



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 South Howell Avenue Hydrant Relocation 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 Section VII MATERIALS FOR WATER MAINS, paragraph H, BEDDING AND BACKFILL MATERIALS in its entirety
- Replace Section VII MATERIALS FOR WATER MAINS, paragraph I in its entirety
- Delete Section VIII MATERIALS GENERAL, paragraph A in its entirety
- Replace the Wisconsin Department of Transportation Utility permit in its entirety

Thank You.

VII. MATERIALS FOR WATER MAINS

H. HYDRANT ASSEMBLY

BEDDING MATERIALS AND BACKFILL MATERIALS

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.

I. GALVANIC ANODE PROTECTION

Where connecting to an existing ductile iron water main, the contractor shall install galvanic anode protection in accordance with the galvanic anode installation detail. For ductile iron water mains 12" in diameter and less, the contractor shall install one 32 lb. magnesium anode. For ductile iron water mains 16" and larger, the contractor shall install two 32 lb. magnesium anodes. The weld shall be coated using REBOUND Aerosol Rubberized Coating or approved equal.

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-309-14

SOUTHWEST REGION

Mark Goggin

mark.goggin@dot.wi.gov

Fax: 608-243-3380 Madison office

608-789-7896 La Crosse office

Utility Job Number:

14103

SOUTHEAST REGION

Ryan Schnurer

ryan.schnurer@dot.wi.gov

Fax: 262-521-4425

Utility Company:

Oak Creek Water & Sewer

Utility Contractor Contact
Name and 24-Hour Number:Brian Jahns
414-852-3917**NORTHEAST REGION**

Ray Drake

ray.drake@dot.wi.gov

Fax: 920-492-0144

NE Utility Unit General E-Mail:

dotdtsdneutilitycoordination@dot.wi.govTraffic Control Provider and
24-Hour NumberBrian Jahns
414-852-3917**NORTH CENTRAL REGION**

Keith Rutkowski – Wis Rapids office

keith.rutkowski@dot.wi.gov

Fax: 715-421-7300

Construction Start Date:

Terry Catlin – Rhinelander office

terry.catlin@dot.wi.gov

Fax: 715-365-5780

Construction Completion Date:

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:

APPLICATION / PERMIT

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 | 6. Location Description (1/4 section, section, town, range; provide plat map or location sketch) E 1/2 Section 5, E 1/2 Section 8, E 1/2 Section 17, E 1/2 Section 20, E 1/2 Section 29, W 1/2 Section 4, W 1/2 Section 21 T5N R22E | |
| 9. Facility Type (Check all that apply): Size (Diameter, kV, pressure, # fibers, etc.) <input type="checkbox"/> Telecom: _____ <input type="checkbox"/> Electric: _____ <input type="checkbox"/> Gas/Oil: _____ <input checked="" type="checkbox"/> Water: 6" <input type="checkbox"/> San Sewer: _____ <input type="checkbox"/> _____: _____ <input type="checkbox"/> Transmission <input checked="" type="checkbox"/> Service: Std <input type="checkbox"/> Distribution <input type="checkbox"/> Service: Exp | | 4. Is the work due to a WisDOT highway project? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | 7. Work Location (Check/list all that apply) <input type="checkbox"/> Town: _____ <input type="checkbox"/> Village: _____ <input checked="" type="checkbox"/> City: Oak Creek <input checked="" type="checkbox"/> County: Milwaukee | |
| 10. Facility Orientation (Check all that apply) <input type="checkbox"/> Crossing R/W <input type="checkbox"/> Parallel R/W <input checked="" type="checkbox"/> Underground <input type="checkbox"/> Overhead <input type="checkbox"/> Structure attachment | | 5. Applicant Work Order (If any) 14103 | | 8. Highway (Check all that apply) <input checked="" type="checkbox"/> WIS 38 <input type="checkbox"/> US _____ <input type="checkbox"/> Interstate _____ <input type="checkbox"/> _____ | |
| 11. Work Types (Check all that apply) <input checked="" type="checkbox"/> New construction <input checked="" type="checkbox"/> Improve/repair existing <input checked="" type="checkbox"/> Removal <input type="checkbox"/> Maintenance <input type="checkbox"/> Discontinued, left in place <input type="checkbox"/> Joint installation | | 12. Proposed Work Methods (Check all that apply) <input checked="" type="checkbox"/> Trench <input type="checkbox"/> Plow <input type="checkbox"/> Casing <input type="checkbox"/> Rock blasting <input checked="" type="checkbox"/> Open cut pavement Bore: <input type="checkbox"/> Hydraulic (Auger/Jack) <input type="checkbox"/> Pneumatic (Mole) <input type="checkbox"/> Directional 1 (Manually tracked) <input type="checkbox"/> Directional 2 (Computer tracked) <input type="checkbox"/> Unknown (At this time) Attach to poles/towers: <input type="checkbox"/> New <input type="checkbox"/> Existing <input type="checkbox"/> Guys** (Diameter) (Name of existing owner) (** Provide details for all guy wires on plan sheets) Subsurface utility excavation: <input type="checkbox"/> Water jetting <input type="checkbox"/> Vacuum Tree/vegetation control: <input type="checkbox"/> Cut and/or trim <input type="checkbox"/> Mow <input type="checkbox"/> Chemically treat | | 13. Work Zone Description (Check all that apply) <input type="checkbox"/> Full road closure: detour <input type="checkbox"/> Full road closure: temporary <input checked="" type="checkbox"/> Lane closure: without flagging <input type="checkbox"/> Lane closure: with flagging <input type="checkbox"/> Lane encroachment (2 feet or less) <input type="checkbox"/> Intersection/roundabout <input checked="" type="checkbox"/> Shoulder/parking lane closure <input checked="" type="checkbox"/> Off shoulder: within clear zone <input type="checkbox"/> In R/W: outside clear zone <input type="checkbox"/> Near R/W line: within clear zone <input type="checkbox"/> Near R/W line: outside clear zone <input type="checkbox"/> Not applicable | |
| 16. Trans 401 project designation? (For all Major projects, provide a formal erosion control plan with this application. See HMM 09-15-55) <input checked="" type="checkbox"/> Minor <input type="checkbox"/> Major | | 15. Will any appurtenances be installed with the facility? (If yes, provide a description and/or specification of each item with this application.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | 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.) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | |
| 14. Is the proposed facility near a survey monument? (See HMM 09-15-35) <input type="checkbox"/> Yes (Call: 1-866-568-2852 or e-mail: geodetic@dot.wi.gov) <input checked="" type="checkbox"/> 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 Ron Pritzlaff | (Area Code) Telephone Number 414-570-8200 | 19. Utility or Project 24/7 Emergency Contact Bryan Jahns | (Area Code) Telephone Number 414-852-3917 |
| 20. Is the utility a member of Diggers Hotline? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, provide line-locate number _____ | | 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 | |
| 21. Provide additional project work details, if needed (Continue on back or include separate page) Work within the R/W includes relocating 18 hydrants on both sides of STH 38 due to future roadway widening and proposed sidewalk. | | Ron Pritzlaff 1-28-2014 | |
| 22. If not employed by applicant, authorized representative's company name and address | | (Signature of Authorized Representative – If filled via computer, Brush Script font) (Date) 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 ↓

| | | |
|---|---|---|
| <input checked="" type="checkbox"/> THE UTILITY SHALL NOTIFY WisDOT 3 DAYS BEFORE STARTING WORK AT: Region contact, title, office address, telephone number, and e-mail address Craig Hardy SE Region Utility Leadworker 141 NW Barstow Street Waukesha, WI 53189 262-548-8706 Craig.Hardy@dot.wi.gov | <input checked="" type="checkbox"/> REVIEW ALL SUPPLEMENTAL PERMIT PROVISIONS <input checked="" type="checkbox"/> REVISIONS MADE to DRAWINGS or OTHER PAGES <input checked="" type="checkbox"/> Lane Closure System notification required: HMM 09-15-60 <input type="checkbox"/> Insurance or performance bond required <input type="checkbox"/> Joint installation: See permit(s) # _____ <input type="checkbox"/> Private utility (Non-public ownership and/or use) <input type="checkbox"/> Expedited Service Connection Permit <input type="checkbox"/> This permit voids & supersedes # _____ issued: _____ <input type="checkbox"/> | Date Application Received 1/28/2014 Date Application Completed 2/12/2014 Date Application Denied Permit Issuance Date 2/12/2014 Permit Extension Date Permit Number 40U-309-14 |
| 2060-15-71 WisDOT Improvement Project ID Numbers (if applicable) | Craig Hardy (WisDOT Authorized Representative Signature – If filled via computer, Brush Script font) | |

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



WISDOT SUPPLEMENTAL UTILITY PERMIT PROVISIONS

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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.



WISDOT SUPPLEMENTAL UTILITY PERMIT PROVISIONS

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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:**



WISDOT SUPPLEMENTAL UTILITY PERMIT PROVISIONS

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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 tined 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.



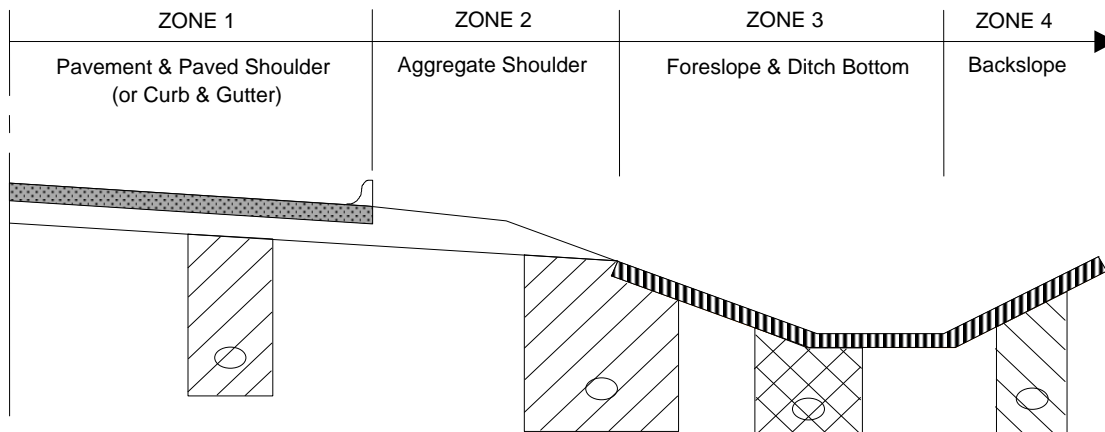
WISDOT SUPPLEMENTAL UTILITY PERMIT PROVISIONS

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Attachment 2: Backfilling Excavation Detail Drawings

CL

LONGITUDINAL EXCAVATION

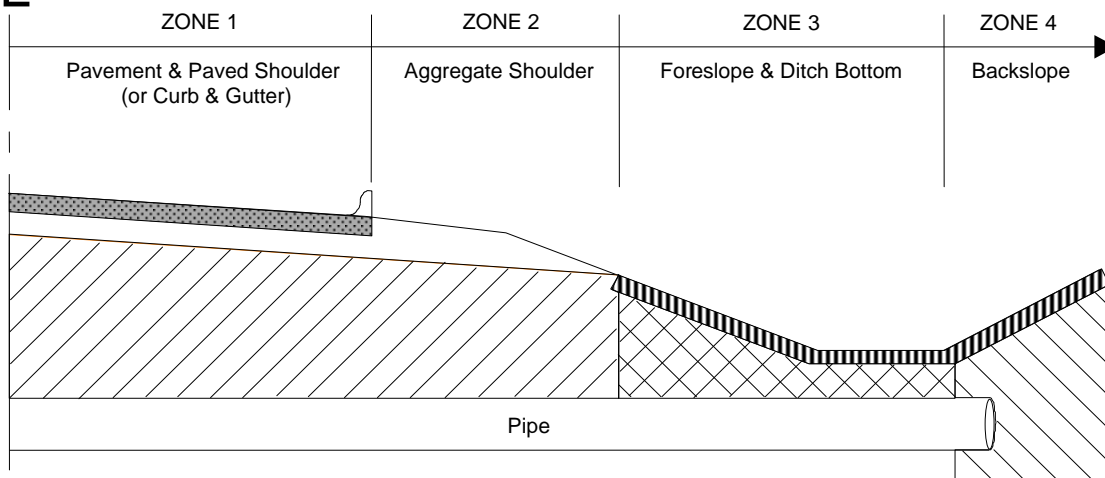


KEY

| | |
|--|-------------------|
| | Slurry Backfill |
| | Granular Backfill |
| | 4" Topsoil |
| | Spoil backfill |

CL

TRANSVERSE EXCAVATION



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
System Development**
Southeast Regional Office
141 N.W. Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798

**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 proposal 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>

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 foot 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.



Division of Transportation System Development
Southeast Regional Office
141 N.W. Barstow Street
P.O. Box 798
Waukesha, WI 53187-0798

Scott Walker, Governor
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Internet: www.dot.wisconsin.gov

Telephone: (262) 548-5903
Facsimile (FAX): (262) 548-6891
E-Mail: waukesha.dtd@dot.state.wi.us

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

LEGEND AND ABBREVIATIONS

| | | | | | | | |
|--|--------------------|--|-------|--|--------------------------|--|------------------------|
| | TRAVERSE POINT | | TILE | | DRAIN TILE | | EDGE OF BRUSH |
| | POWER POLE | | PVC P | | PVC PIPE | | EDGE OF WOODS |
| | LIGHT POLE | | CO | | CLEANOUT | | HEDGE ROW |
| | FLAG POLE | | R BAR | | REBAR | | RIP RAP |
| | MANHOLE | | BM. | | BENCH MARK | | CHAIN LINK FENCE |
| | STORM INLET | | TMH | | TELEPHONE MANHOLE | | GUARD RAIL |
| | WATER VALVE | | GSV | | GAS SERVICE VALVE | | BURIED CABLE TV |
| | GAS VALVE | | WSV | | WATER SERVICE VALVE | | BURIED ELECTRIC LINE |
| | FIRE HYDRANT | | | | CATCH BASIN | | OVERHEAD ELECTRIC LINE |
| | MAIL BOX | | | | CONIFEROUS TREE | | BURIED GAS MAIN |
| | TELEPHONE PEDESTAL | | | | STUMP | | BURIED FORCE MAIN |
| | CONTROL BOX | | | | BUSH | | BURIED STREET LIGHTING |
| | TRAFFIC SIGNAL | | METAL | | METAL POST | | BURIED SANITARY SEWER |
| | GUY WIRE | | | | HANDHOLE | | BURIED MIS SEWER |
| | MONUMENT | | | | MISCELLANEOUS METER | | BURIED STORM SEWER |
| | 1" IRON PIPE | | WOOD | | WOOD POST | | BURIED TELEPHONE LINE |
| | 2" IRON PIPE | | A | | ABANDONED POLE | | BURIED WATER MAIN |
| | VENT PIPE | | YL | | YARD LIGHT | | EXISTING PROPERTY LINE |
| | PULL BOX | | | | SIGN | | EXISTING RIGHT OF WAY |
| | AIR CONDITIONER | | | | INLET PROTECTION | | |
| | DECIDUOUS TREE | | | | CULVERT PIPE DITCH CHECK | | |

| | | | |
|----------|----------------------------|---------|--------------------|
| 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 |
| COMM | COMMUNICATIONS | PROP. | PROPOSED |
| CONC. | CONCRETE | PVC | POLYVINYL CHLORIDE |
| CMP | CORRUGATED METAL PIPE | PVC P. | PVC PIPE |
| CMPA | CORRUGATED METAL PIPE ARCH | OH | OVERHEAD |
| 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 | R.O.W. | RIGHT-OF-WAY |
| ECC. | ECCENTRIC | SAN. | SANITARY |
| ELEC. | ELECTRIC | S. | SLOPE |
| EXIST. | EXISTING | STL. | STEEL |
| EX. | EXISTING | STM. | STORM |
| F.F. | FIRST FLOOR | SUMP D. | SUMP DISCHARGE |
| FM. | FORCE MAIN | S/W | SIDE WALK |
| F.O.C. | FACE OF CURB | TELE | TELEPHONE |
| G.V. | GAS VALVE | TYP. | TYPICAL |
| GR. | GRAVEL | VENT P. | VENT PIPE |
| G.W. | GUY WIRE | W.V. | WATER MAIN |
| HYD. | HYDRANT | WM. | WATER VALVE |
| INL. | INLET | W/ | WITH |

SHEET INDEX

| | | |
|-------------------|-------|------------------------------|
| Sheet No. | 01 | COVER SHEET |
| Sheet No. | 02 | INDEX SHEET |
| Sheet No. | 03-06 | PROPOSED HYDRANT RELOCATIONS |
| Sheet No. | 07-12 | TRAFFIC CONTROL |
| TOTAL SHEETS = 12 | | |

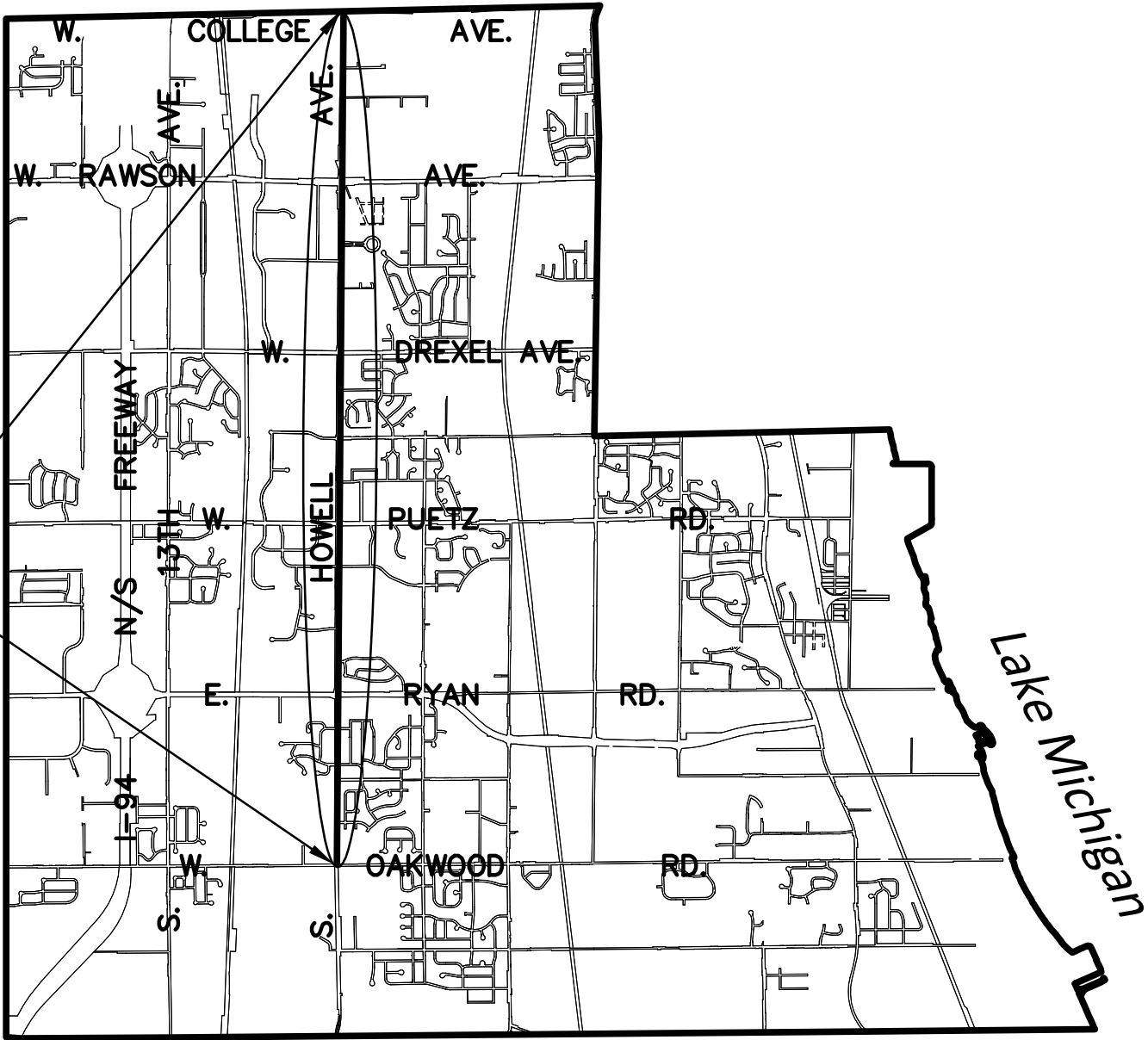
CITY OF OAK CREEK

WATER AND SEWER UTILITY
S. HOWELL AVENUE (STH 38)
HYDRANT RELOCATIONS

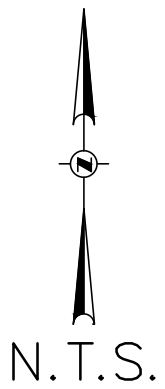
| |
|----------------|
| PROJECT NUMBER |
| 14103 |

DRAFT DATE: FEBRUARY 7, 2014

PROJECT LOCATION
IN: HOWELL AVENUE (STH 38)
FROM: W. COLLEGE AVE.
TO: W. OAKWOOD RD.

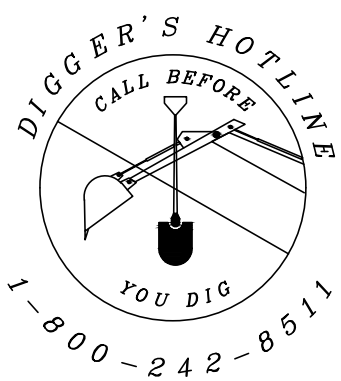
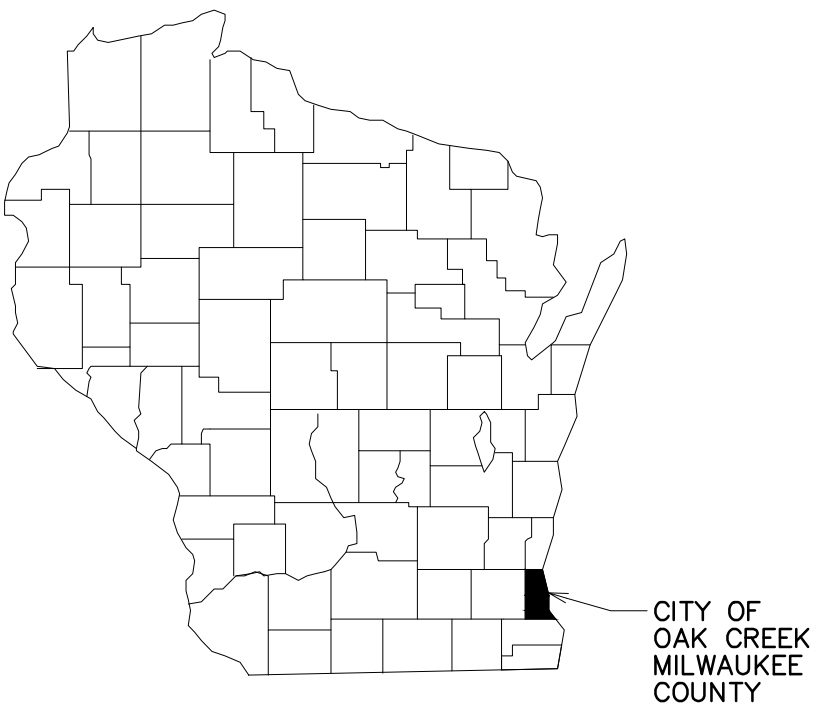


CITY OF OAK CREEK
VICINITY MAP



WATER and SEWER UTILITY

A COMMITMENT TO WATER QUALITY



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

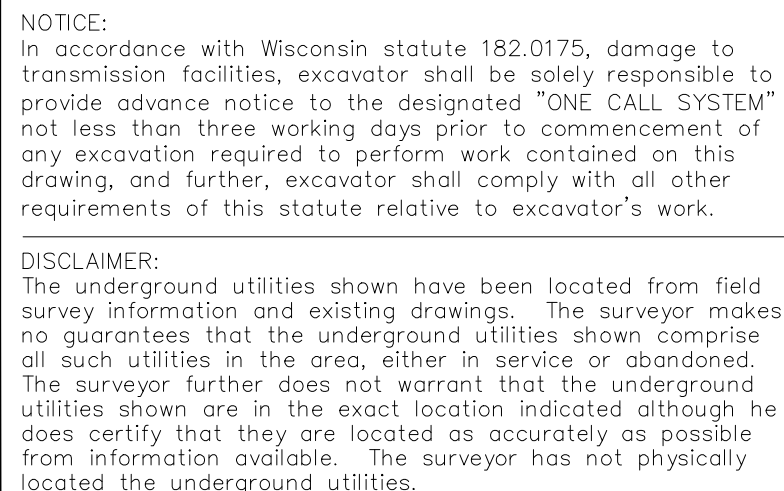
PROJECT ENGINEER: GRAEF

1. THE BASE SURVEY AND PROPOSED LINEWORK WAS PREPARED 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.
2. CONTRACTOR SHALL VERIFY LOCATION OF PROPOSED WORK AND REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.
3. CONTRACTOR SHALL FURNISH ALL PROPOSED HYDRANTS WITH A BURY DEPTH OF 6- FEET AND PROVIDE EXTENSIONS AS REQUIRED TO SET BOTTOM HYD. FLANGE AT THE PROPOSED GROUND ELEVATION.
4. CONTRACTOR SHALL VERIFY PROPOSED ROADWAY IMPROVEMENTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES WITH PROPOSED ROADWAY PLAN.
5. CONTRACTOR SHALL PROVIDE CONCRETE BUTTRESS RESTRAINT AT ALL HORIZONTAL BENDS W/STANDARD DIMENSIONS PER FILE NO. 44 OF THE STANDARD SPECIFICATIONS. PROVIDE RETAINER GLAND RESTRAINT FOR ALL VERTICAL BENDS.
6. ALL DIMENSIONS ARE TO CENTER OF STRUCTURE/FITTING OR OPERATING NUT OF HYDRANT.
7. RESTRAIN ALL HYDRANT LEAD JOINTS.
8. LOCATE PROPOSED HYDRANT BASED ON DIMENSION FROM EXISTING CURB.
9. CONTRACTOR SHALL FURNISH ALL HYDRANTS NOT SALVAGED UNDER HYDRANT RELOCATION AND ALTERATION BID ITEMS.
10. CONTRACTOR SHALL INSULATE ALL HYDRANT LEADS AND MAINLINE WATER MAIN WHERE GROUND COVER IS LESS THAN 6- FEET. INSULATION IS INCIDENTAL TO WATER MAIN AND HYDRANT ALTERATION/RELOCATION BID ITEMS.
11. CONTRACTOR SHALL BACKFILL ALL TRENCH EXCAVATIONS WITH GRANULAR BACKFILL AS DESIGNATED IN SECTION 209 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
12. PHASING TABLE PROVIDES HYDRANT SETS CORRESPONDING TO A SINGLE MAIN LINE SHUT DOWN. EACH PHASE CORRESPONDS TO A SINGLE 5-HOUR SHUT-DOWN PERIOD BETWEEN THE HOURS OF 10:00 PM AND 3:00 AM FOR HYDRANT ABANDONMENT WORK. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE WORK RESTRICTIONS AS SET FORTH IN THE PROJECT MANUAL. CONTRACTOR SHALL SUBMIT SCHEDULE/PHASING PLAN FOR UTILITY REVIEW/APPROVAL.

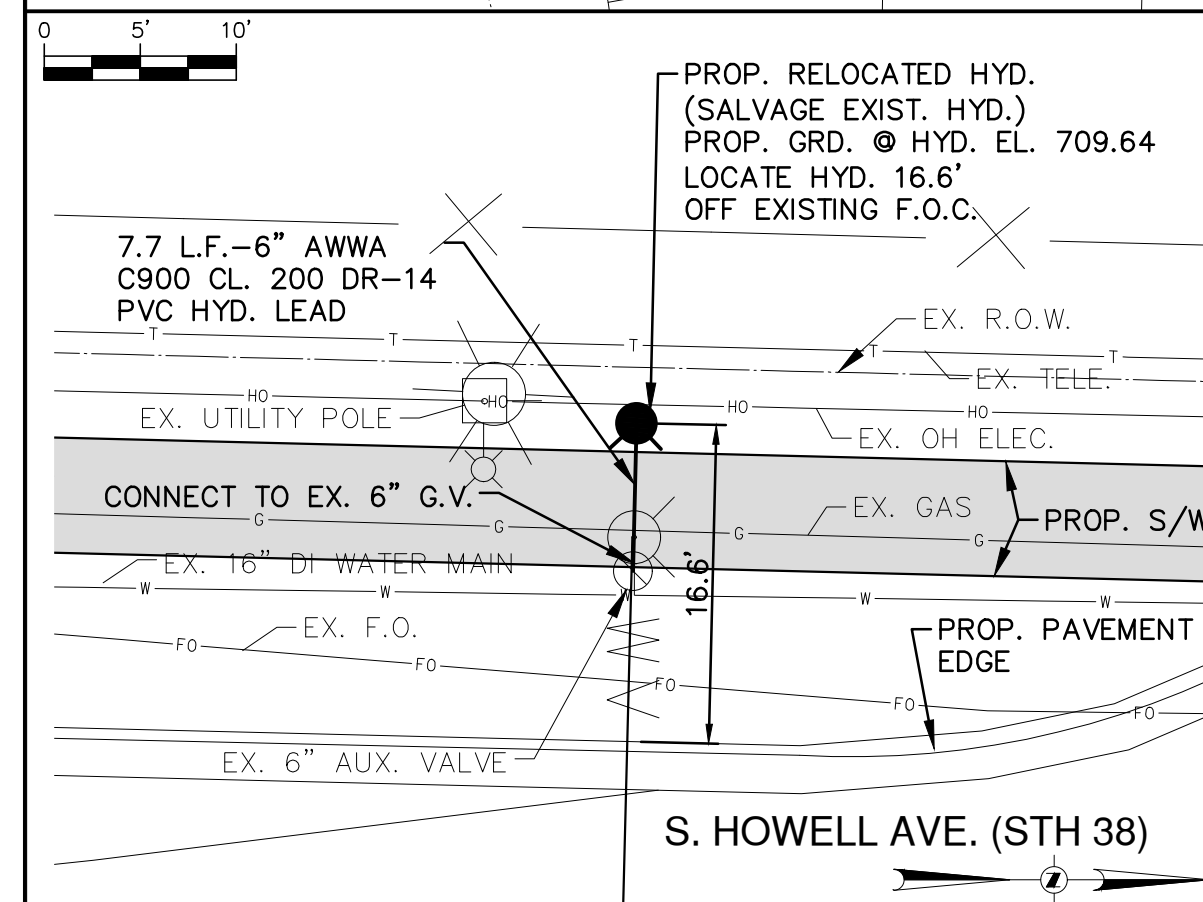
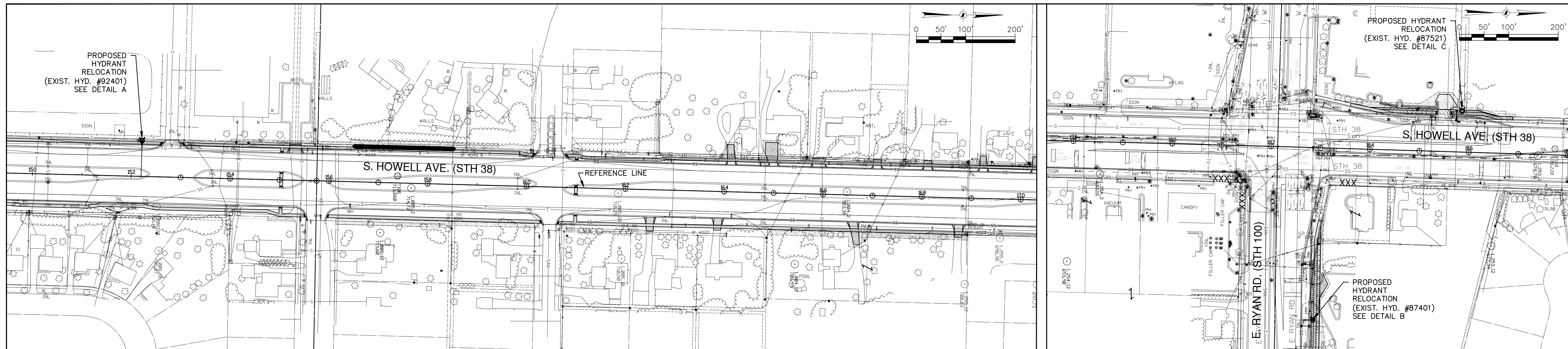
13. CONTRACTOR SHALL DELIVER EXISTING HYDRANTS AND SALVAGED VALVES NOT BEING REINSTALLED TO THE OAK CREEK WATER AND SEWER BUILDING LOCATED AT 170 W. DREXEL AVE. OAK CREEK, WI 53154 AND COORDINATE DELIVERY WITH UTILITY PERSONNEL.
14. COORDINATES IN THIS PLAN ARE REFERENCED TO THE WISCONSIN COUNTY COORDINATE SYSTEM (WCCS), MILWAUKEE COUNTY, (NAD 1983(97)). ELEVATIONS SHOWN ON THIS PLAN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88(07)).
15. CONTRACTOR SHALL INSTALL GALVANIC ANODE CORROSION PROTECTION AT EACH ABANDONED HYDRANT TEE, AND AT EACH CONNECTION TO EXISTING WATER MAIN.
16. CONTRACTOR SHALL RESTRAIN ALL UN-RESTRAINED EXISTING HYDRANT AUXILIARY VALVES AND EXISTING VALVES NEAR CONNECTION POINTS TO EXISTING ANCHOR TEES EXPOSED DURING HYDRANT ALTERATION/RELOCATION BID ITEMS.

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.

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 WSDOT STANDARDS.
3. CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO ENGINEER FOR REVIEW AND APPROVAL A MINIMUM OF TWO WEEKS PRIOR TO CONSTRUCTION.

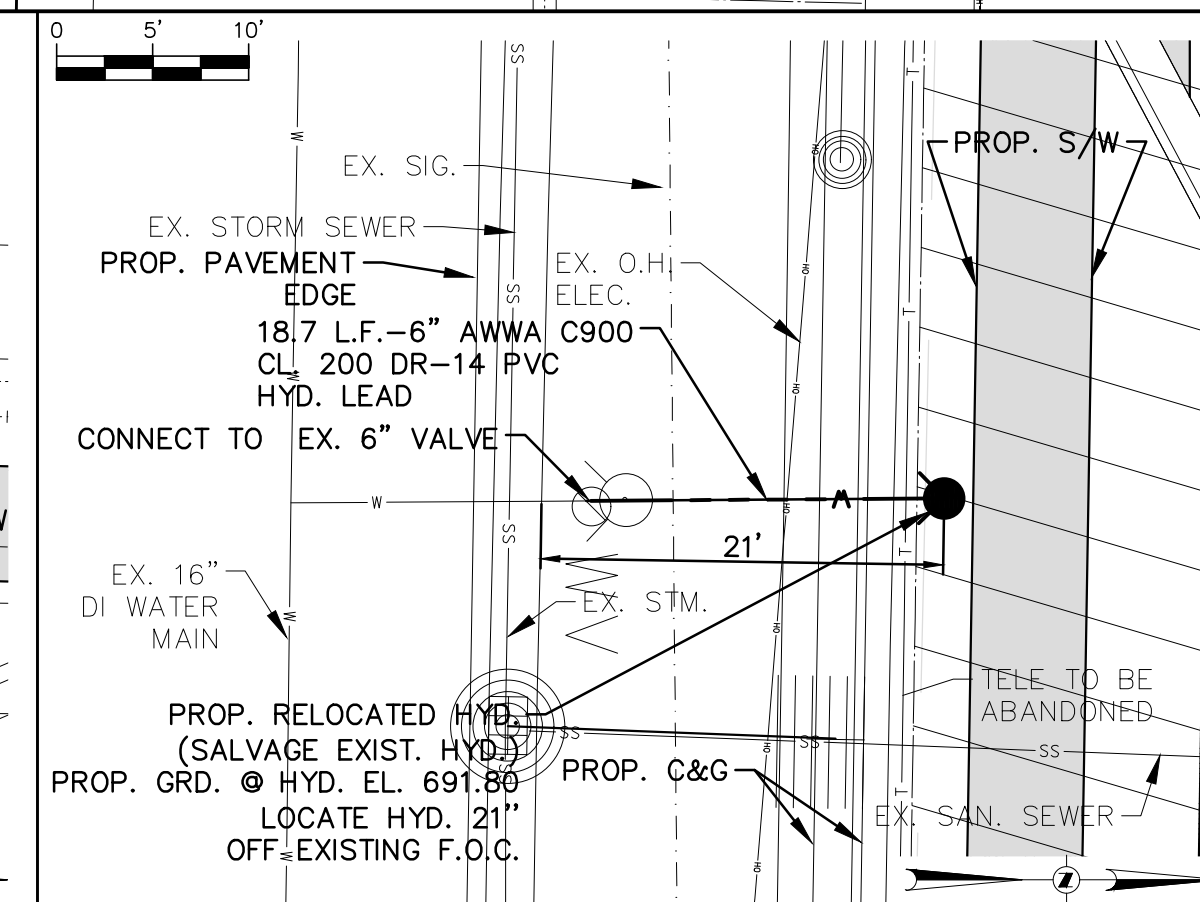


| | | | | | | | | |
|---------------------|------------------------|---|--|--------|------------------------------|----------------------------|------------------------|--|
| BID ITEM NOS. | ESTIMATE OF QUANTITIES | WATER MAIN | | SA.FKO | CITY OF OAK CREEK, WISCONSIN | APPROVED BY | | |
| | | CONTRACTOR: | | ST.FKO | | UTILITY ENGINEER DATE | | |
| | | MAINLINE INSPECTED BY: | | W. FKO | | APPROVED BY | | |
| | | LATERALS INSPECTED BY: | | G. FKO | | CITY ENGINEER DATE | | |
| | | DATE COMPLETED: | | E. FKO | | SCALE | | |
| | | TYPE OF PIPE, ASTM NO. | | T. FKO | | SHEET | | |
| | | TYPE OF PIPE, ASTM NO. | | I. FKO | | PLAN HOR. AS NOTED | | |
| | | AS-BUILTS BY: DATE: | | TS.FKO | | 02 | | |
| | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | PP. | | OF | | |
| | | | | | | 12 | | |
| | | Utility Engineer Date | | | REVISION BY | DATE | FILE NO: 14103-2C-2222 | |



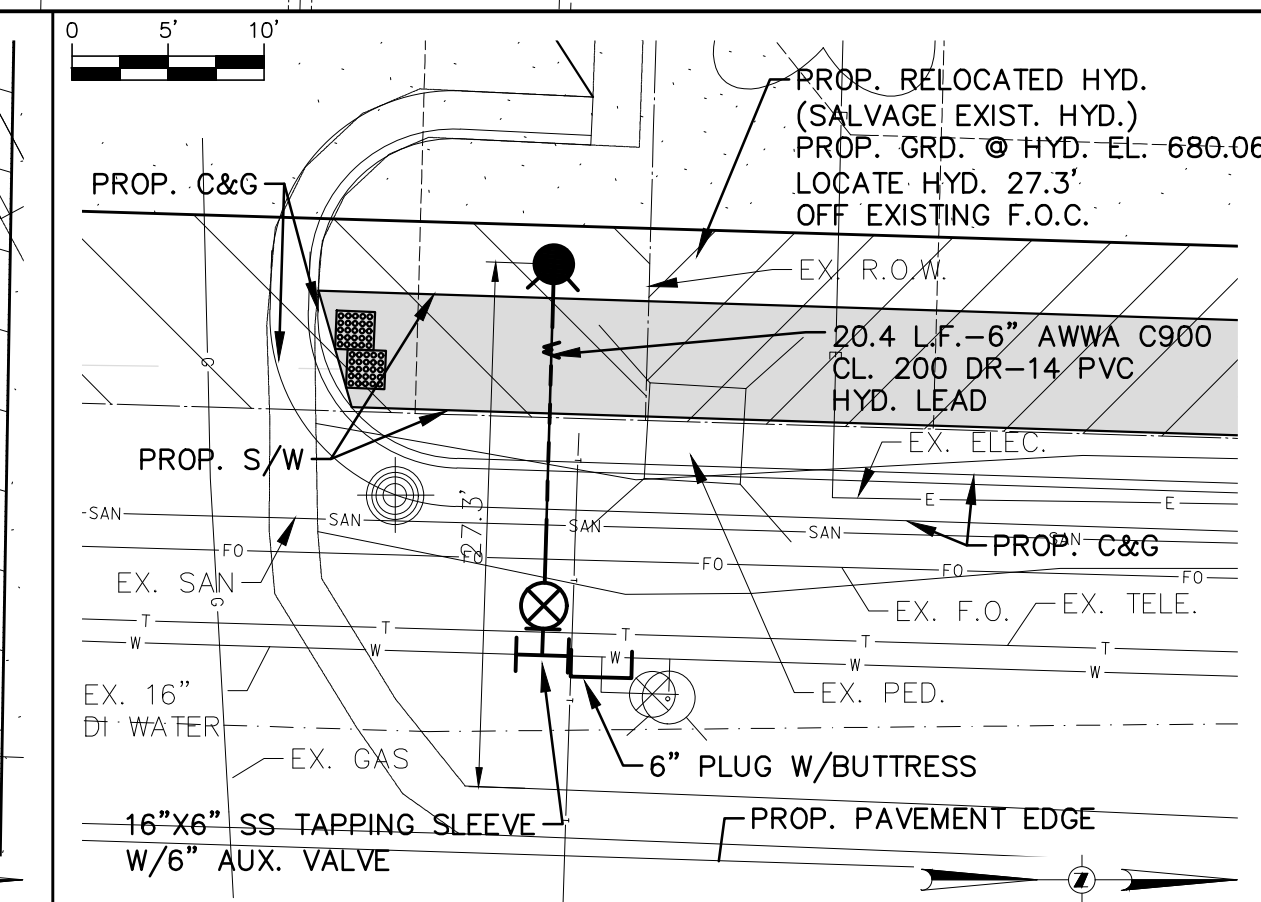
HYDRANT ALTERATION DETAIL "A"

TURF RESTORATION



HYDRANT ALTERATION DETAIL "B"








ASPHALT RESTORATION



HYDRANT RELOCATION DETAIL "C"

ASPHALT RESTORATION

LEGEND

- | | |
|---|----------------------|
|  | -STRUCTURE REMOVAL |
|  | -PROPOSED WATER MAIN |
|  | -PROPOSED HYDRANT |
|  | -PROPOSED PLUG |
|  | -PROPOSED GATE VALVE |
|  | -EXISTING HYDRANT |
|  | -EXISTING GATE VALVE |

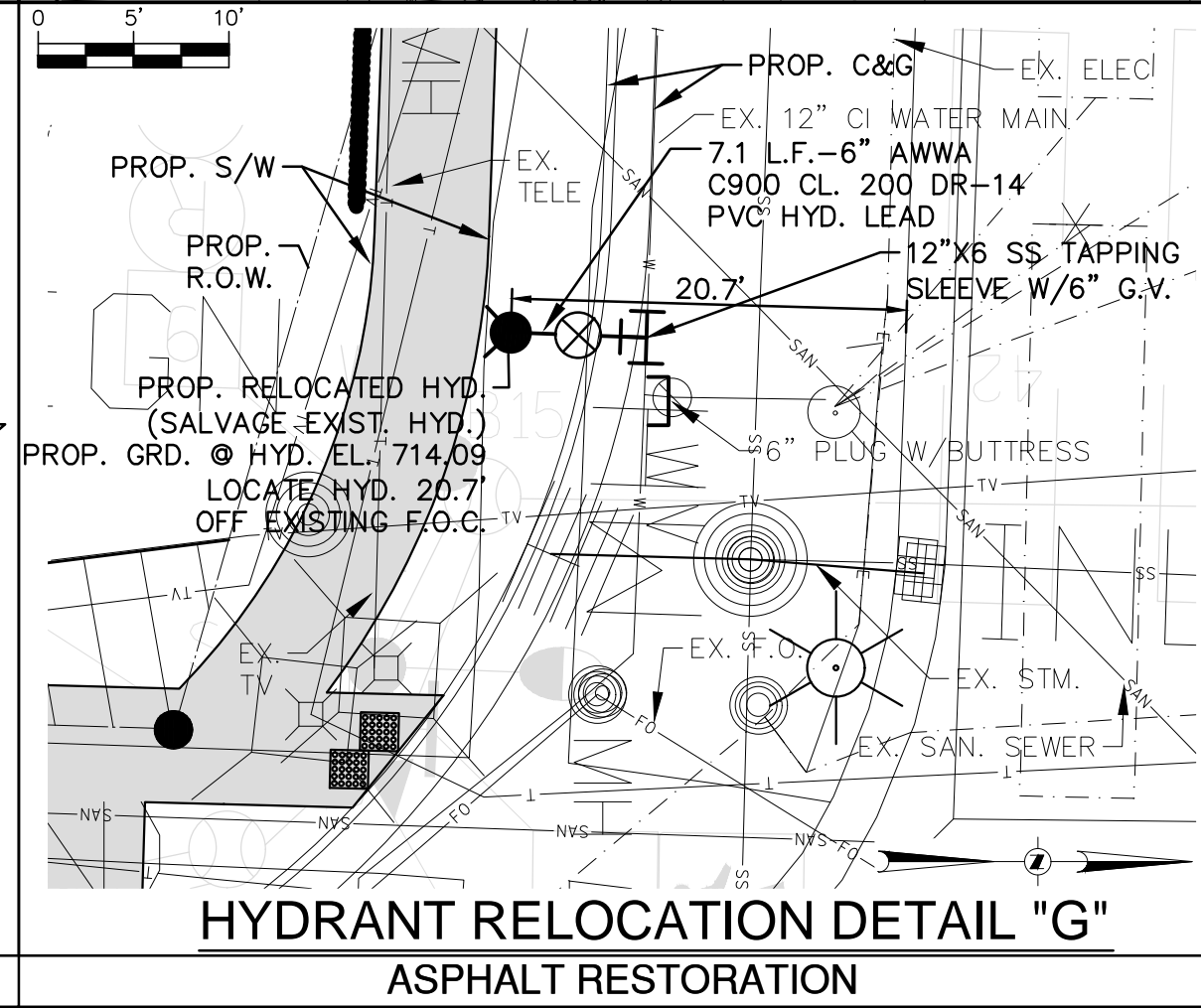
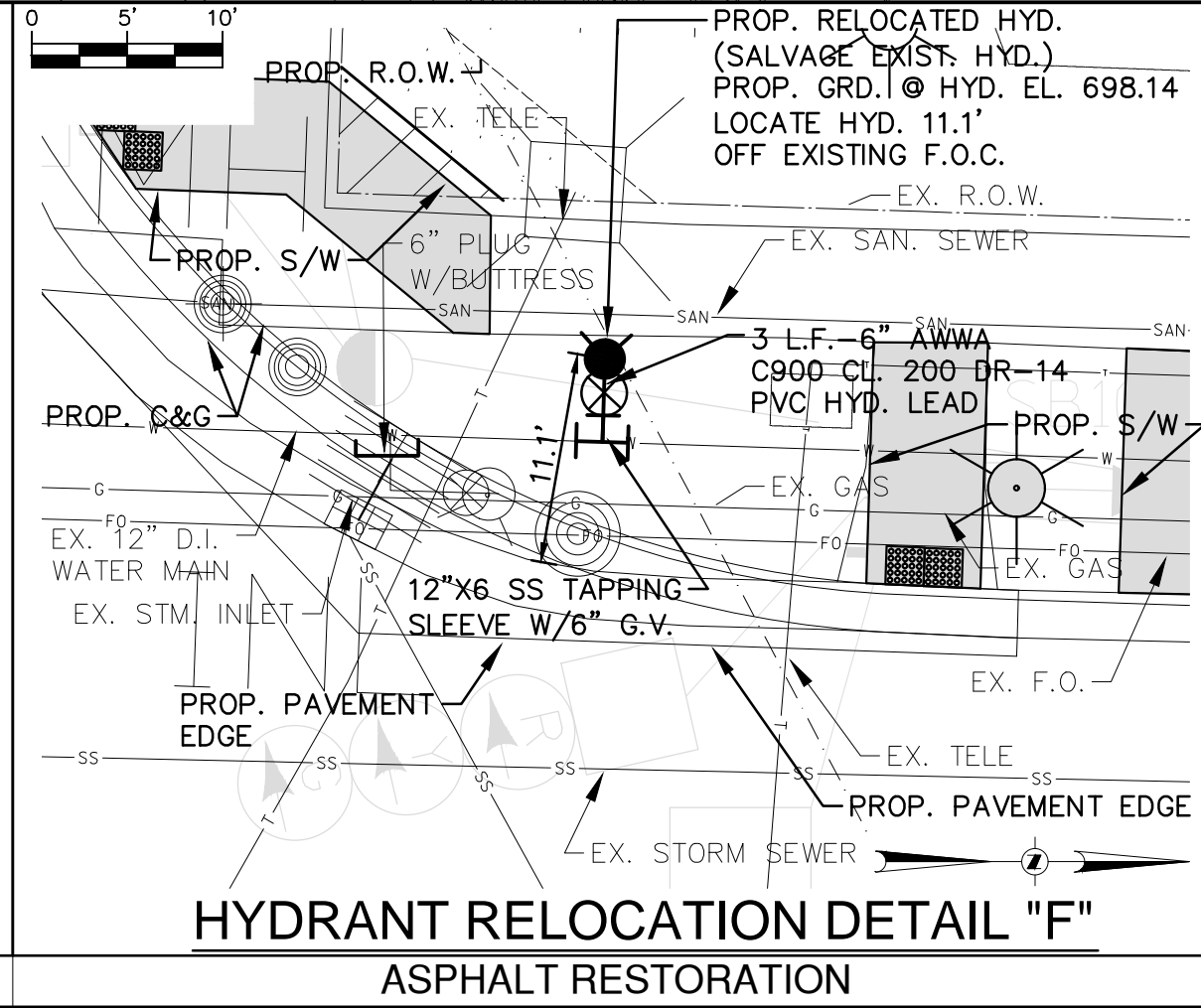
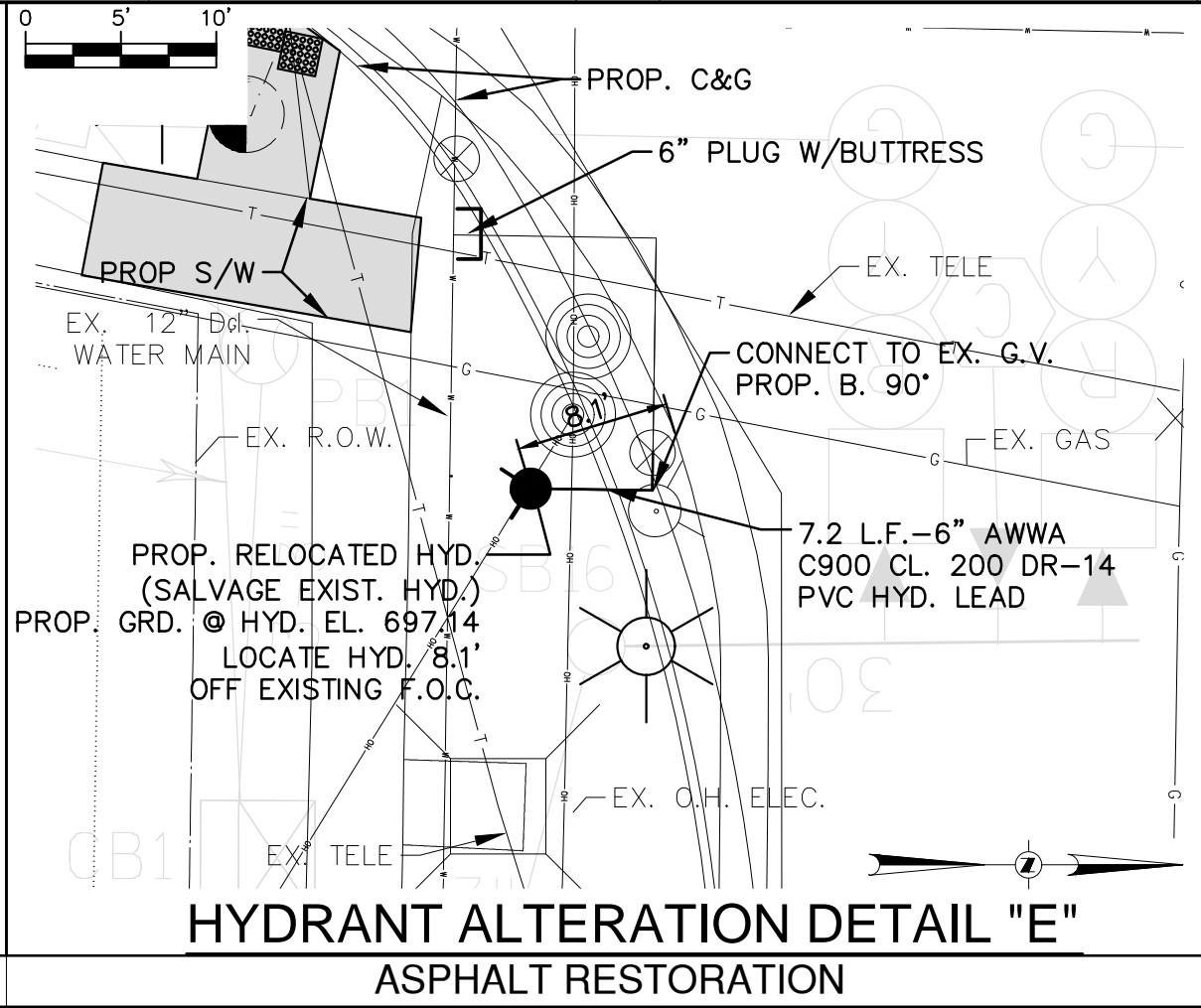
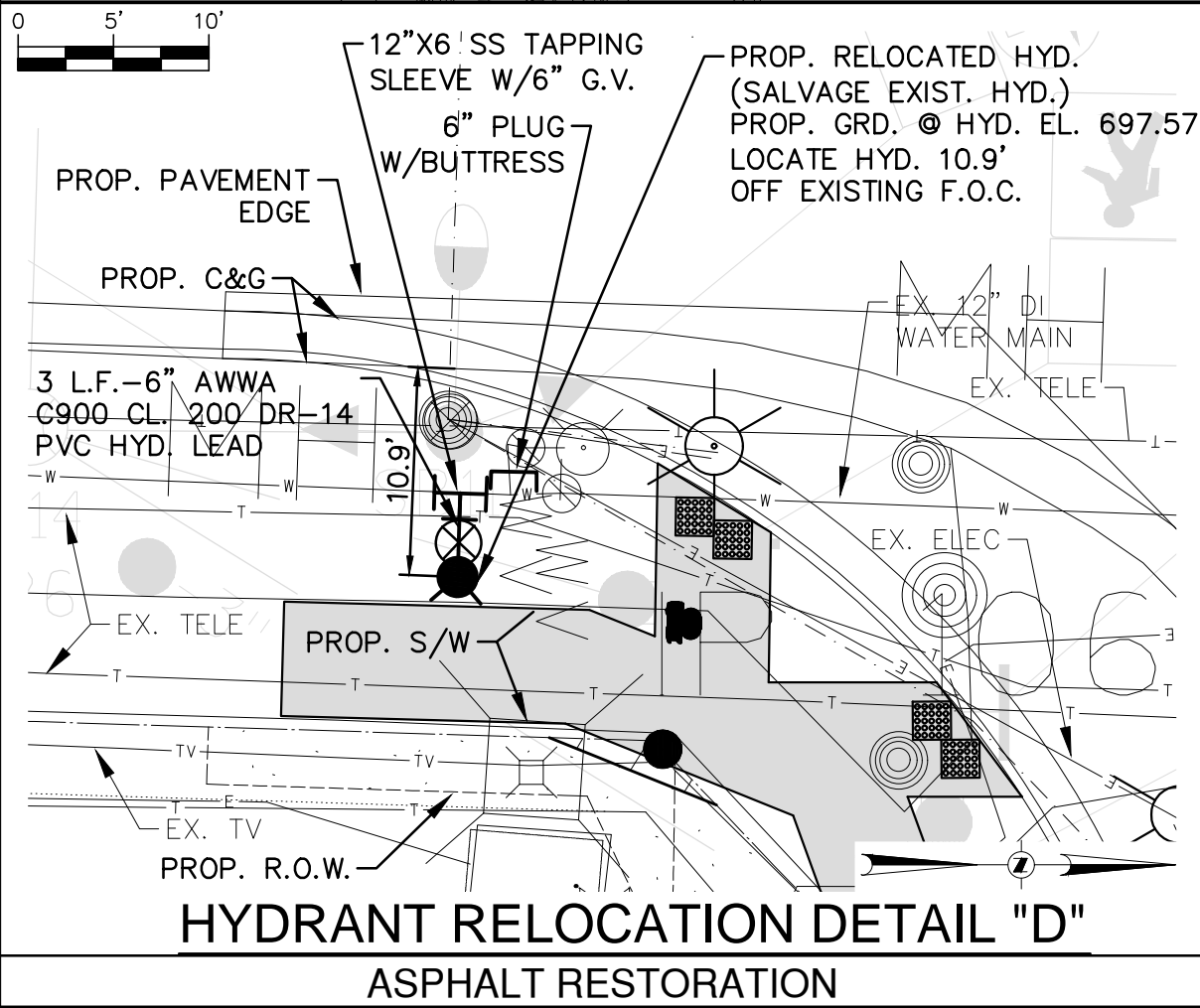
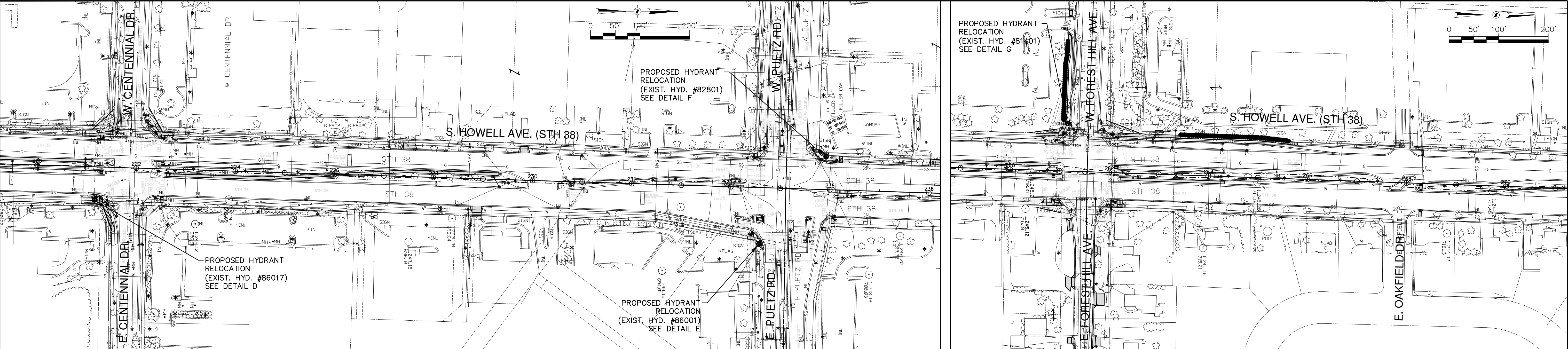
NOTICE:
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DISCLAIMER:
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GRAEF

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

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|---------------------|---|-------|------------------------|--|---|--|------------------------------|--|---------|--|------------|--|------------------|--|-------------|--|---------|--|
| BID ITEM NOS. | ESTIMATE OF QUANTITIES | | WATER MAIN | | SA.FKO | | CITY OF OAK CREEK, WISCONSIN | | | | | | APPROVED BY | | | | | |
| | | | CONTRACTOR: | | ST.FKO | | | | | | | | UTILITY ENGINEER | | DATE | | | |
| 1 | Hydrant relocation, including removing existing hydrants, valves, and pipe as needed, furnishing and installing existing/supplied hydrant, 6" C900 Cl. 200 DR-14 restrained water main pipe, 6" gate valve, fittings, tapping sleeves, live tap to existing water main, butresses, excavation, granular backfill and asphalt restoration as designated on the plans | 1 EA. | MAINLINE INSPECTED BY: | | W. FKO | | DESIGNED BY | | DATE | | CHECKED BY | | DATE | | APPROVED BY | | | |
| | | | LATERALS INSPECTED BY: | | G. FKO | | AS | | 2-13-14 | | FKO | | 2-13-14 | | MNP | | 2-13-14 | |
| | | | DATE COMPLETED: | | E. FKO | | | | | | | | | | | | | |
| | | | TYPE OF PIPE, ASTM NO. | | T. FKO | | | | | | | | | | | | | |
| | | | TYPE OF PIPE, ASTM NO. | | I. FKO | | | | | | | | | | | | | |
| | | | AS-BUILTS BY: | | DATE: | | TS.FKO | | | | | | | | | | | |
| | | | | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | PP. | | | | | | | | | | | |
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LEGEND

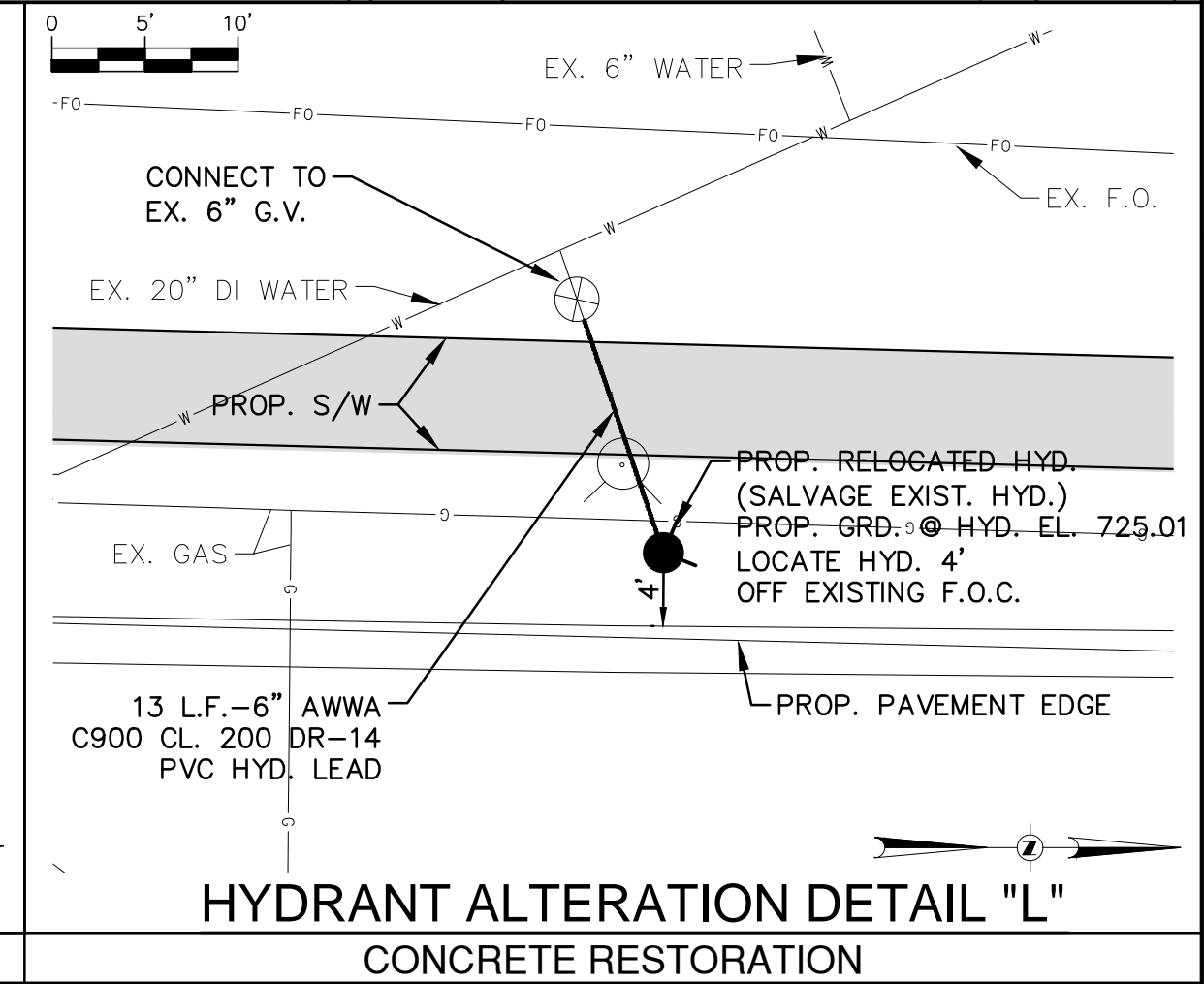
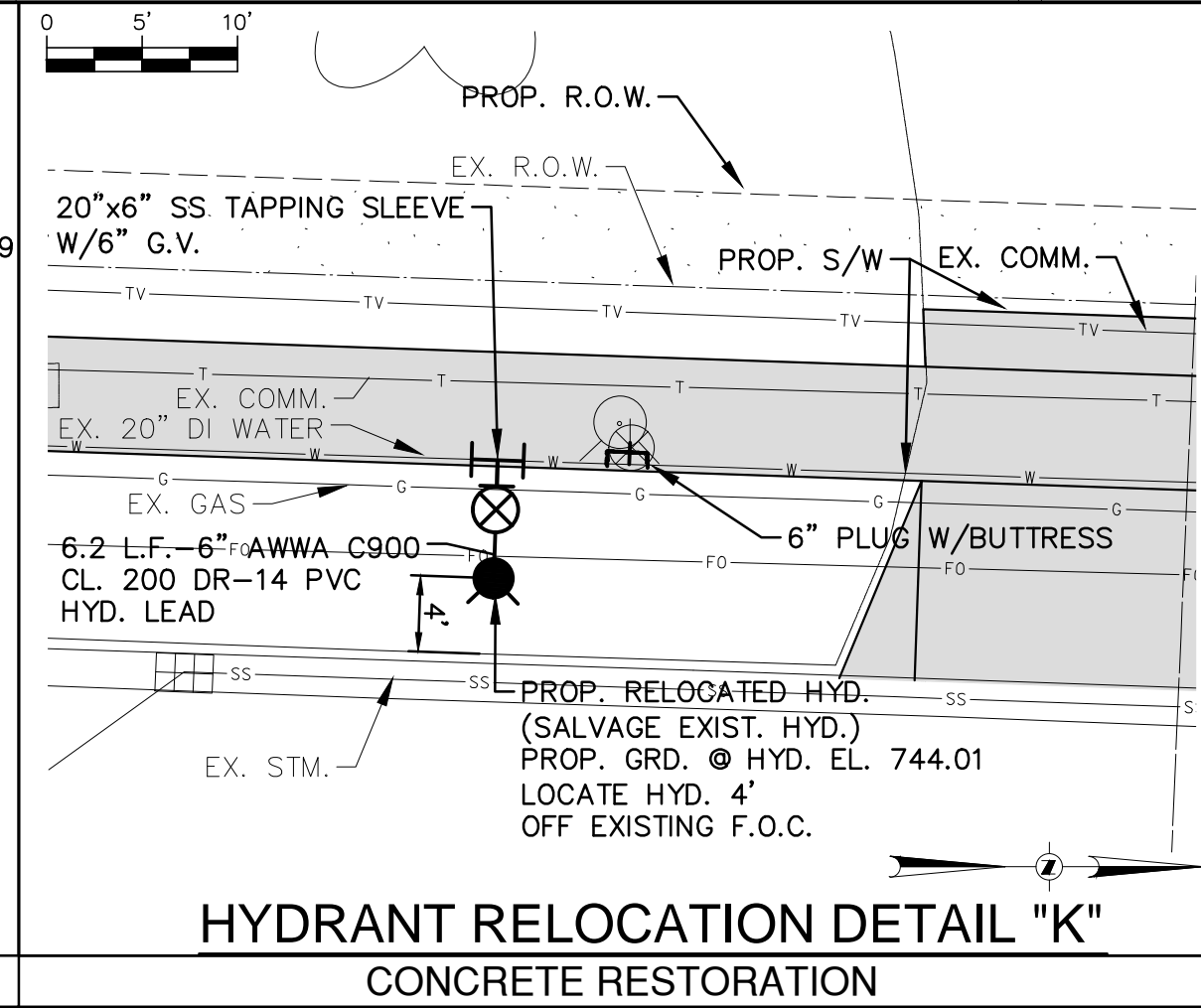
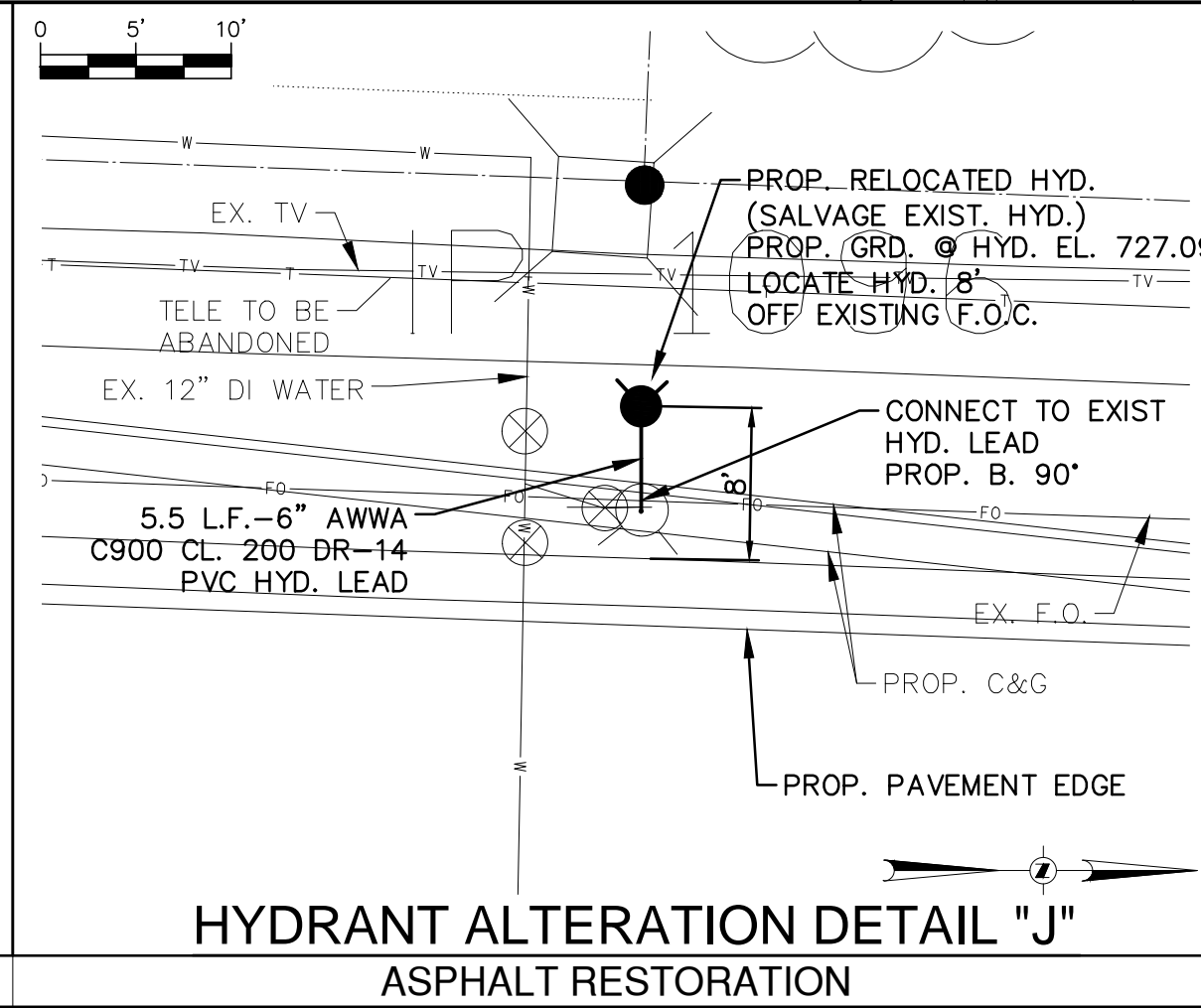
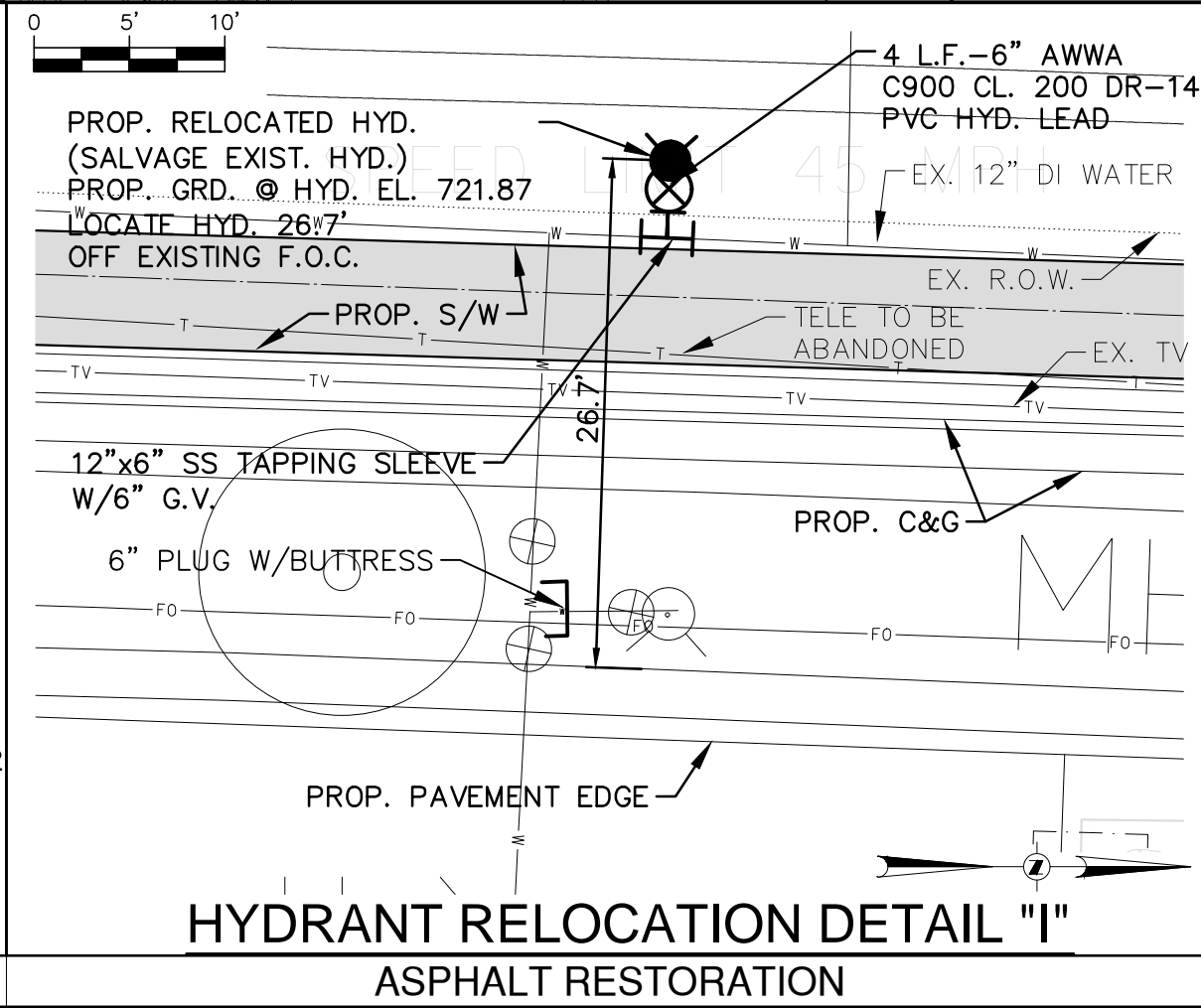
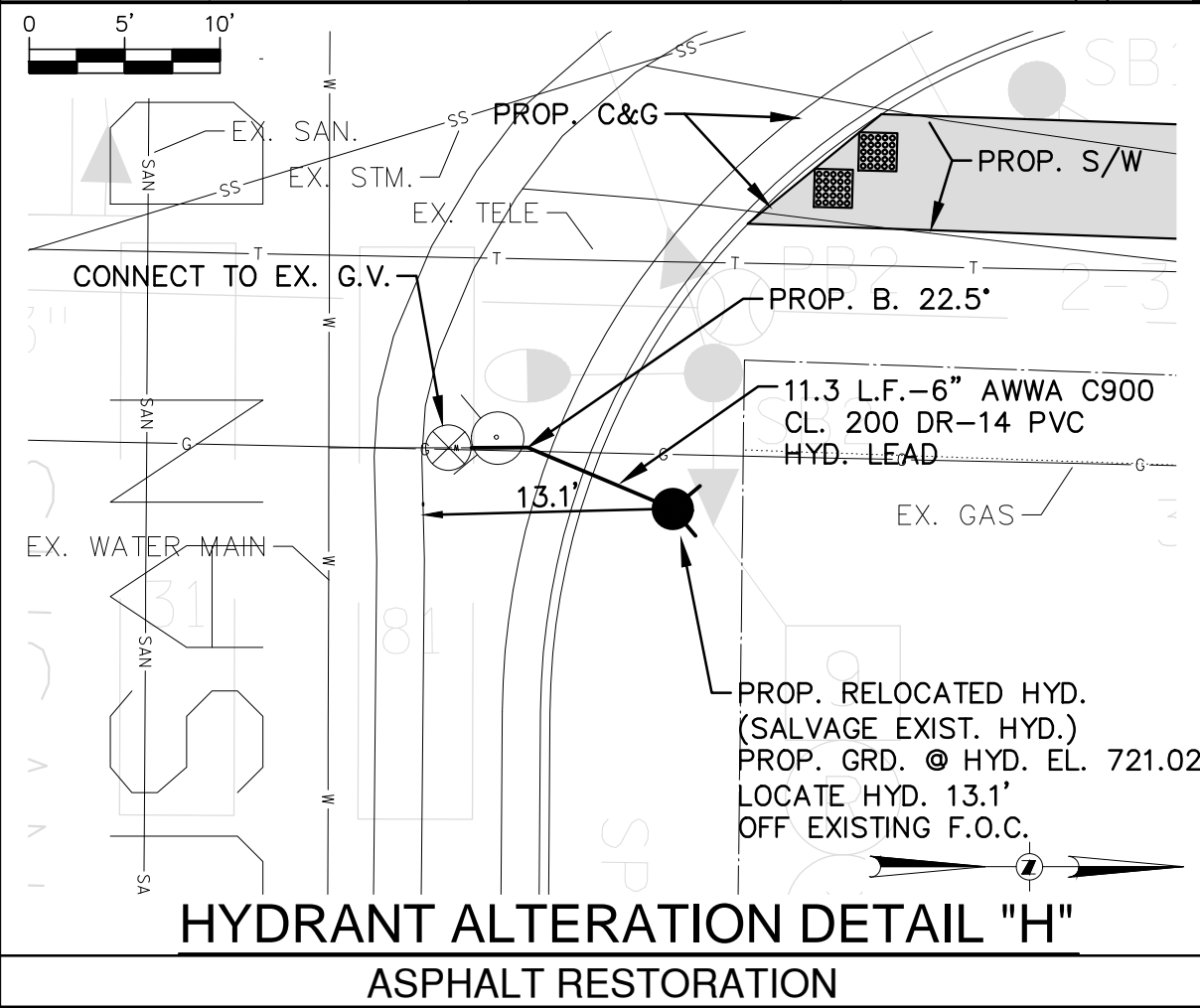
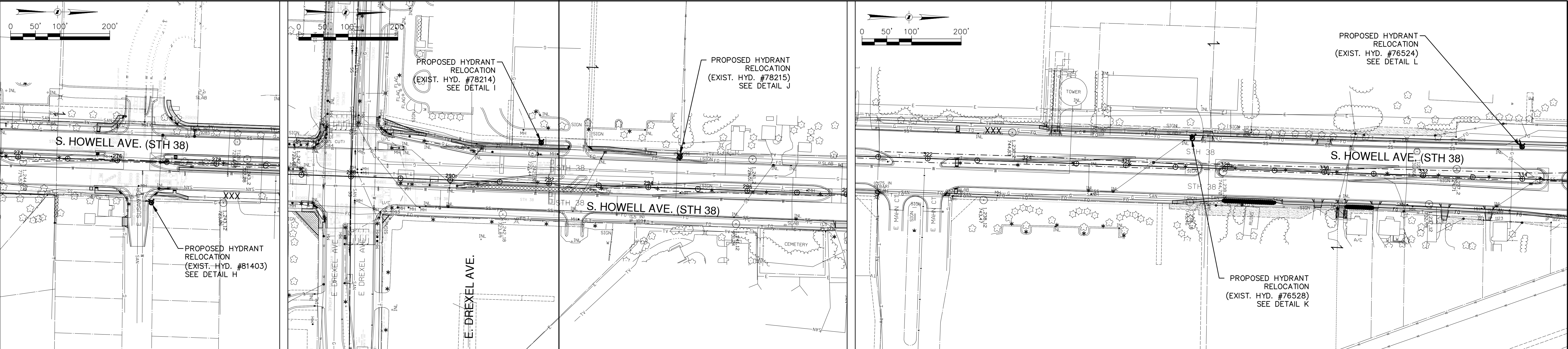
- X -STRUCTURE REMOVAL
- - - - -PROPOSED WATER MAIN
- -PROPOSED HYDRANT
- -PROPOSED PLUG
- ⊗ -PROPOSED GATE VALVE
- -EXISTING HYDRANT
- ⊗ -EXISTING GATE VALVE

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GRAEF
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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 | | SAFKO | | CITY OF OAK CREEK, WISCONSIN | | | APPROVED BY | |
|---------------|--|------------------------|--|---|--|--------|--|--|--|--|------------------|--|
| | | | | CONTRACTOR: | | ST.FKO | | | | | UTILITY ENGINEER | |
| | | | | MAINLINE INSPECTED BY: | | W. FKO | | DESIGNED BY | | | DATE | |
| | | | | LATERALS INSPECTED BY: | | G. FKO | | DRAWN BY | | | APPROVED BY | |
| | | | | DATE COMPLETED: | | E. FKO | | DATE | | | | |
| | | | | TYPE OF PIPE, ASTM NO. | | T. FKO | | AS | | | | |
| | | | | TYPE OF PIPE, ASTM NO. | | I. FKO | | 2-13-14 | | | | |
| | | | | AS-BUILTS BY: | | TS.FKO | | FKO | | | | |
| | | | | DATE: | | PP. | | 2-13-14 | | | | |
| | | | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | | | MNP | | | | |
| | | | | Utility Engineer | | | | DATE | | | | |
| | | | | | | | | REVISION BY | | | | |
| | | | | | | | | DATE | | | | |
| | | | | | | | | S. HOWELL AVE. PROPOSED HYDRANT RELOCATION | | | | |
| | | | | | | | | IN: S. HOWELL AVE. | | | | |
| | | | | | | | | FR: E. CENTENNIAL DR. | | | | |
| | | | | | | | | TO: E. OAKFIELD DR. | | | | |
| | | | | | | | | FILE NO: 14103-4C-2224 | | | | |



LEGEND

- X - STRUCTURE REMOVAL
- - - - - PROPOSED WATER MAIN
- - PROPOSED HYDRANT
- - PROPOSED PLUG
- ⊗ - PROPOSED GATE VALVE
- - EXISTING HYDRANT
- ⊗ - EXISTING GATE VALVE

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| BID ITEM NOS. | | ESTIMATE OF QUANTITIES | | WATER MAIN | | SAFKO | | CITY OF OAK CREEK, WISCONSIN | | | APPROVED BY | |
|---------------|--|------------------------|--|---|--|--------|--|--|--|--|------------------|--|
| | | | | CONTRACTOR: | | ST.FKO | | | | | UTILITY ENGINEER | |
| | | | | MAINLINE INSPECTED BY: | | W. FKO | | DESIGNED BY | | | DATE | |
| | | | | LATERALS INSPECTED BY: | | G. FKO | | DRAWN BY | | | APPROVED BY | |
| | | | | DATE COMPLETED: | | E. FKO | | DATE | | | | |
| | | | | TYPE OF PIPE, ASTM NO. | | T. FKO | | AS | | | | |
| | | | | TYPE OF PIPE, ASTM NO. | | I. FKO | | 2-13-14 | | | | |
| | | | | AS-BUILTS BY: | | TS.FKO | | FKO | | | | |
| | | | | DATE: | | PP. | | 2-13-14 | | | | |
| | | | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | | | MNP | | | | |
| | | | | Utility Engineer | | | | DATE | | | | |
| | | | | | | | | REVISION BY | | | | |
| | | | | | | | | DATE | | | | |
| | | | | | | | | S. HOWELL AVE. PROPOSED HYDRANT RELOCATION | | | | |
| | | | | | | | | IN: S. HOWELL AVE. | | | | |
| | | | | | | | | FR: E. DREXEL AVE. | | | | |
| | | | | | | | | TO: W. RAWSON AVE. | | | | |
| | | | | | | | | FILE NO: 14103-50-2225 | | | | |



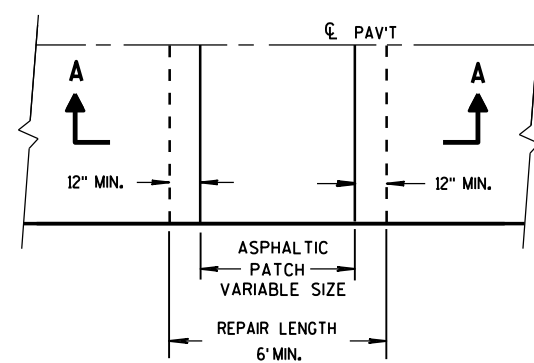
GENERAL NOTES

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.

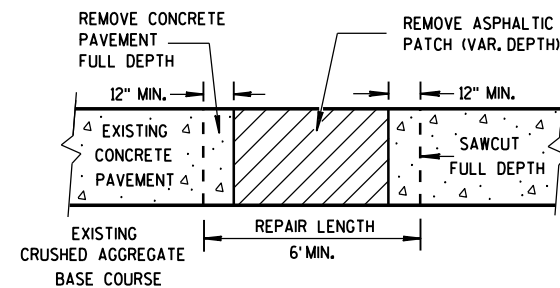
PROVIDE A 6-FOOT MINIMUM DISTANCE FROM BOUNDARIES OF CONCRETE REPAIR AREAS TO ADJACENT TRANSVERSE JOINT OR CRACK IN THE SAME LANE.

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.

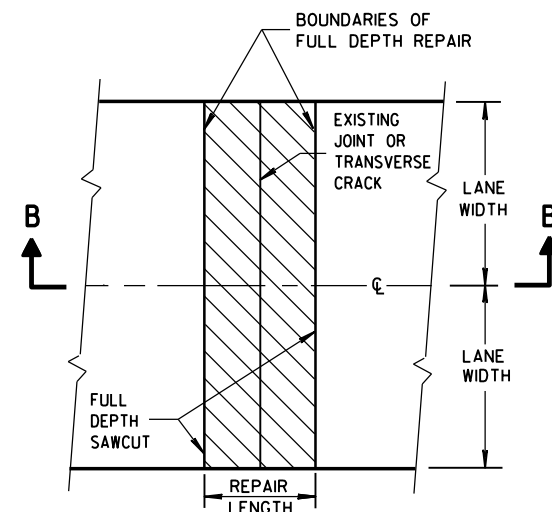
① DOWEL BARS MIGHT NOT EXIST.



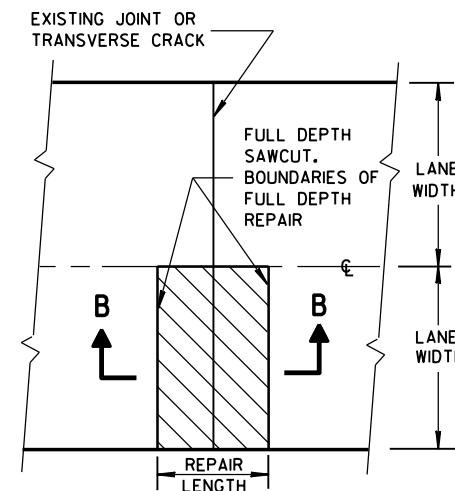
PLAN VIEW



SECTION A-A
HMA PATCH REMOVAL



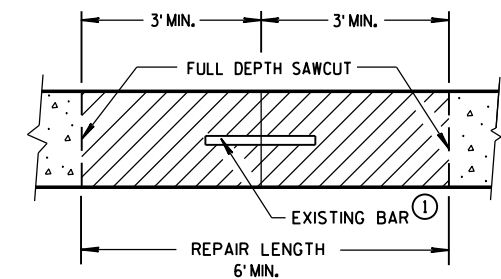
PLAN VIEW
(DOUBLE LANE REPAIR)



PLAN VIEW
(SINGLE LANE REPAIR)

FULL DEPTH CONCRETE PAVEMENT REMOVAL

(SEE NOTE)



SECTION B-B
CONCRETE REMOVAL

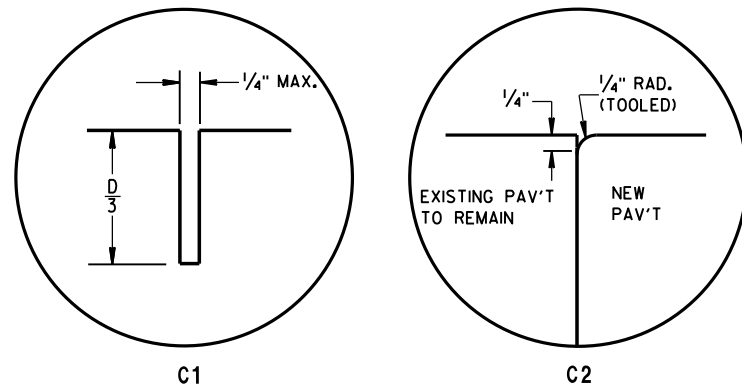
CONCRETE PAVEMENT REPAIR
AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



TIE BAR TABLE

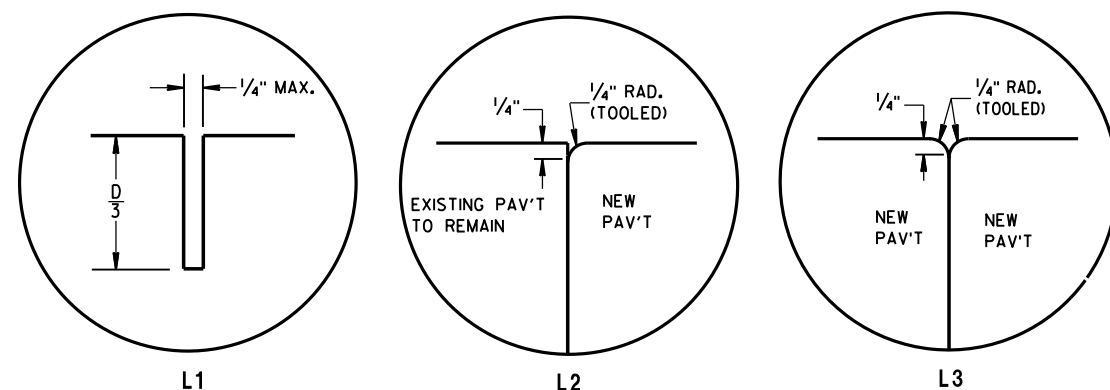
| PAVEMENT DEPTH "D" | CLEAR COVER "C" | MAXIMUM TIE BAR SPACING "S" | |
|--------------------|-----------------|-----------------------------|-------|
| | | PAVEMENT WIDTH 24' OR 26' | ≥ 30' |
| 6, 6 1/2" | 3" ± 1/2" | 48" | 42" |
| 7, 7 1/2" | 3 1/4" ± 1" | 45" | 36" |
| 8, 8 1/2" | 3 3/4" ± 1" | 39" | 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" |



C1

C2

TRANSVERSE JOINTS

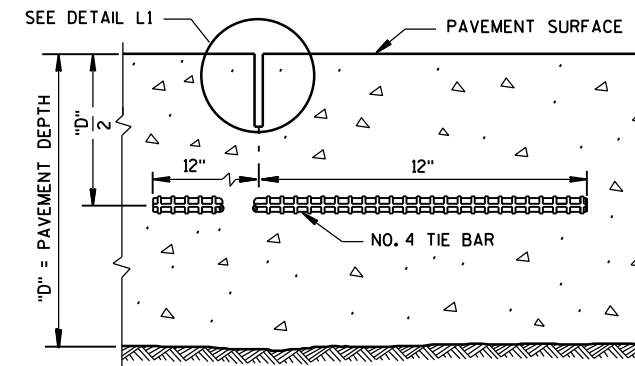


L1

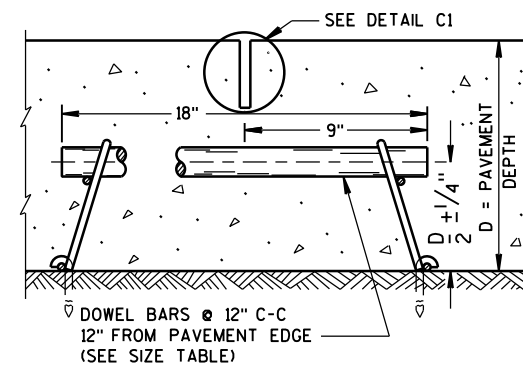
L2

L3

LONGITUDINAL JOINTS



SECTION C-C SAWED LONGITUDINAL JOINT



SECTION F-F CONTRACTION JOINT

GENERAL NOTES

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

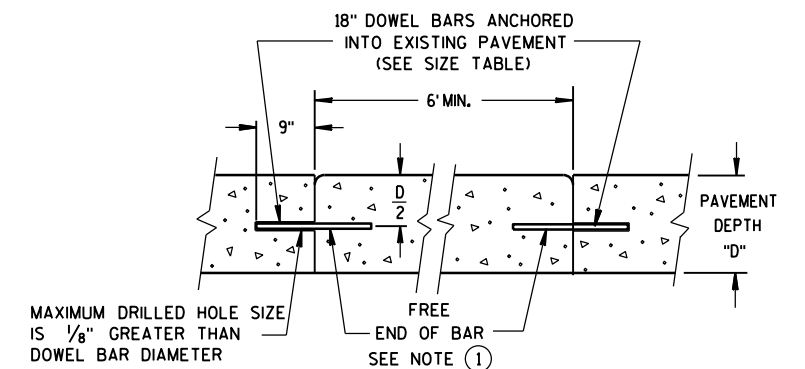
CONCRETE PAVEMENT REPAIRS OF EXISTING NONDOWELED CONCRETE PAVEMENTS DO NOT NEED TO BE DOWELED.

DO NOT SEAL OR FILL JOINTS.

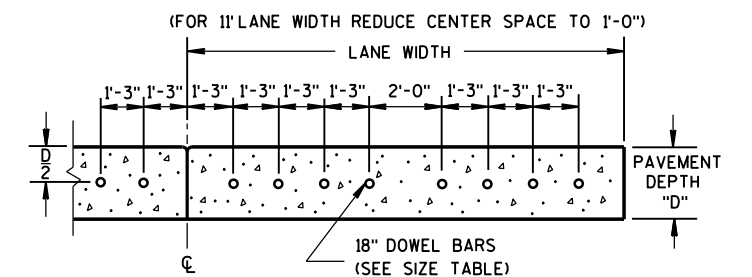
ANCHOR DOWEL BARS AND TIE BARS INTO DRILLED HOLES WITH AN EPOXY.

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 D-D



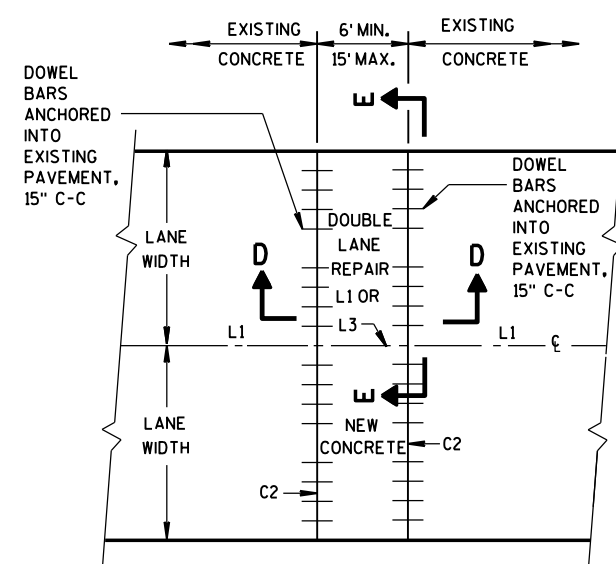
SECTION E-E DRILLED DOWEL BAR CONSTRUCTION JOINT

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' |

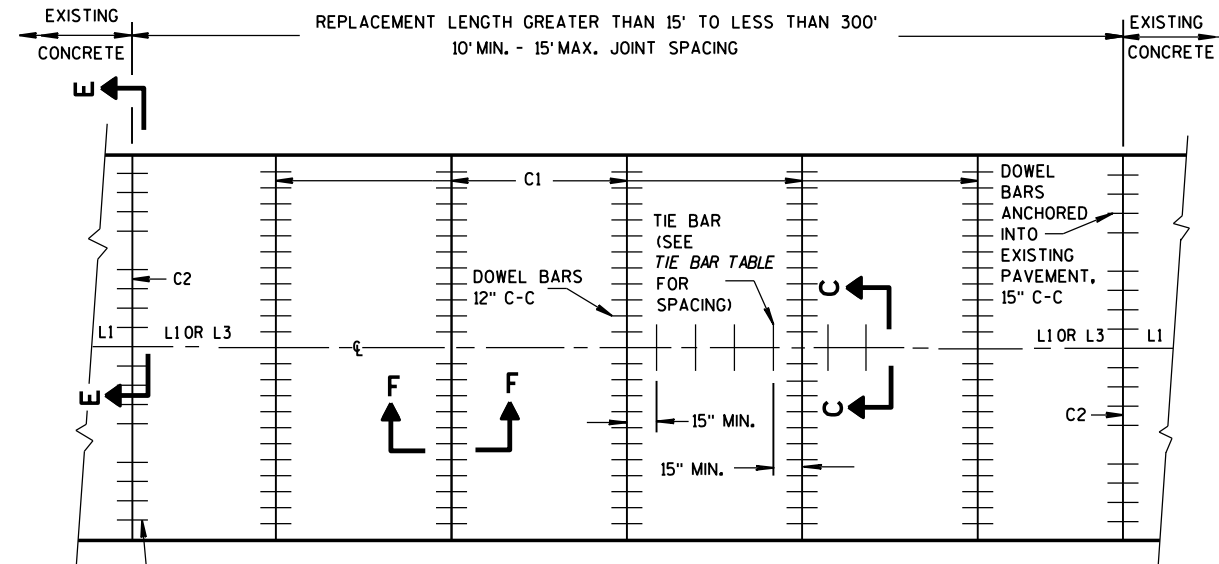
CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION



PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPAIR



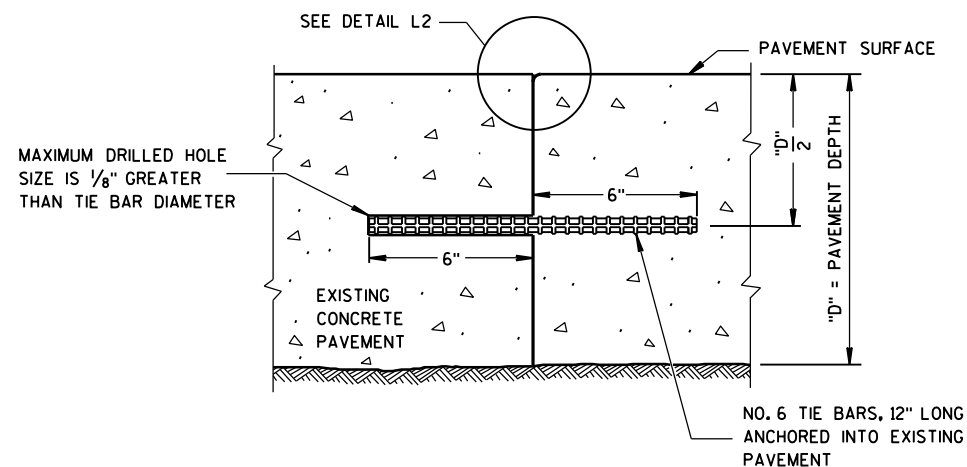
PLAN VIEW

MULTI-LANE CONCRETE PAVEMENT REPLACEMENT

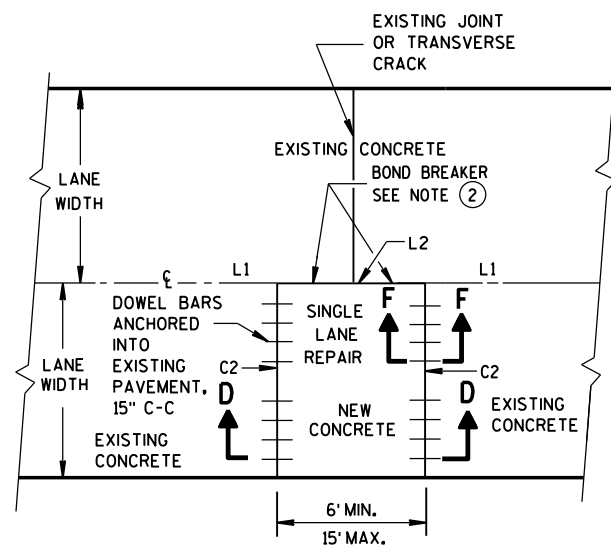


GENERAL NOTES

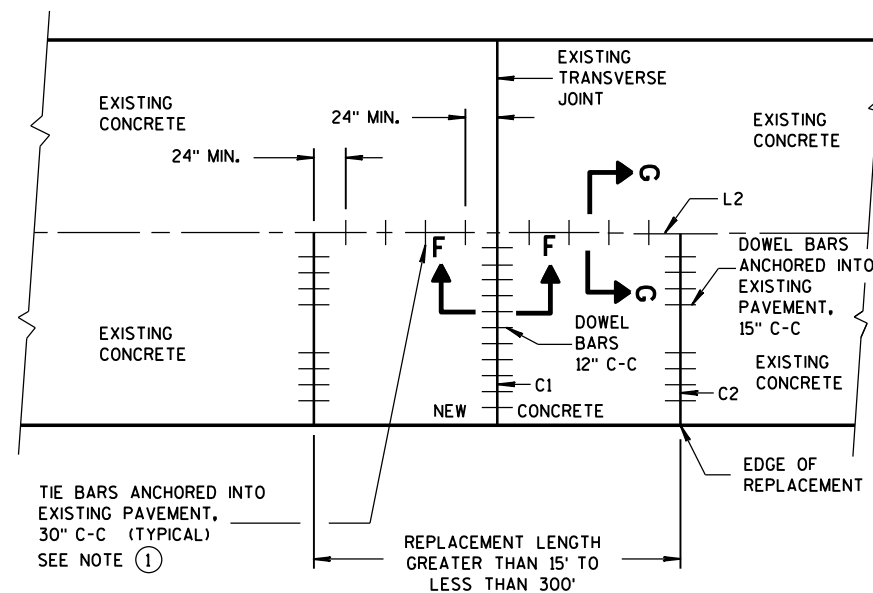
- WITH THE APPROVAL OF THE ENGINEER, FOR SINGLE LANE PAVEMENT REPLACEMENTS LESS THAN 30 FEET IN LENGTH, THE CONTRACTOR MAY INSTALL DRILLED TIE BARS ON 6:1 SKEW HORIZONTALLY, DIRECTION OF SKEW ALTERNATING WITH EACH SUCCESSIVE BAR. DRIVE SKEWED TIE BARS TO A DEPTH OF 6 INCHES AND TO SUCH A DIAMETER AS TO PROVIDE A TIGHT DRIVEN FIT.
- USE AN ENGINEER-APPROVED BOND BREAKER (E.G. RELEASE AGENT, CURING COMPOUND) FOR SINGLE LANE REPAIRS UP TO 15 FEET IN LENGTH.



SECTION G-G
TIE BARS ANCHORED
INTO EXISTING PAVEMENT



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPAIR



PLAN VIEW
SINGLE LANE
CONCRETE PAVEMENT REPLACEMENT

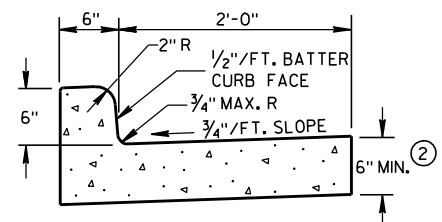
CONCRETE PAVEMENT
REPAIR AND REPLACEMENT

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

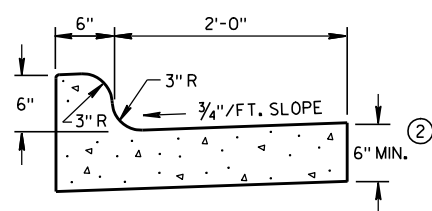
APPROVED
12-2013 /S/ Deb Bischoff
DATE PAVEMENT POLICY & DESIGN ENGINEER
FHWA



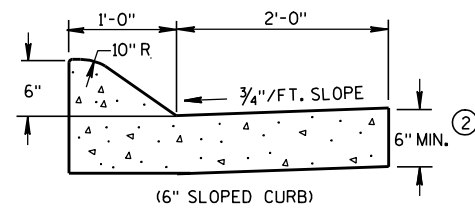
8D1: Concrete Curb, Concrete Curb & Gutter and Ties



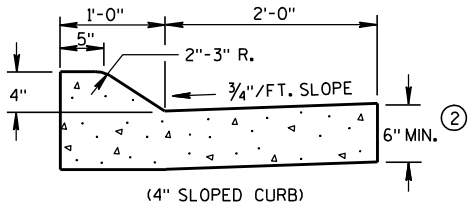
TYPES A & D



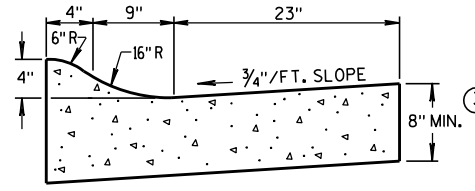
TYPES K & L



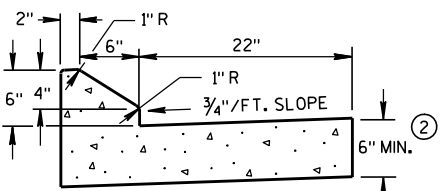
(6" SLOPED CURB)



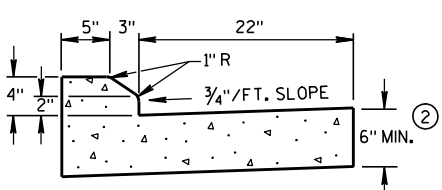
(4" SLOPED CURB)



4" SLOPED CURB TYPES R & T



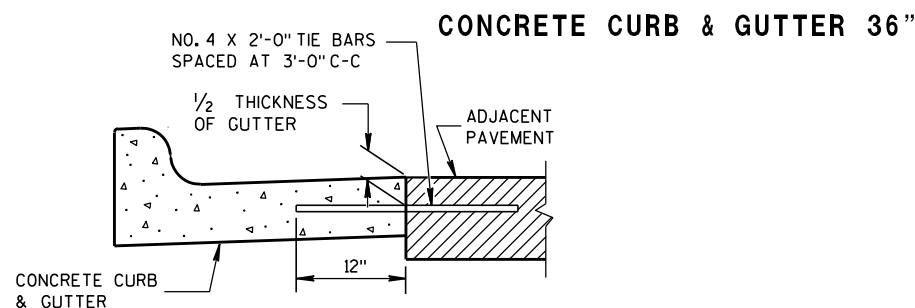
6" SLOPED CURB TYPES G & J



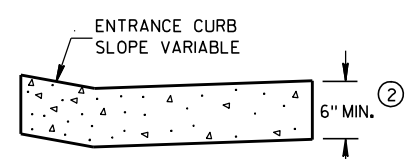
4" SLOPED CURB TYPES G & J

CONCRETE CURB & GUTTER 30"

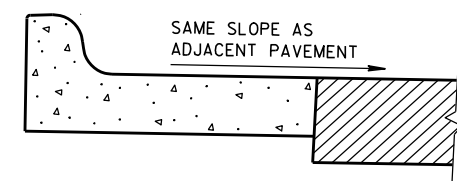
OPTIONAL CURB SHAPE FOR TYPES K & L



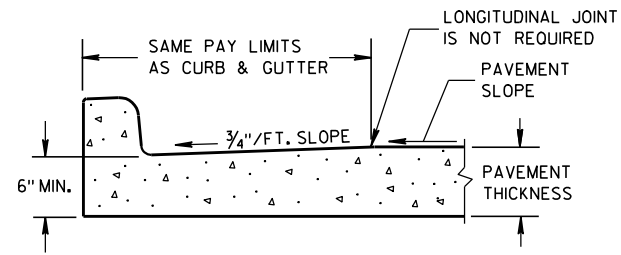
TYPICAL TIE BAR LOCATION



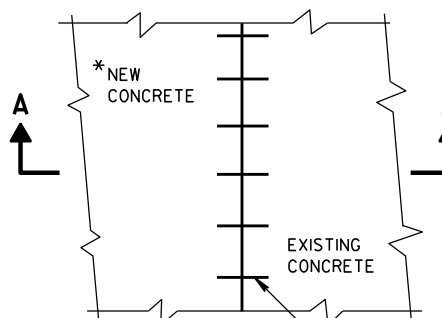
DRIVEWAY ENTRANCE CURB (WHEN DIRECTED BY THE ENGINEER)



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



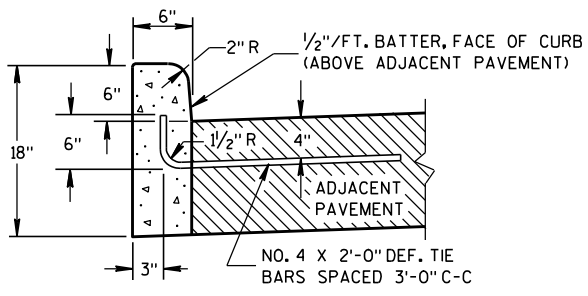
PARTIAL SECTION OF PAVEMENT WITH INTEGRAL CURB & GUTTER



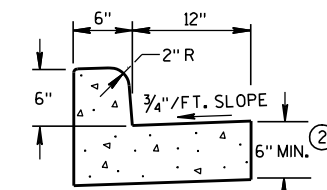
PLAN VIEW

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

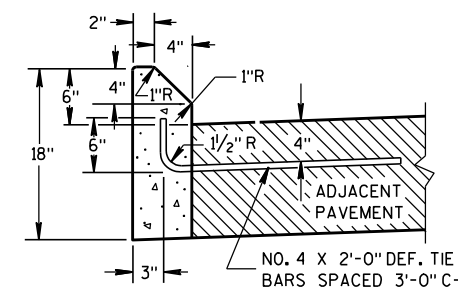
NO. 6 TIE BARS SPACED 2'-6" C-C, INSTALLED PERPENDICULAR TO THE LONGITUDINAL JOINT.



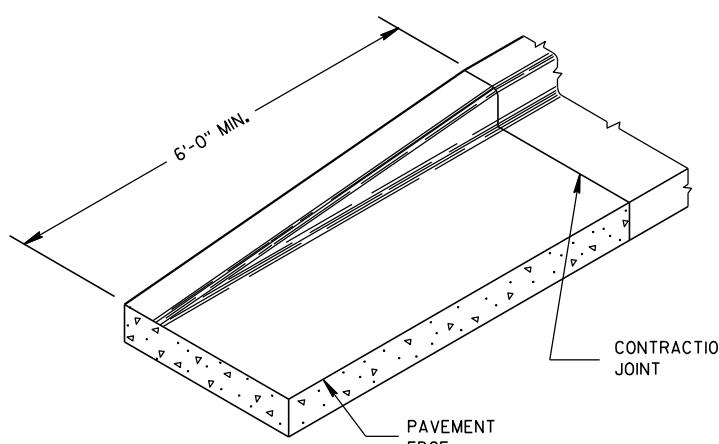
TYPES A & D



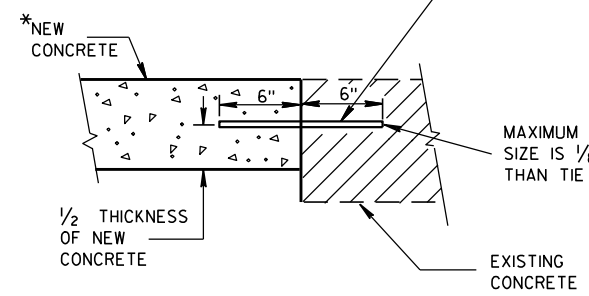
TYPES A & D CONCRETE CURB & GUTTER 18"



TYPES G & J



END SECTION CURB & GUTTER



SECTION A-A TIE BARS DRILLED INTO EXISTING PAVEMENT

MAXIMUM DRILL HOLE SIZE IS 1/8" GREATER THAN TIE BAR DIAMETER

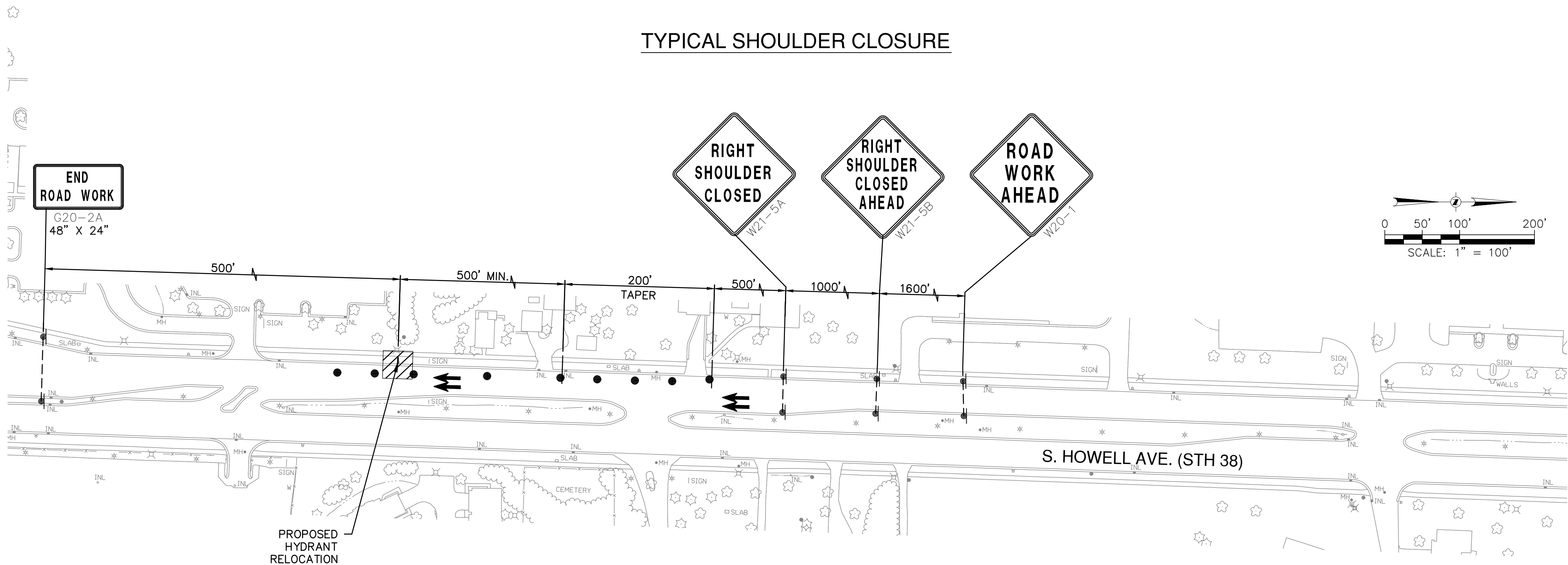
EXISTING CONCRETE

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

L:\Jobs\2013\20130330-06\CAD\Std\dwg\01\HOWELL\TC.dwg, 2/6/2014 12:14:33 PM, 0869, DWG to PDF.pct



STAGING NOTE

TYPICAL SHOULDER CLOSURE TO BE USED FOR
DETAIL A, H, J, K, L, M, N, O, P, Q, R & S.

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

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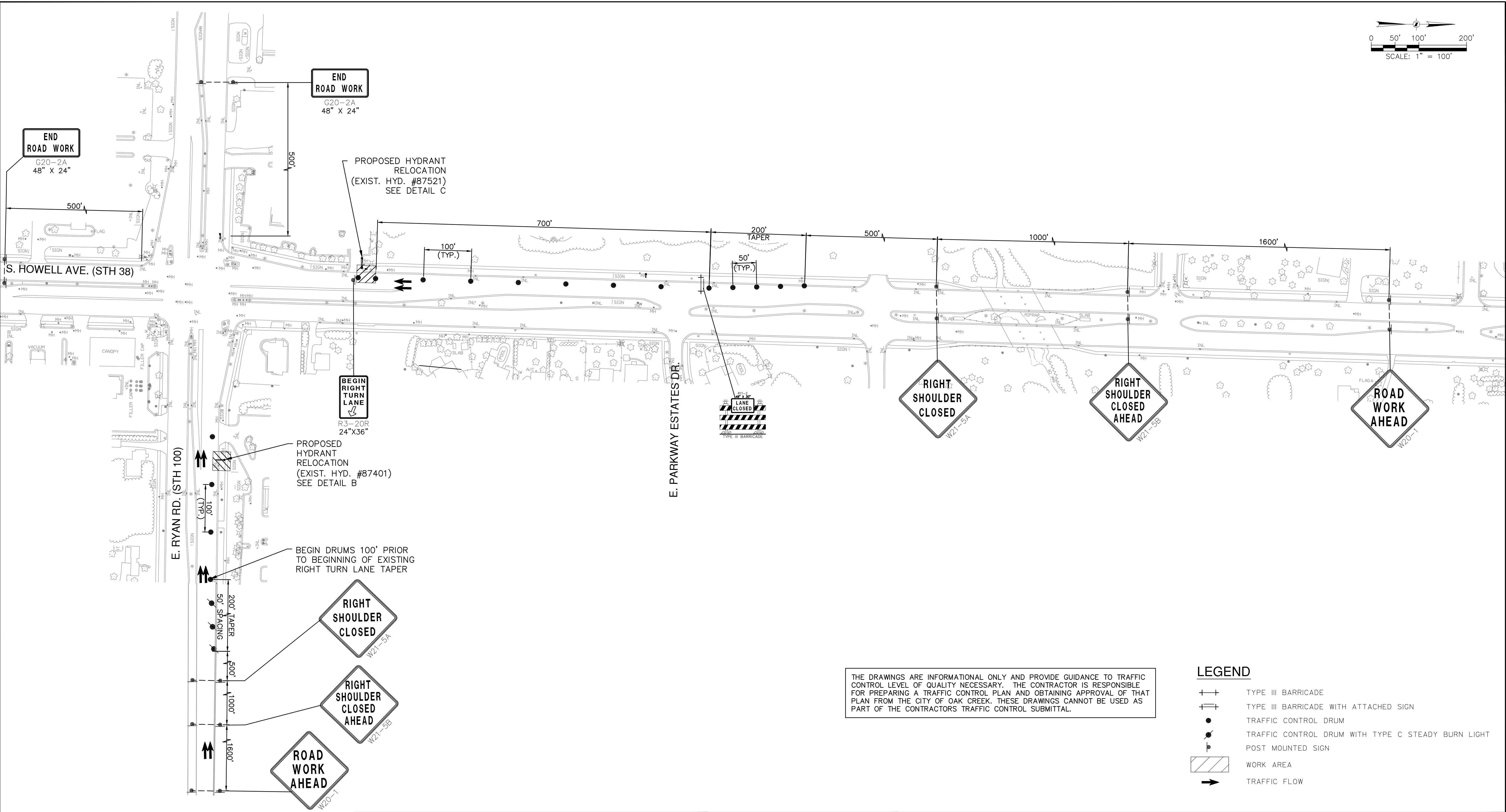
NOTICE:
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DISCLAIMER:
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GRAEF
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

| | | | | | | | | | | | |
|---------------------|------------------------|---|--|--------|--|------------------------------|--|------------------------|--|----------------------------|--|
| BID ITEM NOS. | ESTIMATE OF QUANTITIES | WATER MAIN | | SA.FKO | | CITY OF OAK CREEK, WISCONSIN | | | | APPROVED BY | |
| | | CONTRACTOR: | | ST.FKO | | | | | | | |
| | | MAINLINE INSPECTED BY: | | W. FKO | | | | | | UTILITY ENGINEER DATE | |
| | | LATERALS INSPECTED BY: | | G. FKO | | | | | | APPROVED BY | |
| | | DATE COMPLETED: | | E. FKO | | | | | | | |
| | | TYPE OF PIPE, ASTM NO. | | T. FKO | | | | | | | |
| | | TYPE OF PIPE, ASTM NO. | | I. FKO | | | | | | CITY ENGINEER DATE | |
| | | AS-BUILTS BY: DATE: | | TS.FKO | | | | | | SCALE SHEET | |
| | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | PP. | | | | | | PLAN 07 | |
| | | | | | | | | | | HOR. 1"=100' OF | |
| | | | | | | | | 12 | | | |
| | | Utility Engineer Date | | | | REVISION BY DATE | | FILE NO: 14103-7C-2227 | | | |

L:\Jobs\2013\20130356\56-CAD\Std\dwg\01\WOOD1_HowellC_00_01_HowellTC.dwg, 2/6/2014 12:14:44 PM, 0899, DWG to PDF.pc3



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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:

MAINLINE INSPECTED BY:

LATERALS INSPECTED BY:

DATE COMPLETED:

TYPE OF PIPE, ASTM NO.

TYPE OF PIPE, ASTM NO.

AS-BUILTS BY:

DATE:

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

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. TRAFFIC CONTROL

IN: S. HOWELL AVE.

FR: E. RYAN RD. (STH. 100)

TO: E. PARKWAY ESTATES DR.

APPROVED BY

UTILITY ENGINEER

DATE

APPROVED BY

CITY ENGINEER

DATE

SCALE

SHEET

PLAN

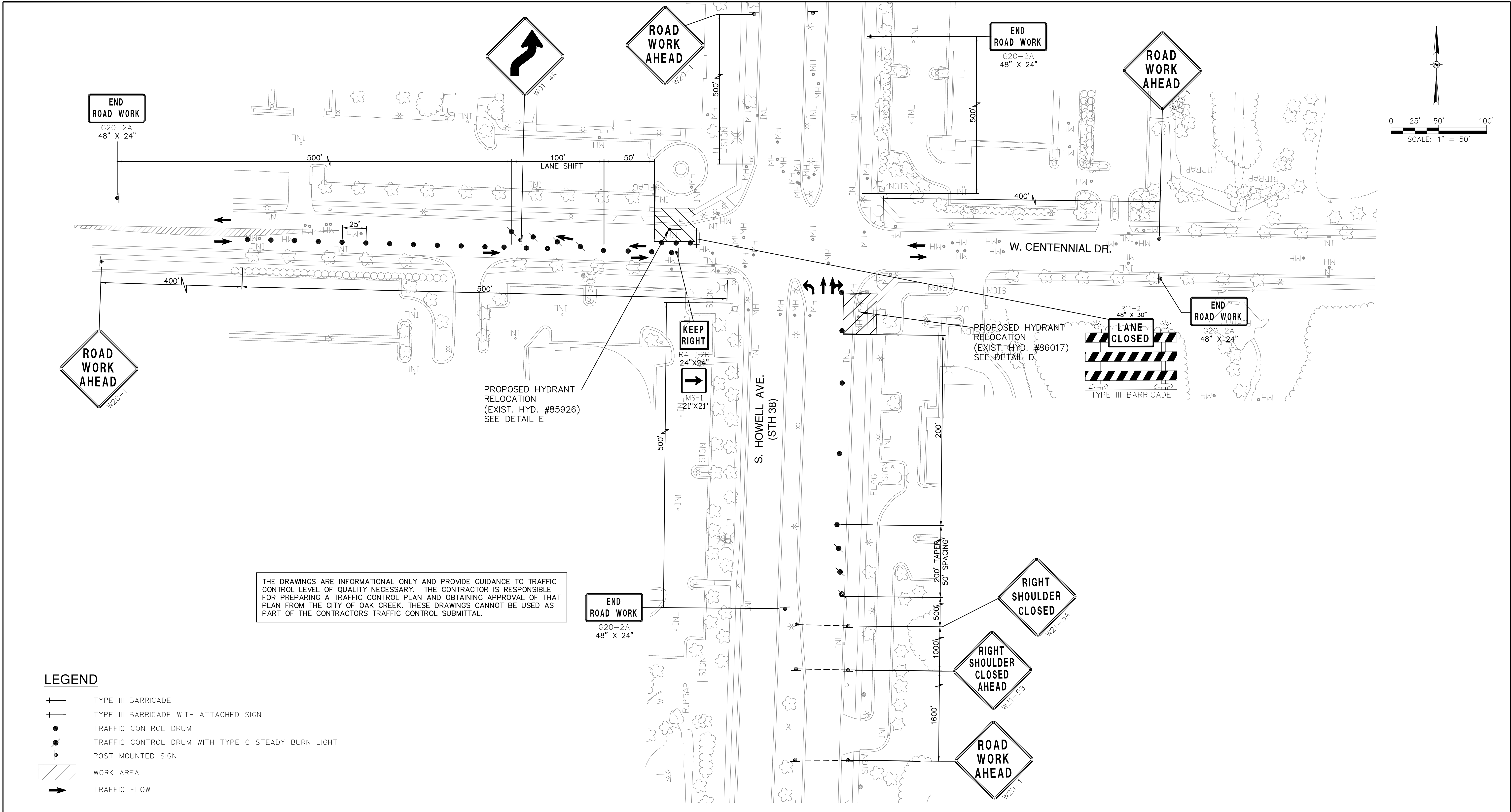
HOR. 1"=100'

OF

12

FILE NO:14103-8C-2228

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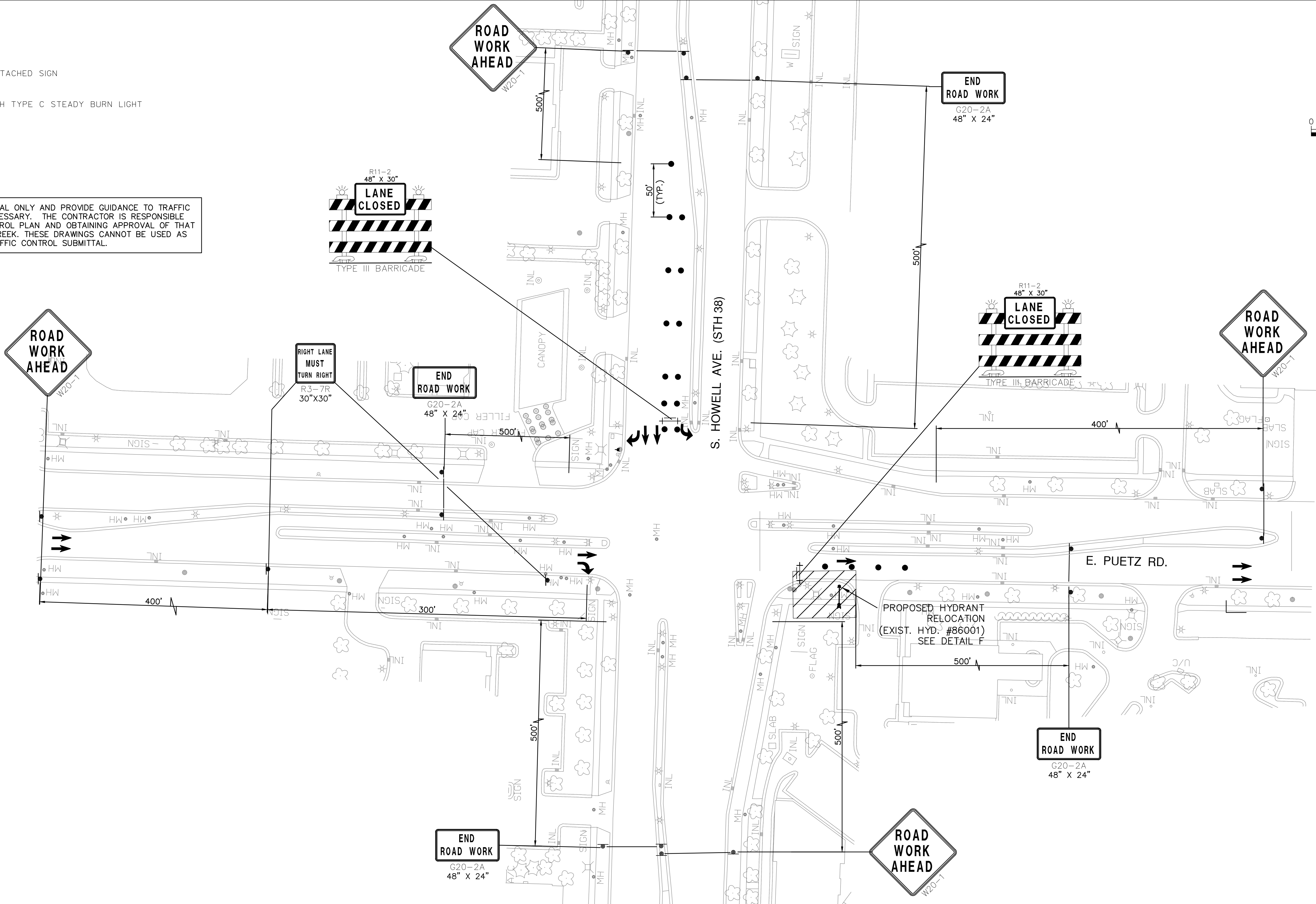
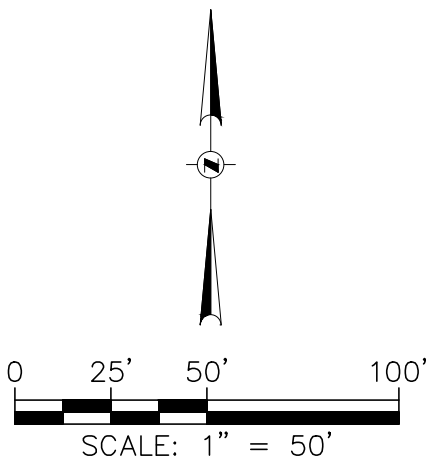
| BID ITEM NOS. | ESTIMATE OF QUANTITIES | WATER MAIN CONTRACTOR: | SA.FKO ST.FKO | CITY OF OAK CREEK, WISCONSIN | | | | APPROVED BY | |
|---------------------|------------------------|---|------------------|--------------------------------|---------|------------------------|---------|------------------|-------|
| | | MAINLINE INSPECTED BY: | W. FKO | DESIGNED BY | DATE | DRAWN BY | DATE | UTILITY ENGINEER | DATE |
| | | LATERALS INSPECTED BY: | G. FKO | AS | 2-13-14 | FKO | 2-13-14 | APPROVED BY | |
| | | DATE COMPLETED: | E. FKO | S. HOWELL AVE. TRAFFIC CONTROL | | | | CITY ENGINEER | DATE |
| | | TYPE OF PIPE, ASTM NO. | T. FKO | IN: S. HOWELL AVE. | | | | SCALE | SHEET |
| | | TYPE OF PIPE, ASTM NO. | I. FKO | FR: E. CENTENNIAL DR. | | | | PLAN | 09 |
| | | AS-BUILTS BY: | TS.FKO | TO: W. PUETZ RD. | | | | HOR. 1"=50' | OF |
| | | DATE: | PP. | | | | | | 12 |
| | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | REVISION BY | DATE | FILE NO: 14103-9C-2229 | | | |
| | | Utility Engineer | Date | | | | | | |

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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

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Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

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:

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

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. TRAFFIC CONTROL

IN: S. HOWELL AVE.

FR: W. PUETZ RD.

TO: E. GROVELAND DR.

APPROVED BY

UTILITY ENGINEER DATE

APPROVED BY

CITY ENGINEER DATE

SCALE SHEET

PLAN 10

HOR. 1"=50' OF

12

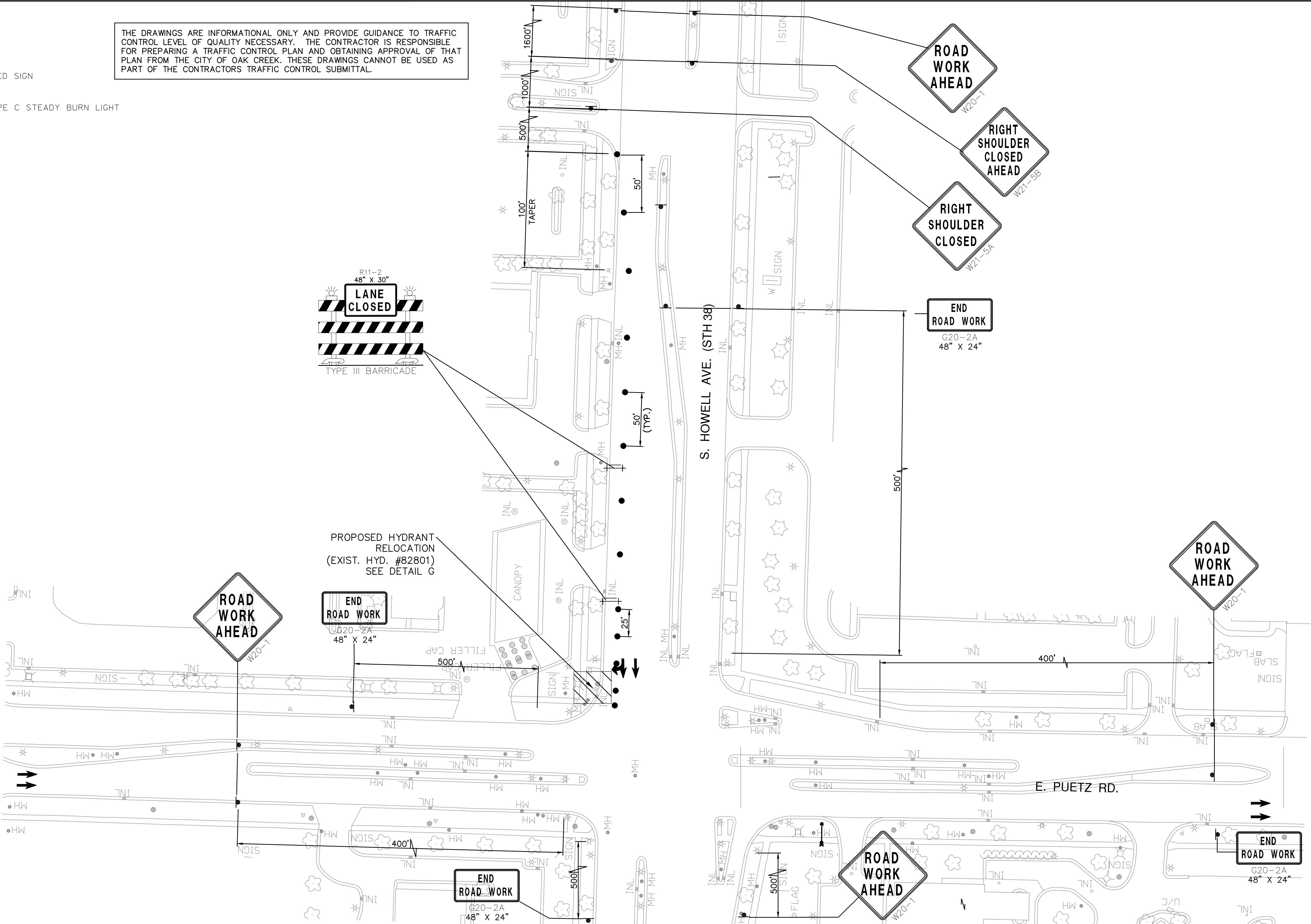
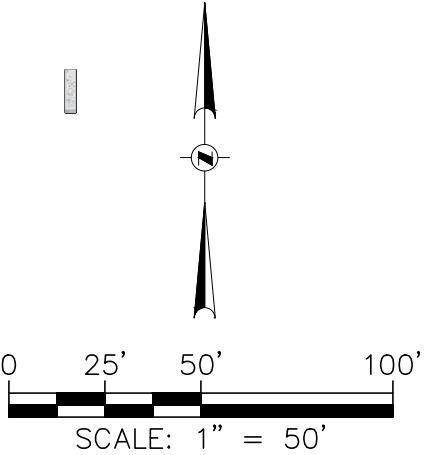
FILE NO:14103-10C-2230

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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

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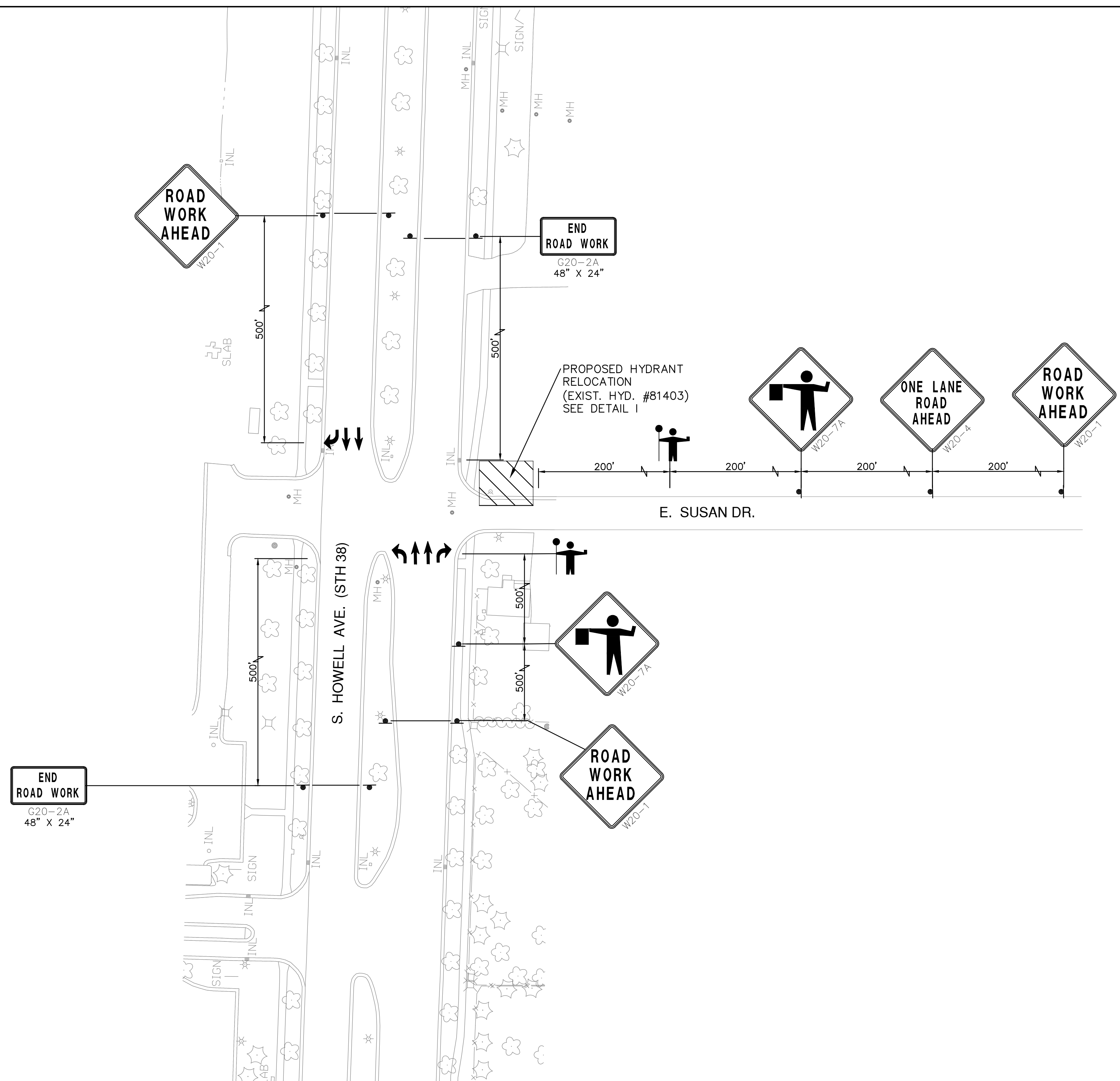


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| | | | | | | | | | | | | | | | | | | | | | |
|---------------------|------------------------|---|--|--------|--|--------------------------------|--|-------------|--|-------------------------|--|---------------|--|------------|--|---------|--|------------------|--|------|--|
| BID ITEM NOS. | ESTIMATE OF QUANTITIES | WATER MAIN | | SA.FKO | | CITY OF OAK CREEK, WISCONSIN | | | | | | APPROVED BY | | | | | | | | | |
| | | CONTRACTOR: | | ST.FKO | | | | | | | | | | | | | | | | | |
| | | MAINLINE INSPECTED BY: | | W. FKO | | DESIGNED BY | | DATE | | DRAWN BY | | DATE | | CHECKED BY | | DATE | | UTILITY ENGINEER | | DATE | |
| | | LATERALS INSPECTED BY: | | G. FKO | | AS | | 2-13-14 | | FKO | | 2-13-14 | | MNP | | 2-13-14 | | APPROVED BY | | | |
| | | DATE COMPLETED: | | E. FKO | | S. HOWELL AVE. TRAFFIC CONTROL | | | | | | CITY ENGINEER | | DATE | | | | | | | |
| | | TYPE OF PIPE, ASTM NO. | | T. FKO | | | | | | | | SCALE | | SHEET | | | | | | | |
| | | TYPE OF PIPE, ASTM NO. | | I. FKO | | | | | | | | PLAN | | 11 | | | | | | | |
| | | AS-BUILTS BY: | | DATE: | | TS.FKO | | HOR. 1"=50' | | OF | | | | | | | | | | | |
| | | This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting. | | PP. | | REVISION BY | | DATE | | FILE NO: 14103-11C-2231 | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | |
| | | Utility Engineer | | Date | | | | | | | | | | | | | | | | | |



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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



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

414 / 259 1500 office
414 / 266 9281 direct
414 / 349 0700 mobile
414 / 259 0037 fax

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

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Please consider the environment before printing this page.

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>



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



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

414 / 259 1500 office
414 / 266 9281 direct
414 / 349 0700 mobile
414 / 259 0037 fax

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

www.graef-usa.com

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