

Information for File # 2015-00212-JCD

Applicant: City of Otsego

Corps Contact: Jessie C. Diaz

Address: 180 – 5th Street East, Suite 700; St. Paul, Minnesota 55101

E-Mail: Jessie.C.Diaz@usace.army.mil

Phone: 651-290-5975

Primary County: Wright

Section: 28-33

Township: 121

Range: 23

Information Complete On: January 21, 2015

Posting Expires On: February 20, 2015

Authorization Type: LOP-05-MN

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbor Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 07-01. We have made a preliminary determination that the aquatic resources that would be impacted by the proposed project are regulated by the Corps of Engineers under Section 404 of the Clean Water Act. Our jurisdictional review and final jurisdictional determination could result in modifications to the scope of the project's regulated waterbody/wetland impacts and compensatory mitigation requirements identified above.

Project Description:

The City of Otsego is proposing to construct a new segment of 70th Street from Martin Farms Avenue to Nadala Avenue. The project also includes improvements to 70th Street from Nadala Avenue to Oakwood Avenue, construction of a roundabout at the intersection of Oakwood Avenue and 70th Street, and improvements to County State Aid Highway (CSAH) 37 from ¼ mile south of the 70th Street intersection. The project in total is 2.33 miles long and will include a bituminous trail constructed from Martin Farms Avenue to Odean Avenue, construction of six stormwater ponds, and several culvert replacements of the same size and elevation, with the exception of one culvert being lengthened.

Project Purpose:

The primary purpose of the project is to facilitate safe traffic patterns in central Otsego and neighboring cities by providing an additional east-west route through Otsego. The project will provide improved access to local residents, area businesses, and regional transportation corridors, and will also reduce the amount of traffic using less direct, heavily traveled and in some cases, sub-standard roadways. The off-street trail will provide the City's first safe east-west connection allowing full access to the nearly 35 miles of existing trails and sidewalk to bikers and pedestrians. This trail connection would also allow access from trails in west Otsego to connect to the Mississippi River Trail (MRT).

Direct and/or indirect impacts as a result of the project to aquatic resources (wetland, lake, tributary, etc.) can be found in the attached two tables.

Alternatives Considered:

Currently, traffic is using more circuitous routes to travel east and west through the City of Otsego. Wright County CSAH 39 is a two lane highway but with ADTs exceeding 10,000 and being located along the northerly edge of the City it is less than an ideal alternate route. Existing Wright County CSAH 37 has a narrow paved surface (26' to 28') with steeper ditch slopes and two 40 MPH curves. Other alternative connection routes consist of local rural section streets that are narrow, paved and/or gravel, have steeper ditch slopes, and 20 MPH curves.

A feasible location alternative for the new portion of 70th St. would be to follow the section lines without the proposed horizontal curves to the west of McAllister Avenue. This would shorten the overall length of the road (and thus reduce the project cost) and eliminate a possible safety hazard of introducing curves to a straight stretch of road. This alternative was eliminated from consideration as the cost savings are minimal and there is enough room to provide safe 55 mph curves. These curves also eliminate the need to remove existing occupied structures in an active farmstead. Acquiring right-of-way with structures would be more expensive and controversial.

No other alternatives are considered feasible; 70th Street offers the most complete existing east-west connection available. Moving the proposed project to the north or south to connect different roads across the city would require a greater amount of new road construction, right-of-way taking, and more property impacts.

None of the above mentioned alternate routes provide a safe route for bike or pedestrian traffic. Traveling along the shoulders of CSAH 39 or CSAH 37 is the only way to access the existing trails and sidewalk system from the east or west side of the City. Providing residents a more effective and safe access to the existing parks/trails network, schools and commercial businesses are a high priority for the City of Otsego. Currently, children who attend Rogers Middle or High School from this area do not have direct access to their school except from the freeway system which forces additional congestion at the I-94 intersection in Rogers from the south. This alternative route could alleviate some of the morning/afternoon clogging of that heavily-used area by redirecting some traffic onto Hwy. 101 and the newly built County Road 42 intersection from the north.

Compensatory Mitigation:

The existing wetlands along the proposed corridor are generally low quality, farmed or tilled with no upland buffers in place. Most of the wetland functions along the corridor provide retention functions, protecting downstream water quality. The functions and values of the aquatic resources lost as a result of the project would be compensated for through the purchase of Corps approved wetland bank credits.

Drawings See attached.

SUMMARY OF WETLAND IMPACTS
70TH STREET/CSAH 37 IMPROVEMENT PROJECT
 S.P. 217-112-002 & S.P. 086-637-033

Wetland ID	Size of Impact						Total Wetland Size	
	Total		Trail		Road			
	SF	AC	SF	AC	SF	AC	SF	AC
A	0	0.0000	0	0.0000	0	0.0000	17597	0.4040
B	6744	0.1548	2520	0.0579	4224	0.0970	10236	0.2350
C	56	0.0013	0	0.0000	56	0.0013	9504	0.2182
D	5157	0.1184	0	0.0000	5157	0.1184	10490	0.2408
E	1405	0.0323	0	0.0000	1405	0.0323	13456	0.3089
F	486	0.0112	0	0.0000	486	0.0112	54475	1.2506
G	7203	0.1654	2696	0.0619	4507	0.1035	10191	0.2340
H	1076	0.0247	98	0.0022	978	0.0225	linear	linear
I	2178	0.0500	1369	0.0314	809	0.0186	2670	0.0613
CR1	6272	0.1440	0	0.0000	6272	0.1440	821600	18.8613
CR2	759	0.0174	0	0.0000	759	0.0174	2719	0.0624
AQUATIC 1	912	0.0209	0	0.0000	912	0.0209	912	0.0209
AQUATIC 2	2036	0.0467	0	0.0000	2036	0.0467	2036	0.0467
TOTALS	34,284	0.7871	6,683	0.1534	27,601	0.6336		

Project Name and/or Number: OT388

PART FOUR: Aquatic Resource Impact¹ Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	Type of Impact (fill, excavate, drain, or remove vegetation)	Duration of Impact Permanent (P) or Temporary (T) ¹	Size of Impact ²	Overall Size of Aquatic Resource ³	Existing Plant Community Type(s) in Impact Area ⁴	County, Major Watershed #, and Bank Service Area # of Impact Area ⁵
B	Wetland	Fill	P	.15	.23	Seasonally flooded basin	Wright/17/7
C	Wetland	Fill	P	.001	.22	Seasonally flooded basin	Wright/17/7
D	Wetland	Excavate/Fill	P	.12	.24	Seasonally flooded basin	Wright/17/7
E	Wetland	Fill	P	.03	.31	Shallow marsh	Wright/17/7
F	Wetland	Fill	P	.01	1.25	Shallow marsh	Wright/17/7
G	Wetland	Fill	P	.17	.23	Shallow marsh	Wright/17/7
H	Wetland	Fill	P	.02	Linear ditch	Seasonally flooded ditch	Wright/17/7
I	Wetland	Fill	P	.05	.06	Seasonally flooded basin	Wright/17/7
CR1	Wetland	Fill	P	.14	18.86	Fresh meadow	Wright/17/7
CR2	Wetland	Fill	P	.02	.06	Shallow marsh	Wright/17/7
Aquatic resource 1 (Corps)	Incidental Ditch	Fill	P	.02	.02	Seasonally flooded ditch	Wright/17/7
Aquatic resource 2 (Corps)	Incidental Ditch	Fill	P	.05	.05	Seasonally flooded ditch	Wright/17/7

¹If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

²Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

³This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

⁴Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

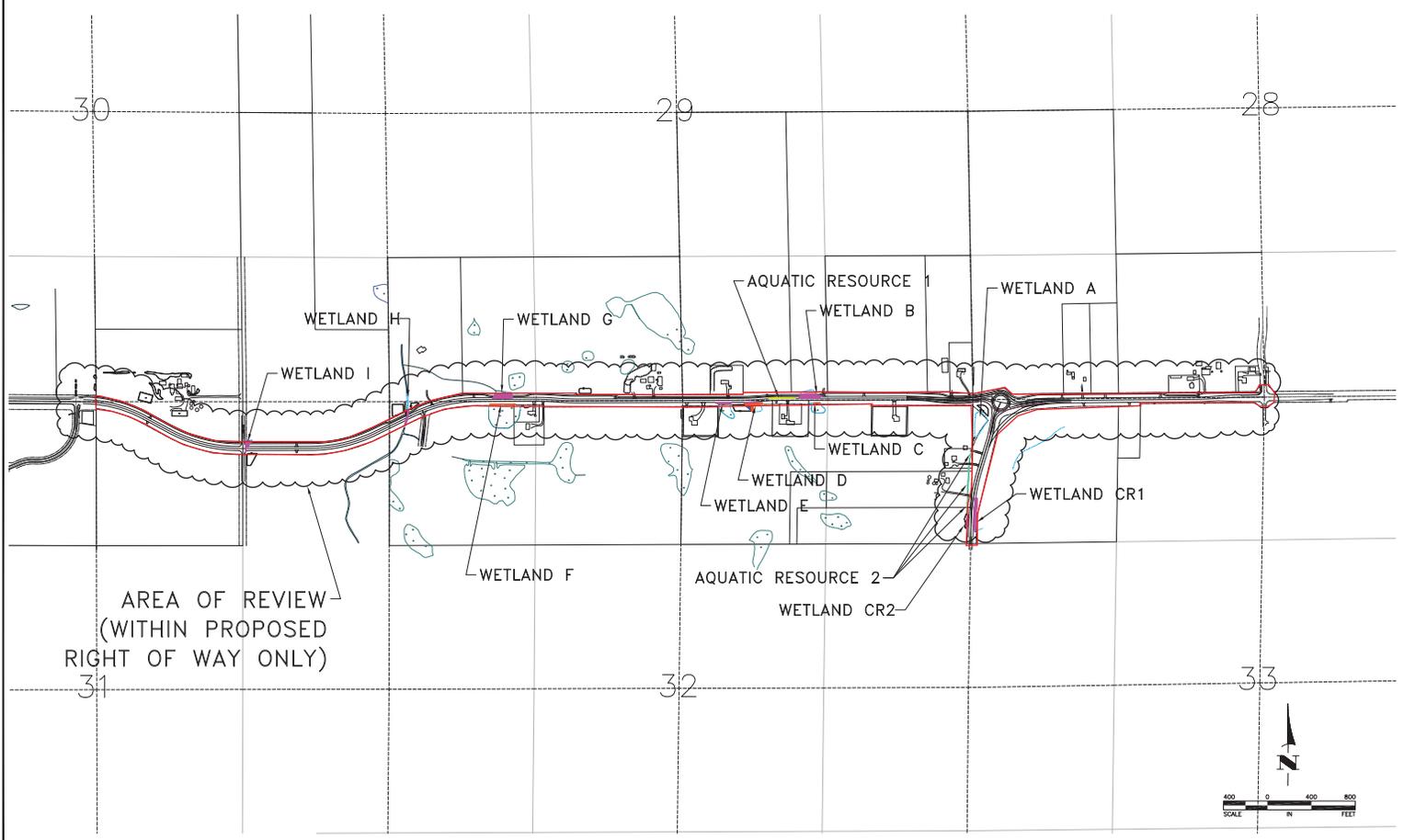
⁵Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

Not Applicable

PART FIVE: Applicant Signature

¹ The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.



AREA OF REVIEW
(WITHIN PROPOSED
RIGHT OF WAY ONLY)

70TH STREET AND OAKWOOD AVENUE (CSAH 37)
WETLAND IMPACTS - OVERALL

OT388
12/23/14

Dec: 24, 2014 - 9:27am
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WETLAND I



WETLAND IMPACT
2178 SF
(1369 SF TRAIL IMPACT
809 SF ROAD IMPACT)

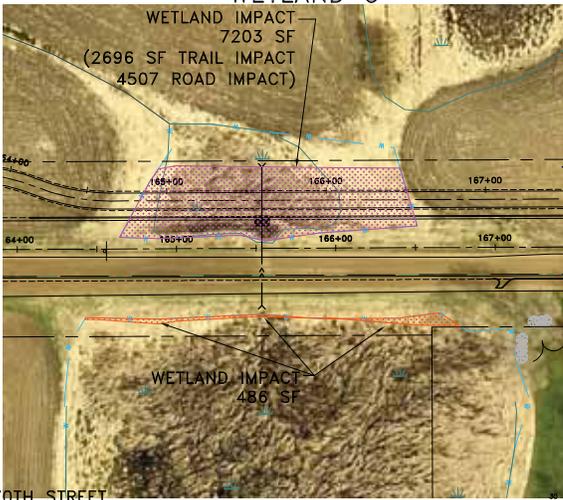
-  WETLAND IMPACT - FILL, PERMANENT
-  WETLAND IMPACT - CUT, TEMPORARY
-  WETLAND IMPACT - CUT, PERMANENT
-  AQUATIC RESOURCE IMPACT - FILL, PERMANENT
-  AQUATIC RESOURCE IMPACT - CUT, TEMPORARY

WETLAND H



WETLAND IMPACT
1079 SF
(98 SF TRAIL IMPACT
978 SF ROAD IMPACT)

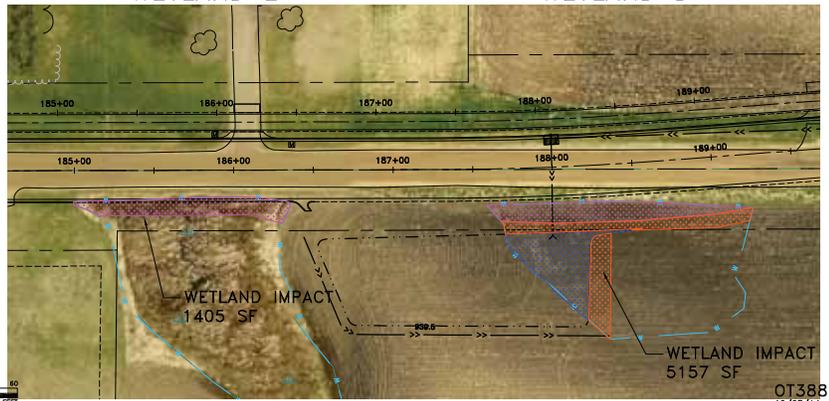
WETLAND G



WETLAND IMPACT
7203 SF
(2696 SF TRAIL IMPACT
4507 ROAD IMPACT)

WETLAND IMPACT
486 SF

WETLAND E



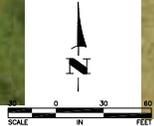
WETLAND IMPACT
1405 SF

WETLAND D

WETLAND IMPACT
5157 SF

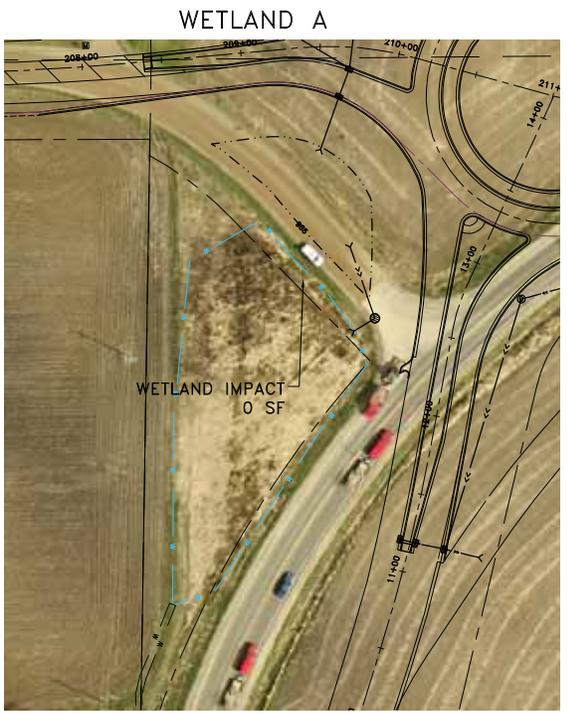
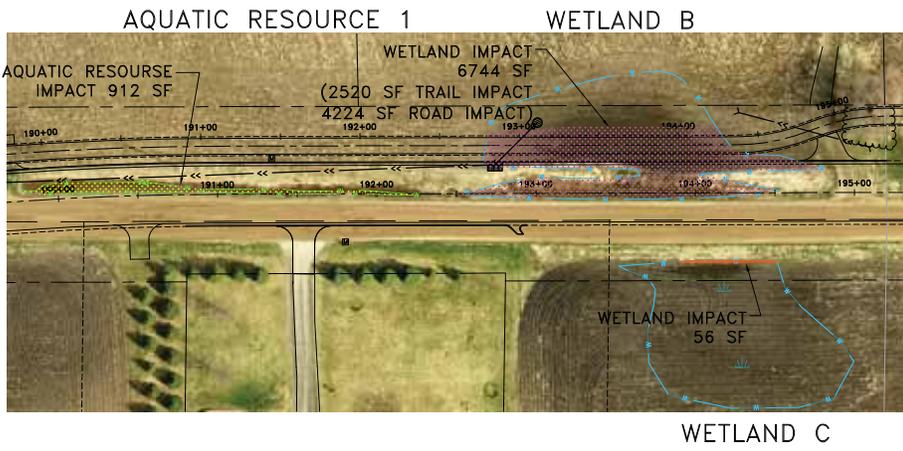
70TH STREET
WETLAND IMPACTS

WETLAND F

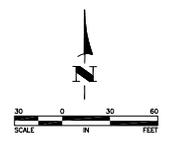


OT388
12/23/14

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-  WETLAND IMPACT - FILL, PERMANENT
-  WETLAND IMPACT - CUT, TEMPORARY
-  WETLAND IMPACT - CUT, PERMANENT
-  AQUATIC RESOURCE IMPACT - FILL, PERMANENT
-  AQUATIC RESOURCE IMPACT - FILL, TEMPORARY

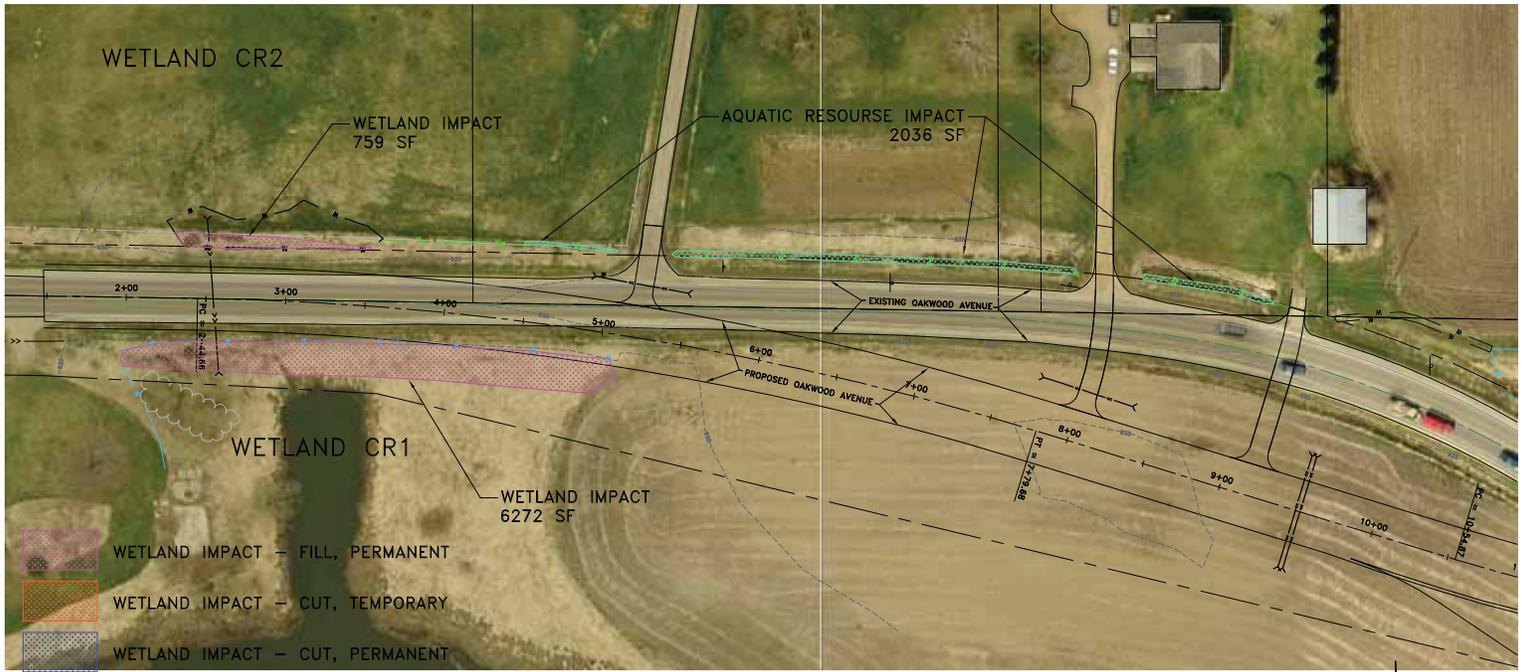


70TH STREET
WETLAND IMPACTS

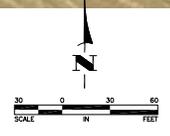
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AQUATIC RESOURCE 2

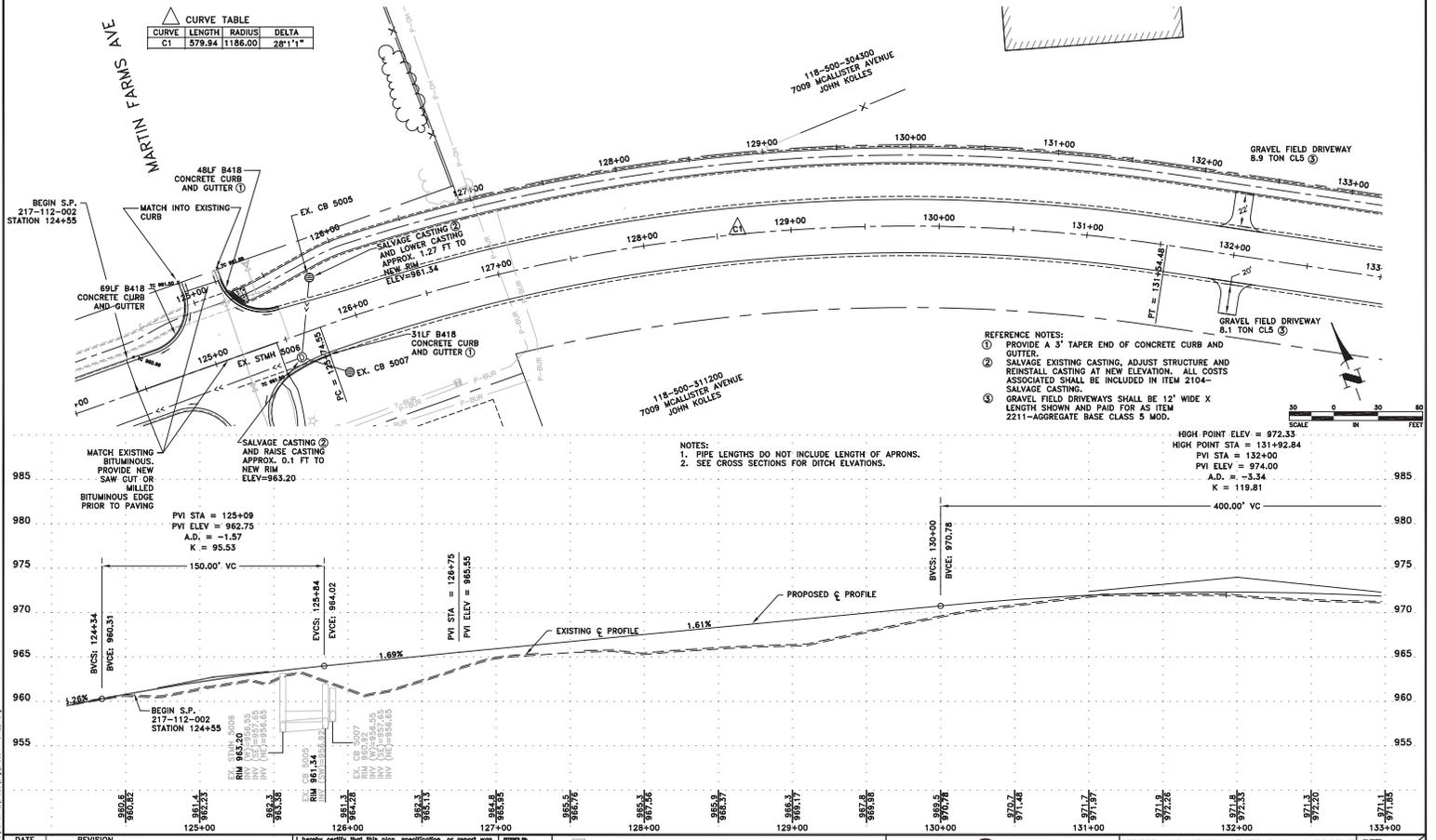


Dec 24, 2014 - 8:30am
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OAKWOOD AVENUE
WETLAND IMPACTS

OT388
12/23/14



CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
CT	579.94	1186.00	28°1'1"

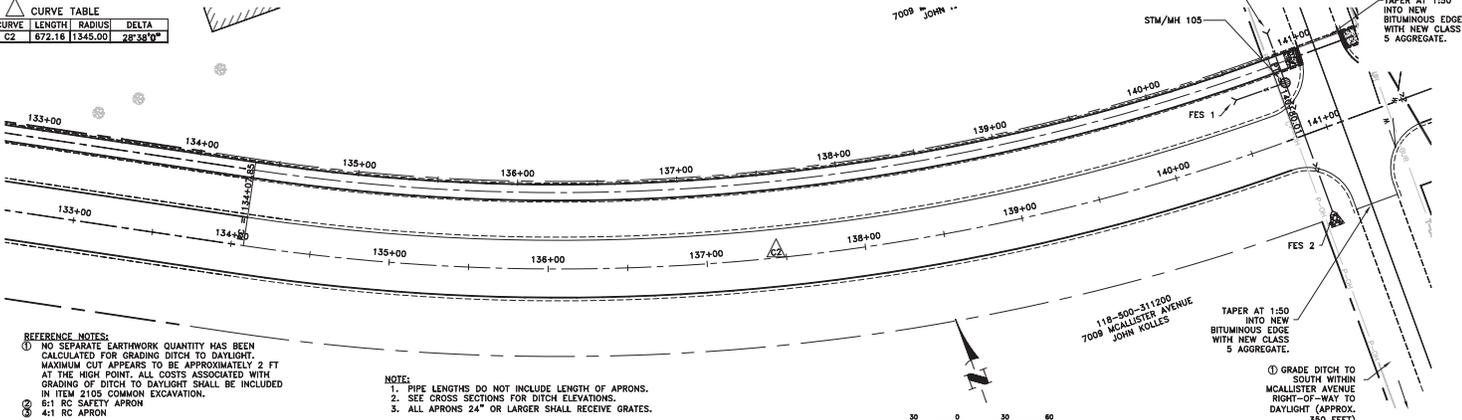
- REFERENCE NOTES:
- ① PROVIDE A 3' TAPER END OF CONCRETE CURB AND GUTTER.
 - ② SALVAGE EXISTING CASTING, ADJUST STRUCTURE AND REINSTALL CASTING AT NEW ELEVATION. ALL COSTS ASSOCIATED SHALL BE INCLUDED IN ITEM 2104--SALVAGE CASTING.
 - ③ GRAVEL FIELD DRIVEWAYS SHALL BE 12" WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211--AGGREGATE BASE CLASS 5 MOD.

- NOTES:
1. PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 2. SEE CROSS SECTIONS FOR DITCH ELEVATIONS.

HIGH POINT ELEV = 972.33
HIGH POINT STA = 131+92.84
PVI STA = 132+00
PVI ELEV = 974.00
A.D. = -3.34
K = 119.81

<p>DATE: 8/8/14</p> <p>REVISION:</p> <p>10/17/14 STATE AND COUNTY COMMENTS</p> <p>12/8/14 STATE AND COUNTY COMMENTS</p> <p>12/8/14 ADD STORM PROFILES PER STATE AID STORM REVIEW</p>	<p>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.</p> <p><i>[Signature]</i> BRM LUGER, P.E. Lic. No. 45850</p>	<p>BM: BML</p> <p>DS: DMS</p> <p>DR: RJW</p>	<p>Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com</p>	<p>CITY OF Otsego MINNESOTA</p>	<p>STREET AND STORM SEWER PLAN & PROFILE</p> <p>70TH STREET NE</p> <p>S.P. 217-112-002</p> <p>S.P. 086-637-033</p>	<p>SHEET 42 OF 98</p> <p>98 SHEETS</p> <p>07388</p>
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CURVE	LENGTH	RADIUS	DELTA
C2	672.16	1345.00	28°38'09"

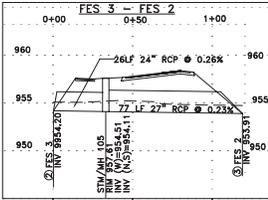
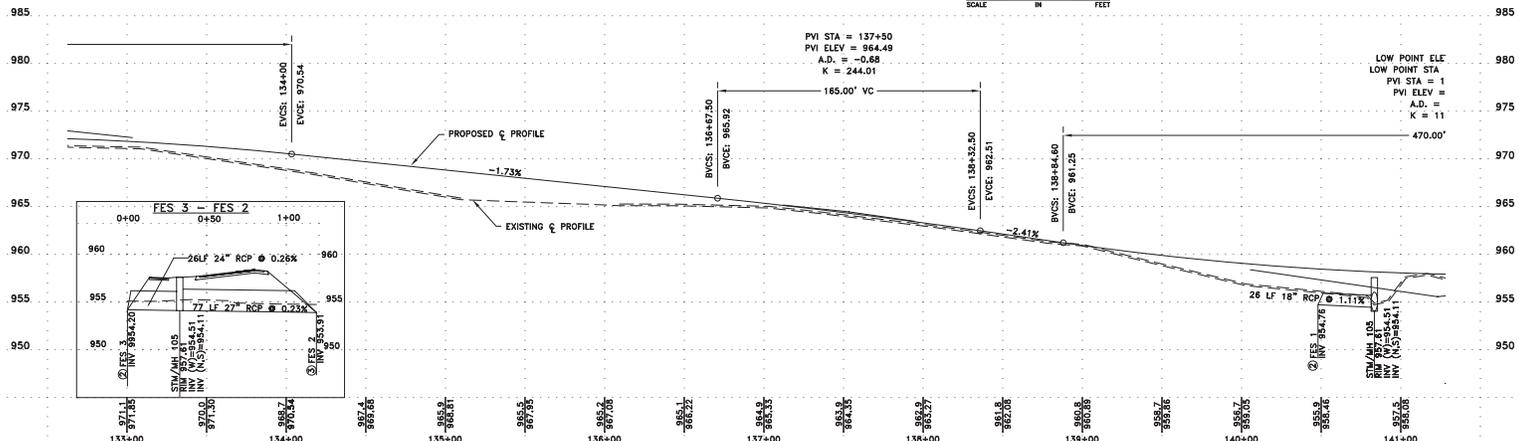


REFERENCE NOTES:
 ① NO SEPARATE EARTHWORK QUANTITY HAS BEEN CALCULATED FOR GRADING DITCH TO DAYLIGHT. MAXIMUM CUT APPEARS TO BE APPROXIMATELY 2 FT AT THE HIGH POINT. ALL COSTS ASSOCIATED WITH GRADING OF DITCH TO DAYLIGHT SHALL BE INCLUDED IN ITEM 2105 COMMON EXCAVATION.
 ② 51 RC SAFETY APRON
 ③ 4:1 RC APRON

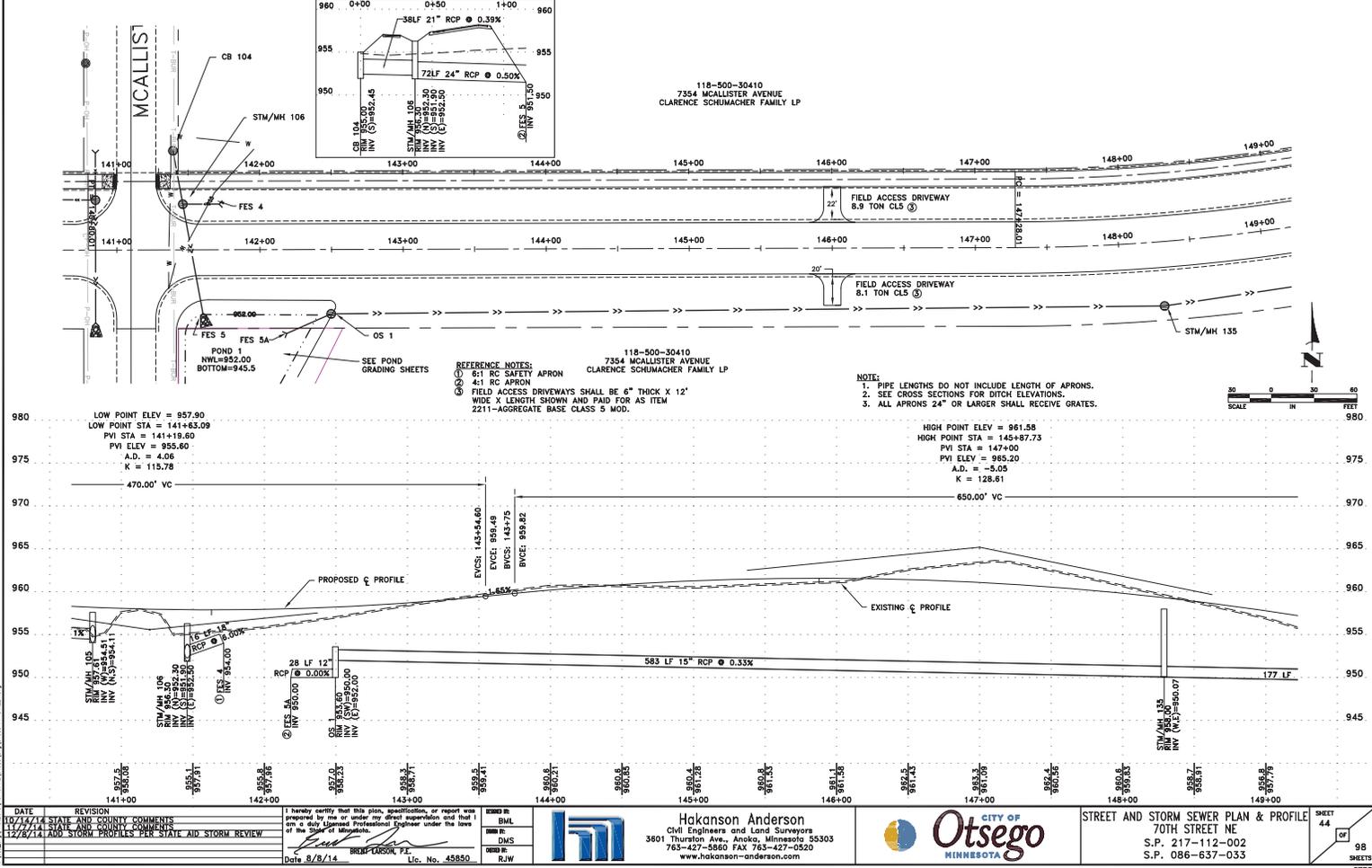
NOTE:
 1. PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 2. SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 3. ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



④ GRADE DITCH TO SOUTH WITHIN MCALLISTER AVENUE RIGHT-OF-WAY TO DAYLIGHT (APPROX. 350 FEET)
 TAPER AT 1:50 INTO NEW BITUMINOUS EDGE WITH NEW CLASS 5 AGGREGATE.



DATE: 10/17/14	REVISION: STATE AND COUNTY COMMENTS	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. Date: 8/8/14 BRM LUGER, P.E. Lic. No. 45850		Hakanson Anderson Civil Engineers and Land Surveyors 3801 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	CITY OF OTSEGO MINNESOTA	STREET AND STORM SEWER PLAN & PROFILE 70TH STREET NE S.P. 217-112-002 S.P. 086-637-033	SHEET 43 OF 98 SHEETS 98
DATE: 12/8/14	REVISION: ADD STORM PROFILES PER STATE AID STORM REVIEW						
DATE: 12/8/14	REVISION: ADD STORM PROFILES PER STATE AID STORM REVIEW						



DATE	REVISION
10/12/14	STATE AND COUNTY COMMENTS
12/17/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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.

[Signature]
 Date 8/8/14 BRM-L2009 FL Lic. No. 45850

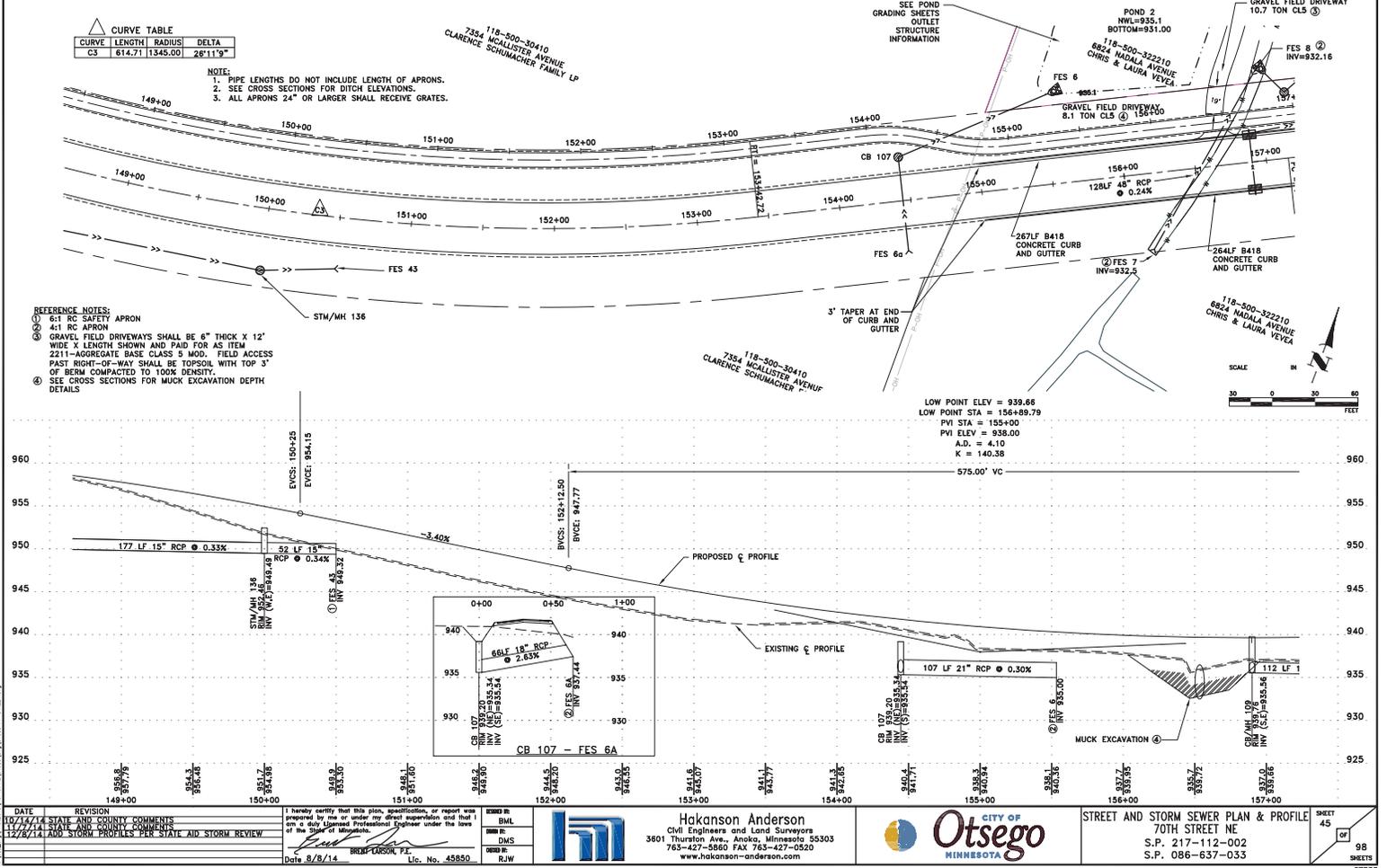
DESIGNED BY	BML
CHECKED BY	DMS
DATE	RJW

Hakanson Anderson
 Civil Engineers and Land Surveyors
 3601 Thurston Ave., Anoka, Minnesota 55303
 763-427-5860 FAX 763-427-0520
 www.hakanson-anderson.com



STREET AND STORM SEWER PLAN & PROFILE
 70TH STREET NE
 S.P. 217-112-002
 S.P. 086-637-033

SHEET 44 OF 98 SHEETS



CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C3	614.71	13435.00	28°11'59"

NOTE:
 1. PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 2. SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 3. ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.

REFERENCE NOTES:
 ① 6:1 RC SAFETY APRON
 ② 4:1 RC APRON
 ③ GRAVEL FIELD DRIVEWAYS SHALL BE 6" THICK X 12" WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211--AGGREGATE BASE CLASS 5 MOD. FIELD ACCESS PAST RIGHT-OF-WAY SHALL BE TOPSOIL WITH TOP 3" OF BERM COMPACTED TO 100% DENSITY.
 ④ SEE CROSS SECTIONS FOR MUCK EXCAVATION DEPTH DETAILS

LOW POINT ELEV = 939.66
 LOW POINT STA = 156+89.79
 PVI STA = 155+00
 PVI ELEV = 938.00
 A.D. = 4.10
 K = 140.38
 575.00' VC



DATE	REVISION
10/14/14	STATE AND COUNTY COMMENTS
11/27/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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.
 Date 8/8/14
 BRM LARSEN, P.E.
 Lic. No. 45850

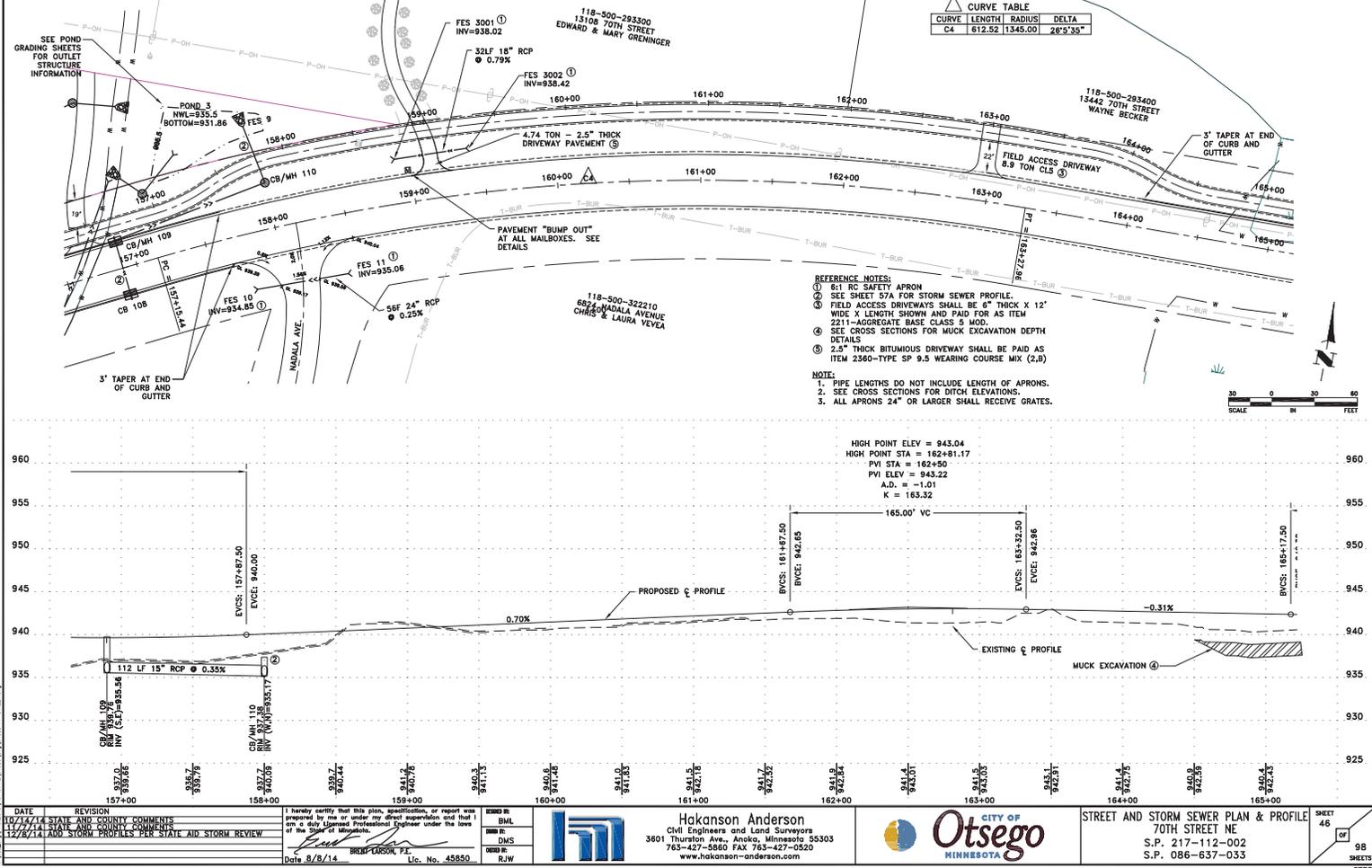
DATE	BY	CHKD BY
	BML	
	DWS	
	RJW	

Hakanson Anderson
 Civil Engineers and Land Surveyors
 3601 Thurston Ave., Anoka, Minnesota 55303
 763-427-5860 FAX 763-427-0520
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STREET AND STORM SEWER PLAN & PROFILE
 70TH STREET NE
 S.P. 217-112-002
 S.P. 086-637-033

SHEET 45 OF 98 SHEETS



CURVE	LENGTH	RADIUS	DELTA
C4	612.52	11345.00	28°5'35"

- REFERENCE NOTES:
- 6:1 RC SAFETY APRON
 - SEE SHEET 57A FOR STORM SEWER PROFILE
 - FIELD ACCESS DRIVEWAYS SHALL BE 6" THICK X 12' WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - SEE CROSS SECTIONS FOR MUCK EXCAVATION DEPTH DETAILS
 - 2.5" THICK BITUMINOUS DRIVEWAY SHALL BE PAID AS ITEM 2360-TYPE SP 9.5 WEARING COURSE MIX (2,B)
- NOTE:
- PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 - SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 - ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.

HIGH POINT ELEV = 943.04
 HIGH POINT STA = 162+81.17
 PVI STA = 162+50
 PVI ELEV = 943.22
 A.D. = -1.01
 K = 183.32

DATE	REVISION
10/14/14	STATE AND COUNTY COMMENTS
12/7/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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.

BRM LARSEN, P.E.
 Date 8/8/14 Lic. No. 45850

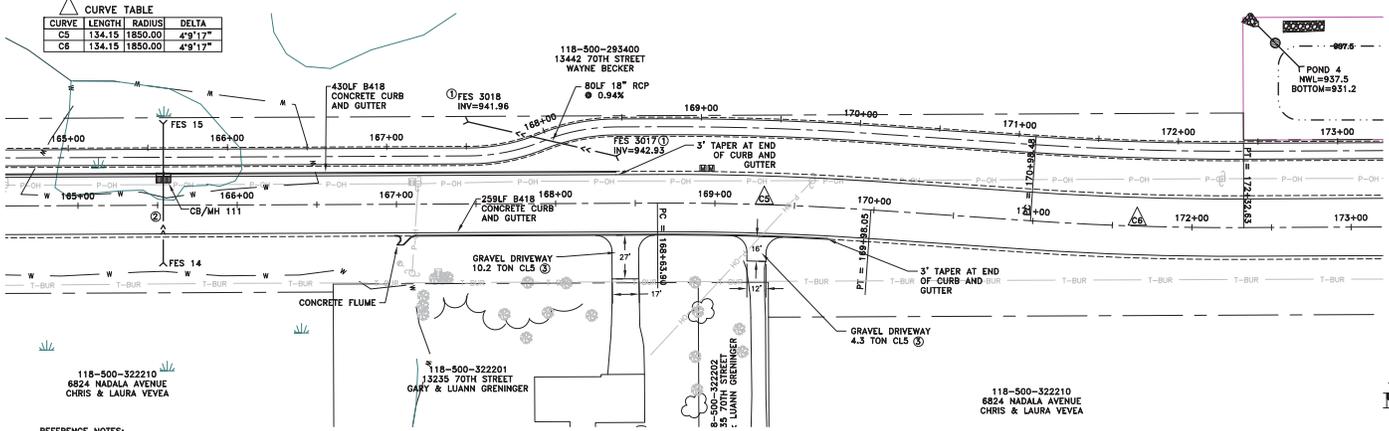
Hakanson Anderson
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CITY OF Otsego
 MINNESOTA

STREET AND STORM SEWER PLAN & PROFILE
 70TH STREET NE
 S.P. 217-112-002
 S.P. 086-637-033

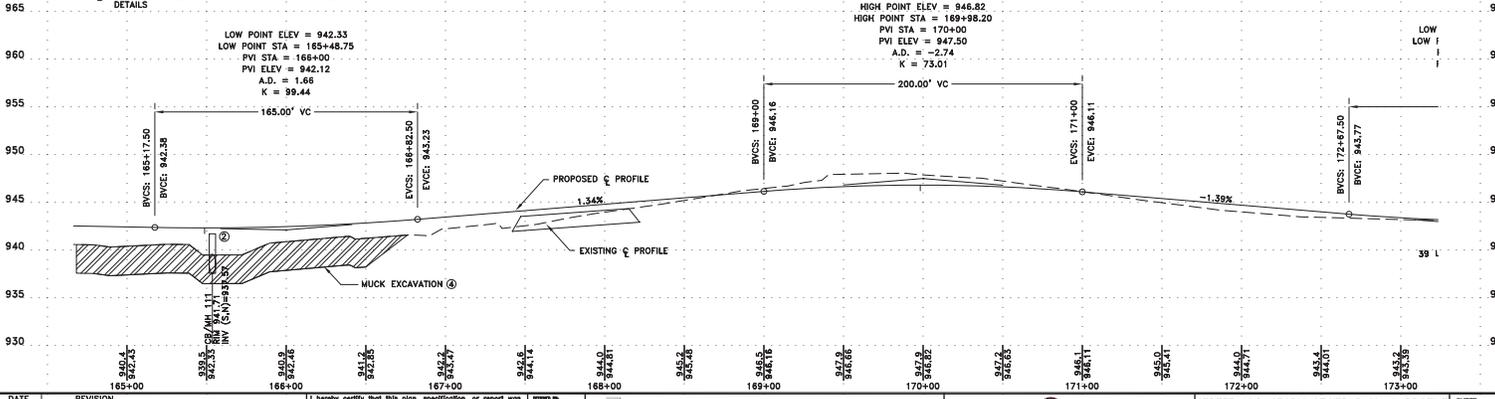
SHEET 45 OF 98 SHEETS
 07388

CURVE TABLE			
CURVE	LENGTH	RADIUS	DELTA
C5	134.15	1850.00	4°9'17"
C6	134.15	1850.00	4°9'17"



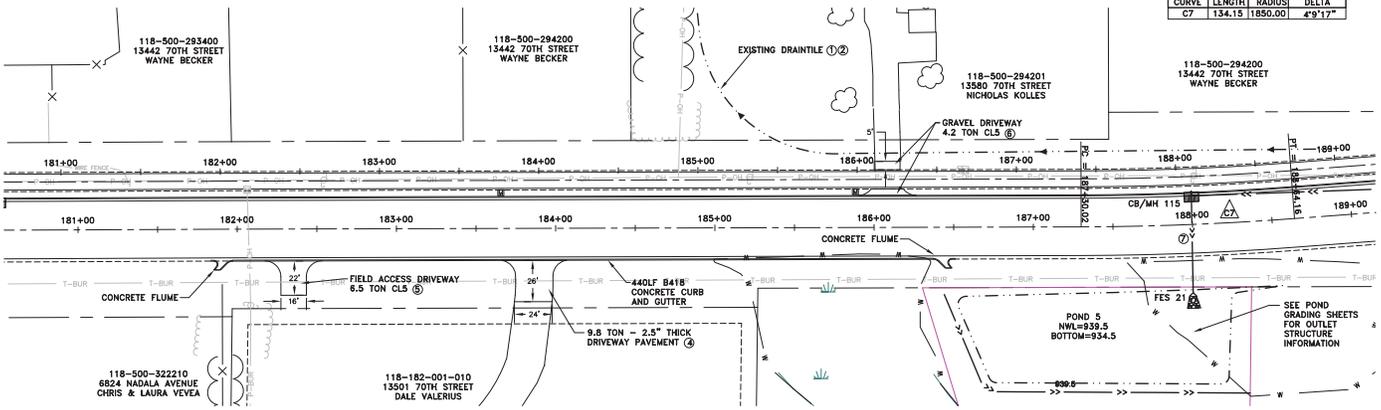
- REFERENCE NOTES:
- ① 811 RC SAFETY APRON
 - ② SEE SHEET 57A FOR STORM SEWER PROFILE
 - ③ GRAVEL DRIVEWAYS SHALL BE 4" THICK AND CONSTRUCTED TO MATCH EXISTING DRIVEWAYS AND SHALL PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - ④ SEE CROSS SECTIONS FOR MUCK EXCAVATION DEPTH DETAILS

- NOTE:
- 1. PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 - 2. SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 - 3. ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



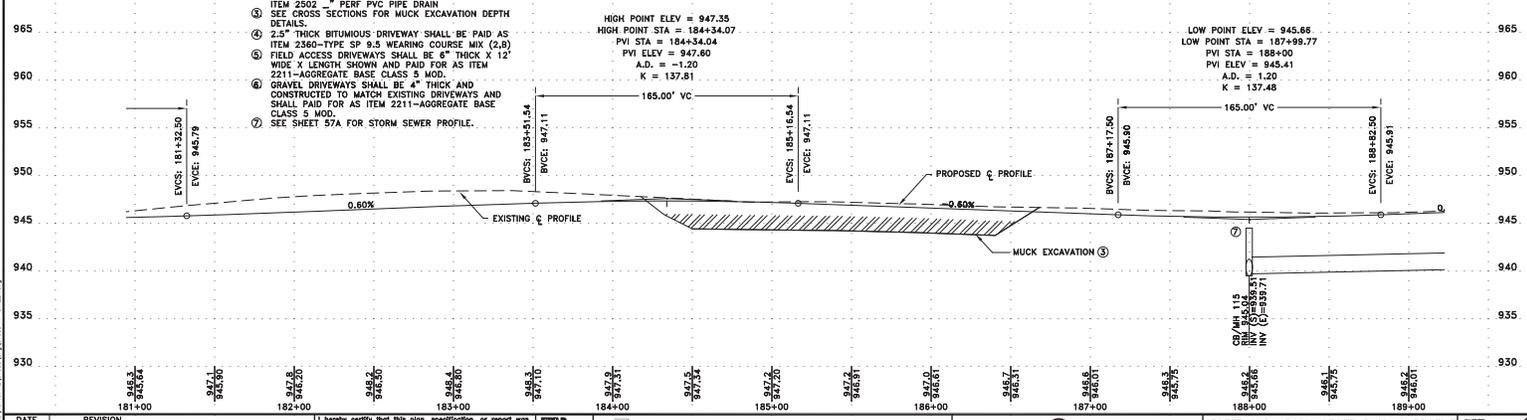
DATE: 10/14/14 REVISION: 12/2/14 STATE AND COUNTY COMMENTS: ADD STORM PROFILES PER STATE AID STORM REVIEW	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Date: 8/8/14 BRM LARSEN, P.E. Lic. No. 45850	Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com		STREET AND STORM SEWER PLAN & PROFILE 70TH STREET NE S.P. 217-112-002 S.P. 086-637-033	SHEET 47 OF 98 SHEETS 07888
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CURVE	LENGTH	RADIUS	DELTA
C7	134.15	1850.00	4°9'17"



- REFERENCE NOTES:
- EXISTING DRAIN TILE IS SHOWN IN APPROXIMATE LOCATION ONLY PER RESIDENTS DESCRIPTION.
 - REPAIR OR REPLACE ANY DAMAGED DRAIN TILE PIPE DURING CONSTRUCTION. THIS SHALL BE PAID FOR AS ITEM 2502 - 12" PERV PVC PIPE DRAIN.
 - SEE CROSS SECTIONS FOR MUCK EXCAVATION DEPTH DETAILS.
 - 2.5" THICK BITUMINOUS DRIVEWAY SHALL BE PAID AS ITEM 2360-TYPE SP 9.5 WEARING COURSE MIX (2,B).
 - FIELD ACCESS DRIVEWAYS SHALL BE 8" THICK X 12' WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - GRAVEL DRIVEWAYS SHALL BE 4" THICK AND CONSTRUCTED TO MATCH EXISTING DRIVEWAYS AND SHALL PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - SEE SHEET 57A FOR STORM SEWER PROFILE.

- NOTE:
- PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 - SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 - ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



DATE	REVISION
10/17/14	STATE AND COUNTY COMMENTS
11/17/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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.

Date 8/8/14
BRM-LAUREN FL
Lic. No. 45850

BML
 DMS
 R/JW

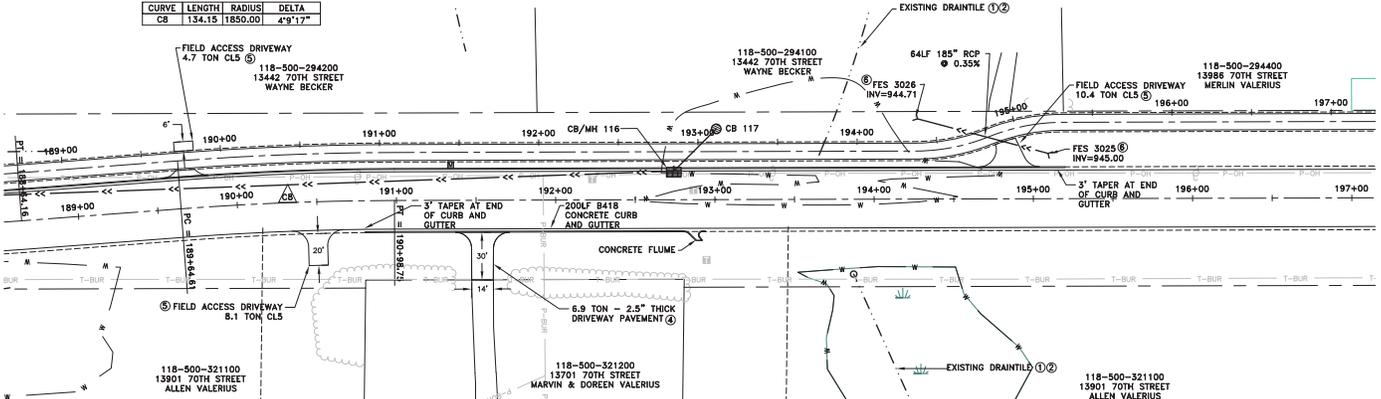
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CITY OF Otsego
 MINNESOTA

STREET AND STORM SEWER PLAN & PROFILE
 70TH STREET NE
 S.P. 217-112-002
 S.P. 086-637-033

SHEET 49 OF 98 SHEETS

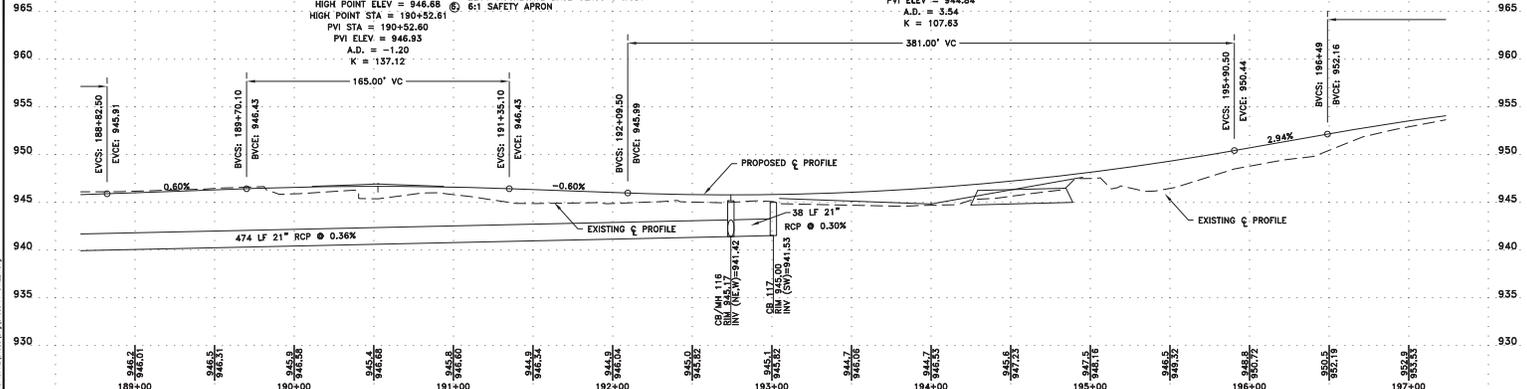
CURVE	LENGTH	RADIUS	DELTA
CB	134.15	1850.00	4°17'



REFERENCE NOTES:
 ① EXISTING DRAINLINE IS SHOWN IN APPROXIMATE LOCATION ONLY PER RESIDENT'S DESCRIPTION.
 ② REPAIR OR REPLACE ANY DAMAGED DRAINLINE PIPE DURING CONSTRUCTION. THIS SHALL BE PAID FOR AS ITEM 2502 " " PERF PVC PIPE DRAIN

REFERENCE NOTES:
 ③ SEE CROSS SECTIONS FOR MUCK EXCAVATION DEPTH DETAILS.
 ④ 2.5" THICK BITUMINOUS DRIVEWAY SHALL BE PAID AS ITEM 2360-TYPE CP 9.5 WEARING COURSE MIX (2.8)
 ⑤ FIELD ACCESS DRIVEWAYS SHALL BE 6" THICK X 12' WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 3 MOD.
 ⑥ 1:1 SAFETY APRON

NOTE:
 1. PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 2. SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 3. ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



DATE	REVISION
10/17/14	STATE AND COUNTY COMMENTS
11/27/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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 Date 8/8/14 BRM LARSEN, P.E. Lic. No. 45850

DESIGNED BY	BML
DRAWN BY	DMS
CHECKED BY	RJW

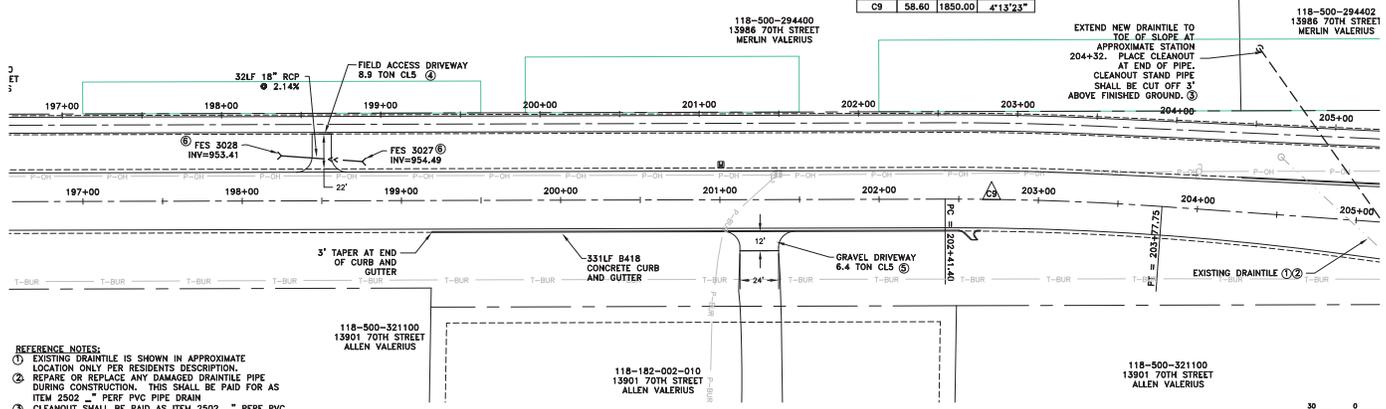
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SHEET 50 OF 98 SHEETS
 07388

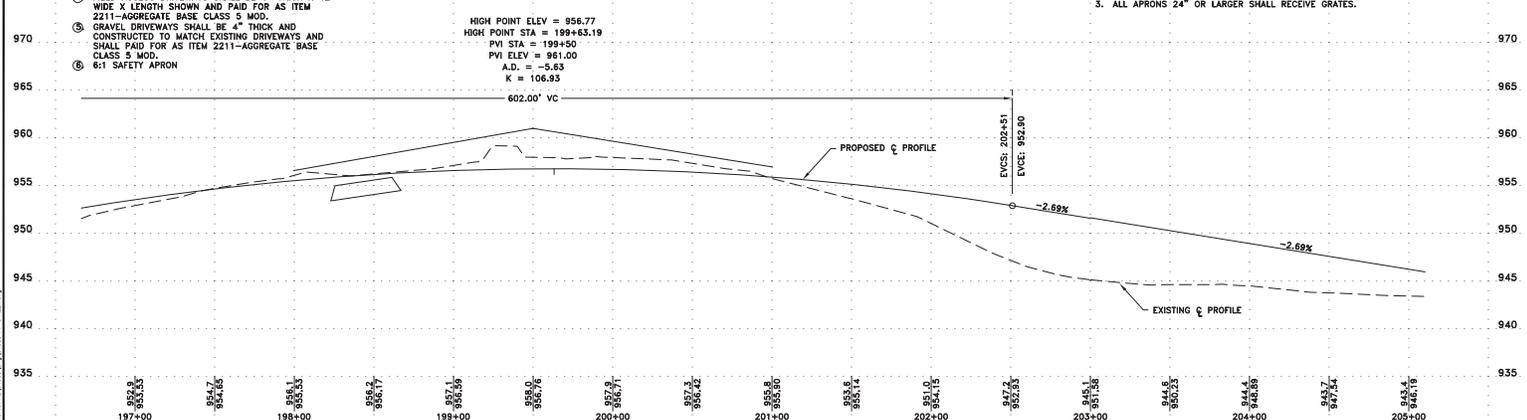
CURVE	LENGTH	RADIUS	DELTA
C9	58.60	1850.00	4°13'23"



- REFERENCE NOTES:**
- EXISTING DRAINTILE IS SHOWN IN APPROXIMATE LOCATION ONLY PER RESIDENTS DESCRIPTION.
 - REPAIR OR REPLACE ANY DAMAGED DRAINTILE PIPE DURING CONSTRUCTION. THIS SHALL BE PAID FOR AS ITEM 2502 - "PERF PVC PIPE DRAIN".
 - CLEANOUT SHALL BE PAID AS ITEM 2502 - "PERF PVC PIPE DRAIN. ALL NECESSARY FITTINGS SHALL BE INCLUDED.
 - FIELD ACCESS DRIVEWAYS SHALL BE 6" THICK X 12' WIDE X LENGTH SHOWN AND PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - GRAVEL DRIVEWAYS SHALL BE 4" THICK AND CONSTRUCTED TO MATCH EXISTING DRIVEWAYS AND SHALL PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - 6:1 SAFETY APRON

HIGH POINT ELEV = 956.77
HIGH POINT STA = 199+63.19
PVI ELEV = 961.00
PVI STA = 199+00
A.D. = -5.83
K = 106.85

- NOTE:**
- PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 - SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 - ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



DATE	REVISION	DESCRIPTION	BY	CHKD BY
10/17/14	1	STATE AND COUNTY COMMENTS		
12/2/14	2	ADD STORM PROFILES PER STATE AID STORM REVIEW		

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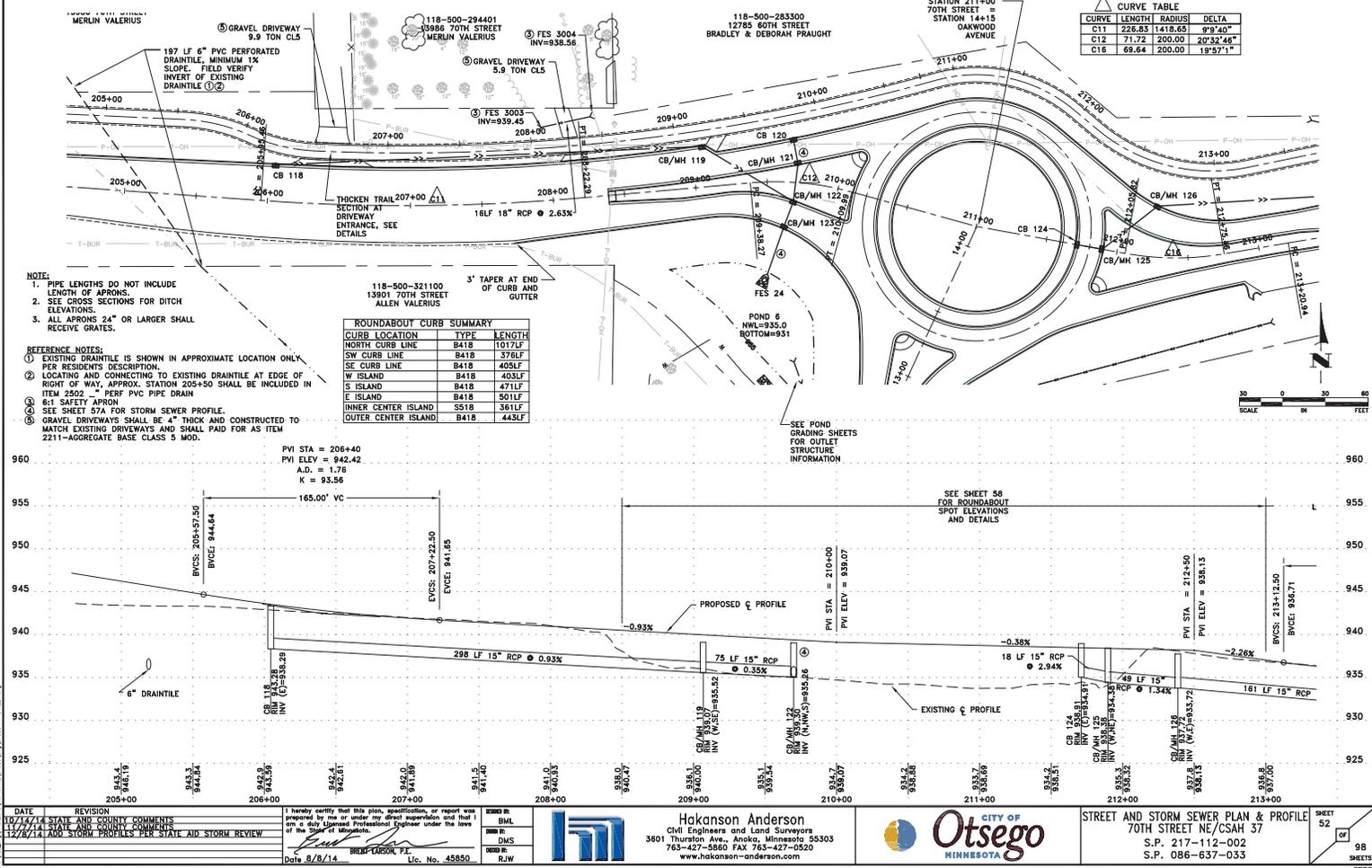
Date 8/8/14
BRM LAGOS, P.E.
Lic. No. 45850

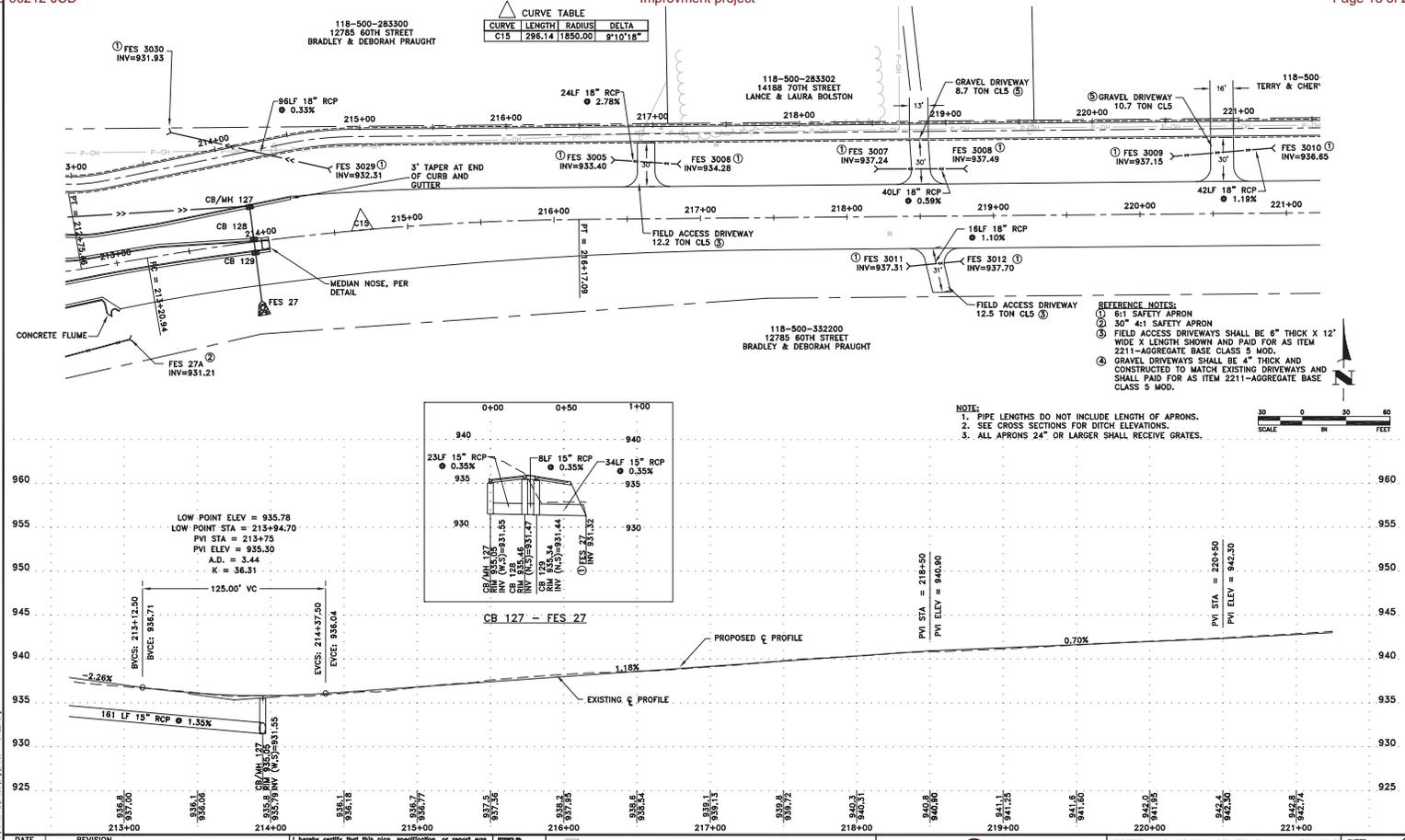
DESIGNED BY	BML
DRAWN BY	DWS
CHECKED BY	RJW

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CITY OF OTSEGO
MINNESOTA

STREET AND STORM SEWER PLAN & PROFILE	SHEET 51
70TH STREET NE	OF 98
S.P. 217-112-002	SHEETS
S.P. 086-637-033	07388





DATE	REVISION	BY	CHKD BY
10/12/14	STATE AND COUNTY COMMENTS		
12/2/14	STATE AND COUNTY COMMENTS		
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW		

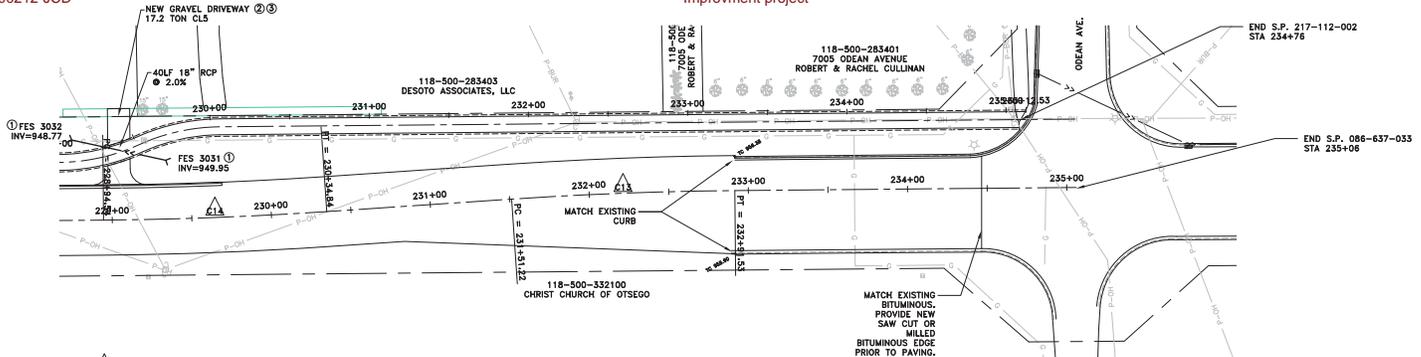
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 Date 8/8/14
 BRM LARSEN, P.E.
 Lic. No. 45850

BRM	BML
DMS	
RJW	

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CITY OF Otsego MINNESOTA

STREET AND STORM SEWER PLAN & PROFILE	SHEET 53
CSAH 37/70TH STREET NE	OF
S.P. 217-112-002	98
S.P. 086-637-033	SHEETS

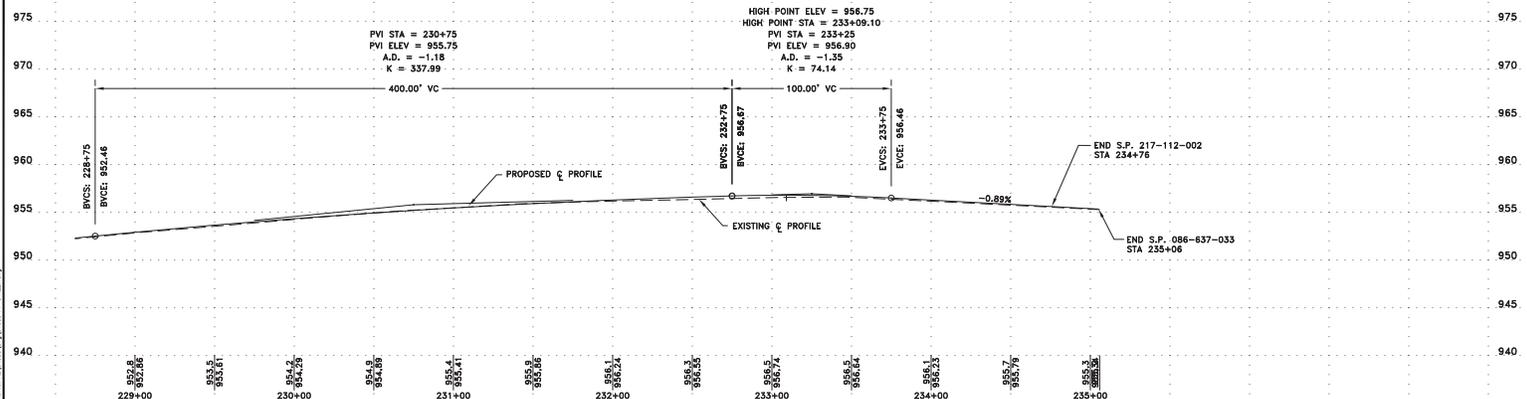
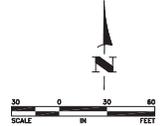


CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA
C13	140.30	2400.00	3°20'58"
C14	140.30	2400.00	3°20'58"

- REFERENCE NOTES:**
- 6:1 SAFETY APRON
 - NEW GRAVEL DRIVEWAY SHALL BE 4" THICK X 14" WIDE AND EXTENDED TO RIGHT OF WAY. EDGE OF DRIVEWAY SHALL BE LOCATED 5' WEST OF EASTERN PROPERTY LINE. CONSTRUCTING DRIVEWAY SUBGRADE IS INCLUDED IN ITEM 2105-COMMON EXCAVATION. PLACEMENT OF GRAVEL SHALL BE PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD.
 - NEW DRIVEWAY SHALL BE CONSTRUCTED PRIOR TO REMOVAL OF EXISTING DRIVEWAY TO THE EAST.

- NOTE:**
- PIPE LENGTHS DO NOT INCLUDE LENGTH OF APRONS.
 - SEE CROSS SECTIONS FOR DITCH ELEVATIONS.
 - ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



DATE	REVISION
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12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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Date 8/8/14
 BRM L0206 FL
 Lic. No. 45850

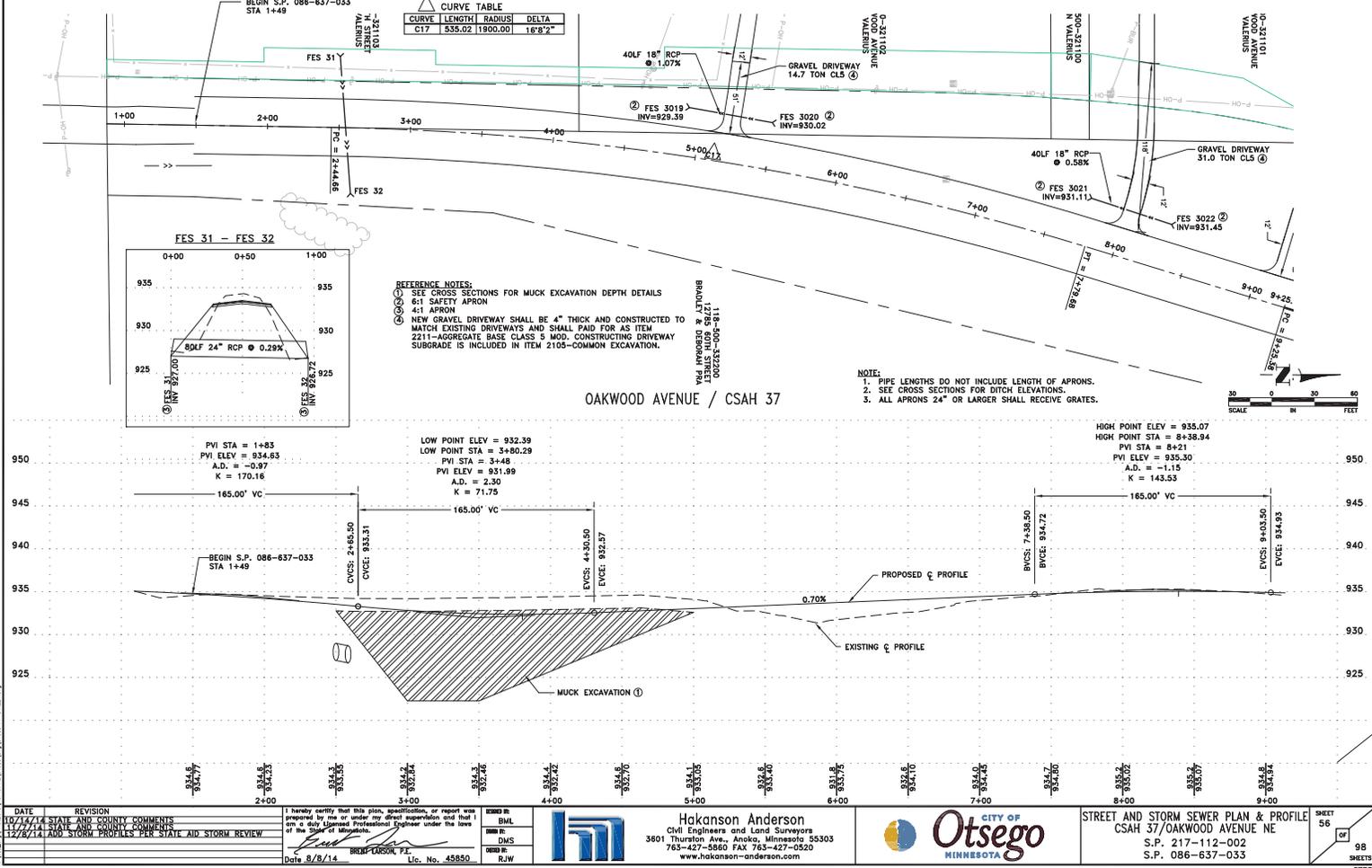
DESIGNED BY	BM
DRAWN BY	DMS
CHECKED BY	RJW

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SHEET 55 OF 98 SHEETS
 07388



DATE	REVISION
10/14/14	STATE AND COUNTY COMMENTS
12/17/14	STATE AND COUNTY COMMENTS
12/8/14	ADD STORM PROFILES PER STATE AID STORM REVIEW

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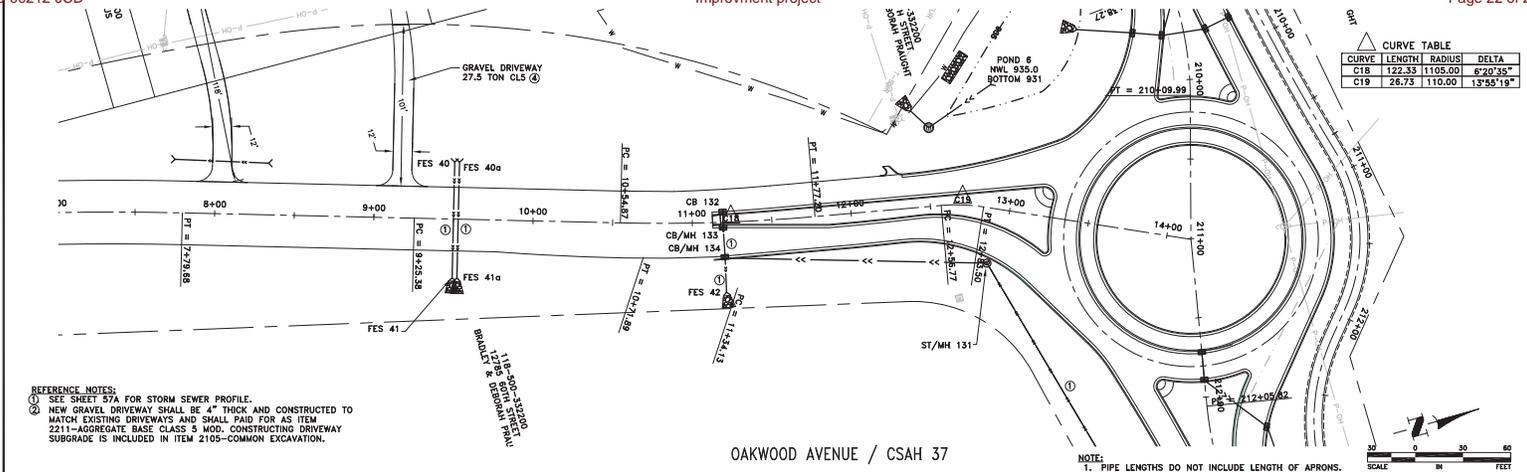
Date 8/8/14
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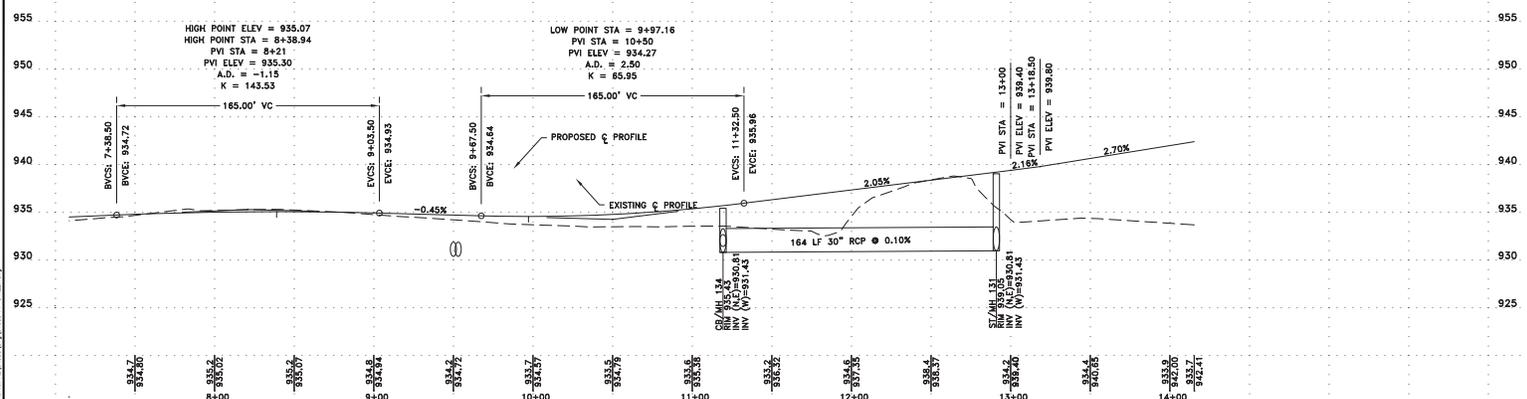
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SHEET 56 OF 98 SHEETS
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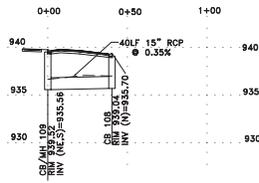


REFERENCE NOTES:
 ① SEE SHEET 57A FOR STORM SEWER PROFILE.
 ② NEW GRAVEL DRIVEWAY SHALL BE 4" THICK AND CONSTRUCTED TO MATCH EXISTING DRIVEWAYS AND SHALL PAID FOR AS ITEM 2211-AGGREGATE BASE CLASS 5 MOD. CONSTRUCTING DRIVEWAY SUBGRADE IS INCLUDED IN ITEM 2105-COMMON EXCAVATION.

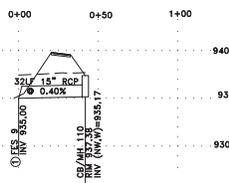
NOTE:
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 3. ALL APRONS 24" OR LARGER SHALL RECEIVE GRATES.



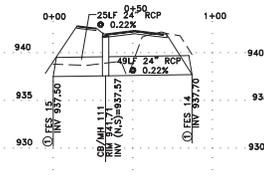
DATE: 10/17/14 REVISION: STATE AND COUNTY COMMENTS 12/8/14 ADD STORM PROFILES PER STATE AID STORM REVIEW	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. Date: 8/8/14 BRM LARSEN, P.E. Lic. No. 45850	BML DWS RJW	Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	CITY OF Otsego MINNESOTA	STREET AND STORM SEWER PLAN & PROFILE CSAH 37/OAKWOOD AVENUE NE S.P. 217-112-002 S.P. 086-637-033	SHEET 57 OF 98 SHEETS 07388
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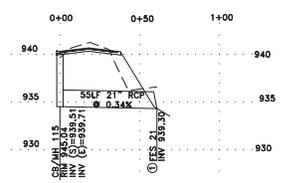
CB/MH 109 - CR 108



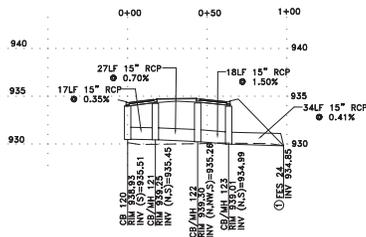
FES 9 - CB/MH 110



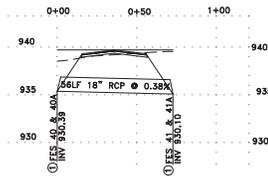
FES 15 - FES 14



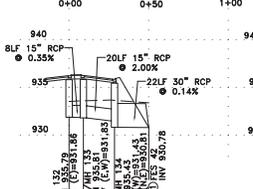
CB/MH 115 - FES 21



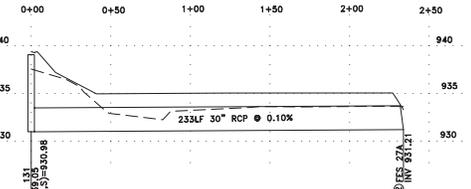
CB 120 - FES 24



FES 40 - FES 41
FES 40A - FES 41A



CB 132 - FES 42



STMH 131 - FES 27A

REFERENCE NOTES:
 ① 4:1 RC APRON
 ② 30\"/>

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DRAWN BY	DMS
CHECKED BY	RJW



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SHEET 57A OF 98 SHEETS