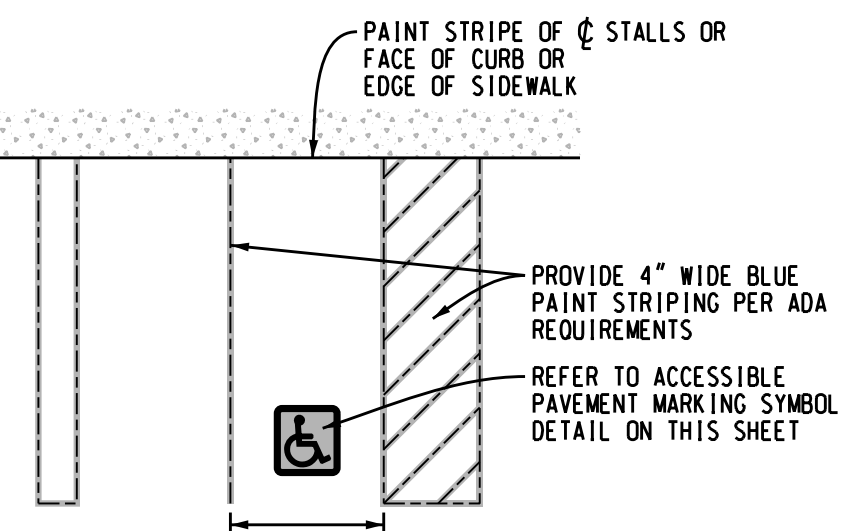
BARRIER FREE PARKING SIGN
NO SCALE (W/ VAN ACCESSIBLE SIGN)



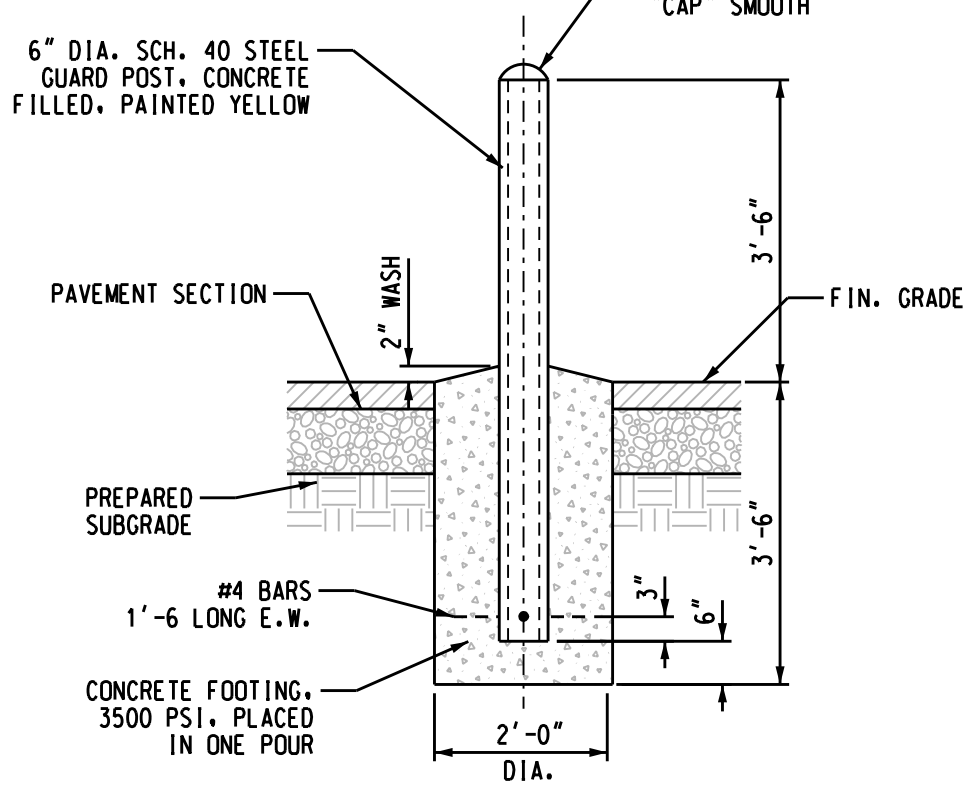
GENERAL SIGN DETAIL
NO SCALE



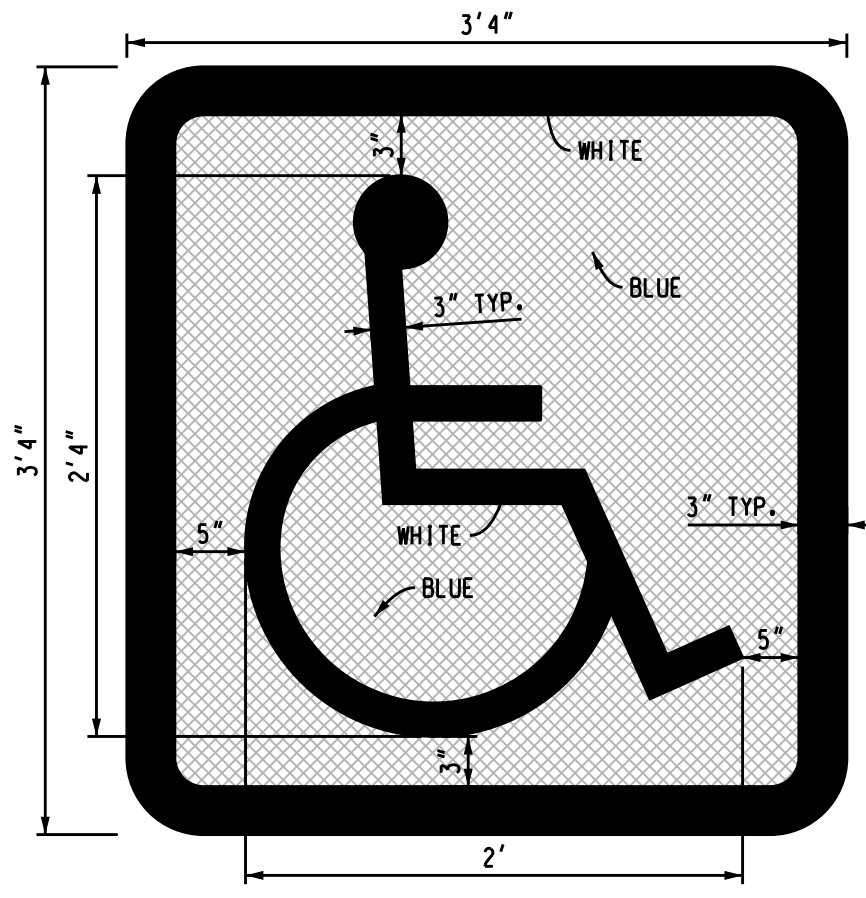
PARKING STALL PAINT STRIPING DETAIL
NO SCALE



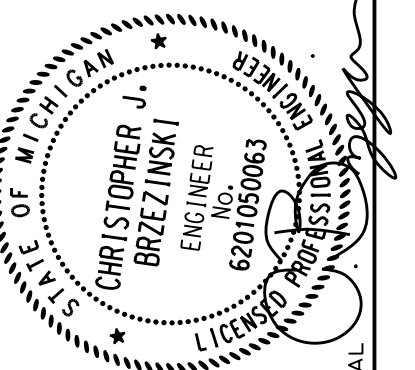
ADA STALL PAINT STRIPING DETAIL
NO SCALE



GUARD POST DETAIL
NO SCALE



ACCESSIBLE PAVEMENT MARKING SYMBOL
NO SCALE



NO.	DATE	REVISION OR ISSUE
09-05-24	FINAL SPA	
06-06-24	FINAL SPA	
03-18-24	PRELIMINARY SPA	

DRAWN	BRZEZINSKI
DESIGNED	QUADERER
CHECKED	QUADERER
FIELD CREW	CB / RO

CULVER'S
NORTH EAST 1/4 SEC. 20
TOWNSHIP 3N, RANGE 9E

BOGIE LAKE ROAD
WHITE LAKE TWP., MI

Griggs Quaderer, Inc.
8308 OFFICE PARK DRIVE
GRAND BLANC, MI 48409

WWW.GQINCORP.COM
PH: (810) 695-0154
FX: (810) 695-0158

**CIVIL ENGINEERING · LAND SURVEYING
SITE PLANNING**



PHASE: **F SPA**

JOB NO.: **230601**

C600

DIR DIRECTIONAL SIGNS WHITE LAKE, MI

Illuminated Directional Signs

DIR
All aluminum construction
LED internal illumination
Totally self contained lighting
Polycarbonate thermoformed faces
Face removal for service
Site plans show placement & field orientation
UL marked product

DIRECTIONAL SIGN 1 DIR-D10-D12
THANK YOU SIDE: A

DIRECTIONAL SIGN 2 DIR-8-8
PLEASE DO NOT ENTER SIDE: B

DIRECTIONAL SIGN 3 DIR-8-8

Culver's

SCALE: 3/4" = 1"

NOTE: SCALE AND COLORS NOT REPRESENTATIVE FROM ORIGINAL PHOTOGRAPHS
*ALL MEASUREMENTS ARE APPROXIMATE

© 2018 Springfield Signs & Graphics Inc., Springfield, MA

SIGN CONCEPTUAL

NOTE: SIGN FACE SHOWN IS FOR DIMENSIONAL DRAWING ONLY (COLORS/STYLES/ACTUAL LOCATION SIGNFACES ARE SHOWN IN LETTERS)

NOTES

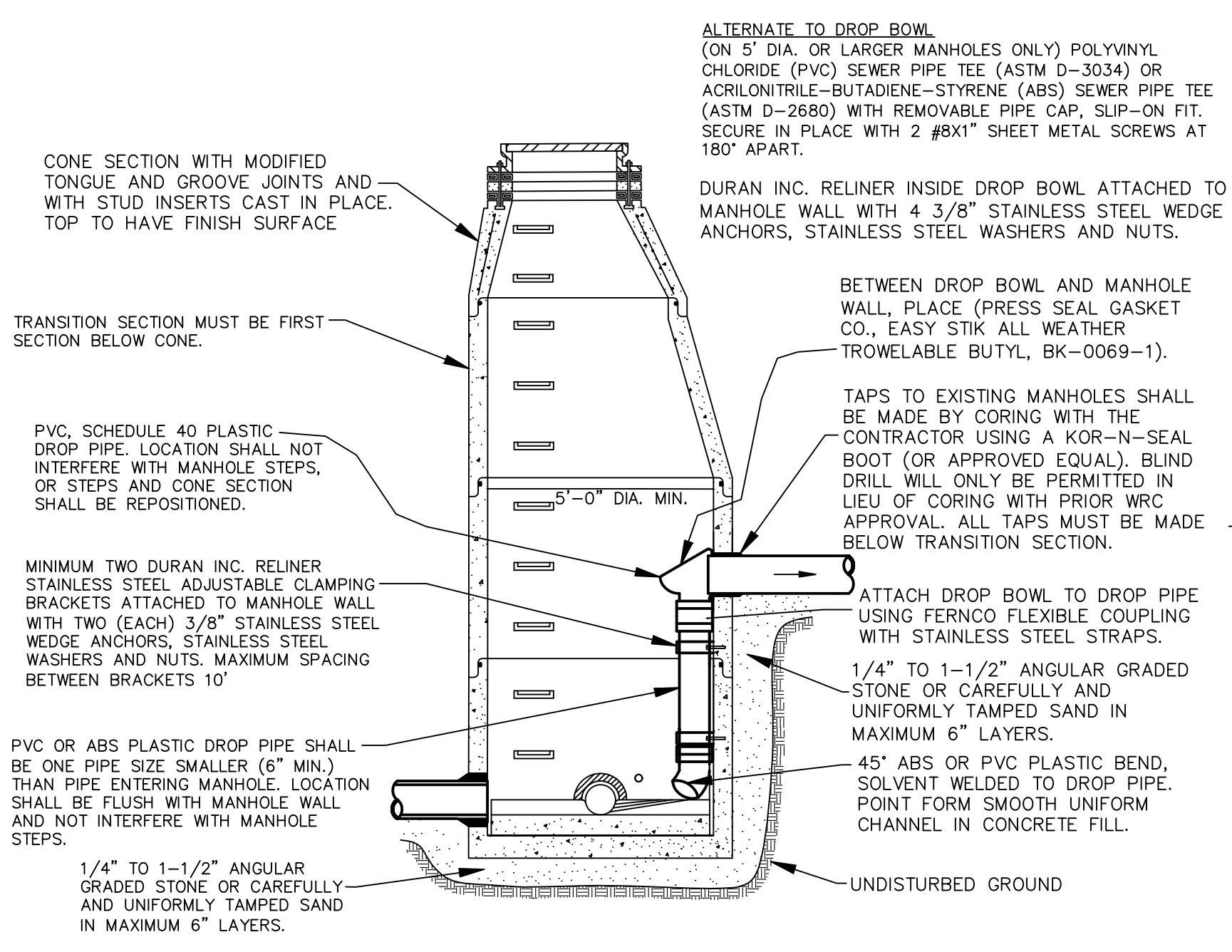
SQUARE FOOTAGE CALCULATIONS: RECTANGULAR 3.24 SF

SALES PERSON:	DESIGNED BY:	AD:
MARK WEGGELL	J.KRODEGER	S2561
DATE CREATED / REVISION HISTORY		
4/23/24 - NEW		

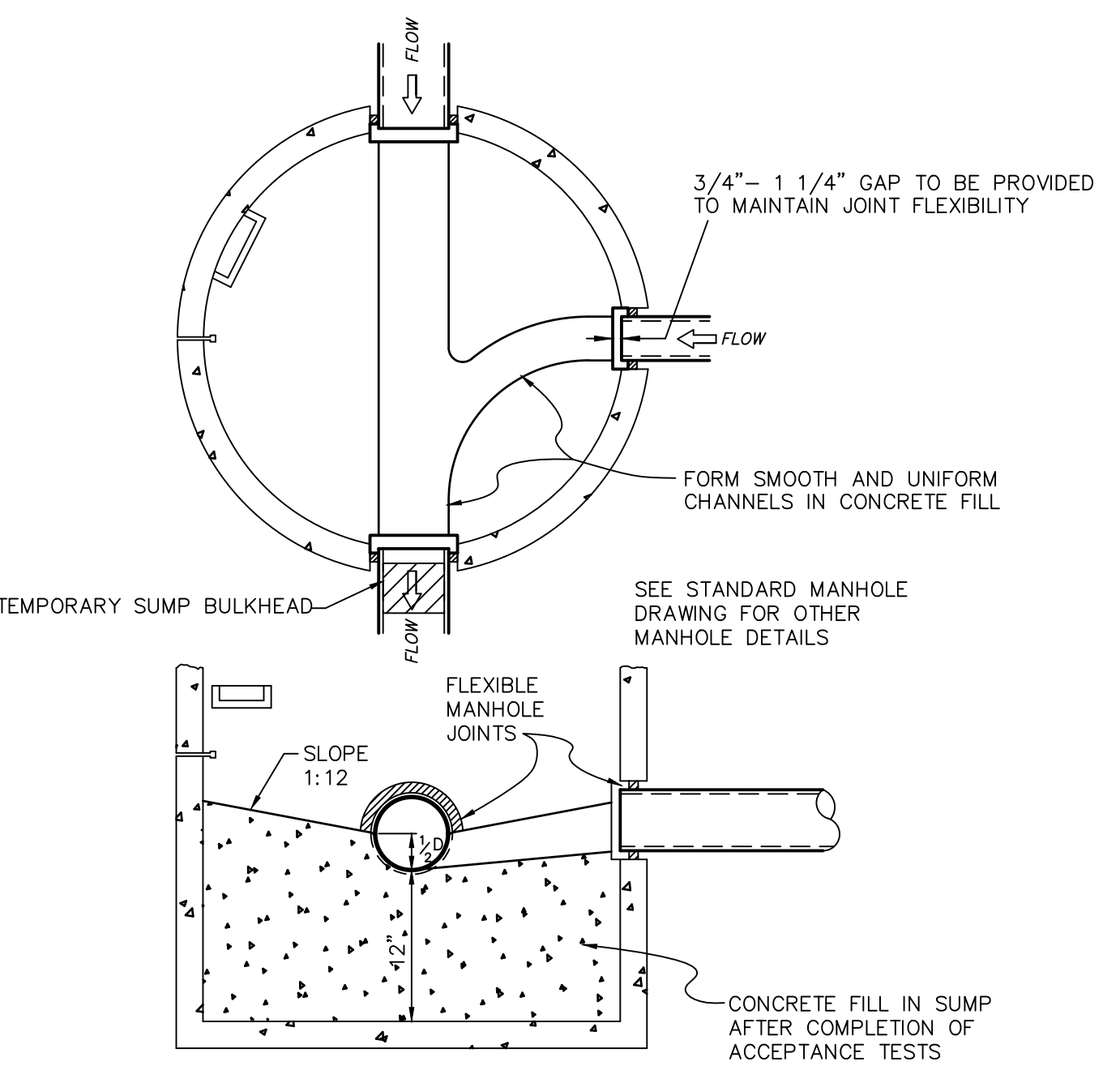


SANITARY SEWER CONSTRUCTION NOTES

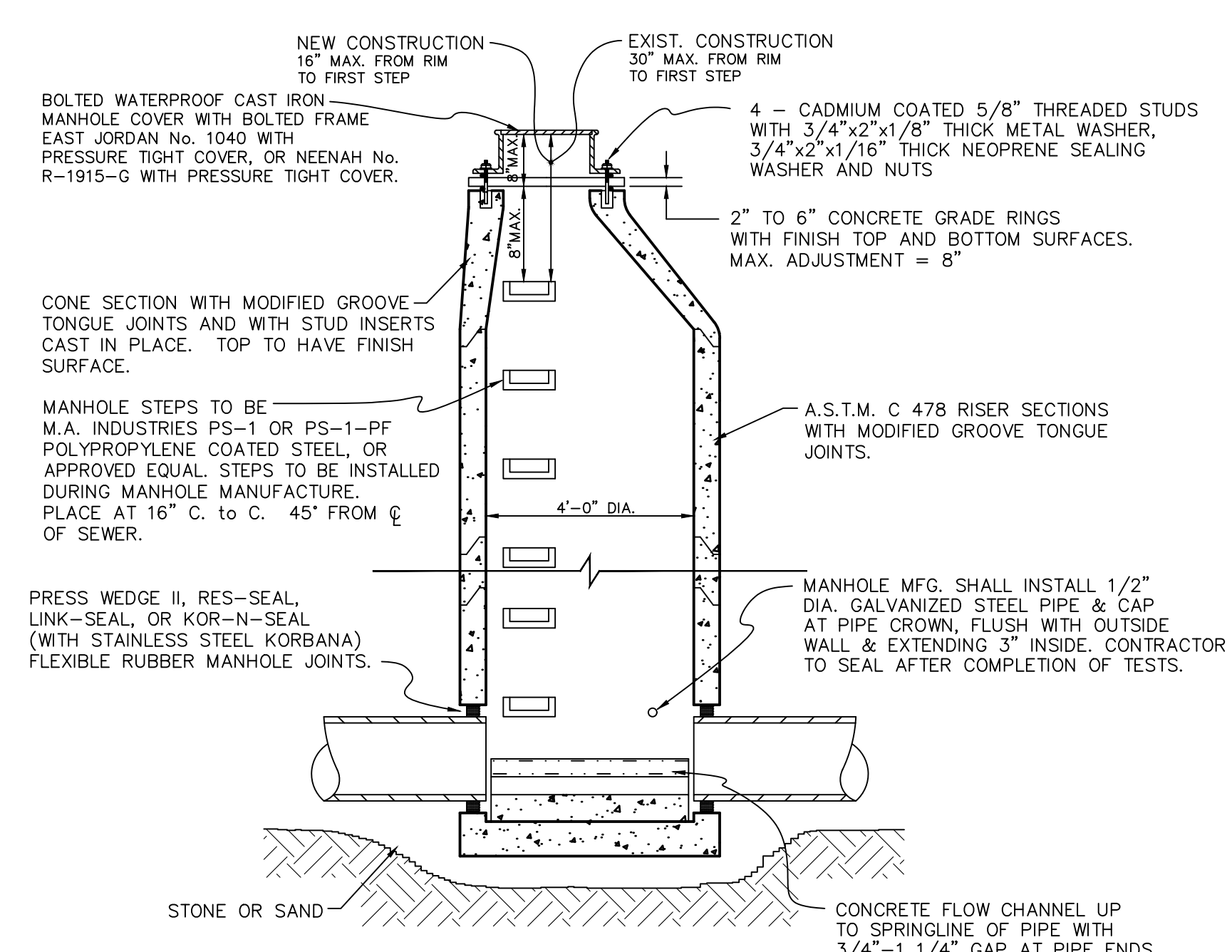
- All construction shall conform to the current standards and specifications of the local unit of government and the Oakland County Water Resources Commissioner (OCWRC). All sanitary sewer construction shall have full time inspection supervised by a professional engineer provided by or caused to be provided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



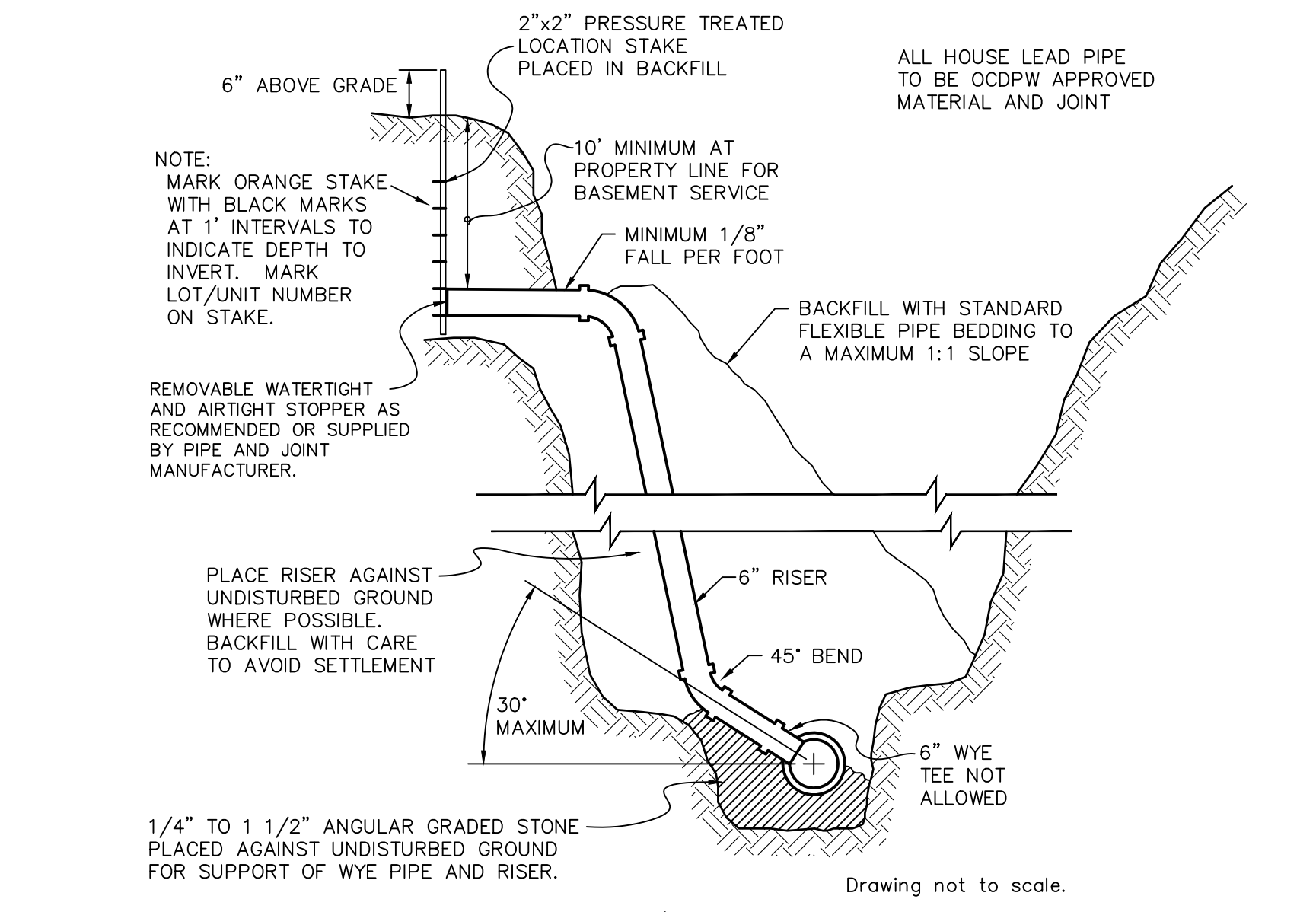
INTERIOR DROP CONNECTION



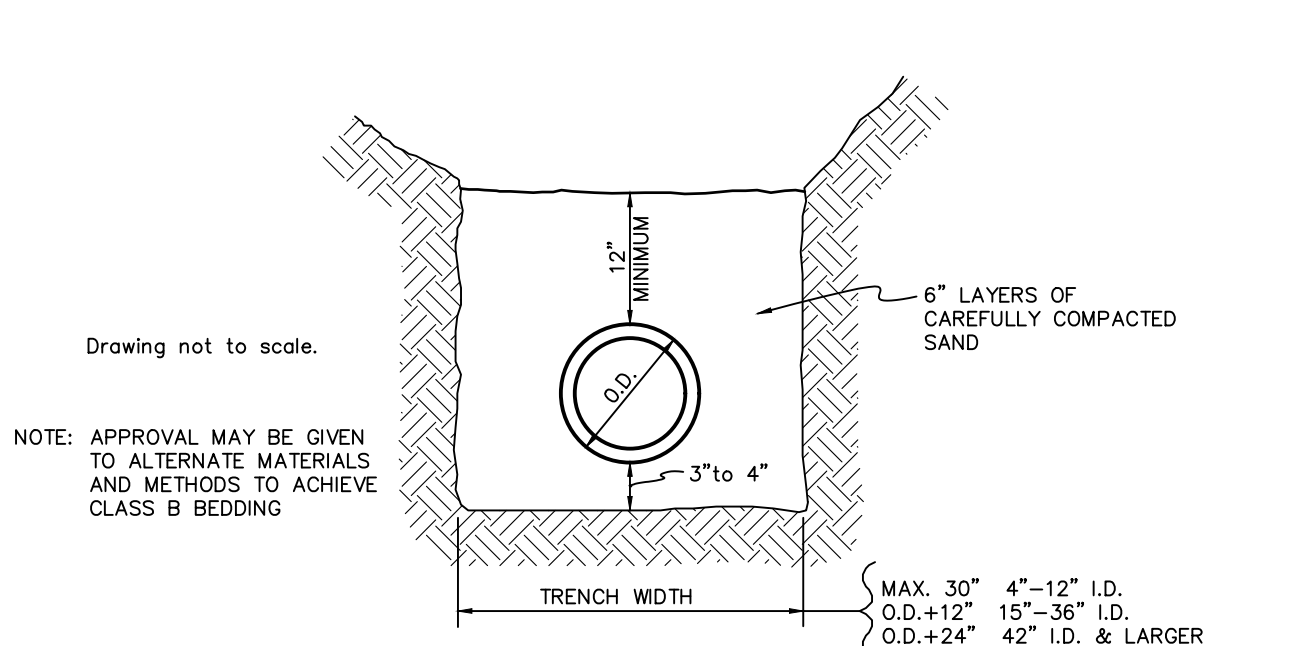
SUMP MANHOLE FOR TESTING, CLEANING, AND DEWATERING



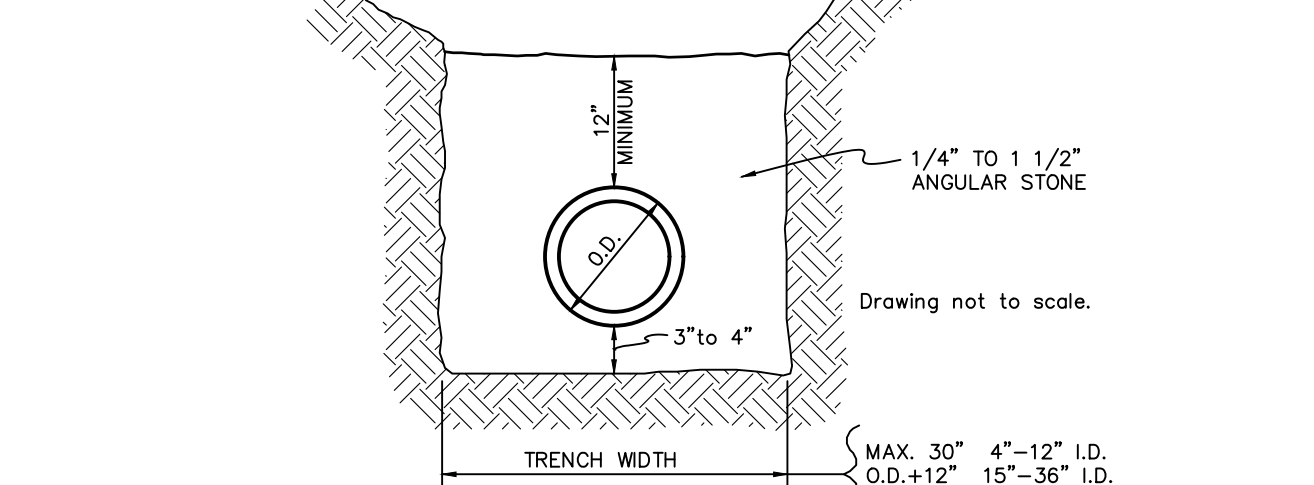
STANDARD MANHOLE ON 8" THROUGH 24" DIAMETER SEWERS



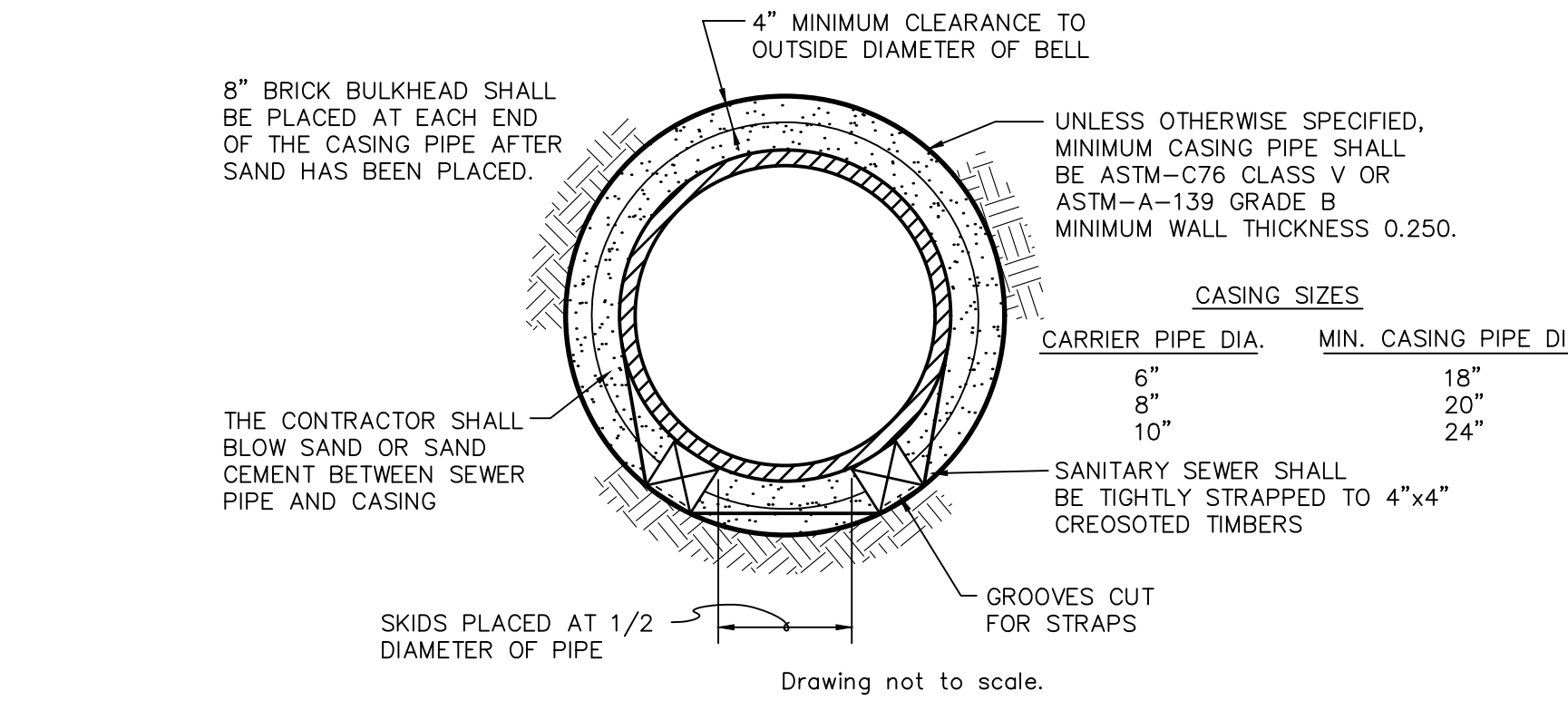
HOUSE/BUILDING LEAD DETAIL



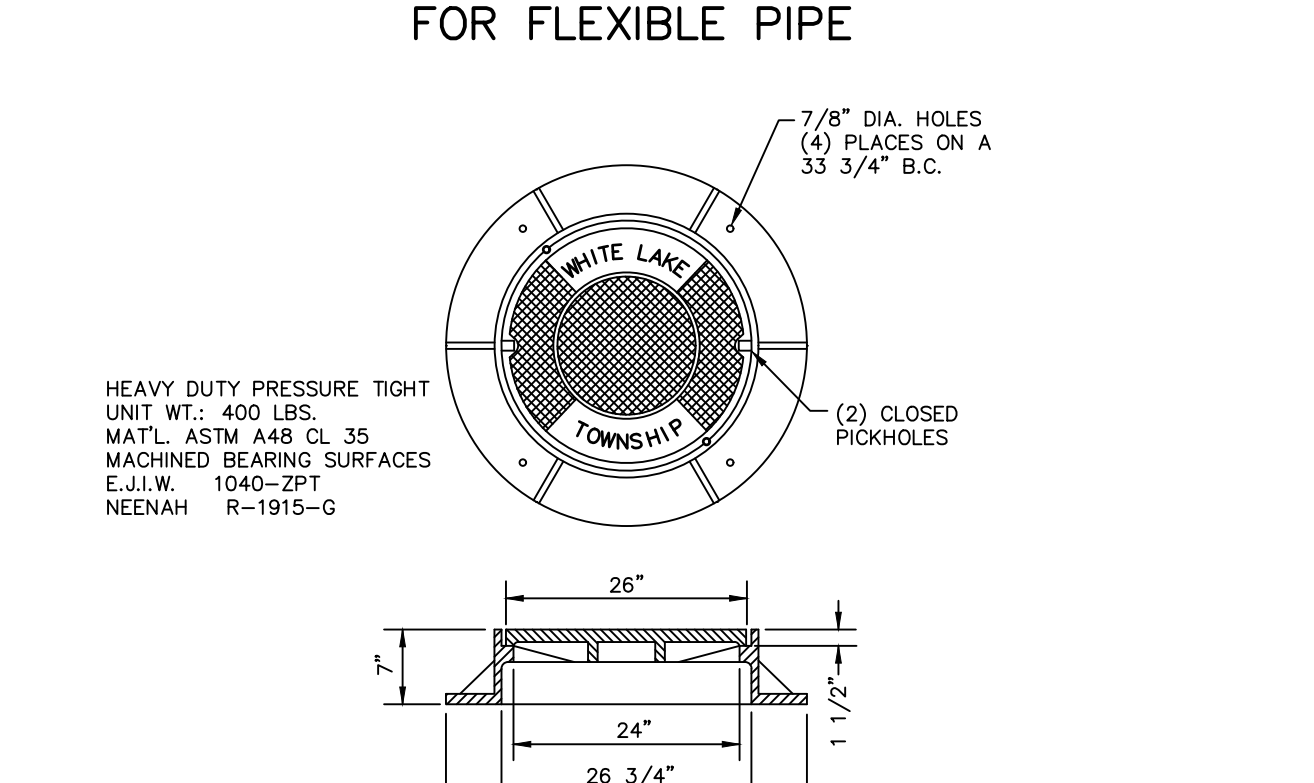
BEDDING DETAIL FOR RIGID PIPE (CLASS B)



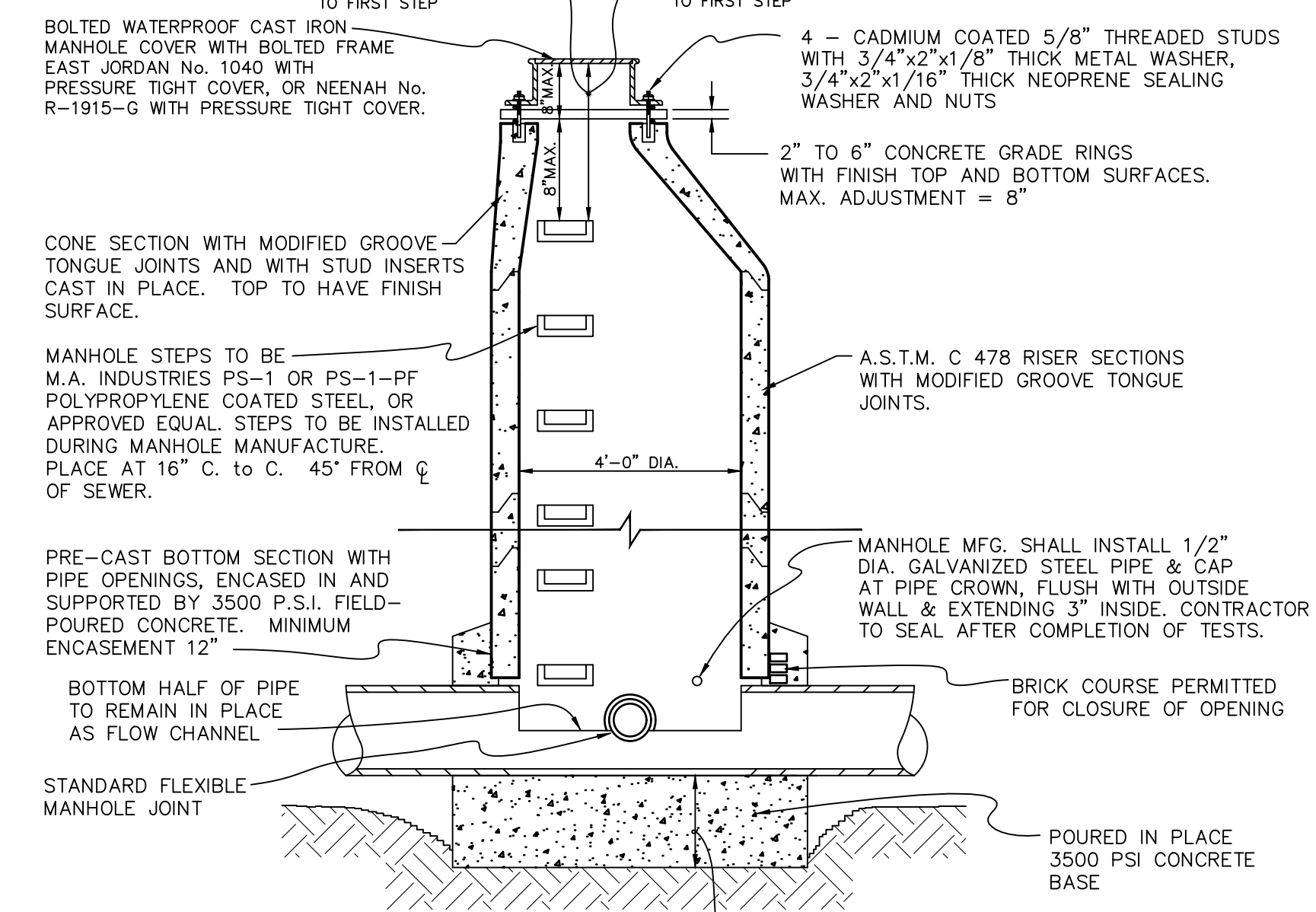
BEDDING DETAIL FOR FLEXIBLE PIPE



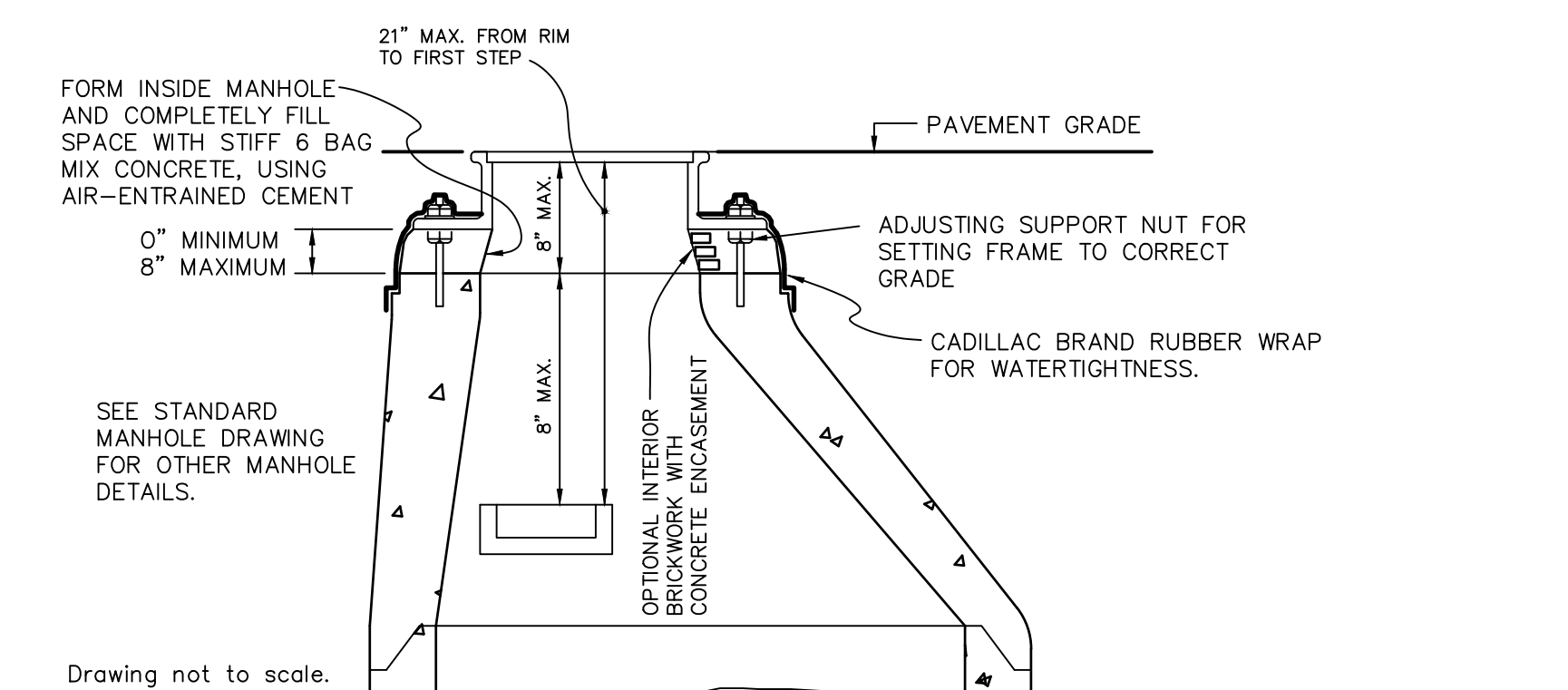
PIPE BARREL SUPPORT FOR SEWER



MANHOLE COVER & FRAME



SKETCH OF MINIMUM MANHOLE REQUIREMENTS ON MANHOLES CONSTRUCTED OVER EXISTING SEWERS



OPTIONAL CONSTRUCTION DETAILS

DRAWN:CAD DESIGN:OA CHECKED:--

SCALE: VERT. - HORZ. AS NOTED

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

Johnson & Anderson

4494 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660

1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115

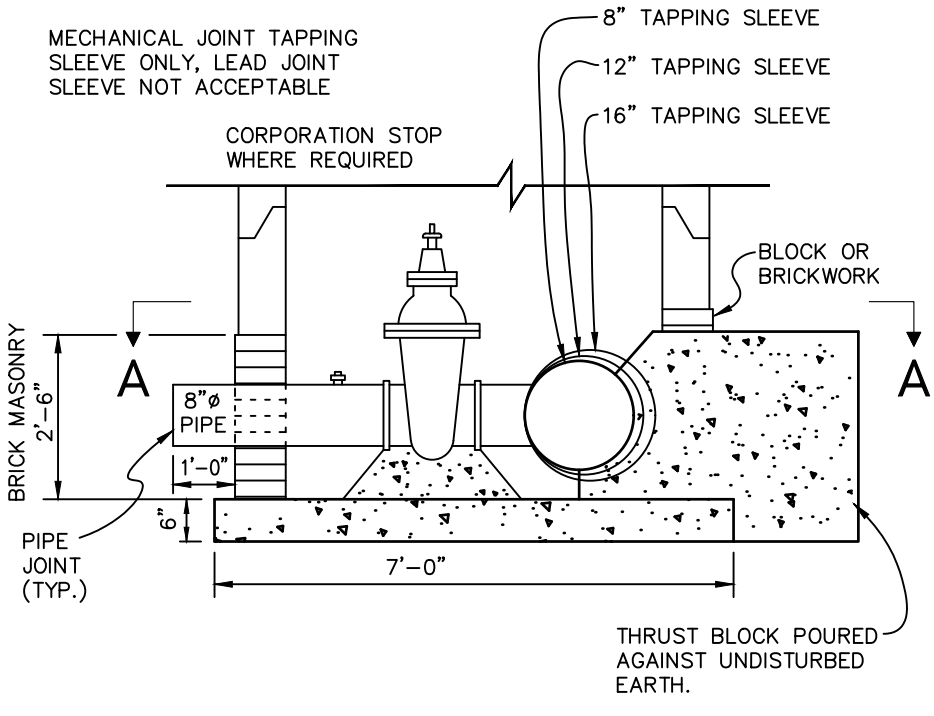
2291 Water Street, Suite 6 Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895

White Lake Township

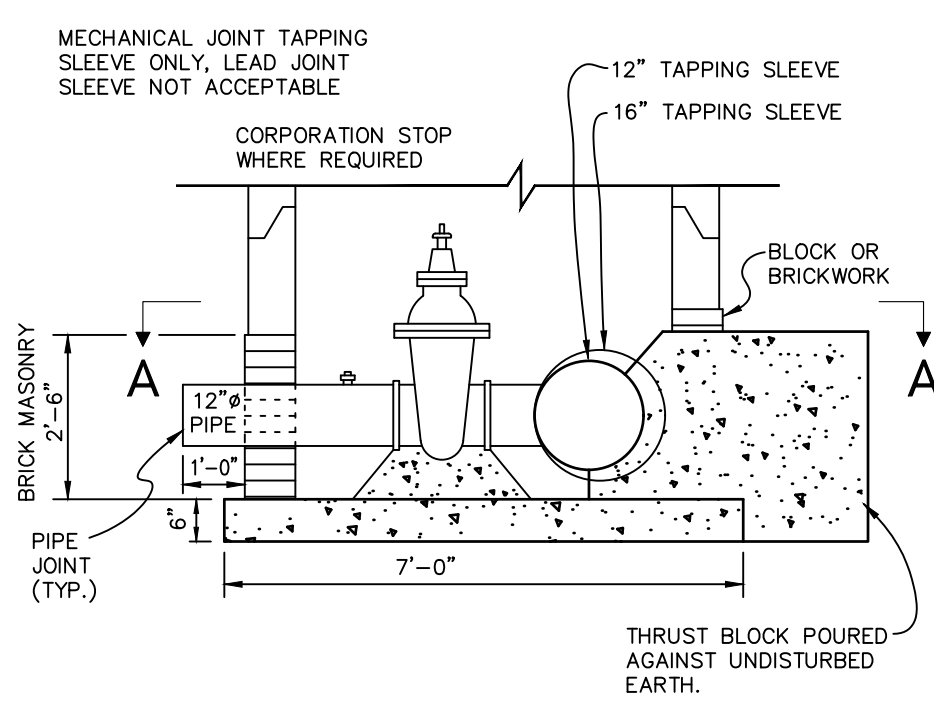
7525 Highland Road (M-59) White Lake, Michigan 48383 248-698-3300

SANITARY SEWER STANDARD DETAILS

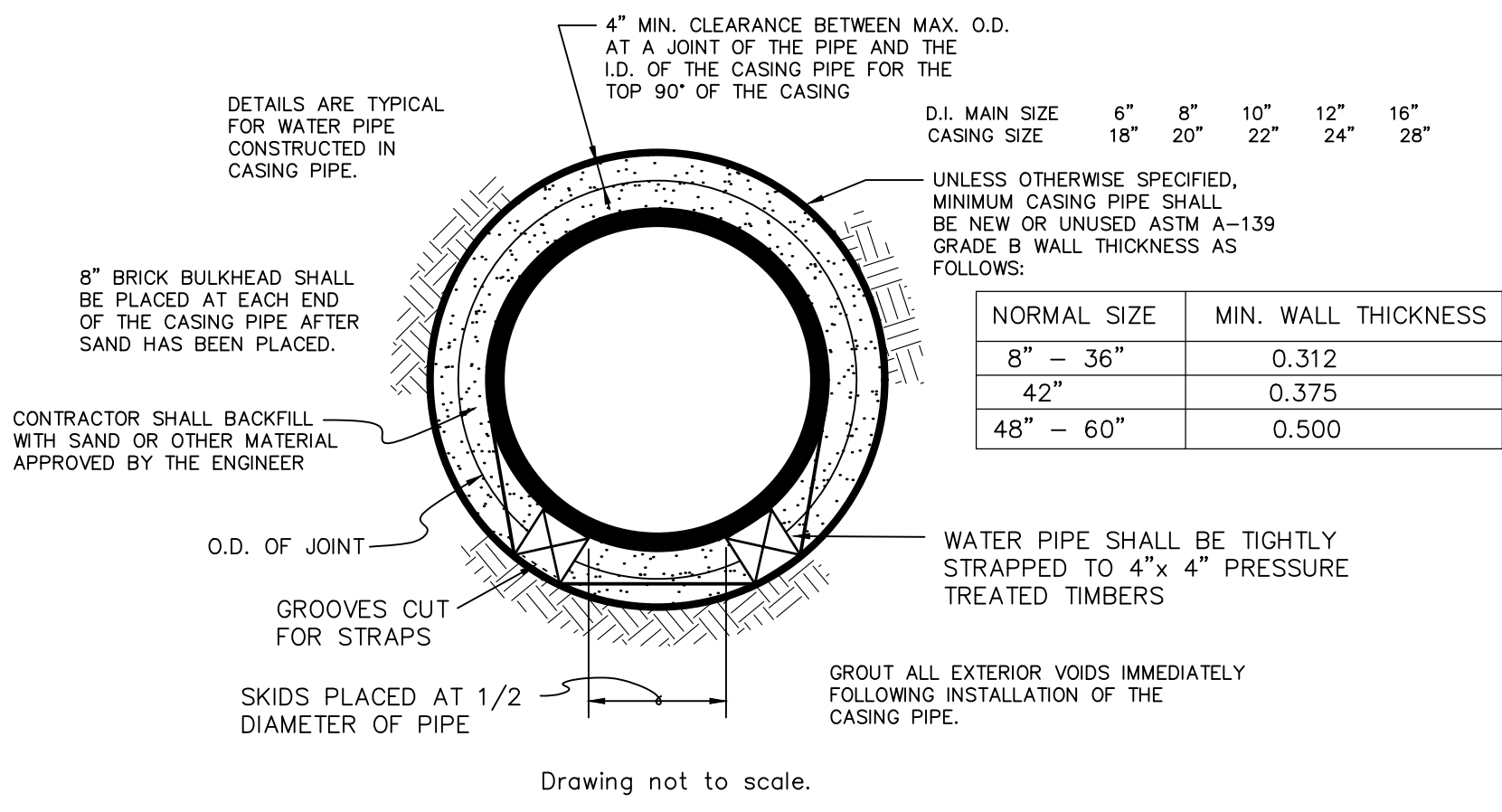
JOB NO. DATE ISSUED 09/11/97 SHEET NO.



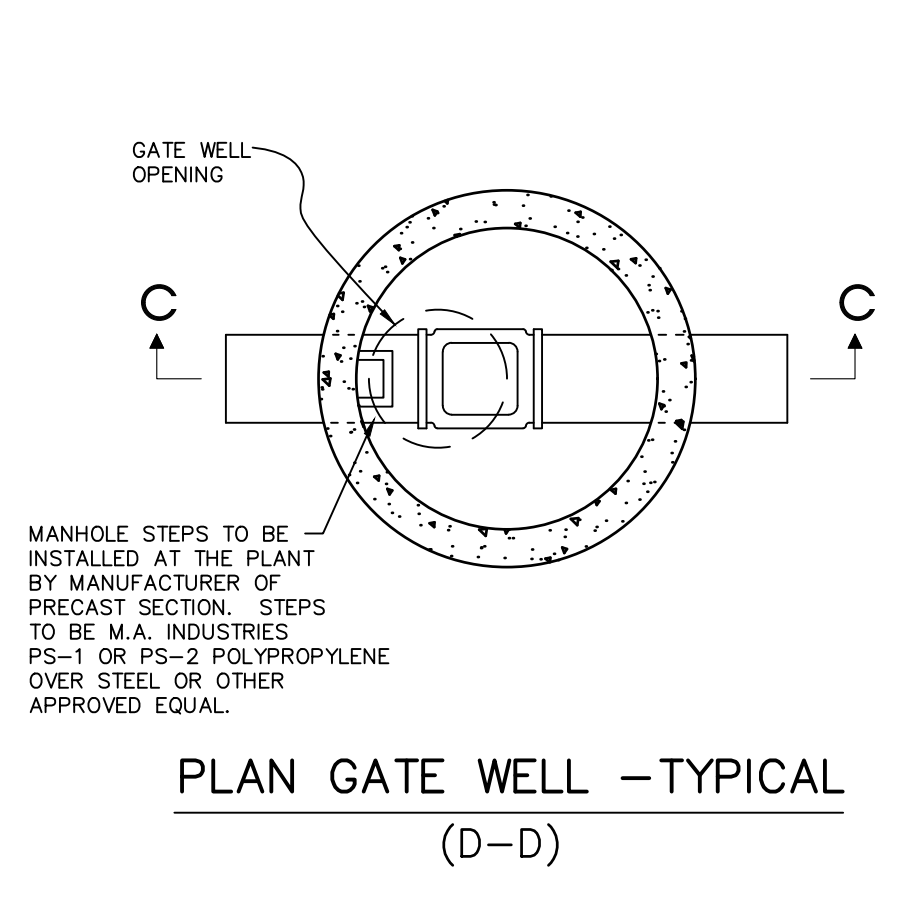
16" X 8", 12" X 8", 8" X 8" TAPPING SLEEVE, VALVE & WELL (B-B)



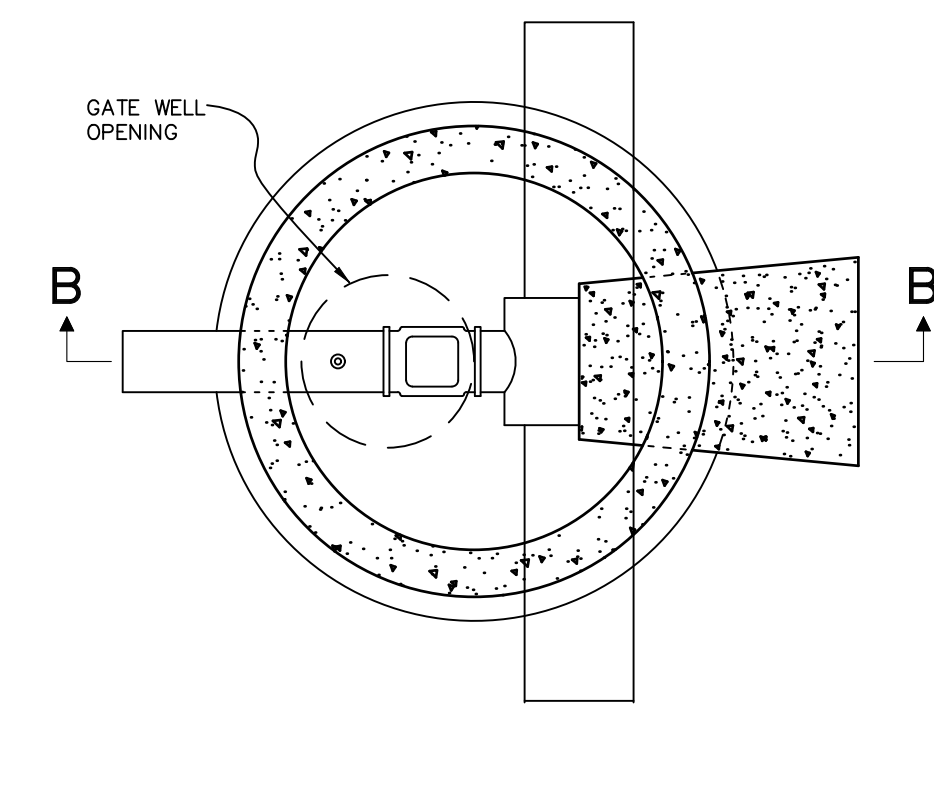
16" X 12", 12" X 12" TAPPING SLEEVE, VALVE & WELL (B-B)



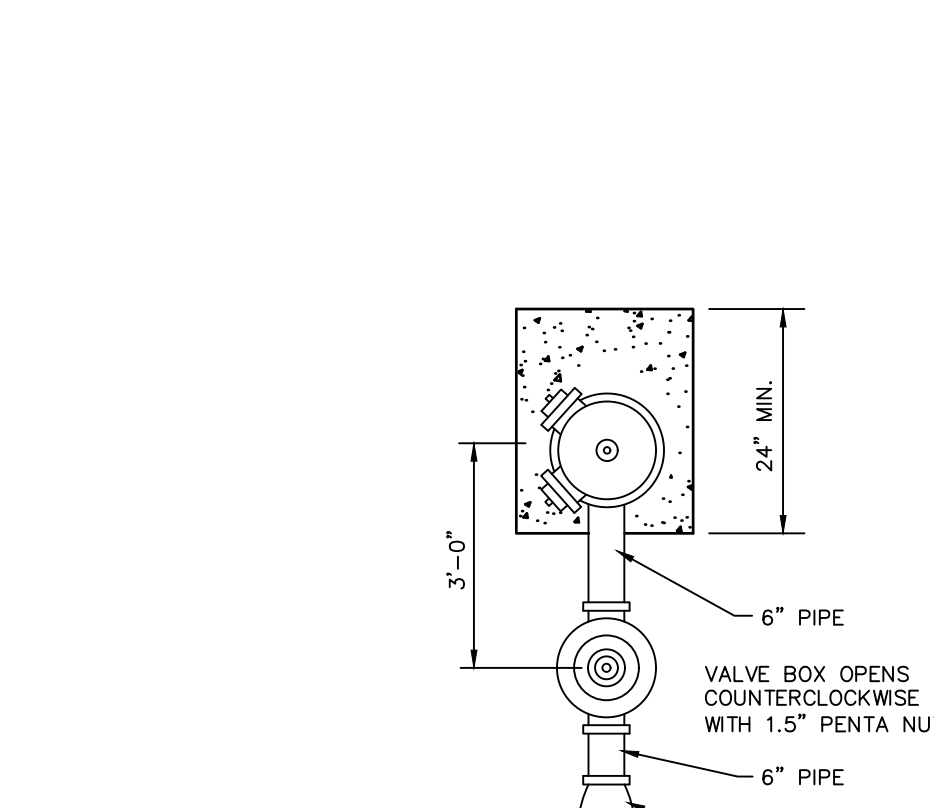
PIPE BARREL SUPPORT FOR WATER MAIN CONSTRUCTED IN CASING



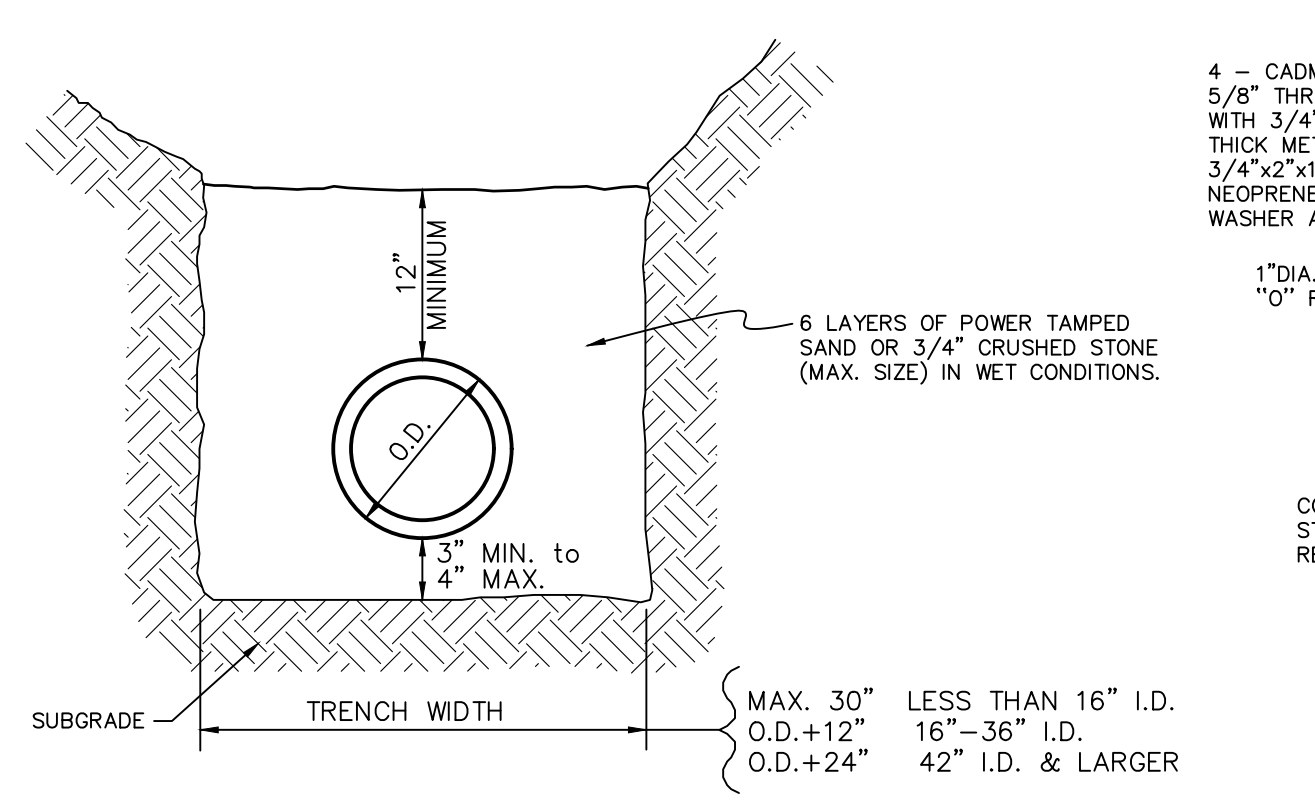
PLAN GATE WELL - TYPICAL (D-D)



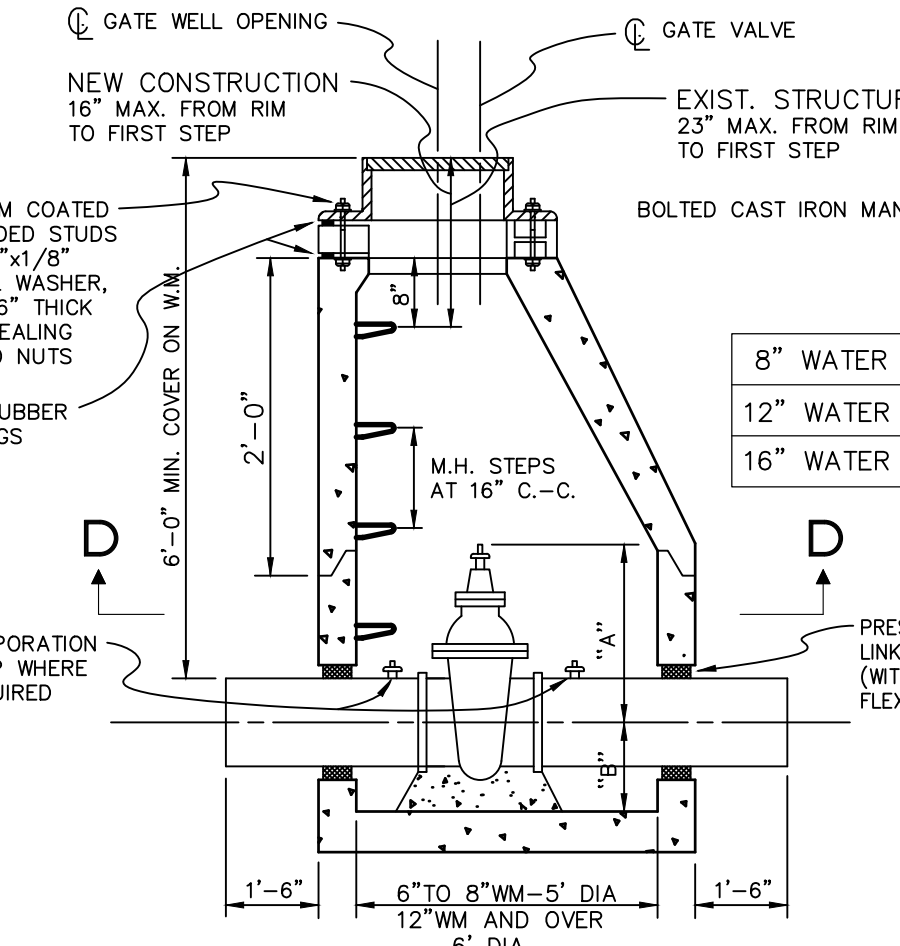
PLAN TAPPING SLEEVE, VALVE & WELL - TYPICAL (A-A)



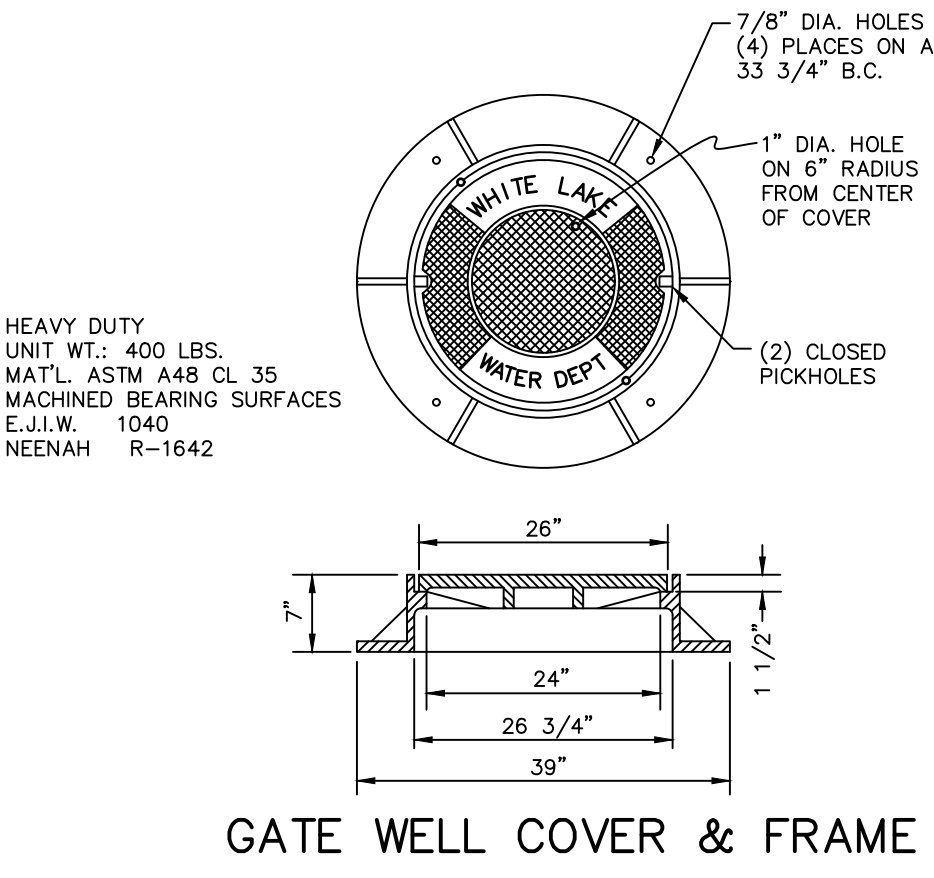
STANDARD BEDDING FOR WATER PIPE



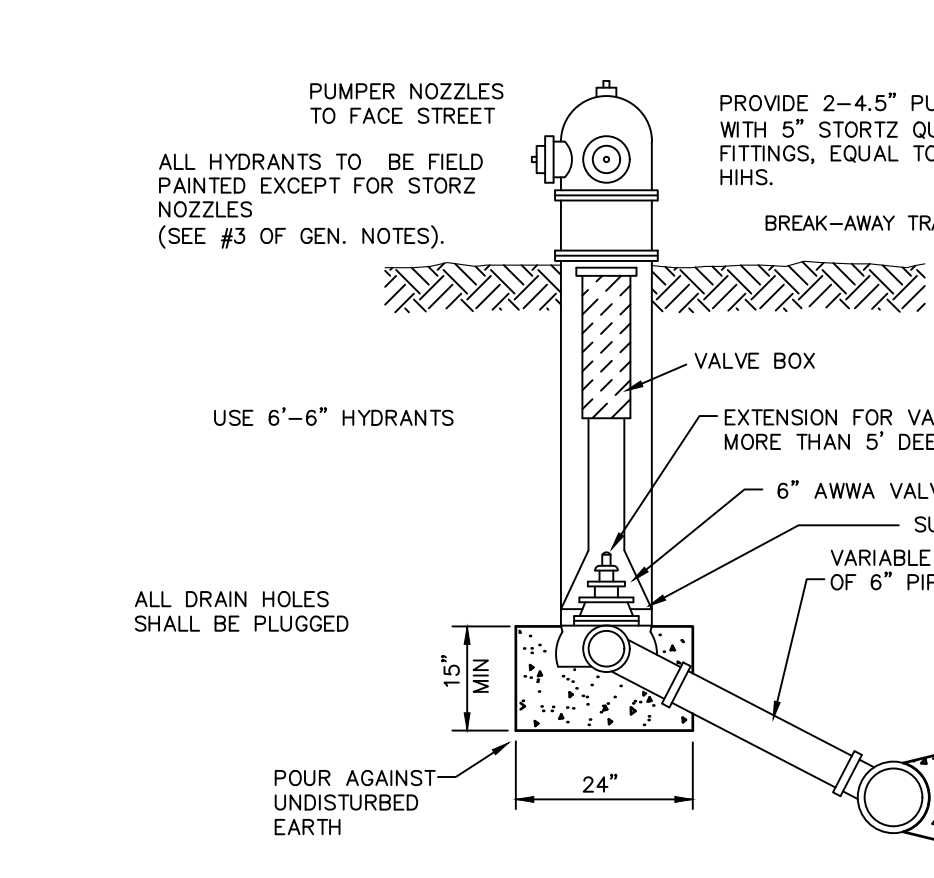
BACKFILL IN THE AREA OF STREETS, ALLEYS, SIDEWALKS, DRIVES & PARKING AREAS



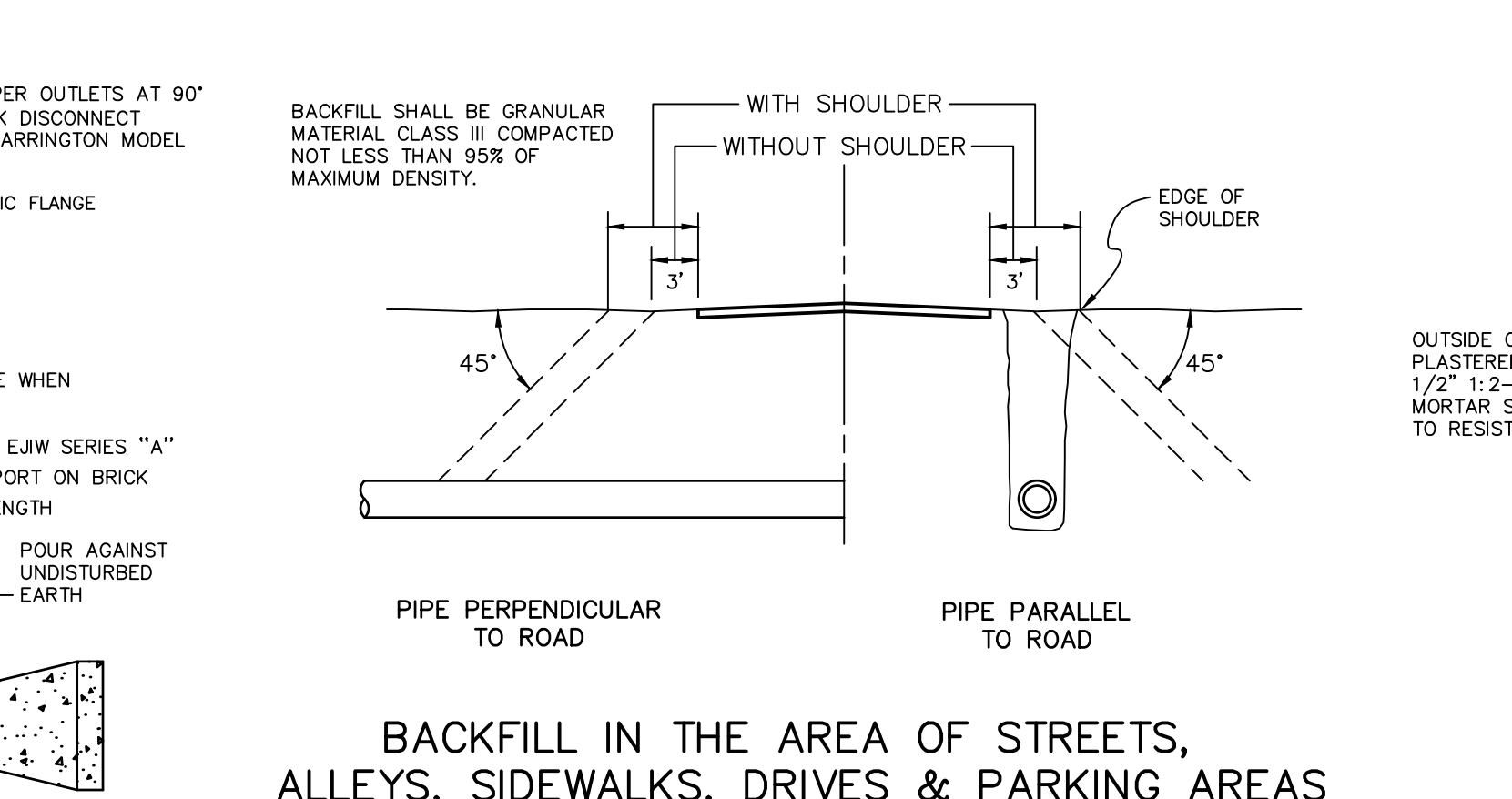
GATE WELL (C-C)



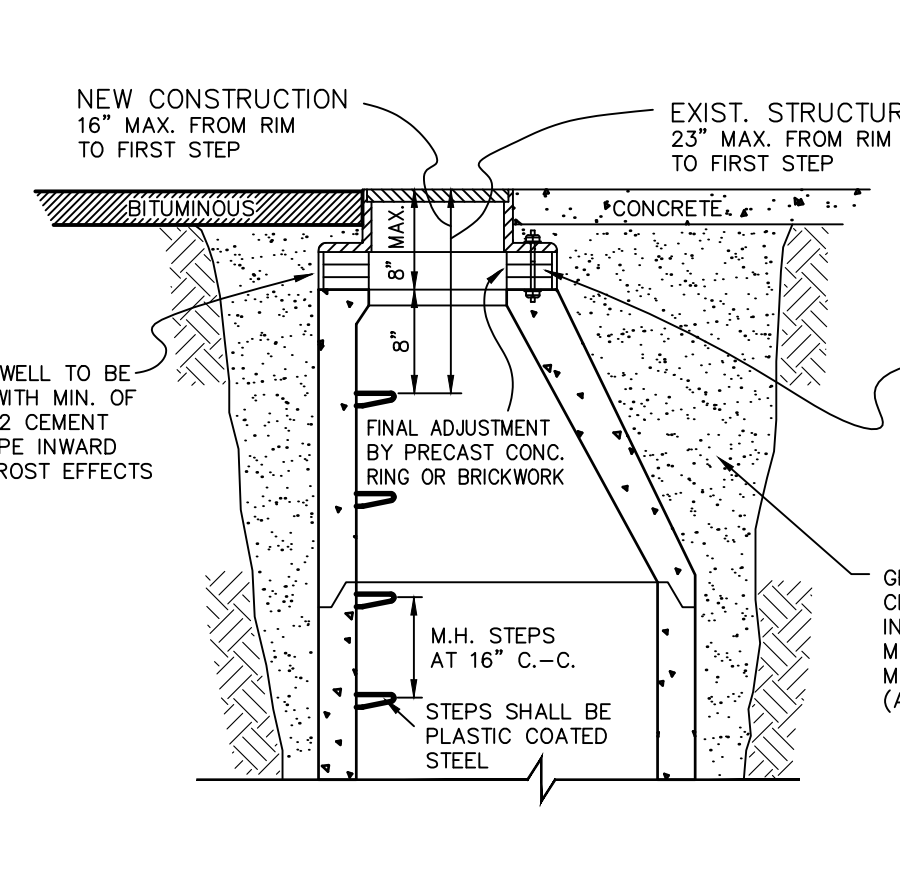
GATE WELL COVER & FRAME



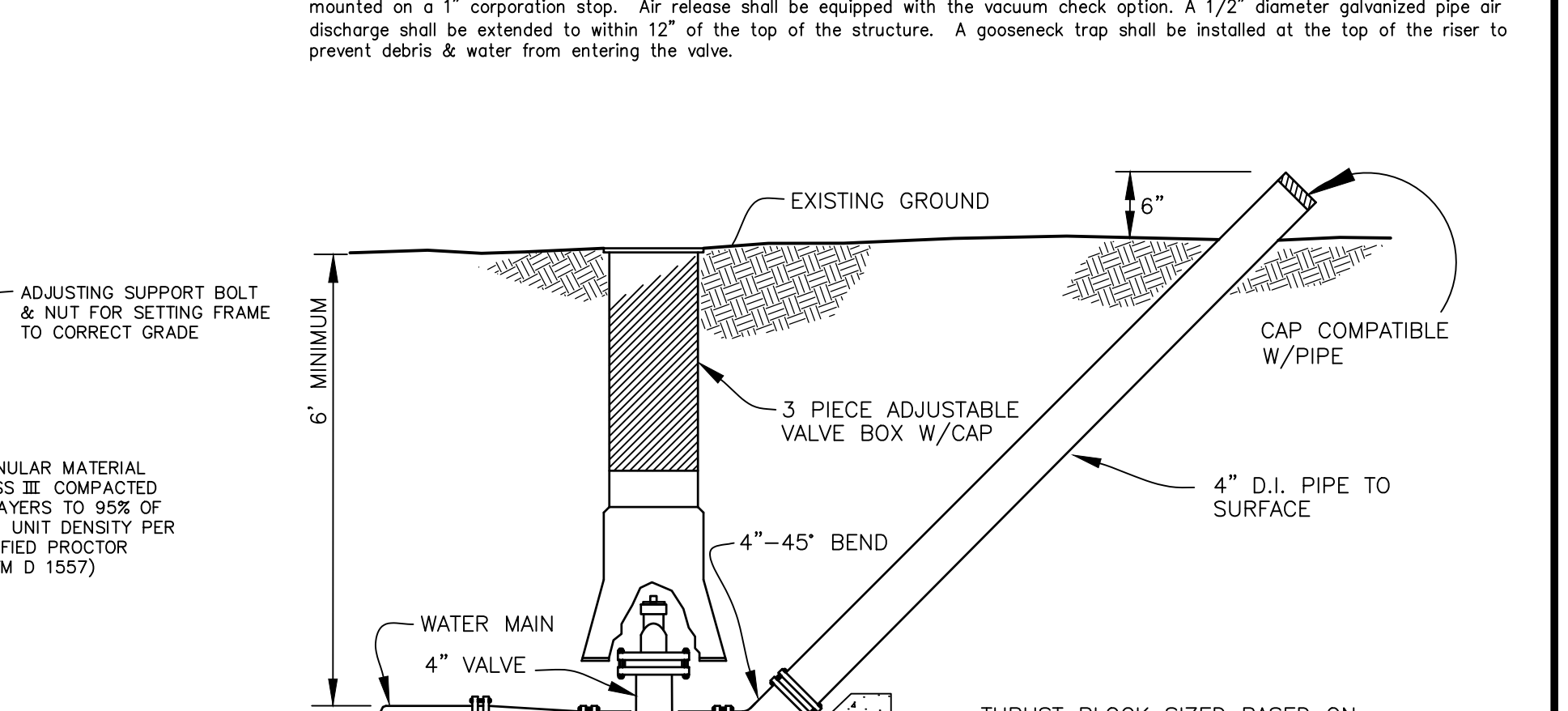
DETAIL OF HYDRANT SETTINGS



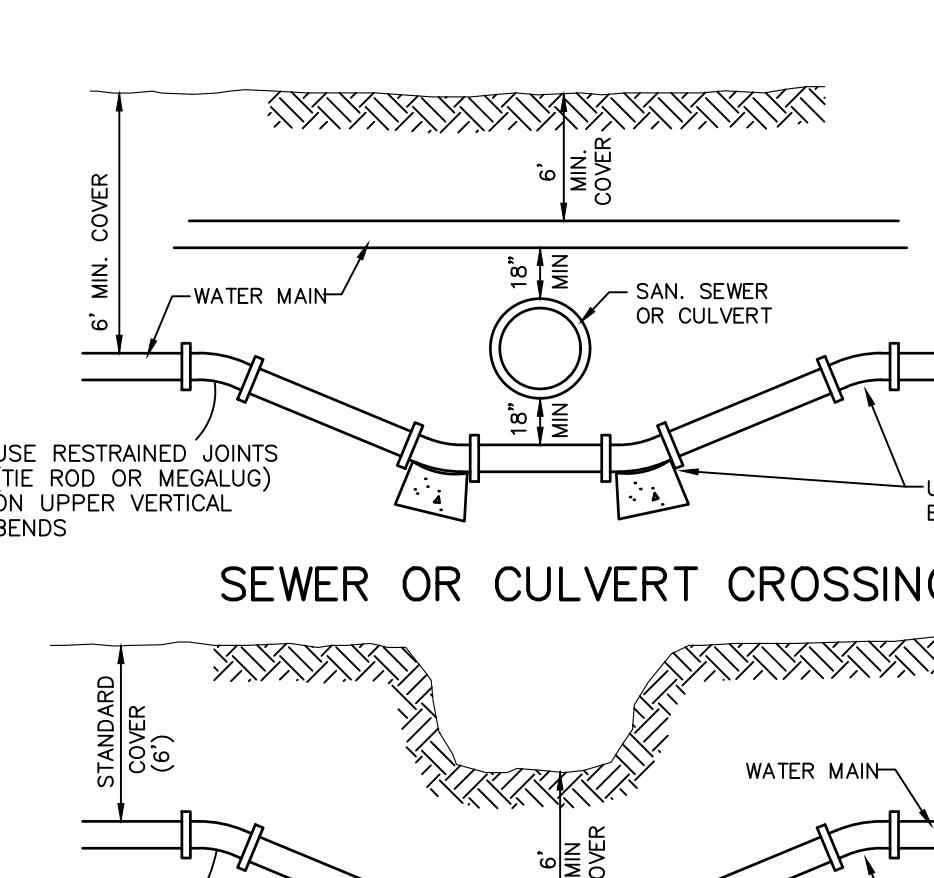
THRUST BLOCK DETAILS



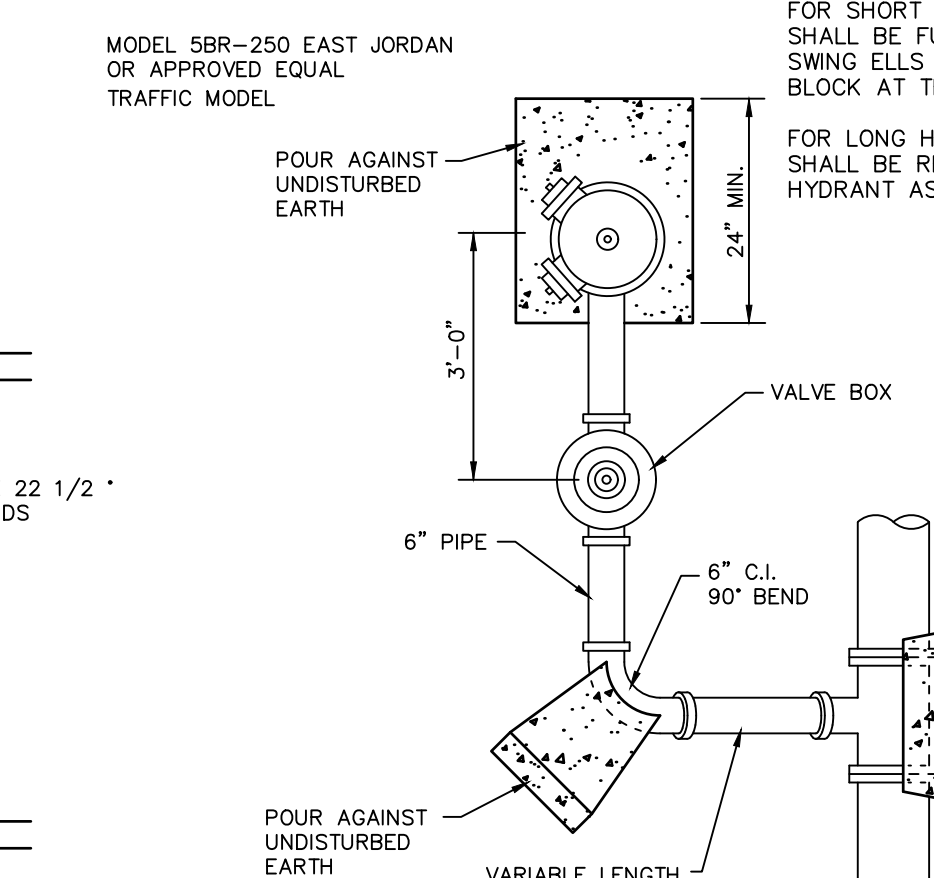
GATE WELL TOPS WITHIN PAVEMENT AREAS



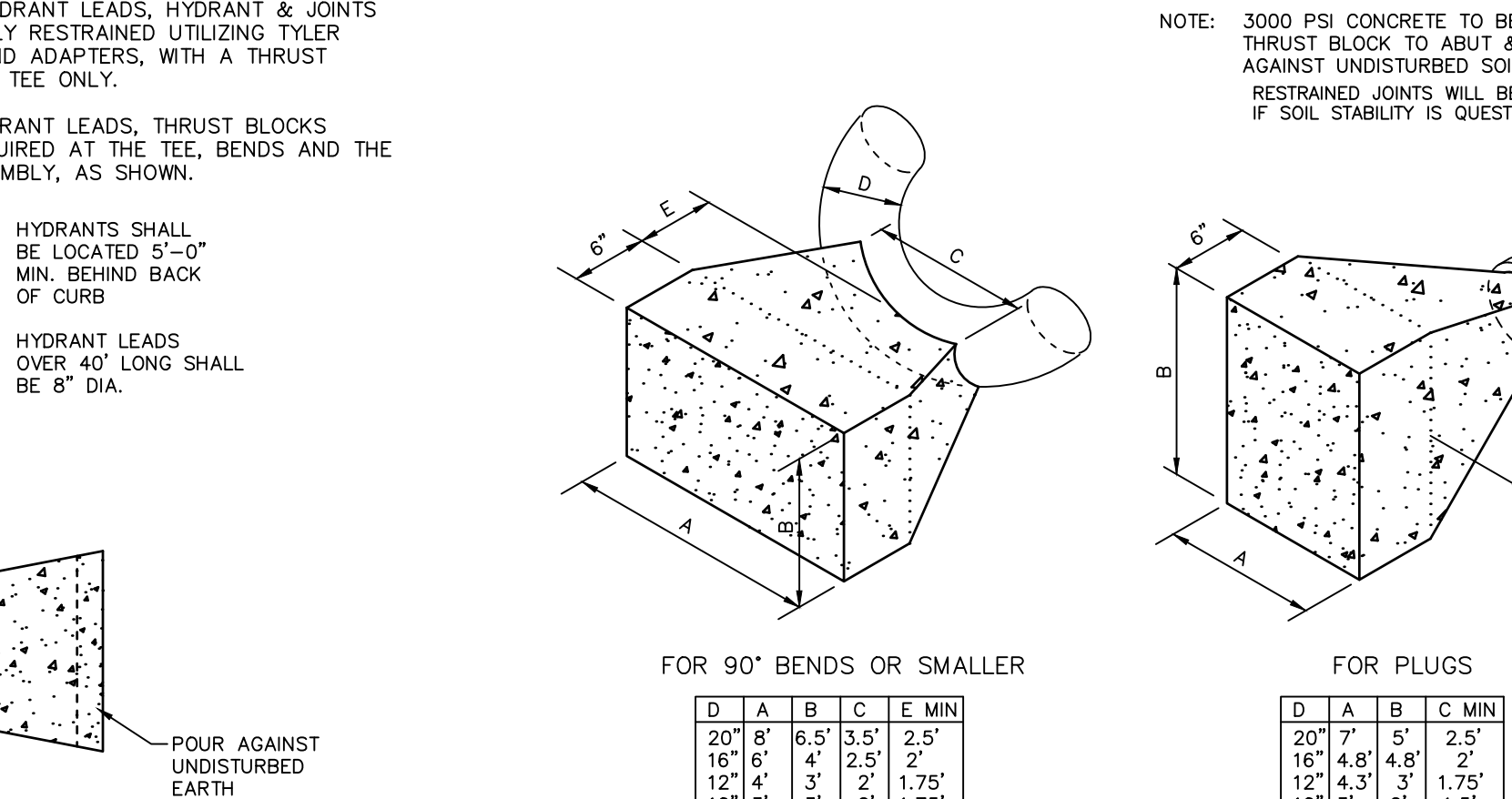
TEMPORARY BLOWOFF ASS'Y



SEWER OR CULVERT CROSSING



DITCH AND STREAM CROSSING



DITCH ENCLOSURE AT GATE WELL

- WATER MAIN NOTES**
- All construction procedures and materials used on this project shall conform to White Lake Township current standards and specifications.
 - All hydrants shall be East Jordan Iron Works 5BR-250 traffic model. Self-draining hydrants shall not be used. Valve shall have 1-1/2" pentagon nut and shall open counter-clockwise. Provide two 4.5" Storz quick connect nozzles (Harrington Integral Hydrant Storz, Model HHS) as manufactured by Harrington, Inc. of Erie, PA.
 - All hydrants shall be field painted with a heavy coat of bright safety red polyurethane or alkyl glass enamel, except for the Storz fittings and caps, which shall be left unpainted.
 - Johnson and Anderson, Inc. field personnel will affix to the fixed collar of each Storz connection 1" wide 3M Scotch reflective tape, color coded per NFPA 291 guidelines flow capacity.
 - All water mains shall be ductile iron pipe Class 54, cement lined with push on joints. Mechanical joints allowed only for tapping sleeves, hydrants & hydrant valves. Only Cor-Blue bolts shall be used for assembling mechanical joints. All bands, tees, valves and hydrant tees shall have a poured concrete thrust block as detailed on this sheet. Joints which have thrust blocks bearing on soil of questionable stability shall be fully restrained utilizing Tyler swivel ells and adapters or a system approved by the Township Engineer. HDPE pipe for directional boring, if approved by the Township Engineer, shall meet all of the requirements of the MDEQ and shall be DR9 (200 psi), and shall have two #8 tracer wires, terminated in the nearest gate well at the highest step.
 - Tapping sleeve shall be mechanical joint or approved equal. Ductile iron or Stainless steel are allowed.
 - Specifications shall include direction of operation of all valves. All valves shall be counter clockwise open.
 - All necessary easements shall be provided in the name of White Lake Township before acceptance of the water distribution system.
 - The design engineer shall furnish White Lake Township with one reproducible set of "As-Built" water main plans or an AutoCAD file upon completion of the job.
 - All required cross-connection devices shall be installed as required by the local plumbing inspector and in accordance with the standards of the Michigan Department of Public Health.
 - Gate well frame and cover shall be as follows: East Jordan heavy manhole cover, base flange type #1040 or Neenah Foundry heavy duty #1642 Manhole frame, solid lid cover shall be non-racking and marked "White Lake Water Department"
 - Gate valves shall be AWWA approved and of a double disc or resilient wedge design with push on joints, 16" gate valves may be mechanical joint provided Cor-Blue bolts are used. All gate valves with operating nuts greater than 5" below ground surface shall be provided with an extension stem. The length of the extension shall be such that it will be within 5' of the ground surface when an extension is used it shall be held in place by an extension stem guide suitably fastened to the wall of the gate well.
 - 1" corporation stops are to be placed on the main at each side of each main line gate valve and at such other locations as may be required by the engineer.
 - All pipe and fittings shall be subjected to a hydro-static pressure test of 150 PSI for a 2 hour duration; Township Engineer must be present. Maximum segment 2000 feet except that longer segments may be tested with allowable leakage based on 2000 feet.
 - 2 consecutive safe bacteria samples shall be taken from the water system approx. 24 hours apart at points established by the Township Engineer. Samples shall be taken by the Township Engineer.
 - Filling, flushing and sampling of water main can only be performed with a "Jumper" Line, the jumper shall be equipped with an approved RPZ type of backflow preventer.
 - Adjustments on gate wells shall be limited to 23" maximum from top of rim to first step in accordance with MIOSHA Rule 341.
 - All new water service lines shall have a minimum nominal size of 1". Services from 1" to 2" may be type K copper tubing or plastic DR-9 (200 PSI rated) meeting ASTM D2237-03 (Standard Specification for Polyethylene (PE) plastic tubing). ASTM Designation and pressure rating shall be stamped on the pipe by the manufacturer. Plastic pipe shall also meet AWWA C-301 Specifications. All sizes shall relate to the copper tubing outside diameter standard size (CTS). Copper pipe joints shall be flared. Fittings shall adapt to the plastic pipe with compression to iron pipe thread adapter. Plastic pipes shall be either compression style with a steel insert or may be fusion welded in the larger sizes.
 - Plastic water service pipes shall be traced with two #10 copper tracer wires or two #12 copper coated steel or stainless steel wires insulated with a minimum of 30 mils of polyethylene insulation. The tracer wires shall be terminated to supply line so as to be locatable at the building and the curb box without digging.
 - Water services sizes 3" and greater shall be Class 54 cement lined ductile iron with push on joints or HDPE DR-9 (200 PSI rated) with fusion welded joints and fittings, DIPS (Ductile Iron Pipe Size).
 - A stop box shall be installed at the property or easement line and shall be equivalent to an A.Y. McDonald Mfg. 6100 flare regular pattern ball valve. The curb box shall have a 1" riser pipe with an Erie 2-hole pattern cover equivalent to A.Y. McDonald Mfg. 5601L. Stop box shall be protected with a 2'x4' painted blue extending 4 feet above ground.
 - Standard pipe cover shall be 6'-0".
 - Air release manholes shall consist of a standard 5' diameter gate well style structure with a ValMatic Model 25C air release valve mounted on a 1" corporation stop. Air release shall be equipped with the vacuum check option. A 1/2" diameter galvanized pipe or discharge shall be extended to within 12" of the top of the structure. A goose-neck trap shall be installed at the top of the riser to prevent debris & water from entering the valve.

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

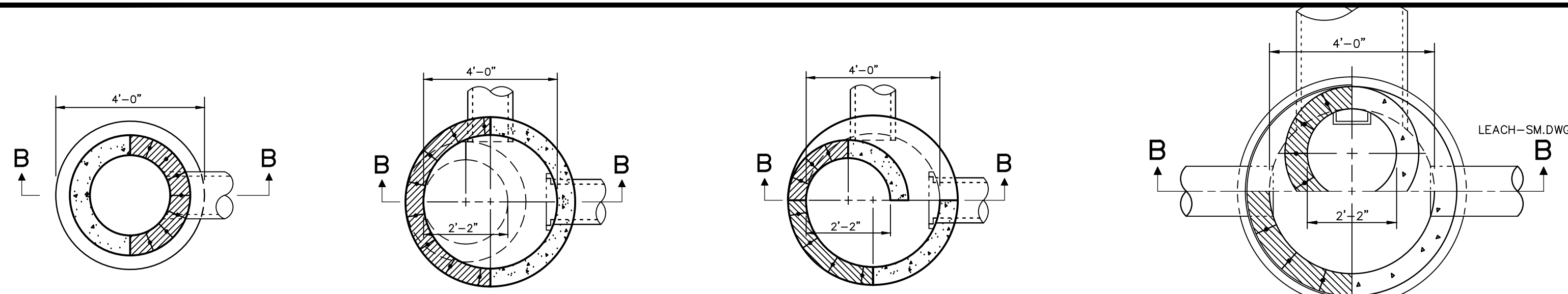
REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
1	GENERAL	REVISION TO CAD	12/29/95	GW & NUT SIZE	07/23/98	CLARIFY HYD. SPEC	02/07/01	REV. HYD. THRUST, AIR REL.	03/29/04
2	ADD NOTE	17	11/04/97	PIPE COVER & FLANGE TAPE	05/12/99	5-BR HYD, WS STAKE	02/27/02	HDPE, HYD, VALVES	07/18/05
3	REVISE	HYD. & THRUSTING	05/18/98	ADD BLOWOFF	07/06/99	ADD NOTE 19	07/23/03	UPDATED TITLE BLOCK	04/30/13

Johnson & Anderson
 4494 Elizabeth Lake Road Waterford, Michigan 48328
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441
 2291 Water Street, Suite 6 Port Huron, Michigan 48060
 (248) 881-7800 fax (248) 881-2680 (231) 780-3100 fax (231) 780-3115 (810) 987-7800 fax (810) 987-7895

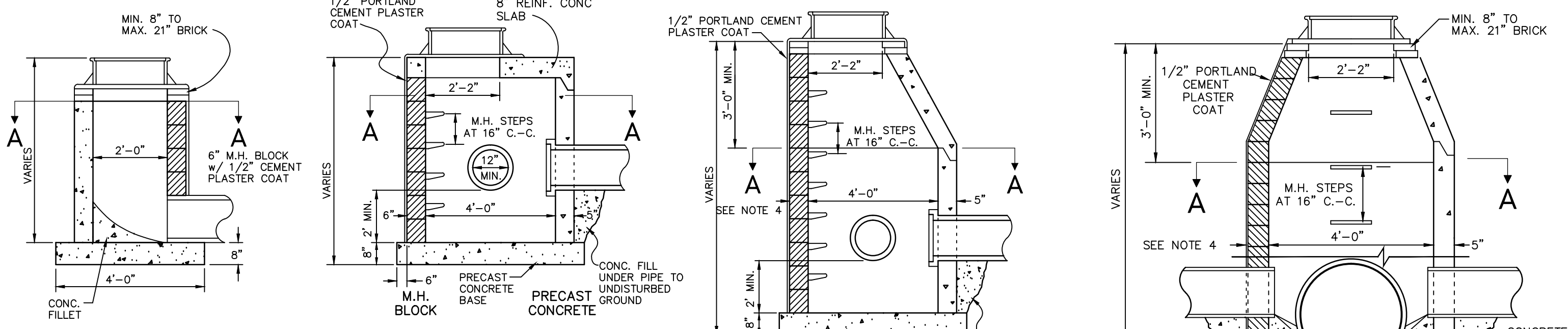
White Lake Township
 7525 Highland Road (M-59)
 White Lake, Michigan 48383
 248-698-3300

WATER MAIN STANDARD DETAILS

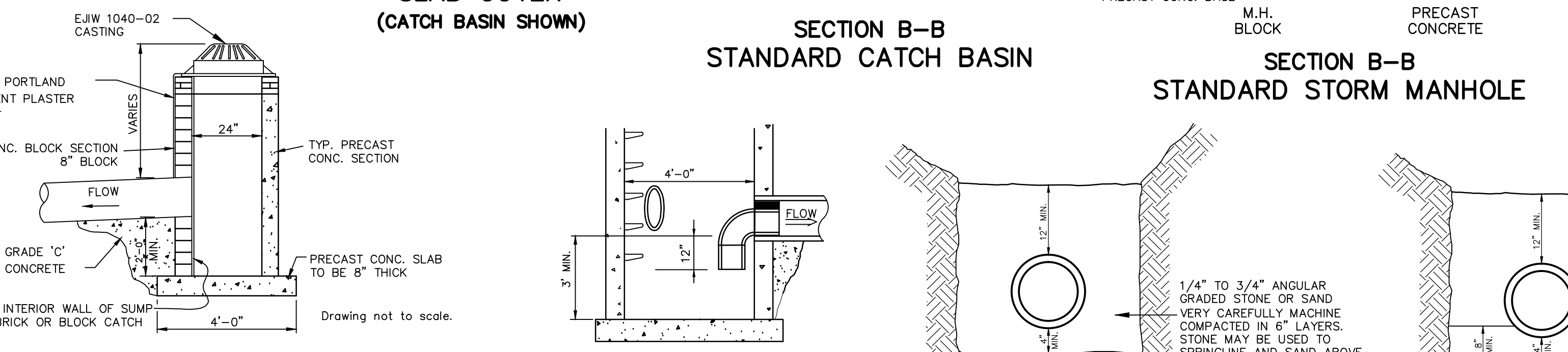
JOB NO. _____
 DATE ISSUED _____
 SHEET NO. _____



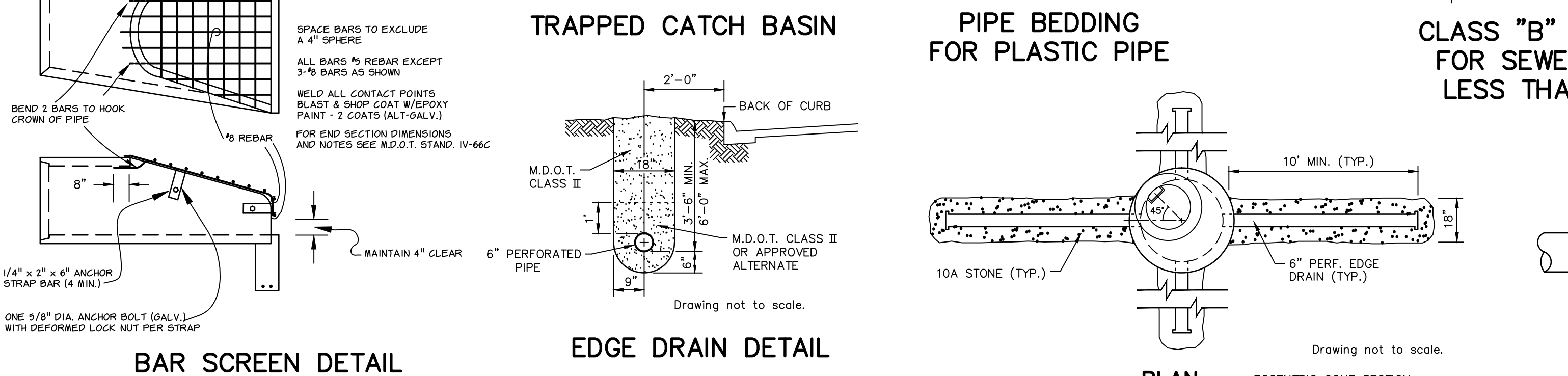
SECTION A-A M.H. BLOCK PRECAST CONCRETE
SECTION A-A M.H. BLOCK PRECAST CONCRETE
SECTION A-A M.H. BLOCK PRECAST CONCRETE
SECTION A-A M.H. BLOCK PRECAST CONCRETE



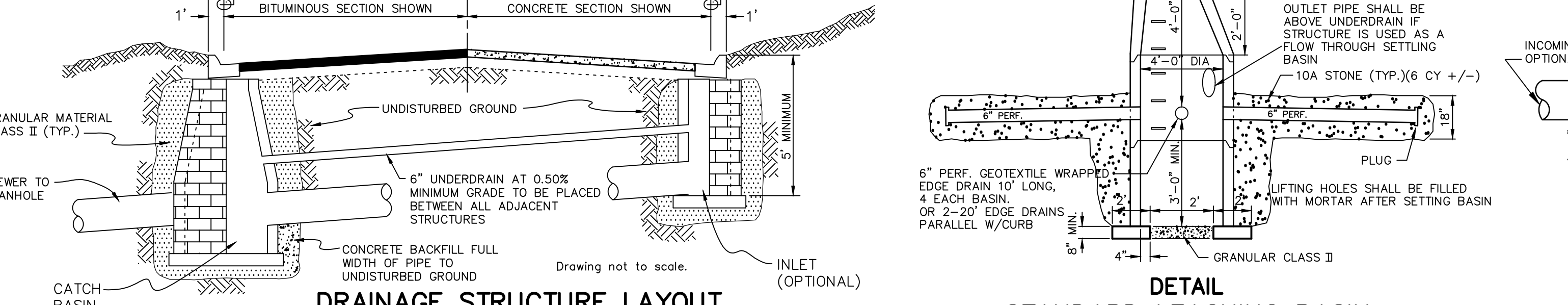
SECTION B-B 24" INLET
SECTION B-B STRUCTURE WITH SLAB COVER (CATCH BASIN SHOWN)
SECTION B-B STANDARD CATCH BASIN
SECTION B-B STANDARD STORM MANHOLE



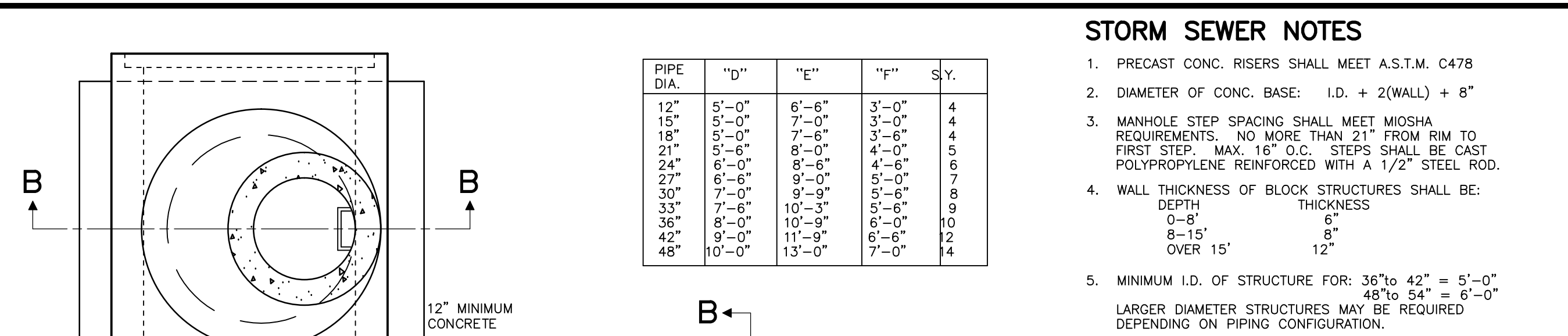
SECTION B-B STANDARD REAR YARD CATCH BASIN
SECTION B-B TRAPPED CATCH BASIN
SECTION B-B PIPE BEDDING FOR PLASTIC PIPE
SECTION B-B CLASS "B" BEDDING FOR SEWER PIPE LESS THAN 48"



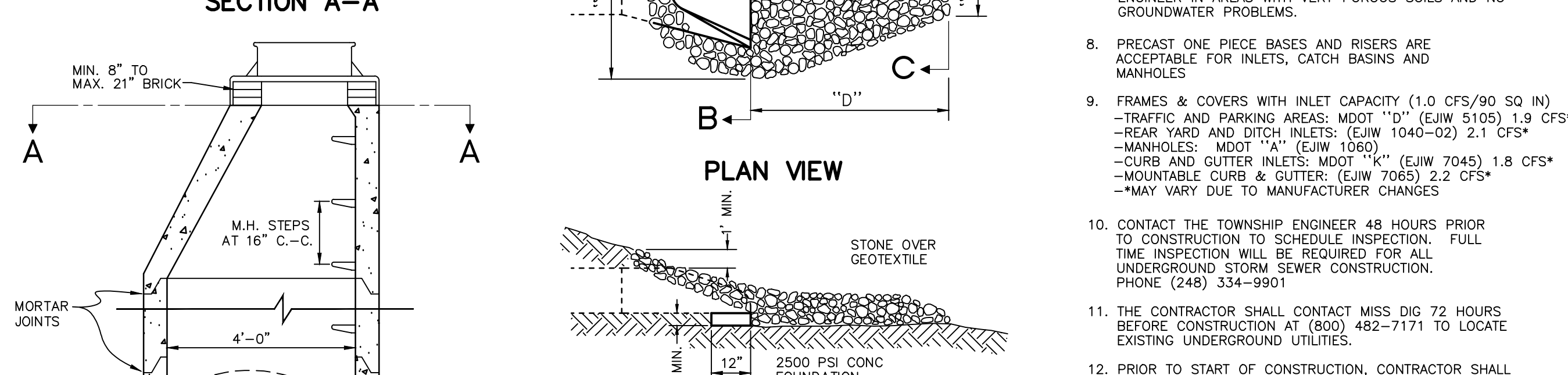
SECTION B-B BAR SCREEN DETAIL
SECTION B-B EDGE DRAIN DETAIL
SECTION B-B DRAINAGE STRUCTURE LAYOUT



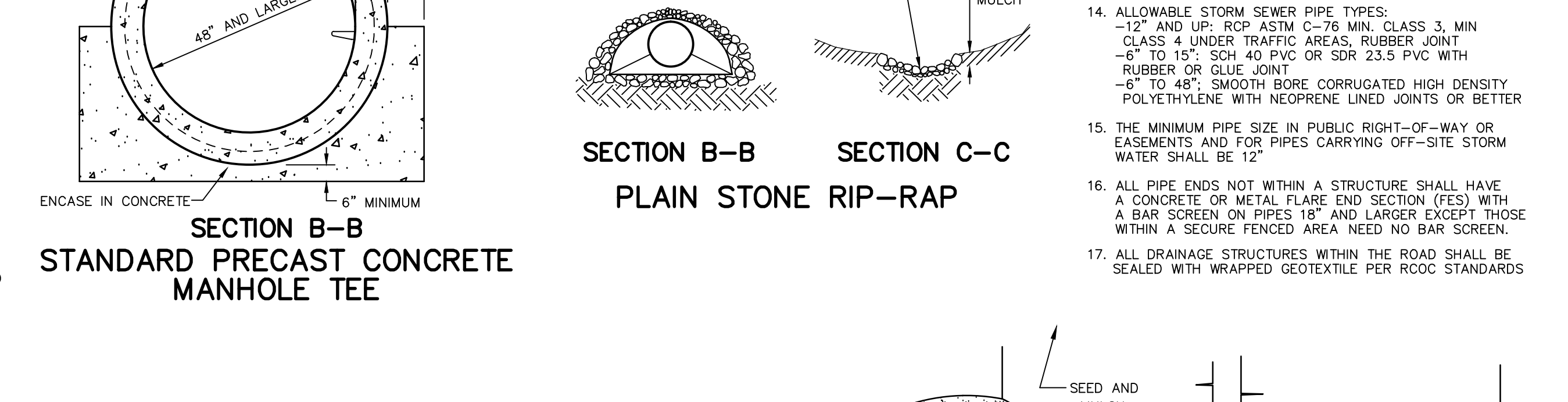
SECTION B-B STANDARD LEACHING BASIN
SECTION B-B 1000 GALLON LEACHING/SETTLING BASIN



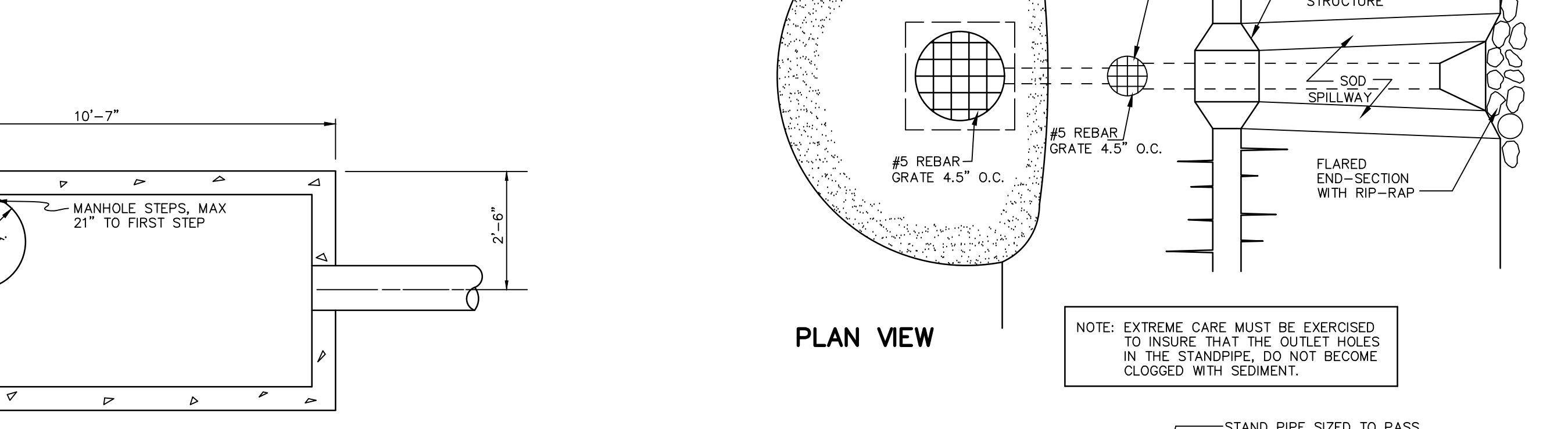
SECTION A-A STANDARD PRECAST CONCRETE MANHOLE TEE



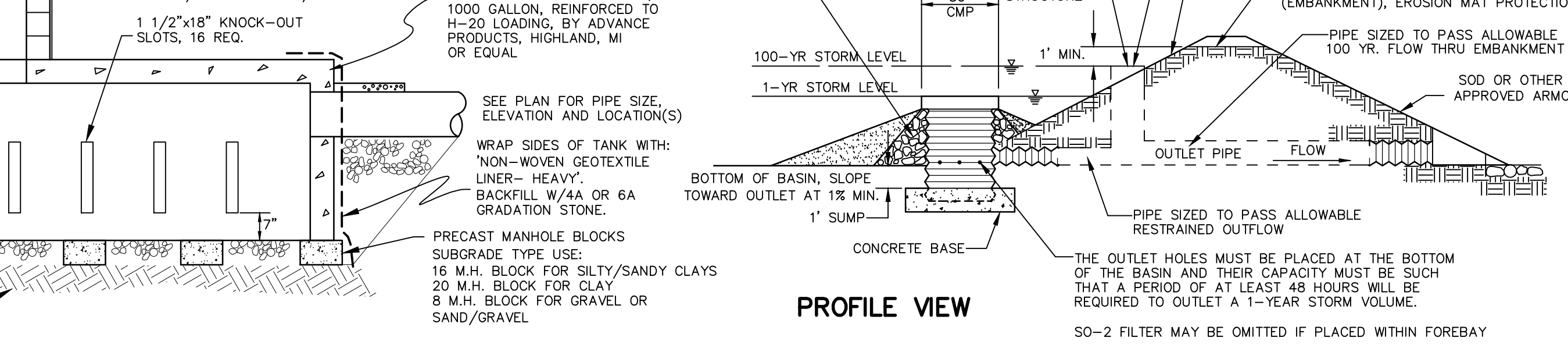
SECTION B-B SECTION C-C PLAIN STONE RIP-RAP



SECTION B-B SO-2 DETENTION BASIN OUTLET FILTER (CMP)



PLAN VIEW 1000 GALLON LEACHING/SETTLING BASIN



PROFILE VIEW 1000 GALLON LEACHING/SETTLING BASIN

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

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

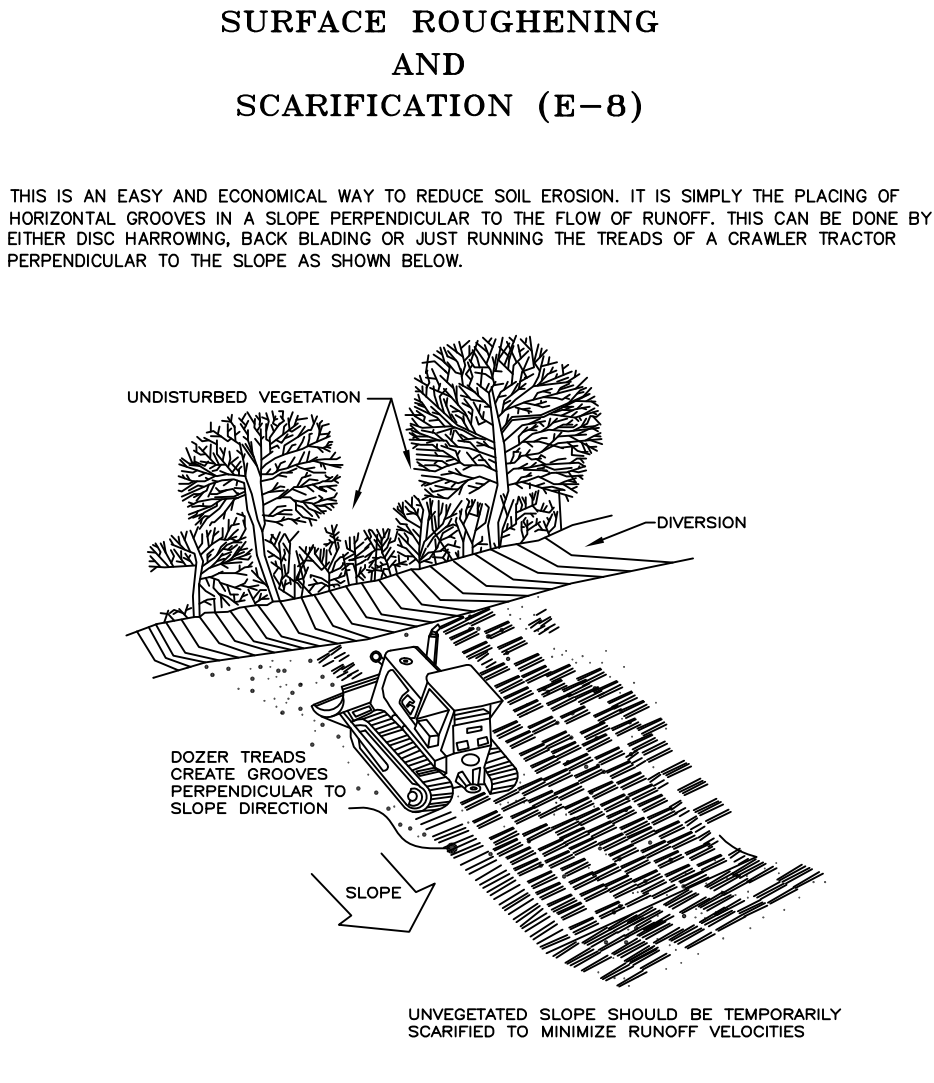
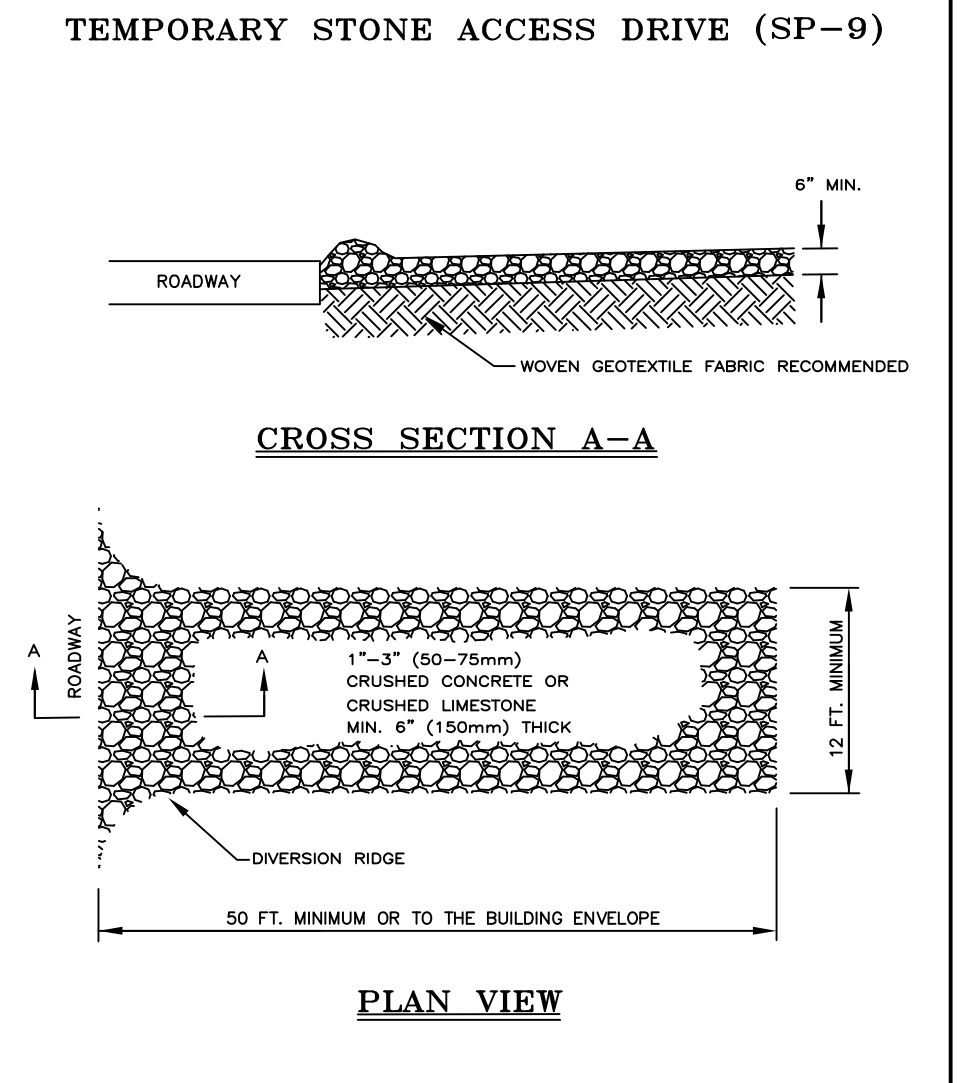
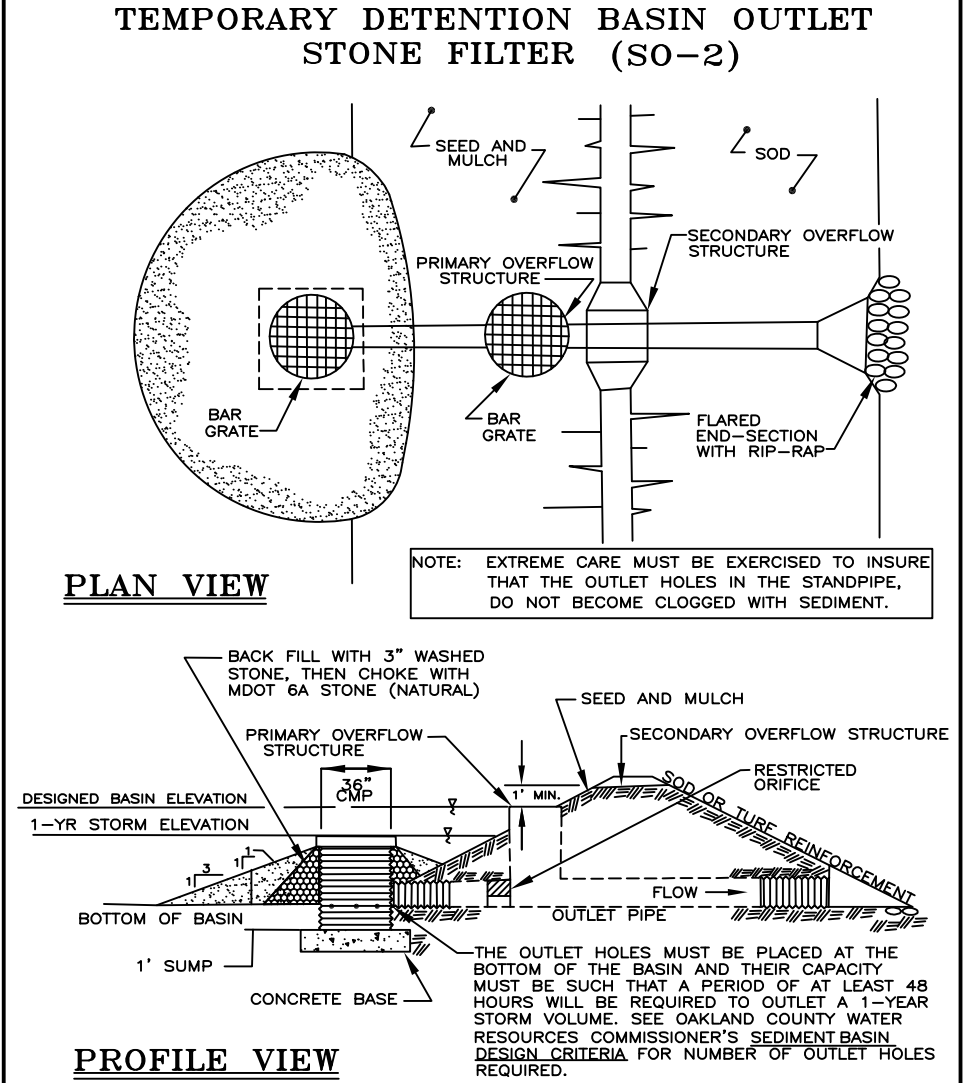
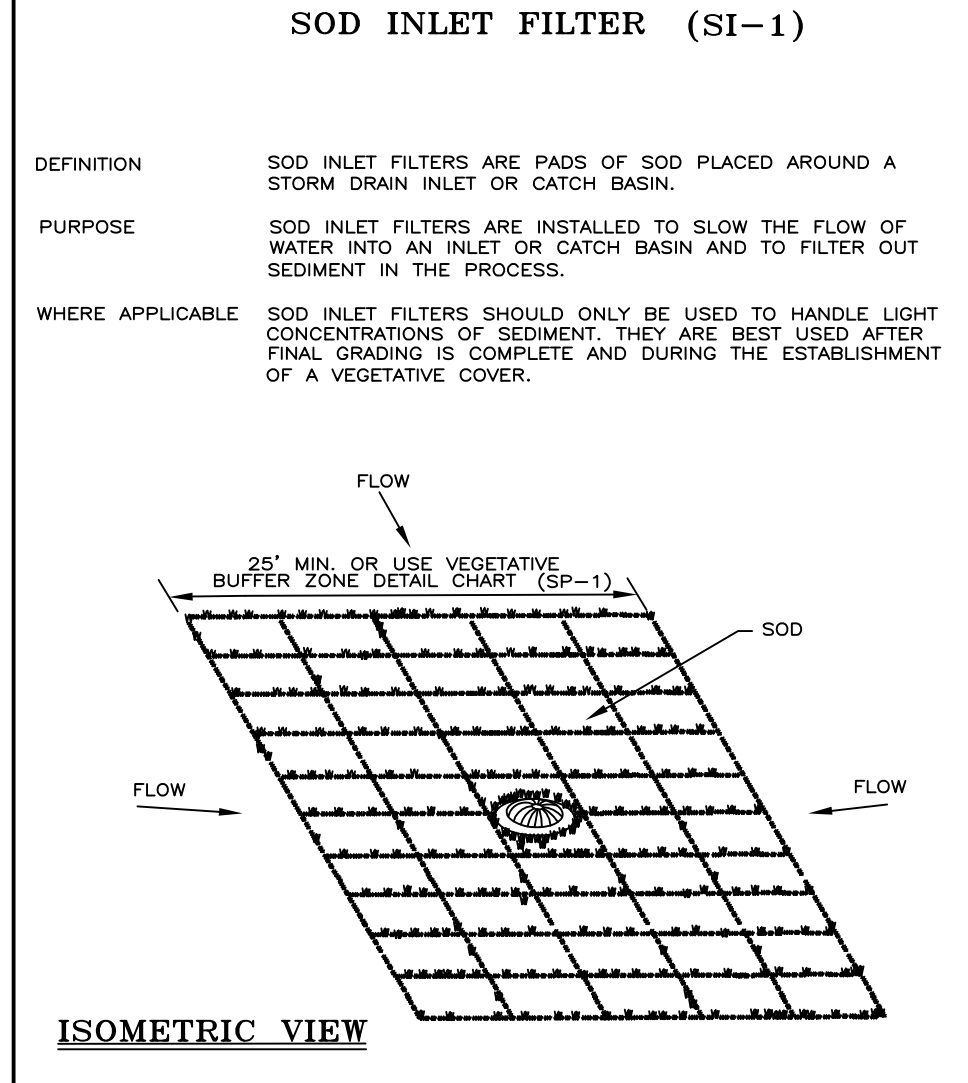
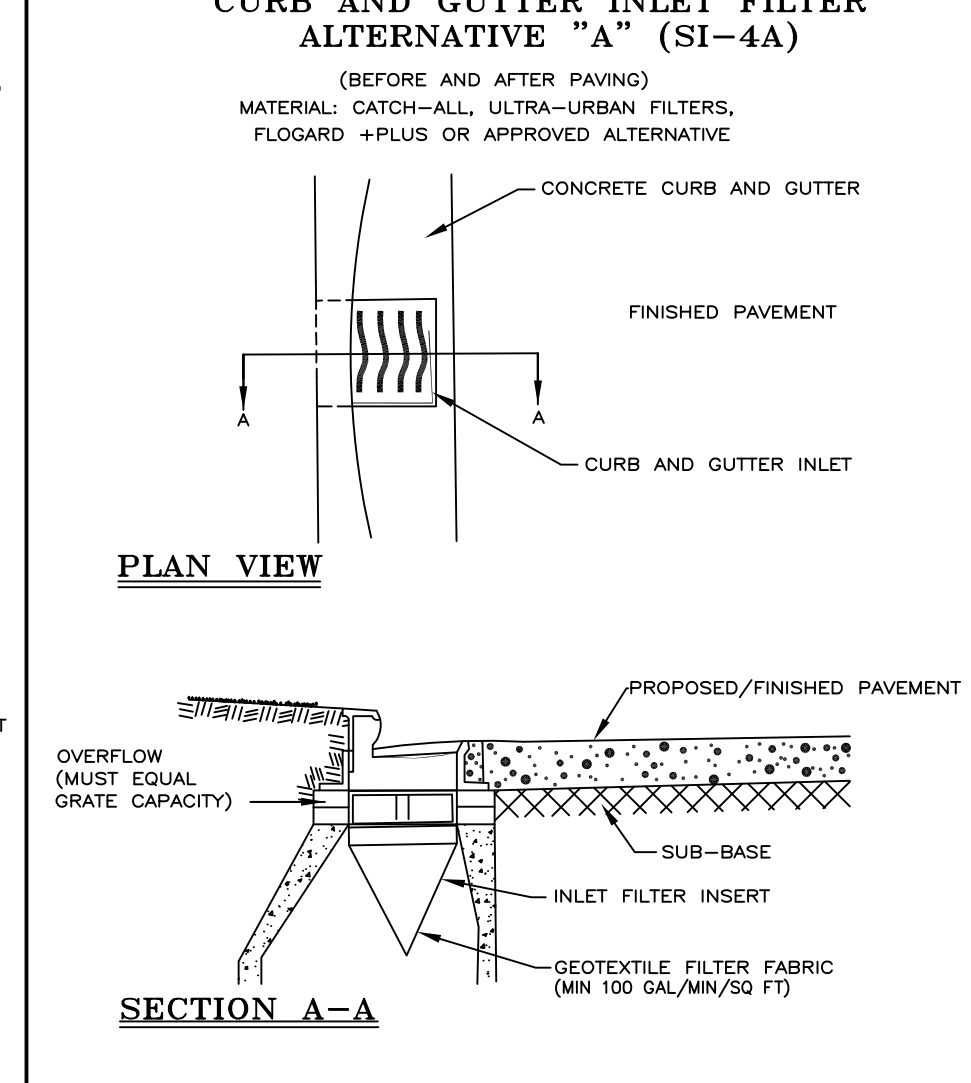
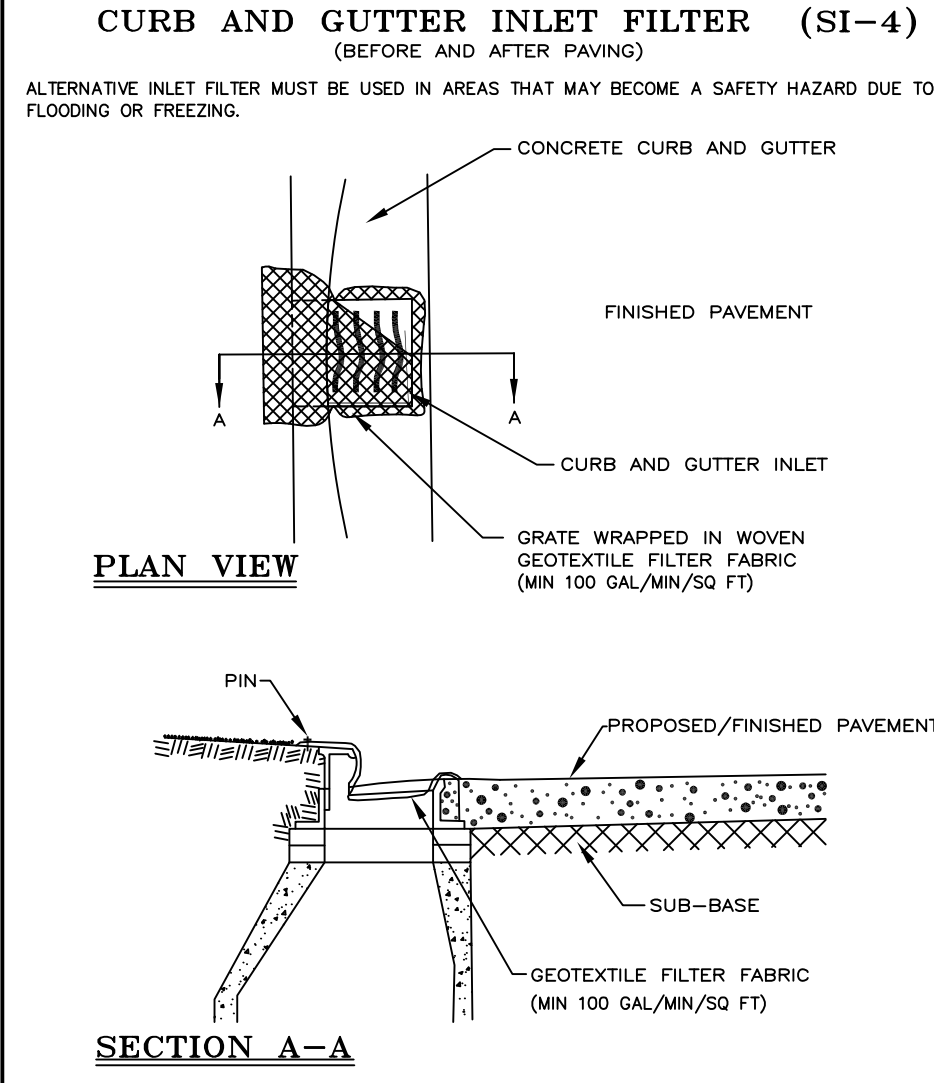
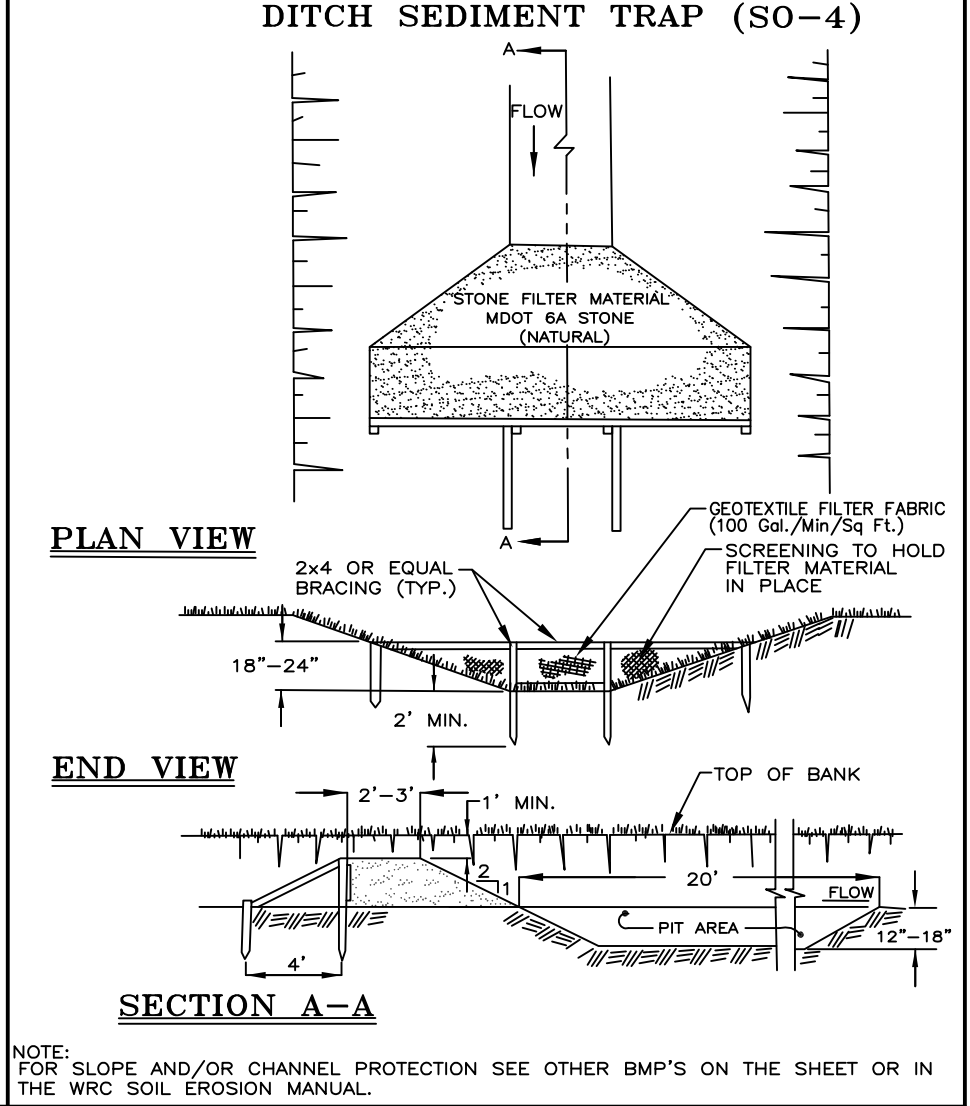
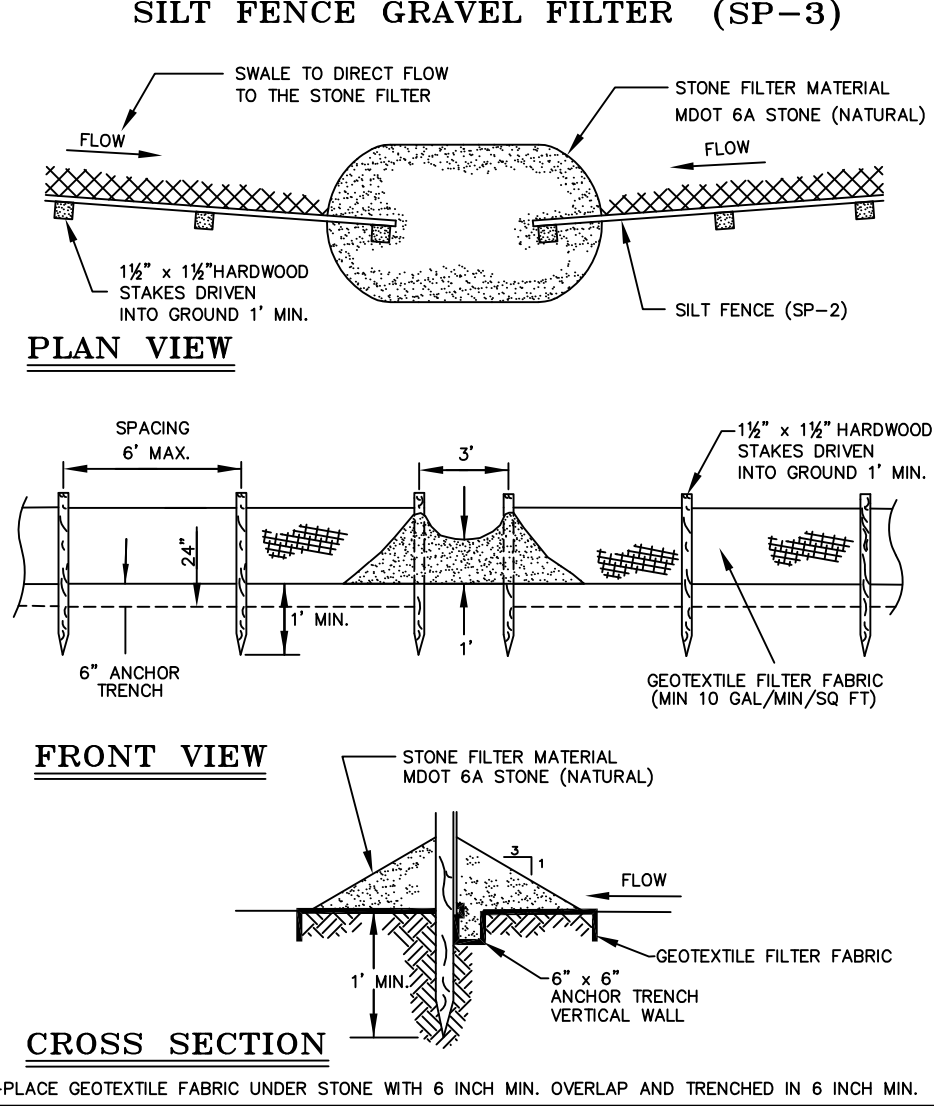
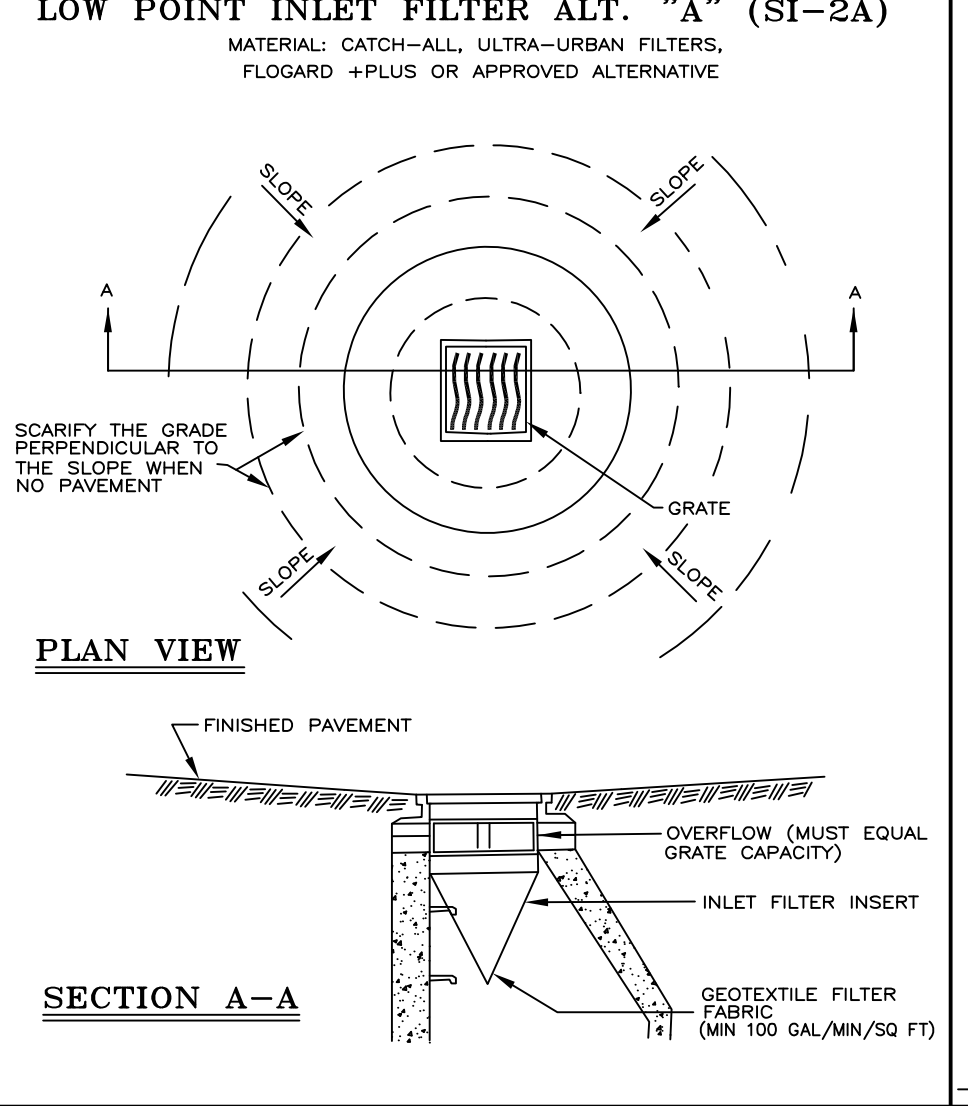
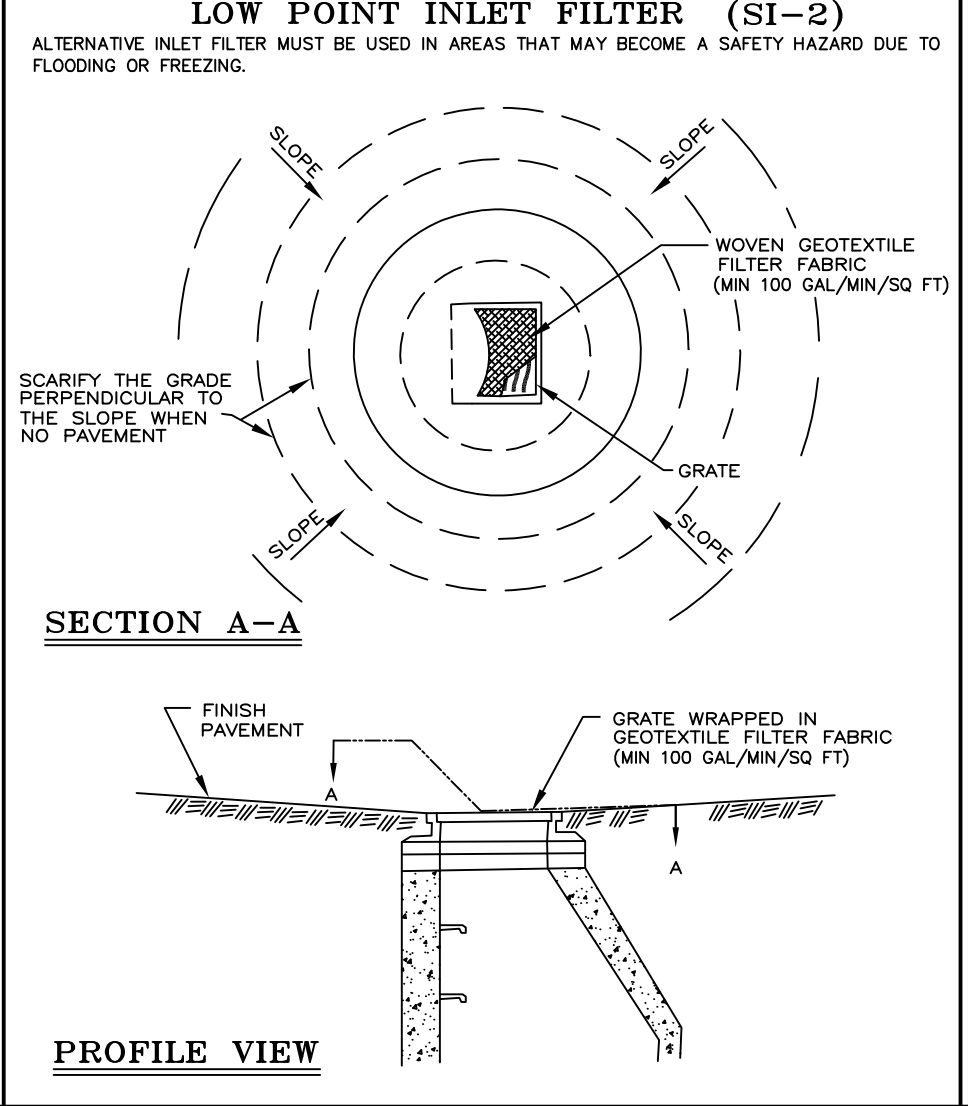
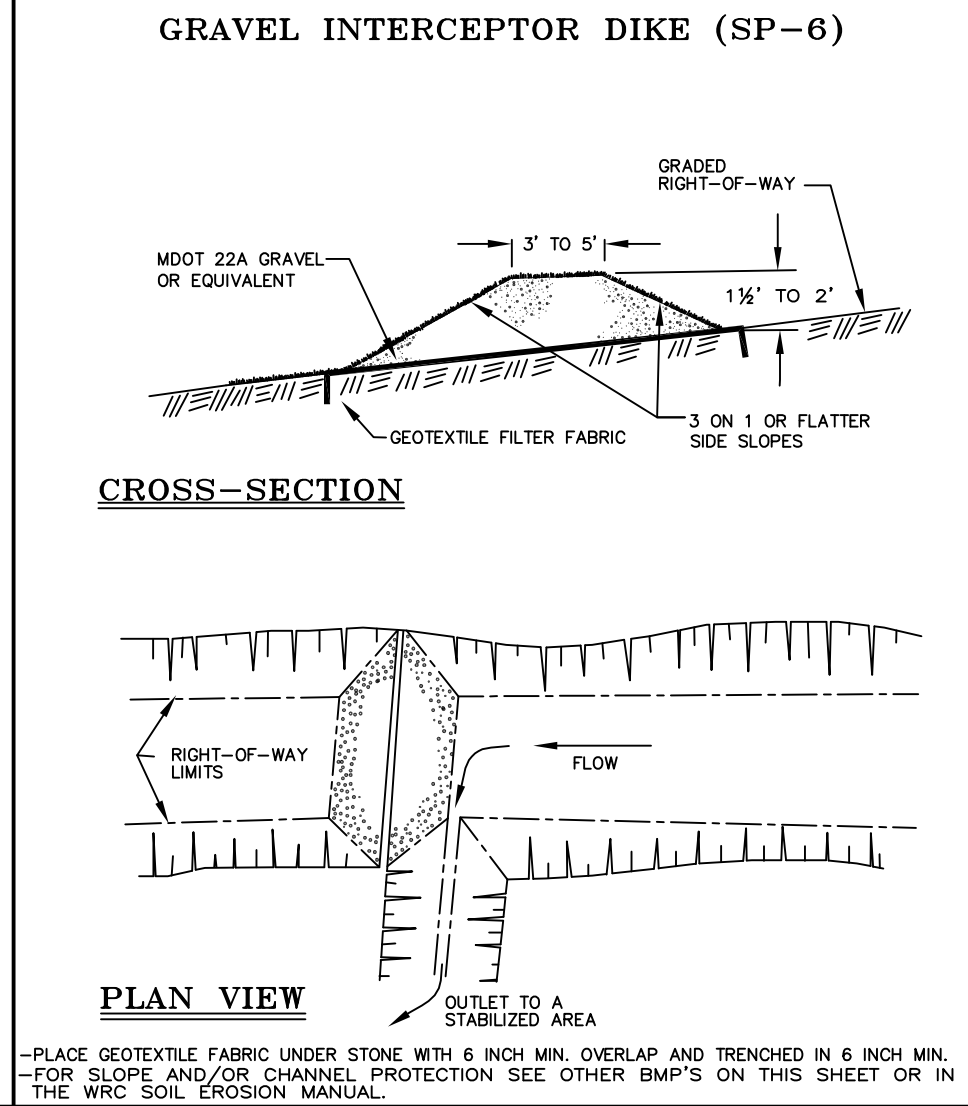
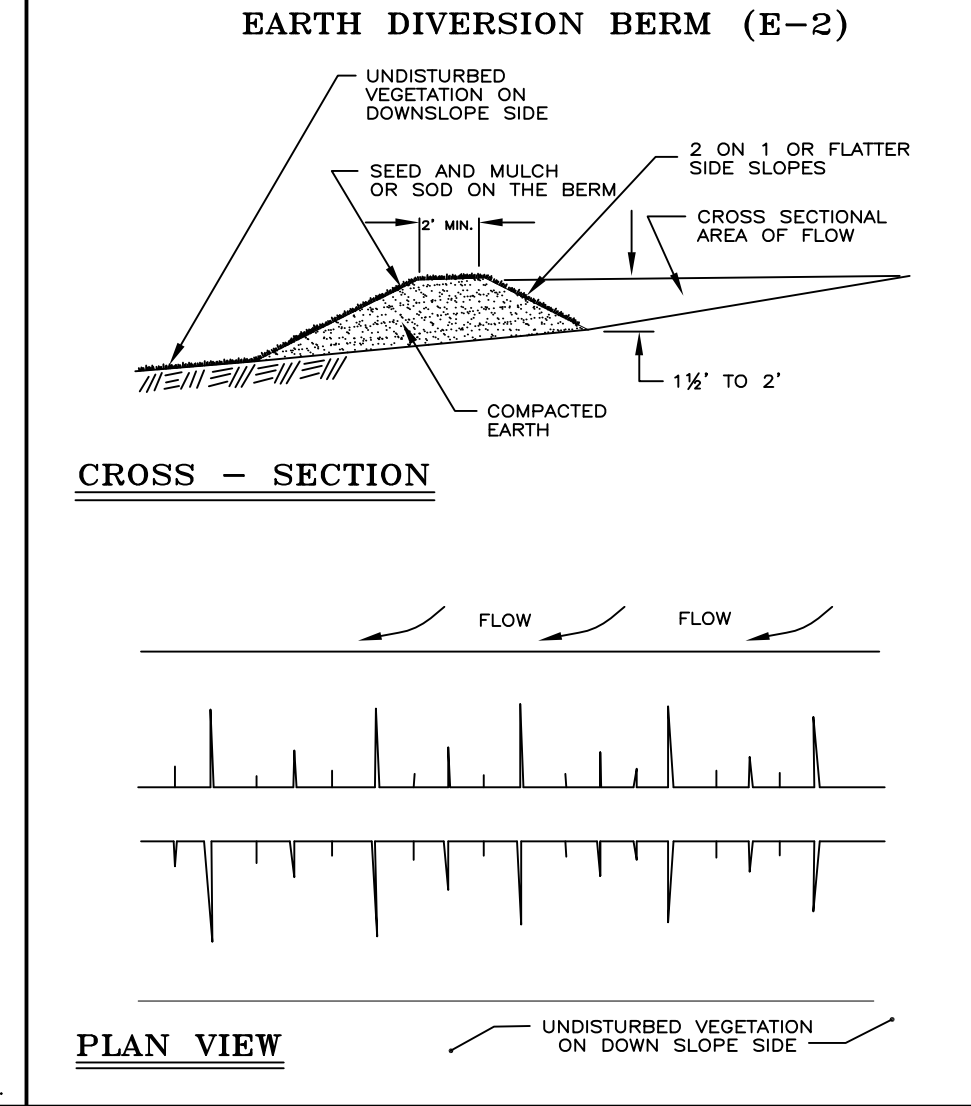
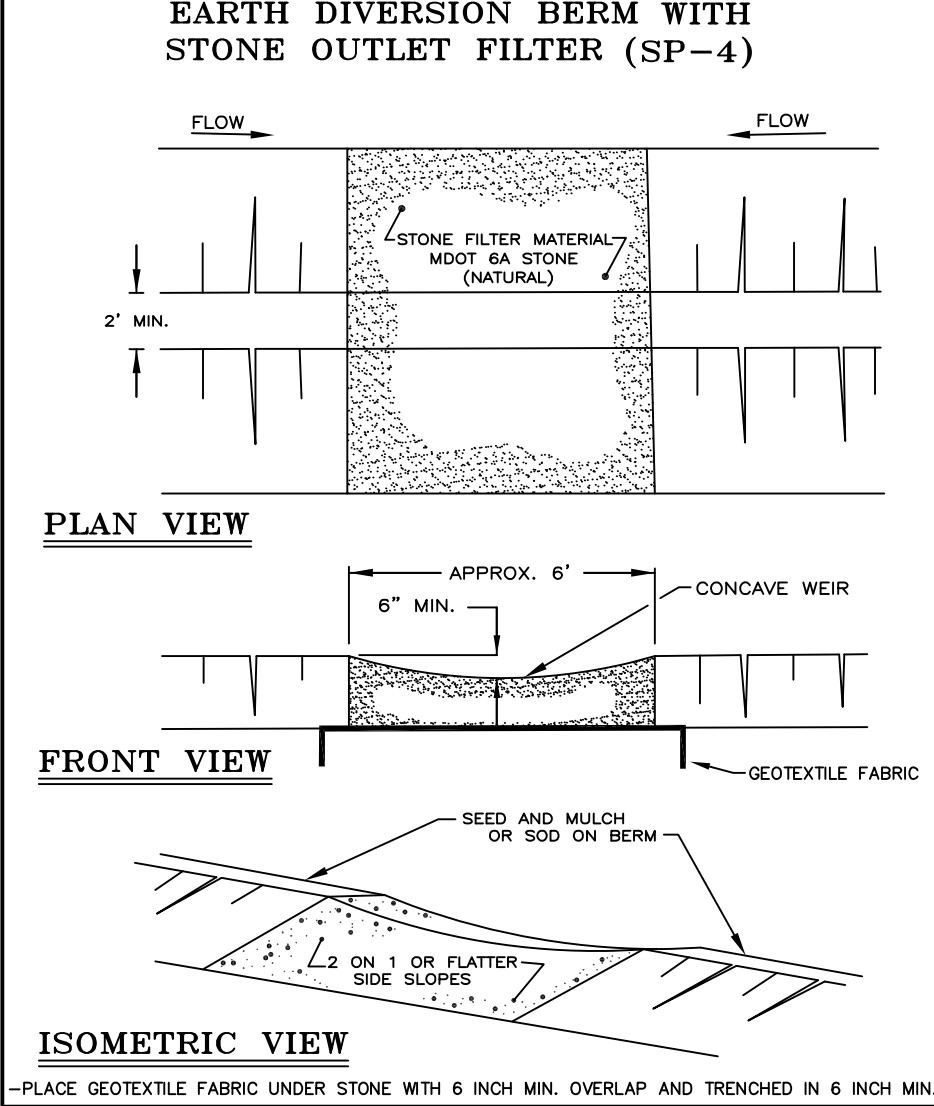
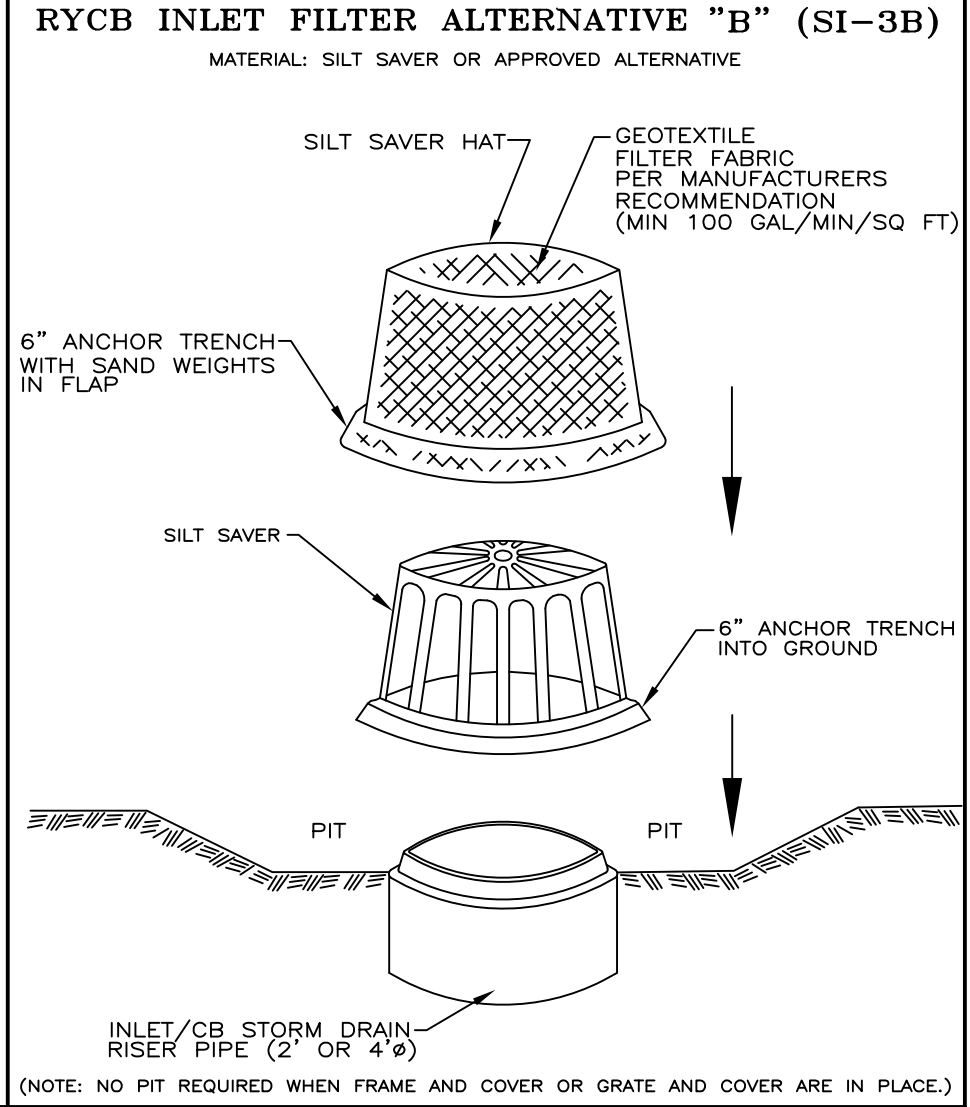
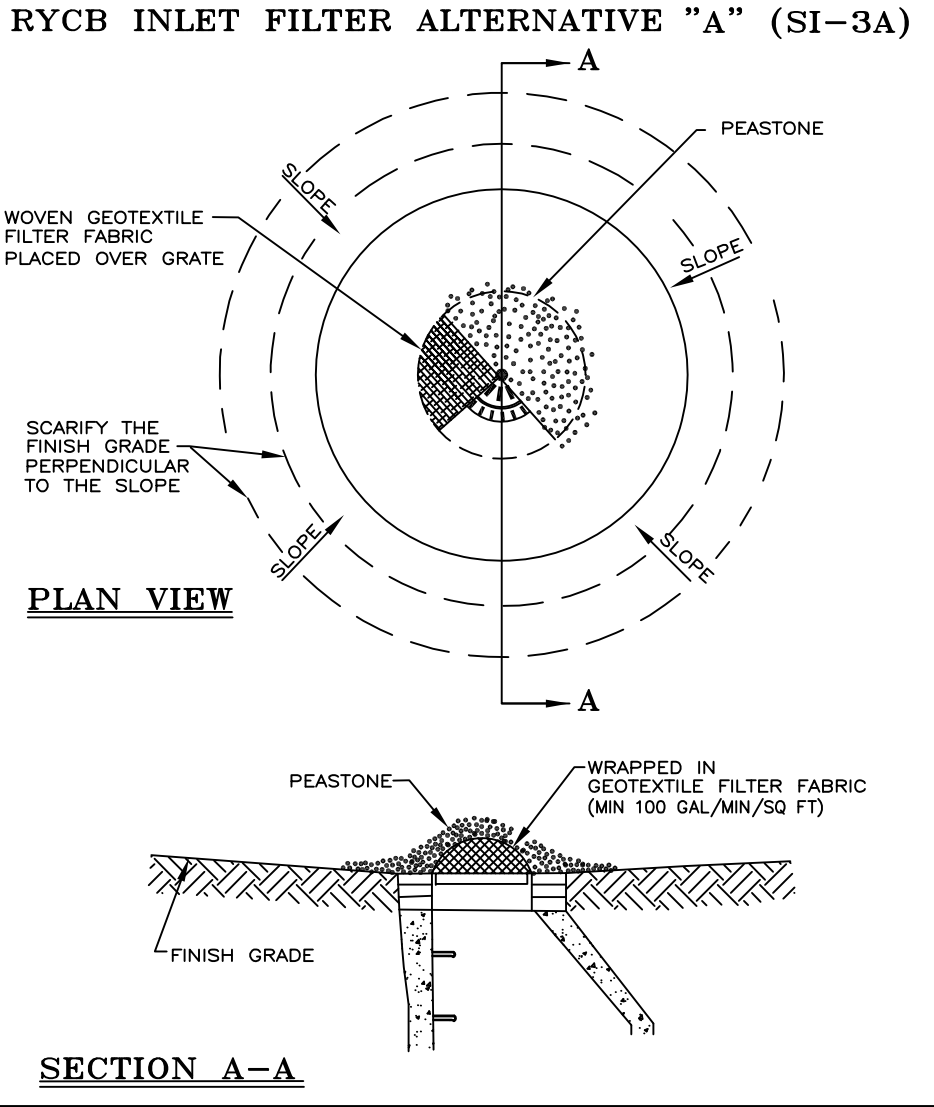
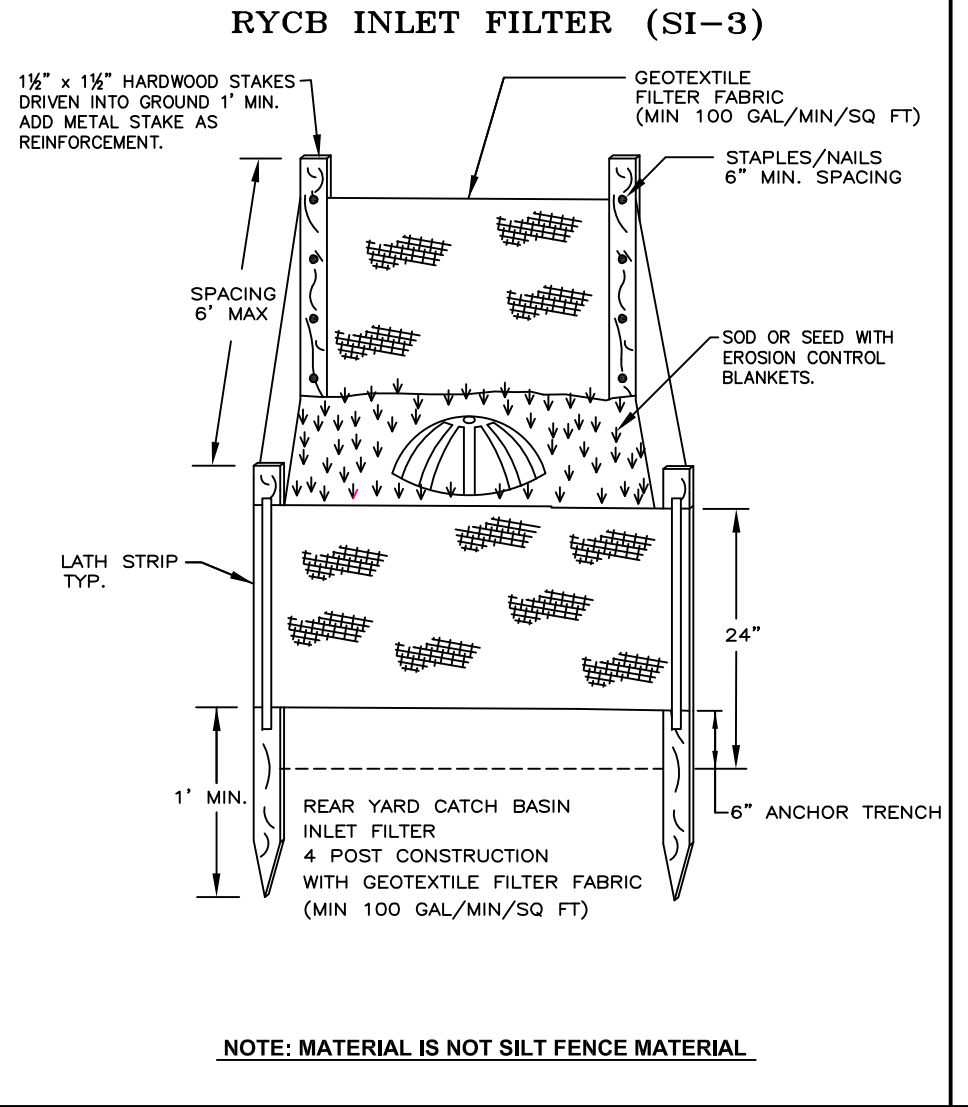
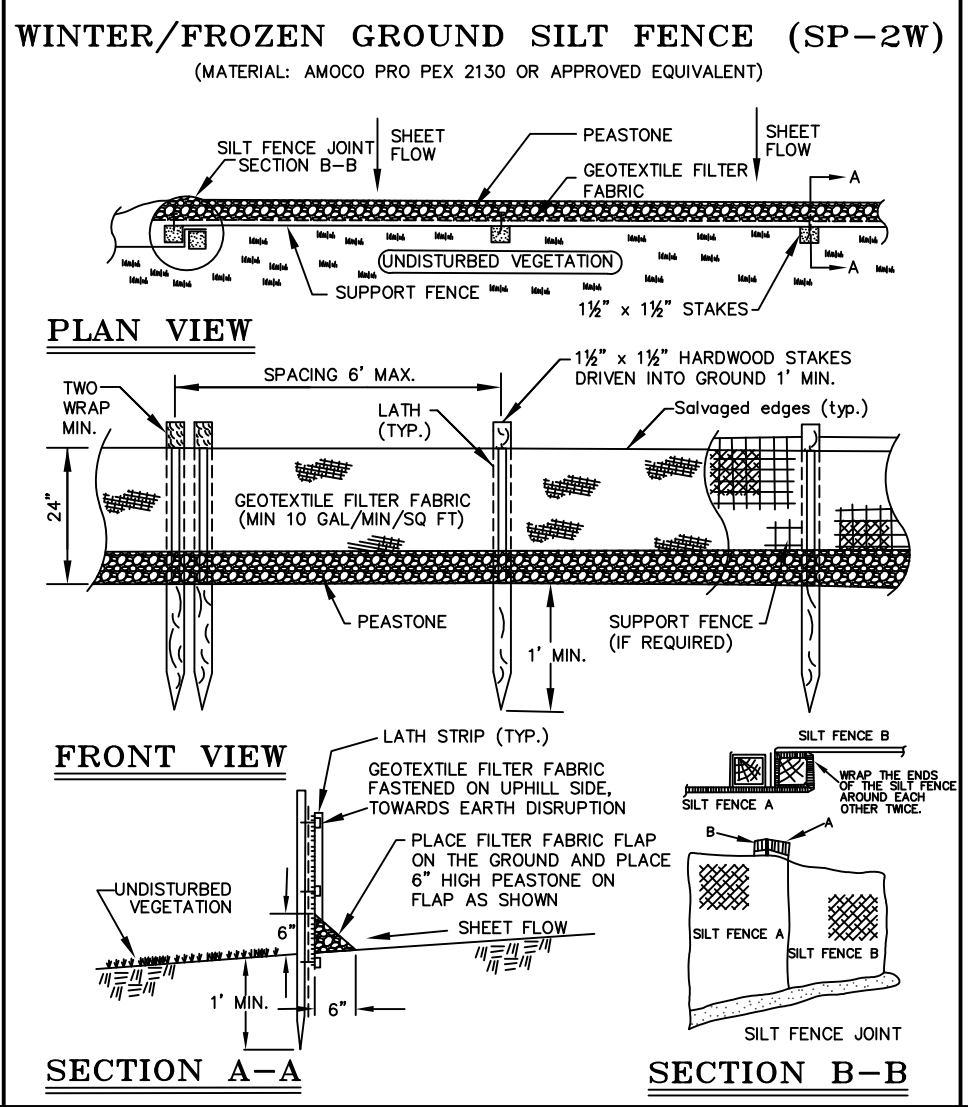
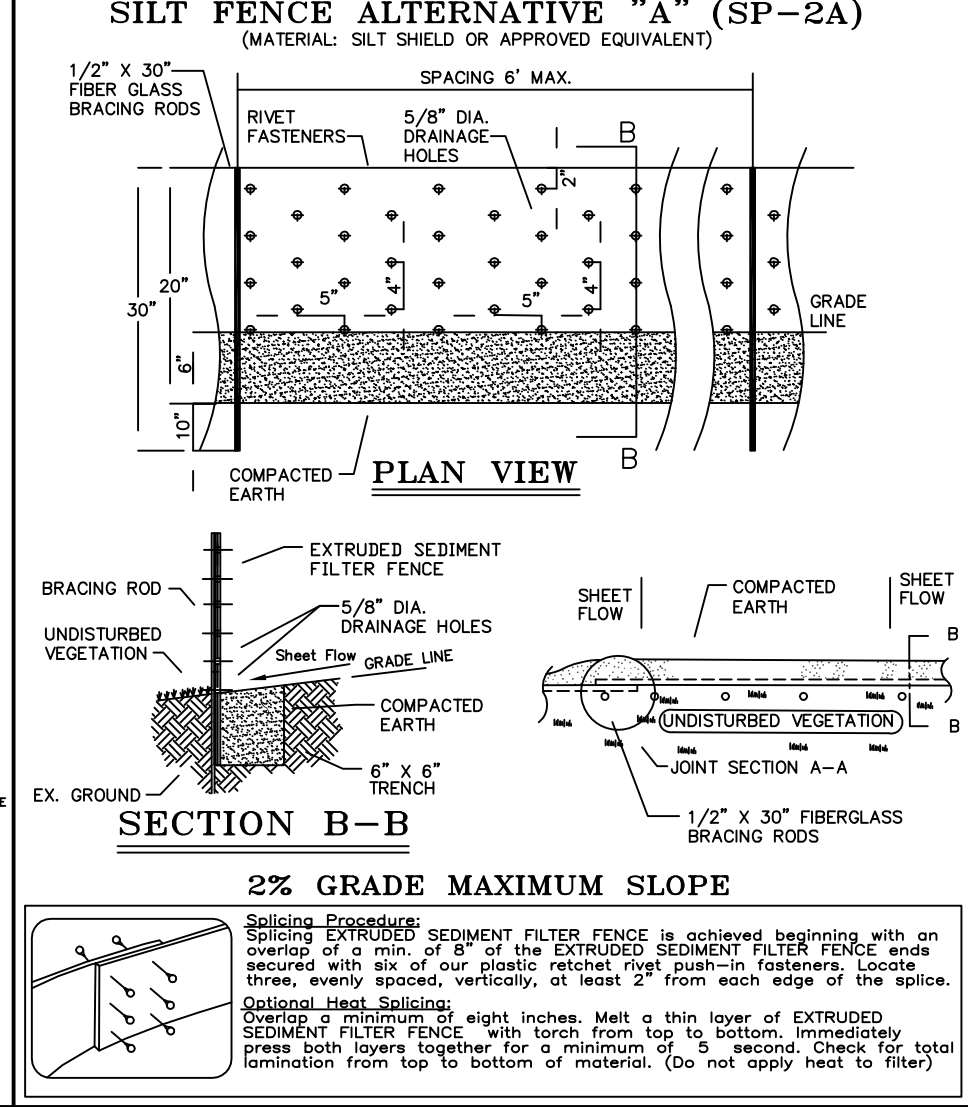
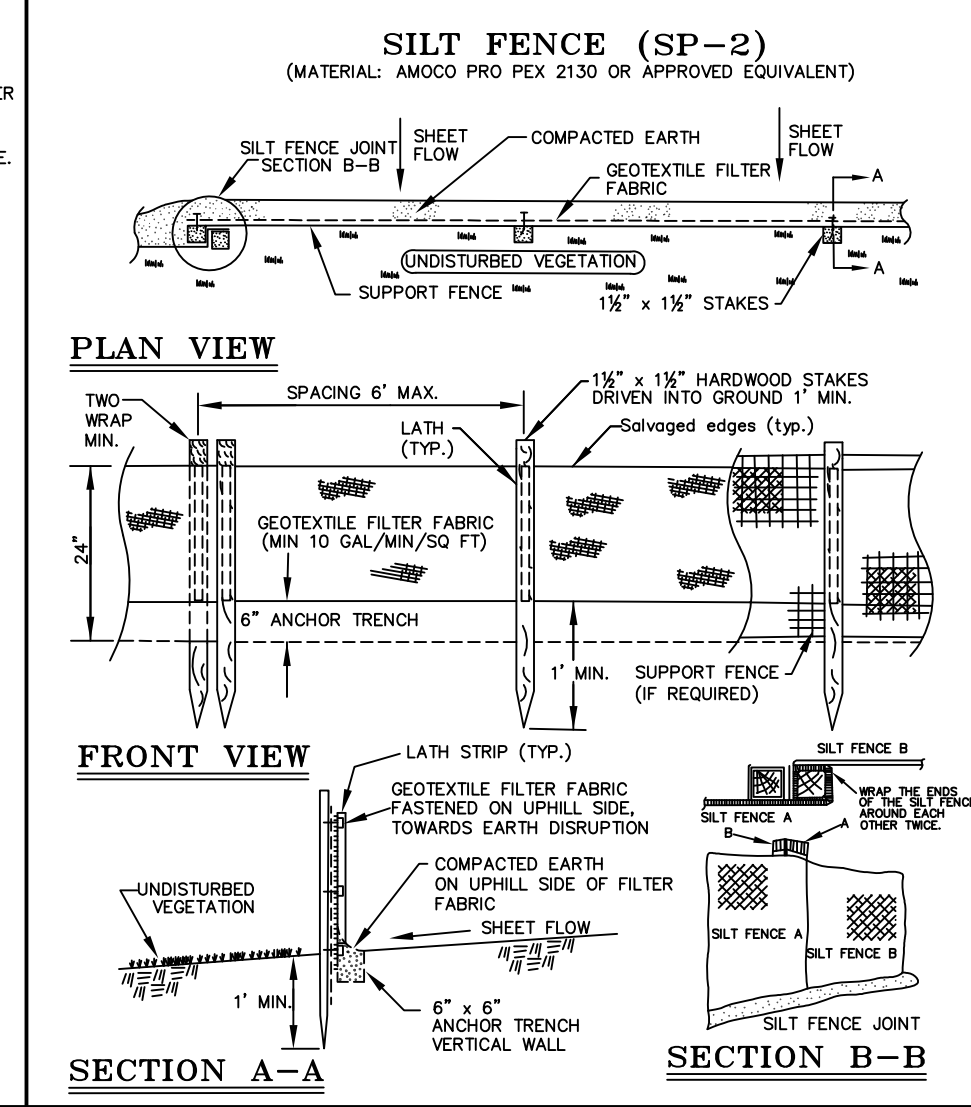
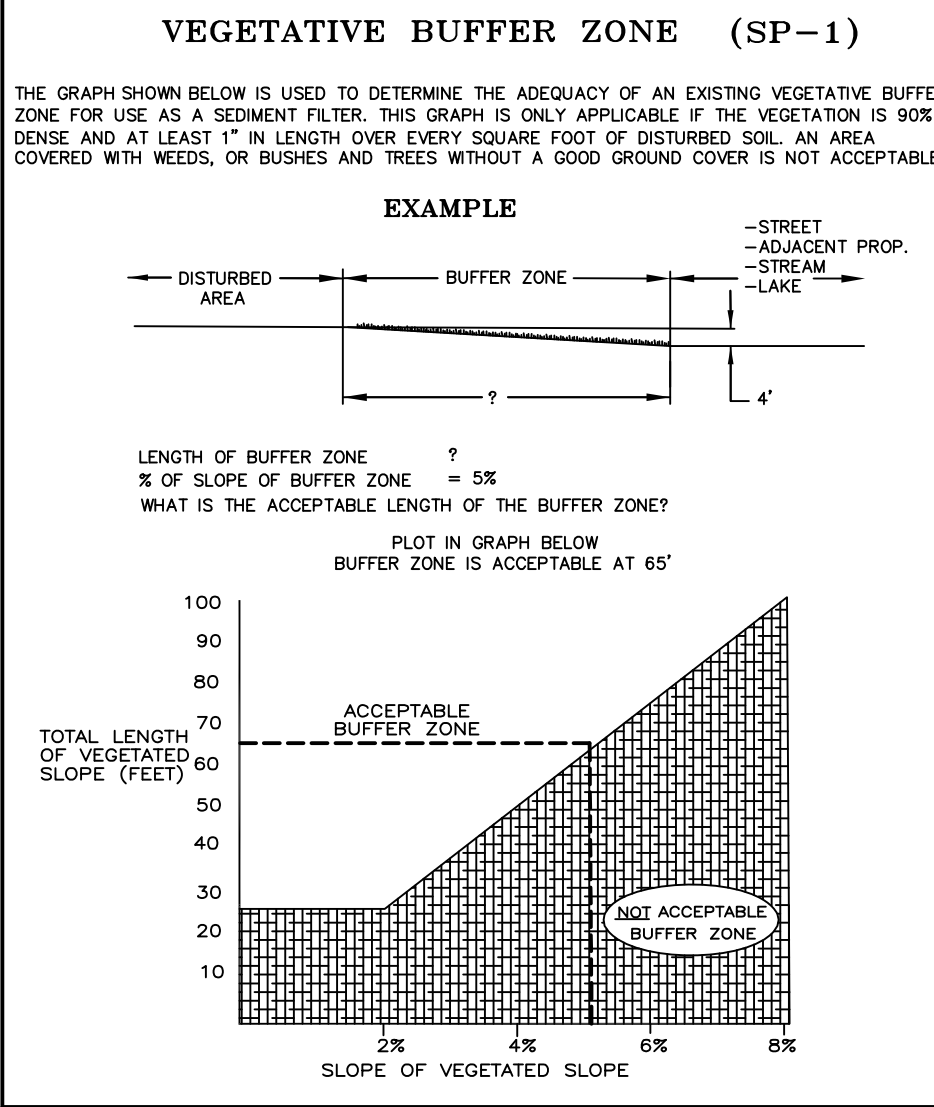
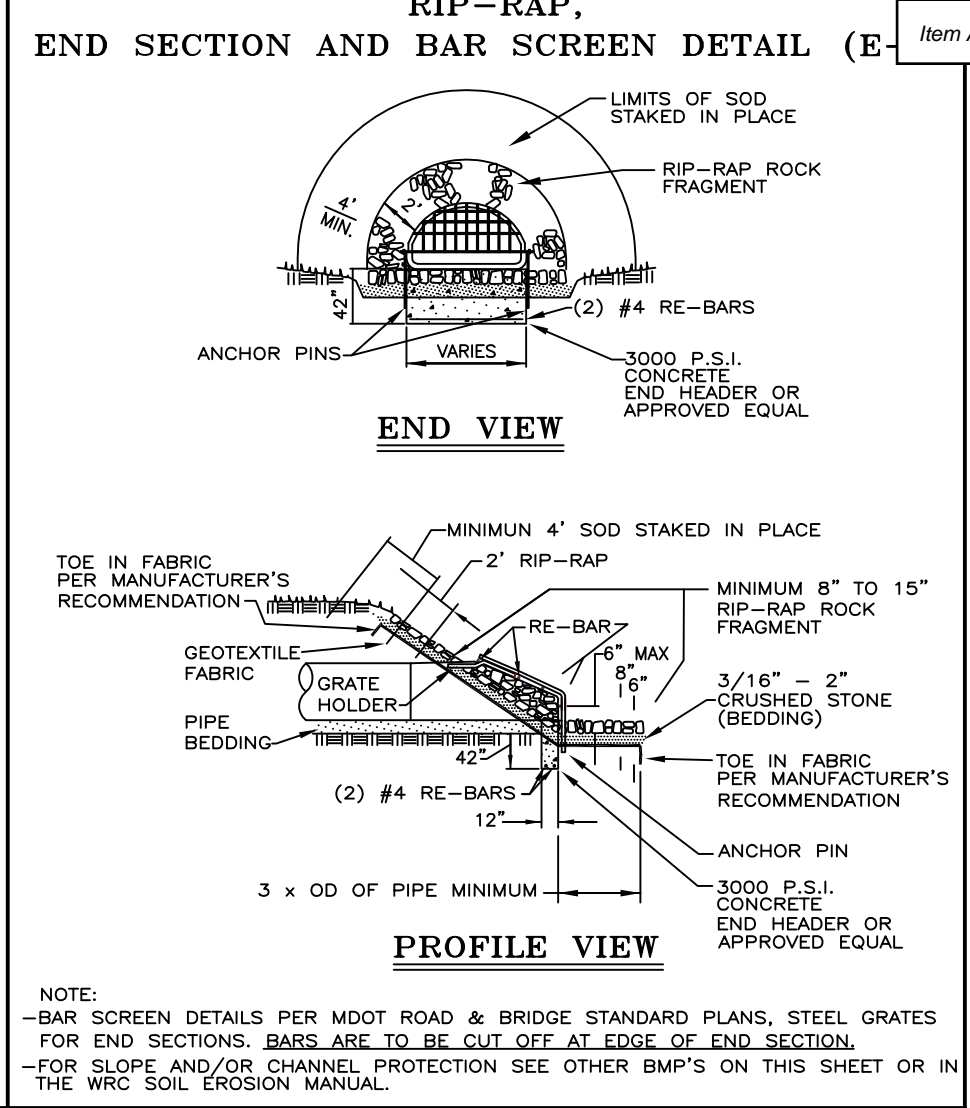
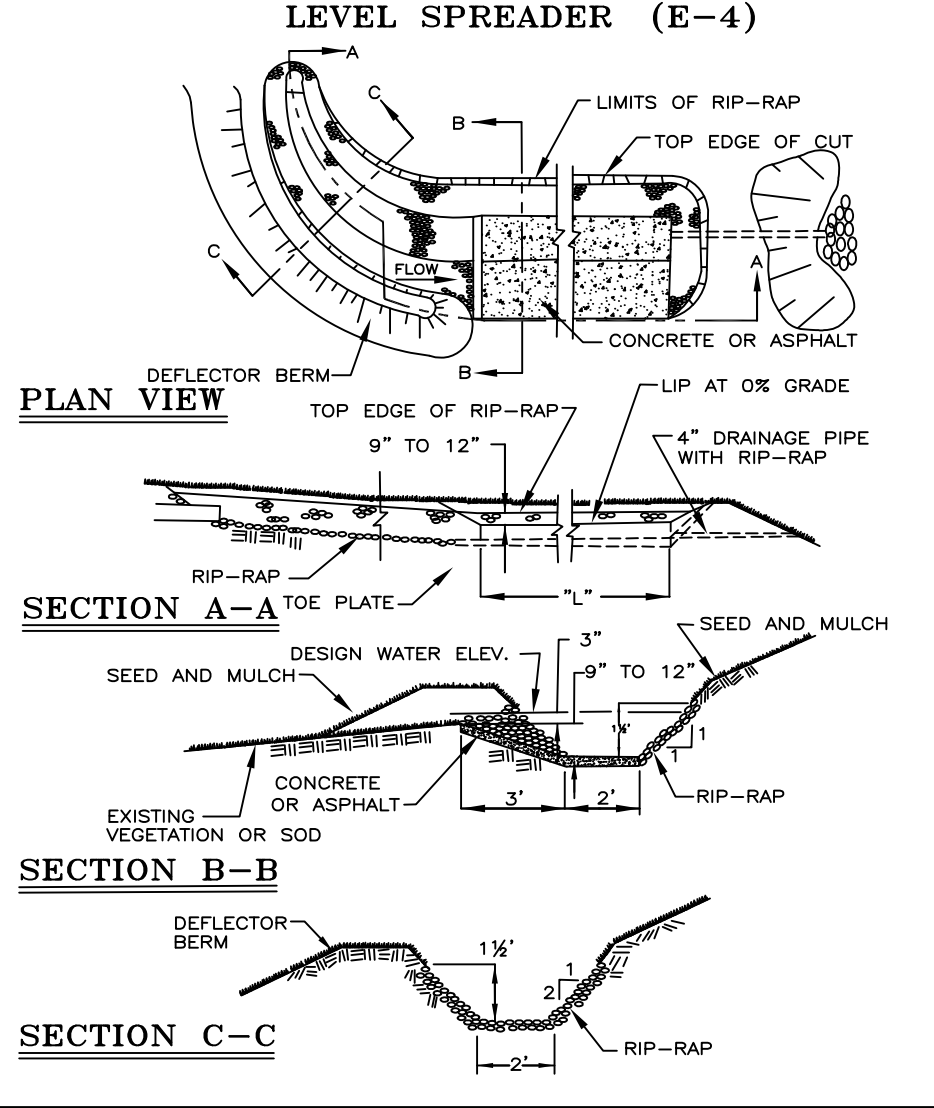
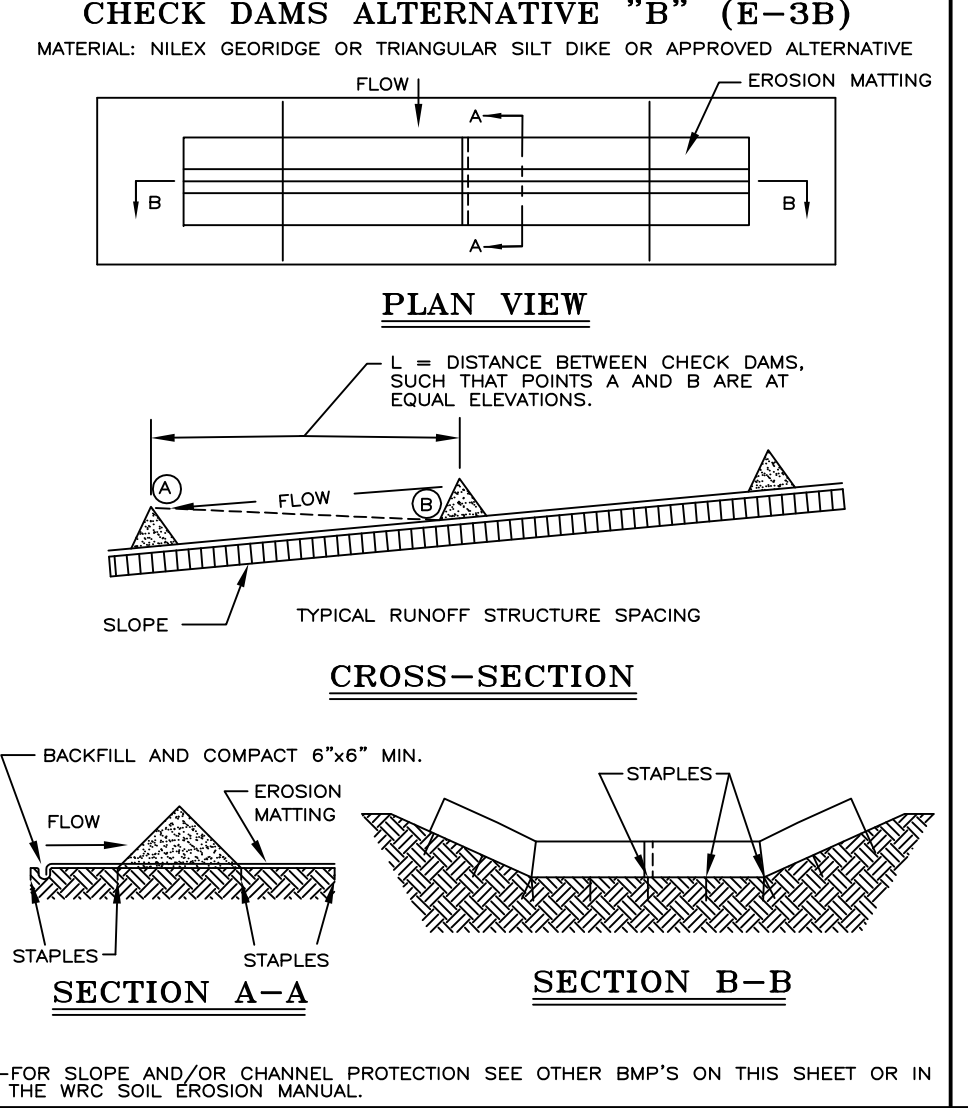
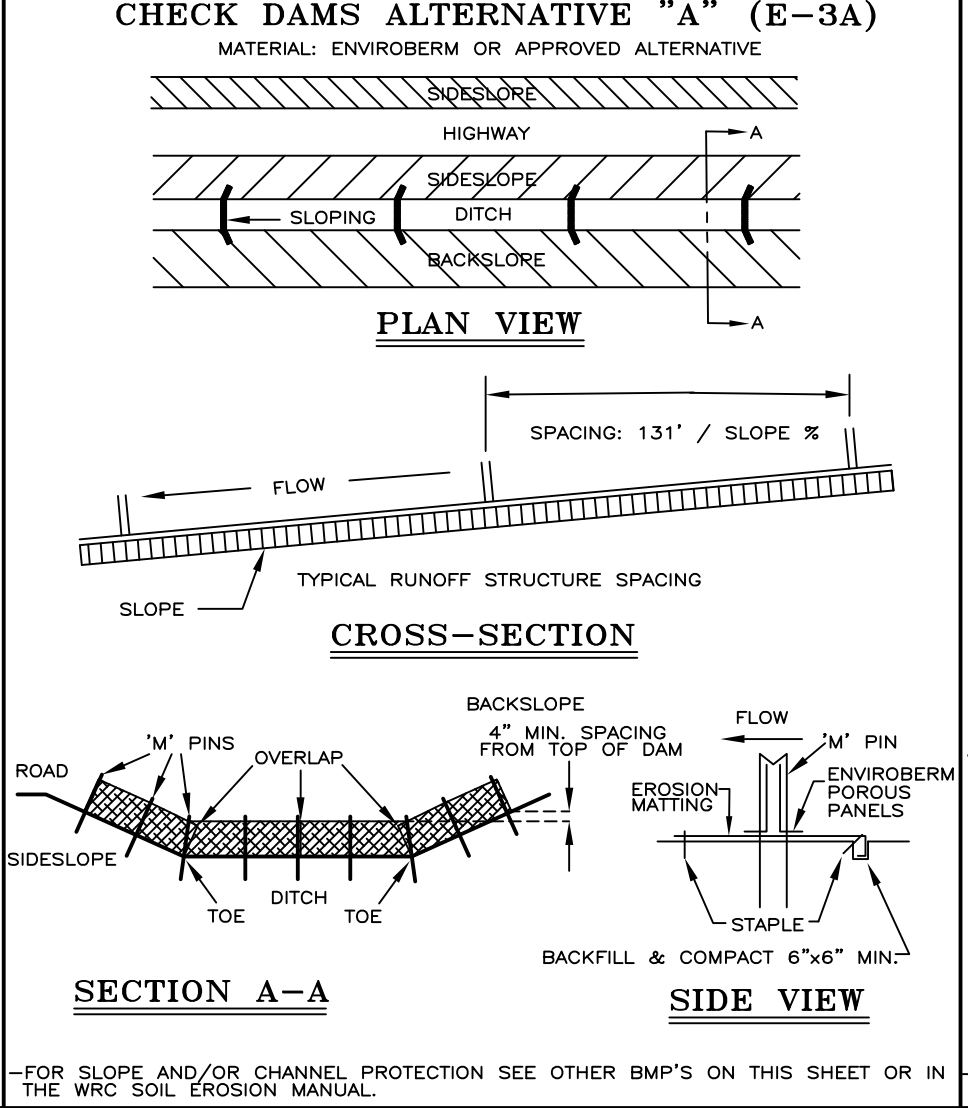
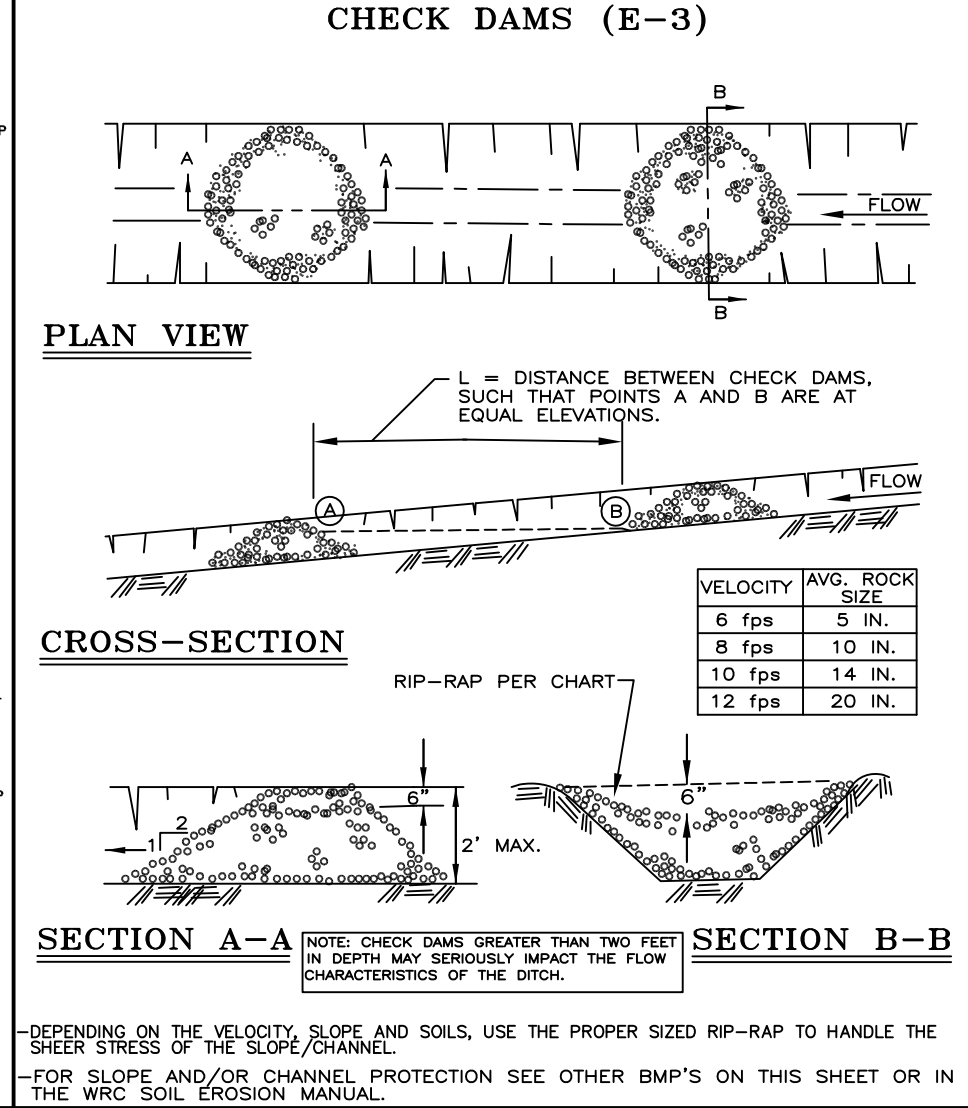
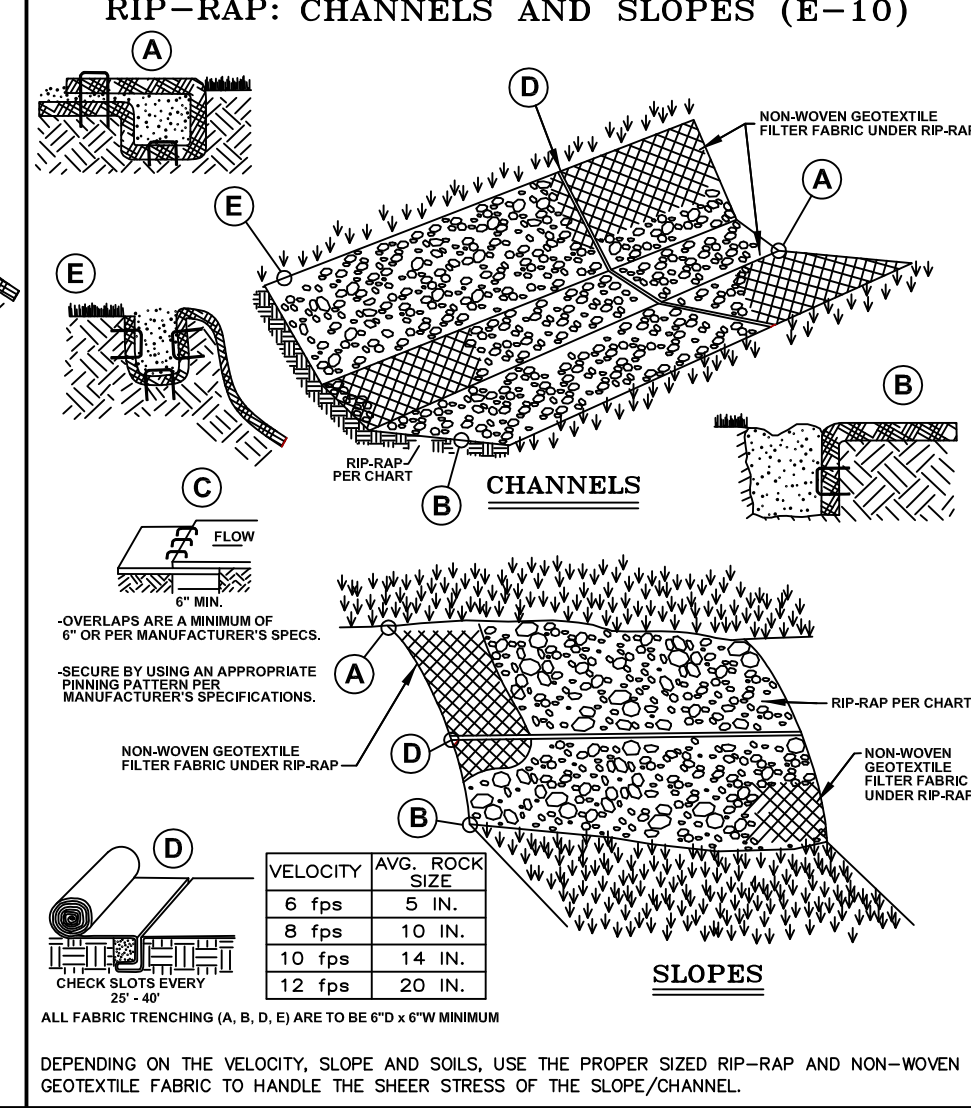
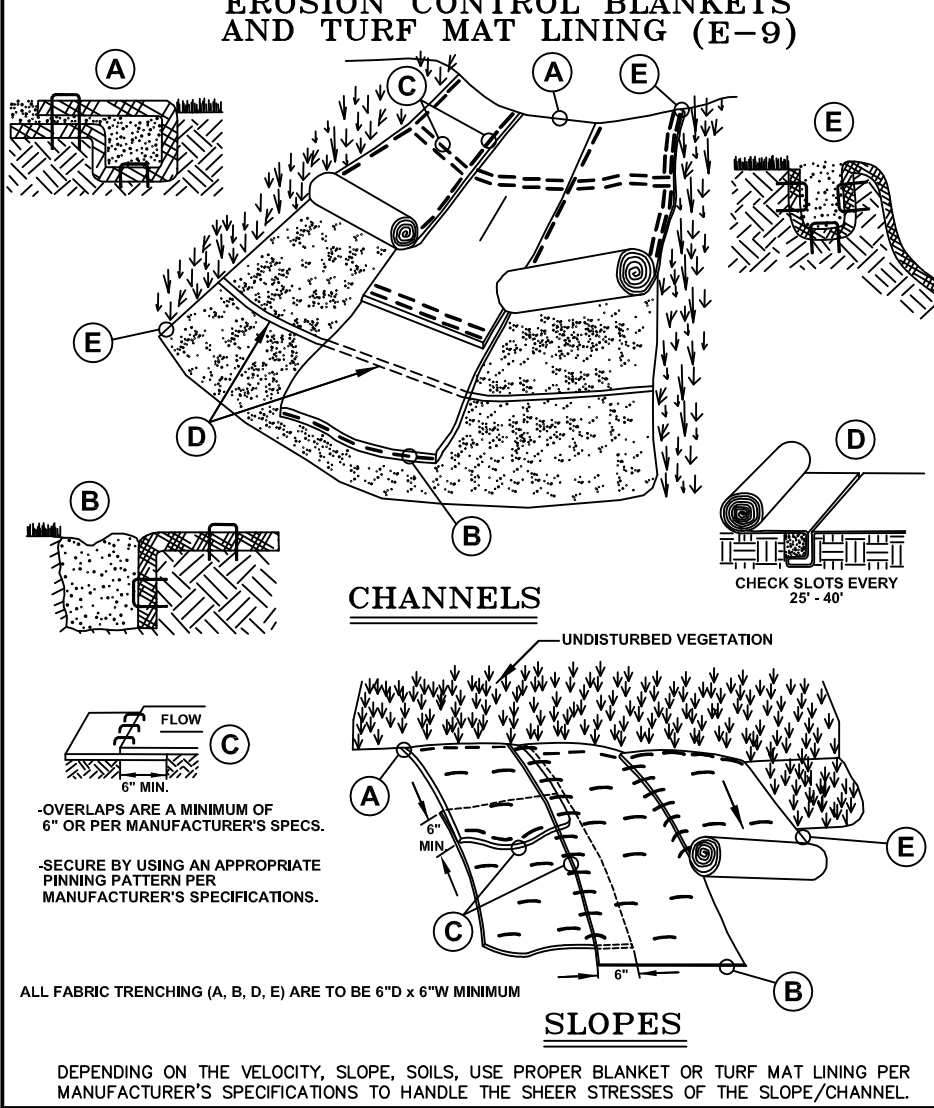
REVISIONS	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE	MARK	ADDENDUM/CHANGE ORDER	DATE
		FIRST ISSUE	08/16/95		REVISE	10-03-02		REVISE	06-01-07
		ADD SO-1	06-17-96		REVISE	12-17-03		UPDATED TITLE BLOCK	04/30/13
		NEW BAR GRATE	11-03-97		SEC REFERENCE	05-17-05			

Johnson & Anderson
 4694 Elizabeth Lake Road Waterford, Michigan 48328 tel (248) 681-7800 fax (248) 681-2660
 1060 W. Norton Avenue, Suite 7 Muskegon, Michigan 49441 tel (231) 780-3100 fax (231) 780-3115
 3910 Lapeer Road Port Huron, Michigan 48060 tel (810) 987-7820 fax (810) 987-7895

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



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



NOTE:

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

SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REV.	DATE	DESCRIPTION
1	01/01/01	PROPOSED DETAIL REVISED
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 48320-1907

SHEET NO.: 1 of 16

NATIONAL ACCOUNTS PROGRAM:

1. CRESCENT ELECTRIC SUPPLY COMPANY: INTERIOR AND EXTERIOR LIGHTING, LIGHTING CONTROLS, DISTRIBUTION GEAR, DEVICES, COVER PLATES, AND LIGHT POLES/ HEADS.

NATIONAL ACCOUNT SUPPORT: cuhers@cesco.com
CONTACT FOR SITE PHOTOMETRIC PLAN

TYPICAL SITE LIGHTING SPECS:

1A ○ LITHONIA D-SERIES SIZE 3 LED FLOOD LIGHT. (FOR OPTIONAL FLAG POLE)

TYPICAL PARKING LOT LIGHTING SPECS:
(VERIFY WITH CRESCENT ELECTRIC)

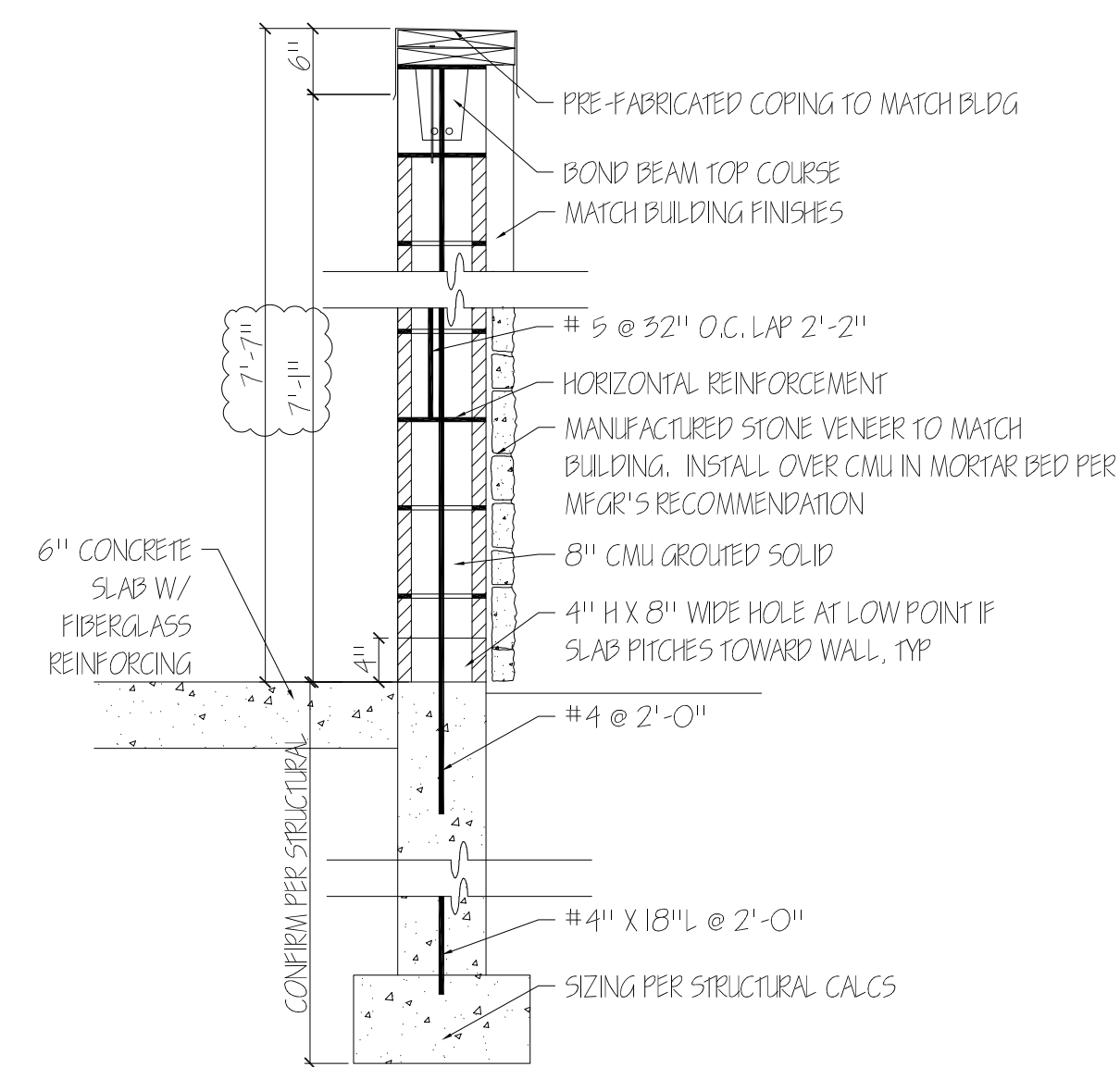
1B □ PARKING LOT FIXTURE
LITHONIA D-SERIES SIZE 1, DSKLED. VERIFY EXACT SPECS AND POLE HEIGHT WITH SITE PHOTOMETRICS AND CITY REQUIREMENTS NOT SHOWN. VERIFY WITH CIVIL PLANS

GENERAL NOTES:

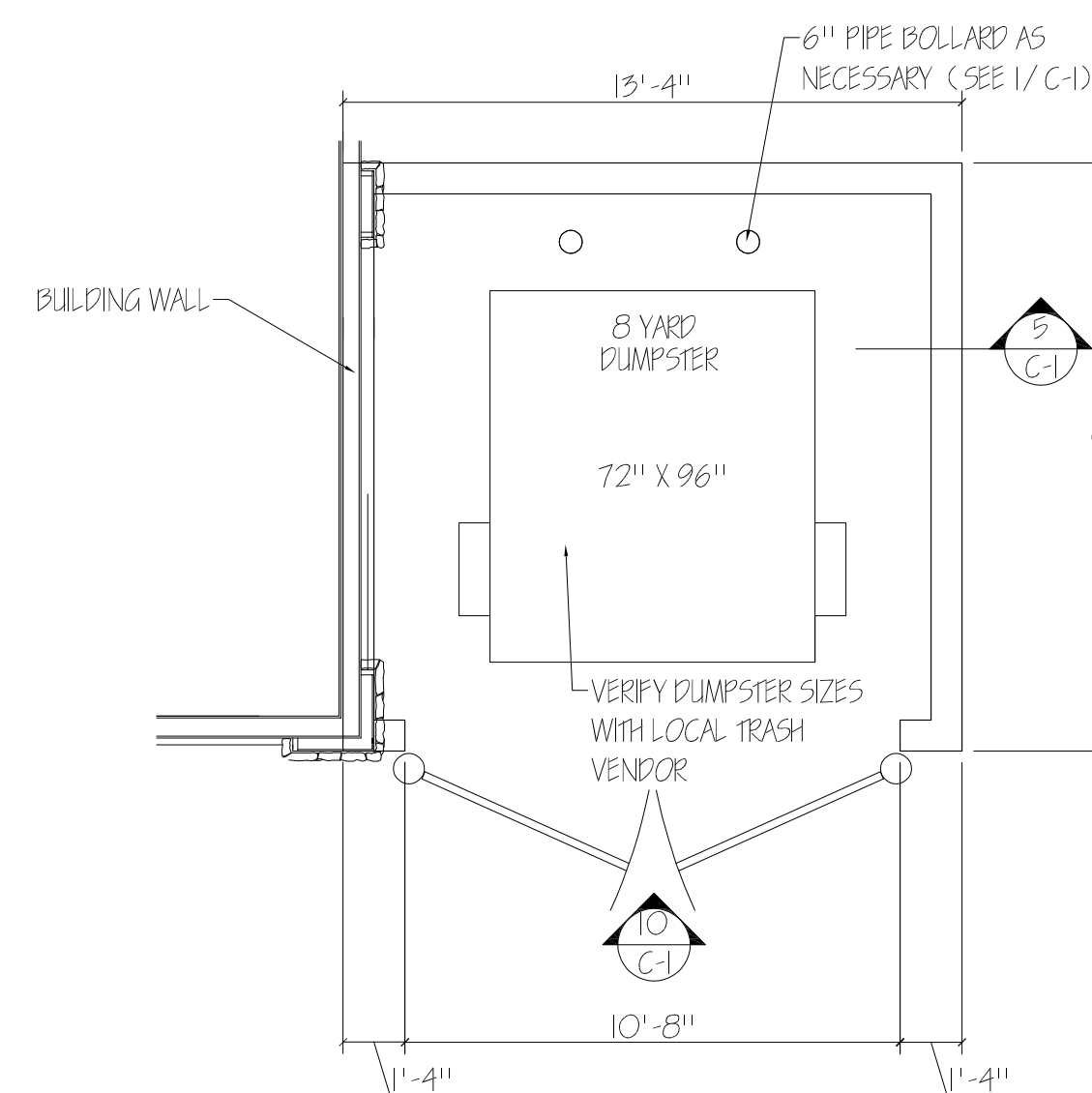
- SEE PROJECT SPECIFIC SITE, BUILDING, AND CIVIL PLANS FOR ACTUAL CONDITIONS AND SIGNAGE LOCATIONS.
- COORDINATE PATIO AND LANDSCAPE LIGHTING WITH OWNER.
- CONTRACTOR TO VERIFY SIGNAGE REQUIREMENTS WITH ASSIGNED SIGN VENDOR PRIOR TO ROUGH-INS.
- PARKING LOT LIGHTING, MAIN BUILDING SIGNAGE, AND MENU BOARD SIGNAGE TO BE CONTROLLED SEPARATELY. SEE SHEET E-6 FOR EXTERIOR LIGHT SWITCHING
- DETAILS LISTED ARE SUGGESTED STANDARD DETAILS. ARCHITECT AND ENGINEER FOR EACH PROJECT ARE RESPONSIBLE TO MODIFY AS NECESSARY TO COMPLY WITH LOCAL CODES OR CONDITIONS.

SUGGESTED LANDSCAPE GUIDELINES:

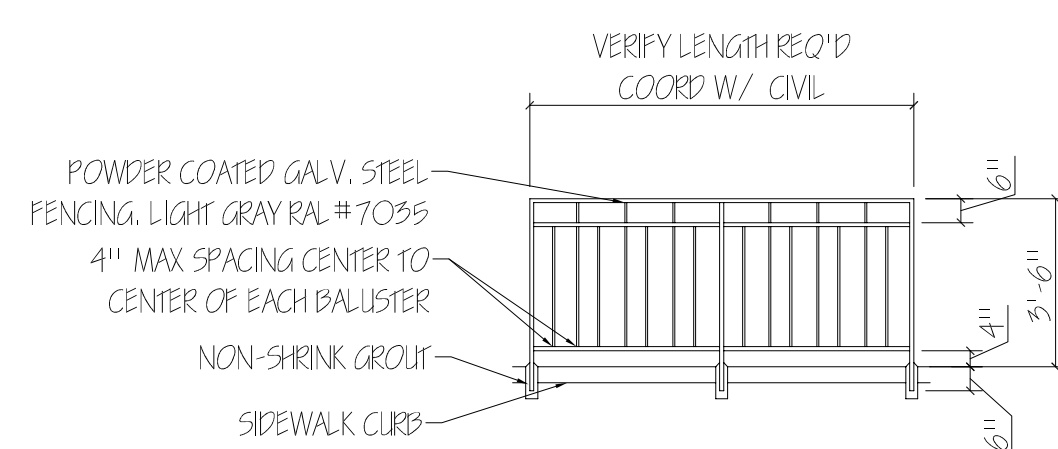
- LANDSCAPING SHOULD UTILIZE PLANTINGS NATIVE TO THE LOCATION AND BLEND WITH THE DOMINANT EXISTING OR PLANNED CHARACTER OF THE SITE.
- LANDSCAPING SHOULD BE PROVIDED AT PERIMETER OF BUILDING TO HELP ANCHOR STRUCTURE TO SITE AND SCREEN MATERIAL TRANSITION TO FOUNDATION.
- SHRUBS OR TREES THAT ARE LOCATED IN FRONT OF THE BUILDING OR SITE SIGNAGE SHOULD BE NO TALLER THEN 4 FEET IN HEIGHT.
- DRIVE THRU AREAS WITH SITE LINES TO UTILITY BOXES OR OTHER SIMILAR ELEMENTS SHOULD BE SCREENED WITH PLANTINGS.
- GRASS, VEGETATIVE GROUND COVER, MULCH, OR ROCK SHALL BE USED IN ALL OPEN SPACE INCLUDING PARKING LOT BUMPOUTS AND ISLANDS.
- PERIMETER OF PATIO SHOULD HAVE PLANTINGS OR LANDSCAPE FEATURE TO HELP SCREEN VIEW OF PARKING LOT.
- ANY WATER FEATURES SHOULD BE PONDLESS AND POTENTIAL LIABILITY SHOULD BE CONSIDERED FOR ANY SIMILAR LANDSCAPE FEATURES.



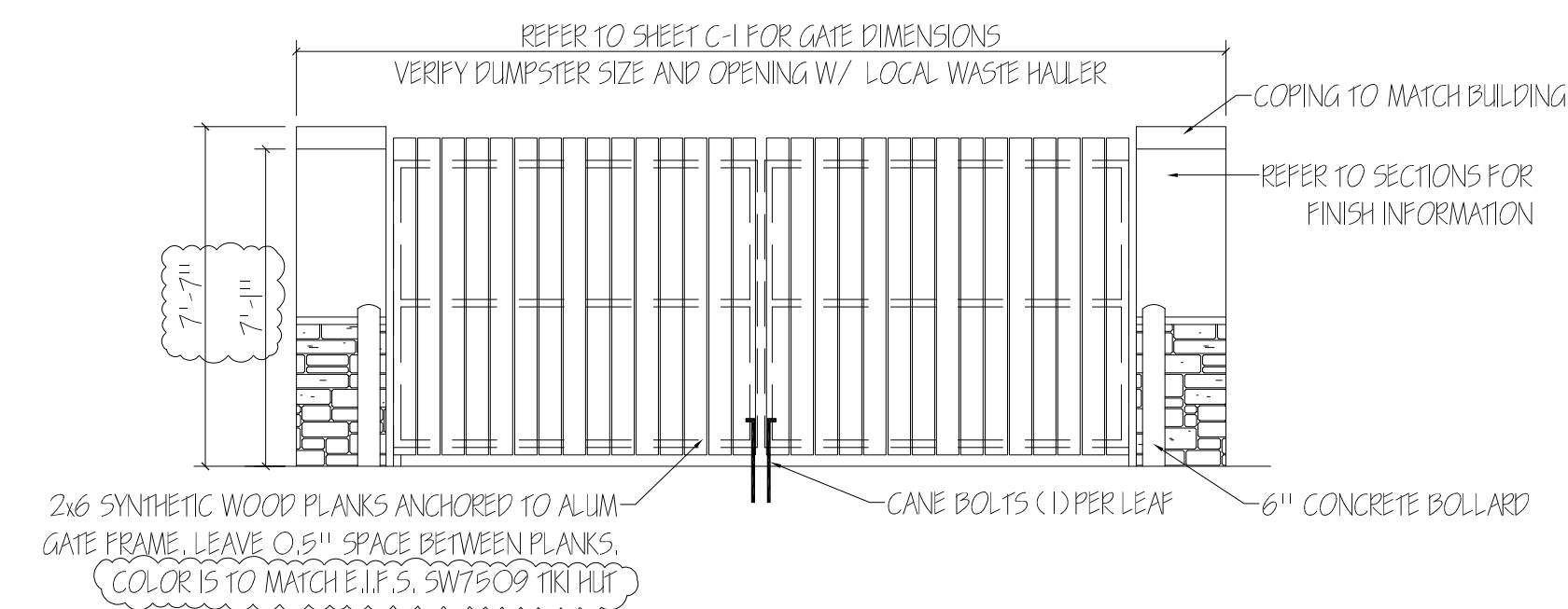
5 SECT. - DUMPSTER ENCLOSURE
C-1 SCALE: 3/4" = 1'-0" (ATTACHED TO BUILDING)



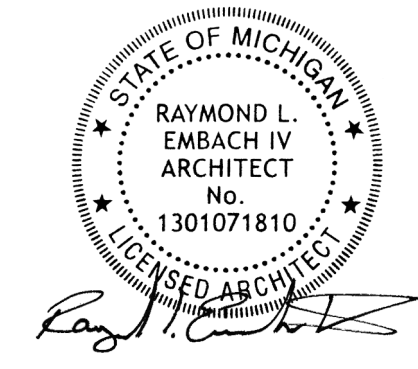
6 DUMPSTER PLAN - ATTACHED
C-1 SCALE: 1/4" = 1'-0"

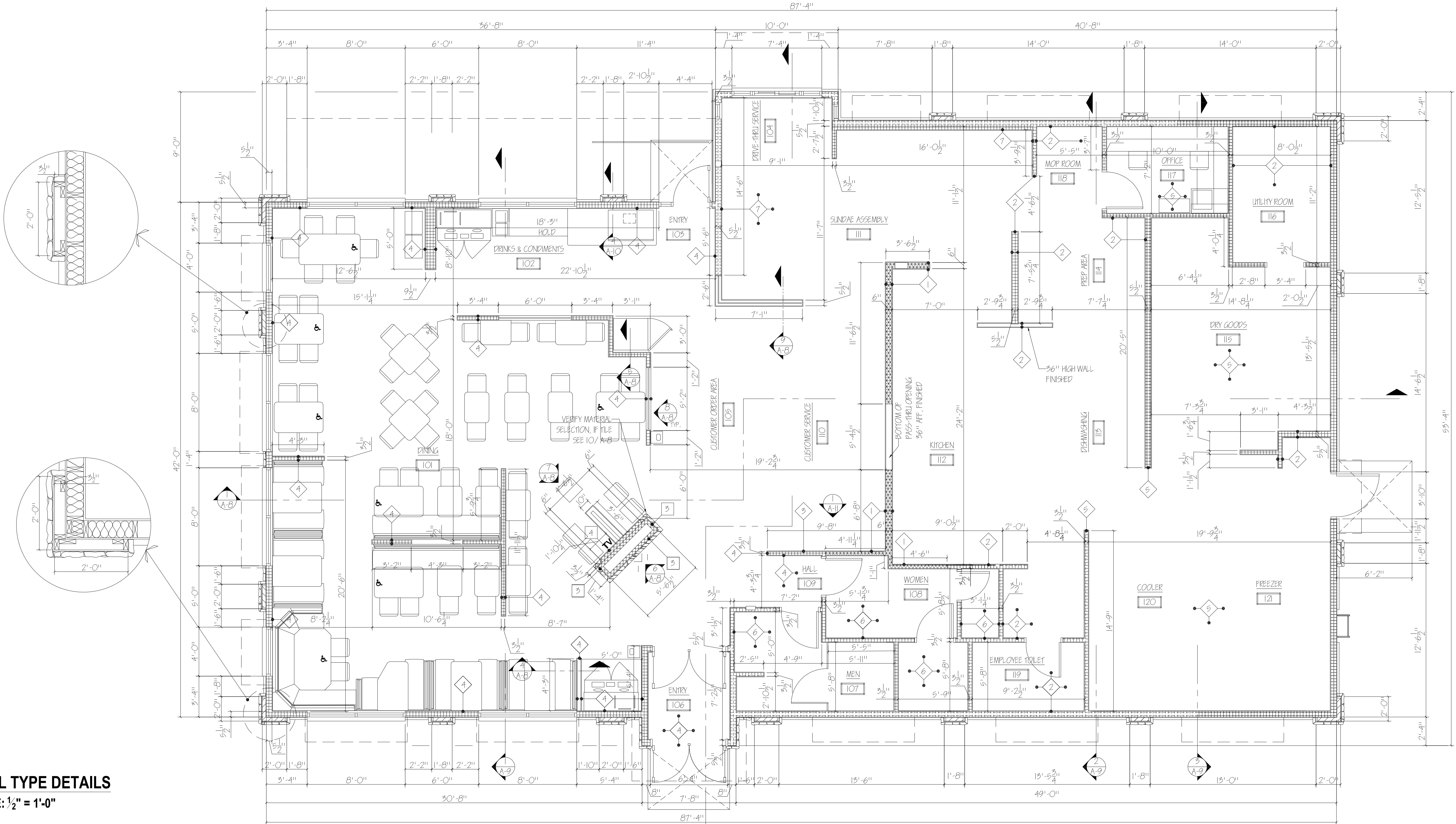


8 ELEV. GUARD RAIL
C-1 SCALE: 1/4" = 1'-0"

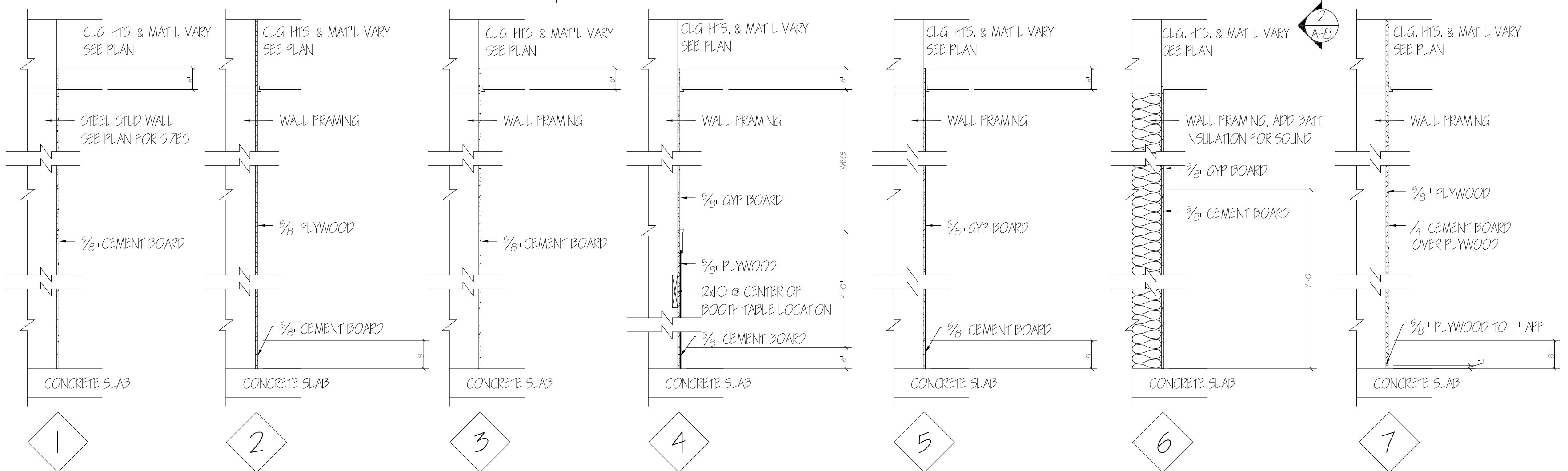


10 ELEV. DUMPSTER ENCLOSURE
C-1 SCALE: 1/4" = 1'-0"





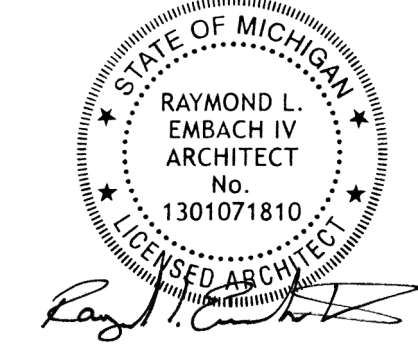
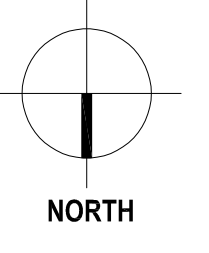
WALL TYPE DETAILS
 SCALE: 1/2" = 1'-0"



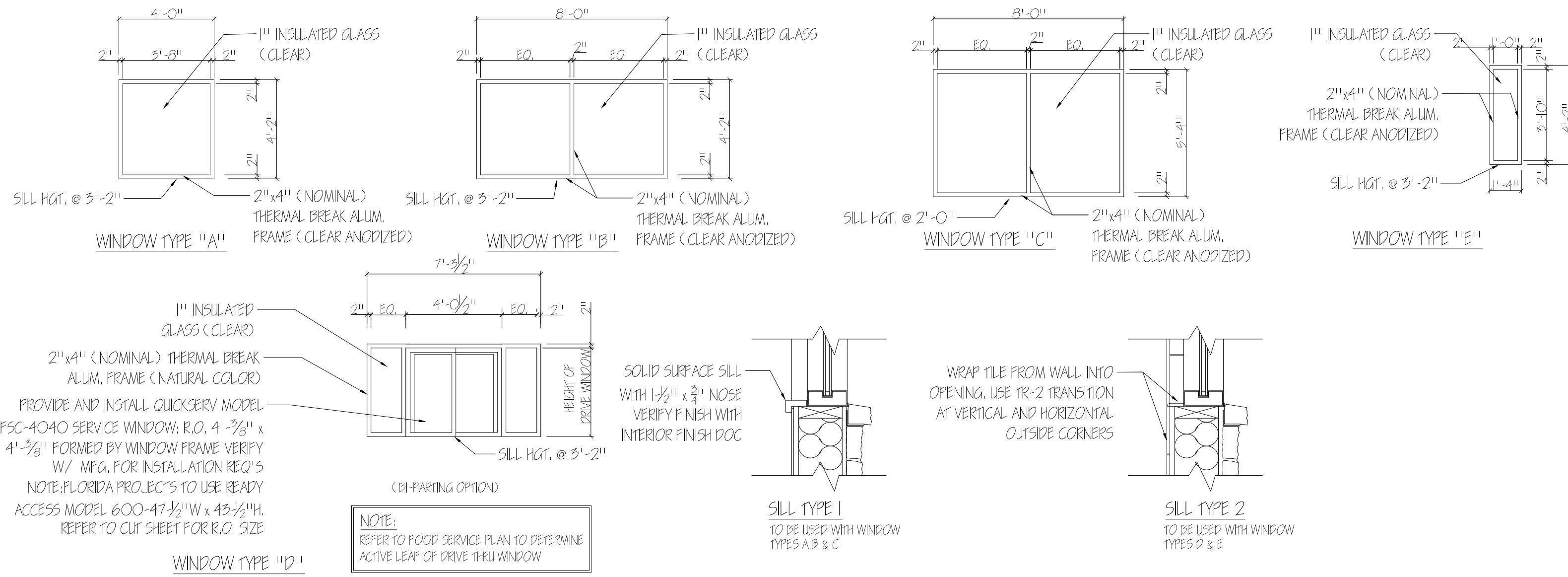
GENERAL NOTES:

- DIMENSIONS SHOWN ARE TO FACE OF STUD UNLESS NOTED OTHERWISE.
- ALL INTERIOR GYPSUM TO RECEIVE PAINT OR VWC SHOULD BE TAPED, SEALED, AND SANDED TO RECEIVE FINISH.

DIMENSIONED FLOOR PLAN
 SCALE: 1/4" = 1'-0"



WINDOW TYPES



DOOR SCHEDULE

DOOR:				FRAME:				HARDWARE GROUP	NOTES
NO.	WIDTH	HGT.	MAT'L	TYPE	MATERIAL	TYPE			
1	2 @ 36"	84"	ALUM	A	ALUM	A	1		
2	2 @ 36"	84"	ALUM	A	ALUM	B	2		
3	36"	84"	ALUM	A	ALUM	C	3		
4	42"	84"	ALUM	B	ALUM	D	4		
5	36"	84"	HPL	C	ALUM	E	5	OPTIONAL ARM PULL	
6	36"	84"	HPL	C	ALUM	E	5	OPTIONAL ARM PULL	
7	28"	60"	HPL	E	ALUM	E, 2'-8"	6		
8	36"	60"	HPL	E	ALUM	E, 3'-4"	6		
9	36"	84"	HPL	D	ALUM	E	7	GLASS FOR DOOR PROVIDED BY GC	
10	34"	84"	HPL	C	ALUM	E	8		
11	-	-	-	-	ALUM	E	-	DOOR OPTIONAL	

NOTE: SEE PROTOTYPE SHEET T-1 FOR NATIONAL ACCOUNT INFORMATION

HARDWARE GROUPS

GROUP #	DOOR	QTY	DESCRIPTION	CATALOG #	FINISH	MFG			
EXTERIOR DOUBLE DOOR	1	2	CONT. HINGE	112HD	628	IVES			
		1	REMOVABLE MULLION	5654	628	VON DUPRIN			
		2	PANIC HARDWARE	35A-NL-OP-388-299	628	VON DUPRIN			
		2	RIM CYLINDER	20-097	628	SCHLAGE			
		2	90 DEG OFFSET PULL	8190HD 10" O	630	IVES			
		2	OH STOP	1005	630	ALYNN			
		2	SURFACE CLOSER	4111 EDA	689	LCN			
		2	MOUNTING PLATE	4110-15	689	LCN			
		2	BLADE STOP SPACER	4110-61	689	LCN			
		2	MEETING STILE	8193AA	AA	ZERO			
		2	DOOR SWEEP	39A	A	ZERO			
		1	THRESHOLD	629A-MSLA-10	A	ZERO			
INTERIOR DOUBLE DOOR	2	2	CONT. HINGE	112HD	628	IVES			
		2	PUSH/PULL BAR (SET)	8190HD 10" N5	630	IVES			
		2	OH STOP	1005	630	ALYNN			
		2	SURFACE CLOSER	4111 EDA	689	LCN			
		2	MOUNTING PLATE	4110-15	689	LCN			
		2	BLADE STOP SPACER	4110-61	689	LCN			
		SECONDARY ENTRY DOOR	3	3	CONT. HINGE	112HD	628	IVES	
				1	PANIC HARDWARE	35A-NL-OP-388-299	628	VON DUPRIN	
				1	RIM CYLINDER	20-097	628	SCHLAGE	
				1	90 DEG OFFSET PULL	8190HD 10" O	630	IVES	
				1	OH STOP	1005	630	ALYNN	
				1	SURFACE CLOSER	4111 EDA	689	LCN	
1	MOUNTING PLATE			4110-15	689	LCN			
1	BLADE STOP SPACER			4110-61	689	LCN			
1	DOOR SWEEP			39A	A	ZERO			
1	THRESHOLD			629A-MSLA-10	A	ZERO			
REAR EXTERIOR DOOR	4			4	CONT. HINGE	224HD	628	IVES	
				1	RIM CYLINDER	20-097	628	SCHLAGE	
		1	90 DEG OFFSET PULL	8190HD 10" O	630	IVES			
		1	PUSH BAR	35A	320	VON DUP			
		1	LOCK GUARD	L612	630	IVES			
		1	SURFACE CLOSER	4111 SFCUSH	689	LCN			
		1	GASKETING	429A	A	ZERO			
		1	DOOR SWEEP	328AA	AA	ZERO			
		1	DOOR SWEEP	39A	A	ZERO			
		1	THRESHOLD	629A-MSLA-10	A	ZERO			
		1	RAIN DRIP	142A	A	ZERO			
		PUBLIC RR DOOR	5	5, 6, 3	HINGE	#53 x U592D	MARLITE	BURNS	
1	PUSH PLATE			#53 x U592D	MARLITE	BURNS			
1	PULL PLATE			#5325B x U592D	MARLITE	BURNS			
1	SURFACE CLOSER			4101	LCN				
2	KICK PLATE			8" x 34" ALUM 628	ROCKWOOD				
1	WALL STOP			3211-U592D	DCI				
1	ARM PULL			MPN 69811	NEWCO				
RR STALL DOOR	6			7, 3	HINGE	SATIN 1902 SPRING 4.5x4	MARLITE	MCKINNEY	
				1	SPRING HINGE	QCL 240.M.626.54.4785.5C.6	STANLEY		
				1	PRIVACY LOCK	3211-U592D	DCI		
				1	WALL STOP	3211-U592D	DCI		
				OFFICE DOOR	7	9	HINGE	QCL 270.M.626.54.4785.5C.10	STANLEY
		1	STOREROOM LOCK			3211-U592D	DCI		
		1	WALL STOP			3211-U592D	DCI		
		EMP RR DOOR	8			10	HINGE	QCL 240.M.626.54.4785.5C.6	STANLEY
						1	PRIVACY LOCK	3211-U592D	DCI
						2	KICK PLATE	8" x 34" ALUM 628	ROCKWOOD
						1	WALL STOP	3211-U592D	DCI

*NOTE - PERIMETER WEATHERSTRIPPING BY DOOR/FRAME MFG.

*NOTE - MOUNT 429A HEAD SEAL PRIOR TO MOUNTING CLOSER, KICK PLATES BOTH SIDES.

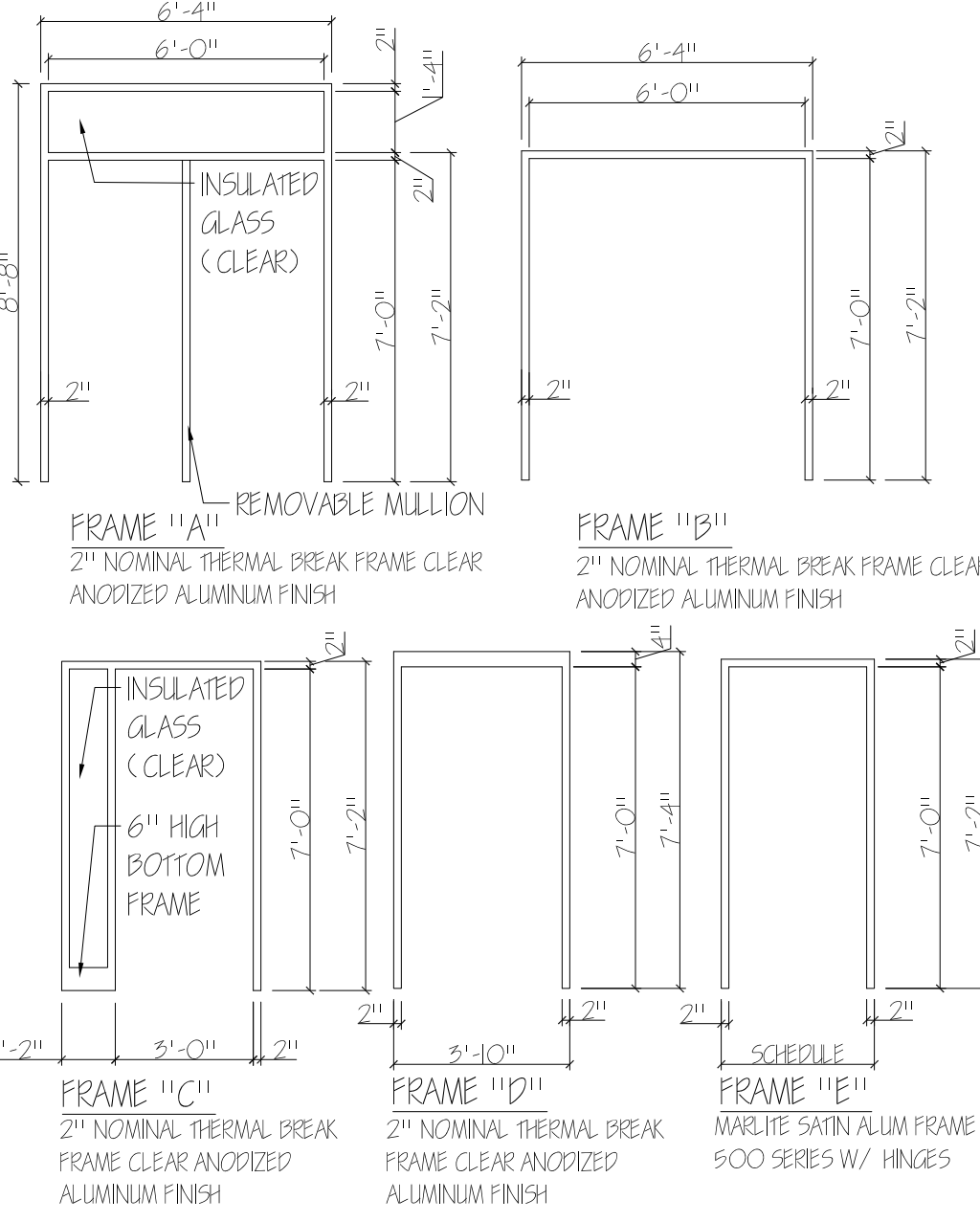
*NOTE - ARM PULL IS OPTIONAL. VERIFY WITH FRANCHISEE.

*NOTE - INSTALL SPRING HINGE TO HOLD DOOR SLIGHTLY OPEN.

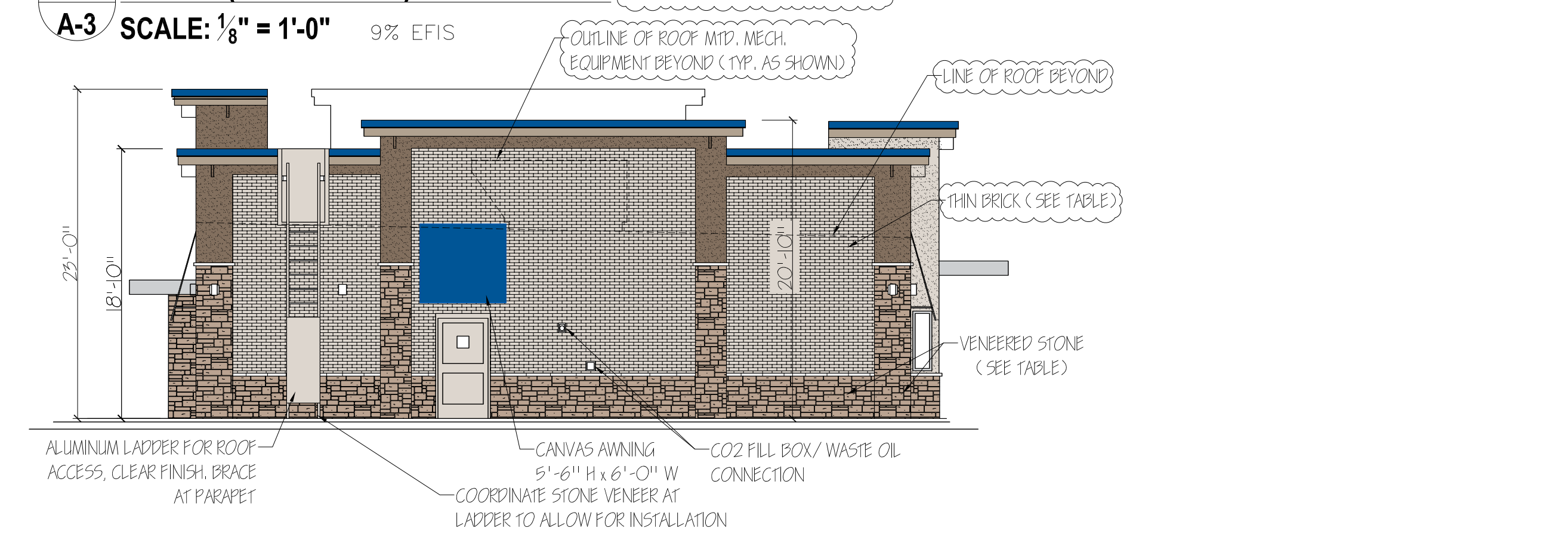
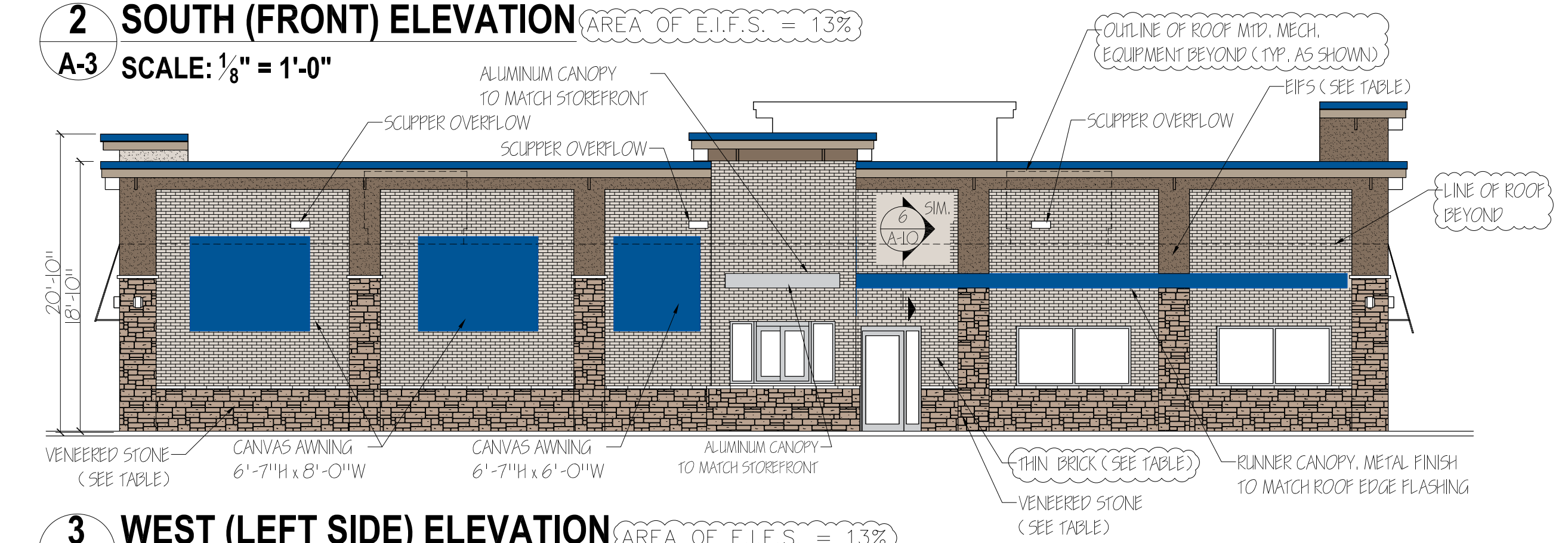
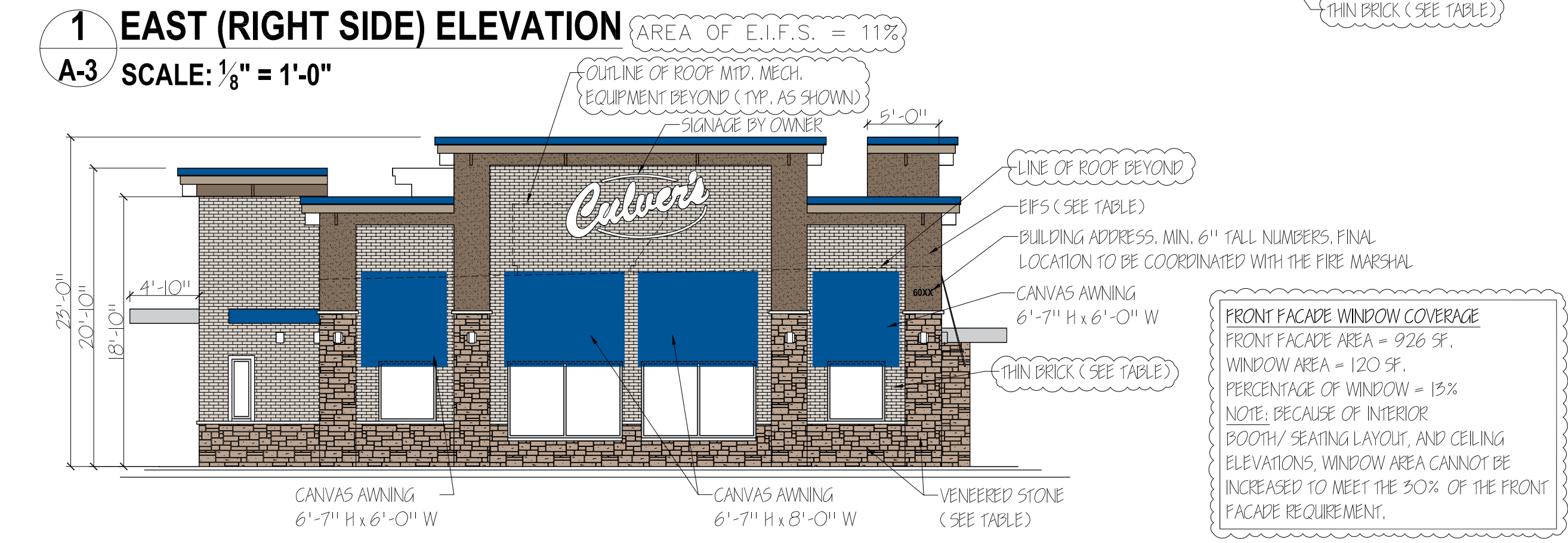
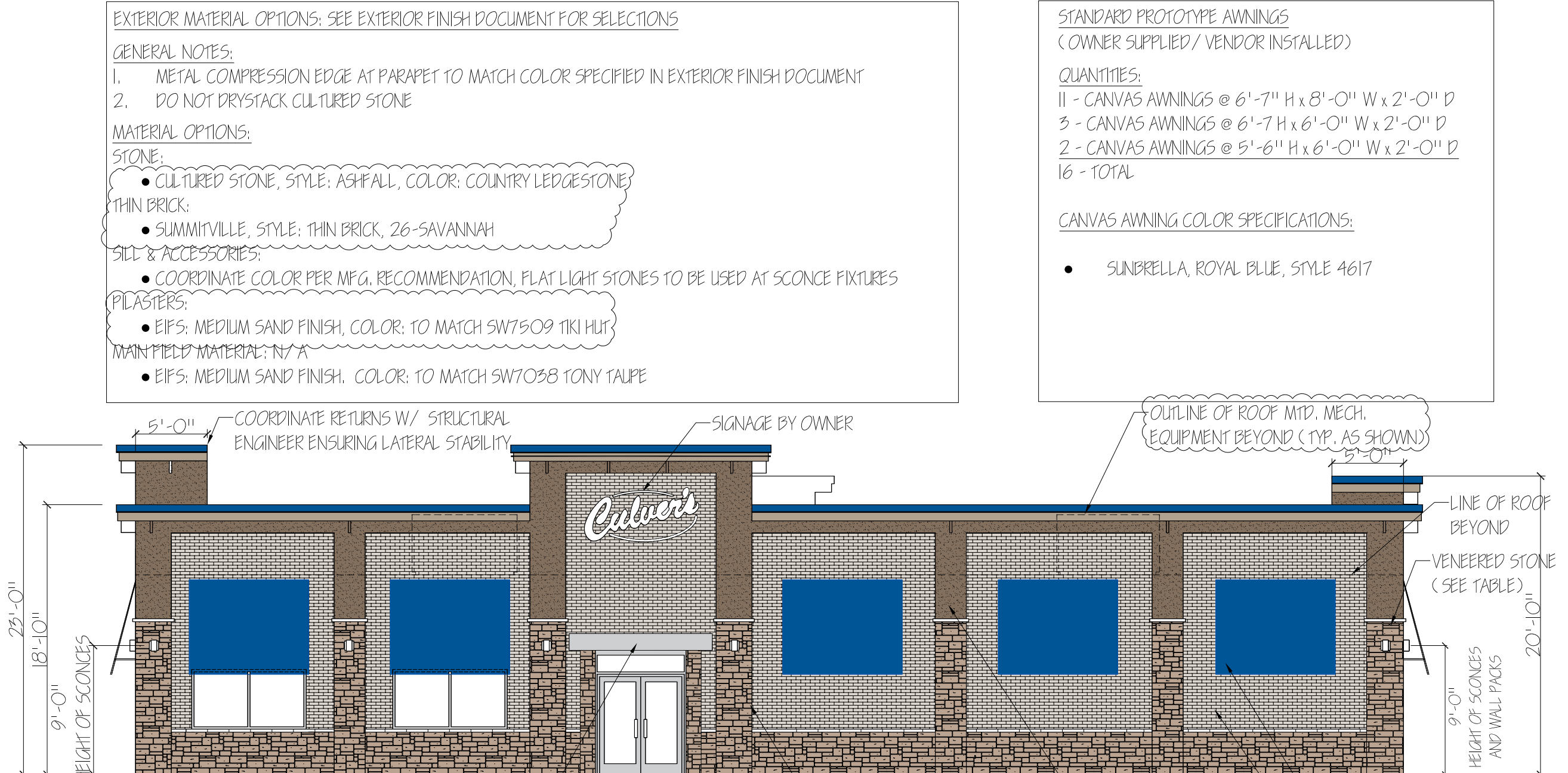
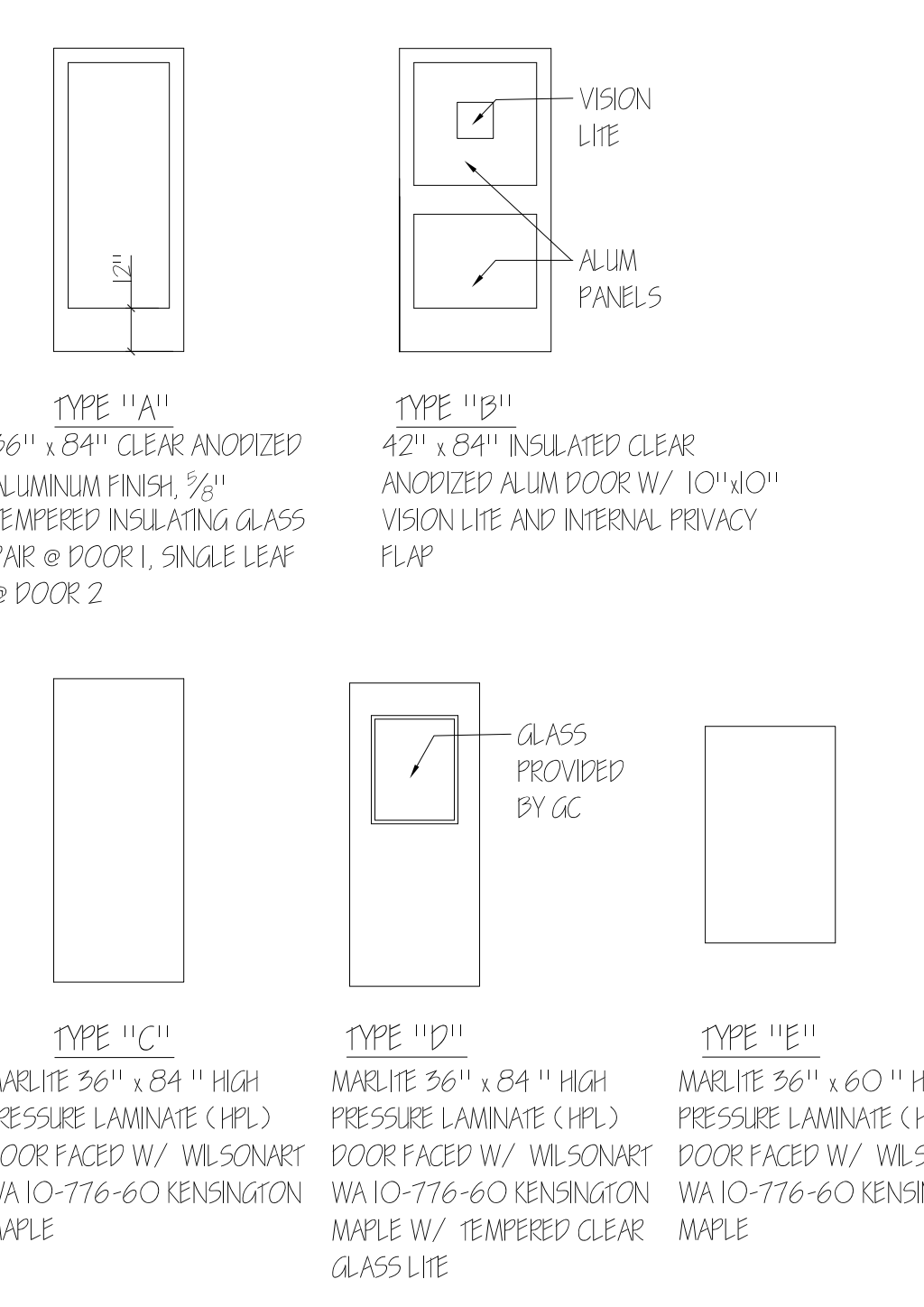
*NOTE - PERIMETER WEATHERSTRIPPING BY DOOR/FRAME MFG.

FOR AUTOMATIC FRONT ENTRY DOOR OPTION: ADD LCN SURF AUTO OPERATOR 4642 WMS AND WALL MOUNT ACTUATOR 8310-8531 AND REMOVE (1) SURFACE CLOSER, (1) MOUNTING PLATE, AND (1) BLADE STOP SPACER FOR DOORS 1 & 2.

FRAME TYPES



DOOR TYPES





SIGN PACKAGE PROPOSAL

NEW BUILD

PRESENTED TO:
Culver's
Bogie Lake Rd
White Lake, MI

DATE PREPARED:
04/29/24 - Preliminary

BB-1 BUTTERBURGER PANEL

Item A.

WHITE LAKE, MI

ButterBurger Outdoor Panel Wall Sign

BB-1

All aluminum 0.080" thick panel -
backside is blank (white)

Baked on aluminum white enamel
finish

Digital print overlay with
overlamine

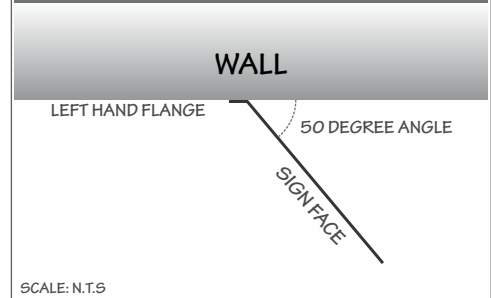
Rounded corners are to be 1.25"
radius

Sign is to be mounted at 50 degree
angle (set by flange)



NOT FOR
PRELIMINARY
CONSTRUCTION

TYPICAL INSTALLATION - TOP VIEW



SCALE: N.T.S.

HOLE PATTERN

HOLES ARE .250" DIAMETER
.737" IN FROM SIDE & 1.488" IN FROM TOP & BOTTOM
TAB IS TO BE BENT 50 DEGREES UP AT LINE

NOTES

SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	AO: 52561
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DATE CREATED / REVISION HISTORY	
4/29/24 - NEW	



SCALE: 1-1/2" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

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ELEVATION WALL SIGNS

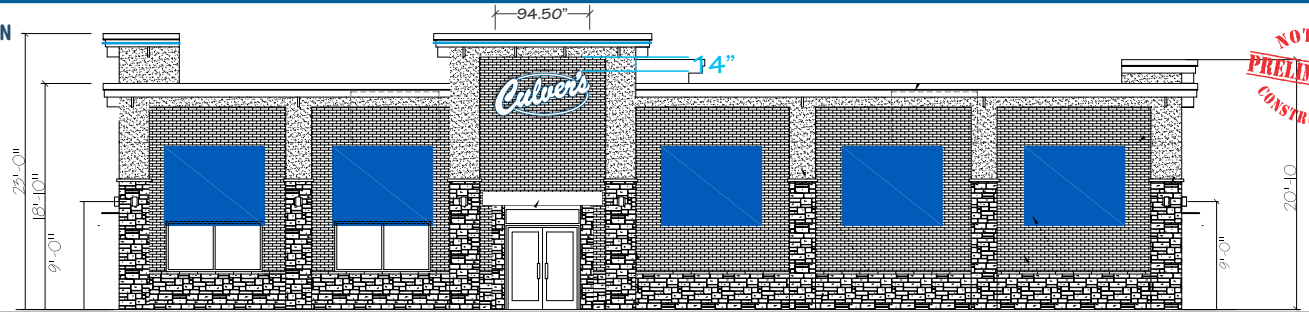
SL-45 & SL-30 Illuminated White Script Channel Letters

SL-SERIES

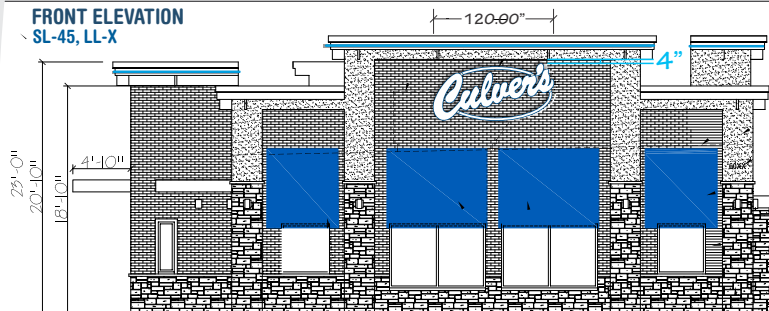
- Channel letter construction
- One piece (saddle capped sections)
- LED internal illumination
- Typical application for new construction
- Embedded power supplies
- UL marked product
- No install pattern needed, level line scribed in back of sign



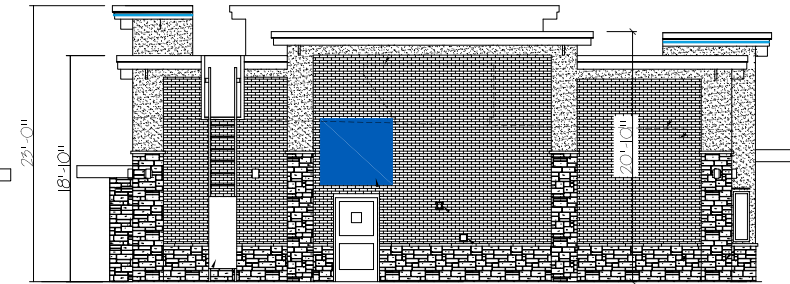
MAIN ELEVATION
SL-30, LL-X



FRONT ELEVATION
SL-45, LL-X



REAR ELEVATION



DRIVE THRU ELEVATION
LL-X, BB-1



SCALE: 1/16" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

SIGN SQUARE FOOTAGE

MAIN ELEVATION: QTY-1 SL-30 (44.37" X 94.50") = 29.12 SF
 FRONT ELEVATION: QTY-1 SL-45 (56.00" X 120.00") = 46.67 SF
 REAR ELEVATION:
 DRIVE THRU ELEVATION: QTY-1 BB-1 (17.67" X 27.88") = 3.42 SF

NOTES

LL-X LED accent strip lighting typical placements:
 MAIN: (2) places - FRONT: (3) Places - REAR: 2,
 DRIVE THRU: (2) places
 BB-1 typical Drive-Thru placement: DRIVE THRU



DATE CREATED / REVISION HISTORY

4/29/24 - NEW

SALES PERSON:
MARK WESSELL

DESIGNED BY:
J KROEGER

AO:
52561



AD-1 ADDRESS NUMBERS

Item A.

WHITE LAKE, MI

Routed Address Numbers

AD-1

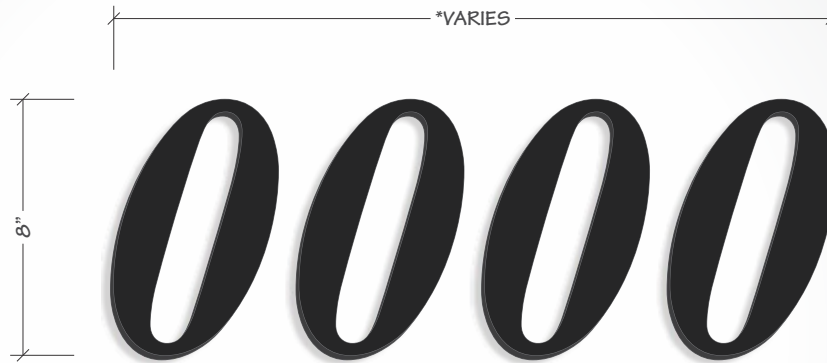
Address letters as required for building occupancy

Size & quantity may vary

Stud/adhesive mounting

1/2" thick, black XPVC

NOTE: Address to be verified with G.C. prior to mfg.



*SEE NOTE



SCALE: 1" = 6'

* Determined by physical address numbers

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

TYPICAL INSTALLATION

*SEE NOTE



SCALE: 1/8" = 1'

NOTES

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--------------------------------------	----------------------------------	---------------------

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DIR DIRECTIONAL SIGNS

Item A.

WHITE LAKE, MI

Illuminated Directional Signs

DIR

- All aluminum construction
- LED internal illumination
- Totally self contained lighting
- Polycarbonate thermoformed faces
- Face removal for service
- Site plans show placement & field orientation
- UL marked product

DIRECTIONAL SIGN 1
DIR-D10-D12



SIDE: A



SIDE: B

**NOT FOR
PRELIMINARY
CONSTRUCTION**

DIRECTIONAL SIGN 2
DIR-#-#

DIRECTIONAL SIGN 3
DIR-#-#

SIGN CONCEPTUAL

NOTE:
SIGN FACE SHOWN IS FOR DIMENSIONAL DRAWING ONLY (CULVER'S LOGO). ACTUAL LOCATION SIGN FACES ARE SHOWN ON LEFT.

NOTES

SQUARE FOOTAGE CALCULATIONS:
MATHEMATICAL: 2.55 SF
RECTANGULAR: 3.24 SF

SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	AO: 52561
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SCALE: 3/4" = 1'

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*ALL MEASUREMENTS ARE APPROXIMATE



DTC-2 DRIVE-THRU CANOPY

Item A.

WHITE LAKE, MI

Drive-Thru Canopy For Order Confirmation System (OCS)

DTC-2

All aluminum construction

Rated for 160 mph winds (3 second burst) & heavy northern states snow loads

Order Confirmation System (OCS) by others

Rear panel (door) access - lockable

Provides protection from rain for DT customer

Houses OCS, speaker & microphone

QTY: 2

Culver's



NOTE:
DISPLAY/ELECTRONIC/
ELECTRICAL & COMMUNICATION
SERVICES BY G.C.

SCALE: 3/8" = 1'



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CONSTRUCTION

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NOTES

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SALES PERSON:
MARK WESSELL

DESIGNED BY:
J KROEGER

AO:
52561

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ENVIRONMENTALLY RESPONSIBLE

 **SPRINGFIELD SIGN**
www.springfieldsign.com

FCO-3 INTERIOR SIGN

Item A.

WHITE LAKE, MI

FCO Interior Sign with City & State

FCO-3

0.25" painted aluminum plate

Routed to shape

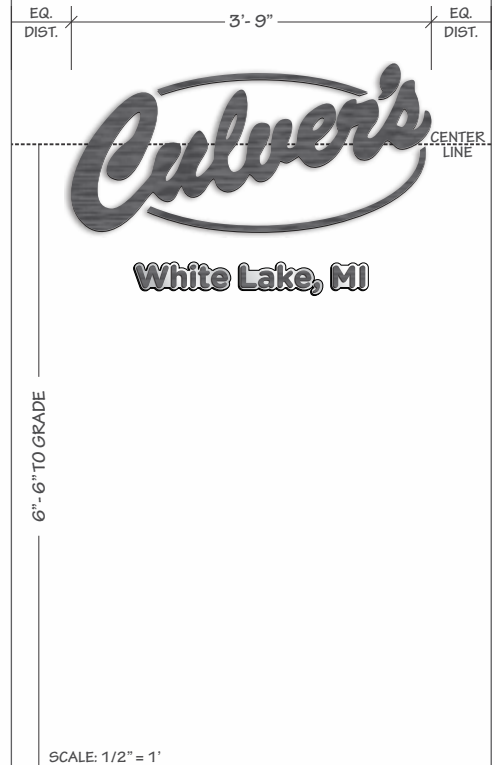
Pin mounted for rough surface application

VHB tape for smooth wall application

Mounting pattern with fastener instructions



SIGN PLACEMENT



SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	AO: 52561
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MAX-1 MAXIMUM OCCUPANCY SIGN

Item A.

WHITE LAKE, MI

Interior Maximum Occupancy Sign

MAX-1

3/16" White acrylic substrate

Direct to surface printing

3M¹ VHB peel & stick adhesive on back

"MAXIMUM OCCUPANCY" must be verified prior to manufacturing

1 - 3M is a registered trademark of Minnesota Mining & Manufacturing



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CONSTRUCTION

SCALE: 3" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
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NOTES

REVISION HISTORY

4/29/24 - NEW

SALES PERSON:
MARK WESSSELL

DESIGNED BY:
J KROEGER

AO:
52561

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ENVIRONMENTALLY RESPONSIBLE

 **SPRINGFIELD SIG**
www.springfieldsign.com

MB-DT-46 EXTERIOR MENU BOARD

Blue Outdoor Drive-Thru Menu Board

MB-DT-46

Standard Menu Board for Drive-Thru Lane

LED Internal Illumination

POP Graphic panels must be purchased separately

POPP-Out magnet access panels included for easy in & out of POP panels

"-CS" option for 160mph coastal wind standards available

Locking rear access doors (4)

QTY: 2



FRONT



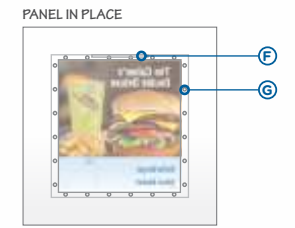
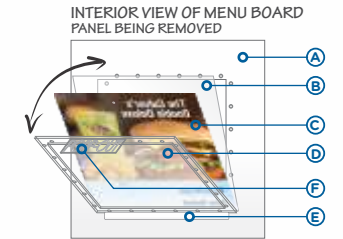
REAR



SCALE: 3/8" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

POPP-Out Point Of Purchase Panel System



- A - INSIDE BACK OF MENU BOARD FACE (ONLY ONE PANEL SHOWN FOR CLARITY)
- B - FRONT PANEL IS ANTI-GLARE (CLEAR) FOR INCREASED VISIBILITY
- C - POP PANEL - PRODUCT GRAPHIC
- D - REAR PANEL FITTED WITH POPP-Out PANEL
- E - SUPPORTING "TIP TRAY" FOR PANELS (SELF ALIGNING)
- F - POPP-Out TAB HANDLE
- G - PAIRED MAGNETIC "LATCH" (MAGNETS EMBEDDED IN POP-Out PANEL & BACK OF MENU BOARD)

SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	AO: 52561
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DATE CREATED / REVISION HISTORY	
4/23/24 - NEW	

MB-ID-84 INTERIOR MENU BOARD

Item A.

WHITE LAKE, MI

Blue Indoor Menu Board

MB-ID-84

- Easy lift up & out graphic panel
- American Beech Wood surround
- Surround is painted black
- LED internal illumination
- Ultra low power consumption

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CONSTRUCTION

FRONT VIEW



END VIEW



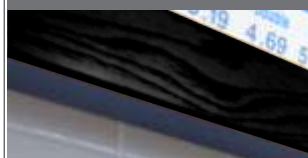
SCALE: 3/8" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

NOTES

MENU BOARD TO INSTALL CENTERED TO THE FRONT CASH REGISTER COUNTER

WOOD SURROUND



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SALES PERSON:
MARK WESSELL

DESIGNED BY:
J KROEGER

AO:
52561

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 **SPRINGFIELD SIGN**
www.springfieldsign.com

RR-1-G, RR-1-L, RR-3 RESTROOM SIGNS

Restroom Signs

RR-1-G
RR-1-L
RR-3

RR-1 SERIES RESTROOM SIGNS

- Injection molded plastic
- ADA compliant
- Raised braille
- Self adhesive back

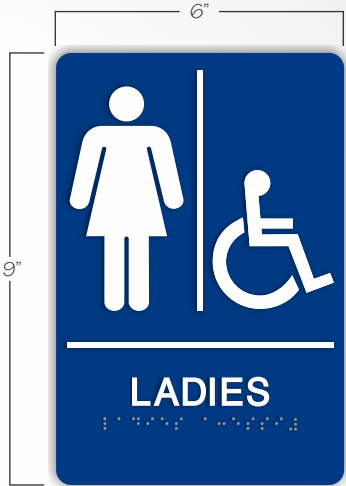
RR-3 SIGN

- White aluminum substrate - laminated with black core
- Digitally printed blue copy routed to shape

NOT FOR PRELIMINARY CONSTRUCTION



RR-1-G
GENTLEMEN



RR-1-L
LADIES

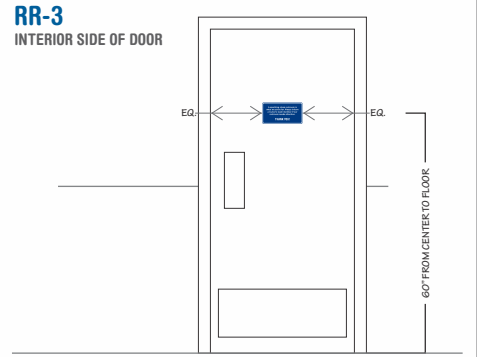
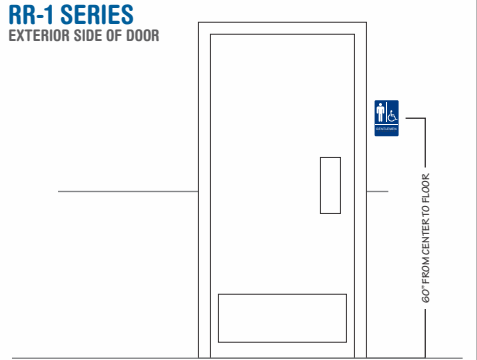


RR-3
LADIES

SCALE: 3" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

SIGN MOUNTING LOCATIONS



SCALE: 1-1/2" = 1'

SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	A0: 52561
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4/23/24 - NEW	



V-1, V-5, V-6 DOOR & WINDOW VINYL

Entry Door & Drive-Thru Vinyl Lettering

V-1-1
V-5-1
V-6

3M¹ HP white vinyl substrate

UV digitally printed image (blue)

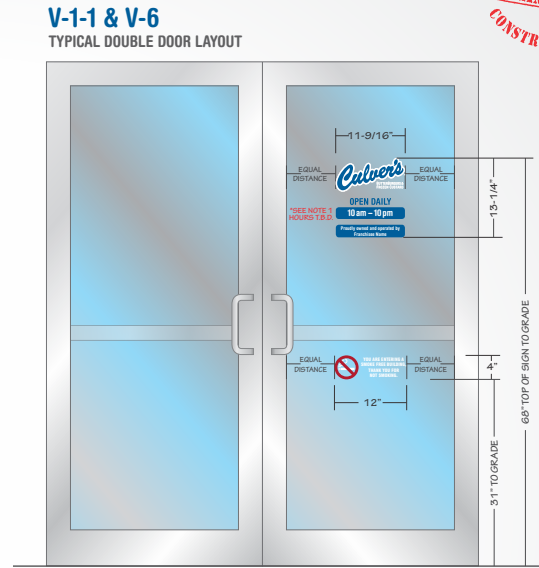
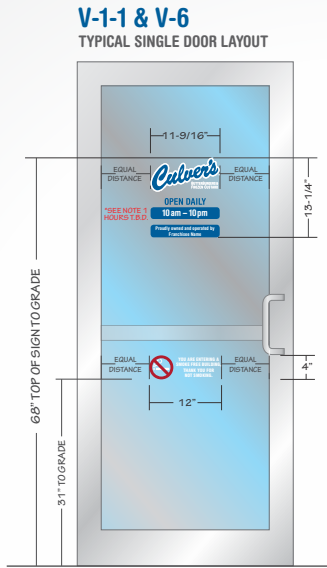
Satin gloss over laminate

Contour cut

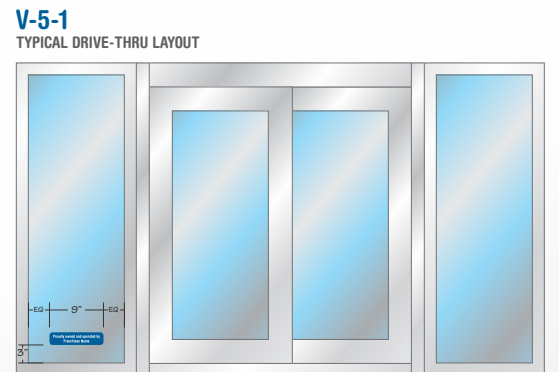
First surface application

NOTE 1: Business hours shown are typical. However, each location may be different than shown.

1 - 3M is a registered trademark of Minnesota Mining & Manufacturing



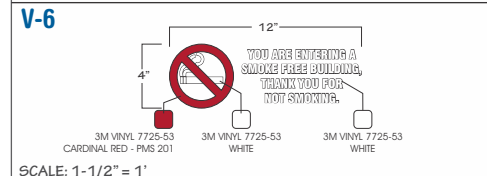
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SCALE: 3/8" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

SIGN SPECIFICATIONS



SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	AO: 52561
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DATE CREATED / REVISION HISTORY	
4/23/24 - NEW	

VHD-1 VEHICLE HEIGHT DETECTOR

Vehicle Height Detector for Drive-Thru Lane

VHD-1

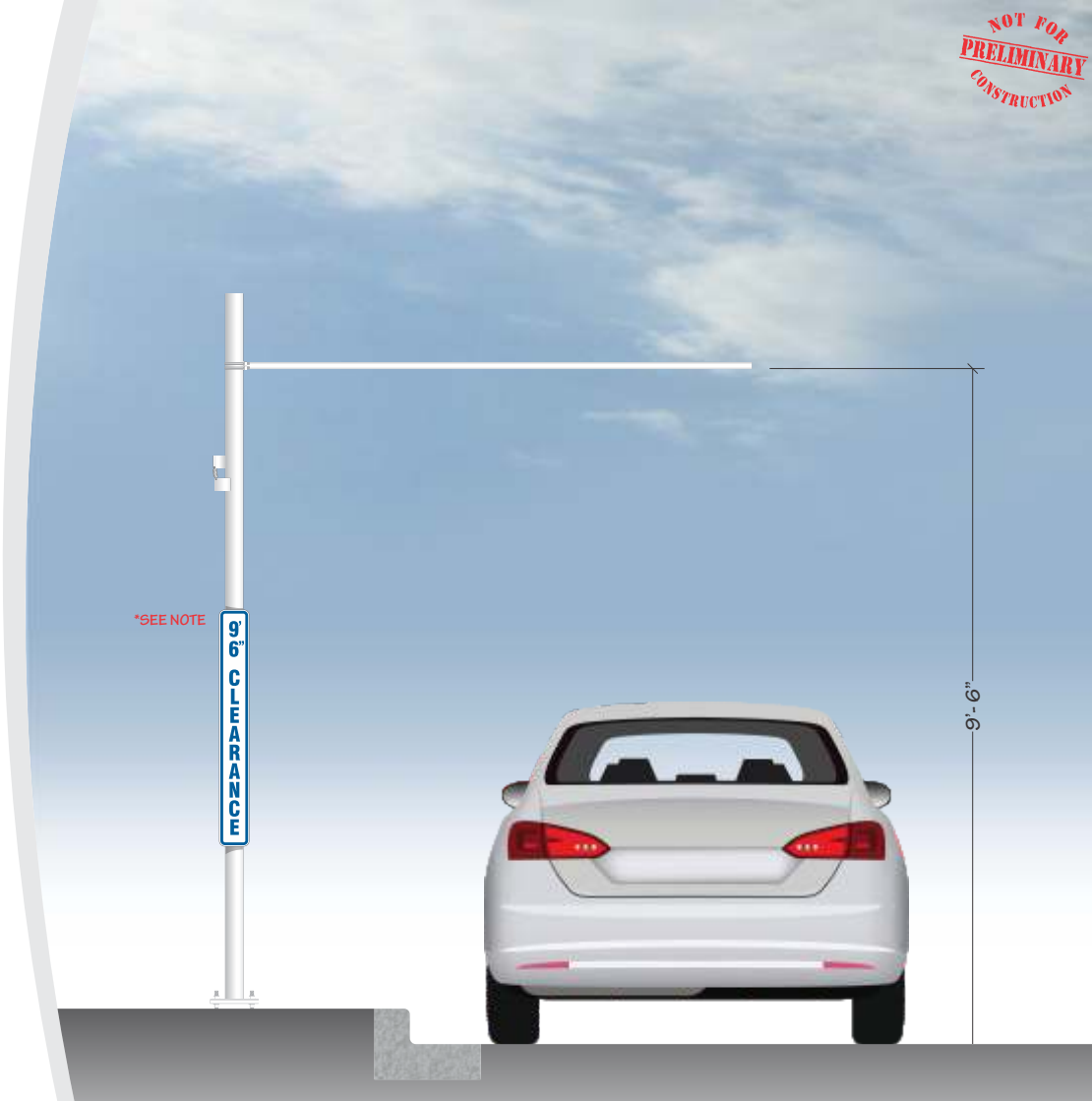
All steel (painted) construction

Re-settable if engaged

Used to help protect canopies from advancing vehicles that are too tall

NOTE: Clearance height must be verified prior to mfg.

QTY: 2



NOT FOR PRELIMINARY CONSTRUCTION

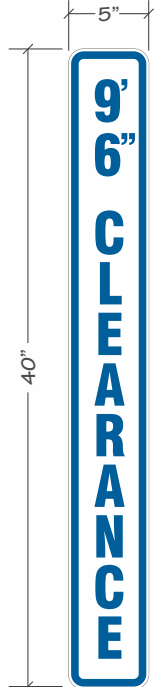
*SEE NOTE

SCALE: 1/2" = 1'

*SCALE AND COLORS NOT REPRESENTATIVE FROM EMAIL ATTACHMENTS
*ALL MEASUREMENTS ARE APPROXIMATE

CLEARANCE PANEL

*SEE NOTE



SCALE: 1" = 1'

SALES PERSON: MARK WESSELL	DESIGNED BY: J KROEGER	A0: 52561
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Drive-Thru Sound Levels

Some municipalities have adopted regulations aimed at controlling the acoustic noise levels in residential and (or) commercial areas. These regulations are of particular importance to drive-thru operators because the drive-thru is viewed as a source of noise. The noise originates both from the vehicles themselves and from the drive-thru communications system. This white paper addresses common questions related to sound from the communications system.

Note: Because every site is different and each municipality has its own regulations, HME is unable to make specific recommendations for compliance or give any assurance that any particular system configuration will comply with any given regulations. Statements made in this paper should be taken as general guidelines, but to ensure compliance, the site planner should retain the services of a qualified acoustic consultant equipped to make the necessary measurements.

In the drive-thru, the primary source of sound other than the vehicles is often the drive-thru communications system. Outbound audio includes the order taker's voice and any sound provided by the message repeater. The outbound audio is delivered by the speaker and must be loud enough to be clearly heard by the customer over the noise of the customer's vehicle, any local traffic and other ambient background noises in the area. However, if it is too loud, the sound can be objectionable to neighbors or even violate specific regulations.

HME base stations are equipped with a feature known as Automatic Volume Control or "AVC" which can be used to reduce the outbound sound pressure level based on ambient noise. When AVC is active, the outbound level is reduced to a level that is 15 dB above the ambient noise level at the speaker post microphone, but it **never** increases the level above what would be heard with AVC turned off. This feature can considerably reduce the SPL during quiet periods and may help in satisfying local requirements.

Sound levels are measured in units of dB SPL and usually include a frequency variable weight referred to as "A Weighting". For this reason, the units are frequently written as "dBA SPL" and that notation will be used throughout this paper. The sound pressure level from a speaker decreases as the distance away increases. However, it can be difficult to predict how much reduction will actually occur. For a single point sound source like an alarm bell hanging in air, the SPL drops approximately 6 dB every time the distance from the source doubles. Thus if one starts one foot away, the level will be 36 dB lower when one is 64 feet away. Unfortunately, speakers are neither single point sources nor are they hanging in air. Rather, speakers are mounted in a variety of different type enclosures. Further, the building, the ground and even other cars in proximity all effect the sound's direction and decay rate. All of this tends to make the sound more directional and the decay rate less predictable.

This paper provides some "typical" measurements taken outdoors under specific circumstances. These measurements can be used as a guide for what levels might occur in a drive-through installation. These measurements were taken using "pink noise", a type of noise frequently used for acoustic testing, at levels simulating the loudest speech expected from an order taker.

All typical measurements provided here were taken using the following equipment:

- Base station: HME ION IQ set to factory default levels
- Communicator: HME COM6000
- Speaker: HME SP10
- Speaker post: Texas Digital model 107150

The measurement environment was as follows:

- Asphalt parking lot 50 ft from any building
- Ambient background noise level: ~47 dBA SPL
- Nearest vehicle not part of measurement: 15 ft

Initial measurements were taken with AVC off, no vehicle in front of the speaker post, and no other obstructions within at least 100 ft of the speaker. These are not “normal” conditions for a drive-thru, but they do yield one worst-case measurement. Under these conditions, the sound pressure level 1 foot in front of the speaker is 90 dBA SPL. At 17 feet, it drops down to a normal conversational level of 66 dBA SPL, but does not drop to 60 dBA until a distance of 55 feet. Figure 1 shows the loudness contours for both 60 dBA and 66 dBA levels. Since the primary concern is noise abatement at a distance, higher level contours are not shown.

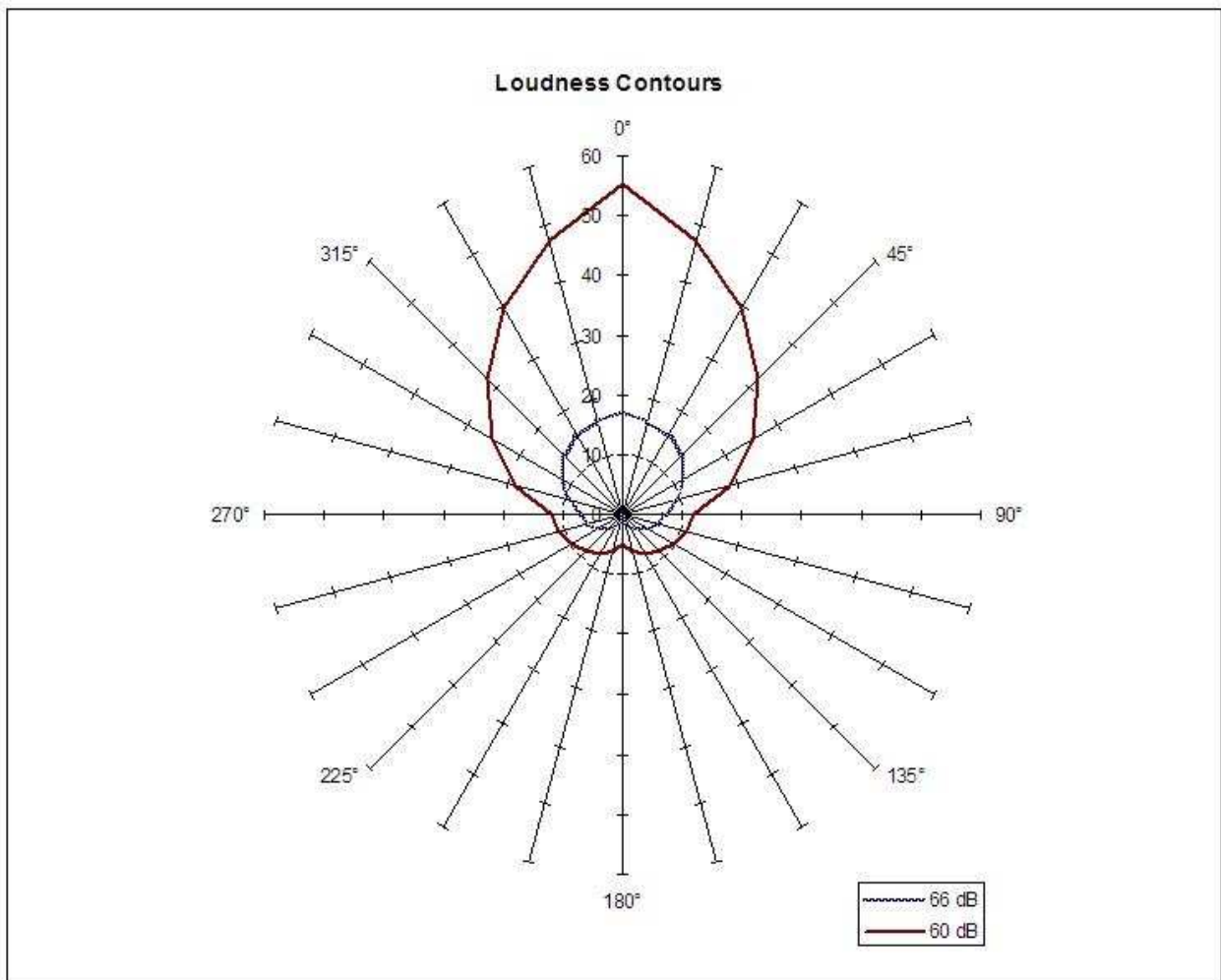


Figure 1 – SP10 SPL Contours

With a vehicle parked in front of the speaker, the shape of the contour changes dramatically and depends on many factors including the height, size, shape, and angle of the vehicle. Because of the tremendous differences in vehicles, positioning, and lane construction, HME cannot predict with any certainty the shape of the resulting SPL contours. However, generally, the shape flattens and the loudest sounds are found at angles to the front and rear of the vehicle with the front being louder.

AVC Operation

AVC measures the ambient noise level in the drive-thru and adjusts the outbound level down so that it is **never more than 15 dB above the ambient noise level**. This is particularly useful at night when there is less traffic on surrounding streets and fewer cars in the drive-thru. It may also be useful in situations where the regulations do not specify specific sound pressure levels, but use terms like “reasonable” or “sufficient”. Because AVC adjusts continuously, it ensures that the outbound level is high enough to be heard by the customer whatever the conditions may be.

As an example, if the ambient noise level is 47 dBA, AVC will adjust the outbound level to approximately 62 dBA at a position about 1 ft from the speaker. Given this condition, the SPL will be below the ambient noise level less than 20 ft away from the post.

Since AVC adjusts based on the noise level measured at the speaker post, a noisy vehicle will drive the outbound level up. Thus, the use of AVC will not guarantee that the SPL is below any particular level for all vehicles or conditions. However, it will keep the outbound level from becoming excessively loud.

Guidelines

HME cannot make specific recommendations, but here are some general things that can be done to minimize issues:

Do

- Place the speaker post where vehicles can get close to it. This allows the outbound level to be kept to a minimum.
- Use brick or concrete walls to isolate the installation from adjacent residences. These walls make good barriers, but must be high enough that sounds do not easily go over them.
- Adjust the outbound level to the minimum necessary to be clearly heard by customers
- Use AVC in situations where noise abatement is an issue to further reduce outbound levels during quiet periods.

Don't

- Face the speaker post toward busy streets. This increases the ambient noise level and makes it necessary to use higher outbound levels.
- Place the speaker post on a curve in the lane. Curves force vehicles to be further away from the post, which results in higher outbound level requirements and makes it difficult for order takers to hear customers.
- Face the speaker post or the drive-thru lane at adjacent residences. Remember that the highest sound levels are likely to be directly opposite the post and off the front of vehicles.
- Turn the outbound level up higher than necessary.
- Rely on vegetation to reduce sounds. Plants have rather limited impact on sound levels.

Memo

Re: Drive-Thru Sound Pressure Levels From the Menu Board or Speaker Post

The sound pressure levels from the menu board or speaker post are as follows:

1. Sound pressure level (SPL) contours (A weighted) were measured on a typical HME SPP2 speaker post. The test condition was for pink noise set to 84 dBA at 1 foot in front of the speaker. All measurements were conducted outside with the speaker post placed 8 feet from a non-absorbing building wall and at an oblique angle to the wall. These measurements should not be construed to guarantee performance with any particular speaker post in any particular environment. They are typical results obtained under the conditions described above.
2. The SPL levels are presented for different distances from the speaker post:

Distance from the Speaker (Feet)	SPL (dBA)
1 foot	84 dBA
2 feet	78 dBA
4 feet	72 dBA
8 feet	66 dBA
16 feet	60 dBA
32 feet	54 dBA

3. The above levels are based on factory recommended operating levels, which are preset for HME components and represent the optimum level for drive-thru operations in the majority of the installations.

Also, HME incorporates automatic volume control (AVC) into many of our Systems. AVC will adjust the outbound volume based on the outdoor, ambient noise level. When ambient noise levels naturally decrease at night, AVC will reduce the outbound volume on the system. See below for example:

Distance from Outside Speaker	Decibel Level of standard system with 45 dB of outside noise <u>without</u> AVC	Decibel level of standard system with 45 dB of outside noise <u>with</u> AVC active
1 foot	84 dBA	60 dBA
2 feet	78 dBA	54 dBA
4 feet	72 dBA	48 dBA
8 feet	66 dBA	42 dBA
16 feet	60 dBA	36 dBA

If there are any further questions regarding this issue please contact HME customer service at 1-800-848-4468.

Thank you for your interest in HME's products.



D-Series Size 0 LED Area Luminaire



Catalog
Number

Item A.

Notes

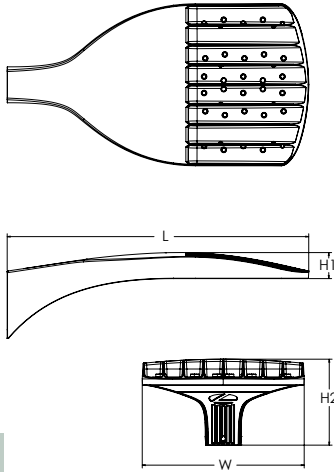
Type

Hit the Tab key or mouse over the page to see all interactive elements.

d^sseries

Specifications

EPA:	0.44 ft ² (0.04 m ²)
Length:	26.18" (66.5 cm)
Width:	14.06" (35.7 cm)
Height H1:	2.26" (5.7 cm)
Height H2:	7.46" (18.9 cm)
Weight:	23 lbs (10.4 kg)



ds Design Select options indicated by this color background.

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.



Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED	Series	LEDs	Color temperature ²	Color Rendering Index ²	Distribution	Voltage	Mounting
DSX0 LED	Forward optics	P1 P5	30K 3000K	70CRI	AFR Automotive front row	T5M Type V medium	Shipped included SPA Square pole mounting (#8 drilling, 3.5" min. SQ pole) RPA Round pole mounting (#8 drilling, 3" min. RND pole) SPA5 Square pole mounting (#5 drilling, 3" min. SQ pole) ⁹ RPA5 Round pole mounting (#5 drilling, 3" min. RND pole) ⁹ SPA8N Square narrow pole mounting (#8 drilling, 3" min. SQ pole) WBA Wall bracket ¹⁰ MA Mast arm adapter (mounts on 2 3/8" OD horizontal tenon)
		P2 P6	40K 4000K	70CRI	T1S Type I short	T5LG Type V low glare	
		P3 P7	50K 5000K	70CRI	T2M Type II medium	T5W Type V wide	
		P4	(this section 80CRI only, extended lead times apply)	80CRI	T3M Type III medium	BLC3 Type III backlight control ³	
		P10 ¹ P12 ¹			27K 2700K	80CRI	
	P11 ¹ P13 ¹	30K 3000K	80CRI	T4M Type IV medium	LCCO Left corner cutoff ³		
	Rotated optics	P10 ¹ P12 ¹ P11 ¹ P13 ¹	35K 3500K 40K 4000K 50K 5000K	80CRI 80CRI 80CRI 80CRI	T4LG Type IV low glare ³	RCCO Right corner cutoff ³	
					TFTM Forward throw medium		
					MVOLT (120V-277V) ⁴		
					HVOLT (347V-480V) ^{5,6}		
XVOLT (277V-480V) ^{7,8}							

Control options	Other options	Finish (required)
Shipped installed NLTAIR2 PIRHN nLight AIR gen 2 enabled with bi-level motion / ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. ^{11, 12, 18, 19} PIR High/low, motion/ambient sensor, 8-40' mounting height, ambient sensor enabled at 2fc. ^{13, 18, 19} PER NEMA twist-lock receptacle only (controls ordered separate) ¹⁴ PERS Five-pin receptacle only (controls ordered separate) ^{14, 19}	PER7 Seven-pin receptacle only (controls ordered separate) ^{14, 19} FAO Field adjustable output ^{15, 19} BL30 Bi-level switched dimming, 30% ^{16, 19} BL50 Bi-level switched dimming, 50% ^{16, 19} DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) ¹⁷	Shipped installed HS Houseside shield (black finish standard) ²⁰ L90 Left rotated optics ¹ R90 Right rotated optics ¹ CCE Coastal Construction ²¹ HA 50°C ambient operation ²² BAA Buy America(n) Act Compliant SF Single fuse (120, 277, 347V) ²⁴ DF Double fuse (208, 240, 480V) ²⁴ Shipped separately EGSR External Glare Shield (reversible, field install required, matches housing finish) BSDB Bird Spikes (field install required)
		DDBXD Dark Bronze DBLXD Black DNAXD Natural Aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white



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Accessories

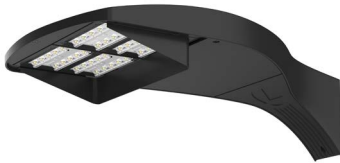
Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²³
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²³
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²³
DSHORT SBK	Shorting cap ²³
DSX0HS P#	House-side shield (enter package number P1-7, P10-13 in place of #)
DSXRPA (FINISH)	Round pole adapter (#8 drilling, specify finish)
DSXRPAS (FINISH)	Round pole adapter #5 drilling (specify finish)
DSXSPA5 (FINISH)	Square pole adapter #5 drilling (specify finish)
DSX0EGSR (FINISH)	External glare shield (specify finish)
DSX0SDB (FINISH)	Bird spike deterrent bracket (specify finish)

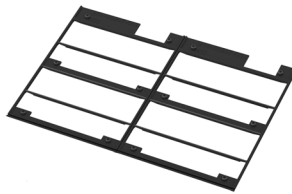
NOTES

- 1 Rotated optics available with packages P10, P11, P12 and P13. Must be combined with option L90 or R90.
- 2 30K, 40K, and 50K available in 70CRI and 80CRI. 27K and 35K only available with 80CRI. Contact Technical Support for other possible combinations.
- 3 T3LG, T4LG, BLC3, BLC4, LCCO, RCCO not available with option HS.
- 4 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- 5 HVOLT driver operates on any line voltage from 347-480V (50/60 Hz).
- 6 HVOLT not available with package P1, P2 and P10 when combined with option NLTAIR2 PIRHN or option PIR.
- 7 XVOLT operates with any voltage between 277V and 480V (50/60 Hz).
- 8 XVOLT not available in packages P1, P2 or P10. XVOLT not available with fusing (SF or DF).
- 9 SPAS and RPAS for use with #5 drilling only (Not for use with #8 drilling).
- 10 WBA cannot be combined with Type 5 distributions plus photocell (PER).
- 11 NLTAIR2 and PIRHN must be ordered together. For more information on nLight Air 2.
- 12 NLTAIR2 PIRHN not available with other controls including PIR, PER, PER5, PER7, FAO, BL30, BL50 and DMG. NLTAIR2 PIRHN not available with P1, P2 and P10 using HVOLT. NLTAIR2 PIRHN not available with P1, P2 and P10 using XVOLT. NLTAIR2 PIRHN not available with P1 using MVOLT.
- 13 PIR not available with NLTAIR2, PER, PER5, PER7, FAO BL30, BL50 and DMG. PIR not available with P1, P2 and P10 using HVOLT. PIR not available with P1, P2 and P10 using XVOLT. PIR not available with P1 using MVOLT.
- 14 PER/PER5/PER7 not available with NLTAIR2, PIR, BL30, BL50. Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- 15 FAO not available with other dimming control options NLTAIR2 PIRHN, PIR, PER5, PER7, BL30, BL50, or DMG.
- 16 BL30 and BL50 are not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, FAO and DMG. BL30 or BL50 must specify 120, 277 or 347V. Consult tech support for 208, 240 or 480V.
- 17 DMG not available with NLTAIR2 PIRHN, PIR, PER, PER5, PER7, BL30, BL50 and FAO.
- 18 Reference Motion Sensor Default Settings table on page 4 to see functionality.
- 19 Reference Controls Options table on page 4.
- 20 Option HS not available with T3LG, T4LG, BLC3, BLC4, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
- 21 CCE option not available with option B5 and EGSR. Contact Technical Support for availability.
- 22 Option HA not available with performance packages P6, P7, P12 and P13.
- 23 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
- 24 Single fuse (SF) requires 120V, 277V, or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF).

Shield Accessories



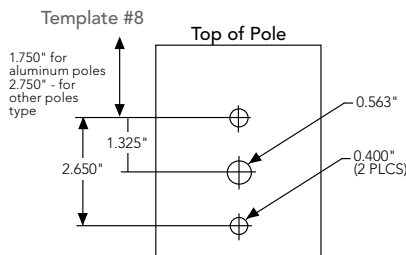
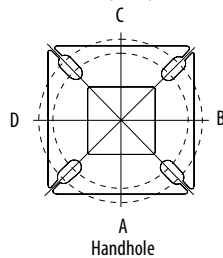
External Glare Shield (EGSR)



House Side Shield (HS)

Drilling

HANDHOLE ORIENTATION (from top of pole)



Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	3.5"	3.5"	3.5"	3.5"		3.5"
RPA	#8	3"	3"	3"	3"	3"	3"
SPAS	#5	3"	3"	3"	3"		3"
RPAS	#5	3"	3"	3"	3"	3"	3"
SPA8N	#8	3"	3"	3"	3"		3"

DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 with SPA	0.44	0.88	0.96	1.18	---	1.16
DSX0 with SPAS, SPA8N	0.51	1.02	1.06	1.26	---	1.29
DSX0 with RPA, RPAS	0.51	1.02	1.06	1.26	1.24	1.29
DSX0 with MA	0.64	1.28	1.24	1.67	1.70	1.93

Isofootcandle plots for the DSX0 LED P7 40K 70CRI. Distances are in units of mounting height (20').



Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient	Lumen Multiplier	
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°C	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
0	1.00
25,000	0.94
50,000	0.89
100,000	0.80

FAO Dimming Settings

FAO Position	% Wattage	% Lumen Output
8	100%	100%
7	93%	95%
6	80%	85%
5	66%	73%
4	54%	61%
3	41%	49%
2	29%	36%
1	15%	20%

*Note: Calculated values are based on original performance package data. When calculating new values for given FAO position, use published values for each package based on input watts and lumens by optic type.

Electrical Load

	Performance Package	LED Count	Drive Current (mA)	Wattage	Current (A)					
					120V	208V	240V	277V	347V	480V
Forward Optics (Non-Rotated)	P1	20	530	34	0.28	0.16	0.14	0.12	0.10	0.07
	P2	20	700	45	0.38	0.22	0.19	0.16	0.13	0.09
	P3	20	1050	69	0.57	0.33	0.29	0.25	0.20	0.14
	P4	20	1400	94	0.78	0.45	0.39	0.34	0.27	0.19
	P5	40	700	89	0.75	0.43	0.38	0.33	0.26	0.19
	P6	40	1050	136	1.14	0.66	0.57	0.49	0.39	0.29
	P7	40	1300	170	1.42	0.82	0.71	0.62	0.49	0.36
Rotated Optics (Requires L90 or R90)	P10	30	530	51	0.42	0.24	0.21	0.18	0.15	0.11
	P11	30	700	67	0.57	0.33	0.28	0.25	0.20	0.14
	P12	30	1050	103	0.86	0.50	0.43	0.37	0.30	0.22
	P13	30	1300	129	1.07	0.62	0.54	0.46	0.37	0.27

LED Color Temperature / Color Rendering Multipliers

	70 CRI		80CRI		90CRI	
	Lumen Multiplier	Availability	Lumen Multiplier	Availability	Lumen Multiplier	Availability
5000K	102%	Standard	92%	Extended lead-time	71%	(see note)
4000K	100%	Standard	92%	Extended lead-time	67%	(see note)
3500K	100%	(see note)	90%	Extended lead-time	63%	(see note)
3000K	96%	Standard	87%	Extended lead-time	61%	(see note)
2700K	94%	(see note)	85%	Extended lead-time	57%	(see note)

Note: Some LED types are available as per special request. Contact Technical Support for more information.

Motion Sensor Default Settings

Option	Unoccupied Dimmed Level	High Level (when occupied)	Photocell Operation	Dwell Time	Ramp-up Time	Dimming Fade Rate
PIR	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min
NLTAIR2 PIRHN	30%	100%	Enabled @ 2FC	7.5 min	3 sec	5 min

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS (not available on DSX0)	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire. Cannot be used with other controls options that need the 0-10V leads.
PIR	Motion sensor with integral photocell. Sensor suitable for 8' to 40' mounting height.	Luminaires dim when no occupancy is detected.	Acuity Controls rSBG	Cannot be used with other controls options that need the 0-10V leads.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSBG	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app. Cannot be used with other controls options that need the 0-10V leads.
BL30 or BL50	Integrated bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output	BLC device provides input to 0-10V dimming leads on all drivers providing either 100% or dimmed (30% or 50%) control by a secondary circuit	BLC UVOLT1	BLC device is powered off the 0-10V dimming leads, thus can be used with any input voltage from 120 to 480V

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics																							
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K					40K					50K								
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)								
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW				
P1	33W	20	530	T1S	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157				
				T2M	4,545	1	0	2	137	4,736	1	0	2	143	4,829	1	0	2	145				
				T3M	4,597	1	0	2	138	4,791	1	0	2	144	4,885	1	0	2	147				
				T3LG	4,107	1	0	1	124	4,280	1	0	1	129	4,363	1	0	1	131				
				T4M	4,666	1	0	2	141	4,863	1	0	2	146	4,957	1	0	2	149				
				T4LG	4,244	1	0	1	128	4,423	1	0	1	133	4,509	1	0	1	136				
				TFTM	4,698	1	0	2	141	4,896	1	0	2	147	4,992	1	0	2	150				
				T5M	4,801	3	0	1	145	5,003	3	0	1	151	5,101	3	0	1	154				
				T5W	4,878	3	0	1	147	5,084	3	0	2	153	5,183	3	0	2	156				
				T5LG	4,814	2	0	1	145	5,018	2	0	1	151	5,115	2	0	1	154				
				BLC3	3,344	0	0	1	101	3,485	0	0	1	105	3,553	0	0	1	107				
				BLC4	3,454	0	0	2	104	3,599	0	0	2	108	3,670	0	0	2	111				
				RCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108				
				LCCO	3,374	0	0	1	102	3,517	0	0	1	106	3,585	0	0	1	108				
				AFR	4,906	1	0	1	148	5,113	1	0	1	154	5,213	1	0	1	157				
				P2	45W	20	700	T1S	6,328	1	0	1	140	6,595	1	0	1	146	6,724	1	0	1	149
								T2M	5,862	1	0	2	130	6,109	1	0	2	135	6,228	1	0	2	138
T3M	5,930	1	0					3	131	6,180	1	0	3	137	6,301	1	0	3	140				
T3LG	5,297	1	0					1	117	5,521	1	0	1	122	5,628	1	0	1	125				
T4M	6,018	1	0					3	133	6,272	1	0	3	139	6,395	1	0	3	142				
T4LG	5,474	1	0					1	121	5,705	1	0	1	126	5,816	1	0	1	129				
TFTM	6,060	1	0					3	134	6,316	1	0	3	140	6,439	1	0	3	143				
T5M	6,192	3	0					1	137	6,453	3	0	2	143	6,579	3	0	2	146				
T5W	6,293	3	0					2	139	6,558	3	0	2	145	6,686	3	0	2	148				
T5LG	6,210	2	0					1	138	6,472	3	0	1	143	6,598	3	0	1	146				
BLC3	4,313	0	0					2	96	4,495	0	0	2	100	4,583	0	0	2	102				
BLC4	4,455	0	0					2	99	4,643	0	0	2	103	4,733	0	0	2	105				
RCCO	4,352	0	0					2	96	4,536	0	0	2	100	4,624	0	0	2	102				
LCCO	4,352	0	0					2	96	4,536	0	0	2	100	4,624	0	0	2	102				
AFR	6,328	1	0					1	140	6,595	1	0	1	146	6,724	1	0	1	149				
P3	69W	20	1050					T1S	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139
								T2M	8,343	2	0	3	121	8,694	2	0	3	126	8,864	2	0	3	129
				T3M	8,439	2	0	3	122	8,795	2	0	3	128	8,967	2	0	3	130				
				T3LG	7,539	1	0	2	109	7,857	1	0	2	114	8,010	1	0	2	116				
				T4M	8,565	2	0	3	124	8,926	2	0	3	129	9,100	2	0	3	132				
				T4LG	7,790	1	0	2	113	8,119	1	0	2	118	8,277	1	0	2	120				
				TFTM	8,624	1	0	3	125	8,988	1	0	3	130	9,163	2	0	3	133				
				T5M	8,812	3	0	2	128	9,184	4	0	2	133	9,363	4	0	2	136				
				T5W	8,955	4	0	2	130	9,333	4	0	2	135	9,515	4	0	2	138				
				T5LG	8,838	3	0	1	128	9,211	3	0	1	134	9,390	3	0	1	136				
				BLC3	6,139	0	0	2	89	6,398	0	0	2	93	6,522	0	0	2	95				
				BLC4	6,340	0	0	3	92	6,607	0	0	3	96	6,736	0	0	3	98				
				RCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95				
				LCCO	6,194	1	0	2	90	6,455	1	0	2	94	6,581	1	0	2	95				
				AFR	9,006	1	0	2	131	9,386	1	0	2	136	9,569	1	0	2	139				
				P4	93W	20	1400	T1S	11,396	1	0	2	122	11,877	1	0	2	128	12,109	2	0	2	130
								T2M	10,557	2	0	3	113	11,003	2	0	3	118	11,217	2	0	3	121
T3M	10,680	2	0					3	115	11,130	2	0	3	120	11,347	2	0	3	122				
T3LG	9,540	1	0					2	103	9,942	1	0	2	107	10,136	1	0	2	109				
T4M	10,839	2	0					3	117	11,296	2	0	3	121	11,516	2	0	4	124				
T4LG	9,858	1	0					2	106	10,274	1	0	2	110	10,474	1	0	2	113				
TFTM	10,914	2	0					3	117	11,374	2	0	3	122	11,596	2	0	3	125				
T5M	11,152	4	0					2	120	11,622	4	0	2	125	11,849	4	0	2	127				
T5W	11,332	4	0					3	122	11,811	4	0	3	127	12,041	4	0	3	129				
T5LG	11,184	3	0					1	120	11,656	3	0	2	125	11,883	3	0	2	128				
BLC3	7,768	0	0					2	83	8,096	0	0	2	87	8,254	0	0	2	89				
BLC4	8,023	0	0					3	86	8,362	0	0	3	90	8,524	0	0	3	92				
RCCO	7,838	1	0					2	84	8,169	1	0	2	88	8,328	1	0	2	90				
LCCO	7,838	1	0					2	84	8,169	1	0	2	88	8,328	1	0	2	90				
AFR	11,396	1	0					2	122	11,877	1	0	2	128	12,109	2	0	2	130				

Lumen Output

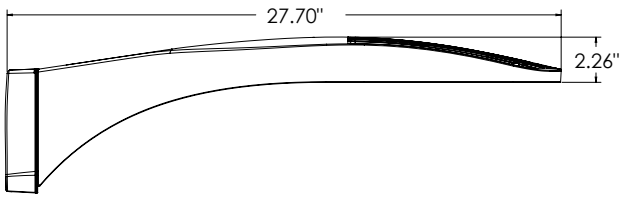
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

Forward Optics																							
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K					40K					50K								
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)								
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW				
P5	90W	40	700	T1S	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146				
				T2M	11,468	2	0	3	127	11,952	2	0	3	133	12,185	2	0	3	135				
				T3M	11,601	2	0	3	129	12,091	2	0	3	134	12,326	2	0	4	137				
				T3LG	10,363	2	0	2	115	10,800	2	0	2	120	11,011	2	0	2	122				
				T4M	11,774	2	0	4	131	12,271	2	0	4	136	12,510	2	0	4	139				
				T4LG	10,709	1	0	2	119	11,160	2	0	2	124	11,378	2	0	2	126				
				TFTM	11,856	2	0	3	132	12,356	2	0	4	137	12,596	2	0	4	140				
				T5M	12,114	4	0	2	134	12,625	4	0	2	140	12,871	4	0	2	143				
				T5W	12,310	4	0	3	137	12,830	4	0	3	142	13,080	4	0	3	145				
				T5LG	12,149	3	0	2	135	12,662	3	0	2	141	12,908	3	0	2	143				
				BLC3	8,438	0	0	2	94	8,794	0	0	2	98	8,966	0	0	2	99				
				BLC4	8,715	0	0	3	97	9,083	0	0	3	101	9,260	0	0	3	103				
				RCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100				
				LCCO	8,515	1	0	2	94	8,874	1	0	2	98	9,047	1	0	2	100				
				AFR	12,380	2	0	2	137	12,902	2	0	2	143	13,154	2	0	2	146				
				P6	137W	40	1050	T1S	17,545	2	0	3	128	18,285	2	0	3	133	18,642	2	0	3	136
								T2M	16,253	3	0	4	119	16,939	3	0	4	124	17,269	3	0	4	126
T3M	16,442	2	0					4	120	17,135	3	0	4	125	17,469	3	0	4	128				
T3LG	14,687	2	0					2	107	15,306	2	0	2	112	15,605	2	0	2	114				
T4M	16,687	2	0					4	122	17,391	3	0	5	127	17,730	3	0	5	129				
T4LG	15,177	2	0					2	111	15,817	2	0	2	115	16,125	2	0	2	118				
TFTM	16,802	2	0					4	123	17,511	2	0	4	128	17,852	2	0	5	130				
T5M	17,168	4	0					2	125	17,893	5	0	3	131	18,241	5	0	3	133				
T5W	17,447	5	0					3	127	18,183	5	0	3	133	18,537	5	0	3	135				
T5LG	17,218	4	0					2	126	17,944	4	0	2	131	18,294	4	0	2	134				
BLC3	11,959	0	0					3	87	12,464	0	0	3	91	12,707	0	0	3	93				
BLC4	12,352	0	0					4	90	12,873	0	0	4	94	13,124	0	0	4	96				
RCCO	12,067	1	0					3	88	12,576	1	0	3	92	12,821	1	0	3	94				
LCCO	12,067	1	0					3	88	12,576	1	0	3	92	12,821	1	0	3	94				
AFR	17,545	2	0					3	128	18,285	2	0	3	133	18,642	2	0	3	136				
P7	171W	40	1300					T1S	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129
								T2M	19,273	3	0	4	113	20,086	3	0	4	118	20,478	3	0	4	120
				T3M	19,497	3	0	5	114	20,319	3	0	5	119	20,715	3	0	5	121				
				T3LG	17,416	2	0	2	102	18,151	2	0	2	106	18,504	2	0	2	108				
				T4M	19,787	3	0	5	116	20,622	3	0	5	121	21,024	3	0	5	123				
				T4LG	17,997	2	0	2	105	18,756	2	0	2	110	19,121	2	0	2	112				
				TFTM	19,924	3	0	5	117	20,765	3	0	5	122	21,170	3	0	5	124				
				T5M	20,359	5	0	3	119	21,217	5	0	3	124	21,631	5	0	3	127				
				T5W	20,689	5	0	3	121	21,561	5	0	3	126	21,982	5	0	3	129				
				T5LG	20,418	4	0	2	120	21,279	4	0	2	125	21,694	4	0	2	127				
				BLC3	14,182	0	0	3	83	14,780	0	0	3	87	15,068	0	0	3	88				
				BLC4	14,647	0	0	4	86	15,265	0	0	4	89	15,562	0	0	4	91				
				RCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89				
				LCCO	14,309	1	0	3	84	14,913	1	0	3	87	15,204	1	0	3	89				
				AFR	20,806	2	0	3	122	21,683	2	0	3	127	22,106	2	0	3	129				

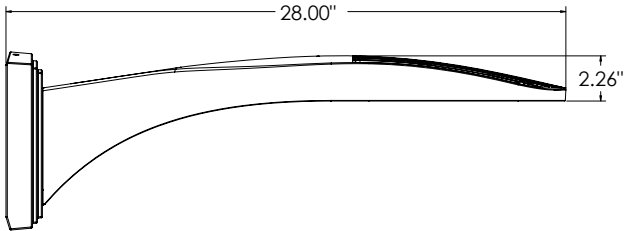
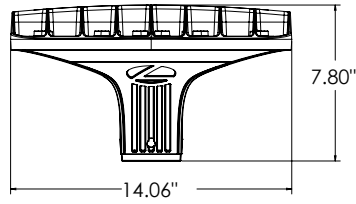
Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of configurations shown within the tolerances described within LM-79. Contact factory for performance data on any configurations not shown here.

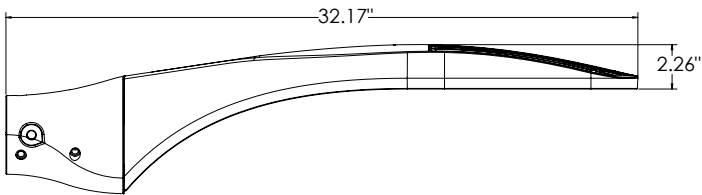
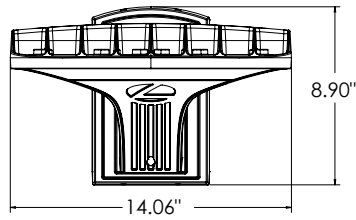
Rotated Optics																			
Performance Package	System Watts	LED Count	Drive Current (mA)	Distribution Type	30K					40K					50K				
					(3000K, 70 CRI)					(4000K, 70 CRI)					(5000K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	51W	30	530	T1S	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				T2M	6,854	3	0	3	135	7,144	3	0	3	140	7,283	3	0	3	143
				T3M	6,933	3	0	3	136	7,225	3	0	3	142	7,366	3	0	3	145
				T3LG	6,194	2	0	2	122	6,455	2	0	2	127	6,581	2	0	2	129
				T4M	7,036	3	0	3	138	7,333	3	0	3	144	7,476	3	0	3	147
				T4LG	6,399	2	0	2	126	6,669	2	0	2	131	6,799	2	0	2	134
				TFTM	7,086	3	0	3	139	7,385	3	0	3	145	7,529	3	0	3	148
				T5M	7,239	3	0	2	142	7,545	3	0	2	148	7,692	3	0	2	151
				T5W	7,357	3	0	2	145	7,667	3	0	2	151	7,816	4	0	2	154
				T5LG	7,260	3	0	1	143	7,567	3	0	1	149	7,714	3	0	1	152
				BLC3	5,043	3	0	3	99	5,256	3	0	3	103	5,358	3	0	3	105
				BLC4	5,208	3	0	3	102	5,428	3	0	3	107	5,534	3	0	3	109
				RCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				LCCO	5,089	0	0	2	100	5,303	0	0	2	104	5,407	0	0	2	106
				AFR	7,399	3	0	3	145	7,711	3	0	3	151	7,862	3	0	3	154
				P11	68W	30	700	T1S	9,358	3	0	3	138	9,753	3	0	3	143	9,943
T2M	8,669	3	0					3	127	9,034	3	0	3	133	9,211	3	0	3	135
T3M	8,768	3	0					3	129	9,138	3	0	3	134	9,316	3	0	3	137
T3LG	7,833	3	0					3	115	8,164	3	0	3	120	8,323	3	0	3	122
T4M	8,899	3	0					3	131	9,274	3	0	3	136	9,455	3	0	3	139
T4LG	8,093	3	0					3	119	8,435	3	0	3	124	8,599	3	0	3	126
TFTM	8,962	3	0					3	132	9,340	3	0	3	137	9,522	3	0	3	140
T5M	9,156	4	0					2	135	9,542	4	0	2	140	9,728	4	0	2	143
T5W	9,304	4	0					2	137	9,696	4	0	2	143	9,885	4	0	2	145
T5LG	9,182	3	0					1	135	9,569	3	0	1	141	9,756	3	0	1	143
BLC3	6,378	3	0					3	94	6,647	3	0	3	98	6,777	3	0	3	100
BLC4	6,587	3	0					3	97	6,865	3	0	3	101	6,999	3	0	3	103
RCCO	6,436	0	0					2	95	6,707	0	0	2	99	6,838	0	0	2	101
LCCO	6,436	0	0					2	95	6,707	0	0	2	99	6,838	0	0	2	101
AFR	9,358	3	0					3	138	9,753	3	0	3	143	9,943	3	0	3	146
P12	103W	30	1050					T1S	13,247	3	0	3	128	13,806	3	0	3	134	14,075
				T2M	12,271	4	0	4	119	12,789	4	0	4	124	13,038	4	0	4	126
				T3M	12,412	4	0	4	120	12,935	4	0	4	125	13,187	4	0	4	128
				T3LG	11,089	3	0	3	107	11,556	3	0	3	112	11,782	3	0	3	114
				T4M	12,597	4	0	4	122	13,128	4	0	4	127	13,384	4	0	4	129
				T4LG	11,457	3	0	3	111	11,940	3	0	3	116	12,173	3	0	3	118
				TFTM	12,686	4	0	4	123	13,221	4	0	4	128	13,479	4	0	4	130
				T5M	12,960	4	0	2	125	13,507	4	0	2	131	13,770	4	0	2	133
				T5W	13,170	4	0	3	127	13,726	4	0	3	133	13,994	4	0	3	135
				T5LG	12,998	3	0	2	126	13,546	3	0	2	131	13,810	3	0	2	134
				BLC3	9,029	3	0	3	87	9,409	3	0	3	91	9,593	3	0	3	93
				BLC4	9,324	4	0	4	90	9,718	4	0	4	94	9,907	4	0	4	96
				RCCO	9,110	1	0	2	88	9,495	1	0	2	92	9,680	1	0	2	94
				LCCO	9,110	1	0	2	88	9,494	1	0	2	92	9,680	1	0	2	94
				AFR	13,247	3	0	3	128	13,806	3	0	3	134	14,075	3	0	3	136
				P13	129W	30	1300	T1S	15,704	3	0	3	122	16,366	3	0	3	127	16,685
T2M	14,547	4	0					4	113	15,161	4	0	4	118	15,457	4	0	4	120
T3M	14,714	4	0					4	114	15,335	4	0	4	119	15,634	4	0	4	121
T3LG	13,145	3	0					3	102	13,700	3	0	3	106	13,967	3	0	3	108
T4M	14,933	4	0					4	116	15,563	4	0	4	121	15,867	4	0	4	123
T4LG	13,582	3	0					3	105	14,155	3	0	3	110	14,431	3	0	3	112
TFTM	15,039	4	0					4	117	15,673	4	0	4	122	15,979	4	0	4	124
T5M	15,364	4	0					2	119	16,013	4	0	2	124	16,325	4	0	2	127
T5W	15,613	5	0					3	121	16,272	5	0	3	126	16,589	5	0	3	129
T5LG	15,409	3	0					2	120	16,059	3	0	2	125	16,372	4	0	2	127
BLC3	10,703	4	0					4	83	11,155	4	0	4	87	11,372	4	0	4	88
BLC4	11,054	4	0					4	86	11,520	4	0	4	89	11,745	4	0	4	91
RCCO	10,800	1	0					2	84	11,256	1	0	2	87	11,475	1	0	3	89
LCCO	10,800	1	0					2	84	11,255	1	0	2	87	11,475	1	0	3	89
AFR	15,704	3	0					3	122	16,366	3	0	3	127	16,685	4	0	4	130



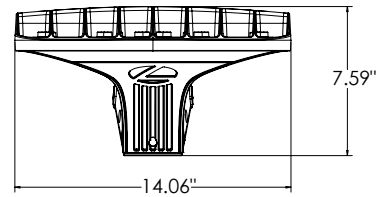
DSX0 with RPA, RPA5, SPA5, SPA8N mount
Weight: 25 lbs



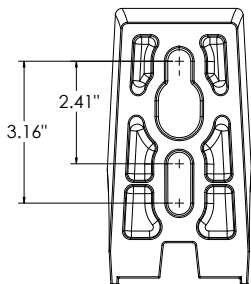
DSX0 with WBA mount
Weight: 27 lb



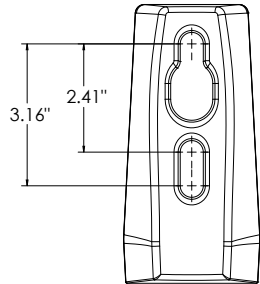
DSX0 with MA mount
Weight: 28 lbs



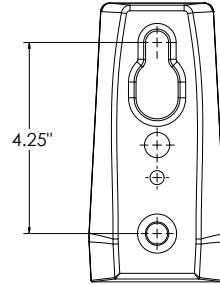
SPA (STANDARD ARM)



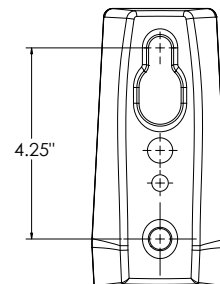
RPA



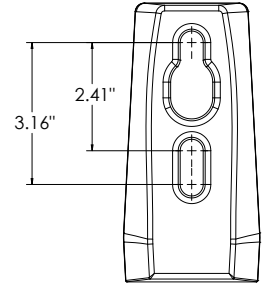
SPA5



RPA5

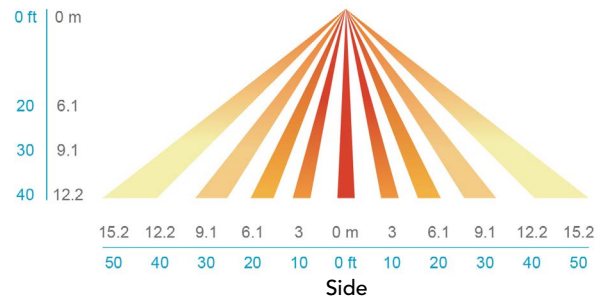
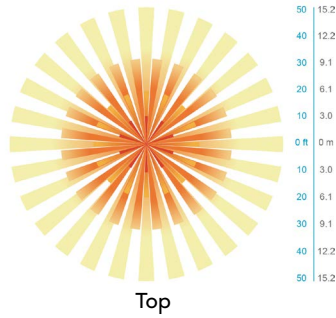
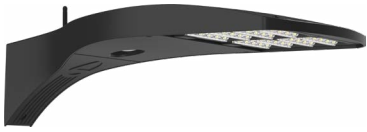


SPA8N



nLight Sensor Coverage Pattern

NLTAIR2 PIRHN



FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing driver compartment is completely sealed against moisture and environmental contaminants (IP66). Vibration rated per ANSI C136.31 for 3G. Low EPA (0.44 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

COASTAL CONSTRUCTION (CCE)

Optional corrosion resistant construction is engineered with added corrosion protection in materials and/or pre-treatment of base material under super durable paint. Provides additional corrosion protection for applications near coastal areas. Finish is salt spray tested to over 5,000 hours per ASTM B117 with scribe rating of 10. Additional lead-times may apply.

OPTICS

Precision-molded proprietary silicone lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. 80CRI configurations are also available. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L80/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. PIR integrated motion sensor with on-board photocell feature field-adjustable programming and are suitable for mounting heights up to 40 feet. Control option BL features a bi-level device that allows a second control circuit to switch all light engines to either 30% or 50% light output.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Integral mounting arm allows for fast mounting using Lithonia standard #8 drilling and accommodates pole drilling's from 2.41 to 3.12" on center. The standard "SPA" option for square poles and the "RPA" option for round poles use the #8 drilling. For #5 pole drillings, use SPA5 or RPA5. Additional mountings are available including a wall bracket (WBA) and mast arm (MA) option that allows luminaire attachment to a 2 3/8" horizontal mast arm.

LISTINGS

UL listed to meet U.S. and Canadian standards. UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP66 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

GOVERNMENT PROCUREMENT

BAA – Buy America(n) Act: Product with the BAA option qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product with the BAA option also qualifies as manufactured in the United States under DOT Buy America regulations.

BABA – Build America Buy America: Product with the BAA option also qualifies as produced in the United States under the definitions of the Build America, Buy America Act.

Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY

5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Catalog Number	Item A.
Notes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE

Provides years of maintenance-free illumination for outdoor use in residential & commercial applications. Ideal for applications such as lighting walkways and stairways for safety and security.

CONSTRUCTION

Cast-aluminum housing with corrosion-resistant paint in either dark bronze or white finish.

ADA compliant.

OPTICS

4000K CCT LEDs.

Polycarbonate lens protects the LED from moisture, dirt and other contaminants.

LUMEN MAINTENANCE: The LED will deliver 70% of its initial lumens at 50,000 hour average LED life. See Lighting Facts label on page 2 for performance details.

ELECTRICAL

MVOLT driver operates on any line voltage from 120-277V

Operating temperature -30°C to 40°C.

1KV surge protection standard.

INSTALLATION

Surface mounts to universal junction box (provided by others).

LISTINGS

UL Listed to U.S. and Canadian safety standards for wet locations.

Tested in accordance with IESNA LM-79 and LM-80 standards.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at:

www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.

Outdoor General Purpose

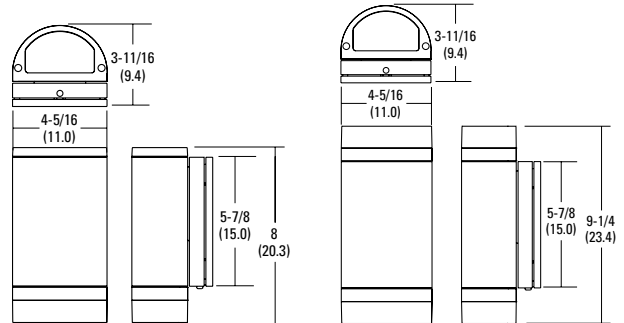
OLLWD & OLLWU

LED WALL CYLINDER LIGHT



Specifications

All dimensions are inches (centimeters)



ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: OLLWD LED P1 40K MVOLT DDB

Series	Performance Package	Color temperature (CCT)	Voltage	Finish
OLLWD LED Downlight	P1	40K 4000K	MVOLT 120V-277V	DDB Dark bronze
OLLWU LED Up & downlight			120 120V ¹	WH White ²

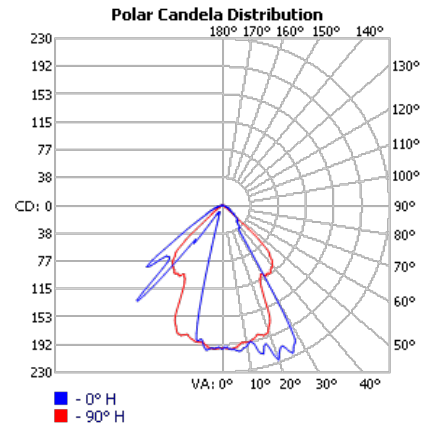
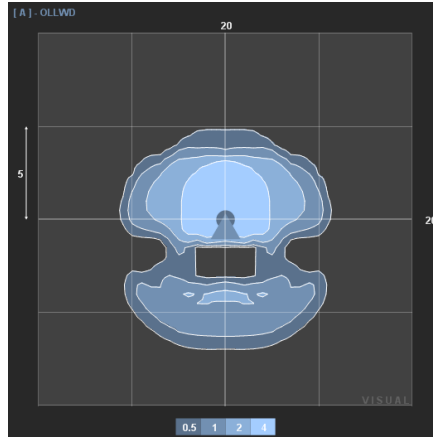
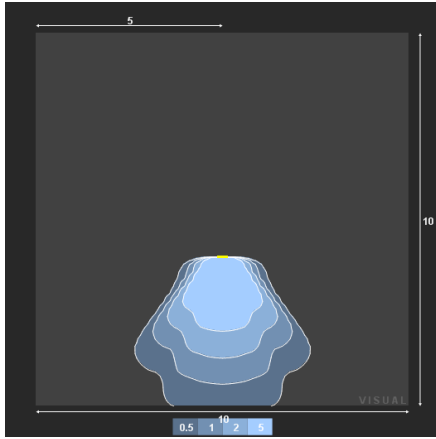
Notes

1. Only available with OLLWU and in DDB.
2. Only available with OLLWU.

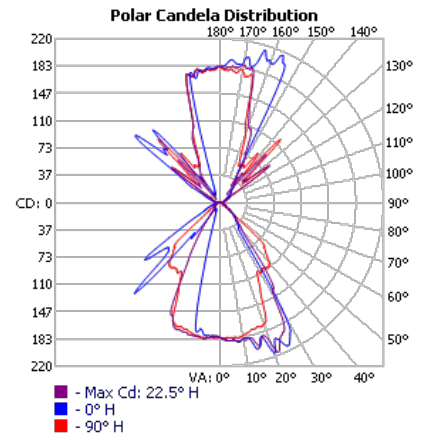
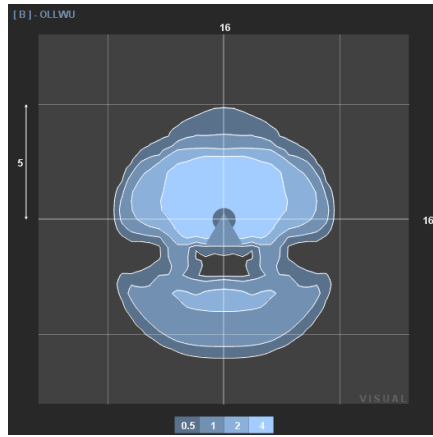
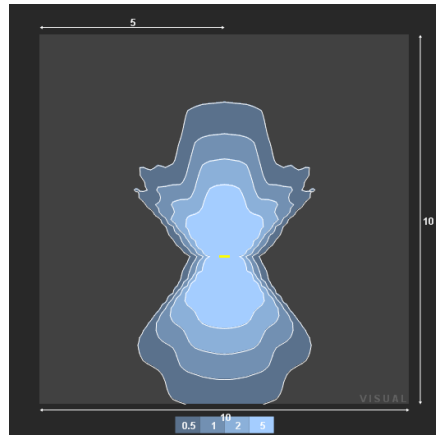
PHOTOMETRICS

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's Outdoor LED homepage
 Tested in accordance with IESNA LM-79 and LM-80 standards.

OLLWD



OLLWU



OLLWD

Lithonia Lighting

LED lighting facts
 A Program of the U.S. DOE

Light Output (Lumens)	533
Watts	9.1
Lumens per Watt (Efficacy)	58.63

Color Accuracy
 Color Rendering Index (CRI) 70

Light Color
 Correlated Color Temperature (CCT) 4000 (Bright White)

2700K 3000K 4500K 6500K

Warm White Bright White Daylight

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: NLSM-W8FYMF (7/20/2016)
 Model Number: OLLWD LED P1 40K XXXXX XXX
 Type: Luminaire - Other

OLLWU

Lithonia Lighting

LED lighting facts
 A Program of the U.S. DOE

Light Output (Lumens)	947
Watts	14
Lumens per Watt (Efficacy)	67.64

Color Accuracy
 Color Rendering Index (CRI) 70

Light Color
 Correlated Color Temperature (CCT) 4000 (Bright White)

2700K 3000K 4500K 6500K

Warm White Bright White Daylight

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: NLSM-Y7HW8B (7/20/2016)
 Model Number: OLLWU LED P1 40K XXXXX XXX
 Type: Luminaire - Other

PLANNED BUSINESS DEVELOPMENT AGREEMENT
CULVER'S

THIS PLANNED BUSINESS DEVELOPMENT AGREEMENT (the "Agreement"), dated _____, 2024, is made and entered into by and between the **CHARTER TOWNSHIP OF WHITE LAKE**, a Michigan municipal corporation, having the address of 7525 Highland Road, White Lake, Michigan 48383, hereinafter referred to as and called the "Township", and **BLUEPOINT MANAGEMENT, LLC**, a Michigan limited liability company, whose address is 7734 Somerhill Lane, Clarkston, Michigan 48348 ("Culver's").

RECITALS:

A. Culver's is the fee owner of the real property in White Lake Township, Michigan, which is more particularly described on **Exhibit A**, attached hereto and made a part hereof (hereinafter referred to as the "Property").

B. The Property is zoned PB, Planned Business District, and is currently master planned Commercial Corridor and is located within the White Lake Township Corridor Improvement Authority District.

C. This Planned Business Development consists of 1.69 acres of real property as described on Exhibit A. The Property is a vacant outlot located north of M-59, west of Bogie Lake Road, and southeast of Meijer.

D. Culver's has applied to the Township to develop the Property as a 4,085 sq. ft restaurant, including an outdoor seating area and a drive-through, using the Planned Business Development (PBD) process under the Township's Zoning Ordinance (the "Development").

E. The Planning Commission recommended approval with conditions of the Preliminary Site Plan dated March 18, 2024 at its May 2, 2024 Planning Commission Meeting, after having held a public hearing on that date.

F. On May 21, 2024, the Township Board considered and approved the Preliminary Site Plan dated March 18, 2024.

G. A revised Site Plan, dated September 5, 2024, was submitted consistent with Planning Commission's recommendation and Township Board's approval, which is attached hereto as **Exhibit B** and referred to as the "PBD Plan." All references in this Agreement to the PBD Plan shall be deemed to refer to the revised Site Plan attached hereto as **Exhibit B**.

H. The Township considered and relied upon the representations by Culver's of certain public benefits of the Culver's PBD, which benefits were summarized in Culver's Written Statement dated March 18, 2024.

I. Culver's has represented to the Township its objective to be achieved by the Development is to provide a desired service to the community at a convenient location.

J. Culver's has represented to the Township that it has no intention to sell or lease the Development (except for a related-party lease that may be entered into between Culver's and an affiliate that will operate the business on the Property).

K. The Township desires to ensure that the real property that is depicted on the PBD Plan is developed in accordance with, and used for the purposes permitted by the approved PBD Plan, the related documents and undertakings of Culver's, and all applicable laws, ordinances, regulations, and standards; and Culver's desires to proceed with obtaining engineering division approval of the proposed site plan and the issuance of permits required to develop the Property in accordance with the approved PBD Plan.

NOW, THEREFORE, it is hereby agreed as follows:

1. The Township has granted its approval of the PBD Plan and this Agreement under the Planned Development Approval Process of Section 6.7 of the Township's Zoning Ordinance, which approval is subject to the terms and conditions of this Agreement. The parties agree and acknowledge that the Property shall be developed only in accordance with:

- a. all applicable provisions of the White Lake Township Code of Ordinances, including (without limitation) Section 6.7 of the Zoning Ordinance relating to Planned Developments;
- b. the PBD Plan, as such PBD Plan was approved by the Planning Commission on _____, 2024, which PBD Plan shall also constitute the approved final site plan, landscape and tree preservation plan for the Development, because Culver's chose to submit the PBD Plan in sufficient detail so as to allow the PBD Plan to act as the final site plan, landscape plan and tree preservation plan for the Development;
- c. engineering construction plan review and approval by the Township's Engineering Consultant, which plans shall be submitted by Culver's in accordance with all applicable laws, ordinances, regulations and standards; and
- d. this Agreement.

The items listed in 1.a. through d. above are referred to in this Agreement as the "PBD Documents."

2. The permitted use of the Property shall be those permitted in the PB, Planned Business District.

3. The Township's approval of the PBD Documents, and the use of the Property and any development thereof, are subject to compliance with this Agreement and the following conditions:

- a. Submission by Culver's of engineering construction plans and approval by the Township's Engineering Consultant. Such plans shall comply with all applicable ordinances, standards, rules, regulations, and requirements of the Township as determined by the Engineering Consultant, including without limitation its comments in the September 24, 2024 correspondence to the Community Development Director relating to the PBD Plan.
- b. The requirements of the Township as determined by the Planning Consultant, including without limitation its comments in the September 19, 2024 letter report issued by Mr. Matteo Passalacqua, of Carlisle Wortman Associates, Inc., the Township's Planning Consultant, relating to the PBD Plan.
- c. Conditions imposed on the Development by the Planning Commission during site plan review, including the hours of operation for the outdoor seating area (limited to 10:00 a.m. to 11:00 p.m.), conditions recommended by the Township's Planning Consultant and Engineer and any other staff, and any other reasonable conditions, which may be subsequently imposed on the site plan, landscape plan, and engineering plans that are not contrary to this Agreement and the approved PBD Plan.
- d. All improvements shown on the PBD Plan and PBD Documents completed at Culver's sole cost and expense, in accordance with applicable ordinances, rules, standards and regulations.
- e. The only deviations from otherwise applicable Township ordinances that shall be permitted are those deviations described below:

- f. Culver's shall ensure that the proposed use on the Property shall not exceed the performance criteria found in the Township's Zoning Ordinance, Section 4.47.
- g. Prior to commencement of construction of the Development, Culver's will contribute the sum of \$10,000.00 to the Corridor Improvement Authority to benefit its Development and the community.
- h. Architectural style, elevation features and materials must be consistent with Culver's representations to the Planning Commission at its Planning Commission Meeting on _____, 2024, and in accordance with the PBD Plan.
- i. The proposed development schedule for the development of the Property is attached as **Exhibit C**, which may be modified by Culver's as necessary or appropriate, with the Township's consent.
- j. The Traffic Impact Study was waived by the Community Development Director, in accordance with Section 6.3 of the Zoning Ordinance.

k. [unless waived] The Community Impact Study prepared by _____, dated _____, is incorporated by reference into this Agreement. Culver's acknowledges the reliance by the Township on this study in the approval of the PBD Plan.

4. The Zoning Board of Appeals shall have no jurisdiction over the Property or the application of this Agreement.

5. Except for deviations specifically approved by the Township under this Agreement, if any, and the approved PBD Plan, the Township Code of Ordinances, Zoning Ordinance and all applicable regulations of the Township shall apply to the Property, and any violation of such Codes, Ordinances and regulations by Culver's, its successors or assigns, or occupant of the Property shall be deemed a breach of this Agreement, as well as a violation of the Township Code or Ordinance.

6. (a) Any breach of this Agreement shall constitute a nuisance *per se* which shall be abated. The parties therefore agree that, in the event of a breach of this Agreement by Culver's, which is not cured in accordance with this Agreement, the Township, in addition to any other relief to which it may be entitled at law or in equity, shall be entitled under this Agreement to an order of a court of competent jurisdiction providing for relief in the form of injunctive relief or specific performance requiring abatement of the nuisance *per se*.

(b) In the event of a breach of this Agreement, the Township may notify Culver's of the occurrence of the breach and issue a written notice requiring the breach be cured within thirty (30) days; provided, however, that if the breach, by its nature, cannot be cured within thirty (30) days, Culver's shall not be in the breach hereunder if Culver's commences the cure within the thirty (30) day period and diligently pursues the cure to completion. Failure to comply with such notice shall, in addition to the remedy provided in subsection (c) below and any other relief to which the Township may be entitled in equity or at law, render Culver's liable to the Township in any suit for enforcement for actual costs incurred by the Township including, but not limited to, reasonable attorneys' fees, expert witness fees and the like.

(c) In addition to the above described remedies, in the event the breach is due to a failure to maintain the Property in a first class condition, using commercially reasonable standards consistent with the PBD plan and this Agreement, and the Township provided the notice described in subsection (b), above, which notice sets forth the date, time and place of a hearing before the Township Board for the purpose of allowing Culver's to be heard as to why the Township should not proceed to perform the maintenance which has not been undertaken. In that hearing, the time for curing such deficiencies and the hearing itself may be extended. If, following the hearing, the Township Board shall determine that the deficiency has not been cured within the time specified at the hearing, then upon five (5) days written notice to Culver's, the Township shall thereupon have the power and authority, but not the obligation, to enter upon the Property or cause its agents or contractors to enter upon the Property to cure such deficiency as reasonably found by the Township to be appropriate and/or necessary, in a manner so as to reasonably minimize any interference with the business operations on the Property and the cost and expense of such curative action, including the cost of notices by the Township and reasonable legal, planning, and engineering fees and costs incurred by the Township, shall be paid by Culver's. Such amount shall constitute a lien on the Property and the Township may require such costs and

expenses to be paid prior to the commencement of work. If such costs and expenses have not been paid within sixty (60) days of a billing to Culver's, all unpaid amounts may be a) placed on a delinquent tax roll of the Township as to the Property and shall accrue interest and penalties and shall be collected as and shall be deemed delinquent real property taxes according to the laws made and provided for the collection of delinquent real property taxes in the discretion of the Township; or b) assessed against Culver's and collected as a special assessment on the next annual Township tax roll; or c) collected by use of the applicable provisions of Michigan law providing for foreclosure by advertisement, Culver's having specifically granted the Township the required power of sale to do so; or d) collected by suit against the Owner. If suit is initiated, the Owner shall pay all the Township's legal fees and costs. The selection of remedy shall be at the sole option of the Township, and election of one remedy shall not waive the use of any other remedy

7. This Agreement may not be amended except in writing signed by the parties and recorded in the same manner as this Agreement.

8. The parties understand and agree that if any part, term, or provision of this Agreement is held by a court of competent jurisdiction, and as a final enforceable judgment, to be illegal or in conflict with any law of the State of Michigan or the United States, the validity of the remaining portions or provisions of this Agreement shall not be affected, and the rights and obligations of the parties shall be construed and enforced as if this Agreement did not contain the particular part, term, or provisions held to be invalid.

9. This Agreement shall be governed by the laws of the State of Michigan, both as to interpretation and performance. In the event of any litigation relating to this Agreement or the PBD, the parties consent to the venue in and to the exclusive jurisdiction of the courts of and in the State of Michigan, including the federal courts.

10. No waiver of any breach of this Agreement shall be held to be a waiver of any other or subsequent breach. A delay in enforcement of any provision of this Agreement shall not be construed as a waiver or estoppel of the Township's right to eventually enforce, or take action to enforce, the terms of this Agreement. All remedies afforded in this Agreement shall be taken and construed as cumulative; that is, all remedies afforded in this Agreement are in addition to every other remedy provided by law.

11. The signers of this Agreement warrant and represent that they have the authority to sign this Agreement on behalf of their respective principals and the authority to bind each party to this Agreement according to its terms. Further, each of the parties represent that the execution of this Agreement has been duly authorized and is binding on such parties.

12. This Agreement shall run with the land described herein as the Property and bind the parties, their heirs, successors, and assigns. This Agreement shall be recorded in the Oakland County Register of Deeds by the Township. The parties acknowledge that the Property is subject to changes in ownership and/or control at any time, but that heirs, successors, and assigns shall take their interest subject to the terms of this Agreement. All references to "Culver's" in this Agreement shall also include its heirs, successors, and assigns.

13. (a) Culver's has negotiated with the Township the terms of the PBD Documents, including this Agreement, and such documentation represents the product of the joint efforts and mutual agreements of Culver's and the Township.

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

14. Culver's acknowledges that, at the time of the execution of this Agreement, Culver's has not yet obtained engineering approvals for the development of the Property. Culver's acknowledges that the Township's Engineering Consultant may impose additional conditions other than those contained in this Agreement during their plan reviews and approvals as authorized by law; provided, however, that such conditions shall not be inconsistent with the PBD Plan or PBD Documents and shall not change or eliminate any development right authorized thereby. The plans approved by the Engineering Consultant and any conditions imposed thereby, shall be incorporated into and made a part of this Agreement automatically upon issuance of the Engineering Consultant's approval of same and without the necessity of amending this Agreement, and shall be enforceable against Culver's in the event it proceeds with the development of the Property.

15. It is understood that construction of some of the improvements included in the PBD Documents may require the approval of other governmental agencies.

16. None of the terms or provisions of this Agreement shall be deemed to create a partnership or joint venture between the Developer and the Township.

17. The recitals contained in this Agreement and all exhibits attached to this Agreement and referred to herein shall for all purposes be deemed to be incorporated in this Agreement by this reference and made a part of this Agreement.

18. This Agreement, together with the PBD Documents, are intended as the complete integration of all understandings between the parties related to the subject matter herein. No prior contemporaneous addition, deletion, or other amendment shall have any force or effect whatsoever, unless embodied herein in writing. No subsequent notation, renewal, addition, deletion or other amendment shall have any force or effect unless embodied in a written amendatory or other agreement executed by the parties required herein, other than additional conditions, which may be attached to site plan approvals as stated in Section 14 above.

19. The parties intend that this Agreement shall create no third-party beneficiary interest except for an assignment pursuant to this Agreement. The parties are not presently aware of any actions by them or any of their authorized representatives that would form the basis for interpretation construing a different intent and in any event expressly disclaim any such acts or actions, particularly in view of the integration of this Agreement.

20. Where there is a question with regard to applicable regulations for a particular aspect of the development, or with regard to clarification, interpretation, or definition of terms or regulations, and there are no apparent express provisions of the PBD Documents which apply, the Township Council, in the reasonable exercise of its discretion, shall determine the regulations of the Township's Zoning Ordinance, as that Ordinance may have been amended, or other Township Ordinances that shall be applicable, provided that such determination is not inconsistent with the nature and intent of this Agreement and the PBD Documents. In the event of a conflict or inconsistency between two or more provisions of the PBD Documents, the more restrictive provision, as determined in the reasonable discretion of the Township Council, shall apply. In the event there exists any conflict between this Agreement and the PBD Plans and current and future Township Zoning Ordinance provisions, this Agreement and the PBD Plan shall apply.

[Signatures on Next Page]

On this ____ day of _____, 2024, before me personally appeared Rik Kowall, the Township Supervisor, and Anthony Noble, the Township Clerk, who acknowledged that they signed and attested to this Agreement on behalf of the Township of White Lake.

Notary Public
Oakland County, Michigan
Acting in Oakland County, Michigan
My Commission Expires: _____

Exhibits:

- A –Property Legal Description
- B – PBD Plans
- C – Development Schedule

DRAFT

Drafted Jointly By:
Lisa J. Hamameh, Esq.
Rosati Schultz Joppich & Amtsbuechler, P.C.
27555 Executive Drive, Suite 250
Farmington Hills, MI 48331-3550

When Recorded, Return To:
Township Clerk
Township of White Lake
7525 Highland Road
White Lake, MI 48383

and

Brandon Muller, Esq.
Clark Hill
220 Park Street, Suite 200
Birmingham, MI 48009-3477

DRAFT

EXHIBIT A

PROPERTY LEGAL DESCRIPTION

DRAFT

EXHIBIT B

PBD PLANS

DRAFT

Exhibit C

Development Schedule

DRAFT