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**SCOTT COUNTY  
PLANNING AND ZONING COMMISSION  
AGENDA  
Tuesday, February 6, 2024  
5:30 P.M.**

1. **Call to Order**
2. **Approval of Minutes:** Approval of the January 16, 2024 meeting minutes.
3. **Public Hearing, Ordinance Amendment:** Submission by County staff to amend certain sections of Zoning Ordinance Sections 6-23 through 6-26 (Floodways, Floodway Fringes, General Floodplains, and Shallow Flooding Overlay Districts), as required by FEMA in order to address the updated Physical Map Revision (PMR) that will become effective April 11, 2024.
4. **Public Meeting, Site Plan Review:** Application from **Dollar General Store** (DGOG Davenport IA 07262023, LLC) for approval of a site plan to establish a retail store at the property legally described as Lot 1 of RSBR Addition in Section 2 of Buffalo Township.
5. **Public Meeting, Site Plan Review:** Application from **Robert Iossi** for approval of a site plan to establish a Private Park and construct a “pavilion” at the property legally described as Subdivided Government Lots 1-8 in Section 11 of Allens Grove Township.
6. **Old Business**
7. **Zoning Administrator’s Report**
8. **Public Comment**
9. **Adjournment**

*Public Hearing/Meeting Procedure*

- a. Chairman reads public notice of hearing.
- b. Director reviews background of request.
- c. Applicant /Representative provide any additional comments on request.
- d. Public may make comments or ask questions.
- e. Director makes staff recommendation.
- f. Applicant may respond or comment.
- g. Commission members may ask questions.
- h. Chairman closes the public portion of the hearing (No more public comments).
- i. Discussion period for the Commission members.
- j. Commission members make motion to approval, deny, or modify request.
- k. Final vote. Recommendation goes to Board of Supervisors.

**PLANNING & DEVELOPMENT**

600 West Fourth Street

Davenport, Iowa 52801-1106

Office: (563) 326-8643 Fax: (563) 326-8257

Email: [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov)

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**NOTICE OF PLANNING AND ZONING COMMISSION  
PUBLIC HEARING FOR AMENDMENTS TO THE ZONING ORDINANCE**

Public Notice is hereby given as required by Section 6-33 of the County Code (Zoning Ordinance for Unincorporated Scott County), that the Scott County Planning and Zoning Commission will hold a public hearing for proposed amendments to said ordinance at a public meeting on **Tuesday, February 6, 2024 at 5:30 PM**. The meeting will be held in the **1<sup>st</sup> Floor Board Room of the Scott County Administrative Center, 600 West 4<sup>th</sup> Street, Davenport, Iowa 52801**.

The Planning and Zoning Commission will consider amendments to certain sections of Zoning Ordinance Sections 6-23 through 6-26 (Floodways, Floodway Fringes, General Floodplains, and Shallow Flooding Overlay Districts), as required by FEMA in order to address the updated Physical Map Revision (PMR) that will become effective April 11, 2024.

If you have any questions or comments regarding this meeting or proposal, please call or write the Planning and Development Department, Scott County Administrative Center, 600 West Fourth Street, Davenport, Iowa 52801, (563) 326-8643, [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov), or attend the meeting.

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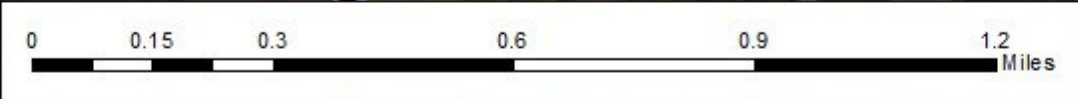
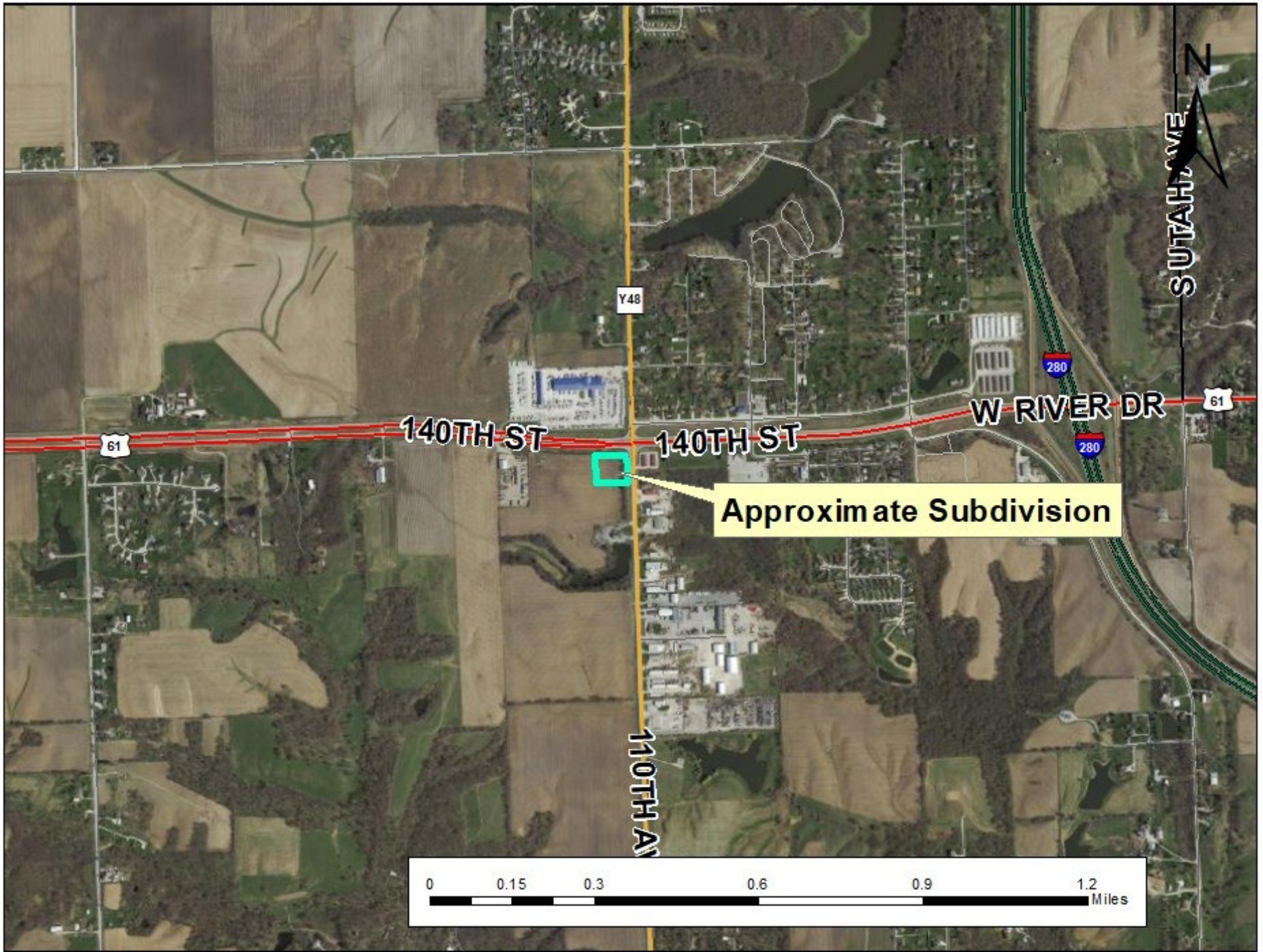
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**SCOTT COUNTY  
PLANNING AND ZONING COMMISSION  
NOTICE OF PUBLIC MEETING**

Public Notice is hereby given as required by Section 6-31 of the County Code (Zoning Ordinance for Unincorporated Scott County), that the Scott County Planning and Zoning Commission will review a site plan approval request submitted by **Dollar General Store** (DGOG Davenport IA 07262023, LLC) at a public meeting on **Tuesday, February 6, 2024 at 5:30 PM**. The meeting will be held in the **1<sup>st</sup> Floor Board Room, County Administrative Center, 600 W 4<sup>th</sup> Street, Davenport, IA, 52801**.

The Planning and Zoning Commission will consider the request of **Dollar General Store** (DGOG Davenport IA 07262023, LLC) for approval of a site plan to establish a retail store at the property legally described as Lot 1 of RSBR Addition in Section 2 of Buffalo Township. The property is zoned "Commercial-Light Industrial" (C-2), which allows retail sales as a principal permitted use.

If you have questions or comments regarding the meeting, please call, write or email the Planning and Development Department, 600 West Fourth Street, Davenport, Iowa 52801, (563) 326-8643, [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov) or attend the hearing.



Approximate Subdivision

140TH ST

140TH ST

W RIVER DR

110TH AV

Y48

SUTAHOME

61

280

280

61

Miles

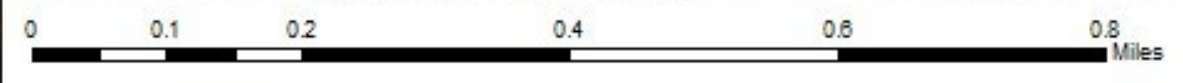


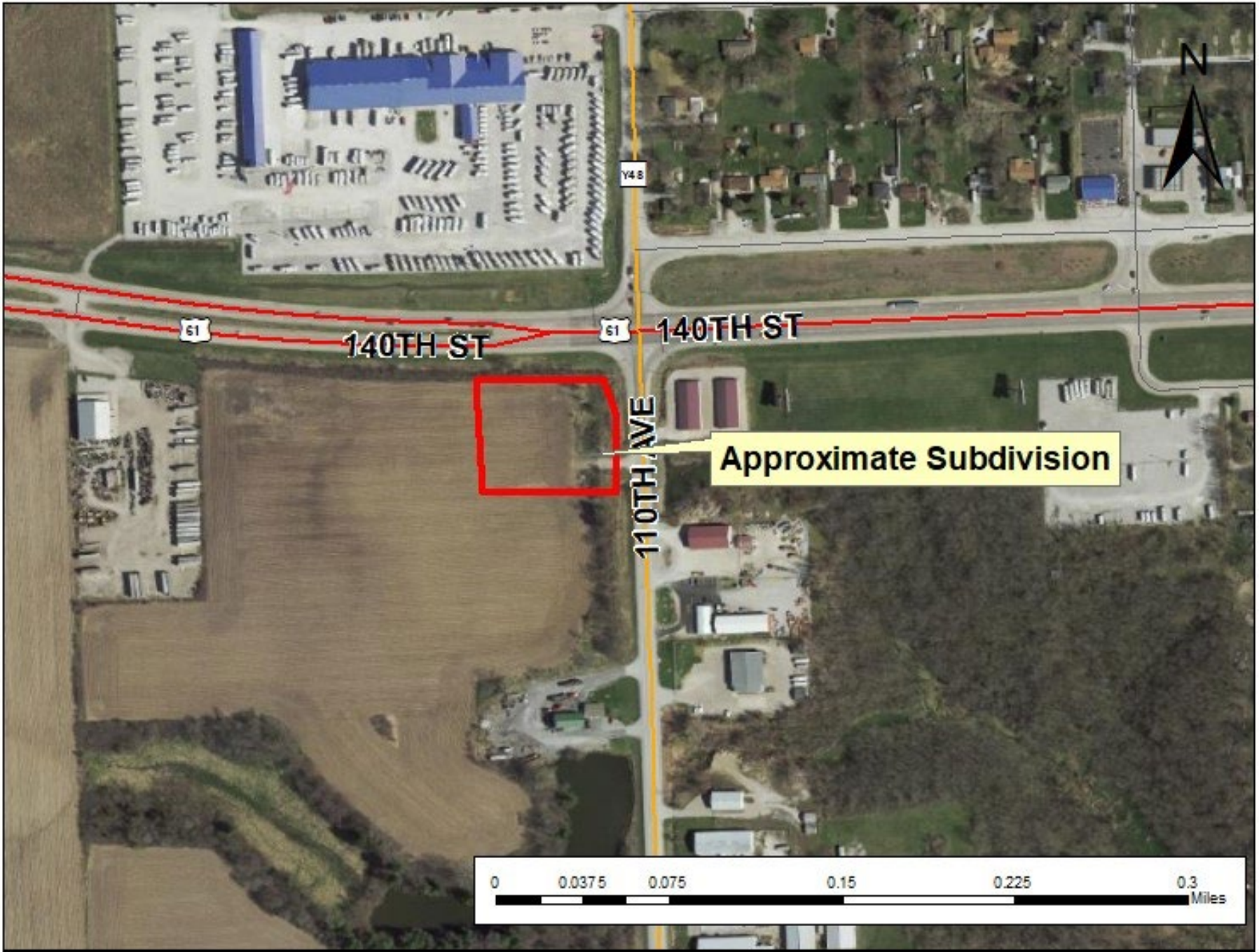
110TH AVE

140TH ST

140TH ST

Approximate Subdivision





61

Y48

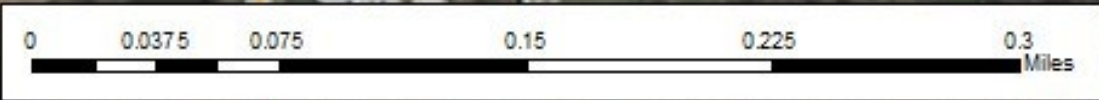
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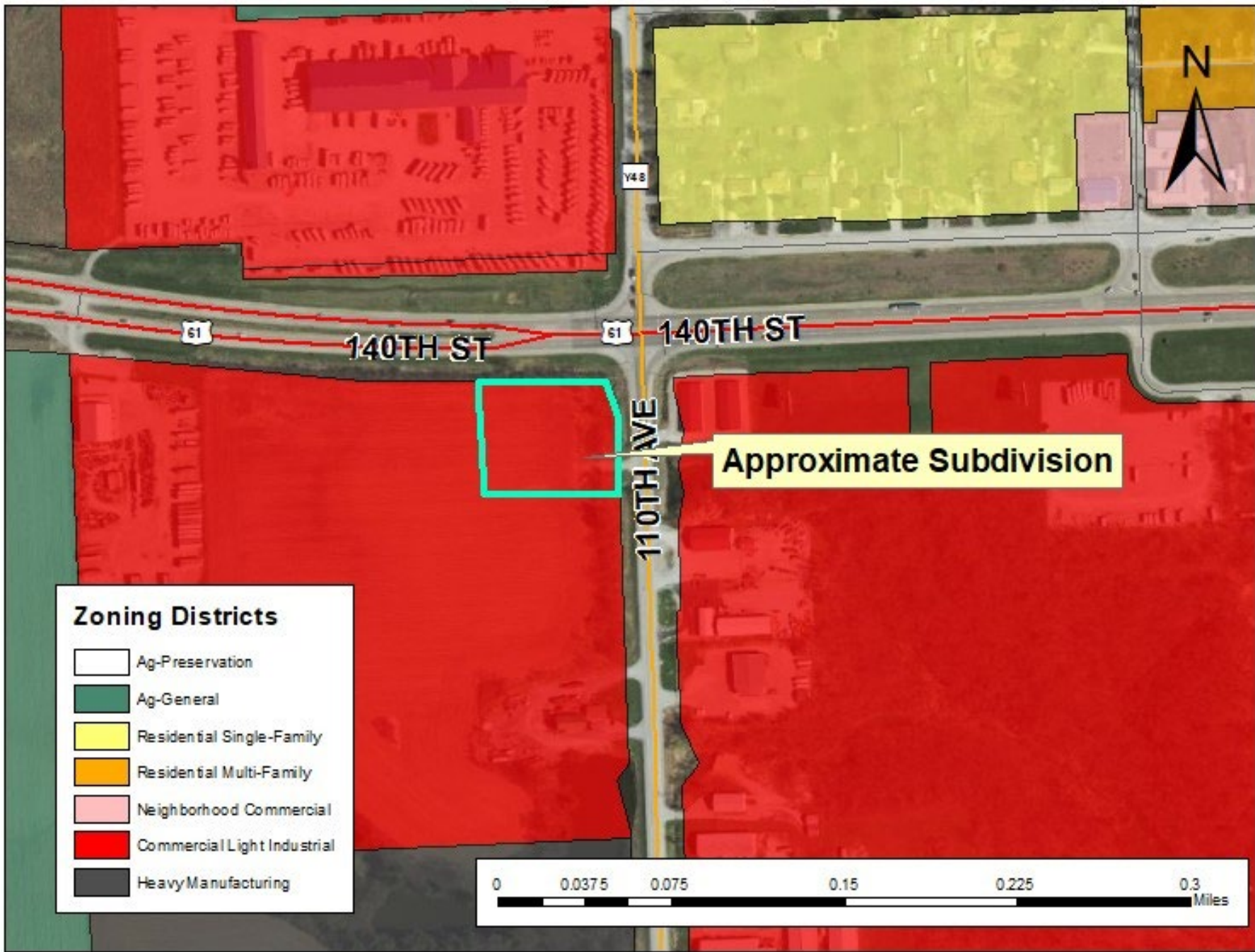
140TH ST

140TH ST

110TH AVE

Approximate Subdivision





# DOLLAR GENERAL STORE #30307

**DOLLAR GENERAL**  
HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA

**APPLICANT/DEVELOPER**

DGOG Davenport 07262023 LLC  
1906 E BATTLEFIELD ROAD  
DAVENPORT, IOWA 52807  
417-256-4790 (VOICE)  
417-256-5422 (FAX)

**OWNER**

JOHN E. GROVES  
4222 E 59TH STREET  
DAVENPORT, IOWA 52807  
(563) 340-3633 (VOICE)

**SITE DEVELOPMENT DATA**

LOT AREA = 87,742 S.F. (2.01 ACRES)  
PROPOSED OPEN AREA = 45,675 S.F. (52%)  
PROPOSED BUILDING  
GROSS AREA = 12,480 S.F.  
SALES AREA = 9,872 S.F.  
PARKING SPACES  
REQUIRED VEHICLE = 17 SPACES  
(12,480 S.F. / 750 = 16.6)  
PROVIDED VEHICLE = 40 SPACES  
EXISTING ZONING: C-2  
EXISTING USE: VACANT  
PROPOSED USE: RETAIL  
FRONT SETBACK: 50 FEET  
REAR SETBACK: 20 FEET  
PROPOSED IMPERVIOUS: 42,067 S.F.  
PROPOSED WATER: IOWA AMERICAN  
WATER COMPANY  
PROPOSED SEWER: SEPTIC SYSTEM  
(SCOTT COUNTY)

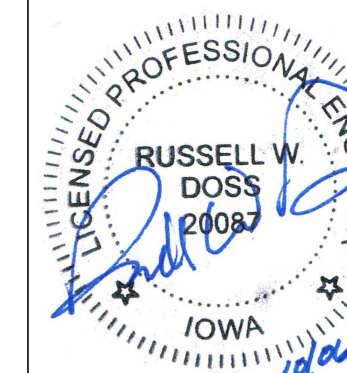
**LEGEND**

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING CENTERLINE DITCH/ROADWAY
- ST --- EXISTING STORM SEWER
- W --- EXISTING WATER MAIN
- EXISTING TIMBER
- RECOVERED 5/8" IRON ROD (CAPPED)
- SET 5/8" IRON ROD
- EXISTING MANHOLE
- EXISTING GUY WIRE
- EXISTING UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING SIGN
- EXISTING TELEPHONE PEDESTAL
- EXISTING MAST ARM
- AGG AGGREGATE SURFACE
- BIT BITUMINOUS SURFACE
- CONC CONCRETE SURFACE
- EL ELEVATION
- RCP REINFORCED CONCRETE PIPE

**GENERAL NOTES**

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC GENERAL NOTES WORKS DEPARTMENT OF SCOTT COUNTY, IOWA, UNLESS OTHERWISE NOTED.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF SCOTT COUNTY, IOWA.
3. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
4. THE CONTRACTOR MAY UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY THE ONE CALL SYSTEM, INC.: 1-(800)-292-8989. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF IOWA.
5. ALL DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
6. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES CLEAR OR DAMAGE ANY TREES OUTSIDE THE CLEARING LIMIT LINE SET BY THE CITY WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER OR PROPERTY OWNER.
7. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
8. THE CONTRACTOR SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
9. THE CONTRACTOR SHALL PLACE MIN. 4" TOPSOIL AND SEED & MULCH ALL DISTURBED AREAS AT THE DIRECTION OF THE ENGINEER.

SEAL:



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.

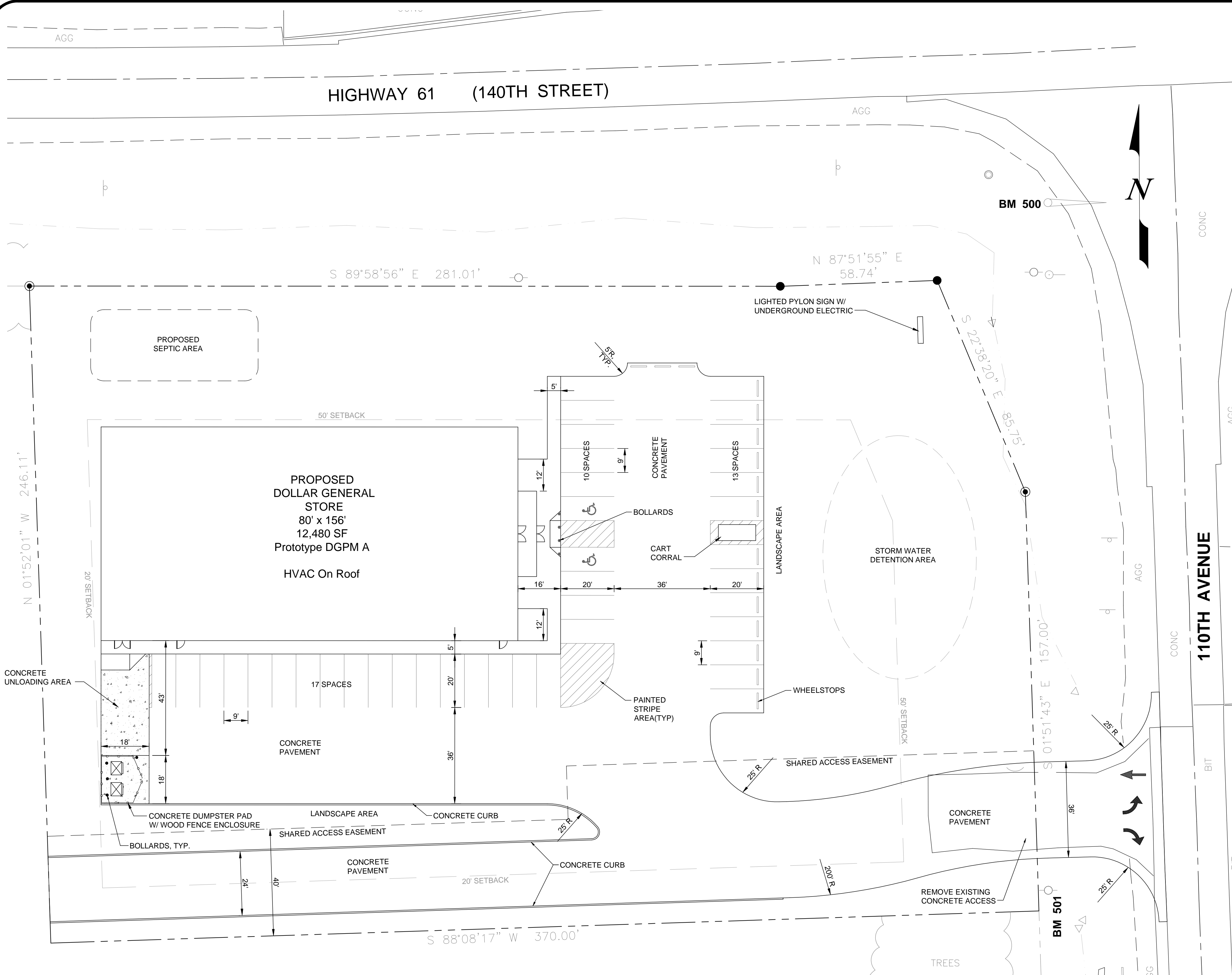
*Russell W. Doss* 10/04/2023  
(SIGNATURE) (DATE)

RUSSELL W. DOSS

LICENSE NO. 20087

MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023

PAGES OR SHEETS COVERED BY THIS SEAL: C1 THRU C5



**UTILITY DISCLAIMER**

EXISTING UNDERGROUND UTILITIES AND BURIED STRUCTURES IN THE VICINITY OF THE WORK TO BE PERFORMED HEREIN ARE INDICATED ON THE DRAWINGS ONLY TO THE EXTENT THAT SUCH INFORMATION HAS BEEN MADE AVAILABLE TO OR DISCOVERED BY THE ENGINEER IN THE PREPARATION OF THE DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY OR THE COMPLETENESS OF SUCH INFORMATION AND ALL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS THEREOF IS EXPRESSLY DISCLAIMED.

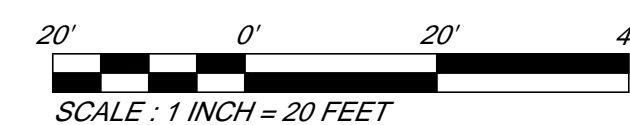


**BENCHMARKS**

BM 500  
CHISELED 1" ON CONCRETE MAST ARM  
BASE AT SOUTHWEST CORNER OF  
HIGHWAY 61 AND 110TH AVENUE.  
ELEV. 759.25

BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

THE CONTRACTOR SHALL OBTAIN AN ENTRANCE PERMIT FROM SCOTT COUNTY SECONDARY ROADS DEPARTMENT PRIOR TO RECONSTRUCTION OF THE ENTRANCE OFF OF 110TH AVENUE.



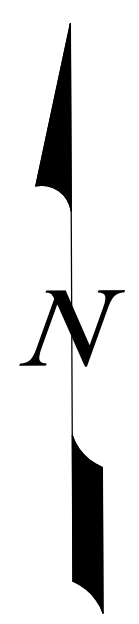
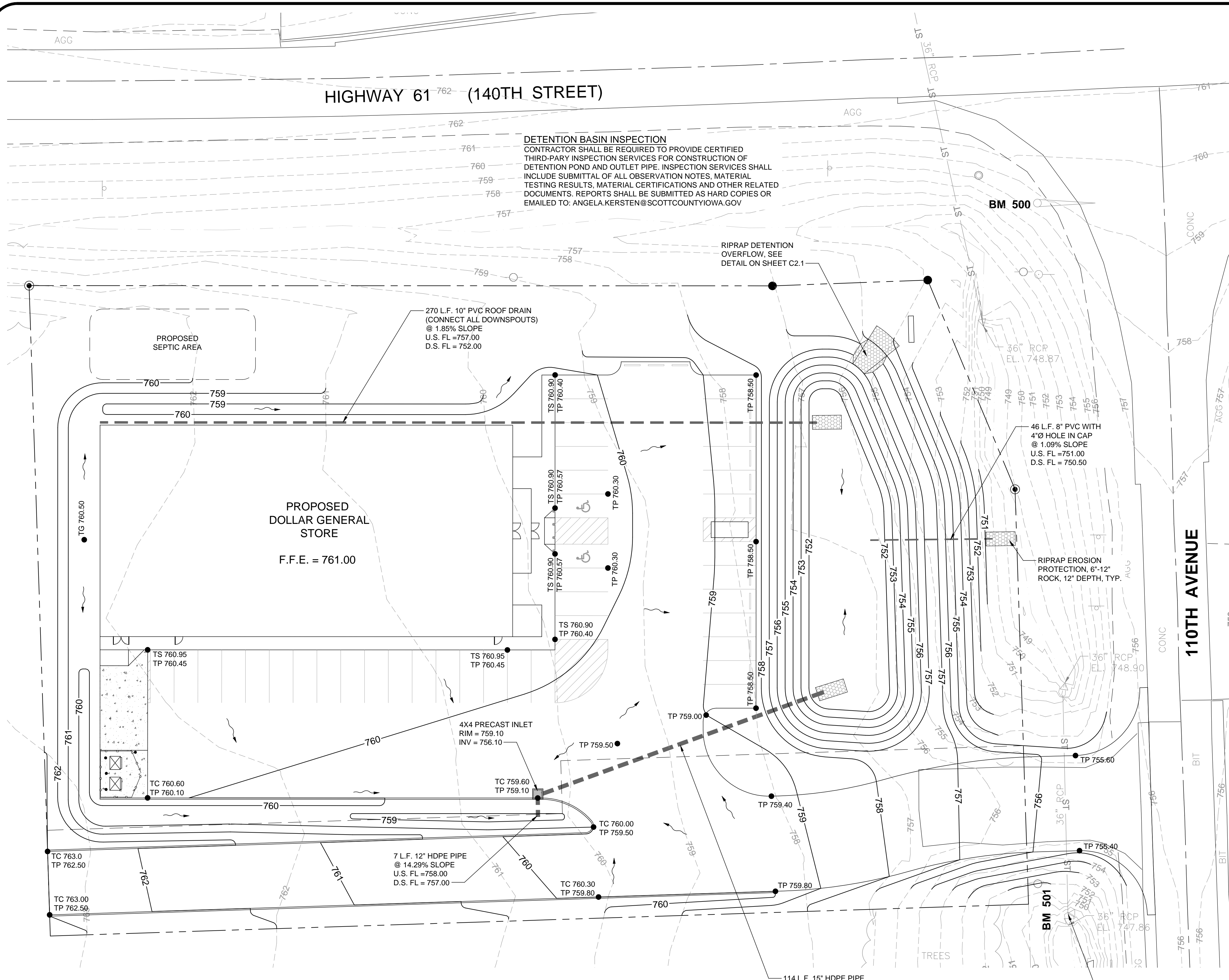
NO.	DATE	DESCRIPTION	BY

**Overland**  
ENGINEERING, LLC  
1598 IMPERIAL CIR., STE. 2009 WEST PLAINS, MO 65775  
PHONE: (417) 256-8150 FAX: (417) 256-8152  
rds@overlandeng.com

DOLLAR GENERAL  
DAVENPORT, IOWA  
SITE PLAN

SHEET  
**C1**





**LEGEND**

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING CENTERLINE DITCH/ROADWAY
- - - EXISTING STORM SEWER
- - - EXISTING WATER MAIN
- - - EXISTING TIMBER
- RECOVERED 5/8" IRON ROD (CAPPED)
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- BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

**SITE PLAN GENERAL NOTES:**

1. STANDARD PARKING SPACES SHALL HAVE MINIMUM SIZE OF 9'X 20' UNLESS LOCAL JURISDICTION REQUIRE LARGER SPACES. PARKING SPACE STRIPING SHALL BE STANDARD 90 DEGREE STYLE. MINIMUM SIZE OF H.C. PARKING SPACES AND ACCESS AISLE ARE SHOWN ON DETAILS.
2. PAINTED STANDARD PARKING SPACE AND ISLAND STRIPE COLOR SHALL BE YELLOW FOR ASPHALT PAVEMENT AND CONCRETE PAVEMENT. COLOR FOR PAINTED H.C. ACCESSIBLE PARKING SPACE STRIPES, ACCESS AISLE OR ISLAND STRIPES, H.C. SYMBOLS, SHALL BE PAINTED PER THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. BOLLARDS SHALL BE PAINTED YELLOW. PAINT SHALL BE REFLECTIVE TYPE.
3. PAINTED FIRE LANE STRIPING OR PAINTED CURBS SHALL BE PROVIDED AS REQUIRED BY JURISDICTIONAL REQUIREMENTS.
4. CONCRETE PARKING STOPS SHALL BE USED AT PARKING SPACES ALONG THE OUTER PERIMETER OF PARKING LOT WHEN CONCRETE CURBS ARE NOT USED.
5. CONCRETE PARKING STOPS SHALL NOT BE USED AT THE FRONT OF THE BUILDING OR ALONG THE PERIMETER (ADJACENT) TO THE BUILDING.
6. THE SIDEWALK AT THE FRONT OF THE BUILDING SHALL BE A MINIMUM OF 9-FOOT WIDE. THE SIDEWALK SHALL INCLUDE A 10-FOOT MINIMUM WIDE ADA ACCESSIBLE RAMP CLOSE TO THE STORE MAIN ENTRANCE. SIDEWALKS ALONG OTHER SIDES OF BUILDING SHALL BE MINIMUM 3'-6" WIDE. SIDEWALKS ADJACENT TO BUILDING SLABS SHALL HAVE SEALED ISOLATION JOINTS AND SHALL BE 6" HIGH ABOVE EXTERIOR OR PAVEMENT FINISH GRADES. ALL EXTERIOR SIDEWALKS SHALL HAVE A BROOM FINISH.
7. PORTLAND CEMENT SIDEWALKS SHALL BE MINIMUM 4" THICK WITH WELDED WIRE FABRIC REINFORCING.
8. SIDEWALKS ADJOINING THE BUILDING MUST HAVE A 6" HIGH INTEGRAL CURB.
9. SLOPE CONCRETE SIDEWALKS AWAY FROM BUILDING AT A MINIMUM SLOPE OF 1/8" PER FOOT, INCLUDING RECESSED SIGN.
10. THE ACTUAL LOCATION FOR THE PYLON SIGN SHALL BE SITUATED FOR OPTIMUM VISIBILITY ALONG THE MAIN FRONT TRAFFIC CORRIDOR.
11. BUILDING CORNERS ADJACENT TO PAVED AREAS SHALL BE BOLLARD PROTECTED. ABOVE GROUND UTILITY APPURTENANCES, SUCH AS METERS, TRANSFORMERS, FIRE HYDRANTS IN PAVED AREAS, ETC. SHALL BE BOLLARD PROTECTED.
12. DOWNSPOUTS SHALL NOT BE ALLOWED TO DISCHARGE ON CONCRETE SIDEWALKS. ROUTE DOWNSPOUTS UNDER SIDEWALKS AT ALL SIDEWALK LOCATIONS.
13. ALL DOWNSPOUTS DISCHARGING ONTO NON PAVED AREAS ARE TO HAVE A MINIMUM FIVE FOOT PERFORATED LANDSCAPE PIPE STRAPPED TO A MINIMUM 12 INCH X 24 INCH CONCRETE SPLASH BLOCK.
14. FINISH FLOOR TO BE A MINIMUM OF 12 INCHES ABOVE 100 YEAR FLOOD PLAIN.
15. FINISHED GRADE AT EXTERIOR WALLS SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR AT ALL NON-PAVED AREAS.

**DETENTION BASIN INSPECTION**  
CONTRACTOR SHALL BE REQUIRED TO PROVIDE CERTIFIED THIRD-PARTY INSPECTION SERVICES FOR CONSTRUCTION OF DETENTION POND AND OUTLET PIPE. INSPECTION SERVICES SHALL INCLUDE SUBMITTAL OF ALL OBSERVATION NOTES, MATERIAL TESTING RESULTS, MATERIAL CERTIFICATIONS AND OTHER RELATED DOCUMENTS. REPORTS SHALL BE SUBMITTED AS HARD COPIES OR EMAILED TO: ANGELA.KERSTEN@SCOTTCOUNTYIOWA.GOV

RIPRAP DETENTION OVERFLOW, SEE DETAIL ON SHEET C2.1

PROPOSED SEPTIC AREA

270 L.F. 10" PVC ROOF DRAIN (CONNECT ALL DOWNSPOUTS) @ 1.85% SLOPE U.S. FL = 757.00 D.S. FL = 752.00

PROPOSED DOLLAR GENERAL STORE  
F.F.E. = 761.00

46 L.F. 8" PVC WITH 4" HOLE IN CAP @ 1.09% SLOPE U.S. FL = 751.00 D.S. FL = 750.50

RIPRAP EROSION PROTECTION, 6"-12" ROCK, 12' DEPTH, TYP.

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**IOWA ONE CALL**  
1-800-292-8989  
www.iowaonecall.com

811  
Before you dig, call 811. It's the way to live.

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONTACT SCOTT COUNTY SECONDARY ROADS REGARDING CONDITION OF EXISTING DRIVEWAY PIPE. REPLACEMENT MAY BE NECESSARY DEPENDING UPON CONDITION.



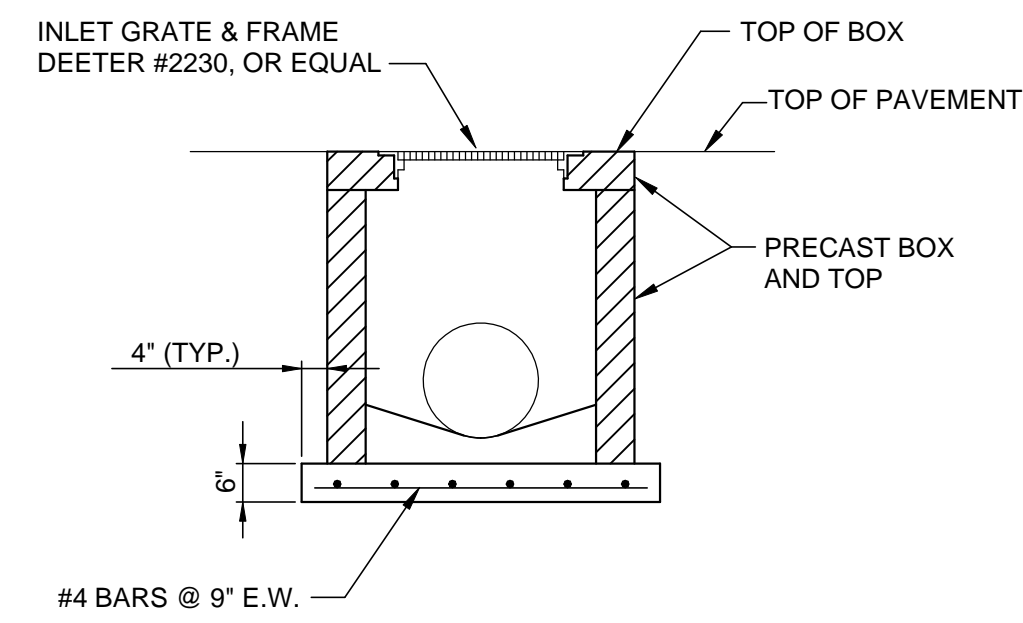
HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA

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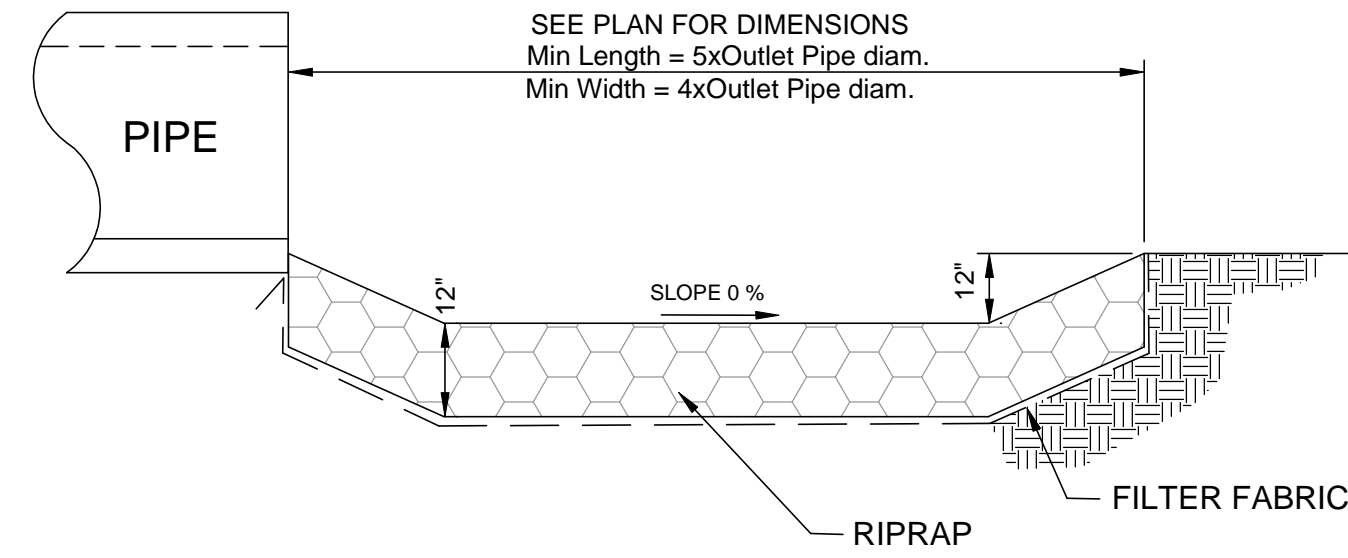


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russ@overlandeng.com

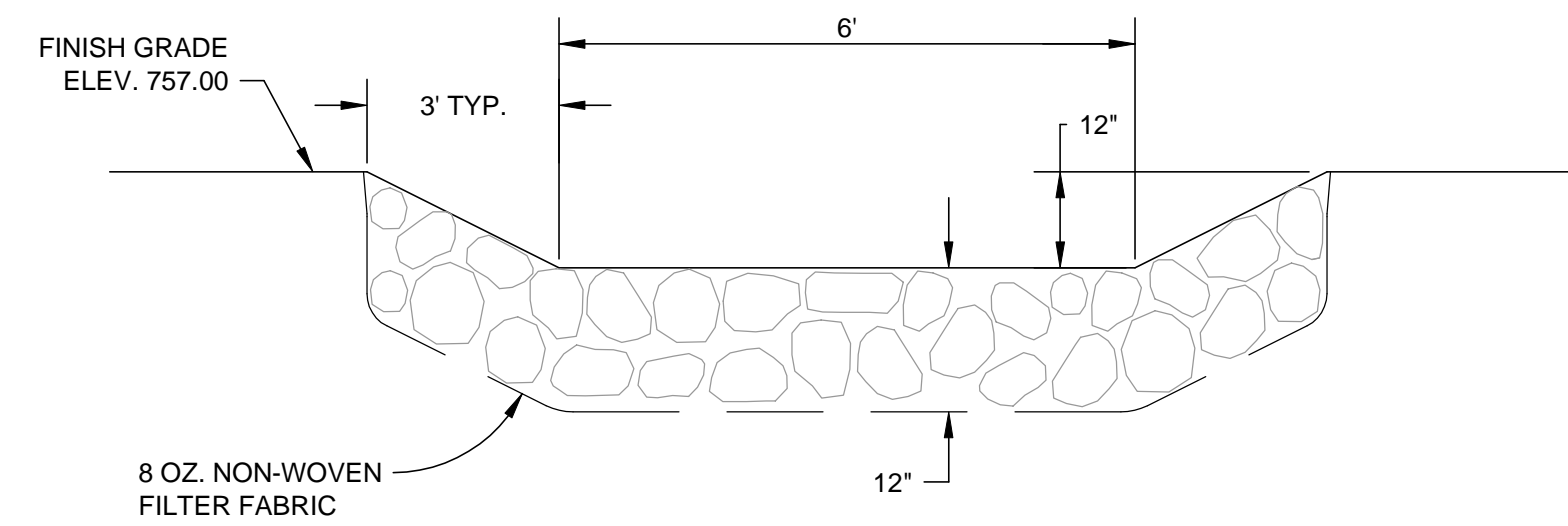
DOLLAR GENERAL  
DAVENPORT, IOWA  
GRADING PLAN



**GRATE INLET DETAIL**  
NO SCALE



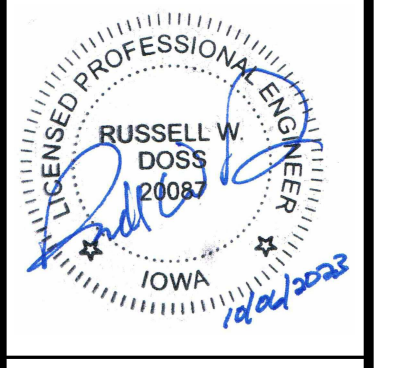
**RIPRAP OUTLET DETAIL**  
NO SCALE



**RIPRAP OVERFLOW SECTION**  
NO SCALE

**DOLLAR GENERAL**  
HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA  
www.dollargeneral.com

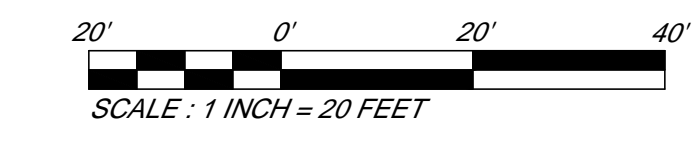
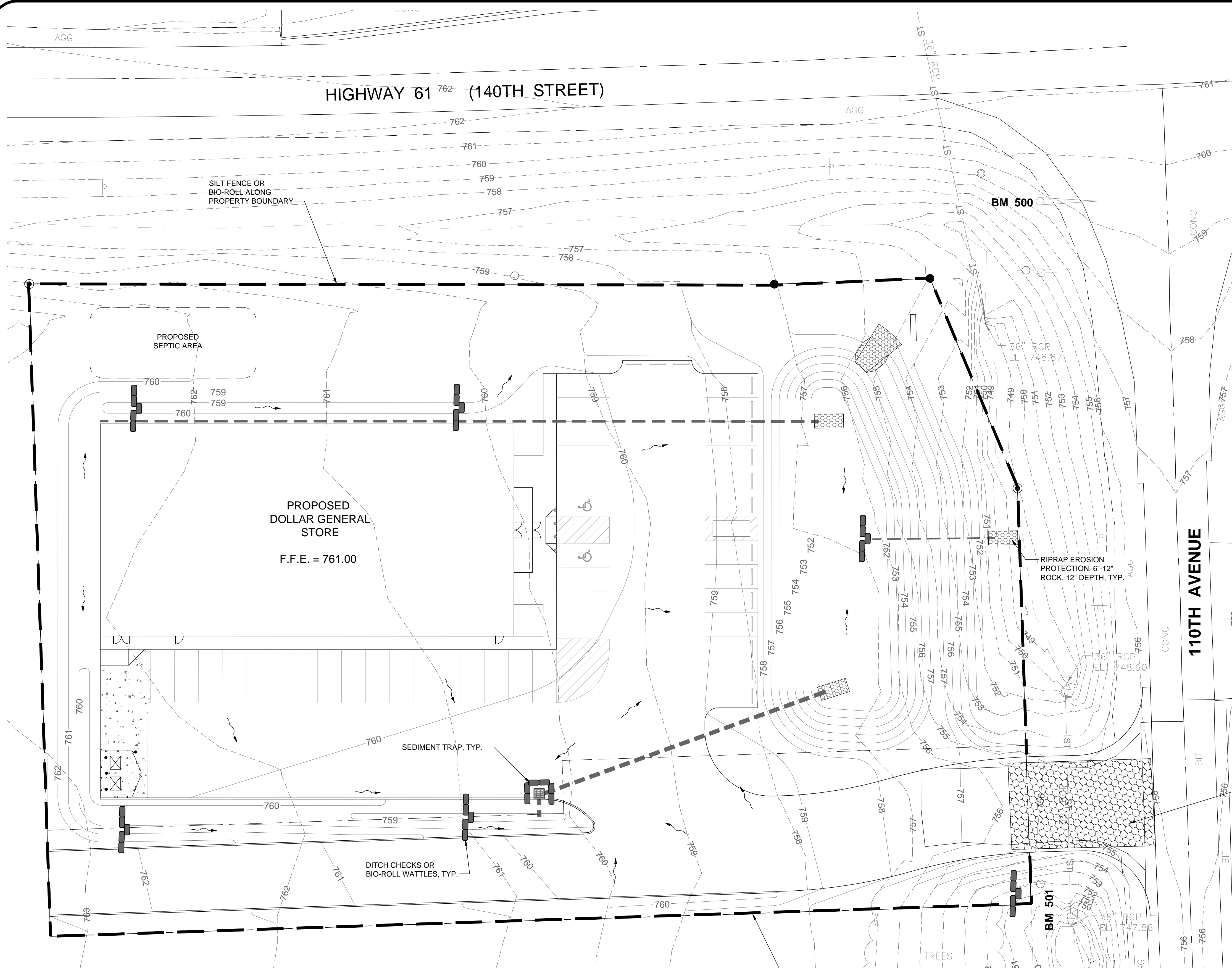
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DOLLAR GENERAL  
DAVENPORT, IOWA  
DRAINAGE DETAILS

SHEET  
**C2.1**



- LEGEND**
- BOUNDARY OF SURVEY
  - - - EXISTING LOT LINE
  - - - EXISTING CENTERLINE DITCH/ROADWAY
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  - W EXISTING WATER MAIN
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  - BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

MINIMUM 30' X 60'  
CONSTRUCTION  
ENTRANCE, 6" STONE

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SM  
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www.iowaonecall.com

811  
Before you dig, call 811. It's the way to live safely.

SILT FENCE OR  
BIO-ROLL ALONG  
PROPERTY BOUNDARY

**REPORTING NOTE:**

THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT 1/2" RAIN AND WEEKLY EROSION CONTROL INSPECTION REPORTS DURING CONSTRUCTION OF THE PROJECT. REPORTING SHALL COMMENCE WHEN GRADING BEGINS AND SHALL CONTINUE UNTIL ALL DISTURBED GROUND IS STABILIZED. REPORTS SHALL BE EMAILED TO: ANGELA.KERSTEN@SCOTTCOUNTYIOWA.GOV

**DOLLAR GENERAL**  
HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA

NO.	DATE	DESCRIPTION	BY

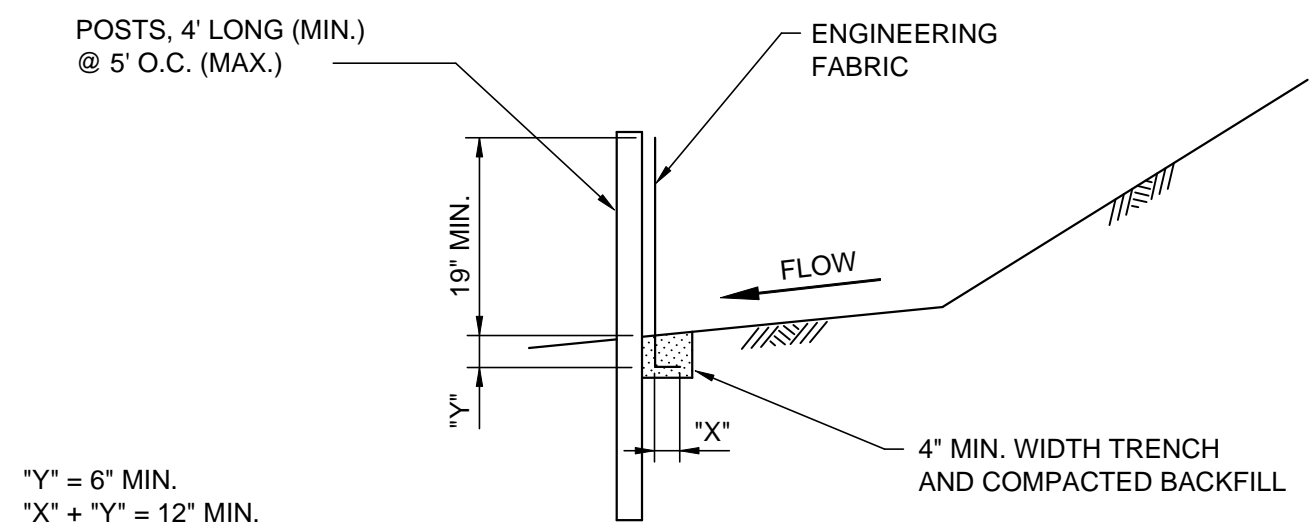


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PHONE: (417) 236-8100 FAX: (417) 236-8152  
rwo@overlandeng.com

**DOLLAR GENERAL  
DAVENPORT, IOWA  
SEDIMENT & EROSION  
CONTROL PLAN**

**NOTES:**

1. THE MINIMUM LONGITUDINAL SPLICE OVERLAP SHALL BE 2' WITH A POST AT EACH END.
2. SECURE FABRIC TO POSTS.



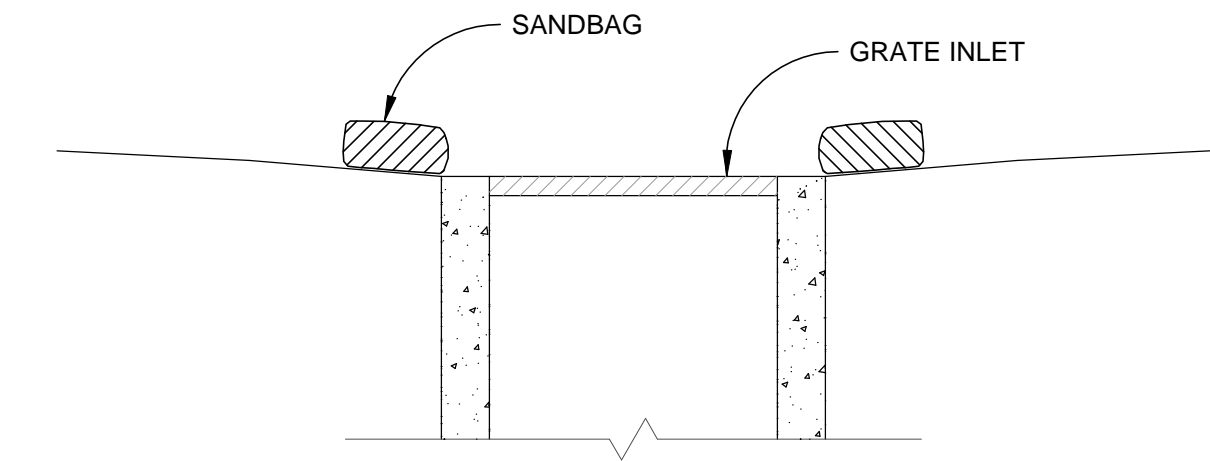
"Y" = 6" MIN.  
"X" + "Y" = 12" MIN.

**SILT FENCE DETAIL**  
NOT TO SCALE

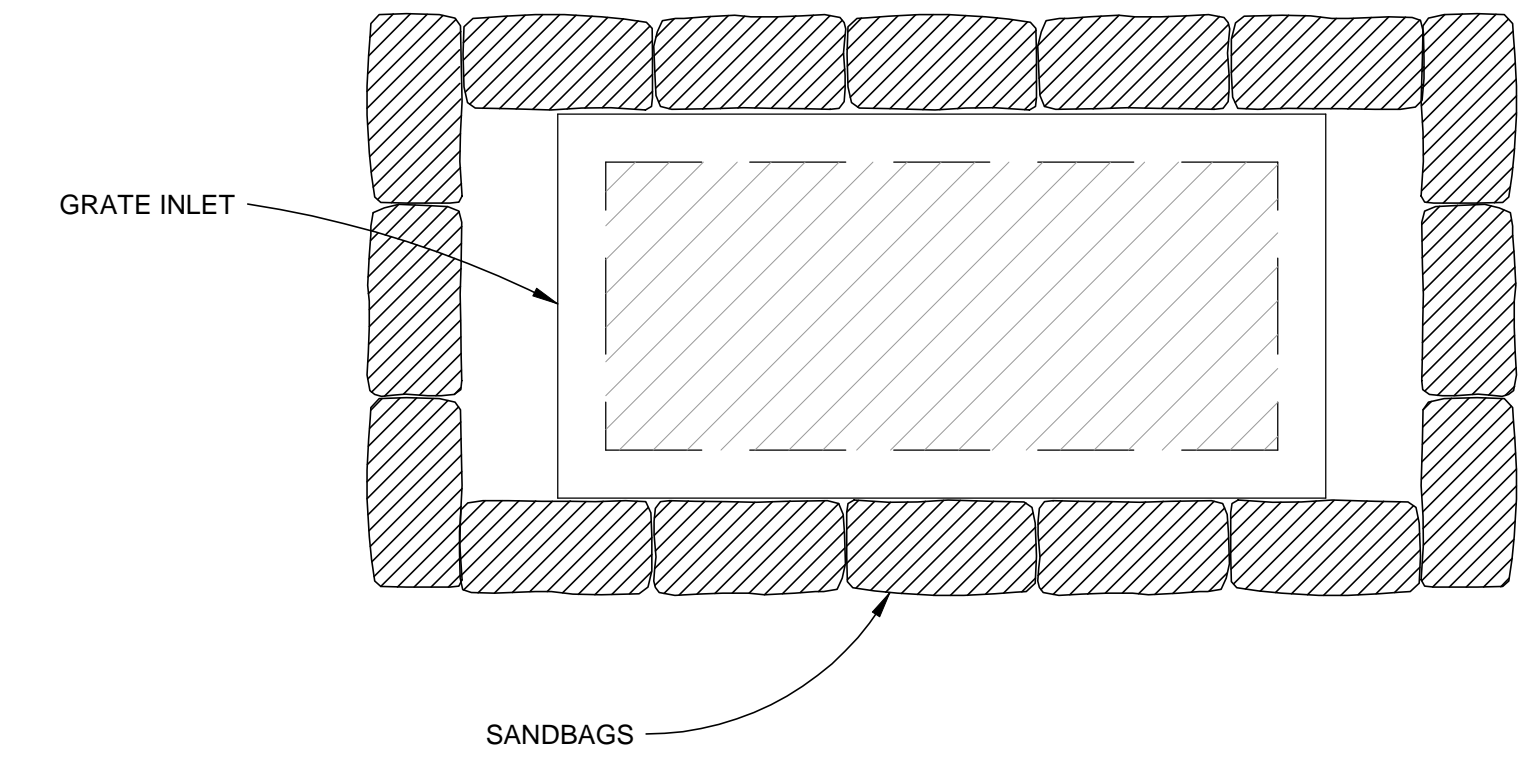
**SEEDING AND MULCHING SPECIFICATIONS**

ALL DISTURBED AREAS MUST BE REVEGETATED BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED.

1. GOVERNING SPECIFICATIONS  
ALL SEEDING, MUCHING, FERTILIZING, AND MAINTENANCE SHALL BE IN ACCORDANCE WITH SECTION 9010 OF THE SUDAS STANDARD SPECIFICATIONS
2. TOPSOIL  
SEEDBED SHALL BE PREPARED LOOSENING TOPSOIL A MINIMUM OF 6 INCHES.
3. FERTILIZER  
FERTILIZER SHALL BE 13-13-13 (N-P-K) COMMERCIAL GRADE APPLIED AT A RATE OF 200 LBS PER ACRE.
4. SEEDING  
SEED MIX SHALL BE TYPE 1 AS SPECIFIED IN THE SUDAS STANDARD SPECIFICATIONS.  
SEED SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE.
5. MULCHING  
MULCHING SHALL BE APPLIED AT THE RATE OF 1.5 TONS PER ACRE.



**CROSS-SECTION**

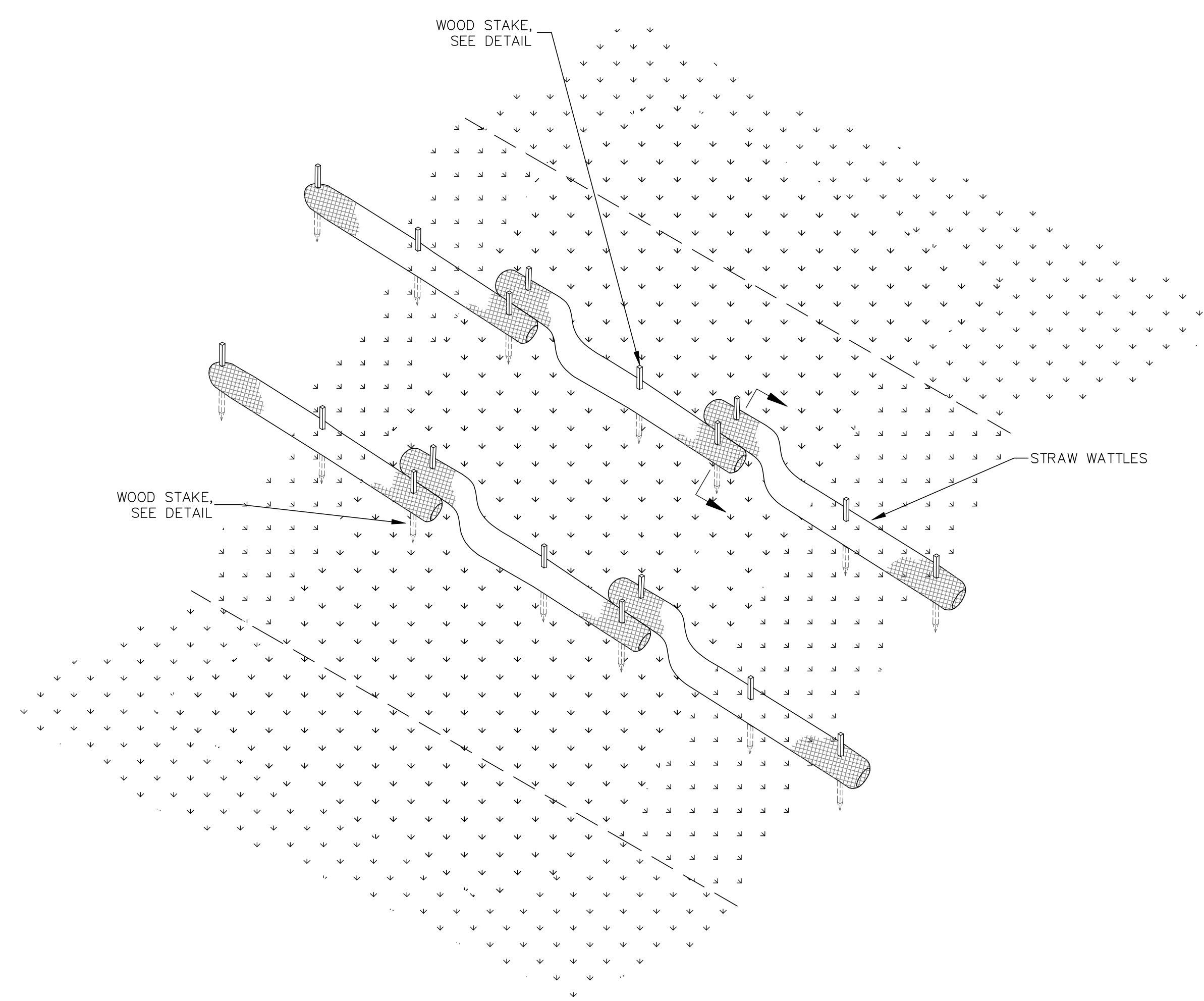


**PLAN**

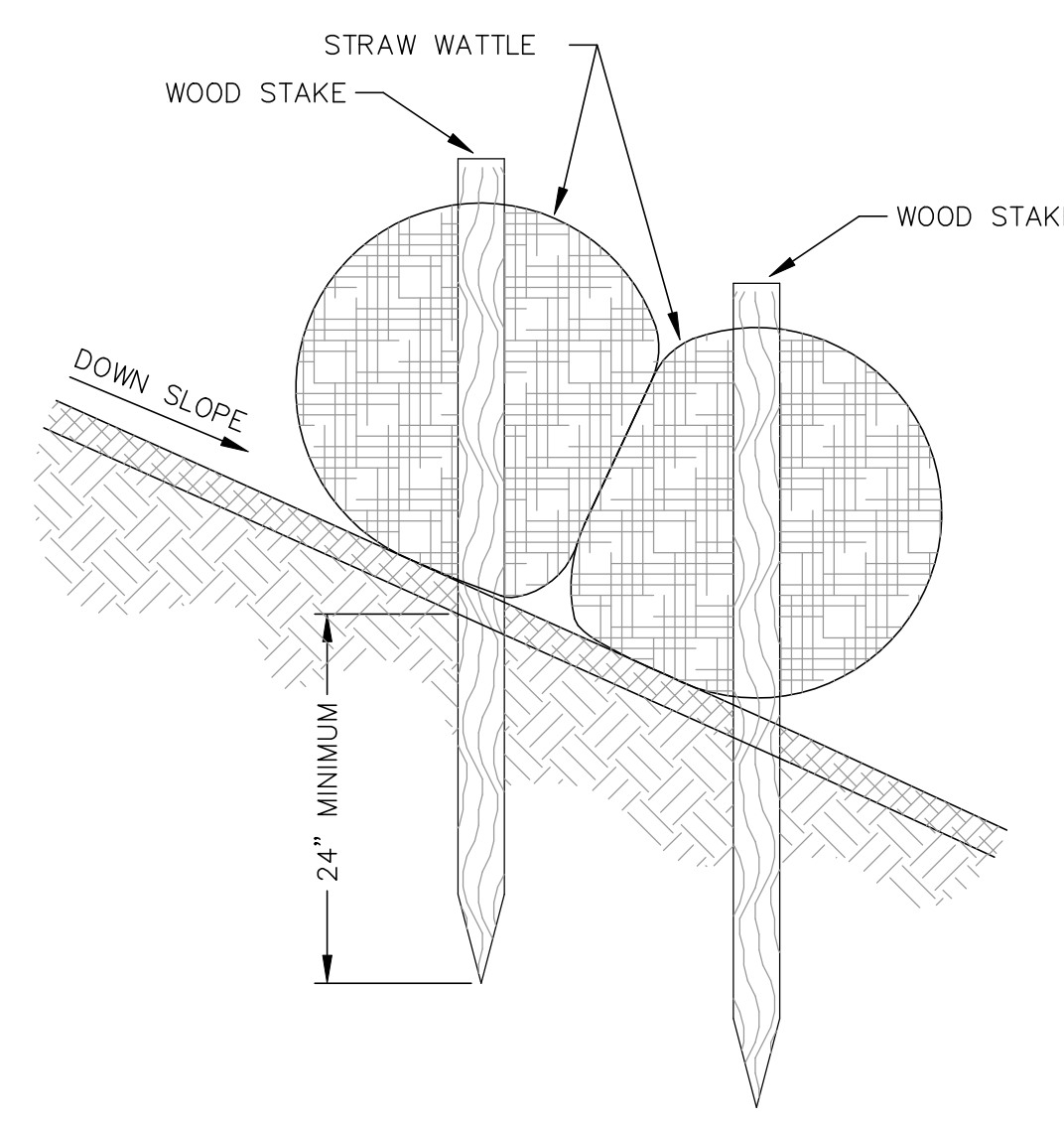
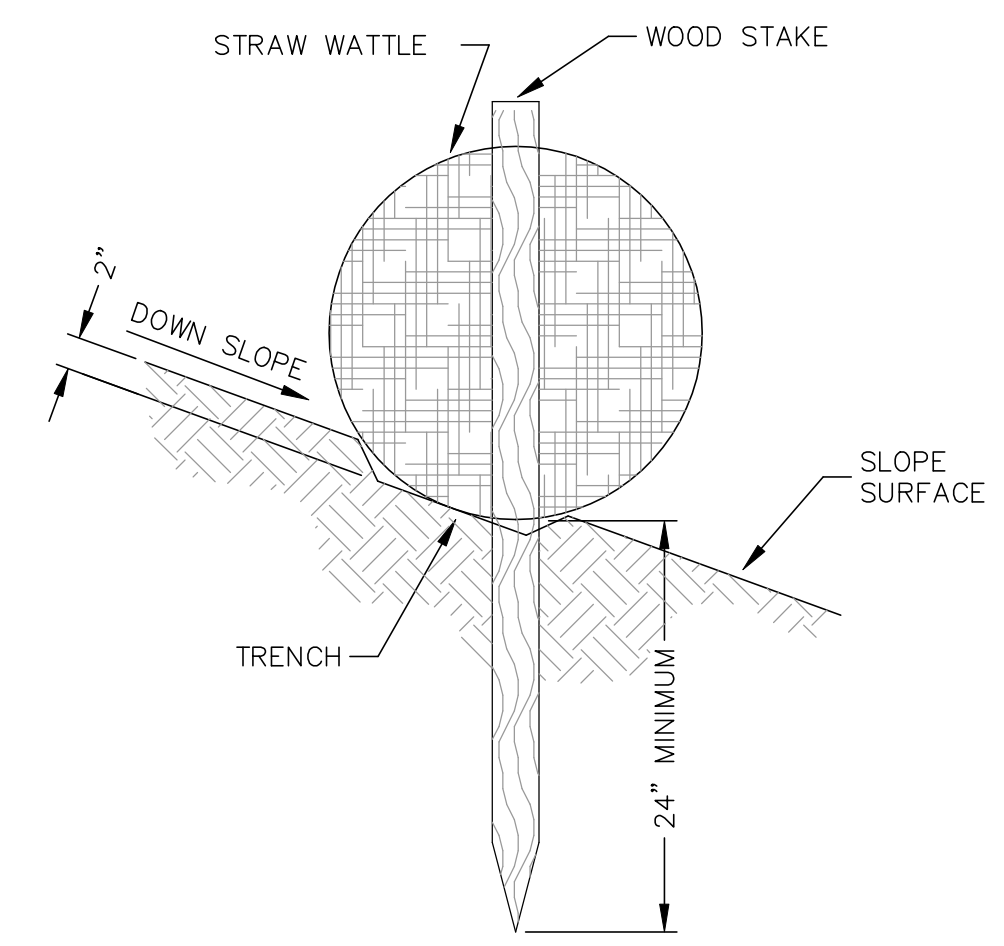
**NOTES:**

1. FILL BAGS WITH 5/8" CRUSHED LIMESTONE.
2. BAGS SHALL BE BURLAP OR BIODEGRADABLE PLASTIC.
3. BAGS SHALL BE INSPECTED AND REPLACED AS NEEDED.

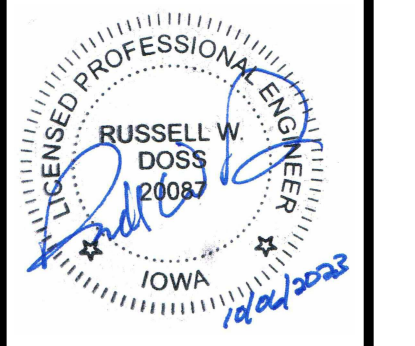
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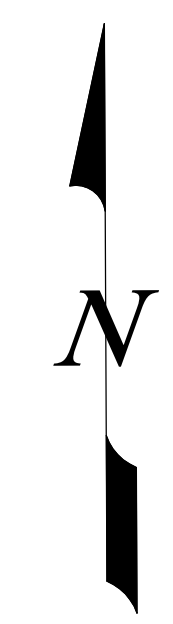
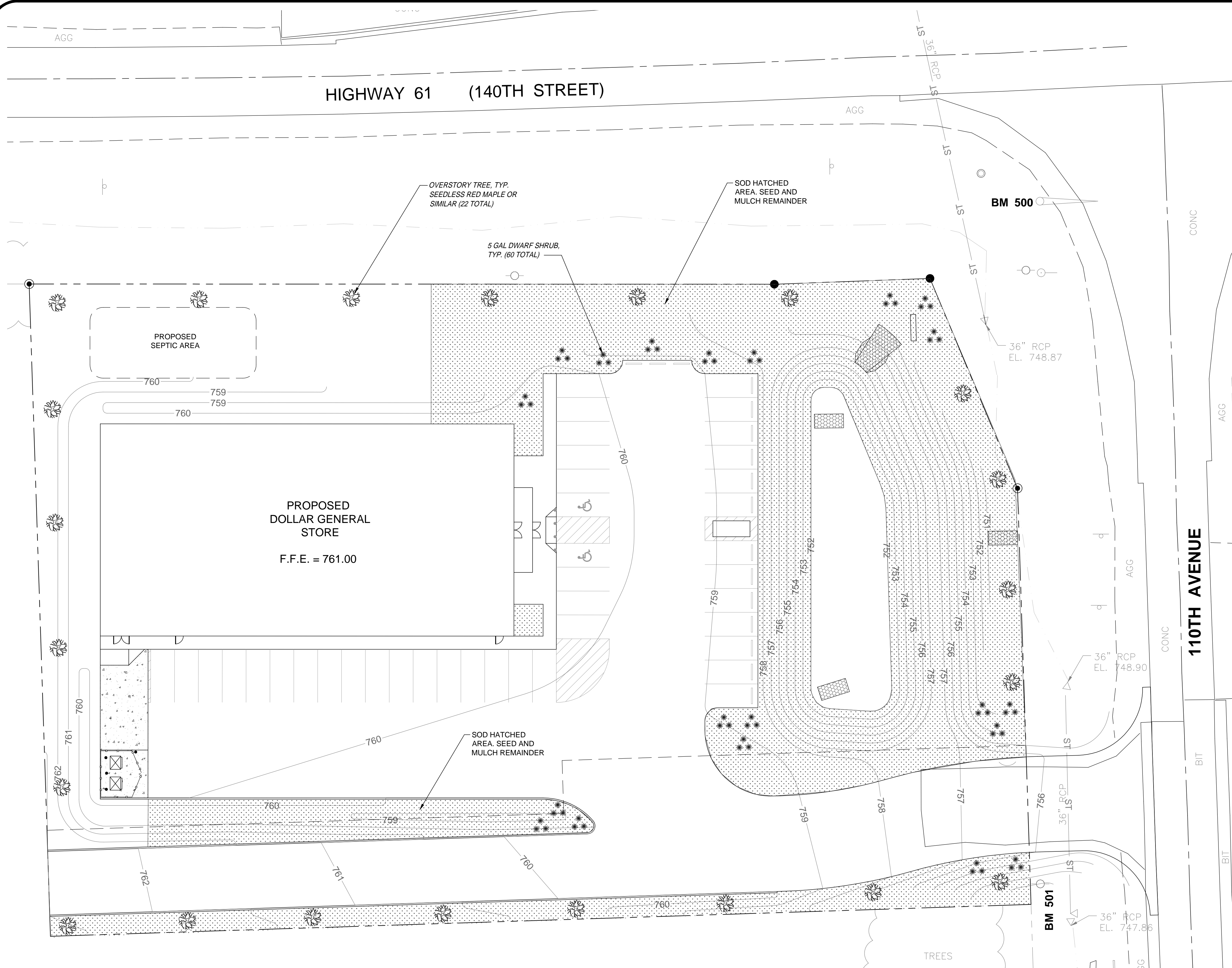


**BIO-ROLL/WATTLE DETAIL**  
NOT TO SCALE



NO.	DATE	DESCRIPTION	BY





**LEGEND**

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING CENTERLINE DITCH/ROADWAY
- ST — EXISTING STORM SEWER
- W — EXISTING WATER MAIN
- EXISTING TIMBER
- RECOVERED 5/8" IRON ROD (CAPPED)
- SET 5/8" IRON ROD
- EXISTING MANHOLE
- EXISTING GUY WIRE
- EXISTING UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING SIGN
- EXISTING TELEPHONE PEDESTAL
- EXISTING MAST ARM
- AGG AGGREGATE SURFACE
- BIT BITUMINOUS SURFACE
- CONC CONCRETE SURFACE
- EL ELEVATION
- RCP REINFORCED CONCRETE PIPE

**BENCHMARKS**

- BM 500  
CHISELED "T" ON CONCRETE MAST ARM  
BASE AT SOUTHWEST CORNER OF  
HIGHWAY 61 AND 110TH AVENUE.  
ELEV. 759.25
- BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

**LANDSCAPE NOTES:**

1. ALL PLANTING BEDS SHALL HAVE A MINIMUM 3" DEPTH OF MULCH, WITH EDGING AS REQUIRED.
2. ALL TREES LOCATED IN SOD AREAS SHALL HAVE A MULCH RING AROUND THEM WITH EDGING.
3. ALL PLANTINGS SHALL BE THOROUGHLY WATERED BY THE LANDSCAPE CONTRACTOR AT THE TIME OF THE PLANTINGS.
4. MAXIMUM GRADING SHALL NOT EXCEED 4:1 EXCEPT IN DETENTION AREA.
5. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING ALL VEGETATION AND REGIONAL APPROPRIATE LANDSCAPING.

**IRRIGATION NOTES:**

1. IRRIGATION SYSTEM FOR SODDED AND LANDSCAPED AREAS IS NOT SHOWN BUT SHALL BE DESIGNED AND INSTALLED BY CONTRACTOR.
2. IRRIGATION SYSTEM TO INCLUDE ALL SPRAY HEADS, VALVES AND CONTROLLERS.
3. LOCATE HEADS A MINIMUM OF 2'-0" FROM EDGE OF PAVEMENT / CURB.

**UTILITY DISCLAIMER**

EXISTING UNDERGROUND UTILITIES AND BURIED STRUCTURES IN THE VICINITY OF THE WORK TO BE PERFORMED HEREIN ARE INDICATED ON THE DRAWINGS ONLY TO THE EXTENT THAT SUCH INFORMATION HAS BEEN MADE AVAILABLE TO OR DISCOVERED BY THE ENGINEER IN THE PREPARATION OF THE DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY OR THE COMPLETENESS OF SUCH INFORMATION AND ALL RESPONSIBILITY FOR THE ACCURACY AND COMPLETENESS THEREOF IS EXPRESSLY DISCLAIMED.

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**LANDSCAPING SYMBOL LEGEND**

- OVERSTORY TREES
- 5 GALLON SHRUBS

HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA

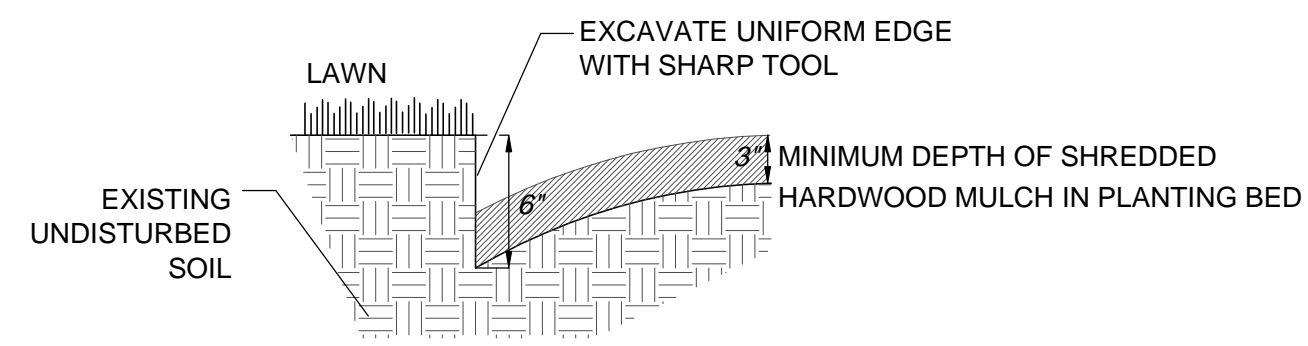
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**Overland ENGINEERING, LLC**
  
 1508 IMPERIAL CIR., STE. 2009 WEST PLAINS, MO 65775
   
 PHONE: (417) 236-8100 FAX: (417) 236-8152
   
[www.overlandeng.com](http://www.overlandeng.com)

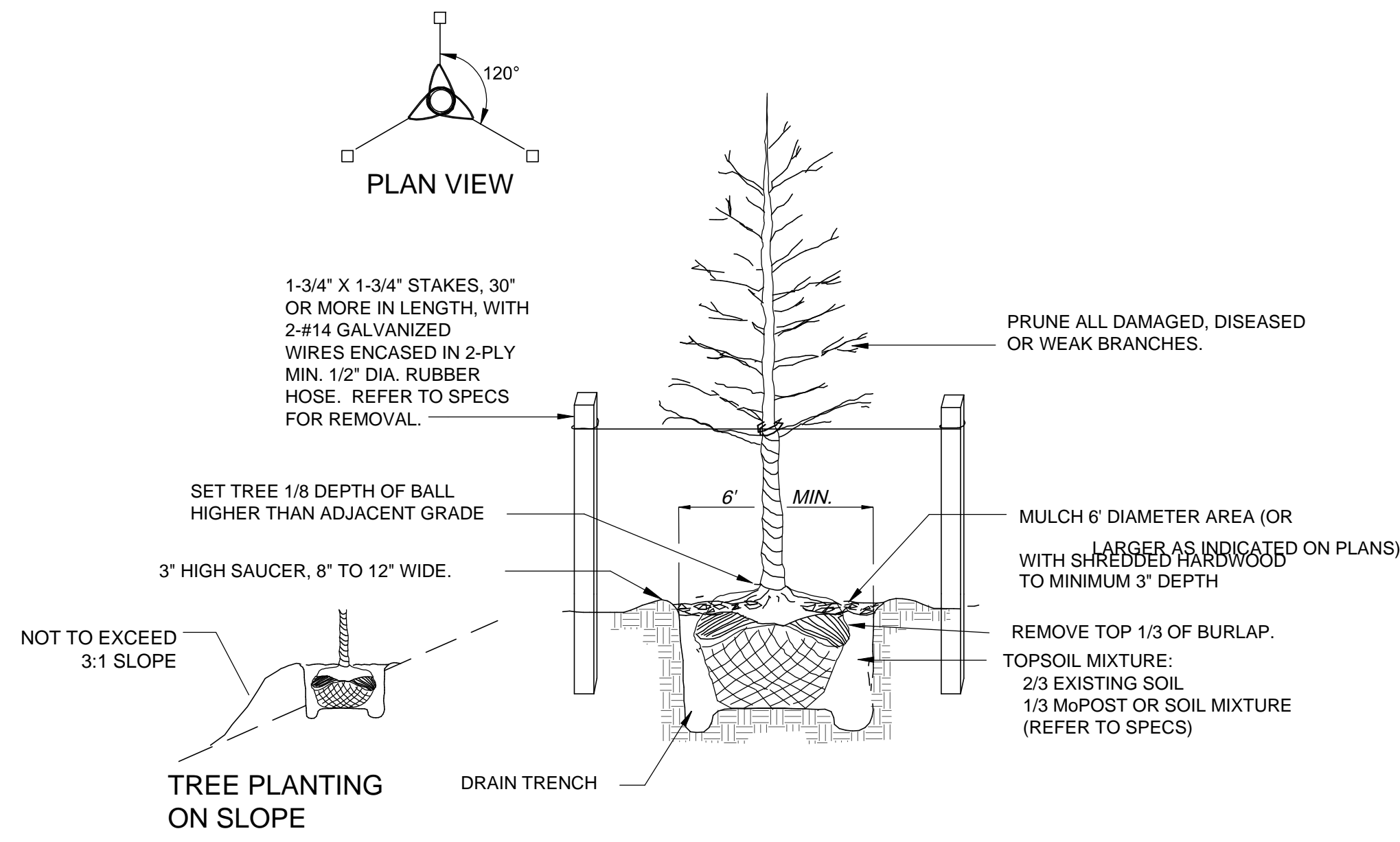
**DOLLAR GENERAL**  
 DAVENPORT, IOWA  
**LANDSCAPING PLAN**

SHEET  
**C4**



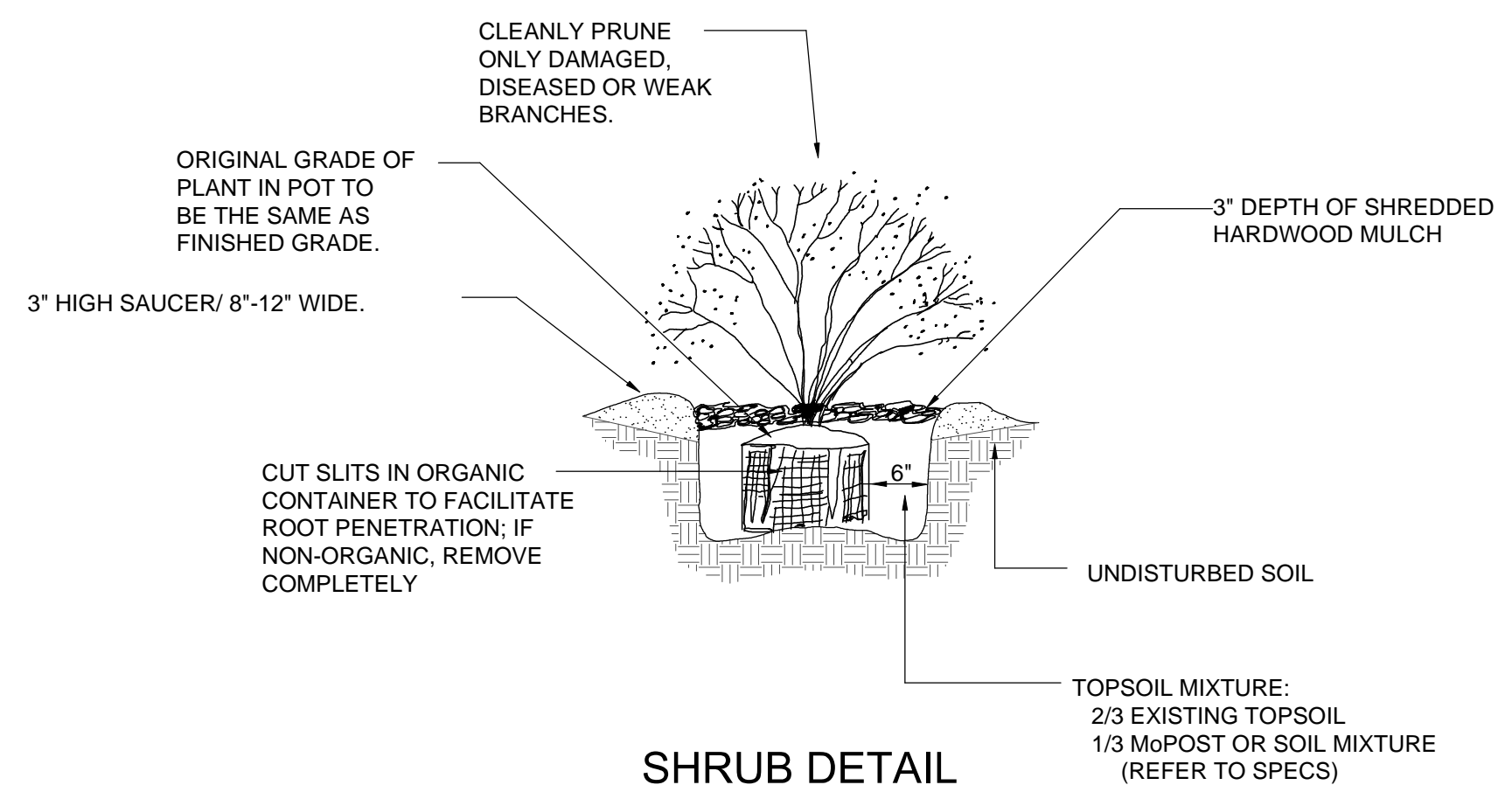
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NO SCALE



**TREE DETAIL- LESS THAN 3 1/2" CALIPER**

NO SCALE

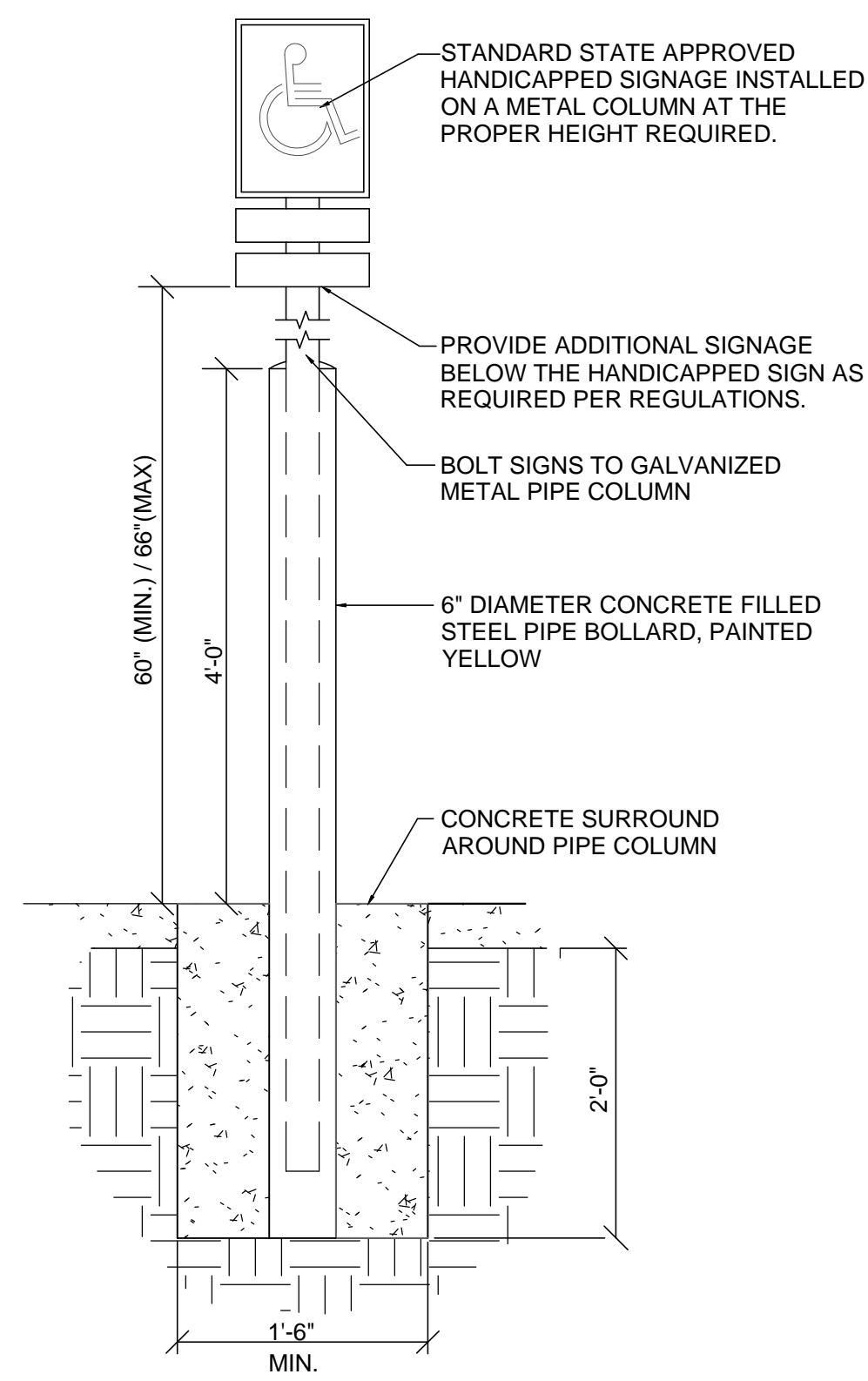


**SHRUB DETAIL**

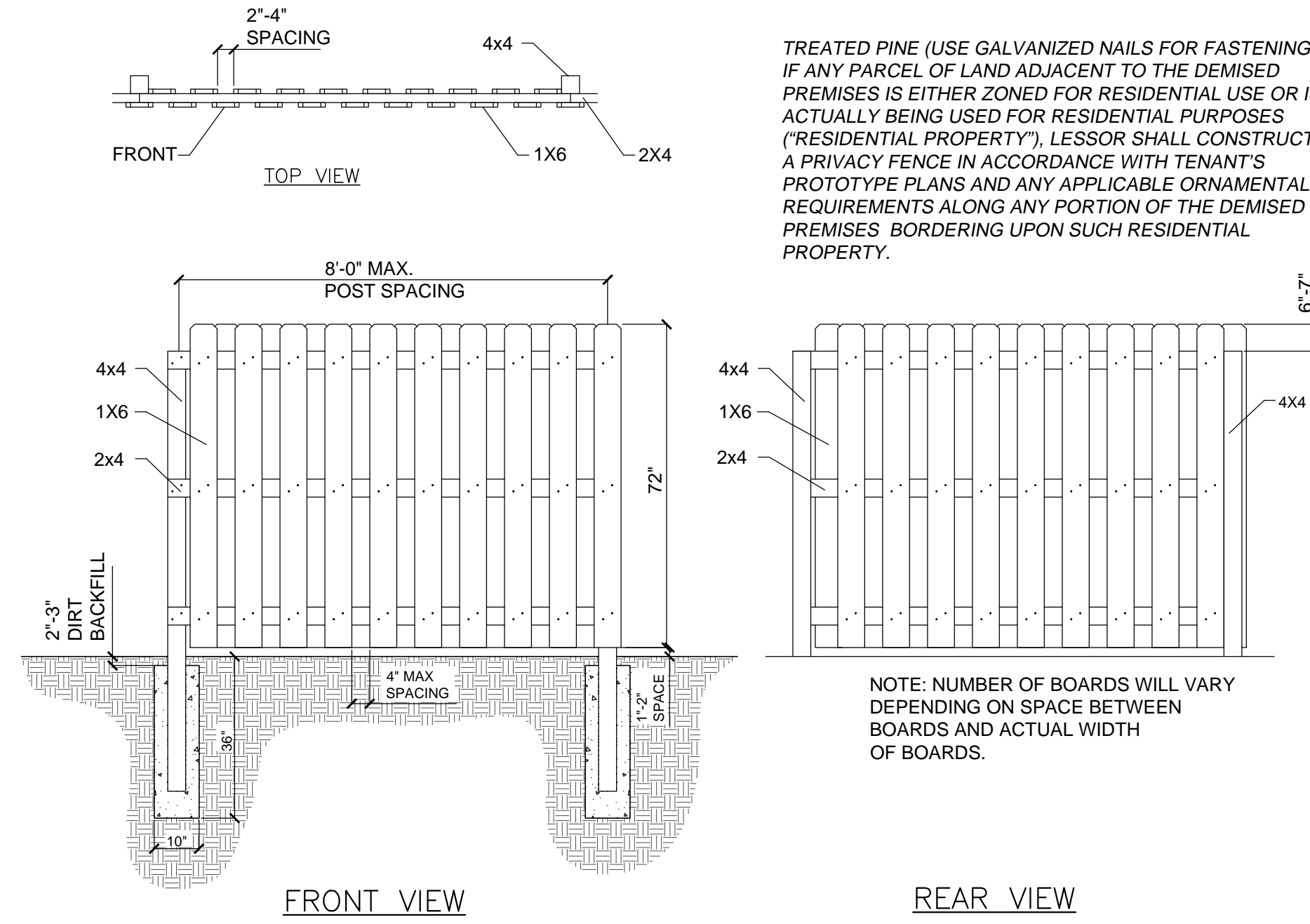
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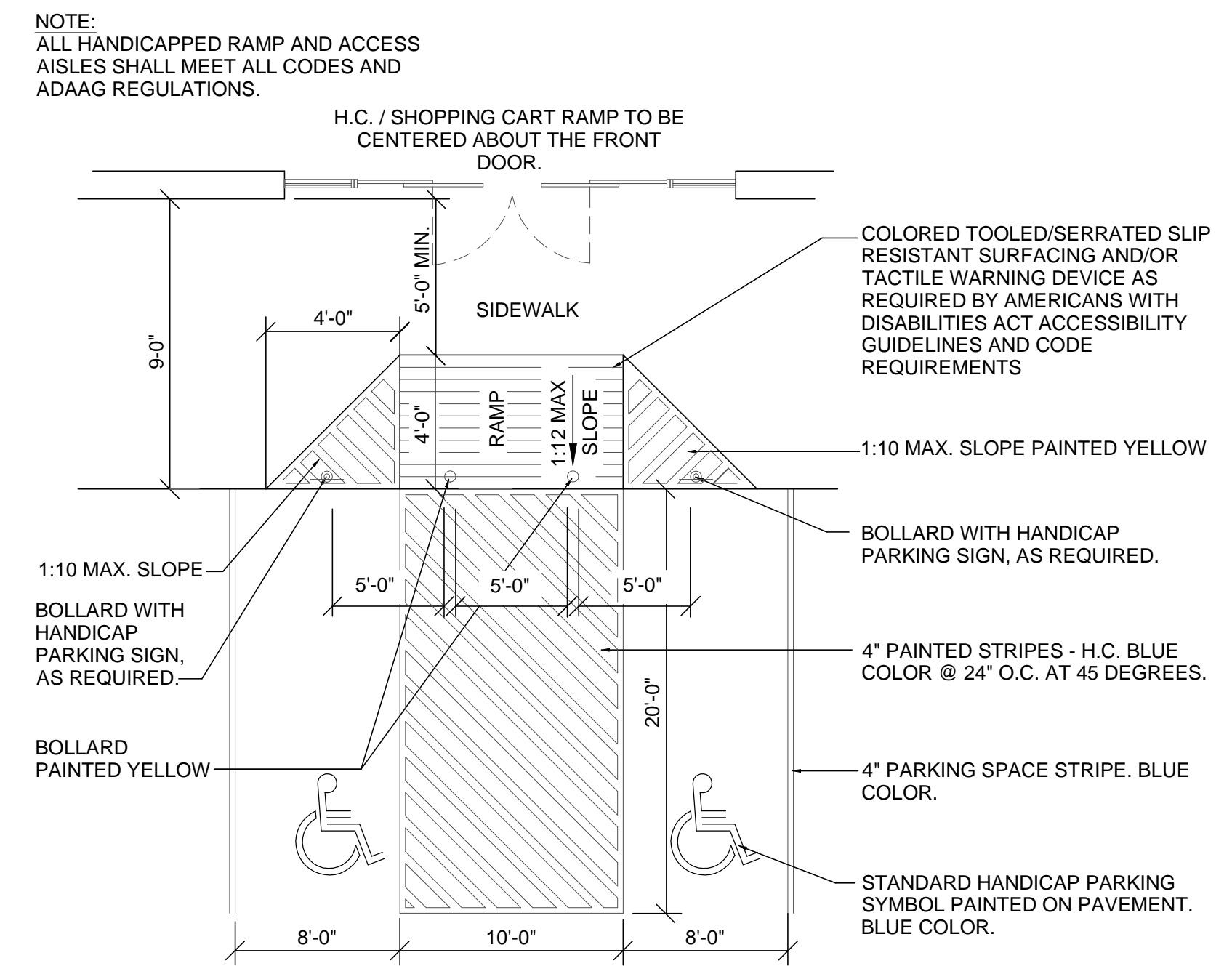




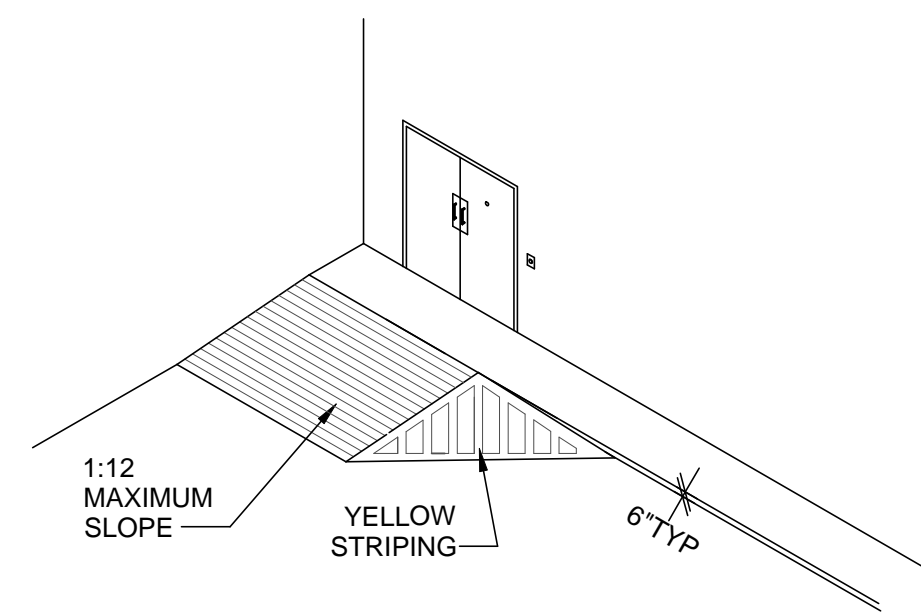
**BOLLARD DETAIL**  
NOT TO SCALE



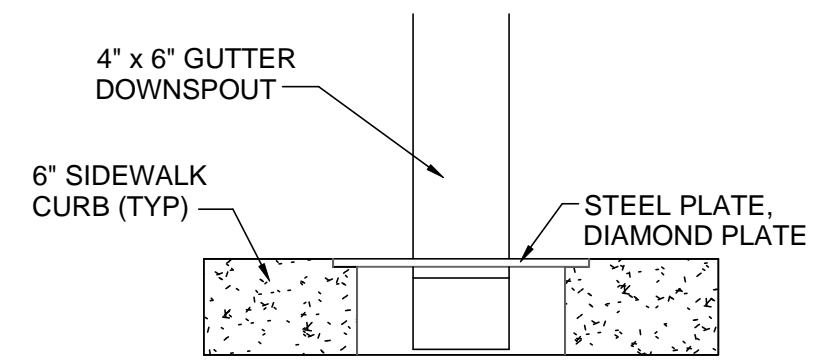
**WOOD FENCE DETAIL**  
NOT TO SCALE



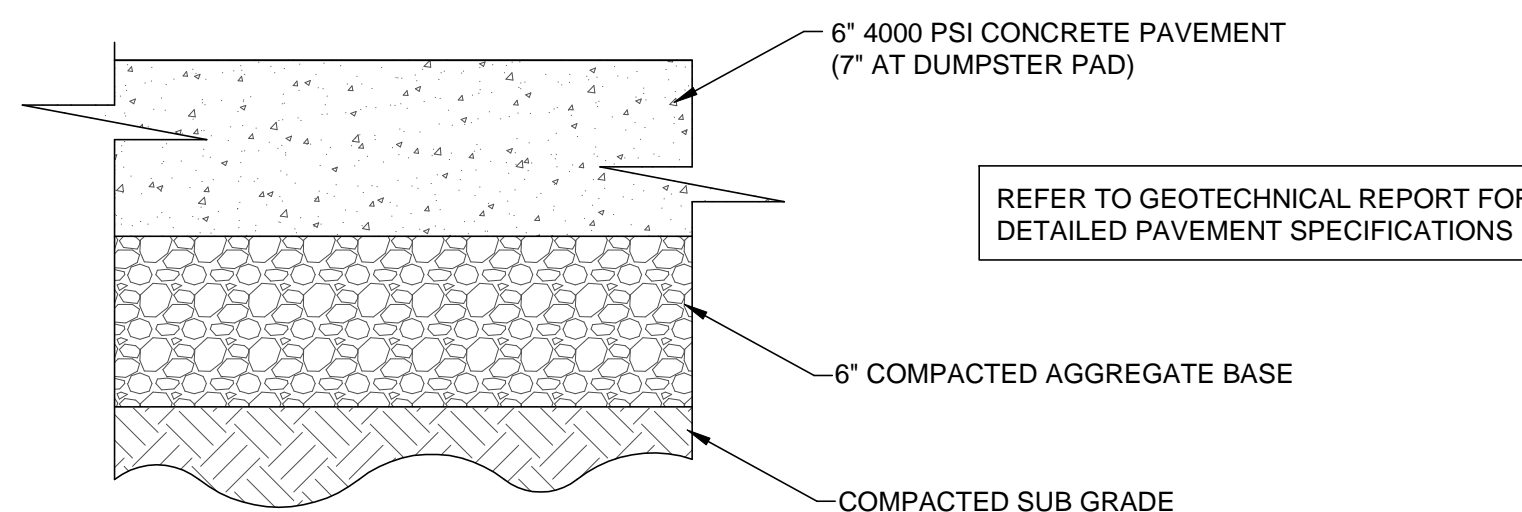
**FRONT ENTRY PLAN**  
NOT TO SCALE



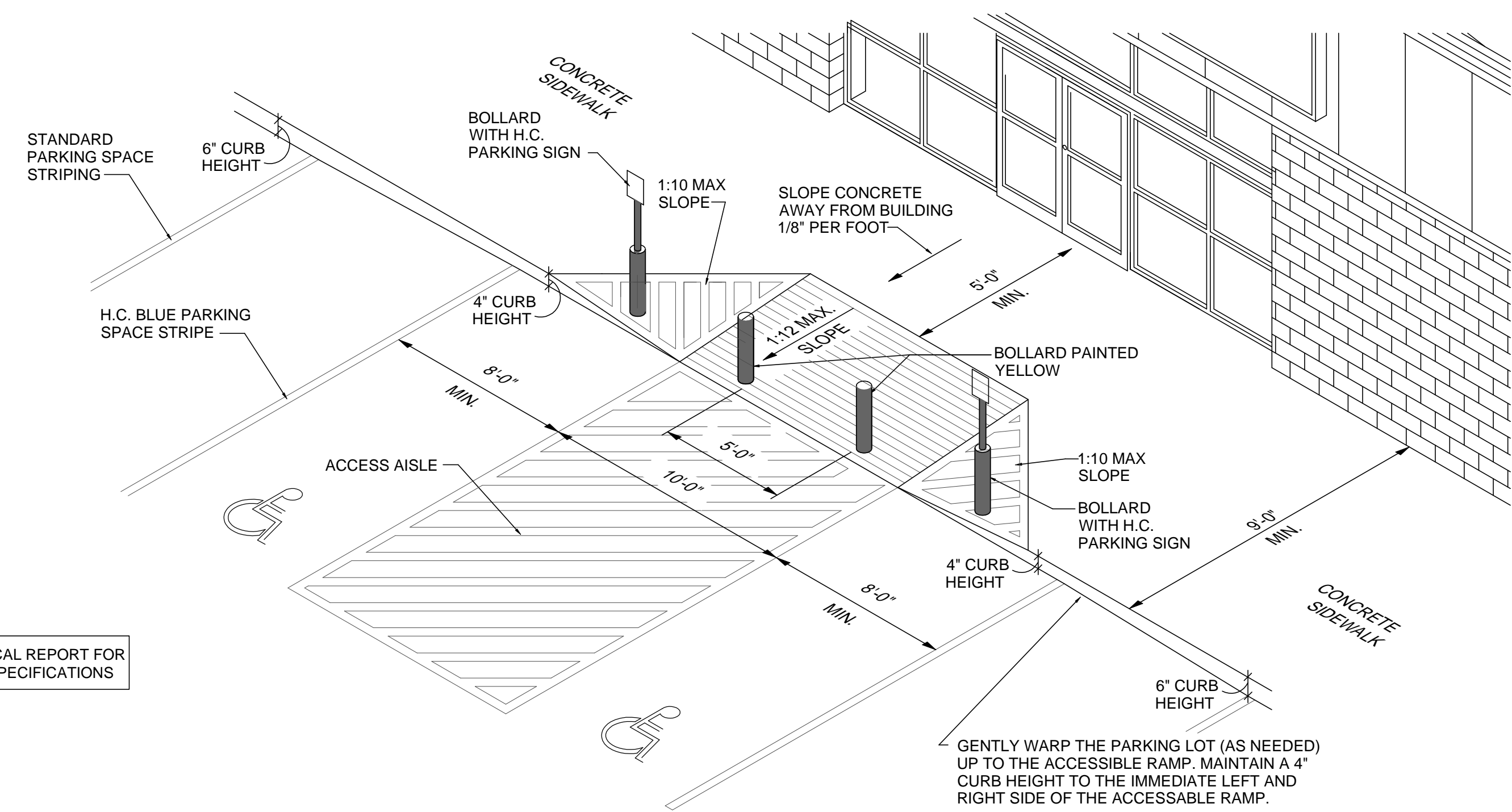
**SIDE ENTRY DETAIL**  
NOT TO SCALE



**GUTTER DOWNSPOUT DETAIL @ SIDEWALK**  
NOT TO SCALE



**CONCRETE PAVEMENT SECTION**  
NOT TO SCALE

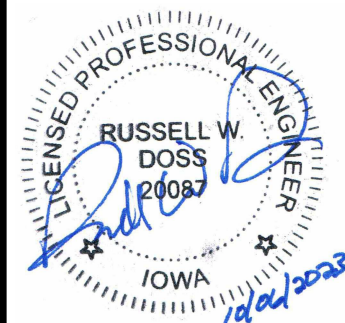


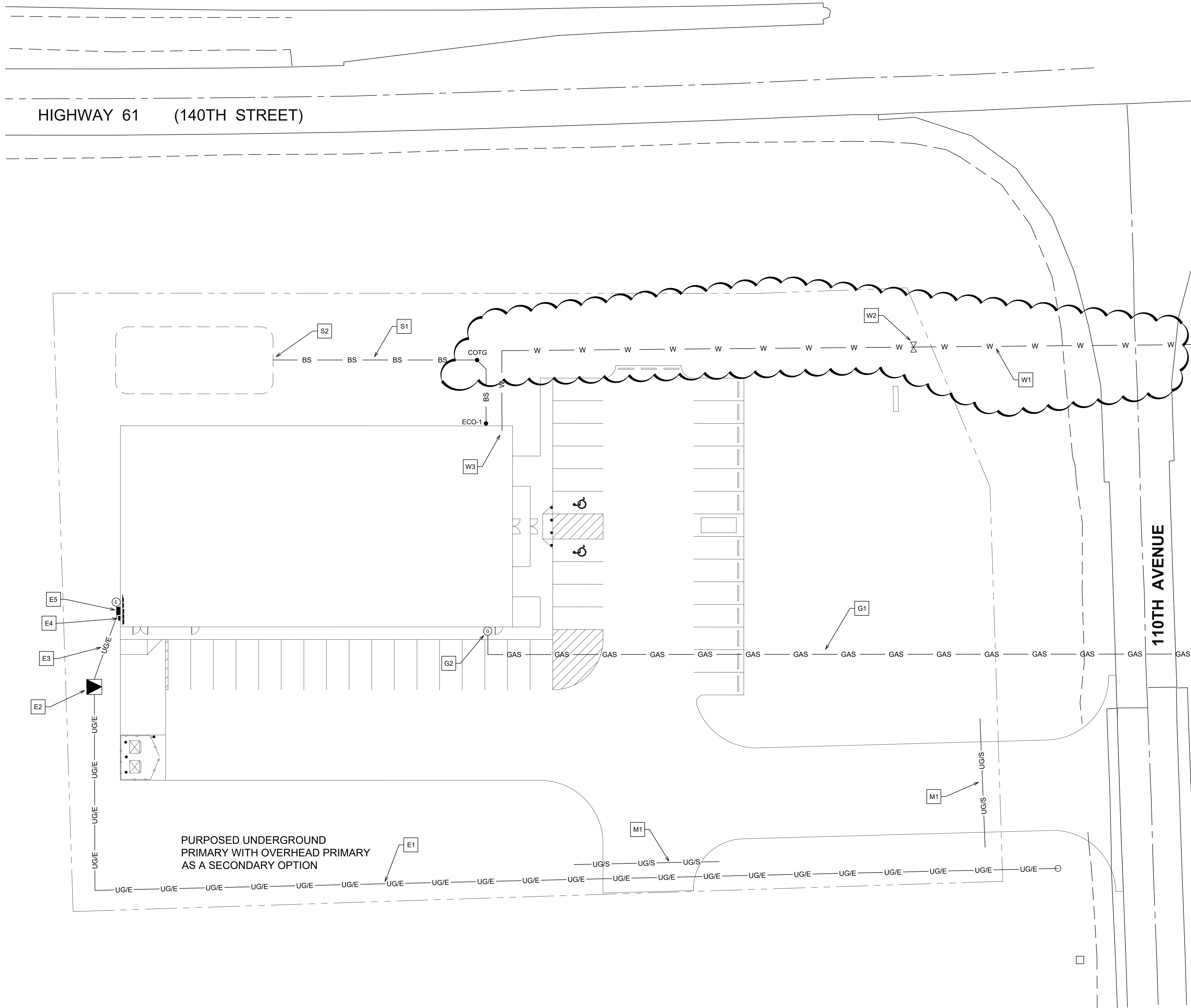
**FRONT ENTRY ISOMETRIC**  
NOT TO SCALE

**STRIPING NOTES**

- YELLOW CURBING AND BOLLARDS** SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYD ENAMEL SAFETY YELLOW B55Y300
- STRIPING - PARKING LOT** SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT YELLOW TM5495
- HANDICAP STRIPING - PARKING LOT** SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE

NO.	DATE	DESCRIPTION	BY





SITE UTILITY LEGEND		SITE UTILITY LEGEND	
— SS —	SANITARY SEWER	— FO —	FIBER OPTICS
— BS —	BUILDING SEWER	(E)	ELECTRIC METER
— W —	WATER PIPING	(G)	GAS METER
— GAS —	GAS PIPING	(W)	WATER METER
— UG/E —	UNDERGROUND ELECTRIC	(FH)	FIRE HYDRANT
— OH/E —	OVERHEAD ELECTRIC	(▲)	PAD MOUNT TRANSFORMER
— UG/C —	UNDERGROUND CONDUIT	(MH)	MANHOLE
— UG/S —	UNDERGROUND SLEEVE	(●)	CLEANOUT TO GRADE
— T —	TELEPHONE		

#	KEYNOTES
ELECTRICAL	
E1	PROPOSED UNDERGROUND PRIMARY BY THE ELECTRIC UTILITY.
E2	PAD MOUNTED TRANSFORMER BY THE ELECTRIC UTILITY. THE E.C. SHALL CONSTRUCT A CONCRETE PAD IN ACCORDANCE WITH THE ELECTRIC UTILITY'S SPECIFICATIONS.
E3	UNDERGROUND SERVICE LATERAL BY THE ELECTRICAL CONTRACTOR.
E4	CABINET AND METER SOCKET BY THE ELECTRICAL CONTRACTOR. 1-1/4" NIPPLE BETWEEN THE CT CABINET AND THE METER SOCKET BY THE ELECTRICAL CONTRACTOR.
E5	600 AMP 3-POLE NEMA 3R FUSED SERVICE DISCONNECT BY THE ELECTRICAL CONTRACTOR.
GAS	
G1	NATURAL GAS SERVICE PIPE BY THE GAS COMPANY.
G2	LOCATION OF THE GAS METER WITH A SHUT-OFF VALVE ON THE SUPPLY SIDE AND A 7" W.C. REGULATOR. THE NATURAL GAS LOAD WILL BE 648,000 BTUH.
MISCELLANEOUS	
M1	4" PVC SLEEVE WITH PULL WIRE UNDER DRIVE. TURN UP AND WEATHERPROOF BOTH ENDS.
SEWER	
S1	4" BUILDING SEWER AT 1/4" PER 1' SLOPE WITH CLEANOUT TO GRADE WITHIN 5' OF THE BUILDING AND EVERY 100' THEREAFTER AND AT EVERY HORIZONTAL CHANGE OF DIRECTION GREATER THAN 45°.
S2	CONNECT TO THE SANITARY SEPTIC, BY OTHERS.
WATER	
W1	1-1/2" WATER SERVICE FOR DOMESTIC AND LAWN IRRIGATION USES. COORDINATE WITH THE WATER COMPANY FOR TAPPING REQUIREMENTS, ROAD BORING/CUTTING & PATCHING, ETC.
W2	1-1/2" CURB STOP AT THE PROPERTY LINE.
W3	THE WATER METERS WILL BE INSIDE THE BUILDING AT THIS LOCATION.

**WATER & SEWER SERVICE MATERIALS**

**WATER SERVICE PIPE**  
 COPPER: SEAMLESS COPPER TUBE TYPE K, SOFT TEMPER. - ANSI H23.1, ASTM B88  
 COPPER FITTINGS: BRASS OR BRONZE FLARE FITTINGS 125 LBS AND OVER. HEAVY DUTY LONG COLLAR TYPE - ASTM B62. OR CAST BRONZE AND WROUGHT SOLDER JOINT PRESSURE FITTINGS - ANSI B16.22, ANSI H23.1, ANSI B16.16  
 SOLDERED JOINTS SHALL BE THOROUGHLY CLEANED AND PROPERLY FLUXED WITH NONCORROSIVE PASTE OR LIQUID FLUX COMPLYING WITH ASTM B813-00. SOLDER SHALL BE 95-5 TIN ANTIMONY OR 96-4 TIN SILVER SOLDER (LESS THAN 0.2% LEAD) COMPLYING WITH ASTM B52-04.

HDPE: SDR 9, 200 PSI, WATER SERVICE PIPE - ASTM D2269  
 HDPE FITTING: ASTM D2669, ASTM D2663, ASTM D3261, ASTM F1055, CSA B137.1.  
 HDPE: CTS DR 11, 200 PSI, WATER SERVICE PIPE - ASTM D2737  
 HDPE FITTING: ASTM D2669, ASTM D2663, ASTM D3261, ASTM F1055, CSA B137.1.  
 PLASTIC PIPE (HDPE) SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2774 AND SHALL BE INSTALLED WITH A COATED #12 AWG COPPER TRACER WIRE.

**BUILDING SEWER PIPE**  
 PVC DRAIN WASTE AND VENT: SCH. 40 OR SCH. 80 SOLVENT WELD PIPE AND FITTINGS - ASTM D2665, ASTM F626, NSF 14, C5272, CSA B161.2.  
 PVC SEWER PIPE - SDR 23.5 - ASTM D3034.  
 PVC PIPE AND FITTINGS MUST BE LAID ON A CONTINUOUS GRANULAR BED. INSTALLATION SHALL COMPLY WITH ASTM D2321.  
 CAST IRON, CAST IRON PIPE AND FITTINGS EXTRA HEAVY - ANSI A21.8; CAST IRON PIPE CENTRIFUGALLY CAST ONLY AND FITTINGS SERVICE WEIGHT - ANSI A21.8, ANSI A21.8, C5195.  
 CAST IRON FITTINGS: HUBLESS CAST IRON PIPE AND FITTINGS - ASTM A888-07A, CIPSI STD. 301-05, CSA/CAN 3-B70.

THE ENGINEER HAS PROVIDED ONLY MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERING SERVICES. FLOOR PLANS AND SITE PLANS HAVE BEEN PROVIDED BY THE ARCHITECT FOR OUR USE RELATIVE TO MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERING SERVICES ONLY.  
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REVISED BY MOVING THE WATER SERVICE LINE TO THE EAST SIDE OF 110TH AVENUE.

**811**  
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FIELD VERIFY AND COORDINATE ALL UNDERGROUND UTILITIES WITH STORM WATER DETENTION AND DRAIN PIPING TO AVOID CONFLICT/INTERFERENCE.

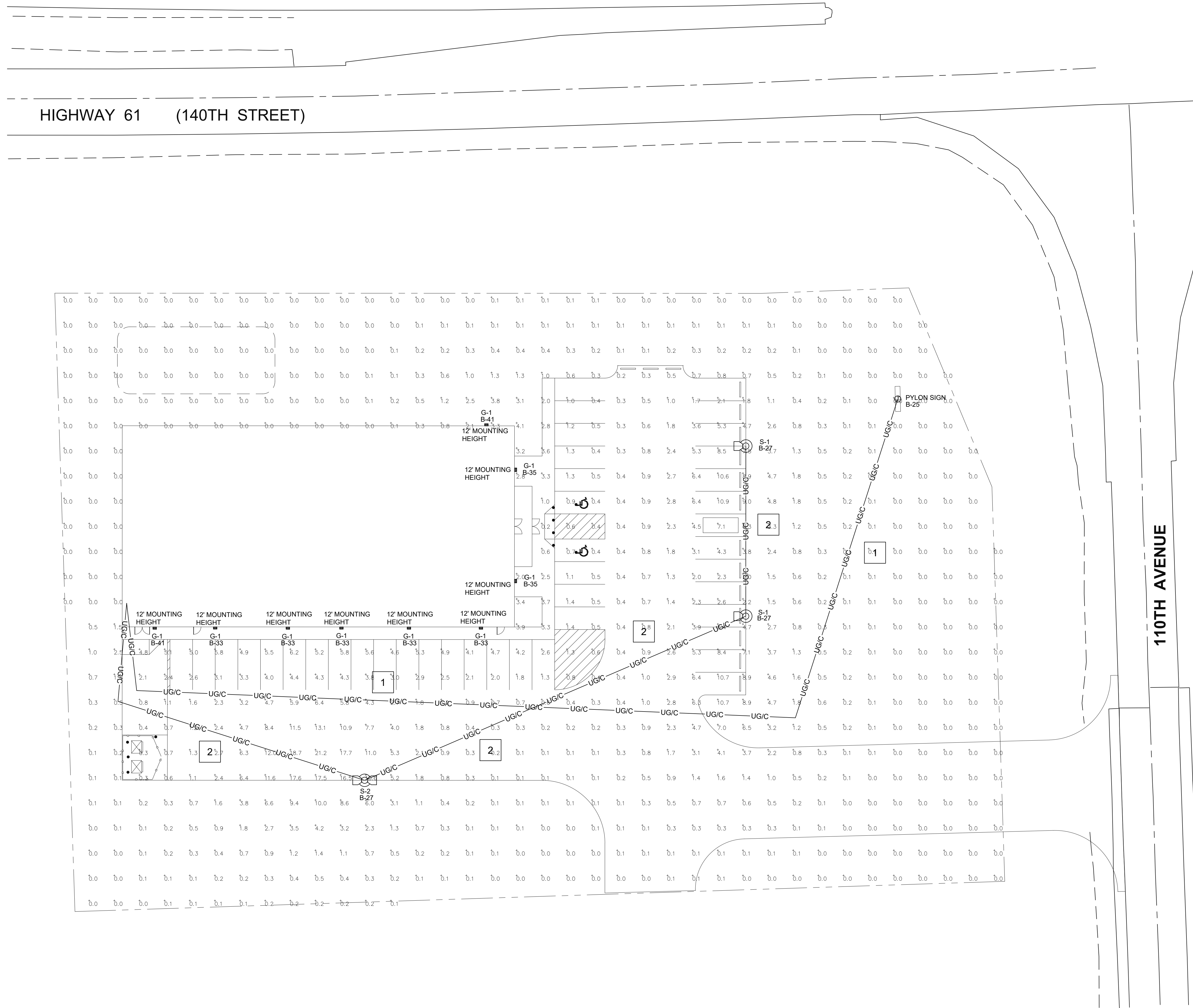
**CROCKER CONSULTING ENGINEERS, INC.**  
 REGISTERED PROFESSIONAL ENGINEERS  
 327 E. 9<sup>TH</sup> AVE. S.W. SPRINGFIELD, MO 65804-4794 | 417-863-4056

**DOLLAR GENERAL**  
 TYPE DGRM23 - A PLUS  
 HIGHWAY 61 & 110TH AVENUE  
 DAVENPORT, SCOTT COUNTY, IOWA

IOWA PROFESSIONAL ENGINEER  
 PATRICK DEAN CROCKER  
 LICENSE NUMBER: 2066  
 MY LICENSE RENEWAL DATE IS DECEMBER 31, 2020  
 PAGES OR SHEETS COVERED BY THIS SEAL  
 SU1, SU2, M1, MC, ME, E1, E2, E3, E4, E5, E6, E8, E81, E84SE, P1, P2, P3, P4

DRAWN: GLE, RGO  
 CHECKED: PDC  
 DATE: 10/05/2023  
 REVISION: 10/23/2023  
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 REVISION:  
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 JOB #: 2023-141  
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SITE UTILITY LEGEND		SITE UTILITY LEGEND	
— SS —	SANITARY SEWER	— FO —	FIBER OPTICS
— BS —	BUILDING SEWER	⊖	ELECTRIC METER
— W —	WATER PIPING	⊙	GAS METER
— GAS —	GAS PIPING	⊕	WATER METER
— UG/E —	UNDERGROUND ELECTRIC	⊠	FIRE HYDRANT
— OH/E —	OVERHEAD ELECTRIC	▲	PAD MOUNT TRANSFORMER
— UG/C —	UNDERGROUND CONDUIT	⊗	MANHOLE
— UG/S —	UNDERGROUND SLEEVE	●	CLEANOUT TO GRADE
— T —	TELEPHONE		

#	KEYNOTES
1	1" CONDUIT TO PYLON SIGN.

DISCLAIMER: THE PHOTOMETRIC CALCULATIONS WILL BE CONFIRMED BY THE NATIONAL LIGHTING ACCOUNT VENDOR (NATIONAL LIGHTING ELECTRICAL SERVICE). THE E.C. AND G.C. WILL BE RESPONSIBLE TO CONFIRM THAT NATIONAL LIGHTING ELECTRICAL SERVICE (THE NATIONAL ACCOUNT LIGHTING VENDOR) HAS RUN THEIR PHOTOMETRICS FOR THIS SITE. IT IS ALSO THE RESPONSIBILITY OF THE E.C. AND G.C. TO CONFIRM ALL LIGHT FIXTURE MODEL NUMBERS WITH THE NATIONAL ACCOUNT VENDOR (NATIONAL LIGHTING ELECTRICAL SERVICE).

LED LIGHT HEADS ARE COVERED ON FOUR SIDES PLUS THE BACK WITH LIGHT BEING PROJECTED IN ONE DIRECTION. LIGHT HEADS MOUNTED AND POINTING IN A DOWNWARD DIRECTION ACCOMPLISHES THE GOAL OF WHAT USED TO BE CALLED "FULL CUT-OFF". IN THIS WAY THE PARKING LOT IS LIT AND THERE IS NO BLEED OVER TO THE PROPERTY LINE OR ACROSS PROPERTY LINES.

REVISED BY ADDING PHOTOMETRICS TO THE EXTERIOR OF THE BUILDING.

THE ENGINEER HAS PROVIDED ONLY MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERING SERVICES. FLOOR PLANS AND SITE PLANS HAVE BEEN PROVIDED BY THE ARCHITECT FOR OUR USE RELATIVE TO MECHANICAL, ELECTRICAL, AND PLUMBING ENGINEERING SERVICES ONLY.

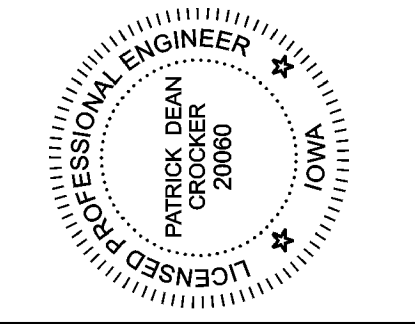


DOLLAR GENERAL  
TYPE DGPM23 - A PLUS  
HIGHWAY 61 & 110TH AVENUE  
DAVENPORT, SCOTT COUNTY, IOWA

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PATRICK O. CROCKER  
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DATE:	10/05/2023
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REVISION:	
JOB #:	2023-141
SHEET #:	

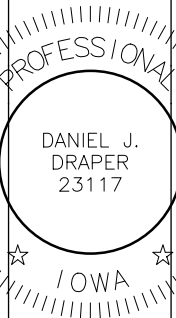
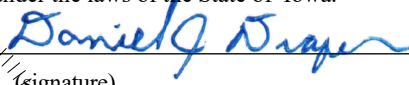


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FIELD VERIFY AND COORDINATE ALL UNDERGROUND UTILITIES WITH STORM WATER DETENTION AND DRAIN PIPING TO AVOID CONFLICT/INTERFERENCE.

# TRAFFIC IMPACT STUDY

## DOLLAR GENERAL STORE DAVENPORT, IA

	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.	
		12/15/2024
	(signature)	(date)
	Daniel J. Draper	
	License number 23117	
	My license renewal date is December 31, 2024.	
	Pages or sheets covered by this seal:	
	Complete report pages 1 to 69	



Chamlin & Associates  
ENGINEERS • SURVEYORS • PLANNERS  
Project No. N8021.03

DECEMBER 2023

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6) CONCLUSIONS & RECOMMENDATIONS .....	9
7) APPENDIX	

**APPENDIX:**

Exhibit 1	Location Map
Exhibit 2	Proposed Site Plan
Exhibit 3A	Existing Lane Configuration
Exhibit 3B	Existing Traffic Signal Configuration
Exhibit 4	Traffic Count Data
Exhibit 5	Turning Movement Volume Reports
Exhibit 6A	2024 Existing/No-Build Traffic Volumes
Exhibit 6B	2044 No-Build Traffic Volumes
Exhibit 7	Iowa Crash Analysis Tool Quick Report
Exhibit 8	Trip Generation Data
Exhibit 9	ITE Trip Generation Reports
Exhibit 10	New Trip Distribution
Exhibit 11	New Trip Volumes
Exhibit 12	Pass-By Trip Volumes
Exhibit 13	Total Generated Trip Volumes
Exhibit 14A	2024 Build Condition Traffic Volumes
Exhibit 14B	2044 Build Condition Traffic Volumes
Exhibit 15A	Left-Turn Lane Warrant
Exhibit 15B	Right-Turn Lane Warrant
Exhibit 16	HCS7 Capacity Reports

**Chamlin & Associates**

4152 Progress Boulevard  
Peru, IL 61354  
Phone: (815) 223-3344  
Fax: (815) 223-3348

## 1) EXECUTIVE SUMMARY, CONCLUSIONS & RECCOMENDATIONS

This Traffic Impact Study has been prepared to assess the traffic impacts associated with the construction of a Dollar General Store in Davenport, Scott County, Iowa. The proposed store will be in the southwest quadrant of the US 61 and 110<sup>th</sup> Avenue intersection approximately 1 mile west of I-280. A location map is shown in **Exhibit 1**.

The proposed development will consist of a 12,480 square foot Dollar General Store and a parking lot providing 40 parking spaces. One full-access driveway with one inbound lane and two outbound lanes will be provided on 110<sup>th</sup> Avenue. The proposed site plan is shown in **Exhibit 2**.

The purpose of the analysis is to determine the traffic impacts due to the construction of the new development.

Conclusions and recommendations include:

1. Intersection site distance at the proposed site entrance exceeds policy intersection sight distance requirements.
2. The proposed development is expected to generate a total of 38 and 84 trips during the AM and PM peak hours, respectively. A portion of these trips would be drawn from the background traffic volumes; therefore, 25 and 55 “new” trips will be generated during each peak hour, respectively.
3. Auxiliary tun lanes are not warranted at the site entrance.
4. The proposed site entrance is in the US 61 and 110<sup>th</sup> Avenue intersection functional area. However, while it is desirable to avoid access within the functional area, it is not possible in this case because the south limits of property frontage are in the functional intersection area and alternative access is not available. To minimize impacts, the access connection has been located as far south as possible. Additional mitigating factors include:
  - a. The traffic volumes entering and exiting the site as well as the volume of traffic on US 61 are relatively small.
  - b. There have only been two crashes in the vicinity of the entrance in the past 10 years.
  - c. The maximum queue length estimated in capacity analysis is less than 20 feet.
5. Capacity analyses demonstrate the US 61 and 110<sup>th</sup> Avenue intersection and the site intersection will operate at will operate a Level of Service (LOS B or better) during each peak hour under no-build and build conditions. Therefore, the site generated traffic is expected to have minimal impact on traffic operations.

## 2) INTRODUCTION:

The purpose of this analysis is to determine the amount of traffic that will be generated by the proposed development, evaluate the intersection capacity at the intersections of US 61 (140<sup>th</sup> Street) & 110<sup>th</sup> Avenue (County Highway Y48) at the proposed site entrance, and evaluate the need for auxiliary turn lanes.

## 3) ANALYSIS OF EXISTING CONDITIONS

The proposed development is in the southwest quadrant of the intersection of US 61 (140<sup>th</sup> Street) and Scott County Highway Y48 (110<sup>th</sup> Avenue) approximately 1 mile west of I-280.

The area is transitioning from rural to urban. For purposes of this study this location is considered urban. See **Exhibit 1** location map.

The existing land use in the vicinity of the proposed development is a mixture of residential, commercial, and agricultural. There is one existing access point to the parcel. The current zoning classification for the proposed land development is C-2, which is a corridor commercial zoning district.

The intersection of US 61 & 110<sup>th</sup> Avenue is a 4-leg signalized intersection. US 61 runs east-west and has two lanes in each direction separated by a median. There are dedicated left turn lanes in the eastbound and westbound directions at the 110<sup>th</sup> Avenue intersection. 110<sup>th</sup> Avenue is a two-lane highway running in a north-south direction. There are no auxiliary lanes at the US 61 intersection. **Exhibits 3A** and **3B** show the existing intersection lane and traffic signal configurations.

The posted speed limit on US 61 at 110<sup>th</sup> Avenue is 55 MPH. The speed limit for 110<sup>th</sup> Avenue is 55 MPH south of US 61 and 45 MPH north of US 61. US 61 is under the authority of the Iowa Department of Transportation (IowaDOT) and is classified as an other principal arterial. 110<sup>th</sup> Avenue is under the authority of Scott County Secondary Roads Department and is classified as a major collector. There are no sidewalks in the vicinity of the intersection.

Sight distance at the proposed entrance location was analyzed utilizing the methodologies put forth in Chapter 3 of the IowaDOT Access Management Manual, the required intersection sight distance at a design speed of 60 MPH for a left turn is approximately 665 feet and approximately 580 feet for the right turn movement. The available sight distance exceeds 1000 feet in each direction, so sight distance is considered adequate.

### *Traffic Data*

According to the IowaDOT Traffic Data GIS application, the current AADT on the south leg of 110<sup>th</sup> Avenue is 2500, the north leg of 110<sup>th</sup> Avenue is 3410. The east leg of US Hwy 61 is 8700 while the west leg is 7950.

Turning movement counts were collected at the intersection of US 61 and 110<sup>th</sup> Avenue on November 28, 2023, from 6-9 AM and 3-6 PM. The traffic count data including the AM and PM peak hour volumes, existing turning movement volumes, and truck % on all routes may be found in **Exhibit 4**.

Based on the counts, two peak hours were identified for analysis: the AM (7:15 – 8:15) and PM (3:30 – 4:30) peak hours.

For the purposes of this analysis, an annual traffic growth rate of 1.0% is assumed based upon a review of IowaDOT historical traffic count maps.

OTISS Pro software traffic impact analysis software was utilized to project the existing traffic peak hour volumes to the 2024 and 2044 background traffic rates. A summary of background traffic projections may be found in **Exhibit 5** and is graphically depicted in **Exhibits 6A and 6B**.

#### *Crash History*

There were 61 crashes during the study period from 2013 to 2023 within the 300 ft buffer around the proposed site location. Most of the crashes were intersection related crashes at the US 61 and 110<sup>th</sup> Avenue intersection. Of those 61 crashes there were no fatal crashes. Three (3) crashes were suspected serious injury crashes, eleven (11) were suspected minor injury crashes, and eleven (11) were possible/unknown injuries crashes. The injury type crashes resulted in a total of 50 injuries reported. Rear-end crashes (47.5%) accounted for the largest percentage of crashes followed by angle (16.4%) and broadside (16.4%) crashes. 83.6% of the crashes occurred in dry pavement conditions. The remaining 36 crashes were property damage only crashes. **Table 1** provides a crash summary. The detailed Iowa Crash Analysis Tool Quick Report can be found in **Exhibit 7**.

Table 1 Crash History Summary US 61 and 110th Avenue Intersection Davenport, IA		
<i>Surface Condition</i>	<i># of Crashes</i>	<i>Percentage</i>
Dry	51	83.6%
Wet	5	8.2%
Snow	3	4.9%
Slush	1	1.6%
Not reported	1	1.6%
<b>Total</b>	<b>61</b>	<b>100.0%</b>
<i>Crash Severity</i>	<i># of Crashes</i>	<i>Percentage</i>
Fatal Crash	0	0.0%
Fatalities		0
Suspected Serious Injury Crash	3	5.0%
Suspected Serious/incapacitating Crash injuries		5
Suspected Minor Injury Crash	11	18.0%
Suspected Minor Crash Injuries		21
Possible/Unknown Injury Crash	11	18.0%
Possible/Unknown Injury Crash Injuries		24
Property Damage Only	36	59.0%
<b>Total Injuries</b>		<b>50</b>
<i>Crash Type</i>	<i># of Crashes</i>	<i>Percentage</i>
Rear-end (front to rear)	29	47.5%
Angle, oncoming left turn	10	16.4%
Broadside (front to side)	10	16.4%
Other	5	8.2%
Non-collision (single vehicle)	3	4.9%
Sideswipe, same direction	3	4.9%
Not reported	1	1.6%
<b>Total</b>	<b>61</b>	<b>100.0%</b>

#### 4) PROPOSED DEVELOPMENT

The proposed development will consist of a 12,480 square foot Dollar General Store and a parking lot providing 40 parking spaces. One full-access driveway with one inbound lane and two outbound lanes will be provided on 110<sup>th</sup> Avenue. The proposed site plan may be found in **Exhibit 2**. The existing driveway will be removed in favor of a new pavement. The proposed development

is expected to generate new traffic to the intersection in the form of new and pass-by trips. The expected opening year is 2024 and the design year is 2044.

## 5) ANALYSIS OF FUTURE CONDITIONS

### *Trip Generation*

As a primary step in this analysis, traffic forecasts were prepared to estimate the amount of traffic that the proposed development would generate during each peak period. These forecasts were based upon information provided in the "Trip Generation Manual", 11th Ed., published by the Institute of Transportation Engineers (ITE). The land use code used for this development was #814 - Variety Store. The unit of measurement for land use code #814 is per 1000 square feet of gross floor area. The quantity of land use is 12.480. The trip generation data can be found in **Exhibit 8** and the ITE Trip Generation Reports can be found in **Exhibit 9**.

It should be noted, however, that not all these trips would represent new traffic on the adjacent roadways. Specifically, a portion of the traffic attracted to this site would already be traveling on US 61 as a part of another trip, i.e., pass-by trips. Based on statistical information provided in the 2021 Pass-By Data and Rate Tables located in the appendices of the "Trip Generation Manual", 11<sup>th</sup> Edition, it was estimated that 34% of the site's traffic during the AM and PM peak hours would be comprised of pass-by trips. After accounting for pass-by trips, the site will generate 25 and 55 "new" trips during the AM and PM peak hours, respectively. **Table 2** shows the estimated trip generation totals.

Table 2 Estimated Trip Generation Proposed Dollar General Store Davenport, IA										
Land Use	Gross Floor Area (Per 1,000 SF)	AM Peak Period			PM Peak Period			Weekday		
		In	Out	Total	In	Out	Total	In	Out	Total
Variety Store	12.480	20	18	38	43	41	84	397	397	794
<b>Total Development Trips</b>		<b>20</b>	<b>18</b>	<b>38</b>	<b>43</b>	<b>41</b>	<b>84</b>	<b>397</b>	<b>397</b>	<b>794</b>
<i>Pass-By Trips (34%)</i>		<i>(7)</i>	<i>(6)</i>	<i>(13)</i>	<i>(15)</i>	<i>(14)</i>	<i>(29)</i>	<i>(135)</i>	<i>(135)</i>	<i>(270)</i>
<i>New Trips (66%)</i>		<i>13</i>	<i>12</i>	<i>25</i>	<i>28</i>	<i>27</i>	<i>55</i>	<i>262</i>	<i>262</i>	<i>524</i>

### *Trip Distribution*

Traffic generated by the proposed development was assigned to the adjoining road system based on the proposed access configuration, existing traffic patterns, and anticipated operating



characteristics. The new trips have been distributed to the roadway network as follows:

- Arriving from and departing to the north in the AM (PM) on 110<sup>th</sup> Avenue: 8% (11%)
- Arriving from and departing to the south in the AM (PM) on 110<sup>th</sup> Avenue: 6% (7%)
- Arriving from and departing to the west in the AM (PM) on US Hwy 61: 51% (39%)
- Arriving from and departing to the east in the AM (PM) on US Hwy 61: 35% (43%)

The distribution of pass-by trips matches the split of traffic passing the site on 110<sup>th</sup> Avenue. The distribution of new trips can be found in **Exhibit 10**.

The development's new and pass-by trips are summarized in **Exhibits 11 and 12** respectively while the total site-generated trips are summarized in **Exhibit 13**. The site-generated traffic volumes were then aggregated with the 2024 and 2044 No-Build traffic volumes shown in **Exhibits 5A and 5B** to arrive at the 2024 and 2044 Build Condition traffic volumes, respectively. The 2024 Build Condition DHV's are shown in **Exhibit 14A** while the 2044 Build Condition DHV's are shown in **Exhibit 14B**.

#### *Turn Lane Warrants*

The opening year (2024) and design year (2044) volumes were used to determine if auxiliary turn lanes at the proposed site entrance on 110<sup>th</sup> Avenue will be warranted. The IowaDOT's Design Manual does not contain any specifications on left-turn lanes or right-turn lanes at urban intersections. Instead, the guidelines put forth in the Engineering Study Guide for Evaluating Intersection Improvements uses National Cooperative Highway Research Program (NCHRP) Report 457 are used to determine if installation of left and/or right turn lanes are warranted. For this project, the left lane turn warrants and right turn warrants were evaluated for the 2024 build condition and the 2044 build condition. As shown in **Exhibit 15A** a northbound left turn lane is not warranted at the proposed site access driveway. **Exhibit 15B** indicates a right turn lane is not warranted at the proposed site access driveway.

#### *Functional Area Analysis*

The approximate distance from the US 61 edge of pavement to the center of the proposed entrance driveway is 270 feet. As shown in **Table 3** the upstream functional distance was determined to be 690 feet based on the 2044 PM peak hour. The preferred downstream functional distance based on stopping sight distance is 610 feet.

Table 3 Functional Distance Proposed Dollar General Store Davenport, IA			
Upstream			
<i>Distance Required for Each Element of the Functional Area (Table 11 – Iowa DOT Access Management Manuals)</i>			
<i>D<sub>1</sub></i> <i>non-complex urban</i>	<i>D<sub>2</sub></i> <i>No Turn Lane</i>	<i>D<sub>3</sub></i> <i>Estimated Queue Length</i>	<i>Total</i>
130 feet	540 feet	20 feet	690 feet
Downstream			
<i>Decision Sight Distance (Table 12 – Iowa DOT Access Management Manual)</i>			
<i>Design Speed (MPH)</i>	<i>Avoidance Maneuver Type</i>	<i>Distance</i>	
60	A	610 feet	

While it is desirable to avoid access within the functional area, in this case it is not possible because the south limits of property frontage are in the functional intersection area and alternative access is not available. To minimize impacts, the access connection has been located as far south as possible. Additional mitigating factors include:

- The traffic volumes entering and exiting the site as well as the volume of traffic on US 61 are relatively small.
- There have only been two crashes in the vicinity of the entrance in the past 10 years.
- The maximum queue length estimated in capacity analysis is less than 20 feet.

For the reasons listed above the entrance location and site generated traffic are expected to have minimal impact on traffic operations.

*Capacity Analysis*

Operating conditions for the intersection of US 61 and 110<sup>th</sup> Avenue and proposed site entrance were analyzed using HCS7 software, which uses study procedures outlined in the “*Highway Capacity Manual*” (2010 ed.) published by the Transportation Research Board. Analyses were performed for the 2024 and 2044 No-Build and Build conditions. The results of the capacity analyses are summarized in **Table 4**. The HCS7 capacity reports pertaining to the weekday AM and PM peak hours can be found in **Exhibit 16**.

Analyses demonstrated each movement at the study intersections will operate a Level of Service (LOS B or better) during each peak hour under both the no-build and build conditions, which indicates the site generated traffic is expected to have minimal impact on traffic operations.

Table 4 Capacity Analysis Summary Proposed Dollar General Store Davenport, IA US 61 and 110 <sup>th</sup> Ave (Signalized Controlled)								
Traffic Movement	No-Build				Build			
	2024		2044		2024		2044	
	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound – Approach	A (7.8)	A (6.9)	A (8.8)	A (7.7)	A (8.1)	A (7.4)	A (9.1)	A (8.2)
Westbound – Approach	A (9.0)	A (9.3)	B (10.0)	A (10.7)	A (9.0)	A (9.4)	B (10.0)	B (10.8)
Northbound – Approach	B (10.5)	B (10.8)	B (11.9)	B (12.3)	B (10.6)	B (10.9)	B (12.0)	B (12.5)
Southbound – Approach	B (11.3)	B (11.7)	B (13.0)	B (13.6)	B (11.3)	B (11.7)	B (13.1)	B (13.7)
Overall Intersection	A (8.7)	A (8.7)	A (9.8)	A (10.0)	A (8.8)	A (9.0)	A (10.0)	B (10.3)
110th Ave & Proposed Entrance (Stop Controlled)								
Traffic Movement					Build			
	2024		2044		2024		2044	
	AM	PM	AM	PM	AM	PM	AM	PM
Eastbound – Approach	A (9.3)	A (9.5)	A (9.5)	A (9.7)	A (9.3)	A (9.5)	A (9.5)	A (9.7)
Northbound – Left Turn	A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)	A (7.4)

X - Level of Service  
 (XX.X) - (vehicular delay in seconds per vehicle)

## 6) CONCLUSIONS & RECOMMENDATIONS

Based upon the preceding discussion, the following may be concluded regarding the traffic impact of the proposed development:

6. Intersection site distance at the proposed site entrance exceeds policy intersection sight distance requirements.
7. The proposed development is expected to generate a total of 38 and 84 trips during the AM and PM peak hours, respectively. A portion of these trips would be drawn from the background traffic volumes; therefore, 25 and 55 “new” trips will be generated during each peak hour, respectively.
8. The projected volumes for the 2044 Build condition indicate that a northbound left-turn lane is not warranted at the site entrance on 110<sup>th</sup> Avenue.
9. The projected volumes for the 2044 Build condition indicate that a southbound right-turn lane is not warranted at the site entrance on 110<sup>th</sup> Avenue.
10. The proposed site entrance is in the US 61 and 110<sup>th</sup> Avenue intersection functional area. However, while it is desirable to avoid access within the functional area, it is not possible in this case because the south limits of property frontage are in the functional intersection area and alternative access is not available. To minimize impacts, the access connection has been located as far south as possible. Additional mitigating factors include:
  - a. The traffic volumes entering and exiting the site as well as the volume of traffic on US 61 are relatively small.
  - b. There have only been two crashes in the vicinity of the entrance in the past 10 years.
  - c. The maximum queue length estimated in capacity analysis is less than 20 feet.

For the reasons listed above the entrance location and site generated traffic are expected to have minimal impact on traffic operations.

11. Capacity analyses demonstrate the US 61 and 110<sup>th</sup> Avenue intersection and the site intersection will operate at will operate a Level of Service (LOS B or better) during each peak hour under no-build and build conditions. Therefore, the site generated traffic is expected to have minimal impact on traffic operations.

Traffic Impact Study – Proposed Dollar General Development  
Davenport, Scott County, Iowa

**7) APPENDIX:**

Exhibit 1	Location Map
Exhibit 2	Proposed Site Plan
Exhibit 3A	Existing Lane Configuration
Exhibit 3B	Existing Traffic Signal Configuration
Exhibit 4	Traffic Count Data
Exhibit 5	Turning Movement Volume Reports
Exhibit 6A	2024 Existing/No-Build Traffic Volumes
Exhibit 6B	2044 No-Build Traffic Volumes
Exhibit 7	Iowa Crash Analysis Tool Quick Report
Exhibit 8	Trip Generation Data
Exhibit 9	ITE Trip Generation Reports
Exhibit 10	New Trip Distribution
Exhibit 11	New Trip Volumes
Exhibit 12	Pass-By Trip Volumes
Exhibit 13	Total Generated Trip Volumes
Exhibit 14A	2024 Build Condition Traffic Volumes
Exhibit 14B	2044 Build Condition Traffic Volumes
Exhibit 15A	Left-Turn Lane Warrant
Exhibit 15B	Right-Turn Lane Warrant
Exhibit 16	HCS7 Capacity Reports



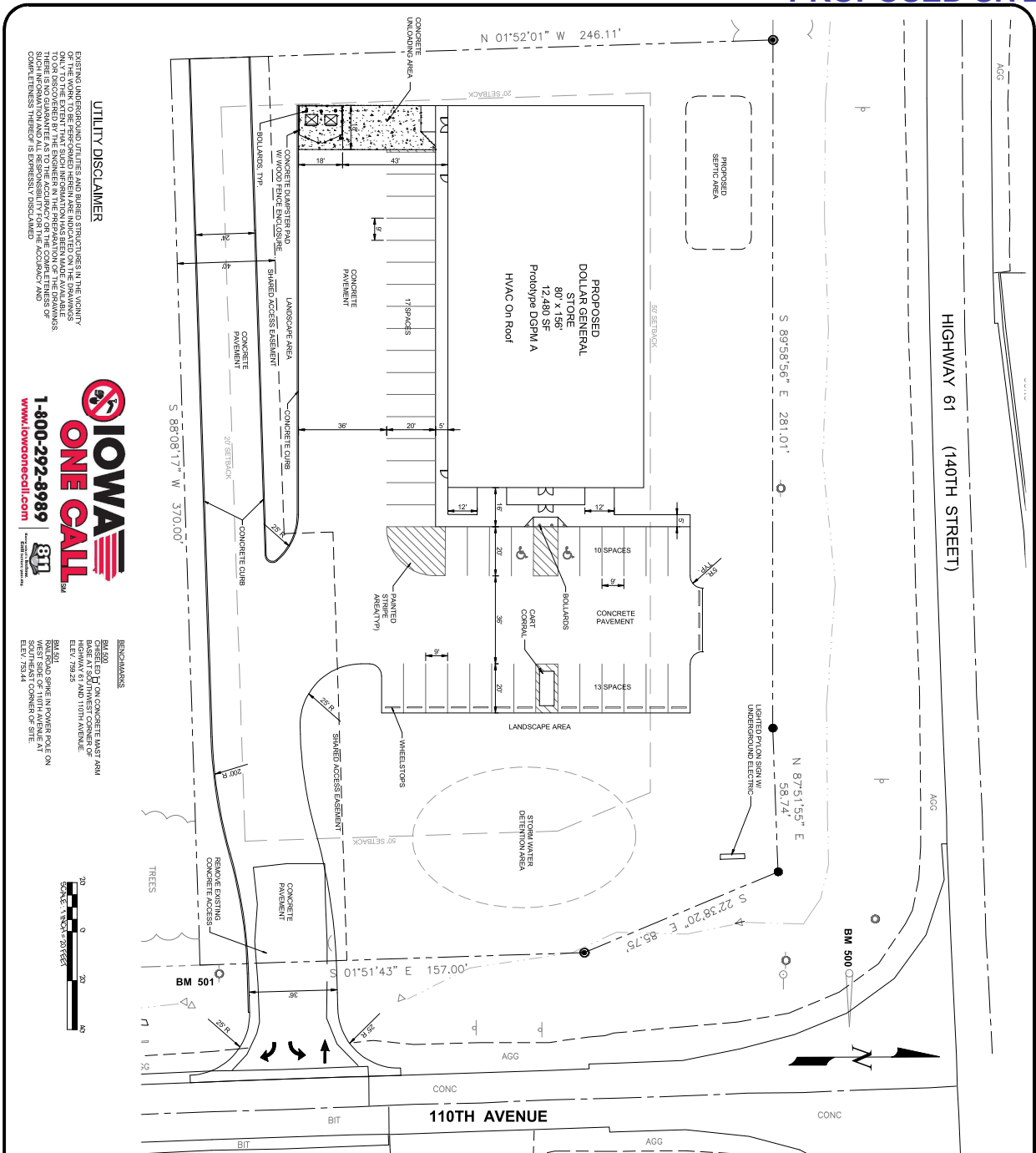
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Last Modified: Wednesday, December 13, 2023 8:56:43 AM by Code Dutko



DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 1  
LOCATION MAP

PROJECT NO.: P8021.03



**UTILITY DISCLAIMER**  
EXISTING UNDERGROUND UTILITIES AND BURIED STRUCTURES IN THE VICINITY OF THE WORK TO BE PERFORMED HEREIN ARE INDICATED ON THE DRAWINGS TO THE EXTENT KNOWN TO THE ENGINEER IN THE PREPARATION OF THE DRAWINGS. THERE IS NO GUARANTEE AS TO THE ACCURACY OR THE COMPLETENESS OF THE INFORMATION OBTAINED AND THE ENGINEER HAS CONDUCTED VISUAL SURVEY AND COMPLETENESS THEREOF IS EXPRESSLY DISCLAIMED.

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**BENCHMARKS**  
BM 500: CONCRETE CURB ON CONCRETE WEST SIDE OF HIGHWAY 61 AND 110TH AVENUE  
ELEV. 729.25  
BM 501: CONCRETE CURB ON CONCRETE EAST SIDE OF HIGHWAY 61 AND 110TH AVENUE  
ELEV. 731.00



# DOLLAR GENERAL STORE #30307

**APPLICANT/DEVELOPER**

1808 E BATTLEFIELD ROAD  
DAVENPORT, IOWA 52807  
SALES AREA = 9,872.51 SF  
475-256-6422 (I/VA)

**OWNER**

DOLLAR GENERAL STORE  
4222 45TH STREET  
DAVENPORT, IOWA 52807  
SALES AREA = 9,872.51 SF  
(402) 345-9000 (I/VA)

**SITE DEVELOPMENT DATA**

PROPOSED BUILDING 12,480 S.F.  
PROPOSED SALES AREA 9,872.51 S.F.  
TOTAL DEVELOPABLE AREA 11,165 S.F.  
PARKING SPACES - 17 SPACES  
112,480 S.F. / 7,750 = 16.61 SPACES  
EXISTING ZONING - C-2  
EXISTING ZONING - C-2  
EXISTING USE - VACANT  
PROPOSED USE - RETAIL  
FRONT SETBACK - 50 FEET  
REAR SETBACK - 50 FEET  
PROPOSED WALKWAY - 42,287 S.F.  
PROPOSED WATER, IOWA AERBON/PROPOSED SEWER, SEPTIC SYSTEM (SCOTT COUNTY)

**LEGEND**

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING EGRESS DRIVE
- - - EXISTING STORMSEWER
- - - EXISTING WATER MAIN
- - - EXISTING TANKER
- EXISTING 6" IRON ROD
- EXISTING 4" IRON ROD
- EXISTING 8" IRON ROD
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING WATER VALVE
- EXISTING TELEPHONE
- EXISTING TELEPHONE FEDERAL
- EXISTING MAIL BOX
- EXISTING ASPHALT SURFACE
- EXISTING BITUMINOUS SURFACE
- EXISTING CONCRETE SURFACE
- EXISTING TELEPHONE SURFACE
- RECOVERED 6" IRON ROD (COVERED)
- SET 6" IRON ROD
- EXISTING 4" MANHOLE
- EXISTING 8" UTILITY POLE
- EXISTING WATER VALVE
- EXISTING TELEPHONE
- EXISTING TELEPHONE FEDERAL
- EXISTING MAIL BOX
- EXISTING ASPHALT SURFACE
- EXISTING BITUMINOUS SURFACE
- EXISTING CONCRETE SURFACE
- EXISTING TELEPHONE SURFACE
- RECOVERED 6" IRON ROD (COVERED)
- SET 6" IRON ROD

**GENERAL NOTES**

1. THIS PLAN WAS PREPARED BY THE ARCHITECT IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC GENERAL NOTES WORKS DEPARTMENT OF SCOTT COUNTY, IOWA, UNLESS OTHERWISE NOTED.

2. ALL DIMENSIONS ARE GIVEN IN FEET AND INCHES, UNLESS OTHERWISE NOTED.

3. APPROVAL OF SCOTT COUNTY, IOWA, SHALL BE OBTAINED TO THE INSPECTION AND REVISION TO CORRECT ANY ERRORS OR OMISSIONS.

4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPLICABLE AGENCIES.

6. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

7. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

8. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

9. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL EXISTING UTILITIES AND STRUCTURES ON THE SITE.

**SCALE:**



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

(SIGNATURE)  
Russell W. Doores

(DATE)  
10/16/2023

LICENSE NO. 20087  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025  
PAGES OR SHEETS COVERED BY THIS SEAL: C1 THRU C5

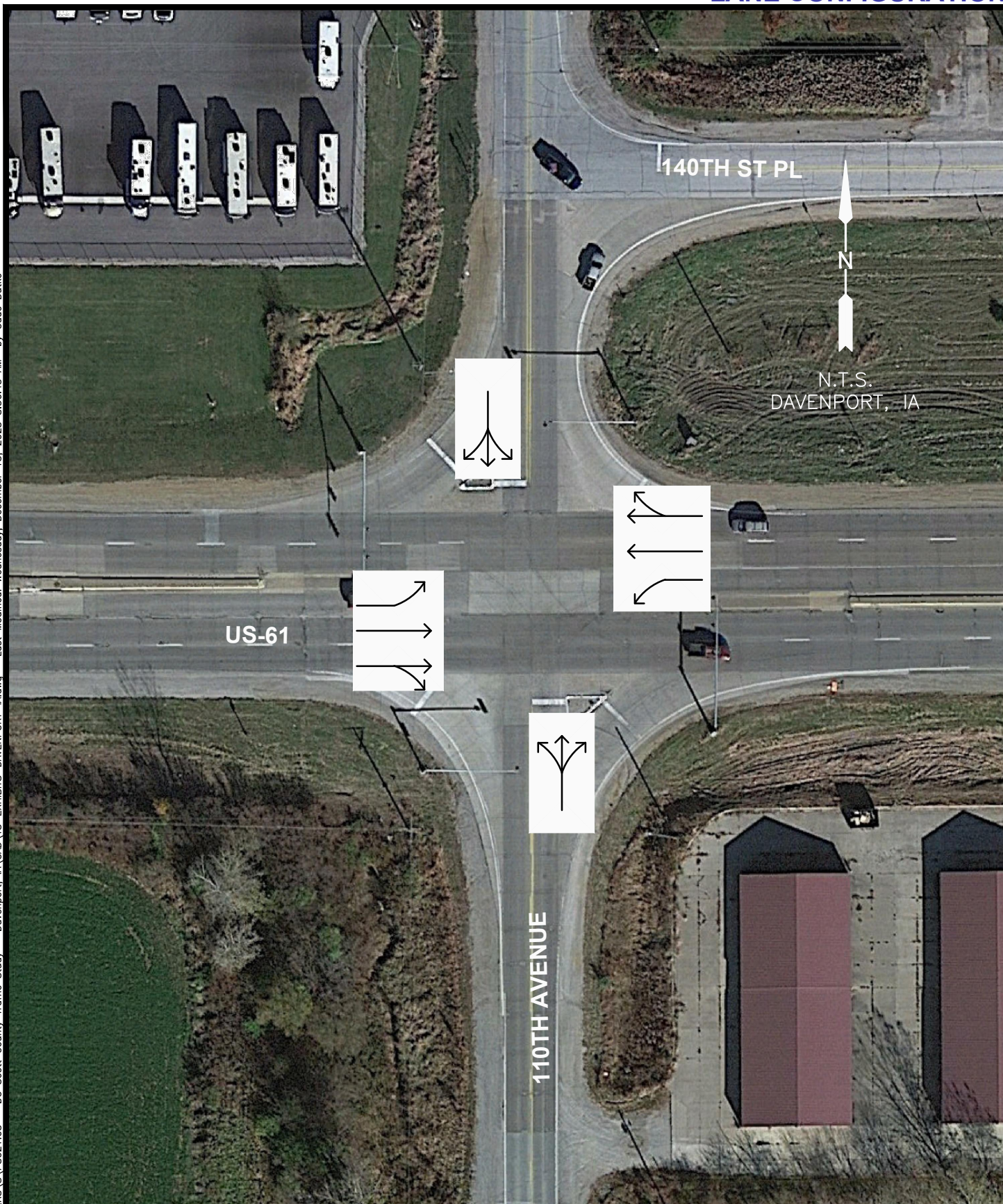
**DOLLAR GENERAL**  
DAVENPORT, IOWA  
**SITE PLAN**

**Verland**  
 ENGINEERING, LLC  
 1506 IMPERIAL CIR., STE. 2009 WEST PLAINS, MO 65775  
 PHONE: (417) 256-8150 FAX: (417) 256-8152  
[www.verlandeng.com](http://www.verlandeng.com)

HIGHWAY 61 & 110TH AVENUE, DAVENPORT, IOWA  
 www.dollargeneral.com

NO.	DATE	DESCRIPTION	BY

EXHIBIT 3A  
LANE CONFIGURATION



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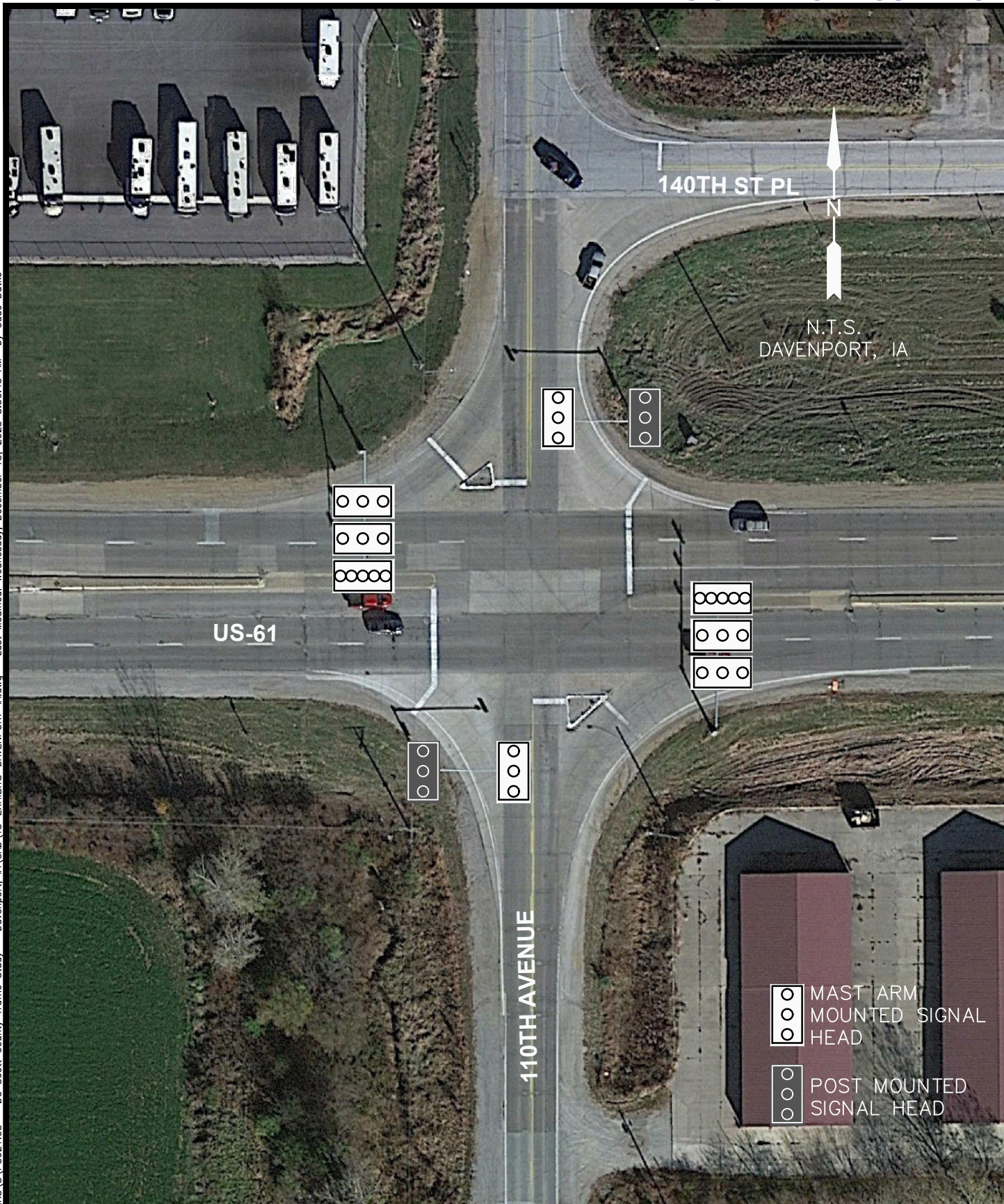
DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 3A  
LANE CONFIGURATION

PROJECT NO.: P8021.03



# EXHIBIT 3B TRAFFIC SIGNAL CONFIGURATION



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DOLLAR GENERAL  
DAVENPORT, IA

EXHIBIT 3B  
TRAFFIC SIGNAL CONFIGURATION

PROJECT NO.: P8021.03

US 61 (140th Street) and 110th Avenue - TMC  
 Tue Nov 28, 2023  
 Full Length (6 AM-9 AM, 3 PM-6 PM)  
 All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
 All Movements  
 ID: 1137737, Location: 41.508464, -90.688366



TRAFFIC COUNT DATA  
 Provided by: Gewalt Hamilton Associates Inc.  
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

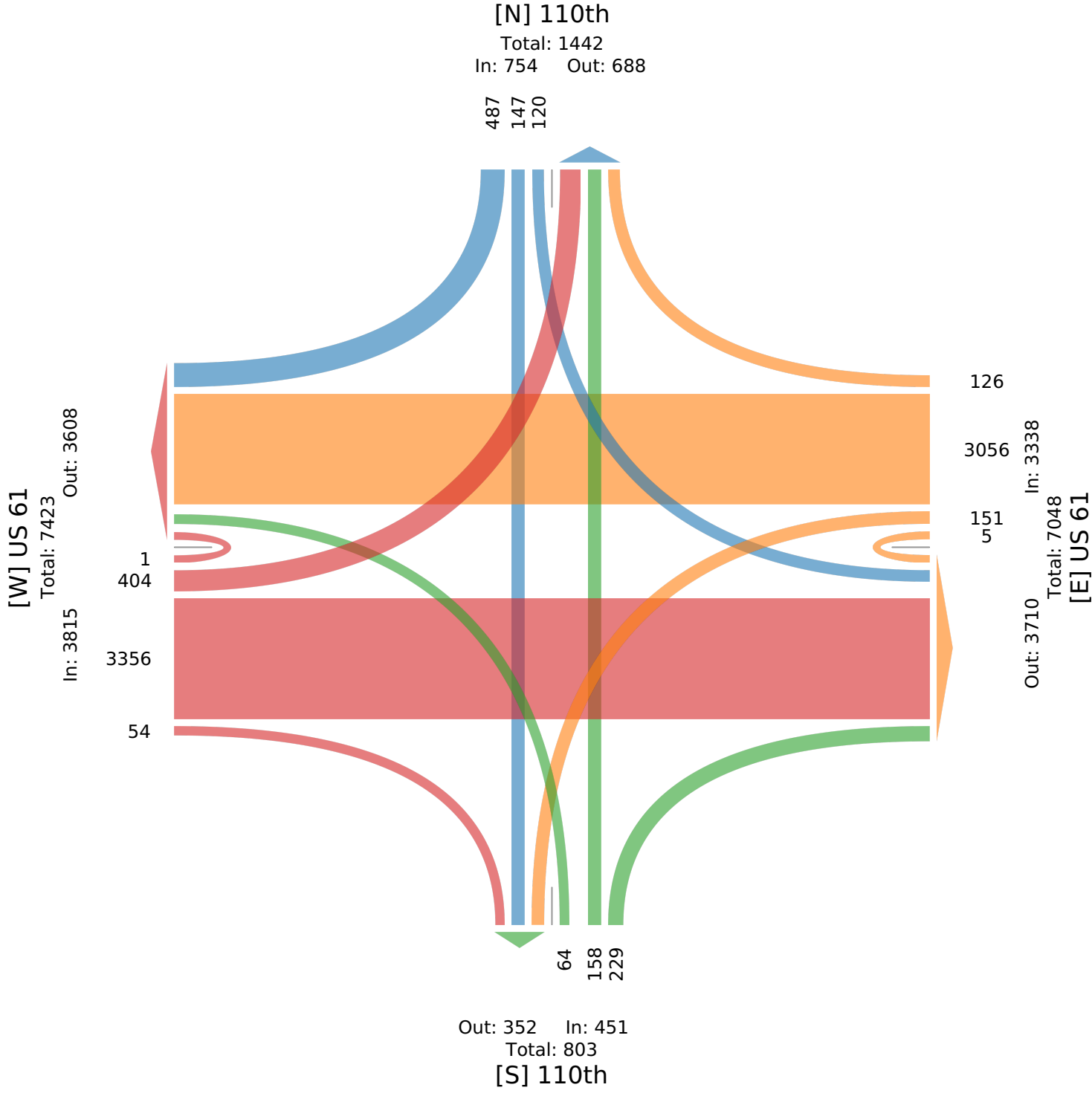
Leg Direction	110th Southbound					US 61 Westbound					110th Northbound					US 61 Eastbound					Int
	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	
2023-11-28 6:00AM	7	4	2	0	13	1	72	4	0	77	6	2	3	0	11	0	90	4	0	94	195
6:15AM	17	2	5	0	24	2	118	13	0	133	8	3	1	0	12	3	132	11	0	146	315
6:30AM	15	9	3	0	27	3	103	4	0	110	7	7	3	0	17	1	148	17	1	167	321
6:45AM	22	10	3	0	35	1	89	14	0	104	10	11	4	0	25	3	142	13	0	158	322
Hourly Total	61	25	13	0	99	7	382	35	0	424	31	23	11	0	65	7	512	45	1	565	1153
7:00AM	17	3	7	0	27	2	112	10	0	124	9	3	1	0	13	2	157	18	0	177	341
7:15AM	22	5	6	0	33	5	113	8	0	126	7	2	4	0	13	2	172	13	0	187	359
7:30AM	30	8	8	0	46	5	138	5	1	149	12	6	1	0	19	2	197	16	0	215	429
7:45AM	20	3	6	0	29	9	109	12	1	131	11	9	2	0	22	5	146	27	0	178	360
Hourly Total	89	19	27	0	135	21	472	35	2	530	39	20	8	0	67	11	672	74	0	757	1489
8:00AM	8	5	4	0	17	10	110	4	0	124	11	9	7	0	27	3	147	28	0	178	346
8:15AM	13	8	4	0	25	7	99	7	0	113	16	9	0	0	25	1	125	13	0	139	302
8:30AM	11	7	4	0	22	6	99	9	0	114	16	10	2	0	28	7	113	7	0	127	291
8:45AM	10	8	6	0	24	2	88	6	0	96	12	1	1	0	14	4	106	9	0	119	253
Hourly Total	42	28	18	0	88	25	396	26	0	447	55	29	10	0	94	15	491	57	0	563	1192
3:00PM	18	3	3	0	24	2	111	3	0	116	6	10	4	0	20	1	115	15	0	131	291
3:15PM	24	3	2	0	29	7	146	7	0	160	11	12	3	0	26	3	143	15	0	161	376
3:30PM	30	8	5	0	43	12	166	5	0	183	15	7	7	0	29	1	148	17	0	166	421
3:45PM	43	10	6	0	59	6	170	2	0	178	14	8	2	0	24	1	137	17	0	155	416
Hourly Total	115	24	16	0	155	27	593	17	0	637	46	37	16	0	99	6	543	64	0	613	1504
4:00PM	28	6	4	0	38	12	161	5	0	178	21	14	5	0	40	3	138	26	0	167	423
4:15PM	36	5	7	0	48	3	175	5	1	184	4	8	2	0	14	3	136	20	0	159	405
4:30PM	26	10	9	0	45	6	144	7	0	157	14	3	4	0	21	6	171	21	0	198	421
4:45PM	23	5	6	0	34	8	164	3	0	175	4	5	3	0	12	1	160	22	0	183	404
Hourly Total	113	26	26	0	165	29	644	20	1	694	43	30	14	0	87	13	605	89	0	707	1653
5:00PM	20	4	10	0	34	5	164	3	0	172	4	4	2	0	10	1	163	31	0	195	411
5:15PM	23	10	5	0	38	5	152	7	1	165	4	6	1	0	11	0	127	17	0	144	358
5:30PM	14	8	0	0	22	3	138	8	1	150	3	4	2	0	9	0	131	20	0	151	332
5:45PM	10	3	5	0	18	4	115	0	0	119	4	5	0	0	9	1	112	7	0	120	266
Hourly Total	67	25	20	0	112	17	569	18	2	606	15	19	5	0	39	2	533	75	0	610	1367
<b>Total</b>	<b>487</b>	<b>147</b>	<b>120</b>	<b>0</b>	<b>754</b>	<b>126</b>	<b>3056</b>	<b>151</b>	<b>5</b>	<b>3338</b>	<b>229</b>	<b>158</b>	<b>64</b>	<b>0</b>	<b>451</b>	<b>54</b>	<b>3356</b>	<b>404</b>	<b>1</b>	<b>3815</b>	<b>8358</b>
<b>% Approach</b>	64.6%	19.5%	15.9%	0%	-	3.8%	91.6%	4.5%	0.1%	-	50.8%	35.0%	14.2%	0%	-	1.4%	88.0%	10.6%	0%	-	-
<b>% Total</b>	5.8%	1.8%	1.4%	0%	<b>9.0%</b>	1.5%	36.6%	1.8%	0.1%	<b>39.9%</b>	2.7%	1.9%	0.8%	0%	<b>5.4%</b>	0.6%	40.2%	4.8%	0%	<b>45.6%</b>	-
<b>Lights</b>	474	132	113	0	<b>719</b>	118	2706	131	5	<b>2960</b>	202	143	42	0	<b>387</b>	35	2957	399	1	<b>3392</b>	7458
<b>% Lights</b>	97.3%	89.8%	94.2%	0%	<b>95.4%</b>	93.7%	88.5%	86.8%	100%	<b>88.7%</b>	88.2%	90.5%	65.6%	0%	<b>85.8%</b>	64.8%	88.1%	98.8%	100%	<b>88.9%</b>	89.2%
<b>Articulated Trucks and Single-Unit Trucks</b>	7	13	3	0	<b>23</b>	6	338	19	0	<b>363</b>	25	13	21	0	<b>59</b>	19	378	2	0	<b>399</b>	844
<b>% Articulated Trucks and Single-Unit Trucks</b>	1.4%	8.8%	2.5%	0%	<b>3.1%</b>	4.8%	11.1%	12.6%	0%	<b>10.9%</b>	10.9%	8.2%	32.8%	0%	<b>13.1%</b>	35.2%	11.3%	0.5%	0%	<b>10.5%</b>	10.1%
<b>Buses</b>	6	2	4	0	<b>12</b>	2	12	1	0	<b>15</b>	2	2	1	0	<b>5</b>	0	21	3	0	<b>24</b>	56
<b>% Buses</b>	1.2%	1.4%	3.3%	0%	<b>1.6%</b>	1.6%	0.4%	0.7%	0%	<b>0.4%</b>	0.9%	1.3%	1.6%	0%	<b>1.1%</b>	0%	0.6%	0.7%	0%	<b>0.6%</b>	0.7%

\* L: Left, R: Right, T: Thru, U: U-Turn



US 61 (140th Street) and 110th Avenue - TMC  
Tue Nov 28, 2023  
Full Length (6 AM-9 AM, 3 PM-6 PM)  
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
All Movements  
ID: 1137737, Location: 41.508464, -90.688366

Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



US 61 (140th Street) and 110th Avenue - TMC  
 Tue Nov 28, 2023  
 AM Peak (7:15 AM - 8:15 AM)  
 All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
 All Movements  
 ID: 1137737, Location: 41.508464, -90.688366

Provided by: Gewalt Hamilton Associates Inc.  
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

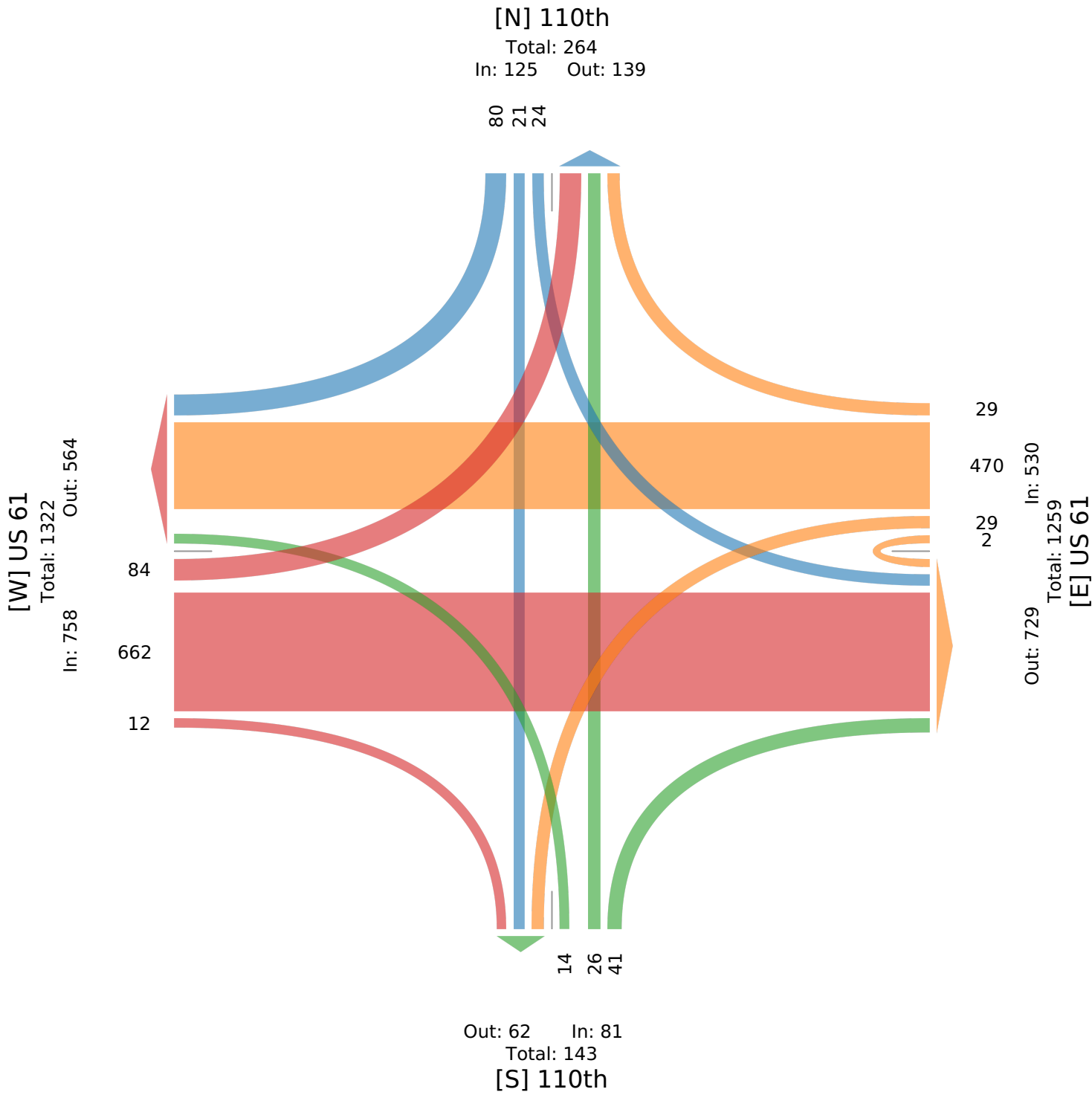
Leg Direction	110th Southbound					US 61 Westbound					110th Northbound					US 61 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2023-11-28 7:15AM	22	5	6	0	33	5	113	8	0	126	7	2	4	0	13	2	172	13	0	187	359
7:30AM	30	8	8	0	46	5	138	5	1	149	12	6	1	0	19	2	197	16	0	215	429
7:45AM	20	3	6	0	29	9	109	12	1	131	11	9	2	0	22	5	146	27	0	178	360
8:00AM	8	5	4	0	17	10	110	4	0	124	11	9	7	0	27	3	147	28	0	178	346
<b>Total</b>	80	21	24	0	125	29	470	29	2	530	41	26	14	0	81	12	662	84	0	758	1494
<b>% Approach</b>	64.0%	16.8%	19.2%	0%	-	5.5%	88.7%	5.5%	0.4%	-	50.6%	32.1%	17.3%	0%	-	1.6%	87.3%	11.1%	0%	-	-
<b>% Total</b>	5.4%	1.4%	1.6%	0%	8.4%	1.9%	31.5%	1.9%	0.1%	35.5%	2.7%	1.7%	0.9%	0%	5.4%	0.8%	44.3%	5.6%	0%	50.7%	-
<b>PHF</b>	0.667	0.656	0.750	-	0.679	0.725	0.851	0.604	0.500	0.889	0.854	0.722	0.500	-	0.750	0.600	0.840	0.750	-	0.881	0.871
<b>Lights</b>	77	15	22	0	114	28	406	25	2	461	36	21	7	0	64	5	593	83	0	681	1320
<b>% Lights</b>	96.3%	71.4%	91.7%	0%	91.2%	96.6%	86.4%	86.2%	100%	87.0%	87.8%	80.8%	50.0%	0%	79.0%	41.7%	89.6%	98.8%	0%	89.8%	88.4%
<b>Articulated Trucks and Single-Unit Trucks</b>	2	6	1	0	9	0	61	3	0	64	4	5	7	0	16	7	66	0	0	73	162
<b>% Articulated Trucks and Single-Unit Trucks</b>	2.5%	28.6%	4.2%	0%	7.2%	0%	13.0%	10.3%	0%	12.1%	9.8%	19.2%	50.0%	0%	19.8%	58.3%	10.0%	0%	0%	9.6%	10.8%
<b>Buses</b>	1	0	1	0	2	1	3	1	0	5	1	0	0	0	1	0	3	1	0	4	12
<b>% Buses</b>	1.3%	0%	4.2%	0%	1.6%	3.4%	0.6%	3.4%	0%	0.9%	2.4%	0%	0%	0%	1.2%	0%	0.5%	1.2%	0%	0.5%	0.8%

\*L: Left, R: Right, T: Thru, U: U-Turn



US 61 (140th Street) and 110th Avenue - TMC  
Tue Nov 28, 2023  
AM Peak (7:15 AM - 8:15 AM)  
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
All Movements  
ID: 1137737, Location: 41.508464, -90.688366

Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



US 61 (140th Street) and 110th Avenue - TMC  
 Tue Nov 28, 2023  
 PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour  
 All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
 All Movements  
 ID: 1137737, Location: 41.508464, -90.688366

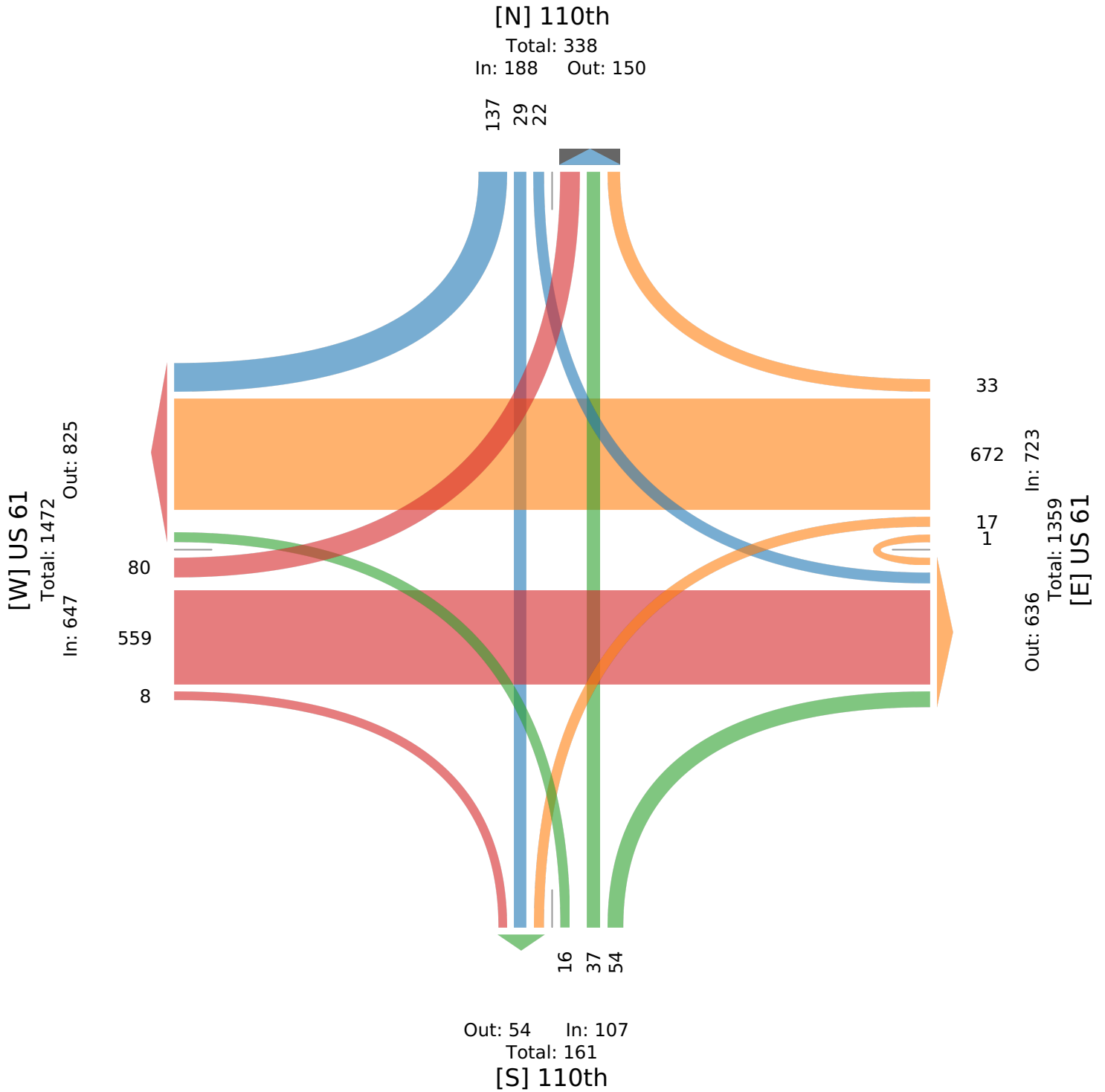
Provided by: Gewalt Hamilton Associates Inc.  
 625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	110th Southbound					US 61 Westbound					110th Northbound					US 61 Eastbound					
Time	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	R	T	L	U	App	Int
2023-11-28 3:30PM	30	8	5	0	43	12	166	5	0	183	15	7	7	0	29	1	148	17	0	166	421
3:45PM	43	10	6	0	59	6	170	2	0	178	14	8	2	0	24	1	137	17	0	155	416
4:00PM	28	6	4	0	38	12	161	5	0	178	21	14	5	0	40	3	138	26	0	167	423
4:15PM	36	5	7	0	48	3	175	5	1	184	4	8	2	0	14	3	136	20	0	159	405
<b>Total</b>	137	29	22	0	188	33	672	17	1	723	54	37	16	0	107	8	559	80	0	647	1665
<b>% Approach</b>	72.9%	15.4%	11.7%	0%	-	4.6%	92.9%	2.4%	0.1%	-	50.5%	34.6%	15.0%	0%	-	1.2%	86.4%	12.4%	0%	-	-
<b>% Total</b>	8.2%	1.7%	1.3%	0%	11.3%	2.0%	40.4%	1.0%	0.1%	43.4%	3.2%	2.2%	1.0%	0%	6.4%	0.5%	33.6%	4.8%	0%	38.9%	-
<b>PHF</b>	0.797	0.725	0.786	-	0.797	0.688	0.960	0.850	0.250	0.982	0.643	0.661	0.571	-	0.669	0.667	0.944	0.769	-	0.969	0.984
<b>Lights</b>	134	27	21	0	182	31	624	13	1	669	51	35	15	0	101	7	482	78	0	567	1519
<b>% Lights</b>	97.8%	93.1%	95.5%	0%	96.8%	93.9%	92.9%	76.5%	100%	92.5%	94.4%	94.6%	93.8%	0%	94.4%	87.5%	86.2%	97.5%	0%	87.6%	91.2%
<b>Articulated Trucks and Single-Unit Trucks</b>	1	2	0	0	3	2	45	4	0	51	2	2	0	0	4	1	74	1	0	76	134
<b>% Articulated Trucks and Single-Unit Trucks</b>	0.7%	6.9%	0%	0%	1.6%	6.1%	6.7%	23.5%	0%	7.1%	3.7%	5.4%	0%	0%	3.7%	12.5%	13.2%	1.3%	0%	11.7%	8.0%
<b>Buses</b>	2	0	1	0	3	0	3	0	0	3	1	0	1	0	2	0	3	1	0	4	12
<b>% Buses</b>	1.5%	0%	4.5%	0%	1.6%	0%	0.4%	0%	0%	0.4%	1.9%	0%	6.3%	0%	1.9%	0%	0.5%	1.3%	0%	0.6%	0.7%

\* L: Left, R: Right, T: Thru, U: U-Turn

US 61 (140th Street) and 110th Avenue - TMC  
Tue Nov 28, 2023  
PM Peak (3:30 PM - 4:30 PM) - Overall Peak Hour  
All Classes (Lights, Articulated Trucks and Single-Unit Trucks, Buses)  
All Movements  
ID: 1137737, Location: 41.508464, -90.688366

Provided by: Gewalt Hamilton Associates Inc.  
625 Forest Edge Drive, Vernon Hills, IL, 60061, US



# EXHIBIT 5 TURNING MOVEMENT VOLUME REPORT

Project: Davenport DG - CD Working AM 2024										1:US 61 and 110th Ave Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave			110th Ave			US 61			US 61		
	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
Number of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
Shared?	Yes		Yes	Yes		Yes	No		Yes	No		Yes
% Growth Over 1 Years	1	1	1	1	1	1	1	1	1	1	1	1
Growth Factor	1	1	1	1	1	1	1	1	1	1	1	1
Turning Volumes												
Existing Traffic	24	21	80	14	26	41	84	662	12	29	470	29
Background Traffic	24	21	81	14	26	41	85	669	12	29	475	29
Site Generated Trips	0	1	0	6	1	4	0	0	7	5	0	0
Pass-by Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-primary Trips	0	0	0	0	0	0	0	0	0	0	0	0
Build Conditions												
Redistributed Background Traffic	24	21	81	14	26	41	85	669	12	29	475	29
Total Build Traffic	24	22	81	20	27	45	85	669	19	34	475	29

Project: Davenport DG - CD Working AM 2024										2:Proposed Entrance Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave		110th Ave		Entrance							
	SBT	SBR	NBL	NBT	EBL	EBR						
Number of Lanes	1	1	1	1	1	1						
Shared?	Yes		Yes		No							
% Growth Over 1 Years	1	1	0	1	1	1						
Growth Factor	1	1	1	1	1	1						
Turning Volumes												
Existing Traffic	62	0	0	81	0	0						
Background Traffic	63	0	0	82	0	0						
Site Generated Trips	0	13	1	0	11	1						
Pass-by Trips (Non-Primary)	-3	3	4	-4	4	3						
Diverted Trips (Non-Primary)	0	0	0	0	0	0						
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0						
Total Non-primary Trips	-3	3	4	-4	4	3						
Build Conditions												
Redistributed Background Traffic	60	3	4	78	4	3						
Total Build Traffic	60	16	5	78	15	4						



# EXHIBIT 5 TURNING MOVEMENT VOLUME REPORT

Project: Davenport DG - CD Working PM 2024										1:Intersection-1 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave			110th Ave			US 61			US 61		
	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
Number of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
Shared?	Yes		Yes	Yes		Yes	No		Yes	No		Yes
% Growth Over 1 Years	1	1	1	1	1	1	1	1	1	1	1	1
Growth Factor	1	1	1	1	1	1	1	1	1	1	1	1
Turning Volumes												
Existing Traffic	22	29	137	16	37	54	80	559	8	17	672	33
Background Traffic	22	29	138	16	37	55	81	565	8	17	679	33
Site Generated Trips	0	3	0	11	3	12	0	0	11	12	0	0
Pass-by Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-primary Trips	0	0	0	0	0	0	0	0	0	0	0	0
Build Conditions												
Redistributed Background Traffic	22	29	138	16	37	55	81	565	8	17	679	33
Total Build Traffic	22	32	138	27	40	67	81	565	19	29	679	33

Project: Davenport DG - CD Working PM 2024										2:Intersection-2 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave		110th Ave		Entrance							
	SBT	SBR	NBL	NBT	EBL	EBR						
Number of Lanes	1	1	1	1	1	1						
Shared?		Yes	Yes		No							
% Growth Over 1 Years	1	1	0	1	1	1						
Growth Factor	1	1	1	1	1	1						
Turning Volumes												
Existing Traffic	54	0	0	107	0	0						
Background Traffic	55	0	0	108	0	0						
Site Generated Trips	0	26	2	0	26	2						
Pass-by Trips (Non-Primary)	-5	5	10	-10	10	5						
Diverted Trips (Non-Primary)	0	0	0	0	0	0						
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0						
Total Non-primary Trips	-5	5	10	-10	10	5						
Build Conditions												
Redistributed Background Traffic	50	5	10	98	10	5						
Total Build Traffic	50	31	12	98	36	7						

# EXHIBIT 5 TURNING MOVEMENT VOLUME REPORT

Project: Davenport DG - CD Working AM 2044										1:Intersection-1 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave			110th Ave			US 61			US 61		
	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
Number of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
Shared?	Yes		Yes	Yes		Yes	No		Yes	No		Yes
% Growth Over 21 Years	1	1	1	1	1	1	1	1	1	1	1	1
Growth Factor	1	1	1	1	1	1	1	1	1	1	1	1
Turning Volumes												
Existing Traffic	24	21	80	14	26	41	84	662	12	29	470	29
Background Traffic	30	26	99	17	32	51	104	816	15	36	579	36
Site Generated Trips	0	1	0	6	1	4	0	0	7	5	0	0
Pass-by Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-primary Trips	0	0	0	0	0	0	0	0	0	0	0	0
Build Conditions												
Redistributed Background Traffic	30	26	99	17	32	51	104	816	15	36	579	36
Total Build Traffic	30	27	99	23	33	55	104	816	22	41	579	36

Project: Davenport DG - CD Working AM 2044										2:Intersection-2 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave		110th Ave		Entrance							
	SBT	SBR	NBL	NBT	EBL	EBR						
Number of Lanes	1	1	1	1	1	1						
Shared?	Yes		Yes		No							
% Growth Over 21 Years	1	1	0	1	1	1						
Growth Factor	1	1	1	1	1	1						
Turning Volumes												
Existing Traffic	62	0	0	81	0	0						
Background Traffic	76	0	0	100	0	0						
Site Generated Trips	0	13	1	0	11	1						
Pass-by Trips (Non-Primary)	-3	3	4	-4	4	3						
Diverted Trips (Non-Primary)	0	0	0	0	0	0						
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0						
Total Non-primary Trips	-3	3	4	-4	4	3						
Build Conditions												
Redistributed Background Traffic	73	3	4	96	4	3						
Total Build Traffic	73	16	5	96	15	4						

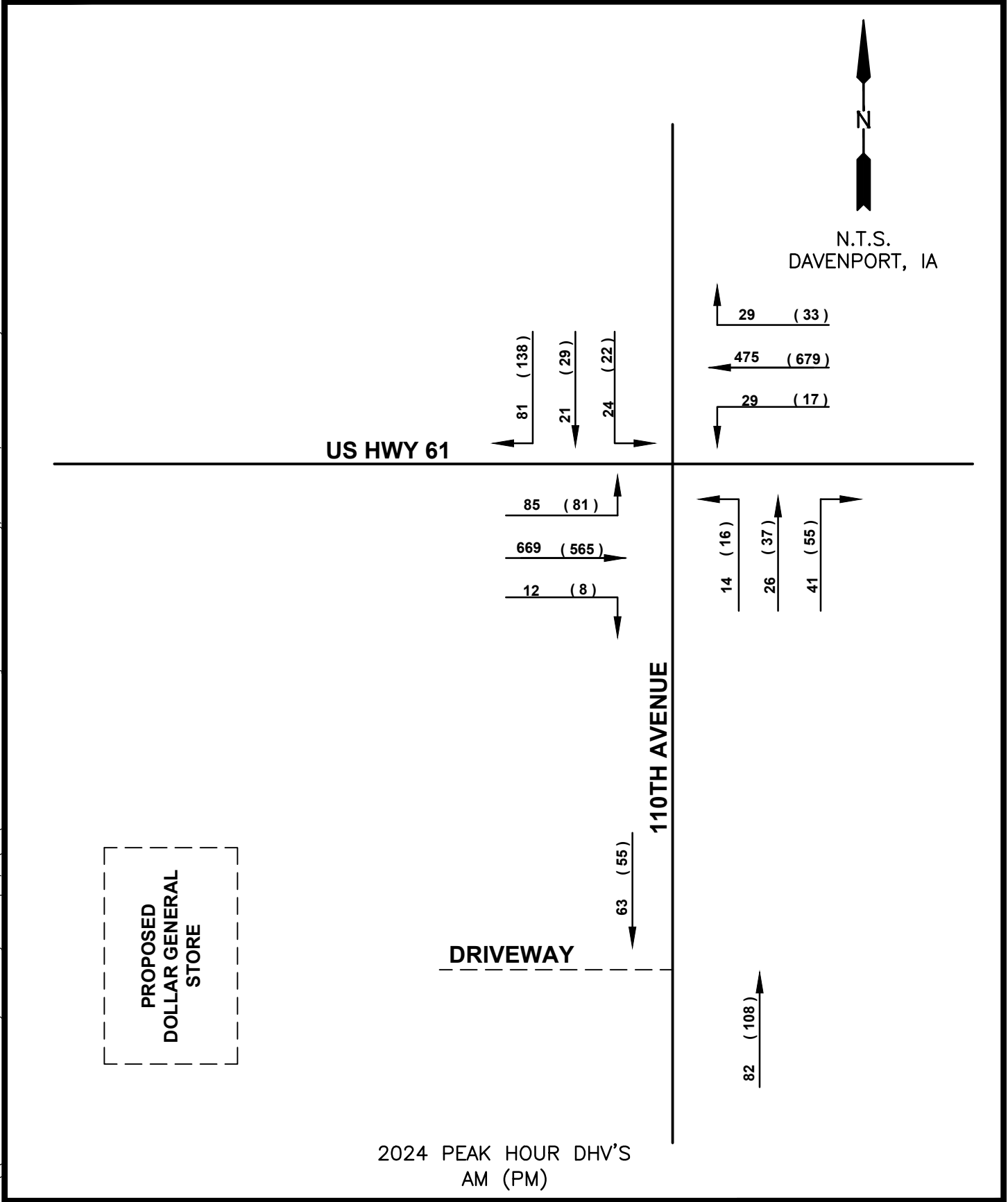
# EXHIBIT 5 TURNING MOVEMENT VOLUME REPORT

Project: Davenport DG - CD Working PM 2044										1:Intersection-1 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave			110th Ave			US 61			US 61		
	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR
Number of Lanes	1	1	1	1	1	1	1	2	1	1	1	1
Shared?	Yes		Yes	Yes		Yes	No		Yes	No		Yes
% Growth Over 21 Years	1	1	1	1	1	1	1	1	1	1	1	1
Growth Factor	1	1	1	1	1	1	1	1	1	1	1	1
Turning Volumes												
Existing Traffic	22	29	137	16	37	54	80	559	8	17	672	33
Background Traffic	27	36	169	20	46	67	99	689	10	21	828	41
Site Generated Trips	0	3	0	11	3	12	0	0	11	12	0	0
Pass-by Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0	0	0	0	0	0	0
Total Non-primary Trips	0	0	0	0	0	0	0	0	0	0	0	0
Build Conditions												
Redistributed Background Traffic	27	36	169	20	46	67	99	689	10	21	828	41
Total Build Traffic	27	39	169	31	49	79	99	689	21	33	828	41

Project: Davenport DG - CD Working PM 2044										2:Intersection-2 Report Generated by OTISS Pro		
Lane Group Configuration	110th Ave		110th Ave		Beacon Hill							
	SBT	SBR	NBL	NBT	EBL	EBR						
Number of Lanes	1	1	1	1	1	1						
Shared?	Yes		Yes		No							
% Growth Over 21 Years	1	1	0	1	1	1						
Growth Factor	1	1	1	1	1	1						
Turning Volumes												
Existing Traffic	54	0	0	107	0	0						
Background Traffic	67	0	0	132	0	0						
Site Generated Trips	0	26	2	0	26	2						
Pass-by Trips (Non-Primary)	-5	5	10	-10	10	5						
Diverted Trips (Non-Primary)	0	0	0	0	0	0						
Extra Reduced Trips (Non-Primary)	0	0	0	0	0	0						
Total Non-primary Trips	-5	5	10	-10	10	5						
Build Conditions												
Redistributed Background Traffic	62	5	10	122	10	5						
Total Build Traffic	62	31	12	122	36	7						

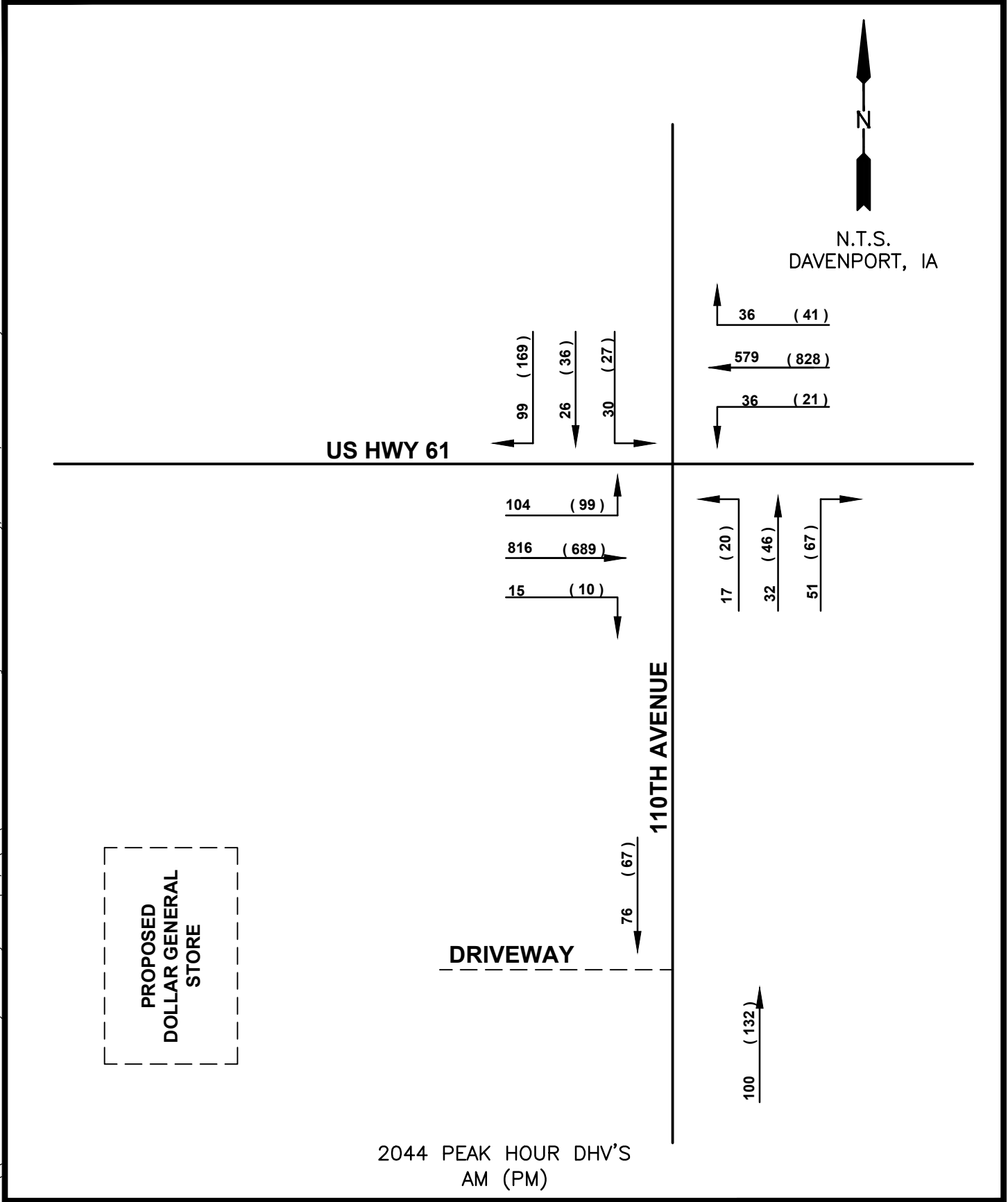
CHAMLIN & ASSOCIATES, INC. © 2022  
 Drawing Name: R:\USERS\B\P8021.03 - DG Scott County Traffic Study - Davenport, IA\CAD\TS-EXHIBITS-DAVENPORT-IA.dwg  
 Last Modified: Wednesday, December 13, 2023 8:56:43 AM by Code Durko



DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 6A  
2024 NO-BUILD TRAFFIC  
VOLUMES  
PROJECT NO.: P8021.03

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DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 6B  
2044 NO-BUILD TRAFFIC  
VOLUMES  
PROJECT NO.: P8021.03

# IOWA CRASH ANALYSIS TOOL QUICK REPORT



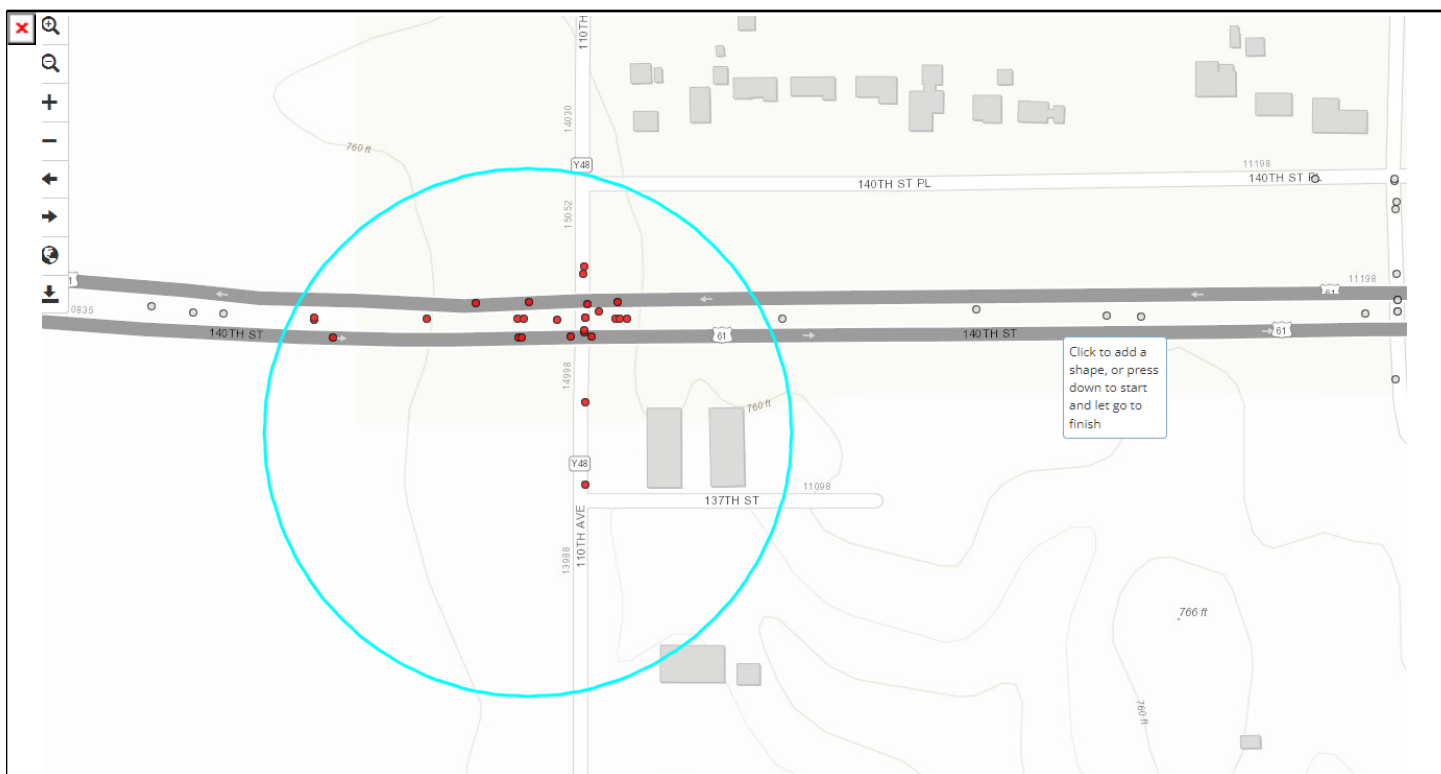
Iowa Crash Analysis Tool  
Quick Report  
2013-2023

Crash Severity	61
Fatal Crash	0
Suspected Serious Injury Crash	3
Suspected Minor Injury Crash	11
Possible/Unknown Injury Crash	11
Property Damage Only	36

Injury Status Summary	52
Fatalities	0
Suspected serious/incapacitating	5
Suspected minor/non-incapacitating	21
Possible (complaint of pain/injury)	24
Uninjured	0
Unknown	0
Not Reported	2

Property/Vehicles/Occupants	
Property Damage Total (dollars):	523,868.00
Average (per crash dollars):	8,588.00
Total Vehicles:	126.00
Average (per crash):	2.07
Total Occupants:	196.00
Average (per crash):	3.21

Average Severity	
Fatalities/Fatal Crash:	0.00
Fatalities/Crash:	0.00
Injuries/Crash:	0.82
Major Injuries/Crash:	0.08
Minor Injuries/Crash:	0.34
Possible/Unknown Injuries/Crash:	0.39



## IOWA CRASH ANALYSIS TOOL QUICK REPORT


 Iowa Crash Analysis Tool  
 Quick Report  
 2013-2023

Major Cause			60
Animal	3	Ran traffic signal	5
Ran stop sign	0	Failed to yield to emergency vehicle	0
FTYROW: At uncontrolled intersection	0	FTYROW: Making right turn on red signal	1
FTYROW: From stop sign	0	FTYROW: From yield sign	0
FTYROW: Making left turn	13	FTYROW: From driveway	0
FTYROW: From parked position	0	FTYROW: To pedestrian	0
FTYROW: Other	0	Drove around RR grade crossing gates	0
Disregarded RR Signal	0	Crossed centerline (undivided)	0
Crossed median (divided)	0	Traveling wrong way or on wrong side of road	0
Aggressive driving/road rage	0	Driving too fast for conditions	1
Exceeded authorized speed	0	Improper or erratic lane changing	0
Operating vehicle in an reckless, erratic, ca...	3	Followed too close	14
Passing: On wrong side	0	Passing: Where prohibited by signs/markings	0
Passing: With insufficient distance/inadequa...	0	Passing: Through/around barrier	0
Passing: Other passing	0	Made improper turn	1
Driver Distraction: Manual operation of an e...	0	Driver Distraction: Talking on a hand-held d...	0
Driver Distraction: Talking on a hands free ...	0	Driver Distraction: Adjusting devices (radio...	0
Driver Distraction: Other electronic device ...	0	Driver Distraction: Passenger	0
Driver Distraction: Unrestrained animal	0	Driver Distraction: Reaching for object(s)/f...	0
Driver Distraction: Inattentive/lost in thou...	3	Driver Distraction: Other interior distracti...	2
Driver Distraction: Exterior distraction	1	Ran off road - right	0
Ran off road - straight	0	Ran off road - left	1
Lost control	4	Swerving/Evasive Action	2
Over correcting/over steering	0	Failed to keep in proper lane	0
Failure to signal intentions	0	Traveling on prohibited traffic way	0
Vehicle stopped on railroad tracks	0	Other: Vision obstructed	1
Other: Improper operation	0	Other: Disregarded warning sign	0
Other: Disregarded signs/road markings	0	Other: Illegal off-road driving	0
Downhill runaway	0	Separation of units	0
Towing improperly	0	Cargo/equipment loss or shift	0
Equipment failure	0	Oversized load/vehicle	0
Other: Getting off/out of vehicle	0	Failure to dim lights/have lights on	1
Improper backing	0	Improper starting	0
Illegally parked/unattended	0	Driving less than the posted speed limit	0
Operator inexperience	1	Other	2
Unknown	1	Not reported	0
Other: No improper action	0		

IOWA CRASH ANALYSIS TOOL QUICK REPORT



Iowa Crash Analysis Tool  
Quick Report  
2013-2023

Time of Day/Day of Week														
Day of Week	12 AM to 2 AM	2 AM to 4 AM	4 AM to 6 AM	6 AM to 8 AM	8 AM to 10 AM	10 AM to Noon	Noon to 2 PM	2 PM to 4 PM	4 PM to 6 PM	6 PM to 8 PM	8 PM to 10 PM	10 PM to 12 AM	Not reported	Total
Sunday	1	0	0	0	1	0	0	0	1	0	0	1	0	4
Monday	0	0	1	1	1	1	2	1	5	1	0	0	0	13
Tuesday	0	0	0	2	0	1	1	1	0	0	1	0	0	6
Wednesday	0	0	0	1	0	1	0	0	1	1	0	0	0	4
Thursday	1	1	0	1	3	3	1	1	1	0	1	0	0	13
Friday	0	0	1	2	1	2	1	2	1	2	0	0	0	12
Saturday	0	0	0	0	0	1	1	1	2	1	2	1	0	9
<b>Total</b>	<b>2</b>	<b>1</b>	<b>2</b>	<b>7</b>	<b>6</b>	<b>9</b>	<b>6</b>	<b>6</b>	<b>11</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>61</b>

Manner of Crash Collision	61
Non-collision (single vehicle)	3
Head-on (front to front)	0
Rear-end (front to rear)	29
Angle, oncoming left turn	10
Broadside (front to side)	10
Sideswipe, same direction	3
Sideswipe, opposite direction	0
Rear to rear	0
Rear to side	0
Not reported	1
Other	5
Unknown	0

Surface Conditions	61
Dry	51
Wet	5
Ice/frost	0
Snow	3
Slush	1
Mud, dirt	0
Water (standing or moving)	0
Sand	0
Oil	0
Gravel	0
Not reported	1
Other	0
Unknown	0

Fixed Object Struck	126
Bridge overhead structure	0
Bridge/bridge rail parapet	0
Ditch	2
Ground	0
Guardrail - face	1
Concrete traffic barrier (median or right sid...)	0
Cable barrier	0
Utility pole/light support	0
Traffic signal support	0
Fire hydrant	0
Tree	0
Snow bank	0
Wall	0
Other fixed object	0
Bridge pier or support	0
Curb/island/raised median	0
Embankment	0
Culvert/pipe opening	0
Guardrail - end	0
Other traffic barrier	0
Impact attenuator/crash cushion	0
Traffic sign support	0
Other post/pole/support	0
Mailbox	0
Landscape/shrubbery	0
Fence	0
Building	0
None (no fixed object struck)	123



IOWA CRASH ANALYSIS TOOL QUICK REPORT



Iowa Crash Analysis Tool  
Quick Report  
2013-2023

Driver Age/Driver Gender					
Driver Age - 5 year Bins	Female	Male	Not reported	Unknown	Total
< 14	0	0	0	0	0
= 14	0	0	0	0	0
= 15	0	0	0	0	0
= 16	2	1	0	0	3
= 17	0	0	0	0	0
= 18	1	2	0	0	3
= 19	0	2	1	0	3
= 20	2	1	0	0	3
>= 21 and <= 24	4	6	0	0	10
>= 25 and <= 29	6	7	0	0	13
>= 30 and <= 34	7	3	1	0	11
>= 35 and <= 39	4	5	1	0	10
>= 40 and <= 44	1	6	0	0	7
>= 45 and <= 49	5	2	1	0	8
>= 50 and <= 54	1	8	0	0	9
>= 55 and <= 59	2	8	0	0	10
>= 60 and <= 64	4	7	0	0	11
>= 65 and <= 69	3	7	0	0	10
>= 70 and <= 74	3	2	0	0	5
>= 75 and <= 79	0	2	0	0	2
>= 80 and <= 84	2	2	0	0	4
>= 85 and <= 89	0	0	0	0	0
>= 90 and <= 94	0	1	0	0	1
>= 95	0	0	0	0	0
Not reported	0	0	0	0	0
Unknown	0	0	3	0	3
<b>Total</b>	<b>47</b>	<b>72</b>	<b>7</b>	<b>0</b>	<b>126</b>

Alcohol Test Given	126
None	119
Blood	0
Urine	0
Breath	3
Vitreous	0
Refused	1
Not reported	3

Drug Test Given	126
None	123
Blood	0
Urine	0
Breath	0
Vitreous	0
Refused	0
Not reported	3

Drug Test Result	104
Negative	0
Cannabis	0
Central Nervous System depressants	0
Central Nervous System stimulants	0
Hallucinogens	0
Inhalants	0
Narcotic Analgesics	0
Dissociative Anesthetic (PCP)	0
Prescription Drug	0
Not reported	104
Other	0

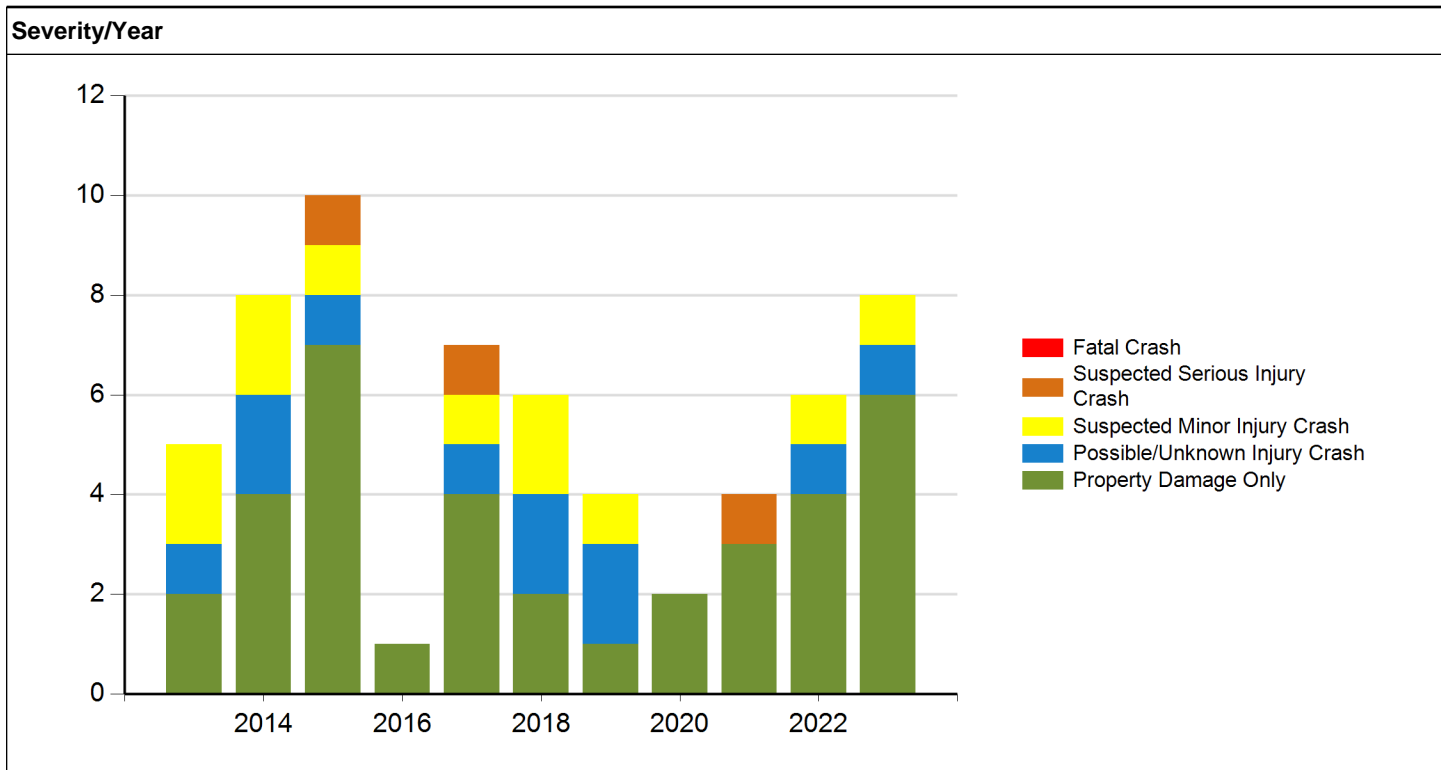
Drug/Alcohol Related	61
Drug	0
Alcohol (< Statutory)	0
Alcohol (Statutory)	2
Drug and Alcohol (< Statutory)	0
Drug and Alcohol (Statutory)	0
Refused	1
Under Influence of Alcohol/Drugs/Medications	0
None Indicated	58

IOWA CRASH ANALYSIS TOOL QUICK REPORT



Iowa Crash Analysis Tool  
Quick Report  
2013-2023

Crash Severity - Annual							
Crash Year	Fatal Crash	Suspected Serious Injury Crash	Suspected Minor Injury Crash	Possible/Unknown Injury Crash	Property Damage Only	Total	
2013	0	0	2	1	2	5	
2014	0	0	2	2	4	8	
2015	0	1	1	1	7	10	
2016	0	0	0	0	1	1	
2017	0	1	1	1	4	7	
2018	0	0	2	2	2	6	
2019	0	0	1	2	1	4	
2020	0	0	0	0	2	2	
2021	0	1	0	0	3	4	
2022	0	0	1	1	4	6	
2023	0	0	1	1	6	8	
<b>Total</b>	0	3	11	11	36	61	

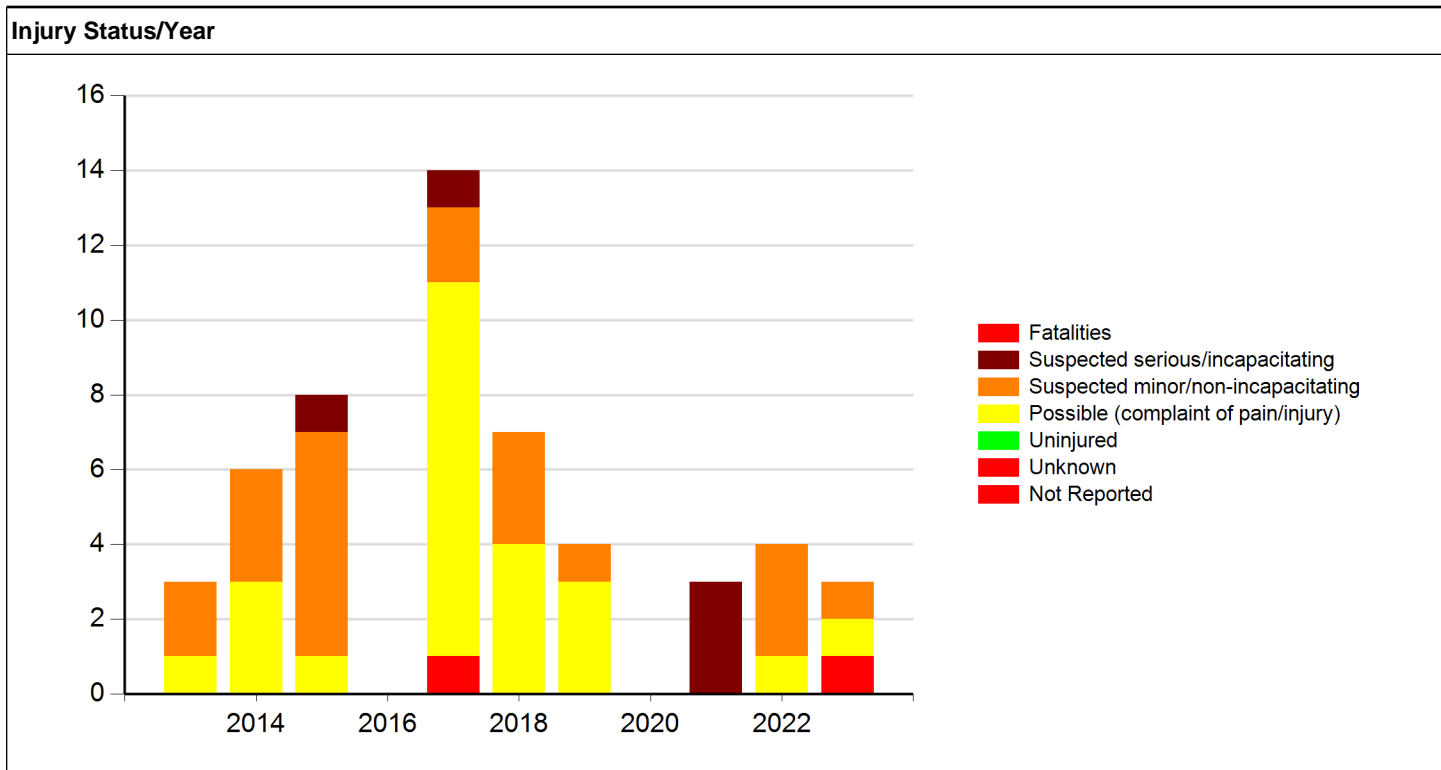


# IOWA CRASH ANALYSIS TOOL QUICK REPORT



Iowa Crash Analysis Tool  
Quick Report  
2013-2023

Injury Status - Annual								
Crash Year	Fatalities	Suspected serious/incapacitating	Suspected minor/non-incapacitating	Possible (complaint of pain/injury)	Uninjured	Unknown	Not Reported	Total
2013	0	0	2	1	0	0	0	3
2014	0	0	3	3	0	0	0	6
2015	0	1	6	1	0	0	0	8
2016	0	0	0	0	0	0	0	0
2017	0	1	2	10	0	0	1	14
2018	0	0	3	4	0	0	0	7
2019	0	0	1	3	0	0	0	4
2020	0	0	0	0	0	0	0	0
2021	0	3	0	0	0	0	0	3
2022	0	0	3	1	0	0	0	4
2023	0	0	1	1	0	0	1	3
<b>Total</b>	0	5	21	24	0	0	2	52



# IOWA CRASH ANALYSIS TOOL QUICK REPORT

Iowa Crash Analysis Tool  
Quick Report  
2013-2023



## Meeting the following criteria

Jurisdiction: Statewide  
Year: 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023  
Map Selection: Yes  
Filter: None

## Analyst Information

## Estimated Trip Generation

**Proposed Development**  
**Davenport, IA**

<b>Site Data</b>				
Code	Description	Independent Variable	Value	Pass-By Trip %
814	Variety Store	1000 Sq. Ft. GFA	12.480	34%

<b>Average Rates and Directional Distributions</b>										
Code	Description	AM			PM			WEEKDAY		
		Rate	Directional Distribution		Rate	Directional Distribution		Rate	Directional Distribution	
			In	Out		In	Out		In	Out
814	Variety Store	3.04	55%	45%	6.70	51%	49%	63.66	50%	50%

<b>Total Generated Trips</b>										
Code	Description	AM			PM			WEEKDAY		
		In	Out	Total	In	Out	Total	In	Out	Total
814	Variety Store	20	18	38	43	41	84	397	397	794
	Total	20	18	38	43	41	84	397	397	794

<b>Pass-By Trips</b>										
Code	Description	AM			PM			WEEKDAY		
		In	Out	Total	In	Out	Total	In	Out	Total
814	Variety Store	7	6	13	15	14	29	135	135	270
	Total	7	6	13	15	14	29	135	135	270

<b>New Trips</b>										
Code	Description	AM			PM			WEEKDAY		
		In	Out	Total	In	Out	Total	In	Out	Total
814	Variety Store	13	12	25	28	27	55	262	262	524
	Total	13	12	25	28	27	55	262	262	524

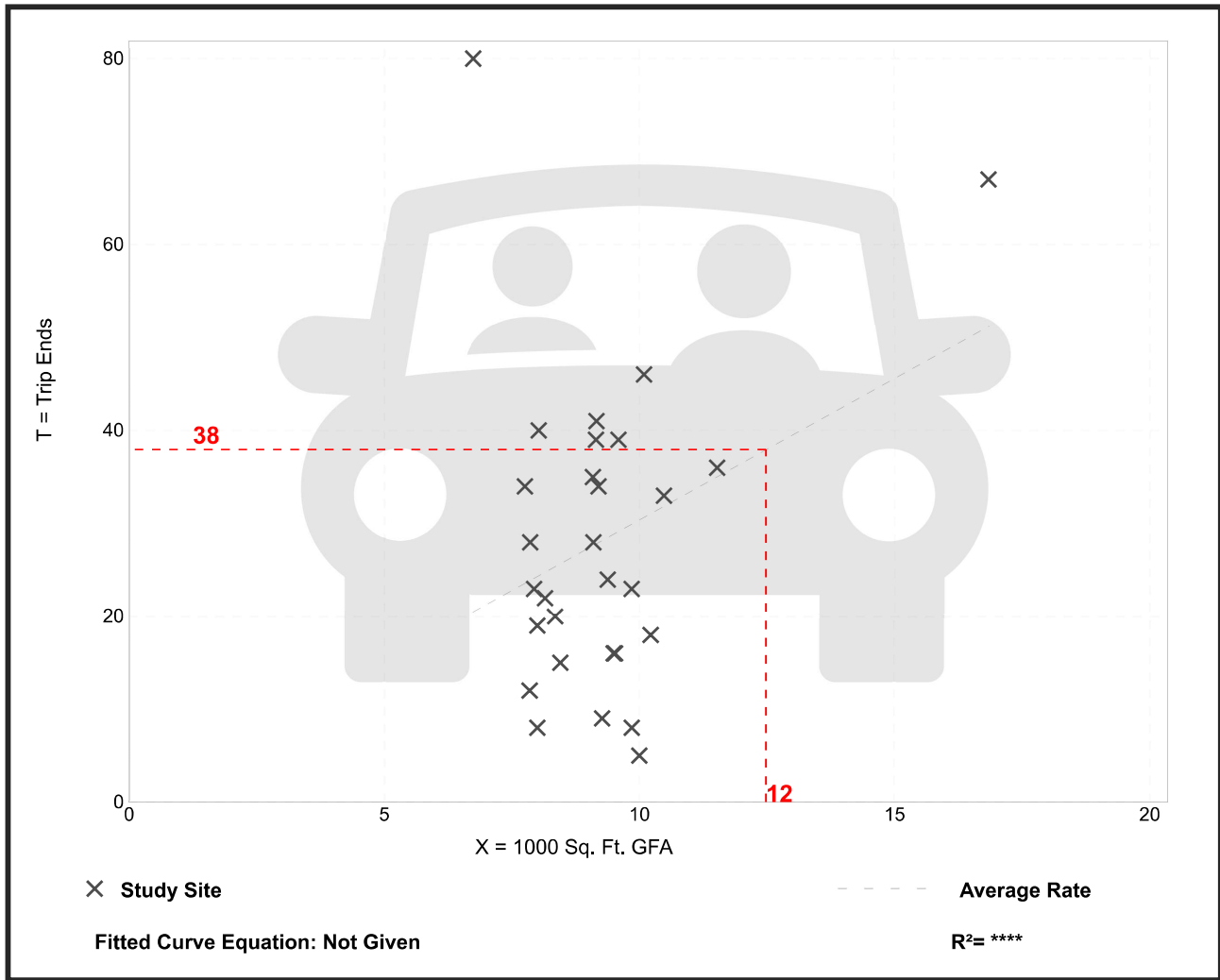
## Variety Store (814)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
 On a: Weekday,  
 Peak Hour of Adjacent Street Traffic,  
 One Hour Between 7 and 9 a.m.  
 Setting/Location: General Urban/Suburban  
 Number of Studies: 29  
 Avg. 1000 Sq. Ft. GFA: 9  
 Directional Distribution: 55% entering, 45% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
3.04	0.50 - 11.87	1.91

### Data Plot and Equation



## Variety Store (814)

**Vehicle Trip Ends vs: 1000 Sq. Ft. GFA**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**

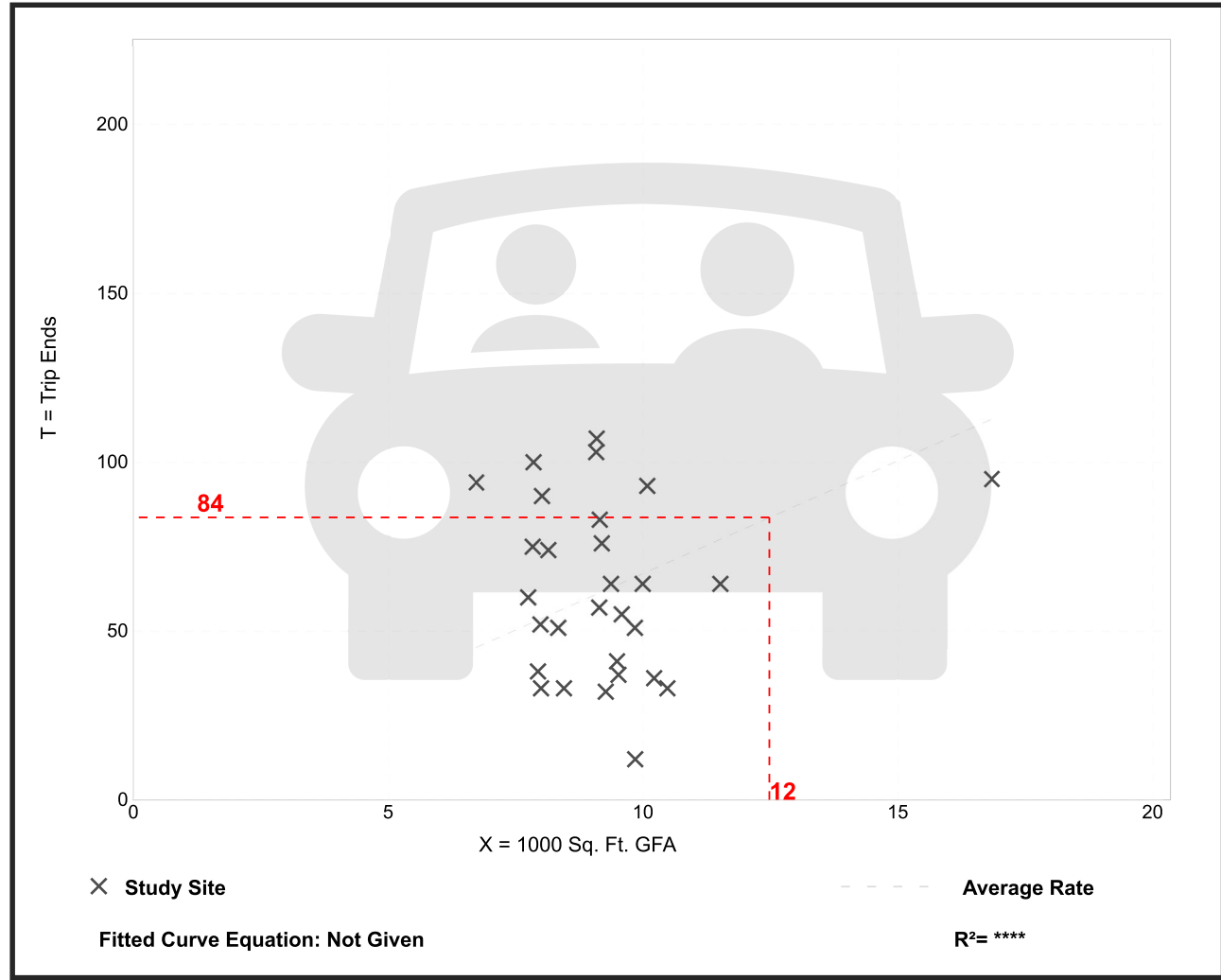
**Setting/Location: General Urban/Suburban**

Number of Studies: 29  
 Avg. 1000 Sq. Ft. GFA: 9  
 Directional Distribution: 51% entering, 49% exiting

### Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.70	1.22 - 13.95	3.08

### Data Plot and Equation



# Variety Store (814)

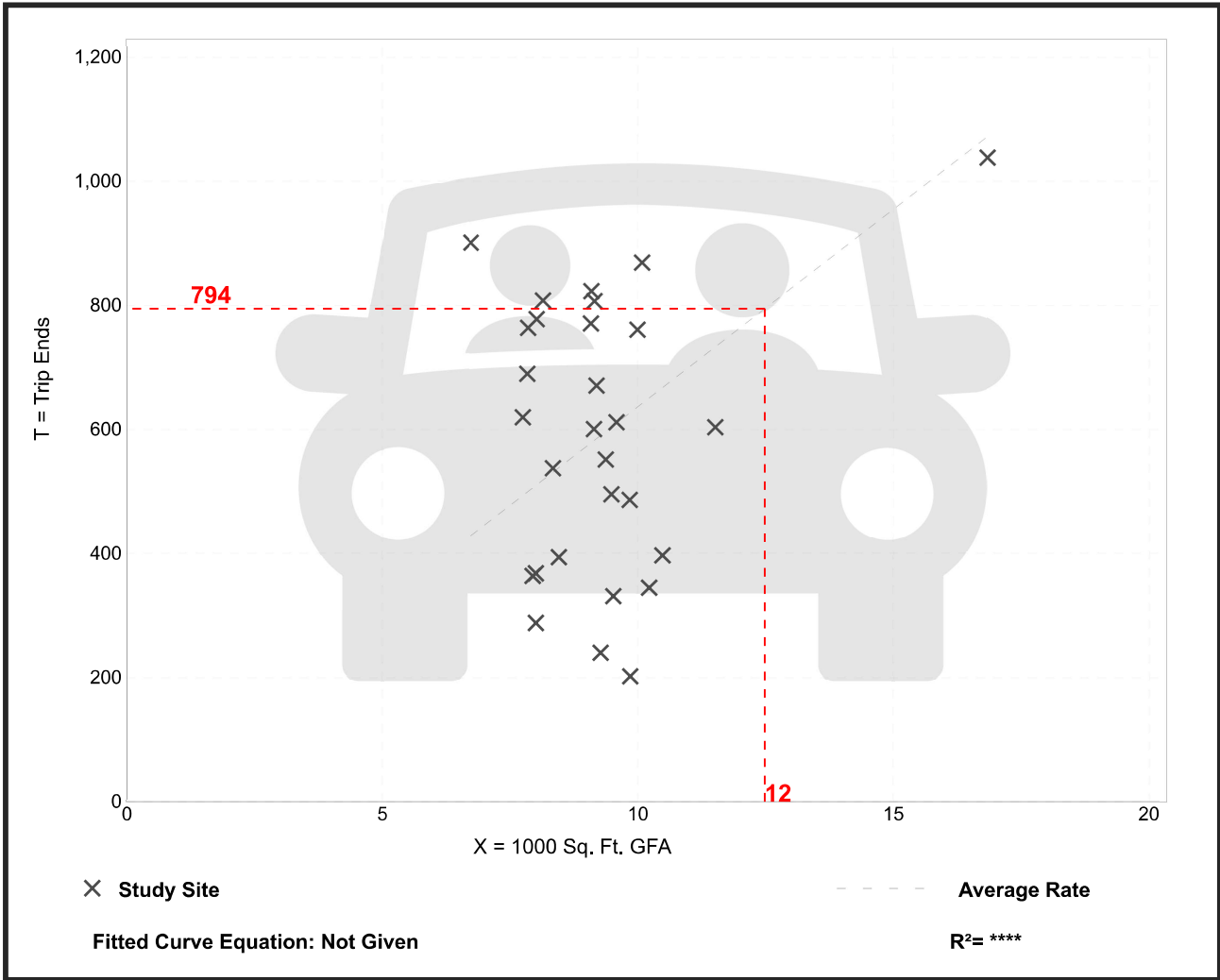
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban  
Number of Studies: 29  
Avg. 1000 Sq. Ft. GFA: 9  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

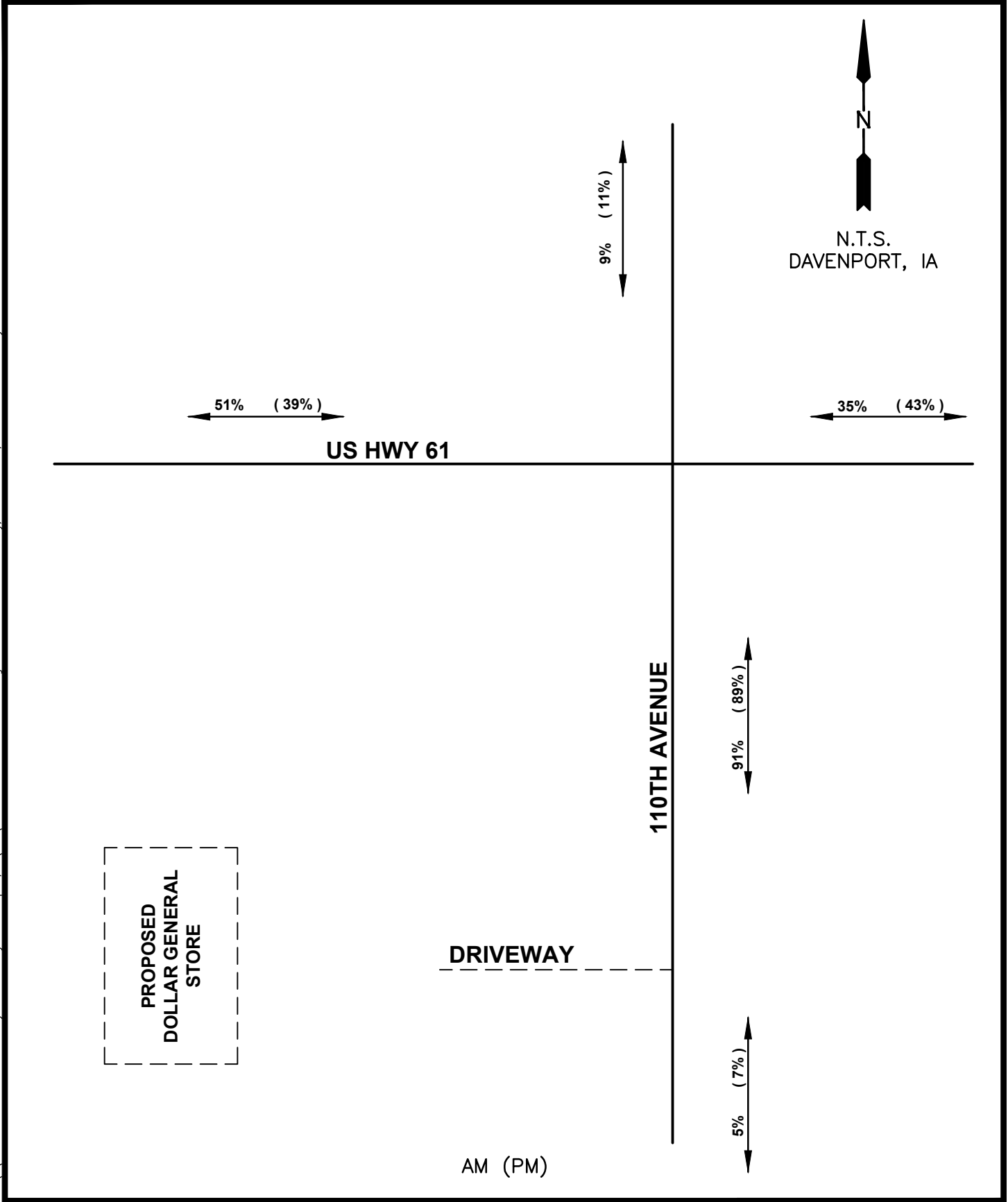
Average Rate	Range of Rates	Standard Deviation
63.66	20.51 - 133.68	25.23

## Data Plot and Equation





**EXHIBIT 10  
NEW TRIP DISTRIBUTION**



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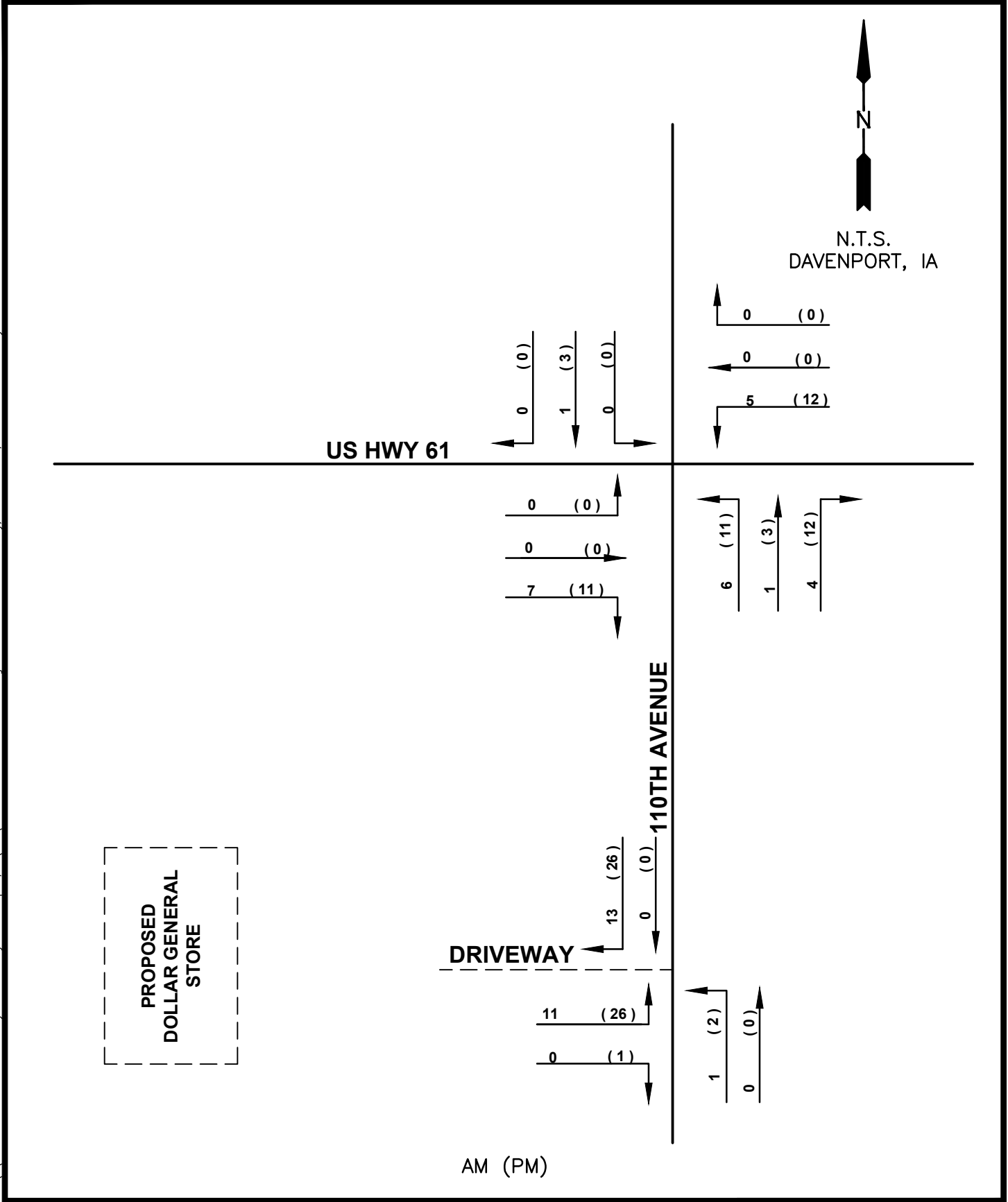


DOLLAR GENERAL  
 DAVENPORT, IOWA

EXHIBIT 10  
 NEW TRIP DISTRIBUTION

PROJECT NO.: P8021.03

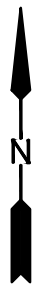
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 Drawing Name: R:\USERS\B\P8021.03 - DG Scott County Traffic Study - Davenport, IA\CAD\TS-EXHIBITS-DAVENPORT-IA.dwg Last Modified: Wednesday, December 13, 2023 8:56:43 AM by Code Dutko



DOLLAR GENERAL  
DAVENPORT, IOWA

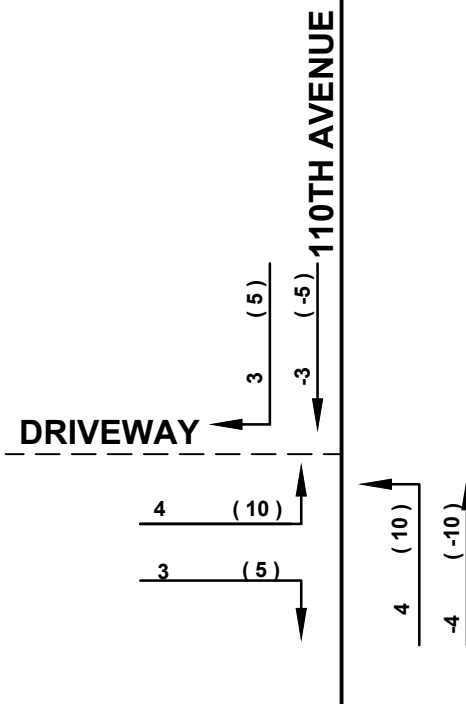
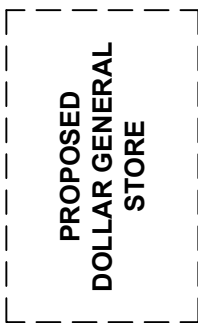
EXHIBIT 11  
NEW TRIP VOLUMES

PROJECT NO.: P8021.03



N.T.S.  
DAVENPORT, IA

US HWY 61



AM (PM)



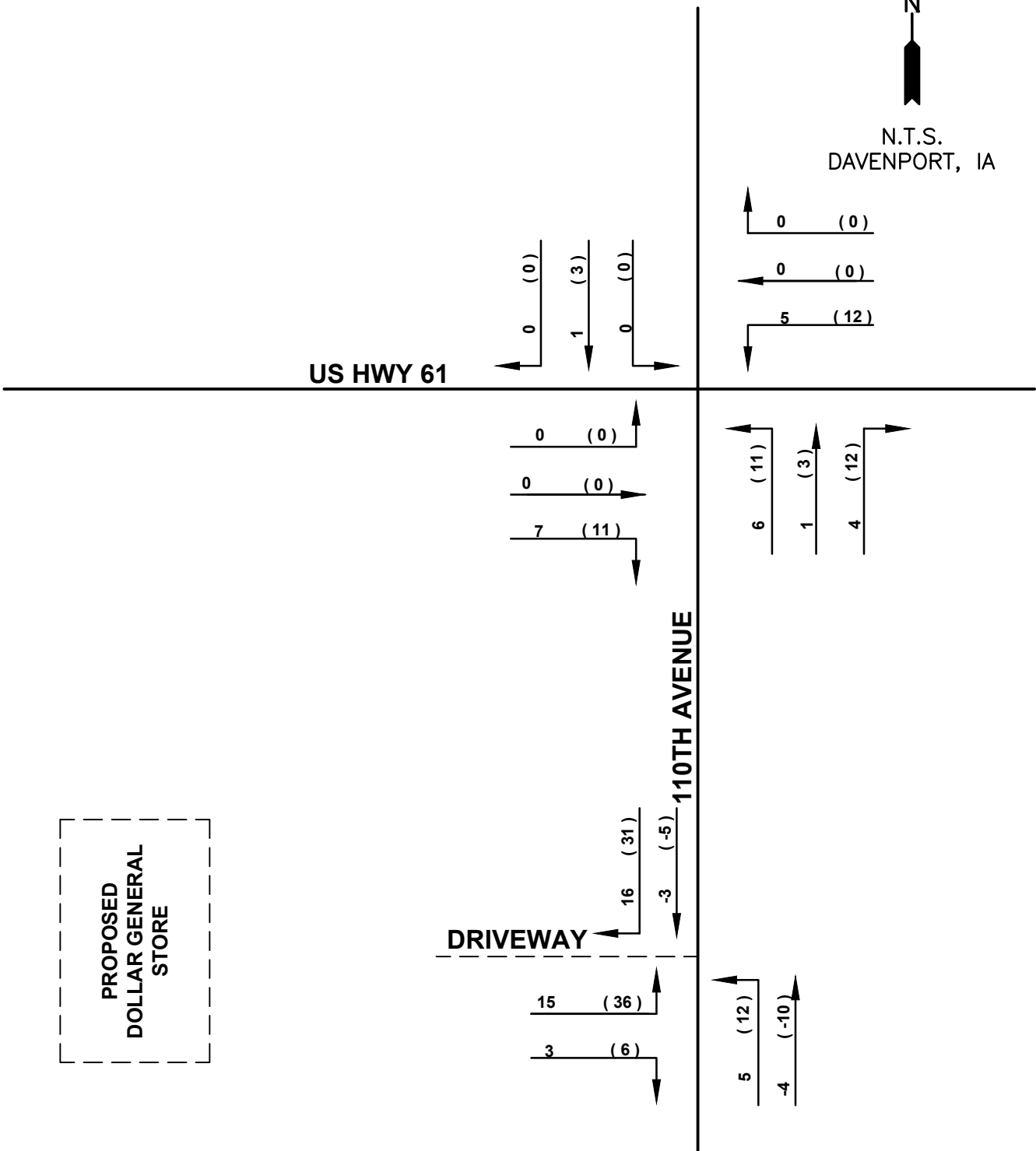
DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 12  
PASS-BY TRIP VOLUMES

EXHIBIT 13  
TOTAL GENERATED VOLUME



N.T.S.  
DAVENPORT, IA



AM (PM)

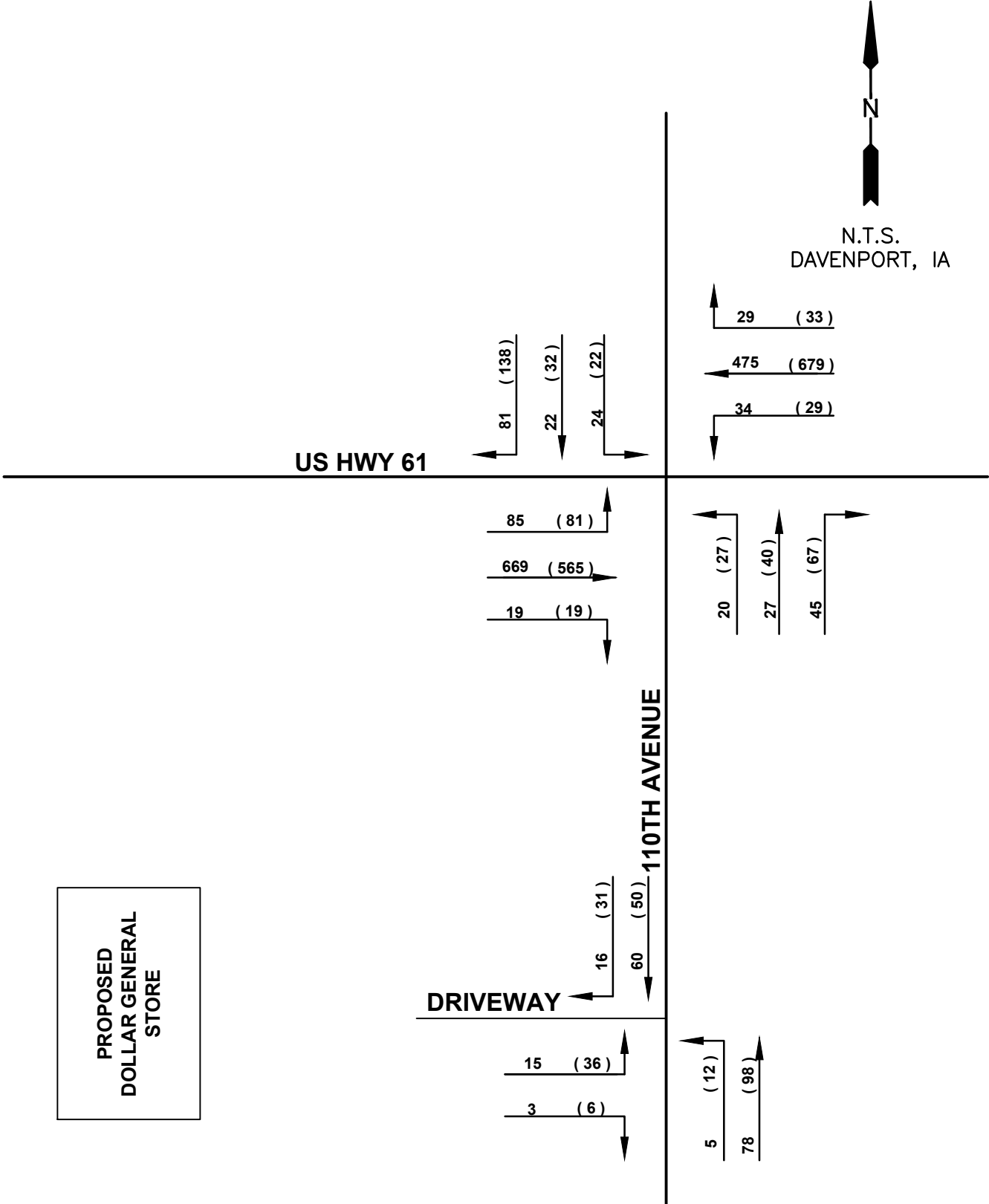


DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 13  
TOTAL GENERATED  
VOLUMES



N.T.S.  
DAVENPORT, IA



2024 PEAK HOUR DHV'S  
AM (PM)

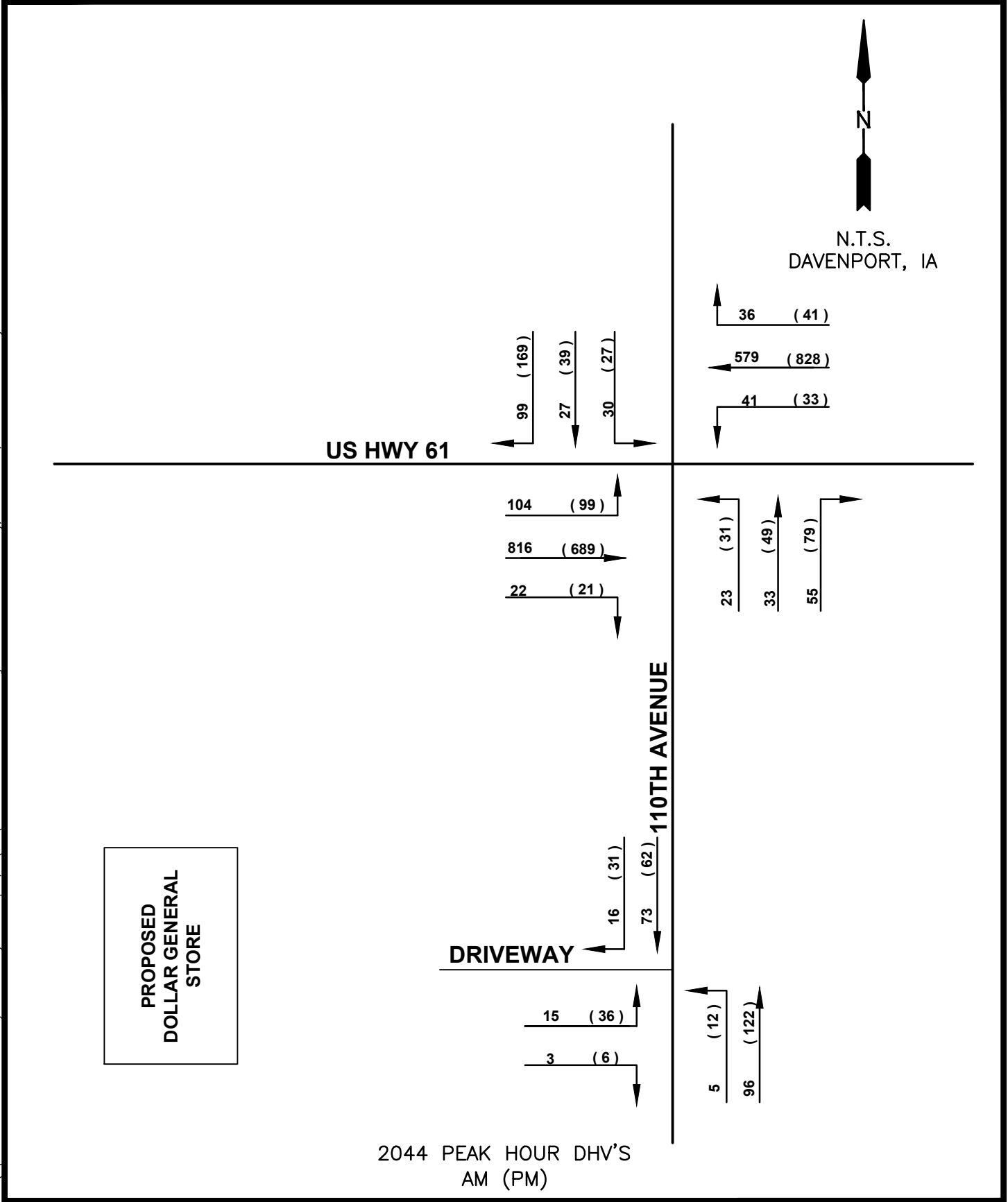
PROPOSED  
DOLLAR GENERAL  
STORE



DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 14A  
2024 BUILD CONDITION  
TRAFFIC

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DOLLAR GENERAL  
DAVENPORT, IOWA

EXHIBIT 14B  
2044 BUILD CONDITION  
TRAFFIC  
PROJECT NO.: P8021.03

**WARRANTS FOR LEFT TURN LANE**

110th AVENUE & DOLLAR GENERAL ENTRANCE INTERSECTION NB LEFT TURN LANE

POSTED SPEED LIMIT: 55 MPH  
OPERATING SPEED: 60MPH

**2024 AM PEAK HOUR**

$V_O = 76$  veh  
 $V_A = 83$  veh  
LT % = 6.0%

**2024 PM PEAK HOUR**

$V_O = 81$  veh  
 $V_A = 110$  veh  
LT % = 10.9%

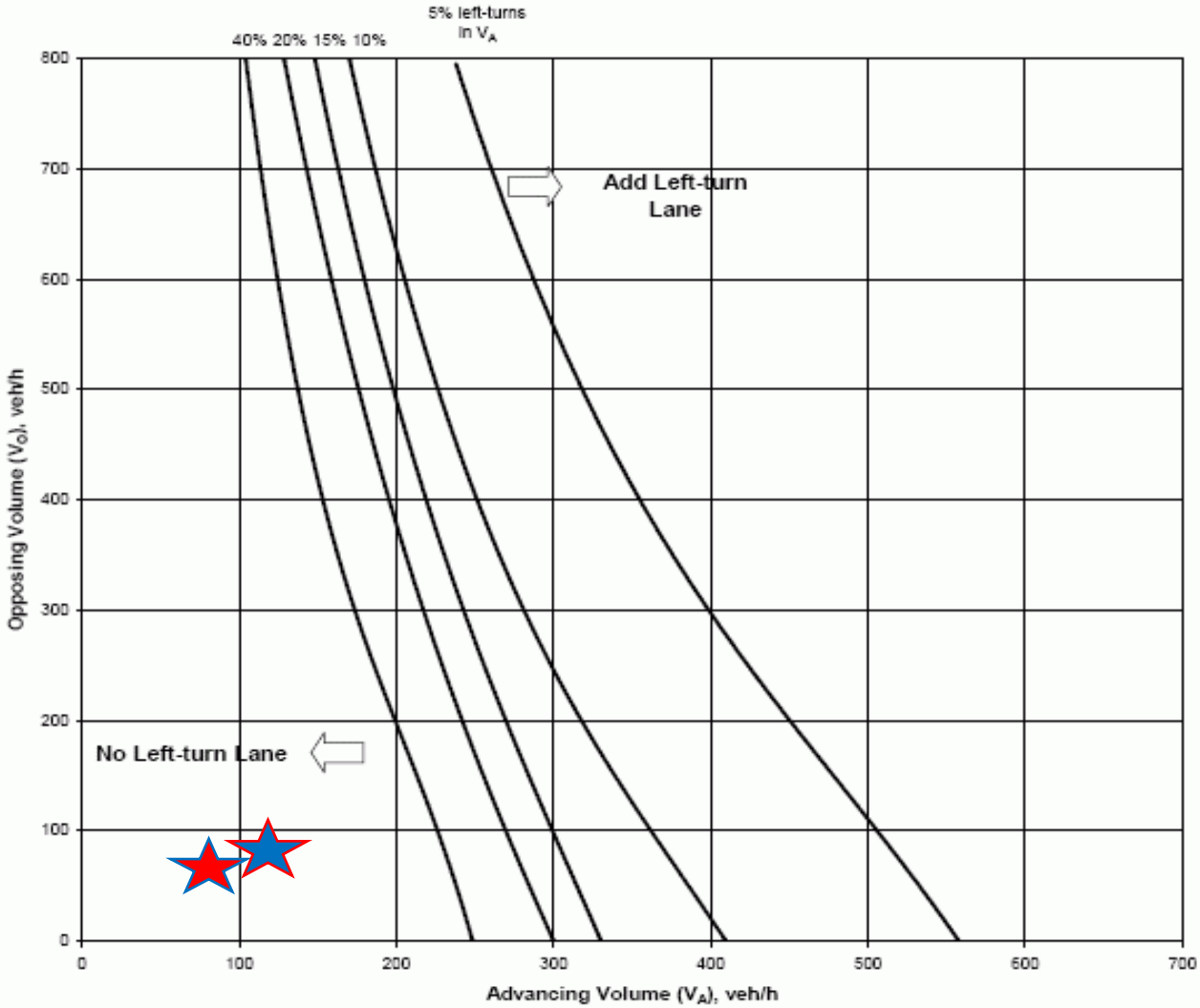


Figure 2.5 from NCHRP 457  
AM PEAK: LEFT TURN LANE NOT WARRANTED  
PM PEAK: LEFT TURN LANE NOT WARRANTED

**WARRANTS FOR LEFT TURN LANE**

110th AVENUE & DOLLAR GENERAL ENTRANCE INTERSECTION SB LEFT TURN LANE

POSTED SPEED LIMIT: 55 MPH  
OPERATING SPEED: 60MPH

**2044 AM PEAK HOUR**

$V_O = 89$  veh  
 $V_A = 101$  veh  
LT % = 5.0%

**2044 PM PEAK HOUR**

$V_O = 93$  veh  
 $V_A = 134$  veh  
LT % = 9.0%

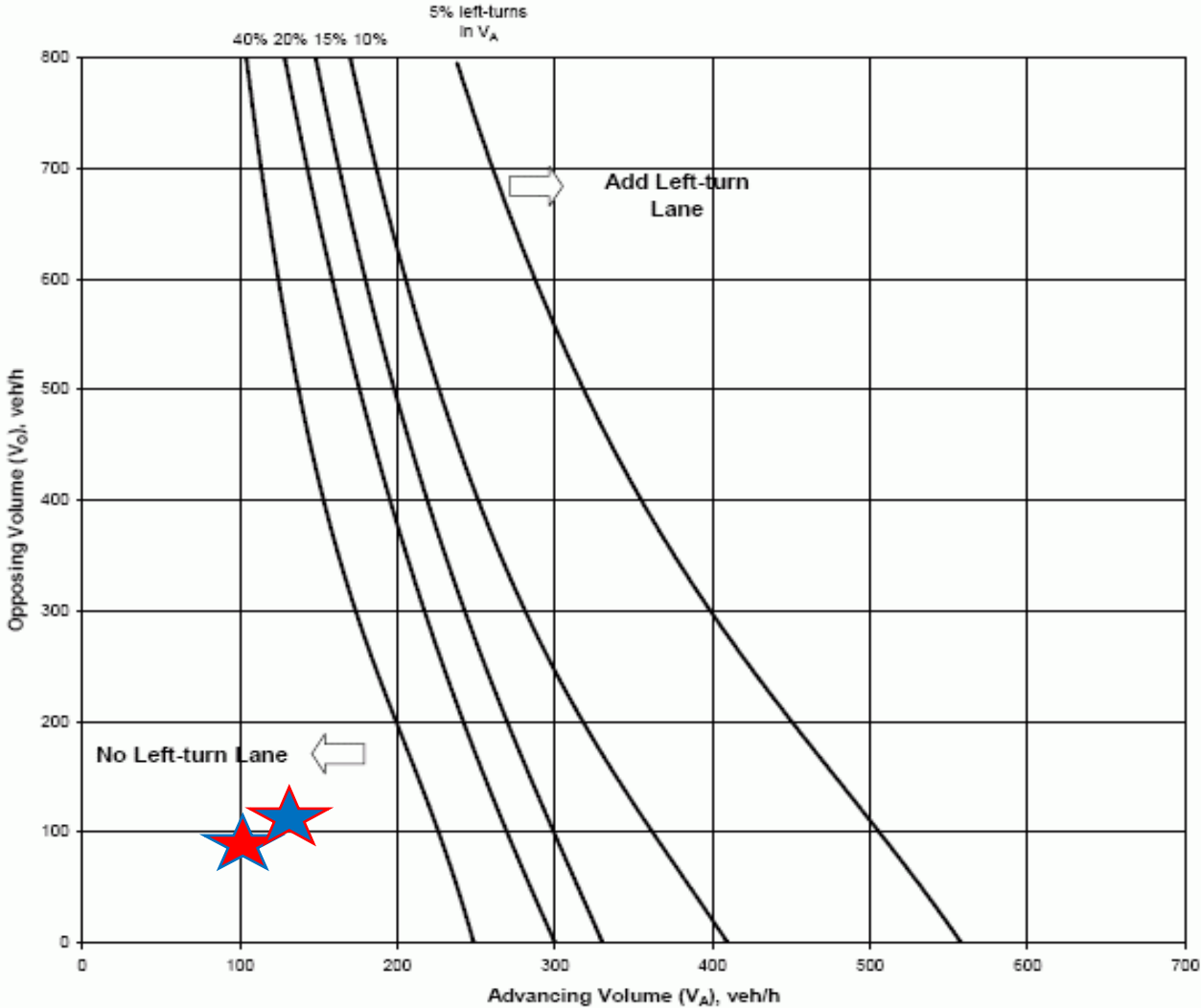


Figure 2.5 from NCHRP 457

AM PEAK: LEFT TURN LANE NOT WARRANTED  
PM PEAK: LEFT TURN LANE NOT WARRANTED



## WARRANTS FOR RIGHT TURN LANE

110th Avenue & DOLLAR GENERAL ENTRANCE INTERSECTION SB RIGHT TURN LANE

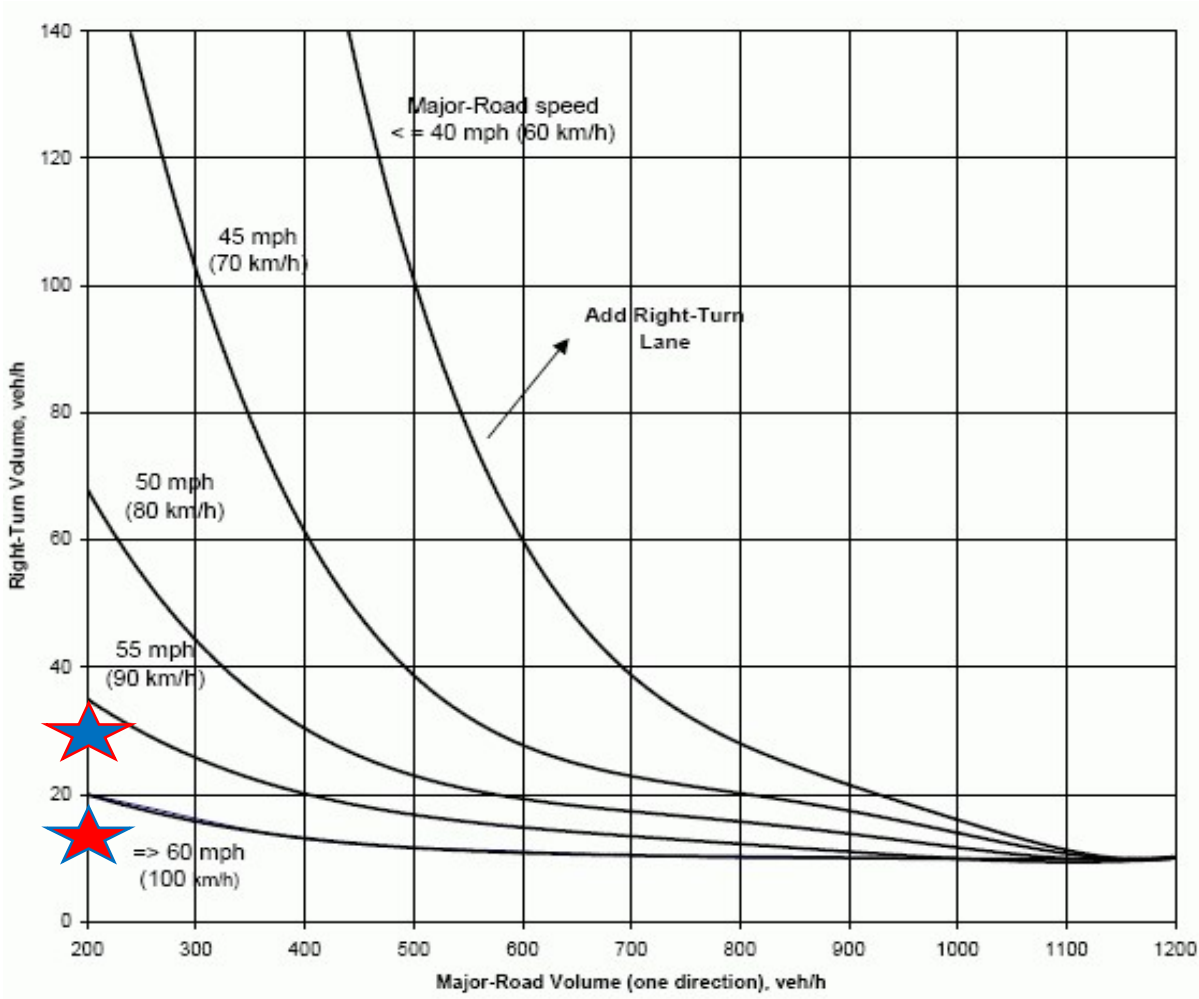
POSTED SPEED LIMIT: 55 MPH  
OPERATING SPEED: 60 MPH

**2024 AM PEAK HOUR**

Major Road Vol. = 76 veh  
Right-Turn Vol. = 16 veh

**2024 PM PEAK HOUR**

Major Road Vol. = 81 veh  
Right-Turn Vol. = 31 veh



*Figure 2.6 from NCHRP 457*

**AM PEAK: RIGHT TURN LANE NOT WARRANTED**

**PM PEAK: RIGHT TURN LANE WARRANTED**

**WARRANTS FOR RIGHT TURN LANE**

110th Avenue & DOLLAR GENERAL ENTRANCE INTERSECTION SB RIGHT TURN LANE

POSTED SPEED LIMIT: 55 MPH  
OPERATING SPEED: 60 MPH

**2044 AM PEAK HOUR**

Major Road Vol. = 89 veh  
Right-Turn Vol. = 16 veh

**2044 PM PEAK HOUR**

Major Road Vol. = 93 veh  
Right-Turn Vol. = 31 veh

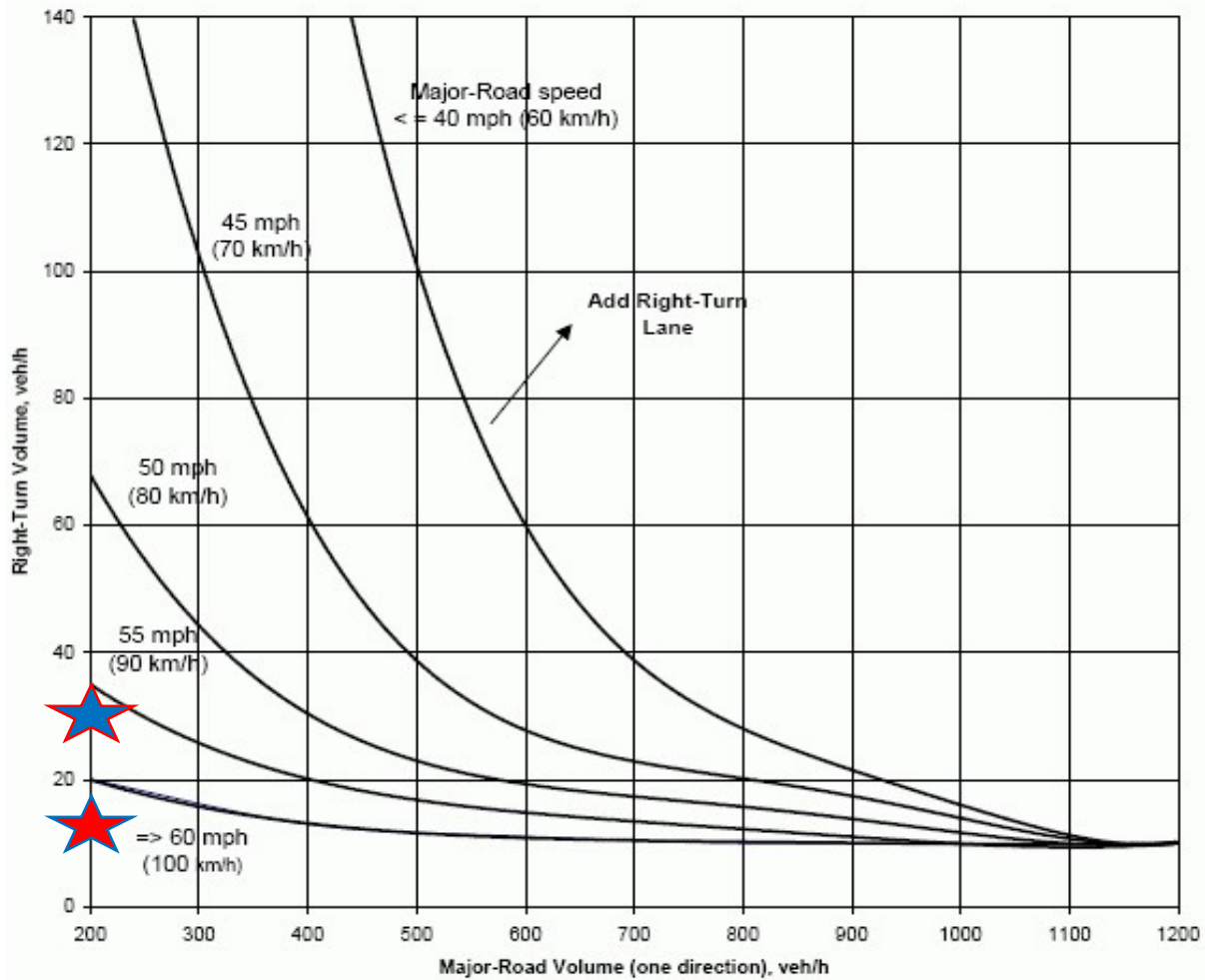


Figure 2.6 from NCHRP 457

AM PEAK: RIGHT TURN LANE NOT WARRANTED

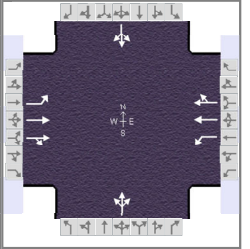
PM PEAK: RIGHT TURN LANE WARRANTED

# HCS Signalized Intersection Results Summary

EXHIBIT 16

HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	1A - 2024 No-Build - AM.xus		
Project Description	2024 No-Build-AM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	85	669	12	29	475	29	14	26	41	24	21	81

Signal Information				Signal Phases																			
Cycle, s	28.9	Reference Phase	2	[Signal Diagrams]																			
Offset, s	0	Reference Point	End	Green	1.4	1.9	8.5	5.1	0.0	0.0	Yellow	4.0	0.0	4.0	4.0	0.0	0.0	Red	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On																				
Force Mode	Fixed	Simult. Gap N/S	On																				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.3	14.4	5.4	12.5		9.1		9.1
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.1		3.1
Queue Clearance Time ( g <sub>s</sub> ), s	3.0	7.4	2.4	6.3		3.5		5.1
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.2	0.0	2.2		0.4		0.4
Phase Call Probability	0.54	1.00	0.24	1.00		0.85		0.85
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	98	393	390	33	293	287		93			145	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1804	1746	1735	1663	1701	1660		1511			1239	
Queue Service Time ( g <sub>s</sub> ), s	1.0	5.4	5.4	0.4	4.2	4.3		0.0			1.4	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	1.0	5.4	5.4	0.4	4.2	4.3		1.5			3.1	
Green Ratio ( g/C )	0.41	0.36	0.36	0.34	0.29	0.29		0.18			0.18	
Capacity ( c ), veh/h	580	627	623	399	501	489		414			368	
Volume-to-Capacity Ratio ( X )	0.169	0.626	0.626	0.084	0.584	0.586		0.225			0.394	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	2	17.4	16	1.2	17.7	15.7		7.8			16.1	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.1	0.6	0.6	0.0	0.6	0.6		0.3			0.5	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.01	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	5.7	7.7	7.7	6.9	8.7	8.7		10.4			11.1	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.4	0.4	0.0	0.4	0.4		0.1			0.3	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	5.8	8.1	8.1	6.9	9.1	9.1		10.5			11.3	
Level of Service ( LOS )	A	A	A	A	A	A		B			B	
Approach Delay, s/veh / LOS	7.8		A	9.0		A	10.5		B	11.3		B
Intersection Delay, s/veh / LOS	8.7						A					

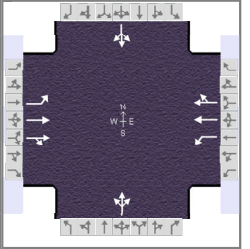
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.21	A	0.99	A	0.64	A	0.73	A

# HCS Signalized Intersection Input Data

EXHIBIT 16

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	1A - 2024 No-Build - AM.xus		
Project Description	2024 No-Build-AM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	85	669	12	29	475	29	14	26	41	24	21	81

Signal Information				Signal Phases											
Cycle, s	28.9	Reference Phase	2												
Offset, s	0	Reference Point	End	Green	1.4	1.9	8.5	5.1	0.0	0.0					
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0					
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0					

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	85	669	12	29	475	29	14	26	41	24	21	81
Initial Queue (Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N <sub>m</sub> ), man/h	None			None			None			None		
Heavy Vehicles (P <sub>HV</sub> ), %	0	10		10	13			19			29	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	1	0	0	1	0	0	1
Arrival Type (AT)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (W), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade (P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval (Y), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green (G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time (lt), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (e), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (PT), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

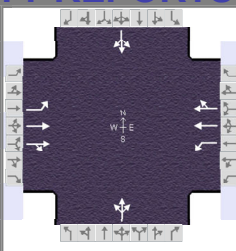
Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

# HCS Signalized Intersection Results Summary

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	1B - 2024 No-Build - PM.xus		
Project Description	2024 No-Build-PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	81	565	8	17	679	33	16	37	55	22	29	138

Signal Information														
Cycle, s	30.1	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On											
Force Mode	Fixed	Simult. Gap N/S	On											
				Green	0.8	2.2	9.5	5.6	0.0	0.0				
				Yellow	4.0	0.0	4.0	4.0	0.0	0.0				
				Red	0.0	0.0	0.0	0.0	0.0	0.0				

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.0	15.7	4.8	13.5		9.6		9.6
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.2		3.2
Queue Clearance Time ( g <sub>s</sub> ), s	2.8	5.8	2.2	7.3		3.7		5.5
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.1	0.0	2.1		0.6		0.6
Phase Call Probability	0.50	1.00	0.14	1.00		0.92		0.92
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	83	293	292	17	366	360		110			193	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1790	1701	1693	1465	1790	1761		1700			1525	
Queue Service Time ( g <sub>s</sub> ), s	0.8	3.8	3.8	0.2	5.3	5.3		0.0			1.3	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	0.8	3.8	3.8	0.2	5.3	5.3		1.7			3.5	
Green Ratio ( g/C )	0.42	0.39	0.39	0.34	0.31	0.31		0.19			0.19	
Capacity ( c ), veh/h	521	661	657	414	564	555		455			418	
Volume-to-Capacity Ratio ( X )	0.159	0.443	0.444	0.042	0.649	0.649		0.242			0.461	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	1.9	11.7	10.5	0.8	22.9	21.4		8.8			19.7	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.1	0.4	0.4	0.0	0.9	0.9		0.3			0.7	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.01	0.00	0.00	0.00	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	5.8	6.8	6.8	6.8	8.9	8.9		10.7			11.4	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.2	0.2	0.0	0.5	0.5		0.1			0.3	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	5.9	7.0	7.0	6.8	9.4	9.4		10.8			11.7	
Level of Service ( LOS )	A	A	A	A	A	A		B			B	
Approach Delay, s/veh / LOS	6.9		A	9.3		A	10.8		B	11.7		B
Intersection Delay, s/veh / LOS	8.7						A					

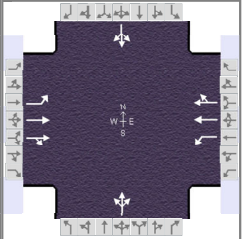
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.04	A	1.10	A	0.67	A	0.81	A

# HCS Signalized Intersection Input Data

EXHIBIT 16

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	1B - 2024 No-Build - PM.xus		
Project Description	2024 No-Build-PM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	81	565	8	17	679	33	16	37	55	22	29	138

Signal Information				Signal Phases									
Cycle, s	30.1	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	0.8	2.2	9.5	5.6	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	81	565	8	17	679	33	16	37	55	22	29	138
Initial Queue (Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N <sub>m</sub> ), man/h		None			None		0	L			None	
Heavy Vehicles (P <sub>HV</sub> ), %	1	13		24	7			5			7	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	1	0	0	2
Arrival Type (AT)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (W), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade (P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval (Y), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green (G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time (l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (e), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (PT), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

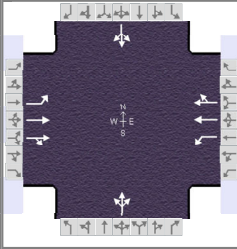
Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

# HCS Signalized Intersection Results Summary

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information			
Agency	Chamlin & Associates, Inc.			Duration, h	0.250		
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other		
Jurisdiction	Scott County	Time Period		PHF	0.87		
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15		
Intersection	110th Avenue	File Name	2A - 2044 No-Build - AM.xus				
Project Description	2044 No-Build-AM						



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	104	816	15	36	579	36	17	32	51	30	26	99

Signal Information				Signal Phases									
Cycle, s	33.6	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	1.9	2.1	11.0	6.6	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	8.1	17.1	5.9	15.0		10.6		10.6
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.1		3.1
Queue Clearance Time ( g <sub>s</sub> ), s	3.3	9.8	2.5	8.1		4.2		6.5
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.9	0.0	2.9		0.5		0.5
Phase Call Probability	0.67	1.00	0.32	1.00		0.94		0.94
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	120	479	476	41	358	349		115			178	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1804	1746	1735	1663	1701	1659		1514			1238	
Queue Service Time ( g <sub>s</sub> ), s	1.3	7.8	7.8	0.5	6.0	6.1		0.0			2.1	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	1.3	7.8	7.8	0.5	6.0	6.1		2.2			4.5	
Green Ratio ( g/C )	0.45	0.39	0.39	0.39	0.33	0.33		0.20			0.20	
Capacity ( c ), veh/h	543	680	676	365	556	542		423			371	
Volume-to-Capacity Ratio ( X )	0.220	0.704	0.704	0.113	0.643	0.644		0.272			0.480	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	3.8	32.8	30.1	2.1	30.8	27.3		13			26.3	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.2	1.2	1.2	0.1	1.1	1.1		0.5			0.9	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.02	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	6.1	8.7	8.7	7.5	9.7	9.7		11.8			12.7	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.5	0.5	0.1	0.5	0.5		0.1			0.4	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	6.2	9.2	9.2	7.5	10.1	10.2		11.9			13.0	
Level of Service ( LOS )	A	A	A	A	B	B		B			B	
Approach Delay, s/veh / LOS	8.8		A	10.0		B	11.9		B	13.0		B
Intersection Delay, s/veh / LOS	9.8						A					

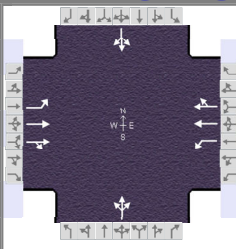
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.37	A	1.10	A	0.68	A	0.78	A

# HCS Signalized Intersection Input Data

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	2A - 2044 No-Build - AM.xus		
Project Description	2044 No-Build-AM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	104	816	15	36	579	36	17	32	51	30	26	99

Signal Information														
Cycle, s	33.6	Reference Phase	2											
Offset, s	0	Reference Point	End											
Uncoordinated	Yes	Simult. Gap E/W	On											
Force Mode	Fixed	Simult. Gap N/S	On											
				Green	1.9	2.1	11.0	6.6	0.0	0.0				
				Yellow	4.0	0.0	4.0	4.0	0.0	0.0				
				Red	0.0	0.0	0.0	0.0	0.0	0.0				

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	104	816	15	36	579	36	17	32	51	30	26	99
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( N <sub>m</sub> ), man/h	None			None			None			None		
Heavy Vehicles ( P <sub>HV</sub> ), %	0	10		10	13			19			29	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	1	0	0	1	0	0	1
Arrival Type ( AT )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( I )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( W ), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade ( P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval ( Y ), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval ( R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green ( G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( e ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( P <sub>T</sub> ), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

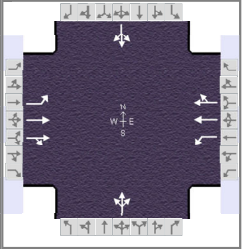


# HCS Signalized Intersection Results Summary

EXHIBIT 16

HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	2B - 2044 No-Build - PM.xus		
Project Description	2044 No-Build-PM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	99	689	10	21	828	41	20	46	67	27	36	169

Signal Information				Signal Phases									
Cycle, s	36.2	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	1.2	2.7	12.7	7.7	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.9	19.3	5.2	16.7		11.7		11.7
Change Period, (Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway (MAH), s	2.9	2.9	2.9	2.9		3.2		3.2
Queue Clearance Time (g <sub>s</sub> ), s	3.1	7.6	2.3	9.9		4.4		7.2
Green Extension Time (g <sub>e</sub> ), s	0.1	2.7	0.0	2.7		0.7		0.7
Phase Call Probability	0.64	1.00	0.19	1.00		0.98		0.98
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate (v), veh/h	101	357	356	21	447	440		136			237	
Adjusted Saturation Flow Rate (s), veh/h/ln	1790	1701	1693	1465	1790	1760		1700			1526	
Queue Service Time (g <sub>s</sub> ), s	1.1	5.6	5.6	0.3	7.9	7.9		0.0			1.9	
Cycle Queue Clearance Time (g <sub>c</sub> ), s	1.1	5.6	5.6	0.3	7.9	7.9		2.4			5.2	
Green Ratio (g/C)	0.48	0.42	0.42	0.38	0.35	0.35		0.21			0.21	
Capacity (c), veh/h	473	721	717	378	626	615		477			437	
Volume-to-Capacity Ratio (X)	0.213	0.496	0.496	0.057	0.714	0.714		0.284			0.542	
Back of Queue (Q), ft/ln (50th percentile)	3.7	23.6	21.2	1.5	42.6	39.7		15.3			33.4	
Back of Queue (Q), veh/ln (50th percentile)	0.1	0.9	0.8	0.1	1.6	1.6		0.6			1.3	
Queue Storage Ratio (RQ) (50th percentile)	0.02	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay (d <sub>1</sub> ), s/veh	6.5	7.6	7.7	7.4	10.3	10.3		12.2			13.2	
Incremental Delay (d <sub>2</sub> ), s/veh	0.1	0.2	0.2	0.0	0.6	0.6		0.1			0.4	
Initial Queue Delay (d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay (d), s/veh	6.6	7.8	7.8	7.4	10.8	10.8		12.3			13.6	
Level of Service (LOS)	A	A	A	A	B	B		B			B	
Approach Delay, s/veh / LOS	7.7		A	10.7		B	12.3		B	13.6		B
Intersection Delay, s/veh / LOS	10.0						A					

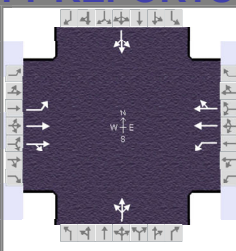
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.16	A	1.24	A	0.71	A	0.88	A

# HCS Signalized Intersection Input Data

EXHIBIT 16

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	2B - 2044 No-Build - PM.xus		
Project Description	2044 No-Build-PM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	99	689	10	21	828	41	20	46	67	27	36	169

Signal Information				Signal Phases								
Cycle, s	36.2	Reference Phase	2									
Offset, s	0	Reference Point	End	Green	1.2	2.7	12.7	7.7	0.0	0.0		
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0		
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0		

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand (v), veh/h	99	689	10	21	828	41	20	46	67	27	36	169
Initial Queue (Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N <sub>m</sub> ), man/h		None			None			None			None	
Heavy Vehicles (P <sub>HV</sub> ), %	1	13		24	7			5			7	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	1	0	0	2
Arrival Type (AT)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (W), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade (Pg), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval (Y), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green (G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time (lt), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (e), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (PT), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

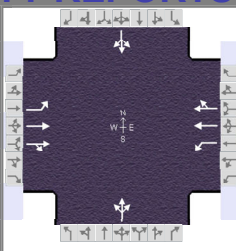
Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

# HCS Signalized Intersection Results Summary

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	4A - 2024 Build - AM.xus		
Project Description	2024 Build-AM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	85	669	19	34	475	29	20	27	45	24	22	81

Signal Information				Phase Diagram								
Cycle, s	29.1	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	1.6	1.7	8.6	5.2	0.0	0.0						
Yellow	4.0	0.0	4.0	4.0	0.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.3	14.2	5.6	12.6		9.2		9.2
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.1		3.1
Queue Clearance Time ( g <sub>s</sub> ), s	3.0	7.6	2.5	6.3		3.7		5.1
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.2	0.0	2.2		0.4		0.4
Phase Call Probability	0.55	1.00	0.27	1.00		0.87		0.87
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	98	397	394	39	293	287		106			146	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1804	1746	1729	1663	1701	1660		1496			1240	
Queue Service Time ( g <sub>s</sub> ), s	1.0	5.6	5.6	0.5	4.3	4.3		0.0			1.4	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	1.0	5.6	5.6	0.5	4.3	4.3		1.7			3.1	
Green Ratio ( g/C )	0.41	0.35	0.35	0.35	0.29	0.29		0.18			0.18	
Capacity ( c ), veh/h	578	614	608	401	501	489		420			370	
Volume-to-Capacity Ratio ( X )	0.169	0.647	0.647	0.097	0.584	0.586		0.252			0.394	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	2.2	19	17.4	1.4	17.9	15.9		8.8			16.3	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.1	0.7	0.7	0.1	0.6	0.6		0.3			0.5	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.01	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	5.7	7.9	7.9	6.9	8.8	8.8		10.5			11.1	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.4	0.4	0.0	0.4	0.4		0.1			0.3	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	5.8	8.4	8.4	6.9	9.2	9.2		10.6			11.3	
Level of Service ( LOS )	A	A	A	A	A	A		B			B	
Approach Delay, s/veh / LOS	8.1		A	9.0		A	10.6		B	11.3		B
Intersection Delay, s/veh / LOS	8.8						A					

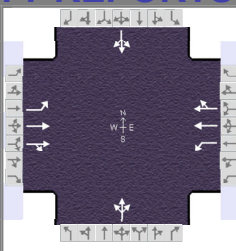
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.22	A	1.00	A	0.66	A	0.73	A

# HCS Signalized Intersection Input Data

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	4A - 2024 Build - AM.xus		
Project Description	2024 Build-AM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	85	669	19	34	475	29	20	27	45	24	22	81

Signal Information												
Cycle, s	29.1	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
Green	1.6	1.7	8.6	5.2	0.0	0.0						
Yellow	4.0	0.0	4.0	4.0	0.0	0.0						
Red	0.0	0.0	0.0	0.0	0.0	0.0						

Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	85	669	19	34	475	29	20	27	45	24	22	81
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( N <sub>m</sub> ), man/h	None			None			None			None		
Heavy Vehicles ( P <sub>HV</sub> ), %	0	10		10	13			19			29	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	1	0	0	1	0	0	1
Arrival Type ( AT )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( I )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( W ), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade ( P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval ( Y ), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval ( R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green ( G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( e ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( P <sub>T</sub> ), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0		0.0		0.0		0.0

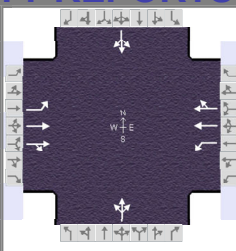
Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

# HCS Signalized Intersection Results Summary

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	4B - 2024 Build - PM.xus		
Project Description	2024 Build-PM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	81	565	19	29	679	33	27	40	67	22	32	138

Signal Information				Signal Phases									
Cycle, s	30.5	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	1.3	1.7	9.6	5.9	0.0	0.0			
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.0	15.3	5.3	13.6		9.9		9.9
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.2		3.2
Queue Clearance Time ( g <sub>s</sub> ), s	2.9	6.1	2.4	7.4		4.1		5.6
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.2	0.0	2.2		0.6		0.6
Phase Call Probability	0.50	1.00	0.22	1.00		0.94		0.94
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	83	299	296	30	366	360		137			196	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1790	1701	1682	1465	1790	1761		1674			1528	
Queue Service Time ( g <sub>s</sub> ), s	0.9	4.1	4.1	0.4	5.4	5.4		0.0			1.2	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	0.9	4.1	4.1	0.4	5.4	5.4		2.1			3.6	
Green Ratio ( g/C )	0.42	0.37	0.37	0.36	0.31	0.31		0.19			0.19	
Capacity ( c ), veh/h	517	630	623	417	563	554		464			426	
Volume-to-Capacity Ratio ( X )	0.160	0.475	0.476	0.071	0.650	0.651		0.295			0.460	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	2.2	14.3	12.9	1.4	23.7	22.1		11.3			20.2	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.1	0.5	0.5	0.0	0.9	0.9		0.4			0.8	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.01	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	6.0	7.3	7.4	6.7	9.0	9.0		10.8			11.4	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.2	0.2	0.0	0.5	0.5		0.1			0.3	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	6.1	7.6	7.6	6.8	9.5	9.5		10.9			11.7	
Level of Service ( LOS )	A	A	A	A	A	A		B			B	
Approach Delay, s/veh / LOS	7.4		A	9.4		A	10.9		B	11.7		B
Intersection Delay, s/veh / LOS	9.0						A					

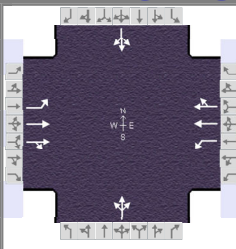
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.64	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.05	A	1.11	A	0.71	A	0.81	A

# HCS Signalized Intersection Input Data

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information			
Agency	Chamlin & Associates, Inc.			Duration, h	0.250		
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other		
Jurisdiction	Scott County	Time Period		PHF	0.98		
Urban Street	US 61	Analysis Year	2024	Analysis Period	1 > 7:15		
Intersection	110th Avenue	File Name	4B - 2024 Build - PM.xus				
Project Description	2024 Build-PM						



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	81	565	19	29	679	33	27	40	67	22	32	138

Signal Information													
Cycle, s	30.5	Reference Phase	2										
Offset, s	0	Reference Point	End										
Uncoordinated	Yes	Simult. Gap E/W	On										
Force Mode	Fixed	Simult. Gap N/S	On										
		Green		1.3	1.7	9.6	5.9	0.0	0.0				
		Yellow		4.0	0.0	4.0	4.0	0.0	0.0				
		Red		0.0	0.0	0.0	0.0	0.0	0.0				

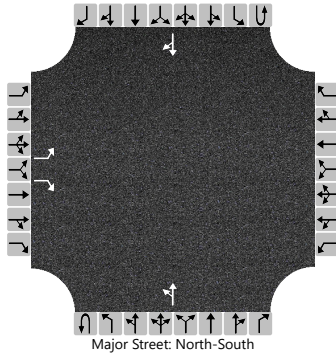
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand ( v ), veh/h	81	565	19	29	679	33	27	40	67	22	32	138
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( N <sub>m</sub> ), man/h	None			None			None			None		
Heavy Vehicles ( P <sub>HV</sub> ), %	1	13		24	7			5			7	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	1	0	0	2
Arrival Type ( AT )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( I )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( W ), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade ( P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval ( Y ), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval ( R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green ( G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( e ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( P <sub>T</sub> ), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

General Information		Site Information	
Analyst	Dan Draper	Intersection	110th Avenue & PR Entrance
Agency/Co.	Chamlin & Associates, Inc	Jurisdiction	Scott County, IA/ Private
Date Performed	12/11/2023	East/West Street	PR Entrance
Analysis Year	2024	North/South Street	110th Avenue
Time Analyzed	AM PEAK	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	2024 Build		

**Lanes**



**Vehicle Volumes and Adjustments**

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	0	1	0	0	0	1	0	
Configuration		L		R						LT						TR	
Volume (veh/h)		15		3						5	78				60	16	
Percent Heavy Vehicles (%)		1		0						0							
Proportion Time Blocked																	
Percent Grade (%)		-2															
Right Turn Channelized		No															
Median Type   Storage		Undivided															

**Critical and Follow-up Headways**

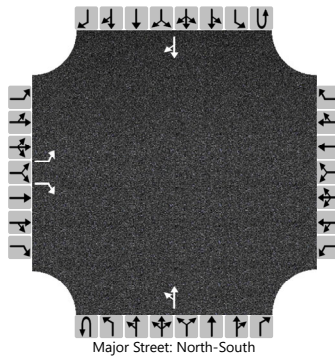
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.01		6.00						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.51		3.30						2.20						

**Delay, Queue Length, and Level of Service**

Flow Rate, v (veh/h)		17		3						6							
Capacity, c (veh/h)		826		992						1521							
v/c Ratio		0.02		0.00						0.00							
95% Queue Length, Q <sub>95</sub> (veh)		0.1		0.0						0.0							
Control Delay (s/veh)		9.5		8.6						7.4	0.0						
Level of Service (LOS)		A		A						A	A						
Approach Delay (s/veh)		9.3								0.5							
Approach LOS		A								A							

General Information				Site Information			
Analyst	Dan Draper			Intersection	110th Avenue & PR Entrance		
Agency/Co.	Chamlin & Associates, Inc			Jurisdiction	Scott County, IA/ Private		
Date Performed	12/11/2023			East/West Street	PR Entrance		
Analysis Year	2024			North/South Street	110th Avenue		
Time Analyzed	PM PEAK			Peak Hour Factor	0.98		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	2024 Build						

**Lanes**



**Vehicle Volumes and Adjustments**

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	0	1	0	0	0	1	0	
Configuration		L		R						LT						TR	
Volume (veh/h)		36		6						12	98				50	31	
Percent Heavy Vehicles (%)		1		0						0							
Proportion Time Blocked																	
Percent Grade (%)		-2															
Right Turn Channelized		No															
Median Type   Storage		Undivided															

**Critical and Follow-up Headways**

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.01		6.00						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.51		3.30						2.20						

**Delay, Queue Length, and Level of Service**

Flow Rate, v (veh/h)		37		6						12						
Capacity, c (veh/h)		810		1006						1527						
v/c Ratio		0.05		0.01						0.01						
95% Queue Length, Q <sub>95</sub> (veh)		0.1		0.0						0.0						
Control Delay (s/veh)		9.7		8.6						7.4	0.1					
Level of Service (LOS)		A		A						A	A					
Approach Delay (s/veh)		9.5								0.9						
Approach LOS		A								A						

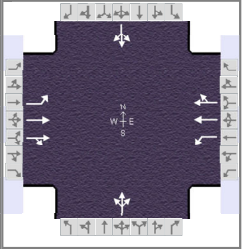


# HCS Signalized Intersection Results Summary

EXHIBIT 16

HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	5A - 2044 Build - AM.xus		
Project Description	2044 Build-AM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	104	816	22	41	579	36	23	33	55	30	27	99

Signal Information				Signal Phases									
Cycle, s	33.9	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	2.2	1.9	11.1	6.8	0.0	0.0	0.0	0.0	0.0
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0	0.0	0.0	0.0
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	8.1	17.0	6.2	15.1		10.8		10.8
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.1		3.1
Queue Clearance Time ( g <sub>s</sub> ), s	3.3	10.0	2.6	8.1		4.4		6.5
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.9	0.0	2.9		0.6		0.6
Phase Call Probability	0.68	1.00	0.36	1.00		0.95		0.95
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	120	484	479	47	358	349		128			179	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1804	1746	1729	1663	1701	1659		1502			1239	
Queue Service Time ( g <sub>s</sub> ), s	1.3	8.0	8.0	0.6	6.1	6.1		0.0			2.1	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	1.3	8.0	8.0	0.6	6.1	6.1		2.4			4.5	
Green Ratio ( g/C )	0.45	0.38	0.38	0.39	0.33	0.33		0.20			0.20	
Capacity ( c ), veh/h	542	670	664	368	558	544		427			373	
Volume-to-Capacity Ratio ( X )	0.220	0.722	0.722	0.128	0.641	0.642		0.299			0.481	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	4.1	35.5	32.5	2.4	31	27.5		14.7			26.8	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.2	1.3	1.3	0.1	1.1	1.1		0.5			0.9	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.02	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	6.2	8.9	8.9	7.5	9.7	9.7		11.9			12.7	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.6	0.6	0.1	0.5	0.5		0.1			0.4	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	6.3	9.5	9.5	7.6	10.2	10.2		12.0			13.1	
Level of Service ( LOS )	A	A	A	A	B	B		B			B	
Approach Delay, s/veh / LOS	9.1		A	10.0		B	12.0		B	13.1		B
Intersection Delay, s/veh / LOS	10.0						A					

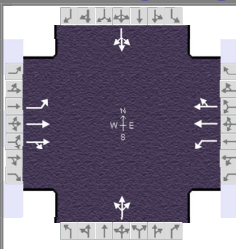
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.38	A	1.11	A	0.70	A	0.78	A

# HCS Signalized Intersection Input Data

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.87
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	5A - 2044 Build - AM.xus		
Project Description	2044 Build-AM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	104	816	22	41	579	36	23	33	55	30	27	99

Signal Information												
Cycle, s	33.9	Reference Phase	2									
Offset, s	0	Reference Point	End									
Uncoordinated	Yes	Simult. Gap E/W	On									
Force Mode	Fixed	Simult. Gap N/S	On									
				Green	2.2	1.9	11.1	6.8	0.0	0.0		
				Yellow	4.0	0.0	4.0	4.0	0.0	0.0		
				Red	0.0	0.0	0.0	0.0	0.0	0.0		

Traffic Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	104	816	22	41	579	36	23	33	55	30	27	99
Initial Queue ( Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate ( s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking ( N <sub>m</sub> ), man/h		None			None			None			None	
Heavy Vehicles ( P <sub>HV</sub> ), %	0	10		10	13			19			29	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses ( N <sub>b</sub> ), buses/h	0	0	0	0	0	1	0	0	1	0	0	1
Arrival Type ( AT )	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering ( I )	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width ( W ), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade ( P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green ( G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval ( Y ), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval ( R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green ( G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time ( l <sub>t</sub> ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green ( e ), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage ( P <sub>T</sub> ), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk ( Walk ), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time ( P <sub>C</sub> ), s		0.0		0.0		0.0		0.0

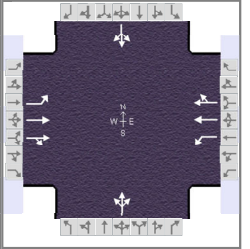
Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

# HCS Signalized Intersection Results Summary

EXHIBIT 16

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	5B - 2044 Build - PM.xus		
Project Description	2044 Build-PM				



Demand Information	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Demand ( v ), veh/h	99	689	21	33	828	41	31	49	79	27	39	169

Signal Information				Signal Phases									
Cycle, s	36.6	Reference Phase	2										
Offset, s	0	Reference Point	End	Green	1.8	2.1	12.8	7.9	0.0	0.0			
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	4.0	0.0	4.0	4.0	0.0	0.0			
Force Mode	Fixed	Simult. Gap N/S	On	Red	0.0	0.0	0.0	0.0	0.0	0.0			

Timer Results	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Assigned Phase	5	2	1	6		8		4
Case Number	1.1	4.0	1.1	4.0		8.0		8.0
Phase Duration, s	7.9	18.9	5.8	16.8		11.9		11.9
Change Period, ( Y+R <sub>c</sub> ), s	4.0	4.0	4.0	4.0		4.0		4.0
Max Allow Headway ( MAH ), s	2.9	2.9	2.9	2.9		3.2		3.2
Queue Clearance Time ( g <sub>s</sub> ), s	3.2	7.9	2.5	9.9		4.9		7.3
Green Extension Time ( g <sub>e</sub> ), s	0.1	2.8	0.0	2.8		0.8		0.8
Phase Call Probability	0.64	1.00	0.29	1.00		0.98		0.98
Max Out Probability	0.00	0.00	0.00	0.00		0.00		0.00

Movement Group Results	EB			WB			NB			SB		
	L	T	R	L	T	R	L	T	R	L	T	R
Approach Movement												
Assigned Movement	5	2	12	1	6	16	3	8	18	7	4	14
Adjusted Flow Rate ( v ), veh/h	101	364	360	34	447	440		162			240	
Adjusted Saturation Flow Rate ( s ), veh/h/ln	1790	1701	1683	1465	1790	1760		1677			1527	
Queue Service Time ( g <sub>s</sub> ), s	1.2	5.9	5.9	0.5	7.9	7.9		0.0			1.9	
Cycle Queue Clearance Time ( g <sub>c</sub> ), s	1.2	5.9	5.9	0.5	7.9	7.9		2.9			5.3	
Green Ratio ( g/C )	0.46	0.41	0.41	0.40	0.35	0.35		0.22			0.22	
Capacity ( c ), veh/h	471	693	686	383	625	615		482			442	
Volume-to-Capacity Ratio ( X )	0.215	0.525	0.526	0.088	0.715	0.715		0.337			0.543	
Back of Queue ( Q ), ft/ln ( 50 th percentile)	4.2	27.2	24.4	2.3	43.6	40.7		18.9			34.3	
Back of Queue ( Q ), veh/ln ( 50 th percentile)	0.2	1.0	1.0	0.1	1.7	1.6		0.7			1.3	
Queue Storage Ratio ( RQ ) ( 50 th percentile)	0.02	0.00	0.00	0.01	0.00	0.00		0.00			0.00	
Uniform Delay ( d <sub>1</sub> ), s/veh	6.7	8.2	8.2	7.3	10.4	10.4		12.4			13.3	
Incremental Delay ( d <sub>2</sub> ), s/veh	0.1	0.2	0.2	0.0	0.6	0.6		0.2			0.4	
Initial Queue Delay ( d <sub>3</sub> ), s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Control Delay ( d ), s/veh	6.8	8.4	8.4	7.3	10.9	10.9		12.5			13.7	
Level of Service ( LOS )	A	A	A	A	B	B		B			B	
Approach Delay, s/veh / LOS	8.2		A	10.8		B	12.5		B	13.7		B
Intersection Delay, s/veh / LOS	10.3						B					

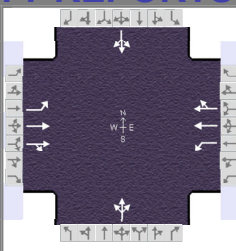
Multimodal Results	EB		WB		NB		SB	
Pedestrian LOS Score / LOS	1.65	B	1.65	B	2.25	B	2.25	B
Bicycle LOS Score / LOS	1.17	A	1.25	A	0.76	A	0.88	A

# HCS Signalized Intersection Input Data

**EXHIBIT 16**

## HCS7 CAPACITY REPORTS

General Information				Intersection Information	
Agency	Chamlin & Associates, Inc.			Duration, h	0.250
Analyst	D. Draper	Analysis Date	Dec 11, 2023	Area Type	Other
Jurisdiction	Scott County	Time Period		PHF	0.98
Urban Street	US 61	Analysis Year	2044	Analysis Period	1 > 7:15
Intersection	110th Avenue	File Name	5B - 2044 Build - PM.xus		
Project Description	2044 Build-PM				



Demand Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	99	689	21	33	828	41	31	49	79	27	39	169

Signal Information											
Cycle, s	36.6	Reference Phase	2								
Offset, s	0	Reference Point	End								
Uncoordinated	Yes	Simult. Gap E/W	On								
Force Mode	Fixed	Simult. Gap N/S	On								

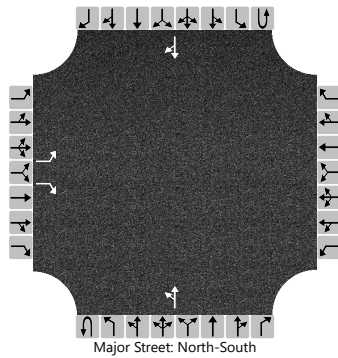
Traffic Information	EB			WB			NB			SB		
Approach Movement	L	T	R	L	T	R	L	T	R	L	T	R
Demand (v), veh/h	99	689	21	33	828	41	31	49	79	27	39	169
Initial Queue (Q <sub>b</sub> ), veh/h	0	0	0	0	0	0	0	0	0	0	0	0
Base Saturation Flow Rate (s <sub>0</sub> ), veh/h	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Parking (N <sub>m</sub> ), man/h	None			None			None			None		
Heavy Vehicles (P <sub>HV</sub> ), %	1	13		24	7			5			7	
Ped / Bike / RTOR, /h	0	0	0	0	0	0	0	0	0	0	0	0
Buses (N <sub>b</sub> ), buses/h	0	0	0	0	0	0	0	0	1	0	0	2
Arrival Type (AT)	3	3	3	3	3	3	3	3	3	3	3	3
Upstream Filtering (I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Width (W), ft	12.0	12.0		12.0	12.0			12.0			12.0	
Turn Bay Length, ft	180	0		205	0			0			0	
Grade (P <sub>g</sub> ), %		1			1			-2			2	
Speed Limit, mi/h	55	55	55	55	55	55	55	55	55	45	45	45

Phase Information	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Maximum Green (G <sub>max</sub> ) or Phase Split, s	20.0	70.0	20.0	70.0		30.0		30.0
Yellow Change Interval (Y), s	4.0	4.0	4.0	4.0		4.0		4.0
Red Clearance Interval (R <sub>c</sub> ), s	0.0	0.0	0.0	0.0		0.0		0.0
Minimum Green (G <sub>min</sub> ), s	6	6	6	6		6		6
Start-Up Lost Time (lt), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Extension of Effective Green (e), s	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Passage (PT), s	2.0	2.0	2.0	2.0		2.0		2.0
Recall Mode	Off	Min	Off	Min		Off		Off
Dual Entry	No	Yes	No	Yes		Yes		Yes
Walk (Walk), s		0.0		0.0		0.0		0.0
Pedestrian Clearance Time (PC), s		0.0		0.0		0.0		0.0

Multimodal Information	EB			WB			NB			SB		
85th % Speed / Rest in Walk / Corner Radius	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0	0.0	No	25.0
Walkway / Crosswalk Width / Length, ft	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0	9.0	12.0	0.0
Street Width / Island / Curb, ft	0.0	0	No	0.0	0	No	0.0	0	No	0.0	0	No
Width Outside / Bike Lane / Shoulder, ft	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0	12.0	5.0	2.0
Pedestrian Signal / Occupied Parking	No	0.50		No	0.50		No	0.50		No	0.50	

General Information		Site Information	
Analyst	Dan Draper	Intersection	110th Avenue & PR Entrance
Agency/Co.	Chamlin & Associates, Inc	Jurisdiction	Scott County, IA/ Private
Date Performed	12/11/2023	East/West Street	PR Entrance
Analysis Year	2044	North/South Street	110th Avenue
Time Analyzed	AM PEAK	Peak Hour Factor	0.87
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25
Project Description	2044 Build		

**Lanes**



**Vehicle Volumes and Adjustments**

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		1	0	1		0	0	0	0	0	1	0	0	0	1	0	
Configuration		L		R						LT						TR	
Volume (veh/h)		15		3						5	96				73	16	
Percent Heavy Vehicles (%)		1		0						0							
Proportion Time Blocked																	
Percent Grade (%)		-2															
Right Turn Channelized		No															
Median Type   Storage		Undivided															

**Critical and Follow-up Headways**

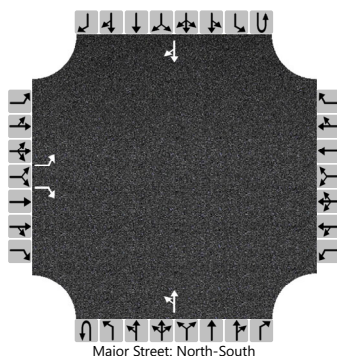
Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.01		6.00						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.51		3.30						2.20						

**Delay, Queue Length, and Level of Service**

Flow Rate, v (veh/h)		17		3						6							
Capacity, c (veh/h)		791		975						1502							
v/c Ratio		0.02		0.00						0.00							
95% Queue Length, Q <sub>95</sub> (veh)		0.1		0.0						0.0							
Control Delay (s/veh)		9.7		8.7						7.4	0.0						
Level of Service (LOS)		A		A						A	A						
Approach Delay (s/veh)		9.5								0.4							
Approach LOS		A								A							

General Information				Site Information			
Analyst	Dan Draper			Intersection	110th Avenue & PR Entrance		
Agency/Co.	Chamlin & Associates, Inc			Jurisdiction	Scott County, IA/ Private		
Date Performed	12/11/2023			East/West Street	PR Entrance		
Analysis Year	2044			North/South Street	110th Avenue		
Time Analyzed	PM PEAK			Peak Hour Factor	0.98		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	2044 Build						

**Lanes**



**Vehicle Volumes and Adjustments**

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		1	0	1		0	0	0	0	0	1	0	0	0	1	0
Configuration		L		R						LT						TR
Volume (veh/h)		36		6						12	122				62	31
Percent Heavy Vehicles (%)		0		0						0						
Proportion Time Blocked																
Percent Grade (%)		-2														
Right Turn Channelized		No														
Median Type   Storage		Undivided														

**Critical and Follow-up Headways**

Base Critical Headway (sec)		7.1		6.2						4.1						
Critical Headway (sec)		6.00		6.00						4.10						
Base Follow-Up Headway (sec)		3.5		3.3						2.2						
Follow-Up Headway (sec)		3.50		3.30						2.20						

**Delay, Queue Length, and Level of Service**

Flow Rate, v (veh/h)		37		6						12						
Capacity, c (veh/h)		777		991						1512						
v/c Ratio		0.05		0.01						0.01						
95% Queue Length, Q <sub>95</sub> (veh)		0.1		0.0						0.0						
Control Delay (s/veh)		9.9		8.7						7.4	0.1					
Level of Service (LOS)		A		A						A	A					
Approach Delay (s/veh)		9.7								0.7						
Approach LOS		A								A						

**Dollar General Store – Davenport, IA  
Highway 61 & 110<sup>th</sup> Avenue  
Stormwater Detention Calculations  
January 4, 2024**

Total Area to Detention = 68,933 s.f. = 1.58 acres

Runoff Coefficient:

100% Type C Soil (C = 0.35)

Pre-Project

68,933 s.f. (1.58 acres)

C<sub>u</sub> = 0.35

Post-Project

43,658 s.f. of building and pavement (C<sub>d</sub>=0.98)

25,275 s.f. of grass (C<sub>d</sub>=0.55)

$$C_d = (43,658 \text{ s.f.} * 0.98 + 25,275 \text{ s.f.} * 0.55) / 68,933 = 0.82$$

Time of Concentration:

Pre-project = 15 minutes (see worksheet)

Detention Volume:

See attached worksheet = **100-year 7,947 c.f. (required) at 2.15 cfs**

Elev	Area (s.f.)	Volume (c.f.)	Cumulative Volume (c.f.)
751.00	0	0	0
752.00	3,132	1,566	1,566
753.00	3,996	3,564	5,130
754.00	4,917	4,456	9,586

**= 8,472 c.f. (provided) at Elev 753.75**

Detention Orifice:

Low Flow: **2.15 cfs or less (required)**

**4" orifice:  $Q_{low} = 0.6 * (0.196 \text{ s.f.}) * (64.4 * (753.75 - 751.17))^{1/2} = 1.52 \text{ cfs}$   
(provided) @ 753.75**

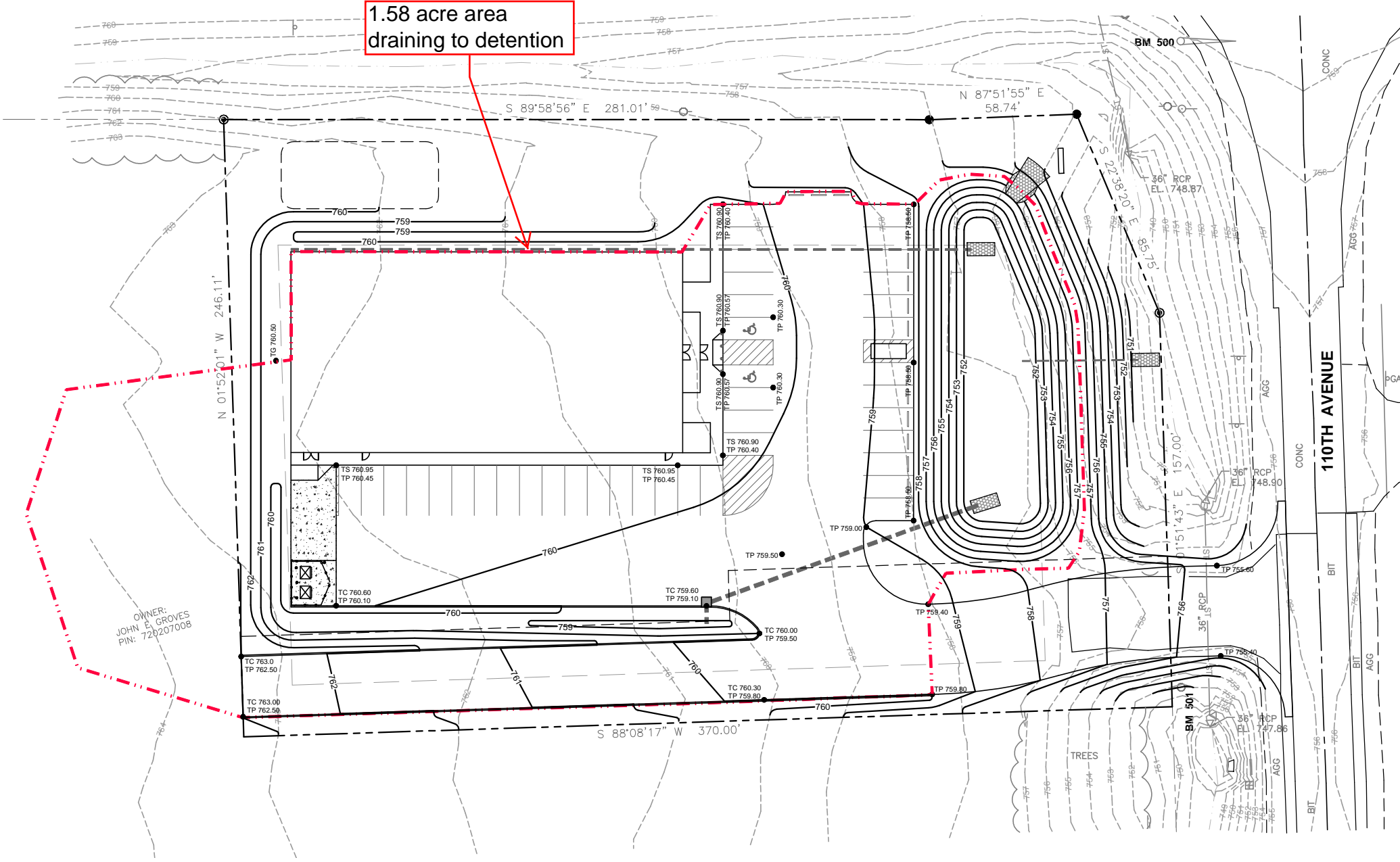
Detention Outfall:

100 year intensity = 11.6 in/hr per Table 2B-2.06

100 year peak flow = C\*I\*A = 0.82 \* 11.6 in/hr \* 1.58 acres = **15.03 cfs (required)**

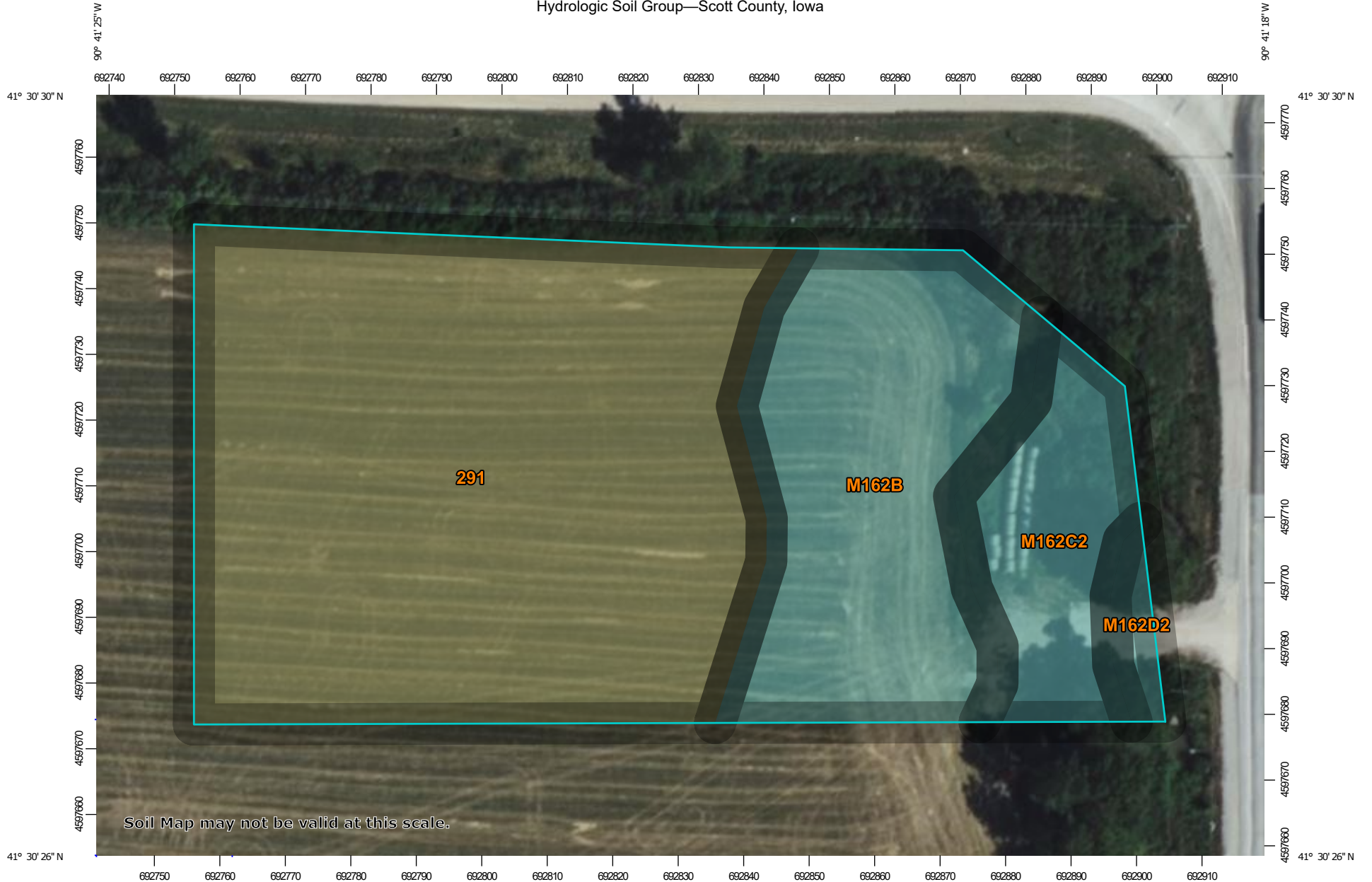
6' weir:  $Q_{weir} = 2.7 * (6 \text{ l.f.}) * (757.00 - 756.00)^{3/2} = 16.20 \text{ cfs (provided)}$

1.58 acre area  
draining to detention

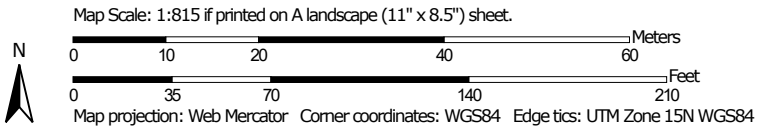




Hydrologic Soil Group—Scott County, Iowa



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Scott County, Iowa  
 Survey Area Data: Version 32, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 17, 2020—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
291	Atterberry silt loam, 1 to 3 percent slopes	C/D	1.6	61.3%
M162B	Downs silt loam, till plain, 2 to 5 percent slopes	C	0.7	25.8%
M162C2	Downs silt loam, till plain, 5 to 9 percent slopes, eroded	C	0.3	11.3%
M162D2	Downs silt loam, till plain, 9 to 14 percent slopes, eroded	C	0.0	1.6%
<b>Totals for Area of Interest</b>			<b>2.6</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

<b>Existing Watershed</b>	
<b>Time of Concentration Worksheet</b>	
<b>SCS Method</b>	
<b>Sheet Flow</b>	
Length (ft)	100 < 300 ft
Roughness	0.15
P (2-year)	3.01
Slope (ft/ft)	0.01
<i>Overland Tc Component</i>	13.3 minutes
<b>Shallow Flow</b>	
Length (ft)	160
Slope (ft/ft)	0.023
Paved or Unpaved (U or P)	u
Velocity (ft/sec)	2.4
<i>Shallow Tc Component</i>	1.1 minutes
<b>Channel Flow</b>	
Length (ft)	0
Velocity (ft/sec)	2
<i>Channel Tc Component</i>	0.0 minutes
<b>Time of Concentration</b>	<b>14.4 minutes</b>

Table 3-1.—Roughness coefficients (Manning's n) for sheet flow

Surface description	n <sup>1</sup>
Smooth surfaces (concrete, asphalt, gravel, or bare soil) .....	0.011
Fallow (no residue) .....	0.05
Cultivated soils:	
Residue cover ≤ 20% .....	0.06
Residue cover > 20% .....	0.17
Grass:	
Short grass prairie .....	0.15
Dense grasses <sup>2</sup> .....	0.24
Bermudagrass .....	0.41
Range (natural) .....	0.13
Woods: <sup>3</sup>	
Light underbrush .....	0.40
Dense underbrush .....	0.80

<sup>1</sup>The n values are a composite of information compiled by Engman (1986).

<sup>2</sup>Includes species such as weeping lovegrass, bluegrass, buffalo grass, blue grama grass, and native grass mixtures.

<sup>3</sup>When selecting n, consider cover to a height of about 0.1 ft. This is the only part of the plant cover that will obstruct sheet flow.

**Table 2B-4.01: Runoff Coefficients for the Rational Method**

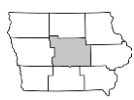
Cover Type and Hydrologic Condition <i>Recurrence Interval</i>	Runoff Coefficients for Hydrologic Soil Group											
	A			B			C			D		
	5	10	100	5	10	100	5	10	100	5	10	100
<b>Open Space (lawns, parks, golf courses, cemeteries, etc.)</b>												
Poor condition (grass cover < 50%)	.25	.30	.50	.45	.55	.65	.65	.70	.80	.70	.75	.85
Fair condition (grass cover 50% to 75%)	.10	.10	.15	.25	.30	.50	.45	.55	.65	.60	.65	.75
Good condition (grass cover >75%)	.05	.05	.10	.15	.20	.35	.35	.40	.55	.50	.55	.65
<b>Impervious Areas</b>												
Parking lots, roofs, driveways, etc. (excluding ROW)	.95	.95	.98	.95	.95	.98	.95	.95	.98	.95	.95	.98
Streets and roads:												
Paved; curbs & storm sewers (excluding ROW)	.95	.95	.98	.95	.95	.98	.95	.95	.98	.95	.95	.98
Paved; open ditches (including ROW)	---	---	---	.70	.75	.85	.80	.85	.90	.80	.85	.90
Gravel (including ROW)	---	---	---	.60	.65	.75	.70	.75	.85	.75	.80	.85
Dirt (including ROW)	---	---	---	.55	.60	.70	.65	.70	.80	.70	.75	.85
<b>Urban Districts (excluding ROW)</b>												
Commercial and business (85% impervious)	---	---	---	---	---	---	.85	.85	.90	.90	.90	.95
Industrial (72% impervious)	---	---	---	---	---	---	.80	.80	.85	.80	.85	.90
<b>Residential Districts by Average Lot Size (excluding ROW)<sup>1</sup></b>												
1/8 acre (36% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/4 acre (36% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/3 acre (33% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/2 acre (20% impervious)	---	---	---	---	---	---	.45	.50	.65	.60	.65	.70
1 acre (11% impervious)	---	---	---	---	---	---	.40	.45	.60	.55	.60	.65
2 acres (11% impervious)	---	---	---	---	---	---	.40	.45	.60	.55	.60	.65
<b>Newly Graded Areas (pervious areas only, no vegetation)</b>												
<b>Agricultural and Undeveloped</b>												
Meadow - protected from grazing (pre-settlement) .....	.10	.10	.25	.10	.15	.30	.30	.35	.55	.45	.50	.65
<b>Straight Row Crops</b>												
Straight Row (SR) .....	<i>Poor Condition</i>	.33	.39	.55	.52	.58	.71	.70	.74	.84	.78	.89
	<i>Good Condition</i>	.24	.30	.46	.45	.51	.66	.62	.67	.78	.73	.86
SR + Crop Residue (CR) .....	<i>Poor Condition</i>	.31	.37	.54	.50	.56	.70	.67	.72	.82	.75	.87
	<i>Good Condition</i>	.19	.25	.41	.38	.45	.61	.55	.60	.73	.62	.78
Contoured (C) .....	<i>Poor Condition</i>	.29	.35	.52	.47	.53	.70	.60	.65	.77	.70	.84
	<i>Good Condition</i>	.21	.26	.43	.38	.45	.61	.55	.60	.73	.65	.80
C+CR .....	<i>Poor Condition</i>	.27	.33	.50	.45	.51	.66	.57	.63	.75	.67	.82
	<i>Good Condition</i>	.19	.25	.41	.36	.43	.59	.52	.58	.71	.62	.78
Contoured & Terraced (C&T) .....	<i>Poor Condition</i>	.22	.28	.45	.36	.43	.59	.50	.56	.70	.55	.73
	<i>Good Condition</i>	.16	.22	.38	.31	.37	.54	.45	.51	.66	.52	.71
C&T + CR .....	<i>Poor Condition</i>	.13	.19	.35	.31	.37	.54	.45	.51	.66	.52	.71
	<i>Good Condition</i>	.10	.16	.32	.27	.33	.50	.43	.49	.65	.50	.66

<sup>1</sup> The average percent impervious area shown was used to develop composite coefficients.

Note: Rational coefficients were derived from SCS CN method

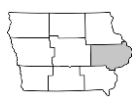
- b. Composite Runoff Analysis:** Care should be taken not to average runoff coefficients for large segments that have multiple land uses of a wide variety (i.e., business to agriculture). However, within similar land uses, it is often desirable to develop a composite runoff coefficient based on the percentage of different types of surface in the drainage area. The composite procedure can be applied to an entire drainage area, or to typical sample blocks as a guide to selection of reasonable values of the coefficient for an entire area.

**Table 2B-2.06:** Section 5 - Central Iowa  
*Rainfall Depth and Intensity for Various Return Periods*

	Return Period															
	1 year		2 year		5 year		10 year		25 year		50 year		100 year		500 year	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I
5 min	0.39	4.78	0.46	5.59	0.57	6.91	0.67	8.1	0.81	9.76	0.92	11.1	1.04	12.4	1.33	15.9
10 min	0.58	3.51	0.68	4.08	0.84	5.08	0.98	5.92	1.19	7.16	1.35	8.13	1.52	9.15	1.94	11.6
15 min	0.71	2.84	0.83	3.32	1.03	4.12	1.20	4.82	1.45	5.81	1.65	6.61	1.86	7.44	2.37	9.50
30 min	0.99	1.99	1.16	2.33	1.45	2.91	1.70	3.40	2.05	4.11	2.34	4.68	2.63	5.27	3.36	6.73
1 hr	1.29	1.29	1.51	1.51	1.89	1.89	2.23	2.23	2.72	2.72	3.13	3.13	3.55	3.55	4.62	4.62
2 hr	1.58	0.79	1.85	0.92	2.33	1.16	2.76	1.38	3.39	1.69	3.91	1.95	4.46	2.23	5.88	2.94
3 hr	1.75	0.58	2.06	0.68	2.60	0.86	3.09	1.03	3.82	1.27	4.42	1.47	5.07	1.69	6.76	2.25
6 hr	2.05	0.34	2.40	0.40	3.03	0.50	3.61	0.60	4.47	0.74	5.20	0.86	5.98	0.99	8.02	1.33
12 hr	2.34	0.19	2.74	0.22	3.44	0.28	4.07	0.33	5.01	0.41	5.79	0.48	6.62	0.55	8.79	0.73
24 hr	2.67	0.11	3.08	0.12	3.81	0.15	4.46	0.18	5.44	0.22	6.26	0.26	7.12	0.29	9.37	0.39
48 hr	3.06	0.06	3.49	0.07	4.25	0.08	4.94	0.10	5.96	0.12	6.81	0.14	7.71	0.16	10.0	0.20
3 day	3.34	0.04	3.81	0.05	4.63	0.06	5.36	0.07	6.43	0.08	7.31	0.10	8.25	0.11	10.6	0.14
4 day	3.59	0.03	4.09	0.04	4.96	0.05	5.74	0.05	6.86	0.07	7.78	0.08	8.74	0.09	11.1	0.11
7 day	4.25	0.02	4.83	0.02	5.82	0.03	6.69	0.03	7.93	0.04	8.93	0.05	9.98	0.05	12.5	0.07
10 day	4.87	0.02	5.50	0.02	6.58	0.02	7.52	0.03	8.86	0.03	9.94	0.04	11.0	0.04	13.8	0.05

D = Total depth of rainfall for given storm duration (inches)  
 I = Rainfall intensity for given storm duration (inches/hour)

**Table 2B-2.07:** Section 6 - East Central Iowa  
*Rainfall Depth and Intensity for Various Return Periods*

	Return Period															
	1 year		2 year		5 year		10 year		25 year		50 year		100 year		500 year	
	D	I	D	I	D	I	D	I	D	I	D	I	D	I	D	I
5 min	0.38	4.56	0.44	5.30	0.54	6.56	0.63	7.65	0.76	9.18	0.86	10.3	0.97	11.6	1.23	14.8
10 min	0.55	3.33	0.64	3.87	0.8	4.8	0.93	5.58	1.11	6.70	1.26	7.60	1.42	8.54	1.80	10.8
15 min	0.67	2.70	0.78	3.14	0.97	3.88	1.13	4.53	1.36	5.45	1.54	6.18	1.73	6.94	2.20	8.81
30 min	0.95	1.90	1.11	2.22	1.38	2.76	1.61	3.22	1.94	3.88	2.20	4.40	2.47	4.95	3.14	6.29
1 hr	1.23	1.23	1.44	1.44	1.80	1.80	2.11	2.11	2.58	2.58	2.96	2.96	3.36	3.36	4.37	4.37
2 hr	1.51	0.75	1.77	0.88	2.22	1.11	2.62	1.31	3.22	1.61	3.71	1.85	4.24	2.12	5.60	2.80
3 hr	1.68	0.56	1.96	0.65	2.47	0.82	2.93	0.97	3.63	1.21	4.22	1.40	4.85	1.61	6.50	2.16
6 hr	1.97	0.32	2.30	0.38	2.89	0.48	3.45	0.57	4.3	0.71	5.02	0.83	5.8	0.96	7.87	1.31
12 hr	2.28	0.19	2.65	0.22	3.31	0.27	3.93	0.32	4.88	0.40	5.68	0.47	6.56	0.54	8.87	0.73
24 hr	2.60	0.10	3.01	0.12	3.75	0.15	4.42	0.18	5.44	0.22	6.29	0.26	7.22	0.30	9.64	0.40
48 hr	2.98	0.06	3.43	0.07	4.22	0.08	4.93	0.10	6.01	0.12	6.90	0.14	7.86	0.16	10.3	0.21
3 day	3.28	0.04	3.72	0.05	4.51	0.06	5.24	0.07	6.32	0.08	7.22	0.10	8.19	0.11	10.7	0.14
4 day	3.53	0.03	3.98	0.04	4.78	0.04	5.50	0.05	6.58	0.06	7.49	0.07	8.46	0.08	10.9	0.11
7 day	4.17	0.02	4.67	0.02	5.53	0.03	6.29	0.03	7.39	0.04	8.30	0.04	9.25	0.05	11.6	0.06
10 day	4.75	0.01	5.30	0.02	6.24	0.02	7.04	0.02	8.20	0.03	9.12	0.03	10.0	0.04	12.4	0.05

D = Total depth of rainfall for given storm duration (inches)  
 I = Rainfall intensity for given storm duration (inches/hour)

**SUDAS - Modified Rational Detention Analysis**  
**Dollar General - Davenport, IA**

Area (ac)                    1.58 acres  
Tc                                15 min  
C (undev)                    0.35  
C (dev)                        0.82  
5 yr Intensity                3.88 in/hr  
5 yr undev flow rate        2.15 cfs

<b>Td (min)</b>	<b>100-year Intensity (in/hr)</b>	<b>100-year Inflow (cfs)</b>	<b>100-year Inflow (c.f.)</b>	<b>Release Volume (c.f.)</b>	<b>Storage (c.f.)</b>
5	11.60	15.03	4509	644	3865
10	8.54	11.06	6639	1287	5351
15	6.94	8.99	8092	1931	6161
30	4.95	6.41	11544	3862	7682
60	3.36	4.35	15672	7724	7947
120	2.12	2.75	19776	15449	4327
180	1.61	2.09	22528	23173	-645

Design volume = 7947 c.f. Release rate = 2.15 cfs
--



NPDES GENERAL PERMIT NO. 2  
STORM WATER POLLUTION PREVENTION PLAN FOR

Dollar General Store #30307  
Davenport/Scott County, Iowa

NPDES Permit Discharge Authorization Number: IA- 43554 - 43150

November 2023

Prepared by:

Overland Engineering, LLC  
1598 Imperial Center, Suite 2001  
West Plains, Missouri 65775  
(417) 256-8150

## **Table of Contents**

Part 1	Site Description / General Location Map and Site Map
Part 2	Controls
Part 3	Construction / Implementation
Part 4	Final Stabilization / Termination
Appendix A	NPDES General Permit No. 2
Appendix B	Public Notices, Notice of Intent
Appendix C	Inspection Reports

**PART 1**

**SITE DESCRIPTION / SITE MAP**

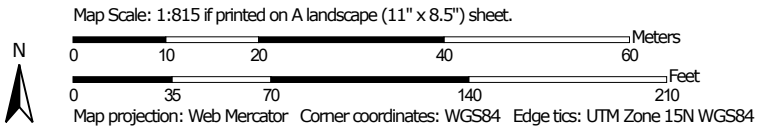
SITE INFORMATION

Project Name	Dollar General Store #30307
Project Location (address, Section, TWP, R)	SWC 110th Ave & Hwy61, Davenport IA Scott County, NE1/4, S2, T77N, R2E
Owner Name	DGOGDavenportia07262023 LLC
Representative	Jacob Stauffer
Representative Address/Phone	The Overland Group 1598 Imperial Center, Suite 2009 West Plains, MO 65775 417-256-8150 / 417-505-8069
Site Area	2.00 acres
Disturbed Area	2.00 acres
Final Runoff Coefficient	0.74
Soil type	Atterberry Silt Loam Downs Silt Loam
Receiving Waters	Onsite detention basin, Unnamed tributary of Donaldson Creek
Description of Proposed Activity	Grading, utilities, and paving
Expected Sequence of Major Construction Activity (Subject to change: any deviations to the plan shall be noted on this plan)	A. Install temporary sediment control measures B. Grading C. Utility Installation D. Paving E. Final stabilization seeding, sodding, mulching, fertilizing F. Remove remaining temporary sediment control measures

Hydrologic Soil Group—Scott County, Iowa



Soil Map may not be valid at this scale.



## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points






 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Scott County, Iowa  
 Survey Area Data: Version 32, Sep 12, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 17, 2020—Sep 15, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
291	Atterberry silt loam, 1 to 3 percent slopes	C/D	1.6	61.3%
M162B	Downs silt loam, till plain, 2 to 5 percent slopes	C	0.7	25.8%
M162C2	Downs silt loam, till plain, 5 to 9 percent slopes, eroded	C	0.3	11.3%
M162D2	Downs silt loam, till plain, 9 to 14 percent slopes, eroded	C	0.0	1.6%
<b>Totals for Area of Interest</b>			<b>2.6</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher



# DOLLAR GENERAL STORE #30307

## APPLICANT/DEVELOPER

DGDCD#190707262023 LLC  
1906 E BATTLEFIELD ROAD  
DAVENPORT, IOWA 52807  
417-256-4700 (VOICE)  
417-256-6422 (FAX)

## SITE DEVELOPMENT DATA

LOT AREA = 87,742 S.F. (2.01 ACRES)  
PROPOSED OPEN AREA = 46,875 S.F. (82%)  
PROPOSED BUILDING GROSS AREA = 12,480 S.F.  
SALES AREA = 9,872 S.F.  
PARKING SPACES REQUIRED VEHICLE = 17 SPACES  
(12,480 S.F. / 750 = 16.6)  
PROVIDED VEHICLE = 40 SPACES  
EXISTING ZONING: C-2  
EXISTING USE: VACANT  
PROPOSED USE: RETAIL  
FRONT SETBACK: 50 FEET  
REAR SETBACK: 20 FEET  
PROPOSED WATER: IOWA AMERICAN WATER COMPANY  
PROPOSED SEWER: SEPTIC SYSTEM (SCOTT COUNTY)

## OWNER

JOHN E. GROVES  
4222 E 80TH STREET  
DAVENPORT, IOWA 52807  
(563) 340-3033 (VOICE)

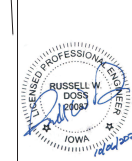
## LEGEND

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING CENTERLINE DITCH/ROADWAY
- - - EXISTING STORM SEWER
- - - EXISTING WATER MAIN
- - - EXISTING TIMBER
- RECOVERED 5/8" IRON ROD (CAPPED)
- SET 5/8" IRON ROD
- EXISTING MANHOLE
- EXISTING GUY WIRE
- EXISTING UTILITY POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER VALVE
- EXISTING SIGN
- EXISTING TELEPHONE PEDESTAL
- EXISTING MAST ARM
- AGG AGGREGATE SURFACE
- BIT BITUMINOUS SURFACE
- CONC CONCRETE SURFACE
- EL ELEVATION
- RP REINFORCED CONCRETE PIPE

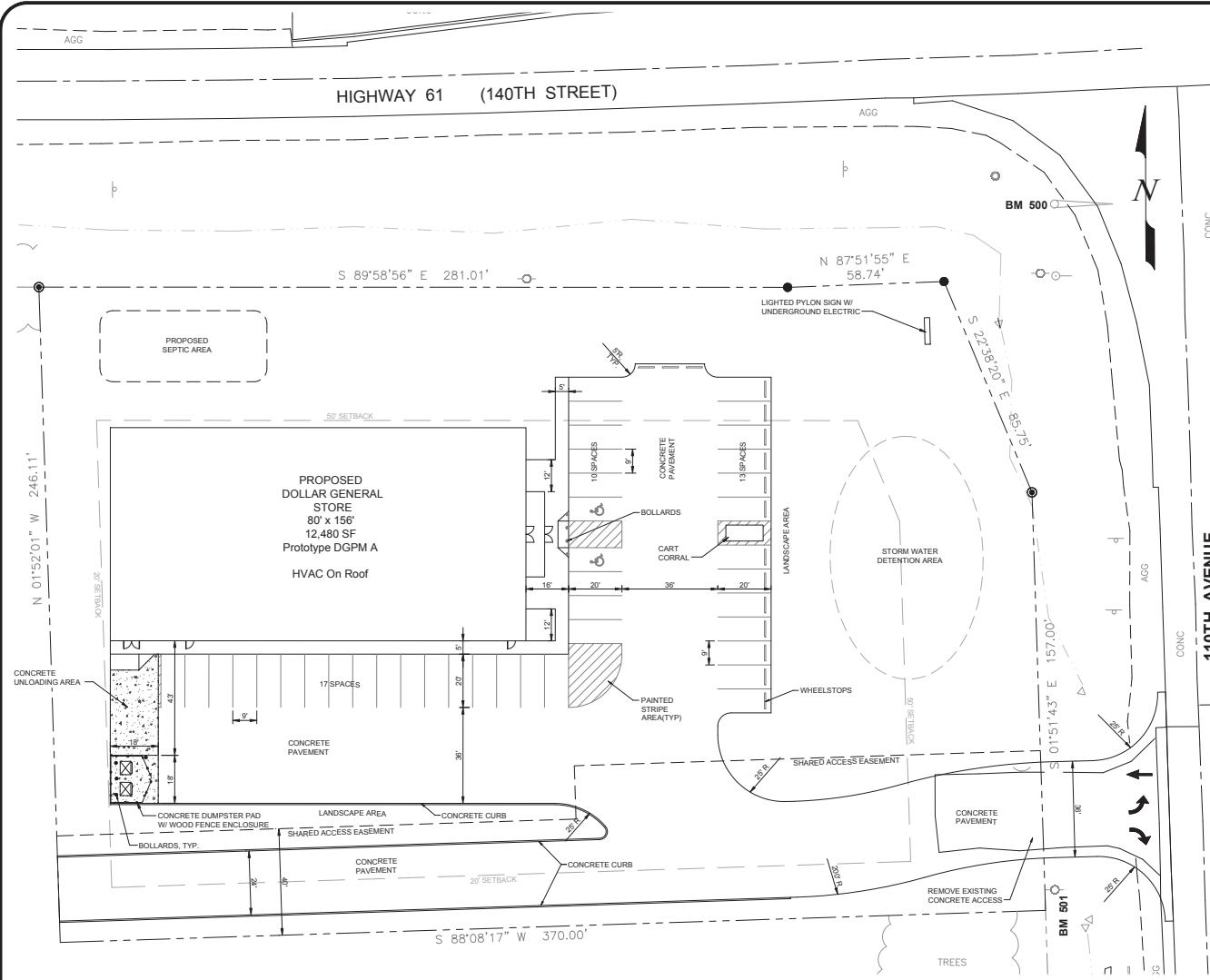
## GENERAL NOTES

1. THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO ALL CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS OF THE PUBLIC GENERAL NOTES WORKS DEPARTMENT OF SCOTT COUNTY, IOWA, UNLESS OTHERWISE NOTED.
2. ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF SCOTT COUNTY, IOWA.
3. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
4. THE CONTRACTOR MAY UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY THE ONE CALL SYSTEM, INC.: 1-800-292-8989. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF IOWA.
5. ALL DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY AND AT THE EXPENSE OF THE CONTRACTOR.
6. THE CONTRACTOR SHALL UNDER NO CIRCUMSTANCES CLEAR OR DAMAGE ANY TREES OUTSIDE THE CLEARING LIMIT LINE SET BY THE CITY WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER OR PROPERTY OWNER.
7. CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
8. THE CONTRACTOR SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
9. THE CONTRACTOR SHALL PLACE MIN. 4" TOPSOIL AND SEED & MULCH ALL DISTURBED AREAS AT THE DIRECTION OF THE ENGINEER.

## SEAL:



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.  
*Russell W. Doos* 10/26/2023  
(SIGNATURE) (DATE)  
RUSSELL W. DOOS  
LICENSE NO. 20087  
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2023  
PAGES OR SHEETS COVERED BY THIS SEAL: C1 THRU C5



## UTILITY DISCLAIMER

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## BENCHMARKS

BM 500  
CROSSED ON CONCRETE MAST ARM  
BASE AT SOUTHWEST CORNER OF  
HIGHWAY 61 AND 110TH AVENUE.  
ELEV. 759.25

BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44



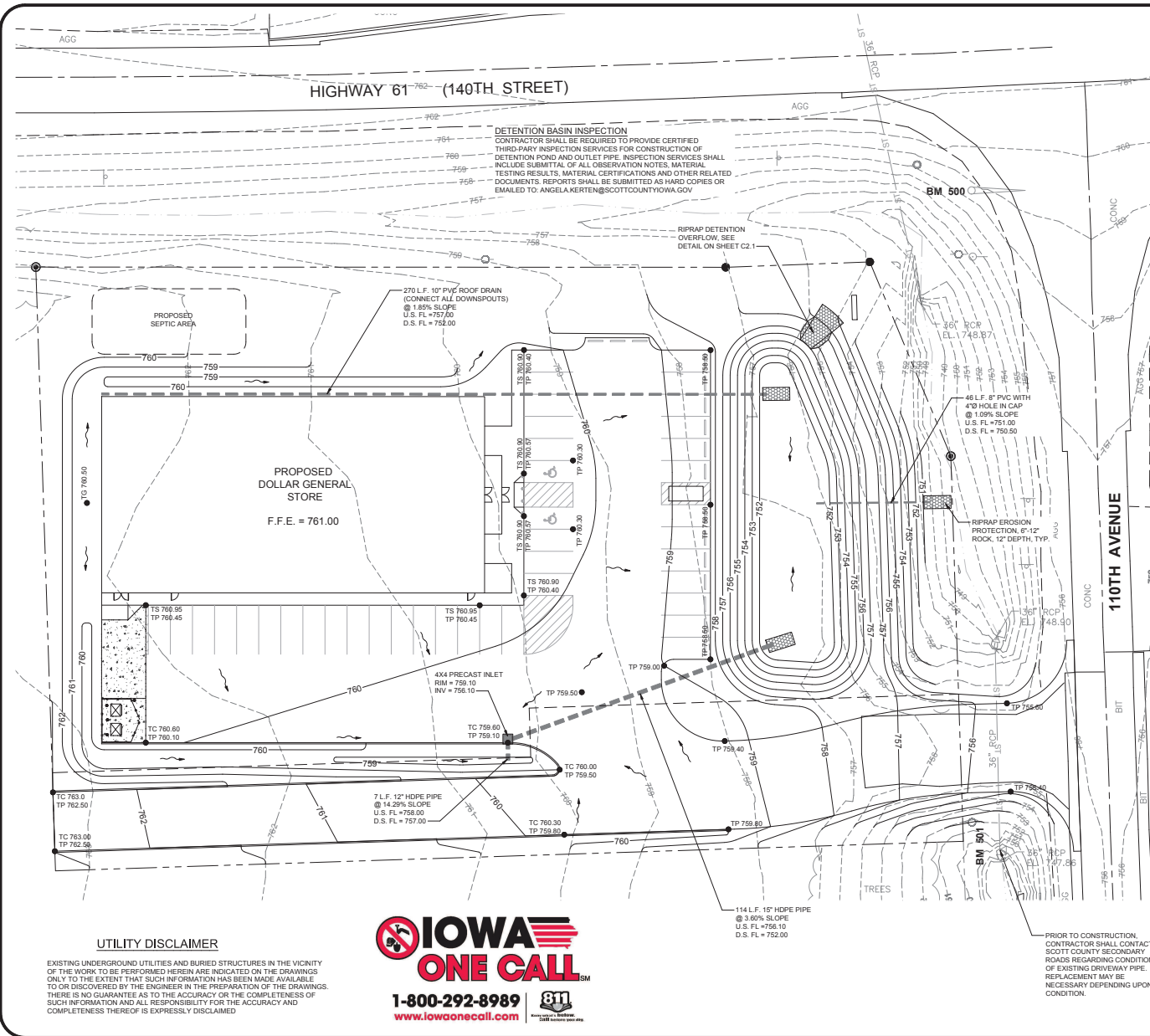
NO.	DATE	DESCRIPTION



DOLLAR GENERAL  
DAVENPORT, IOWA

SITE PLAN

SHEET  
C1



- LEGEND**
- BOUNDARY OF SURVEY
  - - - - EXISTING LOT LINE
  - - - - EXISTING CENTERLINE DITCH/ROADWAY
  - ST EXISTING STORM SEWER
  - W EXISTING WATER MAIN
  - EXISTING TIMBER
  - RECOVERED 5/8" IRON ROD (CAPPED)
  - SET 5/8" IRON ROD
  - EXISTING MANHOLE
  - EXISTING GUY WIRE
  - EXISTING UTILITY POLE
  - EXISTING FIRE HYDRANT
  - EXISTING WATER VALVE
  - EXISTING SIGN
  - EXISTING TELEPHONE PEDESTAL
  - EXISTING MAST ARM
  - AGG AGGREGATE SURFACE
  - BIT BITUMINOUS SURFACE
  - CONC CONCRETE SURFACE
  - EL ELEVATION
  - RCP REINFORCED CONCRETE PIPE

- BENCHMARKS**
- BM 500 CHISELED 1" ON CONCRETE MAST ARM BASE AT SOUTHWEST CORNER OF HIGHWAY 61 AND 110TH AVENUE. ELEV. 759.25
  - BM 501 RAILROAD SPIKE IN POWER POLE ON WEST SIDE OF 110TH AVENUE AT SOUTHEAST CORNER OF SITE. ELEV. 753.44

**SITE PLAN GENERAL NOTES:**

1. STANDARD PARKING SPACES SHALL HAVE MINIMUM SIZE OF 9'X 20' UNLESS LOCAL JURISDICTION REQUIRE LARGER SPACES. PARKING SPACE STRIPING SHALL BE STANDARD W/ DEGREE STYLE. MINIMUM SIZE OF H.C. PARKING SPACES AND ACCESS AISLE ARE SHOWN ON DETAILS.
2. PAINTED STANDARD PARKING SPACE AND ISLAND STRIPE COLOR SHALL BE YELLOW FOR ASPHALT PAVEMENT AND CONCRETE PAVEMENT. COLOR FOR PAINTED H.C. ACCESSIBLE PARKING SPACE STRIPES, ACCESS AISLE OR ISLAND STRIPES, H.C. SYMBOLS, SHALL BE PAINTED PER THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. BOLLARDS SHALL BE PAINTED YELLOW. PAINT SHALL BE REFLECTIVE TYPE.
3. PAINTED FIRE LANE STRIPING OR PAINTED CURBS SHALL BE PROVIDED AS REQUIRED BY JURISDICTIONAL REQUIREMENTS.
4. CONCRETE PARKING STOPS SHALL BE USED AT PARKING SPACES ALONG THE OUTER PERIMETER OF PARKING LOT WHEN CONCRETE CURBS ARE NOT USED.
5. CONCRETE PARKING STOPS SHALL NOT BE USED AT THE FRONT OF THE BUILDING OR ALONG THE PERIMETER (ADJACENT) TO THE BUILDING.
6. THE SIDEWALK AT THE FRONT OF THE BUILDING SHALL BE A MINIMUM OF 9- FEET WIDE. THE SIDEWALK SHALL INCLUDE A 10-FOOT MINIMUM WIDE ADA ACCESSIBLE RAMP CLOSE TO THE STORE MAIN ENTRANCE. SIDEWALKS ALONG OTHER SIDES OF BUILDING SHALL BE MINIMUM 3'-6" WIDE. SIDEWALKS ADJACENT TO BUILDING SLABS SHALL HAVE SEALED ISOLATION JOINTS AND SHALL BE 6" HIGH ABOVE EXTERIOR OR PAVEMENT FINISH GRADES. ALL EXTERIOR SIDEWALKS SHALL HAVE A BROOM FINISH.
7. PORTLAND CEMENT SIDEWALKS SHALL BE MINIMUM 4" THICK WITH WELDED WIRE FABRIC REINFORCING.
8. SIDEWALKS ADJOINING THE BUILDING MUST HAVE A 6" HIGH INTEGRAL CURB.
9. SLOPE CONCRETE SIDEWALKS AWAY FROM BUILDING AT A MINIMUM SLOPE OF 1/8" PER FOOT, INCLUDING RECESSED ENTRY.
10. THE ACTUAL LOCATION FOR THE PYLON SIGN SHALL BE SITUATED FOR OPTIMUM VISIBILITY ALONG THE MAIN FRONT TRAFFIC CORRIDOR.
11. BUILDING CORNERS ADJACENT TO PAVED AREAS SHALL BE BOLLARD PROTECTED. ABOVE GROUND UTILITY APPURTENANCES, SUCH AS METERS, TRANSFORMERS, FIRE HYDRANTS IN PAVED AREAS, ETC. SHALL BE BOLLARD PROTECTED.
12. DOWNSPOUTS SHALL NOT BE ALLOWED TO DISCHARGE ON CONCRETE SIDEWALKS. ROUTE DOWNSPOUTS UNDER SIDEWALKS AT ALL SIDEWALK LOCATIONS.
13. ALL DOWNSPOUTS DISCHARGING ONTO NON PAVED AREAS ARE TO HAVE A MINIMUM FIVE FOOT PERFORATED LANDSCAPE PIPE STRAPPED TO A MINIMUM 12 INCH X 24 INCH CONCRETE SPLASH BLOCK.
14. FINISH FLOOR TO BE A MINIMUM OF 12 INCHES ABOVE 100 YEAR FLOOD PLAN.
15. FINISHED GRADE AT EXTERIOR WALLS SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR AT ALL NON-PAVED AREAS.

PRIOR TO CONSTRUCTION, CONTRACTOR SHALL CONTACT SCOTT COUNTY SECONDARY ROADS REGARDING CONDITION OF EXISTING DRIVEWAY PIPE. REPLACEMENT MAY BE NECESSARY DEPENDING UPON CONDITION.

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**DOLLAR GENERAL**  
110TH AVENUE & 140TH AVENUE, DAVENPORT, IOWA

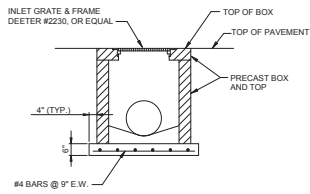
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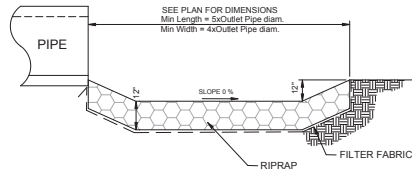
**overland ENGINEERING, LLC**  
1008 MIFKIN CTR., STE. 2000 WEST PLAINS, MO 65755  
PHONE: (417) 235-6909 FAX: (417) 234-8532  
www.overlandeng.com

DOLLAR GENERAL  
DAVENPORT, IOWA  
GRADING PLAN

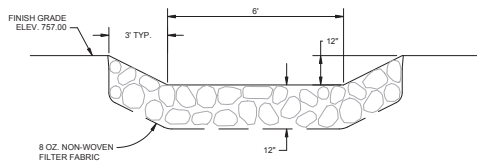
SHEET  
C2



**GRATE INLET DETAIL**  
NO SCALE



**RIPRAP OUTLET DETAIL**  
NO SCALE



**RIPRAP OVERFLOW SECTION**  
NO SCALE

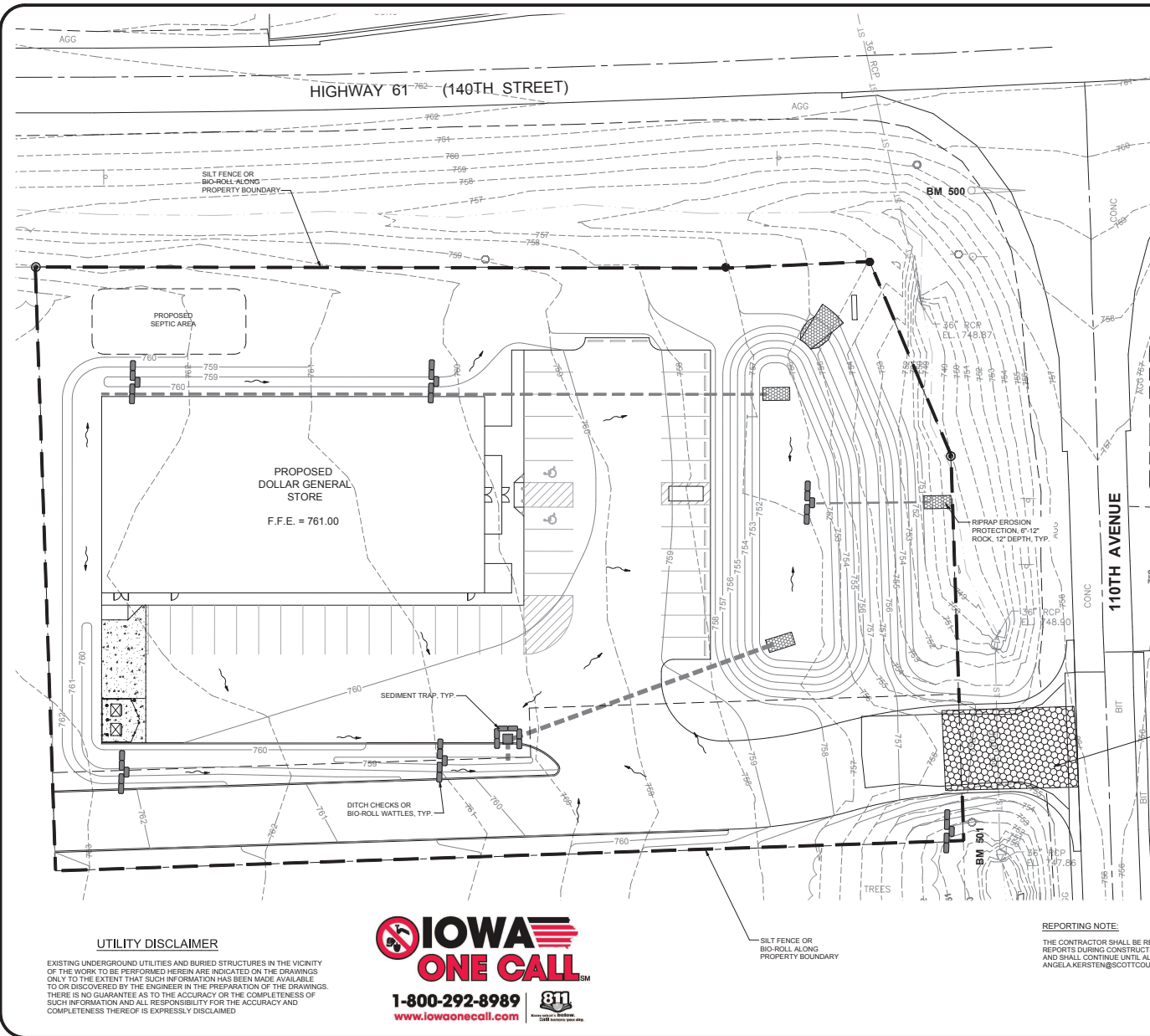


NO.	DATE	DESCRIPTION	BY



**Overland ENGINEERING, LLC**  
 1008 WINTERGLEN DR., STE. 2000 WEST PLAINS, MO 65775  
 PHONE: (417) 233-8900 FAX: (417) 234-8522  
 www.overlandeng.com

DOLLAR GENERAL  
 DAVENPORT, IOWA  
 DRAINAGE DETAILS



- 20' 0' 20' 40'  
SCALE: 1" = 20' FEET
- LEGEND**
- BOUNDARY OF SURVEY
  - - - EXISTING LOT LINE
  - - - EXISTING CENTERLINE DITCH/ROADWAY
  - ST EXISTING STORM SEWER
  - W EXISTING WATER MAIN
  - EXISTING TIMBER
  - RECOVERED 5/8" IRON ROD (CAPPED)
  - SET 5/8" IRON ROD
  - EXISTING MANHOLE
  - EXISTING GUY WIRE
  - EXISTING UTILITY POLE
  - EXISTING FIRE HYDRANT
  - EXISTING WATER VALVE
  - EXISTING SIGN
  - EXISTING TELEPHONE PEDESTAL
  - EXISTING MAST ARM
  - AGG AGGREGATE SURFACE
  - BIT BITUMINOUS SURFACE
  - CONC CONCRETE SURFACE
  - EL ELEVATION
  - RCP REINFORCED CONCRETE PIPE

- BENCHMARKS**
- BM 500  
CHISELED 1" ON CONCRETE MAST ARM  
BASE AT SOUTHWEST CORNER OF  
HIGHWAY 61 AND 110TH AVENUE.  
ELEV. 756.25
  - BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

**REPORTING NOTE:**  
THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT 1/2" RAIN AND WEEKLY EROSION CONTROL INSPECTION REPORTS DURING CONSTRUCTION OF THE PROJECT. REPORTING SHALL COMMENCE WHEN GRADING BEGINS AND SHALL CONTINUE UNTIL ALL DISTURBED GROUND IS STABILIZED. REPORTS SHALL BE EMAILED TO: ANGELAKERSTEN@SCOTT COUNTY IOWA.GOV

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**IOWA ONE CALL**  
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**DOLLAR GENERAL**  
1100 HWY 61 & 110TH AVENUE, DAVENPORT, IOWA 52806  
781-291-1100

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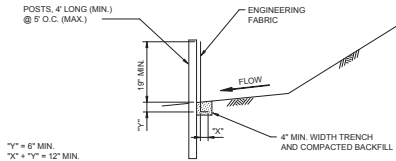


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PHONE: (417) 237-0609 FAX: (417) 234-8532  
www.overlandeng.com

DOLLAR GENERAL  
DAVENPORT, IOWA  
SEDIMENT & EROSION  
CONTROL PLAN

NOTES:

1. THE MINIMUM LONGITUDINAL SPICE OVERLAP SHALL BE 2' WITH A POST AT EACH END.
2. SECURE FABRIC TO POSTS.



"Y" = 6" MIN.  
"X" = "Y" = 12" MIN.

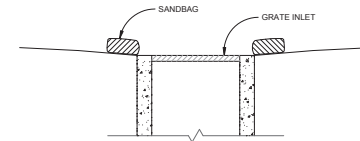
SILT FENCE DETAIL

NOT TO SCALE

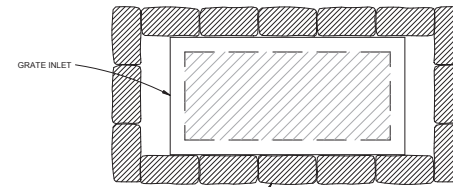
SEEDING AND MULCHING SPECIFICATIONS

ALL DISTURBED AREAS MUST BE REVEGETATED BEFORE TEMPORARY SEDIMENT CONTROLS CAN BE REMOVED.

1. COVERING SPECIFICATIONS  
ALL SEEDING, MUCHING, FERTILIZING, AND MAINTENANCE SHALL BE IN ACCORDANCE WITH SECTION 9010 OF THE SUDAS STANDARD SPECIFICATIONS
2. TOPSOIL  
SEEDBED SHALL BE PREPARED LOOSENING TOPSOIL A MINIMUM OF 6 INCHES.
3. FERTILIZER  
FERTILIZER SHALL BE 13-13-13 (N-P-K) COMMERCIAL GRADE APPLIED AT A RATE OF 200 LBS PER ACRE.
4. SEEDING  
SEED MIX SHALL BE TYPE 1 AS SPECIFIED IN THE SUDAS STANDARD SPECIFICATIONS. SEED SHALL BE APPLIED AT A RATE OF 200 POUNDS PER ACRE.
5. MULCHING  
MULCHING SHALL BE APPLIED AT THE RATE OF 1.5 TONS PER ACRE.



CROSS-SECTION



SANDBAGS

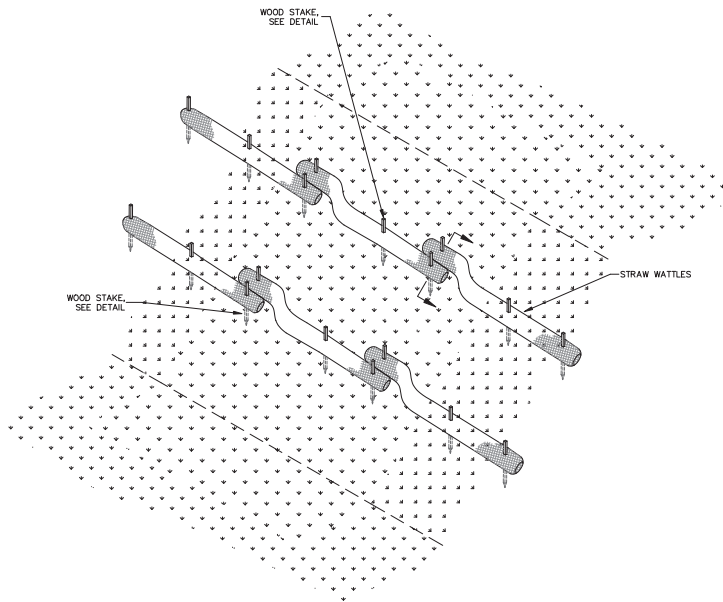
PLAN

NOTES:

1. FILL BAGS WITH 5/8" CRUSHED LIMESTONE.
2. BAGS SHALL BE BURLAP OR BIODEGRADABLE PLASTIC.
3. BAGS SHALL BE INSPECTED AND REPLACED AS NEEDED.

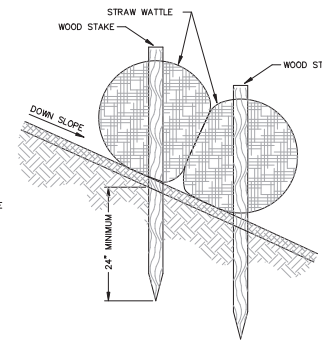
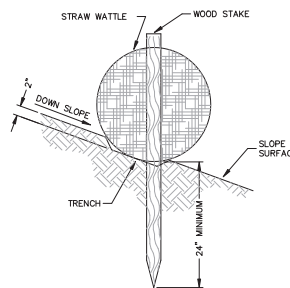
INLET SEDIMENT TRAP

NOT TO SCALE



BIO-ROLL/WATTLE DETAIL

NOT TO SCALE



**DOLLAR GENERAL**  
INGHAM & B. URBAN AVENUE, DAVENPORT, IOWA  
www.dollargeneral.com

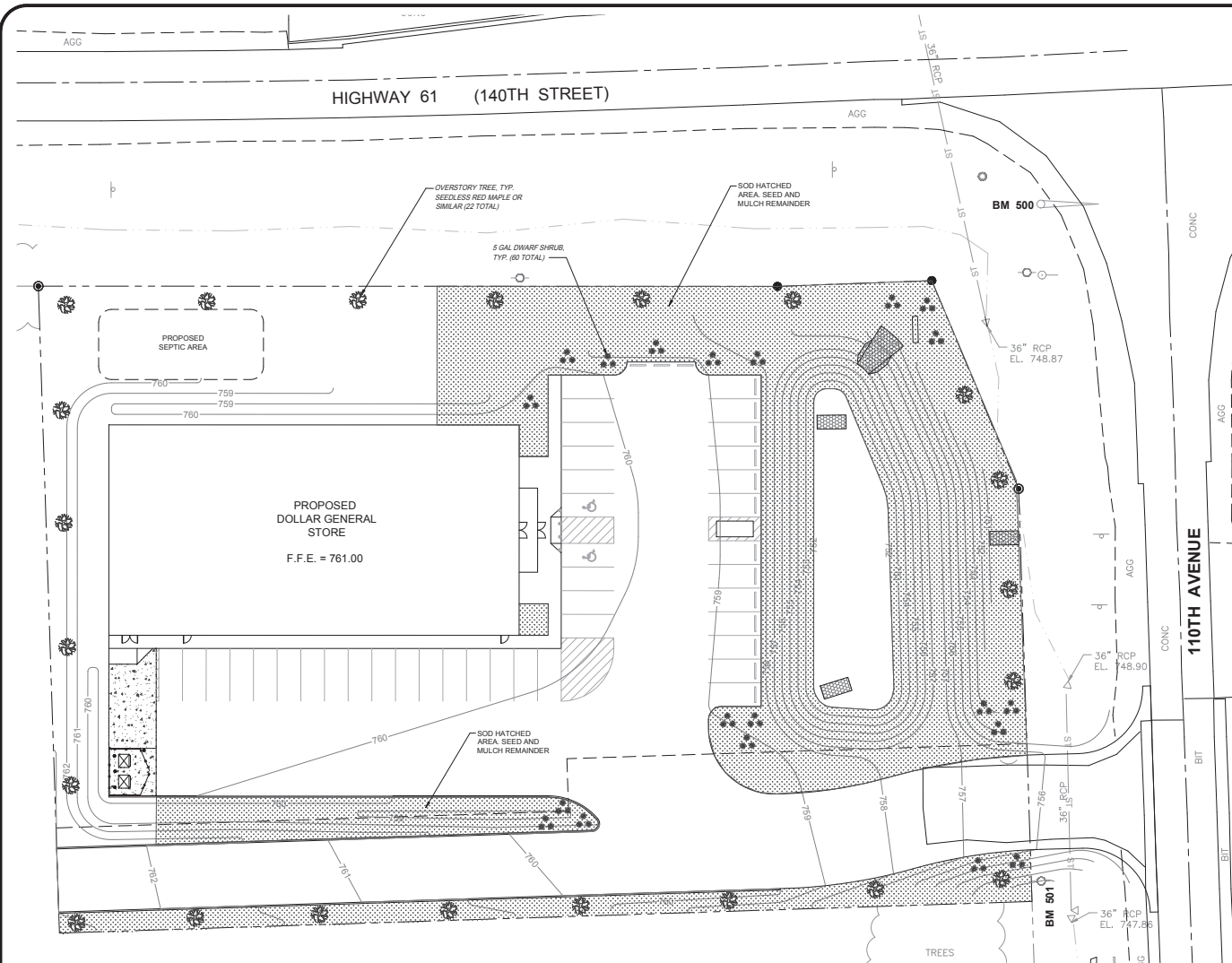
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DOLLAR GENERAL  
DAVENPORT, IOWA  
SEDIMENT & EROSION  
CONTROL DETAILS

SHEET  
**C3.1**



20' 0' 20' 40'  
SCALE: 1 INCH = 20 FEET

**LEGEND**

- BOUNDARY OF SURVEY
- - - EXISTING LOT LINE
- - - EXISTING CENTERLINE DITCH/ROADWAY
- - - ST EXISTING STORM SEWER
- - - W EXISTING WATER MAIN
- - - EXISTING TIMBER
- RECOVERED 5/8" IRON ROD (CAPPED)
- SET 5/8" IRON ROD
- EXISTING MANHOLE
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- BIT BITUMINOUS SURFACE
- CONC CONCRETE SURFACE
- EL ELEVATION
- RCP REINFORCED CONCRETE PIPE

**BENCHMARKS**

BM 500  
CHISELED "I" ON CONCRETE MAST ARM  
BASE AT SOUTHWEST CORNER OF  
HIGHWAY 61 AND 110TH AVENUE.  
ELEV. 748.25

BM 501  
RAILROAD SPIKE IN POWER POLE ON  
WEST SIDE OF 110TH AVENUE AT  
SOUTHEAST CORNER OF SITE.  
ELEV. 753.44

- LANDSCAPE NOTES:**
- ALL PLANTING BEDS SHALL HAVE A MINIMUM 3" DEPTH OF MULCH, WITH EDGING AS REQUIRED.
  - ALL TREES LOCATED IN SOD AREAS SHALL HAVE A MULCH RING AROUND THEM WITH EDGING.
  - ALL PLANTINGS SHALL BE THOROUGHLY WATERED BY THE LANDSCAPE CONTRACTOR AT THE TIME OF THE PLANTINGS.
  - MAXIMUM GRADING SHALL NOT EXCEED 4:1 EXCEPT IN DETENTION AREA.
  - CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING ALL VEGETATION AND REGIONAL APPROPRIATE LANDSCAPING.
- IRRIGATION NOTES:**
- IRRIGATION SYSTEM FOR SODDED AND LANDSCAPED AREAS IS NOT SHOWN BUT SHALL BE DESIGNED AND INSTALLED BY CONTRACTOR.
  - IRRIGATION SYSTEM TO INCLUDE ALL SPRAY HEADS, VALVES AND CONTROLLERS.
  - LOCATE HEADS A MINIMUM OF 2'-0" FROM EDGE OF PAVEMENT / CURB.

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**IOWA ONE CALL**

1-800-292-8989  
www.iowaonecall.com

**LANDSCAPING SYMBOL LEGEND**

- OVERSTORY TREES
- 5 GALLON SHRUBS

**DOLLAR GENERAL**

110TH AVENUE & 140TH AVENUE, DAVENPORT, IOWA

NO.	DATE	DESCRIPTION	BY

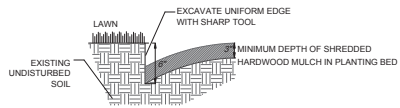


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PHONE: (417) 233-6609 FAX: (417) 234-8522  
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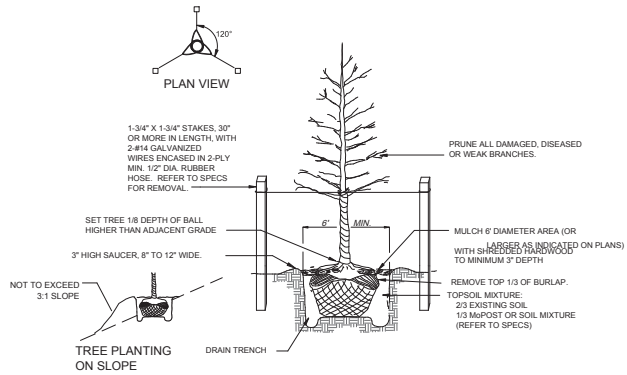
DOLLAR GENERAL  
DAVENPORT, IOWA  
LANDSCAPING PLAN

SHEET  
C4



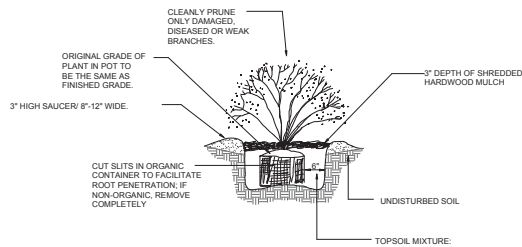
**EARTHEN EDGING DETAIL**

NO SCALE



**TREE DETAIL- LESS THAN 3 1/2" CALIPER**

NO SCALE

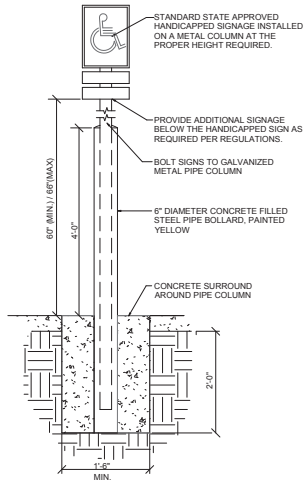


**SHRUB DETAIL**

NO SCALE

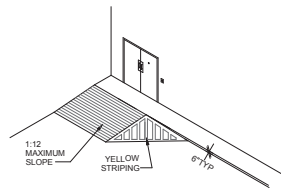
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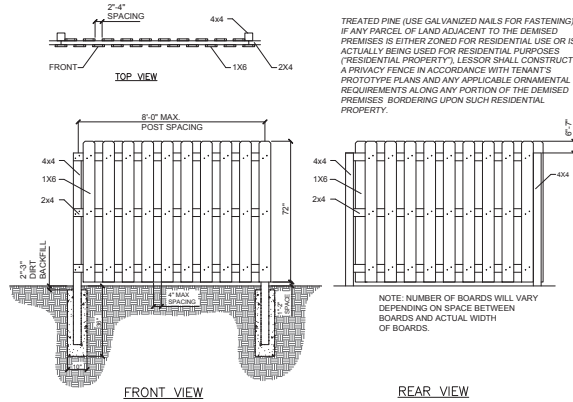
**BOLLARD DETAIL**

NOT TO SCALE



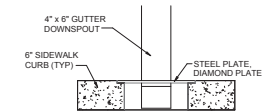
**SIDE ENTRY DETAIL**

NOT TO SCALE



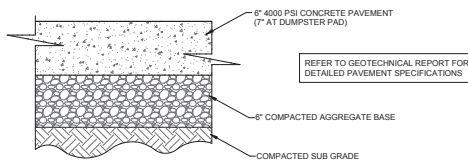
**WOOD FENCE DETAIL**

NOT TO SCALE



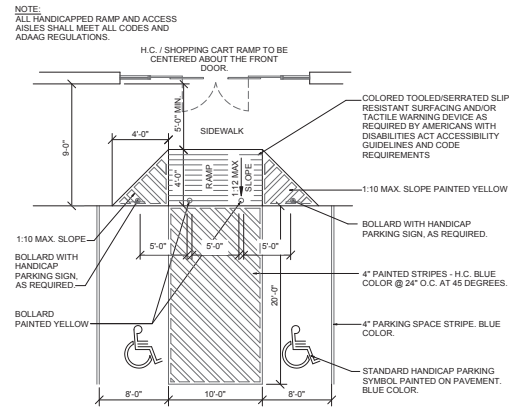
**GUTTER DOWNSPOUT DETAIL @ SIDEWALK**

NOT TO SCALE



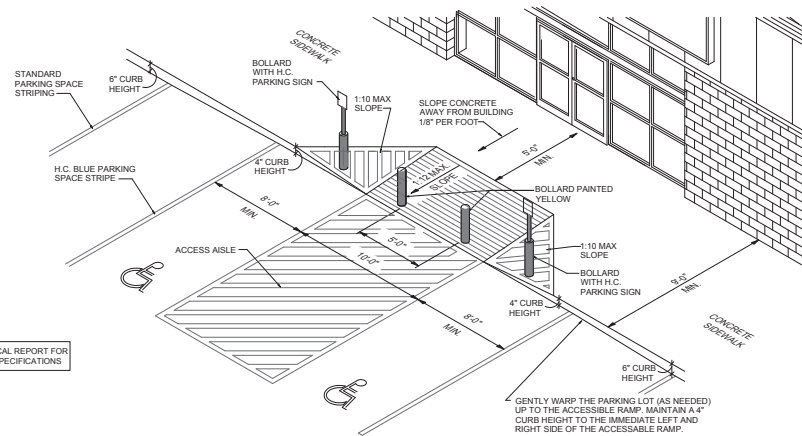
**CONCRETE PAVEMENT SECTION**

NOT TO SCALE



**FRONT ENTRY PLAN**

NOT TO SCALE



**FRONT ENTRY ISOMETRIC**

NOT TO SCALE

**STRIPING NOTES**

YELLOW CURBING AND BOLLARDS SURFACES SHOULD BE CLEAN, DRY AND METAL SURFACES FREE OF HEAVY RUST 2 COATS SHERWIN WILLIAMS - KEM 4000 ACRYLIC ALKYL ENAMEL SAFETY YELLOW 8557300

STRIPING - PARKING LOT SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT YELLOW TM5495

HANDICAP STRIPING - PARKING LOT SURFACES SHOULD BE CLEAN, DRY. TOP COAT SHERWIN WILLIAMS - PROMAR TRAFFIC MARKING PAINT "H.C." BLUE

**DOLLAR GENERAL**  
ENGINEERING, LLC  
1008 INFANTIL CRT., STE. 2000 WEST DAVENPORT, IA 52745  
PHONE: (319) 336-8600 FAX: (319) 256-8532



**overland**  
ENGINEERING, LLC  
1008 INFANTIL CRT., STE. 2000 WEST DAVENPORT, IA 52745  
PHONE: (319) 336-8600 FAX: (319) 256-8532

**DOLLAR GENERAL**  
DAVENPORT, IOWA  
DETAILS

SHEET  
**C5**

NO.	DATE	DESCRIPTION	BY



**PART 2**  
**CONTROLS**

A. Erosion and Sediment Controls

Measures to be used for controlling erosion and sediment throughout the construction project include stabilization measures for limiting soil erosion from disturbed areas and structural controls to divert runoff and remove sediment. Contractor/subcontractor is responsible for the implementation and management of control measures specific to this site. As work progresses, field investigation may indicate additional erosion control measures may be required as determined by the Contractor, Owner, Engineer, City or other governmentally regulated agencies.

1. Stabilization

- a. Preserve existing vegetation in areas not disturbed during construction.
- b. Undisturbed areas will utilize existing vegetation as a natural buffer zone to increase infiltration and sediment deposition by reducing runoff velocity.
- c. The total area of soil disturbed by construction operations at any time shall be held to a minimum.
- d. Soil Compaction - compaction of soils in area to be seeded or sodded will be kept to a minimum to increase infiltration of storm water runoff into the groundwater, reducing the amount of runoff.
- e. Topsoil Conservation - The Contractor shall be responsible for stripping topsoil from existing vegetated areas that will be disturbed as part of the construction. Topsoil does not have to be stockpiled and reused and can be removed from the site by the contractor unless specifically specified otherwise in the contract documents. Minimum 4" topsoil is required on all unpaved areas.
- f. Temporary stabilization - in areas where construction activity is not planned to occur for a period exceeding 14 calendar days, the contractor shall initiate temporary stabilization measures immediately after ceasing construction activities in that area by one or more of the following temporary erosion control methods:
  1. Topsoil stockpiles and disturbed portions of the site will be stabilized with temporary seed and mulch.
  2. In drought-stricken areas and areas that have recently received excessive rain amounts that make it impossible to initiate vegetation with field equipment, allowable alternative measures maybe employed as specified by the Iowa Department of Natural Resources.
- g. Permanent Stabilization - in areas where construction activity has permanently ended, the contractor shall initiate permanent stabilization measures immediately after ceasing construction activities in that area by one or more of the following permanent erosion control measures:
  1. Sodding or permanent seeding/mulch and mulch in unpaved areas where final grading is complete.
- h. Dust Control - Mulch or surface watering will be utilized to control wind erosion of susceptible soils during and/or immediately after mass site grading operations.
- i. Winter Stabilization - The project is scheduled to be complete in late October. Permanent sod and seed & mulch will be completed prior to cold weather. In the event that winter stabilization is necessary, temporary mulch will be applied to disturbed areas until permanent stabilization can take place.

- j. Additional requirements
  - If control locations cannot be pre-determined, the SWPPP manager shall add them to the site map as they are implemented.
  - Time construction activities to limit impact from weather/seasonal changes.
  - Do not remove perimeter controls until upstream areas are stabilized.
  - Install infiltration controls after upstream areas are stabilized.

## 2. Structural Controls

- a. At all areas where runoff can move offsite, silt fence, filter sock or approved equal will be installed along the perimeter of the project downstream of soil disturbing activities and storm water discharge points prior to site clearing and grading operations as required and/or shown on the plans.
- b. Provide silt fence, filter sock, or equivalent measures for all sideslopes and downstream boundaries of the disturbed area as required and/or shown on the plans.
- c. Inlet protection devices will be installed in all storm water intakes to protect storm sewers from sediment immediately after construction of the inlet.
- d. Additional erosion control measures may be required on embankments, stockpiles, and other areas to ensure runoff control.

## B. Storm Water Management

Post construction storm water drainage will be facilitated by curb and gutter, storm sewer and intake structures for the developed areas or area intakes and the detention basin in undeveloped areas. Runoff will be directed to the City of Sioux City storm sewer system and then to a city retention basin.

Measures implemented to control pollution of storm water after construction is complete include the following:

- 1. Undeveloped areas of the site will be graded at the slopes indicated and have permanent seeding and/or landscaping designed to reduce runoff velocities and increase infiltration.
- 2. Portions of the site will remain undisturbed and in its original vegetative state, limiting the amount of exposed soil and providing a vegetative buffer zone that will reduce runoff velocities and increase infiltration.

## C. Other Controls

Measures for controlling other sources of potential pollution that may exist on the construction site. During the course of construction, it is possible that situations may arise where unknown material will be encountered. When such situations occur, they will be handled according to all applicable federal, state, and local regulations in effect at the time.

### 1. Waste Materials

Disposal of unused construction materials and construction material wastes shall comply with applicable state and local waste disposal, sanitary sewer, or septic system regulations. In the event of a conflict with other governmental laws, rules and regulations, the more restrictive laws, rules, or regulations shall apply.

All collected sediment and debris shall be properly disposed of.

Do not dispose of rubble in wetlands, floodplains, or drainage ways without IDNR or jurisdiction approval.

Dumpsters shall be covered to prevent storm water contamination.

2. Hazardous Waste

- a. Hazardous waste materials will be disposed of in accordance with applicable local, State and/or Federal regulations.
- b. Equipment refueling and maintenance operations will be carried out in such a manner so as to prevent any spills and contamination to the soil and ground water.
- c. Potentially hazardous materials will be used with great care to prevent spillage in any volume.

3. Vehicle Tracking

- a. Stabilized construction entrances and/or vehicle washing racks will be installed at all site access points to reduce vehicle tracking of sediment offsite.
- b. Paved streets adjacent to the site will be inspected daily and cleaned as necessary to remove any excess mud, dirt, or rock tracked from the site.
- c. Dump trucks hauling material from the site will be properly covered with a tarpaulin.
- d. Dust control measures will be used as necessary.

4. Sanitary Waste

A portable restroom facility may be located onsite at the contractor's discretion. Wastes will be collected and disposed of in complete compliance with local, State and Federal regulations. This facility will be located in an area where contact with storm water discharge is minimized.

D. Non-storm Water Discharges

1. Expected sources of non-storm water discharges from the site during construction may include:
  - a. Potable water sources, including water line flushing, irrigations drainage and firefighting activities.
  - b. Pavement/building wash waters where no spills or leaks of toxic or hazardous materials have occurred and excluding detergents.
  - c. Uncontaminated groundwater from de-watering excavations.
  - d. Natural springs, wetland, water sources.
  - e. Foundation or footing drains where flows have not been exposed to solvents.
2. Non-storm water flows will be discharged to a stabilized area or directed to a sediment retention device or other appropriate control measure prior to discharging off-site.

E. State and Local Requirements

1. The storm water pollution prevention plan reflects the State of Iowa requirements for storm water management and erosion and sediment control as established in 161A.64 Code of Iowa, State of Iowa Statutory Requirements pertaining to Erosion Control Plans.

2. Code Compliance: The contractor shall comply with the soil erosion control requirements of the Iowa Code, the Iowa DNR permit, and all local ordinances.

F. Sequence of Installation

1. Install perimeter silt fence, silt berms, & intake protection where possible.
2. Contact City Engineer for pre-construction inspection.
3. Clearing, Grubbing, & Removals as needed.
4. Complete grading, and utility installation.
5. Complete paving.
6. Complete fine grade permanent stabilization seed/mulch, sod, or landscaping of all disturbed areas.
7. Contact City Engineer for post-construction inspection.
8. Remove temporary sediment control measures when 70% stabilization is reached.
9. File Notice of Discontinuation within 30 days of removal.
10. Copy of NOD to City Engineer.

5 of

**PART 3**  
**CONSTRUCTION/IMPLEMENTATION**

**PROJECTED CONSTRUCTION SCHEDULE / CONSTRUCTION PROGRESS**

<b>Initial control measure installation</b> (Construction entrance, perimeter silt fence)			
<b>Operator Responsible</b>			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

<b>Removal operations</b> (Rough grading, paving & utility removals, maintain silt fence, add as directed)			
<b>Operator Responsible</b>			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

<b>Utility Installation</b> (Installation of site utilities - storm sewer & intake protection, installation of other utilities)			
<b>Operator Responsible</b>			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

<b>Paving</b> (Construction of paved areas, fine grading, permanent & temporary seed stabilization)			
<b>Operator Responsible</b>			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

<b>Building Construction</b> (N/A)			
<b>Operator Responsible</b>			
Anticipated Start Date		Anticipated End Date	
Actual Start Date		Actual End Date	

**Final Stabilization**

(Seed/mulch or sod, & fertilize disturbed areas not already stabilized with permanent seeding, remove temporary sediment control measures)

<b>Operator Responsible</b>			
<b>Anticipated Start Date</b>		<b>Anticipated End Date</b>	
<b>Actual Start Date</b>		<b>Actual End Date</b>	



A. Maintenance

1. All documents related to the storm water discharge permit shall be kept on site at all times and must be presented to the Iowa DNR or EPA upon request. This includes but is not limited to the Storm Water Pollution Prevention Plan, Notice of Intent, Proof of Publication, and project inspection diary.
2. This pollution prevention plan shall be revised as construction progresses to reflect current ownership, responsibilities, operations, and findings.
  - a. The plan will be revised due to any deficiencies in the plan or changes in conditions noted during an inspection, and the contractor will implement any and all revisions as soon as practical but no later than seven days after the inspection. If deemed impractical to complete the revisions within 72 hours following the inspection, the contractor shall document in the plan why it is impracticable and indicate an estimated date of completion for the corrective measures.
  - b. Maintain record of major construction operations start and ending dates and operators responsible for the various phases.
  - c. The plan will be modified within 14 calendar days of a hazardous condition describing the release, the date of release, and the circumstances leading to the release. Steps to prevent the reoccurrence of such releases will be identified in a plan revision and implemented.
3. Maintain all temporary and permanent erosion control measures in good working order by cleaning, repairing, replacement and sediment removal throughout the permit period. Any necessary repairs will be initiated within 24 hours of report.
  - a. Built up sediment will be removed from sediment barrier (silt fence or filter sock) or the silt barrier replaced when it has reached 1/2 the height of the barrier.
  - b. Accumulation of earth, silt or debris on adjoining properties or streets will be minimized. Remove any accumulation of earth, silt or debris immediately and take remedial actions for prevention.
  - c. Minor spill of potentially hazardous materials will be cleaned up by removing and disposing of contaminated soils properly. Major spills shall be reported in accordance with 455B.386 code of Iowa with clean-up procedures dependent on the severity of the spill.

B. Inspections

1. The contractor will be responsible for selecting a “qualified” inspector to conduct the inspections. “Qualified” is defined as a person knowledgeable in the principles and practices of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact storm water quality and to assess the effectiveness of any sediment and erosion control measures selected to control the quality of storm water discharges from the construction activity.

2. The project area and control devices will be inspected by the personnel assigned by the contractor every 7 calendar days. The findings and any actions taken as a result of this inspection shall be recorded in the project diary with a copy submitted weekly to the owner or owner's representative during the project.
  - a. Inspect silt fence for depth of sediment, tears, fabric securely attached to posts, posts firmly in the ground, fabric firmly in the ground, and signs of undermining.
  - b. Inspect filter socks for depth of sediment, tears, posts firmly in ground, firm contact between sock and ground, and signs of flow under the sock.
  - c. Inspect inlet protection devices for level of sediment, bypassing of flows, and ensure that overflow device is not plugged.
  - d. Inspect storm outlets for signs of sediment from the site and erosion at the outlet.
  - e. Inspect adjoining property for signs of sediment from site.
  - f. Inspect construction entrance for sediment accumulation.
  - g. Inspect street for track-out.
  - h. Inspect seeding for bare spots, washouts and healthy growth.
  - i. Inspect concrete washout area for depth of accumulated material, evidence of flows leaving the area and diversion of surface runoff away from the washout area.

C. Material Management

Site sources of pollution generated as a result of this work related to silts and sediment which may be transported as a result of a storm event are included as part of this SWPPP. However, this SWPPP provides conveyances for other (non-project related) operations. These other operations have storm water runoff, the regulation of which is beyond the control of this SWPPP.

1. Materials or substances expected to be present onsite during construction:
  - a. Concrete
  - b. Detergents
  - c. Paints
  - d. Tar
  - e. Soil stabilization additives
  - f. Fertilizers
  - g. Petroleum based additives
  - h. Cleaning solvents
  - i. Wood
  - j. Solids and construction wastes
  - k. Pesticides
  - l. Fuel
  - m. Curing compounds
  - n. Paint

(Contractor shall list additional materials not shown)

- o.
- p.
- q.
- r.
- s.

2. Material Management Practices - the following is a list of practices that will be used onsite to minimize the risk of spills or other accidental exposure of materials and substances to storm water runoff.

a. Good Housekeeping

- i. An effort will be made to store onsite only enough products required to complete the job.
- ii. All materials stored onsite will be kept in a neat, orderly manner and in their appropriate containers. If possible, products shall be kept under a roof or other enclosure.
- iii. Materials will be kept in their original containers with the original manufacturer's label.
- iv. Substances will not be mixed with one another unless recommended by the manufacturer.
- v. Whenever possible, all of a product will be used up before disposing of the container.
- vi. Manufacturer's recommendations for proper use and disposal will be followed.
- vii. The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

b. Hazardous Products

- i. Products will be kept in their original containers with the original manufacturer's label.
- ii. The original labels and material safety data will be kept for each of the materials as they contain important product information.
- iii. Disposal of any excess product will be done in a manner that follows all manufacturers', federal, local and state recommended methods for proper disposal.

(Contractor shall list additional practices, as appropriate, used to prevent hazardous material discharge).

- iv.
- v.
- vi.
- vii.
- viii.
- ix.

3. Product Specific Practices - the following is a list of potential sources of pollution and specific practices to reduce pollutant discharges from materials or sources expected to be present during construction.
  - a. Petroleum Storage Tanks
    - i. All onsite vehicles shall be inspected and monitored for leaks and receive preventative maintenance to reduce the chance of leakage.
    - ii. Steps will be taken by the contractor to eliminate contamination from storage tanks from entering the soil. Any petroleum storage tanks kept onsite will be located with an impervious surface between the tank and the ground.
  - b. Fertilizers - shall be applied in minimal amounts as recommended by the manufacturer. It shall be worked into the soil as to minimize the contact with storm water discharge.
  - c. Paints, paint solvents and cleaning solvents - Excess paints and solvents shall not be discharged into the storm sewer system. The contractor shall refer to the manufacturer's instructions and federal regulations on the proper disposal techniques.
  - d. Concrete wastes
    - i. Concrete trucks will be allowed to washout or discharge excess concrete only in specifically designated areas which have been prepared to minimize contact between the concrete and storm water discharge from the site.
    - ii. The hardened product from the concrete washout areas will be disposed of as other non-hazardous waste materials or may be broken up and used on the site for other appropriate uses.
  - e. Solid and construction wastes - All trash and construction debris shall be deposited into a dumpster that will be emptied as necessary. No construction waste materials will be buried on site. The dumpsters must be put in a location where contact with storm water discharge is minimized.

(Contractor shall list additional potential sources of pollution and practices to reduce pollutant discharge.)

- i.
- ii.
- iii.
- iv.
- v.

#### 4. Hazardous Substance Spill Prevention and Response

- a. The contractor is responsible for training all personnel in the proper handling and cleanup of spilled materials. No spilled hazardous materials or wastes will be allowed to come into contact with storm water discharges. If contact does occur, the storm water discharge will be contained on site until appropriate measures in compliance with all Federal, state, and local regulations are followed to dispose of the hazardous substance.
- b. In addition to Good Housekeeping and material management practices, the following practices shall be done to minimize the potential for hazardous materials spills and to reduce the risk of the spill coming in contact with storm water.
  - i. Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.
  - ii. Material and equipment necessary for spill control, containment and cleanup will be provided onsite in a material storage area. Equipment and materials will include but not be limited to brooms, dust pans, mops, rags, gloves, goggles, kitty litter, sand, sawdust and plastic and meal trash containers.
- c. In the event of a spill, the following procedures will be followed:
  - i. All spills will be cleaned up immediately following discovery.
  - ii. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substance.
  - iii. Spill of toxic or hazardous material will be reported to the appropriate state or local government agency and to the project manager and engineer, regardless of the size of the spill.
- d. In the event the construction site has a release of a hazardous substance of oil in an amount which exceeds a reportable quantity (RQ) as defined at 40 CFR Part 110, 40 CFR Par 117, or 40 CFR Part 302, then the permittee shall:
  - i. Person in charge of the site at the time of the spill shall call the EPA National Response Center to report the spill (800-424-8802, or 202-426-2675).
  - ii. Modify the Pollution Prevention Plan accordingly within 14 days of the spill, including the items mentioned below.
  - iii. Within 14 days of the release, submit a written description of the release including: a description of the release, type of material, estimated amount of spill, date of release, explanation of why the spill happened, and a description of the steps taken to prevent and control future releases.

**PART 4**

**FINAL STABILIZATION/DISCONTINUATION**

A. Final Stabilization/Discontinuation

1. The storm water discharge from a construction activity is no longer considered to be a discharge subject to the storm water permit requirements when final stabilization has been reached and temporary erosion and sediment controls have been or will be removed. A permittee must submit a Notice of Discontinuation (NOD) to inform the IDNR that storm water discharge for the site will no longer need to be covered by the general permit.
2. “Final Stabilization” - the point at which all soil disturbing activities are complete, and a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been employed.
3. Notice of Discontinuation should be mailed to the following address:  
  
Storm Water Coordinator  
Iowa Department of Natural Resources  
502 E. 9<sup>th</sup> Street  
Des Moines, Iowa 50319-0034
4. All plans, inspection reports and other related documents must be retained for a period of three years after project completion. The contractor shall retain a record copy and provide the original documents to the owner upon issuance of the NOD.

# NOTICE OF DISCONTINUATION

## OF A STORM WATER DISCHARGE COVERED UNDER IOWA NPDES GENERAL PERMIT NO. 2 FOR CONSTRUCTION ACTIVITIES

Name of the owner or facility to which the storm water discharge general permit coverage was issued. Dollar General Store #20584 County: <u>Blackhawk</u>
---

List the complete permit authorization number for the discharge. This number is provided on the bottom of the authorization sheet. IA- <u>43554</u> --- <u>43150</u>
---

List the date the construction site reached final stabilization as defined on the back of this form. _____
---

The following certification must be signed in accordance with the signatory requirements of the general permit (see back side).

I certify under penalty of law that disturbed soils at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time. I understand that by submitting this Notice of Discontinuation, I am no longer authorized to discharge storm water associated with industrial activity for construction activities by Iowa Department of Natural Resources NPDES General Permit No. 2 and that discharging pollutants from storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by an NPDES permit.

I further certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

_____ Name (print)	_____ Title
_____ Signature	_____ Date

Return to: Storm Water Coordinator  
Department of Natural Resources  
502 E. 9th Street  
Des Moines, IA 50319-0034



Final Stabilization means that all soil disturbing activities at the site have been completed and that a uniform perennial vegetative cover for the area has been established or equivalent stabilization measures have been employed. All building must be completed before the project is considered finally stabilized.

SIGNATORY REQUIREMENTS All Notices of Intent, storm water pollution prevention plans, reports, certifications or information either submitted to the Department or the operator of a large or medium municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed in accordance with rule 567--64.3(8) of the Iowa Administrative Code as follows:

64.3(8) *Identity of signatories of operation permit applications.* The person who signs the application for an operation permit shall be:

- a. *Corporations.* In the case of corporations, a principal executive officer of at least the level of vice-president.
- b. *Partnerships.* In the case of a partnership, a general partner.
- c. *Sole proprietorships.* In the case of a sole proprietorship, the proprietor.
- d. *Public facilities.* In the case of a municipal, state, or other public facility, by either the principal executive officer, or the ranking elected official.
- e. *Storm water discharge associated with construction activity.* In the case of a storm water discharge associated with industrial activity from construction as identified in 40 CFR 122.26(b)(14)(x), either the owner of the site or the general contractor.

**PART 5**  
**CERTIFICATION**

A. Storm Water Pollution Prevention Plan Certification

1. This project is subject to section 402(b) of the Clean Water Act and IAC 455 B.174 Subrule 567-64.4 (projects disturbing one or more total acres) and requires inclusion in the National Pollutant Discharge Elimination System (NPDES) General Permit No. 2 of individual NPDES Permit for storm water discharge associated with industrial activity for construction activities.
2. The owner and prime contractor must sign the following certification statements. By doing so, the prime contractor becomes co-permittee with the owner and other co-permittee contractors. The prime contractor must identify which contracting entity will be responsible for each portion of the pollution prevention plan and maintain the site in compliance with the plan and NPDES Permit. The certification must be signed in accordance with the signatory requirements found in the general permit: i.e., principal executive officer, vice president, general partner, proprietor, elected official, and will be incorporated into the pollution prevention plan.
3. All subcontractors, including short-term contractors and subcontractors must sign the appropriate certification statement before conducting any work at the site. The Certification must be signed in accordance with the signatory requirements found in the general permit: i.e., principal executive officer, vice president, general partner, proprietor, elected official, and will be incorporated into the pollution prevention plan.
4. Upon signing the certification, the contractor or subcontractor becomes a co-permittee with the owner and other co-permittee contractors. In signing the plan, the authorizing representative certifies that the information is true and assumes liability for the plan and its implementation. Note that Section 309 of the Clean Water Act provides for significant penalties where information is false or the permittee violates, either knowingly or negligently, the permit requirements.

**Owner's Certification**  
for  
NPDES General Permit No. 2 "Storm Water Discharge  
Associated with Industrial Activity for Construction Activities"

Project: Dollar General #30307

Location SWC Hwy 61 & 110th Avenue, Davenport IA

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Signature \_\_\_\_\_

Printed Name Jacob Stauffer

Title Managing Member

Company DGOGDavenporta07262023 LLC

Address 1598 Imperial Center, Suite 2001

West Plains, Missouri 65775

Telephone 417-256-4790

Date of Certification November 22, 2023

The Applicant hereby agrees to defend, indemnify and hold the City of Waterloo harmless from any and all claims, damages or suits arising directly or indirectly out of any act of commission or omission by the Applicant, or any employee, agent, assignee or Contractor or subcontractor of the Applicant, in connection with Applicant's State NPDES General Permit No. 2 and/or Storm Water Pollution Prevention Plan.

**Contractor's Certification**  
for  
NPDES General Permit No. 2 "Storm Water Discharge  
Associated with Industrial Activity for Construction Activities"

Project: Dollar General Store #30307

Location SWC Hwy 61 and 110th Avenue, Davenport, IA

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am becoming a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for "Storm Water Discharge Associated with Industrial Activity for Construction Activities" at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan developed under this NPDES permit and the terms of this NPDES permit.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

Date of Certification \_\_\_\_\_

**APPENDIX A**

**NPDES GENERAL PERMIT NO. 2**

**IOWA DEPARTMENT OF NATURAL RESOURCES**

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)**

**GENERAL PERMIT NO. 2**

**EFFECTIVE DATES**

**MARCH 1, 2023 THROUGH FEBRUARY 29, 2028**

**FOR**

**STORM WATER DISCHARGE ASSOCIATED WITH  
CONSTRUCTION ACTIVITIES**

# NPDES GENERAL PERMIT NO. 2

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## PART I. COVERAGE UNDER THIS PERMIT

### A. PERMIT AREA

This permit covers all areas of the State of Iowa.

### B. ELIGIBILITY

#### 1. Authorizations.

- a. Except for discharges identified under Parts I.B.2. and I.B.3., this permit may authorize the discharge of storm water associated with industrial activity from construction sites, (those sites or common plans of development or sale that will result in the disturbance of one or more acres total land area, including the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more), (hereafter referred to as storm water discharge associated with industrial activity for construction activities), occurring after the effective date of this permit (including discharges occurring after the effective date of this permit where the construction activity was initiated before the effective date of this permit), including storm water discharge associated with industrial activity from areas that are dedicated to producing earthen materials, such as soils, sand and gravel, for use at a single construction site. This permit may also authorize areas where soil is placed permanently or temporarily, also known as fill sites.
- b. This permit may authorize storm water discharge from a construction site that is mixed with storm water discharge associated with industrial activity from sources other than construction activities provided that the storm water discharge from the industrial (non-construction) source is in compliance with the terms of a NPDES general permit, other than this general permit, or an individual permit authorizing such discharge. In addition, the storm water other than from construction shall be in compliance with Part IV.D.6. of this permit.

#### 2. **Limitations on Coverage.** The following discharges associated with industrial activity for construction activities are NOT authorized by this permit:

- a. storm water discharges that are mixed with sources of non-storm water other than discharges identified in Part III.A.2. of this permit;
- b. storm water discharges associated with industrial activity for construction activities which are covered by an existing individual NPDES permit or which are issued a permit in accordance with Part I.C. of this permit. Storm water discharges authorized by an existing individual NPDES permit will be eligible to apply for coverage under this general permit as the existing individual permit expires;
- c. storm water discharges associated with industrial activity for construction activities that the Iowa Department of Natural Resources has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard;
- d. new or expanded storm water discharge associated with industrial activity that discharges to Outstanding Iowa Waters or to Outstanding National Resource Waters; and
- e. discharges from concrete washout activities and from wet sawing of concrete. Waste from concrete washout and wet sawing of concrete is not allowed to be discharged to surface waters and is not allowed to adversely affect a water of the state.

#### 3. **Exclusions.** The following storm water discharges associated with industrial activity from construction activities do not require a NPDES permit: discharges from soil disturbing activities from sites where less than 5 acres is disturbed and the soil disturbing activities are due to routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or original purpose of the site and discharges from agricultural and silvicultural activities including storm water runoff from orchards, cultivated crops, pastures, range lands, and forest lands, but not discharges from concentrated animal feeding operations as defined in 40 CFR Section 122.23, concentrated aquatic production facilities as defined in 40 CFR Section 122.24, discharges to aquaculture projects as defined in 40 CFR Section 122.25, and discharges from silvicultural point sources as defined in 40 CFR Section 122.27.

**C. REQUIRING AN INDIVIDUAL PERMIT**

1. The Department may require any person authorized by this permit to apply for and obtain an individual NPDES permit. The Department may require any owner or operator authorized to discharge under this permit to apply for an individual NPDES permit only if the owner or operator has been notified in writing that a permit application is required. This notice shall include a brief statement of the reasons for this decision, an application form, a statement setting a deadline for the owner or operator to file the application, and a statement that on the effective date of the individual NPDES permit, coverage under this general permit shall automatically terminate. If an owner or operator fails to submit an individual NPDES permit application required by the Department under this paragraph, coverage of this general permit automatically is terminated at the end of the day specified for submittal of the individual NPDES application.
2. Any person authorized to discharge under this permit may apply for an individual NPDES permit. In such cases, the discharger shall submit the following in accordance with the requirements of subrule 567 IAC 64.3(4):
  - a. an individual application, using industrial application Form 1, Form 2F, and Form 5; and,
  - b. all applicable fees identified in rule 567 IAC 64.16.
3. When an individual NPDES permit is issued to a discharger covered under this general permit, the applicability of this general permit to the individual NPDES permittee is automatically terminated on the effective date of the individual NPDES permit. When an individual NPDES permit is denied to a discharger otherwise subject to this permit, the applicability of this permit to the individual NPDES permittee is automatically terminated on the date of such denial, unless otherwise specified by the Department.

**D. AUTHORIZATION**

A discharger must submit a Notice of Intent (NOI) in accordance with the requirements of Part II of this permit in order for storm water discharge associated with industrial activity for construction activities pursuant to Part I.B. of this permit to be authorized to discharge under this general permit.

**PART II. NOTICE OF INTENT (NOI) REQUIREMENTS**

**A. DEADLINES FOR NOTIFICATION**

For storm water discharge associated with industrial activity for construction activities, such activities shall not commence until an authorization has been issued for the project by the Department.

**B. FAILURE TO NOTIFY**

Dischargers who fail to notify the Department of their intent to be covered, and discharge pollutants to water of the United States within Iowa, without an NPDES permit, are in violation of the CWA and the Code of Iowa.

**C. CONTENTS OF AN NOI**

A complete NOI shall include the items described in Parts II.C.1., II.C.2., and II.C.3. of this permit.

1. A completed NOI form, DNR Form 542-1415, signed in accordance with Parts VI.H. and VI.I of this permit. The information on the form shall include all of the following:
  - a. Name, address, and location of the construction site for which this notification is submitted. The location shall be provided as the 1/4 section (NE, SE, SW, NW), township, range, and county where the storm water discharge is located;
  - b. The owner's name, address, telephone number, and status (federal, state, private, public or other entity);
  - c. The name, address and telephone number of any operator (contractor) that has been identified as having a role in the storm water pollution prevention plan (SWPPP) for the site required under Part IV.D.7. of this permit. Contractors (operators) identified after the submittal of the completed NOI shall be identified in the SWPPP;
  - d. The type of discharge (new or existing as related to October 1, 1992); whether or not the discharge is to a municipal separate storm sewer system; the date the discharge is to commence; the permit status of the discharge; and, the name of the receiving water(s);

- e. An indication if any existing quantitative data is available describing the concentration of pollutants in storm water discharges. Existing data should not be included as part of the NOI, it should be retained as part of the SWPPP;
  - f. A brief description of the project; an estimated timetable for major activities; and, an estimate of the number of acres of the site on which soil will be disturbed; and
  - g. A certification that compliance with g.(1). through g.(4). are met:
    - g.(1). the SWPPP has been developed before the NOI is submitted to the Department;
    - g.(2). the SWPPP will be implemented on October 1, 1992 for any existing storm water discharge associated with industrial activity for construction activities. For a storm water discharge associated with industrial activity for construction activities that commence after October 1, 1992, the SWPPP shall be implemented with the start of construction activities;
    - g.(3). the NOI will be included and incorporated into the SWPPP and will be updated as required; and,
    - g.(4). the SWPPP provides compliance with Iowa Code section 161A.64 and local sediment and erosion plans and are consistent with the requirements of Part IV of this general permit.
2. **Applicable Fees.** The applicable fees specified in 567 IAC 64.16.
3. **Public Notification.** A demonstration that the public notice specified in 567 IAC 64.6(1)“c”(1) was published at least one day in one newspaper with the largest circulation in the area in which the facility is located or the activity will occur.

#### **D. WHERE TO SUBMIT**

Facilities which discharge storm water associated with industrial activity for construction activities must submit items described in Part II.C. of this permit to the Department online at: <https://programs.iowadnr.gov/stormwater/pages/home.aspx> or by mail to the following address: Storm Water Coordinator, Iowa Department of Natural Resources, 502 E 9<sup>th</sup> St., Des Moines IA 50319-0034.

#### **E. RENOTIFICATION**

Prior to the expiration of an authorization issued under this general permit, the permittee is required to resubmit an NOI (no additional public notice is required) with the Department for coverage under the new general permit. If a new general permit has not been reissued prior to the expiration of the current permit, the provisions and coverage of the current permit are extended until replaced by the adoption of a new general permit.

#### **F. TRANSFER OF COVERAGE UNDER THIS PERMIT**

For storm water discharge associated with industrial activity for construction activities where the ownership changes, the Department must be notified of the title transfer within 30 days. Both the previous owner(s) and the new owner(s) are responsible for notifying the Department of the transfer and the new owner's name and contact information. This requirement shall be satisfied upon the Department's receipt of the notification of this information by either the previous owner(s) or the new owner(s).

If a storm water discharge associated with industrial activity for construction activities is covered by this general permit, the new owner(s) shall be subject to all terms and conditions of this general permit. A copy of the notice of transfer that was sent to the Department shall be included in the SWPPP.

For construction activity which is part of a larger common plan of development, such as a housing or commercial development project, if a permittee transfers ownership of all or any part of property subject to this permit, both the permittee and transferee shall be responsible for compliance with the provisions of this permit for that portion of the project which has been transferred including when the transferred property is less than one acre in area. If the new owner(s) agree in writing to be solely responsible for compliance with the provisions of this permit for the property which has been transferred, then the existing permittee(s) shall be relieved of responsibility for compliance with this permit for the transferred property, from and after the date the transfer of responsibility is signed. A copy of the notice of transfer of responsibility shall be included in the SWPPP.

**G. NOTICE OF DISCONTINUATION (NOD)**

1. Within 30 days after final stabilization at a construction site (as defined in Part VIII of this permit), the operator or owner of the facility shall submit a Notice of Discontinuation (NOD) to the Department.
2. A NOD shall include the following information:
  - a. the name of the owner/operator to which the permit was issued;
  - b. the general permit number and permit authorization number;
  - c. the date the construction site reached final stabilization; and,
  - d. the following certification signed in accordance with Part VI.H. of this permit:

I certify under penalty of law that disturbed soils at the identified facility have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time. I understand that by submitting this Notice of Discontinuation, that I am no longer authorized to discharge storm water associated with industrial activity for construction activities by Iowa Department of Natural Resources General NPDES Permit No. 2. and that discharging pollutants from storm water associated with industrial activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit.

**PART III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, AND OTHER NON-NUMERIC LIMITATIONS**

**A. PROHIBITION ON NON-STORM WATER DISCHARGES**

1. All discharges authorized by this permit shall be composed entirely of storm water except for non-storm discharges listed in Part III.A.2 of this permit.
2. Discharges from firefighting activities; fire hydrant flushings; waters used to wash vehicles in accordance with Part III.C. and Part IV.D.2.c.(2). of this permit; potable water sources including waterline flushings; irrigation drainage; routine external building washdown which does not use detergents; pavement washwaters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled material has been removed) and where detergents are not used; air conditioning condensate; springs; uncontaminated groundwater; and foundation or footing drains where flows are not contaminated with process materials such as solvents; may be authorized by this permit provided the non-storm water component of the discharge is in compliance with Part IV.D.5. of this permit.

**B. RELEASES IN EXCESS OF REPORTABLE QUANTITIES**

Any owner or operator identified in the SWPPP is subject to the spill notification requirements as specified in Iowa Code 455B.386. Iowa law requires that as soon as possible but not more than six hours after the onset of a hazardous condition<sup>1</sup> the Department and local sheriff's office or the office of the sheriff of the affected county be notified.

The SWPPP described in Part IV of this permit must be modified within 7 calendar days of knowledge of the release to provide a description of the release and the circumstances leading to the release and to identify and provide for the implementation of steps to prevent the reoccurrence of such releases and to respond to such releases.

**C. FEDERAL CONSTRUCTION AND DEVELOPMENT EFFLUENT GUIDELINES**

In addition to all other requirements in this permit, all sites and activities required to be authorized under this permit shall comply with the following federal effluent guidelines as applicable to each site and activity.

1. **Erosion and Sediment Controls.** Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, such controls must be designed, installed and maintained to:
  - a. Control storm water volume and velocity to minimize soil erosion in order to minimize pollutant discharges;
  - b. Control storm water discharges, including both peak flow rates and total storm water volume, to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points;
  - c. Minimize the amount of soil exposed during construction activity;

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<sup>1</sup> see Definitions, Part VIII

- d. Minimize the disturbance of steep slopes;
  - e. Minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting storm water runoff and soil characteristics including the range of soil particle sizes expected to be present on the site; and
  - f. Provide and maintain natural buffers around waters of the United States, direct storm water to vegetated areas and maximize storm water infiltration to reduce pollutant discharges, unless infeasible.
2. **Soil Compaction and Topsoil Preservation.** Practices to minimize soil compaction and preserve topsoil shall be implemented as described in Part IV.D.2.a.(2).iii. of this permit.
3. **Soil Stabilization.** Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days. In drought-stricken areas and areas that have recently received such high amounts of rain that seeding with field equipment is impossible and initiating vegetative stabilization immediately is infeasible, alternative stabilization measures must be employed as specified by the Department. In limited circumstances, stabilization may not be required if the intended function of a specific area of the site necessitates that it remain disturbed.
4. **Dewatering.** Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.
5. **Pollution Prevention Measures.** Design, install, implement and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures must be designed, installed, implemented and maintained to:
- a. Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge;
  - b. Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and storm water. Minimization of exposure is not required in cases where the exposure to precipitation and to storm water will not result in a discharge of pollutants, or where exposure of a specific material or product poses little risk of storm water contamination (such as final products and materials intended for outdoor use); and
  - c. Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.
6. **Prohibited Discharges.** The following discharges are prohibited:
- a. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
  - b. Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance; and
  - c. Soaps or solvents used in vehicle and equipment washing.
7. **Surface Outlets.** When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

#### **PART IV. STORM WATER POLLUTION PREVENTION PLANS (SWPPP)**

A storm water pollution prevention plan (SWPPP) shall be developed for each construction site covered by this permit. SWPPPs shall be prepared in accordance with good engineering practices. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of the storm water discharge from the construction activities. In addition, the SWPPP shall describe and ensure the implementation of practices which will be used to reduce the pollutants in storm water discharge associated with industrial activity for construction activities at the construction site and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions of the SWPPP required under this part as a condition of this permit.

**A. DEADLINES FOR SWPPP PREPARATION AND COMPLIANCE**

1. **SWPPP Preparation Deadline.** The SWPPP shall be completed prior to the submittal of a NOI to the Department to be covered under this permit and shall be updated as appropriate.
2. **SWPPP Compliance Deadline.** The SWPPP shall provide for compliance with the terms and schedule of the SWPPP prior to the initiation of construction activities.

**B. SIGNATURE AND SWPPP REVIEW**

1. The SWPPP shall be signed in accordance with Part VI.H. of this permit.
2. The permittee shall make SWPPPs available to the Department upon request; or in the case of a storm water discharge associated with industrial activity for construction activities that discharges through a municipal separate storm sewer system with an NPDES permit, shall make the SWPPP available to the municipal operator of the system.
3. The Department may notify the permittee at any time that the SWPPP does not meet one or more of the minimum requirements of this Part. After such notification from the Department, the permittee shall make changes to the SWPPP and shall submit to the Department a written certification that the requested changes have been made. Unless otherwise provided by the Department, the permittee shall have 3 business days after such notification to make the necessary changes.
4. All SWPPPs received by the Department from the permittee are considered reports that shall be available to the public under Section 308(b) of the CWA and Iowa Code Chapter 22. However, the permittee may claim any portion of a SWPPP as confidential in accordance with Iowa Code Chapter 22 and 561 IAC 2.5.

**C. KEEPING SWPPPS CURRENT**

The permittee shall amend the SWPPP whenever any of the following occurs: (1) there is a change in design, construction, operation, or maintenance, that has a significant effect on the potential for the discharge of pollutants to the waters of the U.S. and which has not been addressed in the SWPPP; or (2) if the SWPPP proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified in Part IV.D.2. of this permit, or (3) the SWPPP fails to otherwise achieve the general objectives of controlling pollutants in storm water discharge associated with industrial activity for construction activities. In addition, the SWPPP shall be updated to: expeditiously change the site map to include changes at the site, including contractors identified after the submittal of the NOI as Co-permittees, described in Part IV.D.7. of this permit; identify any change in ownership or transference of the permit and permit responsibilities; or, if required, by the occurrence of a hazardous condition (as defined in Part VIII of this permit). Amendments to the SWPPP may be reviewed by the Department in the same manner as Part IV.B.2 of this permit.

**D. CONTENTS OF THE SWPPP**

The SWPPP shall include the following items:

1. **Site Description.** Each SWPPP shall provide a description of the following:
  - a. a description of the nature of the construction activity;
  - b. estimates of the total area of the site and the area of the site that is expected to be disturbed by excavation, grading, or other activities;
  - c. an estimate of the runoff coefficient of the site after construction activities are completed and existing data describing the soil or the quality of any discharge from the site;
  - d. a site map indicating drainage patterns and approximate slopes anticipated after major grading activities, areas of soil disturbance, the location of structural and nonstructural controls identified in the SWPPP, the location of areas where stabilization practices are expected to occur, surface waters (including wetlands), and locations where storm water is discharged to a surface water; and
  - e. the name of the receiving water(s) and the ultimate receiving water(s).
2. **Controls.** Each SWPPP shall include a description of controls that will be implemented at the construction site. The SWPPP will clearly describe the intended sequence of major activities and for each activity, the appropriate control measures and the timing during the construction process that the measures will be implemented. (For example, perimeter controls for one portion of the site will be installed after the clearing and grubbing

necessary for installation of the measure, but before the clearing and grubbing for the remaining portions of the site. Perimeter controls will be actively maintained until final stabilization of those portions of the site upward of the perimeter control. Temporary perimeter controls will be removed after final stabilization). The description of controls shall address the following minimum components:

**a. Erosion and Sediment Controls**

- a.(1). Stabilization Practices.** A description of temporary and permanent stabilization practices, including site-specific scheduling of the implementation of the practices. Stabilization practices may include: temporary or permanent seeding after germination and establishment of vegetative cover of sufficient density and height to preclude erosion has been achieved, as well as mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature vegetation, and other appropriate measures. Temporary or continued stabilization must be implemented and maintained when necessary to prevent erosion of seeded areas prior to the establishment of vegetative cover of sufficient density and height to preclude erosion.
- a.(2). Structural Practices.** A description of structural practices to the degree attainable, to divert flows from exposed soils, store flows or otherwise limit runoff from exposed areas of the site. Such practices may include silt fences, earth dikes, brush barriers, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions and temporary or permanent sediment basins. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA.
  - a.(2).i** For common drainage locations that serve an area with more than 10 disturbed acres at one time, a temporary or permanent sediment basin providing 3,600 cubic feet of storage per acre drained shall be provided where attainable until final stabilization of the site has been achieved. The 3,600 cubic feet of storage area per acre drained does not apply to flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around the sediment basin. For drainage locations which serve more than 10 disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained is not attainable, sediment traps, silt fences, or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area.
  - a.(2).ii** For drainage locations serving 10 or fewer acres, sediment traps, silt fences or equivalent sediment controls are required for all sideslope and downslope boundaries of the construction area or a sediment basin providing for 3,600 cubic feet of storage per acre drained.
  - a.(2).iii** Unless infeasible, the following measures shall be implemented at all sites: utilize outlet structures that withdraw water from the surface when discharging from basins, provide and maintain natural buffers around surface waters and direct storm water to vegetated areas to both increase sediment removal and maximize storm water infiltration.

The permittee(s) shall minimize soil compaction and, unless infeasible, preserve topsoil. "Infeasible" shall mean not technologically possible, or not economically practicable and achievable in light of the best industry practices. "Unless infeasible, preserve topsoil" shall mean that, unless infeasible, topsoil from any areas of the site where the surface of the ground for the permitted construction activities is disturbed shall remain within the area covered by the applicable General Permit No. 2 authorization. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted. Preserving topsoil is not required where the intended function of a specific area of the site dictates that the topsoil be disturbed or removed. The permittee(s) shall control storm water volume and velocity to minimize soil erosion in order to minimize pollutant discharges and shall control storm water discharges, including both peak flowrates and total storm water volume, to minimize channel and stream bank erosion

and scour in the immediate vicinity of discharge points. An affidavit signed by the permittee(s) may be submitted to demonstrate compliance.

For construction activity which is part of a larger common plan of development, such as a housing or commercial development project, in which a new owner agrees in writing to be solely responsible for compliance with the provisions of this permit for the property which has been transferred or in which the new owner has obtained authorization under this permit for a lot or lots (as specified in subrule 567 IAC 64.6(6)), the topsoil preservation requirements described above must be met no later than at the time the lot or lots have reached final stabilization as described in this permit.

The topsoil preservation requirement described above shall be implemented for projects that have not received an authorization under this permit prior to October 1, 2012. The topsoil preservation requirements are not required to be implemented for projects that have been authorized prior to October 1, 2012. In residential and commercial developments, a plat is considered a project. For other large areas that have been authorized for multiple construction sites, including those to be started at a future date, such as those located at industrial facilities, military installations and universities, a new construction project not yet surveyed and platted out is considered a project. This stipulation is intended to be interpreted as requiring the topsoil preservation requirements on development plats and construction activities on other extended areas that may have several construction projects permitted under the same authorization to be implemented on those projects not yet surveyed and platted out prior to October 1, 2012 even if other plats and construction activities in the same development or other extended area were authorized prior to October 1, 2012.

- b. Storm Water Management.** A description of measures that will be installed during construction to control pollutants in storm water discharges that will occur after construction operations have been completed. The installation of these devices may be subject to Section 404 of the CWA. This permit only addresses the installation of storm water management measures and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. Permittees are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site and are not responsible for maintenance after storm water discharges associated with industrial activity have been eliminated from the site.
- b.(1).** Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; and infiltration of runoff onsite; and sequential systems (which combine several practices). A goal of 80 percent removal of total suspended solids from those flows which exceed predevelopment levels should be used in designing and installing storm water management controls (where practicable). Where this goal is not met, the permittee shall provide justification for rejecting each practice based on site conditions.
- b.(2).** Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel as necessary to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g. maintenance of hydrologic conditions present prior to the initiation of construction activities).
- c. Other Controls.**
- c.(1). Waste Disposal.** All wastes composed of building materials must be removed from the site for disposal in permitted disposal facilities. No building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
- c.(2).** Off-site vehicle tracking of sediments shall be minimized.
- c.(3).** The SWPPP shall ensure and demonstrate compliance with applicable State or local waste disposal, sanitary sewer or septic system regulations.



- d. Approved State or Local Plans.** A SWPPP that is submitted by a facility that discharges storm water associated with industrial activity for construction activities must include the procedures and requirements specified in any applicable sediment and erosion site plans or storm water management plans approved by State or local officials. Any requirements specified in sediment and erosion plans, site permits, or storm water management plans approved by State or local officials that are applicable to protecting surface water resources are, upon submittal of an NOI, incorporated by reference and are enforceable under this permit even if they are not specifically included in the SWPPP.

Operators of facilities seeking alternative permit requirements shall submit an individual permit application in accordance with Part I.C.2. of this permit along with a description of why the requirements in approved State or local plans should not be applicable as a condition of an NPDES permit.

- 3. Maintenance.** A description of procedures to maintain in good and effective operating conditions vegetation, erosion and sediment control measures and other protective measures identified in the site plan.
- 4. Inspections.** Qualified personnel (provided by the discharger) shall inspect disturbed areas of the construction site that have not been stabilized with a perennial, vegetative cover of sufficient density to preclude erosion at least once every seven calendar days. Unless erosion is evident or other conditions warrant them, regular inspections are not required on areas that have been stabilized with a perennial, vegetative cover of sufficient density to preclude erosion.
- a.** Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. When discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.
  - b.** Based on the results of the inspection, the storm water pollution prevention measures identified in the SWPPP shall be revised at the construction site as appropriate as soon as practicable after the inspection and added to the SWPPP within 7 calendar days of the inspection. If the permittee determines that making these changes at the construction site within 72 hours of the inspection is impracticable, the permittee shall document in the SWPPP why it is impracticable and indicate an estimated date by which the changes will be made.
  - c.** A report shall be made and retained as part of the SWPPP for at least three years after final stabilization has been achieved and a NOD has been submitted to the Department. The report shall be signed in accordance with Part VI.H. of this permit. The report shall contain the following: a summary of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP and actions taken in accordance with Part IV.D.4.b. of this permit.
- 5. Non-Storm Water Discharges.** Sources of non-storm water listed in Part III.A.2. of this permit that are combined with storm water discharges associated with industrial activity from construction activities must be identified in the SWPPP. Flows from firefighting activities are exempt from this requirement. The SWPPP shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.
- 6. Additional Requirements for Storm Water Discharge from Industrial Activities Other than Construction, Including Dedicated Asphalt Plants and Dedicated Cement Plants.** This permit may only authorize a storm water discharge associated with industrial activity from a construction site that is mixed with a storm water discharge from an industrial source other than construction, where all of the following conditions are met:
- a.** the industrial source other than construction is located on the same site as the construction activity;
  - b.** storm water discharges associated with industrial activity from the areas of the site where construction activities are occurring are in compliance with the terms of this permit; and,
  - c.** storm water discharges associated with industrial activity from the areas of the site where industrial activity other than construction are occurring (including storm water discharges from dedicated asphalt plants and dedicated cement plants) are in compliance with the terms and conditions, including applicable NOI or

application requirements, of a different NPDES general permit or individual permit authorizing such discharges.

**7. Contractors.**

- a. The SWPPP must clearly identify, for each measure in the SWPPP, the contractor(s) and/or subcontractor(s) that will implement the measure. All contractors and subcontractors identified in the SWPPP must sign a copy of the certification statement in Part IV.D.7.b. of this permit in accordance with Part VI.H. of this permit. Upon signing the certification, the contractor or sub-contractor is a co-permittee with the owner and other co-permittee contractors. All certifications must be included in the SWPPP.
- b. **Certification Statement.** All contractors and subcontractors identified in a SWPPP in accordance with Part IV.D.7.a. of this permit shall sign a copy of the following certification statement before conducting any professional service at the site identified in the SWPPP:

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site as part of this certification. Further, by my signature, I understand that I am a co-permittee, along with the owner(s) and other contractors and subcontractors signing such certifications, to the Iowa Department of Natural Resources NPDES General Permit No. 2 for Storm Water Discharge Associated with Industrial Activity for Construction Activities at the identified site. As a co-permittee, I understand that I, and my company, are legally required under the Clean Water Act and the Code of Iowa, to ensure compliance with the terms and conditions of the storm water pollution prevention plan (SWPPP) developed under this NPDES permit and the terms of this NPDES permit.

The certification must include the following:

- b.(1). The name and title of the person providing the signature;
- b.(2). The name, address and telephone number of the contracting firm;
- b.(3). The address (or other identifying description) of the site; and
- b.(4). The date the certification is made.

**PART V. RETENTION OF RECORDS**

- A. For a period of at least three years from the date of the document or the date the site is finally stabilized and a NOD has been submitted, the permittee shall retain copies of SWPPPs, all reports required by this permit, and all records used to complete the NOI.
- B. If there is a construction trailer, shed or other covered structure located on the property, the permittee shall retain a copy of the SWPPP required by this permit at the construction site from the date of project initiation to the date of final stabilization. If there is no construction trailer, shed or other covered structure located on the property, the permittee shall retain a copy of the SWPPP from the date of project initiation to the date of final stabilization at a readily available alternative site approved by the Department and provide it for inspection upon request. If the SWPPP is maintained at an off-site location such as a corporate office, it shall be provided for inspection no later than three hours after being requested.

**C. ADDRESSES**

All written correspondence to the Department shall be emailed to [npdes.mail@dnr.iowa.gov](mailto:npdes.mail@dnr.iowa.gov) or mailed to the following address: Storm Water Coordinator, Iowa Department of Natural Resources, 502 E 9<sup>th</sup> St., Des Moines IA 50319-0034.

**PART VI. STANDARD CONDITIONS**

**A. ADMINISTRATIVE RULES**

Rules of the Department that govern the operation of a facility in connection with this permit are published in volumes 561 and 567 of the IAC. Reference to the term "rule" in this permit means the designated provision of volume 561 or 567.

**B. DUTY TO COMPLY**

1. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Iowa Code and the CWA and is grounds for enforcement action; for termination of coverage under this general permit; or, for denial of a request for coverage under a reissued general permit. Coverage under this general permit does not relieve the permittee of the responsibility to comply with all local, state and federal laws, ordinances, regulations or other legal requirements.
2. **Toxic Pollutants.** The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this permit has not yet been modified to incorporate the requirement.

**C. CONTINUATION OF THE EXPIRED GENERAL PERMIT**

This permit expires on February 29, 2028. An expired general permit continues in force until replaced by adoption of a new general permit.

**D. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE**

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**E. DUTY TO MITIGATE**

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**F. DUTY TO PROVIDE INFORMATION**

The permittee shall furnish to the Department, within three hours, any information which the Department may request to determine compliance with this permit. The permittee shall also furnish to the Department upon request copies of records required to be kept by this permit.

**G. OTHER INFORMATION**

When the permittee becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the NOI or in any other report to the Department, he or she shall promptly submit such facts or information.

**H. SIGNATORY REQUIREMENTS**

All NOIs, NODs, SWPPPs, reports, certifications, or information either submitted to the Department or the operator of a municipal separate storm sewer system, or that this permit requires be maintained by the permittee, shall be signed in accordance with subrule 567 IAC 64.3(8) as follows:

64.3(8) *Identity of signatories of operation permit applications.* The person who signs the application for an operation permit shall be:

- a. *Corporations.* In the case of corporations, a responsible corporate officer. A responsible corporate officer means: (1) A president, secretary, treasurer, or vice-president in charge of a principal business function or any other person who performs similar policy or decision-making functions; or (2) The manager of manufacturing, production, or operating facilities if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- b. *Partnerships.* In the case of a partnership, a general partner.
- c. *Sole proprietorships.* In the case of a sole proprietorship, the proprietor.
- d. *Municipal, state, federal, or other public agency.* In the case of a municipal, state, or other public facility, either the principal executive officer or the ranking elected official. A principal executive officer of a public

agency includes: (1) The chief executive officer of the agency; or (2) A senior executive officer having responsibility for the overall operations of a unit of the agency.

- e. *Storm water discharge associated with industrial activity from construction activities.* In the case of a storm water discharge associated with construction activity, either the owner of the site or the general contractor.

The person who signs NPDES reports shall be the same, except that in the case of a corporation or a public body, monitoring reports required under the terms of the permit may be submitted by the person who is responsible for the overall operation of the facility from which the discharge originated.

**I. CERTIFICATION**

Any person signing documents required by this permit shall make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for known violations.

**J. OIL AND HAZARDOUS SUBSTANCE LIABILITY**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under section 311 of the CWA.

**K. PROPERTY RIGHTS**

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

**L. SEVERABILITY**

The provisions of this permit are severable. If any provision of this permit is found to be invalid by this Department or a court of law, such a determination shall not affect validity or enforceability of any other permit term or part. Additionally, if the application of any provision to a particular circumstance is found to be invalid by the Department or a court of law, such a determination shall not affect the validity or enforceability of said provision to other circumstances.

**M. TRANSFERS**

This permit is not transferable to any person except after notice to the Department. The Department may require the discharger to apply for and obtain an individual NPDES permit as stated in Part I.C of this permit.

**N. PROPER OPERATION AND MAINTENANCE**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the requirements of SWPPPs. Adequate laboratory controls and appropriate quality assurance procedures shall be provided to maintain compliance with the conditions of this permit.

**O. INSPECTION AND ENTRY**

The permittee shall allow the Department or an authorized representative of EPA, the State, or, in the case of a facility which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Provide access to and copy at reasonable times, any records that must be kept under the conditions of this permit;
3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), and
4. Sample or monitor, at reasonable times, to assure compliance or as otherwise authorized by the CWA.

**P. PERMIT ACTIONS**

Coverage under this permit may be terminated for cause. The filing of a request by the permittee for a permit discontinuance, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

**Q. ENVIRONMENTAL LAWS**

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

**PART VII. REOPENER CLAUSE**

If there is evidence indicating potential or realized impacts or water quality due to any storm water discharge associated with industrial activity for construction activities covered by this permit, the owner or operator of such discharge may be required to obtain individual permit in accordance with Part I.C of this permit.

**PART VIII. DEFINITIONS**

***"Best Management Practices" or "BMPs"*** means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

***"Construction site"*** means a site or common plan of development or sale on which construction activity, including clearing, grading and excavating, results in soil disturbance. A construction site is considered one site if all areas of the site are contiguous with one another and one entity owns all areas of the site.

***"CFR"*** means the Code of Federal Regulations.

***"CWA" or "Clean Water Act"*** means the Federal Water Pollution Control Act.

***"Dedicated portable asphalt plant"*** means a portable asphalt plant that is located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to.

***"Dedicated portable concrete plant"*** means a portable concrete plant that is located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

***"Dedicated sand or gravel operation"*** means an operation that produces sand and/or gravel for a single construction project.

***"Department"*** means the Iowa Department of Natural Resources.

***"Final Stabilization"*** means that all soil disturbing activities at the site have been completed, and that a uniform perennial vegetative cover with a density of 70%, sufficient to preclude erosion, for the entire disturbed area of the permitted project has been established or equivalent stabilization measures have been employed, or which is

covered by a permanent structure that ensures the ground surface will not be eroded or otherwise impacted by precipitation or runoff, or which has been returned to agricultural production.

**“Hazardous condition”** means any situation involving the actual, imminent, or probable spillage, leakage, or release of a hazardous substance onto the land, into a water of the state, or into the atmosphere, which creates an immediate or potential danger to the public health or safety or to the environment. *Iowa Code § 455B.381(4)*

**“Hazardous substance”** means any substance or mixture of substances that presents a danger to the public health or safety and includes but is not limited to a substance that is toxic, corrosive, or flammable, or that is an irritant or that generates pressure through decomposition, heat, or other means. “Hazardous substance” may include any hazardous waste identified or listed by the administrator of the United State Environmental Protection Agency under the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act of 1976, or any toxic pollutant listed under section 307 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous substance designated under section 311 of the federal Water Pollution Control Act as amended to January 1, 1977, or any hazardous material designated by the secretary of transportation under the Hazardous Materials Transportation Act. *Iowa Code § 455B.381(5)*

**“IAC”** means the Iowa Administrative Code.

**“Infeasible”** means not technologically possible, or not economically practicable and achievable in light of best industry practices.

**“Municipality”** means a city, town, borough, county, parish, district, association, or other public body created by or under State law.

**“NOD”** means Notice of Discontinuation (see Part II.G. of this permit.)

**“NOI”** means Notice of Intent to be covered by this permit (see Part II of this permit.)

**“Outstanding Iowa Waters”** means those waters which constitute an outstanding state resource such as waters of exceptional recreational or ecological significance. These waters are identified in Appendix B of the Iowa Antidegradation Implementation Procedure manual.

**“Outstanding National Resource Waters”** means those waters which constitute an outstanding national resource such as waters of national and state parks and wildlife refuges and waters of exceptional recreational or ecological significance. These waters are identified in Appendix B of the Iowa Antidegradation Implementation Procedure manual.

**“Permittee”** means the owner of the facility or site.

**“Qualified personnel”** means those individuals capable enough and knowledgeable enough to perform the required functions adequately well to ensure compliance with the relevant permit conditions and requirements of the Iowa Administrative Code.

**“Runoff coefficient”** means the fraction of total rainfall that will appear at the conveyance as runoff.

**“Stabilization” or “Soil Stabilization”** means the prevention of soil particles from being dislodged and moving therefore preventing erosion from initiating or continuing.

**“Storm Water”** means storm water runoff, snow melt runoff, and surface runoff and drainage.

**“Storm water discharge associated with industrial activity”** means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122. For the categories of industries identified in paragraphs (i) through (x) of this definition, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at 40 CFR Part 401); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and finished products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water.

For the purposes of this definition, material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product, or waste product. The term excludes areas located on plant lands separate from the plant’s industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are Federally, State, or municipally owned or operated that meet the description of the facilities listed in these paragraphs (i) to (xi) of this definition) include those facilities designated under 40 CFR Section 122.26(a)(1)(v). The following categories of facilities are considered to be engaging in “industrial activity” for purposes of this definition:

- (i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR Subchapter N (except facilities with toxic pollutant effluent standards which are exempted under paragraph (xi) of this definition);
- (ii) Facilities classified within Standard Industrial Classification 24, Industry Group 241 that are rock crushing, gravel washing, log sorting, or log storage facilities operated in connection with silvicultural activities defined in 40 CFR Sections 122.27(b)(2)-(3) and Industry Groups 242 through 249; 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373; (not included are all other types of silviculture facilities);
- (iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under Section 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable state or federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, by-products or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);
- (iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under Subtitle C of the Resource Conservation and Recovery Act (RCRA);
- (v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this definition) including those that are subject to regulation under Subtitle D of RCRA;
- (vi) Facilities involved in the recycling of materials, including metal scrap yards, battery reclaimers, salvage yards, and automobile junkyards, including, but not limited to, those classified as Standard Industrial Classifications 5015 and 5093;
- (vii) Steam electric power generating facilities, including coal handling sites;

- (viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221-4225), 43, 44, 45 and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (i) to (vii) or (ix) to (xi) of this definition are associated with industrial activity;
- (ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR Part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA;
- (x) Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than one acre of total land area. Construction activity also includes the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more;
- (xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221-4225.

***“Storm water discharge associated with industrial activity for construction activities”*** means activities that fall under subparagraph (x) in the definition of storm water discharge associated with industrial activity.

***“SWPPP”*** means storm water pollution prevention plan.

***“Topsoil”*** means the fertile, uppermost part of the soil containing significant organic matter largely devoid of debris and rocks and often disturbed in cultivation.

***“Uncontaminated groundwater”*** means water that is potable for humans, meets the narrative water quality standards in subrule 567 IAC 61.3(2), contains no more than half the listed concentration of any pollutants in subrule 567 IAC 61.3(3), has a pH of 6.5-9.0 and is located in soil or rock strata.

***“Water(s) of the State”*** means any stream, lake, pond, marsh, watercourse, waterway, well, spring, reservoir, aquifer, irrigation system, drainage system and any other body or accumulation of water, surface or underground, natural or artificial, public or private which are contained within, flow through or border upon the State of Iowa or any portion thereof.



**APPENDIX B**

**PUBLIC NOTICE/NOTICE OF INTENT**



October 13, 2023

JACOB STAUFFER  
DGOGD AVENPORTIA07262023 LLC  
1906 E BATTLEFIELD RD  
SPRINGFIELD, MO 65804

Re: Authorization of a Storm Water Discharge Associated With Construction Activity  
Iowa Department of Natural Resources, NPDES General Permit No. 2  
DNR Authorization Number: IA - 43554 - 43150  
Facility Name and Location: DOLLAR GENERAL #30307 DAVENPORT - CONSTRUCTION, DAVENPORT, IA

This letter is to acknowledge that a complete Notice of Intent to be covered under Iowa's NPDES Storm Water General Permit No. 2 has been received. Please use the DNR Authorization Number provided above for any future correspondence on this project. By making this Notice of Intent with the DNR, you are committing to meet the terms and conditions in General Permit No. 2. If you do not have a copy of General Permit No. 2 please go to <http://www.iowadnr.gov/Environmental-Protection/Water-Quality/NPDES-Storm-Water/Permits-Guidance-Forms> or call (515)204-9234 and request that a copy be sent to you.

In accordance with the terms and conditions in General Permit No. 2, a pollution prevention plan was to have been developed before the Notice of Intent was submitted to the department. The plan is to be implemented at the start of construction and updated accordingly. The pollution prevention plan and other records are to be kept on-site where the storm water discharge occurs. Unless otherwise requested, you do not need to provide a copy to the DNR.

When the construction project has reached final stabilization as defined in the permit, you must submit a Notice of Discontinuation to the DNR (refer to the summary guidance document). Final stabilization is not achieved for residential and commercial developments until all houses and buildings have been constructed and ground surrounding them has been finally stabilized.

If you have questions, please call me at 515-217-0875  
or email at [david.schelling@dnr.iowa.gov](mailto:david.schelling@dnr.iowa.gov).

Sincerely,

Dave Schelling  
NPDES Section

Enclosure: Permit Authorization Sheet

File No. CON 11 - 34 -- 43554  
IDNR Field Office # 6



DEPARTMENT OF NATURAL RESOURCES
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
NOTICE OF GENERAL PERMIT COVERAGE UNDER
GENERAL PERMIT NO. 2

STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY

This notice of general permit coverage for a storm water discharge associated with construction activity is issued pursuant to the authority of section 402 (b) of the Clean Water Act (U.S.C. 1342(b)), Iowa Code 455B.174, and subrule 567--64.4(2), Iowa Administrative Code. A Notice of Intent has been filed with the Iowa Department of Natural Resources that this storm water discharge complies with the terms and conditions of NPDES General Permit No. 2. Authorization is hereby issued to discharge storm water associated with industrial activity as defined in Part VIII of the Iowa Department of Natural Resources NPDES General Permit No. 2 in accordance with the terms and conditions set forth in the permit.

Owner:

JACOB STAUFFER
1906 E BATTLEFIELD RD
SPRINGFIELD MO 65804
(417)256-4790

Contact:

JACOB STAUFFER
DGOGD AVENPORTIA07262023 LLC
1906 E BATTLEFIELD RD
SPRINGFIELD MO 65804
(417)256-4790

Permit Coverage Issued To:

DOLLAR GENERAL #30307 DAVENPORT - CONSTRUCTION
SEC HWY 61 AND 110TH AVE
in DAVENPORT, SCOTT COUNTY
located at

Table with 4 columns: 1/4 Section, Section, Township, Range. Row 1: NE, 2, 77, 2E

Coverage Provided Through: 3/1/2025

NPDES Permit Discharge Authorization Number: 43554 - 43150

Discharge Authorization Date: 3/1/2024

Project Description: NEW CONSTRUCTION OF 12687SF RETAIL STORE AND PARKING LOT - 1.7 ACRES

\*\*\* Proof of Publication \*\*\*

STATE OF IOWA  
SCOTT COUNTY, } ss.

The undersigned, being first duly sworn, on oath does say that he/she is an authorized employee of THE QUAD-CITY TIMES, morning edition, a daily newspaper printed and published by Lee Enterprises, Incorporated, in the City of Davenport, Scott County, Iowa, and that a notice, a printed copy of which is made a part of this affidavit, was published in said THE QUAD-CITY TIMES, on the dates listed below.

The Overland Group, LLC - Legals  
Mallory  
1598 IMPERIAL CENTER STE 2001  
WEST PLAINS MO 65775

NOTICE  
DGOGDavenportia07262023, LLC plans to submit a Notice of Intent to the Iowa Department of Natural Resources to be covered under the NPDES General Permit No.2: "Storm Water Discharge Associated with Industrial Activity or Construction Activities."  
The storm water discharge will be from construction grading located at Part of the NE ¼ NE ¼ of Section 2, T77N, R2E, Scott County.  
Storm water will be discharged from 1 point source and will be discharged to the following stream: Unnamed Tributary of Donaldson Creek.  
Comments may be submitted to the Storm Water Discharged Coordinator, Iowa Department of Natural Resources, Environmental Protection Division, 502 E. 9th Street, Des Moines, IA 50319-0034. The public may review the Notice of Intent from 8:00 a.m. to 4:40 p.m. Monday through Friday, at the above address after it has been received by the department.

Davenport, IA #1293

ORDER NUMBER 167152

The affiant further deposes and says that all of the facts set forth in the foregoing affidavit are true as he/she verily believes.



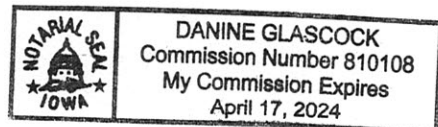
Section: Notices & Legals  
Category: 2627 Miscellaneous Notices  
PUBLISHED ON: 10/04/2023

TOTAL AD COST: 36.55  
FILED ON: 10/4/2023

Subscribed and sworn to before me by said affiant this 4 day of October 2023



Notary Public in and for Scott County, Iowa



**APPENDIX C**  
**OBSERVATION REPORTS**

# Iowa Department of Natural Resources General Permit No. 2 Inspection Report

Project:	NPDES Permit:	Type of Inspection: <input type="checkbox"/> Rain Event <input type="checkbox"/> Weekly	Construction Stage: <input type="checkbox"/> Initial Grading <input type="checkbox"/> Utilities & Infrastructure <input type="checkbox"/> Paving <input type="checkbox"/> Buildings/structures <input type="checkbox"/> Final Site Stabilization <input type="checkbox"/> Other _____
Prime Contractor:	Phone:	Date of Inspection:	
Primary Contact:	Phone:	Time of Inspection:	

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Inspector name (print):	Inspector Signature:
-------------------------	----------------------

	Yes	No	NA	Note any problems identified and actions taken:
<b>Storm water Pollution Prevention Plans</b>				
Plans located on-site or at approved designated area				
Site controls listed in SWPPP in place				
SWPPP updated to reflect site and control changes				
Project schedule is being followed				
Site Inspection documentation available and current				
Are Certification Statements Signed by site owner/contractor?				
<b>Objective   keep any sediment on site</b>				
Controls at all downslope perimeters?				
Are soil stock piles in appropriate locations and covered, mulched, or vegetated?				
Are all discharge points free of any noticeable pollutants?				
Are areas stabilized within 14 days?				
Is any on-site traffic properly routed, with parking and storage restricted to designated areas?				
Are all sediments, mud, and debris being kept from public roads? Provisions in place to prevent mud tracking off site?				
<b>Objective   non-storm water concerns</b>				
Dust control measures implemented where appropriate				
Concrete washout contained, clearly marked and maintained.				
Are materials, supplies, chemicals, portable toilets, fuel tanks, paints, solvents, and trash in approved areas and protected from erosion or spills?				
Are clean-out, storage, and maintenance areas for material handling equipment clean and free of spills and leaks.				
<b>Objective   in summary</b>				
Are erosion and sediment control devices in place and functioning according to the SWPPP?				
Have all temporary control structures that are no longer needed been removed?				
Is the site adequately stabilized at this time?				

**Additional comments & site observations:**

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**APPENDIX D**

**SUDAS STANDARD SPECIFICATIONS**

# Stabilized Construction Entrance



<u>BENEFITS</u>			
	L	M	H
Flow Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Erosion Control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sediment Control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Runoff Reduction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flow Diversion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Description:** A stabilized construction entrance is a temporary, stabilized layer of large aggregate that is located at any point where traffic enters or leaves a construction site and enters a public road or other paved areas. Effectiveness depends on length, depth of rock, frequency of use, and maintenance of temporary rock entrance.

**Typical Uses:** Used where construction vehicles leave a construction site and enter onto a public street. The purpose of the rock entrance is to prevent mud from being tracked out onto the roadway, where it can cause plugging of storm sewers and fugitive dust problems.

**Advantages:**

- Low cost (based on stone availability) and easily installed.
- Helps prevent tracking of mud onto public streets, reducing fugitive dust and clogged storm sewers.
- Provides stable exit/entrance for construction traffic.

**Limitations:**

- Rock must be replaced once the voids become plugged with mud.
- May not remove all soil from vehicles, especially on muddy sites.
- Rock and sediment must be disposed of upon completion.

**Longevity:** Varies, based upon site conditions and volume of traffic

**SUDAS Specifications:** Refer to [Section 9040, 2.14](#) and [3.19](#)



## A. Description/Uses

A stabilized construction entrance consists of a pad of large aggregate, often underlain with engineering fabric. Rock entrances should be located at any point where traffic will be leaving a construction site and entering a public roadway. The stabilized construction entrance reduces the amount of sediment (dust, mud, etc.) tracked offsite by construction equipment, especially if a wash-rack is incorporated for removing caked sediment.

## B. Design Considerations

The entrance from a construction site is a significant source for offsite sediment deposition. Entrance and parking areas are continuously disturbed, leaving no opportunity for vegetation stabilization. During wet weather, these areas often become muddy, and construction vehicles track this mud off of the site and deposit it onto the public roadway where it clogs storm sewers and creates fugitive dust problems.

A stabilized construction entrance can reduce the amount of sediment that is tracked into the street by construction traffic. A rock entrance stabilizes the access to the site, and helps remove mud and clay from vehicle tires before they leave the site. A stabilized construction entrance should be constructed on every construction site, prior to the mobilization of construction equipment.

- 1. Location:** A stabilized construction entrance should be located at every point where construction traffic leaves a construction site. Vehicles leaving the site should travel over the entire length of the rock entrance. When possible, the entrance should be located on level ground, at a location with appropriate sight distance. Construction vehicles should be prohibited from leaving the site at locations other than the stabilized construction entrance. Fence should be constructed if necessary. If additional access to the site is required, additional rock entrances should be constructed
- 2. Site Preparation:** The area of the entrance should be excavated to the proposed thickness of the stone, stripping any topsoil, vegetation, and soft soils as necessary to provide a stable subgrade. When soft soil conditions exist, or when earthmoving or other heavy equipment will use the entrance, a subgrade stabilization fabric should be placed over the entire length and width of the entrance prior to placing the rock.
- 3. Drainage:** Slopes should not exceed 15% and should be carefully graded to drain transversely to prevent runoff from the entrance from flowing into the street. All surface water flowing off of the construction entrance should be directed to a sediment removal device (sediment basin or trap, silt fence, filter sock, etc.).
- 4. Tire Washing or “Wash-rack”:** A properly constructed rock entrance should not be relied upon to remove all the mud from construction traffic. In some cases, the action of tires moving over a gravel pad may not adequately clean tires. If conditions on the site are such that the majority of the mud is not removed by the vehicles traveling over the rock, then the tires of the vehicles should be washed before entering the public road. Manual washing of the tires should be provided, or automated wash racks should be installed. Wash water must be carried away from the entrance to a sediment removal device (sediment basin or trap, silt fence, filter tube, etc.). All sediment shall be prevented from entering storm drains, ditches, or watercourses.

### C. Application

1. **Length:** Minimum of 50 feet with an exception for single family residential lots which should be 30 feet. For sites that will be utilizing the entrance to haul a large volume of earth, the length of the entrance should be increased.
2. **Width:** Minimum of 20 feet wide. Busy entrances will need the capability of handling a lane of traffic each way, typically 30 feet wide. Flare the entrance where it meets the existing road to provide a turning radius.
3. **Geotextile:** If soft soil conditions exist, or when earthmoving or other heavy equipment will utilize the entrance, a layer of subgrade stabilization fabric should be placed over the prepared subgrade prior to placement of the rock to minimize migration of stone into the underlying soil by heavy vehicle loads. The barrier created by the fabric also aids in removal of the stone upon completion of the project, or as required for maintenance.
4. **Stone:** The rock for the entrance should consist of a nominal 2 to 3 inch clean crushed stone or recycled concrete. A 6 to 12-inch thick layer of stone, depending on anticipated traffic, should be placed over the entire length and width of the construction entrance. Rock with smaller aggregate does not adequately remove mud and clay from vehicles, and may be picked up by vehicle tires and carried out into the street.

### D. Maintenance

Construction entrances should be inspected daily to ensure that mud and dirt are not being tracked onto roadways. All sediment deposited on paved roadways should be removed, not washed into the stormwater system or into waterways, at the end of each workday.

Rock entrances may require that additional stone be placed if the existing material becomes buried or if the subgrade is soft or becomes saturated.

Upon completion of the project the rock entrance, engineering fabric and any accumulated sediment should be removed and disposed.

# Silt Fences



<u>BENEFITS</u>			
	L	M	H
Flow Control	█		
Erosion Control			
Sediment Control	█	█	
Runoff Reduction			
Flow Diversion	█	█	

**Description:** Silt fence is a temporary sediment barrier of geotextile fabric that is anchored into the ground and supported by posts on the downstream side of the fabric. Silt fences temporarily impound runoff and retain sediment onsite. They are most effective when designed to provide comprehensive water and sediment control throughout a construction site and if used in conjunction with erosion control practices.

**Typical Uses:** Used to control sheet flow runoff from disturbed land. May also be used to create a sediment trap for removal of suspended particles from low volume concentrated flows.

**Advantages:**

- Widely used BMP due to ease of installation and availability of materials.
- Relatively low cost.

**Limitations:**

- Ineffective against high flows.
- Must be removed after final stabilization.
- Could involve frequent maintenance related to removing accumulated silt behind the silt fence.

**Longevity:** Until sediment accumulates to one-half the height of the fence

**SUDAS Specifications:** Refer to [Section 9040.2.13](#) and [3.18](#)

## A. Description/Uses

Silt fence is a temporary barrier used to remove sediment from runoff. The fence works by intercepting sheet flow from slopes, causing the runoff to pond behind the fence, thereby promoting deposition of sediment on the uphill side of the fence.

Silt fence consists of a geotextile fabric that is trenched or sliced into the ground. The bottom of the fence is anchored into the ground by compacting the disturbed soil along both sides of the trench or slice. The top of the fence is attached to steel posts for support, creating a barrier to the flow of contaminated stormwater runoff.

Silt fence is one of the most commonly used sediment control practices. As such, it is often used improperly, or installed incorrectly. It should be placed at regular intervals on slopes to impound water. Silt fence can also be used in ditches and swales to create a small sediment containment system or ditch check. However, use as a ditch check should be limited to minor ditches and swales due to the potential for blow-out or undermining of the silt fence by high flows.

A common misconception among many designers is that the silt fence actually “filters” suspended particles from runoff. The effectiveness of silt fence is primarily derived from its ability to pond water behind the fence. This ponding action allows suspended particles to settle out on the uphill side of the fence. Particles are not removed by filtering the runoff through the fabric.

## B. Design Considerations

### 1. Overland Flow:

- a. **General Guidelines:** Silt fence for sediment and slope control should be installed along the contour of the slope (i.e. the entire length should be at the same elevation). At each end of the silt fence a 20 foot segment should be turned uphill (“J”-hook) to prevent ponded water from flowing around the ends of the silt fence. Individual sections of silt fence should be limited to 200 foot lengths. This limits the impact if a failure occurs, and prevents large volumes of water from accumulating and flowing to one end of the installation, which may cause damage to the fence.
- b. **Sediment Control:** When used for sediment control, silt fence should be located to maximize the storage volume created behind the fence. Larger storage volumes increase the sediment removal efficiency of the silt fence, and decrease the required replacement/clean-out intervals.

A common location to place silt fence for sediment control is at the toe of a slope. When used for this application, the silt fence should be located as far away from the toe of the slope as practical to ensure that a large storage volume is available for runoff and sediment.

- c. **Slope Control:** Silt fence can be installed on a slope to reduce the effective slope length and limit the velocity of runoff flowing down the slope. Silt fence also helps prevent concentrated flows from developing, which can cause rill and gully erosion. As a secondary benefit, silt fence installed on slopes can remove suspended sediment from runoff that results from any erosion that has occurred. For slopes that receive runoff from above, a silt fence should be placed at the top of the slope to control the velocity of the flow running onto the slope, and to spread the runoff out into sheet flow.

- d. **Perimeter Control:** Silt fence is commonly used as a perimeter control along streets or adjacent to water bodies to prevent polluted water from leaving the site. When a diversion or perimeter control silt fence is installed in the direction of a slope, a 20 foot length of fence should be turned in, across the slope, at regular intervals (100 feet) to create a “J”-hook. These “J”-hooks act as check dams, controlling the velocity of the diverted runoff as it travels along the fence.
2. **Concentrated Flow:** For concentrated flows in swales or ditches, the silt fence is installed at right angles to the flow of water with the end posts turned uphill to prevent water from flowing around the edges. The 2 year discharge in the ditch should be checked to ensure that it does not exceed 1 cfs. For ditch or swale applications greater than 1 cfs, alternative methods of sediment removal and velocity control within the ditch, such as rock or manufactured ditch checks and sediment traps, are required.
  3. **Diversion:** Silt fence can also be utilized as a synthetic diversion structure to redirect clean water around a site and intercept sediment-laden runoff and transport it to a sediment removal practice.

### C. Application

For sediment control applications, the maximum contributing area should not exceed 1/4 acre per 100 feet of fence. If the contributing area exceeds this value, additional silt fence should be installed to break up the runoff into multiple storage areas.

When used as a velocity control measure for sheet flow on long slopes of disturbed ground, silt fence should be placed at the spacing interval stated in the table below:

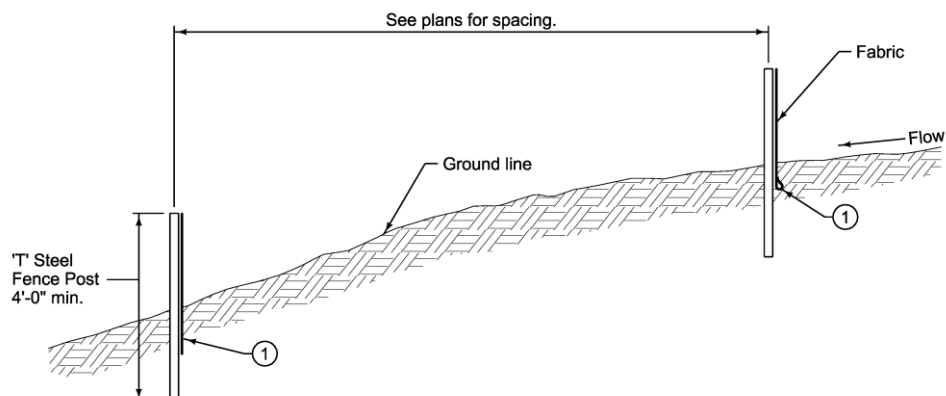
**Table 7E-14.01: Silt Fence Spacing on Slopes**

Slope	Placement Interval (feet)
≤ 10:1 (10%)	100
5:1 (20%)	60
4:1 (25%)	50
3:1 (33%)	40

When silt fence is used under concentrated flow, as a ditch check to intercept soil and debris from water flowing through ditches or swales, the following spacing guidelines should be used:

**Figure 7E-14.01: Typical Ditch Check Spacing**

Ditch Grade (%)	Spacing (feet)
1 to 2	150
2 to 4	75
4 to 6	40
> 6	25



## **D. Maintenance**

When accumulated sediment reaches approximately one-half of the fence height, new silt fence should be installed, leaving the existing fence in place, and locating the new silt fence a sufficient distance away from it to provide area for sediment accumulation. When site conditions require that the silt fence be cleaned out, rather than replaced, extreme care must be taken to ensure that the silt fence is not damaged. Removed sediment should be spread out and stabilized. Any areas of damaged silt fence should be replaced immediately.

Upon project completion, fence fabric, posts, and accumulated sediment should be removed. Any areas disturbed by the removal of the silt fence or sediment should be stabilized.

## **E. Time of Year**

Silt fences are effective on a year-round basis. Installation may not be possible when there is frost in the ground due to the requirement to trench or slice the fence below the ground surface.

# Inlet Protection



Source: Soil Tek

<u>BENEFITS</u>			
	L	M	H
<b>Flow Control</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Erosion Control</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Sediment Control</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Runoff Reduction</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Flow Diversion</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Description:** Inlet protection devices consist of a variety of manufactured sediment barriers and products, which are used to filter runoff before it enters the storm sewer system.

**Typical Uses:** Inlet protection is considered the last line of protection against releasing sediment into the stormwater system or a water body. Inlet protection should be considered around all stormwater intakes and culverts that accept runoff from disturbed areas.

**Advantages:**

- Provide one last opportunity to remove suspended particles from stormwater runoff.
- Areas requiring protection are easy to identify during both planning and construction.

**Limitations:**

- Available practices are not effective at removing fine particles.
- May be used improperly as the sole method of erosion and sediment control.
- Require high level of maintenance.
- Limited to treating runoff from areas of 1 acre or less.

**Longevity:** Varies by product; until sediment accumulates and clean out is required

**SUDAS Specifications:** Refer to [Section 9040, 2.18](#) and [3.24](#)

## A. Description/Uses

Inlet protection can be provided by a variety of methods. A number of new manufactured products are currently available which claim to adequately filter runoff before it enters the storm sewer intake. The effectiveness of these products has yet to be determined.

The traditional method of providing inlet protection is to construct a filter at the opening. The filter is constructed from wire mesh or a steel plate, filter fabric, and crushed stone.

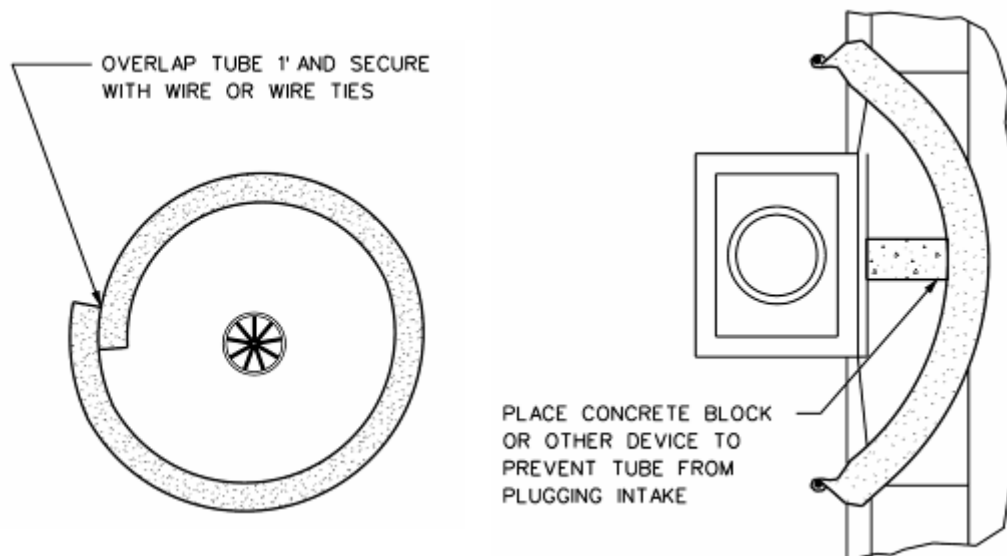
## B. Design Considerations

Most inlet protection devices rely on filtering techniques or on ponding small volumes of water to remove suspended particles. In general, the only way to remove fine particles from suspension is to detain the runoff for an extended period of time. Because inlet protection devices do not have the ability to pond and store large volumes of water, they are generally considered ineffective at removing fine particles from suspension in runoff. However, they are the last line of protection against releasing sediment-laden runoff into a stormwater system or water body. In addition, they may provide some benefit by trapping a portion of the larger suspended particles.

Because of their relative inefficiency compared to other techniques, inlet protection devices should not be used on a project as the sole method of sediment removal.

The traditional method for providing inlet protection was to construct a filter at the opening. The filter was constructed from wire mesh, filter fabric, and crushed stone. Runoff flowing to the intake would percolate through the stone and filter fabric before entering the intake. This stone medium slowed the flow of water and filtered larger sediment particles from the water. Today, these methods have been replaced with alternative techniques and materials.

**Figure 7E-20.01:** Filter Tubes Used for Inlet Protection





Silt fence, placed around the perimeter of an area intake, can also serve as an inlet protection device. Silt fence used around an intake should be reinforced with 6 by 6 inch welded wire fabric, placed on the inside of the silt fence and securely attached to the posts. Silt fence should not be placed where concentrated flows are expected.

Filter socks may be used around the perimeter of an area intake, or in locations where silt fence cannot be installed, such as paved areas. Refer to [Section 7E-4 - Filter Socks](#) for additional information on using filter socks around intakes.

A variety of manufactured products are available including storm intake filter socks, synthetic filter tubes for open throat curb intakes, intake inserts, pop-up filters for area intakes, and many others. These products should be used and installed according to the manufacturer's recommendations.

Using any inlet protection device that restricts the flow into the intake should be avoided for intakes that are on-grade. Because of the flow restriction, a majority of the flow to an on-grade intake will be bypassed to the downstream intake. This creates the potential for flooding problems downstream. To limit the potential for flooding, the drainage area to a protected inlet should be limited to 1 acre. For drainage areas larger than 1 acre, temporary sediment traps, flow diversion, or other methods should be considered.

### **C. Application**

Inlet protection devices should be considered for inlets that are to receive runoff from small disturbed areas (less than 1 acre). These devices are used as a last line of defense against releasing sediment into the storm sewer or a water body.

### **D. Maintenance**

Inlet protection devices are easily plugged, and may require a high level of maintenance. The devices should be cleaned out or replaced when standing water is still evident 48 hours after a rain event.

# Rip Rap



Source: Mississippi State University

<u>BENEFITS</u>			
	L	M	H
<b>Flow Control</b>	██████████		
<b>Erosion Control</b>	██████████		
<b>Sediment Control</b>	□	□	□
<b>Runoff Reduction</b>	□	□	□
<b>Flow Diversion</b>	□	□	□

**Description:** Rip rap is a common method of protecting a channel downstream of a storm sewer or culvert outlet from erosion. A layer of crushed stone placed on the bottom and sides of the channel protects the channel and dissipates the energy of the high velocity flow.

**Typical Uses:** Used at the outlet of storm sewer pipes, roadway and driveway culverts, and at any point concentrated runoff enters a channel.

**Advantages:**

- Widely used method of erosion protection.
- Materials are readily available in most areas.
- Effective at reducing scour when properly designed and installed.

**Limitations:**

- Commonly undersized.
- Not aesthetically pleasing.
- May not be adequate for flows from large pipes (>48 inches).
- May be higher cost due to limited availability of stone.

**Longevity:** Temporary or permanent

**SUDAS Specifications:** Refer to [Section 9040, 2.09](#) and [3.13](#)

## A. Description/Uses

The most common method of protecting a channel at an outlet is to place a layer of crushed stone along the bottom and sides of the channel. The purpose of the stone is to protect the channel until the outlet flow loses sufficient velocity and energy, so that erosion will not occur in the downstream channel. Rip rap is provided by constructing a blanket of crushed stone, to a specified depth at the outlet. The layer of the stone is constructed so that the top is flush with the invert elevation of the outlet pipe. The stone should be placed on a layer of engineering fabric to protect the underlying soil from the erosive action of the churning water.

For larger pipes, or for discharges from pipes with large head pressures, greater protection may be required. Additional protection can be provided by constructing a rock-lined plunge pool, stilling basin, or through the use of concrete energy dissipaters (see [Chapter 2 - Stormwater](#)).

## B. Design Considerations

The following design information only applies to the design of rock protection at outlets. It does not apply to rock lining of channels or streams. In addition, the design of rock plunge pools or stilling basins, and other types of energy dissipaters is not covered in this section. Refer to the Federal Highway Administration Hydraulic Engineering Circular No. 14 (HEC-14), "Hydraulic Design of Energy Dissipaters for Culverts and Channels" for information on designing these structures.

The Iowa DOT Culvert Program (version 2.0) includes three methods of designing rock protection at the outlet of culverts. The methods include HEC-14 rip rap basins, U.S. Army Corps of Engineers scour hole design and U.S. Bureau of Reclamation plunge basin design. This program is available online and can be obtained from the Iowa DOT's Office of Bridges and Structures.

The steps below describe the method of designing rip rap:

- 1. Tailwater Depth:** The first step is to find the tailwater depth at the pipe outlet, corresponding to the appropriate design-year storm event for the outlet structure (see [Chapter 2 - Stormwater](#) for design criteria for various structures). Normally, the tailwater depth is found by determining the normal depth in the channel using Manning's equation (see [Chapter 2 - Stormwater](#)). If downstream restrictions such as a culvert, dam or channel constriction exist, a more thorough analysis is required.

If the tailwater is less than half of the discharge flow depth (pipe diameter or box height if flowing full) it is classified as a *minimum tailwater condition*. If the tailwater is greater than or equal to half of the discharge flow depth, it is classified as a *maximum tailwater condition*. The tailwater condition will determine which figure (Figure 7E-10.03 or 7E-10.04) to use to find the necessary rock size and apron dimensions.

Pipes that outlet onto flat areas without a well-defined channel can be assumed to have a minimum tailwater condition.

If the tailwater condition cannot be easily determined for a channel, the apron should be designed for the maximum tailwater condition as a conservative approach.

- 2. Stone Size:** As the discharge flows over the crushed stone, the flow imposes shear stresses on the individual stones. Since the stones are only held in place by the force of gravity, they must have sufficient mass to prevent them from being dislodged by the force of the flowing water. For rip rap design, the crushed stone material is selected based upon its average, or  $d_{50}$ , diameter. The  $d_{50}$

diameter represents the size at which half of the individual stones (by weight) are smaller than the specified diameter.

The  $d_{50}$  diameter is determined with Figure 7E-10.03 or 7E-10.04, for the appropriate tailwater condition. This value represents the minimum average diameter of stone necessary to resist the anticipated flows.

- a. **Pipes Flowing Full:** The appropriate figure is entered along the x-axis at the design discharge. A vertical line is projected to the curve for the appropriate pipe diameter in the lower set of curves. From this point, a horizontal projection is made to the right, and the minimum  $d_{50}$  diameter is read.
- b. **Partially Full Pipes and Box Culverts:** Using the depth of flow and velocity at the outlet, the intersection of  $d$  and  $v$  in the lower portion of the appropriate figure is found. From this point, a horizontal projection is made to the right, and the minimum  $d_{50}$  diameter is read.

Most crushed stone used for outlet protection is specified by weight, not by diameter. The following table lists the standard SUDAS and Iowa DOT revetment and erosion stone weights and corresponding  $d_{50}$  diameters. These gradations are also shown on Figures 7E-10.03 and 7E-10.04. Alternative gradations may be selected and specified if available from local aggregate suppliers.

**Table 7E-10.01:** Standard Revetment and Erosion Stone Properties

Standard Classification	$d_{50}$ Weight (lbs)	Average $d_{50}$ Diameter <sup>1</sup> (feet)	Maximum Weight (lbs)	Avg. max. Diameter <sup>1</sup> (feet)
Class A Revetment Stone	125 <sup>2</sup>	1.1 <sup>2</sup>	400	1.7
Class B Revetment Stone	275	1.5	650	2.0
Class D & E Revetment Stone	90	1.0	250	1.4
Erosion Stone	---	0.5	---	0.75

<sup>1</sup> Diameters based upon an assumed specific gravity of 2.65.

<sup>2</sup> Approximate values for design purposes. Actual  $d_{50}$  value is not specified. ( $d_{75} = 75$  lbs).

3. **Apron Length:** A sufficient length of protection must be provided in order to reduce the velocity and energy of the flow to the level anticipated in the downstream channel. This length is dependent on the volume and velocity of the flow at the discharge point. It is also dependent on the tailwater condition of the downstream channel. The length,  $L_a$ , is found from Figure 7E-10.03 or 7E-10.04 for the appropriate tailwater condition.

From the intersection of discharge and pipe diameter, or for velocity and flow depth found in the previous step, a vertical line is projected to the appropriate discharge depth/pipe diameter in the upper set of curves. From this intersection, a horizontal line is projected to the left to determine the minimum length of rock protection required.

4. **Apron Width:** For pipes that discharge into a well-defined channel, the width of the apron should extend to the top of the bank, or at least 1-foot above the maximum tailwater depth, whichever is less, along the entire length of the apron.

For outlets that discharge onto flat areas, the width of the apron at the upstream end of the culvert should be three times the diameter of the pipe, or equal to the width of the concrete pipe apron if one is provided. The width of the apron at the downstream end should be equal to the length of the apron,  $L_a$ , plus the diameter of the pipe,  $D$ .

5. **Apron Depth:** The depth of the apron should be equal to one and one-half times the maximum stone diameter (see Table 7E-10.01 for maximum diameter).

The channel downstream of the rock apron must be analyzed to ensure that existing or proposed channel liner is sufficient and that it will not be eroded under the anticipated flow depths. Methods for analyzing channel liners can be found in [Section 7E-23](#).

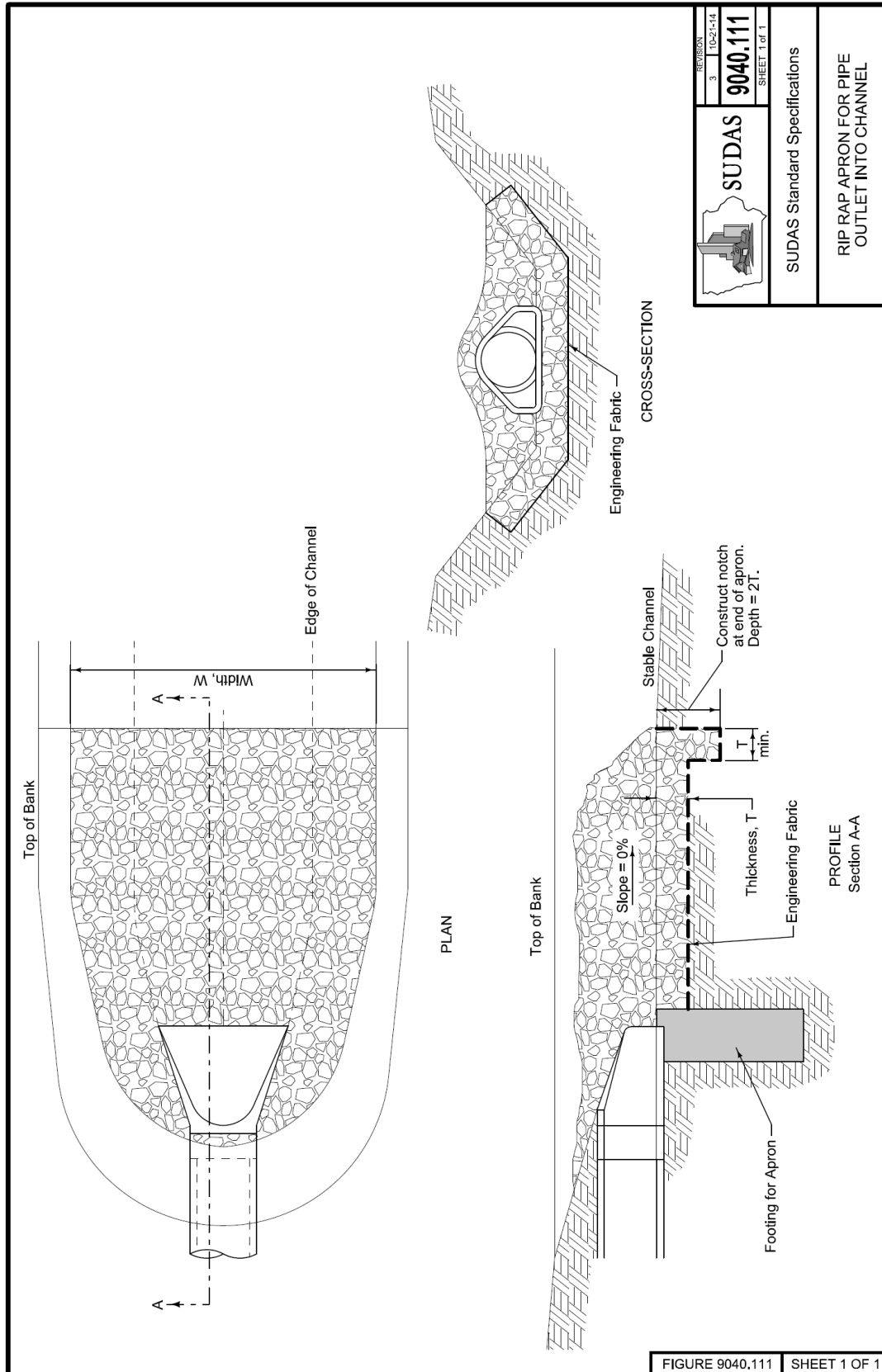
### **C. Application**

Outlet protection should be considered at all pipe and culvert outlets. Rip rap is an easily constructed method of protection and is sufficient for many situations.

### **D. Maintenance**

After installation, rock aprons should be inspected regularly. Special attention should be paid to the end of the apron, as it transitions to a natural channel. If scour or erosion is occurring at this junction, the apron should be extended, and additional stabilization methods may be required.

Figure 7E-10.01: Rip Rap Apron for Pipe Outlet into Channel  
 (SUDAS Specifications Figure 9040.111)



**Figure 7E-10.02: Rip Rap Apron for Pipe Outlet onto Flat Ground**  
 (SUDAS Specifications Figure 9040.110)

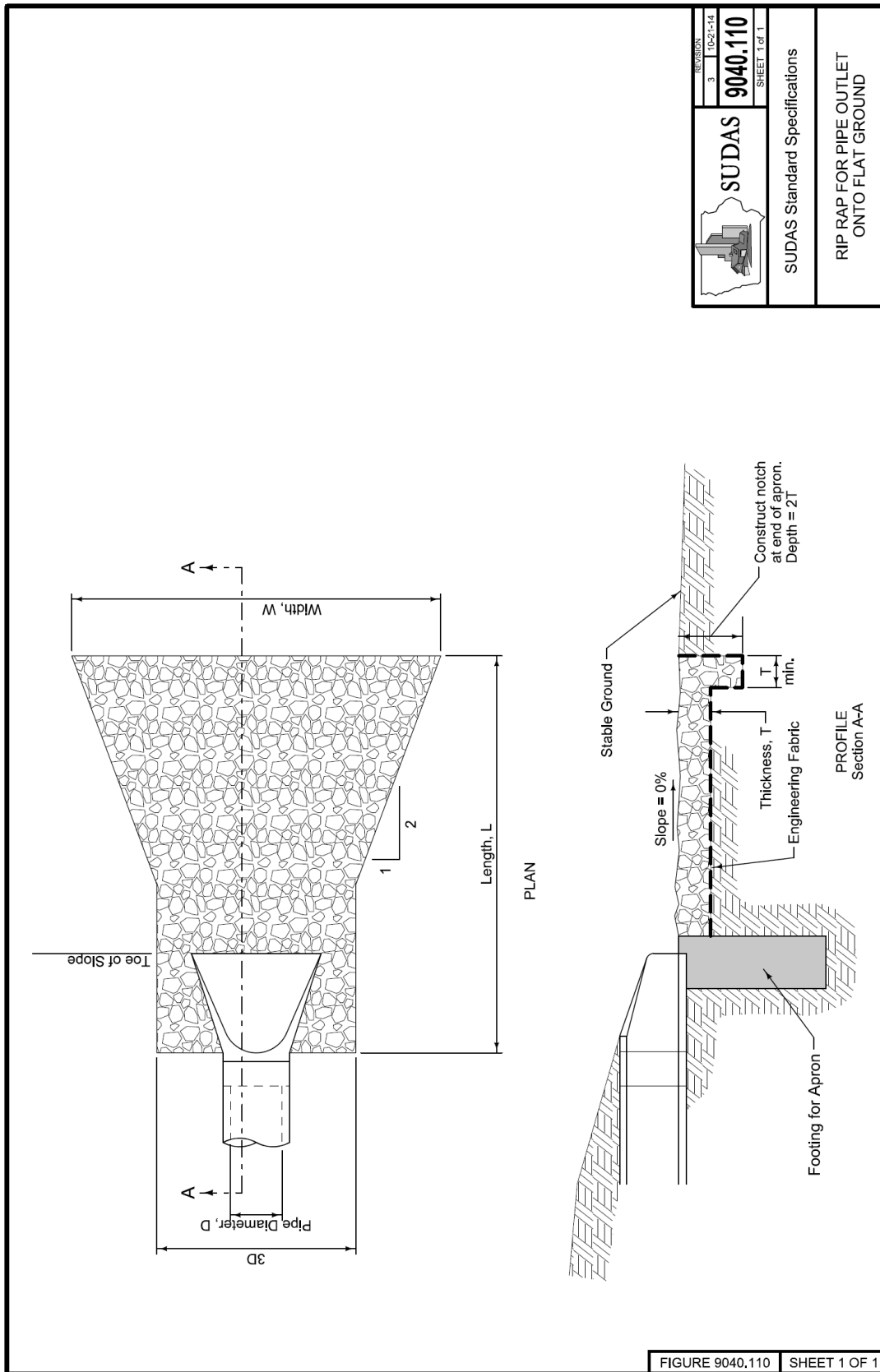
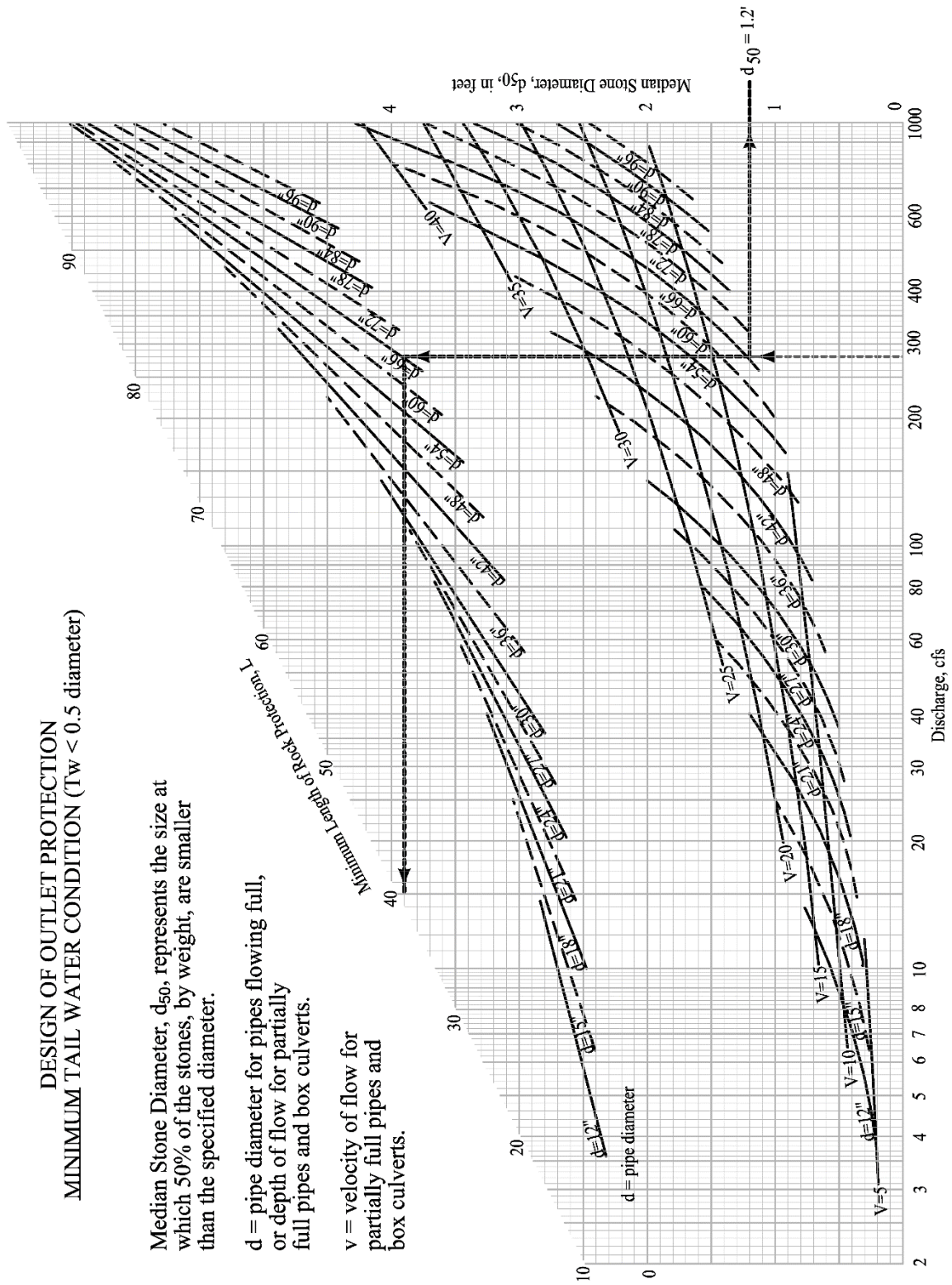


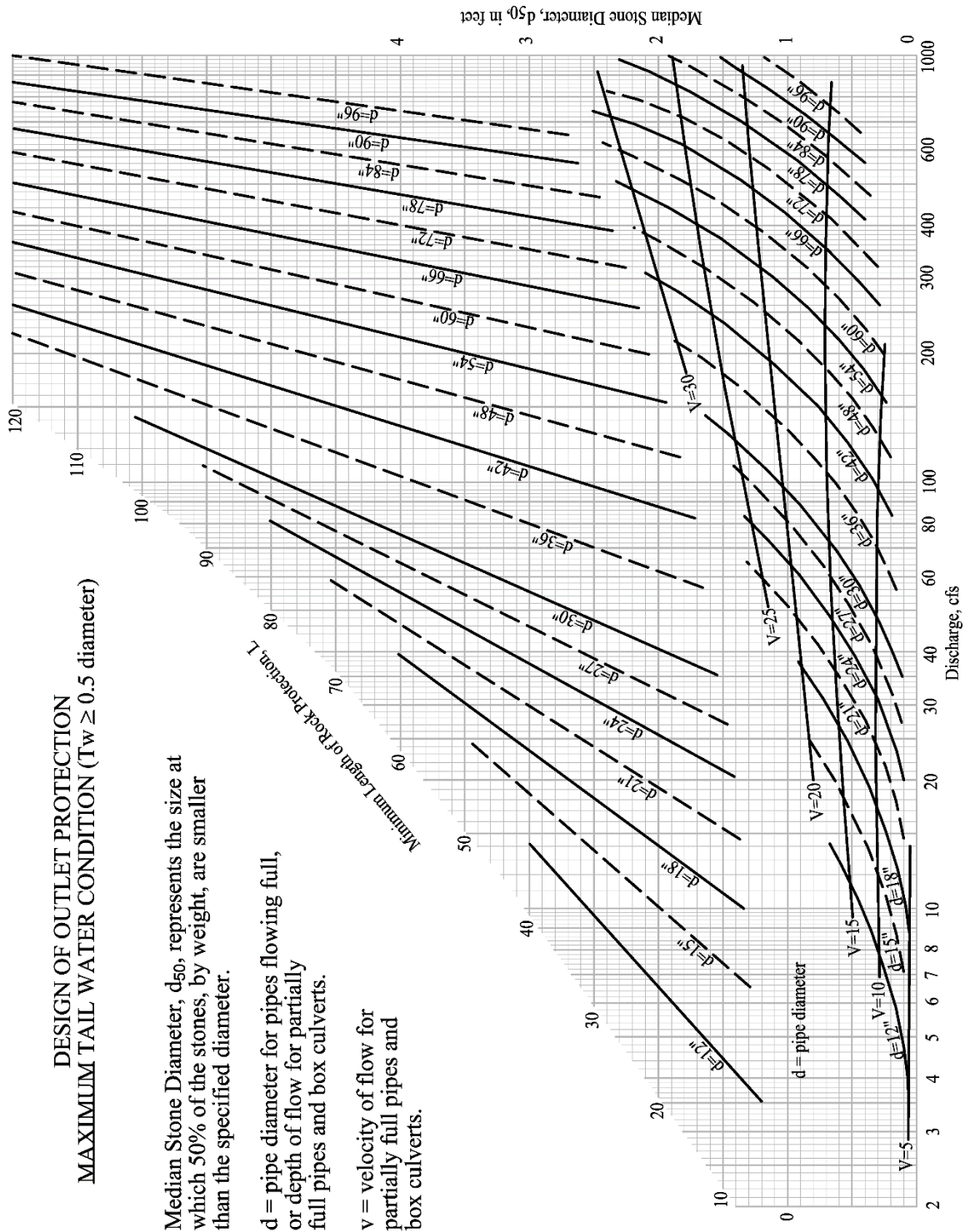
Figure 7E-10.03: Design of Outlet Protection, Minimum Tailwater Condition



Source: USDA NRCS, 2004



Figure 7E-10.04: Design of Outlet Protection, Maximum Tailwater Condition



Source: USDA NRCS, 2004

# Permanent Seeding



Source: Iowa NRCS, 2004

## BENEFITS

	L	M	H
Flow Control	█	█	█
Erosion Control	█	█	█
Sediment Control	█	█	█
Runoff Reduction	█	█	█
Flow Diversion	█	█	█

**Description:** Permanent seeding is a means of establishing permanent, perennial vegetative cover on disturbed areas. The purpose of permanent seeding is to prevent erosion, remove sediment from runoff, reduce the volume of runoff, and improve water quality.

**Typical Uses:** Permanent seeding is used to stabilize the ground after grading and land-disturbing activities have been completed, or whenever construction activities will be halted for a time period longer than temporary seeding can provide protection (i.e. one growing season).

### **Advantages:**

- Relatively low cost.
- Most common method of providing permanent stabilization of disturbed ground.
- Highly effective as a stand-alone measure in all but the most extreme situations (i.e. continuously flowing channels, steep slopes, high flows, etc.).
- Competes with undesirable vegetation and noxious weeds.
- Vegetation absorbs water, reducing the volume of stormwater runoff.
- Vegetation filters out sediment and other pollutants, improving water quality.
- Provides an aesthetically pleasing, finished look to the site.

### **Limitations:**

- Does not provide instant protection; requires sufficient time and moisture to establish.
- Difficult to establish in area subjected to concentrated flows.
- Seasonal limitations on planting may not coincide with construction schedule.

**Longevity:** Permanent

**SUDAS Specifications:** Refer to [Section 9010 \(Seeding\)](#)

## A. Description/Uses

Permanent seeding consists of planting perennial vegetation on disturbed/denuded soil areas. Through seeding, a fibrous root system is established. This holds the soil in place and provides a canopy over the soil, protecting it from raindrop impact. The vegetation slows the velocity of the runoff, protecting the surface from sheet and rill erosion, while allowing suspended sediment to be removed. Vegetation also absorbs water from the soil, reducing the total volume of runoff.

## B. Design Considerations

Permanent seeding is the most commonly used method of providing permanent surface stabilization. It is an economical, long-term method of providing highly effective stabilization, and is aesthetically pleasing. However, in order to be effective, the designer must select the proper vegetation and recognize the practical limits of vegetation.

The following should be considered for all sites prior to permanent seeding:

1. **Site Stabilization:** Steep slopes, which increase the erosion hazard, should be minimized. Vegetation alone is normally an effective method of stabilizing slopes that are 3:1 or flatter. For slopes steeper than 3:1, or for flatter slopes carrying runoff from upland areas, a rolled erosion control product may be required to provide slope stabilization until the vegetation is established.

In addition, slopes that are very steep (2:1 or greater) and areas that receive intermittent concentrated flows may require application of a turf reinforcement mat to provide permanent reinforcement to the vegetation.

2. **Sediment and Water Control Devices:** Measures should be taken to divert sheet and concentrated flows away from areas that are to be seeded until the vegetation is established.
3. **Seeding Methods:** There are four seeding methods to consider:
  - a. Broadcast seed spreader/cyclone seeder
  - b. Mechanical drill or cultipacker
  - c. Hydroseeder in which the seed is intermixed with mulch and water to create a slurry
  - d. Pneumatic seeder in which the seed is intermixed with compost or a compost/soil blend

When hydroseeding and pneumatic seeding are utilized, the surface may be left with a more irregular surface, since these practices will fill small depressions and cover small bumps. These two types of seeding methods can be used in situations where slope and accessibility is a limiting factor and seedbed preparation is not possible, or where the application of seed, mulch and fertilizer (if necessary) in one operation is desirable.

Hand broadcasting seed may be utilized for small or inaccessible areas; however it is not recommended for larger areas because of the difficulty in achieving a uniform distribution.

4. **Seedbed Preparation:** Proper seedbed preparation is essential for the seed to germinate and develop into a dense, healthy stand of vegetation.
  - a. **Subsoil Preparation:** Newly graded areas may be severely compacted by the weight of heavy earth-moving and construction equipment. Disking or tilling reduces compaction in

the uppermost layer of the soil, providing an adequate growing bed for the seed; however, the soil below this level may remain severely compacted. This compacted layer acts as an impermeable barrier, slowing or preventing the infiltration of water into the ground. Infiltration of precipitation reduces runoff, and recharges groundwater supplies. Techniques for reducing ground compaction, such as deep tillage, should be investigated.

- b. Topsoil:** In order to provide an adequate growing medium, a minimum of 6 inches of topsoil should be placed over the disturbed area prior to seeding. Deeper topsoil depths (8-12 inches or greater) are desirable as they increase the organic matter available for use by the plants, allow for deeper root penetration and increase the moisture holding ability of the soil. These benefits will increase the drought tolerance and long-term health of the vegetation. Where sufficient topsoil is not available, composted material may be incorporated at the rate of 1 inch of compost for every 3 inches of deficient topsoil. This will increase the organic matter content of the soil, and provide an adequate growing medium for vegetation.
- c. Soil pH:** The soil pH should have a range of 5.5 to 7.5. Where soils are known to be highly acidic (pH 6.0 and lower), lime should be applied at the rate recommended by the soil-testing laboratory.
- d. Soil Fertilization:** Soil fertilization is required for permanent seeding. Fertilizer rates specified in the SUDAS Specifications are recommended for most applications. Sites without sufficient topsoil or low organic matter may require higher fertilizer rates, or fertilizer with a higher nitrogen concentration.

#### 5. Seeding Properties:

- a. General Mixtures:** The SUDAS Specifications provide a number of seed mixes that are acceptable for most general applications. These mixes and a description of their intended usage are shown in Table 7E-24.01.

**Table 7E-24.01: SUDAS Seeding Mixtures**

Description	Typical Uses	Allowable Seeding Dates
Type 1 - Permanent Lawn Mixture	Used for residential and commercial turf sites. Fertilized; typically mowed.	March 1 - May 31 August 10 - September 30
Type 2 - Permanent Cool - Season Mixture for Slopes and Ditches	Not typically mowed. Reaches maximum heights of 2 to 3 feet; low fertility requirements; grows in spring and fall; can go dormant in summer.	March 1 - May 31 August 10 - September 30
Type 3 - Permanent Warm-Season Slope and Ditch Mixture	Not typically mowed. Reaches heights of 5 to 6 feet; stays green throughout summer; responds well to being burned in spring; do not apply fertilizer.	March 1 - June 30
Type 4 - Temporary Erosion Control Mixture	Short-lived (6 to 8 months) mix for erosion control.	March 1 - September 30 (seeding dates vary by seasonal mix)
Wetland Seeding	Used in areas designated for wetland grass seeding.	April 1 - June 30 August 1 - August 31
Native Grass and Wildflower Seeding	Used in areas designated for native grass and wildflower seeding.	April 1 - June 30

- b. Special Mixtures:** Some sites require specifically designed or selected mixtures to address individual site characteristics. Site characteristics that require special consideration include very shady areas, detention ponds, wet areas, streambanks, severe slopes, and areas with poor soils.
- 6. Weather:** When seeding, be aware of the weather. Do not seed when heavy rainfall is predicted, during windy weather or on wet/frozen ground (hydroseeding and pneumatic seeding may be an exception to seeding on wet/frozen ground).
- 7. Matting:** A rolled erosion control product is recommended for slopes steeper than 3:1. RECPs may also be required for flatter slopes greater than 100 feet in length, to hold the seed in place and protect new vegetation from runoff until it becomes established. Refer to [Section 7E-5 - Temporary Rolled Erosion Control Products](#).
- 8. Mulching:** Mulching is recommended for most permanent seeding applications. Mulch aids in stabilizing the surface until vegetation is established. Mulch also helps retain soil moisture and maintains temperature conditions favorable to germination. Refer to [Section 7E-17 - Erosion Control Mulching](#).
- 9. Moisture:** If normal rainfall is insufficient to ensure vegetation establishment, mulching, matting, or controlled watering should be completed to keep seeded areas adequately moist.

### C. Application

In order to achieve a dense, healthy stand of vegetation that will provide long-term surface stabilization, seed mixtures and fertilizer should be applied at the rates specified in the SUDAS Specifications.

### D. Maintenance

Once the area is seeded, it should not be disturbed and should be protected from traffic. Newly seeded areas should be inspected weekly as part of the overall erosion control inspection, to ensure that grass is growing satisfactorily. Areas that have bare spots, or where erosion has occurred should be re-seeded.

### E. Time of Year

The seed mixtures within the SUDAS Specifications should be placed within the dates specified, or as weather conditions allow and if approved by the Jurisdictional Engineer.

# Erosion Control Mulching



Source: Iowa DNR, 2005

## BENEFITS

	L	M	H
Flow Control	■	□	□
Erosion Control	■	■	□
Sediment Control	■	□	□
Runoff Reduction	■	□	□
Flow Diversion	□	□	□

**Description:** Mulching is the application of organic material over soil that is bare or immediately over soil that has been seeded. Mulch prevents erosion by preventing the detachment of soil particles, slows runoff velocity, and retains moisture to improve germination and establishment of vegetative cover.

**Typical Uses:** This practice may be applied on exposed soils as a temporary control where soil grading or landscaping has taken place or in conjunction with temporary or permanent seeding. When time constraints prevent the establishment of vegetation (seeding), mulch such as wood chips, straw, or compost can be used independently as a temporary soil stabilization practice that protects the soil surface until vegetation establishment can be completed.

### **Advantages:**

- Provides immediate surface protection.
- Suppresses weed growth.
- Conserves soil moisture.
- Acts as a thermal layer for seed.
- If used in conjunction with seed, allows seed growth through the mulch.
- Useful for dust control.

### **Limitations:**

- If applied too thick, it may inhibit seed germination.
- Can blow or wash away if not anchored properly.

**Longevity:** Varies by material (three months to one year)

**SUDAS Specifications:** Refer to [Section 9040.2.16](#) and [3.21](#)

## A. Description/Uses

Used alone or applied over seed, mulch provides immediate erosion protection. Mulching without seeding may be considered for very short-term protection. Mulch protects the disturbed soil surface by absorbing the impact of raindrops, thereby preventing detachment of the soil particles. It also retains and absorbs water, slowing runoff. These properties allow for greater infiltration of water into soil; help to retain seeds, fertilizer and lime in place; and improve soil moisture and temperature conditions for seed germination. Mulch is essential in establishing good stands of grasses and legumes. In order to prevent movement by wind or water, it is important that the mulch be anchored to the soil.

## B. Design Considerations

The plans and specifications should address the type of mulch used, application rate, timing of the application, method of anchoring, and schedule for installation, inspection, and maintenance.

1. **Site Preparation:** The soil surface shall be prepared prior to the application of mulch in order to achieve the desired purpose and to ensure optimum contact between soil and mulch.
2. **Material Considerations:**
  - a. **General:**
    - 1) Mulching should not be performed during periods of excessively high winds that would preclude the proper placement of mulch.
    - 2) Concentrated flows should be diverted around areas where mulch is applied.
    - 3) If ground is seeded, mulching should be completed during or immediately after seeding.
    - 4) Depending on the seeding period, a heavier application of mulch may be needed to prevent seedlings from being damaged by frost.
    - 5) In areas where lawn-type turf will be established, the use of tackifiers is the preferred anchoring method. Crimping tends to leave an uneven surface and netting can become displaced and entangled in mowing equipment.
    - 6) The use of mulch behind curb and gutter may not be desirable unless anchored by netting, because air turbulence from nearby traffic can displace mulch. Consider the use of erosion mat or sod as an alternative.
    - 7) The product longevity should match the length of time the soil will remain bare or until vegetation occurs.
  - b. **Straw:**
    - 1) Straw mulch should be applied in conjunction with temporary or permanent seeding, except when applied for short-term (less than three months) stabilization prior to the allowable seeding date.
    - 2) To prevent straw from being windblown, it is anchored to the soil surface using tackifiers, nets, or a mulch-crimping machine. Mechanical anchoring or crimping is recommended only for slopes flatter than 2:1. Mulch on slopes steeper than 2:1 should be anchored to the soil with netting, or other alternatives, such as a rolled erosion control product considered.
    - 3) Only use straw free from all noxious weeds, seed bearing stalks, or roots
    - 4) Expected longevity is less than three months.

- c. Wood Chips/Grindings:**
- 1) Do not use wood chips/grindings over newly seeded areas.
  - 2) Chips may be produced from vegetation removed from site.
  - 3) Chips are effective on slopes up to 3:1.
  - 4) Wood chips decompose over an extended period of time. This process may take nitrogen from the soil. To prevent nitrogen deficiency in the soil, the wood mulch should be treated with a nitrogen rich fertilizer.
  - 5) Do not use in areas where fine turf will be established.
  - 6) Expected longevity is less than 12 months.
- d. Hydromulch:** Hydromulching is normally conducted in conjunction with hydroseeding, but can also be applied as a stand-alone practice. Several different types of hydromulch are available, and each has different material properties and typical uses:
- 1) Wood Cellulose Fiber Hydromulch:**
    - a) Produced from wood pulp and recycled paper
    - b) Most commonly used hydromulch
    - c) Use is limited to slopes 6:1 or flatter.
    - d) Typically require 24 hours to dry before rainfall occurs in order to be effective against erosion.
    - e) Expected longevity is 3 to 12 months.
  - 2) Bonded Fiber Matrix (BFM) Hydromulch:**
    - a) Produced from strands of elongated wood fibers and a binding agent
    - b) May be used on slopes up to and including 2:1.
    - c) Typically requires 24 hours to dry before rainfall occurs in order to be effective against erosion.
    - d) Expected longevity is 3 to 12 months.
    - e) Provides significantly superior erosion protection than straw mulch or wood cellulose hydromulch.
  - 3) Mechanically Bonded Fiber Matrix (MBFM) Hydromulch:**
    - a) Produced from strands of elongated wood fibers and crimped synthetic fibers to create an interlocking mechanism between the fibers. Material is combined with additional binding agents.
    - b) May be used on slopes up to and including 2:1.
    - c) Provides immediate protections against erosion. No cure time is required to develop surface protection.
    - d) Expected longevity is 12 months or greater.
    - e) Provides significantly superior erosion protection than straw mulch or wood cellulose hydromulch.
- e. Compost:**
- 1) Compost may be used as mulch, either with or without seeding for erosion protection. See [Section 7E-2 - Compost Blanket](#).
  - 2) Expected longevity is less than 12 months.

## C. Application

- 1. Mulching without Seeding:** Wood mulch and compost applied without seed, should be applied to a uniform depth of 1 to 3 inches depending on slope. Straw mulch should be applied at a rate of 2 tons per acre to achieve the specified coverage rate. Wood cellulose fiber hydromulch should be applied at a rate of 2,600 pounds per acre. BFM and MBFM hydromulch should be applied at a rate of 3,600 pounds per acre.



2. **Mulching for Seeding:** Straw mulch over newly seeded areas should be applied at a rate of 1 1/2 tons per acre. This application provides some protection of the surface, while allowing some sunlight to penetrate and air to circulate thereby promoting seed germination. When compost is used as mulch over newly seeded areas, a minimum thickness of 1 inch should be spread evenly over flat surfaces. For compost used as mulch on slopes, see compost blankets in [Section 7E-2](#). Hydromulch products applied with seeding (hydroseeding) are applied at the same rate as without seeding (see paragraph above).

The NPDES General Permit No. 2 requires that all disturbed areas where no construction activities are scheduled for a period of 21 calendar days or more, be stabilized within 14 days of the final construction activity. Mulching is one way to meet this requirement.

## **D. Maintenance**

Inspect mulched areas for signs of thin or bare spots. Add mulch as required to maintain the thickness of the cover. Areas that show signs of erosion should be repaired, and may require additional protection with an erosion control blanket or other method.

## **E. Time of Year**

Mulch applications for establishing vegetation should be done when weather and soil conditions are favorable. Mulch can be applied over bare frozen ground that has not been seeded to help prevent erosion until such time as vegetation can be established.

# Sodding



Source: Welch, J.

<u>BENEFITS</u>	
	L M H
Flow Control	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Erosion Control	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
Sediment Control	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Runoff Reduction	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Flow Diversion	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**Description:** A section of grass-covered surface soil held together by matted roots that is cut in pre-determined sections, transported, and delivered directly to the job site ready to install.

**Typical Uses:** Sod is placed to prevent erosion and damage from sediment and water by stabilizing the soil surface and to improve the visual quality and utility of the area quickly. Sod is typically used in residential or commercial areas where prompt use or aesthetics are important such as building entrance zones or high activity areas. Sod is also used in areas of intermittent concentrated flow such as waterways and channels. Sod may also be utilized in critical areas such as storm drain inlets, steep slopes, and any area where conditions make seeding impractical or impossible.

**Advantages:**

- Provides immediate erosion and dust control.
- Provides finished landscape appearance at time of installation.
- Reduces likelihood of weed growth.
- Placement can occur any time soil moisture is adequate and ground is not frozen.
- Rapid stabilization of surfaces for traffic areas, channel linings, or critical areas.

**Limitations:**

- More costly when compared to seeding and mulching.
- Vegetation selection is limited (typically a cool-season bluegrass based mix).
- Time is necessary for root establishment.
- Watering is required to ensure establishment.

**Longevity:** Permanent

**SUDAS Specifications:** Refer to [Section 9020 \(Sodding\)](#)

## A. Description/Uses

Sodding consists of transplanting turf-type vegetation to promptly stabilize areas that are subject to erosion. Sod may be field sod or commercial sod, a cultured product utilizing specific grass species. A sodded area provides one of the best methods for preventing soil particles from leaving the site, providing immediate protection against soil erosion from water and wind.

## B. Design Considerations

The following should be considered for all sites stabilized with sod.

- 1. Fertilization:** Test soil to determine the exact requirements for lime and fertilizer. Soil tests should be conducted by the state soil testing lab or a reputable commercial laboratory. Information on soil testing and testing services is available from the Iowa State University Extension (<http://www.extension.iastate.edu/>).
- 2. Site Preparation:** In areas where topsoil has been stripped, a sodbed should be constructed by spreading a minimum of 6 inches of topsoil prior to sodding. Deeper topsoil depths (8 to 12 inches or greater) are desirable as they increase the organic matter available for use by the plants, allow for deeper root penetration and increase the moisture holding ability of the soil. These benefits will increase the drought tolerance and long-term health of the vegetation. Where sufficient topsoil is not available, composted material may be incorporated at the rate of 1 inch of compost for every 3 inches of deficient topsoil.

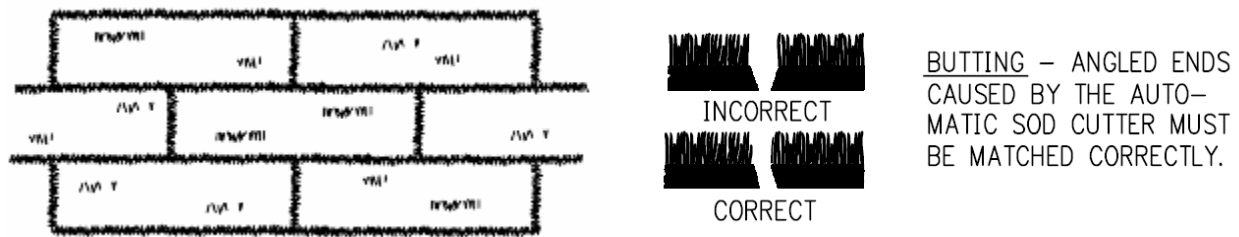
The top of the completed sodbed should contain a minimum soil organic matter content of 5%. In areas where topsoil has not been stripped, and the soil organic content is low, compost may be placed, as required, to increase the soil organic matter content.

The top 3 inches of the sodbed should be prepared by tilling, and the surface cleared of any trash, debris, roots, branches, and stones or clods larger than 3/4 inch in diameter. Any low spots should be filled or leveled to avoid standing water. The fertilizer and any other soil amendments should be uniformly applied and incorporated into the top 1 1/2 inches of the soil by tilling or disking. Complete soil preparation by rolling or cultipacking to firm the soil. Avoid using heavy equipment on the area, particularly when the soil is wet, as this may cause excessive compaction and make it difficult for the sod to take root.

Newly graded areas may be severely compacted by the weight of heavy earth moving and construction equipment. Disking or tilling reduces compaction in the uppermost layer of the soil, providing an adequate growing bed for the sod; however the soil below this level may remain severely compacted. This compacted layer acts as an impermeable barrier, slowing or preventing the infiltration of water into the ground. Infiltration of precipitation reduces runoff and recharges groundwater supplies. Techniques for reducing ground compaction, such as deep tillage, should be investigated.

- 3. Installation Techniques:** Sod should be placed as soon as possible after the ground surface has been graded, to take advantage of the ground moisture, and installed within 36 hours of cutting. The soil should be slightly moist, but firm enough not to leave depressions if walked on. Install sod in a straight line at right angles to the direction of the slope, starting at the base of the area to be sodded and working uphill. Sodding operations should be planned so that sloped areas can be completely protected, from bottom to top, prior to halting operations for the day, or before significant precipitation is expected. The angled ends caused by the automatic sod-cutting machine must be matched correctly.

Figure 7E-25.01: Proper Sod Installation



Source: Kansas City APWA, 2003

Place the strips together tightly so that no open joints are left between strips or between the ends of strips. Lateral joints shall be staggered in a brickwork-type pattern to promote uniform growth and strength. Sod should not be overlapped or stretched, and all joints should be butted tightly to prevent voids. Sod should be laid perpendicular to the flow of water on slopes and in waterways. The edges of the sod at the top of the slopes should be slightly tucked under. A layer of soil should be compacted over the edge to conduct surface water over and onto the top of the sod. Fill any spaces between the joints and all sod edges with at least 2 inches of topsoil.

Care shall be taken to prevent voids or over-exposure of the roots, which would cause drying. As sodding of defined areas is completed, sod shall be rolled or tamped to provide firm contact between roots and soil. Seam openings between the mats are a sign the turf is shrinking and that the sod requires more water. Gaps between edges or ends of sod mats should be filled with topsoil and rolled. If sod placement is delayed, it should be kept cool and moist. When placed on slopes steeper than 3:1, or in areas subject to concentrated flow, the sod should be anchored with pins, staples, or other approved methods at the ends and center, or every 3 to 4 feet for longer strips, to prevent movement. Sod should be kept moist until it is firmly rooted which typically takes a minimum of two weeks (see supplemental watering).

4. **Sod Properties:** Sod should be of high quality, which the genetic origin is known, free of noxious weeds, disease, and insect problems consisting of a 3/4 inch mat of vigorous turf. It should appear healthy and vigorous, and conform to the following specifications:
  - a. Sod should be live grass, machine cut at a uniform depth of 1/2 to 2 inches (excluding shoot growth and thatch).
  - b. Sod strips should be cut with smooth, clean edges and square ends to facilitate laying and fitting.
  - c. Sod should not be cut in excessively wet or dry weather.
  - d. Frozen sod should never be placed.
  - e. Sod should not be permitted to dry out.
  - f. Harvested sod pieces can vary from widths of 12 to 48 inches and lengths of 2 to 100 feet, but should be in sections strong enough to support their own weight and retain their size and shape when lifted by one end.

- g. As noted in the installation considerations, harvest, delivery, and installation of sod should take place within a period of 36 hours.
  - h. Sod should be moistened after it is unrolled, which helps to maintain its viability, and stored in the shade if possible, during installation.
5. **Supplemental Water:** After placement is complete, the sod should be irrigated to a depth sufficient that the underside of the sod mat and 4 inches of soil below sod is thoroughly wet. Irrigate at a rate that does not result in runoff. The moisture level can be checked by lifting a corner of a sod roll, and verifying that water is penetrating well into the subsoil.

As a rule of thumb, watering should be scheduled as follows:

- a. **First Week:** The sod soil should be kept moist at all times. During dry spells, the sod should be watered daily, or as often as necessary to maintain moist soil. The sod should be watered during the heat of the day to prevent wilting.
- b. **Second and Subsequent Weeks:** Water sod to maintain adequate moisture in the soil until the grass takes root. This can be determined by gently tugging on the sod. Resistance indicates that rooting has occurred.
- c. **Summer Installations (June through August):** Summer installations require high levels of attention to water application needs, as newly installed sod will dry out rapidly, suffering significant setback or total loss.

## C. Application

The NPDES General Permit No. 2 requires that all disturbed areas, where no construction activities are scheduled for a period of 21 calendar days or more, be stabilized within 14 days of the final construction activity. Sodding is one way to meet this requirement.

## D. Maintenance

The sodded area should be inspected daily for at least two weeks, or until the sod is established, to ensure that the moisture content is sufficient and that root establishment is proceeding. The sod should not be mowed regularly until it is well established, and the roots have knitted down. The turf should never be mowed shorter than 2 1/2 inches and no shorter than 3 inches during June, July, and August, in order to increase drought tolerance.

## E. Time of Year

Sod availability is seasonal, although it can be laid in nearly all weather conditions. Sod laid during the middle of the summer will require significantly more maintenance and watering. If the ground is frozen, sod cannot be cut and should not be laid; however, if it is available, unfrozen, dormant sod can be laid on unfrozen ground, provided there is not a significant layer of snow.

## SCOTT COUNTY ENGINEER'S OFFICE

950 E. Blackhawk Trail  
Eldridge, Iowa 52748

(563) 326-8640  
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WEB SITE - [www.scottcountyiowa.gov](http://www.scottcountyiowa.gov)



ANGELA K. KERSTEN, P.E.  
COUNTY ENGINEER

ELLIOTT R. PENNOCK, E.I.T.  
ASSISTANT COUNTY ENGINEER

TARA YOUNGERS  
SENIOR ADMINISTRATIVE ASSISTANT

### MEMO

TO: Alan Silas  
Planning & Development Specialist

FROM: Angie Kersten, P.E.  
County Engineer

SUBJ: Dollar General Store #30307 Site Plan Review Comments

DATE: December 27, 2023

We have reviewed the Dollar General Store #30307 revised site plan application submittals. Listed below are our requests and comments:

#### **Plan Set**

- On Sheet C2, under the Detention Basin Inspection note at the top of the sheet, the email address is spelled incorrectly. It should read: [angela.kersten@scottcountyiowa.gov](mailto:angela.kersten@scottcountyiowa.gov)

#### **Traffic Impacts**

- The developer submitted a traffic impact study that was completed by or under the direct personal supervision of a duly licensed Professional Engineer under the laws of the State of Iowa. The results of the study indicated that no improvements to 110<sup>th</sup> Avenue (Y48) or 140<sup>th</sup> Street (Hwy 61) are warranted and that the site generated traffic is expected to have minimal impact on traffic operations. No additional studies or documentation are required.

#### **Stormwater Management**

- Please submit revised storm water calculations that include the shared access road that will drain into the detention area and show that the detention area is sufficiently sized to accommodate the additional drainage.
- Prior to construction, please provide documentation regarding the condition of the existing 36" Reinforced Concrete Pipe (RCP) under the entrance off of 110<sup>th</sup> Avenue. If the pipe is in fair or poor condition, it shall be replaced as part of this development project.
- The contractor shall be required to submit ½" rain and weekly erosion control inspection reports during construction of the project. Reporting shall commence when grading begins and shall continue until all disturbed ground is stabilized. Reports shall be emailed to:

[Angela.Kersten@scottcountyiowa.gov](mailto:Angela.Kersten@scottcountyiowa.gov)

### **Construction**

- The contractor shall be required to obtain an entrance permit from the Scott County Secondary Roads Department prior to reconstruction of the entrance off of 110<sup>th</sup> Avenue.
- The contractor shall be required to provide certified third party inspection services for construction of the detention pond and outlet pipe. The certified inspection services shall include submittal of all observation notes, material testing results, material certifications and other inspection related documents. All costs associated with the third party inspection services shall be borne by the developer. Reports shall be submitted as hard copies or emailed to:  
[Angela.Kersten@scottcountyiowa.gov](mailto:Angela.Kersten@scottcountyiowa.gov)

### **Lighting**

- Will a street light be built at the entrance off of 110<sup>th</sup> Avenue or is there sufficient lighting for traffic to see the entrance at night?

### **Miscellaneous**

- Recommend that a perpetual ingress/egress easement is recorded on both property deeds for the shared use road prior to approval of the final plat. The easement should also identify road maintenance responsibilities.

## SCOTT COUNTY ENGINEER'S OFFICE

950 E. Blackhawk Trail  
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COUNTY ENGINEER

ELLIOTT R. PENNOCK, E.I.T.  
ASSISTANT COUNTY ENGINEER

TARA YOUNGERS  
SENIOR ADMINISTRATIVE ASSISTANT

### MEMO

TO: Alan Silas  
Planning & Development Specialist

FROM: Angie Kersten, P.E.  
County Engineer

SUBJ: Dollar General Store #30307 Site Plan Review Comments

DATE: November 21, 2023

We have reviewed the Dollar General Store #30307 site plan application submittals. Listed below are our requests and comments:

#### **Traffic Impacts**

This proposed development requires a traffic impact study completed by or under the direct personal supervision of a duly licensed Professional Engineer under the laws of the State of Iowa. The traffic impact study shall evaluate traffic forecasts, peak hour traffic operations and road infrastructure improvement needs associated with the planned development. The scope of the analysis shall include the intersection of 110<sup>th</sup> Avenue and U.S. Hwy 61 and the 110<sup>th</sup> Avenue corridor adjacent to the entrance to the store. The traffic impact study shall be completed in accordance with the Iowa Department of Transportation Guidelines for Traffic Impact Analysis. The level of analysis is a traffic impact study. This manual can be downloaded at:  
[https://iowadot.gov/systems\\_planning/pr\\_guide/Traffic/Traffic\\_Impact\\_Guidelines.pdf](https://iowadot.gov/systems_planning/pr_guide/Traffic/Traffic_Impact_Guidelines.pdf)

#### **Stormwater Management**

- The contractor will need to submit the following documents to the Scott County Secondary Roads Department prior to construction:
  - NPDES permit and Pollution Prevention Plan
- Prior to construction, please provide documentation regarding the condition of the existing 36" Reinforced Concrete Pipe (RCP) under the entrance off of 110<sup>th</sup> Avenue. If the pipe is in fair or poor condition, it shall be replaced as part of this development project.
- The contractor shall be required to submit ½" rain and weekly erosion control inspection reports during construction of the project. Reporting shall commence when grading begins and shall continue until all disturbed ground is stabilized. Reports shall be emailed to:  
[Angela.Kersten@scottcountyiowa.gov](mailto:Angela.Kersten@scottcountyiowa.gov)



## **Construction**

- The contractor shall be required to obtain an entrance permit from the Scott County Secondary Roads Department prior to reconstruction of the entrance off of 110<sup>th</sup> Avenue.
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[Angela.Kersten@scottcountyiowa.gov](mailto:Angela.Kersten@scottcountyiowa.gov)

**PLANNING & DEVELOPMENT**

600 West Fourth Street

Davenport, Iowa 52801-1106

Email: [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov)

Office: (563) 326-8643

Fax: (563) 326-8257



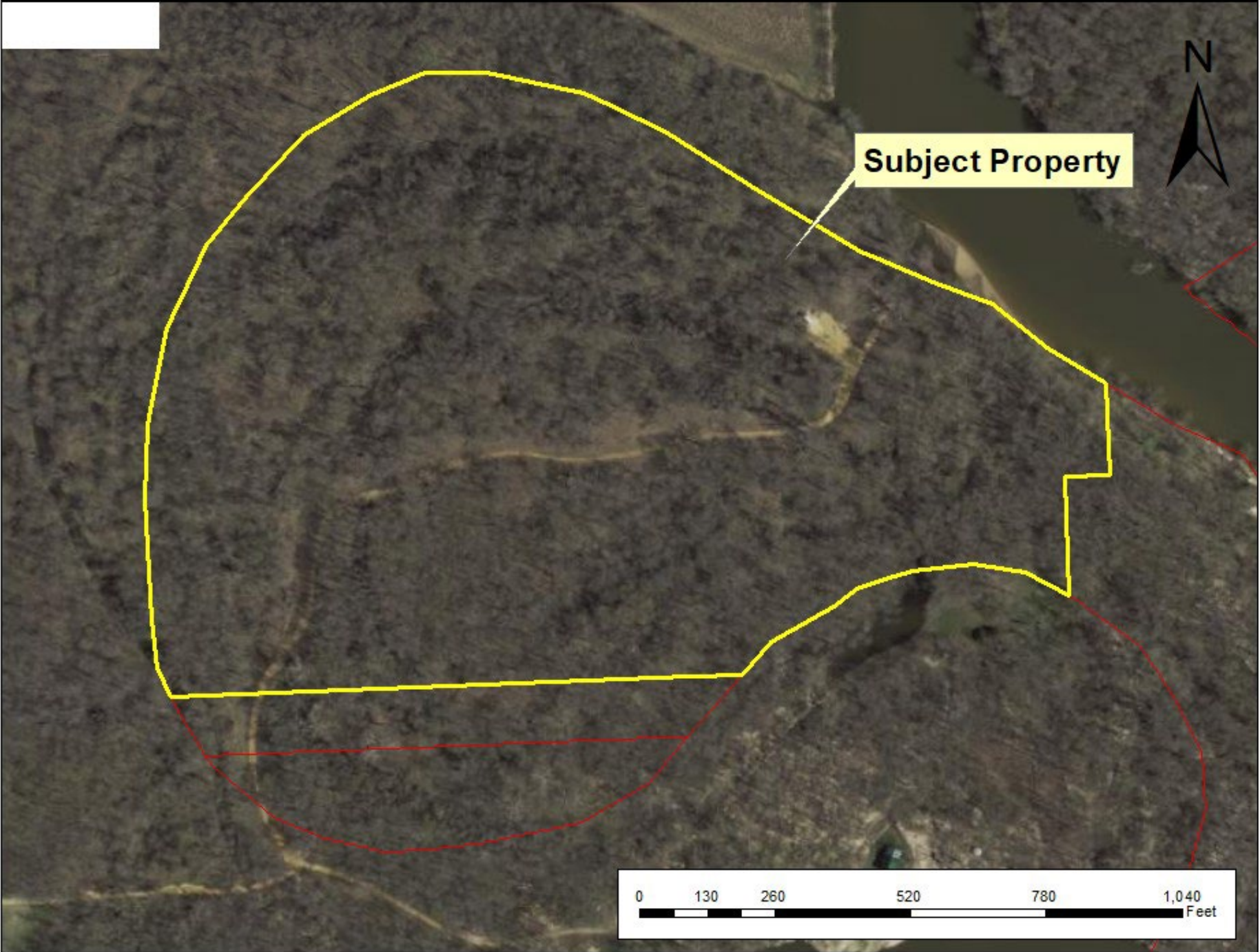
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**SCOTT COUNTY  
PLANNING AND ZONING COMMISSION  
NOTICE OF PUBLIC MEETING**

Public Notice is hereby given as required by Section 6-31 of the County Code (Zoning Ordinance for Unincorporated Scott County), that the Scott County Planning and Zoning Commission will review a site plan approval request submitted by **Robert Iossi** at a public meeting on **Tuesday, February 6, 2024 at 5:30 PM**. The meeting will be held in the **1<sup>st</sup> Floor Board Room, County Administrative Center, 600 W 4<sup>th</sup> Street, Davenport, IA, 52801**.

The Planning and Zoning Commission will consider the request of **Robert Iossi** for approval of a site plan to establish a Private Park and construct a "pavilion" at the property legally described as Subdivided Government Lots 1-8 in Section 11 of Allens Grove Township.

If you have questions or comments regarding the meeting, please call, write or email the Planning and Development Department, 600 West Fourth Street, Davenport, Iowa 52801, (563) 326-8643, [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov) or attend the hearing.

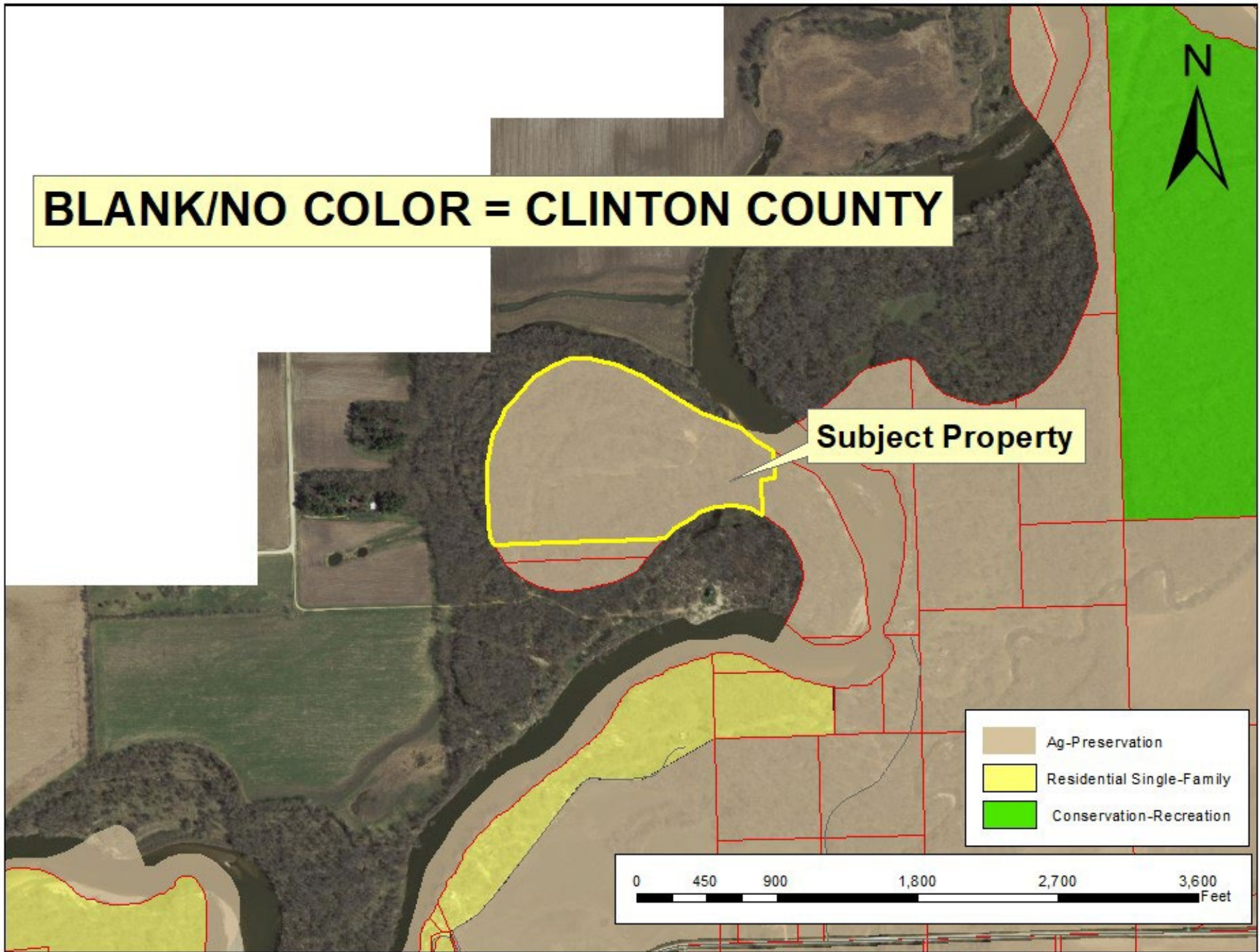
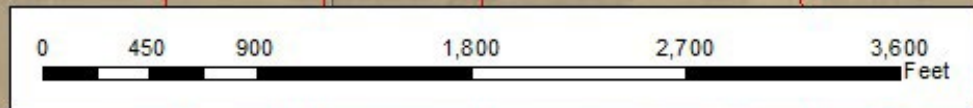


**BLANK/NO COLOR = CLINTON COUNTY**



**Subject Property**

	Ag-Preservation
	Residential Single-Family
	Conservation-Recreation



# CLINTON COUNTY



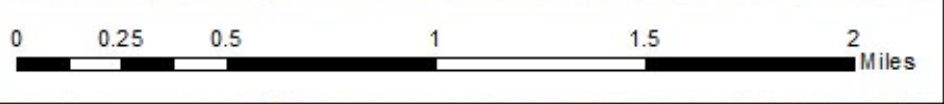
115TH AVE

Subject Property

Y52

F33

290TH ST





Chris Mathias, Director

**Site Plan Review Application**

Date Submitted: 1 / 5 / 20 24

Name: ROBERT IOSSI

Address: 1075 OAK WOOD DR City CAROL STREAM State IL Zip 60188

Phone: 630-461-3736 Email: wftiossi@gmail.com

Developer Name: SAME

Developer Address: \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Developer Phone: \_\_\_\_\_ Developer Email: \_\_\_\_\_

Name of proposed development: ESTABLISH A PRIVATE PARK TO CONSTRUCT A PAVILION.

**Name and location of adjoining subdivisions**

<u>Subdivision Name</u>	<u>Location</u>

**Name and addresses of adjoining landowners** (previously submitted)

<u>Name</u>	<u>Address</u>	<u>City</u>	<u>State</u>	<u>Zip</u>

**Fees:**      Less than five (5) acres = \$100.00      Between five (5) and ten (10) acres = \$150.00  
                   Ten (10) acres or more = \$200.00

ALLENS GROVE TOWNSHIP - CLINTON CITY SIDE  
 LEGAL: SECTION 11 TOWNSHIP 80 NORTH RANGE  
 LOT 2 EAST - 5<sup>TH</sup> PRINCIPAL MERIDIAN  
ROBERT FOSSI SITE PLAN

- NO PROPERTY LINES NEAR -



pic TAKEN 2002

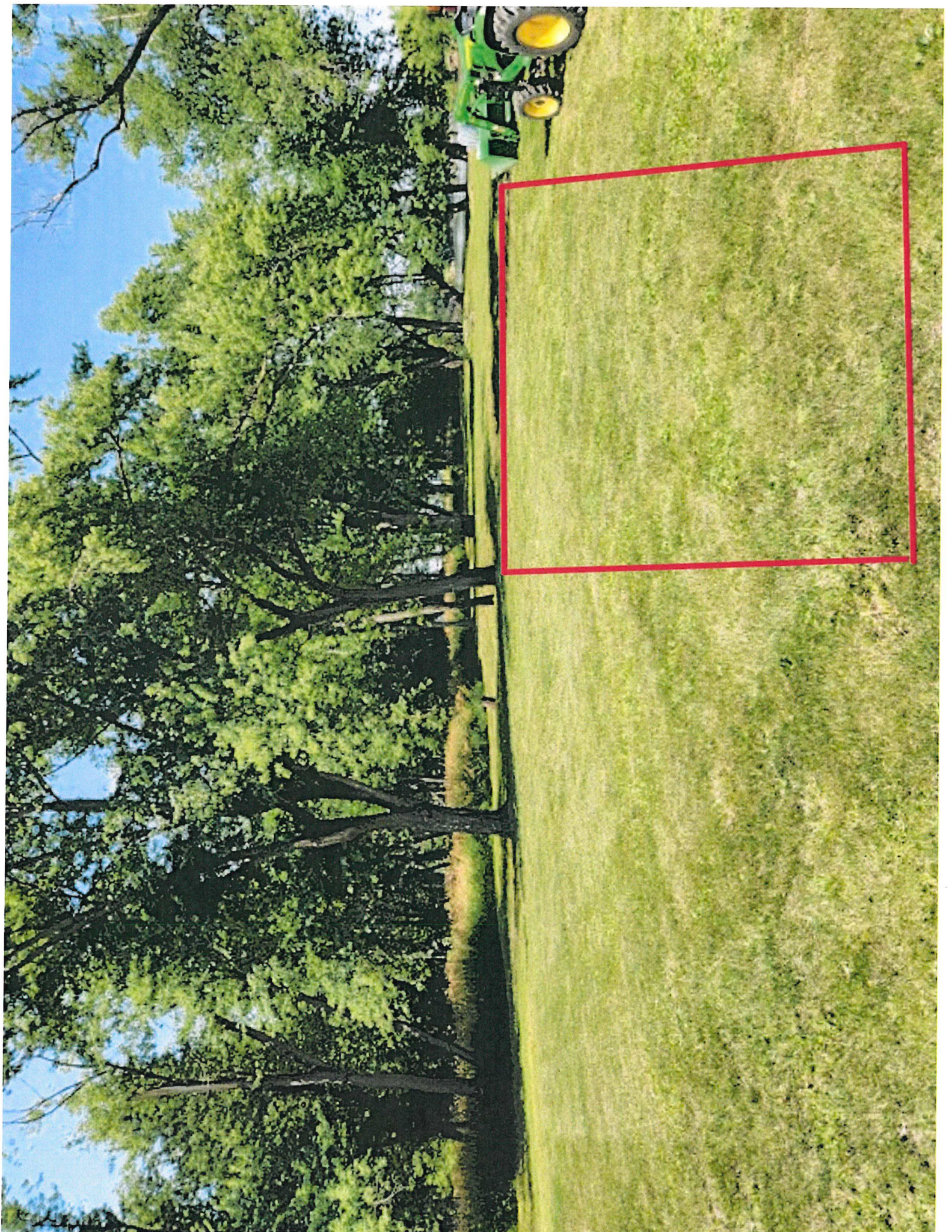
SUMMER CABIN USE



PRIES  
CABIN

THESE ARE THE CABINS REMOVED





December 20, 2023

Hello, my name is Bob lossi and I am here today representing my family members (behind me) who are with me. We have been enjoying this property for our entire life spanning four generations (our grandkids now) asking for a variance in zoning.

The State of Iowa passed a law in 1981 to prevent farm land from being converted to residences as we understand it. Our property is located on the Clinton County side of the Wapsi River, we are one of a small number of owners that are in Scott County but can only access their property from the Clinton County side. We do not have access to County provided services.

Our uncle and aunt bought this property with his friend and sister in the early 1930's. Our aunt and uncle wanted to provide our families and friends with a recreational place where we could all enjoy year round, along the river and hidden away in the woods. After decades of enjoying the property with a trailer on wheels, they wanted to enhance the experience as the trailer had aged. In the 1960's my uncle applied for a cabin building permit while I was still in grade school. Scott County approved the building permit, no issue.

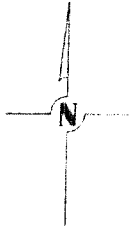
My aunt and uncle gave the property to me to be the custodian for the family in 1979 and I promised my uncle and aunt that I would finish their vision. We utilize the property for recreation while maintaining it. After years of wear and tear caused by the weather, the cabin suffered a major frame structure issue and we decided to remove the cabin and start over. We notified the Scott County Office and they removed the structure from our taxes and we discussed with the county to rebuild and were told there would be no problem. My aunt and uncle paid property taxes to Scott County for 44 years. We paid the taxes for the property for 36 years, a total of 80 years on our 37.5 acre property.

I personally met with Chris Mathias in 2018 and made him aware of what we had done and what we were doing, showed him our cabin prints and discussed our plans. He gave me some advice on the cabin prints, but nothing was mentioned about zoning issues.

We are now focused on completing this rustic cabin on our family property, to continue a family tradition of gathering to enjoy this as best we can for the rest of our lives, but mostly for our children and grandchildren and stand here today to request a variance based on the following factors:

1. There is no Agriculture on this property except nature and trees. The property is surrounded by agricultural fields owned by others to west and north and bordered by the Wapsi River on the east. The south is our woods and the road to get to the river side. We believe there isn't a reason for this property to be protected and it won't remove any property currently used as farmland.
2. We had a building permit originally for a 20' X 28' - 560sq. ft. cabin, so we are asking for this variance and permit to be grandfathered back into this property with an increased footprint of 40' X 46' – 1840sq ft – a 1,280sq ft increase.
3. **We are NOT building a residence.** It will be a rustic cabin used to escape the weather and bugs. We will utilize an outside chemical toilet which will be serviced monthly. We currently have an outside sand pit water well with stainless sink and we transport drinking water in containers from our homes as we have done for the past 80 years. It will have a fireplace that will meet specifications or cast iron.

# ORIGINAL RIVER PATH



SCALE: 1 INCH = 330 FEET

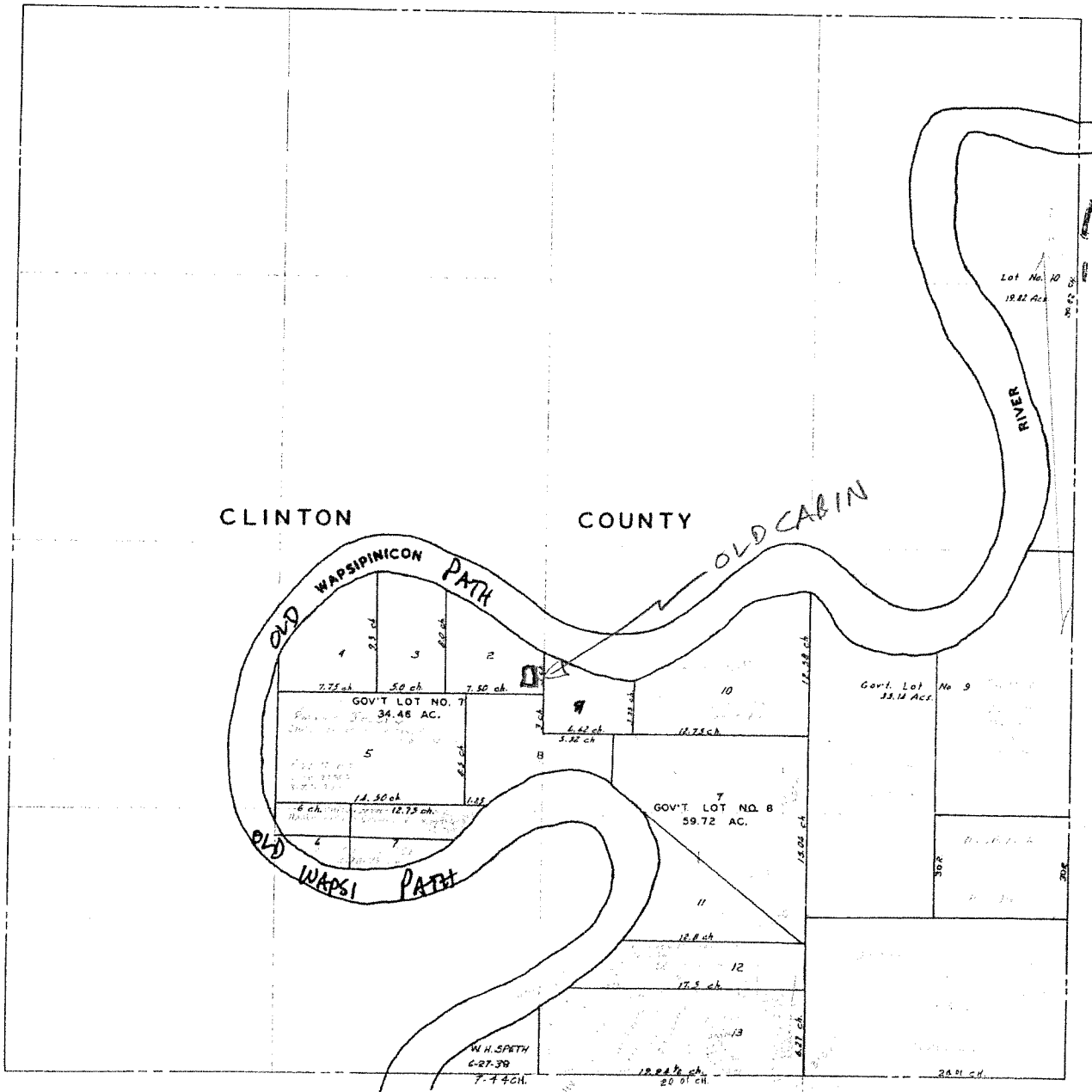
**SECTION 11**  
TOWNSHIP 80 NORTH, RANGE 2 EAST,  
5<sup>TH</sup> PRINCIPAL MERIDIAN  
**ALLENS GROVE TOWNSHIP**  
SCOTT COUNTY, IOWA

TRANSFER PAGE 6

SECTION PAGE

PAGE SECTION

PAGE SECTION 12



**PLANNING & DEVELOPMENT**

600 West Fourth Street  
Davenport, Iowa 52801  
Office: (563) 326-8643  
Fax: (563) 326-8257  
Email: [planning@scottcountyiowa.gov](mailto:planning@scottcountyiowa.gov)

RUSTIC CABIN

Single Family Dwelling *RSB*

**Construction Permit Application  
for Unincorporated Scott County**



**Owner Information**

Name: Robert S. Iossi  
Address: 1075 Oak Wood Drive  
City: Rural Scott County State IA Zip \_\_\_\_\_  
Phone: 630-461-3736  
Email: riossi@comcast.net

**General Contractor Information**

Name: Owners to build  
Address: \_\_\_\_\_  
City: \_\_\_\_\_ State IA Zip \_\_\_\_\_  
Phone: \_\_\_\_\_  
Email: \_\_\_\_\_

\*\*Please indicate preferred contact for payment, permit inquiries, and inspections:

**Owner**       **General Contractor**

*Final Permit Fee is determined by Planning & Development upon review of this **completed** application packet. Fee is based on value and adopted fee schedule.*

List of Sub-Contractors (Electrical, Plumbing, Mechanical):

1. \_\_\_\_\_  
Iowa Licensure Required
2. \_\_\_\_\_  
Iowa Licensure Required
3. \_\_\_\_\_  
Iowa Licensure Required

**Property Information of Job Site**

Job Site Address: Property # 021135001 City Rural Scott County State IA Zip \_\_\_\_\_  
Legal Description: IA Sec 11 Block/TWP 80 Lot Rng 02  
Township: Allens Grove TWP Zoning Classification: Residence Tax Parcel ID#: 021135001  
(i.e. lot number, subdivision)

Is Property Located in the Floodplain?       Yes       No

**Proposed Construction Description**

Rustic Cabin for shelter from weather - not a Residence, rebuild in existing location where previous was located.

**REQUIRED SUBMITTAL CHECKLIST:**

- Signed & Completed Permit Application
- Two (2) Sets of **Full-Size** Building Plans *B*
- Site Plan (with lot dimensions and setbacks)
- Signed RES Check ([www.energycodes.gov](http://www.energycodes.gov)) *NA*
- Zoning Approval (MUST HAVE CITY APPROVAL)
- Floodplain Development Permit (if applicable)

*NO ENERGY CONSUMED -*  
I hereby acknowledge that I have read this application and state that the above is true and correct to the best of my knowledge and belief. I agree to comply with all applicable County Ordinances or City Ordinances and all State Laws regulating Building Construction. If any information provided is incorrect, the building permit may be revoked.

**Applicant Signature:**  
Robert S. Iossi

**Date:** 10/17/2023



Iowa Department of Natural Resources
Flood Plain Management Program

Request for Base Floodplain Elevations, Offsets, and Design Parameters

Email completed form to: BFERequest@dnr.iowa.gov

I am requesting:

- [X] Base Flood Elevation (BFE) and Minimum Protection Level (MPL)
[] Floodway Offset
[] Other (i.e. Flow Rate, Reach Slope) Explain:

Purpose of Request:

- [] BFE needed to apply for a Letter of Map Change or Letter of Map Amendment from FEMA.
[] BFE, MPL and/or Offsets needed for project design. A Joint Application will be submitted separately.
[X] Other -Explain: BFE needed to place proposed cabin above floodplain

Site Information:

Owner Name: Robert S. lossi

Location (in Quarter-Section-Tier-Range format): Qtr. Sec. 11 T 80 N R 02

County: Scott Stream(s): Wapsipinicon River

Location Address/City/Zip Code (if available):

Project Description and Explanation of Request:

Owner wants to determine BFE to elevate a proposed structure on site above the 1% chance annual floodplain. Licensed surveyor will place benchmark on site. Located west of Y52 in Scott County, north of Donahue.

\*\*Required\*\* information must be attached with this request form.

- [X] Aerial photo clearly identifying the project location. Hand marked aerial photos are typically accepted. Aerial photos can be obtained from the following sources:

http://ortho.gis.iastate.edu/ http://programs.iowadnr.gov/maps/floodplain/
http://iowaassessors.com/ http://www.bing.com/mapspreview
https://beaconbeta.schneidercorp.com/ https://www.google.com/maps

Contact Information: Preferred Mailing Address (applicant or agent)

Name: Michael D. Richmond, PLS Phone: 563-386-4236

Address: 2224 East 12th Street

City/State/Zip: Davenport, Iowa 52803

Email Address (if available) mrichmond@townsendengineering.net

Land Owner Contact Information (if different from Contact Information)

Name: Robert lossi or Don Schnauber Phone: 563-391-9979 (Schnauber)

Address: 1075 Oakwood Drive

City/State/Zip: Carol Stream, IL 60188

Email Address (if available) dschnaub@gmail.com

Handwritten signature and DNR Form 542-1030

October 17, 2023

Scott County Planning & Development  
600 West Fourth Street  
Davenport, IA 52801-1106

Dear Sirs:

Attached please find our application for permitting to RE-BUILD our CABIN to replace the cabin we had that was destroyed by flooding in 2009 and previous years (attachment). In 2014, we notified Scott County that we had removed the cabin and the footings and would be rebuilding. We were told by this office that we would be allowed to rebuild provided we built one foot above the highest flood level.

During the period of 2010 and 2019, we made significant changes to improve accessibility on the property and improve ability to maintain the 47 acres in preparation to rebuild the cabin. In 2019, I personally experienced a house fire, and spent 14 months in a hotel to rebuild and dealing with COVID delays most of 2021, the cabin was placed on the back burner. In May 2016, we hired Townsend Engineering to perform a DNR Floodplain Measurement (Attachment). In 2020, we decided on a Menards/Meadow Valley Architect EXISTING Cabin Plan. (Attachment)

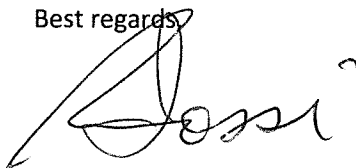
It was the wish of my Uncle Adolph Groth to **NEVER have phone, electrical, plumbing, or HVAC** on the property and only have a cast iron wood stove for heat in winter. The cabin in attachment only had a cast iron Ben Franklin (Sears) supplied wood stove we used for heating and cooking. As a family, we believe this to be a solem place. Now, we cook outside. **We primarily utilize this property on the weekends**, with a couple of exceptions during the year where we will take week long vacations and enjoy the warmer weather.

**The plans we are submitting do NOT include any provisions for electrical, plumbing, or HVAC. The cabin is basically a shell for us to get inside when bad weather approaches and to be with family and friends. The majority of the time, we will be outside around the fire ring and ultimately build an outdoor fireplace. This is a gathering location for a large family to be together and enjoy the outdoors. This has been the purpose of the original cabin and our plans to do the same with the new cabin. We intend to carry out my Uncle's wishes.**

Please process this building permit on the basis of a remote cabin REPLACEMENT. This NOT a city/county HOME that will be without plumbing, electrical or HVAC. We currently continue to have an outdoor toilet on the property, and we will be adding a elevated chemical outdoor toilet that will be serviced MONTHLY by a sanitary company. We currently have a potable water sand pit well (about 8' down), that provides water we boil outside for cleaning and washing. We bring bulk 5 & 10 gal drinkable water for cooking and drinking. No other modern conveniences are planned.

We were told by your department we would be able to rebuild since we once had a permitted approved structure which we paid real estate taxes on to the county.

Best regards,



Robert S. Iossi

Layer List Legend

**Quick Links:**

- Property Search
- View Map

**Layers:**

- Land Records
  - Parcels
  - Tax Districts - Parcel Based
  - Subdivisions
  - Buildings on Land Lease and Ag Dwellings
  - Condo and Townhome Units
  - Parcel Dimensions
  - GIS PIN Labels
  - Parcel ID Labels
  - Parcel Net AC
  - Parcel Deed Holder Labels
  - Condo Parcels
  - Lot Dimensions
  - Lot Labels
  - Lots
  - Block Labels
  - Misc Dimensions
  - Map Notes
  - Block Background
- Transportation

Map navigation tools: Home, Previous, Next, Full Screen, Print, Measure, Draw, Erase, Copy, Paste, Refresh, Search, Layers, Map, Search.

Scale: 21 ft

POWERED BY **esri** 2-405657.97, 648921.90



Layer List
  Legend

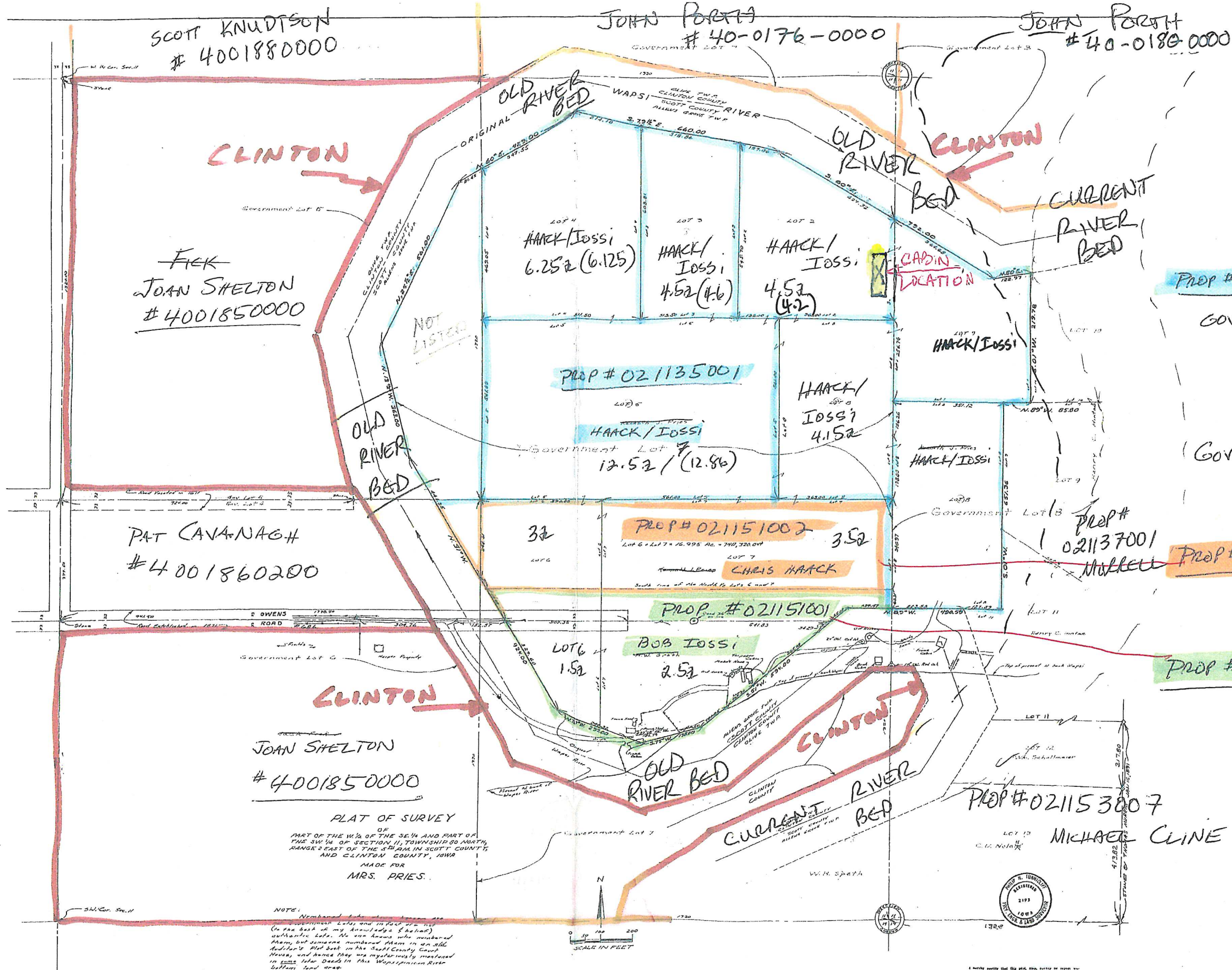
**Quick Links:**

- [Property Search](#)
- [View Map](#)

**Layers:**

- Addressing
- Parks
- Lot and Survey Information
- Parcel Dimensions
- Lot Dimensions
- ROW Dimensions
- Political Township
- Subdivision
- Block
- Lot
- Lot Lines
- Building Footprints
- City Names
- Corporate Limits
- County Boundary
- Roads and Rail
- PLS Boundaries
- Water Features
- Planning & Zoning
- Parcel Data
- Surrounding Areas
- Ag Land and Soil
- Assessment Layers





SCOTT KNUDTSON  
# 4001880000

JOHN PORTT  
# 40-0176-0000

JOHN PORTT  
# 40-0188-0000

FEK  
JOAN SHELTON  
# 4001850000

PAT CAVANAGH  
# 4001860200

JOAN SHELTON  
# 4001850000

HAACK/IOSI  
6.25<sup>2</sup> (6.125)

HAACK/IOSI  
4.52 (4.6)

HAACK/IOSI  
4.52 (4.2)

PROP # 021135001

HAACK/IOSI  
12.52 (12.86)

HAACK/IOSI  
4.152

32

PROP # 021151002

352

CHRIS HAACK

PROP # 021151001

LOT 6  
1.52

BOB IOSI  
2.52

PROP # 02113700  
MORRELL

PROP # 021135001

GOVT LOT 7 LOT 1 = 3  
LOT 2 = 4.5  
LOT 3 = 4.5  
LOT 4 = 6.5  
LOT 5 = 12.5  
LOT 8 = 4.15  
GOVT LOT 8 LOT 8 = ?

TOTAL

PROP # 021151007

PROP # 021137001  
MORRELL

PROP # 021151001

PROP # 021153007

MICHAEL CLINE

PLAT OF SURVEY  
OF  
PART OF THE W/4 OF THE SE/4 AND PART OF  
THE SW/4 OF SECTION 11, TOWNSHIP 30 NORTH,  
RANGE 3 EAST OF THE 6TH RANGE IN SCOTT COUNTY,  
AND CLINTON COUNTY, IOWA  
MADE FOR  
MRS. PRIES.

NOTE:  
Neighboring Lots, and in fact are not  
in the book of my knowledge (Section)  
with the title. No one knows who owned  
them, but someone numbered them in an old  
book. The old book in the Scott County Court  
House, and hence they are mysteriously mentioned  
in some later Deeds in the Wapiti River  
bottom land area.

SCALE IN FEET

I hereby certify that this plat, map, survey or report was  
made by me or under my direct personal supervision and  
that I am a duly registered Land Surveyor under the laws  
of the State of Iowa.  
TUNNICLIFFE SURVEYORS & ENGS. INC.  
711 PUTNAM BLDG. DAVENPORT, IA 52001  
319-377-3633

ORIGINAL

LEGEND:  
Measurements are in feet & decimals.  
Iron monuments and points shown show.

Replacement

Scott County Parcel Records

- Search Page
- Print
- Comparables Search
- Feedback
- Help

[ Assessment Report | Auditor/Treasurer Report | Map ]

Assessment Summary

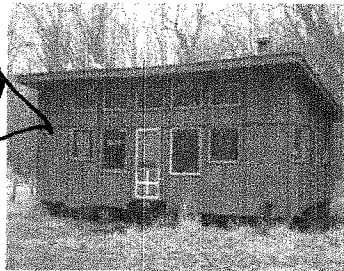
Scott County, IA

Parcel Number: 021135001  
 Deedholder: IOSSI ROBERT S  
 Contract:  
 Property Location:

ALLENS GROVE TWP, IA  
 Legal Description: 11-80-02 PT SW 1/4 LOTS 1-2-3-4-5-8 SUBD. GOVT LOTS 7-8 (34.00 ACRES FOREST RESERVE - CREDIT BEGAN 2005)

Classification: Residential  
 AddNum / Sect: 11  
 Block / Twp: 80  
 Lot / Rng: 02

LOCATION



Sketch (click to enlarge)

ORIGINALLY PERMITTED



STRUCTURE

Lot Information  
 Lot Area: 1.00 Acres

Residential Dwelling  
 Occupancy: Single-Family / Owner Occupied  
 Style: 1 Story Frame  
 Year Built: 1955  
 Exterior Material: Other  
 Above-Grade Living Area: 560 SF  
 Number Rooms: 2 above  
 Number Bedrooms: 1 above  
 Total Basement Area: None  
 Basement Finished Area:  
 Number of Baths: 1 No Bathroom; 1 Water Only w/Sink;  
 Central Air: No  
 Heat: No  
 Number of Fireplaces: 1 - Freestand;  
 Garage: None  
 Porches and Decks: None  
 Yard Extras: None

ORIGINAL RUSTIC CABIN

ASSESSED VALUES	2012	2011
Land	\$66,000	\$66,000
Dwellings	\$8,070	\$12,530
Improvements	\$0	\$0
<b>Total</b>	<b>\$74,070</b>	<b>\$78,530</b>

Date	Sales		Sale Type
	\$ Amount	Recording	
	- No sale information available -		

Date	Permits Amount	Description
- No permit information available -		

Disclaimer: The information in this web site represents current data from a working file which is updated regularly. Information is believed reliable, but its accuracy cannot be guaranteed. No warranty, expressed or implied, is provided for the data herein or its use.

[Click here to report incorrect data for \(Parcel # 021135001\).](#)

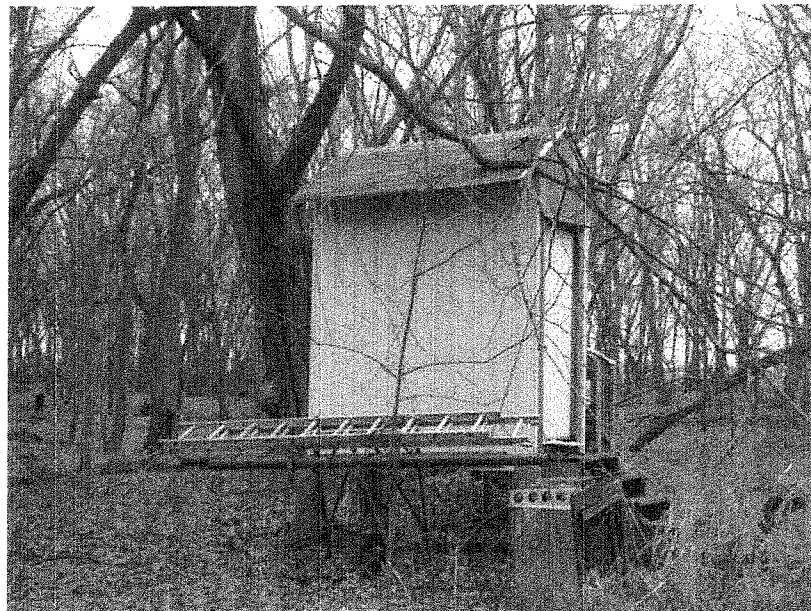
[Click here to pay taxes for \(Parcel # 021135001\).](#)

Last Data Upload: 10/13/2012

**Scott County Assessor**  
 Administrative Center ? 600 W. 4th St. ? Davenport, Iowa 52801  
 (563) 326-8635 ? [assessor@scottcountyia.com](mailto:assessor@scottcountyia.com)  
[www.scottcountyia.com](http://www.scottcountyia.com)



Photo 3



Parcel ID: 021135001

Photo 1



Photo 2



Replacing this Cabin due to flooding

Y  
MEADOW  
L  
LOG  
HOMES  
Y



EAST ELEVATION

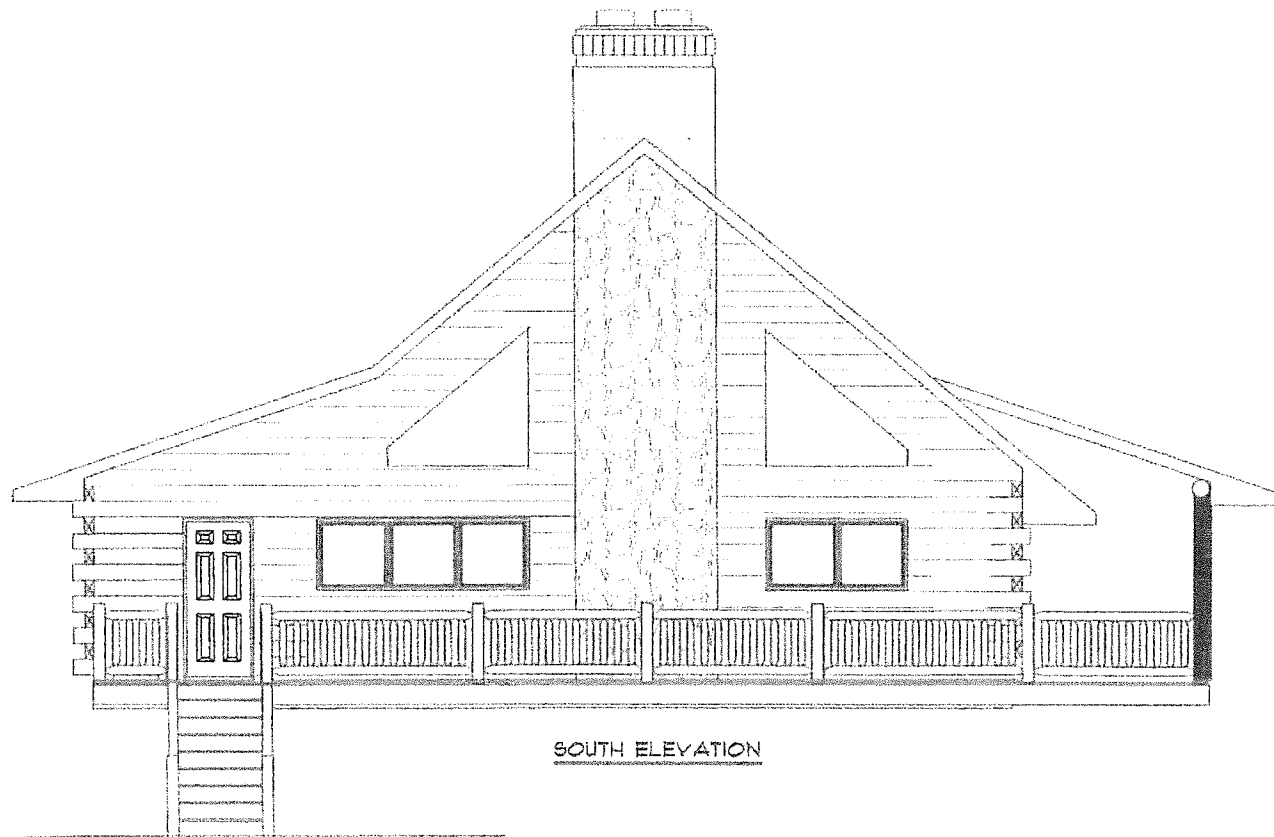
**ARTIST RENDERING**  
ELEVATION DRAWINGS SHOWN MAY BE  
DIFFERENT FROM ACTUAL CONSTRUCTION

NOTE: CHECK LOCAL CODES  
FOR CHIMNEY HEIGHT

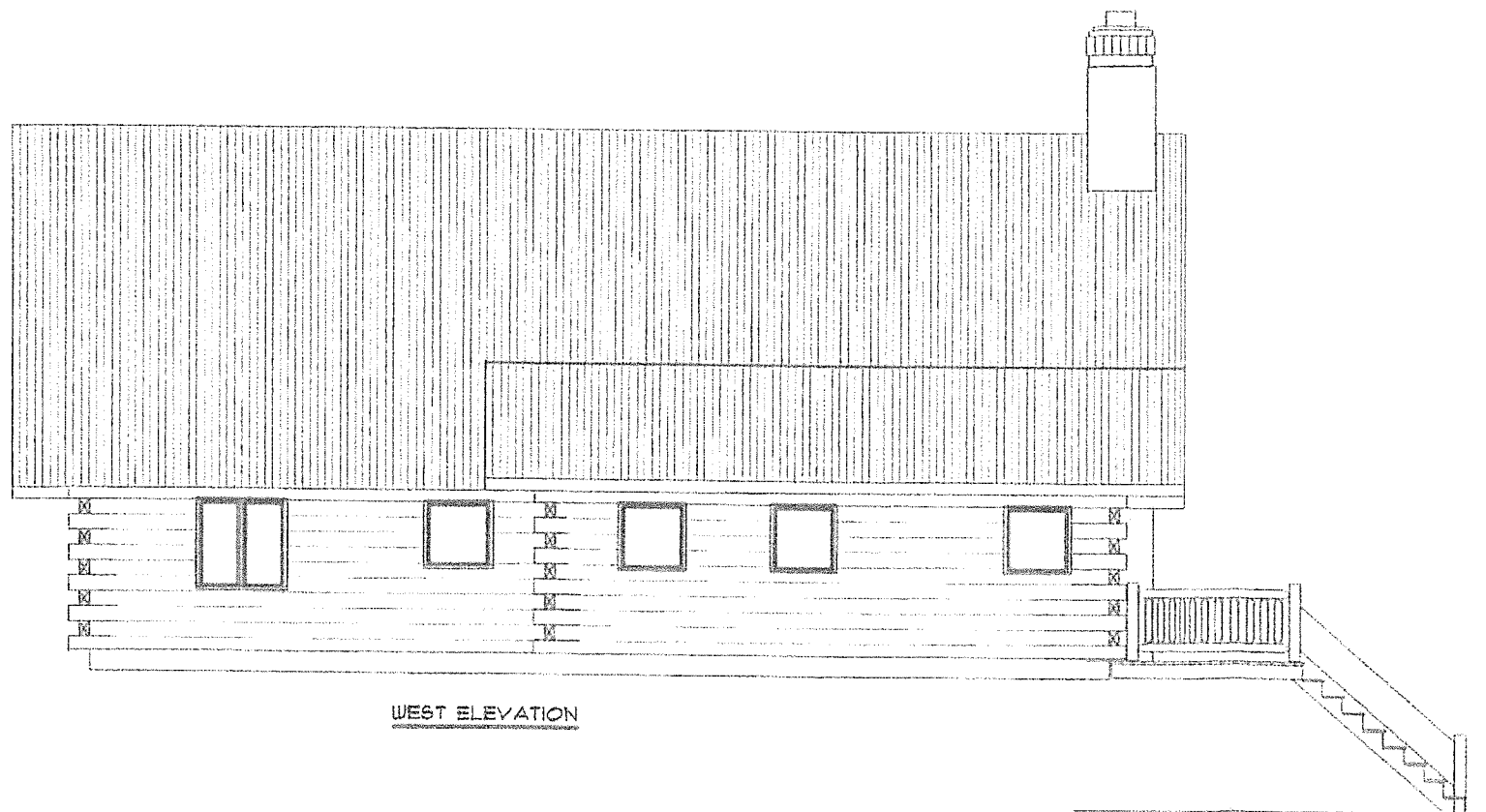
NOTE: SIDING MANUFACTURER  
RECOMMENDS AT LEAST A 2'-0"  
OVERHANG TO PROTECT CORNER  
TAILS

WAPSI FAMILY TRUST  
CUSTOM MYL-4046

ALTHOUGH EVERY EFFORT HAS BEEN MADE IN PREPARING  
THESE PLANS AND CHECKING THEM FOR ACCURACY, THE  
CONTRACTORS MUST CHECK ALL DETAILS AND BE  
RESPONSIBLE FOR THE SAME.

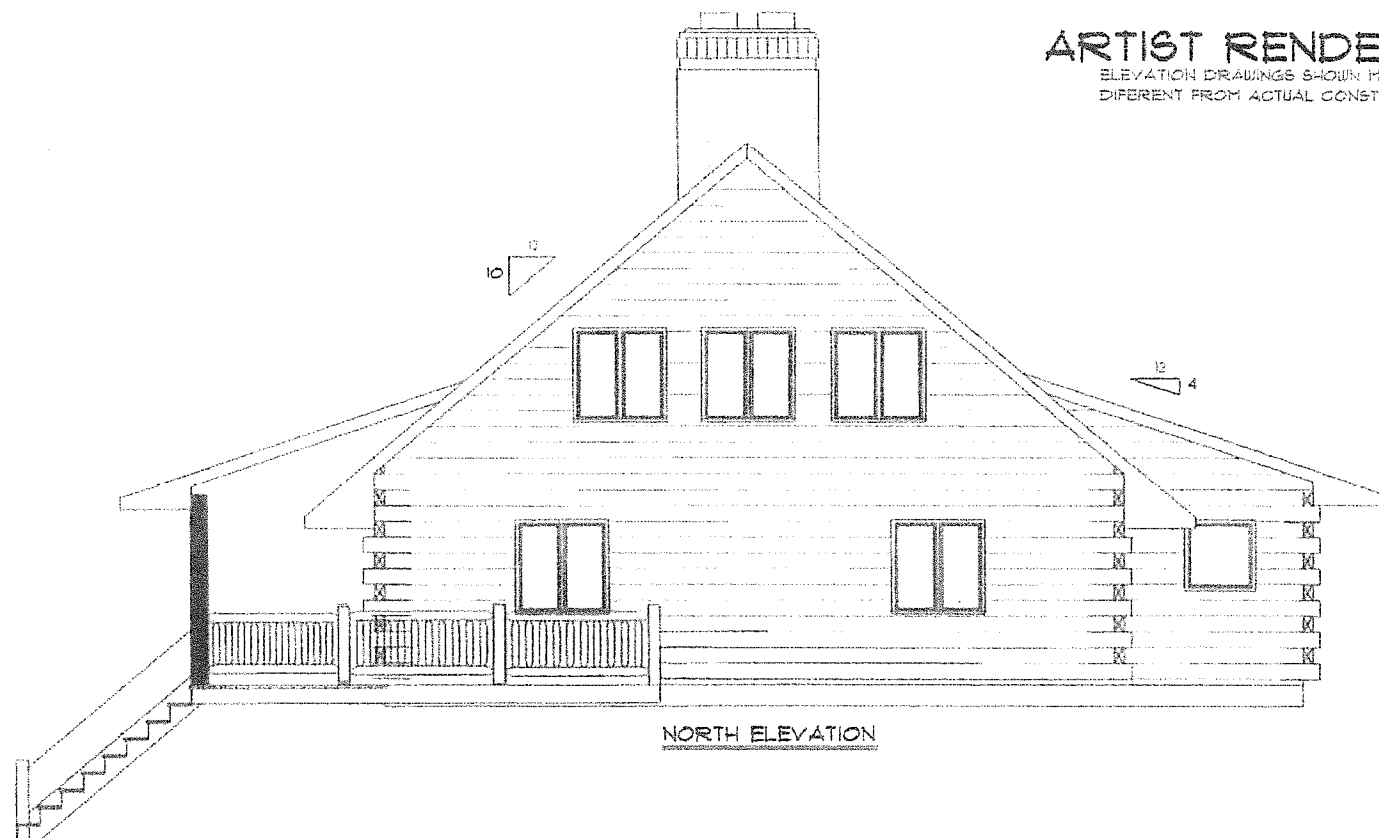


SOUTH ELEVATION



WEST ELEVATION

**ARTIST RENDERING**  
 ELEVATION DRAWINGS SHOWN MAY BE  
 DIFFERENT FROM ACTUAL CONSTRUCTION



NORTH ELEVATION



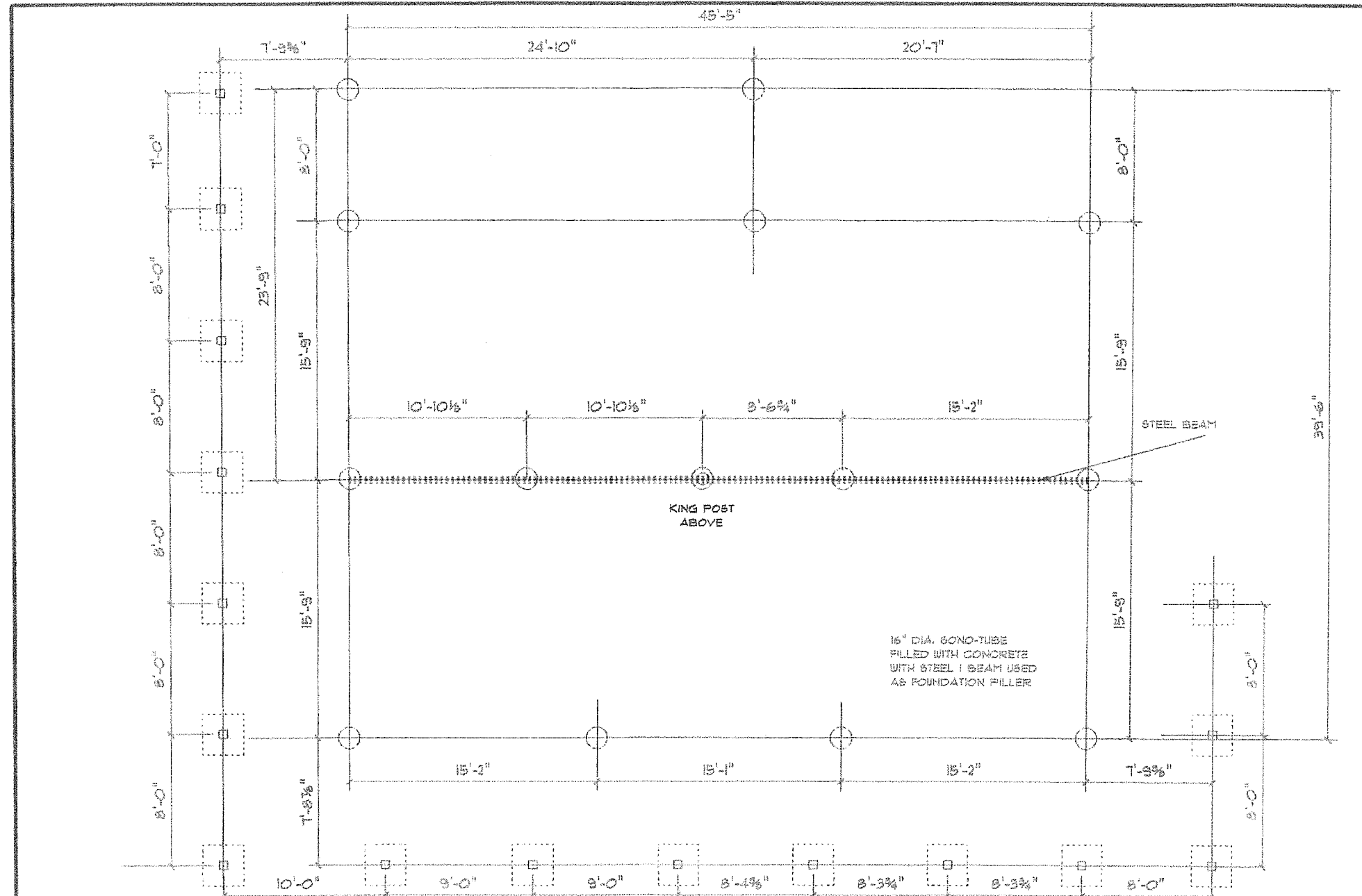
EAST ELEVATION

NOTE: CHECK LOCAL CODES  
 FOR CHIMNEY HEIGHT

NOTE: SIDING MANUFACTURER  
 RECOMMENDS AT LEAST A 2'-0"  
 OVERHANG TO PROTECT CORNER  
 TAILS

SCALE 3/16" = 1'

MEADOW VALLEY LOG HOMES		CUSTOM MYL-4046	
www.mylloghomes.com		WAPSI FAMILY TRUST	
800 My Valley In Pasadena, WA 98841 Box 605845322 800-491-4422 Fax 800-491-3966 For more information about our plans, email, call or visit us at <a href="http://www.mylloghomes.com">www.mylloghomes.com</a>		Elevations	
Project No. 1000000000	Client Name	Project Name	1 of 8

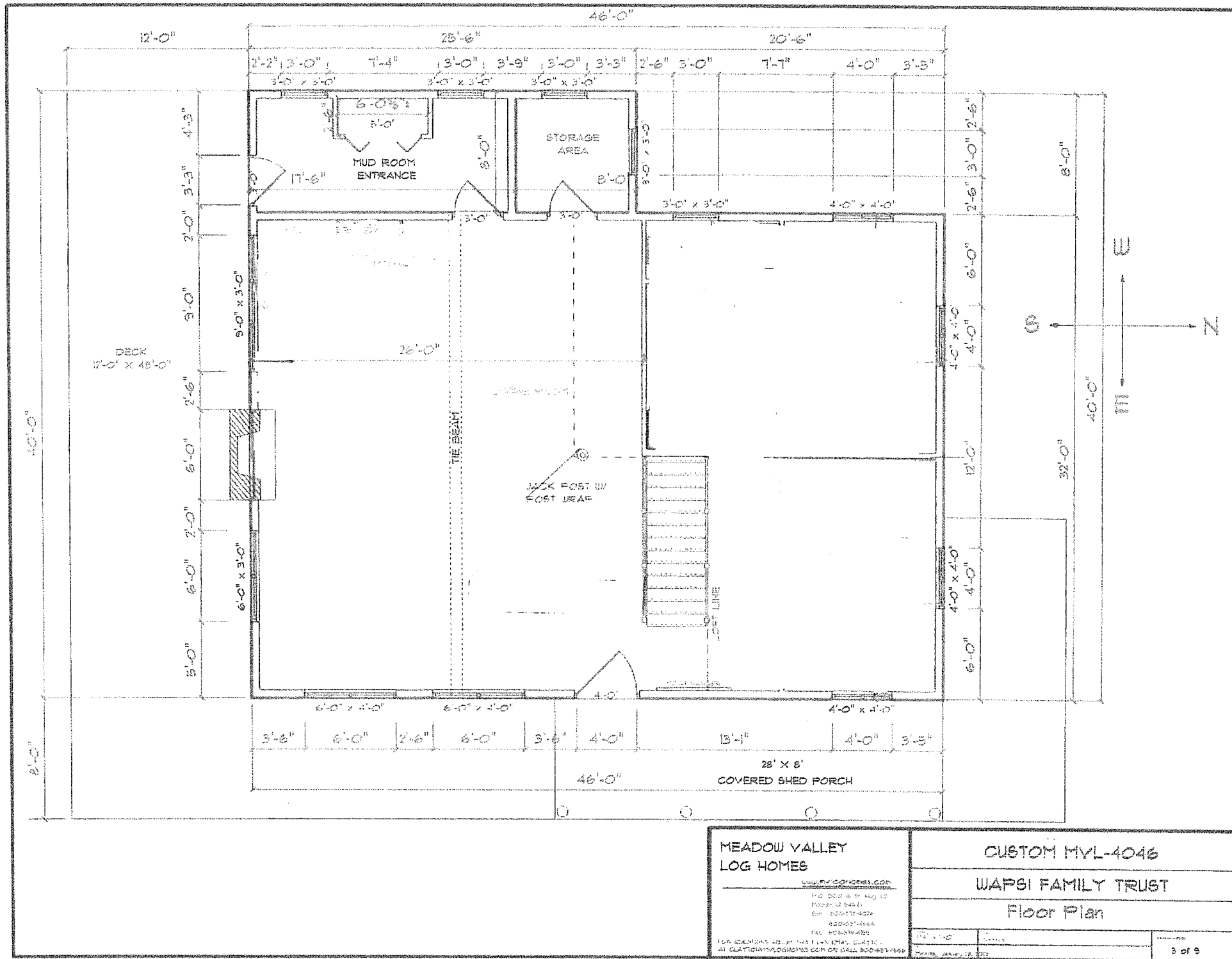


NOTE: BEAM AND SONO-TUBE INFORMATION AND LOCATIONS PROVIDED BY CUSTOMER.

MEADOW VALLEY  
LOG HOMES  
www.mvlloghomes.com  
1100 BOX 45199 RD  
CLATON, WA 98641  
PH: 509-726-4024  
FAX: 509-726-4103  
FOR QUESTIONS ABOUT THIS PLAN SPAL CLAYTON  
AT CLATONMVLLOGHOMES.COM OR CALL 509-726-4664

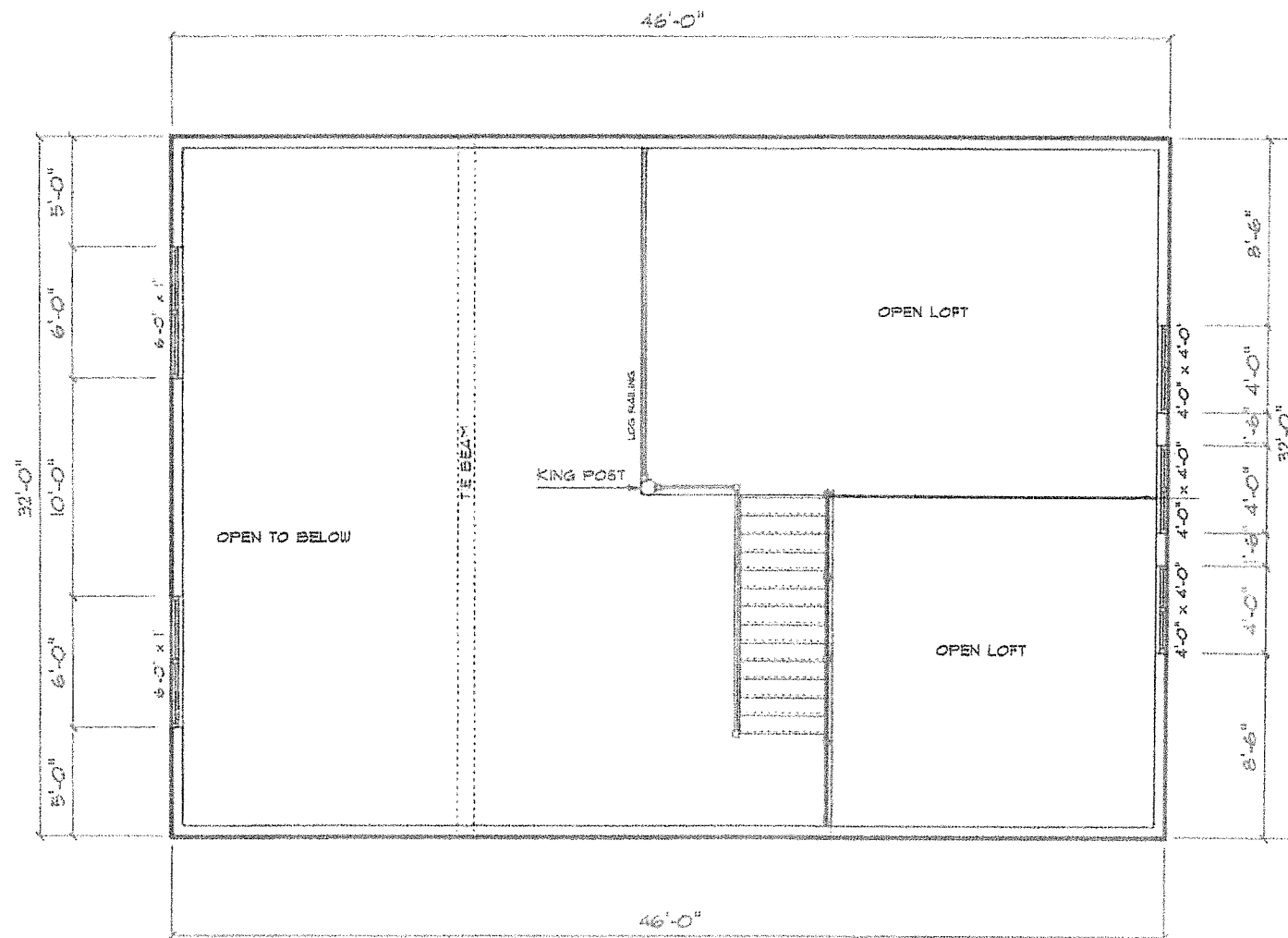
CUSTOM MVL-4046  
WAPSI FAMILY TRUST  
Foundation Plan  
DATE: 1/20/16  
THURSDAY, JANUARY 20, 2016  
2 of 3



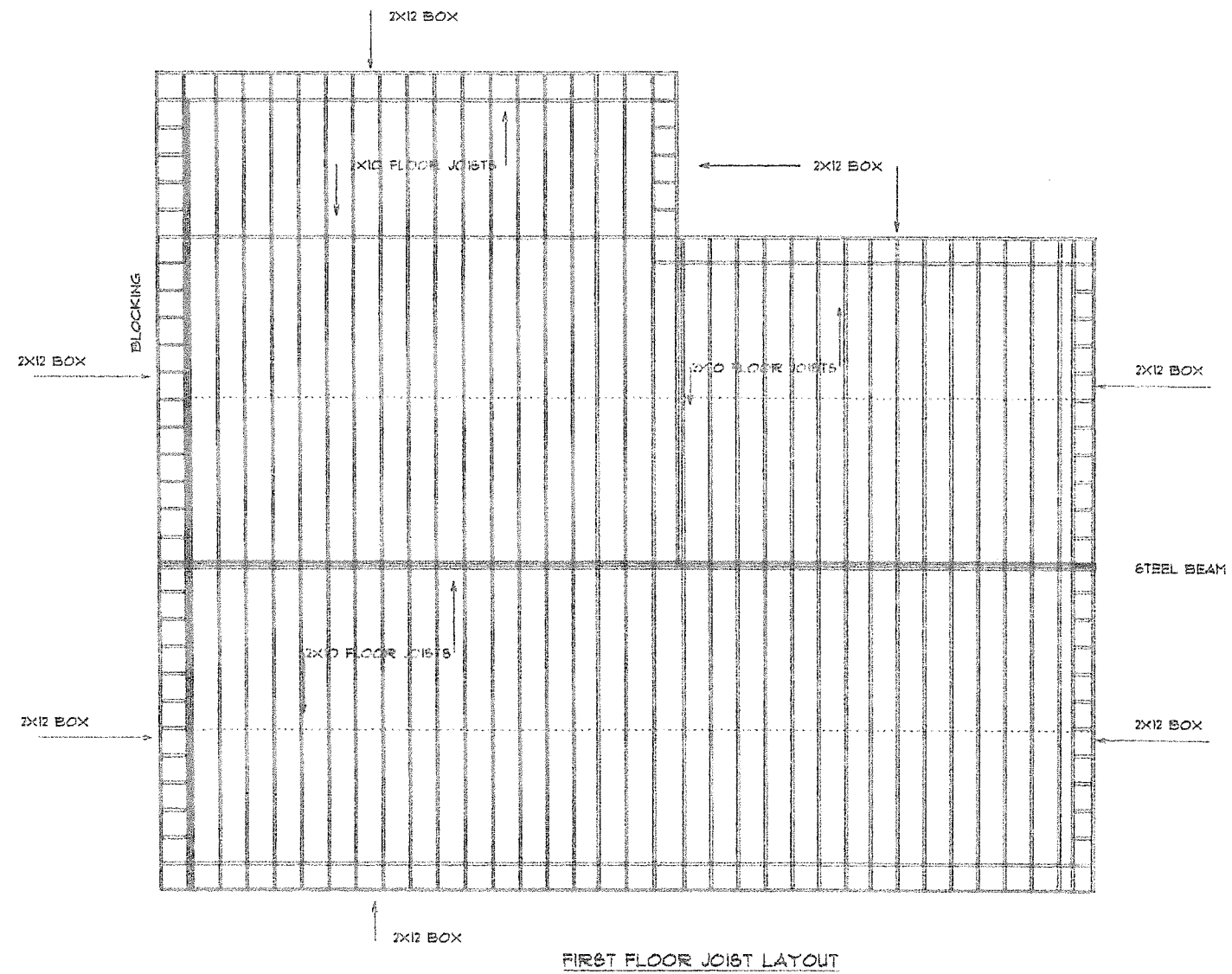


MEADOW VALLEY  
LOG HOMES  
www.mvlloghomes.com  
P.O. Box 654 Hwy 12  
Honey Lake NV  
89424-0654  
TEL: 775-423-4466  
FAX: 775-423-4479  
FOR CATALOGS VISIT THE WEBSITE: WWW.MVL.COM  
OR CALL: 800-683-4466

CUSTOM MYL-4046  
WAPSI FAMILY TRUST  
Floor Plan  
3 of 9



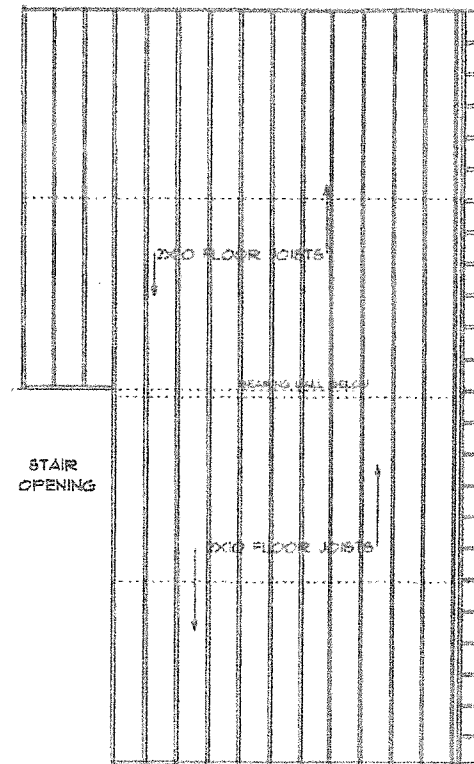
<b>MEADOW VALLEY LOG HOMES</b> <a href="http://www.mvloghomes.com">www.mvloghomes.com</a> P.O. Box 61 Hwy 10 Mead, WY 82421 Ext. 80470-204 307-633-4444 Fax: 307-633-4443 <small>FOR QUESTIONS ABOUT THIS PLAN EMAIL CLAYTON AT CLAYTON@MVLOGHOMES.COM OR CALL 800-931-1434</small>	<b>CUSTOM MYL-4046</b>	
	<b>WAPSI FAMILY TRUST</b>	
	<b>Loft Floor Plan</b>	
<small>DATE: 11/10/10</small> <small>SCALE: 1/4" = 1'-0"</small>	<small>DATE: 11/10/10</small> <small>SCALE: 1/4" = 1'-0"</small>	<small>4 of 9</small>



NOTE: BEAM AND JOIST PROVIDED BY CUSTOMER

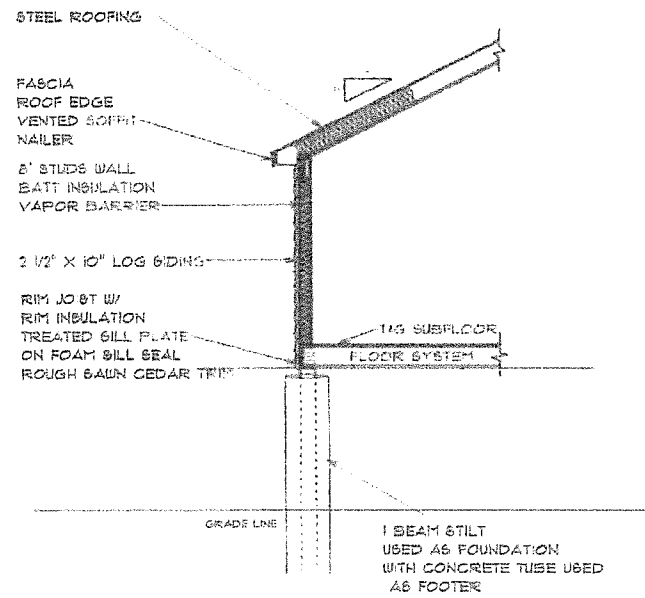
MEADOW VALLEY  
LOG HOMES  
WWW.MVLOGHOMES.COM  
P.O. BOX 61149  
TAMPA, FL 33620  
248 906-7842  
800-637-4166  
FAX: 800-376-4166  
FOR QUESTIONS ABOUT THIS PLAN EMAIL CLAYTON@MVLOGHOMES.COM OR CALL 800-637-4166

CUSTOM MYLH-4046	
WAPSI FAMILY TRUST	
Floor Joist	
DATE: 11/10/10	SCALE: 1/8" = 1'-0"
PROJECT: 1000000000	5 of 5



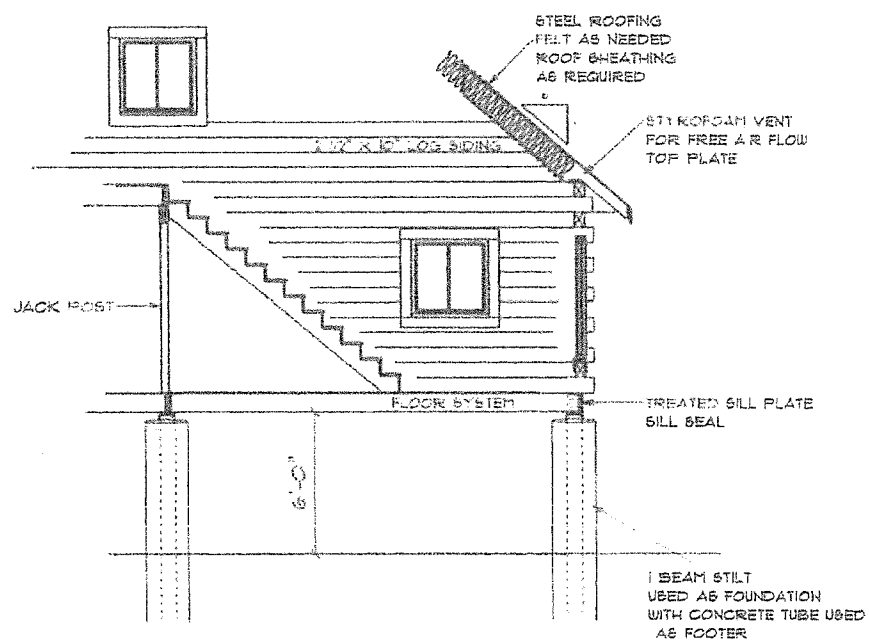
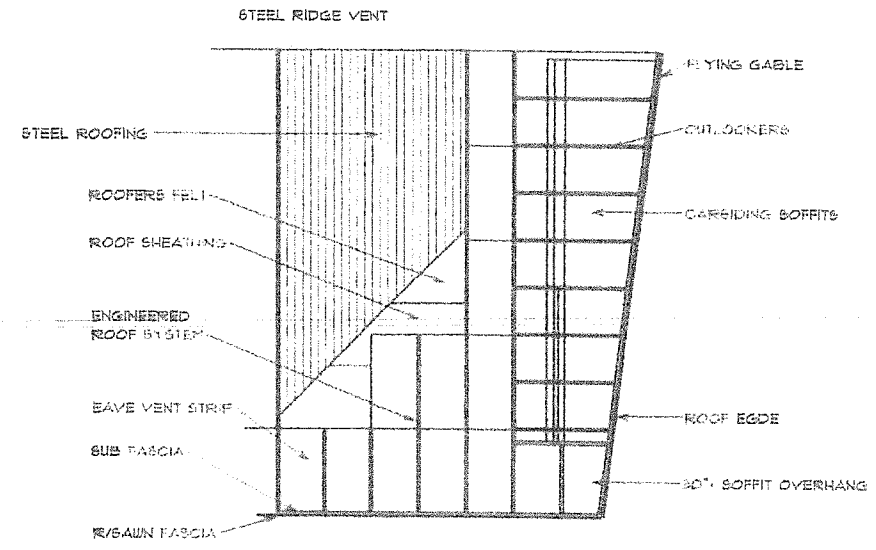
LOFT FLOOR JOIST LAYOUT

<b>MEADOW VALLEY LOG HOMES</b> <a href="http://www.mvloghomes.com">www.mvloghomes.com</a> P.O. BOX 611 Hwy 70 Hesperus, CO 81301 CO 81301-0611 303-483-1004 303-483-1005 <small>FOR QUESTIONS ABOUT THIS PLAN, PLEASE CALL US AT          303-483-1004 OR VISIT OUR WEBSITE AT  <a href="http://www.mvloghomes.com">www.mvloghomes.com</a></small>	<b>MYLH-3256</b>	
	<b>HOMESTEAD</b>	
	<b>Loft Floor Joist</b>	
	<small>DATE: 10/1/10</small>	<small>SCALE: 1/4" = 1'-0"</small>

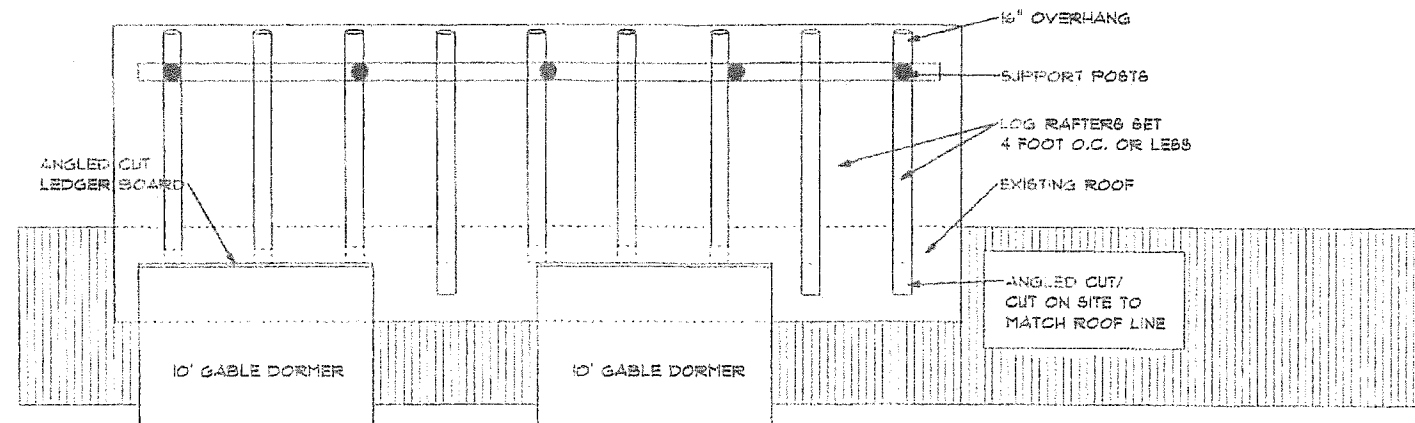


**WALL SECTION DETAIL**  
DETAIL NOT TO SCALE

**LOG SIDING GABLE SIDE VIEW**

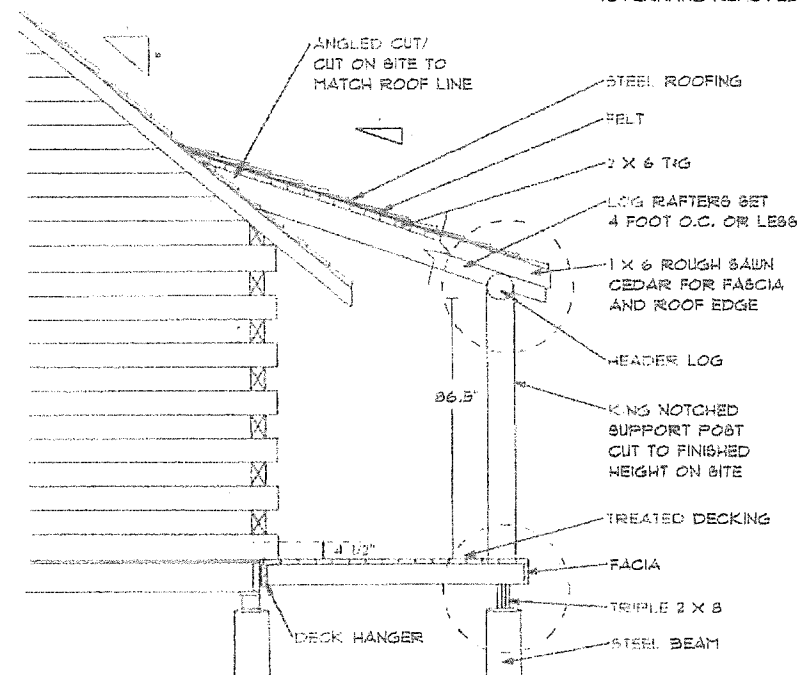


<b>MEADOW VALLEY LOG HOMES</b> <small>WWW.MVLOGHOMES.COM          100 SOUTHWEST HWY 12          TULSA, OKLAHOMA          BR. 405-766-0201          800-537-4380          FAX. 405-766-0205</small>	<b>CUSTOM MYL-4046</b>	
	<b>WAPSI FAMILY TRUST</b>	
<b>Wall, roof &amp; Stair Detail</b>		
<small>FOR QUESTION ABOUT THIS PLAN SHEET, PLEASE CALL: 405-766-0201</small>	<small>DATE: 08/20/2014</small>	<small>1 of 3</small>



PORCH DETAIL TOP VIEW

(OVERHANG REMOVED FOR CLARITY)



PORCH DETAIL SIDE VIEW ON DECK

(DORMER REMOVED FOR CLARITY)  
(NOT TO SCALE, BLOWN UP FOR CLARITY)

MEADOW VALLEY LOG HOMES <a href="http://www.mvloghomes.com">www.mvloghomes.com</a> P.O. BOX 8, ST. JULY, CO NEVADA, 89424 TEL: 702-746-0001 FAX: 702-746-0001	CUSTOM MYL-4046	
	WAPSI FAMILY TRUST	
Porch Detail		
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