OAK CREEK WATER and SEWER UTILITY
A COMMITMENT TO WATER QUALITY

MEMORANDUM

170 W. Drexel Avenue
Oak Creek, WI 53154

Telephone (414) 570-8200
Facsimile (414) 570-8215

DATE: **February 24, 2014**

TO: **Plan Holders**

FROM: **Ronald J. Pritzlaff, Utility Engineer**

RE: **Addendum No. 1**

The Utility has issued Addendum No. 1 to our Howell Avenue Water Main Relay project. You can download a copy of the addendum from our web site at:
http://www.water.oak-creek.wi.us In the “Public Contracts” section.

The purpose of the addendum is to:

- Replace Schedule One of the Bid Proposal Section in its entirety
- Replace Section VII MATERIALS FOR WATER MAINS, paragraph H in its entirety
- Delete Section VIII MATERIALS GENERAL, paragraph A in its entirety
- Replace Section VIII MATERIALS GENERAL, paragraph B, sub-paragraph1 in its entirety
- Replace Section X RESTORATION IN THE WORK AREA, paragraph C, sub-paragraph 1 in its entirety
- Replace Section X RESTORATION IN THE WORK AREA, paragraph C, sub-paragraph 2, part B in its entirety
- Replace Section XVI PROPOSAL ITEMS in its entirety
- Replace the Wisconsin Department of Transportation Utility permit in its entirety
- Replace sheet numbers 1,2,3,4, and 5 of the plans in their entirety

Thank You.

Bid Proposal, Schedule One

Schedule One

Item No.	Item Description	Bid Quantity	Units	Unit Price	Total Price
1	8" PVC Water Main, Asphalt Pavement Restoration, ¾" T.B. Backfill Unit price per lineal foot _____ dollars & _____ cents .	500	LF		
2	8" PVC Water Main, Slurry or Granular Backfill Unit price per lineal foot _____ dollars & _____ cents .	60	LF		
3	12" PVC Water Main, Slurry or Granular Backfill Unit price per lineal foot _____ dollars & _____ cents .	1540	LF		
4	Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene), Asphalt Pavement Restoration Unit price per each. _____ dollars & _____ cents .	9	EA		
5	Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene) Unit price per each. _____ dollars & _____ cents .	12	EA		
6	8" Gate Valve Unit price per each. _____ dollars & _____ cents .	4	EA		
7	12" Gate Valve Unit price per each. _____ dollars & _____ cents .	7	EA		
8	Connect to Existing 8" Water Main Unit price per each _____ dollars & _____ cents .	3	EA		
9	Connect to Existing 12" Water Main Unit price per each. _____ dollars & _____ cents .	4	EA		
10	Hydrant, Lead, and 6-inch Gate Valve Unit price per each _____ dollars & _____ cents .	3	EA		
11	Salvage and Delivery of Existing Hydrants Unit price per lump sum. _____ dollars & _____ cents .	1	LS		

Item No.	Item Description	Bid Quantity	Units	Unit Price	Total Price
12	Existing Valve Box Removal (Top Section Only) Unit price per lump sum. _____ dollars & _____ cents .	1	LS		
13	Erosion Control Unit price per lump sum. _____ dollars & _____ cents .	1	LS		
14	Traffic Control Unit price per lump sum. _____ dollars & _____ cents .	1	LS		
15	Removing Pavement (Howell Avenue) Unit price per square yard. _____ dollars & _____ cents .	2610	SY		
16	Concrete Base 8-Inch (Howell Avenue) Unit price per square yard. _____ dollars & _____ cents .	2190	SY		
17	Concrete Base 8-Inch H.E.S. (Howell Avenue) Unit price per square yard _____ dollars & _____ cents .	420	SY		
18	HMA Pavement Type E-1 (Howell Avenue) Unit price per ton _____ dollars & _____ cents .	500	TON		

BASE BID TOTAL ITEMS 1 - 18 INCLUSIVE $_____

VII. MATERIALS FOR WATER MAINS

H. BEDDING MATERIALS AND BACKFILL MATERIALS

FOREST HILL

Bedding: Bedding shall consist of 4-inches torpedo sand placed up to 6-inches above the pipe. Sand bedding shall also be used to a minimum of 6-inches on either side of the water main pipe.

Backfill: Backfill shall consist of mechanically compacted ¾" graded crushed limestone (T.B.)

HOWELL AVENUE

Bedding: Bedding shall consist of 4-inches torpedo sand placed up to 6-inches above the pipe. Sand bedding shall also be used to a minimum of 6-inches on either side of the water main pipe.

Backfill: The contractor has two options for backfill in Howell Ave.:

Option 1: The contractor shall backfill using a slurry mix as detailed in Attachment 2 of the Wisconsin Department of Transportation Utility Permit

Option 2: The contractor shall backfill using mechanically compacted granular backfill conforming to Grade 2 of Section 209 of the State Specifications. The contractor shall be responsible for providing the granular backfill and for the testing requirements detailed in the Wisconsin Department of Transportation Utility Permit, Trench Backfill Section.

VIII. MATERIALS GENERAL

B. COMPOUNDS FOR ASPHALT PAVEMENT

1. The contractor shall provide one compacted, 3-inch lift of 19mm binder course on Forest Hill and Howell Avenue.

The cost of asphalt restoration on Forest Hill shall be included in the unit prices for the water main on Forest Hill.

The asphalt restoration on Howell Avenue shall be paid by the contract unit price per ton of asphalt complete, in place, and ready to use. The asphalt shall be placed on top of the concrete base.

X. RESTORATION IN THE WORK AREA

C. RESTORATION OF PAVED ROADWAY SURFACES

1. Temporary Bituminous Pavement

FOREST HILL

Forest Hill shall receive temporary asphalt restoration in accordance with Section VIII of these Detailed Specifications.

X. RESTORATION IN THE WORK AREA

C. RESTORATION OF PAVED ROADWAY SURFACES

2. Permanent Pavement

b. Concrete Pavement (Howell Avenue Only)

Concrete Base 8-inch: All Portland cement concrete placement shall be made with a monolithic pour of portland cement concrete, air entrained, 6-bag mix to a thickness of 8-inches up to three inches below the existing finish asphalt grade. Concrete and reinforcement requirements shall be in accordance with the Wisconsin Department of Transportation Utility Permit Standard Detail Drawings.

Concrete Base 8-Inch H.E.S.: All Portland cement concrete placement, high early strength, shall be made with a monolithic pour of portland cement concrete, air entrained, 9-bag mix to a thickness of 8-inches up to three inches below the existing finish asphalt grade. Concrete and reinforcement requirements shall be in accordance with the Wisconsin Department of Transportation Utility Permit Standard Detail Drawings.

XVI. PROPOSAL ITEMS

Item 1 – 8" PVC Water Main, Asphalt Pavement Restoration (3/4" T.B. Backfill)

The unit bid and contract price for these items shall include all equipment, materials, and labor necessary to install 8" PVC Water Main complete in place and ready to use. This item shall include but not be limited to:

- saw cutting the pavement full depth

- removing existing pavement
- installation of tracer wire
- installation of all 8” PVC pipe
- installation of all PVC fitiings
- surface restoration for asphalt pavement and driveway - one lift, 3” - 19mm asphalt binder course, Type E-1
- lawn and ditch restoration shall be in accordance with Section 2.7.4 of the Standard Specifications, Type C salt tolerant, and include returning existing ditch lines in a manner to which water flows and shall be graded to the longitudinal slope of the adjacent road from driveway to driveway
- placement of erosion mat in restored ditch areas
- CMP culvert replacement – size to match existing
- assisting Utility staff with GPS point collection

The water main shall be placed in the manner indicated in these Detail Specifications and shall conform to the Detail Drawings included with these specifications.

This item shall be paid based on the contract unit price per lineal foot installed as measured and documented by the Inspector.

Item 2 – 8” PVC Water Main, Slurry or Granular Backfill

The unit bid and contract price for these items shall include all equipment, materials, and labor necessary to install 8” PVC Water Main complete in place and ready to use. This item shall include but not be limited to:

- saw cutting the pavement full depth
- installation of tracer wire
- installation of all 8” PVC pipe
- installation of all PVC fittings
- placement of mechanically compacted granular backfill or slurry in accordance with the Detailed Specifications and the Wisconsin Department of Transportation Utility Permit Attachment 2
- curb and gutter replacement – match existing
- Type C salt tolerant lawn restoration in accordance with the Standard Specifications Section 2.7.4
- assisting Utility staff with GPS point collection

The water main shall be placed in the manner indicated in these Detail Specifications and shall conform to the Detail Drawings included with these specifications.

This item shall be paid based on the contract unit price per lineal foot installed as measured and documented by the Inspector

Item 3 – 12" PVC Water Main, Slurry or Granular Backfill

The unit bid and contract price for these items shall include all equipment, materials, and labor necessary to install 12" PVC Water Main complete in place and ready to use. This item shall include but not be limited to:

- saw cutting the pavement full depth
- installation of tracer wire
- installation of all 12" PVC pipe
- installation of all PVC fitiings
- placement of mechanically compacted granular backfill or slurry in accordance with the Detailed Specifications and the Wisconsin Department of Transportation Utility Permit Attachment 2
- curb and gutter replacement – match existing
- Type C salt tolerant lawn restoration in accordance with the Standard Specifications Section 2.7.4
- assisting Utility staff with GPS point collection

The water main shall be placed in the manner indicated in these Detail Specifications and shall conform to the Detail Drawings included with these specifications.

This item shall be paid based on the contract unit price per lineal foot installed as measured and documented by the Inspector

Item 4 – Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene), Asphalt Restoration

The unit bid and contract unit price for this item shall include all equipment, materials, and labor necessary to connect original services (COS), 1-1/4" water service laterals (polyethylene) in place and ready to use by installing water service laterals using the open cut trench method. This item shall include but not be limited to:

- excavate trench to install 1-1/4" inch water service
- tapping and installation of corporation stops
- installation of 1-1/4 adaptor to size as necessary to connect to existing service lateral, existing size varies
- triple layer of 6-mil plastic wrapping for corporation stops and adaptors
- surface restoration for asphalt pavement and driveway - one lift, 3" - 19mm asphalt binder course, Type E-1
- curb and gutter replacement – match existing
- Type C salt tolerant lawn restoration in accordance with the Standard Specifications Section 2.7.4

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector.

Item 5 – Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene)

The unit bid and contract unit price for this item shall include all equipment, materials, and labor necessary to connect original services (COS), 1-1/4" water service laterals (polyethylene) in place and ready to use by installing water service laterals using the open cut trench method. This item shall include but not be limited to:

- excavate trench to install 1-1/4" inch water service
- tapping and installation of corporation stops
- installation of 1-1/4 adaptor to size as necessary to connect to existing service lateral, existing size varies
- single layer of 6-mil plastic wrapping for corporation stops and adaptors
- curb and gutter replacement – match existing
- Type C salt tolerant lawn restoration in accordance with the Standard Specifications Section 2.7.4

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector.

Item 6 – 8" Gate Valve

The unit bid and contract price for this item shall include but not be limited to all equipment, materials, and labor necessary to install the 8" resilient wedge gate valve complete, in place, and ready to use in accordance with Section VII of these Detailed Specifications.

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector.

Item 7 – 12" Gate Valve

The unit bid and contract price for this item shall include but not be limited to all equipment, materials, and labor necessary to install the 12" resilient wedge gate valve complete, in place, and ready to use in accordance with Section VII of these Detailed Specifications.

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector.

Item 8 – Connect to Existing 8" Water Main

The unit bid and contract price for this item shall include but not be limited to all equipment, materials, and labor necessary to connect to the existing 8" water main complete, in place, and ready to use. These items shall include but not be limited to:

- Exposing existing water main to verify location and depth prior to scheduling connections
- install mechanical restraints as required
- provide and install galvanic anode protection on existing ductile iron pipe
- triple layer of 6-mil plastic wrapping for fittings

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector

Item 9 – Connect to Existing 12" Water Main

The unit bid and contract price for this item shall include but not be limited to all equipment, materials, and labor necessary to connect to the existing 12" water main complete, in place, and ready to use. These items shall include but not be limited to:

- Exposing existing water main to verify location and depth prior to scheduling connections
- install mechanical restraints as required
- provide and install galvanic anode protection on existing ductile iron pipe
- triple layer of 6-mil plastic wrapping for fittings

This item shall be paid based on the contract unit price per each installed as measured and documented by the Inspector.

Item 10 - Hydrant, Lead, and 6-Inch Gate Valve

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to furnish and set a hydrant with 6'-6" barrel, with associated hydrant lead and auxiliary valve, together with all work and proper backfilling, surface restoration, complete in place and ready to use, in accordance with the construction plans and these Detailed Specifications. This shall include installation of tracer wire test stations.

This item shall include the hydrant, hydrant lead (of various lengths), and aux. valve, as shown on the plans. The hydrant, lead, and valve shall be restrained back the water main.

This item shall be paid based on the contract unit price for each as documented by the Inspector.

Item 11 – Salvage and Delivery of Existing Hydrants

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to salvage and deliver existing hydrants to the Owner's storage yard.

This item shall be paid based on the contract unit price per each as documented by the Inspector.

Item 12 – Existing Valve Box Removal (Top section Only)

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to remove top section of the existing valve box and fill remainder with 3/8" clear stone and provide surface restoration complete, in place.

This item shall be paid based on the contract unit price per lump sum as documented by the Inspector

Item 13 – Erosion Control

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to install erosion controlitems complete, in place, and ready to use. This item shall include but not be limited to:

- compensation for cost of erosion control implementation plan
- furnishing, hauling, and placement of erosion control devices required by local, state, and federal ordinances, statutes, and regulations
- all incidental work related to erosion control required by local, state, and federal ordinances, statutes, and regulations
- regular maintenance and removal of all temporary erosion control devices

This item shall be paid based on the contract unit price per lump sum as documented by the Inspector

Item 14 – Traffic Control

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to install project traffic control. This item shall include but not be limited to:

- setting traffic control in accordance with the plans and specifications\
- coordinating with and completing the requirements under Wisconsin Department

of Transportation Permit
- daily checks and maintenance
- adherence to the Manual on Uniform Traffic Control Devices, latest

This item shall be paid based on the contract unit price per lump sum as documented by the Inspector.

Item 15 – Removing Pavement (Howell Avenue)

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to remove the existing pavement, full depth, on Howell Avenue. This item shall include but not be limited to:

- removing the existing pavement, full depth, on Howell Avenue in accordance with the plans and as detailed in the Wisconsin Department of Transportation Utility Permit

This item shall be paid based on the contract unit price per square yard as documented by the Inspector.

Item 16 – Concrete Base 8-Inch (Howell Avenue)

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to pour a monolithic 8-inch base in Howell Avenue in place and ready for traffic. This item shall include but not be limited to:

- pour an 8-inch concrete base up to three inches below the existing finish asphalt grade in accordance with the Detailed Specifications
- provide a six-bag, portland cement concrete mix in accordance with the Detailed Specifications and as specified in the Wisconsin Department of Transportation Utility Permit
- provide and install reinforcement as specified in the Wisconsin Department of Transportation Utility Permit Standard Detail Drawings
- furnish, cast, and break test cylinders in accordance with the Wisconsin Department of Transportation Utility Permit. Provide data to the Oak Creek Water and Sewer Utility for road openings

This item shall be paid based on the contract unit price per square yard as documented by the Inspector.

Item 17 – Concrete Base 8-Inch H.E.S. (Howell Avenue)

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to pour a monolithic 8-inch base, high early strength, in Howell Avenue in place and ready for traffic. This item shall include but not be

limited to:

- pour an 8-inch concrete, high early strength base up to three inches below the existing finish asphalt grade in accordance with the Detailed Specifications
- provide and install a six-bag, portland cement concrete mix in accordance with the Detailed Specifications and as specified in the Wisconsin Department of Transportation Utility Permit
- provide and install reinforcement as specified in the Wisconsin Department of Transportation Utility Permit Standard Detail Drawings
- furnish, cast, and break test cylinders in accordance with the Wisconsin Department of Transportation Utility Permit. Provide data to the Oak Creek Water and Sewer Utility for road openings

This item shall be paid based on the contract unit price per square yard as documented by the Inspector.

Item 18 – HMA Pavement, Type E-1 (Howell Avenue)

The unit bid and contract price for this item shall include all equipment, materials, and labor necessary to place a 3-inch lift of 19mm asphalt binder on top of the concrete base, in place and ready for traffic. This item shall include but not be limited to:

- provide and install a single 3-inch lift of 19mm asphalt binder course, Mix E-1 to match the existing finish asphalt grade in accordance with the Wisconsin Department of Transportation Utility Permit Specifications

This item shall be paid based on the contract unit price per Ton as documented by the Inspector.

Wisconsin Department of Transportation Utility Permit

Attachment 1: Sample Start and Work Completion Notice

Utility Permit Start Work Notice

Provide all information and e-mail or fax to the utility permit coordinator or other region contact listed on the approved permit form a minimum three working days prior to the start of the work. When restoration is complete and ready for inspection, e-mail or fax to the same contact.

WisDOT Utility Permit Number:	40U-310-14
Utility Job Number:	14105
Utility Company:	Oak Creek Water & Sewer
Utility Contractor Contact Name and 24-Hour Number:	
Traffic Control Provider and 24-Hour Number	
Construction Start Date:	
Construction Completion Date:	

SOUTHWEST REGION
Mark Goggin
mark.goggin@dot.wi.gov
Fax: 608-243-3380 Madison office
608-789-7896 La Crosse office

SOUTHEAST REGION
Ryan Schnurer
ryan.schnurer@dot.wi.gov
Fax: 262-521-4425

NORTHEAST REGION
Ray Drake
ray.drake@dot.wi.gov
Fax: 920-492-0144
NE Utility Unit General E-Mail:
dotdtsdneutilitycoordination@dot.wi.gov

NORTH CENTRAL REGION
Keith Rutkowski – Wis Rapids office
keith.rutkowski@dot.wi.gov
Fax: 715-421-7300

Terry Catlin – Rhinelander office
terry.catlin@dot.wi.gov
Fax: 715-365-5780

NORTHWEST REGION
Heather Dresel
HeatherL.Dresel@dot.wi.gov
Fax: 715-836-2807 Eau Claire office

Completion Notice

Restoration is complete and ready for inspection. File notices within 10 calendar days of restoration completion. Restore within two weeks from completion of utility construction.

Restoration Completion Date:	

DT1553i 12/2010

APPLICATION / PERMIT

Wisconsin Department of Transportation

TO CONSTRUCT, OPERATE and MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY

s.66.0831, 84.08, 85.15, 86.07(2), 86.16, 182.017 and such other applicable Wis. Stats.

1. Applicant (Utility facility owner) Name and Address

Oak Creek Water and Sewer Utility
170 Drexel Avenue
Oak Creek, WI 53154

2. Work Start Date: 2/15//2014

3. Work Finish Date*: 5/31/2014

4. Is the work due to a WisDOT highway project?

☒ Yes ☐ No

5. Applicant Work Order (If any): 14105

6. Location Description (¼ section, section, town, range; provide plat map or location sketch)

SW 1/4 Section 16 T5N R22E

7. Work Location (Check/list all that apply)

☐ Town: _____
☐ Village: _____
☒ City: Oak Creek
☒ County: Milwaukee

8. Highway (Check all that apply)

☒ WIS 38
☐ US _____
☐ Interstate _____
☐ _____

9. Facility Type (Check all that apply):
Size (Diameter, kV, pressure, # fibers, etc.)

☐ Telecom: _____
☐ Electric: _____
☐ Gas/Oil: _____
☒ Water: 12"
☐ San Sewer: _____
☐ _____: _____

☐ Transmission ☒ Service: Std
☒ Distribution ☐ Service: Exp

10. Facility Orientation (Check all that apply)

☐ Crossing R/W ☐ Parallel R/W
☒ Underground ☐ Overhead
☐ Structure attachment

11. Work Types (Check all that apply)

☒ New construction
☒ Improve/repair existing
☒ Removal
☐ Maintenance
☐ Discontinued, left in place
☐ Joint installation

12. Proposed Work Methods (Check all that apply)

☒ Trench ☐ Plow
☐ Casing ☐ Rock blasting
☒ Open cut pavement

Bore:
☐ Hydraulic (Auger/Jack)
☐ Pneumatic (Mole)
☐ Directional 1 (Manually tracked)
☐ Directional 2 (Computer tracked)
☐ Unknown (At this time)

Attach to poles/towers:
☐ New ☐ Existing ☐ Guys**

_____ (Diameter) _____ (Name of existing owner)
(** Provide details for all guy wires on plan sheets)

Subsurface utility excavation:
☐ Water jetting ☐ Vacuum

Tree/vegetation control:
☐ Cut and/or trim ☐ Mow
☐ Chemically treat

13. Work Zone Description (Check all that apply)

☐ Full road closure: detour
☐ Full road closure: temporary
☒ Lane closure: without flagging
☒ Lane closure: with flagging
☐ Lane encroachment (2 feet or less)
☐ Intersection/roundabout
☐ Shoulder/parking lane closure
☐ Off shoulder: within clear zone
☐ In R/W: outside clear zone
☐ Near R/W line: within clear zone
☐ Near R/W line: outside clear zone
☐ Not applicable

14. Is the proposed facility near a survey monument?
(See HMM 09-15-35)

☐ Yes (Call: 1-866-568-2852 or e-mail: geodetic@dot.wi.gov)
☒ No

15. Will any appurtenances be installed with the facility?
(If yes, provide a description and/or specification of each item with this application.)

☐ Yes ☒ No

16. Trans 401 project designation?
(For all Major projects, provide a formal erosion control plan with this application. See HMM 09-15-55)

☒ Minor ☐ Major

17. Are any environmental permits, certifications or approvals required from other regulatory agencies?
(If yes, provide a copy of each item or proof of agency coordination with this application.)

☐ Yes ☒ No

*** NOTE: If the work described is not completed by the "Work Finish Date" specified, this permit is null and void, and the work shall not be completed unless authorized through a subsequent permit or an approved time extension. *ANY PERMIT ISSUED IS REVOCABLE.***

18. Utility Person Responsible for Construction (Area Code) Telephone Number

Ron Pritzlaff 414-570-8200

19. Utility or Project 24/7 Emergency Contact (Area Code) Telephone Number

Bryan Jahns 414-852-3917

20. Is the utility a member of Diggers Hotline?

☒ Yes ☐ No, provide line-locate number _____

21. Provide additional project work details, if needed (Continue on back or include separate page)

Work includes water main relay in outside shoulder of northbound lanes of STH 38. Connections will then be made to the existing water main located on the inside lane of the northbound lanes of STH 38 between Groveland Drive and Forest Hill Avenue.

It is understood and agreed that approval is subject to applicant's full compliance with the pertinent statutes, as well as any rules and regulations of other jurisdictional agencies, which may be more restrictive, and with the Wisconsin Department of Transportation's *Utility Accommodation Policy (UAP)*, current edition.
http://www.dot.wisconsin.gov/business/rules/property-uap.htm

Ron Pritzlaff 1-28-2014
(Signature of Authorized Representative – If filled via computer, Brush Script font) (Date)

22. If not employed by applicant, authorized representative's company name and address

Ron Pritzlaff/Utility Engineer
(Title and/or print name)

414-570-8200 rpritzlaff@water.oak-creek.wi.us
(Authorized Representative Telephone Number) (Authorized Representative E-mail Address)

This permit does not transfer any land; nor give, grant or convey any land right, right in land, nor easement in WisDOT right-of-way. It is not assignable or transferrable. If ownership in a utility facility changes, WisDOT may void and supersede a permit and reissue it to the new owner upon request and with sufficient proof of ownership.

↓ For Wisconsin DOT Use Only ↓

☒ **THE UTILITY SHALL NOTIFY WisDOT 3 DAYS BEFORE STARTING WORK AT:**

Region contact, title, office address, telephone number, and e-mail address

Craig Hardy
Utility Construction Engineer
141 NW Barstow Street
Waukesha, WI 53189
262-548-8706
Craig.Hardy@dot.wi.gov

☒ **REVIEW ALL SUPPLEMENTAL PERMIT PROVISIONS**
☒ **REVISIONS MADE to DRAWINGS or OTHER PAGES**
☒ Lane Closure System notification required: HMM 09-15-60
☐ Insurance or performance bond required
☐ Joint installation: See permit(s) #_____
☐ Private utility (Non-public ownership and/or use)
☐ Expedited Service Connection Permit
☐ This permit voids & supersedes #_____ issued:_____
☐

Date Application Received	Date Application Completed	Date Application Denied	Permit Issuance Date	Permit Extension Date
1/31/14	2/12/2014		2/12/2014	

2060-15-71
WisDOT Improvement Project ID Numbers (if applicable)

Craig Hardy
(WisDOT Authorized Representative Signature – If filled via computer, Brush Script font)

Permit Number: 40U-310-14

Use this section to provide information that does not fit on front page

Contractor has the option to use slurry backfill, or granular backfill. If granular backfill is used, follow the testing and compaction requirements found in this permit.

INDEMNIFICATION

This Applicant shall save and hold the State, its officers, employees, agents, and all private and governmental contractors and subcontractors with the State under Chapter 84 Wisconsin Statutes, harmless from actions of any nature whatsoever (including any by Applicant itself) which arise out of, or are connected with, or are claimed to arise out of or be connected with any of the work done by the Applicant, or the construction or maintenance of facilities by the Applicant, pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way, (1) while the Applicant is performing its work, or (2) while any of the Applicant's property, equipment, or personnel, are in or about such place or the vicinity thereof, or (3) while any property constructed, placed or operated by or on behalf of Applicant remains on the State's property or right-of-way pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way; including without limiting the generality of the foregoing, all liability, damages, loss expense, claims, demands and actions on account of personal injury, death or property loss to the State, its officers, employees, agents, contractors, subcontractors or frequenters; to the Applicant, its employees, agents, contractors, subcontractors, or frequenters; or to any other persons, whether based upon, or claimed to be based upon, statutory (including, without limiting the generality of the foregoing, worker's compensation), contractual, tort, or whether or not caused or claimed to have been caused by active or inactive negligence or other breach of duty by the State, its officers, employees, agents, contractors, subcontractors or frequenters; Applicant, its employees, agents, contractors, subcontractors or frequenters; or any other person. Without limiting the generality of the foregoing, the liability, damage, loss, expense, claims, demands and actions indemnified against shall include all liability, damage, loss, expense, claims, demands and actions for damage to any property, lines or facilities placed by or on behalf of the Applicant pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way in the past or present, or that are located on any highway or State property or right-of-way with or without a permit issued by the State, for any loss of data, information, or material; for trademark, copyright or patent infringement; for unfair competition or infringement of personal or property rights of any kind whatever. The Applicant shall at its own expense investigate all such claims and demands, attend to their settlement or other disposition, defend all actions based thereon and pay all charges of attorneys and all other costs and expenses of any kind arising from any such liability, damage, loss, claims, demands and actions.

Any transfer, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit shall not release Applicant from any of the indemnification requirements of this permit, unless the State is notified of such transfer in writing. Any acceptance by any other person or entity, whether voluntary or involuntary, of ownership or control of any property constructed, placed or operated by or on behalf of the Applicant that remains on the State's property or right-of-way pursuant to this permit, shall include acceptance of all of the indemnification requirements of this permit by the other person or entity receiving ownership or control.

Notwithstanding the foregoing, a private contractor or subcontractor with the State under Chapter 84 Wisconsin Statutes, that fails to comply with sections 66.0831 and 182.0175 Wisconsin Statutes (2007-2008), remains subject to the payment to the Applicant of the actual cost of repair of intentional or negligent damage by the contractor or subcontractor to any property, lines or facilities placed by or on behalf of the Applicant pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way, and remains subject to payment to the Applicant for losses due to personal injury or death resulting from negligence by the contractor or subcontractor.

Notwithstanding the foregoing, if the State, or its officers, employees and agents, fail to comply with sections 66.0831 and 182.0175 Wisconsin Statutes (2007-2008), the State or its officers, employees and agents, remain subject to the payment to the Applicant of the actual cost of repair of willful and intentional damage by the State, or its officers, employees and agents, to any property, lines or facilities placed by or on behalf of the Applicant pursuant to this permit or any other permit issued by the State for location of property, lines or facilities on highway right-of-way, and remain subject to payment to the Applicant for losses due to personal injury or death resulting from negligence by the State, its officers, employees and agents.

No indemnification of private contractors or subcontractors with the State under Chapter 84 Wisconsin Statutes, shall apply in the event of willful and intentional damage by such private contractors or subcontractors to the property, lines and facilities of the Applicant located on the highway right-of-way pursuant to this permit or any other permit issued by the State for the location of property, lines or facilities on highway right-of-way.

Instructions for
APPLICATION/PERMIT TO CONSTRUCT, OPERATE and MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY
Wisconsin Department of Transportation (WisDOT) form DT1553

☒ **Start Work Notice:**

1) Prior to the start of utility construction, the utility operator **MUST** forward a copy of the attached utility start work notice to the Wisconsin Department of Transportation (WisDOT) regional utility permit coordinator. Failure to do so will result in revocation of this permit.

☒ **Permit Requirements:**

2) There shall be no deviations from the approved construction plans covered under this permit without additional written authorization from the WisDOT utility permit coordinator.

3) A complete copy of the permit WisDOT issues a utility for its proposed work shall be in the possession of the utility's work force, consultant, contractor or subcontractor at all times when work is being performed within the right-of-way (R/W). This includes a copy of WisDOT's approval for a service connection under an Expedited Service Connection Permit (ESCP). Electronic copies are acceptable.

4) Failure to maintain a permit on the work site shall cause this permit to become null and void. A subsequent permit will be required to complete the previously permitted work.

5) This permit is valid only for utility construction on WisDOT controlled highway right-of-way. Permits from other federal, state, county and local agencies may be required.

6) Utility construction shall not interfere with any WisDOT construction project or maintenance operation.

7) Underground facility locates shall be done prior to construction.

☐ **Work Time Restrictions:**

8) Work on any state trunk highway shall only occur on weekdays between the hours of XXX and XXX.

☒ **Work Zone Traffic Control:**

9) Work Zone Traffic Control (WZTC) shall be in accordance with the Wisconsin Manual of Uniform Traffic Control Devices (WMUTCD) chapter VI.

10) Traffic control shall be maintained throughout construction and shall be altered at anytime upon the request of WisDOT, the county or local highway department or any law enforcement agency.

11) Flaggers shall be used whenever conditions warrant.

12) At the end of each work day, construction signage shall be knocked down or removed. Turning sign faces away from traffic is no longer allowed.

13) Signage in place longer than 7 continuous calendar days shall be post mounted per the attached detail.

☒ **Wisconsin Lane Closure System (LCS) Notification:**

14) Lane, shoulder, ramp closures or encroachments on XXX XX require lane closure notification to the southeast region traffic engineer. The LCS request shall be sent to WisDOT for review and approval **14 calendar days** prior to the need for a freeway closure, or **3 business days** prior to the need for a non-freeway closure.

15) The utility or their contractor shall set up an account and request lane closures at the following link: http://transportal.cee.wisc.edu/closures/

☐ **I-94 North/South Freeway and ZOO Interchange Projects Lane Closures and Restrictions:**

16) Prior to the start of construction all lane closures and restrictions shall also be coordinated with WisDOT Traffic Coordinator Stephanie Skowronski at 414-750-1397 or Stephanie.Skowronski@dot.wi.gov

☒ **WisDOT Holiday Shutdowns:**

17) No utility work with the exception of emergency work shall be performed during the following holidays. All work shall stop prior to and resume after the holidays on the following dates and times. All unnecessary traffic control shall be knocked down or moved outside the clear zone:

Labor Day-August 30, 2013-12pm through September 3, 2013-6am
Thanksgiving-November 27, 2013-12pm through December 2, 2013-6am
Christmas-December 23, 2013-12pm through December 26, 2013-6am
New Years-December 30, 2013-12pm through January 2, 2014-6am
Martin Luther King, Jr. Day-January 17, 2014-12pm through January 21, 2014-6am
Memorial Day-May 23, 2014-12pm through May 27, 2014-6am
Independence Day-July 3, 2014-12pm through July 7, 2014-6am

☐ **Wisconsin State Fair:**

18) No utility work shall take place on XXX XX during Wisconsin State Fair from August 1, 2013 through August 11, 2013.

☐ **Survey Monuments:**

19) **NOTE:** The proposed utility work is at or near a WisDOT survey monument. Prior to any construction activity the utility operator shall contact WisDOT at 1-888-568-2852 or geodetic@dot.wi.gov

☐ **Freeway System Entry Restrictions:**

20) There shall be no entry to the freeway system right-of-way inside the security fences towards the surface of the traveled way for any reason.

☒ **Utility Installation at Risk:**

21) The proposed facility is being installed at the risk & expense of the facility owner/operator. The work authorized in this permit is within the limits of a future WisDOT improvement project. If the proposed facility will require future relocation and/or adjustment, it will be at the facility owners' expense.

☒ **Erosion Control:**

22) Prior to the start of construction, all applicable erosion control devices including inlet protection shall be placed, inspected, monitored and maintained on a daily basis by the utility operator or their contractor.

23) Spoil removed from excavations shall be placed in an upland area. The perimeter of each spoil pile shall be wrapped with silt fence or other devices to prevent soil loss or soil run off.

24) Whenever construction operations require dewatering, the displaced water shall be pumped through filter fabric bags or temporary settling basins constructed prior to discharge from the work site.

25) Inlet protection shall be removed once construction operations are complete and the work area is stabilized.

26) Silt fence or other erosion control devices shall be removed after substantial vegetative growth has occurred.

☐ **Tree Trimming & Removal Operations Ash Species:**

27) Prior to the cutting, pruning or trimming of any ash trees, the utility shall consult the State of Wisconsin's Emerald Ash Borer (EAB) website: http://www.emeraldashborer.wi.gov/

28) The utility and their contractor shall follow the rules and regulations as established by the Wisconsin

Department of Agriculture, Trade and Consumer Protection (DATCP).

29) The utility shall contact DATCP directly with any specific questions regarding their work and disposition of ash species while working on WISDOT right of ways.

☐ **Tree Trimming & Removal Operations Non- Ash Species:**

30) Brush, logs & debris from tree trimming & removal from non-ash species shall be hauled off the work site during and at the end of each work day or chipped.

31) Wood chips from non-ash species shall not be stockpiled. Any non-ash wood chips shall be spread out and dispersed accordingly to match the existing grade.

32) Stumps from non-ash species shall be cut flush to the existing grade.

☒ **Existing Pavements & Right-of-Way:**

33) Existing inlets, drainage structures, drain tiles or other drainage facilities damaged during construction shall be repaired or replaced in kind. The contractor shall notify WisDOT of any damaged facilities.

34) Equipment and material shall be moved outside the clear zone at the end of each work day.

35) Open excavations shall be plated or protected by other means during and at the end of each work day to ensure public safety. Energy absorbing terminals (EATS) or other crash protection devices shall be used with concrete barrier walls.

36) Existing highway pavements shall be kept and swept clean of mud and debris from construction and trucking operations during and at the end of each work day.

☒ **Directional Drill, Bore & Jack, Plow & Trenching Operations:**

37) All road crossings shall be bored or directionally drilled. Open cutting of any pavements is strictly prohibited and not authorized under this permit.

38) Manual tracking or guiding of directional drill heads from the pavement surface of the highway for utility crossings is strictly prohibited.

☐ **Subsurface Utility Exploration (S.U.E.) Operations:**

39) If water jetting is permitted, the utility or their contractor shall furnish to WisDOT digital pictures taken before and after the S.U.E. excavating from the same camera angle of the roadway section. Vacuum excavations need not pictures.

40) The pavement area for removal shall be cored. Saw cutting is prohibited. The core hole over the existing utility in pavement areas shall be no larger than 12" diameter inside the wheel paths and no larger than 16" outside the wheel paths. .

41) The areas specified on the construction plan where potential conflicts exists with other existing utilities, shall be the only areas where S.U.E. excavating will be allowed to be completed.

42) Flowable fill or slurry backfill per the attached detail shall be used in zones 1 & 2 to restore the voids left behind from the S.U.E. excavating.

43) The pavement core shall be fastened back in place with utilibond or an equivalent epoxy type adhesive. The pavement core shall be placed flush with the existing pavements.

44) The utility operator shall inspect and monitor the areas were S.U.E was performed on a routine basis.

45) WisDOT will require pavement removal and replacement at the utility operator's expense in areas where S.U.E. was performed and subsequent pavement failure occurs. WisDOT will determine final limits of pavement removal and replacement.

☐ **Aerial Construction Operations:**

46) A minimum of three work days in advance, the contractor shall coordinate rolling closures for aerial crossings with the respective county sheriff's office and local law enforcement agencies.

47) The rolling closures for the purpose of detaching or attaching an overhead cable crossing the highway shall be completed during off peak traffic hours. The rolling closure shall be completed under dry pavement conditions.

48) The utility or their contractor shall be responsible for all costs associated with the protection of traffic.

49) Anchors and guy cables shall be installed in accordance with clear zone requirements outlined in the WisDOT facilities development manual (FDM) chapter 11-15-1

50) Anchors and guy cables shall be installed in accordance with clear zone requirements outlined in the WisDOT facilities development manual (FDM) chapter 11-45-10 bicycle facilities.

Further details can be viewed in the WisDOT bicycle facilities design handbook at:

http://www.dot.wisconsin.gov/projects/state/docs/bike-facility.pdf

☐ **WisDOT Improvement Projects Coordination:**

51) The utility work is within the limits of a WisDOT construction project. Coordination must be done with WisDOT project manager XXX to ensure closure conflicts do not arise. Contact XXX at XXX-XXX-XXXX or XXX.XXX@dot.wi.gov

52) The utility work is within the limits of a WisDOT construction project. The utility shall attend the WisDOT weekly construction meeting. Contact XXX for time and location.

☒ **Soft Surface Restoration:**

53) Temporary soft restoration to stabilize the work site shall be completed in a timely manner during and immediately following utility construction. Excess spoil shall be hauled off the work site.

54) Final soft restoration shall consist of placing a minimum 4 " of topsoil, WisDOT spec seed, and fertilizer and erosion mat.

55) The contractor shall notify WisDOT as soon as final restoration has been completed and the work site is ready for inspection.

56) The utility operator or their contractor shall coordinate temporary and final soft restoration and restoration limits with the WisDOT project manager or the WisDOT project leader on the work site.

☐ **Soft Surface Restoration- Late Season :**

57) For late season seeding and restoration after October 1st. See the attached document.

☒ **Sidewalk Removal/ Replacement:**

58) Sidewalk removal, backfill requirements and sidewalk replacement shall be coordinated in advance with the respective local municipality (owner).

☒ **Open Cut Pavement:**

59) Existing pavements specifically authorized for removal to accommodate placement of utility facilities shall be **SAW CUT** full depth prior to the use of pavement breaking equipment.

60) Pavement cuts shall not be completed from November 1st through April 1st. Pavement restoration shall occur before November 1st or before materials become unavailable, whichever occurs 1st.

61) Pavement removed, shall be hauled off the work site during and at the end of each work day.

62) Temporary sheeting and shoring shall be used as necessary to prevent cave-ins.

☒ **Slurry Backfill:**

63) Slurry backfill per the attached detail shall be the required backfill for excavations in zones 1 & 2.

☒ **Granular Backfill:**

64) The use of granular backfill in lieu of slurry backfill for excavations within highway pavement areas and shoulder shall be pre-approved or authorized in advance by the WisDOT regional utility permit coordinator.

65) Granular material, shall be placed in lifts or layers 8" or less each in depth, and mechanically compacted to the density of the adjacent and undisturbed material.

66) Water jetting and use of excess water to facilitate mechanical compaction is strictly prohibited.

67) See attached granular backfill provisions

☒ **Concrete Pavement Restoration:**

68) Concrete pavement restoration shall consist of replacing in kind the concrete removed with concrete mix in accordance with Section 415 of the WisDOT Standard Specification (2014) and reinforced per the attached details. Use high early strength concrete in the intersections.

69) Pavement restoration shall occur before November 1st or before materials become unavailable, whichever occurs 1st.

70) Concrete pavement shall be replaced from joint to joint. The minimum longitudinal length is 6 feet.

71) Concrete pavement without a bituminous asphalt overlay shall have a tine or heavily broomed finish.

72) Curb and gutter damaged or removed during construction operations shall be replaced in kind per the attached detail.

☒ **Bituminous Asphalt Pavement Restoration:**

73) Bituminous asphalt pavement restoration shall consist of replacing in kind the bituminous asphalt overlay removed to match the existing bituminous asphalt thickness.

74) Pavement restoration shall occur before November 1st or before materials become unavailable, whichever occurs 1st.

75) Bituminous asphalt shall be replaced from seam to seam and overlay the longitudinal length of the concrete patch. The minimum longitudinal length is 6 feet.

☐ **Gravel Shoulders:**

76) Gravel shoulder material removed or disturbed due to construction operations shall be replaced in kind, graded and shaped to match the existing gravel shoulders.

☐ **Epoxy Pavement Markings:**

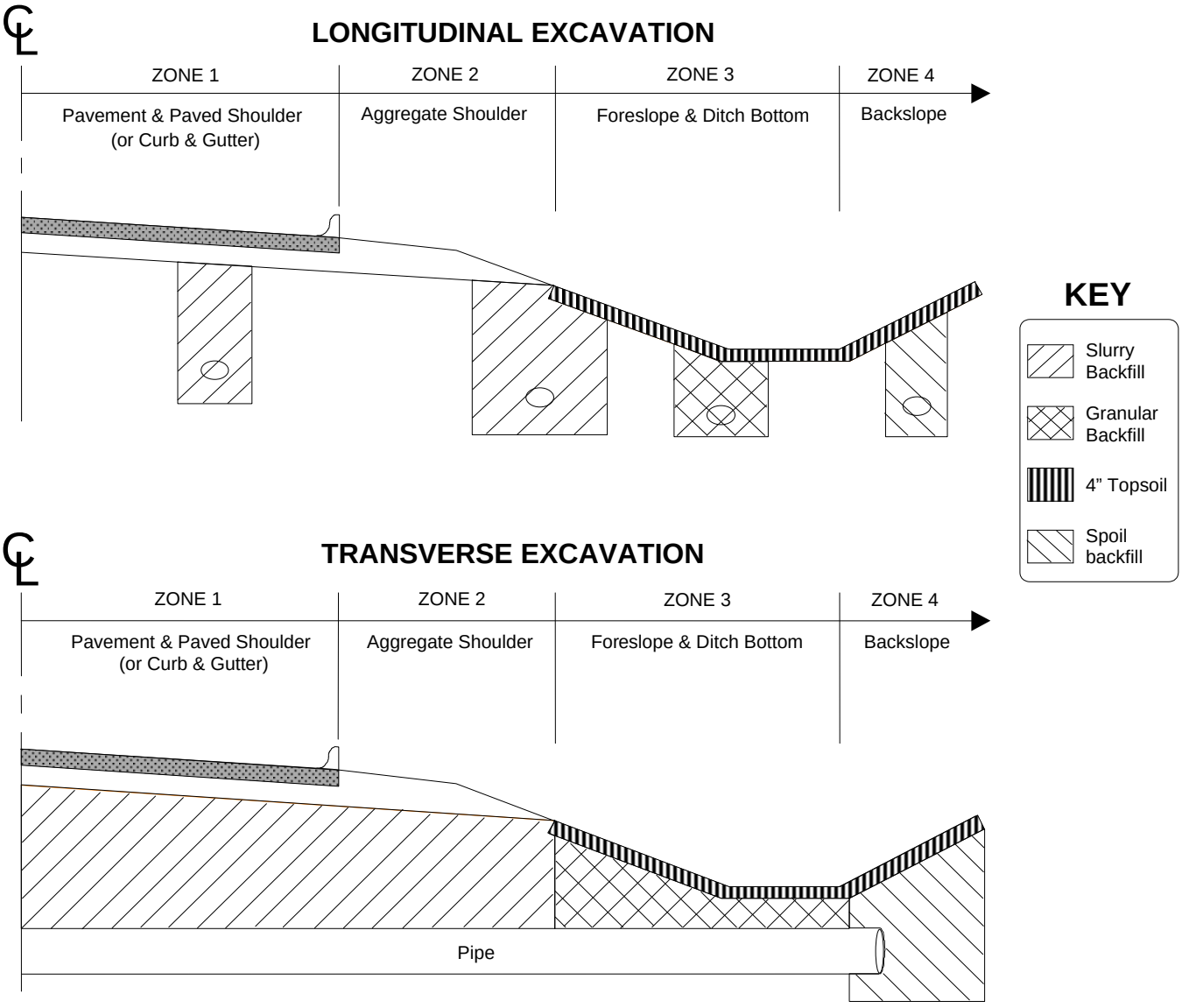
77) Epoxy pavement markings removed shall be replaced in kind with an epoxy based pavement marking paint along with reflective bead materials.

☒ **Temporary Pavement Markings:**

78) Temporary pavement markings when authorized by the WisDOT regional utility permit coordinator in lieu of epoxy pavement markings that are removed shall be replaced in kind with a latex based or equivalent pavement marking paint along with reflective beads.

79) Temporary pavement markings shall have a 2 year minimum service life.

Attachment 2: Backfilling Excavation Detail Drawings



NOTES

1) Use slurry backfill to replace the excavated material in ZONES 1 and 2.

2) If the work area covers BOTH ZONES 2 & 3, use slurry backfill to replace the excavated material.

3) Use granular backfill to replace the excavated material in ZONE 3. Granular backfill placement and gradation shall conform to WisDOT's Standard Specifications for Road and Bridge Construction, current edition.

4) Place backfill in ZONES 3 & 4 to within 4" of the finished grade to allow for topsoil placement.

5) Suitable spoil backfill may be used in ZONE 4 at the discretion of WisDOT.

SLURRY BACKFILL

The materials shall be placed in a clean concrete mixer truck and thoroughly mixed in the following quantities FOR EACH CUBIC YARD REQUIRED:

- SAND 1,350 lbs
- #1 STONE 750 lbs
- #2 STONE 1,150 lbs
- WATER 25 gals (0 to -0.5 gal variance)

No additional water will be allowed. The above weights are damp weights. Just prior to placing the slurry backfill, the mixer shall be run at mixing speed for one full minute to assure an even mixture.

Division of Transportation
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Scott Walker, Governor
Mark Gottlieb, P.E., Secretary
Internet: www.dot.wisconsin.gov

Telephone: (262) 548-5903
Facsimile (FAX): (262) 548-5662
E-Mail: waukesha.dtd@dot.wi.gov

February 11, 2014

Mr. Mike Simmons
City Engineer
City of Oak Creek
8640 S. Howell Avenue
Oak Creek,WI 53154

Re: City of Oak Creek Sanitary Sewer and Watermain- Howell Avenue Reconstruction
Milwaukee County Project 2060-15-71

Dear Mr. Simmons

Robert Elkin referred your request to me for a deviation to our standard slurry backfill policy for installation of the Oak Creek Sanitary Sewer and Watermain project which is planned to be completed prior to the WisDOT highway widening/reconstruction project. WIsDOT Utilities per the Utility Accommodation policy requires that slurry backfill be used for utility construction in our right of way. This is especially critical when that work is scheduled in the same construction period as the roadwork. We understand your concern with backfilled trenches heaving differently than adjacent pavements and acknowledge that you have firsthand knowledge of the soil conditions anticipated to be encountered with the trenching for the pipelines however we have not experienced those same heaving problem. We have recently started, on a case by case basis, to evaluate proposals from municipalities requesting alternates to slurry backfill. The Village of Kewaskum is comparing the slurry cost versus full time construction inspection with compaction testing by a certified nuclear density technician.
The specifications I have attached detail the testing requirements that the City would have to perform and provide to us. WisDOT would perform the verification testing. Please review the information and call me when we can discuss this with Bob Elkin.
Please do not construe this letter as approval to not use slurry. We will evaluate your proposa however our mandate to the public is to protect our highways and create the safest and best transportation facilities in the state of Wisconsin.

Sincerely,

Terry D. Kittson, PE
SE Region Utility Supervisor
262-548-6731

Cc Robert Elkin, Claudia Peterson, Dewayne Johnson

Trench Backfill Special, Item SPV.0090.115

A Description

This special provision describes requirements for trench backfill. Conform to standard spec 209 as modified in this special provision for all work within the roadway foundation at the following locations: This item shall be used to backfill excavations for sanitary sewer and water main items under this contract as shown on the plans and as directed by the engineer.

Provide and maintain a quality control program. A quality control program is defined as all activities, including process control inspection, sampling and testing, documentation, and necessary adjustments in the process that are related to the construction of trench backfill which meets all the requirements of this provision.

Chapter 8 of the department's construction and materials manual (CMM) provides additional detailed guidance for QMP work and describes sampling and testing procedures. The contractor may obtain the CMM from the department's web site at:

http://roadwaystandards.dot.wi.gov/standards/cmm/index.htm

B Materials

B.1 Quality Control Plan

Submit a comprehensive written quality control plan to the engineer at or before the pre-construction meeting. Do not perform utility work before the engineer reviews and accepts the plan. Construct the project as the plan provides.

Do not change the quality control plan without the engineer's review. Update the plan with changes as they become effective. Provide a current copy of the plan to the engineer and post in the contractor's laboratory as changes are adopted. Ensure that the plan provides the following elements:

1. An organizational chart with names, telephone numbers, current certifications and/or titles, and roles and responsibilities of QC personnel.
2. The process used to disseminate QC information and corrective action efforts to the appropriate persons. Include a list of recipients, the communication process that will be used, and action time frames.
3. An outline for resolving a process control problem. Include responsible personnel, required documentation, and appropriate communication steps.
4. Location of the QC laboratory, retained sample storage, and control charts and other documentation.
5. A summary of the locations and calculated quantities to be tested under this provision.
6. An explanation regarding the basis of acceptance for material that cannot be tested by nuclear methods due to a high percentage of oversized particles.

B.2 Personnel

Perform the quality control sampling, testing, and documentation required under this provision using HTCP certified technicians. Have a grading technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present at the site during all trench backfill compaction, and nuclear testing activities. Have a nuclear density technician certified under HTCP at level I perform field density and field moisture content testing.

B.3 Laboratory

Perform quality control testing in a department-qualified laboratory. Obtain information on the Wisconsin laboratory qualification program from:

Materials Laboratory
3502 Kinsman Boulevard
Madison, Wisconsin 53704-2583
Telephone: 608-246-7938
http://www.dot.state.wi.us/business/engrserv/lab-qualification.htm

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B.4 Equipment

Furnish the necessary equipment and supplies for performing quality control testing. Ensure that all testing equipment conforms to the equipment specifications applicable to the required testing methods. The engineer may inspect the measuring and testing devices to confirm both calibration and condition. Calibrate all testing equipment according to the CMM and maintain a calibration record at the laboratory.

Furnish nuclear gauges from the department's approved product list at http://www.atwoodsystems.com/materials. Ensure that the gauge manufacturer or an approved calibration service calibrates the gauge within 12 months before using it on the project. Retain a copy of the calibration certificate with the gauge.

Conform to ASTM D 2950 and CMM 8.15 for density testing and gauge monitoring methods. Perform nuclear gauge measurements using gamma radiation in the backscatter or direct transmission position. Perform each test for 4 minutes of nuclear gauge count time.

B.5 Trench Backfill

Trench backfill shall consist of Granular Backfill, Grade 2, per Section 209 of the WisDOT Standard Specifications.

Develop moisture-density curve for trench backfill soil by utilizing AASHTO T 99, with a minimum of 5 individual points, and a zero air voids curve at a specific gravity of 2.65. If a different specific gravity is used perform a specific gravity test. A new AASHTO T 99 test should be performed when the material gradation changes significantly or the source of material changes.

B.6 Quality Control Documentation

Ensure that all tests are recorded and become part of the project records.

Document all observations, inspection records, adjustments to fill placement procedures, and test results daily. Note the results of the observations and inspection records as they occur in a permanent field record.

Submit original testing records to the engineer in a neat and orderly manner within 10 business days after completing trench backfill.

B.7 Contractor Testing

B.7.1 General

Have a Grading Technician certified under HTCP at level I (or ACT Grading Technician under the direction of a certified technician) present during all trench backfill and testing. Have a nuclear density technician certified under HTCP at level I perform the testing for field density and field moisture content. During trench backfill, use sampling and testing methods identified in the CMM to perform the required tests at randomly selected locations at the indicated minimum frequency for each trench backfill area.

Determine the cubic yards for testing based on a total load count system the engineer and contractor agree to.

For each test, provide the cubic yards represented and the test location to within 2 feet horizontally and 1 feet vertically. Use project stationing to determine horizontal location and grade stakes to determine vertical location.

Test areas of suspect compaction or areas which appear to be nonconforming as determined by the engineer.

B.7.2 Field Density and Field Moisture

Perform the field density and field moisture tests using the nuclear density meter method according to AASHTO T 310. Use a coarse particle correction according to AASHTO T 224.

B.7.3 Testing Frequency

Perform the required tests at the following minimum frequencies per trench run between structures. Test trenches individually at the frequency listed below. For example, lateral lines and trunk lines are to be considered individual trenches:

Test	Minimum Frequency
Field Density and Moisture (AASHTO T 310)	One test per 50 CY of backfill placed or one test per day whichever yields the most tests.

B.7.4 Compaction Zones

Trench backfill placed within 6 feet of the finished subgrade elevation is classified as upper zone material. Trench backfill material placed more than 6 feet below the finished subgrade elevation is classified as lower zone material.

B.7.5 Control Limits

B.7.5.1 Field Density

B.7.5.1.1 General Conditions

The lower control limit for field density measurements in the upper zone is a minimum of 95.0% of the maximum dry density as determined by AASHTO T 99 or T 272.

The lower control limit for field density measurements in the lower zone is a minimum of 93.0% of the maximum dry density as determined by AASHTO T 99 or T 272.

B.7.5.2 Field Moisture Content

B.7.5.2.1 general conditions

The upper control limit for the field moisture content in the upper and lower zones is 110.0% of the optimum moisture as determined by AASHTO T 99 or T 272.

The lower control limit for the field moisture content in the upper and lower zones is 65.0% of the determined optimum moisture. There is no lower control limit for the field moisture of material having less than 5% passing the No. 200 sieve.

B.7.6 Corrective Action

Notify the engineer if an individual field density or field moisture test falls below the individual test control limit. The trench backfill in this area is unacceptable. Perform corrective actions, acceptable to the engineer to improve the density of the trench backfill material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

If the contractor's control data is proven incorrect resulting in a field density or field moisture point falling below the control limit for field density or outside the control limits for field moisture, the trench backfill is unacceptable. Employ the methods described above for unacceptable material.

B.8 Department Testing

B.8.1 General

The department will conduct verification testing to validate the quality of the product and independent assurance testing to evaluate the sampling and testing. The department will provide the contractor with a listing of names and telephone numbers of all verification and independent assurance personnel for the project.

The department will provide field density and field moisture test results to the contractor on the day of testing. Test results from Proctor split samples will be provided to the contractor within 7 business days after the sample has been received by the department.

B.8.2 Verification Testing

The department will have an HTCP technician, or ACT under the direction of a certified technician, perform QV sampling and testing. Department verification testing personnel must meet the same certification level requirements specified for contractor testing personnel for each test being verified. The department will notify the contractor before testing so the contractor can observe QV testing.

The department will test field density and field moisture randomly at locations independent of the contractor's QC work. The department will use split samples for verification of Proctor testing. In all cases, the department will conduct the verification tests in a separate laboratory and with separate equipment from the contractor's QC tests.

The department will perform verification testing as follows:

1. The department will conduct at least one verification test for field density and field moisture per 500 cubic yards.

If verification tests are within specified control limits, no further action is required. If verification tests are not within specified control limits, perform corrective actions, acceptable to the engineer to improve the density of the trench backfill material. After corrective action, perform a randomly located retest within the represented quantity to ensure that the material is acceptable.

Correct all deficiencies. If the contractor does not respond to an engineer request to correct a deficiency or resolve a testing discrepancy, the engineer may suspend utility work until action is taken. Resolve disputes as specified in B.9.

B.8.3 Independent Assurance Testing

Independent assurance is unbiased testing the department performs to evaluate the department's verification and the contractor's QC sampling and testing including personnel qualifications, procedures, and equipment. The department will perform the independent assurance review according to the department's independent assurance program, which may include one or more of the following:

1. Split sample testing.
2. Proficiency sample testing.
3. Witnessing sampling and testing.

4. Test equipment calibration checks.
5. Reviewing required worksheets and control charts.
6. Requesting that testing personnel perform additional sampling and testing.

If the department identifies a deficiency, and after further investigation confirms it, correct that deficiency. If the contractor does not correct or fails to cooperate in resolving identified deficiencies, the engineer may suspend utility work until action is taken. Resolve disputes as specified in B.9.

B.9 Dispute Resolution

The engineer and contractor should make every effort to avoid conflict. If a dispute between some aspect of the contractor's and the engineer's testing program does occur, seek a solution mutually agreeable to the project personnel. The department and contractor may review the data, examine data reduction and analysis methods, evaluate sampling and testing procedures, and perform additional testing. Use ASTM E 178 to evaluate potential statistically outlying data.

If the project personnel cannot resolve a dispute and the dispute affects payment or could result in incorporating nonconforming product, the department will use third party testing to resolve the dispute. The department's central office laboratory, or a mutually agreed on independent testing laboratory, will provide this testing. The engineer and contractor will abide by the results of the third party tests. The party in error will pay service charges incurred for testing by an independent laboratory. The department may use third party tests to evaluate the quality of questionable materials and determine the appropriate payment. The department may reject material or otherwise determine the final disposition of nonconforming material as specified in standard spec 106.5.

B.10 Acceptance

The department will accept the material tested under this provision based on the contractor QC tests unless it is shown through verification testing or the dispute resolution process that the contractor's test results are in error.

C Construction

Place all backfill as specified in standard spec 520.3.4.1(3). Compact all backfill to the density required in Article B.7.5.

D Measurement

The department will measure Trench Backfill Special by the linear foot of trench containing sanitary sewer pipe, water main pipe, manholes, and water main fittings and appurtenances acceptably installed under this contract.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.115	Trench Backfill Special	LF

Payment for Trench Backfill Special is full compensation for furnishing and installing granular backfill, including all labor, equipment, and incidentals required to complete the work.

If the engineer directs construction of the utility pipe greater than one foot above or below the elevations the plans show, the department will pay for the Trench Backfill Special as specified for extra work in 109.4. The department will not pay additional for backfill required for additional trench width.

Costs for all sampling, testing, and documentation required under this special provision are incidental to the work. If the contractor fails to perform the work required under the QMP portion of this special provision, the department may reduce the contractor's pay. The department will administer pay reduction under the Non-performance of QMP administrative item.

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September 24, 2013

MR. RON PRITZLAFF
OAK CREEK SEWER & WATER UTILITY
170 WEST DREXEL AVENUE
OAK CREEK, WI 53154

Work Plan Approval & Start Work Notice

SUBJECT: PROJECT I.D.: 2060-15-71
HOWELL AVENUE, CITY OF OAK CREEK
OAKWOOD RD TO GRANGE AVE
STH-038
MILWAUKEE COUNTY

Dear Mr. Pritzlaff:

This letter is to advise you that we have received your proposed Work Plan for City of Oak Creek – Sewer & Water dated 8/22/2013 for the subject project and you are hereby authorized to proceed with your adjustment and/or relocation work.

Please keep in mind that this approval constitutes only DOT acceptance of your work plan and your start work notice. You may need to obtain approvals, permits, or easements from other parties prior to relocating any utility facilities within or outside the project corridor. You will need to coordinate any other approvals needed directly with the affected parties.

Please contact me at (262) 548-5901 to inform me of the date you plan to start construction and when you have completed the construction. If you have any questions, feel free to call me.

Sincerely,

Gary C. Dahms

Gary Dahms
Southeast Region Utility Coordinator
gary.dahms@dot.state.wi.us

GCD: Filed as N:\PDS\projects\util\Trans220_WPstart_City of Oak Creek – Sewer & Water

CITY OF OAK CREEK

WATER AND SEWER UTILITY

S. HOWELL AVENUE (STH 38)
WATER MAIN RELAY

PROJECT NUMBER
14105

DRAFT DATE: FEBRUARY 10, 2014

OAK CREEK

WATER and SEWER UTILITY

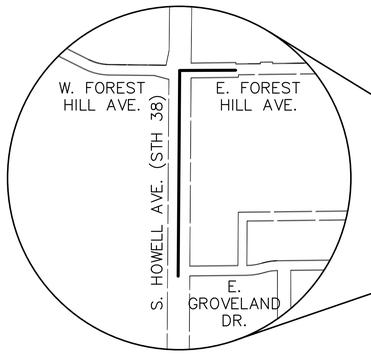
A COMMITMENT TO WATER QUALITY

LEGEND AND ABBREVIATIONS

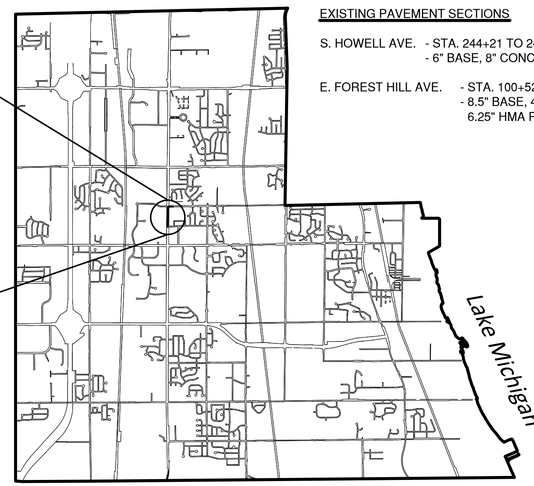
▲	TRAVERSE POINT	○ TILE	DRAIN TILE
	POWER POLE	PVC P	PVC PIPE
	LIGHT POLE	○ CO	CLEANOUT
○ FLAG	FLAG POLE	R BAR	REBAR
○	MANHOLE	BM.	BENCH MARK
	STORM INLET	⊙TMH	TELEPHONE MANHOLE
⊘WV	WATER VALVE	⊘SV	GAS SERVICE VALVE
⊘GV	GAS VALVE	⊘WSV	WATER SERVICE VALVE
	FIRE HYDRANT		CATCH BASIN
	MAIL BOX		CONIFEROUS TREE
	TELEPHONE PEDESTAL		STUMP
	CONTROL BOX		BUSH
	TRAFFIC SIGNAL	○ METAL	METAL POST
○ GUY	GUY WIRE		HANDHOLE
MON	MONUMENT		MISCELLANEOUS METER
○ 1"IP	1" IRON PIPE	○ WOOD	WOOD POST
○ 2"IP	2" IRON PIPE	A	ABANDONED POLE
○VENT	VENT PIPE	○ YL	YARD LIGHT
⊗	PULL BOX		SIGN
A/C	AIR CONDITIONER	S	INLET PROTECTION
2"	DECIDUOUS TREE		CULVERT PIPE DITCH CHECK

	EDGE OF BRUSH
	EDGE OF WOODS
	HEDGE ROW
	RIP RAP
— —○— — —	CHAIN LINK FENCE
○	GUARD RAIL
—TV—	BURIED CABLE TV
—E—	BURIED ELECTRIC LINE
—OHE—	OVERHEAD ELECTRIC LINE
—G—	BURIED GAS MAIN
—FM—	BURIED FORCE MAIN
—L—	BURIED STREET LIGHTING
—SAN—	BURIED SANITARY SEWER
—MIS—	BURIED MIS SEWER
—STM—	BURIED STORM SEWER
—T—	BURIED TELEPHONE LINE
—W—	BURIED WATER MAIN
P/L	EXISTING PROPERTY LINE
R/W	EXISTING RIGHT OF WAY

ASPH.	ASPHALT	I.E.	INVERT ELEVATION
BSM'T.	BASEMENT	I.P.	IRON PIPE
BIT.	BITUMINOUS	LAT.	LATERAL
CB.	CATCHBASIN	MH.	MANHOLE
C/L	CENTERLINE	M.J.	MECHANICAL JOINT
CIPP	CURED-IN-PLACE PIPE	PAV'T.	PAVEMENT
CONC.	CONCRETE	PROP.	PROPOSED
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CMPA	CORRUGATED METAL PIPE ARCH	PVC P.	PVC PIPE
C. & G.	CURB & GUTTER	R. BAR	REBAR
DRAIN T.	DRAIN TILE	REQ'D.	REQUIRED
D.I.P.	DUCTILE IRON PIPE	R.J.	RESTRAINED JOINT
DWY.	DRIVEWAY	SAN.	SANITARY
ECC.	ECCENTRIC	S.	SLOPE
EXIST.	EXISTING	STL.	STEEL
F.F.	FIRST FLOOR	STM.	STORM
FM.	FORCE MAIN	SUMP D.	SUMP DISCHARGE
G.V.	GAS VALVE	TYP.	TYPICAL
GR.	GRAVEL	VENT P.	VENT PIPE
G.W.	GUY WIRE	WM.	WATER MAIN
HYD.	HYDRANT	W.V.	WATER VALVE
INL.	INLET	W/	WITH



PROJECT LOCATION MAP
S. HOWELL AVE. (STH 38)



CITY OF OAK CREEK
VICINITY MAP

EXISTING PAVEMENT SECTIONS

S. HOWELL AVE. - STA. 244+21 TO 247+49
- 6" BASE, 8" CONCRETE, 4" HMA PAVEMENT

E. FOREST HILL AVE. - STA. 100+52 TO 105+40
- 8.5" BASE, 4" AGGREGATE OPEN GRADED, 6.25" HMA PAVEMENT

SHEET INDEX

TOTAL SHEETS = 08

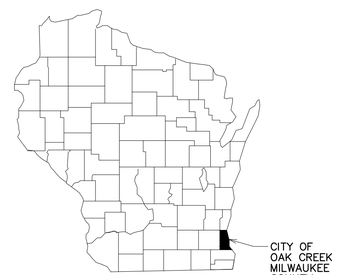
SURFACE RESTORATION

(H1) ASPHALT REPLACEMENT
(C1) CONCRETE REPLACEMENT

BACKFILL LEGEND

(A1) 3/4"–INCH T.B.B.F. (TYPE A1)
(AB) GRANULAR BACKFILL (TYPE A1)

N.T.S.

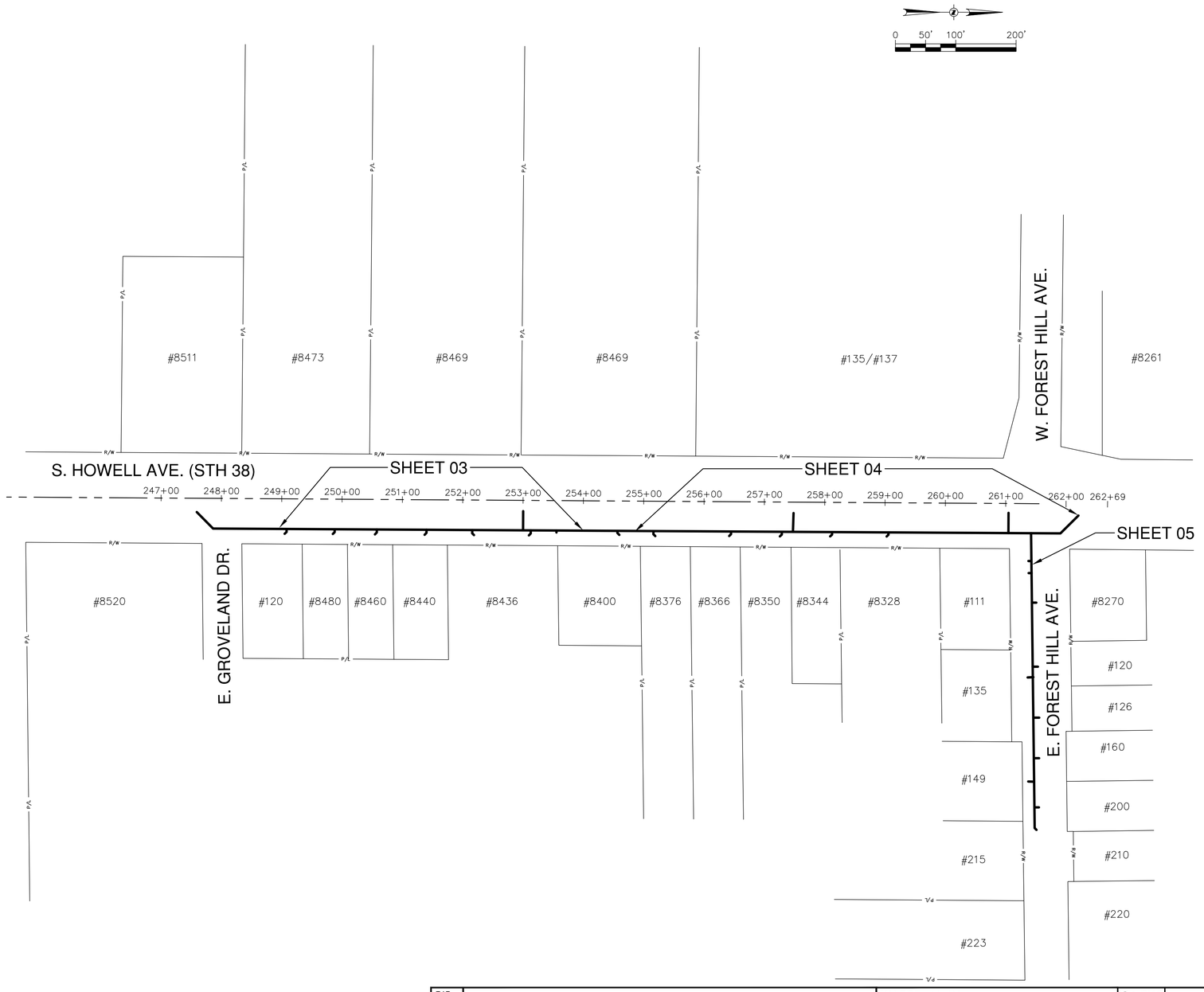


DIGGER'S HOTLINE
CALL BEFORE YOU DIG
1-800-242-8511

GRAEF
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

PROJECT ENGINEER: GRAEF

FILE NO: 14105–1C–2232



GENERAL NOTES:

1. CONTRACTOR SHALL REMOVE SIGNS, MAILBOXES, ETC. DURING CONSTRUCTION. IMMEDIATELY AFTER PIPE INSTALLATION AND BACKFILL OCCURS, ALL SIGNS, MAILBOXES, ETC. SHALL BE RETURNED TO THEIR PREVIOUS LOCATION. ALL STOP SIGNS MUST BE DISPLAYED AT ALL TIMES.
2. THE BASE SURVEY AND PROPOSED LINEWORK WAS PREPARED BY GRAEF AND SUPPLEMENTED WITH INFORMATION PROVIDED BY OTHERS. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO.
3. CONTRACTOR SHALL VERIFY LOCATION OF PROPOSED WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.
4. CONTRACTOR SHALL FURNISH ALL PROPOSED HYDRANTS WITH A BURY DEPTH OF 6.5–FEET AND PROVIDE EXTENSIONS AS REQUIRED TO SET BOTTOM HYD. FLANGE AT THE PROPOSED GROUND ELEVATION.
5. CONTRACTOR SHALL PROVIDE CONCRETE BUTTRESS RESTRAINT AT ALL HORIZONTAL BENDS W/STANDARD DIMENSIONS PER FILE NO. 44 OF THE STANDARD SPECIFICATIONS. RESTRAIN VERTICAL BENDS WITH MEGA LUGS OR APPROVED EQUAL. RESTRAINT OF PROPOSED WATER MAIN IS INCIDENTAL TO WATER MAIN CONSTRUCTION.
6. ALL DIMENSIONS ARE TO CENTER OF STRUCTURE/FITTING OR OPERATING NUT OF HYDRANT.
7. INSULATION IS REQUIRED WHEREVER COVER OVER THE TOP OF WATER MAIN, HYDRANT LEAD, OR WATER LATERAL IS LESS THEN 6–FEET OR WHERE SHOWN ON PLANS. (INCIDENTAL TO PROPOSED WATER MAIN)
8. SUPPORTING OF POWER/LIGHT POLES ALONG THE ENTIRE PROJECT LIMITS FOR PROPOSED WATER MAIN IS INCIDENTAL TO PROPOSED WATER MAIN CONSTRUCTION.
9. LOCATION OF PROPOSED WATER LATERALS ON PLANS ARE APPROXIMATE. FINAL LOCATION SHALL BE DETERMINED IN FIELD DURING CONSTRUCTION.
10. CONTRACTOR SHALL SALVAGE ALL EXISTING HYDRANTS CONNECTED TO EXISTING WATER MAIN TO BE ABANDONED BY DISASSEMBLING THE CONNECTION TO THE EXISTING 6" HYDRANT LEAD AT THE HYDRANT SHOE, AND SALVAGING THE HYDRANT, BARREL, SHOE, AND NOZZLE CAPS TO THE CITY OF OAK CREEK WATER AND SEWER UTILITY LOCATED AT 170 W. DREXEL AVE. OAK CREEK, WI 53154. COORDINATE DELIVERY WITH UTILITY STAFF.
11. CONTRACTOR SHALL BACKFILL ALL TRENCH EXCAVATIONS WITH SLURRY BACKFILL AND RESTORE CONCRETE PAVEMENT IN KIND WITH FULL PANEL REPLACEMENT. PAVEMENT REMOVAL LIMITS SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE ADJUSTED TO MEET FIELD CONDITIONS.
12. COORDINATES IN THIS PLAN ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, (NAD 27). ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF OAK CREEK VERTICAL DATUM.
13. CONTRACTOR SHALL INSTALL GALVANIC ANODE CORROSION PROTECTION AT EACH CONNECTION TO EXISTING WATER MAIN.
14. CONTRACTOR SHALL INSTALL METAL GROUNDING RODS AT ALL CONNECTIONS TO EXISTING WATER MAIN AND CONNECT TO TRACER WIRE FOR FUTURE UTILITY LOCATING.
15. CONTRACTOR SHALL COMPLY WITH WORK RESTRICTIONS AS SET FORTH IN THE PROJECT MANUAL, PHASING PLAN, AND WISDOT APPLICATION/PERMIT TO CONSTRUCT, OPERATE, AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT–OF–WAY.
16. PVC FITTINGS SHALL BE USE ON ALL PVC PIPE. PVC FITTINGS 4"–12" IN DIAMETER SHALL BE INJECTION MOLDED AND COMPLY WITH THE REQUIREMENTS OF AWWA C907 AND BE CERTIFIED CSA B137.2. MOLDED FITTINGS WILL BE MADE OF PVC COMPOUND WITH A MINIMUM HYDROSTATIC DESIGN BASIS OF 4000 PSI. MOLDED FITTINGS MUST BE FACTORY MUTUAL APPROVED AND LISTED BY THE UNDERWRITER'S LABORATORIES INTERNATIONAL (ULI).

    C905 FABRICATED FITTINGS MUST MEET ASTM D 3139 AND BE MANUFACTURED FROM PIPE SECTIONS THIRD PARTY CERTIFIED TO CSA B137.3 AND MUST MEET THE REQUIREMENTS OF AWWA C905. FABRICATED FITTINGS MUST ALSO BE CERTIFIED TO CSA B137.3. ALL FITTINGS MUST BE NSF–61 LISTED.

    IF A PARTICULAR TYPE OF PVC FITTING IS NOT MANUFACTURED, OR UNAVAILABLE, THE CONTRACTOR MAY USE DUCTILE IRON FITTINGS ON A CASE BY CASE BASIS WITH THE APPROVAL OF THE UTILITY ENGINEER.

EROSION CONTROL NOTES

1. CONSTRUCTION SITE AND SEDIMENTATION CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF OAK CREEK, AND SHALL EMPLOY EROSION CONTROL METHODS AS SHOWN AND SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION AND SEDIMENTATION CONTROL TECHNICAL STANDARDS.
2. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
3. PERIODIC INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL STRUCTURES SHALL BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SEDIMENT LEAVING THE PROJECT LIMITS. EROSION CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORK DAY.
4. SILT FENCE SHALL BE INSTALLED AS DIRECTED BY THE FIELD ENGINEER.
5. INLET PROTECTION SHALL BE INSTALLED ON ALL INLETS RECEIVING RUNOFF FROM THE PROJECT AREA TO TRAP SEDIMENT.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL SITE IS FULLY STABILIZED.
7. ALL DISTURBED AREAS WILL BE PERMANENTLY STABILIZED BY THE APPLICATION OF SEED AND MULCH; THE TYPE OF SEED USED WILL BE WISDOT MIXTURE 40 AS SPECIFIED IN THE LATEST EDITION OF THE STATE OF WISCONSIN STANDARDS SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
8. TYPE "C" EROSION CONTROL MATTING SHALL BE USED ON ALL SLOPES 3:1 OR GREATER AND AS DIRECTED BY FIELD ENGINEER.

TRAFFIC CONTROL NOTES

1. TRAFFIC CONTROL SHALL BE INSTALLED IN STAGES CORRESPONDING TO WORK ZONES, AND SHALL BE LIMITED TO AREAS WHERE WORK IS ACTIVELY TAKING PLACE TO MINIMIZE DISRUPTION TO MOTORISTS.
2. ALL TRAFFIC CONTROL SIGNAGE SHALL HAVE DIAMOND GRADE SHEETING PER WISDOT STANDARDS.
3. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO ENGINEER FOR REVIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO CONSTRUCTION.
4. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

RESTORATION NOTES

1. RESTORATION ON S. HOWELL AVE. SHALL BE 9" CONCRETE BASE WITH DRILLED #4 EPOXY COATED TIE BARS ON–CENTER.
2. E. FOREST HILL AVE. DITCH LINES TO BE RESTORED WITH 4" OF TOPSOIL, EROSION MATTING, AND MULCH. CONTRACTOR SHALL INSURE POSITIVE DRAINAGE WITH LONGITUDINAL DITCH SLOPE MATCHING THE LONGITUDINAL GRADE OF THE ROAD CENTER LINE.

NOTICE:
In accordance with Wisconsin statute 182.0175, damage to transmission facilities, excavator shall be solely responsible to provide advance notice to the designated "ONE CALL SYSTEM" not less than three working days prior to commencement of any excavation required to perform work contained on this drawing, and further, excavator shall comply with all other requirements of this statute relative to excavator's work.

DISCLAIMER:
The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

GRAEF
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

BID ITEM NOS.

ESTIMATE OF QUANTITIES

WATER MAIN	
CONTRACTOR:	SA.FKO
	ST.FKO
MAINLINE INSPECTED BY:	W. FKO
LATERALS INSPECTED BY:	G. FKO
DATE COMPLETED:	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
TYPE OF PIPE, ASTM NO.	I. FKO
AS-BUILTS BY: DATE:	TS.FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

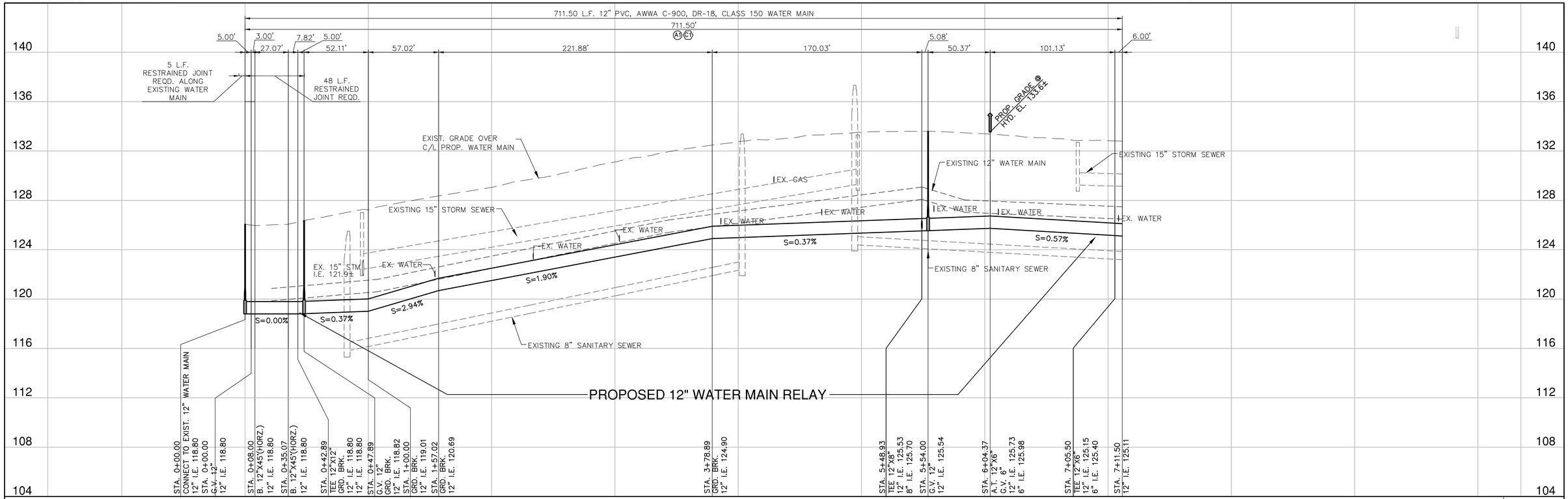
DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2–13–14	FKO 2–13–14	MNP 2–13–14

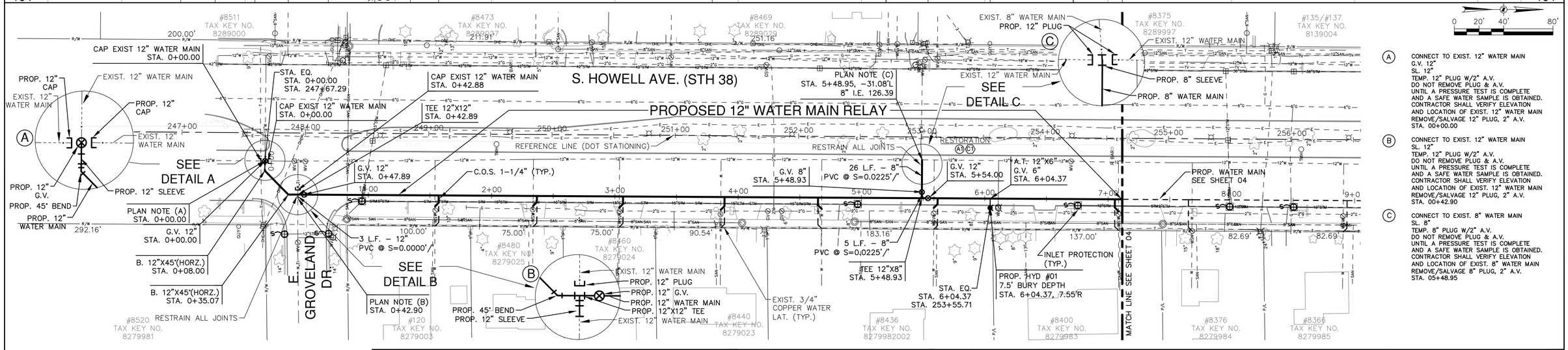
APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: S. HOWELL AVENUE
FR: E. GROVELAND DR.
TO: E. FOREST HILL AVE.

SCALE	SHEET
PLAN HOR. AS NOTED	02
PROFILE HOR. ____	OF
VER. ____	08

FILE NO: 14105–2C–2233





A CONNECT TO EXIST. 12" WATER MAIN
G.V. 12"
SL. 12"
TEMP. 12" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 12" WATER MAIN
REMOVE/SALVAGE 12" PLUG, 2" A.V.
STA. 00+00.00

B CONNECT TO EXIST. 12" WATER MAIN
SL. 12"
TEMP. 12" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 12" WATER MAIN
REMOVE/SALVAGE 12" PLUG, 2" A.V.
STA. 00+42.90

C CONNECT TO EXIST. 8" WATER MAIN
SL. 8"
TEMP. 8" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 8" WATER MAIN
REMOVE/SALVAGE 8" PLUG, 2" A.V.
STA. 05+48.95

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GRÄEF
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

ESTIMATE OF QUANTITIES

BID ITEM NOS.		
2	8" CL. 150 PVC Water Main with granular backfill., full depth sawcutting, concrete pavement removal, concrete pavement replacement, concrete curb and gutter replacement, and lawn restoration.	26 L.F.
3	12" CL. 150 PVC Water main with granular backfill, full depth sawcutting, concrete pavement removal, concrete pavement replacement, concrete curb and gutter replacement, and lawn restoration.	712 L.F.
4	Connect original service (COS) 1-1/4" Water Service Laterals (Polyethylene)	7 EA.
5	8" Gate Valve	1 EA.
6	12" Gate Valve	3 EA.
7	Connect to Existing 8" Water Main'	1 EA.
8	Connect to Existing 12" Water Main	2 EA.
9	Hydrant, Lead and 6-Inch Gate Valve	1 EA.

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY: DATE:	I. FKO
	TS.FKO
	PP.

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Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

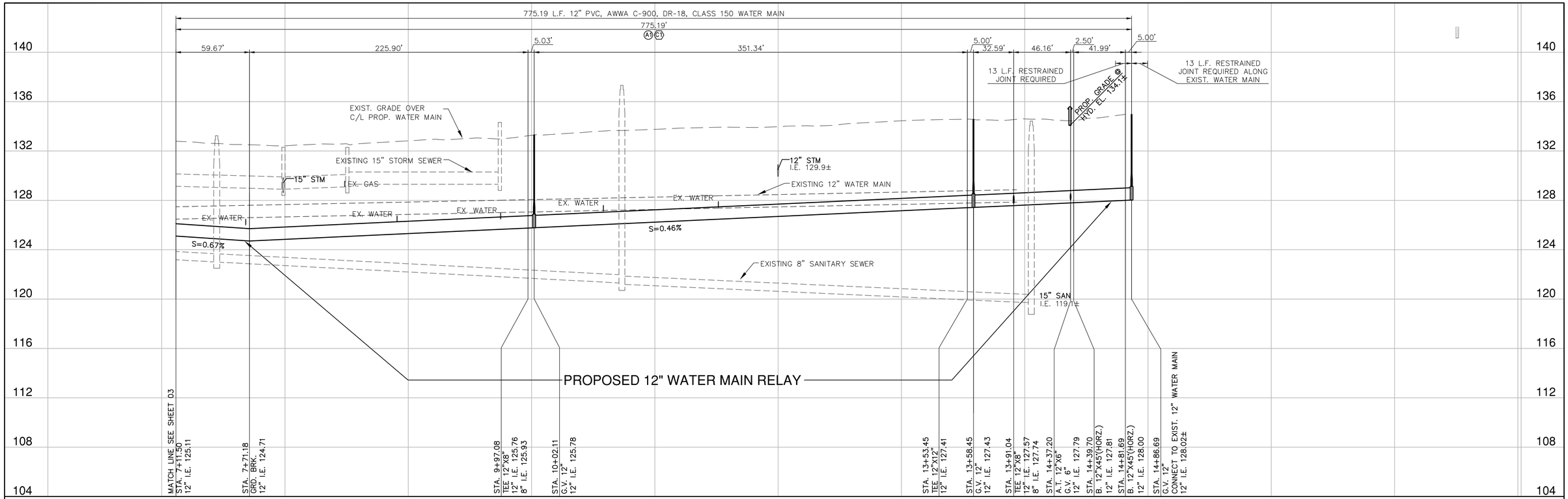
DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: S. HOWELL AVE. (STH 38)
FR: E. GROVELAND DR.
TO: 670 FT. NORTH OF E. GROVELAND DR.

SCALE	SHEET
PLAN HOR. 1"=40'	03
PROFILE HOR. 1"=40' VER. 1"=4'	OF 08

FILE NO: 14105-3C-2234



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4	Connect original service (COS) 1-1/4" Water Service Laterals (Polyethylene)	5 EA.
5	8" Gate Valve	1 EA.
6	12" Gate Valve	4 EA.
7	Connect to Existing 8" Water Main'	1 EA.
8	Connect to Existing 12" Water Main	2 EA.
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WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
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DATE COMPLETED:	G. FKO
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AS-BUILTS BY: DATE:	I. FKO
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CITY ENGINEER DATE

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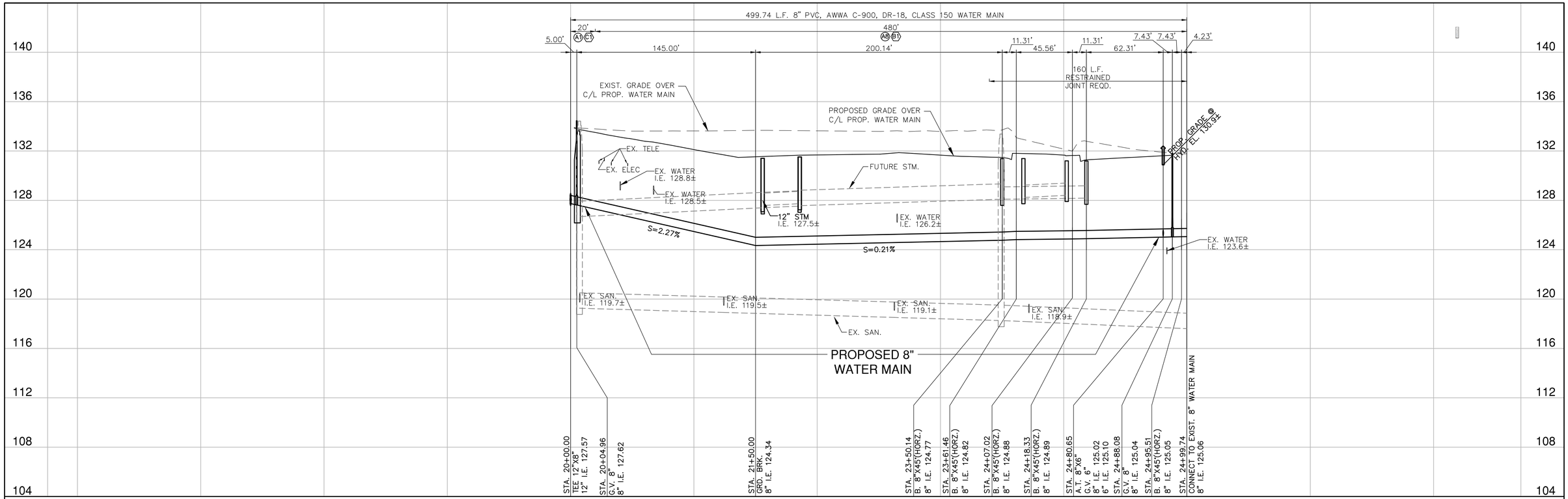
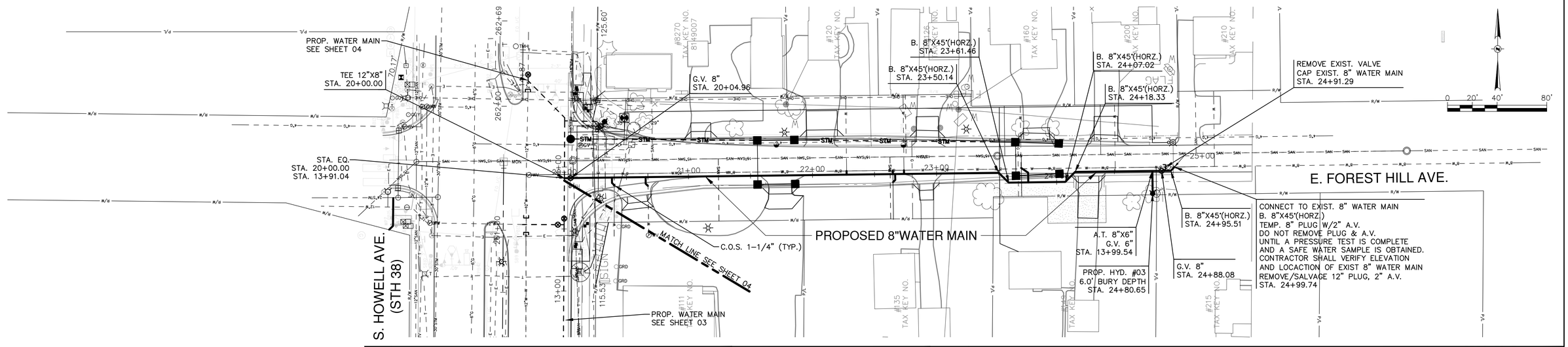
IN: S. HOWELL AVE. (STH 38)
FR: 700 FT. SOUTH OF E. FOREST HILL AVE.
TO: E. FOREST HILL AVE.

SCALE	SHEET
PLAN HOR. 1"=40'	04
PROFILE HOR. 1"=40' VER. 1"=4'	OF 08

FILE NO: 14105-4C-2235





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ESTIMATE OF QUANTITIES

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1	8" CL. 150 PVC Water Main with 3/4-inch T.B.B.F., full depth sawcutting, asphalt pavement removal, asphalt pavement replacement, asphalt driveway replacement, CMP culvert replacement, and lawn restoration.	500 L.F.
4	Connect original service (COS) 1-1/4" Water Service Laterals (Polyethylene)	7 EA.
5	8" Gate Valve	1 EA.
7	Connect to Existing 8" Water Main	2 EA.
9	Hydrant, Lead and 6-Inch Gate Valve	1 EA.

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY: DATE:	I. FKO
	TS.FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: E. FOREST HILL AVE.
FR: S. HOWELL AVE.
TO: 300 FT. EAST OF S. HOWELL AVE.

SCALE	SHEET
PLAN HOR. 1"=40'	05 OF 08
PROFILE HOR. 1"=40' VER. 1"=4'	

FILE NO: 14105-5C-2236

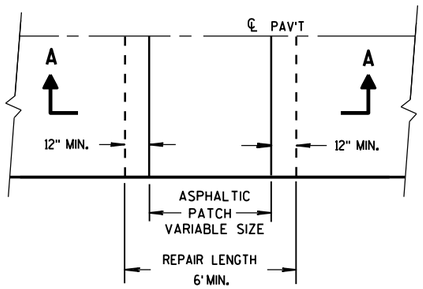
GENERAL NOTES

SAW CUT, DRILL, AND LIFT OUT EXISTING CONCRETE PAVEMENT WITHIN THE BOUNDARIES OF CONCRETE REPAIR AREAS. THE CONTRACTOR MAY MAKE ADDITIONAL SAW CUTS INSIDE THE REPAIR LIMITS TO REDUCE WEIGHT AND SIZE OF CONCRETE PIECES. ADDITIONAL SAW CUTS ARE NOT PAID FOR BY THE DEPARTMENT.

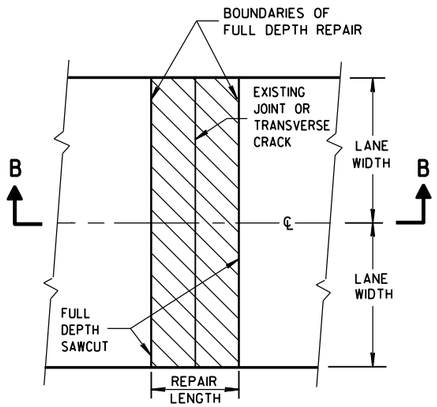
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

THE LENGTH OF THE REPAIRS MAY VARY FROM THE DIMENSIONS SHOWN IF THE EXISTING CONCRETE PAVEMENT IS NONDOWELED AND THE PAVEMENT IS TO BE OVERLAID AFTER REPAIRING.

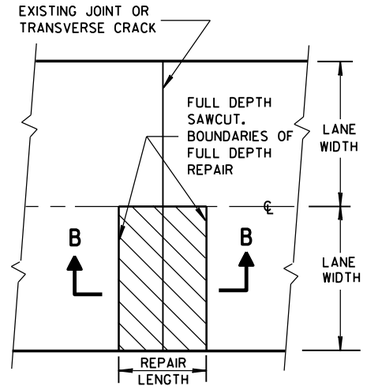
(1) DOWEL BARS MIGHT NOT EXIST.



PLAN VIEW



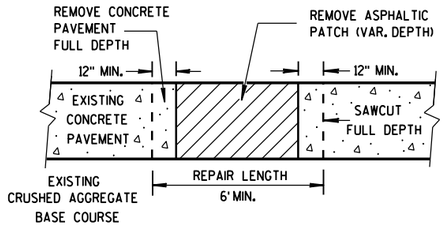
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

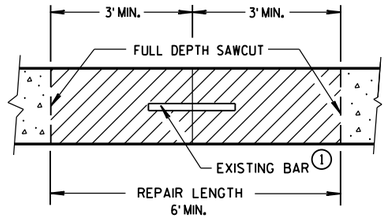
FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION A-A

HMA PATCH REMOVAL



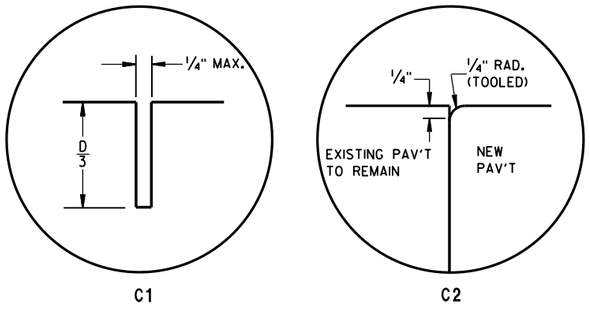
SECTION B-B

CONCRETE REMOVAL

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

13C9 sheet b: Concrete Pavement Repair and Replacement

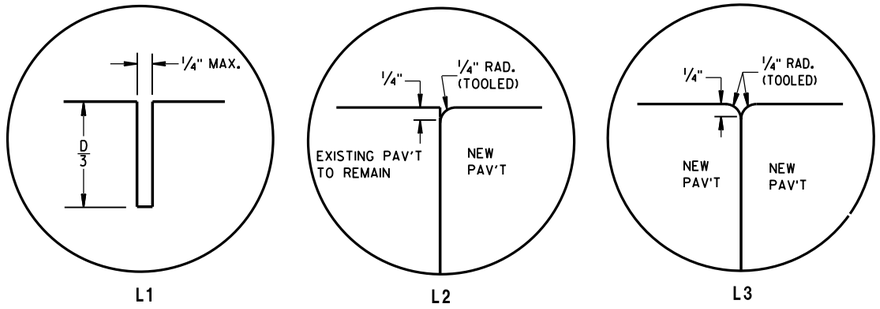


C1 C2

TRANSVERSE JOINTS

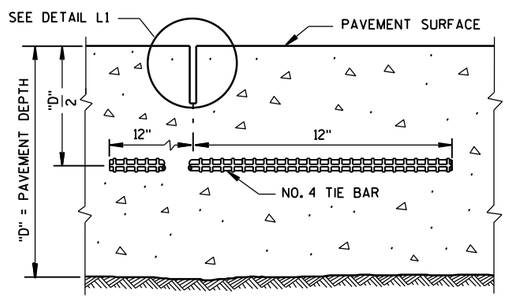
TIE BAR TABLE

PAVEMENT DEPTH "D"	CLEAR COVER "C"	MAXIMUM TIE BAR SPACING "S"	
		PAVEMENT WIDTH	
		24' OR 26'	≥ 30'
6, 6 1/2"	3"±1/2"	48"	42"
7, 7 1/2"	3 1/4"±1"	45"	36"
8, 8 1/2"	3 3/4"±1"	39"	30"
9, 9 1/2"	4 1/4"±1"	33"	27"
10, 10 1/2"	4 3/4"±1"	30"	24"
11, 11 1/2"	5 1/4"±1"	27"	21"
12"	5 3/4"±1"	24"	21"



L1 L2 L3

LONGITUDINAL JOINTS



SECTION C-C

SAWED LONGITUDINAL JOINT

GENERAL NOTES

INSTALL DOWEL BARS PARALLEL TO THE PAVEMENT CENTERLINE AND PAVEMENT SURFACE.

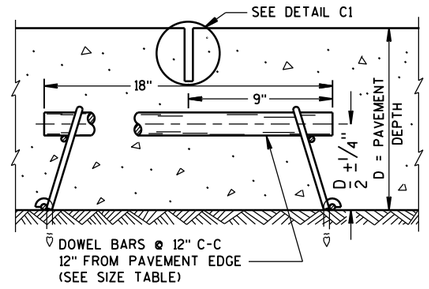
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

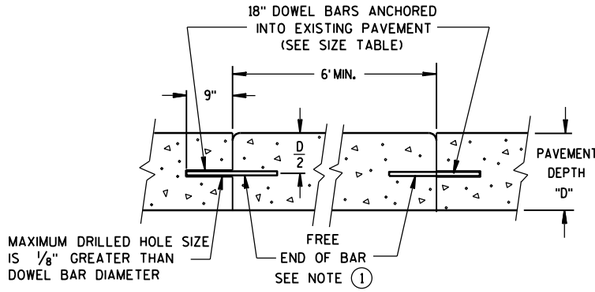
FOR MULTI-LANE CONCRETE PAVEMENT REPLACEMENTS, PROVIDE A MINIMUM DISTANCE OF 15 INCHES FROM ALL TRANSVERSE JOINTS OR EDGES OF REPLACEMENT TO THE CENTER OF THE TIE BAR NEAREST THAT JOINT OR EDGE.

(1) APPLY A THIN UNIFORM COATING OF SURFACE TREATMENT TO THE FREE END OF DOWEL BARS TO PREVENT BONDING.

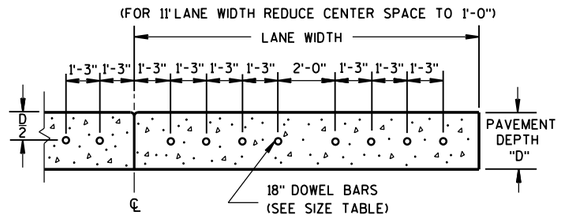


SECTION F-F

CONTRACTION JOINT



SECTION D-D

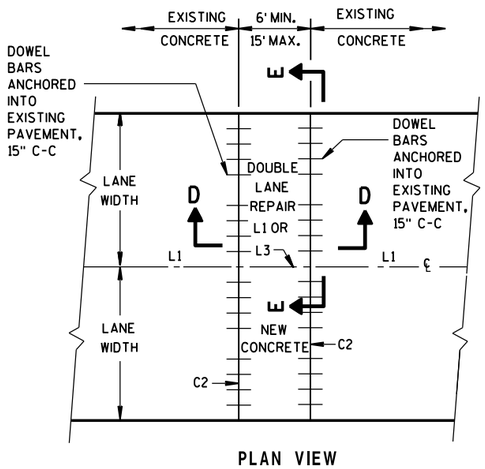


SECTION E-E

DRILLED DOWEL BAR CONSTRUCTION JOINT

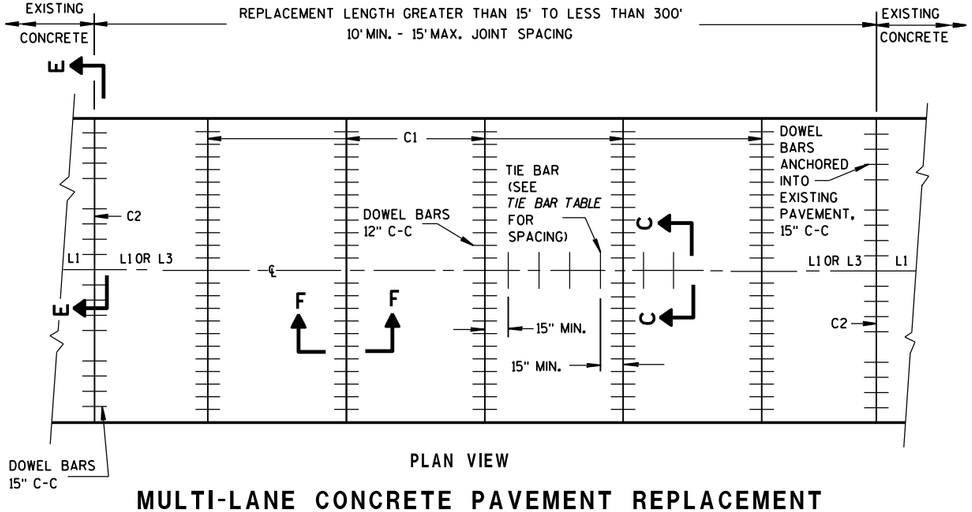
PAVEMENT DEPTH, DOWEL BAR SIZE AND JOINT SPACING TABLE

PAVEMENT DEPTH (D)	DOWEL BAR DIAMETER	CONTRACTION JOINT SPACING
5 1/2", 6",6 1/2"	NONE	12'
7",7 1/2"	1"	14'
8",8 1/2"	1 1/4"	15'
9",9 1/2"	1 1/4"	15'
10" & ABOVE	1 1/2"	15'



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

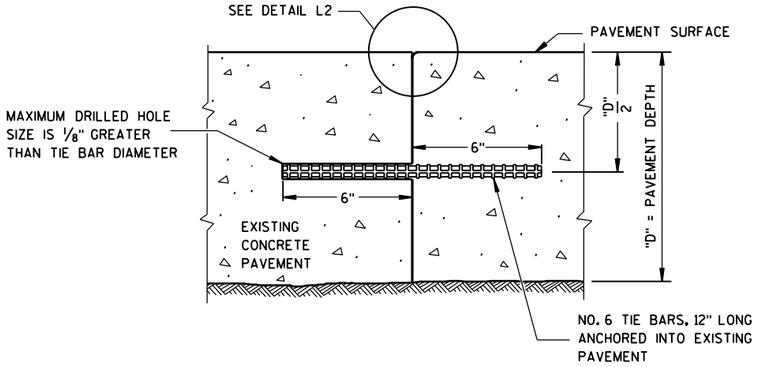
MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

6

S.D.D. 13 C 9-11b



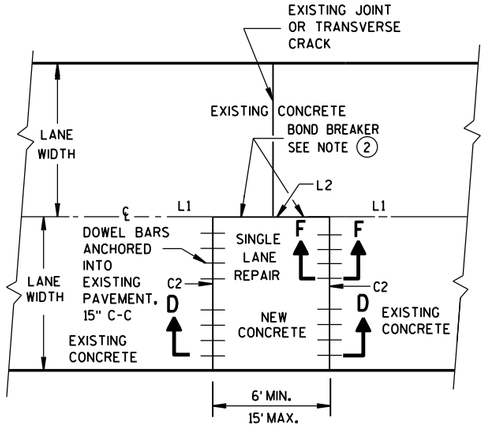
SECTION G-G

TIE BARS ANCHORED INTO EXISTING PAVEMENT

GENERAL NOTES

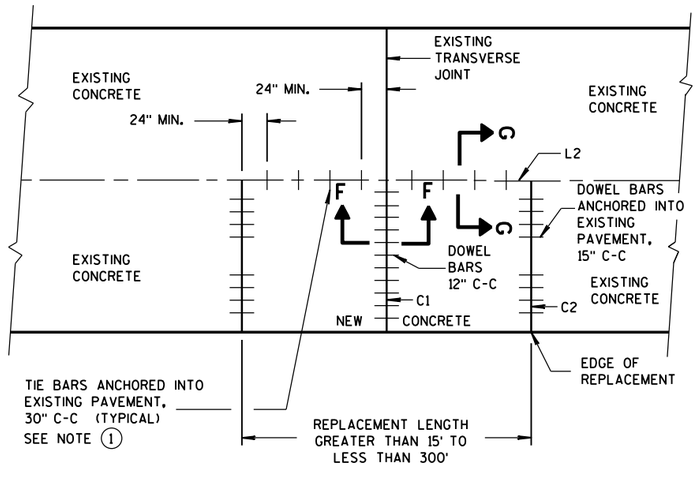
(1) WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.

(2) USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPAIR



PLAN VIEW

SINGLE LANE CONCRETE PAVEMENT REPLACEMENT

CONCRETE PAVEMENT REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

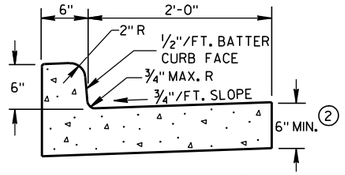
APPROVED

12-2013
DATE

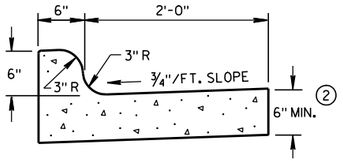
/S/ Deb Bischoff
PAVEMENT POLICY & DESIGN ENGINEER

FHWA

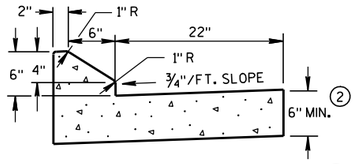
8D1: Concrete Curb, Concrete Curb & Gutter and Ties



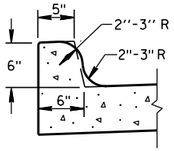
TYPES A & D (1)



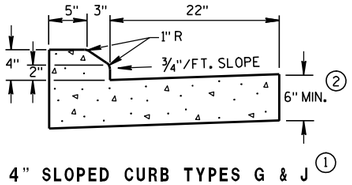
TYPES K & L (1)



6" SLOPED CURB TYPES G & J (1)

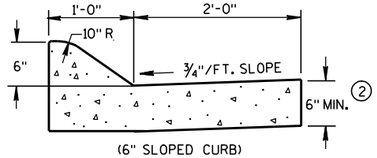


OPTIONAL CURB SHAPE FOR TYPES K & L (1)

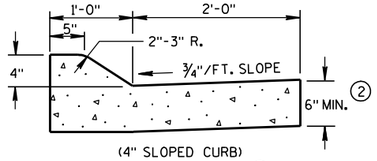


4" SLOPED CURB TYPES G & J (1)

CONCRETE CURB & GUTTER 30"

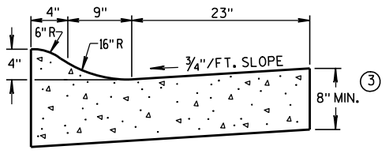


(6" SLOPED CURB)



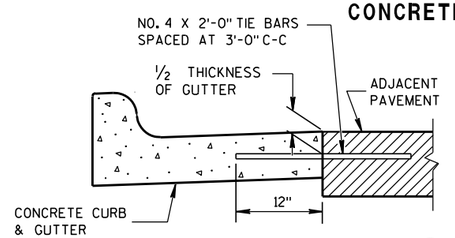
(4" SLOPED CURB)

TYPES A & D (1)

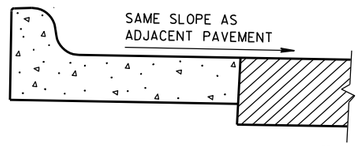


4" SLOPED CURB TYPES R & T (1) (4)

CONCRETE CURB & GUTTER 36"



TYPICAL TIE BAR LOCATION (1)



REVERSE SLOPE GUTTER (5)
(TYPICAL FOR ALL CURB & GUTTER TYPES)

GENERAL NOTES

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE CONTRACT.

PAVEMENT TIES AND TIE BARS SHALL BE EPOXY COATED IN CONFORMANCE WITH SUBSECTION 505.2.6.2 OF THE STANDARD SPECIFICATIONS.

INTEGRAL CURB & GUTTER SHALL CONFORM TO THE DETAILS SHOWN FOR CONCRETE CURB & GUTTER INCLUDING THE TRANSVERSE GUTTER SLOPE. A LONGITUDINAL CONSTRUCTION JOINT IS NOT REQUIRED WITH INTEGRAL CURB AND GUTTER.

WHERE THE TRANSVERSE JOINTS IN THE PAVEMENT ARE REQUIRED TO BE SEALED, THE JOINTS IN THE INTEGRAL CURB AND GUTTER SHALL BE SEALED TO THE FACE OF CURB WITH THE SAME TYPE OF SEALANT. THE COST OF FURNISHING AND INSTALLING THIS SEALANT SHALL BE INCIDENTAL TO THE ITEM CONCRETE CURB AND GUTTER.

UNLESS OTHERWISE SHOWN ON THE TYPICAL CROSS SECTIONS, THE BASE AGGREGATE AND COMMON EXCAVATION LIMITS ARE 2'-0" BEHIND THE BACK OF CURBS.

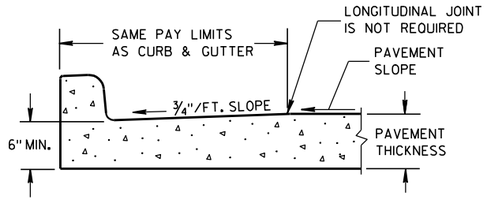
(1) TIE BARS ARE REQUIRED FOR CURB AND GUTTER TYPES A, G, K AND R.

(2) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 6" MINIMUM GUTTER THICKNESS IS MAINTAINED.

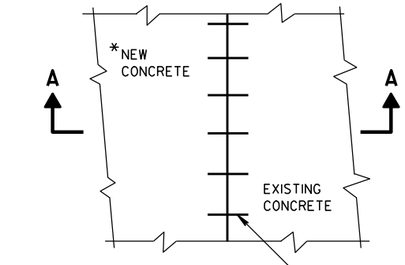
(3) THE BOTTOM OF CURB AND GUTTER MAY BE CONSTRUCTED EITHER LEVEL OR PARALLEL TO THE SLOPE OF THE SUBGRADE OR BASE AGGREGATE PROVIDED A 8" MINIMUM GUTTER THICKNESS IS MAINTAINED.

(4) THE FACE OF CURB IS 6" FROM THE BACK OF CURB.

(5) WHEN REVERSE SLOPE GUTTER IS REQUIRED, THE LOCATION(S) WILL BE SHOWN ELSEWHERE IN THE PLAN.

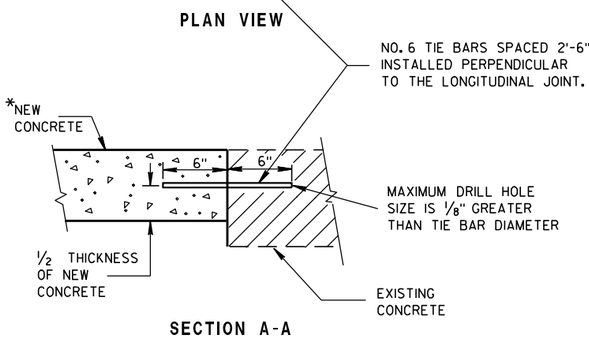


PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



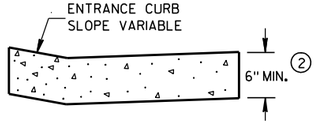
PLAN VIEW

*NEW CURB & GUTTER, SURFACE DRAINS, CONCRETE PAVEMENT OR OTHER NEW CONCRETE.

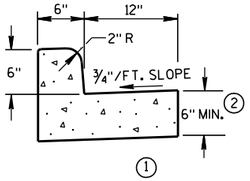


SECTION A-A

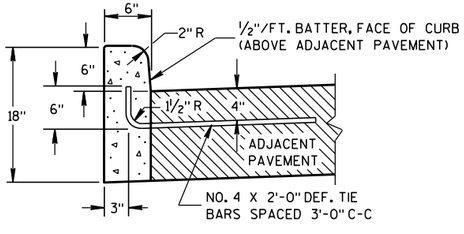
TIE BARS DRILLED INTO EXISTING PAVEMENT



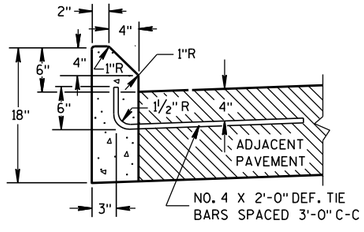
DRIVEWAY ENTRANCE CURB
(WHEN DIRECTED BY THE ENGINEER)



(1)
TYPES A & D
CONCRETE CURB & GUTTER 18"

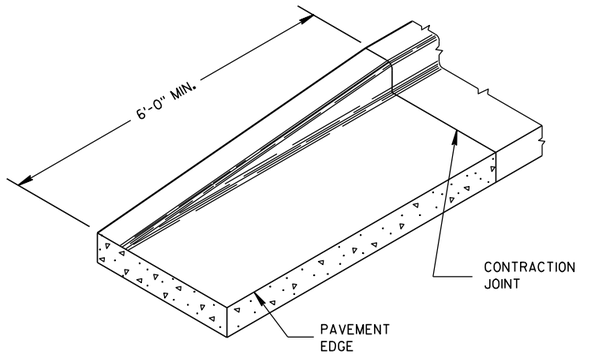


(1)
TYPES A & D



(1)
TYPES G & J

CONCRETE CURB



END SECTION CURB & GUTTER

CONCRETE CURB, CONCRETE CURB & GUTTER AND TIES

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

APPROVED
9/4/08 — DATE
/S/ Jerry H. Zogg — ROADWAY STANDARDS DEVELOPMENT ENGINEER
FHWA

6

S.D.D. 8 D 1-17

Hardy, Craig W - DOT

From: Schultz, Adam [adam.schultz@graef-usa.com]
Sent: Friday, January 24, 2014 10:59 AM
To: Callan, Benjamin S - DNR
Cc: Lambert, Jamie D - DNR; Yanke, Brooke B - DNR; Paulos, Mike; Sisel, Jayme; Rogahn, Doug; Ron Pritzlaff (rjp1ro@yahoo.com)
Subject: RE: Oak Creek: S. Howell Ave Water Main Relay and Hydrant Alterations

Thank you Ben. Based on groundwater mapping, we do not anticipate any trench dewatering at this time. Vehicle traffic will be contained to the roadway and/or terrace area as well so I do not anticipate any wetland/waterway disturbance.

We will include language in the spec. for the contractor to coordinate with the DNR should these situations arise.

Have a Great Weekend,

Adam Schultz
Design Engineer

GRAEF

125 S. 84th Street, Suite 401
Milwaukee, WI 53214

414 / 259 1500 office
414 / 266 9281 direct
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414 / 259 0037 fax

adam.schultz@graef-usa.com
http://www.linkedin.com/pub/adam-schultz/8/266/48b

www.graef-usa.com

GRAEF on: LinkedIn; Facebook; Twitter
GRAEF is the trade name of Graef-USA Inc.

From: Callan, Benjamin S - DNR [mailto:Benjamin.Callan@wisconsin.gov]
Sent: Friday, January 24, 2014 10:51 AM
To: Schultz, Adam
Cc: Lambert, Jamie D - DNR; Yanke, Brooke B - DNR
Subject: Oak Creek: S. Howell Ave Water Main Relay and Hydrant Alterations

Hi Adam –

The attached project will not require a waterway permit under Chapter 30 (Wis. Stats.), or a wetland permit under Chapter 281 (Wis. Stats.). However, please note that this assumes there will be no disturbance in the mapped waterways and wetlands (e.g. from vehicle access, etc.).

It's not clear if your proposal will involve any pit/trench dewatering. Just in case, I've cc'd Storm Water Specialists Jamie Lambert and Brooke Yanke.

Please contact me if your plans change, or if you have additional questions.

Thanks, Ben

Benjamin Callan (OB/7)
Wisconsin Department of Natural Resources
Bureau of Energy, Transportation, and Environmental Analysis (formerly *Office of Energy*)
101 S. Webster Street
PO Box 7921
Madison, WI 53707-7921
(☎) phone: (608) 266-3524
(☎) fax: (608) 267-5231
(✉) e-mail: benjamin.callan@wisconsin.gov
(🖱) DNR Website: http://dnr.wi.gov
(🖱) OE website: http://dnr.wi.gov/topic/Sectors/Energy.html
(🖱) Utility permits: http://dnr.wi.gov/topic/Sectors/UtilityPermitting.html

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From: Schultz, Adam [mailto:adam.schultz@graef-usa.com]
Sent: Thursday, January 23, 2014 4:48 PM
To: Callan, Benjamin S - DNR
Cc: 'Ron Pritzlaff'; Paulos, Mike
Subject: S. Howell Ave Water Main Relay and Hydrant Alterations

Ben-

Please find attached our submittal for your use in making an environmental jurisdictional review for our project. We have been directed by the DOT to submit to you for all projects taking place within DOT right-of-way. Please do not hesitate to contact me with any questions.

Thanks!

Adam Schultz
Design Engineer

GRAEF

125 S. 84th Street, Suite 401
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GRAEF is the trade name of Graef-USA Inc.

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- POST MOUNTED SIGN
- WORK AREA
- TRAFFIC FLOW

THE DRAWINGS ARE INFORMATIONAL ONLY AND PROVIDE GUIDANCE TO TRAFFIC CONTROL LEVEL OF QUALITY NECESSARY. THE CONTRACTOR IS RESPONSIBLE FOR PREPARING A TRAFFIC CONTROL PLAN AND OBTAINING APPROVAL OF THAT PLAN FROM THE CITY OF OAK CREEK. THESE DRAWINGS CANNOT BE USED AS PART OF THE CONTRACTORS TRAFFIC CONTROL SUBMITTAL.

STAGING NOTES

- MAINTAIN A MINIMUM LANE WIDTH OF 11 FEET.
- RESTORE PAVEMENT IN SHOULDER PRIOR TO SWITCHING TRAFFIC FOR STAGE 2.

TRAFFIC CONTROL FOR WATER MAIN CONSTRUCTION

NOTICE:
In accordance with Wisconsin statute 182.0175, damage to transmission facilities, excavator shall be solely responsible to provide advance notice to the designated "ONE CALL SYSTEM" not less than three working days prior to commencement of any excavation required to perform work contained on this drawing, and further, excavator shall comply with all other requirements of this statute relative to excavator's work.

DISCLAIMER:
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One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

BID ITEM NOS.	ESTIMATE OF QUANTITIES

WATER MAIN	
CONTRACTOR:	SA. FKO
MAINLINE INSPECTED BY:	ST. FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY: DATE:	I. FKO
	TS. FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
AS	2-13-14	FKO	2-13-14	MNP	2-13-14

S. HOWELL AVE. (STH 38) TRAFFIC CONTROL STAGE 1
IN: S. HOWELL AVE. (STH 38)
FR: E. PUETZ RD.
TO: E. FOREST HILL AVE.

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR.	06
PROFILE HOR.	OF
VER.	08

FILE NO: 14105-6C-2237

LEGEND

- TYPE III BARRICADE
- TYPE III BARRICADE WITH ATTACHED SIGN
- TRAFFIC CONTROL DRUM
- TRAFFIC CONTROL DRUM WITH TYPE C STEADY BURN LIGHT
- POST MOUNTED SIGN
- WORK AREA
- TRAFFIC FLOW

TRAFFIC CONTROL FOR WATER LATERAL CONSTRUCTION

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STAGING NOTES

- ADJUST TRAFFIC CONTROL AS NEEDED TO ONLY COVER AREA BEING WORKED ON.
- MAINTAIN A MINIMUM LANE WIDTH OF 11 FEET.

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BID ITEM NOS.	ESTIMATE OF QUANTITIES

WATER MAIN
CONTRACTOR:
MAINLINE INSPECTED BY:
LATERALS INSPECTED BY:
DATE COMPLETED:
TYPE OF PIPE, ASTM NO.
TYPE OF PIPE, ASTM NO.
AS-BUILTS BY: DATE:

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Utility Engineer Date

SA.FKO
ST.FKO
W. FKO
G. FKO
E. FKO
T. FKO
I. FKO
TS.FKO
PP.

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
AS	2-13-14	FKO	2-13-14	MNP	2-13-14

S. HOWELL AVE. (STH 38) TRAFFIC CONTROL STAGE 2

IN: S. HOWELL AVE. (STH 38)
FR: E. PUETZ RD.
TO: E. FOREST HILL AVE.

APPROVED BY
UTILITY ENGINEER DATE
APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR.	07
PROFILE HOR.	OF
VER.	08

FILE NO: 14105-7C-2238

LEGEND

- TYPE III BARRICADE
- TRAFFIC CONTROL DRUM
- POST MOUNTED SIGN
- WORK AREA
- TRAFFIC FLOW
- FLAGGER, EQUIPPED WITH STOP/SLOW PADDLE FASTENED ON SUPPORT STAFF

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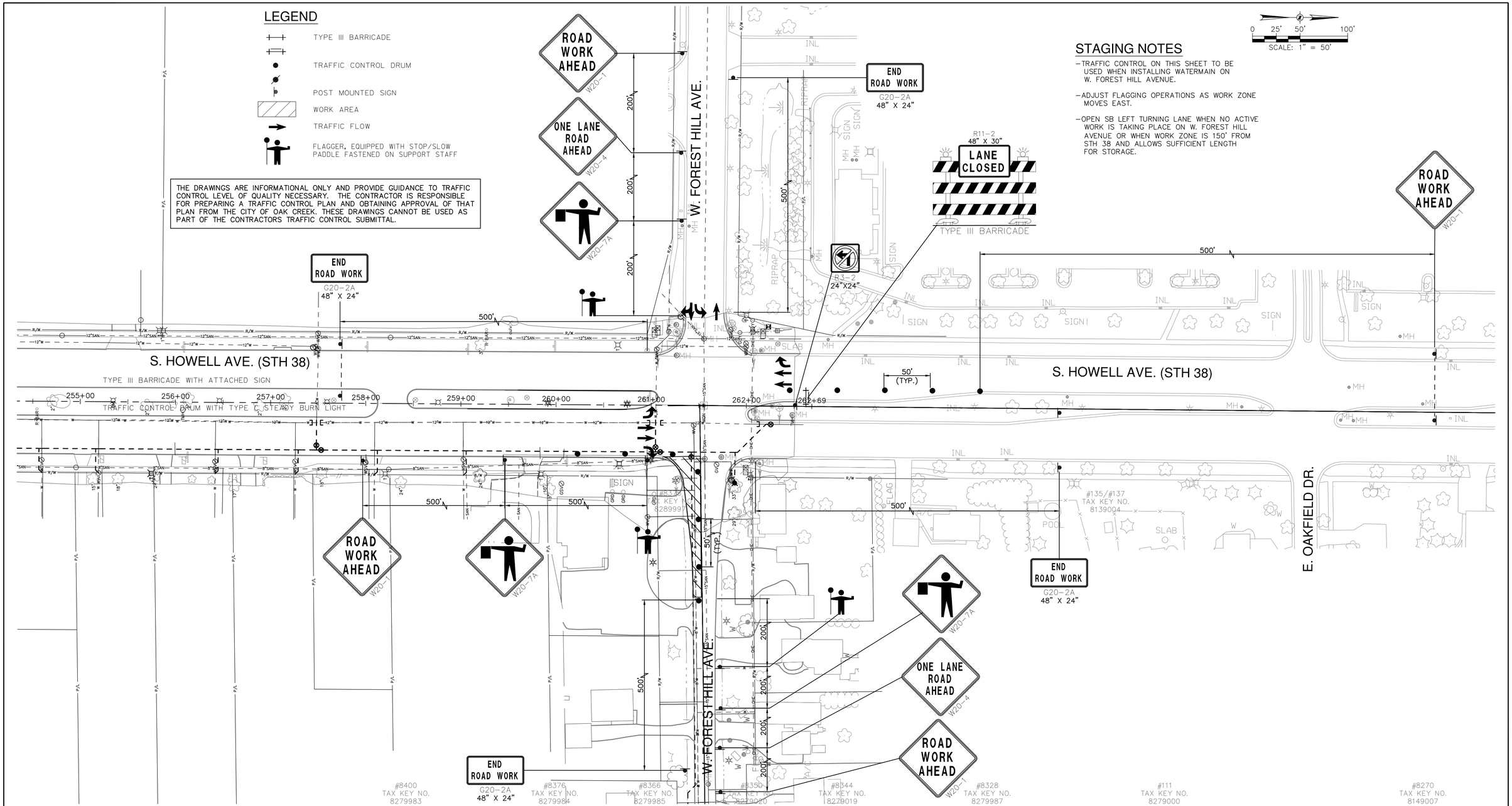
0 25' 50' 100'
SCALE: 1" = 50'

STAGING NOTES

- TRAFFIC CONTROL ON THIS SHEET TO BE USED WHEN INSTALLING WATERMAIN ON W. FOREST HILL AVENUE.
- ADJUST FLAGGING OPERATIONS AS WORK ZONE MOVES EAST.
- OPEN SB LEFT TURNING LANE WHEN NO ACTIVE WORK IS TAKING PLACE ON W. FOREST HILL AVENUE OR WHEN WORK ZONE IS 150' FROM STH 38 AND ALLOWS SUFFICIENT LENGTH FOR STORAGE.



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BID ITEM NOS.	ESTIMATE OF QUANTITIES

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
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AS-BUILTS BY: DATE:	I. FKO
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Utility Engineer Date

REVISION	BY	DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
AS	2-13-14	FKO	2-13-14	MNP	2-13-14

APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) TRAFFIC CONTROL STAGE 3
IN: S. HOWELL AVE. (STH 38)
FR: E. GROVELAND DR.
TO: E. FOREST HILL AVE.

SCALE	SHEET
PLAN HOR. ____	08
PROFILE HOR. ____	OF
VER. ____	08

FILE NO: 14105-8C-2239

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Revised Plan Sheets 1, 2, 3, 4, and 5

CITY OF OAK CREEK

WATER AND SEWER UTILITY

S. HOWELL AVENUE (STH 38)
WATER MAIN RELAY

PROJECT NUMBER
14105

FEBRUARY 24, 2014

OAK CREEK

WATER and SEWER UTILITY

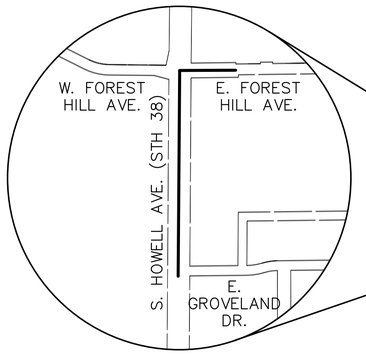
A COMMITMENT TO WATER QUALITY

LEGEND AND ABBREVIATIONS

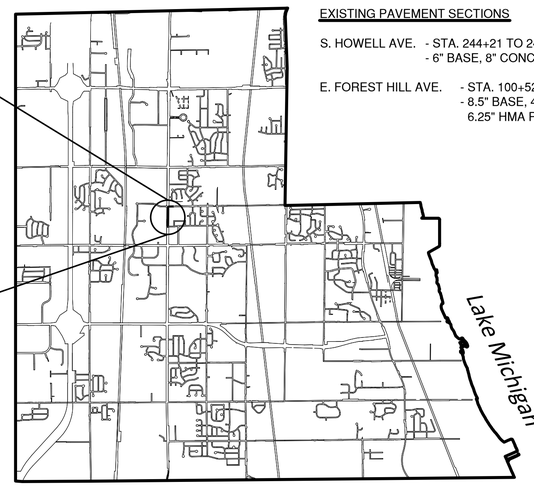
▲	TRAVERSE POINT	○ TILE	DRAIN TILE
	POWER POLE	PVC P	PVC PIPE
	LIGHT POLE	○ CO	CLEANOUT
○ FLAG	FLAG POLE	R BAR	REBAR
○	MANHOLE	BM.	BENCH MARK
	STORM INLET	○TMH	TELEPHONE MANHOLE
⊘WV	WATER VALVE	⊘SV	GAS SERVICE VALVE
⊘GV	GAS VALVE	⊘WSV	WATER SERVICE VALVE
	FIRE HYDRANT		CATCH BASIN
	MAIL BOX		CONIFEROUS TREE
	TELEPHONE PEDESTAL		STUMP
	CONTROL BOX		BUSH
	TRAFFIC SIGNAL	○ METAL	METAL POST
○ GUY	GUY WIRE		HANDHOLE
MON	MONUMENT		MISCELLANEOUS METER
○ 1"IP	1" IRON PIPE	○ WOOD	WOOD POST
○ 2"IP	2" IRON PIPE		ABANDONED POLE
○VENT	VENT PIPE	○ YL	YARD LIGHT
⊗	PULL BOX		SIGN
A/C	AIR CONDITIONER	S	INLET PROTECTION
	DECIDUOUS TREE		CULVERT PIPE DITCH CHECK

	EDGE OF BRUSH
	EDGE OF WOODS
	HEDGE ROW
	RIP RAP
— —○— — —	CHAIN LINK FENCE
	GUARD RAIL
—TV— — — — —	BURIED CABLE TV
—E— — — — —	BURIED ELECTRIC LINE
—OHE— — — — —	OVERHEAD ELECTRIC LINE
— G — — — — —	BURIED GAS MAIN
— FM — — — — —	BURIED FORCE MAIN
—L— — — —	BURIED STREET LIGHTING
—SAN— — — — —	BURIED SANITARY SEWER
—MIS— — — — —	BURIED MIS SEWER
—STM— — — — —	BURIED STORM SEWER
— T — — — — —	BURIED TELEPHONE LINE
— W — — — — —	BURIED WATER MAIN
P.L.	EXISTING PROPERTY LINE
R/W	EXISTING RIGHT OF WAY

ASPH.	ASPHALT	I.E.	INVERT ELEVATION
BSM'T.	BASEMENT	I.P.	IRON PIPE
BIT.	BITUMINOUS	LAT.	LATERAL
CB.	CATCHBASIN	MH.	MANHOLE
C/L	CENTERLINE	M.J.	MECHANICAL JOINT
CIPP	CURED-IN-PLACE PIPE	PAV'T.	PAVEMENT
CONC.	CONCRETE	PROP.	PROPOSED
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CMPA	CORRUGATED METAL PIPE ARCH	PVC P.	PVC PIPE
C. & G.	CURB & GUTTER	R. BAR	REBAR
DRAIN T.	DRAIN TILE	REQ'D.	REQUIRED
D.I.P.	DUCTILE IRON PIPE	R.J.	RESTRAINED JOINT
DWY.	DRIVEWAY	SAN.	SANITARY
ECC.	ECCENTRIC	S.	SLOPE
EXIST.	EXISTING	STL.	STEEL
F.F.	FIRST FLOOR	STM.	STORM
FM.	FORCE MAIN	SUMP D.	SUMP DISCHARGE
G.V.	GAS VALVE	TYP.	TYPICAL
GR.	GRAVEL	VENT P.	VENT PIPE
G.W.	GUY WIRE	WM.	WATER MAIN
HYD.	HYDRANT	W.V.	WATER VALVE
INL.	INLET	W/	WITH



PROJECT LOCATION MAP
S. HOWELL AVE. (STH 38)



CITY OF OAK CREEK
VICINITY MAP

EXISTING PAVEMENT SECTIONS

S. HOWELL AVE. - STA. 244+21 TO 247+49
- 6" BASE, 8" CONCRETE, 4" HMA PAVEMENT

E. FOREST HILL AVE. - STA. 100+52 TO 105+40
- 8.5" BASE, 4" AGGREGATE OPEN GRADED, 6.25" HMA PAVEMENT

SHEET INDEX

TOTAL SHEETS = 08

SURFACE RESTORATION

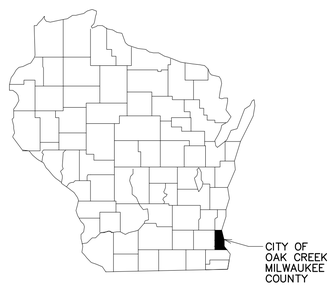
(H1) ASPHALT REPLACEMENT
(C1) CONCRETE REPLACEMENT W/ASPHALT OVERLAY
(C2) HIGH EARLY STRENGTH CONCRETE REPLACEMENT W/ASPHALT OVERLAY

BACKFILL LEGEND

(A1) 3/4"–INCH T.B.B.F. (TYPE A1)
(A8) GRANULAR BACKFILL (TYPE A8) OR SLURRY BACKFILL (SEE D.O.T. PERMIT)

N

N.T.S.



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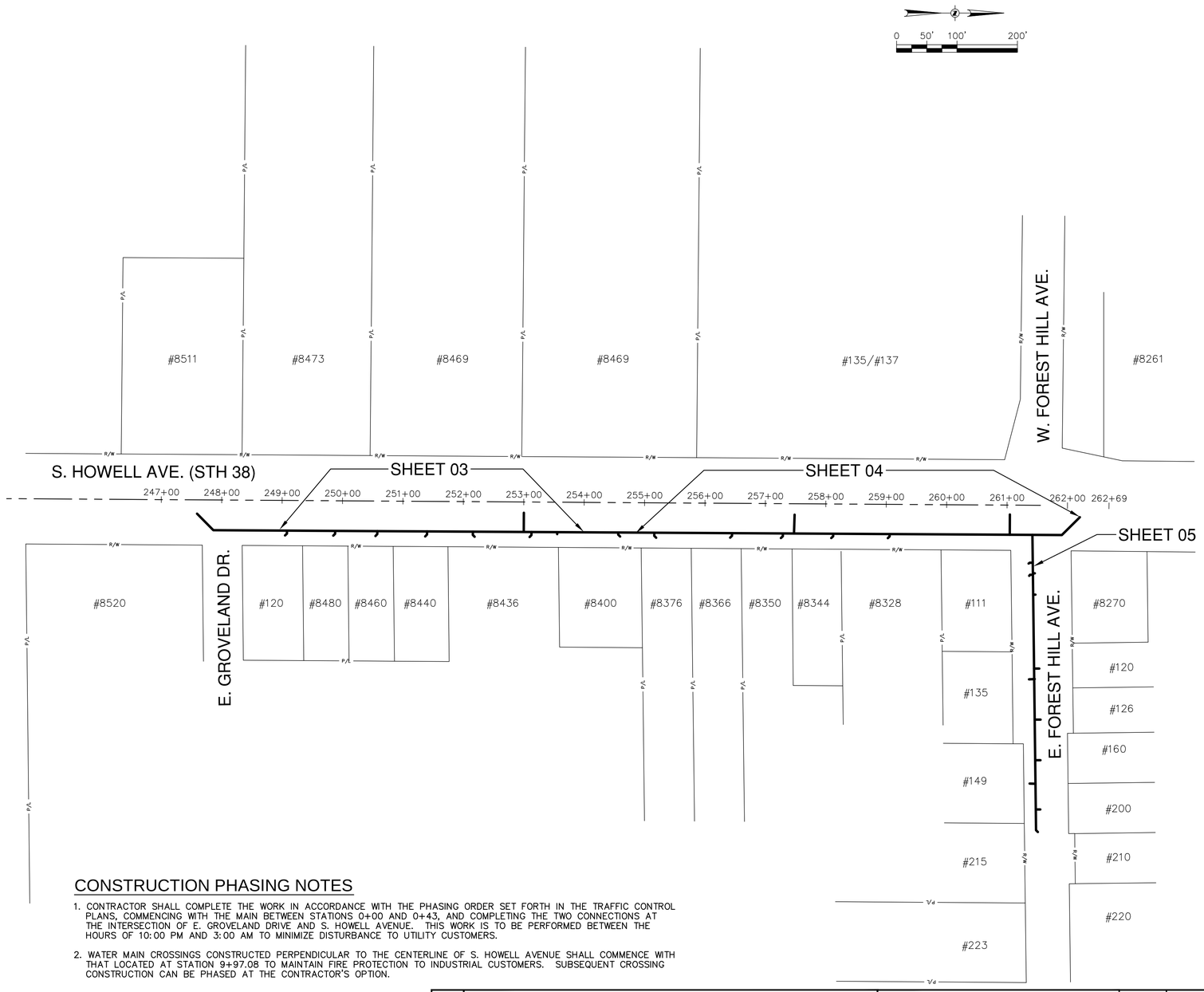
www.graef-usa.com

PROJECT ENGINEER: GRAEF

FILE NO: 14105–1C–2232



CONSTRUCTION PHASING NOTES

1. CONTRACTOR SHALL COMPLETE THE WORK IN ACCORDANCE WITH THE PHASING ORDER SET FORTH IN THE TRAFFIC CONTROL PLANS, COMMENCING WITH THE MAIN BETWEEN STATIONS 0+00 AND 0+43, AND COMPLETING THE TWO CONNECTIONS AT THE INTERSECTION OF E. GROVELAND DRIVE AND S. HOWELL AVENUE. THIS WORK IS TO BE PERFORMED BETWEEN THE HOURS OF 10:00 PM AND 3:00 AM TO MINIMIZE DISTURBANCE TO UTILITY CUSTOMERS.
2. WATER MAIN CROSSINGS CONSTRUCTED PERPENDICULAR TO THE CENTERLINE OF S. HOWELL AVENUE SHALL COMMENCE WITH THAT LOCATED AT STATION 9+97.08 TO MAINTAIN FIRE PROTECTION TO INDUSTRIAL CUSTOMERS. SUBSEQUENT CROSSING CONSTRUCTION CAN BE PHASED AT THE CONTRACTOR'S OPTION.

GENERAL NOTES:

1. CONTRACTOR SHALL REMOVE SIGNS, MAILBOXES, ETC. DURING CONSTRUCTION. IMMEDIATELY AFTER PIPE INSTALLATION AND BACKFILL OCCURS, ALL SIGNS, MAILBOXES, ETC. SHALL BE RETURNED TO THEIR PREVIOUS LOCATION. ALL STOP SIGNS MUST BE DISPLAYED AT ALL TIMES.
2. THE BASE SURVEY AND PROPOSED LINEWORK WAS PREPARED BY GRAEF AND SUPPLEMENTED WITH INFORMATION PROVIDED BY OTHERS. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO.
3. CONTRACTOR SHALL VERIFY LOCATION OF PROPOSED WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.
4. CONTRACTOR SHALL PROVIDE CONCRETE BUTTRESS RESTRAINT AT ALL HORIZONTAL BENDS W/STANDARD DIMENSIONS PER FILE NO. 44 OF THE STANDARD SPECIFICATIONS. RESTRAIN VERTICAL BENDS WITH MEGA LUGS OR APPROVED EQUAL. RESTRAINT OF PROPOSED WATER MAIN IS INCIDENTAL TO WATER MAIN CONSTRUCTION.
5. ALL DIMENSIONS ARE TO CENTER OF STRUCTURE/FITTING OR OPERATING NUT OF HYDRANT.
6. INSULATION IS REQUIRED WHEREVER COVER OVER THE TOP OF WATER MAIN, HYDRANT LEAD, OR WATER LATERAL IS LESS THEN 6-FEET OR WHERE SHOWN ON PLANS. (INCIDENTAL TO PROPOSED WATER MAIN)
7. SUPPORTING OF POWER/LIGHT POLES ALONG THE ENTIRE PROJECT LIMITS FOR PROPOSED WATER MAIN IS INCIDENTAL TO PROPOSED WATER MAIN CONSTRUCTION.
8. LOCATION OF PROPOSED WATER LATERALS ON PLANS ARE APPROXIMATE. FINAL LOCATION SHALL BE DETERMINED IN FIELD DURING CONSTRUCTION.
9. CONTRACTOR SHALL SALVAGE ALL EXISTING HYDRANTS CONNECTED TO EXISTING WATER MAIN TO BE ABANDONED BY DISASSEMBLING THE CONNECTION TO THE EXISTING 6" HYDRANT LEAD AT THE HYDRANT SHOE, AND SALVAGING THE HYDRANT, BARREL, SHOE, AND NOZZLE CAPS TO THE CITY OF OAK CREEK WATER AND SEWER UTILITY LOCATED AT 170 W. DREXEL AVE. OAK CREEK, WI 53154. COORDINATE DELIVERY WITH UTILITY STAFF.
10. COORDINATES IN THIS PLAN ARE REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, (NAD 27). ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE CITY OF OAK CREEK VERTICAL DATUM.
11. CONTRACTOR SHALL INSTALL GALVANIC ANODE CORROSION PROTECTION AT EACH CONNECTION TO EXISTING WATER MAIN.
12. CONTRACTOR SHALL INSTALL METAL GROUNDING RODS AT ALL CONNECTIONS TO EXISTING WATER MAIN AND CONNECT TO TRACER WIRE FOR FUTURE UTILITY LOCATING.
13. CONTRACTOR SHALL COMPLY WITH WORK RESTRICTIONS AS SET FORTH IN THE PROJECT MANUAL, PHASING PLAN, AND WISDOT APPLICATION/PERMIT TO CONSTRUCT, OPERATE, AND MAINTAIN UTILITY FACILITIES ON HIGHWAY RIGHT-OF-WAY.
14. PVC FITTINGS SHALL BE USED ON ALL PVC PIPE. PVC FITTINGS 4" TO 12" IN DIAMETER SHALL BE INJECTION MOLDED AND COMPLY WITH THE REQUIREMENTS OF AWWA C907 AND BE CERTIFIED CSA B137.2. MOLDED FITTINGS WILL BE MADE OF PVC COMPOUND WITH A MINIMUM HYDROSTATIC DESIGN BASIS OF 4000 PSI. MOLDED FITTINGS MUST BE FACTORY MUTUAL APPROVED AND LISTED BY THE UNDERWRITER'S LABORATORIES INTERNATIONAL (ULI).

    C905 FABRICATED FITTINGS MUST MEET ASTM D 3139 AND BE MANUFACTURED FROM PIPE SECTIONS THIRD PARTY CERTIFIED TO CSA B137.3 AND MUST MEET THE REQUIREMENTS OF AWWA C905. FABRICATED FITTINGS MUST ALSO BE CERTIFIED TO CSA B137.3. ALL FITTINGS MUST BE NSF-61 LISTED.

    IF A PARTICULAR TYPE OF PVC FITTING IS NOT MANUFACTURED, OR UNAVAILABLE, THE CONTRACTOR MAY USE DUCTILE IRON FITTINGS ON A CASE BY CASE BASIS WITH THE APPROVAL OF THE UTILITY ENGINEER.

EROSION CONTROL NOTES

1. CONSTRUCTION SITE AND SEDIMENTATION CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF OAK CREEK, AND SHALL EMPLOY EROSION CONTROL METHODS AS SHOWN AND SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES CONSTRUCTION SITE EROSION AND SEDIMENTATION CONTROL TECHNICAL STANDARDS.
2. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
3. PERIODIC INSPECTION AND MAINTENANCE OF ALL EROSION CONTROL STRUCTURES SHALL BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SEDIMENT LEAVING THE PROJECT LIMITS. EROSION CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORK DAY.
4. SILT FENCE SHALL BE INSTALLED AS DIRECTED BY THE FIELD ENGINEER.
5. INLET PROTECTION SHALL BE INSTALLED ON ALL INLETS RECEIVING RUNOFF FROM THE PROJECT AREA TO TRAP SEDIMENT.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL SITE IS FULLY STABILIZED.
7. ALL DISTURBED AREAS WILL BE PERMANENTLY STABILIZED BY THE APPLICATION OF SEED AND MULCH; THE TYPE OF SEED USED WILL BE WISDOT MIXTURE 40 AS SPECIFIED IN THE LATEST EDITION OF THE STATE OF WISCONSIN STANDARDS SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
8. TYPE "C" EROSION CONTROL MATTING SHALL BE USED ON ALL SLOPES 3:1 OR GREATER AND AS DIRECTED BY FIELD ENGINEER.

TRAFFIC CONTROL NOTES

1. TRAFFIC CONTROL SHALL BE INSTALLED IN STAGES CORRESPONDING TO WORK ZONES, AND SHALL BE LIMITED TO AREAS WHERE WORK IS ACTIVELY TAKING PLACE TO MINIMIZE DISRUPTION TO MOTORISTS.
2. ALL TRAFFIC CONTROL SIGNAGE SHALL HAVE DIAMOND GRADE SHEETING PER WISDOT STANDARDS.
3. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO ENGINEER FOR REVIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO CONSTRUCTION.
4. ALL SIGNS ARE 48"X48" UNLESS OTHERWISE NOTED.

RESTORATION NOTES

1. E. FOREST HILL AVE. DITCH LINES TO BE RESTORED WITH 4" OF TOPSOIL, EROSION MATTING, AND MULCH. CONTRACTOR SHALL INSURE POSITIVE DRAINAGE WITH LONGITUDINAL DITCH SLOPE MATCHING THE LONGITUDINAL GRADE OF THE ROAD CENTER LINE.

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BID ITEM NOS.

ESTIMATE OF QUANTITIES

WATER MAIN	
CONTRACTOR:	SA.FKO
	ST.FKO
MAINLINE INSPECTED BY:	W. FKO
LATERALS INSPECTED BY:	G. FKO
DATE COMPLETED:	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
TYPE OF PIPE, ASTM NO.	I. FKO
AS-BUILTS BY: DATE:	TS.FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

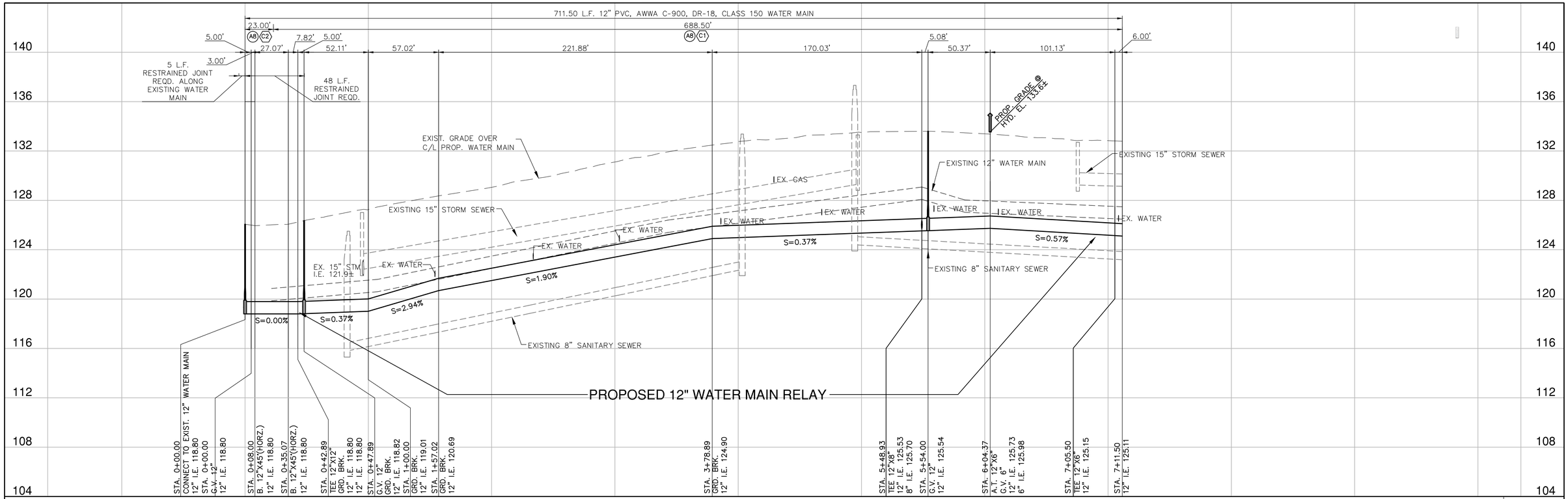
DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

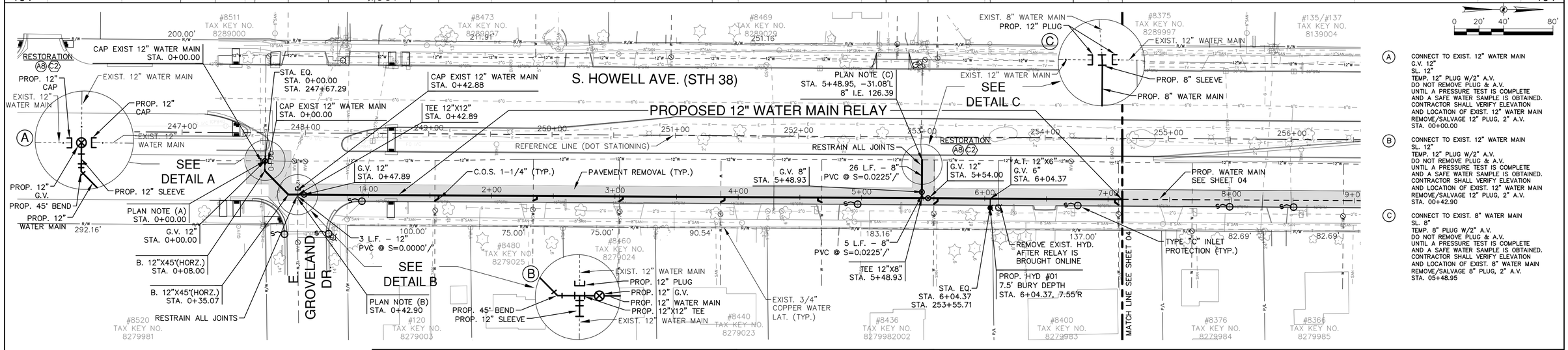
APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: S. HOWELL AVENUE
FR: E. GROVELAND DR.
TO: E. FOREST HILL AVE.

SCALE	SHEET
PLAN HOR. AS NOTED	02
PROFILE HOR. ____	OF
VER. ____	08

FILE NO: 14105-2C-2233





(A) CONNECT TO EXIST. 12" WATER MAIN
G.V. 12"
SL. 12"
TEMP. 12" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 12" WATER MAIN
REMOVE/SALVAGE 12" PLUG, 2" A.V.
STA. 00+00.00

(B) CONNECT TO EXIST. 12" WATER MAIN
SL. 12"
TEMP. 12" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 12" WATER MAIN
REMOVE/SALVAGE 12" PLUG, 2" A.V.
STA. 00+42.90

(C) CONNECT TO EXIST. 8" WATER MAIN
SL. 8"
TEMP. 8" PLUG W/2" A.V.
DO NOT REMOVE PLUG & A.V.
UNTIL A PRESSURE TEST IS COMPLETE AND A SAFE WATER SAMPLE IS OBTAINED.
CONTRACTOR SHALL VERIFY ELEVATION AND LOCATION OF EXIST. 8" WATER MAIN
REMOVE/SALVAGE 8" PLUG, 2" A.V.
STA. 05+48.95

NOTICE:
In accordance with Wisconsin statute 182.0175, damage to transmission facilities, excavator shall be solely responsible to provide advance notice to the designated "ONE CALL SYSTEM" not less than three working days prior to commencement of any excavation required to perform work contained on this drawing, and further, excavator shall comply with all other requirements of this statute relative to excavator's work.

DISCLAIMER:
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GRÄEF
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

ESTIMATE OF QUANTITIES

BID ITEM NOS.		
2	8" PVC Water Main, Concrete Pavement Restoration	26 L.F.
3	12" PVC Water Main, Concrete Pavement Restoration	712 L.F.
4	Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene) Concrete Pavement Restoration	7 EA.
5	8" Gate Valve	1 EA.
6	12" Gate Valve	3 EA.
7	Connect to Existing 8" Water Main	1 EA.
8	Connect to Existing 12" Water Main	2 EA.
9	Hydrant, Lead and 6-Inch Gate Valve	1 EA.
15	Removing Pavement	1140 SY
16	Concrete Base 8-Inch	1030 SY
17	Concrete Base 8-Inch H.E.S.	110 SY
18	HMA Pavement, Type E-1	217 TON

WATER MAIN	SA.FKO
CONTRACTOR:	ST.FKO
MAINLINE INSPECTED BY:	W. FKO
LATERALS INSPECTED BY:	G. FKO
DATE COMPLETED:	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
TYPE OF PIPE, ASTM NO.	I. FKO
AS-BUILTS BY: DATE:	TS.FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

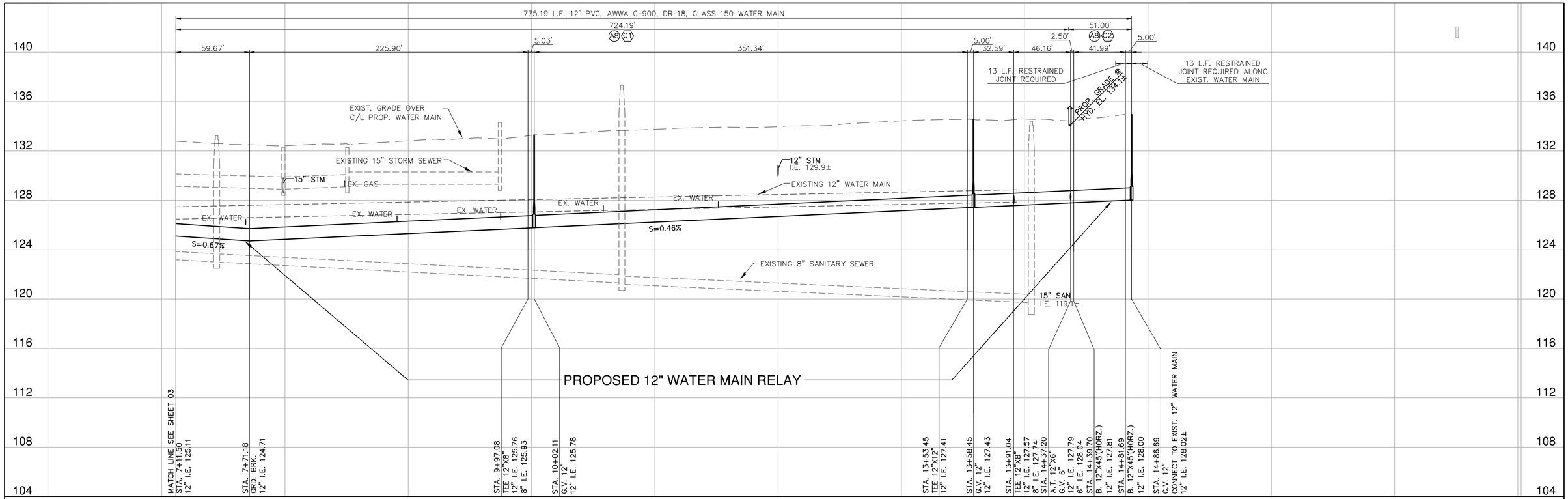
DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: S. HOWELL AVE. (STH 38)
FR: E. GROVELAND DR.
TO: 670 FT. NORTH OF E. GROVELAND DR.

SCALE	SHEET
PLAN HOR. 1"=40'	03
PROFILE HOR. 1"=40' VER. 1"=4'	OF 08

FILE NO: 14105-3C-2234



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Milwaukee, WI 53214-1469
414 / 259 1500
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ESTIMATE OF QUANTITIES

BID ITEM NOS.		
2	8" PVC Water Main, Concrete Pavement Restoration	26 L.F.
3	12" PVC Water Main, Concrete Pavement Restoration	805 L.F.
4	Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene) Concrete Pavement Restoration	5 EA.
5	8" Gate Valve	1 EA.
6	12" Gate Valve	4 EA.
7	Connect to Existing 8" Water Main	1 EA.
8	Connect to Existing 12" Water Main	2 EA.
9	Hydrant, Lead and 6-Inch Gate Valve	1 EA.
15	Removing Pavement	1470 SY
16	Concrete Base 8-Inch	1160 SY
17	Concrete Base 8-Inch H.E.S.	310 SY
18	HMA Pavement, Type E-1	280 TON

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY: DATE:	I. FKO
	TS.FKO
	PP.

This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.

Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

APPROVED BY
UTILITY ENGINEER DATE

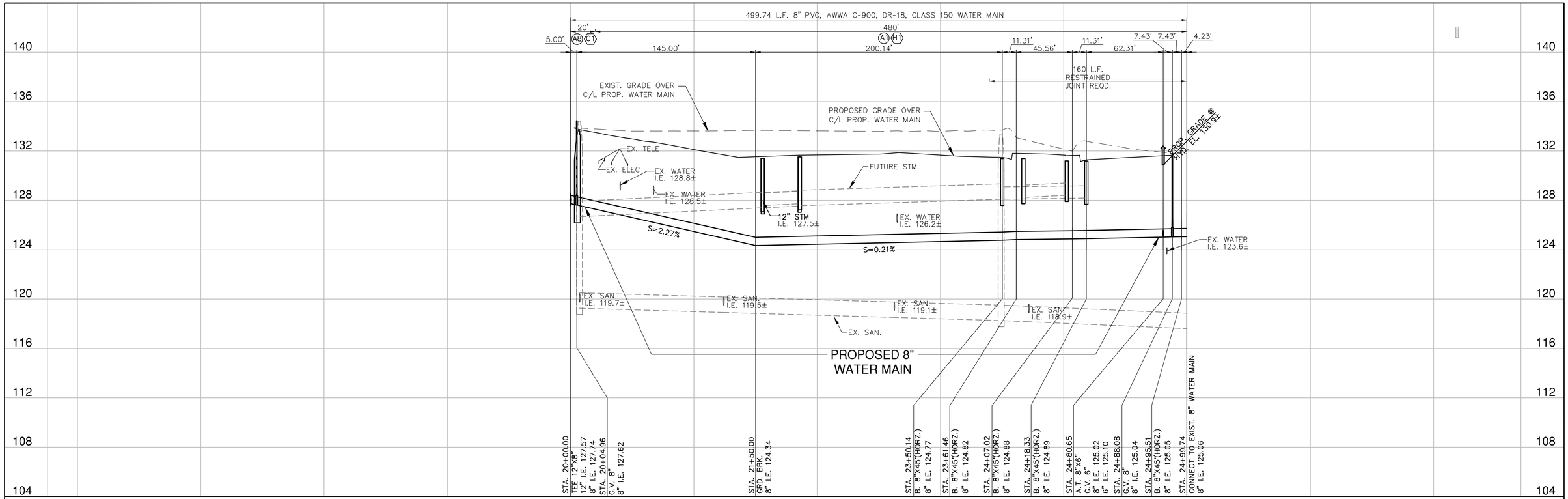
DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

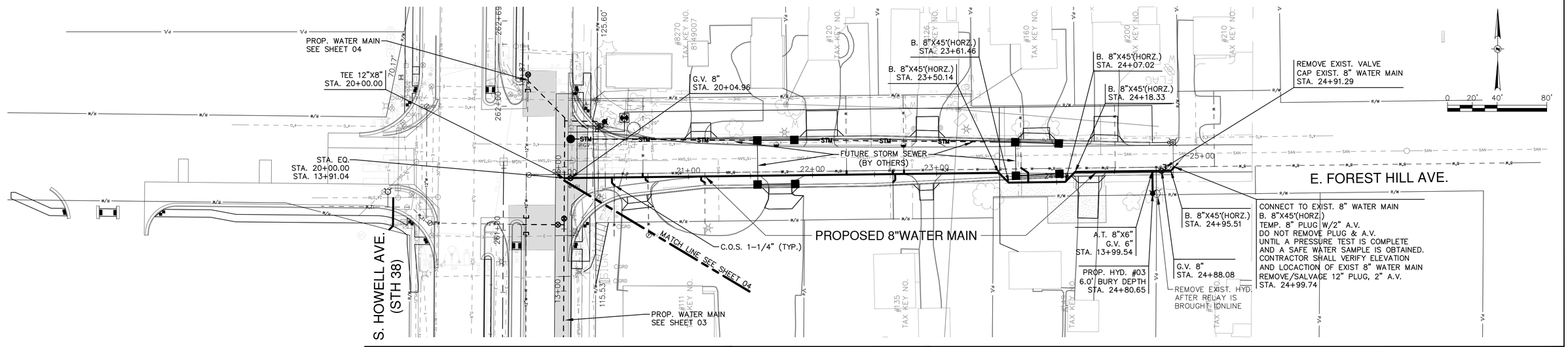
APPROVED BY
CITY ENGINEER DATE

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: S. HOWELL AVE. (STH 38)
FR: 700 FT. SOUTH OF E. FOREST HILL AVE.
TO: E. FOREST HILL AVE.

SCALE	SHEET
PLAN HOR. 1"=40'	04
PROFILE HOR. 1"=40' VER. 1"=4'	OF 08

FILE NO: 14105-4C-2235





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ESTIMATE OF QUANTITIES

BID ITEM NOS.		
1	8" PVC Water Main, Asphalt Restoration	480 L.F.
2	8" PVC Water Main, Concrete Pavement Restoration	20 L.F.
4	Connect Original Service (COS) 1-1/4" Water Service Laterals (Polyethylene), Asphalt Pavement Restoration	9 EA.
6	8" Gate Valve	1 EA.
8	Connect to Existing 8" Water Main	2 EA.
10	Hydrant, Lead and 6-Inch Gate Valve	1 EA.

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY: DATE:	I. FKO
	TS.FKO
	PP.

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Utility Engineer Date

REVISION BY DATE

CITY OF OAK CREEK, WISCONSIN

DESIGNED BY DATE	DRAWN BY DATE	CHECKED BY DATE
AS 2-13-14	FKO 2-13-14	MNP 2-13-14

S. HOWELL AVE. (STH 38) WATER MAIN RELAY
IN: E. FOREST HILL AVE.
FR: S. HOWELL AVE.
TO: 300 FT. EAST OF S. HOWELL AVE.

APPROVED BY
UTILITY ENGINEER DATE

APPROVED BY
CITY ENGINEER DATE

SCALE	SHEET
PLAN HOR. 1"=40'	05
PROFILE HOR. 1"=40' VER. 1"=4'	OF 08

FILE NO: 14105-5C-2236