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CITY OF HILLIARD, OHIO
PUBLIC WATER LINE IMPROVEMENTS

RIGGINS ROAD

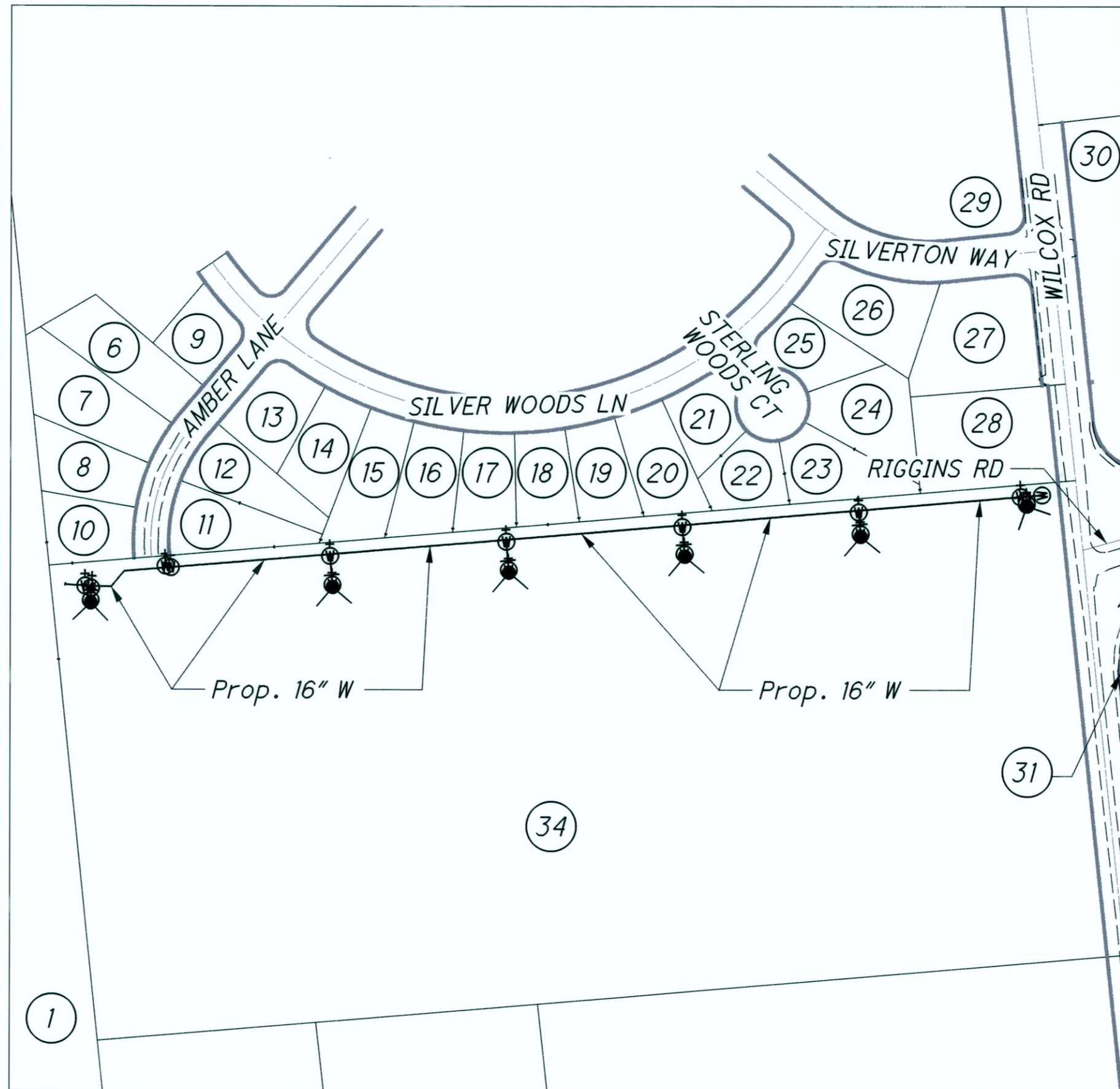
**2015
HP-876**

BENCHMARKS N.A.V.D. 1988

The vertical datum is based on the elevation established by the Franklin County Engineering Department, at monument 8847, being 923.094 feet in elevation, at monument 8855, being 927.054 feet in elevation, and at monument p14reset, being 895.249 feet in elevation. The said monuments being source benchmarks with elevations that are based on the North American Vertical Datum of 1988.

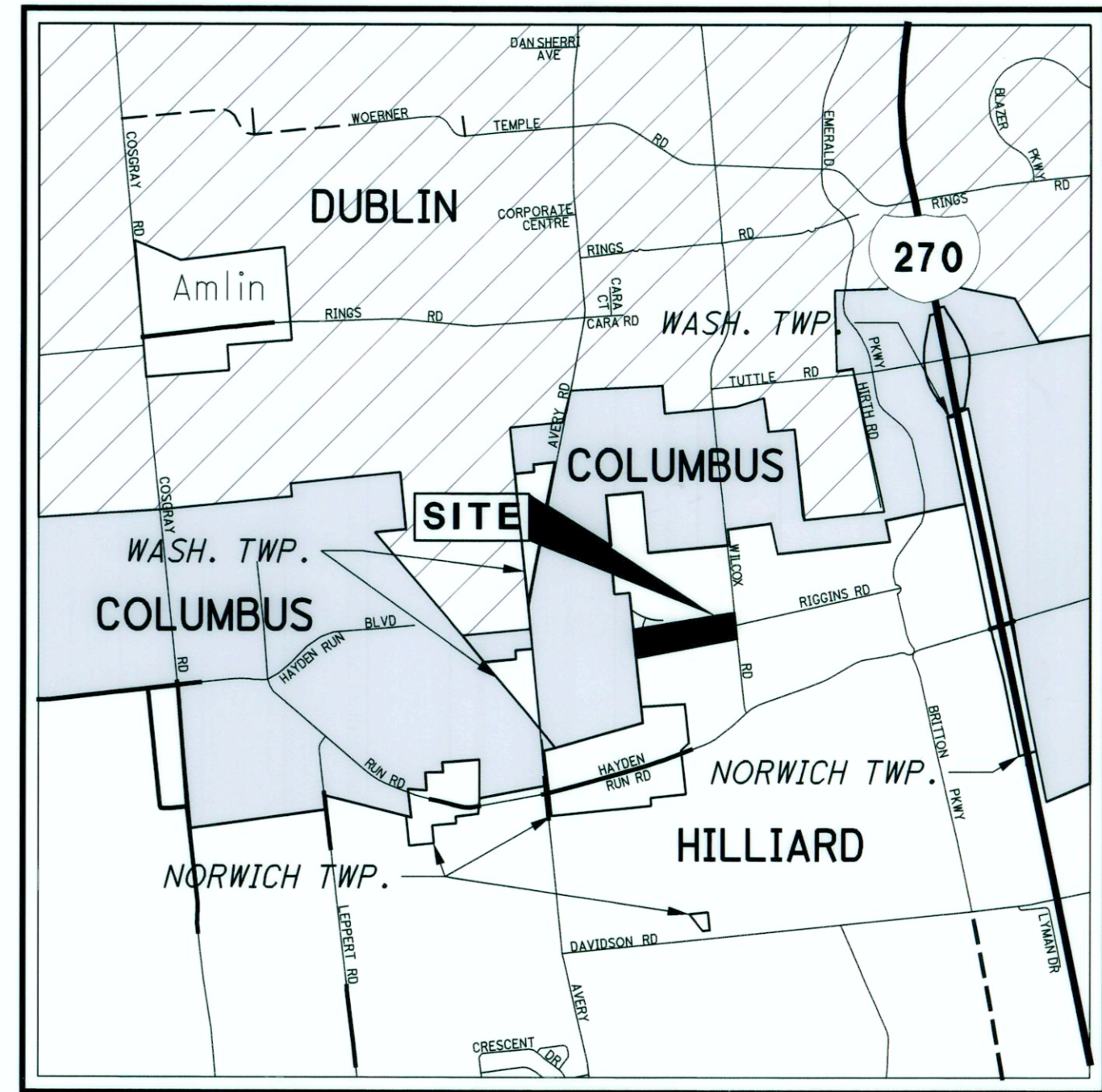
DESCRIPTION

- BENCH MARK FCGS 5542 RESET** Aluminum cap in concrete monument, at the centerline intersection of Wilcox Road and relocated Hayden Run Road, on a P/L south, access through Franklin County road monument box. Monument is on the east line of VMS 3012, the west line of VMS 3022, and on the Washington/Norwich Township line. Monument replaced a found 5/8 inch solid iron pin 3 inches deep.
Elev. = 911.58
- PI4RESET** Brass plug on the northeast wingwall of Wilcox Road bridge was 40-00.05 over Hayden Run, 0.05 miles north of Hayden Run Road, 29.5 feet east of the centerline of Wilcox Road.
Elev. = 895.25
- BM #1** Chiseled square on the east rim of a storm grated manhole, located 10 feet west of the edge of pavement of Wilcox Road, 900 feet north of the intersection of Hayden Run Road and Wilcox Road.
Elev. = 910.39
- BM #4** Chiseled "X" on the east bolt of a fire hydrant, located on the first fire hydrant north of Silverton Way on the west side of Wilcox Road.
Elev. = 914.42
- BM #8** Chiseled "X" on east flange bolt of fire hydrant, 30 Feet north of northeast property corner of residence 5067 Avery Road, on the west side of Avery Road.
Elev. = 927.61
- BM #14** Railroad spike in the east side of the 1st utility pole north from the intersection of the railroad tracks and Avery Road, being on the west side of Avery Road.
Elev. = 931.16
- BM #16** Chiseled "X" on the north bolt of a metal signal pole located at the southwest corner intersection of Avery Road and Hayden Run Road.
Elev. = 921.61



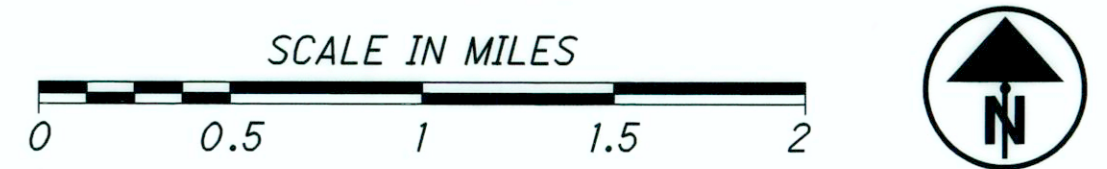
Index Map
Scale: 1"=200'

For address and property owner information, see sheet 5



LOCATION MAP

LATITUDE: 40° 03' 42" N LONGITUDE: 83° 09' 06" W



PLAN PREPARED BY:
AMERICAN **STRUCTUREPOINT** INC.
2580 CORPORATE EXCHANGE DR, STE 300
COLUMBUS, OH 43231
TEL 614.901.2235 FAX 614.901.2236
www.structurepoint.com

ENGINEERS SEAL:

STATE OF OHIO
VALERIE D. KLINGMAN
REGISTERED PROFESSIONAL ENGINEER
#62732

SIGNED: *Valerie D. Klingman*
DATE: 11-2-15

The signatures below signify only concurrence with the purpose and general location of the project. All technical details remain the responsibility of the engineer preparing the plans.

Reviewed By: *Alana R. Seal*
Date: 11/2/2015 Director Of Public Service/City Engineer
City of Hilliard

Reviewed By: *Jim Wilburn*
Date: 11/4/15 Fire Chief
Norwich Township

CITY OF COLUMBUS APPROVAL
Approval on the part of the City of Columbus is given pursuant to provisions of the Water Service Agreement between the City of Hilliard and the City of Columbus, Ohio, dated Feb. 09 1990, And all subsequent amendments thereof.

Approved *TC Wootenfield*
Date: 1-11-16 Administrator, Division Of Water
City Of Columbus, Ohio

Approved *Grace Davis by Anthony*
Date: 1-13-2016 Director Of Public Utilities
City Of Columbus, Ohio

STANDARD DRAWINGS		
HILLIARD	COLUMBUS	ODOT
	L-1003	L-6637A
	L-1004	L-6640
	L-6306	L-7001
	L-6310	L-7401
	L-6311	L-7601
	L-6312	L-9901
	L-6316A	

REVISIONS					
REV. NO.	DATE OF REV.	SHEETS REVISED	DESCRIPTION OF REVISION	APPROVED BY	DATE OF APPROVAL

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TITLE SHEET

PUBLIC WATER LINE IMPROVEMENTS
RIGGINS ROAD

1
11

HP-876
CIP W-50
#14-152

GENERAL NOTES

1. The regulations and construction standards of the City of Hilliard, together with the current construction and material specifications of the City of Columbus (Cols) and the Ohio Department of Transportation (ODOT), including all supplements thereto, shall govern all construction items that are a part of this plan unless otherwise noted.

2. The City Engineer or his authorized representative will make inspection of the work. The City Engineer will require at least 48 hours written notice before any work takes place. Failure to request the necessary inspection may result in the rejection of the work and the project.

3. It is the intention of the plans to provide and require a completed project ready for operation. any work items omitted from the plans, which are clearly necessary for completion of the work, and its appurtenances shall be considered a part of such work, though not directly specified or called for in the plans. This includes, but is not limited to such incidental items as relocation of mailboxes, saw cutting, and removal and/or relocation of signs, sprinklers, or other miscellaneous items.

4. All items of work called for on the plans for which no specific method of payment is provided shall be performed by the Contractor with the cost to be included in the unit price bid for the various related items.

5. The Contractor shall deposit the total estimated escost for inspections, as determined by the City Engineer, with the City of Hilliard prior to the start of construction.

6. The Contractor shall provide the City of Hilliard, a surety, acceptable to the City of Hilliard, equal to 100% of construction costs. the surety shall guarantee the work for one year after acceptance by the city.

7. The City Engineer will not be responsible for means, methods, procedures, techniques, or sequences of construction that are not specified herein. The City Engineer will not be responsible for safety on the work site, or the failure by the contractor to perform work according to plans.

8. Approval of these plans is contingent upon all easements required for construction of the work being secured and submitted to the City of Hilliard for recording prior to commencement of work. No work, which requires an easement, will be allowed to proceed until this is done.

9. The contractor shall perform all work in accordance with all applicable Federal, State and Local safety requirements including the Occupational Safety and Health Act of 1970. The contractor shall exercise precaution always for the protection of persons (including employees) and property. It shall also be the sole responsibility of the contractor to initiate, maintain and supervise all safety requirements, precaution and programs in connection with the work, including the requirements for confined spaces per 29 CFR 1910.146.

10. The Contractor/Developer shall be responsible to obtain all necessary permits.

11. The Contractor shall confine his activities to the project site, existing right-of-ways, temporary and permanent easements, and shall not enter upon other properties without written permission of the owner. if the proposed work requires entering easements upon other properties, the contractor shall notify the owner(s) in writing no less than 72 hours in advance of the commencement of the work, and copy the City on all correspondence. Failure to notify affected property owners may subject the contractor to the penalties associated with the violation of Hilliard City Code, Section 541.05, Criminal Trespass.

12. The Contractor shall carefully preserve benchmarks, property corners, reference points, stakes and other survey reference monuments or markers. In cases of willful or careless destruction, the contractor shall be responsible. Resetting the markers shall be performed by an Ohio Professional Surveyor as approved by the City Engineer at the Contractor's expense.

13. Property boundaries, including property lines and road right-of-way, are shown from the best information available and are not necessarily complete or correct.

14. The Contractor shall be responsible for having the finished work conform to the lines, grades, elevations and dimensions called for on the drawings and typical sections.

15. Any device shall not be operated at any time in such a manner that the noise created substantially exceeds the noise customarily and necessarily attendant to the reasonable and efficient performance of such equipment. pursuant to Hilliard City Code, Section 509.08, construction activity is only permitted between the hours of 7:30 a.m. and 7:00 p.m. Any construction activity beyond these hours requires a written request to the Director of Public Service meeting the requirements of Hilliard City Code, Section 509.08(b).

16. Pavements shall be cut in neat, straight lines the full depth of the existing pavement, or as required by the City Engineer.

17. All soil subgrade shall be prepared and compacted in accordance with item 204 to a depth of 12 inches below the subgrade surface. Subgrade shall be scarified and contain sufficient moisture to meet Item 203 compaction requirements.

18. The Contractor is not permitted to use any reclaimed materials in Item 304.

19. Non-rubber tired vehicles shall not be moved on or across public streets or highways without the written permission of the City Engineer.

20. Tracking or spilling mud, dirt, or debris upon streets, residential or commercial drives, sidewalks or bike paths is prohibited per Hilliard City Code, Section 905.12 and any such occurrence shall be cleaned up immediately by the Contractor. If the Contractor fails to remove said mud, dirt, debris, or spillage, the City of Hilliard reserves the right to remove these materials and clean affected areas, the cost of which shall be paid by the Contractor/Developer per Hilliard City Code, Section 905.13.

21. During construction the contractor shall provide adequate drainage and proper soil erosion control measures for protection of all adjacent roads and lands, per Cols Item 207.

22. The Contractor shall restore all disturbed areas to equal or better than existed before construction. Drainage ditches or watercourses that are disturbed by construction shall be restored to the grades and cross-sections that existed before construction.

23. The Contractor shall conduct his operations so as to maintain at all times sewer, drain, and ditch flows through existing facilities to remain in place and through existing facilities to be replaced until new facilities are completed and put into service. The Contractor, to a condition satisfactory to the City Engineer, shall restore the flow of all sewers, drains, and other watercourses disturbed during the prosecution of the work.

24. Any modification of the work as shown on these drawings must have prior written approval by the Hilliard City Engineer.

25. The Contractor shall call toll free, the Ohio Utilities Protection Service (OUPS) at 1-800-362-2764 seventy-two (72) hours in advance of the anticipated start of construction, and shall notify all utility companies at least forth-eight (48) hours prior to work in the vicinity of their lines.

Utility	Owner	Telephone #
Sanitary Sewer	City of Hilliard	(614) 876-7361
Storm Sewer	3800 Municipal Way Hilliard, OH 43206	
Street Lighting		
Water mains	City of Hilliard	(614) 876-7361
	3800 Municipal Way Hilliard, OH 43206	
Telephone	AT&T	(614) 223-7162
	Tom Ziomek 111 N. 4th St., Rm 802 Columbus, OH 43215	
	Qwest	(614) 215-5606
	Chris Strayer 4650 Lakehurst Ct Dublin, OH 43016	
Electric	AEP Distribution	(614) 883-6831
	Paul Paxton 850 Tech Center Drive Gahanna, OH 43230-6805	
Gas/Pipe Line	Columbia Gas	(614) 481-1057
	Rob Caldwell 1600 Dublin Road Columbus, OH 43215	
	Marathon Pipe Line	(419) 421-2211
	David Wisner 539 South Main Street Findlay, Ohio 45840	
Cable TV	Time Warner cable	(614) 481-5262
	Ray Maurer 3760 Interchange Drive Columbus, OH 43204	

26. Existing utilities shown on the plan are from the best available records and field investigation and are not necessarily complete or correct. The Contractor is responsible for the investigation,

location, support, protection and restoration of all existing utilities and appurtenances whether shown or not.

27. The Contractor shall expose and verify the location and elevation of any utilities within the limits of the proposed conduit path, prior to starting any excavation. In case of conflict, adjustments in location and elevation of the proposed utilities may be made if approved per General Note #24, or arrangements shall be made to move the existing utility to provide adequate clearance.

28. All water lines must be constructed with a minimum ten (10) feet horizontal and one & one-half (1.5) foot vertical separation from all sewer lines. all non-water line utilities must be constructed with a minimum three (3) feet horizontal and one (1) foot vertical separation.

29. Existing drain tiles encountered during construction shall be reconnected or connected to the storm sewer system by the Contractor, as approved by the City Engineer. The cost of said work to be included in the unit price bid for the various related items.

30. All trenches within pavement, berm, and shoulder limits shall be backfilled or securely plated during non-working hours.

31. Access to all adjoining properties shall be maintained at all times. areas with multiple drives shall have at least half of the drives open at all times. Properties with a single access will require staged construction; short-term full closure of a single access will be permitted with the property owner and/or tenants agreement. Such full closures shall be scheduled and coordinated with the property owner/tenant.

32. At all storm sewer and sanitary sewer crossings, the trench backfill shall consist of Compacted Granular Material, COLS Item 912, between the deeper and shallower pipe. For water line crossings, see water line general note #13.

33. Compacted Granular Material, Cols Item 912 shall consist of natural, broken or crushed stone, crushed gravel, or crushed slag. Synthetic or man-made materials are unacceptable.

34. Backfill for storm sewer and sanitary sewer trenches under pavement and within the right-of-way shall be Compacted Granular Material, COLS Item 912, to the pavement subgrade. Where storm sewer and sanitary sewer trenches cross the pavement, COLS Item 912 shall extend the full width of the right-of-way, and to within 6 inches of finished grade where not under pavement. For backfill for water line trenches under pavement and within the right-of-way, see water line general note #14.

35. NOT USED

36. NOT USED

37. NOT USED

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GENERAL NOTES

PUBLIC WATER LINE
IMPROVEMENTS RIGGINS
ROAD (CIP W-50)

GENERAL NOTES (CONTINUED)

38. All seeding shall be applied at the rate of 8 pounds (lb.) per 1,000 square feet (sf) and shall use the following seed mixture:

- 40% Titian tall fescue
- 40% Tarheel tall fescue
- 10% Denim kentucky bluegrass
- 10% Renaissance perennial rye grass

39. Commercial-grade complete fertilizer of neutral character, consisting of fast, and slow release nitrogen, 50% derived from natural organic sources of urea-form, phosphorous, and potassium and with the following composition shall be applied:

Composition: 13% nitrogen, 26% phosphorous, and 12% potassium by weight.

Fertilizer should be applied at the rate of 6 pounds (lb.) per 1,000 square feet (sf).

40. All signs, landscaping, structures or other appurtenances disturbed or damaged during construction shall be replaced or repaired to the satisfaction of the city engineer. The contractor shall pay for the cost of this work.

CITY OF HILLIARD WATER NOTES

1. City of Columbus water division personnel are to operate all water valves.
2. Any modification of the work as shown on these drawings must have prior written approval by the Hilliard City Engineer and the Administrator, Division of Water, City of Columbus.
3. All water line materials and installations shall be in accordance with the current rules and regulations of the City of Columbus, Division of Water.
4. No person shall begin construction or installation of a public water main until plans have been approved by the State of Ohio Environmental Protection Agency (OEPA).
5. NOT USED
6. NOT USED
7. Water lines shall be laid with a minimum of 4 feet 0 inches from the finished surface grade to the top of the water line.
8. All bends, joints deflections and fittings shall be backed with concrete per City of Columbus standards.
9. All water lines shall be located at least ten (10) feet horizontally and one & one-half (1.5) foot vertically from all sanitary or storm sewer lines.
10. All ductile iron water mains shall be wrapped with tube style 8 mil linear low density polyethylene (LLDPE) film in accordance with Standard Drawings L-1003 and L-1004.
11. In case of conflict in grade between water lines and sewers, the water line shall be lowered during construction. Water lines shall be deflected around structures without the use of special fittings, where possible, without exceeding the manufacturers allowable deflection.

CITY OF HILLIARD WATER NOTES (CONTINUED)

12. If the top of the operating nut of a valve is more than 36 inches below finished grade, an extension stem shall be furnished to bring the top of the operating nut to within 24 inches of finished grade.

13. At all points of crossing of water lines and sewers, the trench backfill shall be Compacted Granular Material per COLS Item 801.11, between the deeper and shallower pipe.

14. Backfill for water line trenches under pavement and within the right-of-way shall be Compacted Granular Material, COLS Item 801.11, to the pavement subgrade. Where water line trenches cross the pavement, COLS Item 801.11 shall extend the full width of the right-of-way, and to within 6 inches of finished grade where not under pavement.

15. Backfill for water line trenches parallel to the pavement and within the right-of-way, with the top of the trench 3 feet or closer to the back of curb or edge of pavement or located under a pedestrian pathway, shall be Compacted Granular Material, COLS Item 801.11, to within 6 inches of finished grade. Backfill for all other water line trenches within the right-of-way parallel to the pavement, shall be Compacted Backfill, COLS Item 801.12. Prior to construction of the streets, the City Engineer may require soil test on the backfill. Where test results indicate that the backfill does not meet compaction requirements, the backfill shall be removed, replaced, and re-tested until meeting those requirements.

16. NOT USED.

17. Fire hydrants shall be installed per COLS Item 809, and shall meet City of Hilliard and Norwich Township Fire Department Specifications included in these plans.

18. All water lines shall be cleaned and flushed in accordance with COLS Item 801.13 prior to hydrostatic testing. Any water main 12 inches and larger must also be properly pigged prior to hydrostatic testing.

19. The Contractor shall test all water lines in accordance with COLS Item 801.14. Testing shall be done under the supervision of the City Engineer or his authorized representative at the Contractor's expense.

20. All water lines shall be disinfected in accordance with COLS Item 801.15. Special attention is directed to applicable sections of A.W.W.A. C-651, particularly for flushing (Section 5) and for chlorinating valves and for fire hydrants (Section 7). Cost of work is to be included in price bid for Item 801.

21. When water lines are ready for disinfecting, the Developer's Engineer shall submit three (3) sets of "As Built" plans, two (2) sets of the completed Water Service Reports for each water service constructed, and a letter stating that the water lines have been pressure tested and need to be disinfected, to the Hilliard City Engineer. The City of Hilliard will, in turn, submit a written request for chlorination, three (3) sets of "as-built" plans (full size sheets only), the as-built survey coordinates, the water service reports, and the results of the pressure test to the City of Columbus, Division of Water. The Contractor shall be solely responsible for all costs associated with the disinfecting of all water lines constructed under this plan.

CITY OF HILLIARD WATER NOTES (CONTINUED)

22. Survey coordinates shall be obtained for the completed water main construction and shall include all valves, tees, crosses, bends, deflections, plugs, reducers, tapping sleeves, blow offs, chlorination taps, fire hydrants, air releases, curb stops, casing pipe termini, and other fittings. Additional survey coordinates are required on the water main every 500 feet where no fitting or other water main structure is being installed within that length of the improvement. "Survey Coordinates" include all material, equipment, and labor necessary to obtain horizontal and vertical (northing, easting, and elevation) survey coordinates for the water main improvements.

All survey coordinates shall be referenced to the applicable County Engineer's Monuments, and shall be based on the North American Datum of 1983 (NAD 83) with the (NSRS2007) adjustment, with further reference made to the Ohio State Plane South Coordinate System, South Zone, with elevations based upon North American Vertical Datum of 1988 (NAVD 88). All coordinates (Northing, Easting, Elevation) shall be referenced to the nearest hundredth (N xxxxxxx.xx, E xxxxxxx.xx, Elevation xxx.xx). All survey coordinates shall be accurate to within 1.0 foot or less horizontal and one-tenth foot (0.10) or less vertical.

The survey coordinates shall be documented to the Hilliard City Engineer in digital spreadsheet format and shall include the applicable item, station, northing, easting, and elevation. Survey coordinates shall be submitted to the Hilliard City Engineer on a bi-weekly basis. Survey coordinates shall also be required to be submitted to the Division of Water as part of the request for chlorination submitted by the Hilliard City Engineer.

23. No service connection permits shall be issued or connections made to any service taps until water lines have been disinfected by the City of Columbus, Division of Water. When a 3-inch or larger tap is to occur on a 20-inch or larger water main, the Contractor shall notify the Division of Water Operations Control Center at (614) 645-7168 twenty four (24) hours in advance of performing the tap.

24. NOT USED

25. The proposed water line shall be located a minimum distance of twenty (20) feet away from any structure, overhang, or footer.

26. NOT USED

27. NOT USED

28. NOT USED

29. NOT USED

30. The City of Columbus, Division of Water will be responsible for the repair and maintenance of the water line within the easement area. Backfilling of any excavation caused by the maintenance, repair, or replacement of said water line shall be such that the surface is restored to its former elevation as near as is reasonably possible.

CITY OF HILLIARD WATER NOTES (CONTINUED)

31. The Contractor shall give written notice to all affected property owners at least one (1) working day but not more than three (3) working days prior to any temporary interruption of water service. Interruption of water service shall be held to a minimum and shall be approved by the City Engineer.

CITY OF COLUMBUS WATER NOTES

The City of Columbus Construction and Material Specifications, 2012 edition and all revisions, including all supplements thereto, shall govern all construction items that are a part of this plan, unless otherwise noted.

All City of Columbus, Division of Water Standard Drawings shall apply to the project, unless otherwise noted.

For any emergencies involving the water distribution system, please contact the Division of Water Distribution Maintenance Office at 614-645-7788.

All Brass Fittings associated with water work, including repairs to the existing system, shall conform to the revised allowable lead extraction limit per the updated NSF/ANSI 61 Standard. The Division of Water's Approved Materials List has been updated to reflect this requirement.

It shall be unlawful for any person to perform any work on City of Columbus water line systems without first securing a license to engage in such work, as indicated in Columbus City Code Section 1103.02 and 1103.06. This work includes any attachments, additions to or alterations in any city service pipe or appurtenances (including water service lines and taps). This requirement may be met by utilization of a subcontractor who holds a City of Columbus Water Contractor License or a Combined Water/Sewer Contractor License to perform this work. Utilization of a subcontractor must meet the licensing requirements of City of Columbus Building Code, in particular Section 4114.119 and 4114.529.

Approval on the part of the City of Columbus is given pursuant to the provisions of the Water Service Agreement between Hilliard and the City of Columbus, Ohio, on February 09, 1990 and all subsequent amendments thereof.

The contractor shall obtain the proper hydrant permit(s), and pay any applicable fees, for any approved hydrant usage deemed necessary for work under this improvement. Permits may be obtained through the Division of Water Permit Office (645-7330). The contractor shall adhere to all rules & regulations governing said permit and must have the original permit on site anytime which the hydrant is in use. Cost to be included in the various bid items.

All water mains shall be pressure tested in accordance with section 801.14 if the City of Columbus Construction and Material Specifications, with the following exception: 150 psi of pressure shall be maintained for at least two hours in any tested section. The City may not approve any test lasting less than two hours regardless of the amount of leakage.

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WATER LINE NOTES

PUBLIC WATER LINE IMPROVEMENTS RIGGINS ROAD (CIP W-50)

CITY OF COLUMBUS WATER NOTES (CONTINUED)

Only one connection to an existing water line is permitted before disinfection of a new water line has been completed. All other connections must be made after this line has been disinfected.

Water service boxes shall be placed 1' from the edge of the proposed or existing sidewalk between the sidewalk and the curb, or 2 feet inside the right-of-way or easement line when no sidewalk is present or proposed. Refer to Standard Drawing L-9901 for additional information.

When Controlled Density Fill (Item 613) is to be used as backfill, the contractor shall provide Size No. 57 Crushed Carbonate Stone (CCS) 1 foot below to 1 foot above the existing water line.

No two (2) adjacent fire hydrants shall be taken out of service concurrently.

The contractor shall coordinate his work such that no water customer will have their service disrupted more than two (2) times throughout the duration of the project.

PLUG & THRUST BLOCK

In addition to the requirements of section 800 of the Columbus CMS and Columbus Std. Dwg. L-7001, the payment for all plug & thrust block shall include tools, labor material necessary. Payment shall be included within the price of the waterline. No separate payment shall be made.

CONCRETE SUPPORTS

Concrete supports shall be provided at all horizontal and vertical bends, tees, plugs, valves, joint deflections, fittings and hydrants and as designated on the plans and/or as required by the governing specifications.

The Contractor is fully responsible for providing backing to the extent sufficient to guarantee the operation of the pipe under both the test and design pressures. All casts shall be included within the price of water items.

SHUTDOWN

If required, hours of shutdown for all water facilities shall be coordinated 72 hours in advance of work with the City of Columbus.

USE OF CONTROL DENSITY FILL FOR WATERLINE BACKFILL

The Contractor may use Control Density fill in accordance with section 801 of the CMS, conditionally upon approval by the City of Columbus and at the Contractor's expense. No separate payment shall be made for Control Density Fill and/or the casing pipe required as defined in 801.09. No separate payment shall be made.

Some City of Columbus water notes are not shown if they are duplicated in the City of Hilliard Water Notes section. City of Hilliard notes have been modified to include City of Columbus language where applicable.

CITY OF HILLIARD FIRE HYDRANT SPECIFICATIONS

1. Fire hydrants shall be post type, made of cast iron, and shall conform in all respects to the "American Water Works Association Standard for Dry-Barrel Fire Hydrants", ANSI/AWWA C502-85, except where modified herein.

2. Main valve shall be compression type opening against the pressure and closing with the pressure. Main valve seat shall be made of bronze and shall be designed to allow easy replacement in the field. The design shall eliminate the contact of dissimilar metals in areas of the hydrant that are subject to the continuous presence of moisture.

3. All internal working parts shall be removable from the top of the hydrant, with simple tools, and without disturbing the ground line joint or the upper section of the hydrant barrel.

4. Breakable traffic features shall be provided, and shall include a breakable safety flange on the ground line joint, and a breakable coupling on the main valve stem at the ground line joint. The design shall assure that on heavy impact, the upper and lower sections of the hydrant will break apart cleanly without damage to any other hydrant parts. The ground line joint shall be designed to allow the nozzle section of the hydrant to be rotated 360 degrees.

5. Nozzles shall be bronze and replaceable, designed for easy removal from the hydrant barrel, in the field, with simple tools.

6. Main valve opening shall be 4-1/2 inches in diameter for use in residential areas and 5-1/4 inches in diameter for use in commercial areas & multi-family developments as defined by the Ohio Building Code.

7. Two (2) hose nozzles, 2-1/2 inches inside diameter with National Standard threads.

8. One (1) pumper nozzle, 4-1/2 inches inside diameter with National Standard threads.

9. Main valve shall open counterclockwise (Left).

10. Operating nut shall be pentagon shaped, measuring 1-1/2 inches from point to opposite flat.

11. Bury shall be five (5) feet unless otherwise specified.

12. Draining devices shall be eliminated or the drain holes plugged.

13. The shoe shall have a six (6) inch diameter inlet and a mechanical joint connection with accessories.

14. For publicly maintained hydrants (located in public street right-of-way or an abutting easement), the color of the barrel and caps shall be Royal Blue, Sherwin Williams #6510 or approved equal, and the color of the bonnet shall be white.

15. For privately maintained hydrants (located on private property), the color of the barrel and caps shall be red, and the color of the bonnet shall be white.

CITY OF HILLIARD FIRE HYDRANT SPECIFICATIONS (CONT)

16. The Contractor shall submit detailed drawings and specifications for the hydrant to the Service Director for approval, prior to installation.

17. Where four (4) or more fire hydrants are to be installed on the project, or any phase of the project, the Contractor shall furnish and deliver to the City of Hilliard, at no cost to the City, one (1) complete fire hydrant. When more than ten (10) fire hydrants are installed, two (2) complete fire hydrants shall be furnished and delivered to the City of Hilliard, at no cost to the City. Each extra fire hydrant shall be complete with accessories, including operating wrench, special wrenches and tools, and lubricants necessary for the operation, maintenance and repair of fire hydrants.

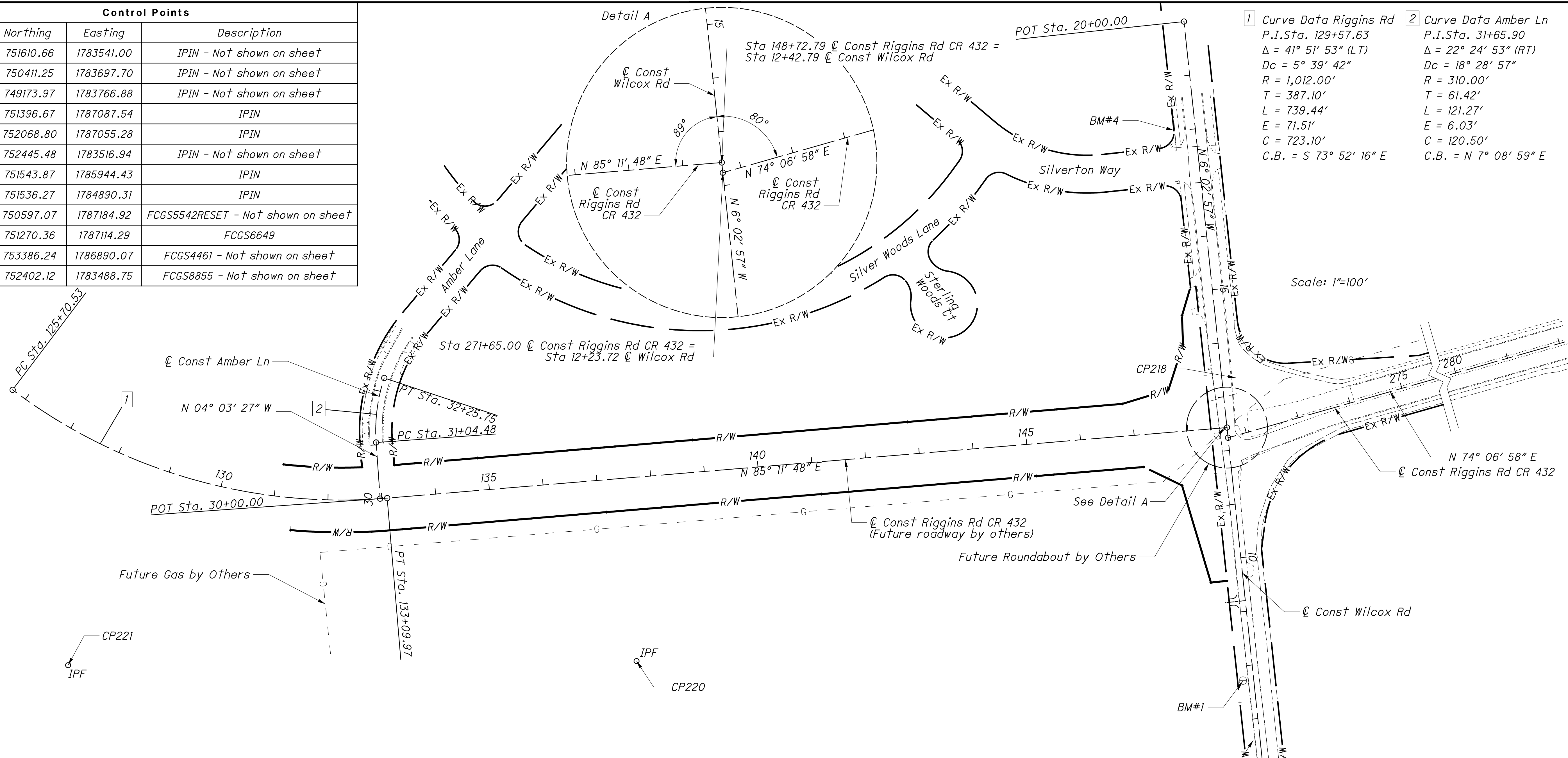
18. Fire hydrants approved for use in the City of Hilliard are the American Darling "Mark 73" or "B-84-B", the Clow "Medallion", and the Mueller "Centurion".

As-Built Water Line Coordinate Table				
Water Feature	Proposed	As-Built		
	Station	Northing	Easting	Elevation
16"x8" Tee	30+79.92, 22.8' Rt			
8" WV	30+80.92, 22.7' Rt			
8" 11.25° Vert. Bend	30+89.92, 22.6' Rt			
8" 11.25° Vert Bend	30+99.42, 22.5' Lt			
Connect to Ex 8"	31+04.42, 22.5' Lt			
P&T Block	131+38.00, 48.0' Lt			
16" WV	131+75.00, 48.0' Lt			
16"x6" Tee	131+85.00, 48.0' Lt			
6" WV	131+85.00, 46.9' Lt			
6" WV	131+85.00, 25.1' Lt			
FH	131+85.00, 24.0' Lt			
16" Vert. Deflection	132+00.00, 52.0' Lt			
16" 45° Horiz. Bend	132+17.58, 48.0' Lt			
16" 45° Horiz. Bend	132+45.00, 78.1' Lt			
16" WV	133+29.00, 80.0' Lt			
16"x6" Tee	134+85.00, 80.0' Lt			
6" WV	134+85.00, 78.9' Lt			
6" WV	134+85.00, 25.1' Lt			
FH	134+85.00, 24.0' Lt			
16"x6" Tee	137+85.00, 80.0' Lt			
6" WV	137+85.00, 78.9' Lt			
6" WV	137+85.00, 25.1' Lt			
FH	137+85.00, 24.0' Lt			
16"x6" Tee	140+85.00, 80.0' Lt			
6" WV	140+85.00, 78.9' Lt			
6" WV	140+85.00, 25.1' Lt			
FH	140+85.00, 24.0' Lt			
16"x6" Tee	143+85.00, 80.0' Lt			
6" WV	143+85.00, 78.9' Lt			
6" WV	143+85.00, 32.8' Lt			
FH	143+85.00, 31.7' Lt			
16"x6" Tee	146+85.00, 80.0' Lt			
6" WV	146+85.00, 78.9' Lt			
6" WV	146+85.00, 38.2' Lt			
FH	146+85.00, 37.1' Lt			
16" WV	148+15.00, 80.0' Lt			
P&T Block	148+35.00, 80.0' Lt			

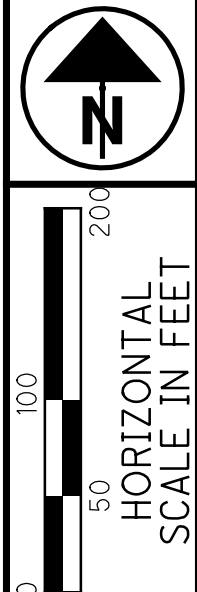
ESTIMATE OF QUANTITIES			
ITEM	QUANTITY	UNIT	DESCRIPTION
201	1	Lump	Clearing and Grubbing
207	1965	L.F.	Perimeter Filter Fabric Fence
624	1	Lump	Mobilization
801	283	L.F.	6" Ductile Iron Water Pipe and Fittings, Class 53 w/ Type I Bedding
801	25	L.F.	8" Ductile Iron Water Pipe and Fittings, Class 53 w/ Type I Bedding
801	1705	L.F.	16" Ductile Iron Water Pipe and Fittings, Class 53 w/ Type I Bedding
802	11	Each	6" Valves and Appurtenances
802	1	Each	8" Valves and Appurtenances
802	3	Each	16" Valves and Appurtenances
809	6	Each	Fire Hydrant, Type A
Spec	1	Lump	As-Built Survey Coordinates
Calculated by: AJR Date:12/23/2015			Checked by: VDK Date:12/23/2015

The intent is to construct this public water line under the same construction contract as the public sanitary sewer detailed in plan designated CC-17147, PM 290, and HP-875. Quantities that are needed for both plans have been included in this plan set.

Control Points			
Point	Northing	Easting	Description
22	751610.66	1783541.00	IPIN - Not shown on sheet
24	750411.25	1783697.70	IPIN - Not shown on sheet
216	749173.97	1783766.88	IPIN - Not shown on sheet
217	751396.67	1787087.54	IPIN
218	752068.80	1787055.28	IPIN
219	752445.48	1783516.94	IPIN - Not shown on sheet
220	751543.87	1785944.43	IPIN
221	751536.27	1784890.31	IPIN
600	750597.07	1787184.92	FCGS5542RESET - Not shown on sheet
601	751270.36	1787114.29	FCGS6649
602	753386.24	1786890.07	FCGS4461 - Not shown on sheet
604	752402.12	1783488.75	FCGS8855 - Not shown on sheet

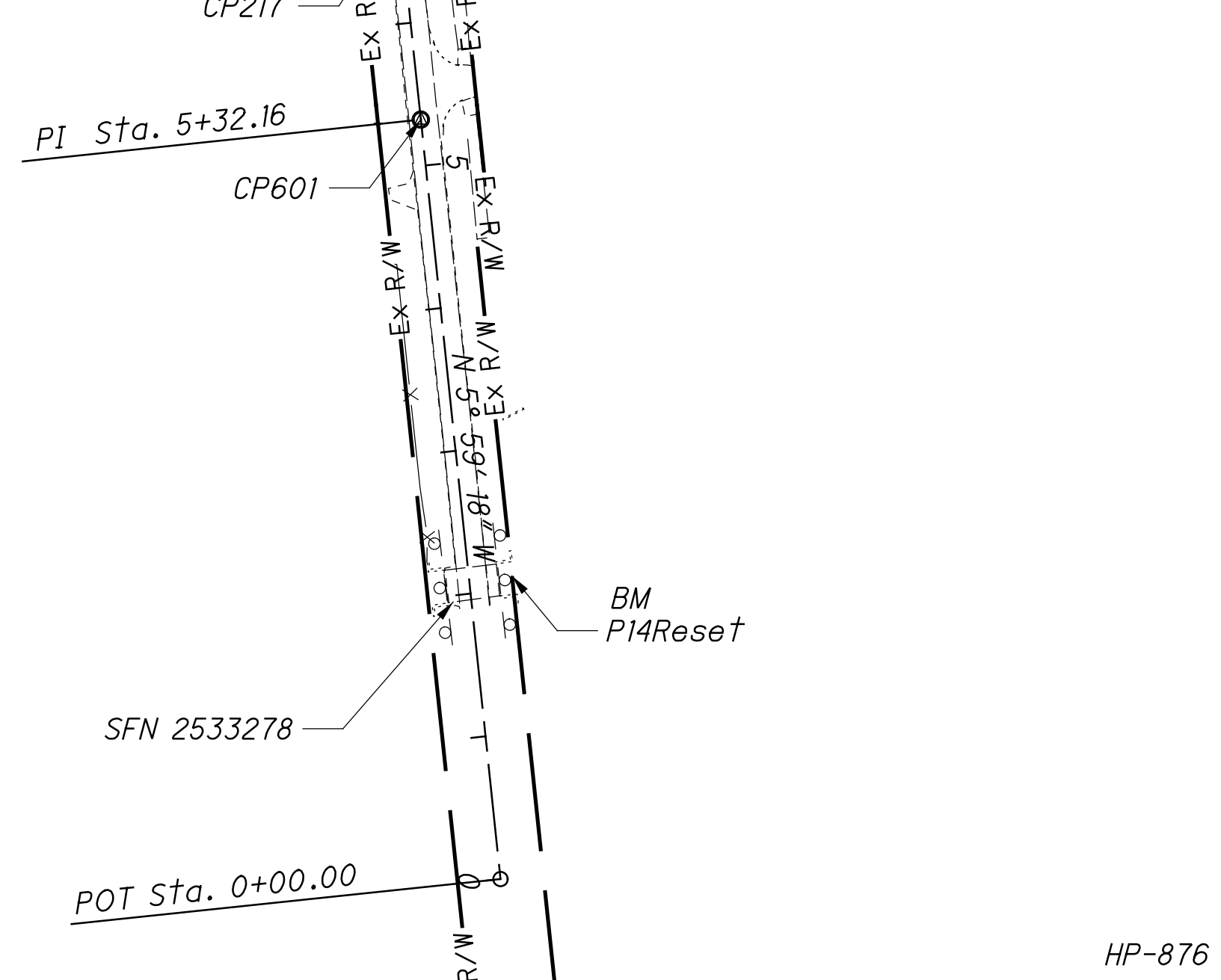


1	Curve Data Riggins Rd	2	Curve Data Amber Ln
	P.I. Sta. 129+57.63		P.I. Sta. 31+65.90
	Δ = 41° 51' 53" (LT)		Δ = 22° 24' 53" (RT)
	Dc = 5° 39' 42"		Dc = 18° 28' 57"
	R = 1,012.00'		R = 310.00'
	T = 387.10'		T = 61.42'
	L = 739.44'		L = 121.27'
	E = 71.51'		E = 6.03'
	C = 723.10'		C = 120.50'
	C.B. = S 73° 52' 16" E		C.B. = N 7° 08' 59" E



For parcel locations see sheet 1

Lot No.	PID	Owner Name(s)	Address	Lot No.	PID	Owner Name(s)	Address
1	010-265649	WHITE FAMILY FARM LTD	5730 HAYDEN RUN ROAD	21	050-010040-00	METRO PROPERTY INC	PO BOX 243
6	050-010159-00	JOHN KASHUBECK, ASMA MOBIN-UDDIN	4949 AMBER LN	22	050-010041-00	LMR PROPERTIES LTD	1 CORELOGIC DR
7	050-010160-00	FATMA KHOUJA, MOHAMED HAMZA	4937 AMBER LN	23	050-010042-00	MARIA BLACK	4914 STERLING WOODS CT
8	050-010161-00	MOHD A AND SAFA B ABURAYYAN	4931 AMBER LN	24	050-010043-00	JAMAL AND TAHSEEN NAIYER	4924 STERLING WOODS CT
9	050-010158-00	STACEY SAYLOR-VANDENBARK	4953 SILVER WOODS LN	25	050-010044-00	FUAD AND HODA ALSHAMI	4934 STERLING WOODS CT
10	050-010162-00	LAITH SAWALHA, DANA CUBIC-SAWALHA	4921 AMBER LN	26	050-010045-00	GALA A KATABAY	190 RED BLUFF LN
11	050-010163-00	ZAKI AHMED KHAN	7913 WILTSHIRE DR	27	050-010047-00	CITY OF HILLIARD	3800 MUNICIPAL WAY
12	050-010164-00	MUHAMMAD A AND BARI BARI	4938 AMBER LN	28	050-009945-00	NOOR MEADOWS LLC	5129 SILVER WOODS LN
13	050-010165-00	NUR AND JAMILA BADSHAH	4937 AMBER LN	29	050-010046-00	AMERICAN ISLAMIC WAQF	PO BOX 20828
14	050-010166-00	MAHMOUD QADOOM, FADYAH ALI	5081 SILVER WOODS LN	30	050-009940-80	HILLIARD GRAND APARTMENTS LLC	5399 GRAND DR
15	050-010167-00	RACHEL M HUGHES, ANDREW COOK	5075 SILVER WOODS LN	31	050-009958-90	HILLIARD GRAND APARTMENTS LLC	2 EASTON OVAL STE 510
16	050-010168-00	ZAHID LATIF	5065 SILVER WOODS LN	34	050-009948-00	NORTHERN TRUST COMPANY (TR) TRUEMAN, BARBARA	545 METRO PL SOUTH #400
17	050-010169-00	NADEEM A, SAMEERA SIDDIQI	40626 BLUESPRINGS CT				
18	050-010037-00	MOUIN KURDI	5043 SILVER WOODS LN				
19	050-010038-00	ZAHID LATIF	5031 SILVER WOODS LN				
20	050-010039-00	MOUNIR (TR), SANAA (TR) SANHAJI	5023 SILVER WOODS LN		050-009956-00		
					050-009942-00		

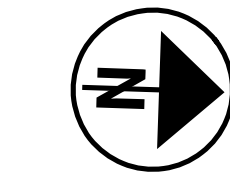


RIGGINS ROAD (CR432) PART 4
CENTERLINE DATA AND CONTROL POINTS

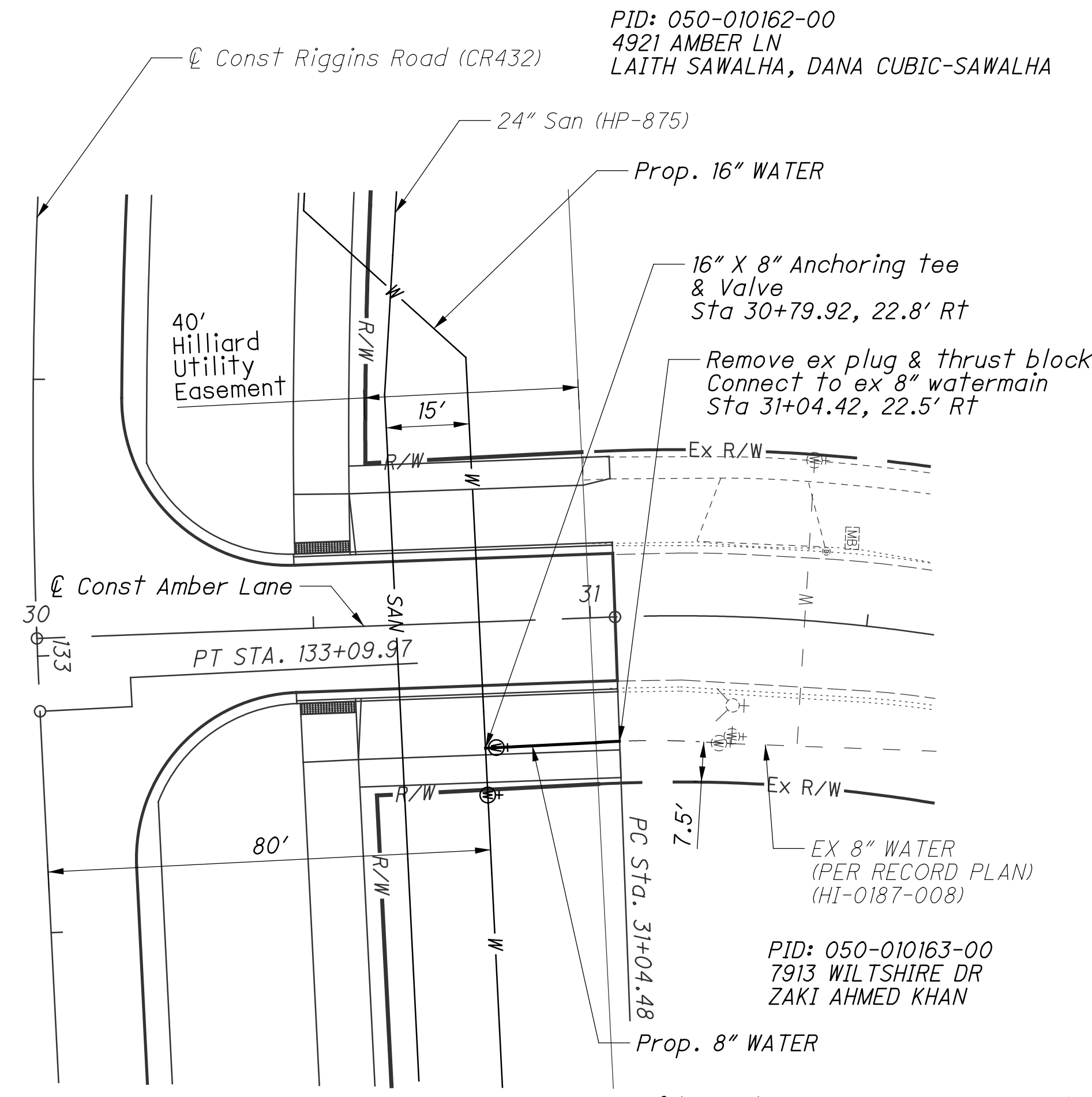
PUBLIC WATER LINE
IMPROVEMENTS RIGGINS
ROAD (CIP W-50)

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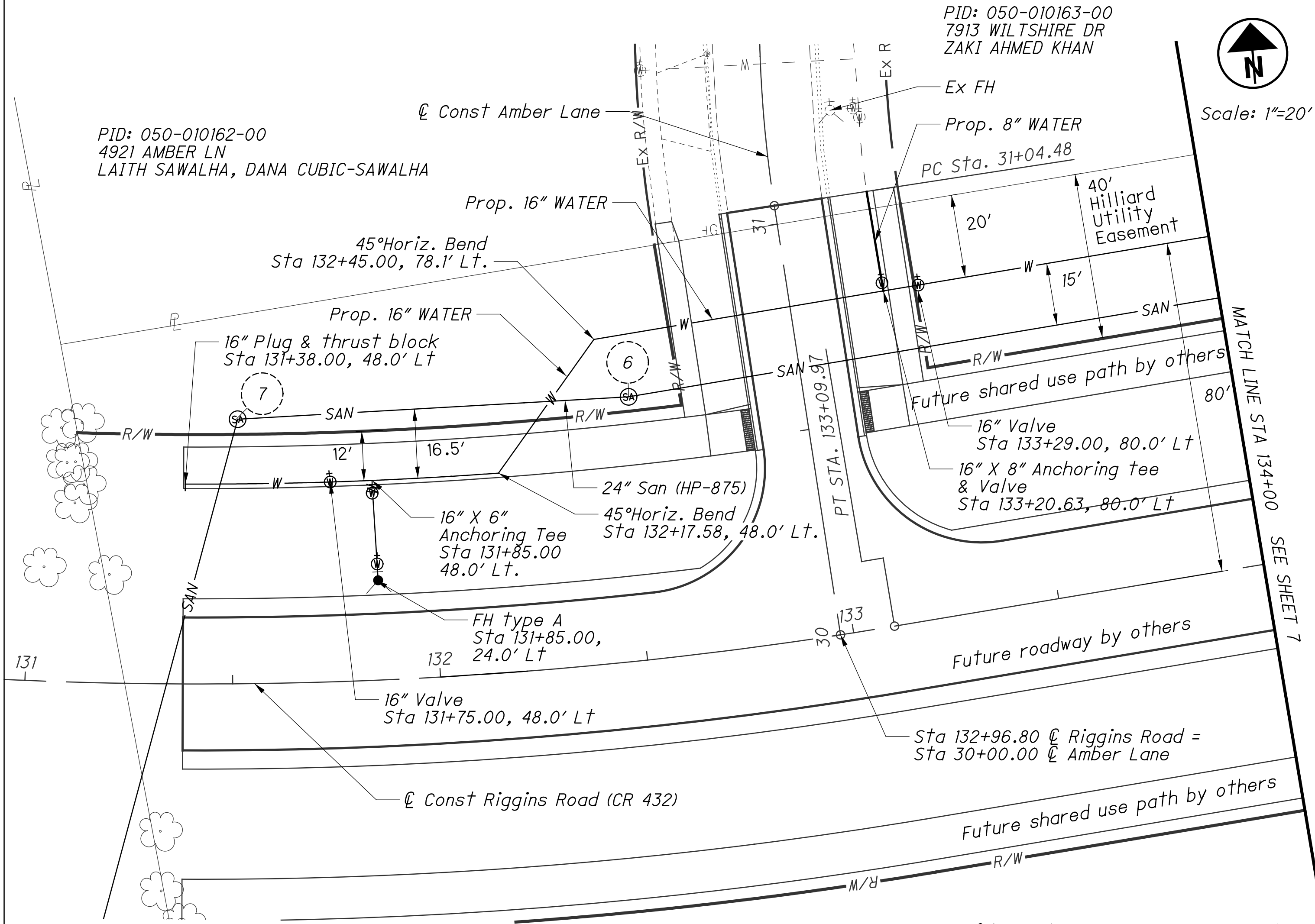
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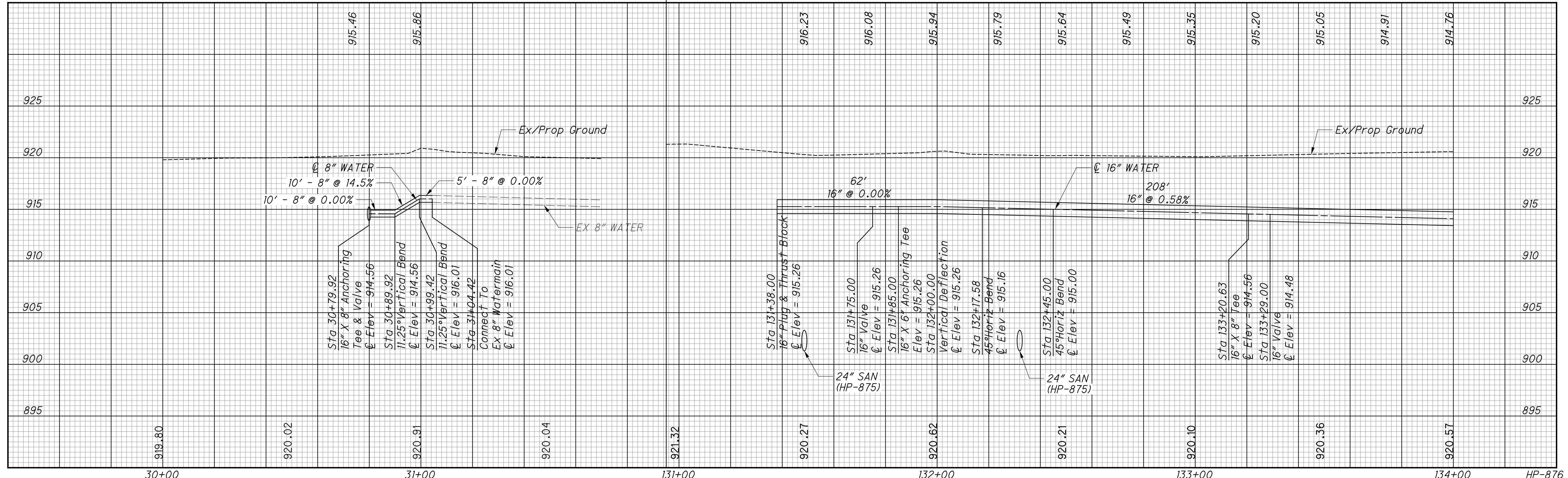
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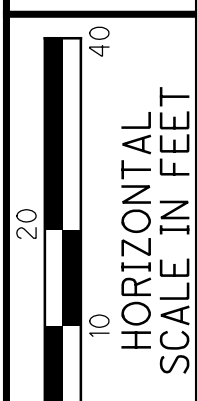


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PUBLIC WATER LINE IMPROVEMENTS RIGGINS ROAD (CIP W-50)
 WATER LINE PLAN & PROFILE - RIGGINS ROAD
 STA 131+38 TO STA 134+00

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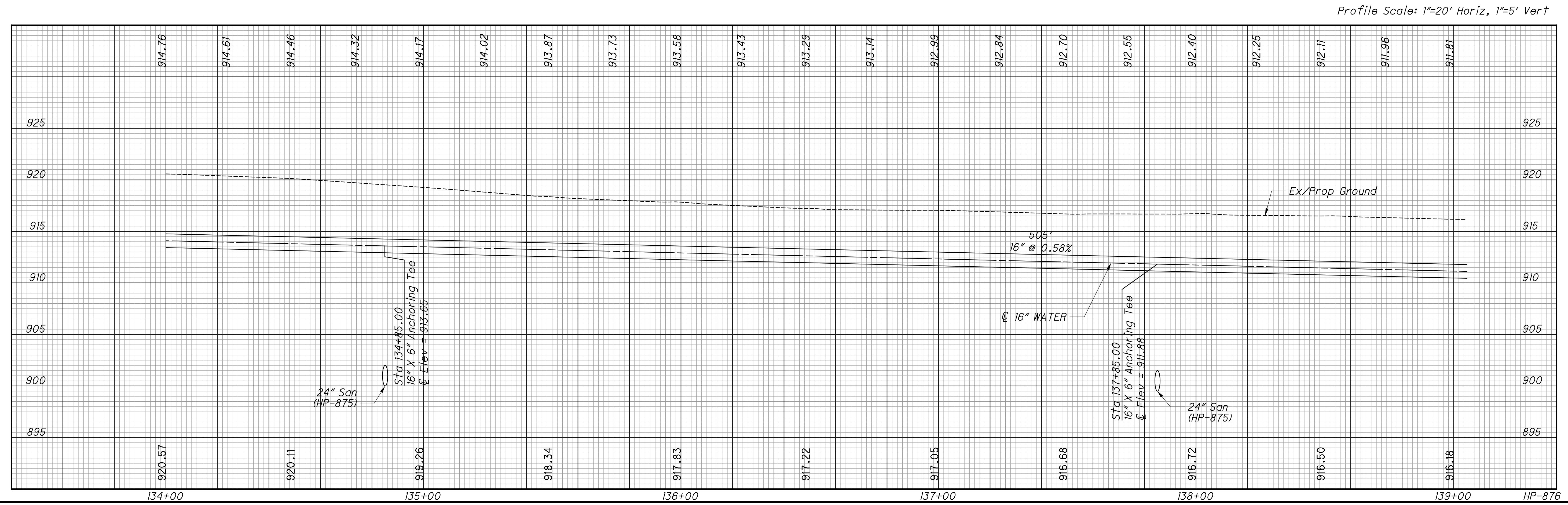
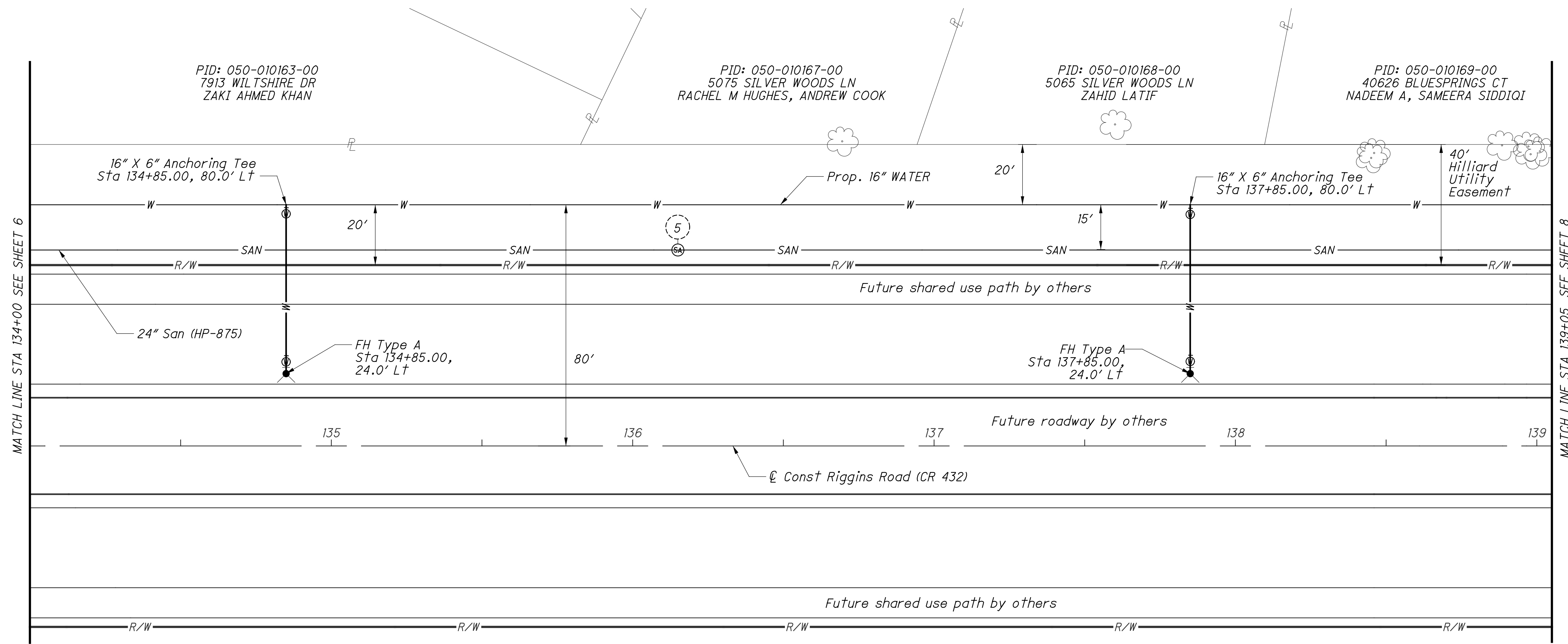


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**WATER LINE PLAN & PROFILE - RIGGINS ROAD
IMPROVEMENTS RIGGINS
ROAD (CIP W-50)
STA 134+00 TO STA 139+05**

**PUBLIC WATER LINE
IMPROVEMENTS RIGGINS
ROAD (CIP W-50)**

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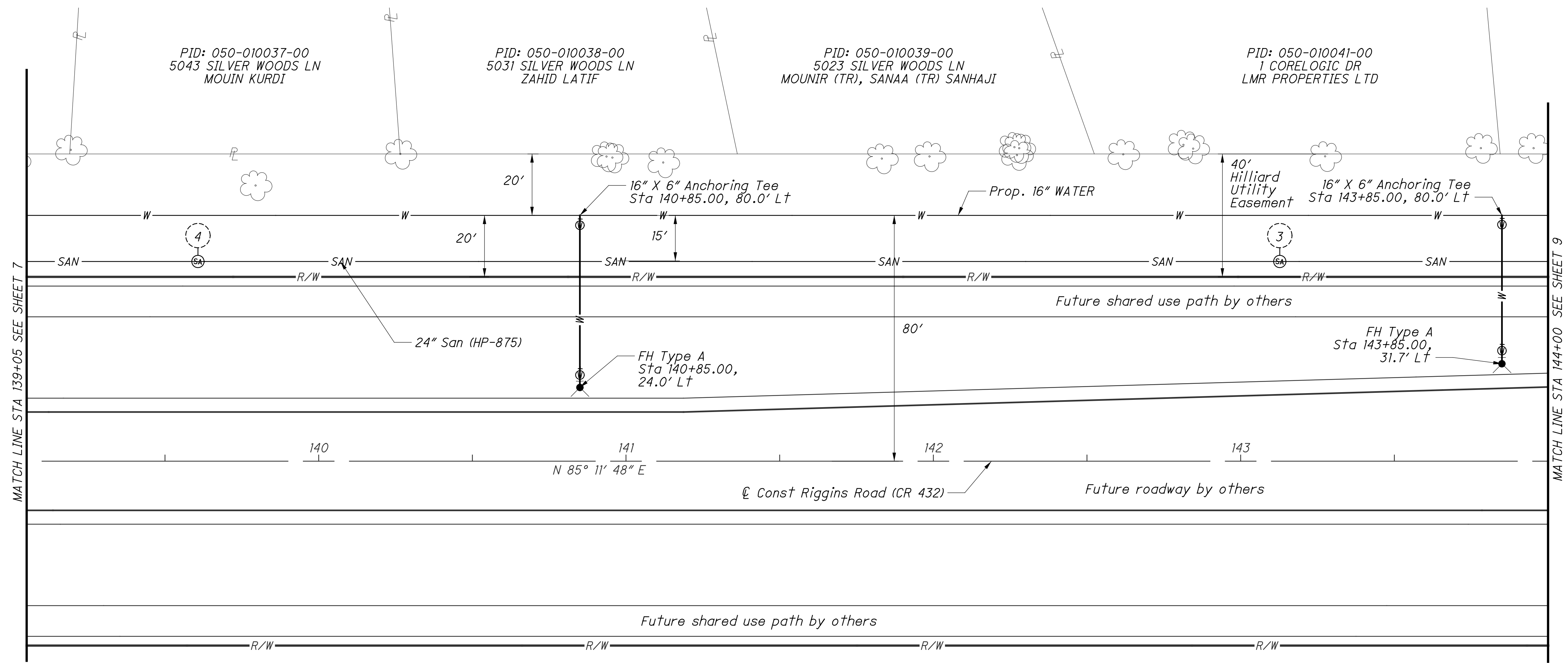
134+00 135+00 136+00 137+00 138+00 139+00 HP-875

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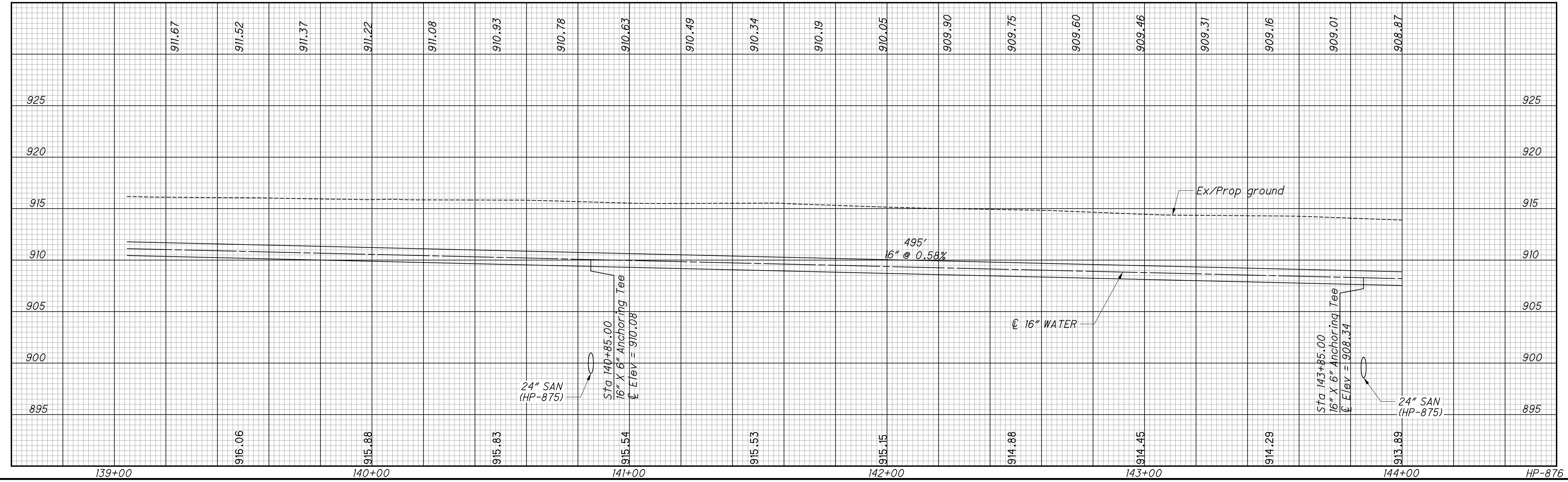


0 10 20 40
HORIZONTAL SCALE IN FEET

CALCULATED KMI
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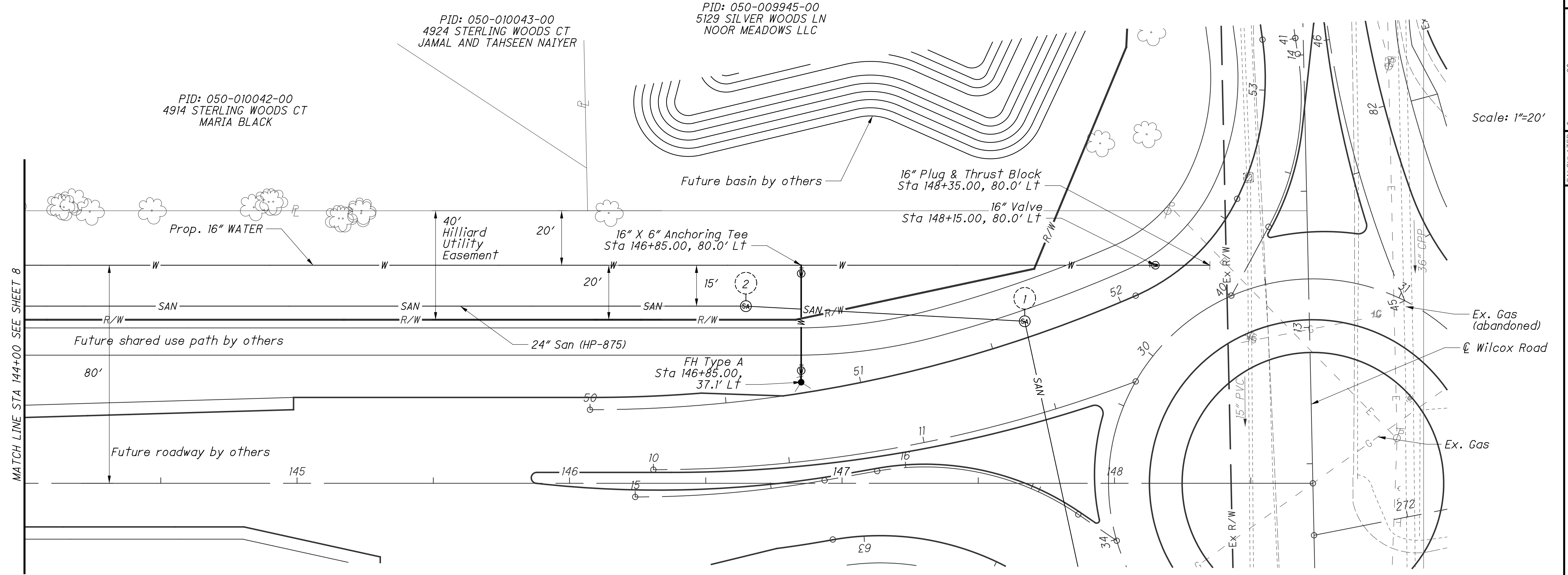


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PUBLIC WATER LINE PLAN & PROFILE - RIGGINS ROAD
IMPROVEMENTS RIGGINS ROAD (CIP W-50)
STA 139+05 TO STA 144+00

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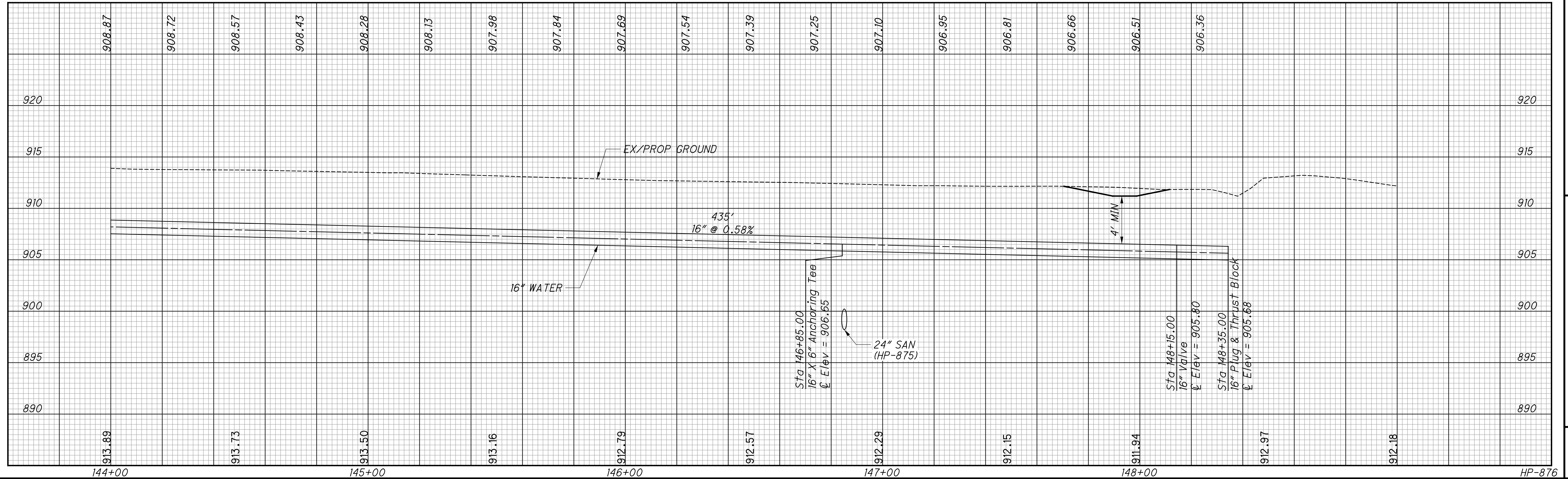
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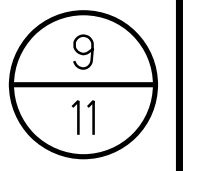


CALCULATED KMI
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WATER LINE PLAN & PROFILE - RIGGINS ROAD
STA 144+00 TO STA 149+00



Profile Scale: 1"=20' Horiz, 1"=5' Vert

PUBLIC WATER LINE IMPROVEMENTS RIGGINS ROAD (CIP W-50)



HP-876

GENERAL NOTES FOR EROSION CONTROL

Site data

Owner:

City of Hilliard
3800 Municipal Way
Hilliard, Ohio 43026
614-876-7361

Developer:

Franklin County Engineer
970 Dublin Road
Columbus, Ohio 43215
614-525-3030

Plan designer:

American Structurepoint
2550 Corporate Exchange Drive
Columbus, Ohio 43231
614-901-2235

Development type: Public Utility

Site acreage: 20 Acres

Disturbed acreage: 0.60 Acres

Site vegetation: Farmland

Adjacent areas: The site is bounded to the north by Silverton Farms, to the west by farmland, to the south by farmland, and to the east by Wilcox Rd. and the Hilliard Grand development.

Receiving waters: The site drains south and to the east to Hayden Run.

Storm water management: Silt fence will be installed around disturbed areas to prevent runoff from construction. There are no storm inlets on site.

Storm water quality: There are currently no stormwater elements of these construction plans.

Sequence of construction:

-Installation of the silt fence, construction entrance, and erosion control measures will occur before construction begins.

Maintenance notes

The contractor's representative will inspect all erosion and sedimentation control measures weekly and within 24 hours after each rainfall event to assure that the measures are functioning properly. The contractor shall keep inspection reports, copies of which shall be provided to the City of Hilliard or Ohio EPA upon request.

Construction road/construction entrance:

Both temporary and permanent roads and parking areas may require periodic top dressing with new gravel. Seeded areas adjacent to the roads and parking areas should be checked periodically to ensure that a vigorous stand of vegetation is maintained. Roadside ditches and other drainage structures should be checked regularly to ensure that they do not become clogged with silt or other debris.

Filter fabric fence:

Filter fabric fences and filter barriers shall be inspected by the contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs shall be made immediately.

Sediment that is collected will be distributed on the protected portion of the site and stabilized. All stockpiles of earth and topsoil will be protected with temporary seeding or other means to prevent erosion. Should the fabric on a silt fence or filter barrier decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly.

Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half (1/2) the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

Inlet protection:

All storm sewer inlets shall be protected by sediment traps (inlet protection), which will be maintained and modified as required as construction progresses. The structure shall be inspected after each rainfall and repairs made as needed.

Sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one-half (1/2) the design of the trap. Removed sediment shall be deposited in a suitable area in such a manner that it will not erode.

Any sediment blocking drainage at inlets that creates standing water on roadways and/or driveways shall be removed immediately.

Inlet protection structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

General land conservation notes

All structural erosion and sediment control practices shall be placed prior to or as the first step in grading for all sites.

Permanent or temporary soil stabilization shall be applied according to the following Ohio EPA criteria:

- Permanent stabilization
 - areas that will be dormant for more than a year. Within 7 days of the most recent disturbance.
 - areas within 50 ft of a stream and at final grade. Within 2 days of reaching final grade.
 - any other areas at final grade. Within 2 days of reaching final grade.
- Temporary stabilization
 - areas within 50 ft of a stream and not at final grade. Within 2 days of the most recent disturbance if the area will remain idle for more than 21 days.
 - any disturbed areas that will be dormant for more than 21 days but less than 1 year, and not within 50 ft of a stream. Within 7 days of the most recent disturbance within the area.
 - disturbed areas that will be idle over winter shall be stabilized prior to the onset of winter weather.

Permanent seeding shall be applied at the rate of 8 pounds (lb.) Per 1,000 square feet (sf) and consist of the following seed mixture:

- 40% titian tall fescue
- 40% tarheel tall fescue
- 10% denim kentucky bluegrass
- 10% renaissance perennial rye grass

Fertilizer for permanent seeding shall be a commercial-grade complete fertilizer of neutral character, consisting of fast, and slow release nitrogen, 50% derived from natural organic sources of urea-form, phosphorous, and potassium and shall meet the following composition:

13% nitrogen, 26% phosphorous, and 12% potassium by weight

Fertilizer shall be applied at the rate of 6 pounds (lb.) Per 1,000 square feet (sf).

All storm sewer, sanitary sewer, water main and service trenches shall be seeded and mulched within 14 days after backfill if installation is through stabilized areas. No more than 250 feet of trench will be open at any one time.

Electrical power, telephone, cable television and gas supply trenches shall be compacted, seeded and mulched within 14 days after backfill if installation is through stabilized areas.

All temporary diversions, sediment basin embankments and earth stockpiles shall be seeded and mulched for temporary vegetative cover within 7 days after grading.

Any disturbed area not stabilized with seeding, sodding, paving or built upon by November 1st, or areas disturbed after that date, shall be mulched immediately with hydro mulch at the rate of one (1) ton per acre and over-seeded by April 15th.

At the completion of construction, all denuded areas shall be stabilized and temporary sedimentation & erosion controls shall be removed once the site has been stabilized.

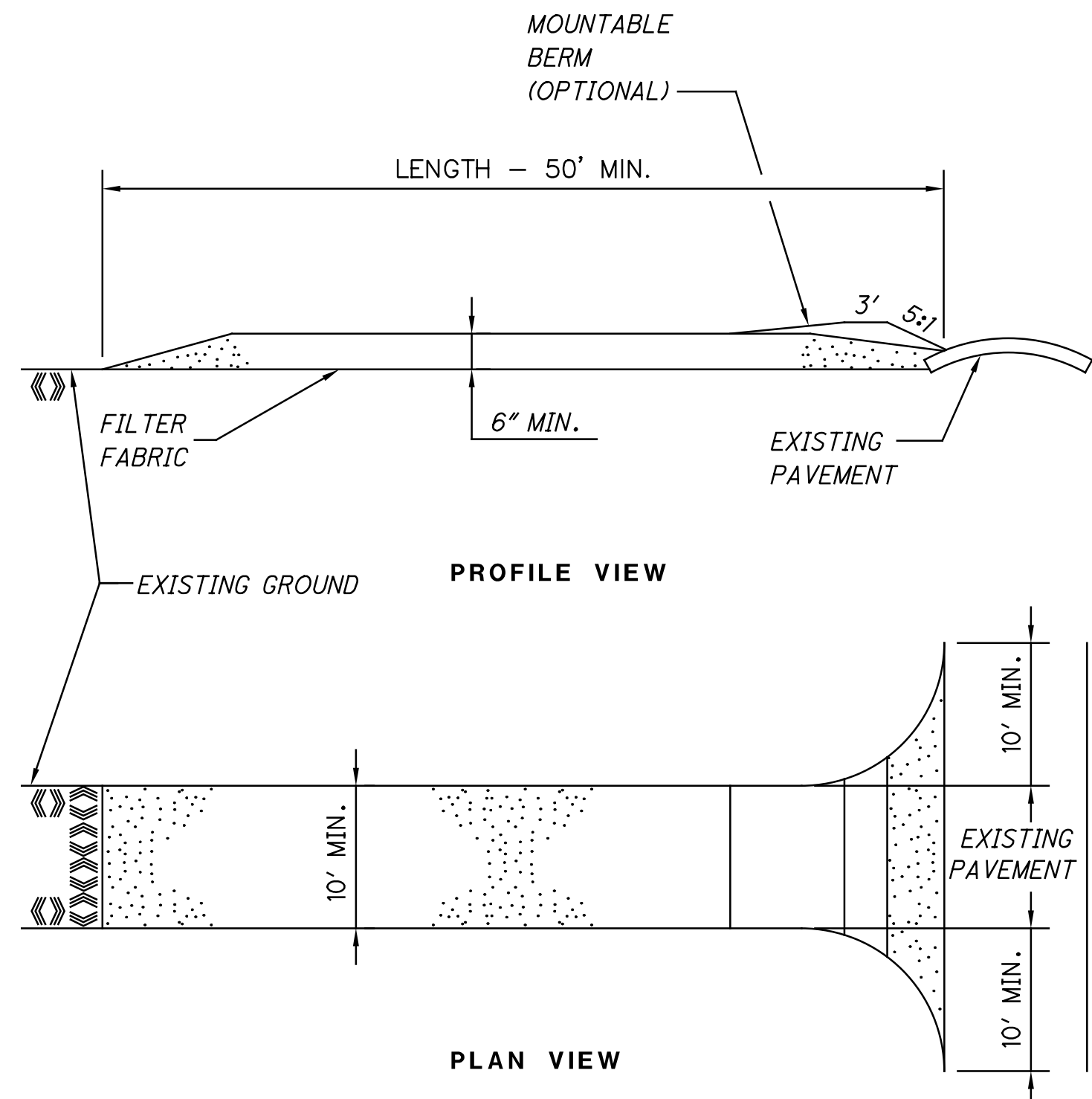
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EROSION CONTROL NOTES

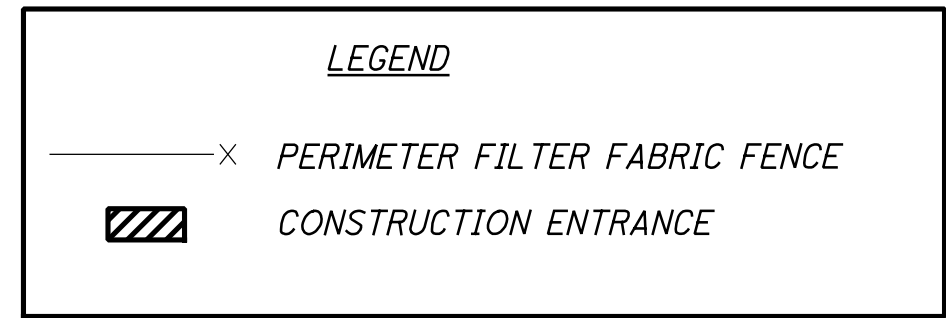
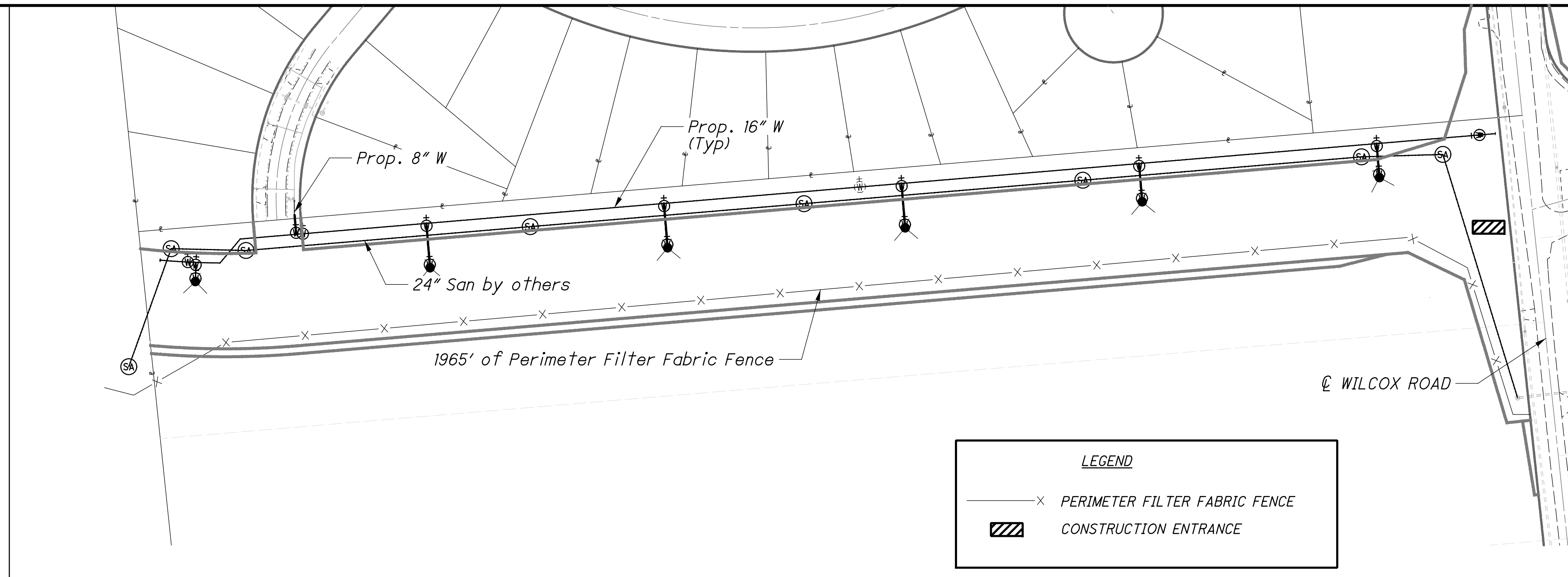
PUBLIC WATER LINE
IMPROVEMENTS RIGGINS
ROAD (CIP W-50)

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CONSTRUCTION ENTRANCE

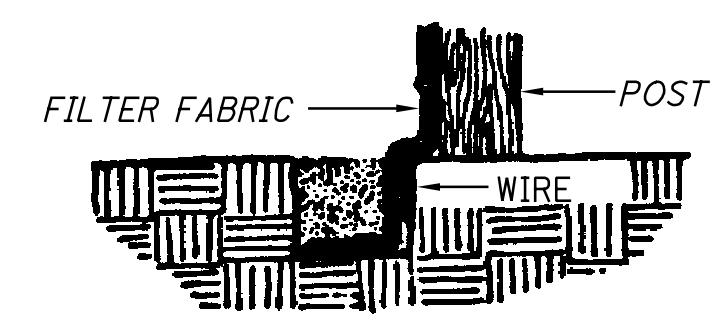
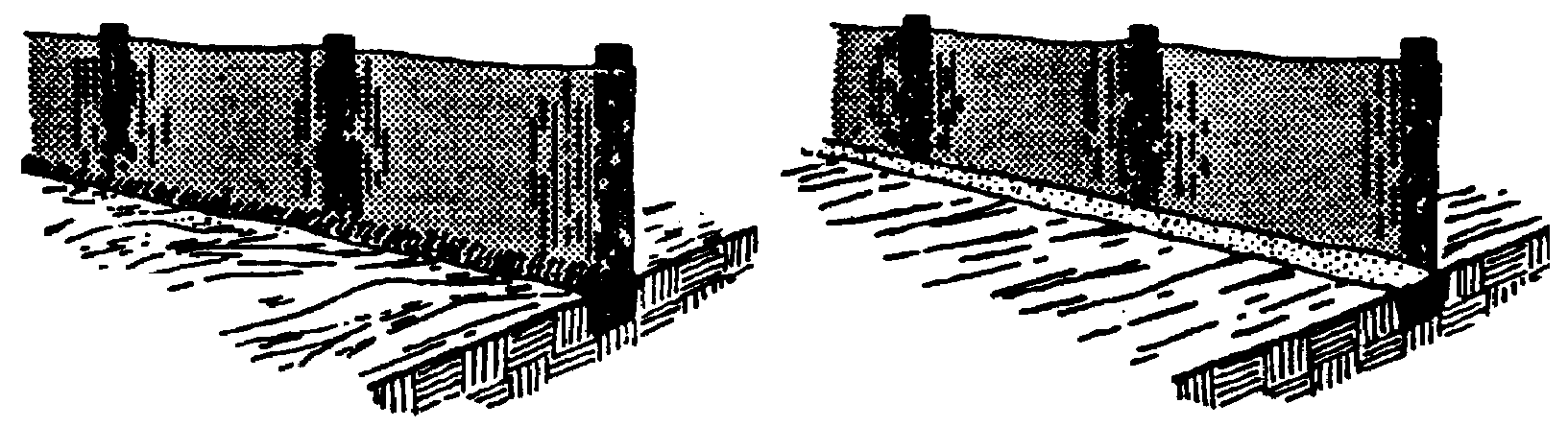
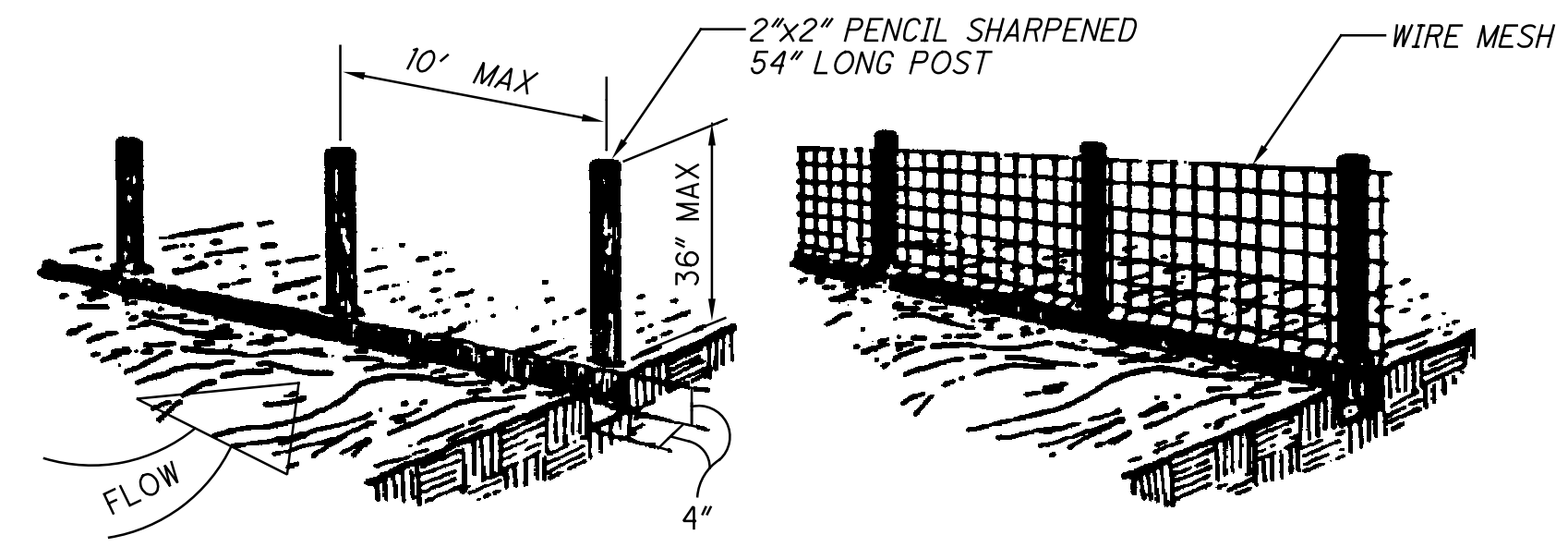
1. Stone size - use 2 inch stone.
2. Length - as required (Minimum of 50 feet).
3. Thickness - not less than 6 inches.
4. Width - 10 foot minimum, but not less than the full width at Points where ingress or egress occurs.
5. Filter fabric - will be placed over the entire subgrade Prior to placing of stone.
6. Surface water - all surface water flowing or diverted toward construction entrances shall be piped across the entrance.
7. Maintenance - the entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto public rights-of-way must be removed immediately.
8. Washing - wheels shall be cleaned to remove mud prior to entrance on to public rights-of-way. When washing is needed, it shall be done on an area stabilized with stone and which drains into an on-site containment area.
9. Periodic inspection and required maintenance shall be performed after each rain.
10. The stabilized construction entrance described is a minimum standard for ingress and egress from the construction site onto public right-of-way. The contractor may vary the construction as needed for specific site conditions provided that its function satisfies the intent described herein as determined by the city engineer. The cost for this work shall be included in the various items of the contract.



PERIMETER FILTER FABRIC FENCE

This sediment barrier utilizes standard strength or extra strength synthetic filter fabrics. It is designed for situations in which only street or overland flows are expected.

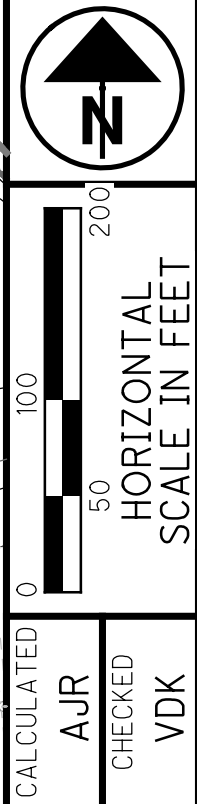
1. The height of a silt fence shall not exceed 36 inches (higher fences may impound volumes of water sufficient to cause failure of the structure).
2. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6 inch overlap, and securely sealed.
3. Posts shall be spaced a maximum of 10 feet apart at the barrier location and driven securely into the ground (minimum of 12 inches). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 feet.
4. A trench shall be excavated approximately 4 inches wide and 4 inches deep along the line of posts and up slope from the barrier.
5. When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the up slope side of the posts using heavy duty wire staples at least 1 inch long, tie wires, or hog rings. The wire shall extend into the trench a minimum of 2 inches and shall not extend more than 36 inches above the original ground surface.
6. The standard strength filter fabric shall be stapled or wired to the fence, and 8 inches of the fabric shall be extended into the trench. The fabric shall not extend more than 36 inches above the original ground surface. Filter fabric shall not be stapled to existing trees.
7. When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such a case, the filter fabric is stapled or wired directly to the posts with all other provisions of item no. 6 applying.
8. The trench shall be backfilled and soil compacted over the filter fabric.
9. Silt fences shall be removed when they have served their useful purpose, but not before the up slope area has been permanently stabilized.
10. This work shall be paid at the unit price per linear foot for Item 207, PERIMETER FILTER FABRIC FENCE.



SECTION THRU TRENCH

PERIMETER FILTER FABRIC FENCE DETAIL

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CALCULATED AJR CHECKED VDK
EROSION CONTROL PLAN, NOTES AND DETAILS

PUBLIC WATER LINE IMPROVEMENTS RIGGINS ROAD (CIP W-50)