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April 11, 2018

Linda Loomis
LMRWD
112 E. Fifth St., Suite 102
Chaska, MN 55318

RE: 2018 Cost Share Grant Application
Main Street Storm Sewer Flood Station
City of Carver
BMI Project No.: C16114914

Dear Linda,

The City of Carver is replacing the lift station structures at the Main Street and Broadway Street storm sewer outfalls during the 2018 construction season. The City's Surface Water Management Plan includes adding stormwater best management practices to the downtown area storm sewer as opportunity arises. As part of the project, the City is including a four foot sump on each of the stormwater manholes, immediately upstream of the lift stations. The intent of the sumps is to capture large sediment particles prior to discharge to the Minnesota River. There is no current stormwater best management practices within the watershed of each storm system. The existing system outlets directly to the Minnesota River and will continue to following the lift station improvements.

Included with this submittal is the completed 2018 Cost Share Grant Application along with the required documents associated with the application. The City is requesting $4,800 to cover 50% of the costs of constructing the sump on the stormwater manholes. This $4,800 cost includes the cost of labor to construct the item per the project specifications. The overall project cost is estimated to be approximately $600,000.

Please review the application for approval and let me know if you have any questions or concerns. I can be reached at (952) 448-8838, Ext: 2642.

Sincerely,

Andrew L Budde, P.E.
City Engineer

LOWER MINNESOTA RIVER
WATERSHED DISTRICT

Cost share grant application
2018

Application type (check one) ___Homeowner
___Non-profit - 501(c)(3) ___School
___Business or corporation _X_ Public agency or local government unit

Project type (check all that apply) ___Raingarden ___Vegetated Swale ___Infiltration Basin
___Wetland restoration ___Lake/creek/wetland buffer ___Conservation practice
___Shoreline/bank stabilization ___Pervious hard surface
_X_ Other___Best Mangement Practice_____

Applicant Information

Name of Organization or Individual Applying for Grant (to be named as Grantee):

City of Carver

Address (street, city and ZIP code):

801 Johnathan Carver Parkway, Carver, MN 55315

Phone: 612-756-2486 Email address: andrewbu@bolton-menk.com

Primary Contact (if different from above)

Name of Organization or Individual Applying for Grant (to be named as Grantee):

_____

Address (street, city and ZIP code):

_____

Phone:_____ Email address:_____

Project location

Address (street, city and ZIP code):

Main St. & Broadway St. (See attached location map)

Property Identification Number (PID)

Work will be performed in City Right of Way

Property Owners:

City of Carver, All work to be completed within public ROW

Project Summary

Title: Main Street Storm Sewer Flood Station

Total Project Cost: $9,600 Grant amount requested: $4,800

Estimated start date: June 2018 Estimated completion date: August 2018

Is project tributary to a water body? ___No, water remains on site ___Yes, indirectly _X Yes, directly adjacent

Project description:

The City of Carver is proposing improvements to the existing storm drain system and existing pump stations located along Main Street between Broadway Street and Mount Hope Road. This area currently discharges to the Minnesota River through three storm drain outfalls in the levee. Two of these outfalls are currently served by pump stations. The proposed improvements would replace the lift stations at the Main Street outfall and Broadway Street outfall locations. As part of the lift station replacement, the storm sewer manholes immediately upstream of each lift station will include a 4' depth sump. The sump will provide sediment removal prior to discharge to the Minnesota River.

Is this work required as part of a permit? _X_No ____Yes

(If yes; describe how the project provides water quality treatment beyond permit requirement on a separate page.)

Project Details

Checklist To be considered complete the following must be included with the application.

_X_ location map

_X_ site plan & design schematic

_X_ itemized budget or contractor bid

_X_ project timeline

___ proof of property ownership (*Work is in City ROW)*

___ plant list &planting plan (Project does not include plants)

Description

Describe the current site conditions, as well as site history, and past management

The original lift stations were constructed in 1993 and are in need of repair. The watershed upstream of the existing lift stations is predominately fully developed with a significant amount of impervious surfacing. The watershed has no current stormwater treatment best management practices and the runoff outlets directly to the Minnesota River. The City has several in place sump structures throughout the city and would add these to their maintenance program.

What are the project objectives and expected outcomes? Give any additional project details.

The City's Surface Water Management Plan includes a plan to include water quality improvements to untreated stormwater discharges in the downtown area as opportunity arises (Pg 8.52). A sump is a manhole constructed with part of the structure located below the outlet, creating a permanent volume pool that will collect incoming grit and large sediment particles. By installing the sump structures immediately upstream of the lift stations, they will function as a pretreatment structure prior to discharge to the river. Per the MPCA's Minnesota Stormwater Manual, each sump structure can provide up to 70-80% removal of coarse silts and sands which correlates to approximately 20% removal of Total Suspended Solids (TSS) and a 10% reduction in total phosphorus. It is anticipated that the sump structures will be cleaned on bi-annual basis to ensure continued function throughout the year.

List other key participants and their roles (provide contact information for each partner and his/her expected contribution to the project)

The City has not partnered with any other local government agencies as part of this project.

Which cost share goals does the project support? (Check all that apply)

__X_ improve watershed resources

____ Foster water resource stewardship

____increase awareness of the vulnerability of watershed resources

____increase familiarity with and acceptance of solutions to improve waters

How does the project support the goals you checked?

The proposed project will remove a significant amount of sediment that is currently discharged to the river on an annual basis (500 lbs/year). While this amount of sediment removed from the individual system is small relative to the global watershed, the City will continue to include sump structures in their street improvement projects. It is approximated that for every eight sumps installed, one ton of sediment will be removed per yearfrom stormwater prior to discharge to the Minnesota River.

Project Details (continued)

Benefits

Estimate the project benefits in terms of restoration and/or annual pollution reduction. If you are working with a designer or contractor, they can provide these numbers. If you need help contact the district Administrator.

Benefit	Amount
Water captures	0 gal/year
Water infiltrated	0 gal/year
Phosphorus removed	6.3 lbs/year
Sediment removed	491 lbs/year
Land restored	sq. ft.

How will you share the project results with your community?

The benefits of the proposed sumps were analyzed using the MPCA MIDS calculator. The results will be incorporated into the City's overall surface water management plan and MS4 permitting requirements.

Are there other projects that could be initiated as a result of this one?

The City plans to include sump stormwater manholes in future street improvement projects with the goal of improving stormwater quality. As additional streets are reconstructed, the City will evaluate additional stormwater BMPs to further improve the water quality at these outlets.

Evaluation

How will the project be monitored and evaluated?

The proposed stormwater sump manholes will be monitored on monthly basis after completion of construction and sediment depths will be recorded. It is currently planned that the stormwater manhole

sumps will be cleaned out on bi-annual basis, likely spring and fall of every year. If initial monitoring indicates that additional maintenance is required, the cleaning schedule will be adjusted as necessary.

Maintenance agreement

I acknowledge that receipt of a grant is contingent upon agreeing to maintain the project for the number of years outlined in the cost share guidelines. _X_ Yes

Authorization

Name of landowner or responsible party_____City of Carver_____

Signature_____Andrew Budde - City Engineer_____Date_____4/15/2018_____

Type or handwrite your answers on this form. Attached additional pages as needed

(For questions, contact Linda Loomis at Naiad Consulting@gmail.com or call 763-545-4659.)

Mail the completed application to:

Lower Minnesota River Watershed District
c/o Linda Loomis, Administrator
112 E. Fifth St., Suite 102
Chaska, MN 55318

or Email to:

Linda Loomis, Administrator
naiadconsulting@gmail.com

LMRWD Cost Share Worksheet
2018 Grant Application

Project Materials

Material Description	Unit Cost	Total # of Units	Requested Funds from LMRWD	Matching/In-Kind Funds	Total
ADDITIONAL SUMP STRUCTURE DEPTH (60" STRUCTURE)	800	4	$1,600.00	$1,600.00	$3,200.00
ADDITIONAL SUMP STRUCTURE DEPTH (84" STRUCTURE)	1600	4	$3,200.00	$3,200.00	$6,400.00
		Total:	$4,800.00	$4,800.00	$9,600.00

Total Requested Funds from LMRWD:	$4,800.00
Total Matchin/In-Kind Funds:	$4,800.00
Project Total:	$9,600.00

CITY OF CARVER

Main Street Lift Station Improvements

Carver, Minnesota

Location Map

April, 2018

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Map Document: H:\CARVER_CI_MNIC161149141GIS\LMRWD_LocationMap.mxd | Date Saved: 4/11/2018 8:48:13 AM

CITY OF CARVER
MAIN STREET STORM SEWER FLOOD STATION
BMI PROJECT NUMBER - C16.114914
4/4/2018

ENGINEER'S ESTIMATE

ITEM NO.	BID ITEM	NOTES	UNIT	UNIT COST	TOTAL QUANTITY	TOTAL COST
	BASE BID:					
1	MOBILIZATION		LUMP SUM	$20,000.00	1	$20,000.00
2	CLEARING		TREE	$500.00	1	$500.00
3	GRUBBING		TREE	$500.00	1	$500.00
4	REMOVE SEWER PIPE (STORM)		LIN FT	$10.00	20	$200.00
5	REMOVE CURB AND GUTTER		LIN FT	$10.00	40	$400.00
6	REMOVE CONCRETE WALK		SQ FT	$1.00	545	$545.00
7	REMOVE BITUMINOUS PAVEMENT		SQ YD	$5.00	245	$1,225.00
8	REMOVE CIP CONCRETE RETAINING WALL		SQ FT	$10.00	100	$1,000.00
9	REMOVE PIPE APRON		EACH	$500.00	2	$1,000.00
10	REMOVE CONCRETE HEADWALL		EACH	$500.00	1	$500.00
11	REMOVE LIFT STATION	[4]	EACH	$6,000.00	2	$12,000.00
12	REMOVE CATCH BASIN OR MANHOLE		EACH	$750.00	1	$750.00
13	SAWCUT BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	$4.00	115	$460.00
14	SITE GRADING		LUMP SUM	$2,500.00	1	$2,500.00
15	EXPLORATORY EXCAVATION	[3]	HOUR	$500.00	5	$2,500.00
16	BITUMINOUS PATCH (LOCAL SECTION)	[6]	SQ YD	$150.00	10	$1,500.00
17	COARSE AGGREGATE BEDDING	[7]	TON	$75.00	60	$4,500.00
18	12" RC PIPE APRON	[11]	EACH	$1,000.00	1	$1,000.00
19	10" FLAP GATE		EACH	$5,000.00	1	$5,000.00
20	LIFT STATION (MAIN STREET)	[9]	LUMP SUM	$84,000.00	1	$84,000.00
21	LIFT STATION (BROADWAY)	[9]	LUMP SUM	$33,000.00	1	$33,000.00
22	12" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	$35.00	2	$70.00
23	15" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	$38.00	37	$1,406.00
24	18" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	$40.00	14	$560.00
25	24" DUAL WALL HDPE PIPE SEWER		LIN FT	$60.00	10	$600.00
26	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LIN FT	$400.00	3	$1,200.00
27	CONSTRUCT DRAINAGE STRUCTURE DESIGN 84-4020		LIN FT	$800.00	5	$4,000.00
28	CASTING ASSEMBLY		EACH	$800.00	2	$1,600.00
29	CONNECT INTO EXISTING STORM SEWER		EACH	$2,000.00	4	$8,000.00
30	GUIDE POST TYPE B		EACH	$100.00	1	$100.00
31	4" CONCRETE WALK		SQ FT	$5.00	225	$1,125.00
32	1" NON-METALLIC CONDUIT (INCLUDES FIBER OPTIC CABLE)		LIN FT	$19.00	145	$2,755.00
33	1.25" NON-METALLIC CONDUIT (INCLUDES FIBER OPTIC CABLE)		LIN FT	$20.00	125	$2,500.00
34	2" NON-METALLIC CONDUIT (INCLUDES ELECTRICAL FEED WIRE)		LIN FT	$37.00	430	$15,910.00
35	UNDERGROUND FIBER OPTIC CABLE (INSTALLED IN EXISTING CONDUIT)		LIN FT	$7.00	285	$1,995.00
36	HANDHOLE		EACH	$1,500.00	2	$3,000.00
37	OAK STREET SITE WORK		LUMP SUM	$8,000.00	1	$8,000.00
38	MAIN STREET CONTROL PANEL (100 AMP)	[1]	LUMP SUM	$45,000.00	1	$45,000.00
39	BROADWAY CONTROL PANEL (100 AMP) WITH MTS & INLET RECEPTACLE		LUMP SUM	$45,000.00	1	$45,000.00
40	XCEL ENERGY 3 PHASE SERVICE TO BROADWAY		LUMP SUM	$2,500.00	1	$2,500.00
41	OAK STREET PANEL (200 AMP) AND ATS	[1]	LUMP SUM	$40,000.00	1	$40,000.00
42	TRAFFIC CONTROL		LUMP SUM	$2,500.00	1	$2,500.00
43	STORM DRAIN INLET PROTECTION		EACH	$250.00	5	$1,250.00
44	SEDIMENT CONTROL LOG TYPE WOOD FIBER		LIN FT	$5.00	250	$1,250.00
45	STABILIZED CONSTRUCTION EXIT		LUMP SUM	$5,000.00	1	$5,000.00
46	EROSION CONTROL SUPERVISOR		LUMP SUM	$1,500.00	1	$1,500.00
47	COMMON TOPSOIL BORROW		CU YD	$40.00	12	$480.00
48	SODDING, TYPE LAWN		SQ YD	$5.00	400	$2,000.00
49	EROSION CONTROL BLANKET CATEGORY 3N WITH SEED AND FERTILIZER		SQ YD	$3.50	950	$3,325.00
50	LANDSCAPING ALLOWANCE		ALLOWANCE	$2,500.00	1	$2,500.00
	SUBTOTAL BASE BID CONSTRUCTION COST					**$378,206.00**
	PRORATED PERCENT					100.0000%
	TOTAL ESTIMATED SOFT COSTS					**$190,123.26**
	TOTAL BASE BID PROJECT COST					**$568,329.26**
	BID ALTERNATES					
51	18" BACK FLOW PREVENTOR		EACH	$5,000.00	1	$5,000.00
52	27" BACK FLOW PREVENTOR		EACH	$8,500.00	1	$8,500.00
53	36" BACK FLOW PREVENTOR		EACH	$12,000.00	1	$12,000.00
54	ADDITIONAL SUMP STRUCTURE DEPTH (60" STRUCTURE)		LIN FT	$800.00	4	$3,200.00
55	ADDITIONAL SUMP STRUCTURE DEPTH (84" STRUCTURE)		LIN FT	$1,600.00	4	$6,400.00
	SUBTOTAL BID ALTERNATES CONSTRUCTION COST					**$35,100.00**
	TOTAL BASE BID + BID ALTERNATES PROJECT COST					**$603,429.26**

ENGINEER'S ESTIMATE

ITEM NO.	BID ITEM	NOTES	UNIT	UNIT COST	TOTAL QUANTITY	TOTAL COST

NOTES:

[1] FIBER OPTION FROM MAIN STREET STATION TO OAK STREET STATION. SCADA OUT FROM OAK STREET STATION.
[2] TIMBER BRIDGE BEAMS, DECK MATERIALS, AND APPROACH FOUNDATIONS.
[3] TO BE USED AS DIRECTED BY THE ENGINEER.
[4] INCLUDES SALVAGING PUMP AND BASE ELBOW.
[5] BULKHEAD AND GROUT FILL PIPE.
[6] INSTALL FULL SUBBASE & BITUMINOUS SECTION PER TYPICAL SECTIONS.
[7] 3" CRUSHED ROCK FOR STABILIZING SOFT PIPE SUBGRADE AREAS AS DIRECTED BY THE ENGINEER.
[8] INCLUDES REMOVAL OF EXISTING SLUICE GATE.
[9] INCLUDES ALL INTERNAL PIPING, VALVES, PUMPS, AND APPURTENANCES.
[10] INCLUDES REINFORCEMENT AT LIFT STATION PAD.
[11] INCLUDES TRASH GUARD

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MEMORANDUM

4/4/2018

Main Street Lift Station Project Schedule

1. 95% Plans Due for PW Review	4/6/2018 (Fri.)
2. Send Plans to Barr & AE2S	4/6/2018 (Fri.)
3. Comments Due back from PW Review	4/11/2018 (Wed.)
4. Barr & AE2S Plans Due, send to PW	4/13/2018 (Fri.)
5. Council Approves Plans and Specs	4/16/2018
a. Consent Agenda (Council Memo Only)	
6. PW comments due back on Elec. Plans	4/16/2018 (Mon.)
7. Final Plans received from Elec.	4/17/2018 (Tues.)
8. 100% Plans & Specs Due	4/18/2018 (Wed.)
9. Advertise (3 Weeks Min)	4/19/2018 - 5/10/2018
a. Quest CDN	4/19/2018 - 5/10/2018
b. Chaska Herald (Submit Thurs Before)	4/26/2018 and 5/3/2018
c. Finance and Commerce	?
10. Open Bids	5/10/2018 at 9:00 AM
11. Council Award	5/21/2018
12. Contracts (3 Weeks)	5/22/2018 – 6/11/2018
13. Construction (Start Date)	6/11/2018 – 7/31/2018
a. Utility Construction (8 Weeks)	6/11/2018 – 8/3/2018
b. Pumps, Controls, Startup & Lead Times	6/11/2018 – 8/31/2018

Project Information

Calculator Version:	Version 3: January 2017
Project Name:	Main Street Storm Sewer Flood Station
User Name / Company Name:	City of Carver
Date:	April 5, 2018
Project Description:	Analyzing the proposed sump structures to be installed upstream of the proposed lift stations
Construction Permit?:	No

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55315
Annual Rainfall (inches):	29.4
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				5.7	5.7
			Impervious Area (acres)		6.7
				Total Area (acres)	12.4

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				5.7	5.7
			Impervious Area (acres)		6.4
				Total Area (acres)	12.1

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	26753	ft3
Volume removed by BMPs towards performance goal:		ft3
Percent volume removed towards performance goal		%

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	17.177	acre-ft
Annual runoff volume removed by BMPs:	0	acre-ft
Percent annual runoff volume removed:	0	%
Post development annual particulate P load:	7.709	lbs
Annual particulate P removed by BMPs:	0.743	lbs
Post development annual dissolved P load:	6.307	lbs
Annual dissolved P removed by BMPs:	0	lbs
Percent annual total phosphorus removed:	5	%
Post development annual TSS load:	2546.3	lbs
Annual TSS removed by BMPs:	490.6	lbs
Percent annual TSS removed:	19	%

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
Main St Lift Station Sump	0	19965	0	19965	0
Broadway Street Lift Station	0	5590	0	5590	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
Main St Lift Station Sump	13.23	0	0	13.23	0
Broadway Street Lift Station	3.3185	0	0	3.3185	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Main St Lift Station Sump	5.9376	0	0.5938	5.3438	10
Broadway Street Lift Station	1.4894	0	0.1489	1.3405	10

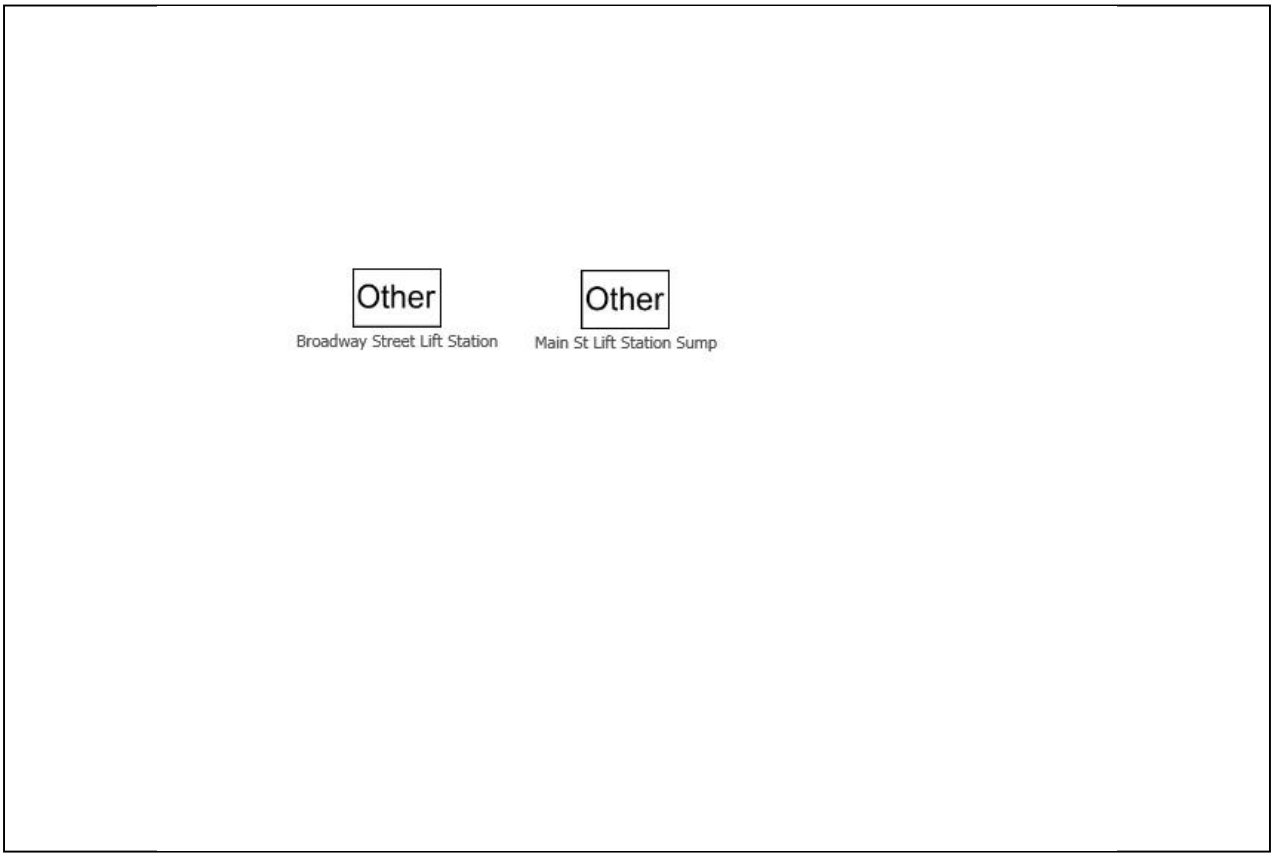
Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Main St Lift Station Sump	4.8581	0	0	4.8581	0
Broadway Street Lift Station	1.2186	0	0	1.2186	0

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
Main St Lift Station Sump	1961.22	0	392.24	1568.98	20
Broadway Street Lift Station	491.94	0	98.39	393.55	20

BMP Schematic



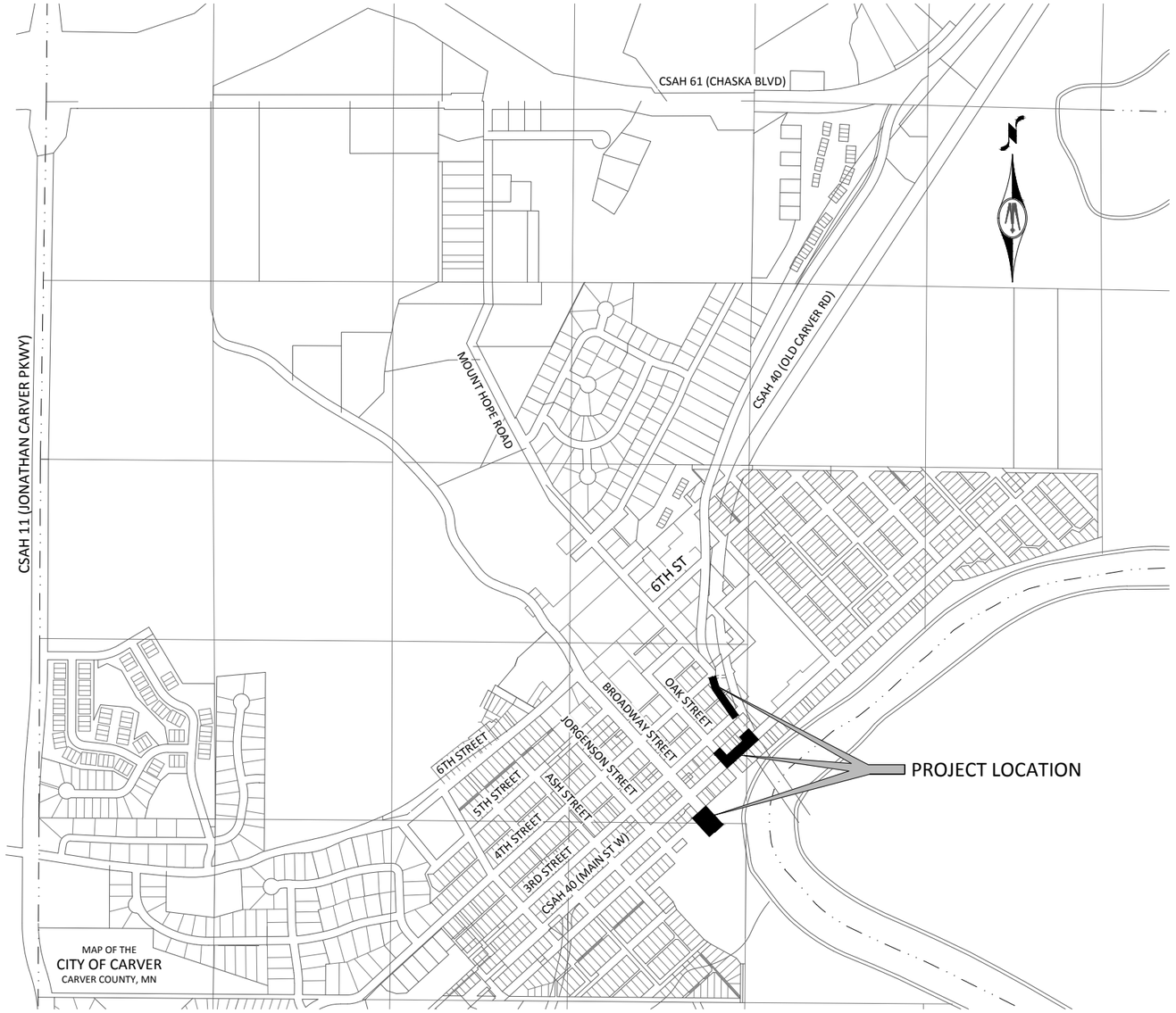
CONSTRUCTION PLANS FOR

MAIN STREET STORM SEWER FLOOD STATION

CARVER, MINNESOTA

APRIL, 2018

PLAN REVISIONS		
REV	ISSUED FOR	DATE



SHEET INDEX

NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW L. BUDDE

LIC. NO. 46585 DATE: 4/6/2018

HORZ. SCALE 0 500 1000 FEET

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www.bolton-menk.com

BM=726.95 MN DOT "LEVEE MN019" STATION 6+23 125' SE (TOP OF LEVEE)	PROJECT DATUM: CARVER COUNTY HORIZONTAL: NAD 83 (1996) VERTICAL: NAVD 88	RECORD DRAWING INFORMATION OBSERVER: CONTRACTOR: DATE:	CITY OF CARVER, MINNESOTA MAIN STREET STORM SEWER FLOOD STATION TITLE SHEET

EXISTING

- IRON PIPE MONUMENT SET
- MONUMENT FOUND
- CAST IRON MONUMENT FOUND
- STONE MONUMENT FOUND
- POST SET
- BENCH MARK
- AUTO SPRINKLER
- ANTENNA
- AIR CONDITIONER
- ANCHOR
- AIR PUMP
- APRON
- BASKETBALL HOOP
- BIRD FEEDER
- BENCH
- BRACE POLE
- CATCH BASIN
- CLOTHES LINE POLE
- CONTROL POINT
- CLEAN OUT
- COMMUNICATION PEDESTAL
- CURB STOP VALVE
- DITCH TOP
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC MANHOLE
- ELECTRIC METER
- ELECTRIC PEDESTAL
- ELECTRIC TRANSFORMER
- EXHAUST VENT
- FLAG POLE
- FILL PIPE
- GAS MANHOLE
- GAS REGULATOR
- GAS VALVE
- GAS METER
- ACCESS GRATE
- HANDICAPPED PARKING
- HAND HOLE
- HYDRANT
- IRRIGATION CONTROL VALVE
- LIGHT DECORATIVE
- LIGHT POLE
- MAILBOX
- METER
- POST
- MANHOLE
- LIFT STATION MANHOLE
- MONITORING WELL
- ORDER MICROPHONE
- PARK GRILL
- GAS PUMP
- POST INDICATOR VALVE
- PARKING METER
- SANITARY MANHOLE
- SATELLITE DISH
- SEMAPHORE TRAFFIC LIGHT
- SIGNAL BOX
- SIGNAL POLE - RR
- SOIL BORING
- SIREN
- SPRINKLER HEAD
- STORM MANHOLE
- TELEPHONE MANHOLE
- PUBLIC TELEPHONE
- TILE INLET
- TILE RISER
- TRAFFIC ARM BARRIER
- TRAFFIC SIGN
- TRANSMISSION TOWER
- UTILITY POLE
- VACUUM
- VENT PIPE
- DECIDUOUS TREE
- CONIFEROUS TREE
- STUMP
- BUSH
- WELL
- WATER MANHOLE
- WATER METER
- WATER SPIGOT
- WATER VALVE
- WETLAND / MARSH
- WETLAND - DELINEATED

- OVERHEAD ELECTRIC LINE
- UNDERGROUND ELECTRIC LINE
- GAS LINE
- FIBER OPTIC LINE
- UNDERGROUND COMMUNICATIONS LINE
- OVERHEAD UTILITY LINE
- WATER SYSTEM
- STORM SEWER
- TILE LINE
- SANITARY SEWER
- SANITARY FORCEMAIN
- CULVERT
- INTERMEDIATE CONTOURS
- INDEX CONTOURS
- COUNTY LINE
- CITY LIMITS
- SIXTEENTH LINE
- QUARTER LINE
- SECTION LINE
- ADJACENT LINES
- EASEMENT LINE
- BUILDING SETBACK LINE
- FENCE LINE
- GUARD RAIL
- ACCESS CONTROL LINE
- CENTERLINE
- PROPERTY / LOT LINE
- ROAD RIGHT-OF-WAY LINE
- RAILROAD RIGHT-OF-WAY LINE
- GRAVEL EDGE
- BITUMINOUS EDGE
- CONCRETE EDGE
- CURB & GUTTER
- WATER EDGE
- WATER CENTERLINE
- HIGHWATER LINE
- WETLAND EDGE
- SWALE CENTERLINE
- RAILROAD TRACKS
- TREE DRIP LINE

PROPOSED

- ALIGNMENT/CENTERLINE (22+00)
- RIGHT-OF-WAY LINE
- TEMPORARY EASEMENT
- CONSTRUCTION LIMITS
- CURB & GUTTER
- CURB & GUTTER (OUT)
- BITUMINOUS EDGE
- CONCRETE EDGE
- GRAVEL EDGE
- SILT FENCE-PREASSEMBLED
- SILT FENCE-HEAVY DUTY
- EROSION PROTECTION AT INLET
- MANHOLE
- CATCH BASIN
- STORM INLET
- APRON
- STORM SEWER
- PERFORATED PIPE DRAIN
- STORM DRAIN TILE
- CULVERT W/APRON
- STORM MANHOLE NUMBER (1)
- SANITARY SEWER
- SANITARY FORCEMAIN
- SANITARY SEWER SERVICE
- SANITARY LIFT STATION
- SANITARY MANHOLE
- SANITARY MANHOLE NUMBER (A)
- WATERMAIN
- WATERMAIN SERVICE
- WATER SYSTEM MANHOLE
- HYDRANT
- HYDRANT W/ VALVE
- VALVE
- CURBSTOP
- BEND
- REDUCER
- CROSS
- TEE
- CAP
- SLEEVE
- SIGN
- LIGHT POLE
- GUARD RAIL
- SOIL BORING (B-?)
- WETLAND
- BUSH
- CONIFEROUS TREE
- DECIDUOUS TREE

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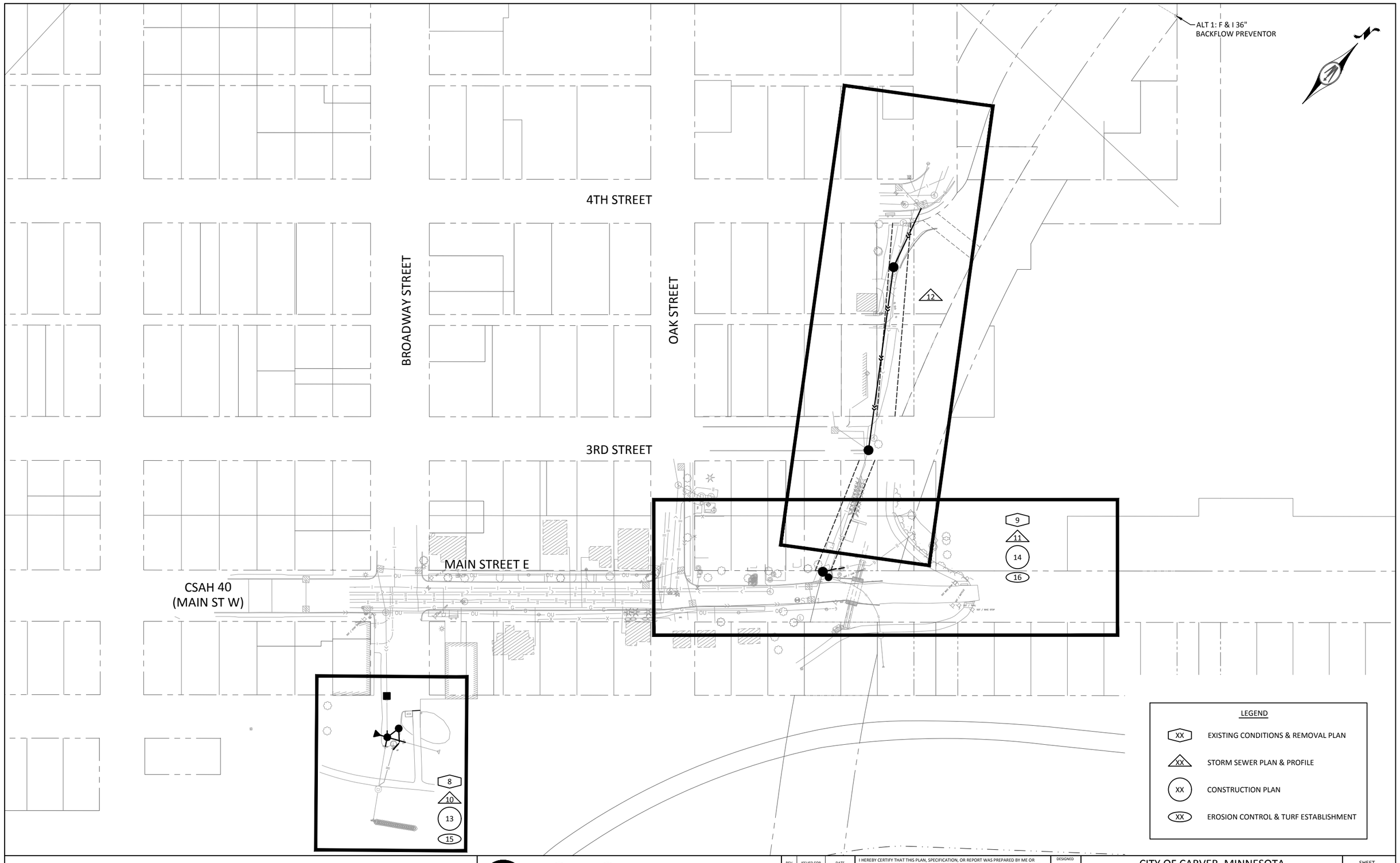
ANDREW L. BUDDE
LIC. NO. 46585 DATE 4/6/2018

DESIGNED	AJS
DRAWN	DDS
CHECKED	ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
LEGEND

SHEET 2 OF 23



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CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
GENERAL PLAN LAYOUT

SHEET 3 OF 23

CONSTRUCTION / SOILS NOTES

GRADING, BASE AND SURFACE:

1. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE MATERIAL. NO ORGANIC SOIL SHALL BE ALLOWED IN THE TOP 5 FEET BELOW THE GRADING GRADE. FOR FIELD PURPOSES, ORGANIC SOIL WILL BE IDENTIFIED AS BEING BLACK IN COLOR AND CONTAINING VISIBLE ORGANIC MATTER.
2. STRIP ALL INPLACE TOPSOIL IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING.
3. UNLESS OTHERWISE NOTED, IN ANY EMBANKMENT CONSTRUCTION, PROVIDE FOR SUBCUTS TO THE DEPTHS AND LOCATIONS SHOWN ON THE TYPICAL SECTIONS. SLOPES FOR THIS CONTRACT WILL BE REPRESENTED WITH HORIZONTAL:VERTICAL NOTATION, X(H):X(V).
4. TOPSOIL MATERIAL SHALL BE USED THROUGHOUT THE PROJECT AND AS DIRECTED BY THE ENGINEER.
5. IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 5 FEET OF THE "GRADING GRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN ON THE TYPICAL SECTIONS.
6. OBTAIN COMPACTION ON THE GRADING PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "SPECIFIED DENSITY METHOD" REQUIREMENTS.
7. OBTAIN COMPACTION ON THE AGGREGATE BASE PORTIONS OF PERMANENT CONSTRUCTION IN ACCORDANCE WITH THE "QUALITY COMPACTION METHOD" REQUIREMENTS. THE TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS. THIS WOULD INCLUDE ANY AREAS WHERE CRUSHED CONCRETE OR SALVAGED ASPHALT MAY BE USED FOR AGGREGATE BASE.
8. TEST ROLLING WILL BE REQUIRED ON ALL PREPARED SUBGRADE PRIOR TO PLACEMENT OF THE PAVEMENT SECTION AND AT ANY LOCATIONS DIRECTED BY THE ENGINEER, WITH A LOADED TANDEM AXLE TRUCK. THIS WORK WILL BE CONSIDERED INCIDENTAL.
9. IN THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHOULD STRIVE TO SUBSTANTIALLY MATCH THE SOILS AND LAYERS INPLACE IN THE UPPER 4 FEET OF THE ROADWAYS. GRANULAR BACKFILL SHALL NOT BE PERMITTED ADJACENT TO IN PLACE NON-GRANULAR SOILS IN ORDER TO PREVENT AN ABRUPT SOILS DIFFERENTIAL.
10. IN ANY CASE WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON-GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1(V):20(H) TRANSITION TAPER BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE 1(V):20(H) TAPER SHALL BE CONSTRUCTED SO THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON-GRANULAR SOIL BACKFILL.
11. WHERE SUBCUTS RUN INTO DRIVEWAYS OR LOCAL ROADS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1(V):4(H) TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
12. WHEN CONNECTING NEW SURFACE ADJACENT TO ANY IN-PLACE PAVEMENTS TO BE WIDENED, CUT VERTICALLY TO THE BOTTOM OF THE IN-PLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1(V):2(H) SLOPE TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
13. PROVIDE 1(V):20(H) TAPERS WHEN CHANGING SUBCUT DEPTHS OR WHEN GOING FROM GRANULAR MATERIAL TO SUITABLE GRADING MATERIAL.
14. DITCH BOTTOMS, TOE OF FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
15. THE CONTRACTOR SHALL MAINTAIN POSITIVE SITE DRAINAGE AT ALL TIMES.
16. ALL EXCESS MATERIAL GENERATED DURING CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF SITE, IN WHICH NO DIRECT COMPENSATION WILL BE MADE.

GENERAL NOTES:

1. ALL EXCAVATION & EQUIPMENT SHALL REMAIN WITHIN, ROW, EASEMENTS, AND REMOVAL LIMITS SHOWN. TRENCH BOX OR SHEETING MAY BE REQUIRED. (INCIDENTAL)
2. CONTRACTOR SHALL PROTECT AND SUPPORT AS NECESSARY ALL TREES, BUILDINGS, LANDSCAPING, RETAINING WALLS, WALKWAYS, DRIVEWAYS, CURB & GUTTER, ETC. UNLESS NOTED OTHERWISE IN THE PLAN OR IN THE FIELD BY THE ENGINEER.
3. CONTRACTOR SHALL SALVAGE AND REINSTALL, REPLACE OR PROTECT ALL LANDSCAPING INCLUDING BOULDERS, EDGING, LANDSCAPE ROCK, MULCH, BUSHES, PLANTS, LAWN ORNAMENTS, ETC. THAT ARE DISTURBED BY CONSTRUCTION.
4. CONTRACTOR SHALL PROTECT & SUPPORT ALL EXISTING PUBLIC AND PRIVATE UTILITIES (GAS, TELEPHONE, ELECTRIC, CABLE, WATERMAIN, STORM, SANITARY, ETC) AS DIRECTED BY UTILITY OWNER UNLESS OTHERWISE NOTED.
5. DEWATERING MAY BE REQUIRED TO INSTALL UTILITIES, ANY DEWATERING REQUIRED SHALL BE INCIDENTAL. ALL DEWATERING SHALL REQUIRE PRETREATMENT PRIOR TO DISCHARGE FROM THE SITE.
6. CONTRACTOR SHALL PROTECT ALL SANITARY SERVICES. DAMAGE OCCURRING TO SERVICES SHALL BE REPAIRED WITH PVC AND IS INCIDENTAL TO PROPOSED CONSTRUCTION.

REMOVALS:

1. PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. LOCATE ALL SAWCUTS ALONG LANE LINES OR PERPENDICULAR TO LANE LINES. ALL SAWING SHALL BE WET SAWN AND ALL DUST/SLURRY SHALL BE COLLECTED TO THE EXTENT PRACTICABLE BY SWEEPING OR VACUUM AND DISPOSED OF ACCORDING TO THE SPECIFICATIONS. THIS WORK IS INCIDENTAL.
2. ALL WORK SHALL REMAIN WITHIN THE APPROVED REMOVAL AND THE PROPOSED CONSTRUCTION LIMITS. ALL REMOVALS OUT OF THE APPROVED LIMITS AND THE RESTORATION THEREOF SHALL BE AT CONTRACTORS EXPENSE.
3. PROTECTION OF ALL ITEMS NOT CALLED OUT FOR REMOVAL SHALL BE INCIDENTAL TO THE CONTRACT.

MISCELLANEOUS:

1. WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
2. THE CONTRACTOR IS HEREBY REMINDED OF HIS/HER RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL PERMITTEES, CONTRACTORS, AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PLAN AND THE STATE OF MINNESOTA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES PHASE II PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS AND IS RESPONSIBLE TO COMPLY WITH ALL REQUIREMENTS STATED WITHIN.
2. THE BMP'S SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, THE PERMITTEE/CONTRACTOR SHALL ANTICIPATE THAT ADDITIONAL BMP'S MAY BE REQUIRED AS SITE CONDITIONS CHANGE AND SHALL PROVIDE ADDITIONAL BMP'S TO MEET APPLICABLE REQUIREMENTS.
3. ALL WORK AND MATERIALS SHALL BE CONSTRUCTED ACCORDING TO THE APPROVED PLANS AND SWPPP. ANY DEVIATION FROM THE APPROVED PLANS SHALL REQUIRE WRITTEN APPROVAL FROM THE OWNER.

STORM SEWER NOTES:

1. ALL RCP STORM SEWER SHALL BE CLASS 5 UNLESS OTHERWISE NOTED.
2. PIPE LENGTHS AND ELEVATIONS IN PROFILES ARE TO CENTER OF STRUCTURE AT BACK OF CURB FOR CATCH BASINS AND CENTER OF STRUCTURE FOR MANHOLES. APRON LENGTHS ARE INCLUDED IN PIPE LENGTHS. THE LENGTH OF THE PIPE APRON SHALL BE DEDUCTED FROM THE PAYMENT LENGTH FOR THE PIPE.

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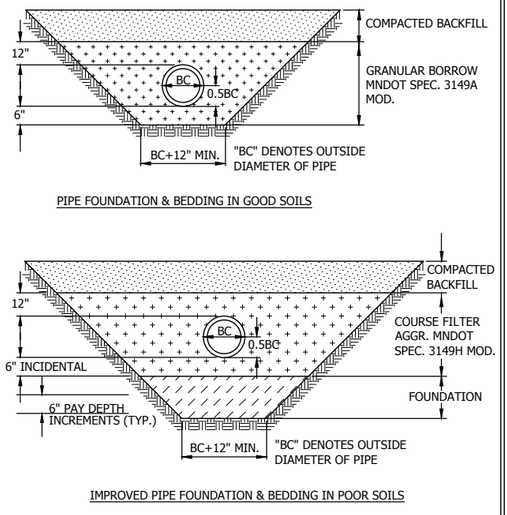
CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
CONSTRUCTION & SOILS NOTES

SHEET 4 OF 23



PIPE FOUNDATION & BEDDING IN GOOD SOILS

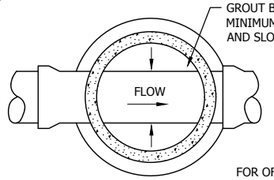
IMPROVED PIPE FOUNDATION & BEDDING IN POOR SOILS

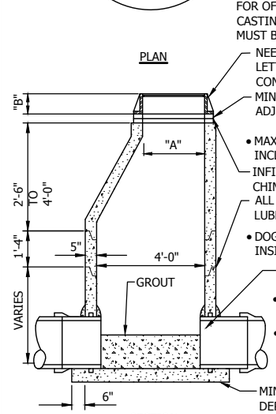
BEDDING METHODS FOR HDPE

CARVER, MINNESOTA

LAST REVISION: APRIL 2017

PLATE NO. GEN–8



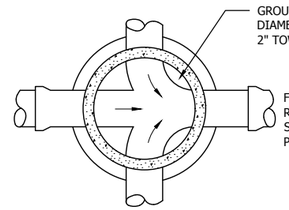


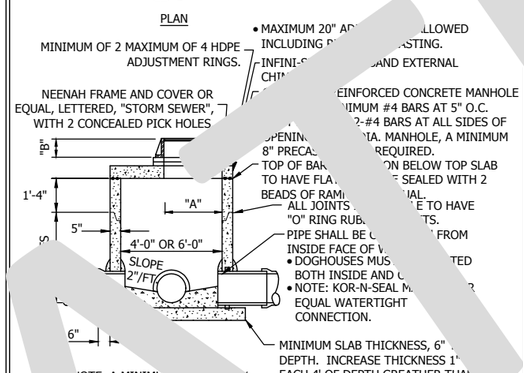
STORM SEWER MANHOLE

CARVER, MINNESOTA

LAST REVISION: SEPT 2017

PLATE NO. STO–1



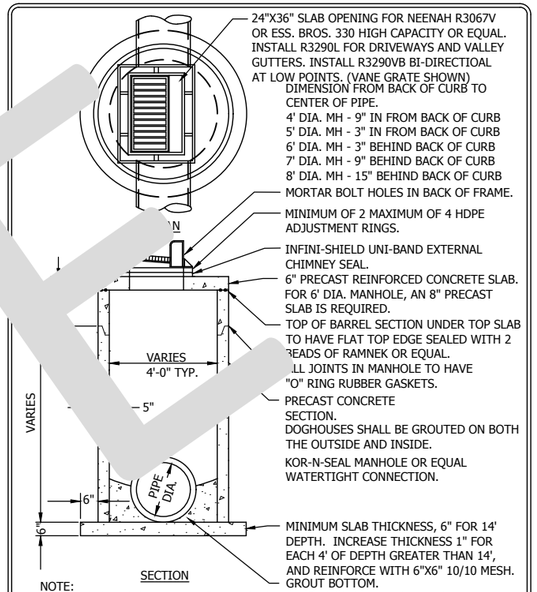


STORM SEWER MANHOLE TOP SLAB

CARVER, MINNESOTA

LAST REVISION: SEPT 2017

PLATE NO. STO–3



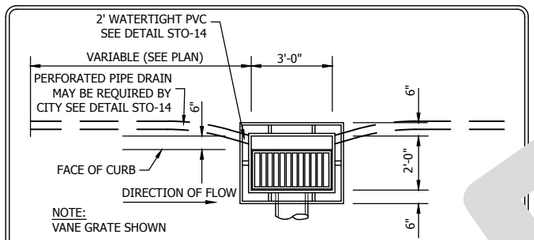
NOTE:
TOP OF CASTING SHALL HAVE "DRAINS TO RIVER" LOGO OR APPROVED EQUAL. LOGO TO BE CAST INTO CASTING WITH RAISED LETTERS.

TYPE II CATCHBASIN MANHOLE

CARVER, MINNESOTA

LAST REVISION: SEPT 2017

PLATE NO. STO–5

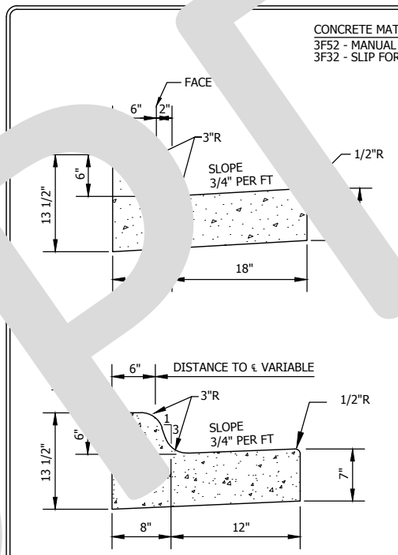


TYPE
CATCHBASIN

CARVER, MINNESOTA

LAST REVISION: SEPT 2017

PLATE NO. STO–6

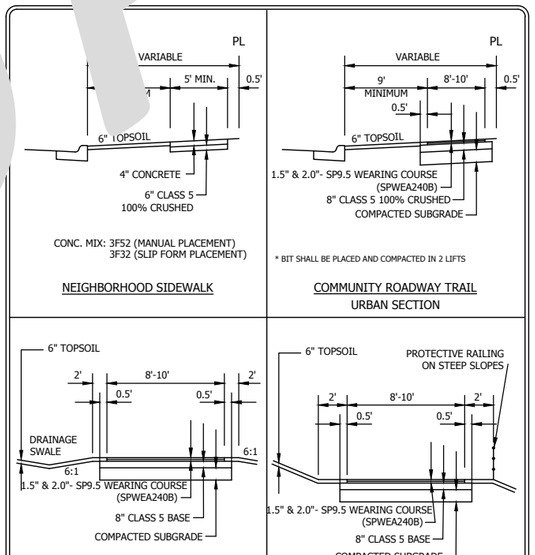


CURB AND GUTTER

CARVER, MINNESOTA

LAST REVISION: APRIL 2017

PLATE NO. STR–5

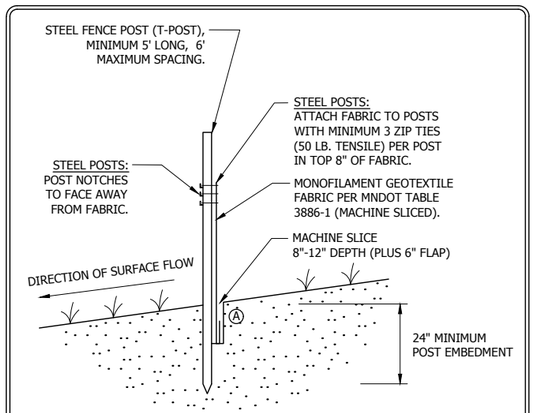


TYPICAL PLACEMENT AND SECTION FOR TRAILS

CARVER, MINNESOTA

LAST REVISION: APRIL 2017

PLATE NO. TRL–4



NOTE:
1. THE MACHINE SLICED METHOD (THIS DETAIL) IS THE STANDARD SILT FENCE INSTALLATION METHOD. HEAVY DUTY (ERO-1B) SILT FENCE INSTALLATION METHODS SHOULD ONLY BE USED WHEN APPROVED OR DIRECTED BY THE CITY.
2. REMOVE SILT FENCE AFTER ESTABLISHMENT PERIOD IS MET.
3. CITY WILL NOT BE RESPONSIBLE FOR DAMAGE TO SILT FENCE LOCATED NEXT TO CURB AND GUTTER DUE TO SNOW PLOWING.

Ⓐ COMPACTION:
AFTER "SLICING" IN THE FABRIC AND *BEFORE* INSTALLATION OF STEEL POSTS, DRIVE INSTALLATION EQUIPMENT OVER THE "SLICE" WHILE FABRIC IS LAYING ON THE GROUND. *THEN* INSTALL THE POSTS AND PULL UP FABRIC TO ATTACH AT A UNIFORM HEIGHT.

SILT FENCE MACHINE SLICED

CARVER, MN

LAST REVISION: APRIL 2017

PLATE NO. ERO–1

NOTE: DETAILS ARE NOT TO SCALE

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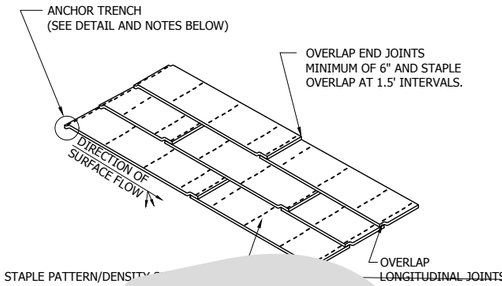
CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
CONSTRUCTION DETAILS

SHEET 5 OF 23



STAPLE PATTERN/DENSITY
FOLLOW MANU
SPEC

R TRENCH
" X 6" TRENCH
LANKET IN TRE
E AT 1.5' INTER
ILL WITH NATU AND COMPACT
ET LENGTH SHA XCEED 100'
OUT AN ANCHOR

E:
OPE SURFACE SHALL BE FR OCKS, SOIL CLUMPS,
STICKS, VEHICLE IMPRINTS, GS. BLANKETS SHALL
HAVE GOOD SOIL CONTACT.

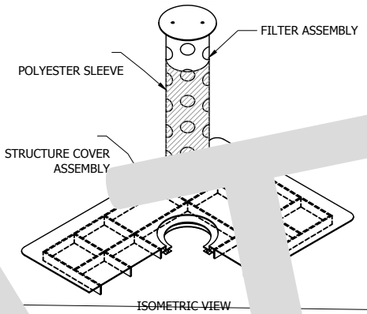
CITY OF CARVER

E BLANKET
ALLATION

CARVER, MINNESOTA

LAST REVISION: APRIL 2017

PLATE NO. ERO–5



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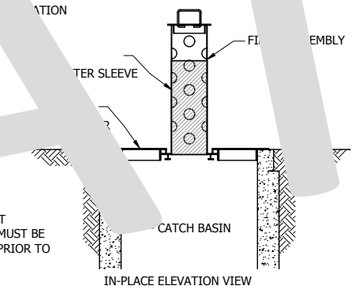


: ALL OTHER INLET
TECTION DEVICES MUST BE
ROVED BY OWER PRIOR TO
TALLATION.

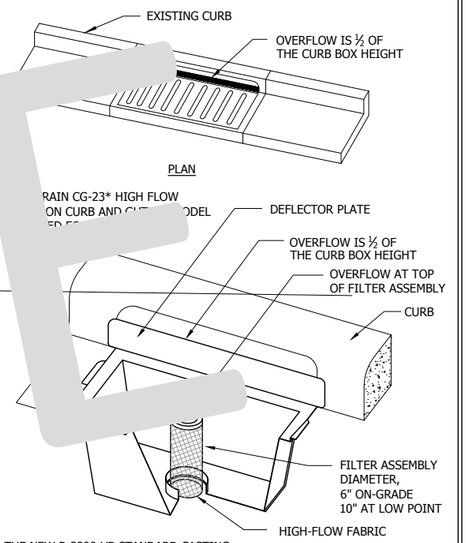
CITY OF CARVER

INLET PROTECTION FOR CATCH BASIN
BEFORE CURB CONSTRUCTION

CARVER, MINNESOTA

LAST REVISION: APRIL 2017

PLATE NO. ERO–8



WIMCO RAIN CG-23* HIGH FLOW
INLET ON CURB AND ODEL
OR CITY

* FOR THE NEW R-3290-VB STANDARD CASTING,
INSTALL WIMCO ROAD DRAIN
CG-3290 OR CITY APPROVED EQUAL.

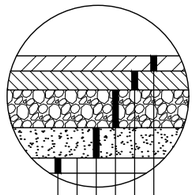
CITY OF CARVER

INLET PROTECTION – CATCH BASIN INSERT
AFTER CURB CONSTRUCTION

CARVER, MINNESOTA

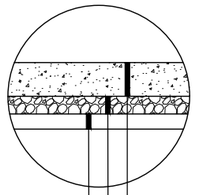
LAST REVISION: APRIL 2017

PLATE NO. ERO–9



1.5" TYPE SP 9.5 BITUMINOUS WEARING COURSE MIXTURE (2,C) (SPWEA240C) (2360)
2" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (2,C) (SPNWB230C) (2360)
8" AGGREGATE BASE, CLASS 5 (100% CRUSHED) (2211)
12" SELECT GRANULAR BORROW (3149)
GEOTEXTILE FABRIC, TYPE 5 (3733)
SUBGRADE PREPARATION (2112) (INCIDENTAL)

BITUMINOUS STREET PATCH - LOCAL SECTION
NOT TO SCALE



6" CONCRETE DRIVEWAY PAVEMENT (2531)
4" AGGREGATE BASE, CL 5 (100% CRUSHED) (2211) (INCIDENTAL)
SUBGRADE PREPARATION (2112) (INCIDENTAL)

6" CONCRETE DRIVEWAY PAVEMENT
NOT TO SCALE

NOTE: DETAILS ARE NOT TO SCALE

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ANDREW L. BUDDE
LIC. NO. 46585 DATE 4/6/2018

DESIGNED AJS
DRAWN DDS
CHECKED ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
CONSTRUCTION DETAILS

SHEET 6 OF 23

GENERAL NOTES

1. ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE MnMUTCD, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

2. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN THE DEVICES IN THE TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.

3. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.

4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MnMUTCD.

5. ALL LOCATIONS IN THE TRAFFIC CONTROL PLAN ARE APPROXIMATE. EXACT LOCATIONS MAY BE MARKED BY THE ENGINEER PRIOR TO PLACEMENT BY THE CONTRACTOR.

6. INSTALLATION DETAILS OF SIGNS ON BARRICADES SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT.

7. SIGNS SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT PROPER HEIGHT AND LATERAL OFFSET AS DETAILED IN THE MnMUTCD. SIGNS MAY ALSO BE MOUNTED ON PORTABLE SUPPORTS 5-7 FT. HIGH, AS APPROVED BY THE ENGINEER. WHEN SIGNS ARE REMOVED, THE SIGN POSTS SHALL BE REMOVED AS SOON AS POSSIBLE. ALL SIGNS MOUNTED MORE THAN 14 DAYS SHALL BE POST MOUNTED.

8. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATIONS SHALL BE COVERED, REMOVED, OR REVISED AS DIRECTED BY THE ENGINEER.

9. ALL WARNING SIGNS SHALL BE MADE OF DIAMOND GRADE ORANGE REFLECTIVE SHEETING (3984 SERIES) OR AN APPROVED SUBSTITUTE. ALL M4-10 (DETOUR ARROW) AND ALL M4-8 (DETOUR) SIGNS SHALL BE FLOURECENT DIAMOND GRADE (3924 SERIES) SHEETING. ALL REGULATORY SIGNS SHALL BE V.I.P. DIAMOND GRADE (3990 SERIES) SHEETING. ALL ROUTE MARKER GUIDE SIGNS AND DIRECTIONAL ARROW SIGNS SHALL HAVE RETROREFLECTIVE SHEETING.

10. BARRICADES SHALL BE TYPE III AND SHALL BE CONSTRUCTED OF LIGHT MATERIAL. THE ACTUAL NUMBER OF BARRICADES AT EACH LOCATION REQUIRED MAY VARY DEPENDING ON THE SIZE OF THE BARRICADE USED.

11. THE CONTRACTOR SHALL COORDINATE THE REMOVAL OF THE TEMPORARY SIGNS.

12. ALL SIGNS PROVIDED BY THE CONTRACTOR FOR TRAFFIC CONTROL DURING CONSTRUCTION SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE JOB SITE WHEN THEY ARE NO LONGER NEEDED.

13. ALL SIGN POSTS SHALL BE REMOVED AND THE SURROUNDING GROUND RETURNED TO ITS ORIGINAL CONDITION WHEN THEY ARE NO LONGER NEEDED.

14. THE CONTRACTOR MUST GIVE 48 HOURS NOTICE PRIOR TO ANY TRAFFIC CONTROL SIGNS BEING PLACED.

NOTES:
1. PAYMENT FOR DETOUR SIGNING IS INTENDED TO COVER SUCH DEVICES AS SHOWN IN THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

2. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL OPEN EXCAVATIONS AS DETAILED IN THE FIELD MANUAL OR AS DIRECTED BY THE ENGINEER IF ANY PUBLIC TRAFFIC IS PERMITTED ON THE WORK SITE.

3. LAYOUT SHOWN IS AN EXAMPLE. CONTRACTOR SHALL ADJUST SIGN PLACEMENT ACCORDING TO CONSTRUCTION STAGING.

4. CONTRACTOR SHALL RESTORE ACCESS TO ALL STREETS AT THE END OF EACH WORK DAY.

5. CONTRACTOR SHALL REOPEN MAIN STREET AT BROADWAY AND OAK STREET AT THE END OF EACH WORK DAY.

TRAFFIC CONTROL NOTES:

1. THE CONTRACTOR SHALL SUBMIT A TRAFFIC MANAGEMENT AND TRAFFIC CONTROL PLAN TO THE ENGINEER TO REVIEW PRIOR TO THE START OF CONSTRUCTION.

2. PAYMENT FOR TRAFFIC CONTROL IS INTENDED TO COVER COSTS FOR MULTIPLE SET-UPS OF TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS AND ANY OTHER TRAFFIC CONTROL ITEMS NEEDED.

3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS AT ALL TIMES TO THE SATISFACTION OF THE ENGINEER.

1. THE CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ALL DEVICES REQUIRED FOR CONSTRUCTION.

LEGEND

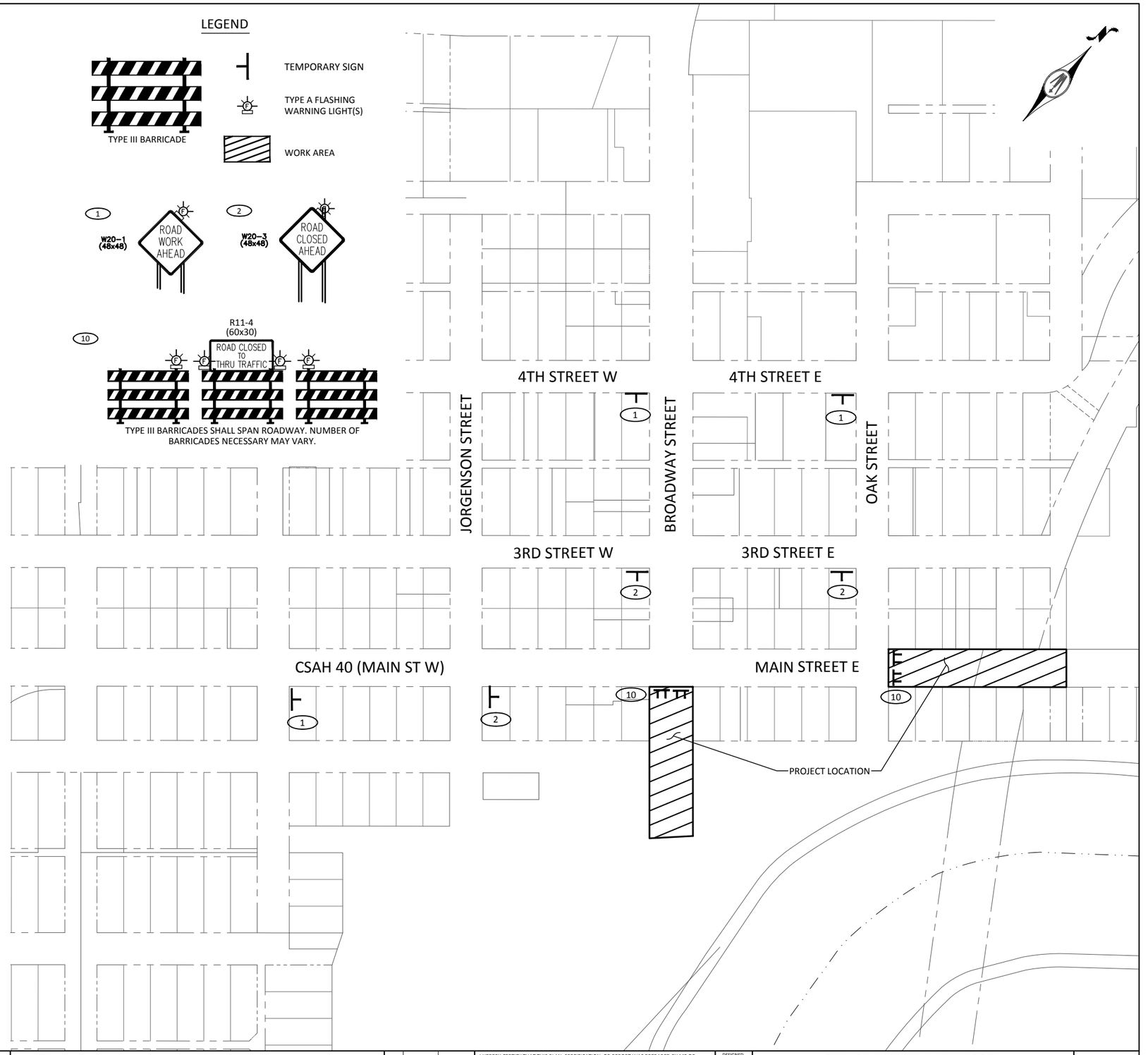
TYPE III BARRICADE

TEMPORARY SIGN

TYPE A FLASHING WARNING LIGHT(S)

WORK AREA

TYPE III BARRICADES SHALL SPAN ROADWAY. NUMBER OF BARRICADES NECESSARY MAY VARY.



HORZ. SCALE 0 100 200 FEET

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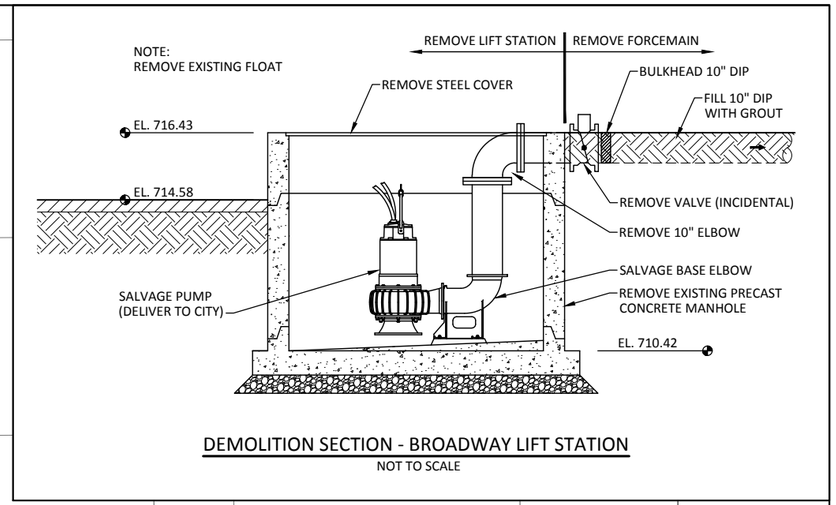
ANDREW L. BUDDE
LIC. NO. 46585 DATE 4/6/2018

DESIGNED	AJS
DRAWN	DDS
CHECKED	ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
STAGING & TRAFFIC CONTROL PLAN

SHEET 7 OF 23

NOTES:
1. CONTRACTOR TO REMOVE ALL MAILBOXES AND NEWSPAPER BOXES IMPACTED BY CONSTRUCTION AND GIVE TO PROPERTY OWNER PRIOR TO CONSTRUCTION AND INSTALL TEMPORARY MAILBOX IN LOCATION AS DIRECTED BY ENGINEER. (INCIDENTAL)
2. UPON COMPLETION OF THE PROJECT, CONTRACTOR SHALL REINSTALL ALL SALVAGED MAILBOXES AND NEWSPAPER BOXES. (INCIDENTAL)
3. ANY TREE TRIMMING MUST BE APPROVED BY ENGINEER PRIOR TO TRIMMING. (INCIDENTAL)



DEMOLITION SECTION - BROADWAY LIFT STATION
NOT TO SCALE

BM=726.95
MN DOT "LEVEE MN019"
STATION 6+23
125' SE (TOP OF LEVEE)

CONSTRUCTION LIMITS (TYP)
REMOVE 15" RCP AND FLARED END SECTION
PROTECT EXISTING TREE
CLEARING & GRUBBING AS DIRECTED BY THE ENGINEER
REMOVE 18" RCP AND CONCRETE HEAD WALL
EXISTING GATE WELL
REMOVE FORCEMAIN
REMOVE GATE VALVE (INCIDENTAL)
REMOVE EXISTING CONTROL PANEL, CONDUIT AND WIRE TO EXISTING LIFT STATION
REMOVE EXISTING BROADWAY LIFT STATION SEE INSET ABOVE RIGHT FOR MORE DETAILS
REMOVE 15" FLARED END SECTION

JUSTIN WILLIAM HARTLEY
100 BROADWAY N

DONNA L ANDERSON
120 BROADWAY N

GREGG C & MEG A WITT
200 BROADWAY N

BROADWAY STREET

BROADWAY STREET

MAIN STREET E

CITY OF CARVER
117 BROADWAY N

CITY OF CARVER
109 MAIN ST E

LISA SCHOKNECHT
205 BROADWAY N

GEORGE FRANK PIPER III
108 MAIN ST E

SEE SHEET 9

REMOVALS LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CONSTRUCTION LIMITS
- REMOVE CONCRETE CURB & GUTTER
- REMOVE PIPE (SEE PLAN FOR TYPE)
- REMOVE/SALVAGE ITEM (SEE PLAN FOR TYPE)
- REMOVE CATCHBASIN OR MANHOLE
- REMOVE PIPE APRON
- SAWCUT BITUMINOUS PAVEMENT
- X CLEAR & GRUB TREE

HORZ. SCALE 0 20 40 FEET

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CHECKED ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
EXISTING CONDITIONS & REMOVAL PLANS

SHEET 8 OF 23

BM=726.95
MN DOT "LEVEE MN019"
STATION 6+23
125' SE (TOP OF LEVEE)

SEE SHEET 12

REMOVE FORCEMAIN

REMOVE EXISTING 6'Ø STORM MANHOLE W/ STEEL COVER AND SLUICE GATE
TOP: 714.50
SIDE OUTLET: 709.58
BOTTOM: 705.50

REMOVE EXISTING 6'Ø MAIN ST. LIFT STATION
TOP: 713.01
SIDE OUTLET: 710.05
BOTTOM: 707.01

PROTECT EX WM

REMOVE CONCRETE PAVEMENT SLAB

REMOVE CURB & GUTTER

PROTECT HYDRANT

CONSTRUCTION LIMITS (TYP)

REMOVE CONTROL PANELS AND METER AND SUPPORT FRAMING

REMOVE CONCRETE RETAINING WALL. VERIFY LIMITS WITH ENGINEER

EXPOSED STEEL

OAK STREET

MAIN STREET E

SEE SHEET 8

KURT A & KIMBERLY K STANKEY
116 MAIN ST E

GEORGE FRANK PIPER III
120 MAIN ST E

CHAD W DRESSEN
204 MAIN ST E

MARY ELIZABETH SO HAPPY
205 3RD ST E

JAMES LEE WOLFF
213 3RD ST E

CARVER COUNTY REG RAIL AUTH

U S FISH & WILDLIFE SERVICE

SHANNON M O'BRYAN
205 MAIN ST E

CARVER COUNTY REG RAIL AUTH

BENCHMARK MN DOT "LEVEE MN019" ELEV = 726.95

12' CLEARANCE BOTTOM BRIDGE

27" RCP STM

24" RCP

12" RCP

CONTROL BOX

GENERATOR

WOOD FENCE

CHAINLINK FENCE

RET. WALL

GARAGE

LOW WINDOW ELEVATION

TRAIL SIGN

REMOVALS LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS WALK
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE CONCRETE WALK
- CONSTRUCTION LIMITS
- REMOVE CONCRETE CURB & GUTTER
- REMOVE PIPE (SEE PLAN FOR TYPE)
- REMOVE/SALVAGE ITEM (SEE PLAN FOR TYPE)
- REMOVE CATCHBASIN OR MANHOLE
- REMOVE PIPE APRON
- SAWCUT BITUMINOUS PAVEMENT
- CLEAR & GRUB TREE

NOTES:
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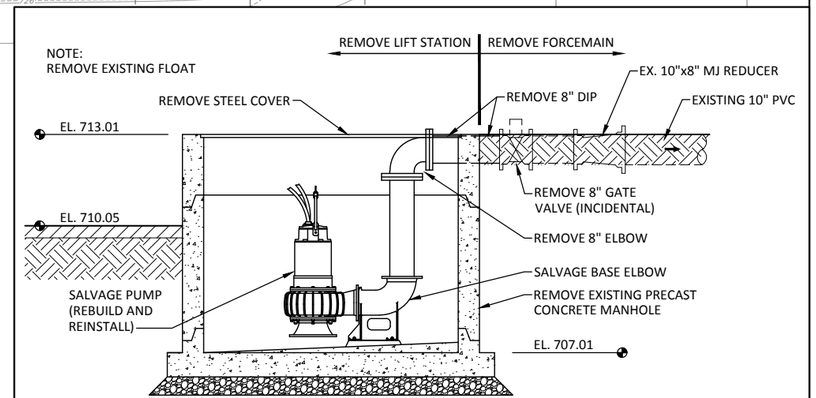

DEMOLITION SECTION - MAIN ST. LIFT STATION
NOT TO SCALE

HORZ. SCALE 0 20 40 FEET

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LIC. NO. 46585 DATE 4/6/2018

DESIGNED AJS
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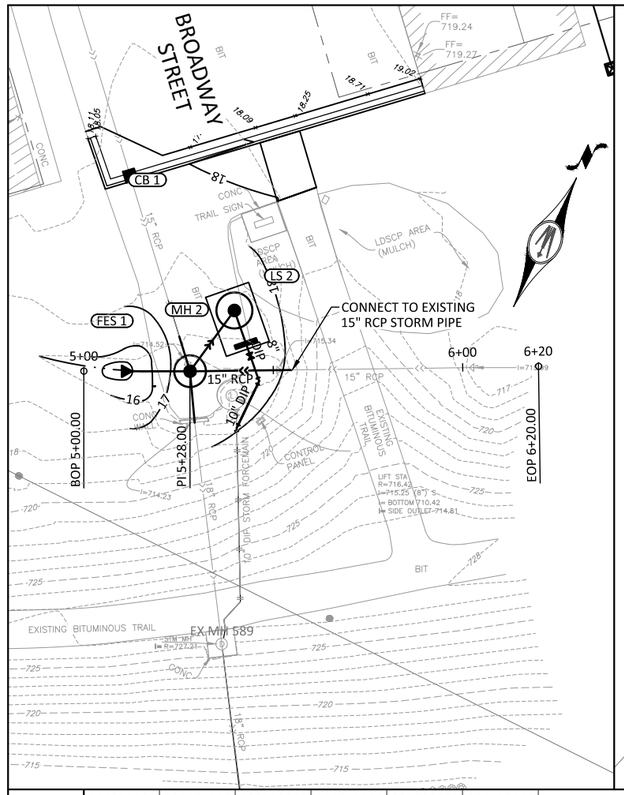
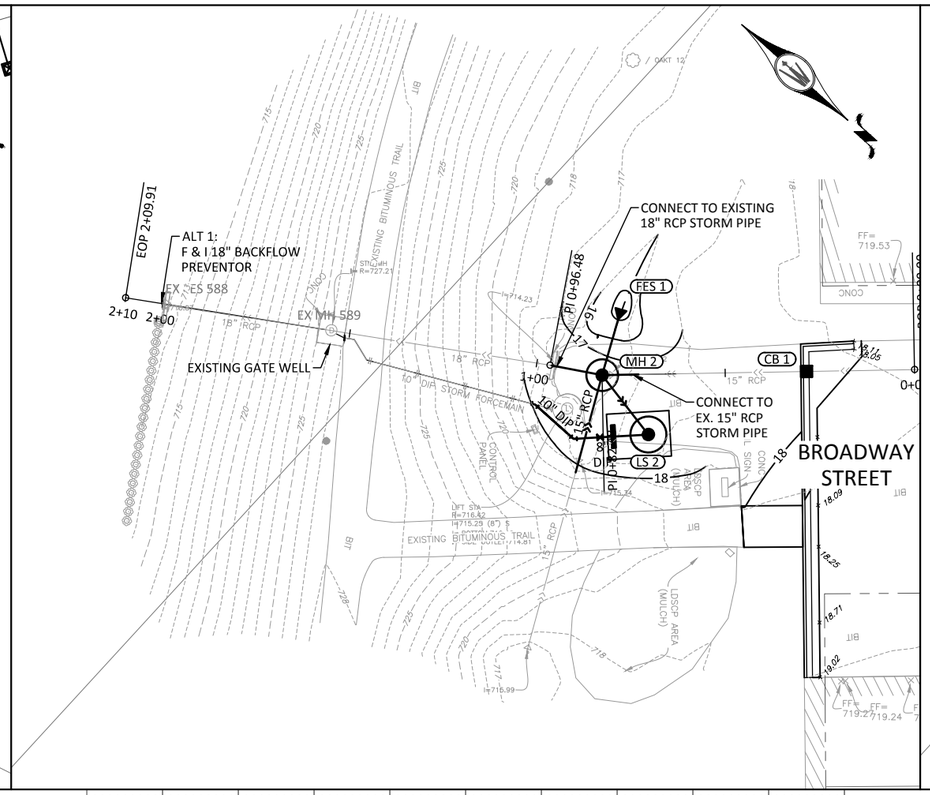
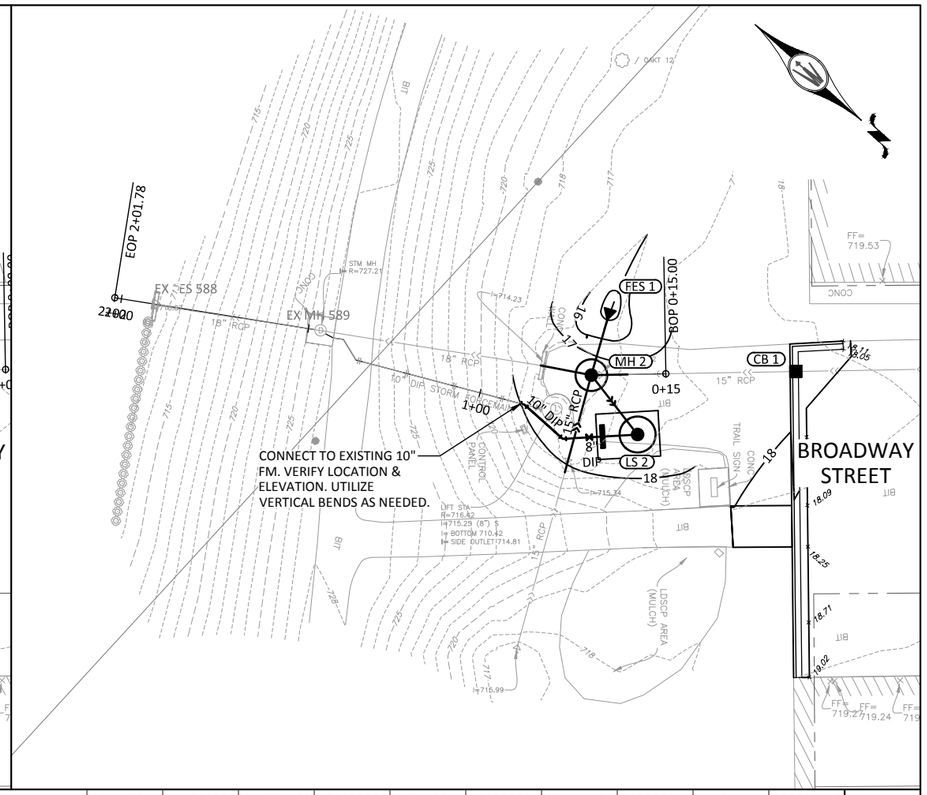
CHECKED ALB

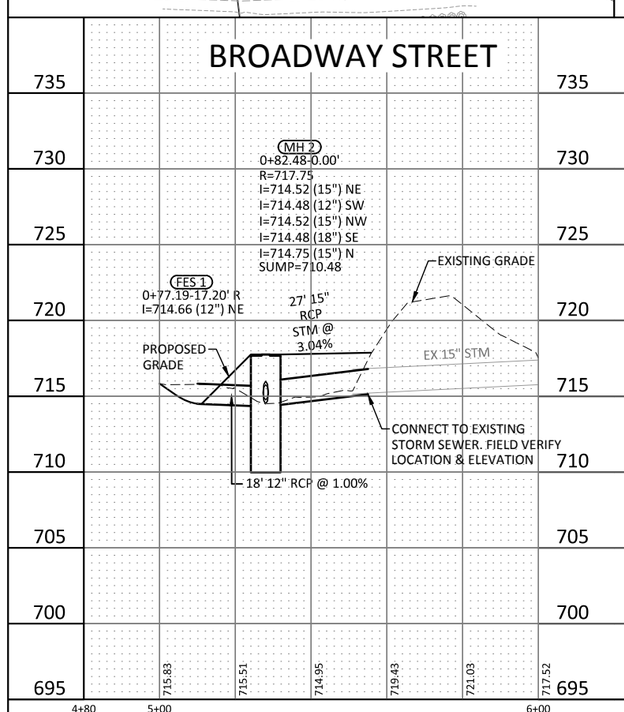
CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
EXISTING CONDITIONS & REMOVAL PLANS

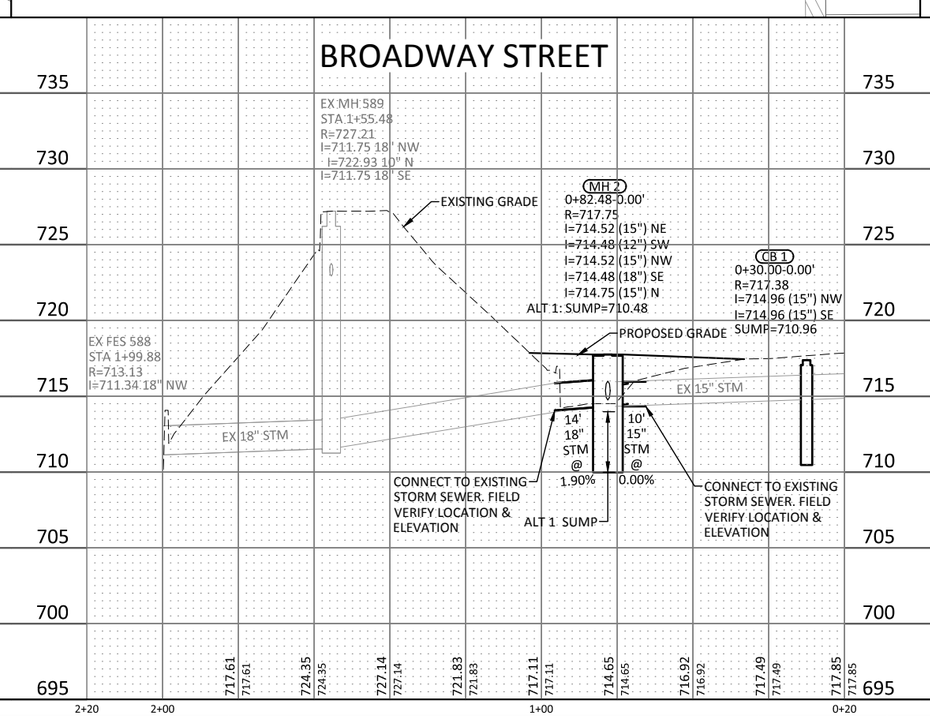
SHEET 9 OF 23

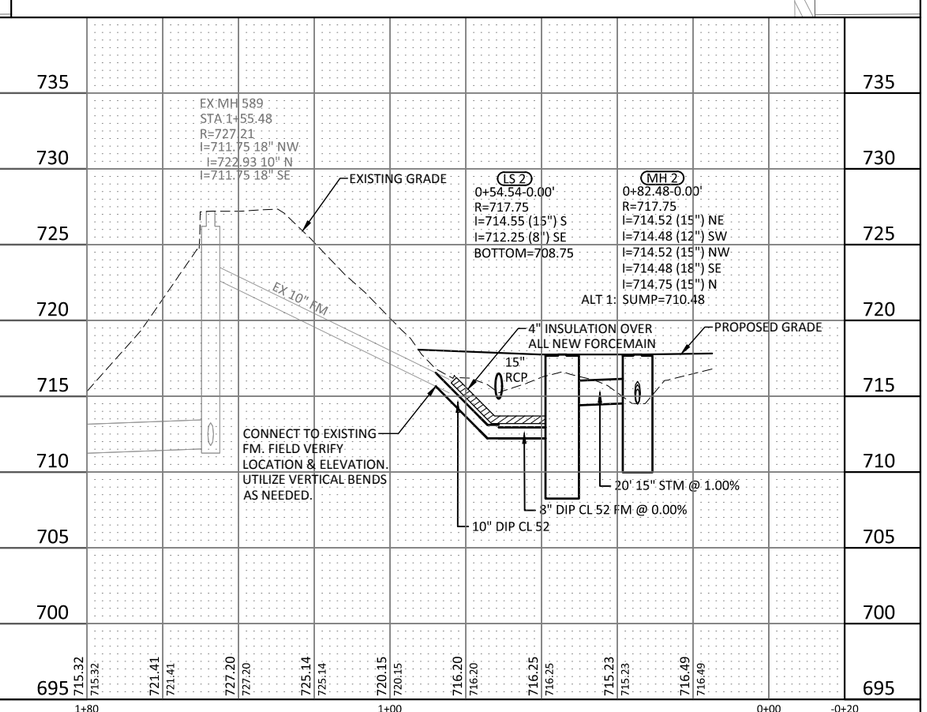












HORZ. SCALE 0 20 40 FEET
VERT. SCALE 0 5 10 FEET

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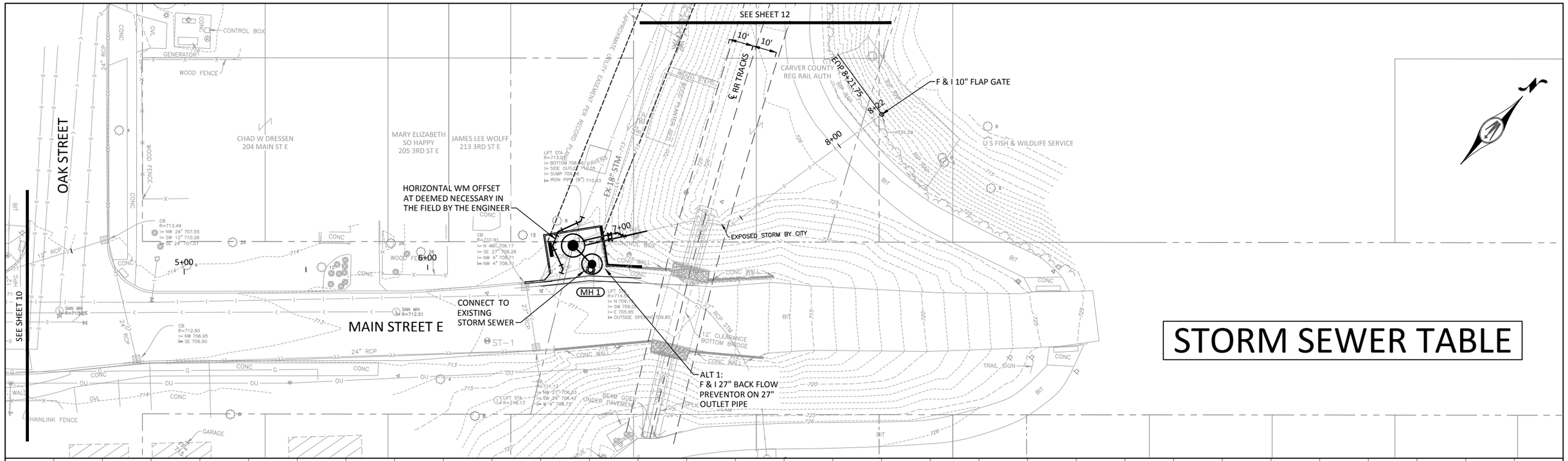
LIC. NO. 46585 DATE 4/6/2018

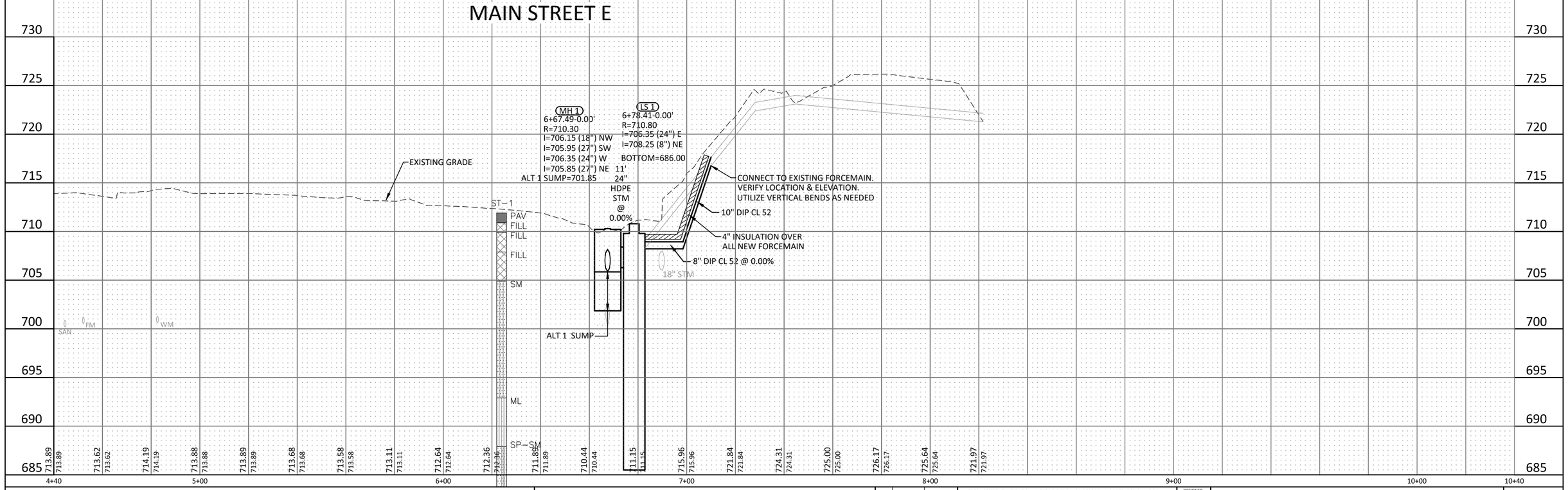
DESIGNED	AJS
DRAWN	DDS
CHECKED	ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
STORM SEWER PLAN & PROFILE

SHEET 10 OF 23



STORM SEWER TABLE



HORZ. SCALE 0 20 40 FEET

VERT. SCALE 0 5 10 FEET

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MAIN STREET STORM SEWER FLOOD STATION
STORM SEWER PLAN & PROFILE

SHEET 11 OF 23

REMOVAL & RESTORATION NOTES:
1. CONTRACTOR SHALL SAWCUT ALL PAVED SURFACES TO FORM A CLEAN VERTICAL EDGE FOR RESTORATION.
2. RESTORE SURFACES IN KIND TO EXISTING CONDITIONS.

LEGEND
- REMOVE/REPLACE 3" BITUMINOUS WALK
- REMOVE/REPLACE 6" CONCRETE DRIVEWAY PAVEMENT OR 4" CONCRETE WALK

3RD STREET E

4TH STREET E

CONNECT TO EXISTING STORM SEWER

CONNECT TO EXISTING STORM SEWER

RELOCATE EXISTING J-BARRIERS AS NEEDED FOR CONSTRUCTION AND MOVE BACK TO SAME LOCATION AFTER CONSTRUCTION IS COMPLETE (INCIDENTAL)

PROTECT POWER POLE

PROTECT POWER POLE

PROTECT RETAINING WALL

REMOVE MANHOLE

CONNECT TO EXISTING STRUCTURE

SEE SHEET 11

BOP 10+00.00
10+00

PI 10+26.01

11+00

12" HDPE

12+00

PI 12+81.01

MH-4

13+00

12" HDPE

EOP 14+00.00
14+00

8+00

EOP 8+21.75
8+22

ALTERNATE 1 STORM SEWER

VERIFY ANGLE-STRUCT SIZE

MH 3
10+26.01-0.00'
R=711.55
I=708.00 (15") W
I=708.50 (12") NW
I=707.95 (18") SE

EX 18" STM

CONNECT TO EXISTING STORM SEWER

255' 12" HDPE STM @ 1.62%

MH-4
12+81.01-0.00'
R=715.64
I=712.64 (12") N
I=712.64 (12") SE

89' 12" HDPE STM @ 2.17%

EX CBMH-2
STA 13+70.43
R=717.48
I=714.08 12" NE
I=714.08 12" W
I=714.58 12" S

CONNECT TO EXISTING STRUCTURE.
REPAIR INVERT AS NEEDED (INCIDENTAL)

730 725 720 715 710 705 700 695 690

713.24 713.24 | 712.91 712.91 | 712.54 712.54 | 712.51 712.51 | 713.49 713.49 | 713.85 713.85 | 714.03 714.03 | 714.14 714.14 | 714.42 714.42 | 714.58 714.58 | 714.73 714.73 | 714.95 714.95 | 715.05 715.05 | 715.21 715.21 | 715.62 715.62 | 716.22 716.22 | 716.88 716.88 | 717.56 717.56 | 717.99 717.99 | 717.79 717.79 | 718.19 718.19

9+00 10+00 11+00 12+00 13+00 14+00 15+00

HORZ. SCALE 0 20 40 FEET
VERT. SCALE 0 5 10 FEET

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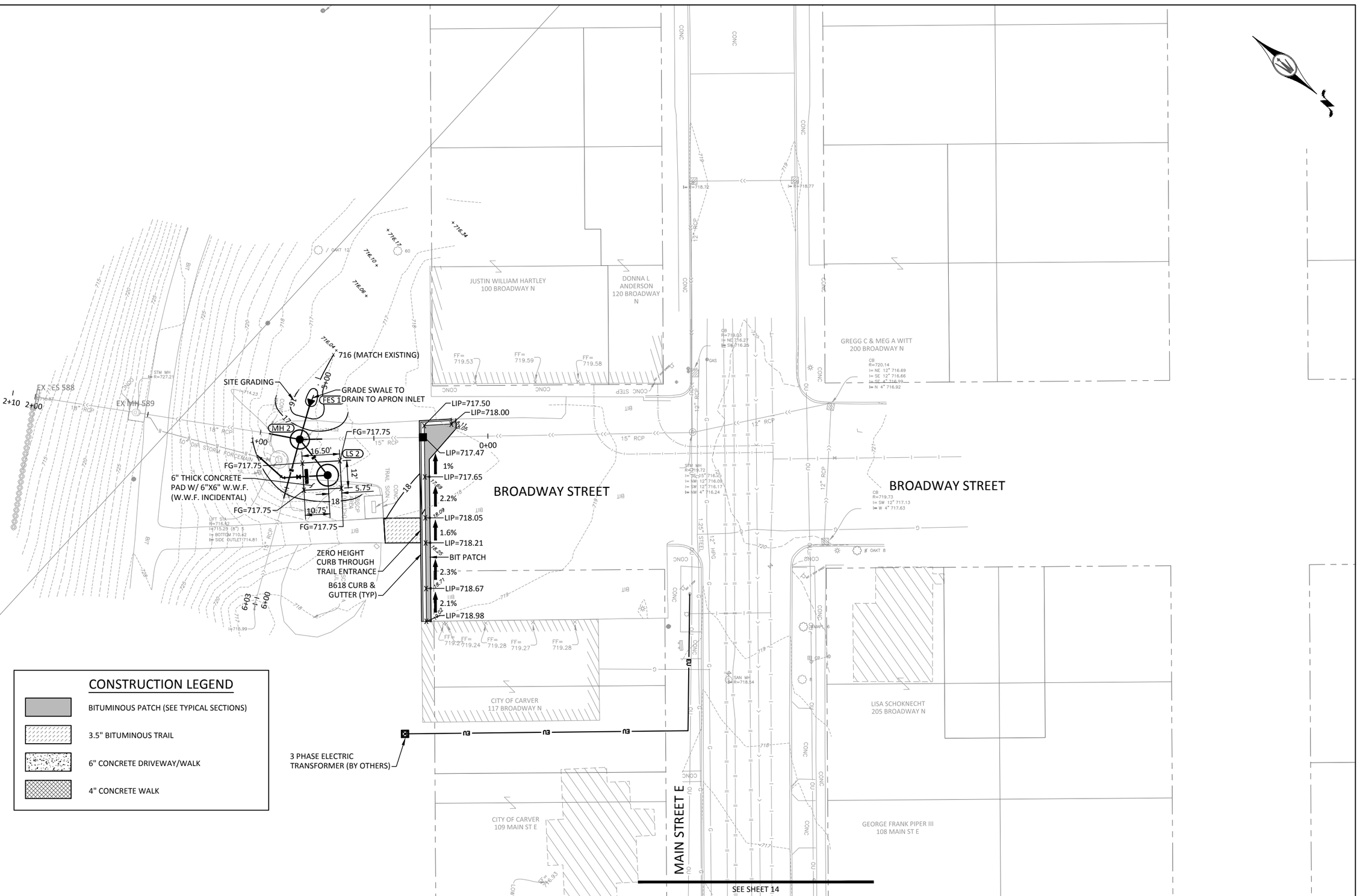
STORM SEWER PLAN & PROFILE

SHEET 12 OF 23



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CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
CONSTRUCTION PLAN

SHEET 13 OF 23

CONSTRUCTION LEGEND

- BITUMINOUS PATCH (SEE TYPICAL SECTIONS)
- 3.5" BITUMINOUS TRAIL
- 6" CONCRETE DRIVEWAY/WALK
- 4" CONCRETE WALK

SEE SHEET 12

SEE SHEET 13

KURT A & KIMBERLY K STANKEY
116 MAIN ST E

GEORGE FRANK PIPER III
120 MAIN ST E

CHAD W DRESSEN
204 MAIN ST E

MARY ELIZABETH SO HAPPY
205 3RD ST E

JAMES LEE WOLFF
213 3RD ST E

CARVER COUNTY REG RAIL AUTH

U S FISH & WILDLIFE SERVICE

CARVER COUNTY REG RAIL AUTH

CITY OF CARVER
300 MAIN ST E

CITY OF CARVER
300 MAIN ST E

OAK STREET

MAIN STREET E

C RR TRACKS

SEE INSET BELOW LEFT

LOCAL SECTION
ST-1

EXPOSED STORM BY CITY

12' CLEARANCE BOTTOM BRIDGE

TRAIL SIGN

CONTROL BOX

GENERATOR

WOOD FENCE

CONC WALL

LIFT STA

4+00 5+00 6+00 7+00 8+00 8+22

INSET

HORZ. SCALE 0 5 10 FEET

NOTES:
1. FG ELEVATIONS FOR RETAINING WALLS ARE AT FRONT FACE OF WALL.

CONNECT V-CURB TO FACE OF RETAINING WALL

12" V-CURB (TYP)

10.75'

TC=712.00

FG=711.0

710.80

6" TO 12" V-CURB

TW=712.00
FG=711.00

84" DIAMETER MH LID. INSTALL TOP SLAB SO OPENING IS AT LOW POINT

TW=714.60
FG=711.00

CONSTRUCT CONCRETE RETAINING WALL. SEE DETAILS

TW=714.60
FG=711.10

TW=714.60 (MATCH EX)
FG=711.24 (MATCH EX)

CONNECT TO EXISTING CONCRETE RETAINING WALL. SEE DETAILS

711.24
(MATCH EX)

TC=711.30

3' APPROACH NOSE TAPER

TC=711.40
(MATCH EX)

TC=711.25

2.6%

1.3%

GU=710.91
(MATCH EX)

GU=710.75

GU=710.67

GU=710.49

CONCRETE JOINT (TYP)

710.40 (LP)

710.50 (LP)

GU=710.39

2' WIDE BITUMINOUS PATCH (TYP)

GU=710.57 (MATCH EX)

CONCRETE FRAME FOR NEENAH R4342 CASTING)

R=710.30 (TOP OF CONCRETE FRAME FOR NEENAH R4342 CASTING)

HORZ. SCALE 0 20 40 FEET

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CHECKED	ALB

CITY OF CARVER, MINNESOTA

MAIN STREET STORM SEWER FLOOD STATION

CONSTRUCTION PLAN

SHEET 14 OF 23

EROSION CONTROL LEGEND

- CAT 3N EROSION CONTROL BLANKET (INCLUDES SEED MIX 25-131 & TYPE 3 FERTILIZER)
- SODDING LAWN TYPE
- SEDIMENT CONTROL LOG
- SILT FENCE TYPE MS
- INLET PROTECTION

INSTALL INLET PROTECTION (TYP)

JUSTIN WILLIAM HARTLEY
100 BROADWAY N

DONNA L ANDERSON
120 BROADWAY N

GREGG C & MEG A WITT
200 BROADWAY N

BROADWAY STREET

MAIN STREET E

CITY OF CARVER
117 BROADWAY N

CITY OF CARVER
109 MAIN ST E

LISA SCHOKNECHT
205 BROADWAY N

GEORGE FRANK PIPER III
108 MAIN ST E

SEE SHEET 16

GENERAL NOTES:
1. SEED MIX 25-131 SHALL BE APPLIED AT 220 LB/AC.
2. TYPE 3 FERTILIZER (22-5-10) SHALL BE APPLIED AT 350 LB/AC.

HORZ. SCALE 0 20 40 FEET

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CHASKA, MINNESOTA 55318
Phone: (952) 448-8838
Email: Chaska@bolton-menk.com
www.bolton-menk.com

REV	ISSUED FOR	DATE

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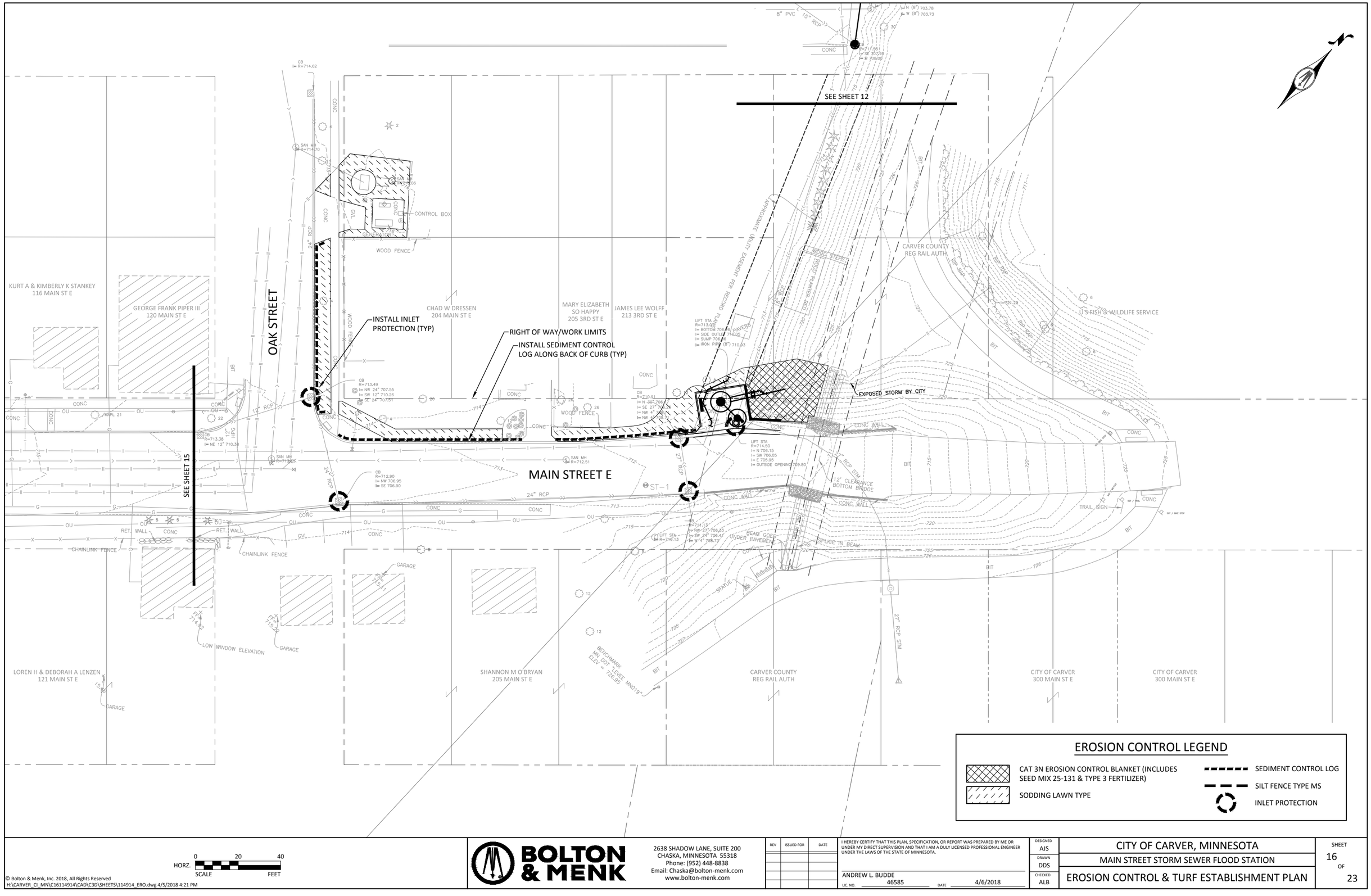
ANDREW L. BUDDE
LIC. NO. 46585 DATE 4/6/2018

DESIGNED	AJS
DRAWN	DDS
CHECKED	ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
EROSION CONTROL & TURF ESTABLISHMENT PLAN

SHEET 15 OF 23



EROSION CONTROL LEGEND

- CAT 3N EROSION CONTROL BLANKET (INCLUDES SEED MIX 25-131 & TYPE 3 FERTILIZER)
- SODDING LAWN TYPE
- SEDIMENT CONTROL LOG
- SILT FENCE TYPE MS
- INLET PROTECTION

HORZ. SCALE 0 20 40 FEET

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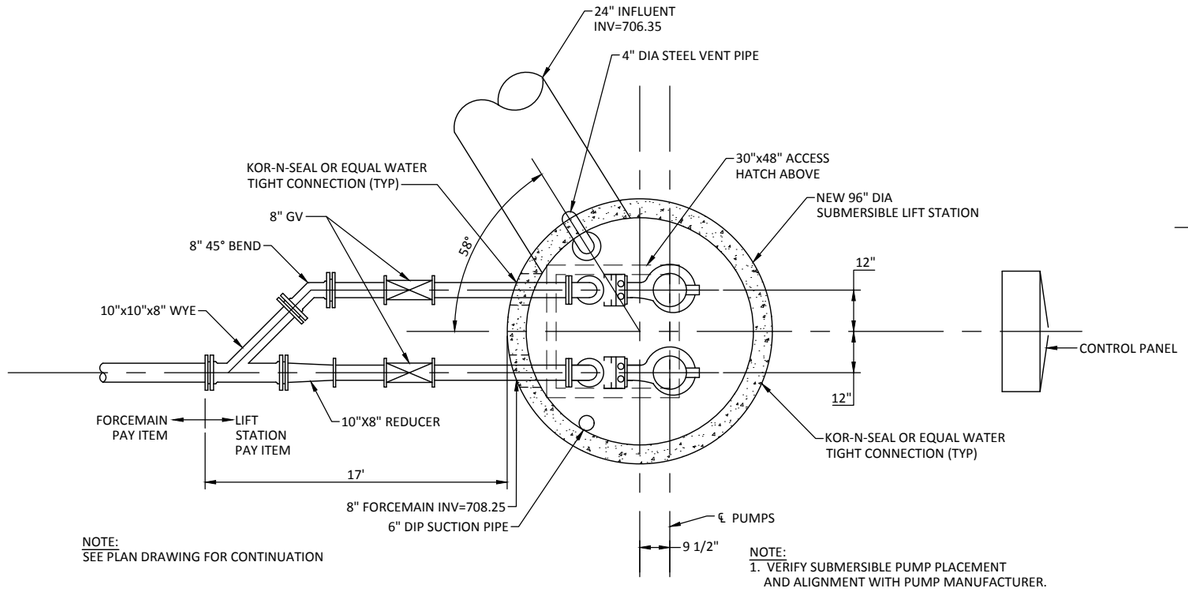
CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
EROSION CONTROL & TURF ESTABLISHMENT PLAN

SHEET 16 OF 23

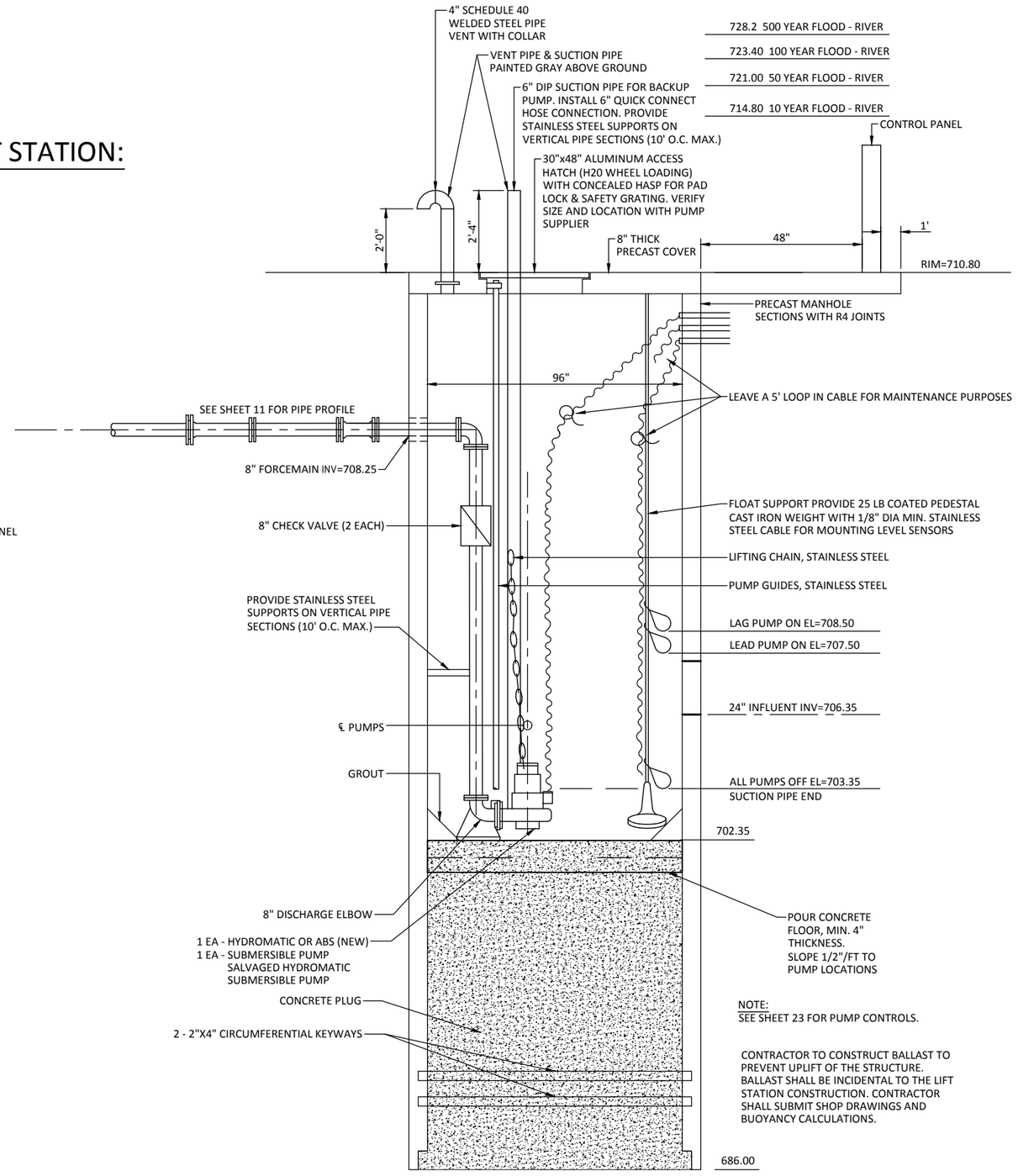
MAIN STREET LIFT STATION:



NOTE:
SEE PLAN DRAWING FOR CONTINUATION

PLAN

NOTE:
1. VERIFY SUBMERSIBLE PUMP PLACEMENT AND ALIGNMENT WITH PUMP MANUFACTURER.
2. CONTRACTOR TO VERIFY ORIENTATION OF LIFT STATION AND PIPING PRIOR TO INSTALLATION OF LIFT STATION.
3. ACCESS HATCH SIZE AND LOCATION SHALL BE VERIFIED WITH PUMP SUPPLIER.



NOTE:
SEE SHEET 23 FOR PUMP CONTROLS.

CONTRACTOR TO CONSTRUCT BALLAST TO PREVENT UPLIFT OF THE STRUCTURE. BALLAST SHALL BE INCIDENTAL TO THE LIFT STATION CONSTRUCTION. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND BUOYANCY CALCULATIONS.

SECTION

DUPLEX PUMP LIFT STATION

NOT TO SCALE

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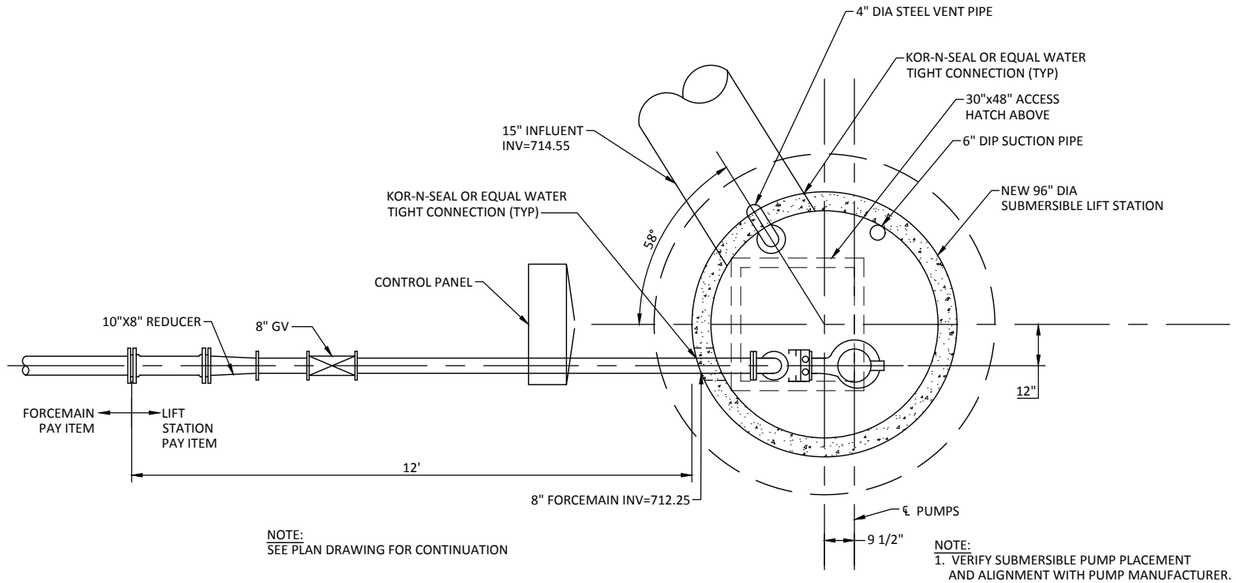
CHECKED	ALB

CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
MAIN STREET LIFT STATION DETAILS

SHEET 17 OF 23

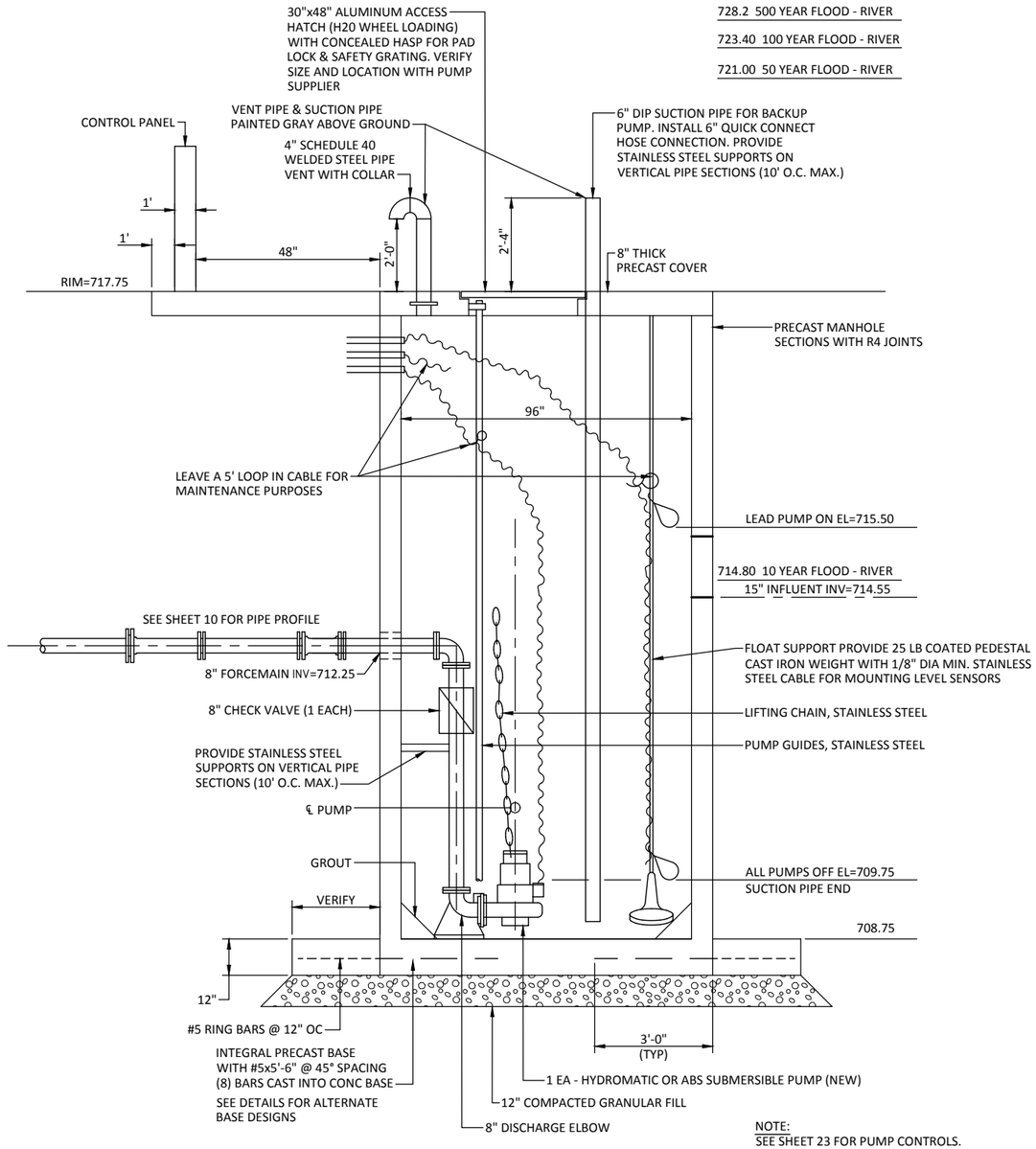
BROADWAY STREET LIFT STATION:



NOTE:
SEE PLAN DRAWING FOR CONTINUATION

PLAN

NOTE:
1. VERIFY SUBMERSIBLE PUMP PLACEMENT AND ALIGNMENT WITH PUMP MANUFACTURER.
2. CONTRACTOR TO VERIFY ORIENTATION OF LIFT STATION AND PIPING PRIOR TO INSTALLATION OF LIFT STATION.
3. ACCESS HATCH SIZE AND LOCATION SHALL BE VERIFIED WITH PUMP SUPPLIER.



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SECTION

DUPLEX PUMP LIFT STATION

NOT TO SCALE

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CITY OF CARVER, MINNESOTA
MAIN STREET STORM SEWER FLOOD STATION
BROADWAY STREET LIFT STATION DETAILS

SHEET 18 OF 23