



AGENDA
REGULAR MEETING OF THE
WINDSOR HEIGHTS
PLANNING AND ZONING COMMISSION
Wednesday, September 6, 2023 - 5:30 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST
ZOOM LINK: <https://us02web.zoom.us/j/7832856334> MEETING ID:
851 7150 9104

1. **Call to Order**
2. **Approval of Agenda**
3. **Approval of the Minutes:**
 - A. Approve Minutes of the Planning and Zoning Commission Meeting on July 19, 2023
4. **Consideration of Preliminary Plat: 6300 Hickman Avenue**
 - A. Staff Report and Application Materials
5. **Consideration of Site Plan: 6300 Hickman Road (Silverstar Car Wash)**
 - A. Staff Report and Application Materials
6. **Consideration of Site Plan: 1105 73rd Street (B-Bop)**
 - A. Staff Report and Application Materials
7. **Adjourn**

*It is possible that members, including a quorum of members of the City Council and other committees may be present. No City business will be discussed outside of this agenda.

City of Windsor Heights Planning and Zoning Commission Meeting Minutes
Wednesday, July 19, 2023 - 5:30 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST
ZOOM MEETING ID: 783 285 6334 (<https://us02web.zoom.us/j/7832856334>)

1. Call to Order

Chair Geoff Wood called the meeting to order at 5:34 PM. Present: Bob Bishop, David Ferree, Geoffrey Wood, Georgie Libbie, and Donna Mueller. Absent: Diane Foss and Tyler Holtorf

2. Approval of Agenda

Motion by Donna Mueller to approve. Seconded by Georgie Libbie. Motion passed 5-0.

3. Approval of the Minutes:

Motion by Georgie Libbie to approve. Seconded by Dave Ferree. Motion passed 5-0.

A. Consideration of the Planning and Zoning Commission Meeting Minutes on May 24, 2023

B. Consideration of the Planning and Zoning Commission Meeting Minutes on June 8, 2023

4. Public Hearing:

A. Public Hearing - Zoning Ordinance Amendment for Chapter 165 - 177

Motion by Dave Ferree to open the Public Hearing at 5:39 PM. Seconded by Bob Bishop. Motion Passed 5-0. Wyatt Archer presented the proposed code amendments. No public comments. Motion by Donna Mueller to close the Public Hearing at 5:48 PM. Seconded by Georgie Libbie. Motion passed 5-0.

B. Consideration of Zoning Ordinance Amendment for Chapter 165 -177

Motion by Donna Mueller to recommend the proposed amendments to City Council. Seconded by Dave Ferree. Motion passed 4-1. Bob Bishop voted in opposition.

C. Public Hearing - Zoning Ordinance Amendment for Chapter 180

Motion by Dave Ferree to open the Public Hearing at 5:54 PM. Seconded by Bob Bishop. Motion Passed 5-0. Wyatt Archer presented the proposed code amendments. No public comments. Motion by Donna Mueller to close the Public Hearing at 5:57 PM. Seconded by Georgie Libbie. Motion passed 5-0.

D. Consideration of Zoning Ordinance Amendment for Chapter 180

Motion by Bob Bishop to recommend the proposed amendments to City Council. Seconded by Donna Mueller. Motion passed 5-0.

5. Adjourn

Motion by Dave Ferree to adjourn the meeting at 6:16 PM. Seconded by Bob Bishop. Motion passed 5-0.

STAFF REPORT

Date: August 23, 2023
To: Windsor Heights Planning and Zoning Commission
From: Wyatt Archer, AICP
Subject: Preliminary Plat: 6300 Hickman Avenue

General Information

Applicant: Houston Engineering – Stan Hanson
3900 W. Technology Circle, Suite 8
Sioux Falls, SD 58106
Property Owner: Midwest Fidelity Partners
1610 S. Minnesota Ave.
Sioux Falls, SD 57105
Zoning: CC (Community Commercial District)
Location: 6300 Hickman Road

Summary

The applicant, Stan Hanson, on behalf of Midwest Fidelity Partners, is requesting a preliminary plat for the 4.13 acre tract centering on 6300 Hickman Avenue, to be subdivided into four parcels. Staff has completed a review of the preliminary plat. Once a preliminary plat and construction plans have been approved, a final plat will be submitted for review. The submitted application materials are attached to this report.

Existing Conditions

The 4.13 acre tract is in the CC – Community Commercial zoning district. The tract is currently vacant, with portions of the tract previously being used for a gas station. A conditional use permit for Auto Services has been approved at 6300 Hickman.

Background

March 1, 2023: Conditional use permit for auto services issued for 6300 Hickman.
July 12, 2023: 1st submittal of documents for preliminary plat.
August 8, 2023: 2nd submittal with revised documents for preliminary plat.

Applicable Code Sections

The City of Windsor Heights does not have a subdivision ordinance. The submitted documents adhere to all state requirements.

Adjacent Land Use

Direction	Zoning	Use
North	N/A (outside Windsor Height limits)	Commercial
South	Community Commercial (CC), Urban Family Residential (R-3), Single Family Residential (Urban Density) (R-2)	Commercial & Residential
East	N/A (outside Windsor Height limits)	Residential
West	Community Commercial	Commercial

Zoning Bulk Regulations

Category	Bulk Regulation
Lot Area	7,200 sq.ft.
Lot Width	60ft
Front Yard Setback	25ft
Side Yard Setback	25ft
Rear Yard Setback	20ft

Utilities

Utilities will be provided by MidAmerican Energy, Urbandale-Windsor Heights Sanitary District, and Des Moines Water Works.

Easements

All proposed easements have been indicated on the preliminary plat.

Future Land Use Map

The future land use map should be used as guidance for areas throughout the City. The map identifies this location as mixed use, which is defined on page 40 of the 2017 Comprehensive Plan. “Mixed Use. This area encourages combinations of limited commercial, office, and residential uses.” The comprehensive plan also identifies the corner of Hickman and 63rd as one of the Community Entrances as seen in the comprehensive plan’s future land use map.

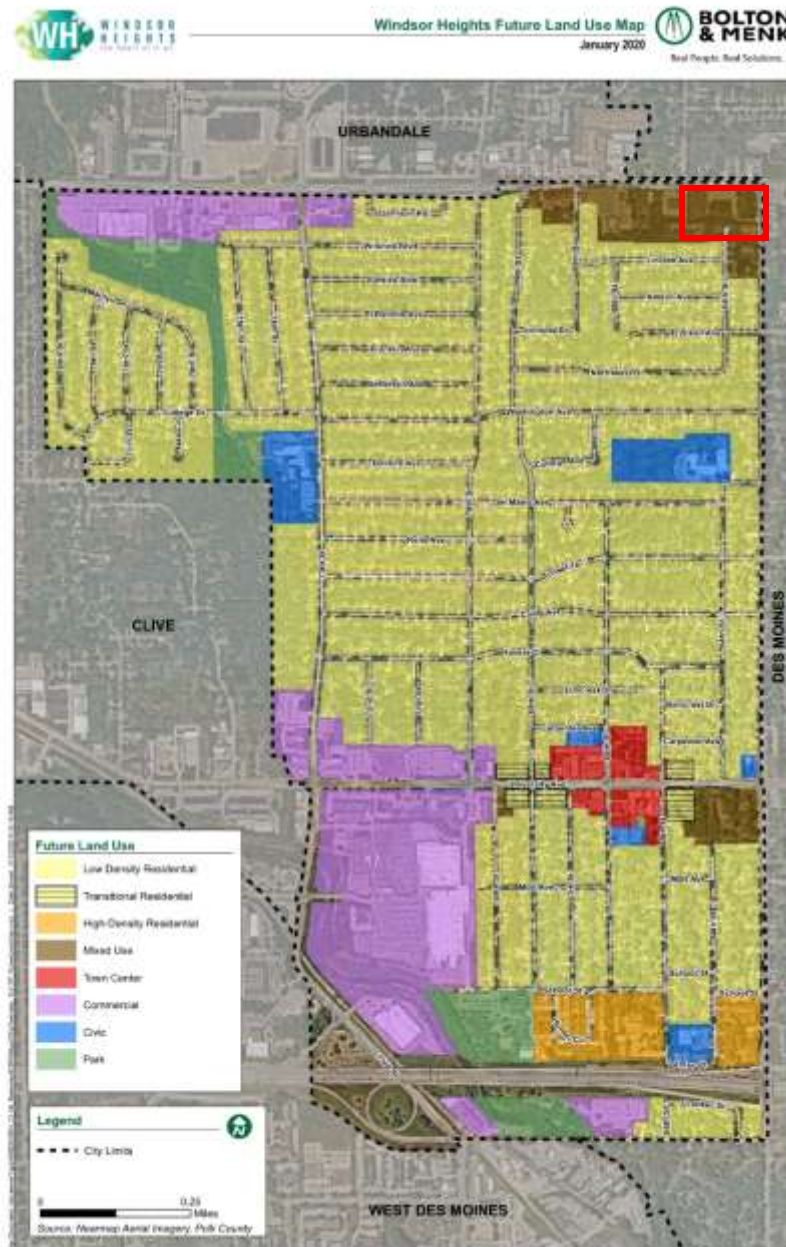


Figure 1: Current Future Land Use Map

Zoning Map

The parcels are currently zoned for Community Commercial which is defined in [Table 168-1 Purposes of Zoning Districts](#) as “This district is intended for commercial facilities which serve the needs of markets ranging from several neighborhoods to the overall region. While allowed commercial and office uses are generally compatible with nearby residential areas, traffic and operating characteristics may have more negative effects on residential neighborhoods than those permitted in the O District. CC Districts are appropriate at major intersections, at the junction of several neighborhoods, or at substantial commercial sub-centers.”

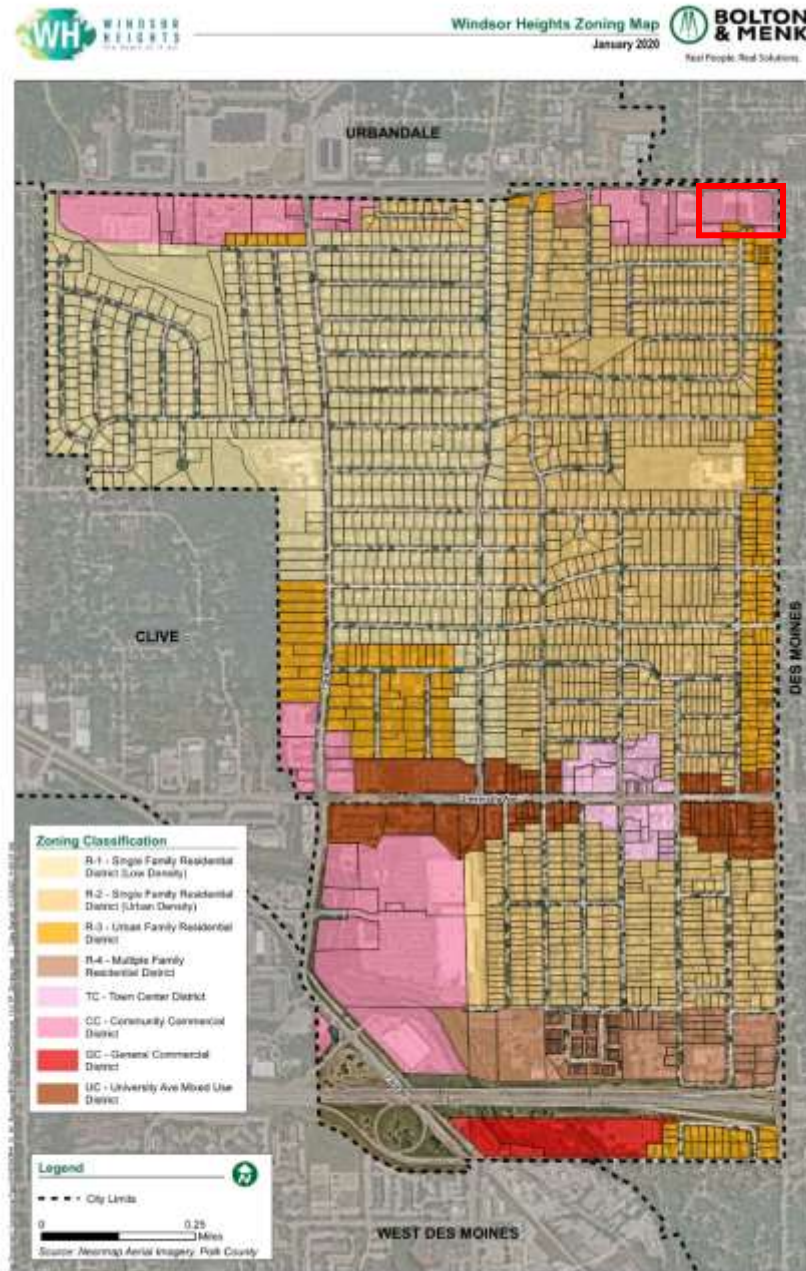


Figure 2: Current Zoning Map

Recommendation

All proposed lots meet the minimum requirements of the zoning ordinance, and the preliminary plat is in general conformance with state code. **The staff recommends approval of the Preliminary Plat.**

Attachments

1. Application Materials (as submitted)



Send the completed permit application and supporting documents to Justin Ernst from Bolton & Menk at Justin.Ernst@bolton-menk.com or call 515-259-9190 x2786.

APPLICATION FOR PRELIMINARY PLAT

DATE SUBMITTED

July 11, 2023

PROJECT TITLE

Silverstar Addition

PROJECT ADDRESS

6322 & 6300 Hickman Rd

LOT #

1 & 2

SUBDIVISION

Windsor Crossing Plat 1

APPLICANT INFORMATION

APPLICANT NAME & EMAIL

Dan Nelson

ADDRESS

1610 S. Minnesota Ave.

CITY, STATE, ZIP

Sioux Falls, SD 57105

PHONE

605-361-3557

FAX

Acceptance of Applicant

I, the undersigned, certify that the information on this application to the best of my knowledge, is true and correct. I further certify that I have a legal interest in the property in question, and/or that I am legally able to represent all other persons or entities with interest in this property.

In addition to the application fee, I understand I am responsible for all development review costs invoiced on a Monthly basis for services performed by City staff or City consultants on my behalf.

Dan Nelson

Print Applicant's Name

Dan Nelson

7/11/2023

Applicant's Signature

Date

DEVELOPMENT TEAM

Project Manager

Stan Hanson

Address

3900 W. Technology Cir Ste 8, Sioux Falls SD 58106

Phone

605-271-0378

Fax

E-Mail Address

sthanson@houstoneng.com

Attorney/Other

Address

Phone

Fax

E-Mail Address

Please provide seven copies (24"x36" maximum) of all plans and one copy of the project drainage report. In addition, a digital copy (.pdf format preferred) of all plan sheets and drainage report shall be provided.

In order for a submittal to be determined as complete, the following basic information should be provided:

Submitted Accepted

Traffic Study (as required by City Engineer)

☐☐

Site Survey

☐☐

Dimension Plan

☐☐

Grading Plan

☐☐

Utility Plan

☐☐

Landscape Plan

☐☐

Drainage Report

☐☐

Architectural Plans

☐☐

For additional detail on the type of information necessary for each of the items above can be found on the back of this form or by contacting the City Administrator.

Additional Information:

Application Approval

☐ Approved

☐ Denied

Planner or Authorized Representative

Date

**PRELIMINARY PLAT SUBMITTAL REQUIREMENTS
FOR DEVELOPMENT REVIEW**

- Name and address of owner/developer, consultant(s), engineer, and surveyor
- Name of subdivision, revision date, north arrow, and scale
- Legal description and acreage
- Vicinity sketch
- Plat boundary
- Zoning district
- Setbacks and buffers with dimensions
- Lot lines with dimensions and acreage
- Lot numbering
- Existing buildings, streets, utilities, easements and right-of-way
- Location and name(s) of adjacent property owners, excluding subdivided property
- Existing and proposed site grading. Please inventory of all existing trees of 6-inch caliper and greater
- Easements for public utilities, access, railroads, underground utilities, pedestrian facilities, and others as required
- Location, names and pavement widths of all existing and proposed streets, proposed right-of-way
- Proposed utility services, line sizes, easements and off-site sources of service for water, sanitary sewer, storm water, and overland flowage.
- Stormwater Management Design Plan and Stormwater calculations.
- Flood Insurance Rate Map designation(s), panel number and date
- Boundary of 100-year floodplain and of floodway with improvements in place
- Identify areas dedicated for public use (right-of-way, schools, parks, trails, etc.)
- Any other information the City finds necessary to determine the impact the proposed subdivision will have on the health, safety, and welfare of property in the City and its residents.

PRELIMINARY PLAT OF
SILVERSTAR ADDITION
CITY OF WINDSOR HEIGHTS
POLK COUNTY, IOWA

HICKMAN ROAD / US HWY NO. 6
(PUBLIC ROAD)

BLOCK 1

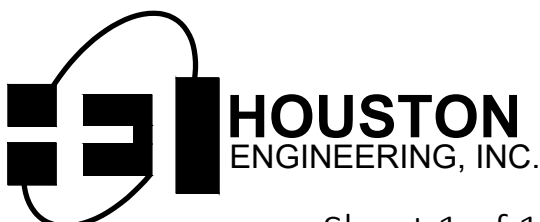
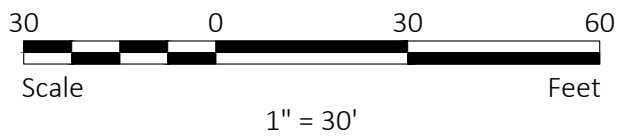
63RD STREET
(PUBLIC ROAD)

64TH STREET

LEGEND

IRON MONUMENT FOUND	●
1/2" I.D. PIPE SET	○
MEASURED BEARING	N00°00'00"E
RECORD BEARING - WINDSOR CROSSING PLAT 1	(N00°00'00"E)
MEASURED DISTANCE	100.00'
RECORD DISTANCE - WINDSOR CROSSING PLAT 1	(100.00')
PLAT BOUNDARY	=====
LOT LINE	=====
UTILITY EASEMENT	-----
EXISTING LOT LINE	-----
EXISTING UTILITY EASEMENT	-----

BEARINGS SHOWN ARE BASED ON THE IOWA STATE PLANE COORDINATE SYSTEM (NAD83) - SOUTH ZONE



Sheet 1 of 1
Project No. 10904-0017

OWNER OF RECORD (PARCEL 2016-24):
IA10 Windsor Heights, LLC
1610 S Minnesota Ave
Sioux Falls, SD 57105

OWNER OF RECORD (PARCEL):
Hurd Windsor, LLC
2000 Fuller Road
West Des Moines, IA 50265

FIELD WORK COMPLETED:
May 24-25, 2023

LAND SURVEYOR:
James A. Schlieman
Houston Engineering, Inc.
1401 21st Avenue North
Fargo, North Dakota 58102
(701) 237-5065

ENGINEER:
Stan Hanson
Houston Engineering, Inc.
100 Court Avenue, Suite 202
Des Moines, Iowa 50309
444-5393

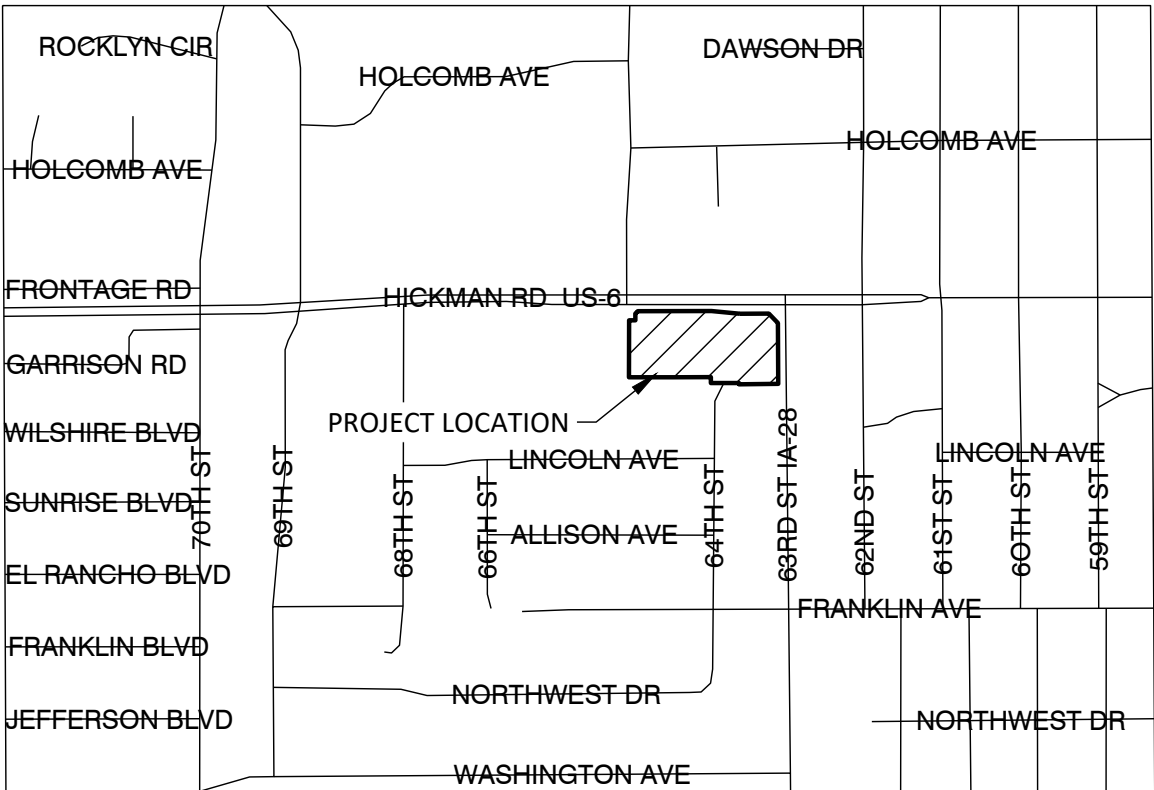
JURISDICTION:
City of Windsor Heights, Polk County, Iowa

FLOOD ZONE:
(Zone X) 0.2% annual chance flood hazard, areas of 1% annual chance flood with average depth less than one foot with drainage areas of less than one square mile.
Panel# 19153C0327F
Effective date February 1, 2019

ZONE INFORMATION:
District (C) Commercial

Front yard setback 25'
Side yard setback 25'
Rear yard setback 20'

UTILITY DISTRICTS:
Mediacom
Centurylink
Midamerican-Elec
Midamerican-Gas
City of Des Moines Traffic
City of Des Moines Sewer
City of Des Moines Water Works
Metro Fibernet LLC
Iowa Communications Network
City of Windsor Heights

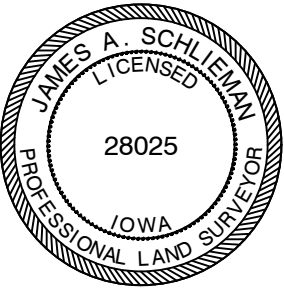


VICINITY MAP
NOT TO SCALE

LEGAL DESCRIPTION:
Lots 1 and 2 of Windsor Crossing Plat 1, an Official Plat, now included in and forming a part of the City of Windsor Heights, Polk County, Iowa.
Said tract of land contains 4.130 acres, more or less.

I hereby certify that this land surveying document was prepared and the related survey work was performed by me or under my direct personal supervision and that I am a duly licensed Professional Land Surveyor under the laws of the State of Iowa.

James A. Schlieman
License number 28025
My license renewal date is December 31, 2024.
Pages or sheets covered by this seal: THIS SHEET



**CITY OF WINDSOR HEIGHTS**

1145 66TH St, Suite 1,
Windsor Heights, IA 50324
Phone (515)279-3662
Fax (515) 279-3664

**APPLICATION FOR
DEVELOPMENT REVIEW
SITE PLAN/SITE PLAN AMENDMENT**

DATE SUBMITTED

PROJECT TITLE

APPLICANT INFORMATION

APPLICANT NAME & EMAIL

Midwest Fidelity Partners

PROJECT ADDRESS

ADDRESS

1610 S. Minnesota Avenue

LOT #

SUBDIVISION

CITY, STATE, ZIP

Sioux Falls, SD 57105

PHONE

605-361-3557

FAX

Please provide seven copies (24"x36" maximum) of all plans and one copy of the project drainage report. In addition, a digital copy (.pdf format preferred) of all plan sheets and drainage report shall be provided.

In order for a submittal to be determined as complete, the following basic information should be provided:

Acceptance of Applicant

I, the undersigned, certify that the information on this application to the best of my knowledge, is true and correct. I further certify that I have a legal interest in the property in question, and/or that I am legally able to represent all other persons or entities with interest in this property.

In addition to the application fee, I understand I am responsible for all development review costs invoiced on a Monthly basis for services performed by City staff or City consultants on my behalf.

Dan Nelson

Print Applicant's Name

Dan Nelson*Dan Nelson*

1/19/2023

Applicant's Signature

Date

Submitted Accepted

Traffic Study (as required by City Engineer)

☐☐

Site Survey

☐☐

Dimension Plan

☐☐

Grading Plan

☐☐

Utility Plan

☐☐

Landscape Plan

☐☐

Drainage Report

☐☐

Architectural Plans

☐☐

Lighting Plans

☐☐

Name & Address of All Properties within 200 ft

☐☐

For additional detail on the type of information necessary for each of the items above can be found on the back of this form or by contacting the City Administrator.

Additional Information:**Application Approval**☐ Approved☐ Denied

Planner or Authorized Representative

Date

SITE PLAN SUBMITTAL REQUIREMENTS FOR DEVELOPMENT REVIEW

The complexity of the proposed construction will dictate whether all of the items below are needed for a complete submittal. If there are any questions as to which items are needed, please contact the City Administrator prior to submitting.

Site Survey - All of the existing site features, including property lines (including metes and bounds), rights-of-way, streets, buildings and structures, driveways and parking lots, public and private sidewalks, landscaping, utilities, topography, easements (including book and page) and legal description should be provided either on a separate Site Survey sheet or included within one of the other plan sheets.

In the case of a Site Plan Amendment, the extent of the site survey should cover the area of proposed construction and the adjoining areas that may be impacted by the proposed improvements. For example, if new hard surface area is included, the existing storm intakes (rim and inverts), storm sewer pipe (size and slope), and detention areas (control structure and volume) should be included in the site survey.

Dimension Plan - All proposed improvements should be accurately shown to scale and dimensioned. Additionally, narrative information such as property owner, legal description, vicinity sketch, construction schedule, property zoning, benchmark, required setbacks, parking counts, site characteristics/impervious surface calculations, and Windsor Heights standard notes should be included.

Grading Plan - Existing and proposed topography should be provided at a maximum interval of 2-feet. Additional spot elevation detail should be provided for finished floor elevations of all structures, retaining walls (top and bottom elevations), along handicapped routes of access (route and ramp grades), curb lines of minimum sloped parking and drive areas and drainage swales with minimum slopes.

Additionally, any site that is located within the Floodplain will need to list the 100-year flood elevation based on the latest adopted FIRM. All proposed building within the Floodplain will need to be elevated to at least 1-foot above the 100-year flood elevation.

Utility Plans - Existing and proposed utilities should be accurately shown in plan view and should identify all of the following: structure type, casting type, rim elevation, invert elevation, pipe material, pipe size, and pipe slope.

If the proposed utility improvements are intended to be public, a plan and profile will be required.

A fire hydrant radius map will need to be provided which demonstrates that all of the building is contained within a 250-foot radius of a hydrant. Usually large buildings may require additional coverage.

Landscape Plan - Existing and proposed landscape features should be accurately shown (trees, shrubbery and ground covers) and appropriately labeled (size and type). Open space calculations and resulting landscaping requirements should be listed (street trees, open space trees, buffer trees).

Foundation plantings, screening materials (headlights, mechanical units, dumpster enclosures), bio-retention areas and other decorative features such as monument signs, flag poles, fountains, patios and bike racks should be detailed.

Drainage Report - The project drainage report in accordance with the Iowa Stormwater Management Manual will need to be provided for all new construction projects. The drainage report should include the following: site characteristics, post development analysis, stormwater conveyance, stormwater management and supporting drawings and calculations.

A full drainage report will be required for most Site Plan Amendments unless the Community Development Director determines that the scale and scope of the project is minor enough to not have a negative impact on the existing storm sewer system.

Architectural Plans - A preliminary floor plan (including at least an indication of building dimension, exits and mechanical rooms) will need to be provided. Additionally, elevation drawings of all sides of the proposed construction will need to be provided (elevation drawings should include representation of all roof mounted mechanical units and anticipated screening materials). It is recommended that a colored rendering be provided (at a minimum, the elevation drawings should include notes on the materials and colors).

Lighting Plan - All proposed lighting (pole lights, building lights, up-lights, canopy lights) should be indicated on the dimension and/or architectural plans. A manufacturer's cut sheet including pole and fixture type, wattage and shielding should be provided.

A site photometric plan will need to be provided for all new construction projects. At a minimum, the plan should include all fixtures, provide the max./min./avg. light levels across the site, and represent the anticipated foot-candle levels at the property lines.

Traffic Study - Project should not reduce the existing level of traffic service on adjacent streets. Compensating improvements will be required to mitigate impact on street system operations. At the discretion of the City Engineer, a traffic impact study may be required as part of the site plan submittal.

Name & Address - of all properties within 200 feet shall be provided in a reproducible electronic format in order to provide mailings for public notices.

CONSTRUCTION PLANS FOR 6300 HICKMAN RD SILVERSTAR CARWASH

WINDSOR HEIGHTS, IOWA
JULY, 2023

LEGAL:

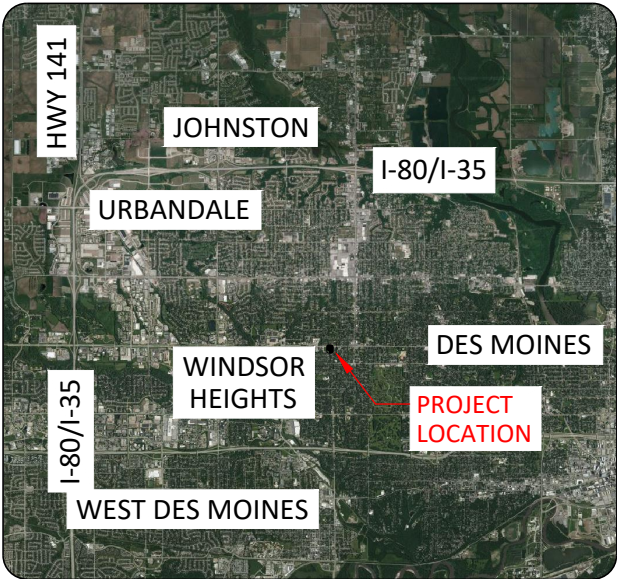
PARCEL 2016-24 BEING ALL OF LOT 1 AND PART OF LOT 2 OF WINDSOR CROSSING PLAT 1, AN OFFICIAL PLAT, NOW INCLUDED IN AND FORMING A PART OF THE CITY OF WINDSOR HEIGHTS, POLK COUNTY, IOWA, AS SHOWN ON THE PLAT OF SURVEY RECORDED AUGUST 16, 2016, IN BOOK 16137 PAGE 344.

LEGEND:

- C1.0-C1.1 TOPOGRAPHIC SURVEY
- C2.0-C2.1 DEMOLITION PLAN
- C2.2 TRAIL TRAFFIC CONTROL
- C3.0-C3.1 SS UTILITY PALN
- C3.2-C3.3 STS & H2O UTILITY PLAN
- C4.0-C4.1 GRADING PLAN
- C5.0-C5.1 SITE PLAN
- C6.0-C6.12 DETAILS
- C7.0-C7.1 EROSION CONTROL PLAN
- C7.2-C7.3 EROSION CONTROL DETAILS
- C8.0 LANDSCAPE PLAN
- C8.1 LANDSCAPE NOTES AND DETAILS

FLOOD ZONE:

(ZONE X) 0.2% ANNUAL CHANCE FLOOD HAZARD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTH LESS THAN ONE FOOT WITH DRAINAGE AREAS OF LESS THAN ONE SQUARE MILE.
PANEL# 19153C0327F
EFFECTIVE DATE FEBRUARY 1, 2019



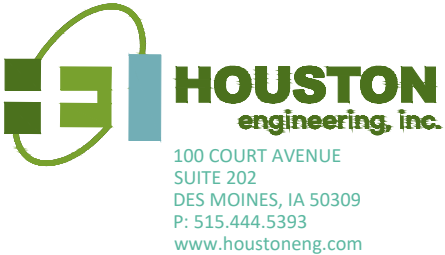
VICINITY MAP



LOCATION MAP



MIDWEST FIDELITY PARTNERS, LLC
1610 S. MINNESOTA AVENUE
SIOUX FALLS, SD 57105
PHONE: 605-691-3814 EMAIL: dan@mfp.llc



GOVERNING STANDARDS:

MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION. THIS SPECIFICATION INCLUDES THE SHAPES, COLORS, AND FONTS USED IN ROAD MARKINGS AND SIGNS. ALL TRAFFIC CONTROL DEVICES MUST CONFORM TO THESE STANDARDS.

GOVERNING SPECIFICATIONS:

CONSTRUCTION SPECIFICATIONS FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH MOST CURRENT EDITION OF SUDAS, SHALL APPLY TO ALL STANDARD DRAWINGS CURRENTLY IN EFFECT AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN:

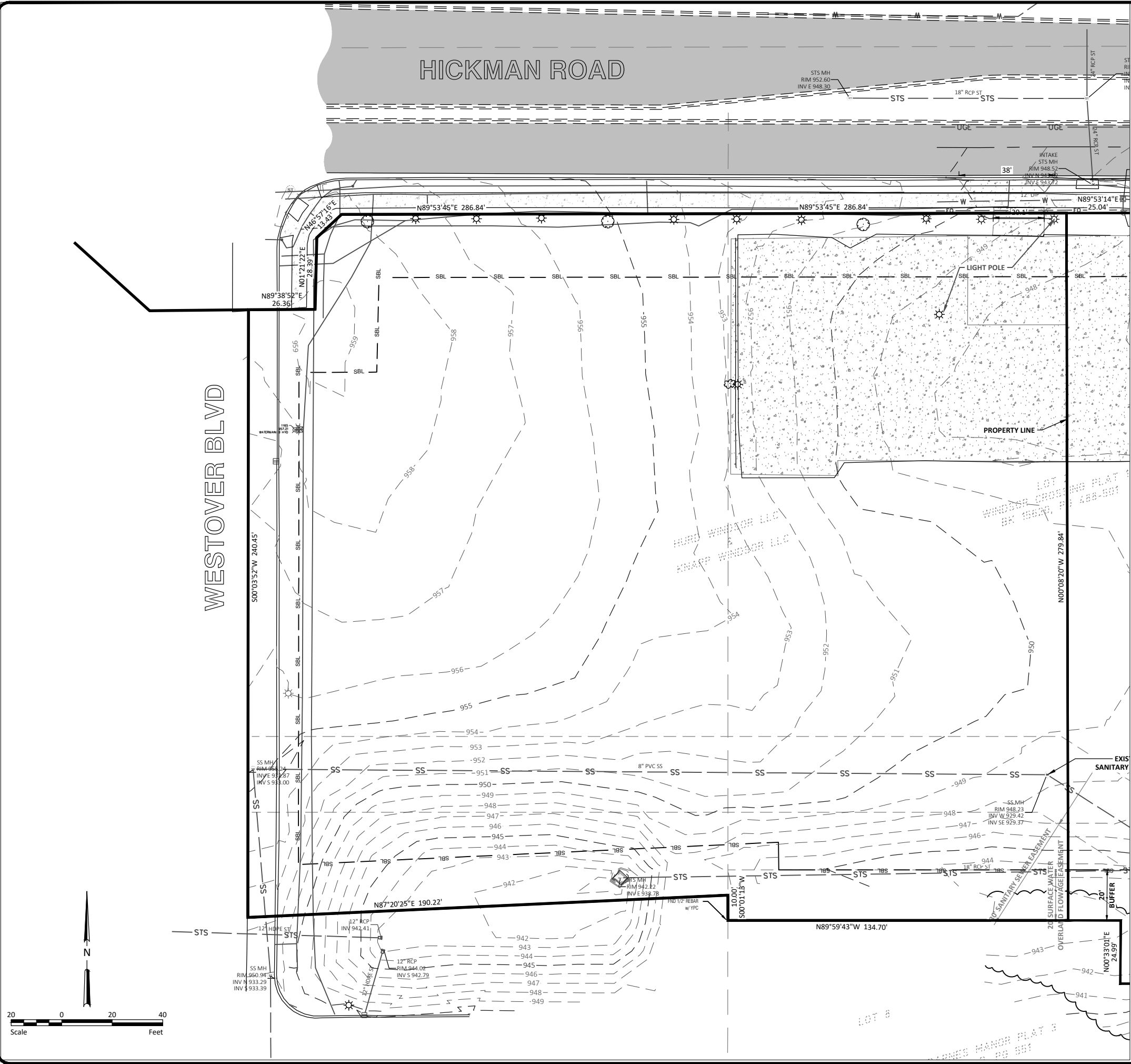
UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS-BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN INDICATE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.

ZONING: C, COMMERCIAL		
i. MINIMUM LOT AREA:		7,200 SQFT
ii. MINIMUM LOT WIDTH:		60 FEET
iii. FRONT YARD SETBACK:		25 FEET
iiii. SIDE YARD SETBACK:		25 FEET
vi. REAR YARD SETBACK:		20 FEET

95%
NOT FOR CONSTRUCTION

h:\BM\10900\10904_0017\10904-0017-Topo.dwg CL0 TOPOGRAPHIC SURVEY-8/18/2023 4:20 PM - (jvandenbos)

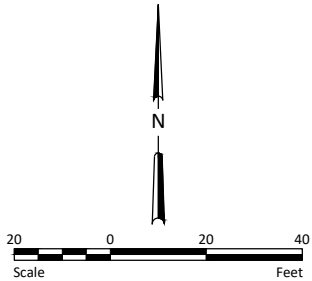


LEGEND

STANDARD CURB & GUTTER	=====
PRIVATE NATURAL GAS	— G —
PRIVATE FIBER OPTIC	— FO —
PRIVATE OVERHEAD POWER	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —
PRIVATE WATER MAIN	— W —
PRIVATE SANITARY SEWER MAIN	— SS —
PRIVATE STORM SEWER MAIN	— STS —
PROPERTY LINE	— BSBL — BSBL —
BUILDING SET BACK LINE	— BSBL — BSBL —
THICKENED EDGE SIDEWALK	=====
IRON MONUMENT FOUND	●
IRON MONUMENT SET	○
SANITARY MANHOLE	⊗
STORM MANHOLE	⊗
FIRE HYDRANT	⊗
GATE VALVE	⊗
STORM INLET	⊗
AIR CONDITIONING UNIT	⊗
GAS METER	⊗
TRANSFORMER	⊗
DECIDUOUS TREE	⊗
BUILDING	▨
EXISTING ROADWAY	▨

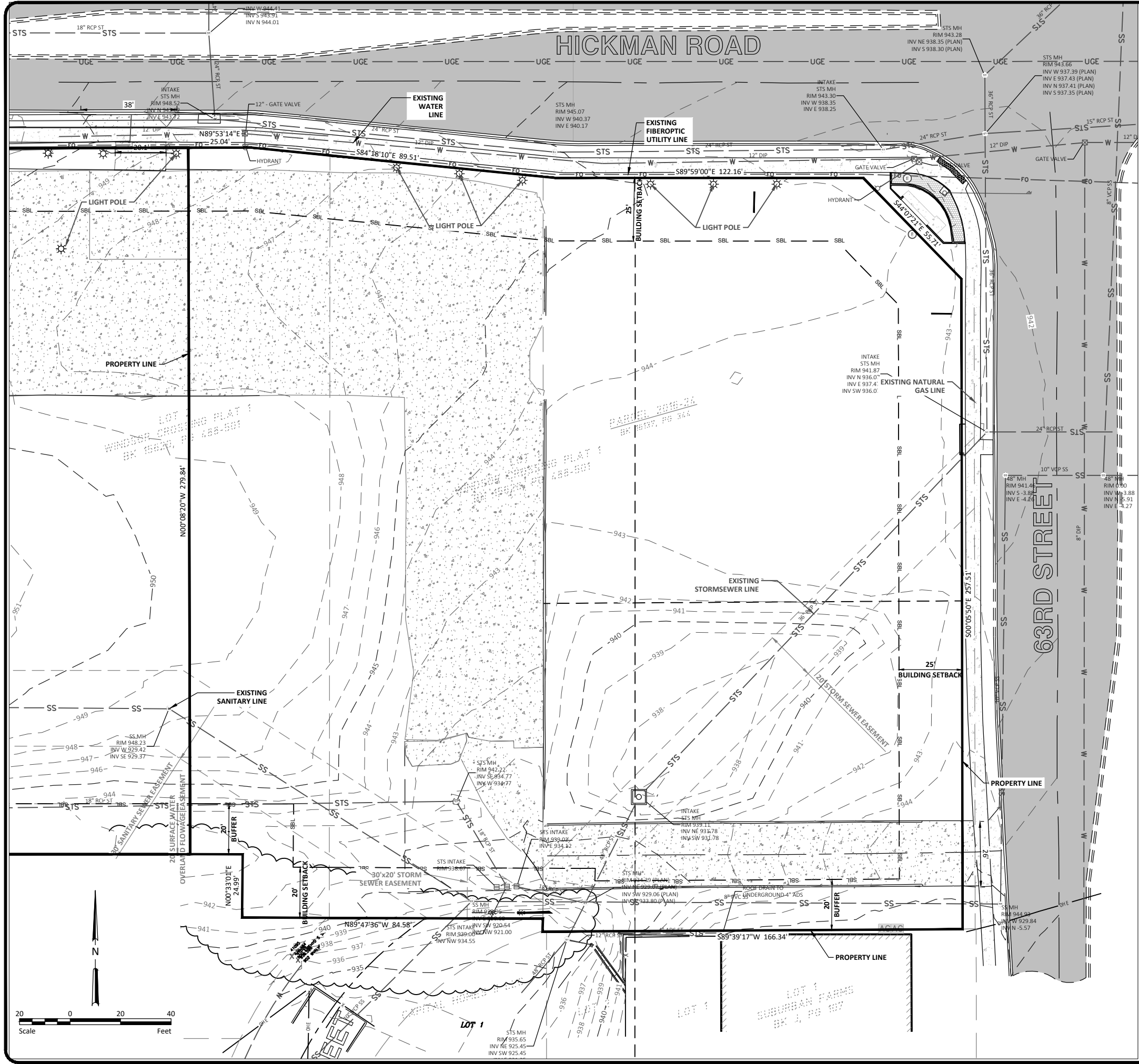
COORDINATE SYSTEM: NAD83 IOWA STATE PLANE SYSTEM, SOUTH ZONE, US FOOT

THE UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS-BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM ITS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.



			By
			Date
			Revision
			No.
SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA			
TOPOGRAPHIC SURVEY			
Houston Engineering, Inc.			
Drawn By JLV			
Checked By SMH			
Date 7/24/2023			
Scale As Shown			
Project No. 10904-0017			
SHEET C1.0			

h:\BM\10900\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Topo.dwg CL1.1 TOPOGRAPHIC SURVEY-9/18/2023 4:20 PM: (jvandenbos)

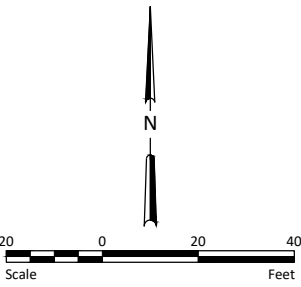


LEGEND

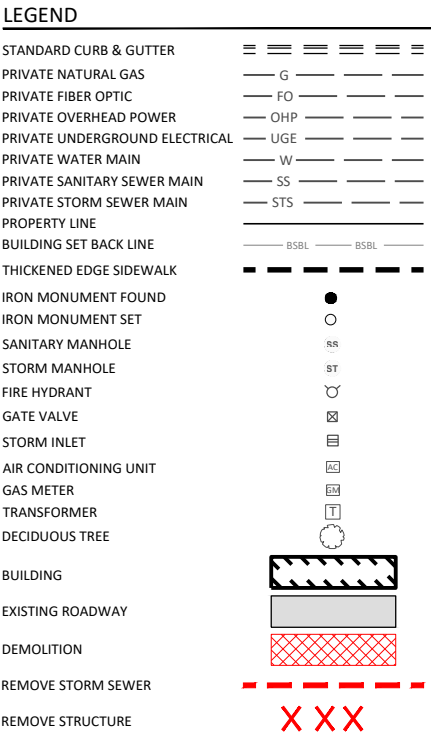
STANDARD CURB & GUTTER	==
PRIVATE NATURAL GAS	— G —
PRIVATE FIBER OPTIC	— FO —
PRIVATE OVERHEAD POWER	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —
PRIVATE WATER MAIN	— W —
PRIVATE SANITARY SEWER MAIN	— SS —
PRIVATE STORM SEWER MAIN	— STS —
PROPERTY LINE	— SBL —
BUILDING SET BACK LINE	— BSBL —
THICKENED EDGE SIDEWALK	—
IRON MONUMENT FOUND	●
IRON MONUMENT SET	○
SANITARY MANHOLE	⊙
STORM MANHOLE	⊙
FIRE HYDRANT	⊙
GATE VALVE	⊙
STORM INLET	⊙
AIR CONDITIONING UNIT	⊙
GAS METER	⊙
TRANSFORMER	⊙
DECIDUOUS TREE	⊙
BUILDING	▨
EXISTING ROADWAY	▨

COORDINATE SYSTEM: NAD83 IOWA STATE PLANE SYSTEM, SOUTH ZONE, US FOOT

THE UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS-BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM ITS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.



			By
			Date
			Revision
			No.
SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA			
TOPOGRAPHIC SURVEY			
Drawn By JLV			
Checked By SMH			
Date 7/24/2023			
Scale As Shown			
Project No. 10904-0017			
SHEET C1.1			

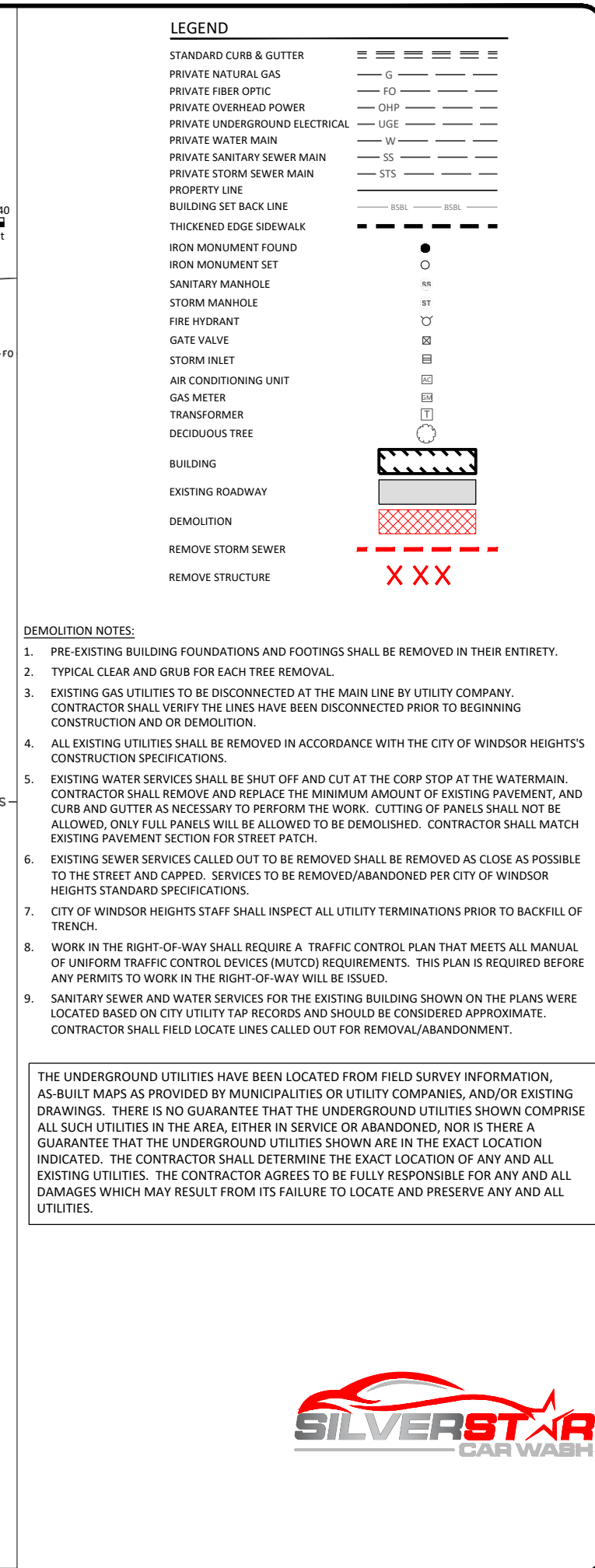


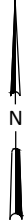
DEMOLITION NOTES:

1. PRE-EXISTING BUILDING FOUNDATIONS AND FOOTINGS SHALL BE REMOVED IN THEIR ENTIRETY.
2. TYPICAL CLEAR AND GRUB FOR EACH TREE REMOVAL.
3. EXISTING GAS UTILITIES TO BE DISCONNECTED AT THE MAIN LINE BY UTILITY COMPANY. CONTRACTOR SHALL VERIFY THE LINES HAVE BEEN DISCONNECTED PRIOR TO BEGINNING CONSTRUCTION AND OR DEMOLITION.
4. ALL EXISTING UTILITIES SHALL BE REMOVED IN ACCORDANCE WITH THE CITY OF WINDSOR HEIGHTS'S CONSTRUCTION SPECIFICATIONS.
5. EXISTING WATER SERVICES SHALL BE SHUT OFF AND CUT AT THE CORP STOP AT THE WATERMAIN. CONTRACTOR SHALL REMOVE AND REPLACE THE MINIMUM AMOUNT OF EXISTING PAVEMENT, AND CURB AND GUTTER AS NECESSARY TO PERFORM THE WORK. CUTTING OF PANELS SHALL NOT BE ALLOWED, ONLY FULL PANELS WILL BE ALLOWED TO BE DEMOLISHED. CONTRACTOR SHALL MATCH EXISTING PAVEMENT SECTION FOR STREET PATCH.
6. EXISTING SEWER SERVICES CALLED OUT TO BE REMOVED SHALL BE REMOVED AS CLOSE AS POSSIBLE TO THE STREET AND CAPPED. SERVICES TO BE REMOVED/ABANDONED PER CITY OF WINDSOR HEIGHTS STANDARD SPECIFICATIONS.
7. CITY OF WINDSOR HEIGHTS STAFF SHALL INSPECT ALL UTILITY TERMINATIONS PRIOR TO BACKFILL OF TRENCH.
8. WORK IN THE RIGHT-OF-WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT-OF-WAY WILL BE ISSUED.
9. SANITARY SEWER AND WATER SERVICES FOR THE EXISTING BUILDING SHOWN ON THE PLANS WERE LOCATED BASED ON CITY UTILITY PLAT RECORDS AND SHOULD BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL FIELD LOCATE LINES CALLED OUT FOR REMOVAL/ABANDONMENT.

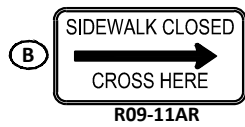
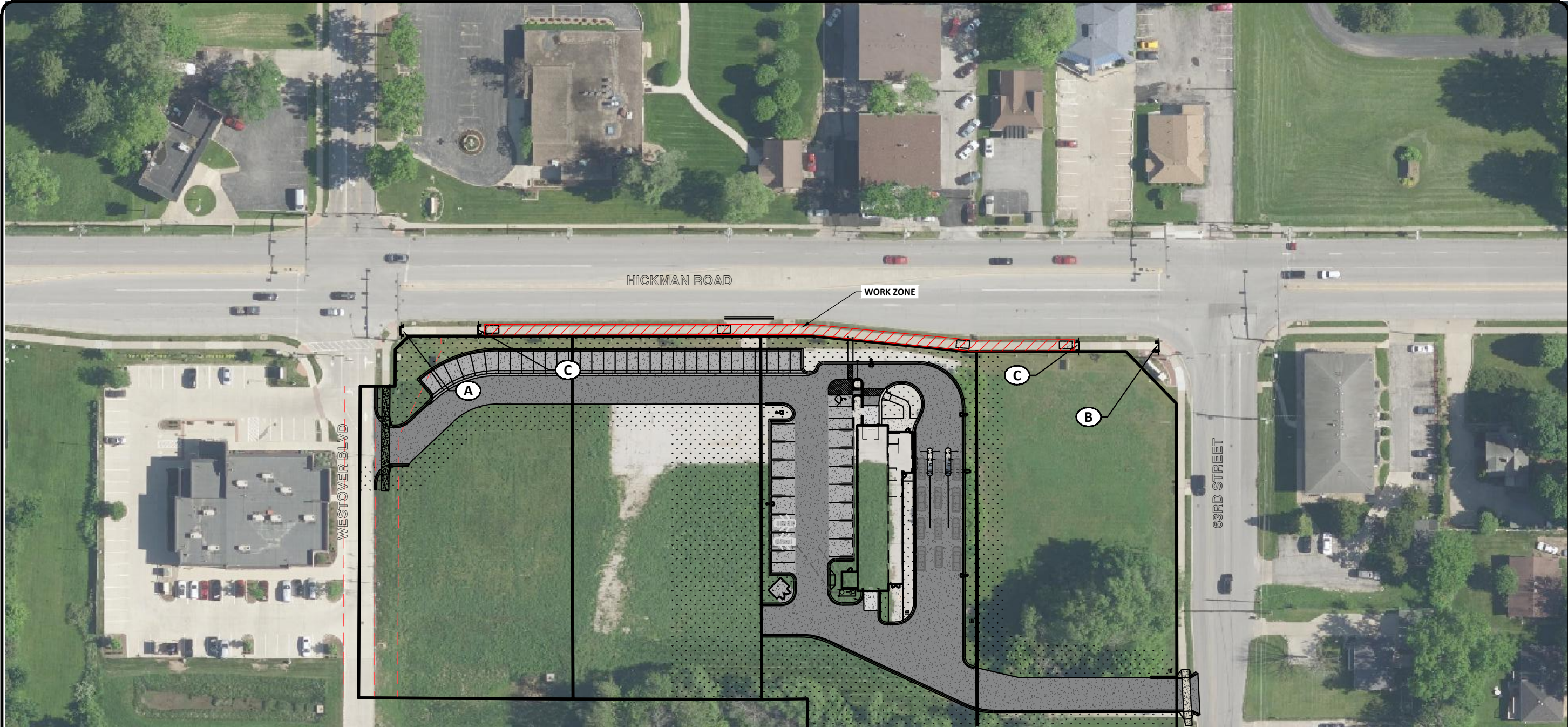
THE UNDERGROUND UTILITIES HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS-BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM ITS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES.







h:\BNA\10900\10904\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Traffic Control.dwg-C2.2 TRAIL TRAFFIC CONTROL-8/18/2023 4:21 PM-[vandenbos]

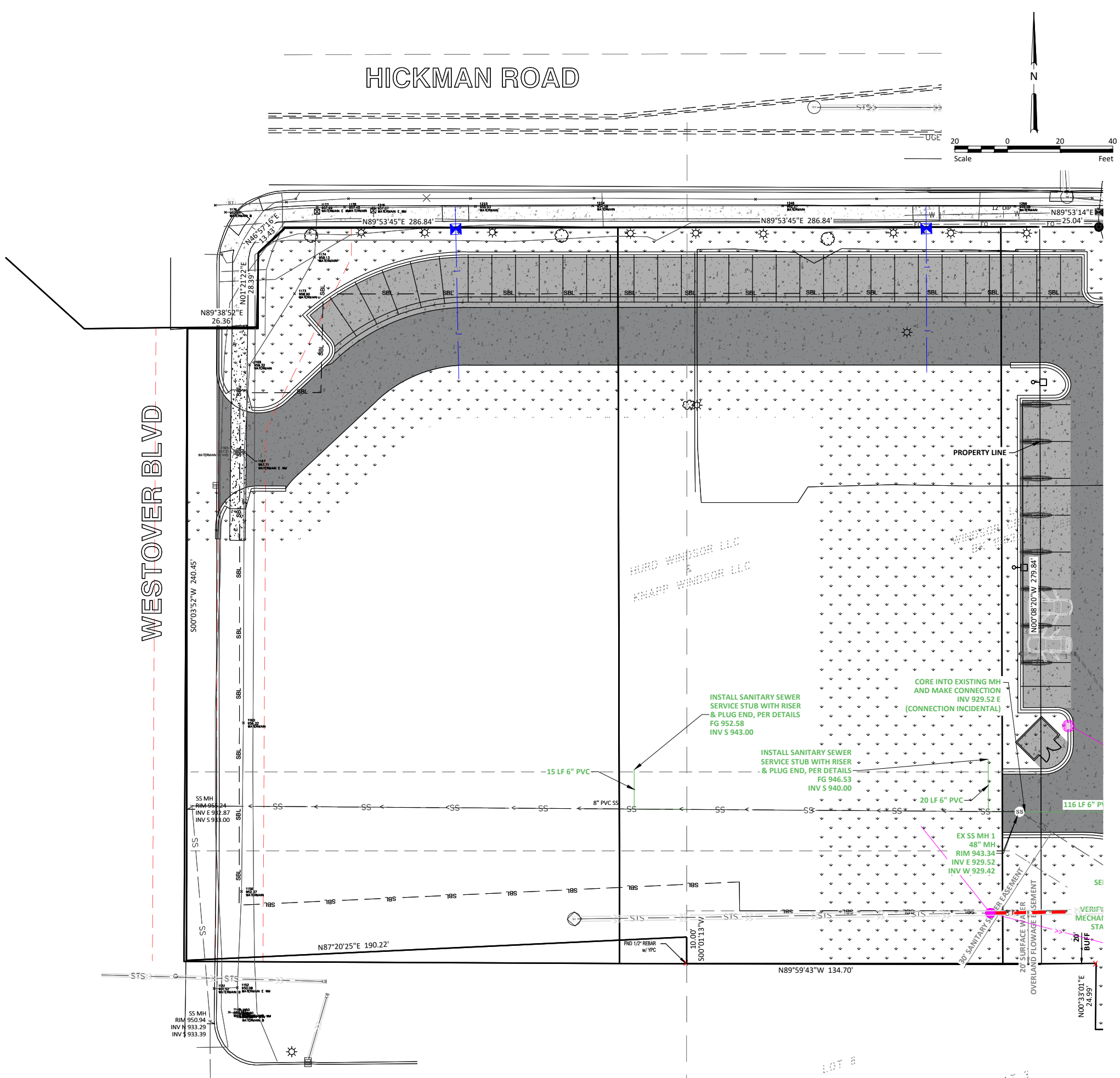


TRAFFIC CONTROL NOTES:

1. ALL SIGNING AND TRAFFIC CONTROL SHALL CONFORM WITH THE LATEST VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
2. CONTRACTOR SHALL ENSURE CONFLICTING SIGNAGE NEAR OR WITHIN THE WORK ZONE IS COVERED.
3. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL TRAFFIC CONTROL DEVICES THROUGHOUT THE PROJECT AT ALL TIMES IN ACCORDANCE WITH THE PLANS AND THE LATEST EDITION OF THE MUTCD.



SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA		Revision		Date		By	
TRAIL TRAFFIC CONTROL		No.					
Houston Engineering, Inc.		Drawn By		JLV		Checked By	
		SMH		Date		7/24/2023	
		Scale		As Shown		Project No.	
		10904-0017		SHEET		C2.2	



LEGEND	EXISTING	NEW
STANDARD CURB & GUTTER	=====	=====
MOUNTABLE CURB & GUTTER	=====	=====
CURB & INVERTED GUTTER	=====	=====
PRIVATE NATURAL GAS	— G —	— G —
PRIVATE FIBER OPTIC	— FO —	— FO —
PRIVATE OVERHEAD POWER	— OHP —	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —	— UGE —
PRIVATE WATER MAIN	— —	— —
PRIVATE SANITARY SEWER MAIN	— > —	— > —
PRIVATE STORM SEWER MAIN	— >> —	— >> —
THICKENED EDGE SIDEWALK	=====	=====
SANITARY MANHOLE	SS	●
STORM MANHOLE	ST	●
FIRE HYDRANT	⊙	●
GATE VALVE	⊗	⊗
STORM INLET	⊞	⊞
AIR CONDITIONING UNIT	AC	AC
GAS METER	GM	GM
TRANSFORMER	T	T
DECIDUOUS TREE	⊙	⊙
BUILDING	▨	▨
EXISTING ROADWAY	▨	▨
NEW 4" CONCRETE AT SIDEWALKS		▨
NEW 7" HEAVY DUTY CONCRETE		▨
NEW 6" LIGHT DUTY CONCRETE		▨
NEW 7" HEATED CONCRETE		▨
NEW GRASS/LANDSCAPE AREA		▨

- UTILITY NOTES:
- ALL DISTANCES AND SLOPES ARE CALCULATED ON CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
 - EITHER MONOLITHIC MANHOLE STYLE BOOT CONNECTOR FACTORY INSTALLED OR CONCRETE TO PVC PIPE ADAPTORS SHALL BE USED TO CONNECT PVC PIPE TO THE MANHOLE. PVC MANHOLE ADAPTER SHALL BE A GPK PRODUCT OR APPROVED EQUIVALENT.
 - THE CONTRACTOR SHALL CONFIRM EXACT LOCATION, INVERT, AND SIZE OF BUILDING SERVICES WITH MECHANICAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
 - ALL WORK DONE IN THE RIGHT-OF-WAY SHALL REQUIRE DOT PERMIT AND CONFORM TO STANDARD SPECIFICATIONS.
 - THE CITY OF WINDSOR HEIGHTS INSPECTIONS DEPARTMENT MUST BE NOTIFIED TO INSPECT THE CONNECTION OF THE SITE SANITARY SEWER SYSTEM TO THE CITY STORM WATER SYSTEM. ENSURE THE EXCAVATION IS KEPT OPEN FOR THIS INSPECTION.
 - REMOVE AND REPLACE EXISTING PAVEMENT, CURB AND GUTTER, AND SIDEWALK AS NECESSARY TO INSTALL UTILITIES.
 - EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.
 - ALL HDPE STORM SEWER SHALL BE ADS N-12 WITH WATERTIGHT JOINTS OR APPROVED EQUIVALENT.
 - ALL PVC SANITARY SEWER SHALL BE SDR26 PVC.



SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

SS UTILITY PLAN

By	
Date	
Revision	
No.	

HOUSTON
ENGINEERING, INC.

Drawn By
JLV

Checked By
SMH

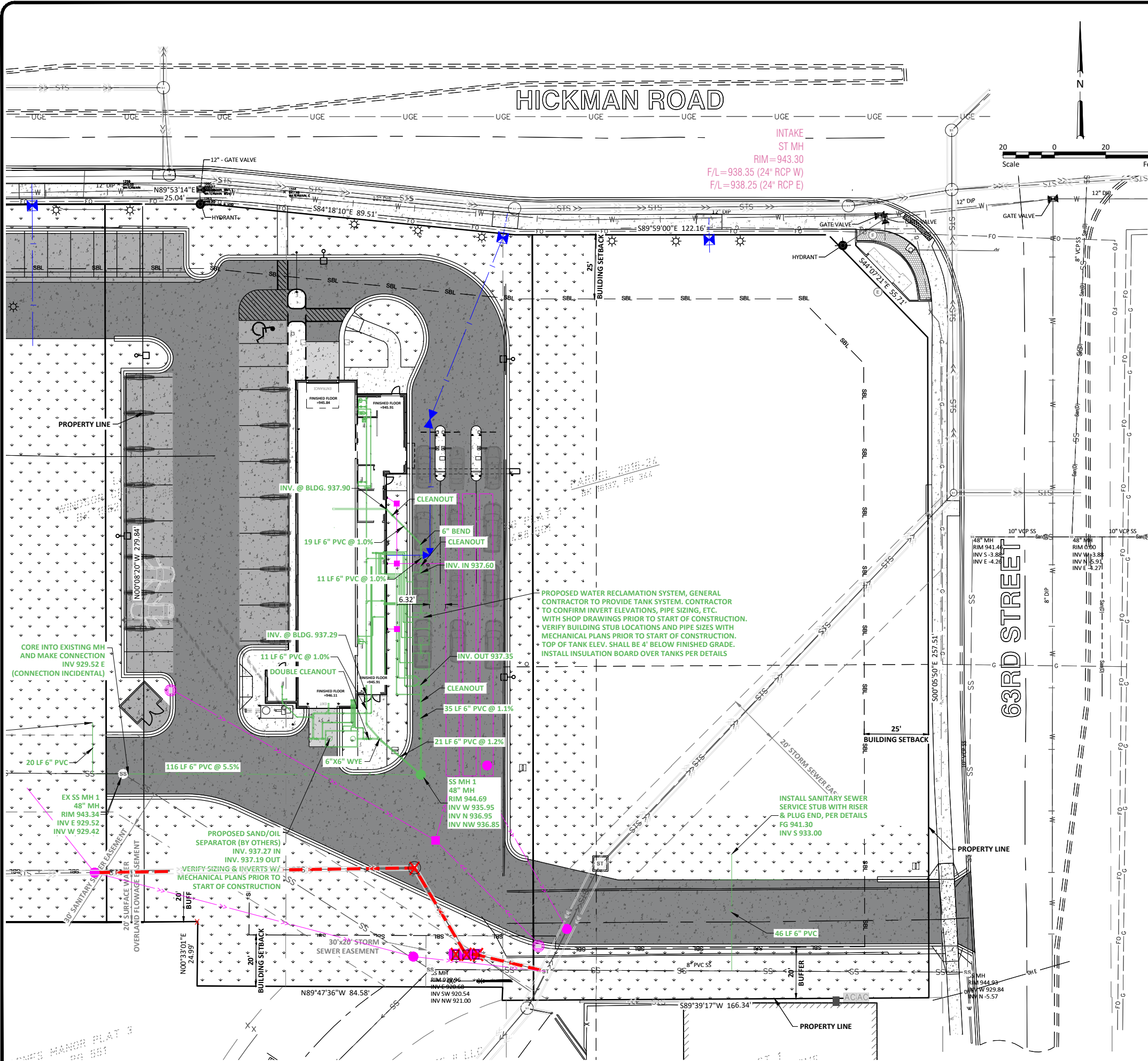
Date
7/24/2023

Scale
As Shown

Project No.
10904-0017

SHEET
C3.0

h:\B\10900\10904\0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Utilities.dwg C3.1 SS UTILITY PLAN-8/18/2023 4:21 PM-[jandenbos]



LEGEND	EXISTING		NEW	
	Symbol	Line Style	Symbol	Line Style
STANDARD CURB & GUTTER	==	==	==	==
MOUNTABLE CURB & GUTTER	==	==	==	==
CURB & INVERTED GUTTER	==	==	==	==
PRIVATE NATURAL GAS	— G —	—	— G —	—
PRIVATE FIBER OPTIC	— FO —	—	— FO —	—
PRIVATE OVERHEAD POWER	— OHP —	—	— OHP —	—
PRIVATE UNDERGROUND ELECTRICAL	— UGE —	—	— UGE —	—
PRIVATE WATER MAIN	— I —	—	— I —	—
PRIVATE SANITARY SEWER MAIN	— > —	—	— > —	—
PRIVATE STORM SEWER MAIN	— >> —	—	— >> —	—
THICKENED EDGE SIDEWALK				
SANITARY MANHOLE	SR			
STORM MANHOLE	ST			
FIRE HYDRANT				
GATE VALVE				
STORM INLET				
AIR CONDITIONING UNIT				
GAS METER				
TRANSFORMER				
DECIDUOUS TREE				
BUILDING				
EXISTING ROADWAY				
NEW 4" CONCRETE AT SIDEWALKS				
NEW 7" HEAVY DUTY CONCRETE				
NEW 6" LIGHT DUTY CONCRETE				
NEW 7" HEATED CONCRETE				
NEW GRASS/LANDSCAPE AREA				

UTILITY NOTES:

- ALL DISTANCES AND SLOPES ARE CALCULATED ON CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
- EITHER MONOLITHIC MANHOLE STYLE BOOT CONNECTOR FACTORY INSTALLED OR CONCRETE TO PVC PIPE ADAPTORS SHALL BE USED TO CONNECT PVC PIPE TO THE MANHOLE. PVC MANHOLE ADAPTER SHALL BE A GPK PRODUCT OR APPROVED EQUIVALENT.
- THE CONTRACTOR SHALL CONFIRM EXACT LOCATION, INVERT, AND SIZE OF BUILDING SERVICES WITH MECHANICAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
- ALL WORK DONE IN THE RIGHT-OF-WAY SHALL REQUIRE DOT PERMIT AND CONFORM TO STANDARD SPECIFICATIONS.
- THE CITY OF WINDSOR HEIGHTS INSPECTIONS DEPARTMENT MUST BE NOTIFIED TO INSPECT THE CONNECTION OF THE SITE SANITARY SEWER SYSTEM TO THE CITY STORM WATER SYSTEM. ENSURE THE EXCAVATION IS KEPT OPEN FOR THIS INSPECTION.
- REMOVE AND REPLACE EXISTING PAVEMENT, CURB AND GUTTER, AND SIDEWALK AS NECESSARY TO INSTALL UTILITIES.
- EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.
- ALL HDPE STORM SEWER SHALL BE ADS N-12 WITH WATERTIGHT JOINTS OR APPROVED EQUIVALENT.
- ALL PVC SANITARY SEWER SHALL BE SDR26 PVC.

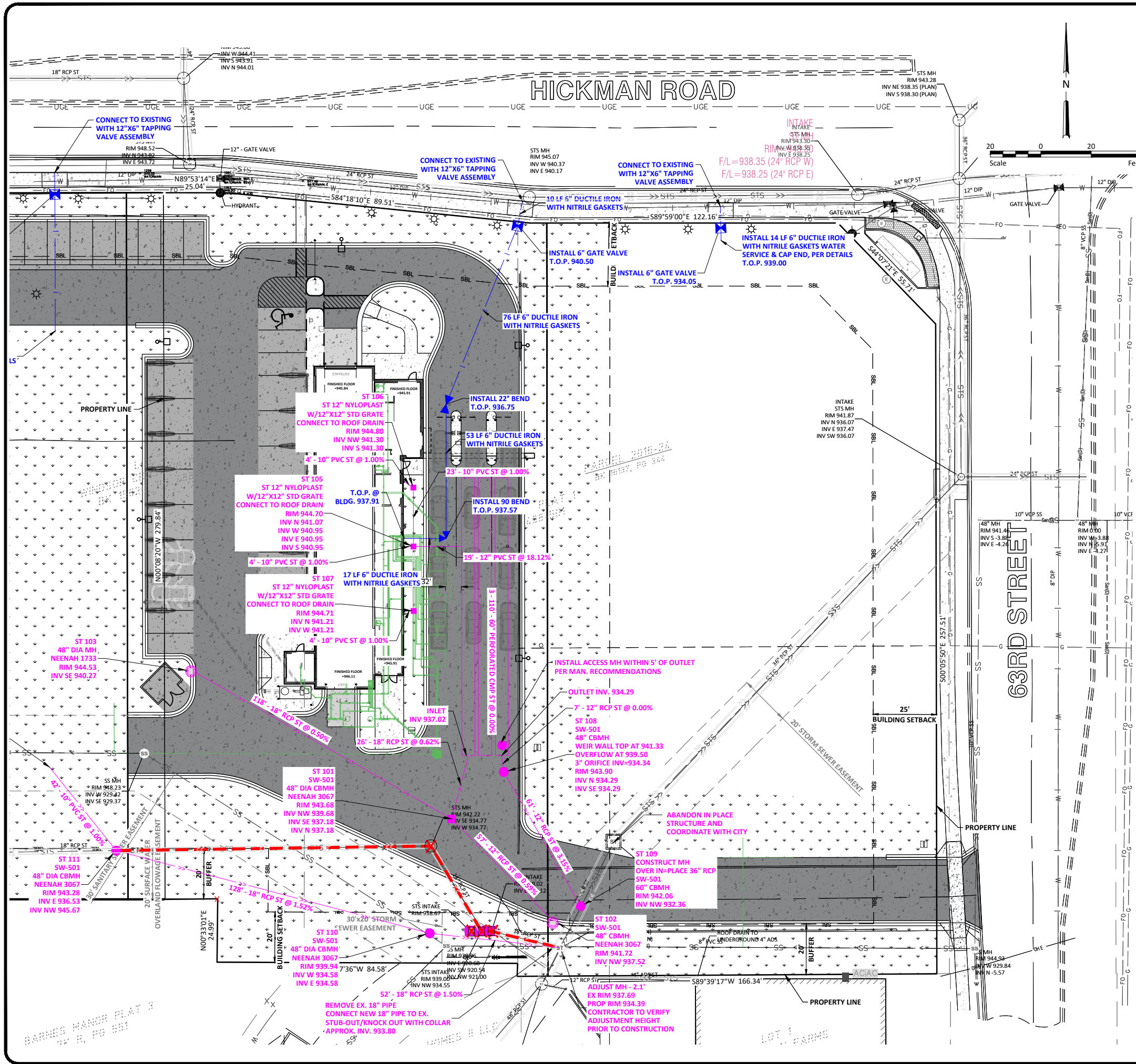


																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								</
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	----



UTILITY NOTES:

- 



LEGEND

EXISTING

NEW

STANDARD CURB & GUTTER	==	==
MOUNTABLE CURB & GUTTER	==	==
CURB & INVERTED GUTTER	==	==
PRIVATE NATURAL GAS	— G —	— G —
PRIVATE FIBER OPTIC	— FO —	— FO —
PRIVATE OVERHEAD POWER	— OHP —	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —	— UGE —
PRIVATE WATER MAIN	— I —	— I —
PRIVATE SANITARY SEWER MAIN	— > —	— > —
PRIVATE STORM SEWER MAIN	— >> —	— >> —
THICKENED EDGE SIDEWALK		
SANITARY MANHOLE	SR	SR
STORM MANHOLE	ST	ST
FIRE HYDRANT	⊗	⊗
GATE VALVE	⊗	⊗
STORM INLET	⊗	⊗
AIR CONDITIONING UNIT	⊗	⊗
GAS METER	⊗	⊗
TRANSFORMER	⊗	⊗
DECIDUOUS TREE	⊗	⊗
REMOVE STORM SEWER		---
REMOVE STRUCTURE		XXX
BUILDING		
EXISTING ROADWAY		
NEW 4" CONCRETE AT SIDEWALKS		
NEW 7" HEAVY DUTY CONCRETE		
NEW 6" LIGHT DUTY CONCRETE		
NEW 7" HEATED CONCRETE		
NEW GRASS/LANDSCAPE AREA		

- UTILITY NOTES:
- ALL DISTANCES AND SLOPES ARE CALCULATED ON CENTER OF STRUCTURE TO CENTER OF STRUCTURE.
 - ALL CONNECTIONS TO STORM SEWER STRUCTURES SHALL BE GROUTED ON BOTH THE INTERIOR AND EXTERIOR OF THE STRUCTURE.
 - EITHER MONOLITHIC MANHOLE STYLE BOOT CONNECTOR FACTORY INSTALLED OR CONCRETE TO PVC PIPE ADAPTORS SHALL BE USED TO CONNECT PVC PIPE TO THE MANHOLE. PVC MANHOLE ADAPTER SHALL BE A GPK PRODUCT OR APPROVED EQUIVALENT.
 - ALL WATERLINES SHALL HAVE THRUST BLOCKING INSTALLED ON ALL BENDS, TEES, AND PLUGS. REFER TO DETAIL FOR SIZING. RESTRAINED JOINTS SHALL ALSO BE ALLOWED IN LIEU OF THRUST BLOCKS; REFER TO DETAIL.
 - ALL WATERLINES SHALL FOLLOW DES MOINES WATER WORKS RULES AND REGULATIONS.
 - ALL FIRE HYDRANTS SHALL HAVE MARKER POSTS INSTALLED PER DETAIL.
 - THE CONTRACTOR SHALL CONFIRM EXACT LOCATION, INVERT, AND SIZE OF BUILDING SERVICES WITH MECHANICAL ENGINEER PRIOR TO THE START OF CONSTRUCTION.
 - THE CONTRACTOR MAY SUBSTITUTE CORRUGATED HDPE PIPE FOR RCP EXCEPT AT CONNECTION TO ANY EXISTING RCP, IN THE CITY RIGHT-OF-WAY, AND AT INLETS AND OUTLET TO PONDS.
 - STORM SEWER PIPE MATERIAL MAY ONLY BE CHANGED AT STRUCTURES. CHANGES OF PIPE MATERIAL AT LOCATIONS OTHER THAN STRUCTURES SHALL NOT BE ALLOWED.
 - HDPE PIPE SHALL HAVE A MINIMUM OF 18" OF COVER OVER THE TOP OF THE PIPE PRIOR TO ALLOWING CONSTRUCTION TRAFFIC OVER THE TOP OF THE PIPE.
 - ALL WORK DONE IN THE RIGHT-OF-WAY SHALL REQUIRE DOT PERMIT AND CONFORM TO STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL COORDINATE WITH DES MOINES WATER WORKS TO TAP EXISTING WATERMAIN.
 - REMOVE AND REPLACE EXISTING PAVEMENT, CURB AND GUTTER, AND SIDEWALK AS NECESSARY TO INSTALL UTILITIES.
 - EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.
 - TRENCH DRAIN SHALL BE ACO POWERDRAIN S200K LOAD CLASS D, WITH DUCTILE IRON SLOTTED GRATE, OR APPROVED EQUIVALENT.
 - FIRE HYDRANT TOP OF NUT (T.O.N.) ELEVATIONS ARE BASED ON A WATEROUS PACER WB-67 HYDRANT WITH PUMPER NOZZLE SET 24" ABOVE FINISHED GRADE.
 - ALL HDPE STORM SEWER SHALL HAVE WATERTIGHT JOINTS.
 - ALL WATER PIPE SHALL BE DUCTILE IRON WITH NITRILE GASKETS.
 - ALL PVC STORM SEWER SHALL BE SDR35 PVC, UNLESS OTHERWISE NOTED.
 - ALL RCP STORM SEWER SHALL BE AS FOLLOWS:
12" - 18" = CLASS V
21" - 36" = CLASS III
42" & LARGER = CLASS II



By

Date

Revision

No.

SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

STS & H2O UTILITY PLAN

Drawn By
JLV

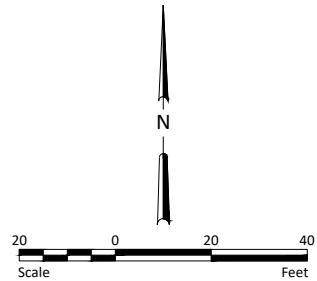
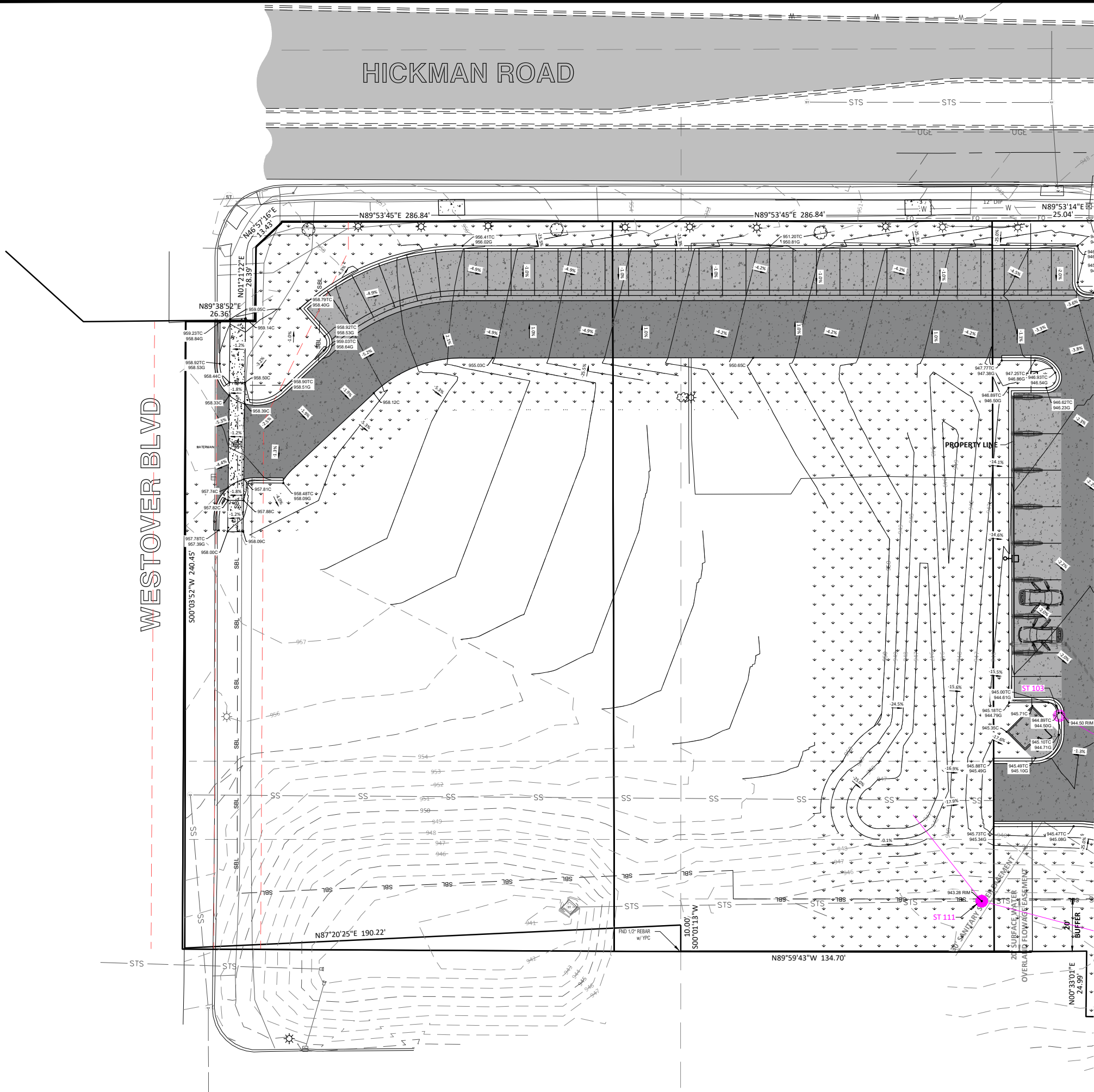
Checked By
SMH

Date
7/24/2023

Scale
As Shown

Project No.
10904-0017

SHEET
C3.3

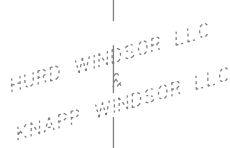
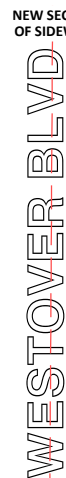
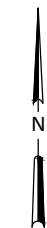


LEGEND	EXISTING	NEW
STANDARD CURB & GUTTER	==	==
MOUNTABLE CURB & GUTTER	==	==
CURB & INVERTED GUTTER	==	==
BREAKLINE	---	---
PRIVATE NATURAL GAS	— G —	— G —
PRIVATE FIBER OPTIC	— FO —	— FO —
PRIVATE OVERHEAD POWER	— OHP —	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —	— UGE —
PRIVATE WATER MAIN	— —	— —
PRIVATE SANITARY SEWER MAIN	— > —	— > —
PRIVATE STORM SEWER MAIN	— >> —	— >> —
THICKENED EDGE SIDEWALK		
SANITARY MANHOLE	SS	●
STORM MANHOLE	ST	●
FIRE HYDRANT	⊗	⊗
GATE VALVE	⊠	⊠
STORM INLET	⊞	⊞
AIR CONDITIONING UNIT	AC	
GAS METER	GM	
TRANSFORMER	T	
DECIDUOUS TREE	⊙	
SPOT ELEVATION	897.155	898.55TC 898.05G
BUILDING	[Hatched Box]	[Solid Box]
EXISTING ROADWAY	[Solid Box]	
NEW 4" CONCRETE AT SIDEWALKS		[Stippled Box]
NEW 7" HEAVY DUTY CONCRETE		[Dark Stippled Box]
NEW 6" LIGHT DUTY CONCRETE		[Medium Stippled Box]
NEW 7" HEATED CONCRETE		[Light Stippled Box]
NEW GRASS/LANDSCAPE AREA		[Grass Pattern Box]

- GRADING NOTES:**
- ALL SIDEWALKS SHALL HAVE A MAXIMUM 2% CROSS SLOPE AND LONGITUDINAL SLOPE OF 5% EXCEPT CURB RAMPS WHICH SHALL HAVE A MAXIMUM SLOPE OF 1:12; REFER TO DETAIL.
 - ALL CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED.
 - ALL WORK DONE IN THE RIGHT-OF-WAY SHALL CONFORM TO THE CITY OF WINDSOR HEIGHTS STANDARD SPECIFICATIONS.
 - ALL HANDICAPPED STALLS SHALL HAVE SIGNING INSTALLED PER DETAILS.
 - ALL HANDICAPPED STALLS SHALL BE STRIPED PER DETAIL.
 - EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.
 - BUILDING HAS MULTIPLE FINISHED FLOOR ELEVATIONS. REFER TO ARCHITECTURAL & STRUCTURAL PLANS FOR DETAILS
 - FINISHED FLOOR ELEVATION AT NORTH TUNNEL ENTRANCE SHALL BE AT 945.84 MINIMUM PER GRADING PLAN.
 - BUILDING FINISH FLOOR ELEVATION SHOWN (100'0" ARCHITECTURAL ELEVATION) IS THAT OF THE LOBBY & MECHANICAL ROOM AREAS. FINISH FLOOR OF THE TUNNEL VARIES FROM ENTRANCE TO EXIT. TUNNEL FLOOR SHALL SLOPE UP FROM ENTRANCE AT A RATE OF ¼" PER 10' TOWARDS THE TUNNEL EXIT. TUNNEL EXIT FFE SHALL BE 946.11.




					By
					Date
					Revision
				No.	
SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA					
GRADING PLAN					
					
Drawn By JLV					
Checked By SMH					
Date 7/24/2023					
Scale As Shown					
Project No. 10904-0017					
SHEET C4.0					



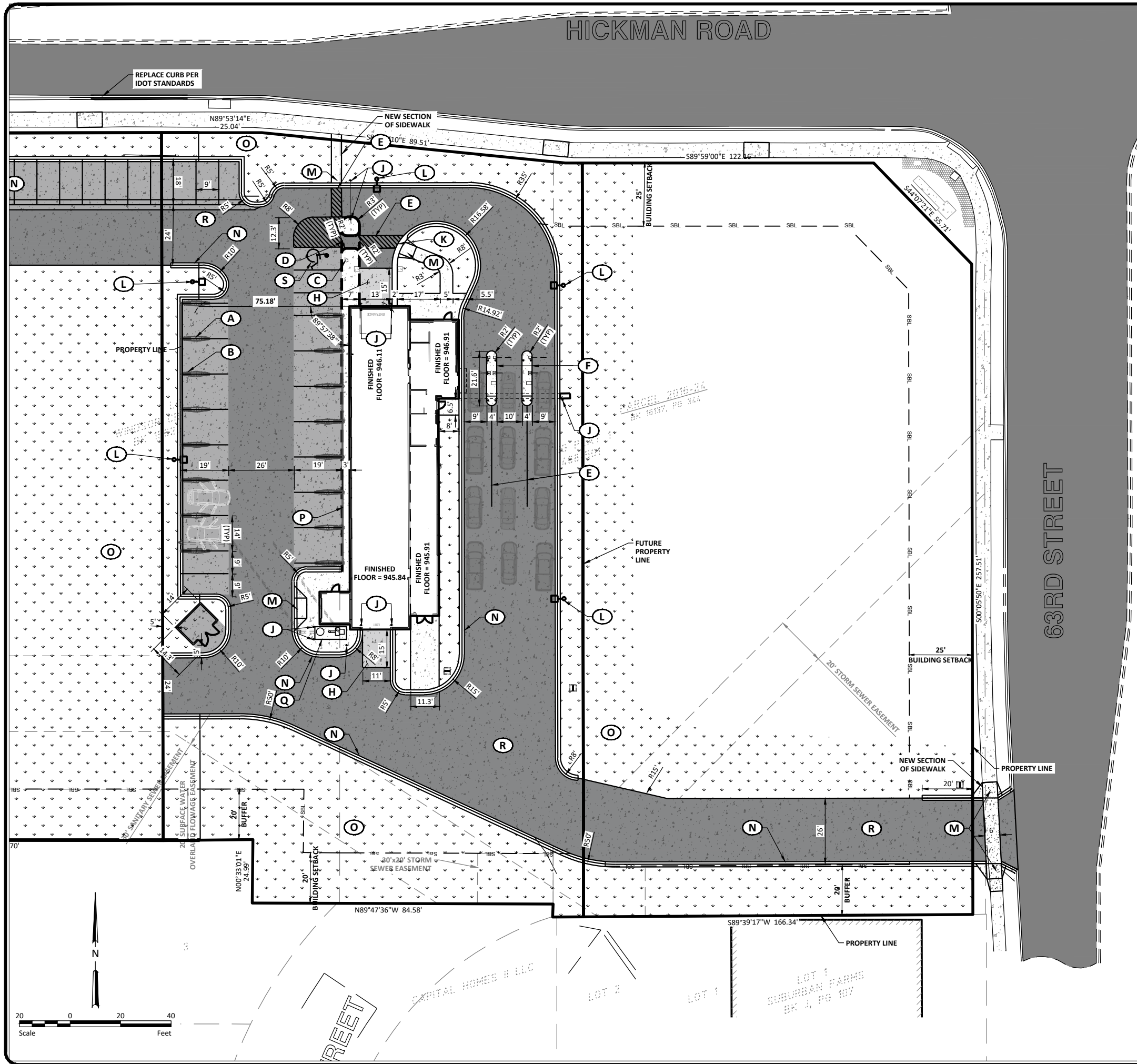
PAVING NOTES:

1. ALL WORK DONE IN THE RIGHT OF WAY SHALL CONFORM TO THE CITY OF WINDSOR HEIGHTS STANDARD SPECIFICATIONS.
2. ALL HANDICAPPED STALLS SHALL HAVE SIGNING INSTALLED PER DETAIL.
3. HANDICAPPED STALLS SHALL BE STRIPED PER DETAIL.
4. SLOPE IN HANDICAP LOADING/UNLOADING ZONES SHALL NOT EXCEED 2% CROSS SLOPE AND ON ANY HANDICAP ACCESSIBLE ROUTE SHALL NOT EXCEED 2%.
5. ALL CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED.
6. ALL MANHOLES AND STORM SEWER INLETS LOCATED IN THE PAVEMENT SHALL HAVE CONCRETE COLLARS INSTALLED PER THE DETAILS.
7. ALL DISTANCES SHOWN ARE TO BACK OF CURB.
8. EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.
9. ALL SIGNING SHALL CONFORM WITH THE CURRENT VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

- KEYNOTES:
- (A)** VACUUM SYSTEM, REFER TO PLANS AND DETAILS (BY OTHERS) FOR EXACT SIZE AND LOCATION.
 - (B)** CONCRETE FOUNDATION FOR VACUUM POST, INSTALL ISOLATION JOINT AT FOUNDATION PER DETAILS.
 - (C)** HANDICAPPED SIGN AT 1'-0" BEHIND EDGE OF SIDEWALK, PER DETAILS.
 - (D)** DROPPED SIDEWALK AT HANDICAPPED ACCESS AISLE.
 - (E)** 4" WHITE PAINTED MARKINGS.
 - (F)** RAISED ISLAND SECTION, CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL CONDUITS, FOOTINGS, AND STRUCTURES IN PROPOSED ISLANDS. ISLAND SECTION TO BE POURED SEPARATELY FROM PAVEMENT SECTION AND INSTALL ISOLATION JOINT AROUND ISLAND SECTION.
 - (H)** 8" HEATED CONCRETE, SEE DETAILS.
 - (J)** BOLLARD, SEE DETAILS.
 - (K)** RIBBON CURB.
 - (L)** LIGHT POLE - SEE LIGHTING PLAN
 - (M)** INSTALL CURB RAMP PER DETAILS.
 - (N)** MOUNTABLE CURB AND GUTTER.
 - (O)** LAWN AREA, SEE LANDSCAPING PLANS
 - (P)** INTEGRAL CONCRETE SIDEWALK - SEE DETAILS
 - (Q)** VACUUM PRODUCER, SEE DETAILS
 - (R)** NEW CONCRETE
 - (S)** ADA SYMBOL PER LOCAL ZONING REQUIREMENTS.
PAINT COLOR: SILVERSTAR RED
- 
- The logo for Silverstar Car Wash features a stylized red car silhouette with a white outline, positioned above the word "SILVERSTAR" in a bold, black, sans-serif font. Below "SILVERSTAR" is the word "CAR WASH" in a smaller, red, sans-serif font. A red star is integrated into the letter "A" of "STAR".



HOUSTON
engineering, inc.



ING NOTES:

ALL WORK DONE IN THE RIGHT OF WAY SHALL CONFORM TO THE CITY OF WINDSOR HEIGHTS STANDARD SPECIFICATIONS.

ALL HANDICAPPED STALLS SHALL HAVE SIGNING INSTALLED PER DETAIL.

HANDICAPPED STALLS SHALL BE STRIPED PER DETAIL.

SLOPE IN HANDICAP LOADING/UNLOADING ZONES SHALL NOT EXCEED 2% CROSS SLOPE AND ON ANY HANDICAP ACCESSIBLE ROUTE SHALL NOT EXCEED 2%.

ALL CURB RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED.

ALL MANHOLES AND STORM SEWER INLETS LOCATED IN THE PAVEMENT SHALL HAVE CONCRETE COLLARS INSTALLED PER THE DETAILS.

ALL DISTANCES SHOWN ARE TO BACK OF CURB.

EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED.

ALL SIGNING SHALL CONFORM WITH THE CURRENT VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

KEYNOTES:

A VACUUM SYSTEM, REFER TO PLANS AND DETAILS (BY OTHERS) FOR EXACT SIZE AND LOCATION.

B CONCRETE FOUNDATION FOR VACUUM POST, INSTALL ISOLATION JOINT AT FOUNDATION PER DETAILS.

C HANDICAPPED SIGN AT 1'-0" BEHIND EDGE OF SIDEWALK, PER DETAILS.

D DROPPED SIDEWALK AT HANDICAPPED ACCESS AISLE.

E 4" WHITE PAINTED MARKINGS.

F RAISED ISLAND SECTION, CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL CONDUITS, FOOTINGS, AND STRUCTURES IN PROPOSED ISLANDS. ISLAND SECTION TO BE POURED SEPARATELY FROM PAVEMENT SECTION AND INSTALL ISOLATION JOINT AROUND ISLAND SECTION.

H 8" HEATED CONCRETE, SEE DETAILS.

J BOLLARD, SEE DETAILS.

K RIBBON CURB.

L LIGHT POLE - SEE LIGHTING PLAN

M INSTALL CURB RAMP PER DETAILS.

N MOUNTABLE CURB AND GUTTER.


O LAWN AREA, SEE LANDSCAPING PLANS

P INTEGRAL CONCRETE SIDEWALK - SEE DETAILS

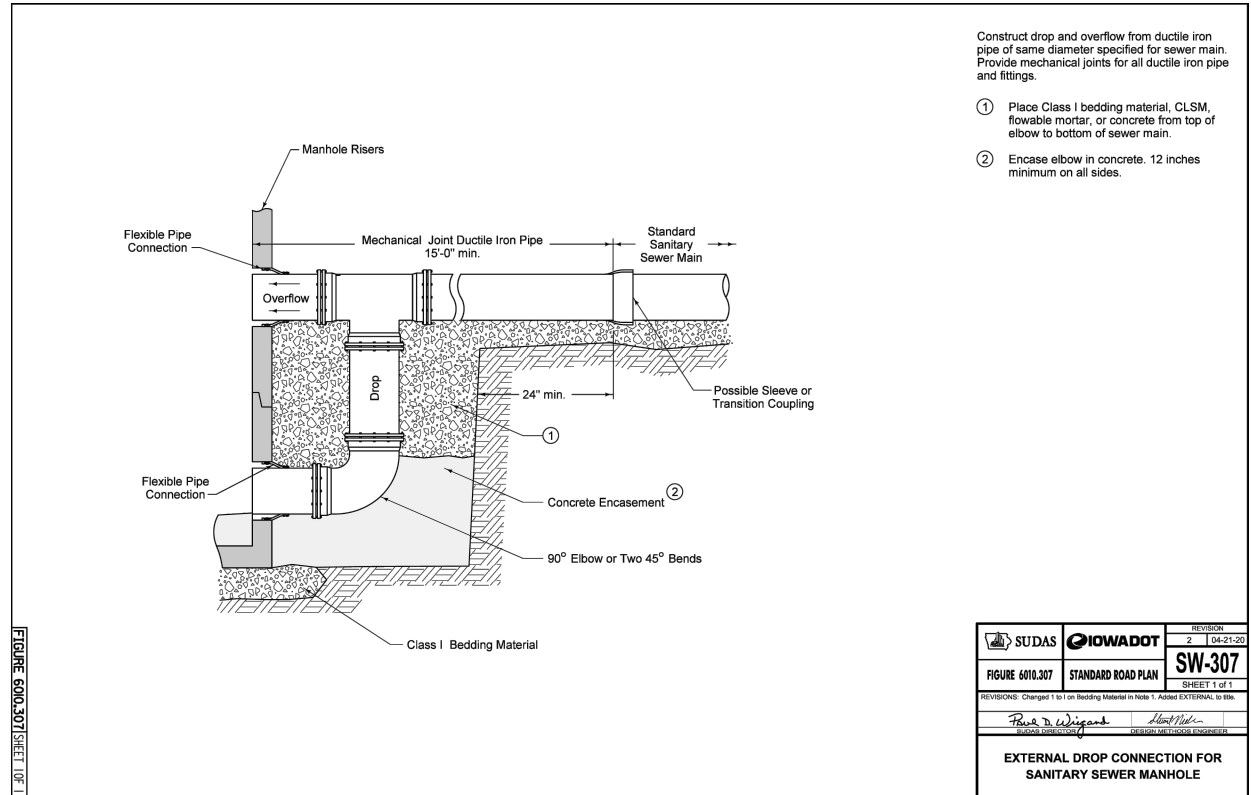
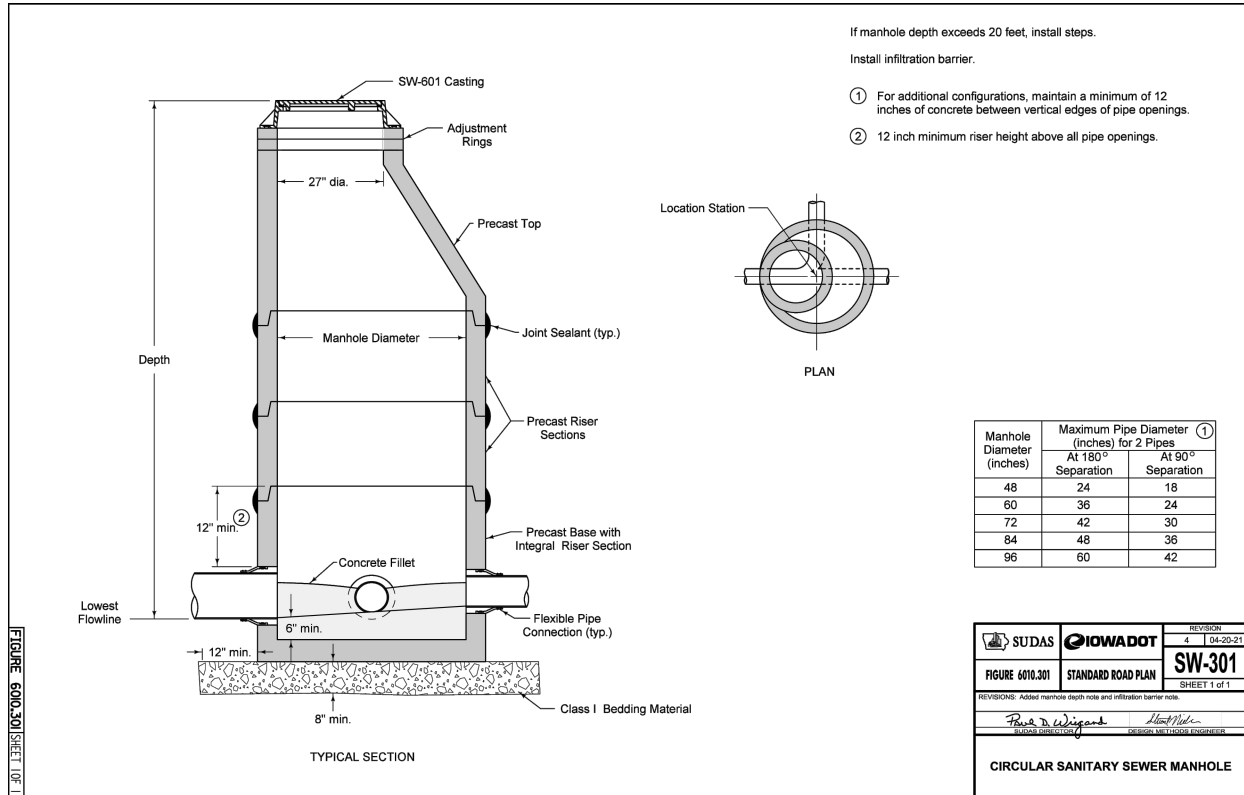
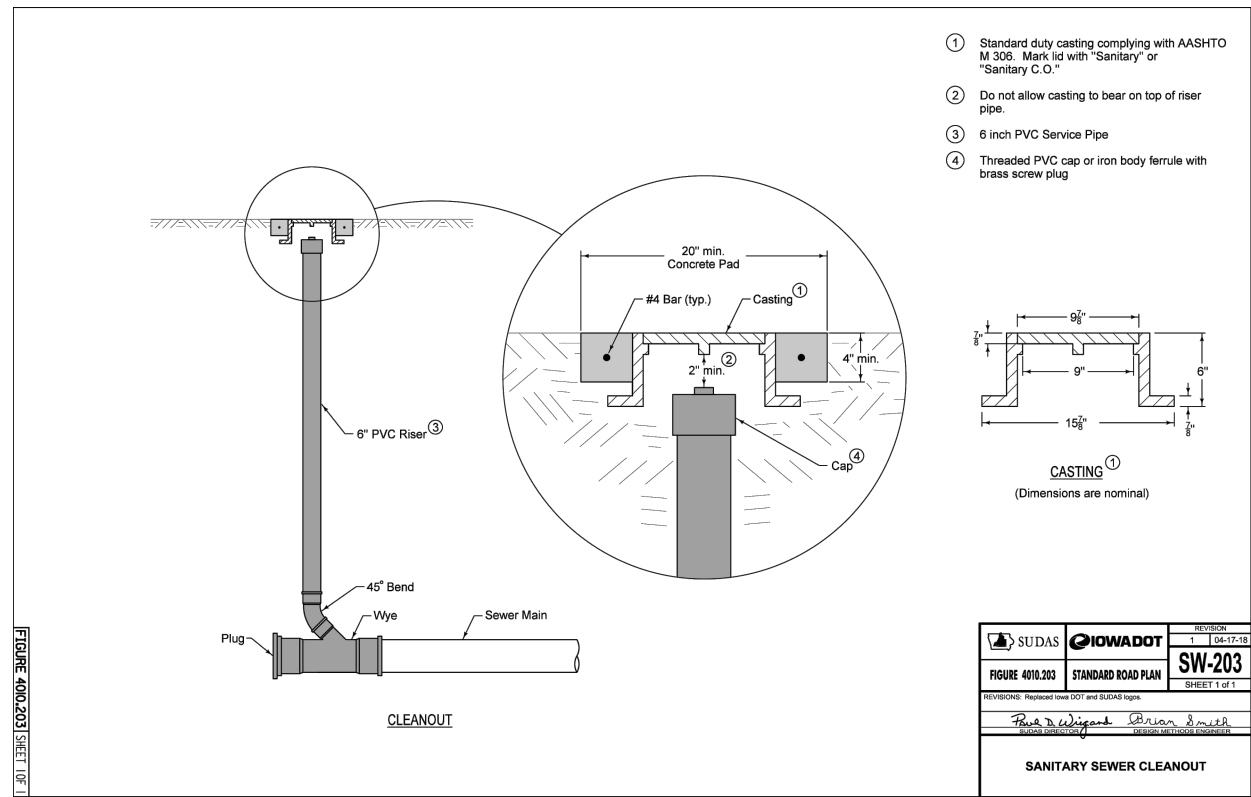
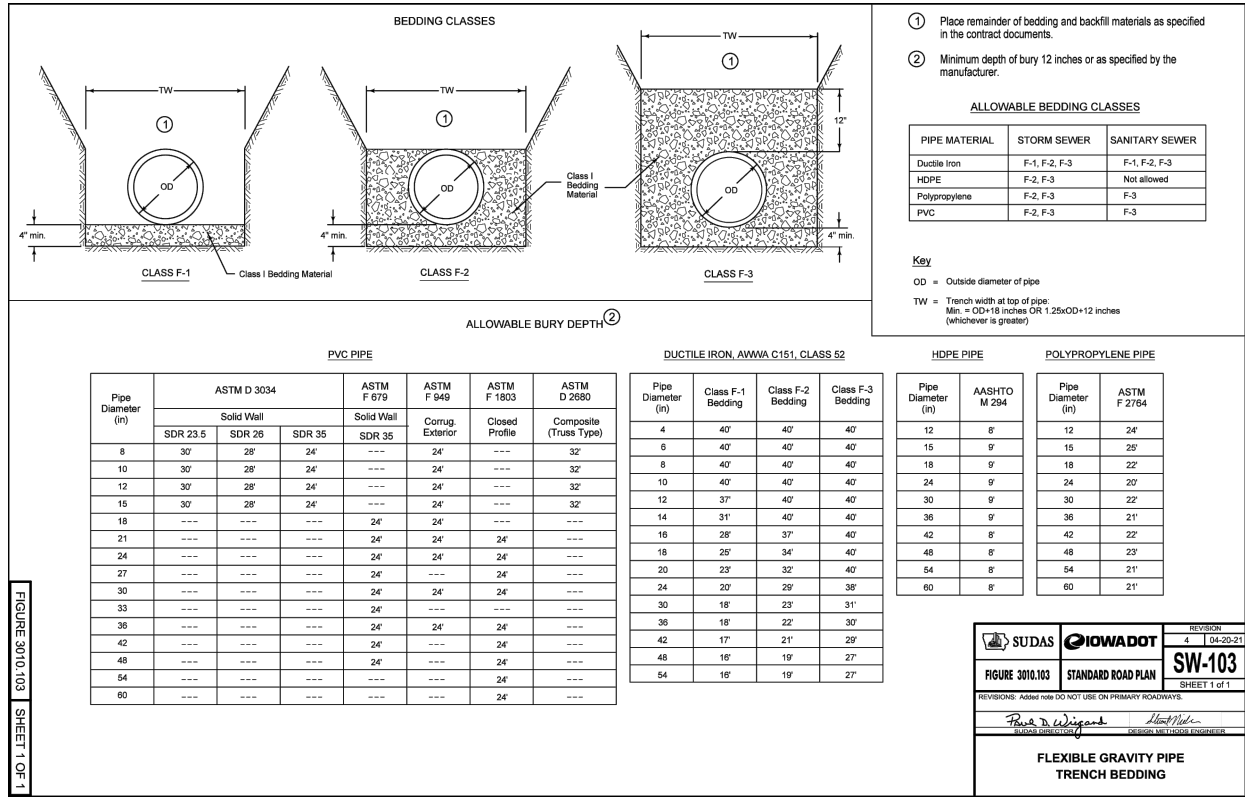
Q VACUUM PRODUCER, SEE DETAILS

R NEW CONCRETE

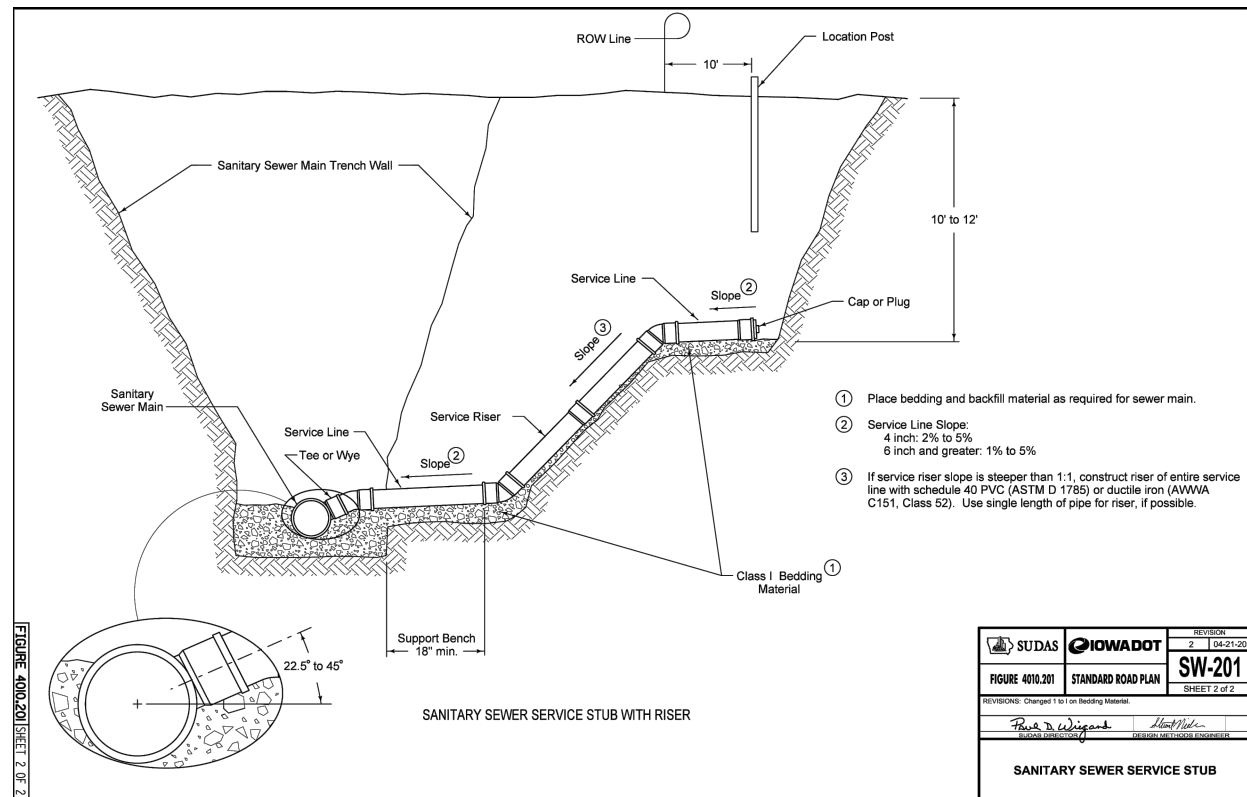
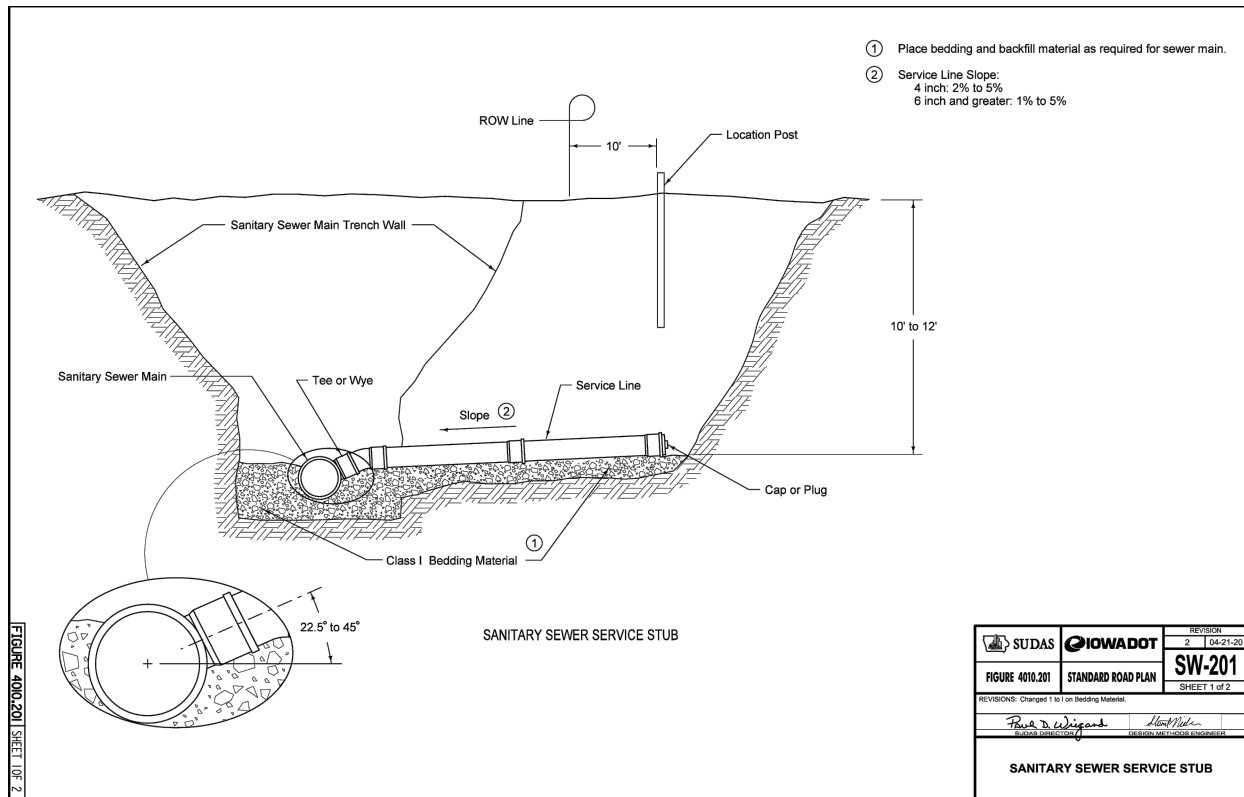
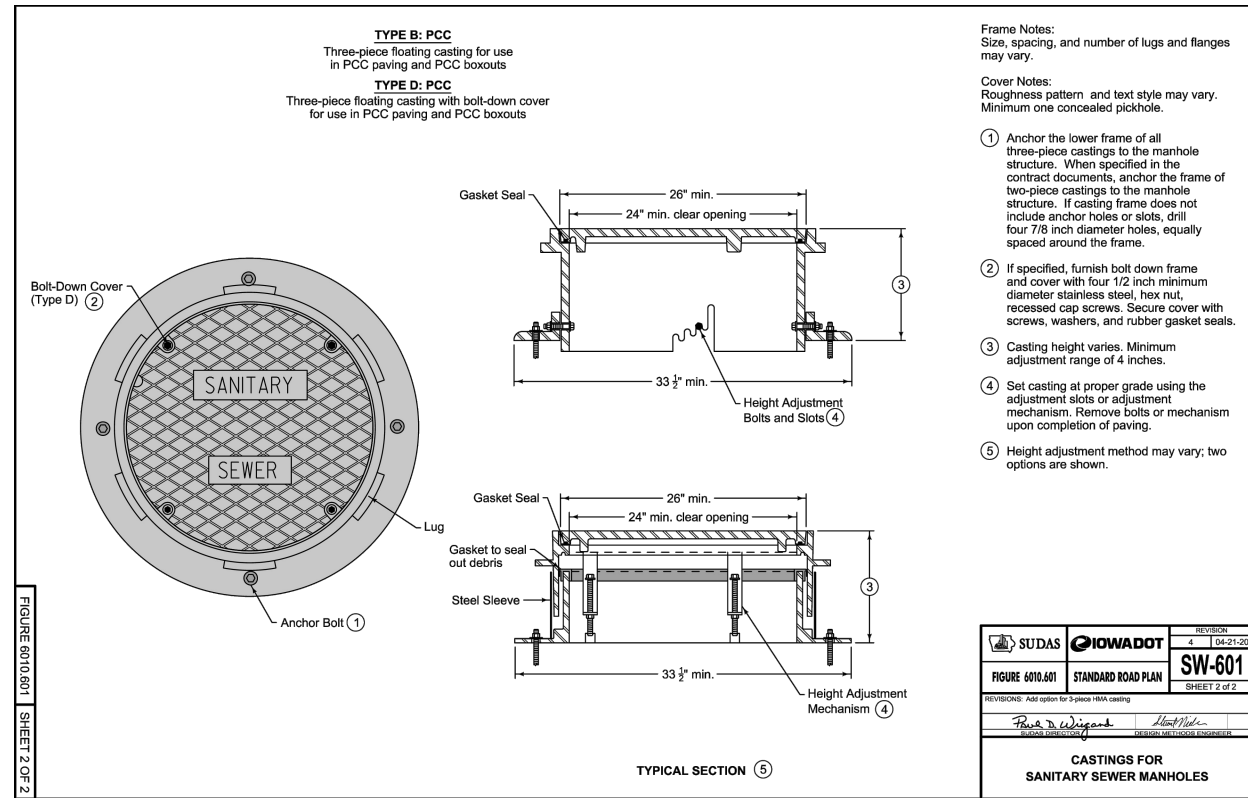
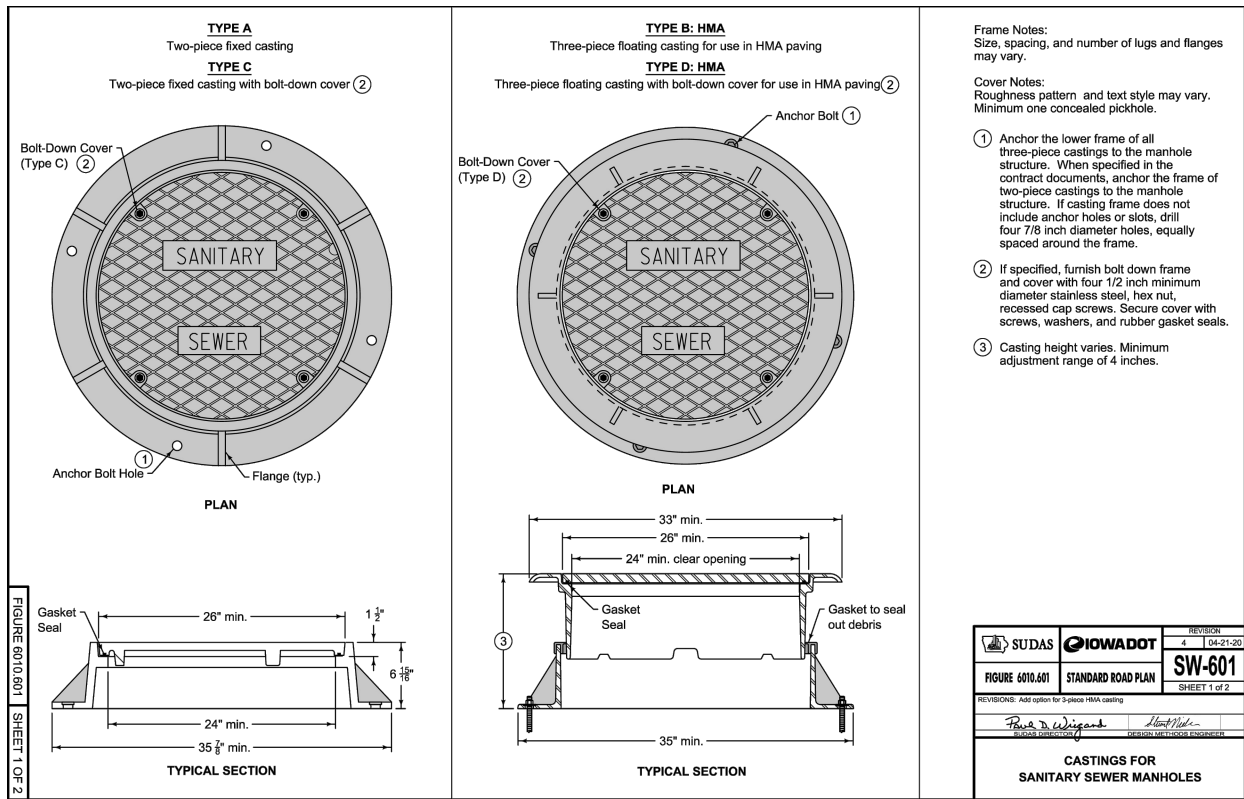
S ADA SYMBOL PER LOCAL ZONING REQUIREMENTS.
PAINT COLOR: SILVERSTAR RED

The logo for Silverstar Car Wash features a stylized red car silhouette with a white star on its side. Below the car, the word "SILVERSTAR" is written in large, bold, black capital letters, and "CAR WASH" is written in smaller, bold, black capital letters underneath.





h:\BM\10900\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Details.dwg: C6.1 DETAILS-8/18/2023 4:24 PM (jvandenbos)



SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS



Drawn By
JLV

Checked By
SMH

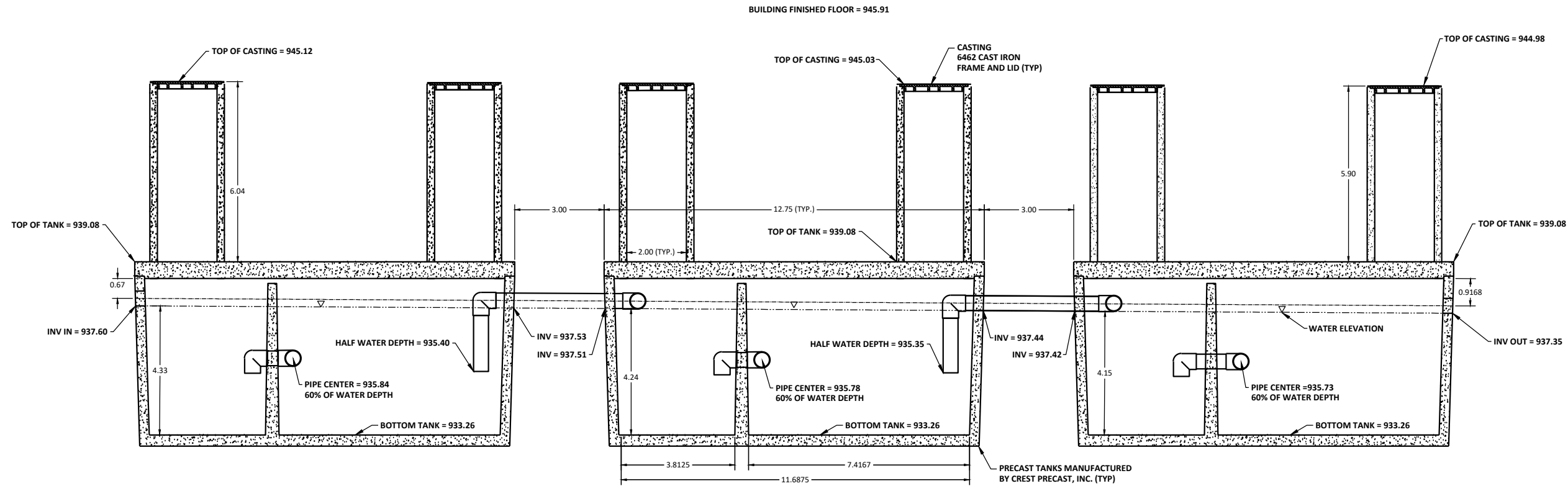
Date
7/24/2023

Scale
As Shown

Project No.
10904-0017

SHEET
C6.1

h:\IBM\10900\10904\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Details.dwg-C6.2 DETAILS-8/18/2023 4:24 PM-(jvandenbos)



RECLAIM TANK DETAIL
NOT TO SCALE

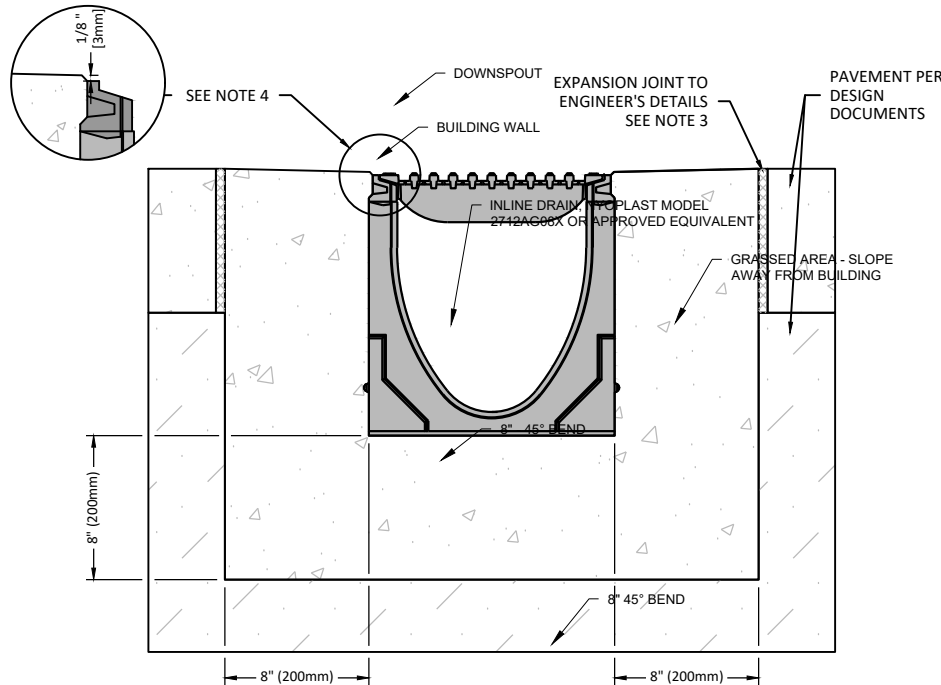
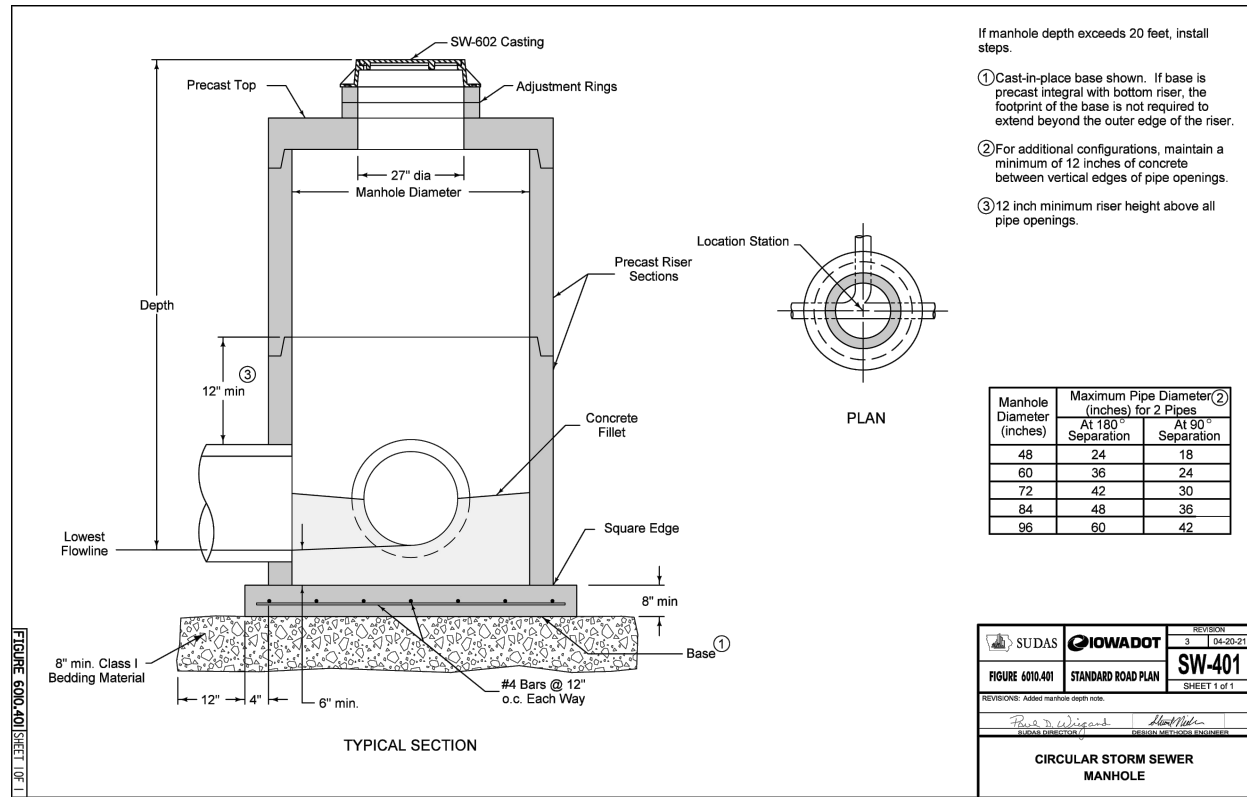
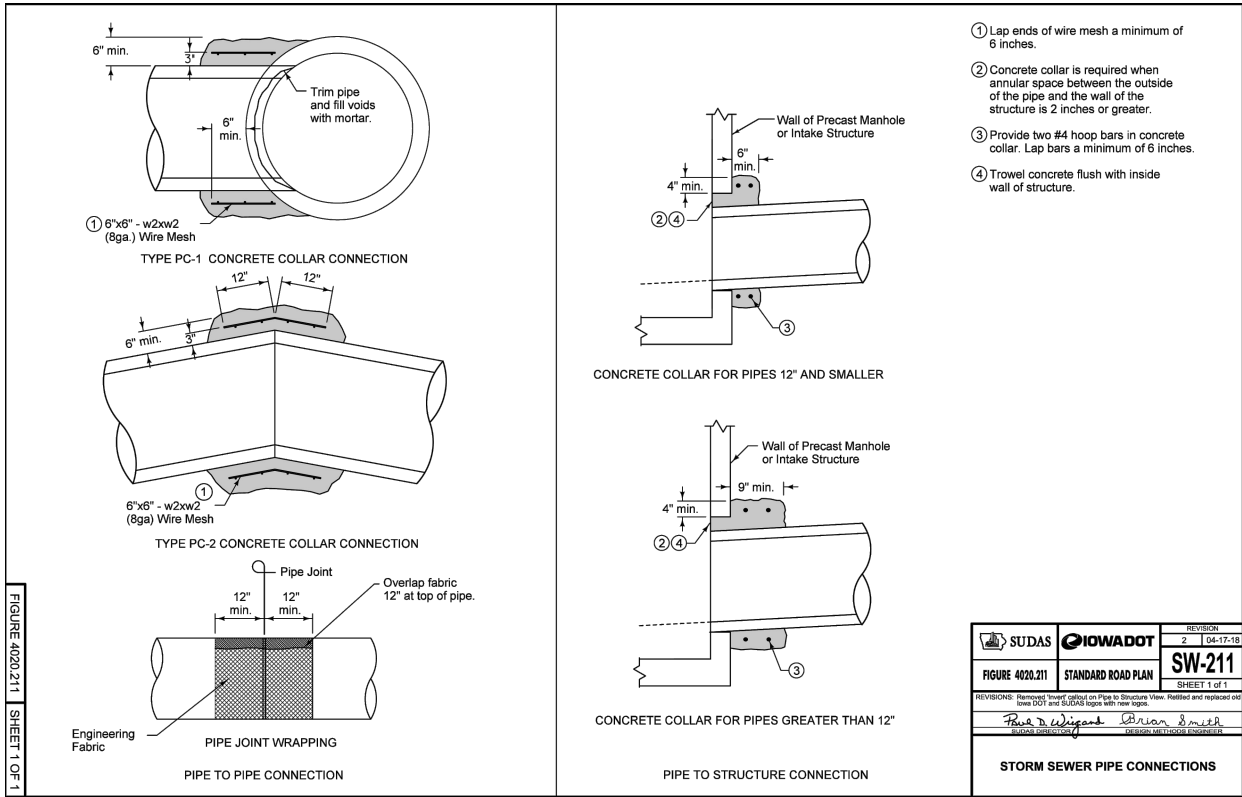
SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS



Drawn By
JLV
Checked By
SMH
Date
7/24/2023
Scale
As Shown
Project No.
10904-0017
SHEET
C6.2

h:\BM\10900\10904\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Details.dwg: C6.3 DETAILS-8/18/2023 4:24 PM (jvandenbos)



- NOTES:
1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUFFICIENT FOR EXISTING GROUND CONDITIONS. **ENGINEERING ADVICE MAY BE REQUIRED.**
 2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
 3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. **ENGINEERING ADVICE MAY BE REQUIRED.**
 4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" (3mm) ABOVE THE TOP OF THE CHANNEL EDGE.
 5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. **ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.**
 6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

S200K POWERDRAIN - LOAD CLASS D

GENERAL

THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE S200K CHANNEL SYSTEM WITH DUCTILE IRON EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS

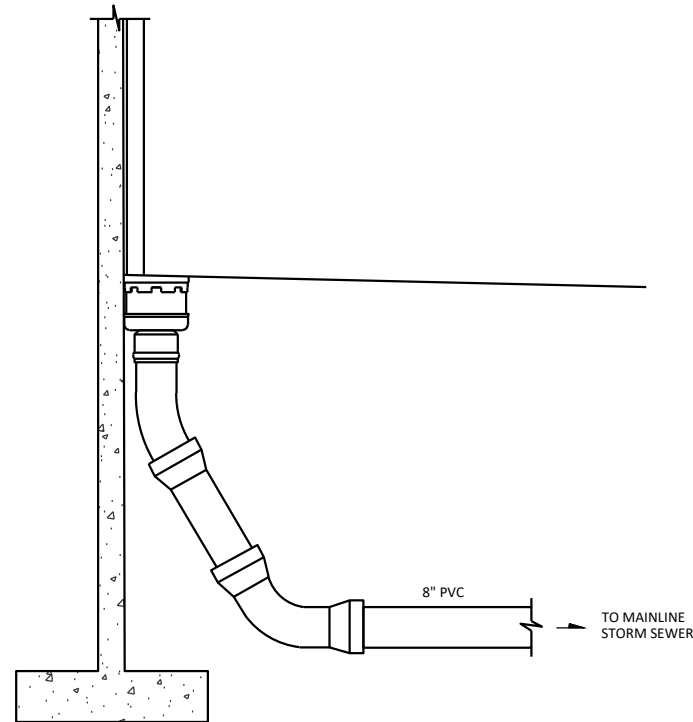
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN DUCTILE IRON EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH: 14,000 PSI
FLEXURAL STRENGTH: 4,000 PSI
TENSILE STRENGTH: 1,500 PSI
WATER ABSORPTION: 0.07%
FROST PROOF YES
DILUTE ACID AND ALKALI RESISTANT YES
B117 SALT SPRAY TEST COMPLIANT YES

THE SYSTEM SHALL BE 8" (200mm) NOMINAL INTERNAL WIDTH WITH A 10.2" (260mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'POWERLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.



NOTE:
VERIFY EXACT LOCATIONS WITH ARCHITECTURAL DRAWING, I.E. DOWNSPOUT LOCATIONS

DOWNSPOUT INLETS

NOT TO SCALE

SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS



Drawn By
JLV

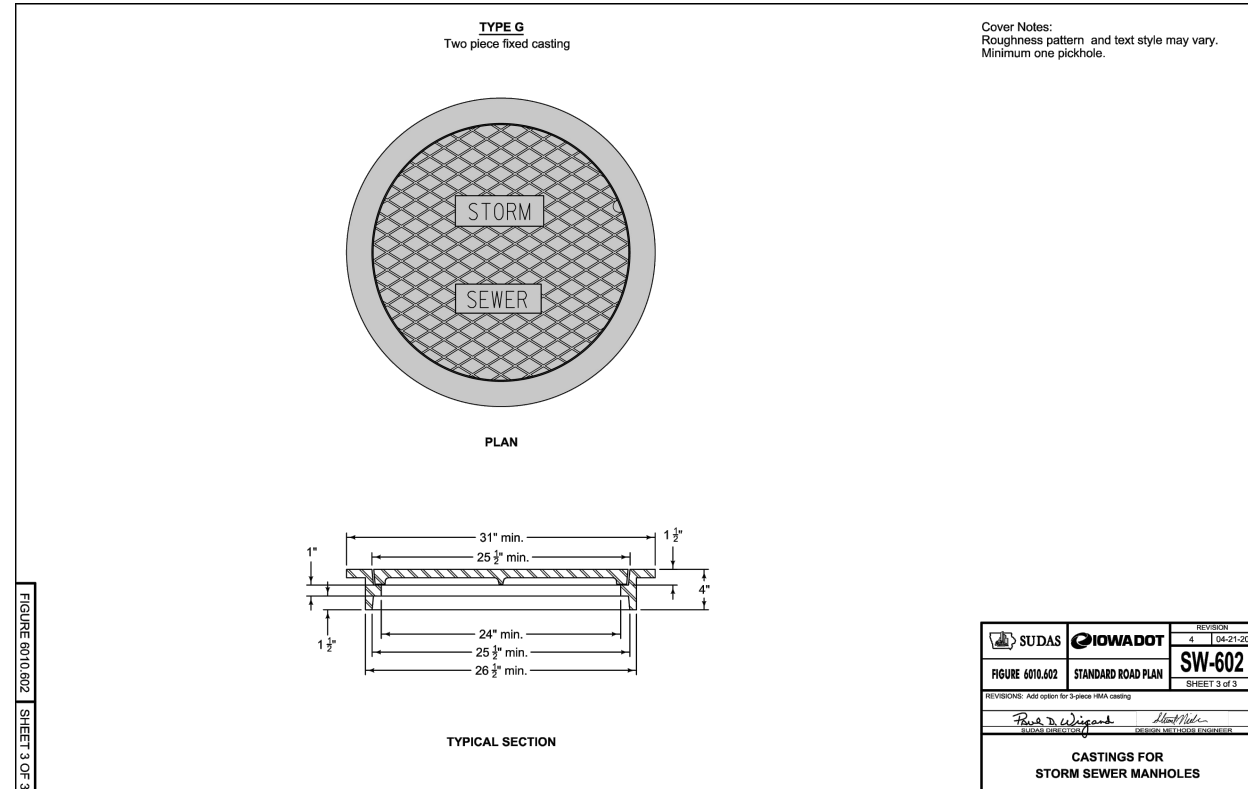
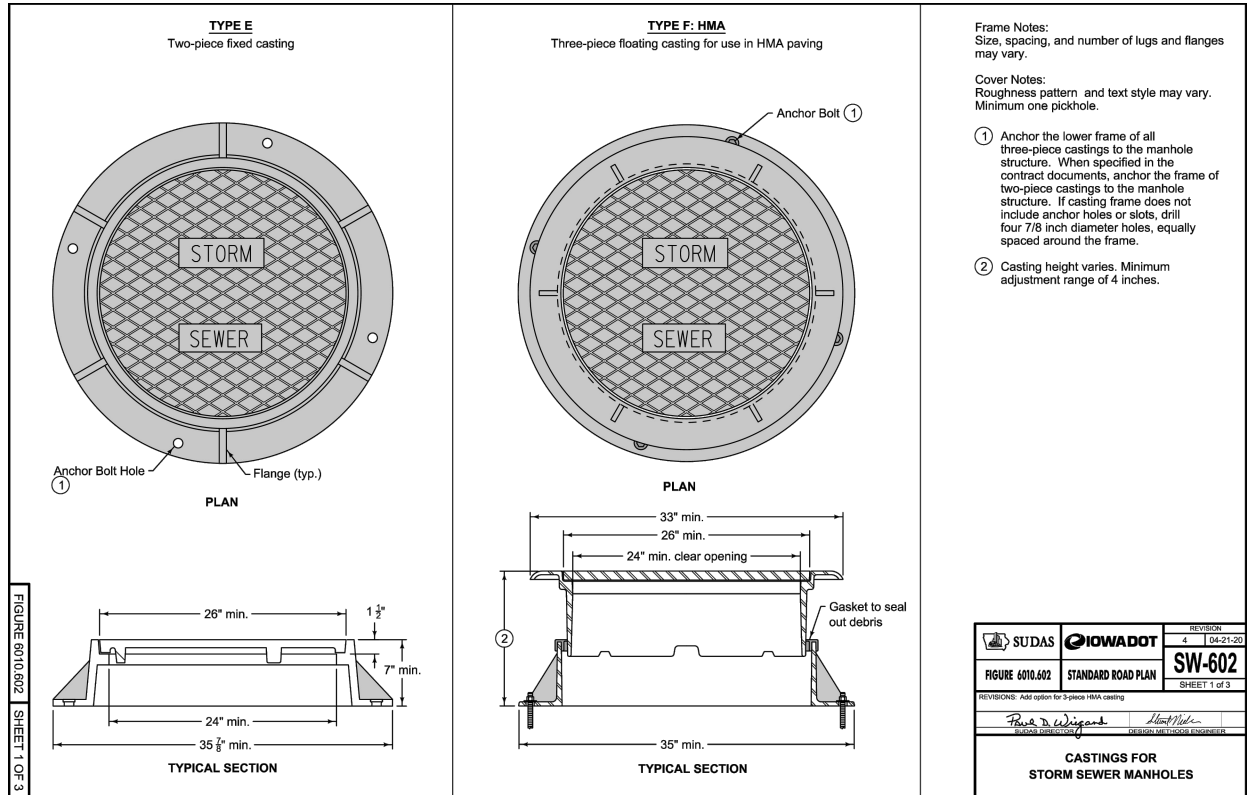
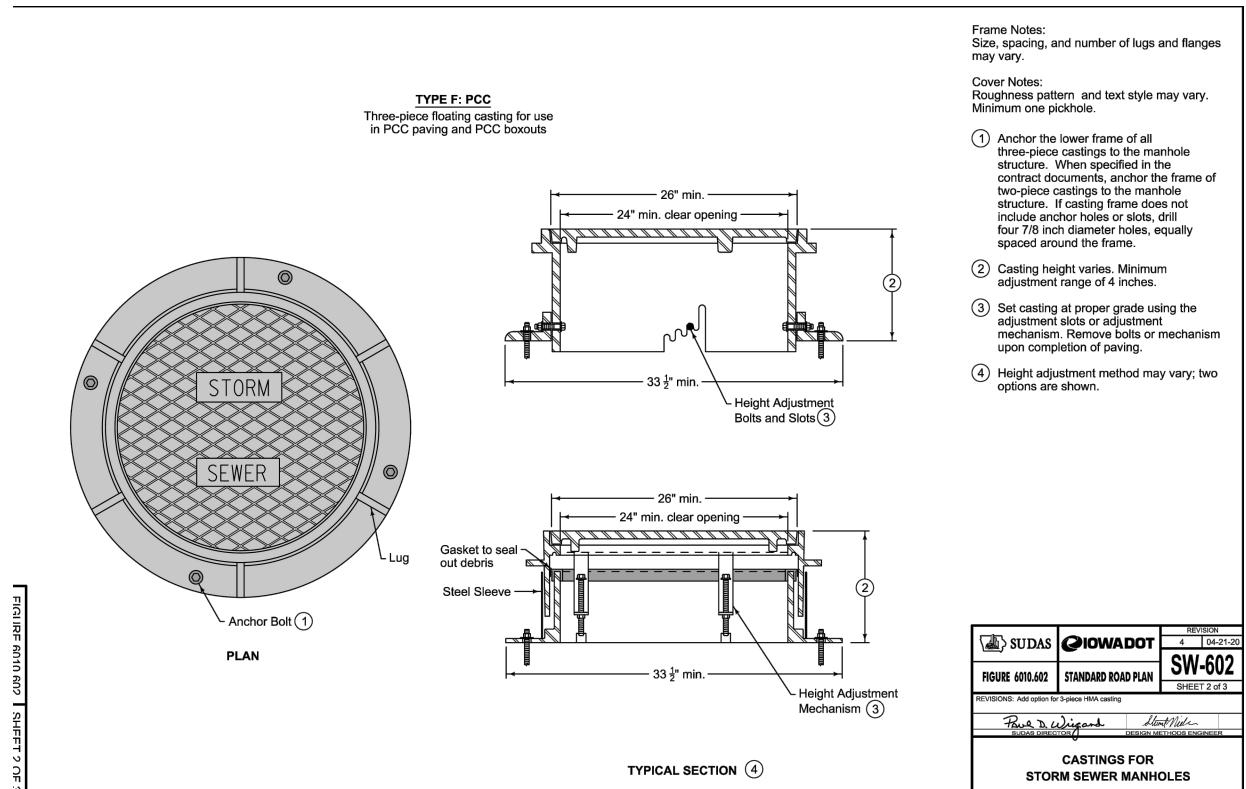
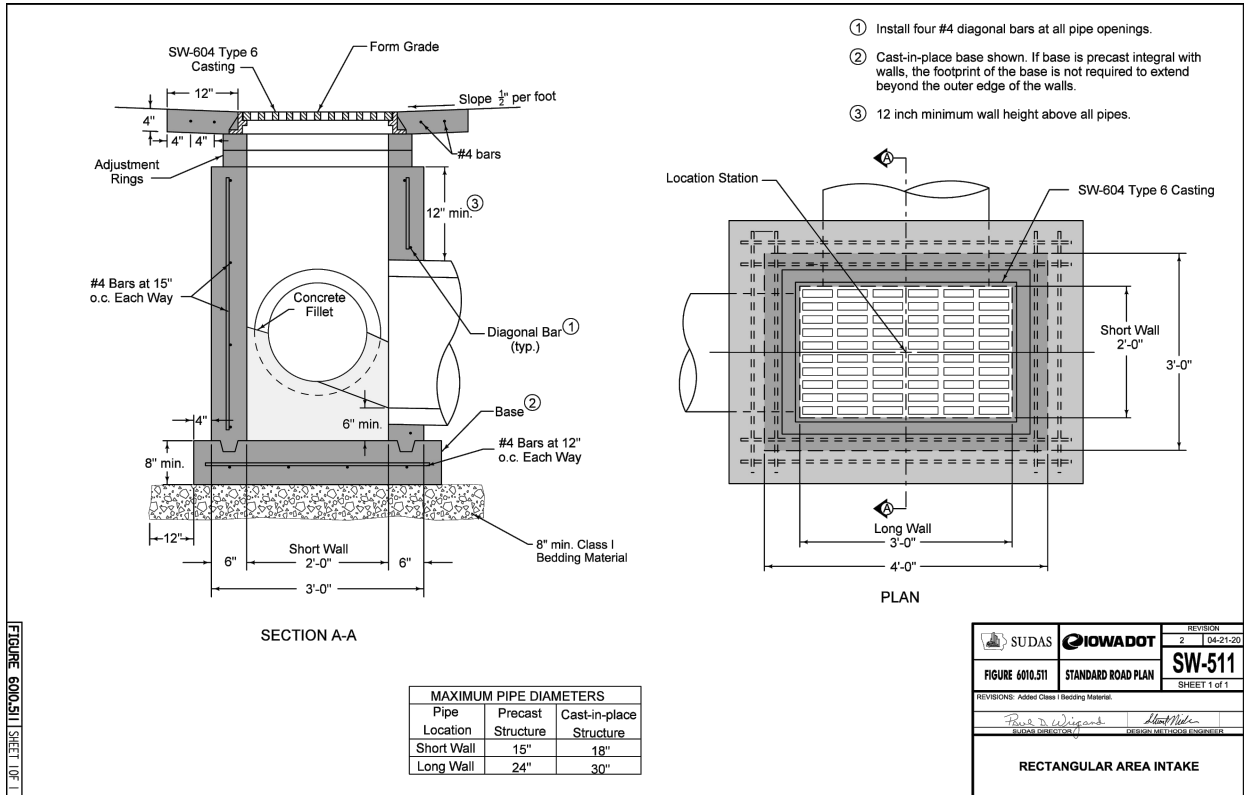
Checked By
SMH

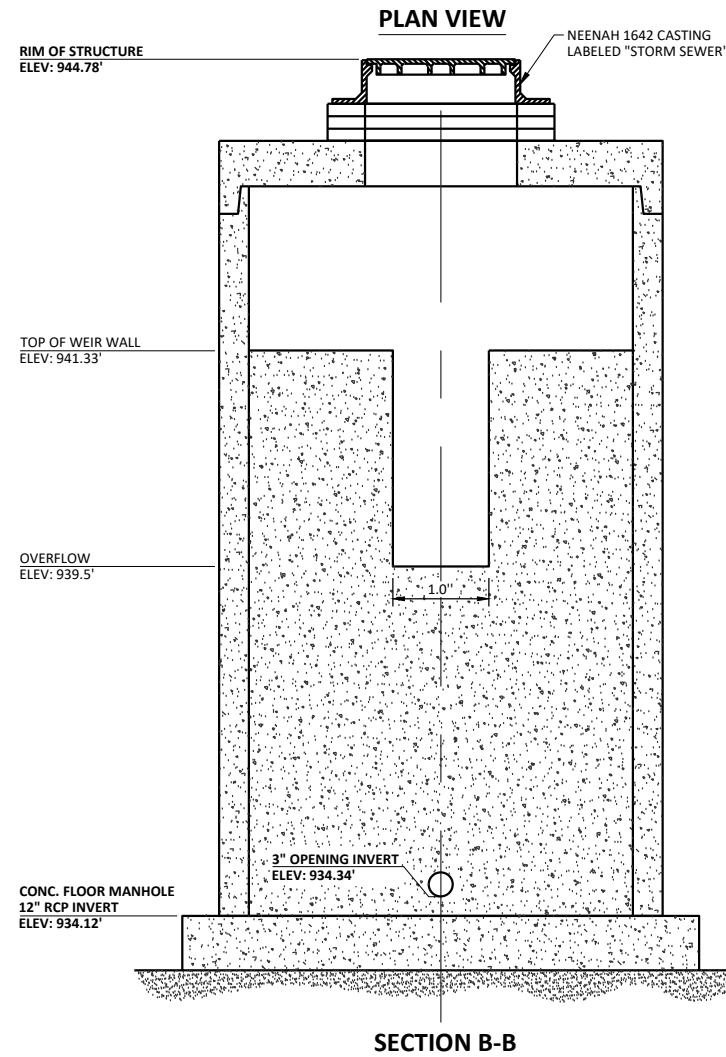
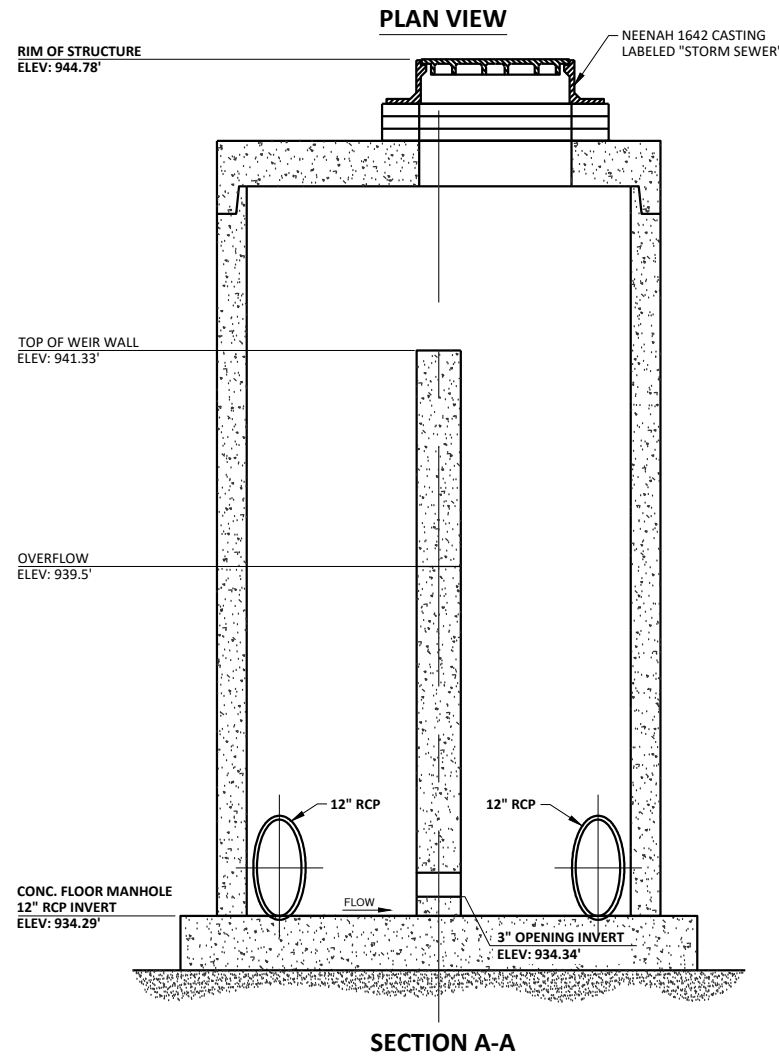
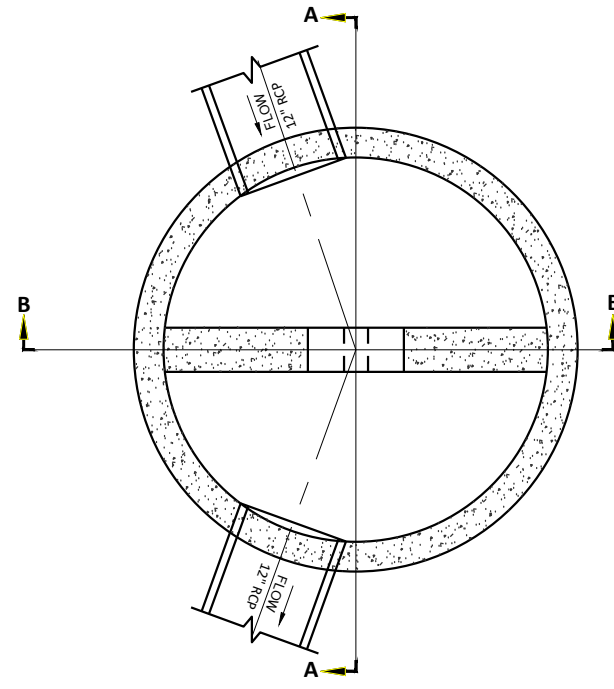
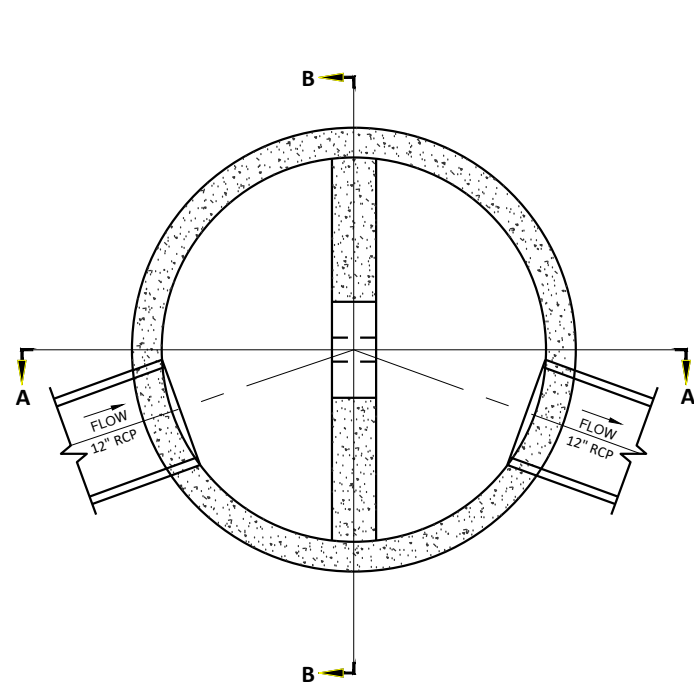
Date
7/24/2023

Scale
As Shown

Project No.
10904-0017

SHEET
C6.3





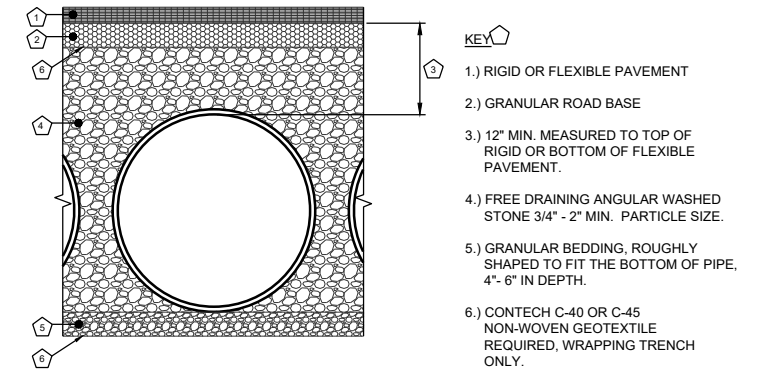
48" CBMH DETAIL - STRUCTURE STMH 108
1:1 SCALE

- NOTES:**
1. PRECAST CONCRETE MANHOLE AND BASE SECTIONS SHALL MEET THE REQUIREMENTS OF ASTM C-478 WITH "O" RING RUBBER GASKET JOINTS.
 2. PRECAST TOP SLAB SHALL BE DESIGNED FOR AASHTO HS-25 HIGHWAY LOADING PLUS DEAD LOAD.
 3. CONCRETE OR MORTAR IN KNOCK-OUTS AND ABOVE THE MANHOLE FLOOR SHALL MEET THE REQUIREMENTS OF ASTM C 270 AND MNDOT 2506.2B.
 4. NON-SHRINK GROUT SHALL MEET THE REQUIREMENTS OF ASTM C 1107.
 5. FRAME GUIDES, INVERT AND STOP LOGS SHALL BE 6061-T6 ALUMINUM.
 6. FASTENERS, NUTS AND BOLTS SHALL BE STAINLESS STEEL, TYPE 304, ASTM A276.
 7. THE CONTRACTOR SHALL PROVIDE 10-EACH, 6-INCH HIGH, ALUMINUM STOP LOGS.

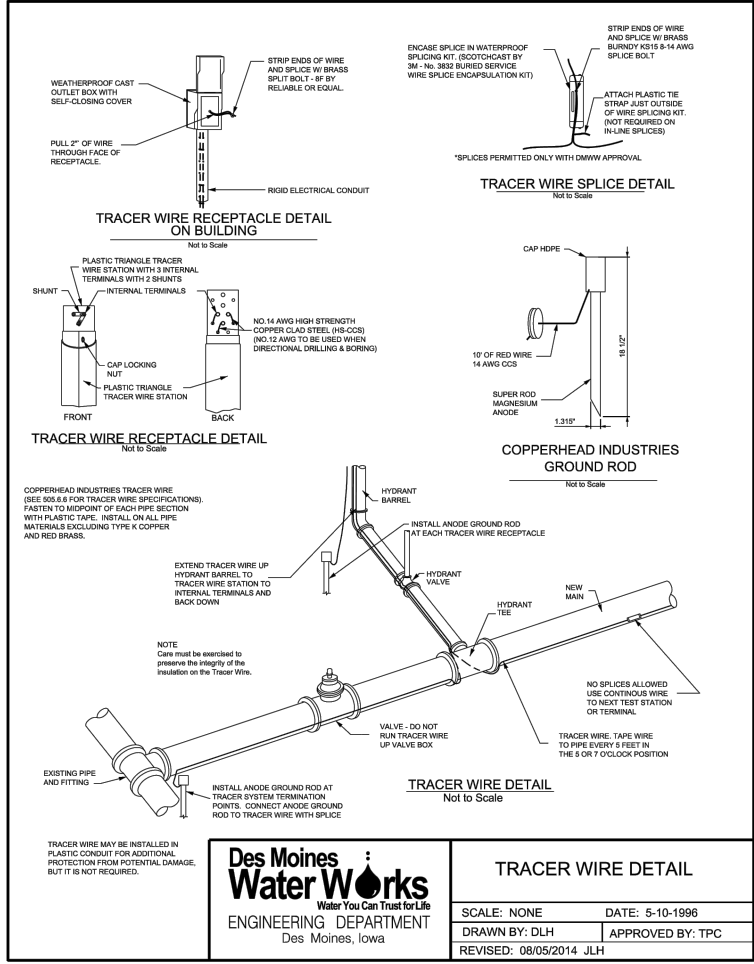
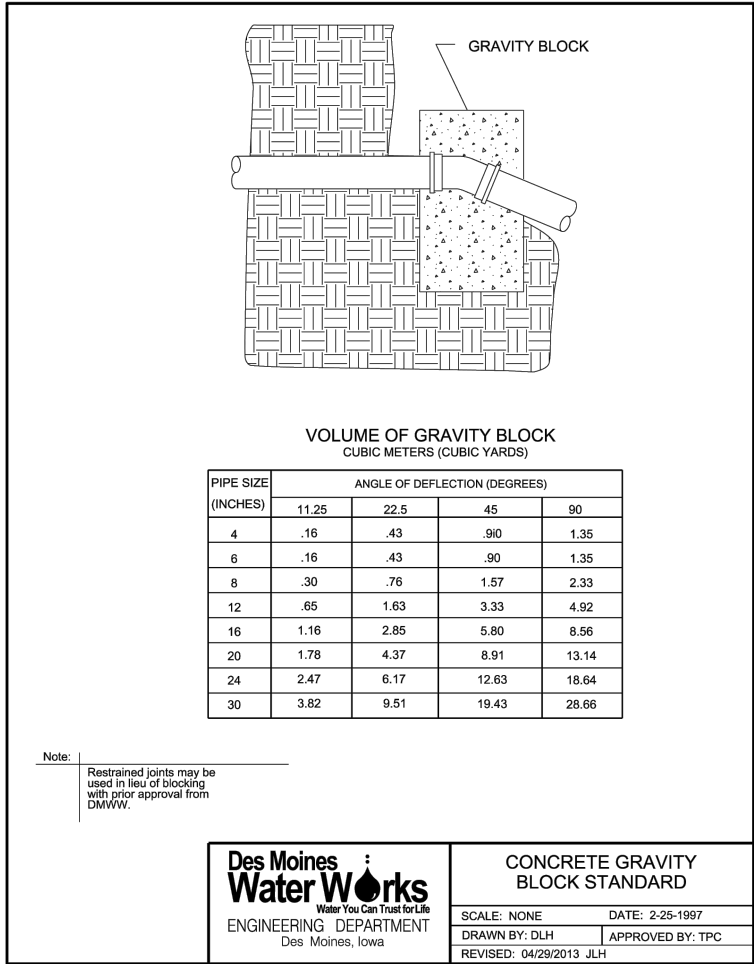
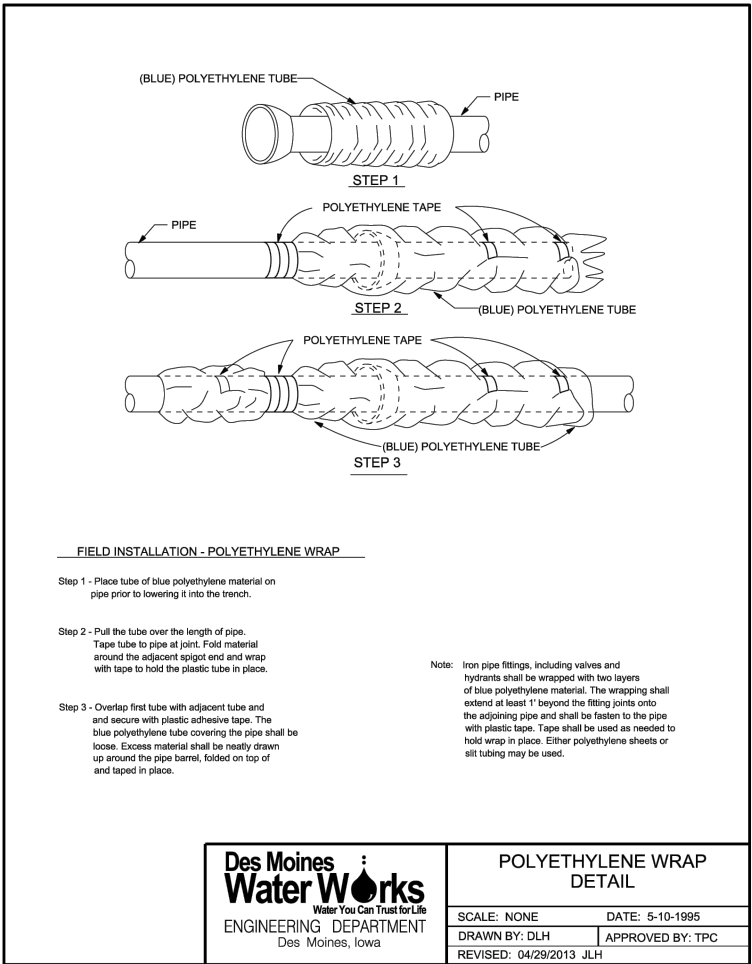
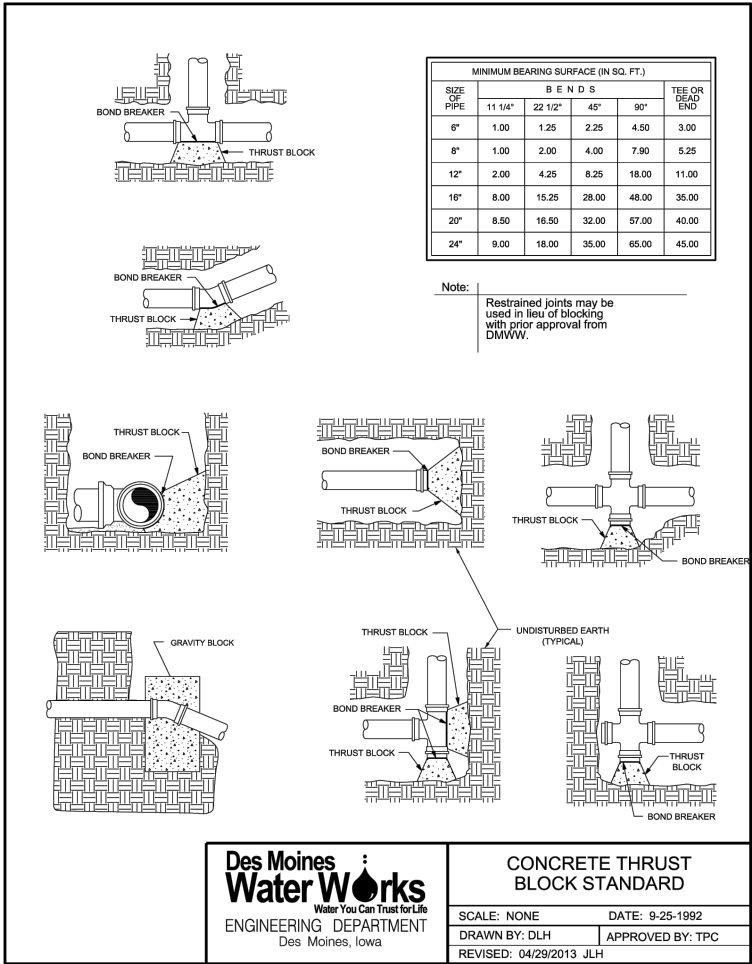
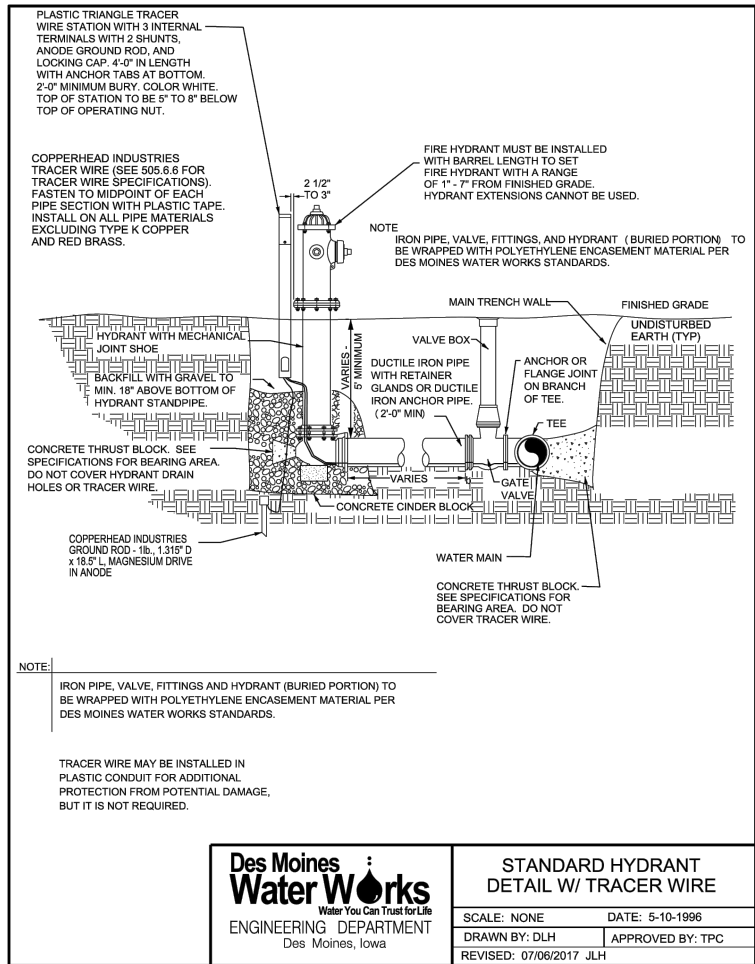
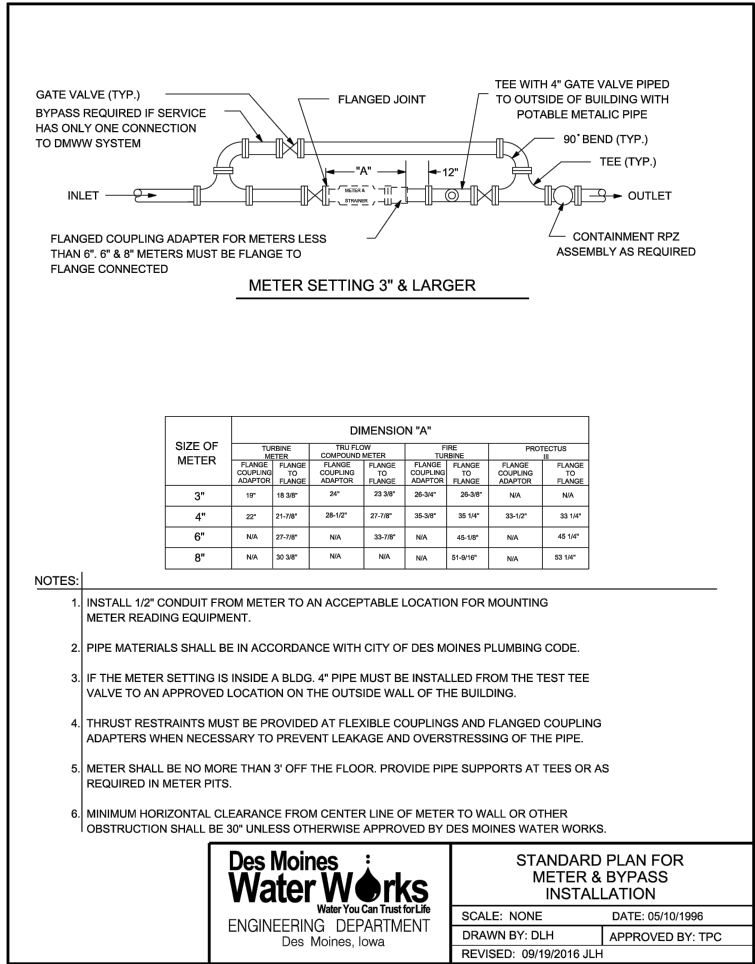
- STAINLESS STEEL ANCHOR BOLT NOTES:**
1. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL STUD ANCHORS AND HAVE A MINIMUM DIAMETER OF 1/2-INCH.
 2. ANCHOR HOLES SHALL BE DRILLED TO PROPER DEPTHS AND DIAMETERS AS PER MANUFACTURER'S RECOMMENDATIONS AND CLEANED FREE OF CONCRETE DUST USING AIR HOSE.
 3. "RED HEAD EPOXY" OR OTHER ENGINEER APPROVED EPOXY ADHESIVE SHALL BE PLACED IN HOLE PRIOR TO SETTING ANCHORS. CONTRACTOR WILL USE EPOXY IN EVERY LOCATION OF STAINLESS STEEL ANCHOR BOLTS.
 4. ANCHOR NUTS SHALL BE TIGHTENED TO MANUFACTURER'S RECOMMENDED TORQUE SPECIFICATION.

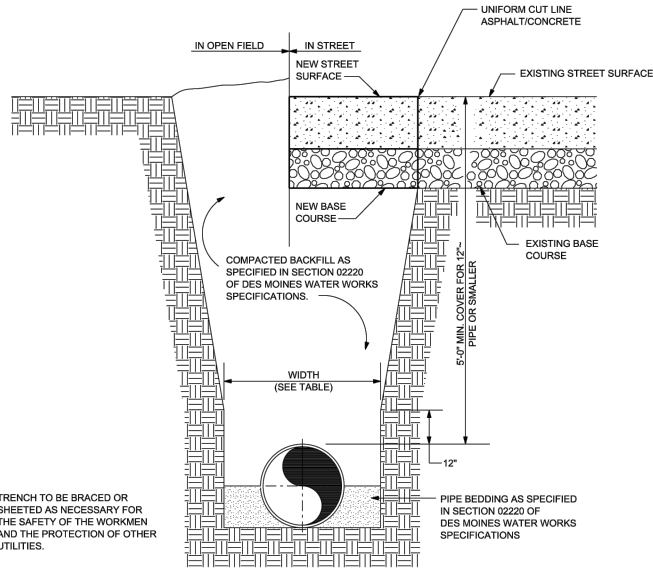
h:\BNA\10900\10904\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Details.dwg: C6.5 DETAILS-8/18/2023 4:24 PM -(jvandenbos)

By		Date		Revision	No.
SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA					
DETAILS					
HOUSTON engineering, inc.					
Drawn By JLV					
Checked By SMH					
Date 7/24/2023					
Scale As Shown					
Project No. 10904-0017					
SHEET C6.5					



UNDERGROUND STORMWATER STORAGE SYSTEM





PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"
20"	2'-8"	3'-8"

TYPICAL TRENCH SECTION
Not to Scale



TYPICAL TRENCH SECTION

SCALE: NONE DATE: 9-22-1992
DRAWN BY: DLH APPROVED BY: TPC
REVISED: 04/29/2013 J.L.H.

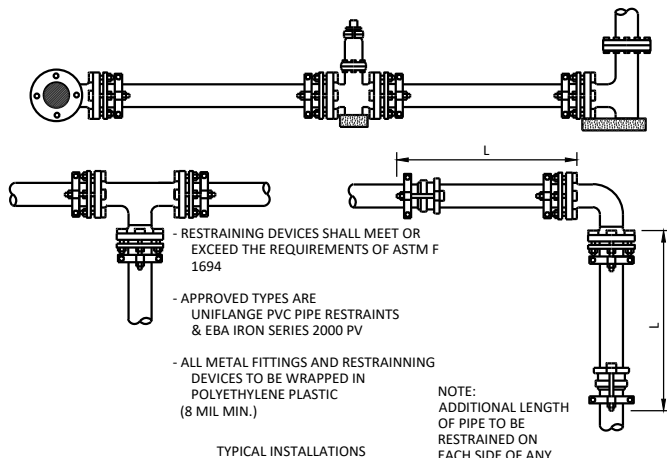
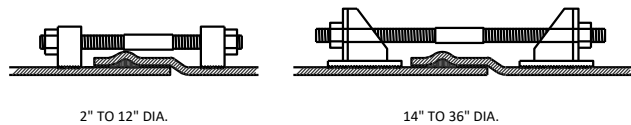
FIGURE 27

RESTRAINED LENGTHS OF PVC PIPE						
NOM. PIPE SIZE	90° BEND (L)	45° BEND (L)	22.5° BEND (L)	11.25° BEND (L)	SIZE ON SIZE TEE (L)*	VALVE/ DEAD-END (L)
6"	19'	8'	4'	2'	2'	35'
8"	25'	11'	5'	3'	13'	45'
10"	31'	13'	6'	3'	23'	55'
12"	36'	15'	8'	4'	33'	65'
16"	47'	20'	10'	5'	52'	84'

* RECOMMENDED RESTRAINED LENGTHS FOR TEES ARE FOR THE BRANCH OUTLET AND ASSUME A MINIMUM 10 FT. SECTION OF PIPE ATTACHED TO EACH SIDE OF THE RUN. RESTRAINT DEVICES ARE ALSO REQUIRED ON BOTH RUN JOINTS OF THE TEE ITSELF.

SIZE	45° VERT. OFFSET* (L)	22 1/2° VERT. OFFSET* (L)
6"	15'/8"	7'/4"
8"	19'/11"	9'/5"
10"	23'/13"	11'/6"
12"	27'/15"	13'/8"
16"	35'/20"	17'/10"

* FIRST NUMBER IS THE RECOMMENDED RESTRAINED LENGTH ON EACH SIDE OF THE DOWN BEND, THE SECOND NUMBER IS THE LENGTH FOR EACH SIDE OF THE UP BEND.

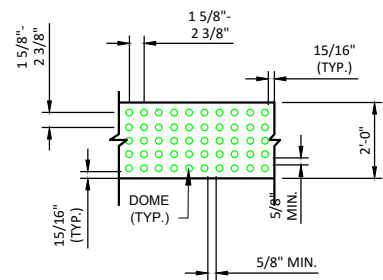
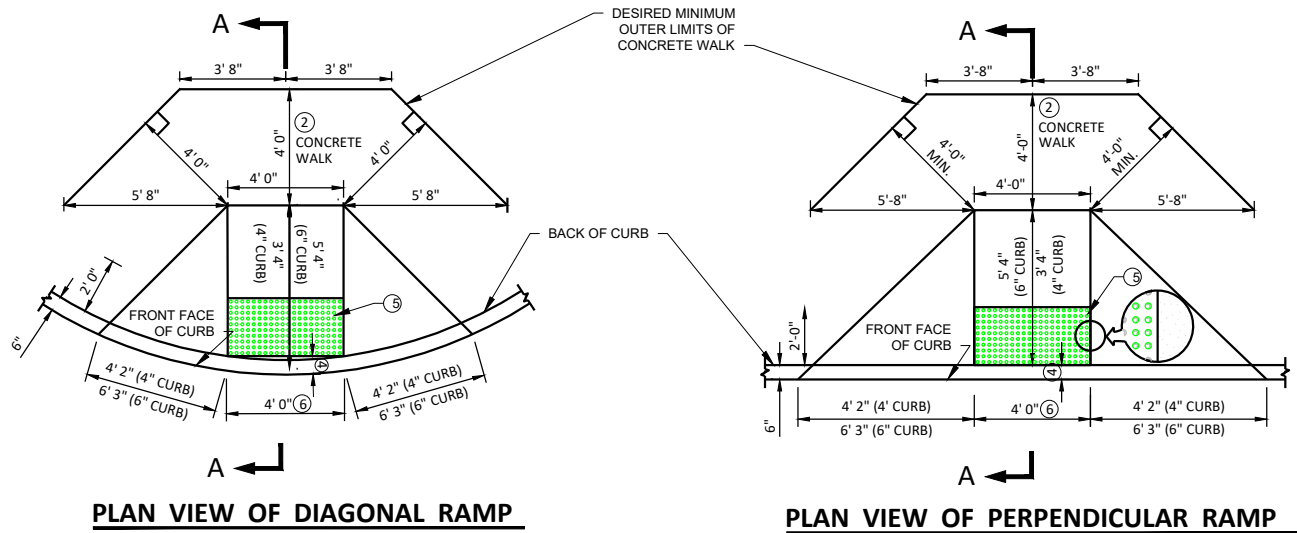


TYPICAL INSTALLATIONS

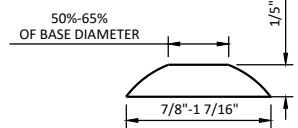
NOTE:
ADDITIONAL LENGTH OF PIPE TO BE RESTRAINED ON EACH SIDE OF ANY RESTRAINED FITTINGS (SEE TABLE BELOW)

RESTRAINED JOINT PIPE

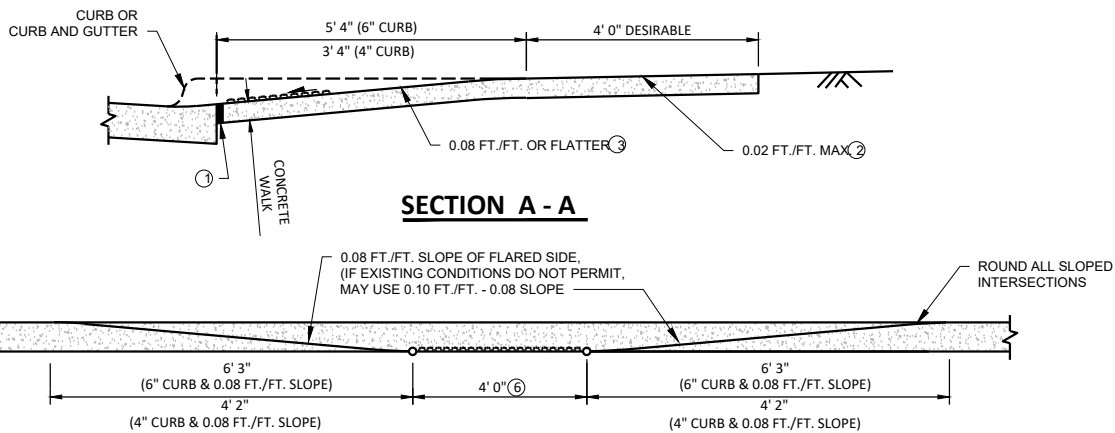
NOT TO SCALE



DOME SPACING



DOME SECTION



SECTION A - A

ELEVATION OF RAMP

PEDESTRIAN CURB RAMP DETAILS FOR THE HANDICAPPED

NOT TO SCALE

NOTES:

- THE CURB AND CURB TRANSITION ON THE RAMP WILL BE PAID FOR AS LINEAR FEET OF CONCRETE CURB OR CONCRETE CURB AND GUTTER. THE RAMP AREA WILL BE PAID FOR AS CONCRETE WALK. THE TRUNCATED DOME AREA SHALL BE CONSIDERED INCIDENTAL.
- 1/2" PRE-FORMED JOINT FILLER MATERIAL, AASHTO M 213
- WHEN POSSIBLE, PROVIDE A PATH OF TRAVEL 48" WIDE BEHIND THE PEDESTRIAN RAMP. A RELATIVELY FLAT 48"x48" LANDING WILL ALLOW WHEELCHAIRS TO NAVIGATE AROUND THE PEDESTRIAN RAMP
- WHEN A MEDIAN IS NOT WIDE ENOUGH FOR TWO PEDESTRIAN RAMPS AND A 48" LANDING BETWEEN THEM, THE PEDESTRIAN CROSSING SHALL BE CUT THROUGH THE MEDIAN AT STREET LEVEL
- 6" TO 8" IS THE REQUIRED OFFSET OF THE DETECTABLE WARNINGS/TRUNCATED DOME AREA FROM THE POINT OF FACE OF CURB, OR PLACE THE DETECTABLE WARNINGS AT THE BACK OF CURB
- ADA REQUIRED TRUNCATED DOME AREA SHALL BE 24" MIN. IN DIRECTION OF TRAVEL AND SHALL EXTEND THE FULL WIDTH (36" OR 48" TYP.) OF THE CURB RAMP. THIS 24" BY 36" OR 48" WIDTH (TYP.) TRUNCATED DOME AREA SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKING SURFACE. THE ENTIRE TRUNCATED DOME AREA SHALL BE A LIGHT COLOR (LIGHT GRAY, WHITE OR YELLOW) WHEN THE ADJACENT SIDEWALK IS A DARK COLOR. THE ENTIRE TRUNCATED DOME AREA SHALL BE A DARK COLOR (RED, BLACK, DARK GRAY OR BRIGHT YELLOW) WHEN THE ADJACENT SIDEWALK IS A "WHITE" OR LIGHT GRAY CEMENT COLOR
- 48" FOR NEW CONSTRUCTION. 36" ALLOWED FOR RETROFITS OR PRESERVATION PROJECTS

SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS



Drawn By
JLV

Checked By
SMH

Date
7/24/2023

Scale

As Shown

Project No.
10904-0017

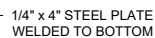
SHEET
C6.8



7" CONCRETE PAVEMENT

~~SLOPE TOP OF FOUNDATION~~
1/4" PER FOOT FROM BOLLARD

GRADE



7" HEATED CONCRETE PAVEMENT
NOT TO SCALE



NOT TO SCALE



NOT TO SCALE



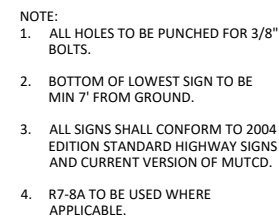
NOT TO SCALE



NOT TO SCALE



NOT TO SCALE

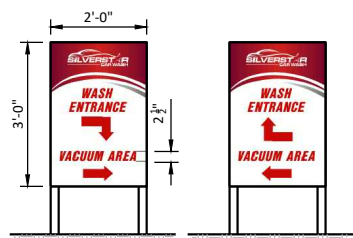
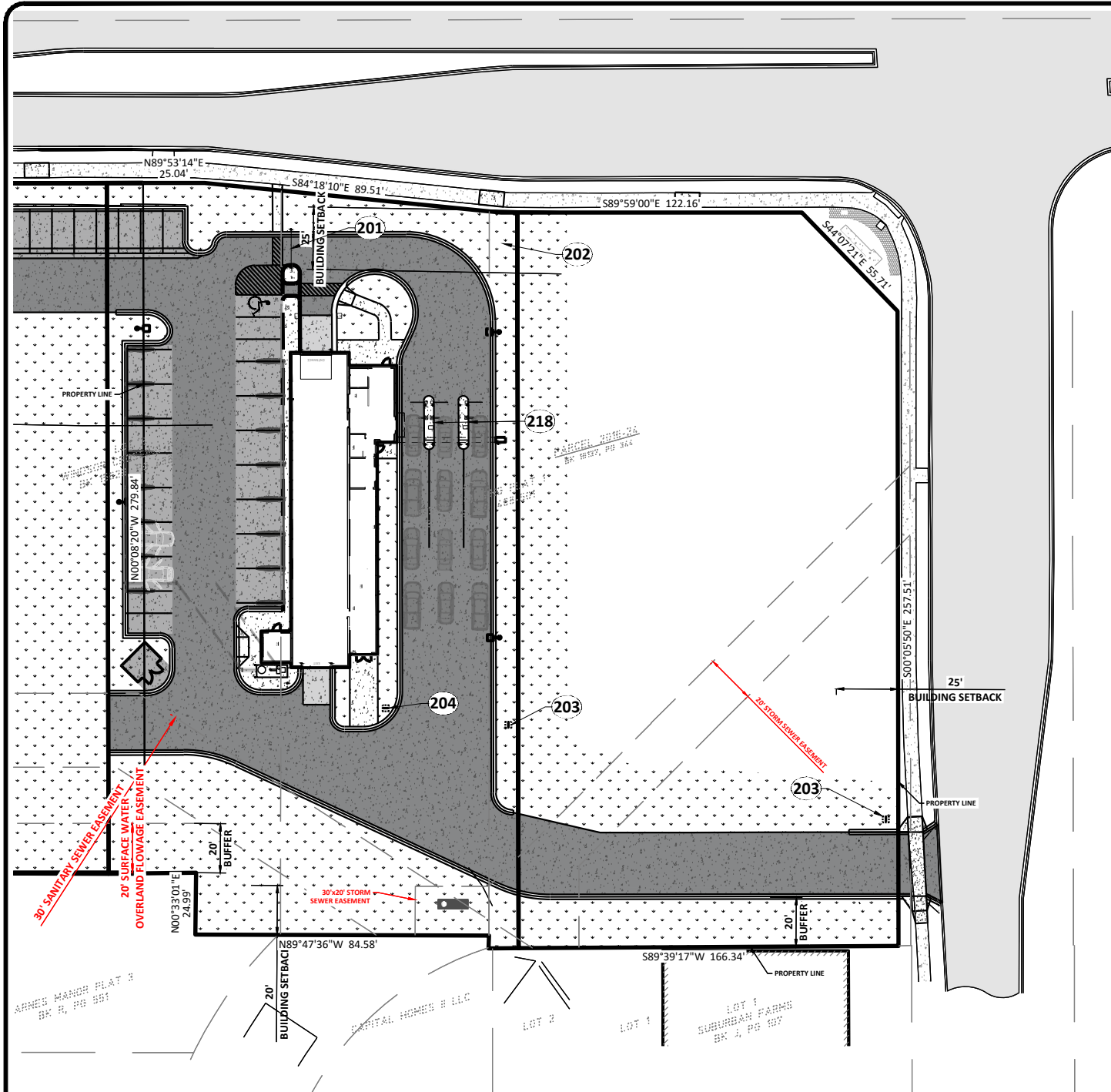


- NOTE:
1. ALL HOLES TO BE PUNCHED FOR 3/8" BOLTS.
 2. BOTTOM OF LOWEST SIGN TO BE MIN 7' FROM GROUND.
 3. ALL SIGNS SHALL CONFORM TO 2004 EDITION STANDARD HIGHWAY SIGNS AND CURRENT VERSION OF MUTCD.
 4. R7-8A TO BE USED WHERE APPLICABLE.



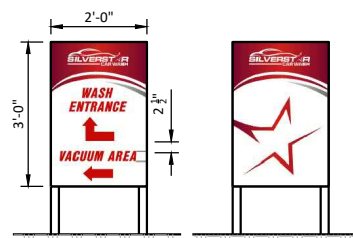
NOT TO SCALE

h:\BNA\10904\10904_0017 is 6300 hickman rd\CAD\Plans\10904-0017 - Details.dwg:66.10 DETAILS-8/18/2023 4:25 PM- (jvandenbos)

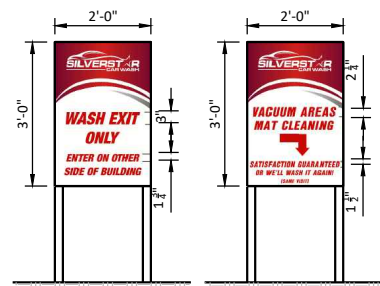


QTY: (1) ALUMINUM PANELS WITH VINYL PRINT MOUNTED ON 2"x2" ALUMINUM FRAME SYSTEM.

203 SERVICE ROAD DIRECTIONAL SIGN



QTY: (1) ALUMINUM PANELS WITH VINYL PRINT MOUNTED ON 2"x2" ALUMINUM FRAME SYSTEM.

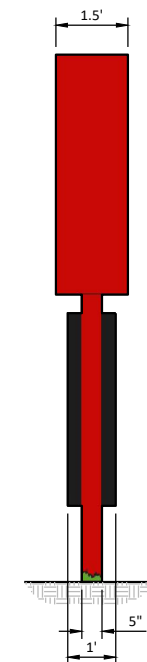


QTY: (1) ALUMINUM PANELS WITH VINYL PRINT MOUNTED ON 2"x2" ALUMINUM FRAME SYSTEM.

204 WASH TUNNEL DIRECTIONAL SIGN

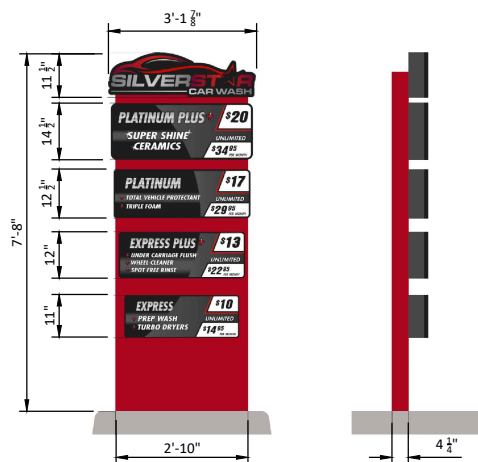


202 MONUMENT SIGN

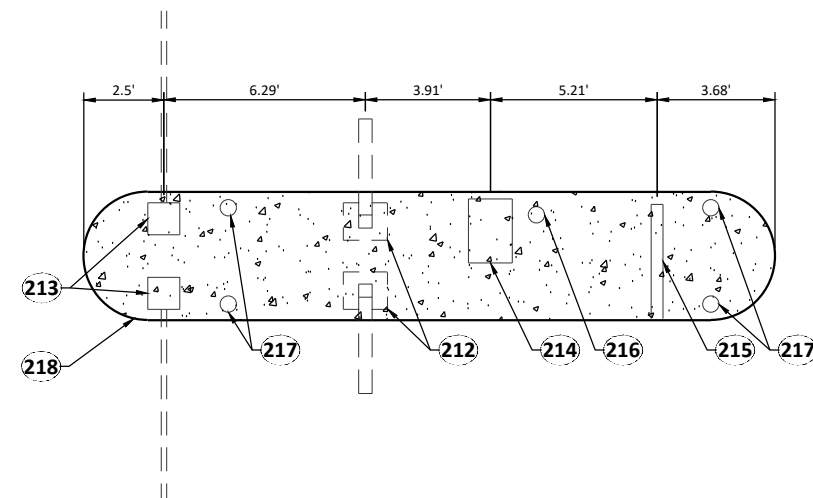


205 BUILDING FACADE SIGNS

"A Better Wash, A Great Feeling"



215 MENU SIGN



ENLARGED ISLAND DETAIL

PLAN NOTES

- 201 COATED CHAIN, RED.
- 202 MONUMENT SIGN.
- 203 DIRECTIONAL SIGN.
- 204 WASH TUNNEL DIRECTIONAL SIGN.
- 205 BUILDING FACADE SIGN.
- 212 RFID TRUSS.
- 213 GATE. SEE EQUIPMENT PLANS.
- 214 AUTO PAY STATION. SEE EQUIPMENT PLAN.
- 215 MENU SIGN. SEE EQUIPMENT PLANS.
- 216 6" DIAMETER CONCRETE FILLED PIPE BOLLARD. INSTALL PREFAB BOLLARD COVER. VERIFY COLOR WITH ARCHITECT.
- 217 24" HIGH - 6" DIAMETER CONCRETE FILLED PIPE BOLLARD. INSTALL PREFAB BOLLARD COVER. VERIFY COLOR WITH ARCHITECT.
- 218 POURED CONCRETE ISLAND. SEE DETAIL 5/A1.0. SEE CIVIL PLANS.

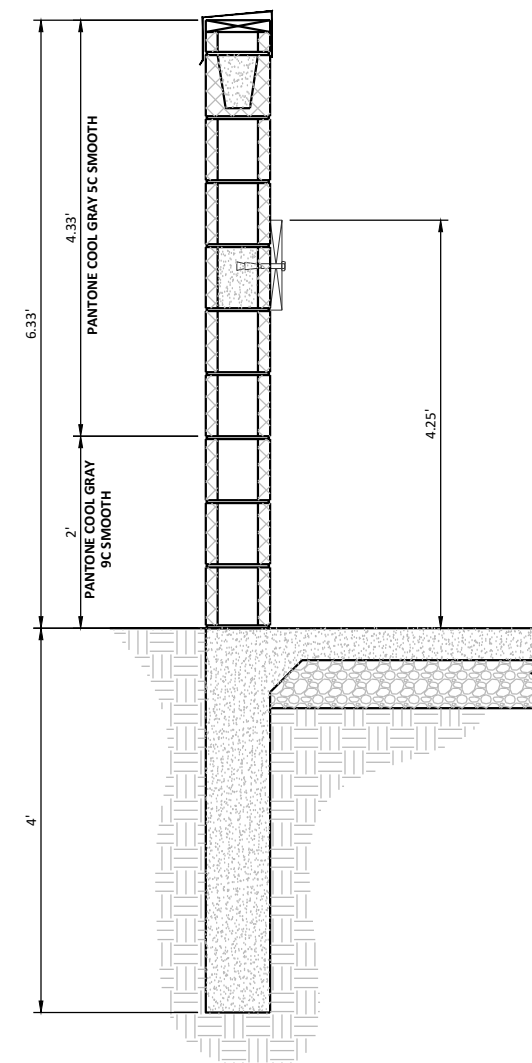
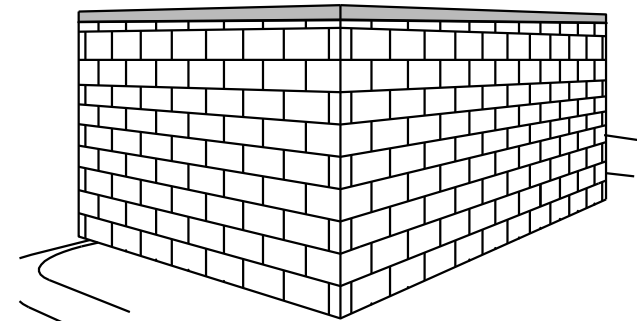
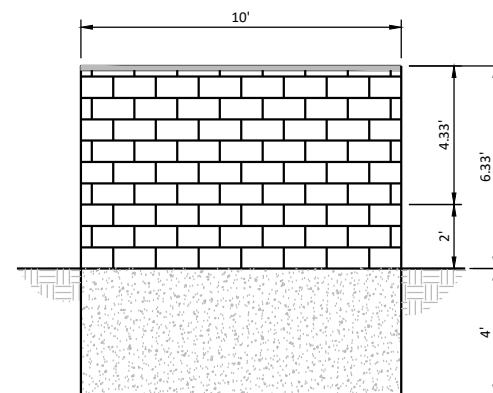
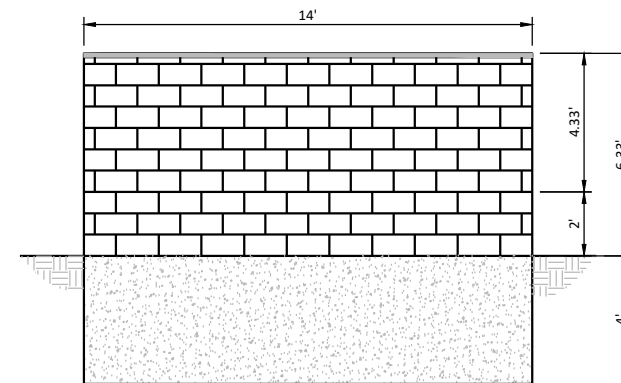
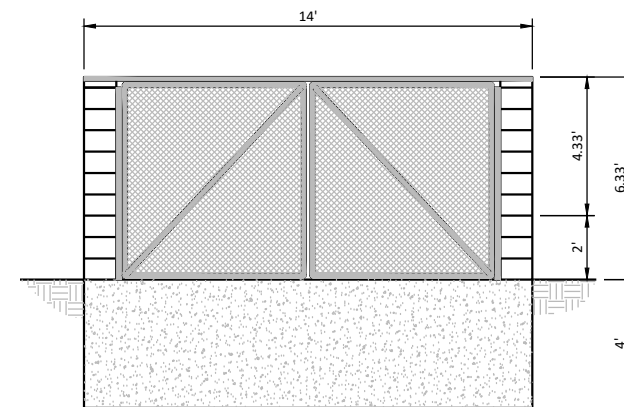
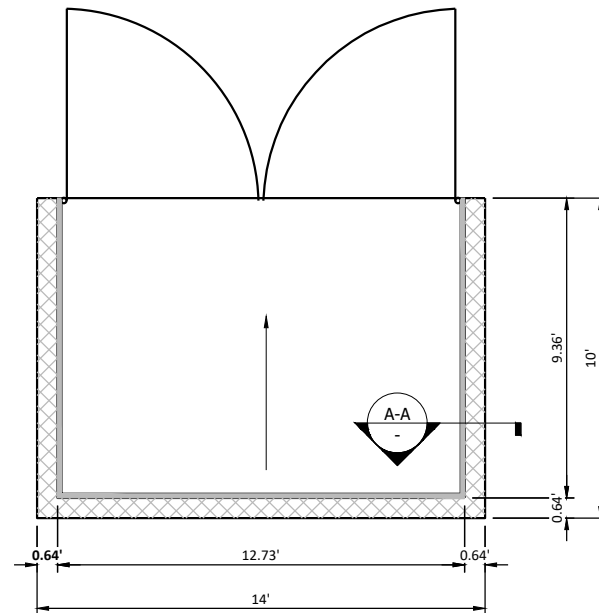
SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS

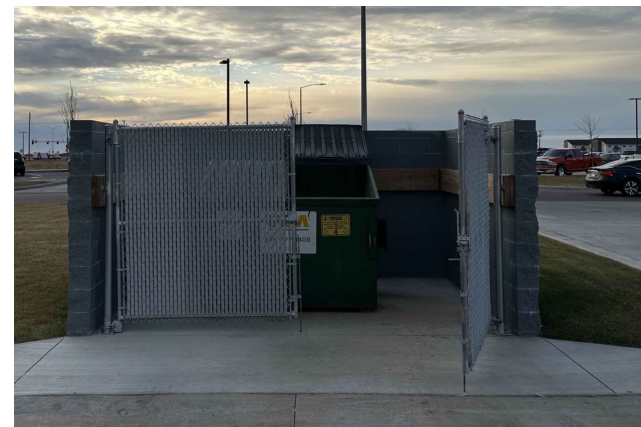


Drawn By
JLV
Checked By
SMH
Date
7/24/2023
Scale
As Shown
Project No.
10904-0017

SHEET
C6.10



- ## PLAN NOTES
- | | |
|-----|---|
| 300 | GRANULAR FILL PER SOILS REPORT. |
| 301 | PREFINISHED METAL KEEPER FOR PARAPET CAP. |
| 302 | 2x BLOCKING FOR PARAPET CAP ATTACHMENT. |
| 303 | PREFINISHED METAL PARAPET CAP. MATCH RED PAINT. |
| 304 | 6" THICK POURED CONCRETE SLAB. |
| 305 | 2x12 CEDAR BUMPER WITH ANCHOR BOLTS @ 16" O.C.
GROUT CMU CORES FILL AT BUMPER LOCATION. VERIFY
MOUNTING HEIGHT PER TRASH CONTAINER. |
| 306 | 8" CMU BOND BEAM. |
| 307 | 8x8x16 CMU WITH HORIZONTAL REINFORCEMENT @ 16" O.C.
PAINT EXTERIOR OF TRASH ENCLOSURE TO MATCH BUILDING. |
| 308 | VINYL CLAD CHAIN LINK GATES WITH SLATS. INSTALL ADA
COMPLIANT ROLLER AND LATCH. |
| 309 | 8x4x16 CMU CAP. |
| 310 | CONCRETE POURED FOUNDATION WALL, SEE STRUCTURAL |



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of _____.

NAME
License No. XXXXX

MM-DD-YYY
Date

SILVERSTAR CARWASH
6300 HICKMAN RD
WINDSOR HEIGHTS, IOWA

DETAILS



HOUSTON
engineering, inc.

Drawn By
JLV

Checked By	SMH
------------	-----

Date
7/24/2023

Scale
As Shown

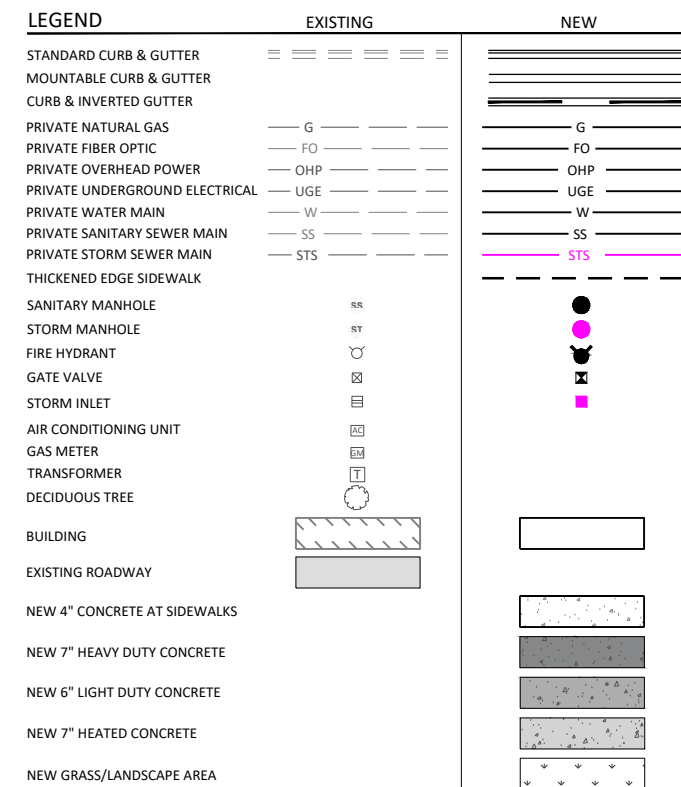
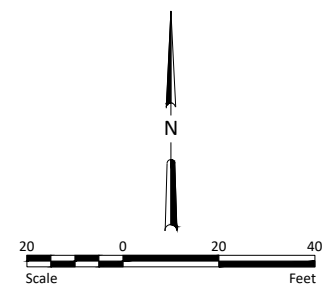
Project No.	10904-0017
-------------	------------

SHEET
C6.11

SILT FENCE
INLET PROTECTION
BIOROLL
CONSTRUCTION ENTRANCE

EROSION AND SEDIMENT CONTROL QUANTITY SUMMARY AND BMP SCHEDULE		
DESCRIPTION	UNITS	QUANTITY
SEEDING & MULCH	ACRE	1.17
EROSION CONTROL BLANKET, CAT. 3*	SY	500
SILT FENCE	LF	1755

*EROSION BLANKET TO BE INSTALLED AT LOCATIONS SPECIFIED BY ENGINEER



SWPPP NOTES:

1. THE CONTRACTOR SHALL INSTALL INLET PROTECTION AND ROCK CONSTRUCTION ENTRANCE PRIOR TO BEGINNING SITE WORK.
2. THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND DISTURBED AREAS AND LIMIT ACCESS TO THE ROCK CONSTRUCTION ENTRANCE.
3. THE CONTRACTOR SHALL INSTALL TEMPORARY SOIL STABILIZATION MEASURES SUCH AS COVER CROPS, EROSION CONTROL BLANKETS, MULCH, ETC. AS NEEDED WHEN AREAS ARE NOT ACTIVELY BEING WORKED AND WILL NOT BE DISTURBED FOR A PERIOD OF GREATER THAN 14 DAYS. THIS INCLUDES STOCKPILED SOIL.
4. IF SITE WORK OR GRADING ACTIVITIES ARE STOPPED OVER THE WINTER DUE TO COLD WEATHER THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL STABILIZATION MEASURES PRIOR TO STOPPING WORK DUE TO COLD WEATHER.
5. THE CONTRACTOR SHALL PROVIDE TEMPORARY OR PERMANENT SOIL STABILIZATION TO AREAS THAT HAVE BEEN FINISH GRADED WITHIN 7 DAYS OF THE COMPLETION OF WORK.
6. STORM SEWER INLETS WILL BE PROTECTED AT ALL TIMES WITH APPROPRIATE INLET PROTECTION AND SHALL BE INSTALLED PRIOR TO DISTURBANCE IN THAT AREA.
7. MULTIPLE APPLICATIONS OF TEMPORARY SOIL STABILIZATION MEASURES SHOULD BE ANTICIPATED BY THE CONTRACTOR.
8. TEMPORARY MULCHING AND PERMANENT SEEDING SHALL CONFORM TO SUDAS STANDARD SPECIFICATIONS. AREAS TO BE SEEDD SHALL BE SEEDD WITH SUDAS SECTION 9010 TYPE B SEED MIXTURE AND BONDED FIBER MATRIX (BMF) MULCH PER .
9. THE CONTRACTOR SHALL MINIMIZE SITE DISTURBANCE AND PHASE THE CONSTRUCTION TO MINIMIZE THE AMOUNT OF OPEN DISTURBED SOIL AS PRACTICAL.
10. THIS PLAN SHOWS THE TYPE AND GENERAL PLACEMENT OF SEDIMENT AND EROSION CONTROL MEASURES. NOT EXACT PLACEMENT.
11. THE CONTRACTOR SHALL MODIFY THE SWPPP AS NEEDED TO PREVENT DISCHARGE OF SEDIMENT FROM THE SITE, THIS INCLUDES DUST, RUNOFF FROM THE CONCRETE WASH WATER, AND RUNOFF FROM SAW CUTTING OF CONCRETE.
12. THE CONTRACTOR SHALL MAINTAIN AND UPDATE THE SWPPP AS NEEDED TO ENSURE THAT THE SITE CONDITIONS MATCH WHAT IS SHOWN ON THE SWPPP DOCUMENTS.
13. TYPE C INLET PROTECTION INSTALLED IN THE RIGHT OF WAY SHALL BE WIMCO, LANGE IPD, FLEXSTORM, OR APPROVED EQUIVALENT PER SUDAS STANDARD SPECIFICATIONS.
14. EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED. A PERMIT IS REQUIRED FOR WORK IN DOT ROADWAYS.

KEYNOTES:

- 1 TOPSOIL WILL NEED TO INCLUDE 2" COMPOST & TILLED INTO THE SOIL PROFILE TO A DEPTH OF 8 INCHES.

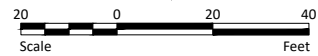
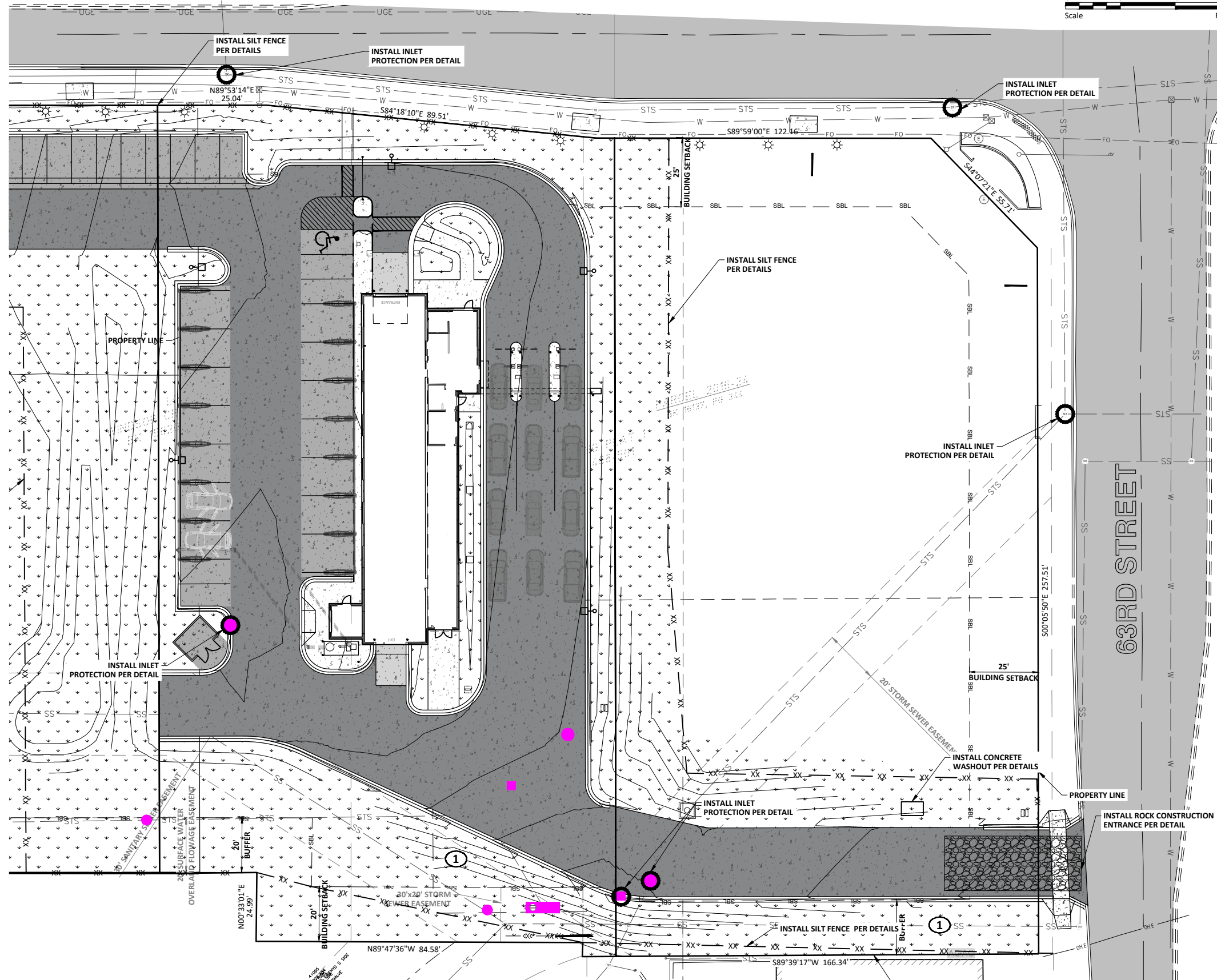


EROSION CONTROL LEGEND



EROSION AND SEDIMENT CONTROL QUANTITY SUMMARY AND BMP SCHEDULE		
DESCRIPTION	UNITS	QUANTITY
SEEDING & MULCH	ACRE	1.17
EROSION CONTROL BLANKET, CAT. 3*	SY	500
SILT FENCE	LF	1755

*EROSION BLANKET TO BE INSTALLED AT LOCATIONS SPECIFIED BY ENGINEER



LEGEND

	EXISTING	NEW
STANDARD CURB & GUTTER	=====	=====
MOUNTABLE CURB & GUTTER	=====	=====
CURB & INVERTED GUTTER	=====	=====
PRIVATE NATURAL GAS	— G —	— G —
PRIVATE FIBER OPTIC	— FO —	— FO —
PRIVATE OVERHEAD POWER	— OHP —	— OHP —
PRIVATE UNDERGROUND ELECTRICAL	— UGE —	— UGE —
PRIVATE WATER MAIN	— W —	— W —
PRIVATE SANITARY SEWER MAIN	— SS —	— SS —
PRIVATE STORM SEWER MAIN	— STS —	— STS —
THICKENED EDGE SIDEWALK		=====
SANITARY MANHOLE	SR	●
STORM MANHOLE	ST	●
FIRE HYDRANT	○	●
GATE VALVE	⊗	⊗
STORM INLET	⊞	⊞
AIR CONDITIONING UNIT	⊞	⊞
GAS METER	⊞	⊞
TRANSFORMER	⊞	⊞
DECIDUOUS TREE	⊞	⊞
BUILDING	▨	▨
EXISTING ROADWAY	▨	▨
NEW 4" CONCRETE AT SIDEWALKS		▨
NEW 7" HEAVY DUTY CONCRETE		▨
NEW 6" LIGHT DUTY CONCRETE		▨
NEW 7" HEATED CONCRETE		▨
NEW GRASS/LANDSCAPE AREA		▨

SWPPP NOTES:

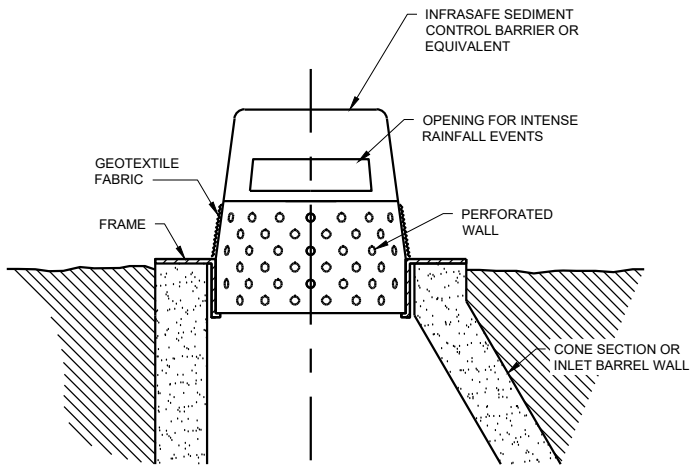
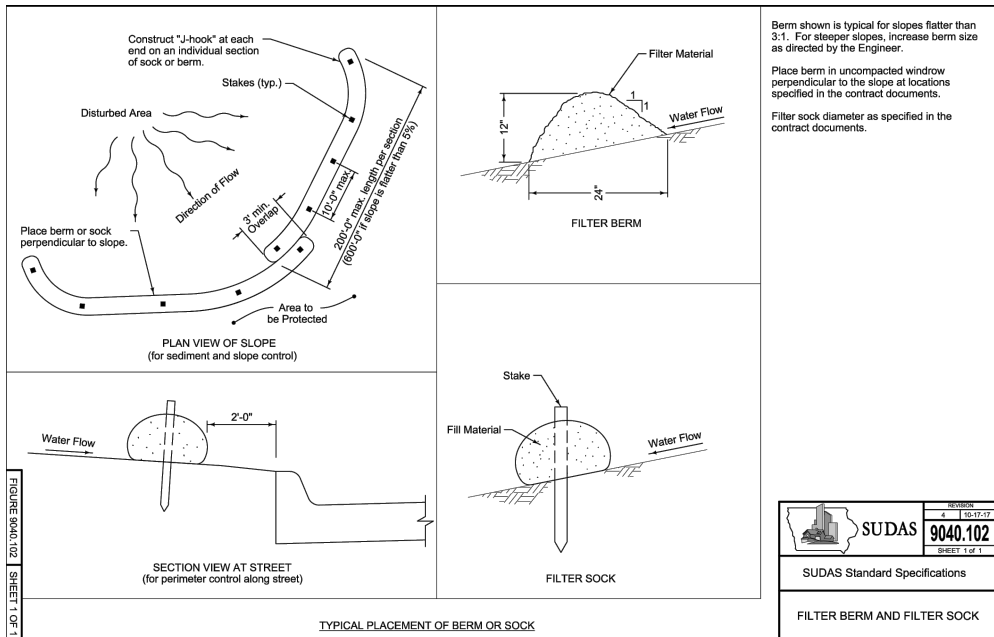
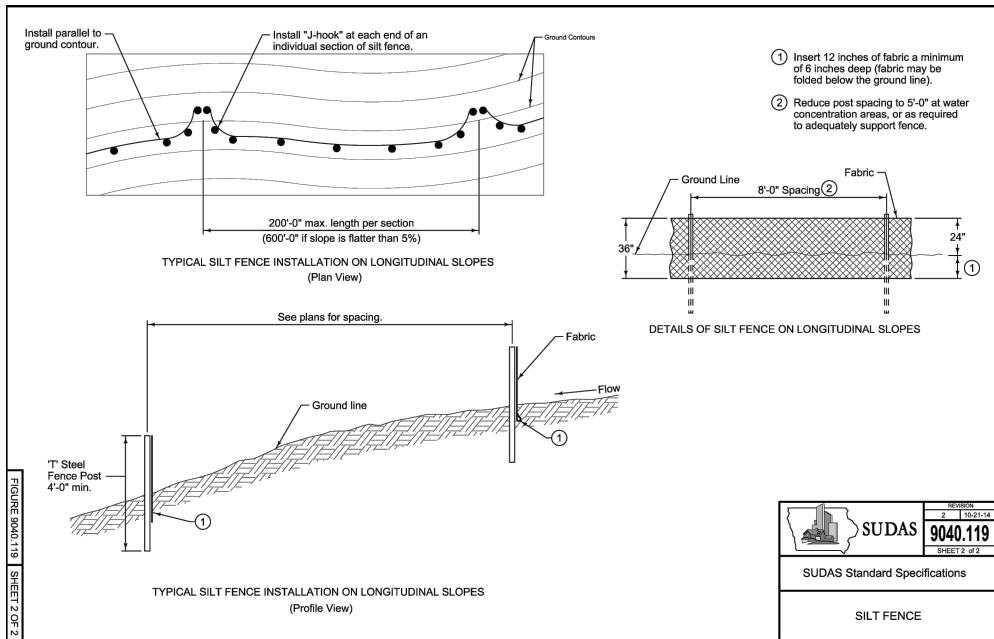
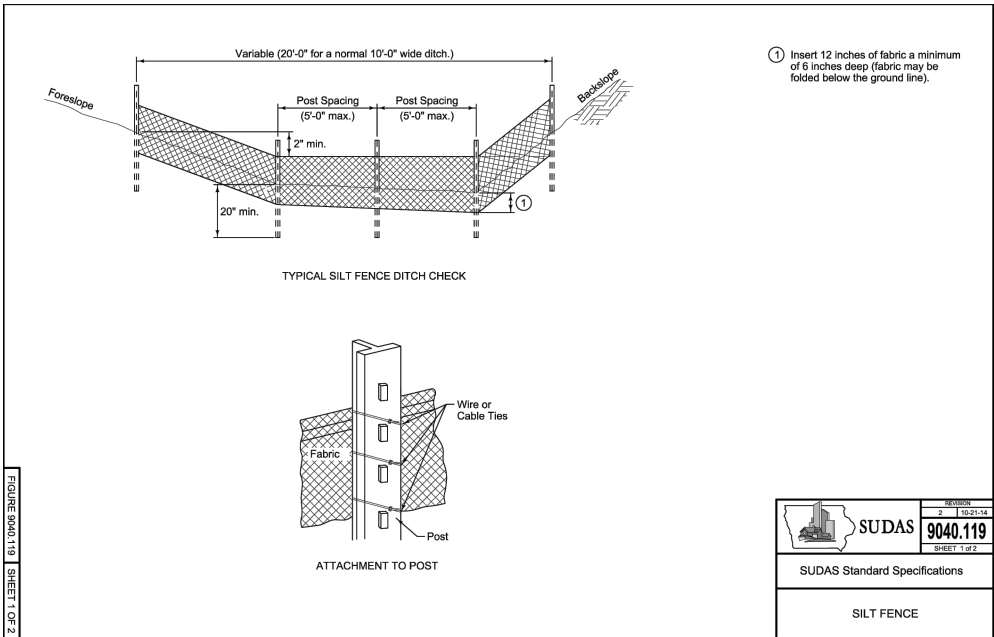
- THE CONTRACTOR SHALL INSTALL INLET PROTECTION AND ROCK CONSTRUCTION ENTRANCE PRIOR TO BEGINNING SITE WORK.
- THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND DISTURBED AREAS AND LIMIT ACCESS TO THE ROCK CONSTRUCTION ENTRANCE.
- THE CONTRACTOR SHALL INSTALL TEMPORARY SOIL STABILIZATION MEASURES SUCH AS COVER CROPS, EROSION CONTROL BLANKETS, MULCH, ETC. AS NEEDED WHEN AREAS ARE NOT ACTIVELY BEING WORKED AND WILL NOT BE DISTURBED FOR A PERIOD OF GREATER THAN 14 DAYS. THIS INCLUDES STOCKPILED SOIL.
- IF SITE WORK OR GRADING ACTIVITIES ARE STOPPED OVER THE WINTER DUE TO COLD WEATHER THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL STABILIZATION MEASURES PRIOR TO STOPPING WORK DUE TO COLD WEATHER.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY OR PERMANENT SOIL STABILIZATION TO AREAS THAT HAVE BEEN FINISH GRADED WITHIN 7 DAYS OF THE COMPLETION OF WORK.
- STORM SEWER INLETS WILL BE PROTECTED AT ALL TIMES WITH APPROPRIATE INLET PROTECTION AND SHALL BE INSTALLED PRIOR TO DISTURBANCE IN THAT AREA.
- MULTIPLE APPLICATIONS OF TEMPORARY SOIL STABILIZATION MEASURES SHOULD BE ANTICIPATED BY THE CONTRACTOR.
- TEMPORARY MULCHING AND PERMANENT SEEDING SHALL CONFORM TO SUDAS STANDARD SPECIFICATIONS. AREAS TO BE SEEDED SHALL BE SEEDED WITH SUDAS SECTION 9010 TYPE B SEED MIXTURE AND BONDED FIBER MATRIX (BMF) MULCH PER .
- THE CONTRACTOR SHALL MINIMIZE SITE DISTURBANCE AND PHASE THE CONSTRUCTION TO MINIMIZE THE AMOUNT OF OPEN DISTURBED SOIL AS PRACTICAL.
- THIS PLAN SHOWS THE TYPE AND GENERAL PLACEMENT OF SEDIMENT AND EROSION CONTROL MEASURES. NOT EXACT PLACEMENT.
- THE CONTRACTOR SHALL MODIFY THE SWPPP AS NEEDED TO PREVENT DISCHARGE OF SEDIMENT FROM THE SITE, THIS INCLUDES DUST, RUNOFF FROM THE CONCRETE WASH WATER, AND RUNOFF FROM SAW CUTTING OF CONCRETE.
- THE CONTRACTOR SHALL MAINTAIN AND UPDATE THE SWPPP AS NEEDED TO ENSURE THAT THE SITE CONDITIONS MATCH WHAT IS SHOWN ON THE SWPPP DOCUMENTS.
- TYPE C INLET PROTECTION INSTALLED IN THE RIGHT OF WAY SHALL BE WIMCO, LANGE IPD, FLEXSTORM, OR APPROVED EQUIVALENT PER SUDAS STANDARD SPECIFICATIONS.
- EXCAVATION OR OTHER WORK IN THE RIGHT OF WAY SHALL REQUIRE A TRAFFIC CONTROL PLAN THAT MEETS ALL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REQUIREMENTS. THIS PLAN IS REQUIRED BEFORE ANY PERMITS TO WORK IN THE RIGHT OF WAY WILL BE ISSUED. A PERMIT IS REQUIRED FOR WORK IN DOT ROADWAYS.

KEYNOTES:

- TOPSOIL WILL NEED TO INCLUDE 2" COMPOST & TILLED INTO THE SOIL PROFILE TO A DEPTH OF 8 INCHES.



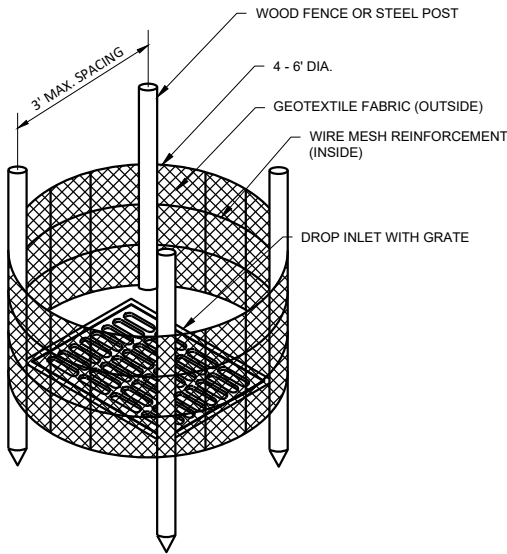
By	
Date	
Revision	
No.	
EROSION CONTROL PLAN	
SILVERSTAR CARWASH 6300 HICKMAN RD WINDSOR HEIGHTS, IOWA	
Drawn By	JLV
Checked By	SMH
Date	7/24/2023
Scale	As Shown
Project No.	10904-0017
SHEET	C7.1



- NOTES
1. ALTERNATIVE INLET PROTECTION DEVICES MAY BE ALLOWED SUBJECT TO ENGINEER'S APPROVAL.
 2. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN TO INSURE THAT SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO INLET. ANY MATERIAL FALLING INTO INLET SHALL BE IMMEDIATELY REMOVED.
 3. ANY INLET PROTECTION USED SHALL BE EQUIPPED WITH AN EMERGENCY OVERFLOW TO MINIMIZE THE THREAT OF STREET FLOODING DURING AN INTENSE RAINFALL EVENT.

INLET PROTECTION - TYPE B

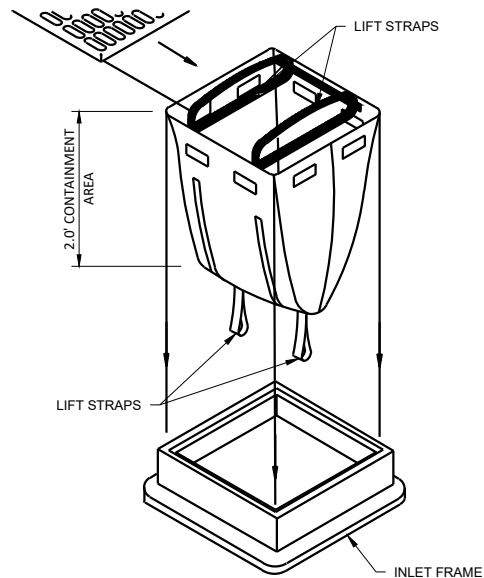
NOT TO SCALE



- NOTES
1. INLET PROTECTION DEVICES SHALL BE MAINTAINED OR REPLACED AT THE DIRECTION OF THE ENGINEER.
 2. MANUFACTURED ALTERNATIVES MAY BE SUBSTITUTED, SUBJECT TO THE ENGINEER'S APPROVAL.
 3. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
 4. ANCHOR FABRIC PER SILT FENCE DETAIL.

INLET PROTECTION - TYPE A

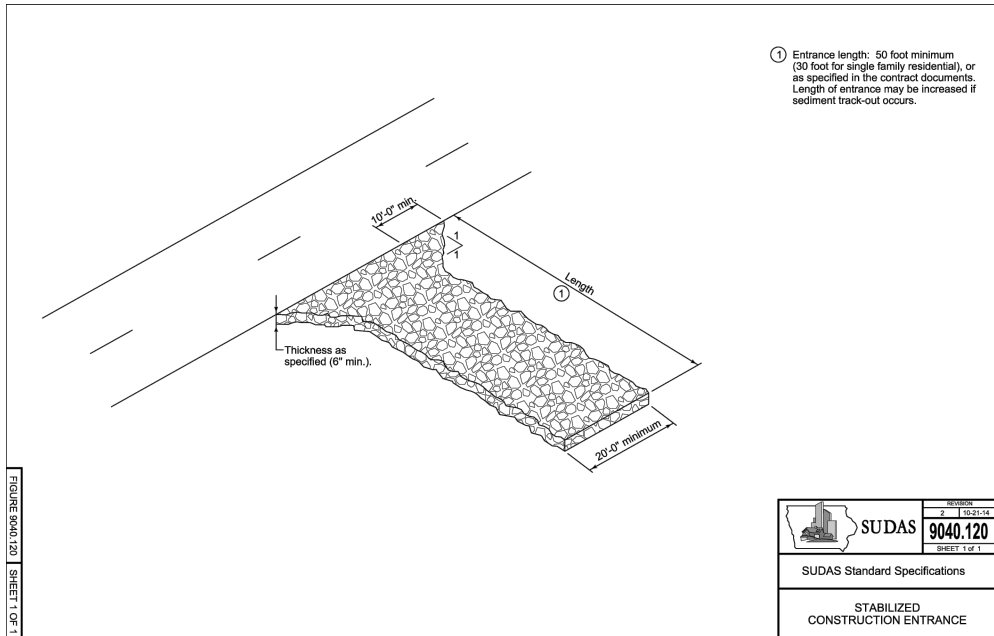
NOT TO SCALE



- INSTALLATION
1. REMOVE THE INLET GRATE.
 2. STAND THE GRATE UPRIGHT. INSTALL THE GRATE BETWEEN THE LIFTING HANDLES.
 3. PLACE THE BAG IN THE INLET & LOWER THE BAG AND GRATE USING THE LIFTING STRAPS.
- MAINTENANCE
1. CHECK BAG REGULARLY & AFTER RAIN EVENTS. IF THE BAG IS FILLED WITH $\frac{3}{4}$ OF ITS CAPACITY WITH SEDIMENT, EMPTY THE BAG.
 2. REMOVE DEBRIS AROUND THE INLET GRATE PRIOR TO REMOVING BAG.
 3. USE THE LIFT HANDLES TO REMOVE THE BAG AND USE THE HANDLES ON THE BOTTOM TO EMPTY BAG.
- NOTES
1. ALTERNATIVE INLET PROTECTION DEVICES MAY BE ALLOWED SUBJECT TO ENGINEER'S APPROVAL.
 2. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN TO INSURE THAT SEDIMENT DOES NOT FALL INTO INLET. ANY MATERIAL FALLING INTO INLET SHALL BE IMMEDIATELY REMOVED.
 3. ANY INLET PROTECTION USED SHALL BE EQUIPPED WITH AN EMERGENCY OVERFLOW TO MINIMIZE THE THREAT OF STREET FLOODING DURING AN INTENSE RAINFALL EVENT.
 4. THIS STYLE MAY BE USED ONLY IN THE PROPERTY LINES. TYPE C INSTALLED IN RIGHT OF WAY SHALL CONFORM WITH SUDAS STANDARD SPECIFICATIONS AND BE FROM WIMCO, LANGE IPD, FLEXSTORM, OR APPROVED EQUIVALENT.

INLET PROTECTION - TYPE C

NOT TO SCALE



STAFF REPORT

Date: September 6, 2023
To: Windsor Heights Planning and Zoning Commission
From: Trey Rouse
Subject: Site Plan: 6300 Hickman Road (Silverstar Car Wash)

General Information

Applicant: Stan Hanson
3900 W Technology Circle, Suite 8
Sioux Falls, SD 58106
Property Owner: Midwest Fidelity Partners - Dan Nelson
1610 S Minnesota Avenue
Sioux Falls, SD 57105
Proposed Use: Car Wash
Zoning: CC (Community Commercial District)
Location: 6300 Hickman Road

Summary

The applicant, Stan Hanson, on behalf of Dan Nelson, is requesting a site plan for the 2.07-acre lot. The site plan for the project shows the construction of a 1,199 sq.ft building with 51 parking spaces being provided. There are no existing structures or buildings on the site and no demolition is required. The submitted application materials are attached to this report.

Existing Conditions

The 2.07-acre parcel is in the CC – Community Commercial zoning district. The parcel is currently not in any form of use.

Background

November 14, 2022: Initial pre-application meeting.
January 20, 2023: Completeness review.
January 20, 2023: 1st submittal of documents for site plan.
March 24, 2023: 2nd submittal with revised documents for site plan.
July 24, 2023: 3rd submittal with revised documents for site plan.
August 21, 2023: 4th Submittal with revised documents for site plan.

Adjacent Land Use

Direction	Zoning	Use
North	N/A (Outside of Windsor Heights Limits)	N/A
South	Community Commercial (CC)/Urban Family Residential (R-3)	Residential
East	N/A (Outside of Windsor Heights Limits)	N/A
West	Community Commercial (CC)	Commercial

Zoning Bulk Regulations

Category	CC
Lot Area	7,200 sq.ft.
Lot Width	60ft
Front Yard Setback	25ft
Side Yard Setback	25ft
Rear Yard Setback	20ft

Future Land Use Map

The future land use map should be used as guidance for areas throughout the City. The map identifies this location as mixed use, which is defined on page 40 of the 2017 Comprehensive Plan. “Commercial. Commercial and office uses that are typically more auto-oriented.”

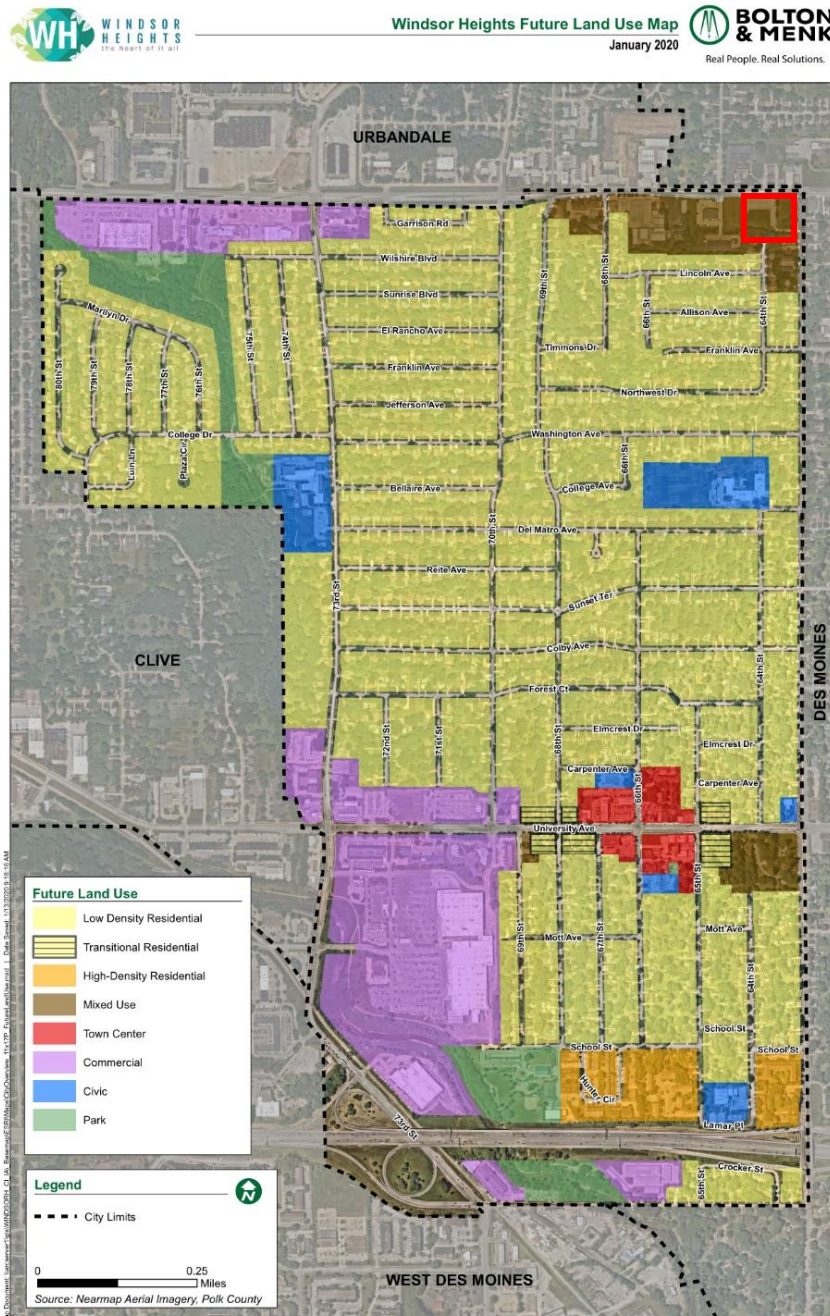


Figure 1: Current Future Land Use Map

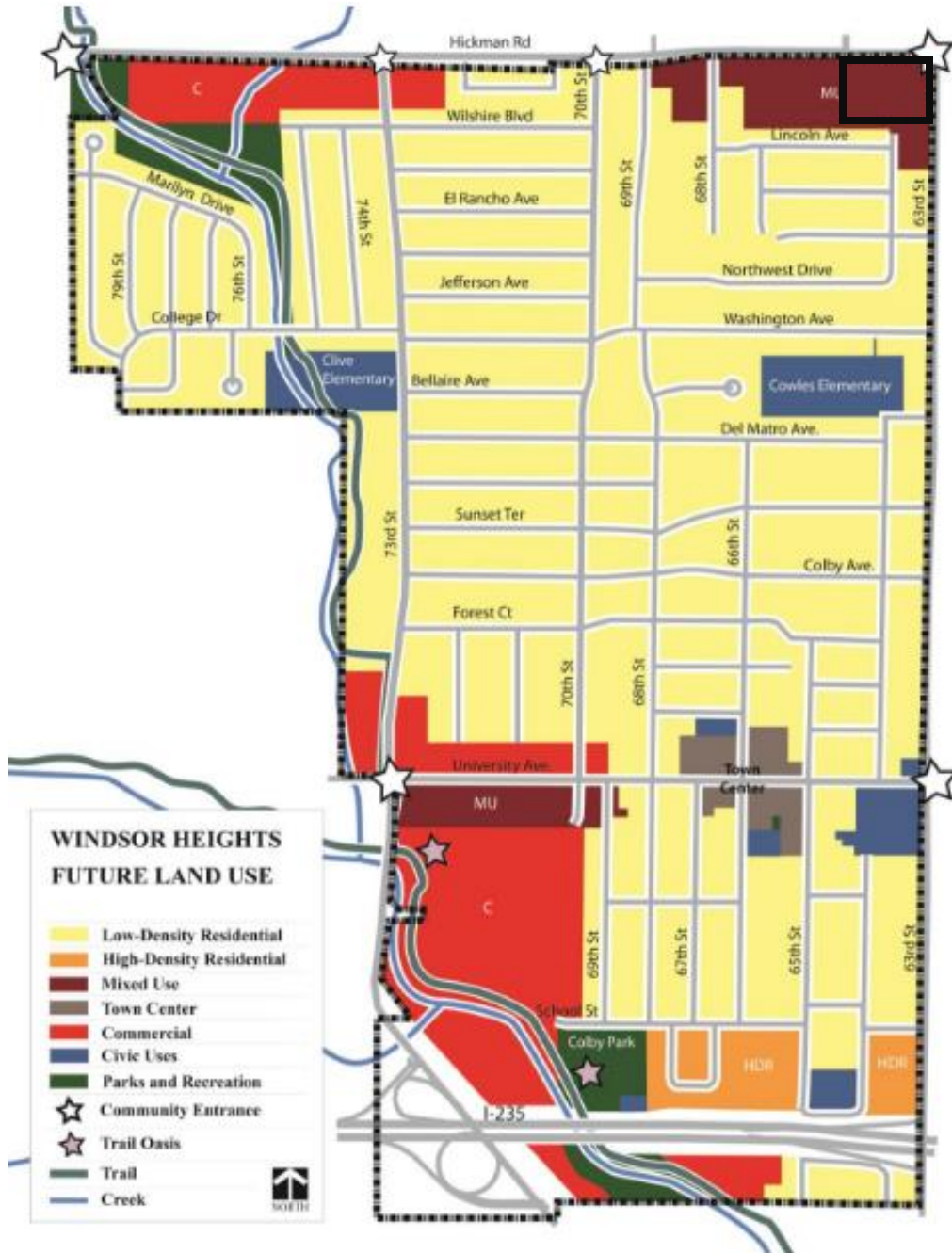


Figure 2: Windsor Heights' 2017 Comprehensive Plan's
Future Land Use Map

Zoning Map

The parcels are currently zoned for Community Commercial which is defined in [Table 168-1 Purposes of Zoning Districts](#) as “This district is intended for commercial facilities which serve the needs of markets ranging from several neighborhoods to the overall region. While allowed commercial and office uses are generally compatible with nearby residential areas, traffic and operating characteristics may have more negative effects on residential neighborhoods than those permitted in the O District. CC Districts are appropriate at major intersections, at the junction of several neighborhoods, or at substantial commercial sub-centers.”

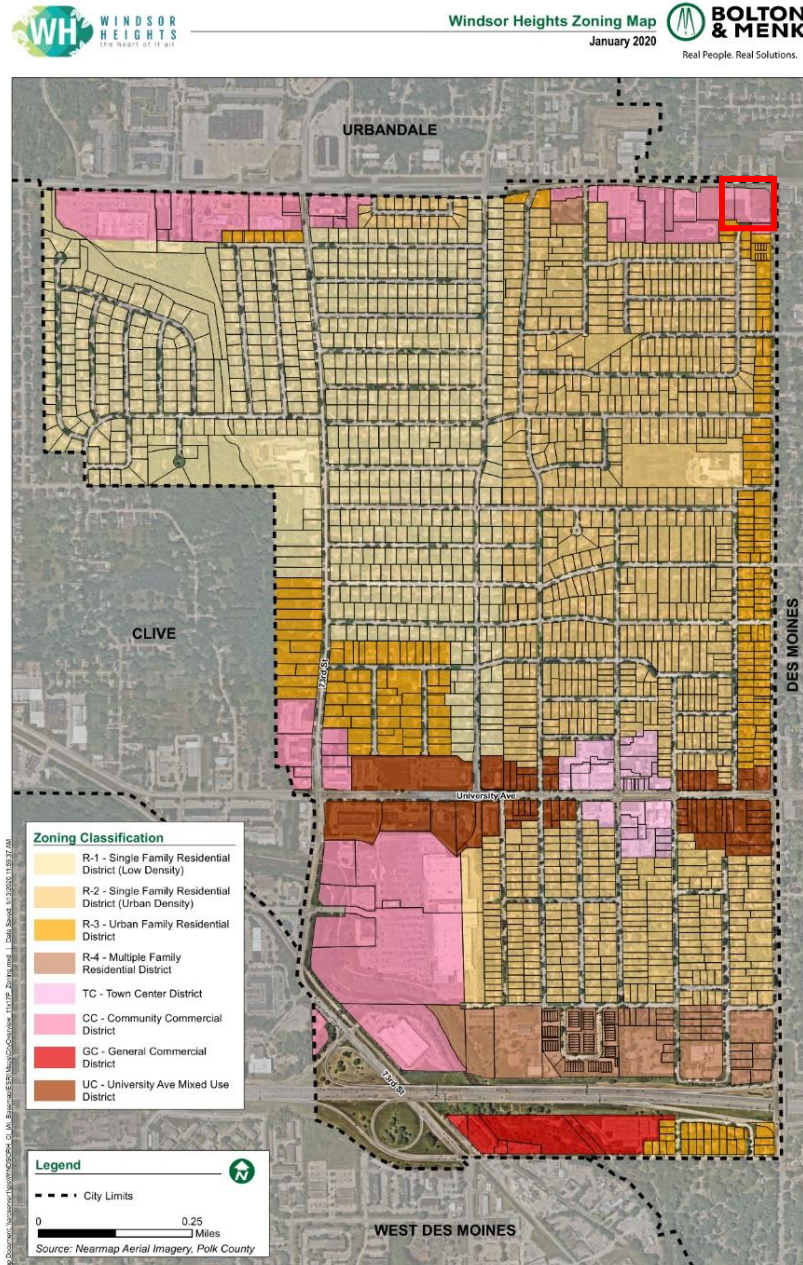


Figure 3: Current Zoning Map

Recommendation

All proposed lots meet the minimum requirements of the zoning ordinance. **The staff recommends approval of the site plan with the following conditions.**

Conditions:

1. All of the following conditions will be met, reviewed by the city department assigned, and deemed complete before approval of the site plan and before any development can take place.
 - a. General
 - i. Signature of Engineer and Surveyor on Final Plans.
 - ii. All comments listed below are addressed.
 - iii. Concurrent approval of the Board of Adjustments approved conditional use permit.
 - iv. Approval of signs and utility from Safe Building.
 - v. Approval of streets and access from IDOT.
 - vi. Revision of site plan application in accordance with the comment letter.
 - vii. City Council approval of site plan.
 - b. Engineering Department
 - i. Completion and submission of a Lighting Plan based upon requirements of Chapter 170
 1. Compliance with Dark-Sky Requirements within Lighting Plan
 - c. Fire Department
 - i. Need to include the address numbers on the 202 – Monument Sign per code requirement.
 1. The address can either be placed on the North end of the tunnel OR on the 202-monument sign.
 - ii. Need to place address with street name “6300 Hickman” on the 203 – Service Road Directional Sign located at the entrance off of 63rd Street.
 - d. Des Moines Water Works
 - i. Stubs are not allowed; Each large service will require a Large Tap Application to be submitted to DMWW for review & approval.
 - ii. Existing main 12” DI water main with cathodic protection. Tap location will need to be adjusted if it falls within the location of a sacrificial anode. Replacement of anodes/test stations will be required for any damages caused by construction. See GIS screen shot below for approximate locations.
 - iii. Tapping valve will be connected directly to the existing water main via tapping sleeve.

- iv. Any existing services associated with this property will need to be cut at the main.
- v. Large Tap application attached, to be submitted to DMWW for review & approval.
- vi. No trees planted within 10' of valve or fire hydrant.
- vii. Current standard detail attached.

Attachments

1. Application Materials (as submitted)

STAFF REPORT

Date: August 23, 2023
To: Windsor Heights Planning and Zoning Commission
From: Wyatt Archer, AICP
Subject: Site Plan: 1105 73rd Street (B-Bop)

General Information

Applicant: Civil Design Advantage – Doug Mandernach
4121 NW Urbandale Drive
Urbandale, IA 50322
Property Owner: John Ferguson
2900 100th Street Suite #302
Urbandale, Iowa 50322
Proposed Use: Fast food establishment
Zoning: CC (Community Commercial District)
Location: 1105 73rd Street

Summary

The applicant, Doug Mandernach, on behalf of John Ferguson, is requesting a site plan for the 2.53 acre lot. The site plan for the project shows the construction of a 1,568 sq.ft building with 20 parking spaces being provided. All of the existing structures and improvements on the site will be demolished as part of the project. The submitted application materials are attached to this report.

Existing Conditions

The 2.53 acre parcel is in the CC – Community Commercial zoning district. The parcel is currently an existing and active B-Bop location.

Background

September 1, 2022: Initial preapplication meeting.
May 25, 2023: Completeness review.
June 7, 2023: 1st submittal of documents for site plan.
July 14, 2023: 2nd submittal with revised documents for site plan.
August 11, 2023: 3rd submittal with revised documents for site plan.

Adjacent Land Use

Direction	Zoning	Use
North	University Avenue Mixed Use District (UC)	Commercial
South	Community Commercial (CC)	Commercial & Park Uses
East	Community Commercial (CC)	Commercial
West	N/A (outside Windsor Height limits)	Commercial

Zoning Bulk Regulations

Category	CC
Lot Area	7,200 sq.ft.
Lot Width	60ft
Front Yard Setback	25ft
Side Yard Setback	25ft
Rear Yard Setback	20ft

Future Land Use Map

The future land use map should be used as guidance for areas throughout the City. The map identifies this location as mixed use, which is defined on page 40 of the 2017 Comprehensive Plan. “Commercial. Commercial and office uses that are typically more auto-oriented.”



Figure 1: Current Future Land Use Map

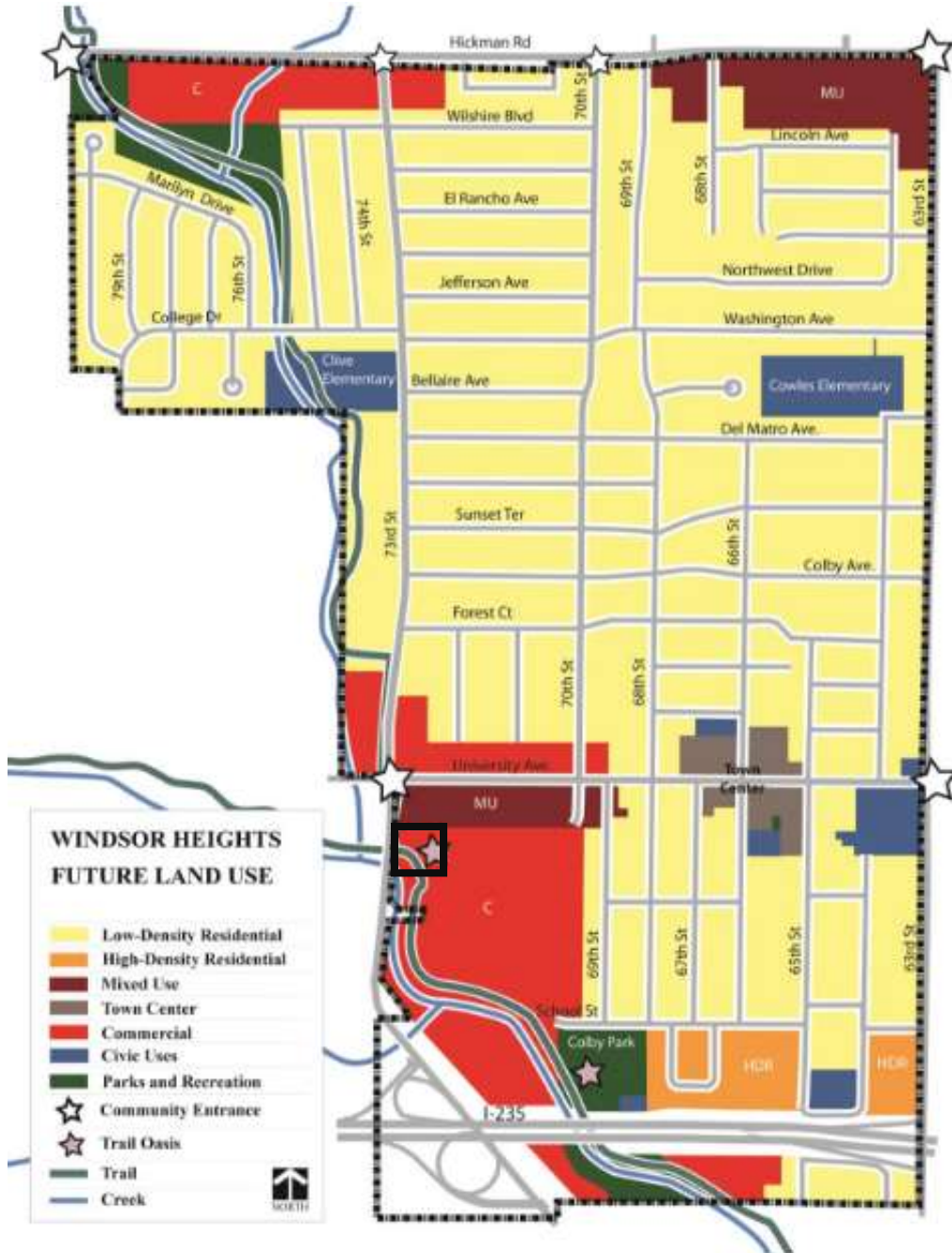


Figure 2: Windsor Heights' 2017 Comprehensive Plan's
Future Land Use Map

Zoning Map

The parcels are currently zoned for Community Commercial which is defined in [Table 168-1 Purposes of Zoning Districts](#) as “This district is intended for commercial facilities which serve the needs of markets ranging from several neighborhoods to the overall region. While allowed commercial and office uses are generally compatible with nearby residential areas, traffic and operating characteristics may have more negative effects on residential neighborhoods than those permitted in the O District. CC Districts are appropriate at major intersections, at the junction of several neighborhoods, or at substantial commercial sub-centers.”

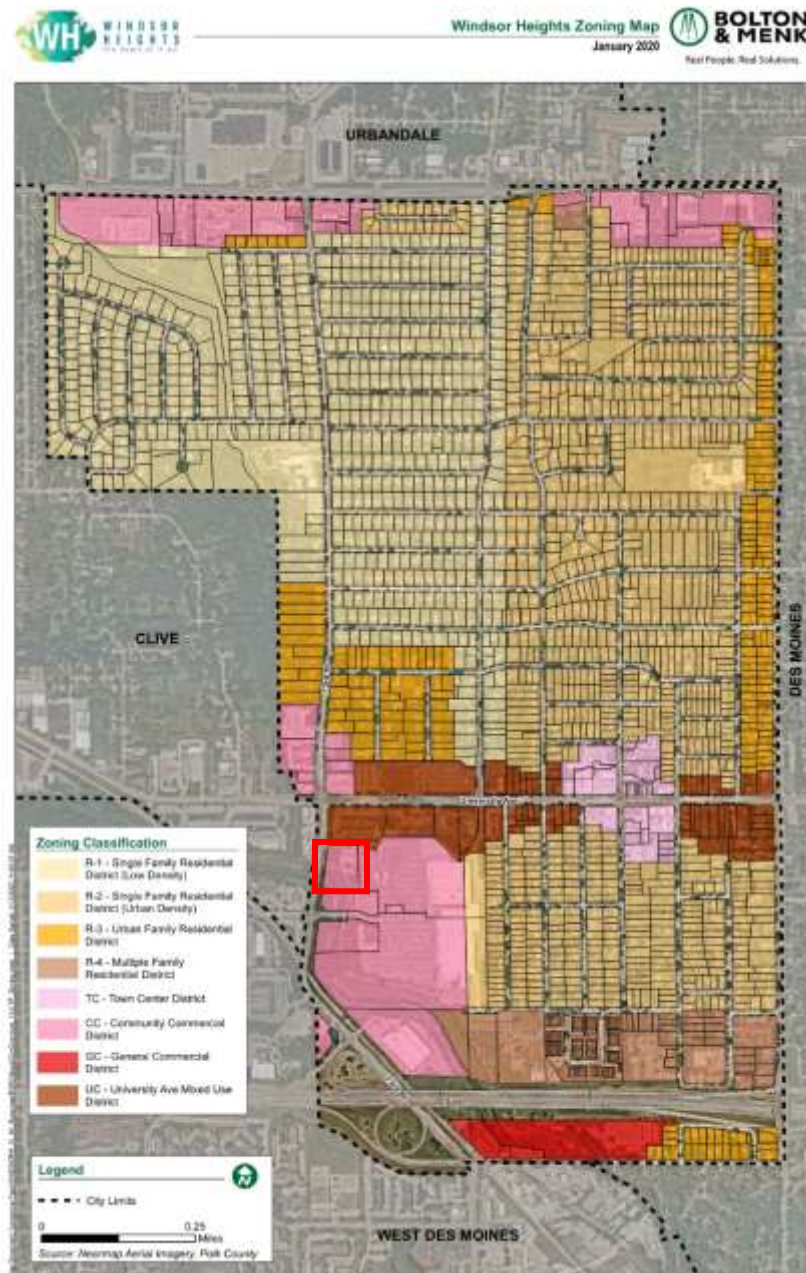


Figure 3: Current Zoning Map

Recommendation

All proposed lots meet the minimum requirements of the zoning ordinance. **The staff recommends approval of the site plan.**

Attachments

1. Application Materials (as submitted)



Send the completed permit application and supporting documents to Rose Schroder from Bolton & Menk at Rose.Schroder@bolton-menk.com or call 515-259-9190.

APPLICATION FOR DEVELOPMENT REVIEW SITE PLAN/SITE PLAN AMENDMENT

DATE SUBMITTED

6-7-2023

PROJECT TITLE

B-Bop's

PROJECT ADDRESS

1105 73rd St, Windsor Heights, IA 50324

LOT #

6

SUBDIVISION

Apple Valley South

Please provide seven copies (24"x36" maximum) of all plans and one copy of the project drainage report. In addition, a digital copy (.pdf format preferred) of all plan sheets and drainage report shall be provided.

In order for a submittal to be determined as complete, the following basic information should be provided:

Submitted Accepted

Traffic Study (as required by City Engineer) ☐ ☐

Site Survey ☐ ☐

Dimension Plan ☐ ☐

Grading Plan ☐ ☐

Utility Plan ☐ ☐

Landscape Plan ☐ ☐

Drainage Report ☐ ☐

Architectural Plans ☐ ☐

Lighting Plans ☐ ☐

Name & Address of All Properties within 200 ft ☐ ☐

For additional detail on the type of information necessary for each of the items above can be found on the back of this form or by contacting the City Administrator.

Additional Information:

APPLICANT INFORMATION

APPLICANT NAME & EMAIL

John Ferguson jferg23@gmail.com

ADDRESS

2900 100th street suite #302

CITY, STATE, ZIP

Urbandale, Iowa 50322

PHONE

515-238-6966

FAX

Acceptance of Applicant

I, the undersigned, certify that the information on this application to the best of my knowledge, is true and correct. I further certify that I have a legal interest in the property in question, and/or that I am legally able to represent all other persons or entities with interest in this property.

In addition to the application fee, I understand I am responsible for all development review costs invoiced on a Monthly basis for services performed by City staff or City consultants on my behalf.

John Ferguson

Print Applicant's Name

Applicant's Signature

Date

5/17/23

DEVELOPMENT TEAM

Project Manager

Doug Mandernach, Civil Design Advantage

Address

4121 NW Urbandale, Drive

Phone

515-369-4400

Fax

515-369-4410

E-Mail Address

Dougmandernach@cda-eng.com

Attorney/Other

Address

Phone

Fax

E-Mail Address

Application Approval

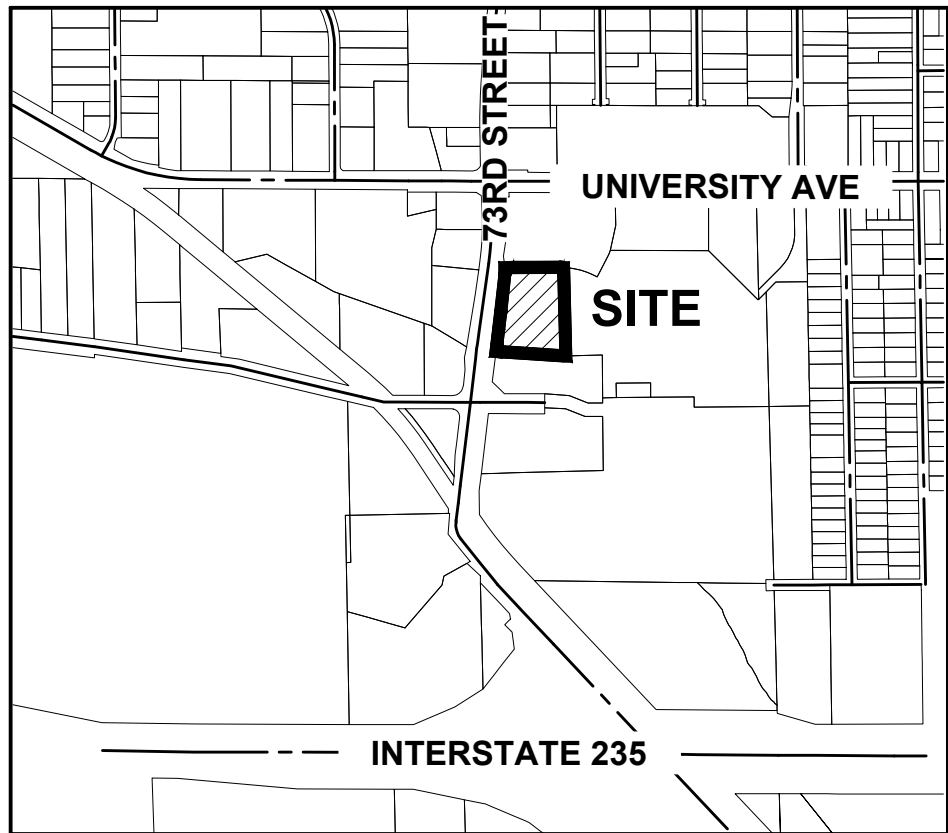
- ☐ Approved
☐ Denied

Planner or Authorized Representative

Date

SITE PLAN FOR:
B-BOP'S
WINDSOR HEIGHTS, IOWA

VICINITY MAP
NOT TO SCALE



WINDSOR HEIGHTS, IOWA

OWNER

COLBY WEST UNIVERSTY TRUST
WAL-MART PROPERTY TAX DEPARTMENT
PO BOX 8050
BENTONVILLE, AR 72716--0555

APPLICANT

B-BOP'S INC.
CONTACT: BOB JOHNSON
939 OFFICE PARK RD # 333
WEST DES MOINES, IA 50265
PH. (515) 221-3202

ENGINEER

CIVIL DESIGN ADVANTAGE, LLC
4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
CONTACT: DOUG MANDERNACH
EMAIL: DOUGM@CDA-ENG.COM
PH: (515) 369-4400

SURVEYOR

CIVIL DESIGN ADVANTAGE, LLC
4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
CONTACT: CHARLIE MCGLOTHLEN
EMAIL: CHARLIEM@CDA-ENG.COM
PH. (515) 369-4400

ARCHITECT

SIMONSON + ASSOCIATES ARCHITECTS LLC
1717 INGERSOLL AVE, SUITE 117
DES MOINES, IA 50309
PH: (515) 440-5626

SUBMITTAL DATES

FIRST SUBMITTAL: 12/19/2022
SECOND SUBMITTAL: 05/12/2023
THIRD SUBMITTAL: 06/06/2023
FOURTH SUBMITTAL: 08/10/2023

LEGAL DESCRIPTION

LOT 6 APPLE VALLEY SOUTH

ZONING

CC - COMMUNITY COMMERCIAL DISTRICT

PROJECT SITE ADDRESS

1105 73RD STREET
WINDSOR HEIGHTS, IA 50324

EXISTING/ PROPOSED USE

FAST FOOD ESTABLISHMENT

DEVELOPMENT SUMMARY

AREA: 2.53 ACRES (110,356 SF)

ZONING: CC

SETBACKS:

FRONT: 25-FOOT SETBACK
SIDE: 25-FOOT SETBACK
REAR: 20-FOOT SETBACK

OPEN SPACE CALCULATION:

TOTAL SITE: = 110,356 (2.53 AC.)
BUILDING = 1,568 SF
PARKING AREAS = 4,446 SF
DRIVEWAYS = 20,214 SF
SIDEWALK = 1,356 SF
PATIO = 1,350 SF
EXISTING PRIVATE DRIVES = 8,166 SF
EXISTING TRAIL = 4,444 SF
OPEN SPACE PROVIDED = 68,812 SF (62.4%)

PERVIOUS CALCULATIONS:

PERVIOUS AREA: 68,812 SF (62.4%)
IMPERVIOUS AREA: 41,544 SF (37.6%)

PARKING:

TOTAL REQUIRED
= 1 SPACE/50 SF CUSTOMER SERVICE AREA
= 350 SF/50 SF
= 7 SPACES
TOTAL PROVIDED
= 20 SPACES

ACCESSIBLE SPACES REQUIRED = 2 SPACES

ACCESSIBLE SPACES PROVIDED = 2 SPACES

DATE OF SURVEY

11/02/2022

BENCHMARKS

- CITY OF CLIVE BM #1. MONUMENT AT THE NORTHEAST CORNER OF THE INTERSECTION BETWEEN NW 75TH STREET AND UNIVERSITY AVENUE. ELEV=828.19
- CDA SET BM; TOP OF THE WEST LIGHT POLE BASE ON THE SOUTH SIDE OF APPLE VALLEY ROAD AND +/- 100 FEET NORTHEAST OF THE EXISTING B-BOP'S BUILDING. ELEV=836.67

CONSTRUCTION SCHEDULE

ANTICIPATED START DATE = 07/01/2023
ANTICIPATED FINISH DATE = 07/01/2024

INDEX OF SHEETS

NO.	DESCRIPTION
C0.1	COVER SHEET
C1.1-C1.3	DETAILS
C2.1	SITE MAP
C2.2	TOPOGRAPHIC AND DEMOLITION PLAN
C3.1	DIMENSION PLAN
C3.2	PAVEMENT MARKING/SIGNAGE PLAN
C4.1-C4.2	GRADING PLAN
C5.1	EROSION AND SEDIMENT CONTROL PLAN
C6.1	UTILITY PLAN
C7.1	TRAIL CLOSURE PLAN
C8.1	LANDSCAPE PLAN



UTILITY WARNING

ANY UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY AND RECORDS OBTAINED BY THIS SURVEYOR. THE SURVEYOR MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL THE UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION SHOWN.

GENERAL LEGEND

PROPOSED	EXISTING
PROPERTY BOUNDARY	SANITARY MANHOLE
SECTION LINE	WATER VALVE BOX
CENTER LINE	FIRE HYDRANT
RIGHT OF WAY	WATER CURB STOP
BUILDING SETBACK	WELL
PERMANENT EASEMENT	STORM SEWER MANHOLE
TEMPORARY EASEMENT	STORM SEWER SINGLE INTAKE
TYPE SW-501 STORM INTAKE	STORM SEWER DOUBLE INTAKE
TYPE SW-502 STORM INTAKE	FLARED END SECTION
TYPE SW-503 STORM INTAKE	DECIDUOUS TREE
TYPE SW-505 STORM INTAKE	CONIFEROUS TREE
TYPE SW-506 STORM INTAKE	DECIDUOUS SHRUB
TYPE SW-512 STORM INTAKE	CONIFEROUS SHRUB
TYPE SW-513 STORM INTAKE	ELECTRIC POWER POLE
TYPE SW-401 STORM MANHOLE	GUY ANCHOR
TYPE SW-402 STORM MANHOLE	STREET LIGHT
FLARED END SECTION	POWER POLE W/ TRANSFORMER
TYPE SW-301 SANITARY MANHOLE	UTILITY POLE W/ LIGHT
STORM/SANITARY CLEANOUT	ELECTRIC BOX
WATER VALVE	ELECTRIC TRANSFORMER
FIRE HYDRANT ASSEMBLY	ELECTRIC MANHOLE OR VAULT
SIGN	TRAFFIC SIGN
DETECTABLE WARNING PANEL	TELEPHONE JUNCTION BOX
WATER CURB STOP	TELEPHONE MANHOLE/VAULT
SANITARY SEWER	TELEPHONE POLE
SANITARY SERVICE	GAS VALVE BOX
STORM SEWER	CABLE TV JUNCTION BOX
STORM SERVICE	CABLE TV MANHOLE/VAULT
WATERMAIN WITH SIZE	MAIL BOX
WATER SERVICE	BENCHMARK
SAWCUT (FULL DEPTH)	SOIL BORING
SILT FENCE	UNDERGROUND TV CABLE
USE AS CONSTRUCTED	GAS MAIN
FINISHED FLOOR ELEVATION	FIBER OPTIC
	UNDERGROUND TELEPHONE
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	FIELD TILE
	SANITARY SEWER W/ SIZE
	STORM SEWER W/ SIZE
	WATER MAIN W/ SIZE

THE PROJECT REQUIRES AN IOWA NPDES PERMIT #2 AND CITY OF WINDSOR HEIGHTS GRADING PERMIT. CIVIL DESIGN ADVANTAGE WILL PROVIDE THE PERMITS AND THE INITIAL STORM WATER POLLUTION PREVENTION PLAN (SWPPP) FOR THE CONTRACTORS USE DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR UPDATING THE SWPPP THROUGHOUT CONSTRUCTION AND MEETING LOCAL, STATE AND FEDERAL REQUIREMENTS.

ALL CONSTRUCTION MATERIALS, DUMPSTERS, DETACHED TRAILERS OR SIMILAR ITEMS ARE PROHIBITED ON PUBLIC STREETS OR WITHIN THE PUBLIC R.O.W.

THE 2023 EDITION OF THE SDAS STANDARD SPECIFICATIONS, THE PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG) AND ALL CITY SUPPLEMENTALS, IF APPLICABLE, SHALL APPLY TO ALL WORK ON THIS PROJECT UNLESS OTHERWISE NOTED.

I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA.

MATTHEW J. THOMAS, P.L.S. DATE: _____

LICENSE NUMBER 19968
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023
PAGES OR SHEETS COVERED BY THIS SEAL:
SHEET C2.1-C2.2

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

JEFFREY J. NESVAK, P.E. DATE: _____

LICENSE NUMBER 23810
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024
PAGES OR SHEETS COVERED BY THIS SEAL:
SHEETS C0.1-C6.1



① ALL GUARDS MUST INCLUDE AT LEAST ONE INTERMEDIATE CROSS BAR. IF PIPE DIAMETER, OR EQUIVALENT DIAMETER, IS 60 INCHES OR GREATER, USE TWO INTERMEDIATE CROSS BARS EQUALLY SPACED.

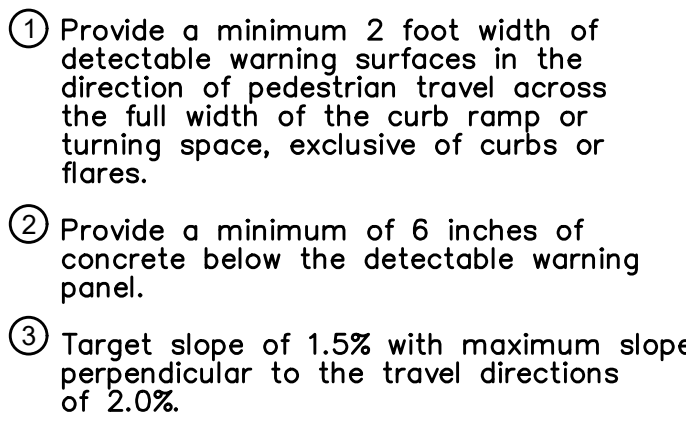


BAR SIZES				
	PIPE SIZE (DIA. OR EQUIV.)	HOLE DIA. REQ'D.	BOLT DIA.	BAR SIZE
ROUND	12" - 24"	2"	2"	2"
	27" - 48"	2"	2"	1"
	54" - 90"	2"	1"	1 1/2"
ARCH	up to 24" eq.	2"	2"	2"
	30" to 48"	2"	2"	1"
	54" to 72"	2"	1"	1 1/2"
ELLIPTICAL	up to 24" eq.	2"	2"	2"
	30" to 48"	2"	2"	1"
	54" to 60"	2"	2"	1 1/2"

BOLT LENGTH = PIPE WALL THICKNESS + 2d



G BAR LIST



PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT	MAX FLOW	PROPOSED LAYOUT
PREFABRICATED END CAP	A	24" TOP PARTIAL CUT END CAP, PART#: MC7200IEPP24T / TYP OF ALL 24" TOP CONNECTIONS	23.05"		28 STORMTECH MC-7200 CHAMBERS
PREFABRICATED END CAP	B	24" BOTTOM PARTIAL CUT END CAP, PART#: MC7200IEPP24B / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.26"		8 STORMTECH MC-7200 END CAPS
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)			12 STONE ABOVE (in)
MANIFOLD	D	24" x 24" TOP MANIFOLD, ADS N-12	23.05"		9 STONE BELOW (in)
MANIFOLD	E	24" x 24" TOP MANIFOLD, ADS N-12	23.05"		40 STONE VOID
NYLOPLAST (INLET W/ ISO PLUS ROW)	F	30" DIAMETER (24.00" SUMP MIN)		28.5 CFS IN	9408 INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
NYLOPLAST (INLET W/ ISO PLUS ROW)	G	30" DIAMETER (24.00" SUMP MIN)		9.5 CFS IN	2320 SYSTEM AREA (SF)
NYLOPLAST (OUTLET)	H	30" DIAMETER (DESIGN BY ENGINEER)		7.0 CFS OUT	203.2 SYSTEM PERIMETER (ft)
INSPECTION PORT	I	6" SEE DETAIL			

CONCEPTUAL ELEVATIONS:

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	836.00
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	831.75
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	831.25
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	831.00
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	831.00
TOP OF STONE:	830.00
TOP OF MC-7200 CHAMBER:	829.00
24" x 24" TOP MANIFOLD INVERT:	825.92
24" x 24" TOP MANIFOLD INVERT:	825.92
24" ISOLATOR ROW PLUS INVERT:	824.19
24" ISOLATOR ROW PLUS INVERT:	824.19
24" BOTTOM CONNECTION INVERT:	824.19
BOTTOM OF MC-7200 CHAMBER:	824.00
BOTTOM OF STONE:	823.25

ISOLATOR ROW PLUS
(SEE DETAIL)

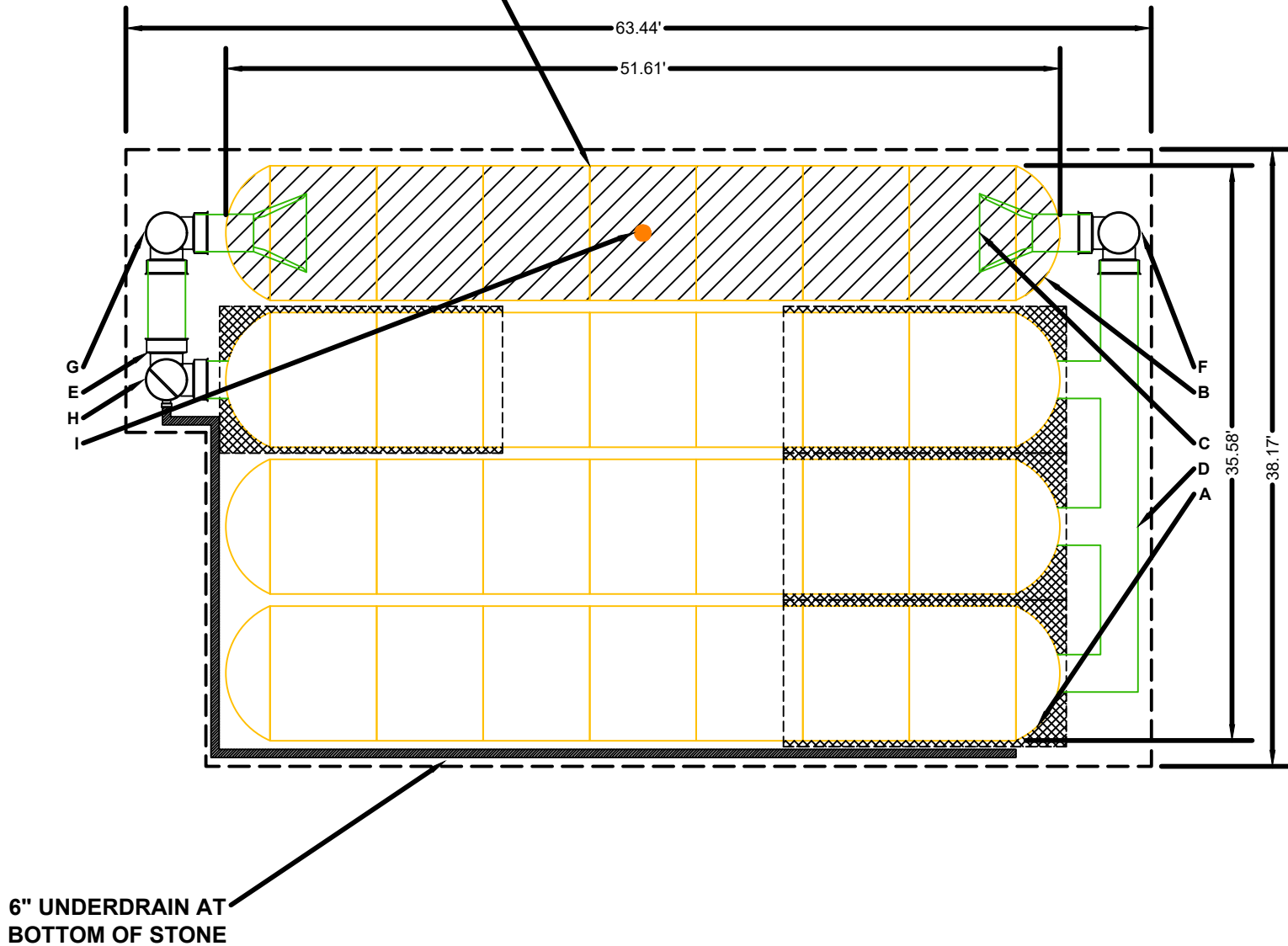
PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE
OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET
FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

PERIMETER

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

THIS ISOLATOR ROW PROVIDES
A WQ FLOWRATE OF 3.57 CFS
(REMOVING 80% TSS BASED ON
AN OK-110 PARTICLE DISTRIBUTION)



IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-7200 CHAMBER SYSTEM

- STORMTECH MC-7200 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 9" (230 mm) SPACING BETWEEN THE CHAMBER ROWS.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
- STONE SHALL BE BROUGHT UP EVENLY AROUND CHAMBERS SO AS NOT TO DISTORT THE CHAMBER SHAPE. STONE DEPTHS SHOULD NEVER DIFFER BY MORE THAN 12" (300 mm) BETWEEN ADJACENT CHAMBER ROWS.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIAL BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-7200 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- THE USE OF EQUIPMENT OVER MC-7200 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-7200 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-7200 CONSTRUCTION GUIDE".
- FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

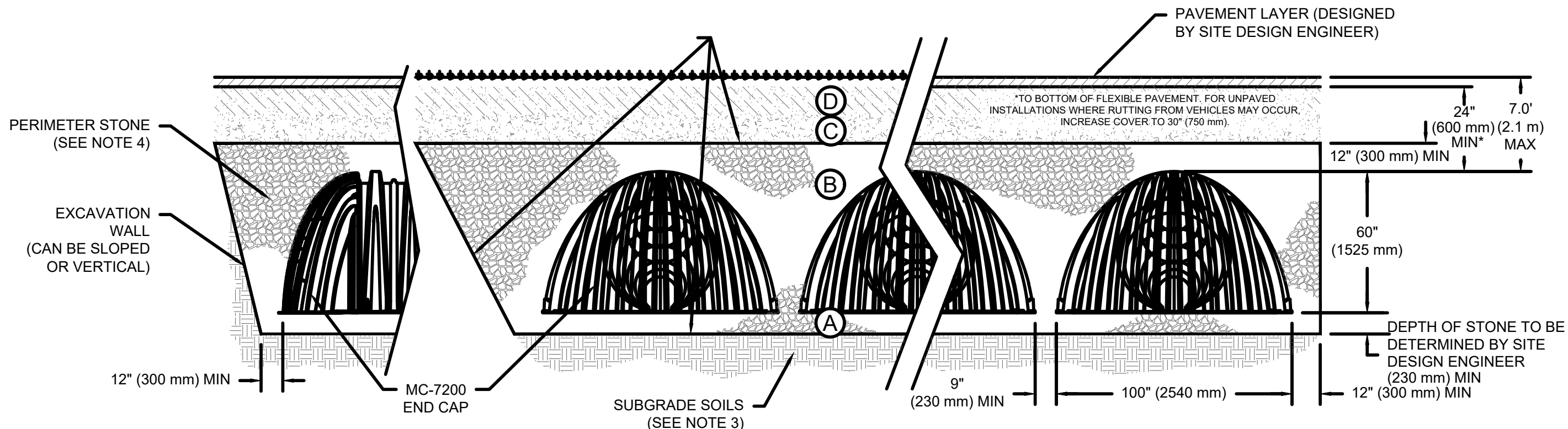
CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

ACCEPTABLE FILL MATERIALS: STORMTECH MC-7200 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2-4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

PLEASE NOTE:

- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101
- MC-7200 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT³. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

MC-7200 STORMTECH CHAMBER SPECIFICATIONS

- CHAMBERS SHALL BE STORMTECH MC-7200.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 60x101.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- REQUIREMENTS FOR HANDLING AND INSTALLATION:
 - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
 - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
 - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT³. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
 - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
 - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
 - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

GA

DATE

08/10/23

06/06/23

05/12/23

12/19/22

REVISIONS

FOURTH SUBMITTAL

PEDESTRAIN CONNECTION THIRD SUB

SECOND SUBMITTAL

FIRST SUBMITTAL

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

ENGINEER: JJN

PM: DAM

GA

CIVIL DESIGN ADVANTAGE

WINDSOR HEIGHTS, IOWA

B-BOP'S

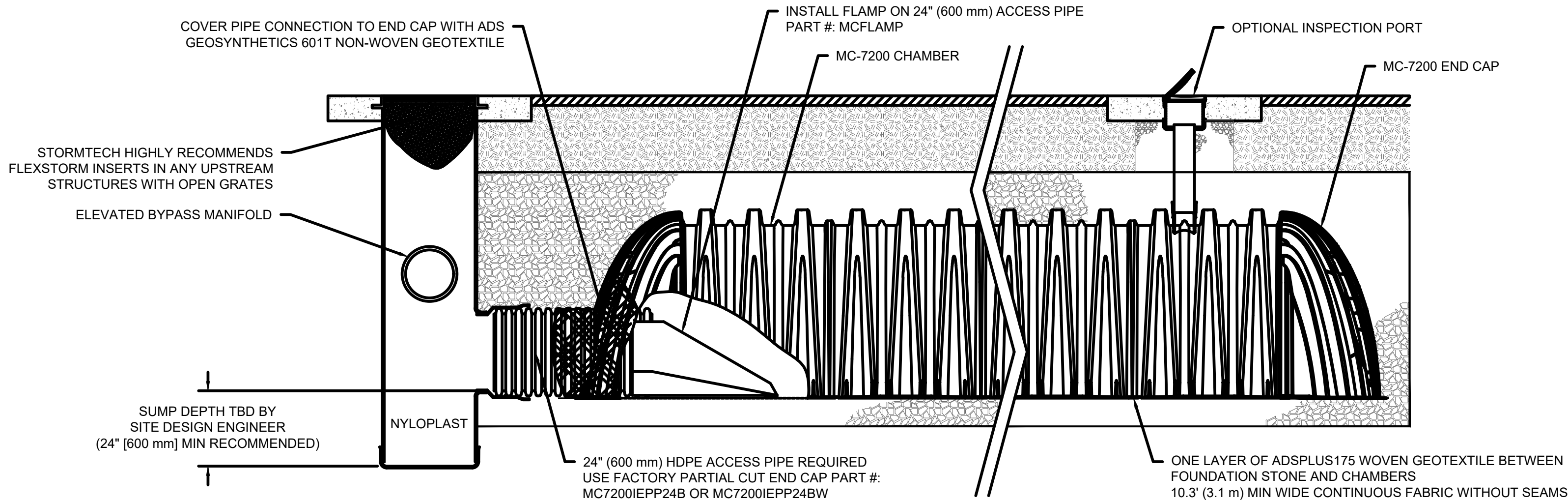
DETAILS

C1.2

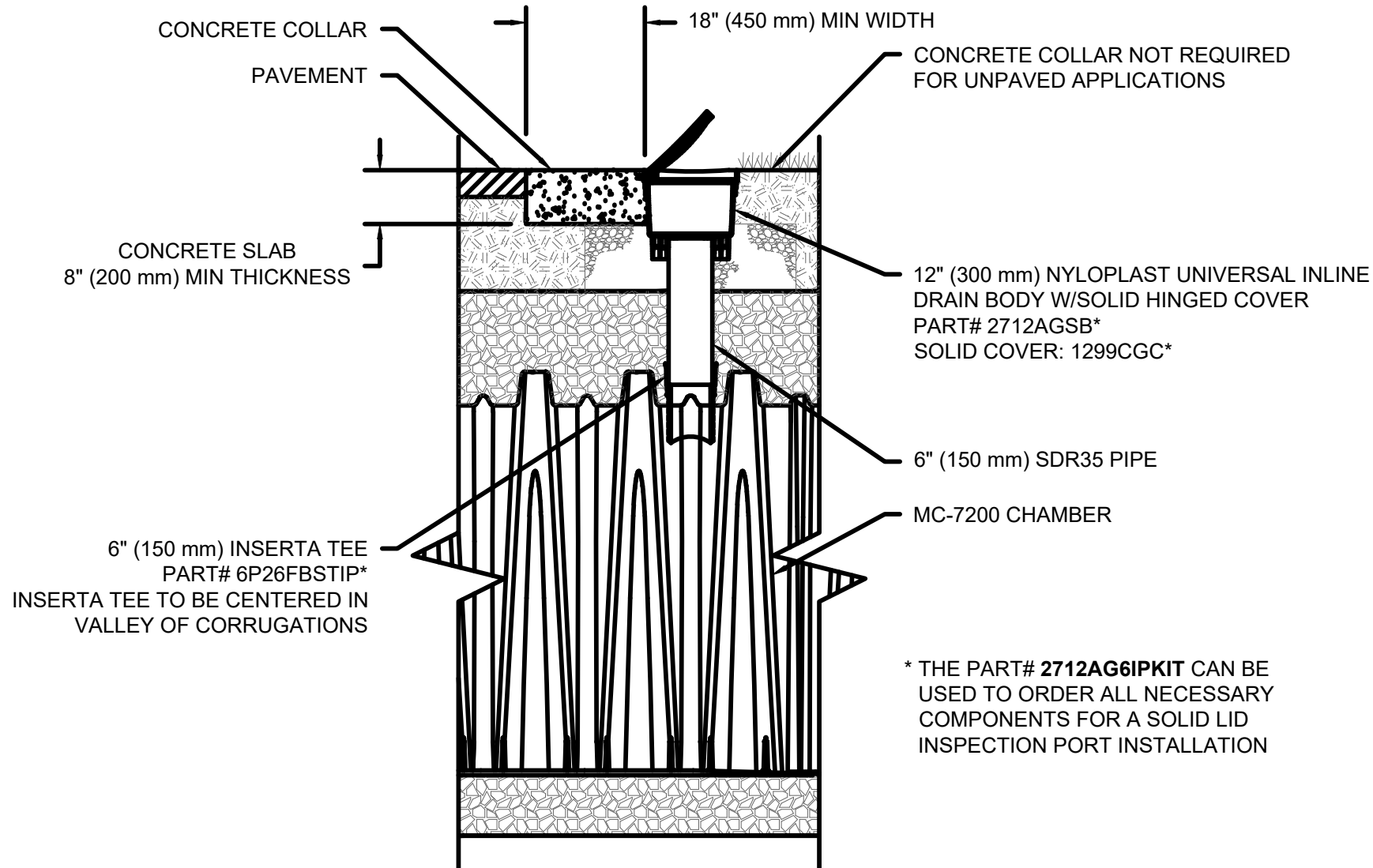
2210.678

GA

Page 63 of 75



MC-7200 ISOLATOR ROW PLUS DETAIL
NTS



MC-7200 6" (150 mm) INSPECTION PORT DETAIL
NTS

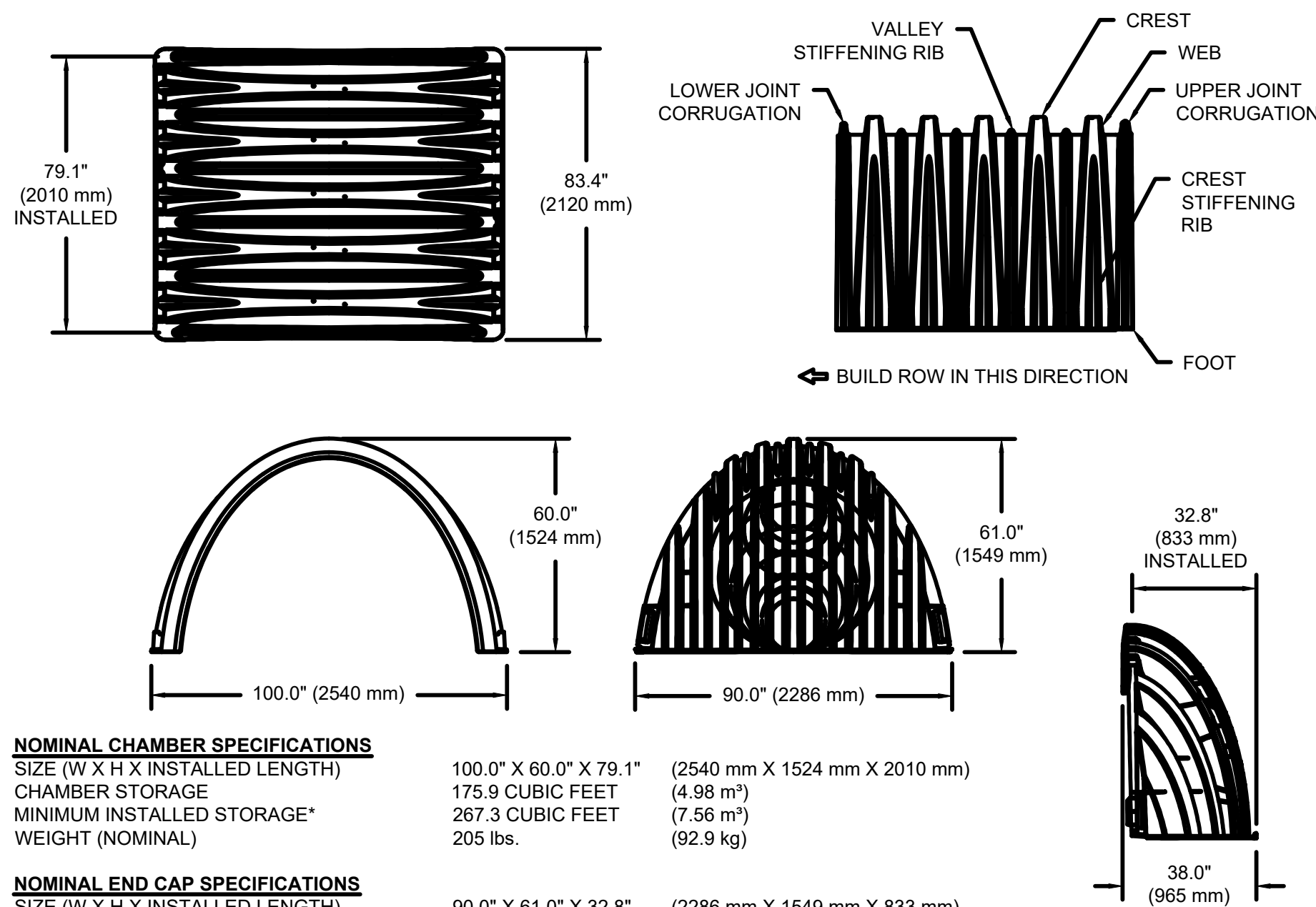
INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
- B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
- i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
- ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

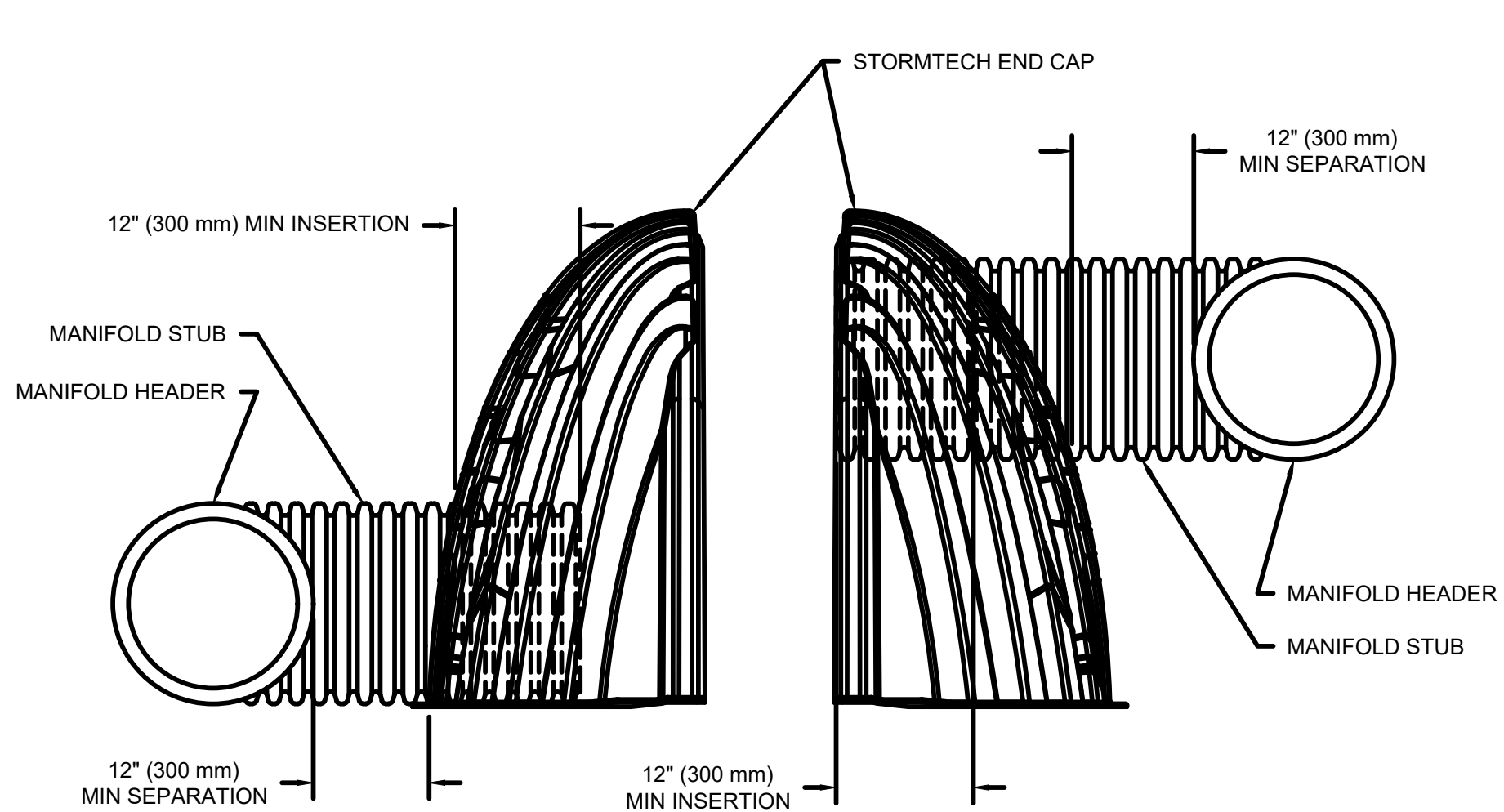
MC-7200 TECHNICAL SPECIFICATION



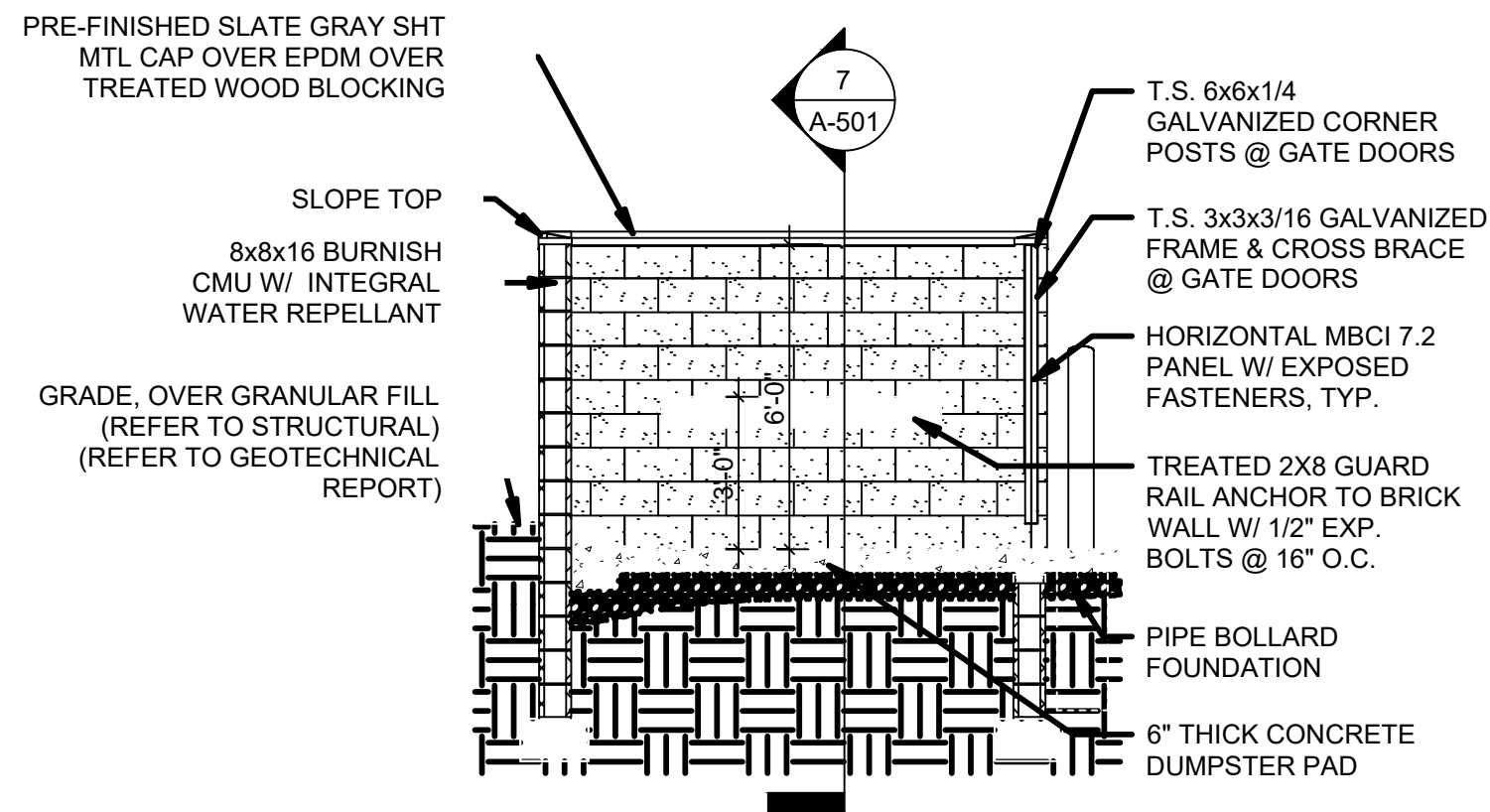
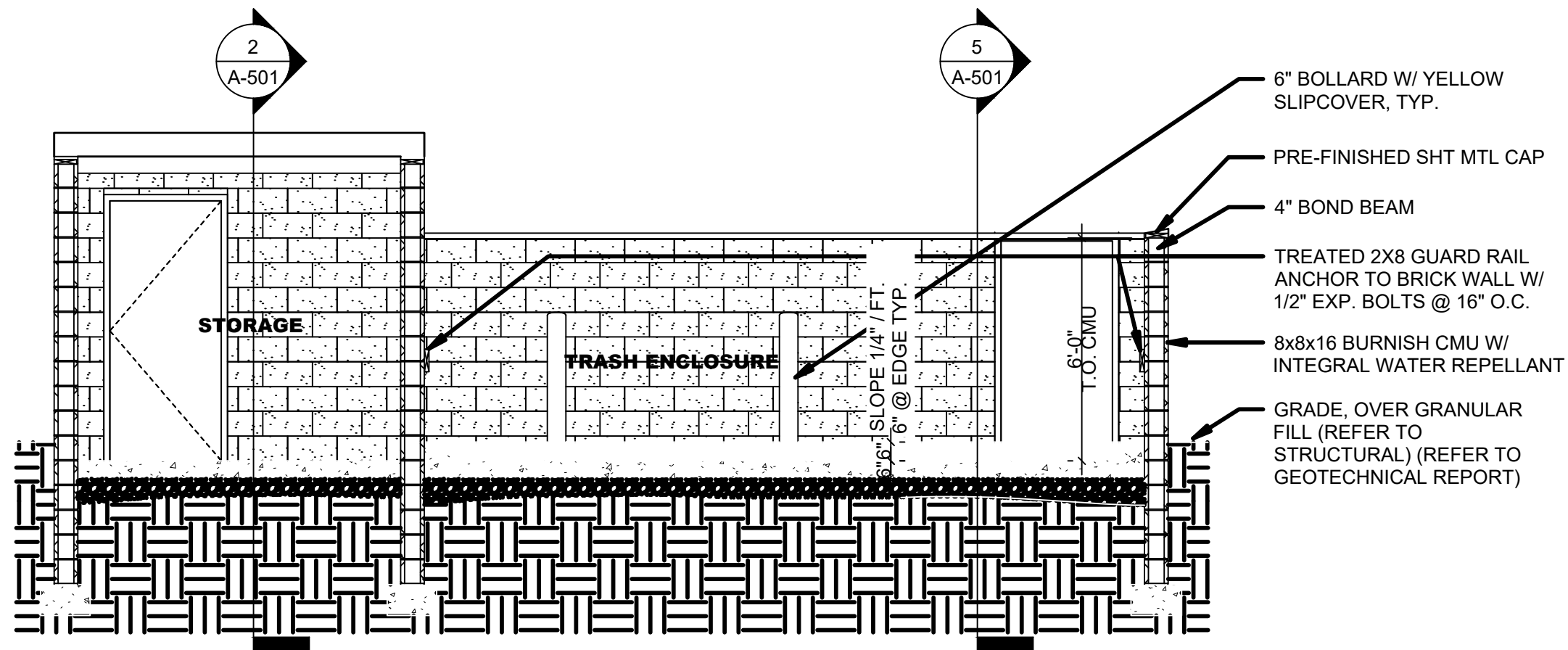
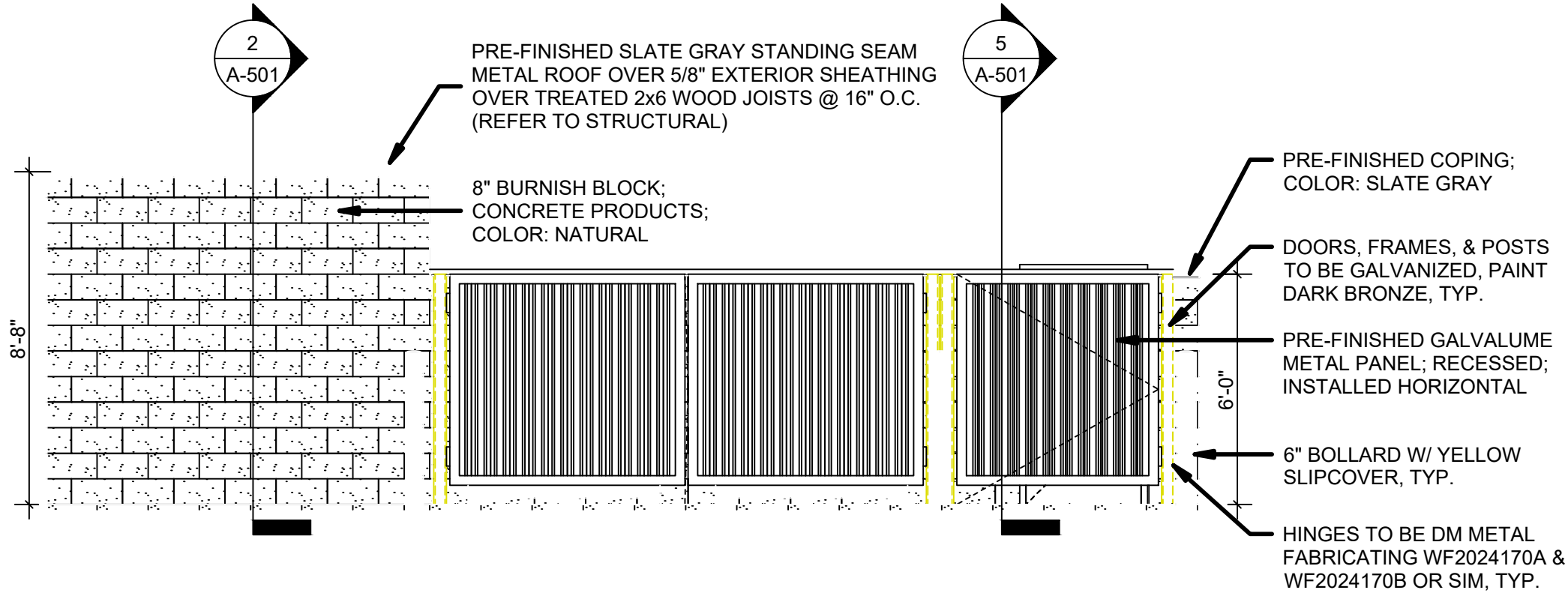
PART #	STUB	B	C
MC7200IEPP06T	6" (150 mm)	42.54" (1081 mm)	---
MC7200IEPP06B	---	---	0.86" (22 mm)
MC7200IEPP08T	8" (200 mm)	40.50" (1029 mm)	---
MC7200IEPP08B	---	---	1.01" (26 mm)
MC7200IEPP10T	10" (250 mm)	38.37" (975 mm)	---
MC7200IEPP10B	---	---	1.33" (34 mm)
MC7200IEPP12T	12" (300 mm)	35.69" (907 mm)	---
MC7200IEPP12B	---	---	1.55" (39 mm)
MC7200IEPP15T	15" (375 mm)	32.72" (831 mm)	---
MC7200IEPP15B	---	---	1.70" (43 mm)
MC7200IEPP18T	18" (450 mm)	29.36" (746 mm)	---
MC7200IEPP18TW	---	---	---
MC7200IEPP18B	---	---	1.97" (50 mm)
MC7200IEPP18BW	---	---	---
MC7200IEPP24T	24" (600 mm)	23.05" (585 mm)	---
MC7200IEPP24TW	---	---	---
MC7200IEPP24B	---	---	2.26" (57 mm)
MC7200IEPP24BW	---	---	---
MC7200IEPP30BW	30" (750 mm)	---	2.95" (75 mm)
MC7200IEPP36BW	36" (900 mm)	---	3.25" (83 mm)
MC7200IEPP42BW	42" (1050 mm)	---	3.55" (90 mm)

NOTE: ALL DIMENSIONS ARE NOMINAL

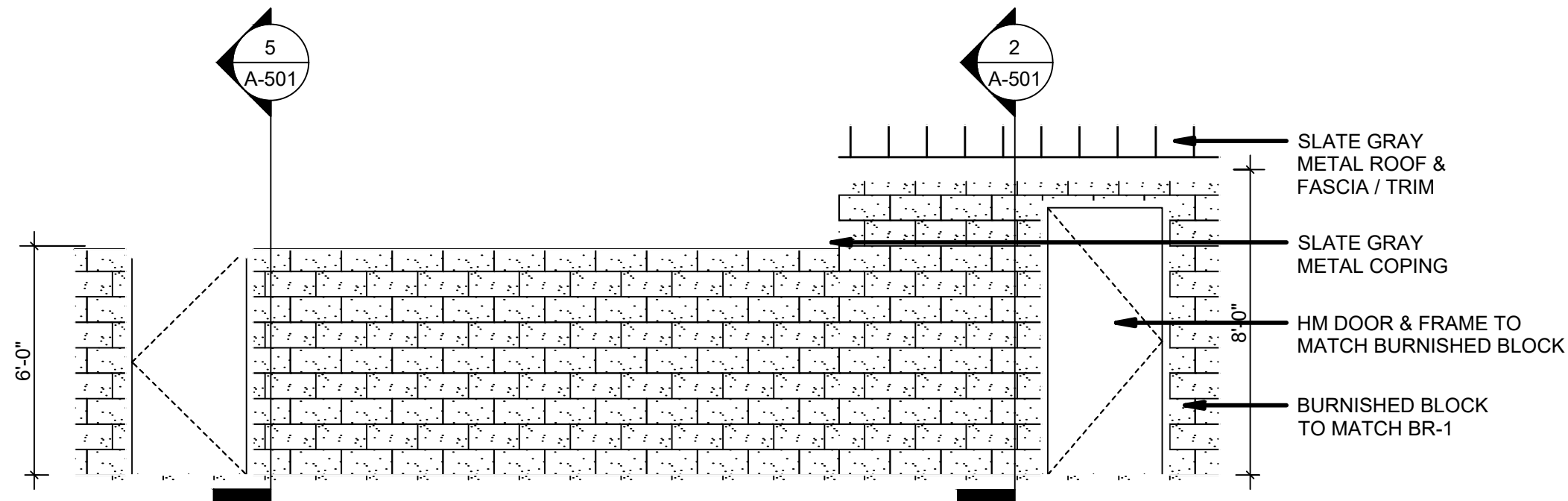
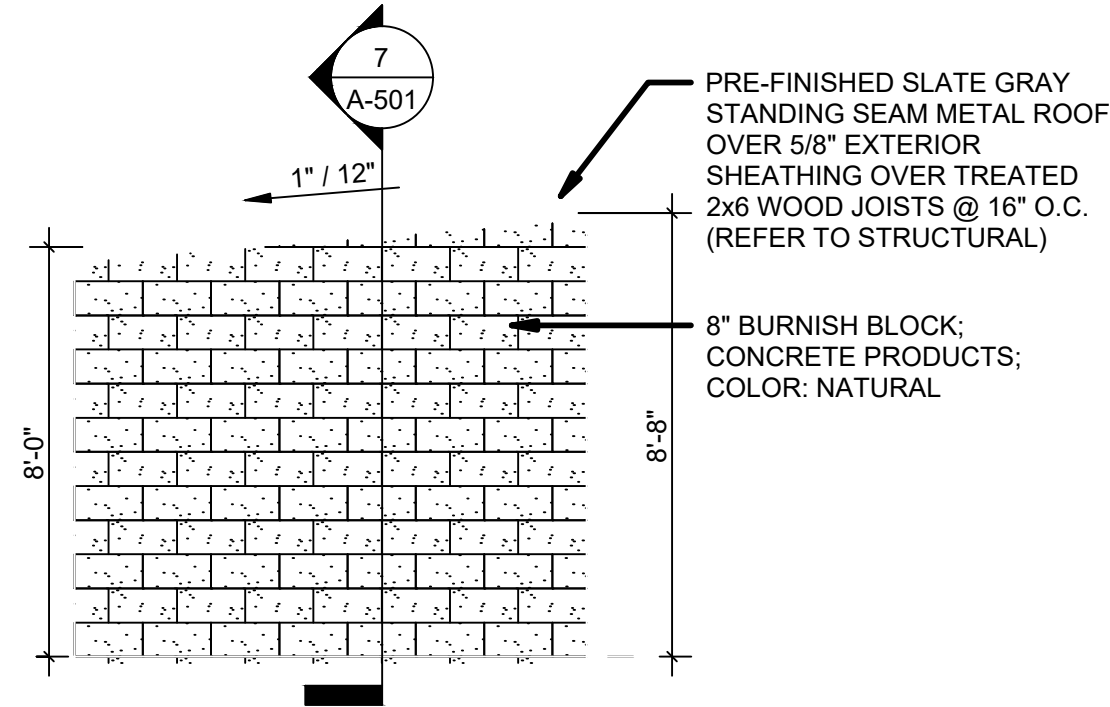
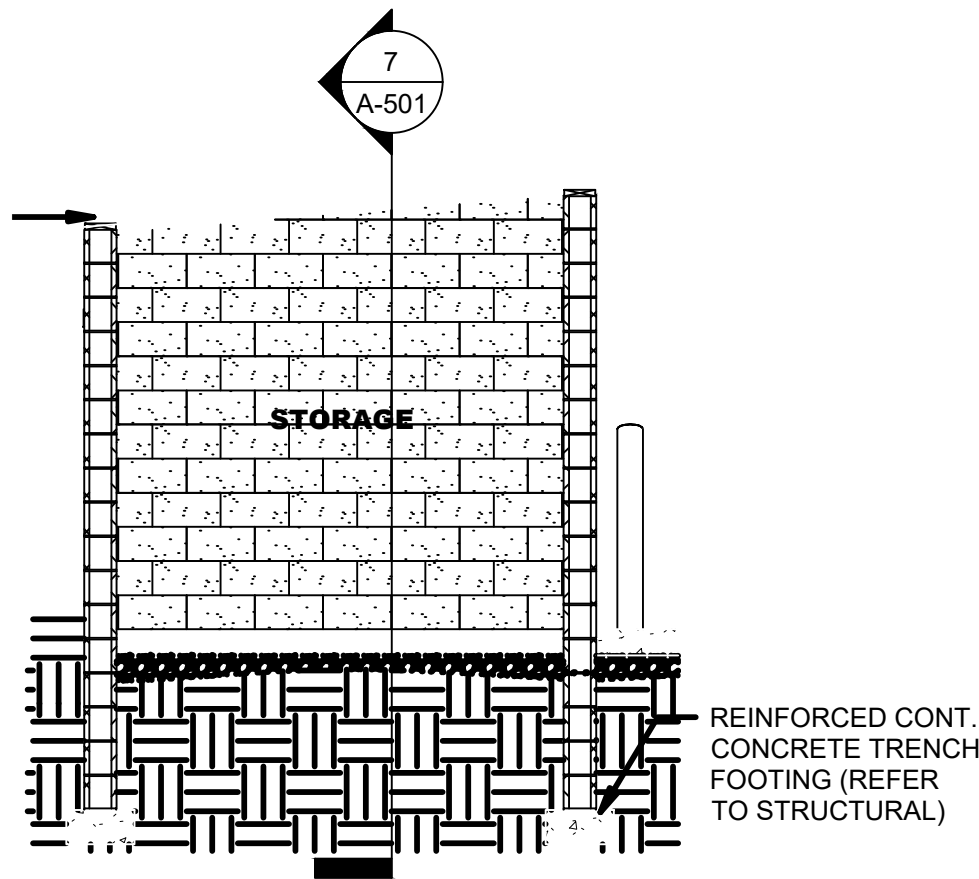
MC-SERIES END CAP INSERTION DETAIL

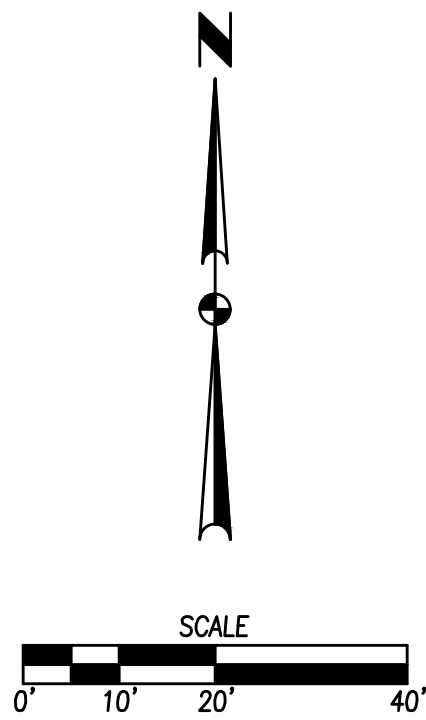


NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.



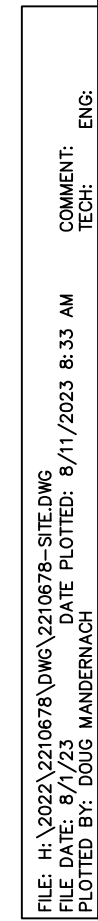
PRE-FINISHED SLATE GRAY STANDING SEAM METAL ROOF OVER 5/8" EXTERIOR SHEATHING OVER TREATED 2x6 WOOD JOISTS @ 16" O.C. (REFER TO STRUCTURAL)





B-BOP'S
SITE MAP

C2.1
2210.678

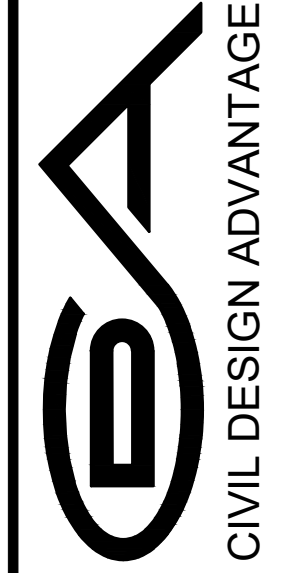



1. PRIOR TO ANY WORK AT THE SITE, CONTRACTOR SHALL EXAMINE ANY APPLICABLE DRAWINGS AVAILABLE FROM THE OWNER OR ENGINEER AND CONSULT WITH OWNER'S PERSONNEL AND UTILITY COMPANY REPRESENTATIVES. NO COMPENSATION WILL BE ALLOWED FOR DAMAGE FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.
2. PRIOR TO DEMOLITION, CONTRACTOR SHALL NOTIFY IN WRITING (48 HRS NOTICE) THE FOLLOWING:
 - A. CITY
 - B. APPROPRIATE UTILITY COMPANIES
 - C. OWNER
 - D. CIVIL DESIGN ADVANTAGE
 - E. ARCHITECT
3. DO NOT DISTURB EXISTING UTILITIES UNLESS OTHERWISE NOTED. COORDINATE REMOVAL OF AND ABANDONMENT OF ALL UTILITIES WITH THE APPROPRIATE UTILITY SUPPLIER AND REGULATORY AGENCIES
4. PROTECT EXISTING UTILITIES THAT ARE TO REMAIN. THE LOCATIONS OF ALL UTILITIES INDICATED ON THE PLANS ARE TAKEN FROM EXISTING RECORDS. THE EXACT LOCATION AND ELEVATION OF ALL UTILITIES MUST BE DETERMINED BY THE CONTRACTOR. IT SHALL BE THE DUTY OF THE CONTRACTOR TO ASCERTAIN WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLAN MAY BE PRESENT.
5. BACKFILL ALL EXCAVATIONS WITH COHESIVE MATERIAL COMPACTED TO 95% MAXIMUM STANDARD PROCTOR DRY DENSITY AND MOISTURE RANGE OF OPTIMUM MOISTURE TO 4% ABOVE OPTIMUM MOISTURE. TESTING OF BACKFILL TO BE BY A GEOTECHNICAL ENGINEER EMPLOYED BY THE OWNER. IN THE EVENT OF A TEST FAILURE, ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR.
6. FIELD VERIFY EXISTING GRADES AND LOCATION OF EXISTING UTILITIES, CONDUIT, LINES, POLES, TREES, PAVING, BUILDING AND OTHER SITE FEATURES PRIOR TO DEMOLITION AND IMMEDIATELY INFORM THE ENGINEER AND/OR OWNER OF ANY DISCREPANCIES.
7. DEMOLITION NOTES AS SHOWN ON THE PLAN ARE NOT ALL INCLUSIVE. CONTRACTOR TO ABANDON IN PLACE OR REMOVE AND DISPOSE OF ALL EXISTING SITE IMPROVEMENTS ABOVE AND BELOW GROUND TO COMPLY WITH THE GENERAL INTENT OF THIS DOCUMENT.
8. ALL CONSTRUCTION/DEMOLITION DEBRIS SHALL BE DISPOSED OF OFFSITE IN FULL COMPLIANCE WITH CURRENT ENVIRONMENTAL REGULATIONS.
9. CONSTRUCTION LIMITS SHALL BE CONFINED TO THE SITE BOUNDARY AS NOTED. ANY DAMAGE TO PROPERTIES OUTSIDE THE SITE BOUNDARY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA STANDARDS. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.

REVISIONS	DATE
FOURTH SUBMITTAL	08/10/23
PEDESTRAIN CONNECTION THIRD SUB	06/06/23
SECOND SUBMITTAL	05/12/23
FIRST SUBMITTAL	12/19/22

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

ENGINEER: JJN	PM: DAM
---------------	---------





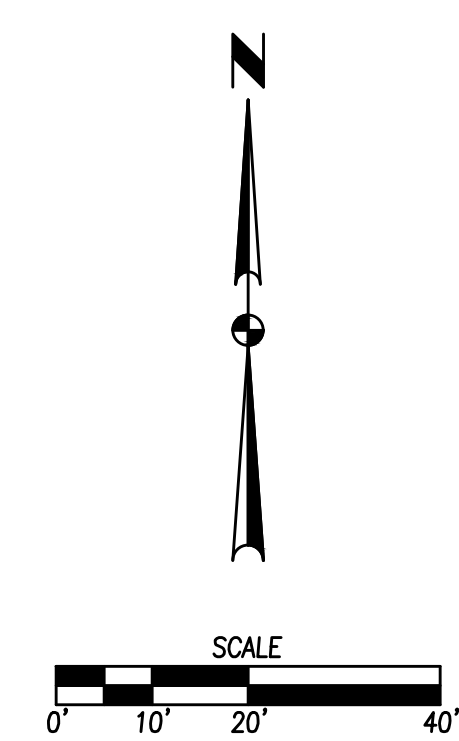
2210.678

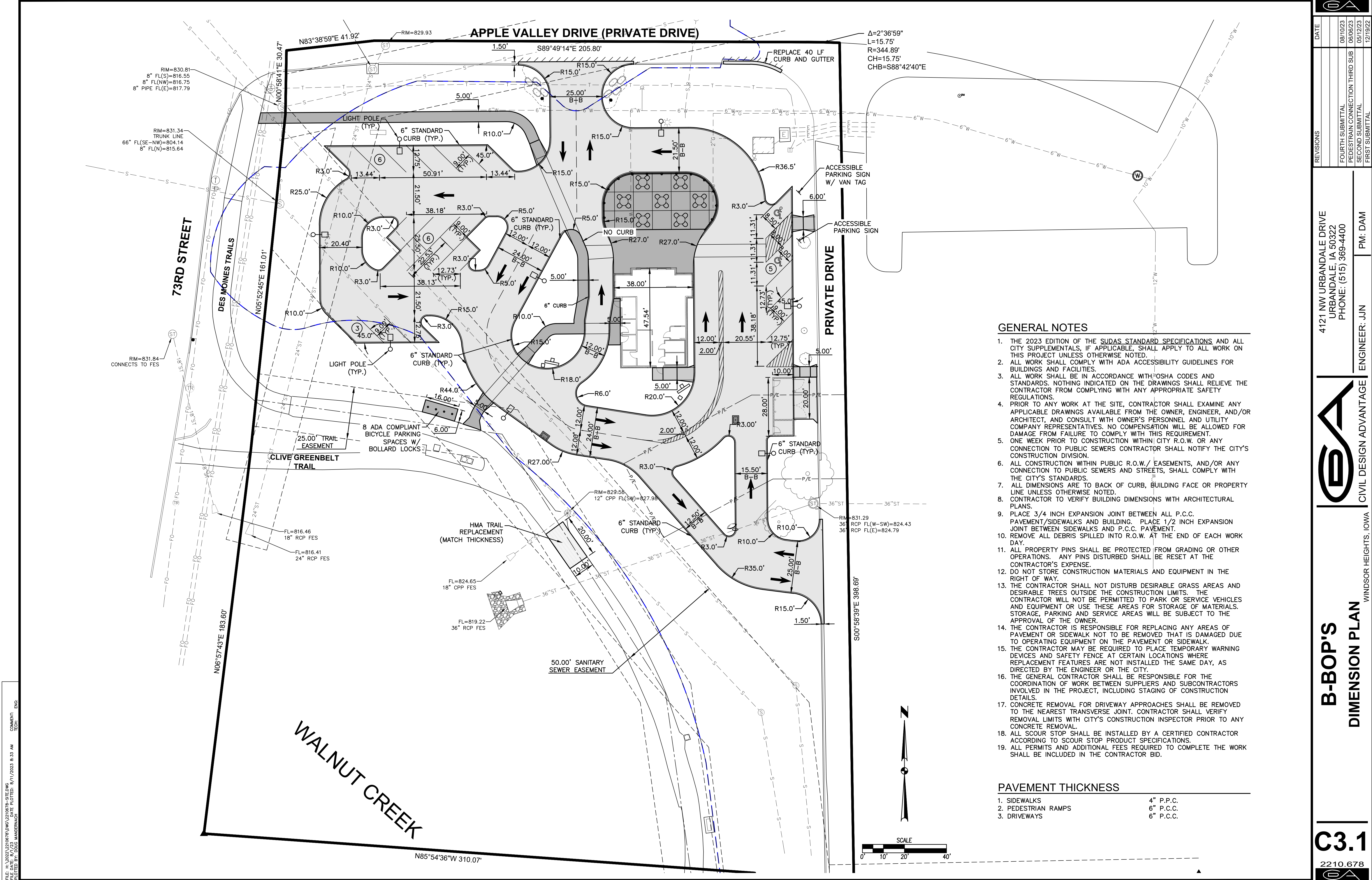
C2.2

B-BOP'S

TOPOGRAPHIC AND DEMOLITION PLAN

WINDSOR HEIGHTS, IOWA



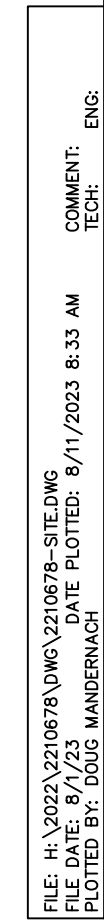


GENERAL NOTES

1. THE 2023 EDITION OF THE SUDAS STANDARD SPECIFICATIONS AND ALL CITY SUPPLEMENTALS, IF APPLICABLE, SHALL APPLY TO ALL WORK ON THIS PROJECT UNLESS OTHERWISE NOTED.
2. ALL WORK SHALL COMPLY WITH ADA ACCESSIBILITY GUIDELINES FOR BUILDINGS AND FACILITIES.
3. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES AND STANDARDS. NOTHING INDICATED ON THE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH ANY APPROPRIATE SAFETY REGULATIONS.
4. PRIOR TO ANY WORK AT THE SITE, CONTRACTOR SHALL EXAMINE ANY APPLICABLE DRAWINGS AVAILABLE FROM THE OWNER, ENGINEER, AND/OR ARCHITECT, AND CONSULT WITH OWNER'S PERSONNEL AND UTILITY COMPANY REPRESENTATIVES. NO COMPENSATION WILL BE ALLOWED FOR DAMAGE FROM FAILURE TO COMPLY WITH THIS REQUIREMENT.
5. ONE WEEK PRIOR TO CONSTRUCTION WITHIN CITY R.O.W. OR ANY CONNECTION TO PUBLIC SEWERS CONTRACTOR SHALL NOTIFY THE CITY'S CONSTRUCTION DIVISION.
6. ALL CONSTRUCTION WITHIN PUBLIC R.O.W./ EASEMENTS, AND/OR ANY CONNECTION TO PUBLIC SEWERS AND STREETS, SHALL COMPLY WITH THE CITY'S STANDARDS.
7. ALL DIMENSIONS ARE TO BACK OF CURB, BUILDING FACE OR PROPERTY LINE UNLESS OTHERWISE NOTED.
8. CONTRACTOR TO VERIFY BUILDING DIMENSIONS WITH ARCHITECTURAL PLANS.
9. PLACE 3/4 INCH EXPANSION JOINT BETWEEN ALL P.C.C. PAVEMENT/SIDEWALKS AND BUILDING. PLACE 1/2 INCH EXPANSION JOINT BETWEEN SIDEWALKS AND P.C.C. PAVEMENT.
10. REMOVE ALL DEBRIS SPILLED INTO R.O.W. AT THE END OF EACH WORK DAY.
11. ALL PROPERTY PINS SHALL BE PROTECTED FROM GRADING OR OTHER OPERATIONS. ANY PINS DISTURBED SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.
12. DO NOT STORE CONSTRUCTION MATERIALS AND EQUIPMENT IN THE RIGHT OF WAY.
13. THE CONTRACTOR SHALL NOT DISTURB DESIRABLE GRASS AREAS AND DESIRABLE TREES OUTSIDE THE CONSTRUCTION LIMITS. THE CONTRACTOR WILL NOT BE PERMITTED TO PARK OR SERVICE VEHICLES AND EQUIPMENT OR USE THESE AREAS FOR STORAGE OF MATERIALS. STORAGE, PARKING AND SERVICE AREAS WILL BE SUBJECT TO THE APPROVAL OF THE OWNER.
14. THE CONTRACTOR IS RESPONSIBLE FOR REPLACING ANY AREAS OF PAVEMENT OR SIDEWALK NOT TO BE REMOVED THAT IS DAMAGED DUE TO OPERATING EQUIPMENT ON THE PAVEMENT OR SIDEWALK.
15. THE CONTRACTOR MAY BE REQUIRED TO PLACE TEMPORARY WARNING DEVICES AND SAFETY FENCE AT CERTAIN LOCATIONS WHERE REPLACEMENT FEATURES ARE NOT INSTALLED THE SAME DAY, AS DIRECTED BY THE ENGINEER OR THE CITY.
16. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF WORK BETWEEN SUPPLIERS AND SUBCONTRACTORS INVOLVED IN THE PROJECT, INCLUDING STAGING OF CONSTRUCTION DETAILS.
17. CONCRETE REMOVAL FOR DRIVEWAY APPROACHES SHALL BE REMOVED TO THE NEAREST TRANSVERSE JOINT. CONTRACTOR SHALL VERIFY REMOVAL LIMITS WITH CITY'S CONSTRUCTION INSPECTOR PRIOR TO ANY CONCRETE REMOVAL.
18. ALL SCOUR STOP SHALL BE INSTALLED BY A CERTIFIED CONTRACTOR ACCORDING TO SCOUR STOP PRODUCT SPECIFICATIONS.
19. ALL PERMITS AND ADDITIONAL FEES REQUIRED TO COMPLETE THE WORK SHALL BE INCLUDED IN THE CONTRACTOR BID.

PAVEMENT THICKNESS

- | | |
|---------------------|-----------|
| 1. SIDEWALKS | 4" P.C.C. |
| 2. PEDESTRIAN RAMPS | 6" P.C.C. |
| 3. DRIVEWAYS | 6" P.C.C. |



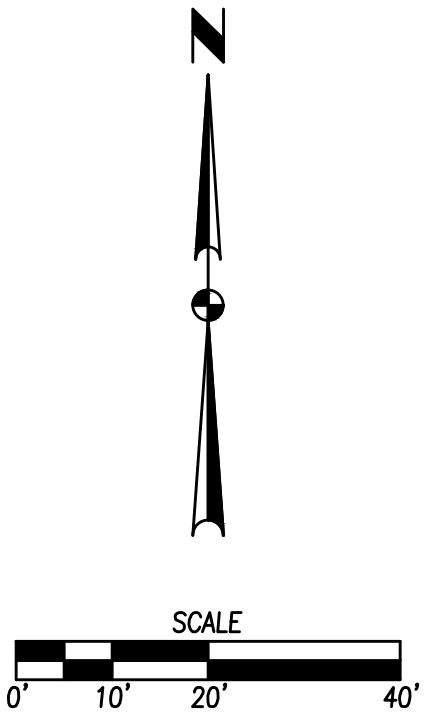
- PRIOR TO ANY GRADING, A COPY OF THE NPDES PERMIT SHALL BE PROVIDED TO THE CITY'S BUILDING DIVISION.
2. CONTRACTOR SHALL STRIP ALL DELETERIOUS MATERIAL. THE TOP 6" OF TOPSOIL IS TO BE STOCKPILED AND RESPREAD AFTER GRADING IS COMPLETE. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A SUITABLE TOPSOIL STOCKPILE SITE.
3. EXCAVATION SHALL BE IN ACCORDANCE WITH THE 2023 EDITION OF THE SUDAS STANDARD SPECIFICATIONS AND ALL CITY SUPPLEMENTALS, IF APPLICABLE.
4. MATCH EXISTING GRADES AT PROPERTY LINES AND/OR CONSTRUCTION LIMITS.
5. ALL SPOT ELEVATIONS ARE FORM GRADE (FG) OR TOP OF FINISHED SURFACES UNLESS OTHERWISE NOTED.
6. SITE SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS.
7. SLOPES ON PAVEMENT SHALL BE UNIFORM TO AVOID PONDING.
8. THE CONTRACTOR SHALL CONFINE HIS GRADING OPERATIONS TO WITHIN THE CONSTRUCTION LIMITS AND EASEMENTS SHOWN ON THE PLANS. ANY DAMAGE TO PROPERTIES OUTSIDE THE SITE BOUNDARY SHALL BE AT THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. THE CONTRACTOR SHALL APPLY NECESSARY MOISTURE CONTROL TO THE CONSTRUCTION AREA AND HAUL ROADS TO PREVENT THE SPREAD OF DUST.
10. REFER TO SEPARATE STORM WATER POLLUTION PREVENTION PLAN FOR DETAILS ON EROSION CONTROL.
11. FINAL FINISH GRADING TO BE APPROVED BY THE ARCHITECT AND CIVIL ENGINEER. MATCH EXISTING GRADES AT THE INTERFACE OF NEW AND EXISTING GRADES OR PAVING.
12. SIDEWALKS:
 - MAINTAIN 1% MINIMUM AND 5% MAXIMUM LONGITUDINAL SLOPES ON ALL PAVED WALKWAYS. ALL WALKS TO HAVE 2.0% MAXIMUM TRANSVERSE SLOPE IN THE DIRECTION OF NATURAL DRAINAGE. SAW CUT JOINTS AS SOON AS CONCRETE HAS SET. SAW CUTS TO BE 1/8" TO 1/4" WIDE;
 - DEPTH: LONGITUDINAL 1/3, TRANSVERSE 1/4.
13. THE GRADING OF THE DETENTION FACILITY, INSTALLATION OF THE STORM SEWER SYSTEM (IF APPLICABLE), AND THE INSTALLATION OF THE ORIFICE PLATE (IF APPLICABLE) SHALL BE COMPLETED AND FUNCTIONAL PRIOR TO ANY INCREASE IN IMPERVIOUS SURFACES WITHIN THE SITE OR THE PREVIOUSLY MENTIONED ITEMS SHALL BE GRADED/INSTALLED AS SOON AS PRACTICAL.

REFER TO THE SOIL MANAGEMENT PLAN FOR DETAILS REGARDING SOIL QUALITY RESTORATION. METHOD 4 FROM THE ISWM C5-S6 WILL BE USED FOR SOIL QUALITY RESTORATION. THE PROCEDURE IS AS FOLLOWS:

- i. TOPSOIL USED FOR SQR MUST MEET THE DEFINITION OF TOPSOIL FOUND IN PART F. "DESIGN PROCEDURES" FOUND ABOVE.
- ii. SITE SOILS SHOULD BE STRIPPED AND STOCKPILED IN AN APPROVED LOCATION IDENTIFIED IN THE SMP. THE SMP SHOULD IDENTIFY THE DEPTH OF THE TOPSOIL LAYER TO BE STRIPPED AND REPLACED. STRIPPING AND STOCKPILING SHOULD OCCUR BEFORE OTHER SITE GRADING OR CONSTRUCTION ACTIVITIES ARE INITIATED TO KEEP TOPSOIL SEPARATE FROM LOWER HORIZON SOILS.
- iii. SOIL STOCKPILES SHOULD BE PROTECTED BY APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES, IDENTIFIED WITHIN THE SWPPP.
- iv. RESPREAD THE TOPSOIL AFTER ALL GRADING AND TRENCHING ACTIVITIES IN THE AREA HAVE BEEN COMPLETED. IF SQR IS COMPLETED PRIOR TO CONSTRUCTION, THE TOPSOIL MATERIAL SHOULD BE STRIPPED PRIOR TO SAID CONSTRUCTION AND RESPREAD AS NECESSARY TO AVOID EXCESSIVE COMPACTION AND SO THE TOPSOIL WILL REMAIN ON THE SURFACE AFTER CONSTRUCTION IS COMPLETED.
- v. REMOVE LARGE CLOUDS, ROOTS, LITTER, STONES LARGER THAN 1 INCH (1/2 INCH FOR RESIDENTIAL LAWN) AND OTHER UNDESIRABLE MATERIAL. AFTER RESPREAD, AVOID PLACEMENT OF BASEMENT SPOILS, FILL, OTHER MATERIALS OR HEAVY EQUIPMENT ON THE RESTORED AREA.
- vi. PERFORM TILLAGE AS NECESSARY TO ADDRESS EXCESSIVE COMPACTION. DO NOT TILL WET SOILS.

CONTRACTOR SHALL AMEND SOILS IN ALL PROPOSED GREEN SPACE AREAS TO 8% ORGANIC MATTER THROUGH COMPOST AMENDMENT PRIOR TO TOPSOIL RESPREAD.

REFER TO THE EROSION AND SEDIMENT CONTROL PLAN ON SHEET C5.1 FOR LOCATIONS AND QUANTITY OF AMENDED SOILS.

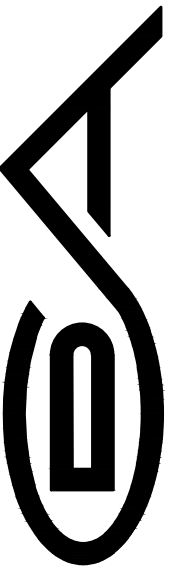


REVISIONS	DATE
FOURTH SUBMITTAL	08/10/23
PEDESTRAIN CONNECTION THIRD SUB	06/06/23
SECOND SUBMITTAL	05/12/23
FIRST SUBMITTAL	12/19/22

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

PM: DAM

ENGINEER: JJN




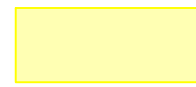

WINDCOB LIMITED IOWA

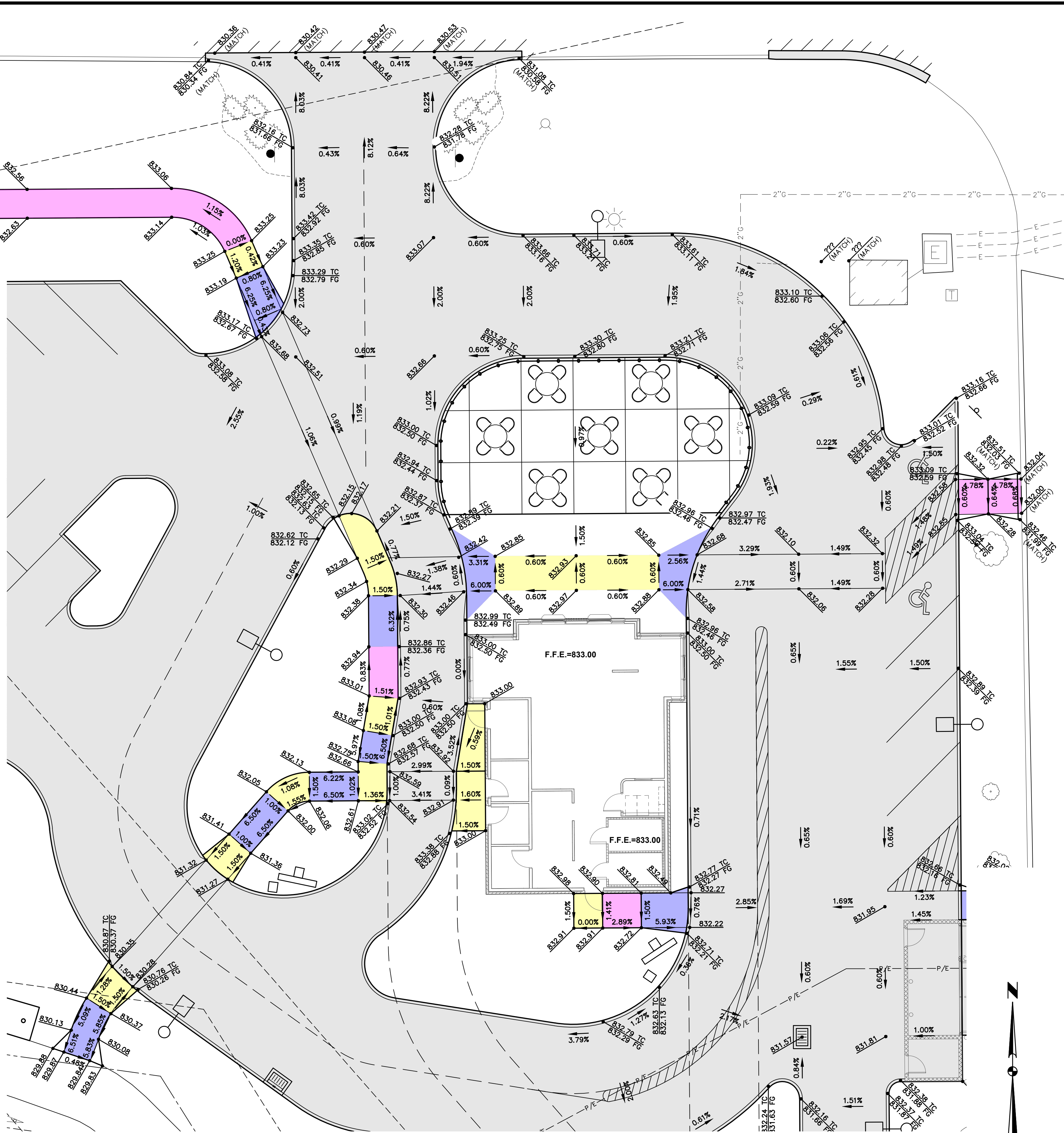
B-BOP'S GRADING PLAN

C4.1

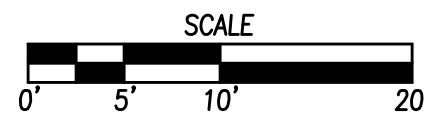
2210.678

DETAIL 'B'

-  RUNNING SLOPE
-  TURNING SPACE
-  RAMP



DETAIL 'A'



B-BOP'S
GRADING PLAN

C4.2

2210.678

WINDSOR HEIGHTS, IOWA

CA
CIVIL DESIGN ADVANTAGE

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

ENGINEER: J.JN

PM: DAM

REVISIONS

REVISIONS	DATE
FOURTH SUBMITTAL	08/10/23
PEDESTRAIN CONNECTION THIRD SUB	06/06/23
SECOND SUBMITTAL	05/12/23
FIRST SUBMITTAL	12/19/22

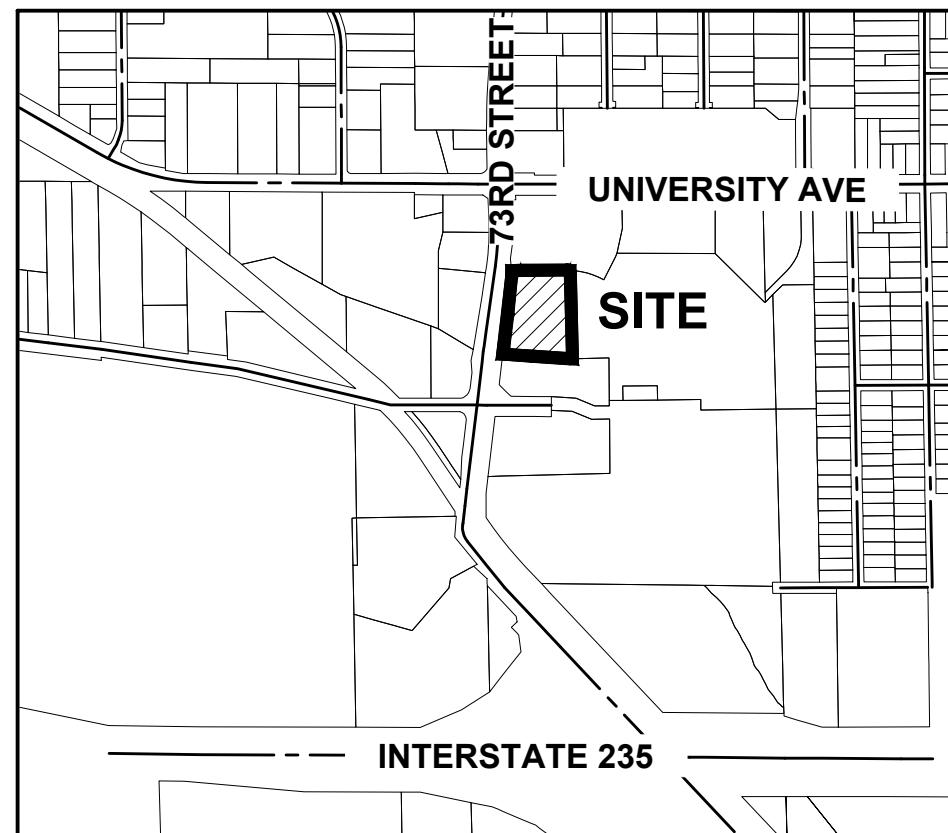


B-BOP'S WINDSOR HEIGHTS

EROSION AND SEDIMENT CONTROL PLAN

VICINITY MAP

NOT TO SCALE



WINDSOR HEIGHTS, IOWA

STABILIZATION QUANTITIES

ITEM NO.	ITEM	UNIT	TOTAL
1	SILT FENCE	LF	941
2	FILTER SOCK	LF	65
3	SEEDING, FERTILIZING, AND MULCHING	AC	0.35
4	INLET PROTECTION DEVICES	EA	4
5	CONCRETE WASHOUT PIT	EA	1
6	COMPOST AMENDED SOILS	SY	1,280

NOTES:

- IF DEWATERING IS NEEDED FOR ANY REASON, DISCHARGE OF WATER OFFSITE IS TO CONFORM WITH THE GENERAL PERMIT #2 REQUIREMENT.
- DISTURBED AREAS SHALL BE TEMPORARILY SEEDED OR MULCHED IMMEDIATELY WHENEVER CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS.
- STORM SEWERS AND DRAINAGE WAYS SHALL BE PROTECTED FROM CONCRETE SLURRY PRODUCED BY SAWCUTTING AND CONCRETE GRINDING.

DISCHARGE POINT SUMMARY

DISCHARGE POINT #1 DIRECTLY TO WALNUT CREEK

TOTAL AREA DISTURBED TO DISCHARGE POINT	0.94 ACRES
STORAGE VOLUME REQUIRED (# OF ACRES*3600 CU FT)	3,372 CU FT
VOLUME PROVIDED IN FILTER SOCK (65 LF @ 2.0 CU FT/LF OF SOCK)	130 CU FT
VOLUME PROVIDED IN SILT FENCE (941 LF @ 4.5 CU FT/LF OF FENCE)	4,235 CU FT
TOTAL VOLUME PROVIDED	4,365 CU FT

SWPPP LEGEND

DRAINAGE ARROW	X.XX %	AREA TO BE SEEDED	
GRADING LIMITS		UNDISTURBED AREA	
FILTER SOCK		RIP-RAP	
SILT FENCE		GRAVEL ENTRANCE	
INLET PROTECTION		STAGING AREA	
PORTABLE RESTROOM			
CONCRETE WASHOUT PIT			



DATE		08/10/23	
FOURTH SUBMITTAL		06/06/23	
PEDESTRAIN CONNECTION THIRD SUB		05/12/23	
SECOND SUBMITTAL		12/19/22	
FIRST SUBMITTAL			

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

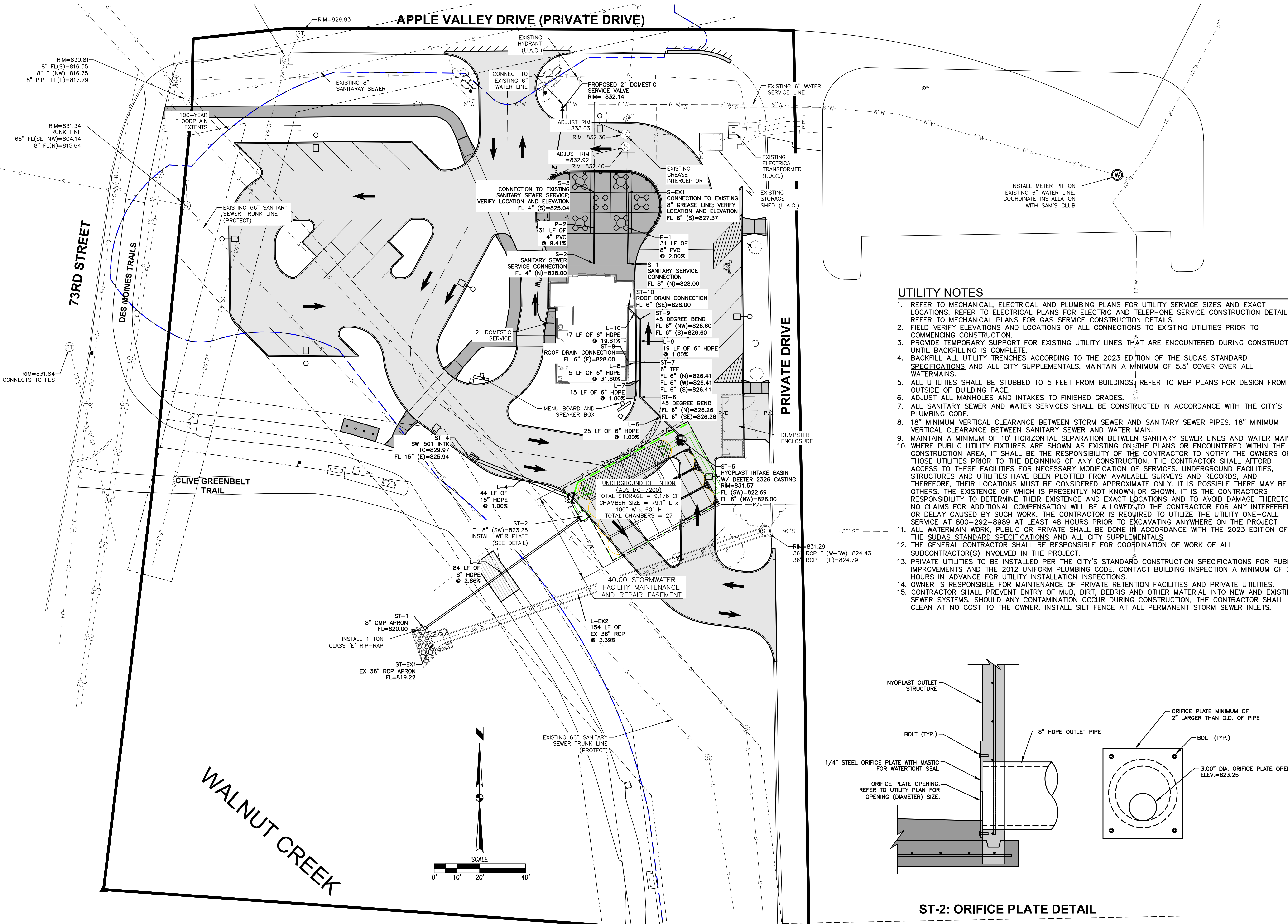
ENGINEER: JLN
PM: DAM

CIVIL DESIGN ADVANTAGE

WINDSOR HEIGHTS, IOWA

B-BOP'S
EROSION AND SEDIMENT CONTROL PLAN

C5.1
2210.678



REVISIONS	
DATE	DESCRIPTION
08/10/23	FOURTH SUBMITTAL
06/06/23	PEDESTRAIN CONNECTION THIRD SUB
05/12/23	SECOND SUBMITTAL
12/19/22	FIRST SUBMITTAL

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400

ENGINEER: JJN
PM: DAM

CIVIL DESIGN ADVANTAGE

WINDSOR HEIGHTS, IOWA

B-BOP'S
UTILITY PLAN

C6.1
2210.678



SIGN LEGEND



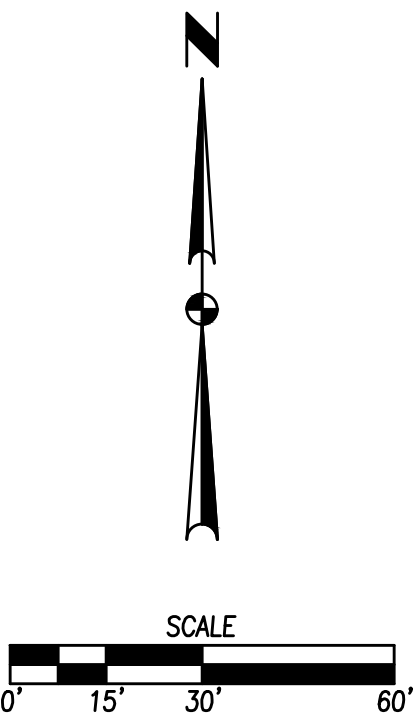
1



2

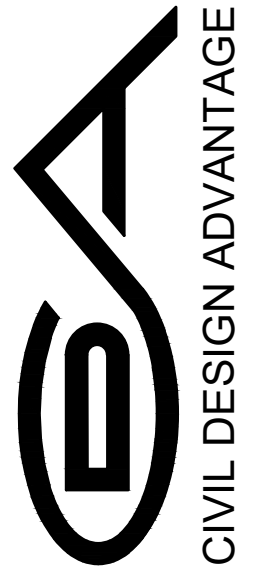
SIDEWALK CLOSURE NOTES

TRAIL CONSTRUCTION IS TO BE CARRIED OUT IN SUCH A WAY THAT ONE THROUGH ROUTE IS AVAILABLE AS SHOWN IN THE EXHIBIT TO THE LEFT.



DATE	REVISIONS
08/10/23	FOURTH SUBMITTAL
06/06/23	PEDESTRAIN CONNECTION THIRD SUB
05/12/23	SECOND SUBMITTAL
12/19/22	FIRST SUBMITTAL

4121 NW URBANDALE DRIVE
URBANDALE, IA 50322
PHONE: (515) 369-4400
ENGINEER: J.J.N. PM: DAM



WINDSOR HEIGHTS, IOWA

B-BOP'S
TRAIL CLOSURE PLAN

