

# HOLYOKE AVENUE - 12" WATER LINE REPLACEMENT

to serve  
CITY OF WICHITA, KANSAS

Paul Gunzelman, P.E. Interim City Engineer

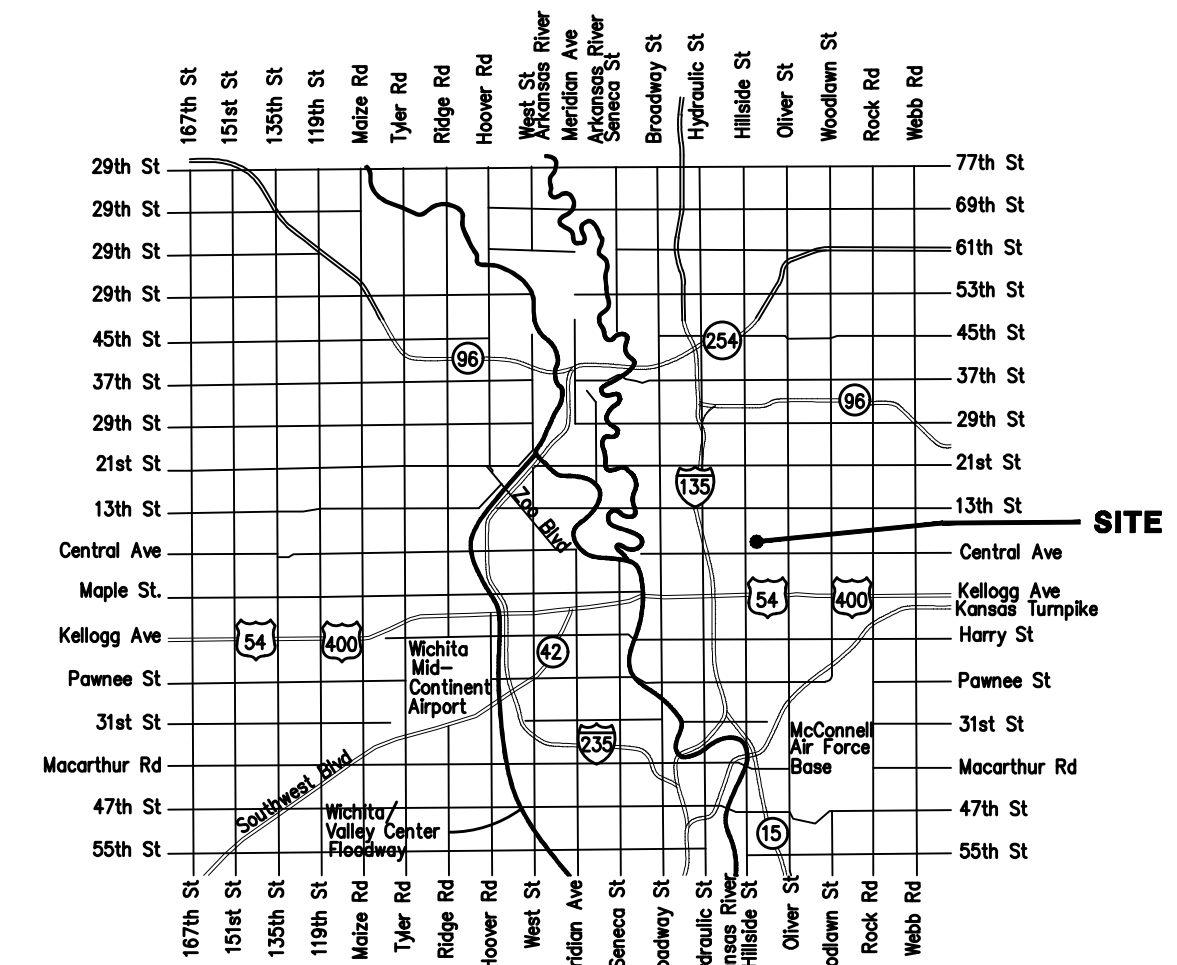
Project Number 448-2022-034847

Munis: W2015

ORG Code Number: 54250022

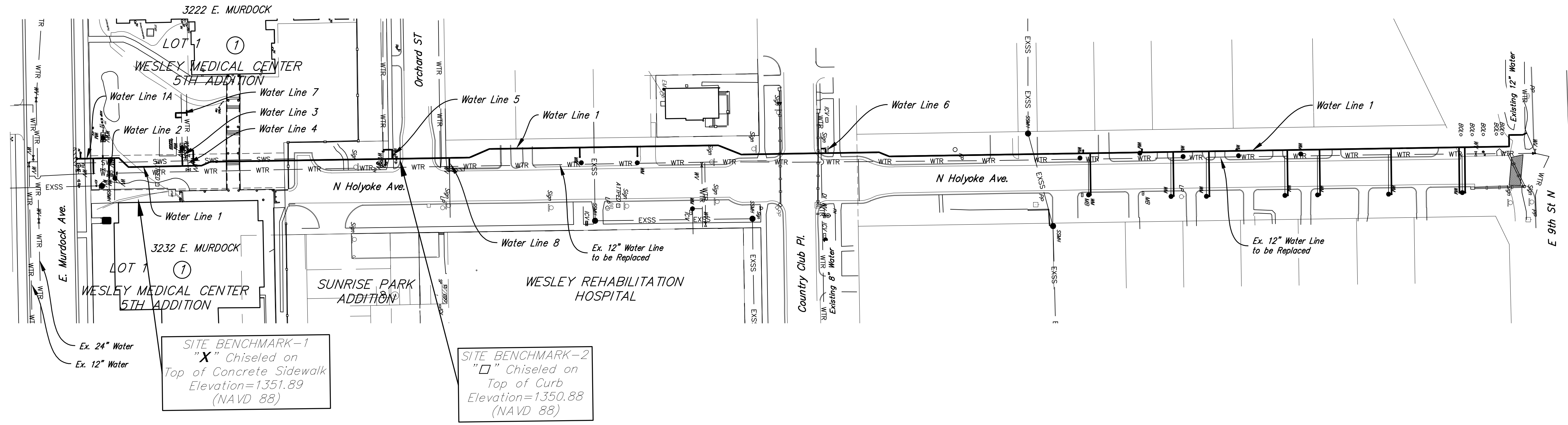
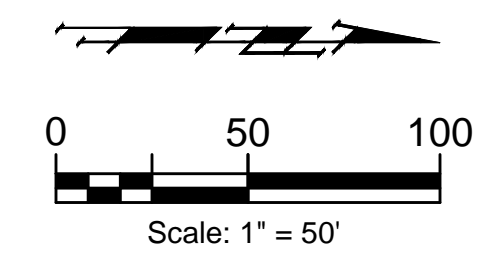
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Vicinity Map

\*Current Water Line Details are available at City of Wichita web site at <http://www.wichita.gov/PWU/StandardsConstruction/Forms/WebPageStandardsConstruction.aspx>



## BENCHMARKS

- BM #1:  
Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232. E Murdock  
Elev. = 1351.89 (NAVD88)
- BM #2:  
Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave.  
Elev. = 1350.88 (NAVD88)



October 30, 2023

**BAUGHMAN COMPANY**  
315 Ellis St. Wichita, KS 67211 316-262-7271  
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# GENERAL NOTES:

- 1. The Contractor Shall comply with all applicable safety regulations. All construction shall be completed following current City Standard Specifications and Special Provisions.**
- 2. Horizontal Separation.** Maintain a minimum of 10-foot horizontal separation between all Water Lines (Mains, Services and Fire Hydrants) and all Sanitary Sewer Lines (Main, Services and Manholes) at crossings. All separation distances are to be measured from edge-to-edge, at the closest point.
- 3. Vertical Separation.** Maintain a minimum of 2-foot vertical separation between all Water Lines (Mains and Services) and all gravity Sanitary Sewer Lines (Main, Services and Manholes) at crossings. All separation distances are to be measured from edge-to-edge, at the closest point.
- 4. Vertical Separation.** Maintain a minimum of 2-foot vertical separation between all Water Lines (Mains and Services) and all pressurized Sanitary Sewer Lines (force mains and services) at crossings. Waterlines must always be placed above pressurized sanitary sewer lines where they cross. All separation distances are to be measured from edge-to-edge, at the closest point.
- 5. Utility Company Seventy-Two (72) Hour Notice.** Contractor will be required to provide notice to utility companies a minimum of seventy-two (72) hours prior to any excavation work.

Kansas One-Call	687-2470
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The Contractor must notify the following in case of an emergency:

AT&T	800-246-6464
Black Hills Energy	800-694-8989
City of Wichita Water & Sewer	316-619-8921
City of Wichita Storm Sewer	316-268-4090
City of Wichita Traffic	316-268-4034
Cox Communications	888-249-3530
Kansas Gas Service	888-482-4950
Energy	800-544-4857
- 6. Existing Utility Adjustments.** Utility service lines, poles, pipes, valve boxes, meters, etc. are to be adjusted, as necessary, by Others prior to construction, unless the plans specifically call for their adjustment by the Contractor, or unless the plans specifically identify a utility to be adjusted by its owner during construction. Existing utilities and their location, as shown on the plans, represent the best information obtainable for design. The Contractor will be required to work around existing utilities within the right-of-way which do not conflict with proposed construction.
- 7. Protection of Utilities.** The Contractor Shall protect utility lines that cross or abut construction work zone. For larger lines, Contractor's method of supporting utility structure shall be provided to the Engineer, as well as the affected Utility Company's representative for review and approval. Any shutdown of a utility line that may be required by construction of the Project Shall be coordinated with said affected utility. Protection of utilities will not be paid for directly, but will be considered SUBSIDIARY to the Bid Item Site Clearing.
- 8. Ten (10) Day Start Notice.** The Contractor Shall give all property owners and/or tenants of developed property abutting the construction of this project a minimum of ten (10) day notice prior to start of construction.
- 9. Survey Monuments.** The Contractor Shall be responsible for preserving Survey Monuments, which include Property Irons, Section Corners, and/or Benchmarks. The Contractor will be required to re-establish any Survey Monument damaged or destroyed by his construction operations, at his expense. Such monuments shall be re-established by a licensed land surveyor in accordance with state laws.
- 10. Project Datum.** All elevations shown are NAVD88.
- 11. Water Utility Locates.** The City of Wichita Engineering Division Shall field locate water valves one (1) time during construction when requested by the Contractor. It Shall be the Contractor's responsibility to preserve such field locations during the construction process. Water valves, valve boxes or fire hydrants damaged during construction Shall be repaired by Contractor at his own expense. Valve boxes and water meters within the project limits Shall be adjusted to match field grades by the Contractor.
- 12. Project Inspector.** The Contractor Shall not begin work on the project until the Project Inspector is assigned and on-site. Any work completed without inspection will be required to be uncovered for inspection, at the Contractor's expense.
- 13. Handling of Rubble and Excess Excavation.** All project waste including any trees, pavement and or rubble from the removal of miscellaneous structures and excess excavation which is to be wasted Shall be disposed of on sites to be provided by the Contractor. These sites Shall be approved by the Engineer as to suitability, appearance and or site location. Locations in the opinion of the Engineer, that will leave an unsightly appearance will not be approved. All disposal sites must be approved by the Kansas Department of Health and Environment. Material either stockpiled or disposed of in a flood plain would require a Kansas State Board Agriculture permit. Any material dumped in waters of the United States or wetlands is subject to U.S. Corps of Engineers permitting regulations. Any material buried or stockpiled beyond approved construction limits would require additional archaeological investigations unless buried in a previously approved borrow location.
- 14. Excess Excavation.** All excess excavation Shall be removed from site.
- 15. Trees and Shrubs.** Trees and shrubs in the work area which are in direct conflict with proposed new construction Shall be removed by the Contractor ONLY with the Engineer's approval. Trees and shrubs which are not in direct conflict with proposed new construction Shall be saved and protected from damage. If trimming is necessary, a chainsaw Shall be used. Breaking limbs with equipment will not be allowed. An on-site pre-construction meeting will occur prior to any construction to discuss tree removal, tree protection and tree trimming. All tree trimming operations Shall be considered SUBSIDIARY to the Bid Item Site Clearing.
- 16. Tree Trimming.** Trees that require trimming for project construction shall not be done with a backhoe, but only by approved methods concurrent with standard tree trimming methods. All tree trimming operations shall be considered SUBSIDIARY to Site Clearing bid item.
- 17. Site Conditions.** Prior to bidding the project, each bidder Shall visit the site and satisfy themselves of surface & subsurface conditions. Each bidder Shall also fully inform himself as to the extent of the scope of work to be performed. Each bidder Shall also be aware that no additional compensation will be awarded for extra work that should have been evaluated prior to bidding.
- 18. Protection of Adjacent Property.** Adjacent buildings, structures, parking lots, driveways, etc. other than those shown for replacement Shall be protected from damage during construction of this project.
- 19. Protection of Mains.** Contractor shall protect existing water and sanitary sewer mains.
- 20. Construction Traffic Control.** The Contractor Shall be responsible for all traffic control measures to facilitate construction activities. All construction zone markings and signage Shall conform to the latest version of the Manual on Uniform Traffic Control Devices (MUTCD), as published by the US Dept. of Transportation, Federal Highway Administration. The Contractor Shall submit comprehensive Traffic Control Plans and receive approval by the City Traffic Engineer, Mike Armour, at [traffic@wichita.gov](mailto:traffic@wichita.gov) before construction can begin. All costs associated with construction drums, markings and signage Shall be considered SUBSIDIARY to the Lump Sum Bid Item Traffic Control.
- 21. Sidewalk Closures.** Contractor shall erect Sidewalk Closed and Sidewalk Closed Ahead signs on Type II barricades, when pedestrian sidewalks are located inside contractor's utility work zone. These signs & Barricades shall be considered Subsidiary to the Lump Sum Bid Item - Traffic Control.
- 22. Clear Zone.** All construction equipment, including vehicles, material, and debris shall be stored outside of the Clear Zone. Where this cannot be achieved the Contractor Shall place appropriate Signs, Object Identifiers, and/or Barricades in compliance with the MUTCD.
- 23. Pipe Deflections.** Deflections at pipe joints or couplings shall not exceed the pipe manufactures recommended maximum.

**24. Existing Sign Removal and Replacement.** Some existing street signs may be in conflict with construction activities and will need to be removed prior to construction. Contractor Shall remove signs, protect them during storage and permanently re-install the signs. Any existing signs that become damaged Shall be replaced with a new sign at the expense of the Contractor. All work and materials associated with removing and replacing these signs Shall be paid for with the Lump Sum Pay Item Signs Existing, Removed and Replaced.

**25. Directional Drilling.** The Contractor shall use Directional Drilling Methods as much as possible and shall open cut only where absolutely necessary. It is the Contractor's responsibility to limit disturbances to properties inside of and adjacent to construction areas.

**26. Open Trenches.** Contractor shall limit the extent of trench openings overnight and weekends to less than 50 feet.

**27. Tracer Wire.** The Contractor Shall install Tracer Wire and Test Stations along all installed water pipes, per City Specifications. Cost is Subsidiary to water pipe installation.

**28. Water Line Connections.** Existing water mains, fire hydrants, and service connections shall remain in service until proposed new water mains have been completed, pressure and water quality tested and passed. The Contractor Shall provide materials for temporary blowoff of waterlines. Connections to the existing waterline(s) Shall be made with clean, swabbed pipe and flushed upon completion of tie-ins.

**29. Temporary Blow-Off Valves.** Temporary Blow-Off Valves necessary to flush lines at existing water line tie-ins shall be installed and removed prior to final connections. Locations where temporary and permanent connections are called out, anchor valves and temporary blow-off assemblies shall be used and be considered subsidiary to the project.

**30. Water Line Separation.** Contractor to maintain 12 in. vertical and horizontal separation from all existing water mains.

**31. Sanitary Sewer Encasement.** If two (2) foot minimum vertical clearance between proposed water line and existing sanitary sewer line cannot be met, then sanitary sewer line must be concrete encased. See City of Wichita Standard Drawing WL-104 for construction details. All work associated with concrete encasement shall be paid per bid item Concrete Encasement 8 in. Reinforced (L.C.).

**32. Water Main Taps.** Where notes call out to install tapping sleeves and valves, the City will provide and install. The valve box will be provided by the City and INSTALLED BY THE CONTRACTOR. The Contractor must install the blocking and the valve box, with the valve box installed at grade, per the City Detail. Fittings for these Taps and ALL other fittings shall be considered subsidiary to the project.

**33. Exposed Waterline Joints.** Any existing waterline joint exposed during construction shall be replaced if within four (4) feet of proposed joint.

**34. Restrained Joints.** The contractor shall use restrained joint systems at all fittings, regardless of installation methods, including sleeves, per City Detail.

a. Thrust Blocking at these fittings is not required.

b. Fire Hydrant leads do not need to be restrained joints, but either side of the tee must be restrained.

c. Restrained gland packs at City installed TAPS to be provided by the Contractor.

d. All directional drilled 12 in. PVC pipe Shall be Restrained Joint (RJ) PVC pipe or Fusible 12 in. PVC pipe (as approved by the Engineer).

**35. Fire Hydrants.** New fire hydrant flanges should not be located more than 6 in. above the bury line with the detailed 2 in. minimum, as the desired distance.

**36. Water Line Abandonment.** Abandonment of the existing water system includes the removal or capping of existing lines, valve removal, and/or valve box and lid removal, as called out on the drawings. All existing piping to be abandoned shall be plugged and capped at each end and shall be completely removed from service no more than 24 in. from the point of disconnection from water mains that remain in service. This work will be paid for with lump sum bid item Abandon Existing Water System.

**37. New Water Service Lines.** Water service lines connected to mains being abandoned shall be replaced with new service lines connected to new mains in accordance with the City of Wichita Specifications and Special Provisions, and per construction details. New services shall be provided to all designated locations along the proposed alignment as shown in the drawings. The unit price bid for new service lines shall include the cost of the service line, the new meter box, meter box ring and lid, new meter setter, installation of the new meter in the new box, new copper pigtail and new corporation in the new water main. Costs to be subsidiary to Long and Short Service Line bid items. Long Services cross the centerline of nearby street and Short Services do not.

**38. Water Meters.** The existing water meters within the project limits should be equipped with Automated Meter Reading (AMR) technologies. Existing 5/8 in. or 3/4 in. water meters will need to be replaced with 1 in. water meters and are not to be installed with adaptors. New water meters will be supplied by the City. The Contractor will coordinate with the City of Wichita Meter shop to pick up new meters and return the old ones. Costs to be subsidiary to Long and Short Service Line bid items.

**39. Water Meter Abandonment.** Water Meter locations to be abandoned, as noted on the plans, shall have water meter removed (if present), along with setter, meter box, ring and lid. This location Shall then be backfilled and compacted to match surrounding grade. This work will be paid for with lump sum bid item Abandon Existing Water System.

**40. Adjustments to Valve Boxes and Water Meters.** New Valve boxes and Water Meters within project limits Shall be adjusted to match final or surrounding grade.

**41. Vacant Properties.** New water services will NOT be installed for vacant properties unless shown on the plans or specified in the special provisions.

**42. Large Water Valve Operation.** Water valves 12 inch or larger are to be operated by the City Water Distribution Division. 48 hours of advance notice is required with Dispatch at 316-291-8921.

**43. Small Water Valve Operation.** Opening and closing water valves shall be done slowly to prevent damage to the water distribution system from water hammer. All valves closed by the Contractor must be reopened as new construction permits. Project Inspector must ascertain that any valve closed by the Contractor is reopened. Contractor will be permitted to operate water valves only when the Project Inspector assigned to the project is present.

**44. Salvage Items.** The contractor shall return all salvageable valves, hydrants, hydrant fittings, etc. to the City of Wichita Water Distribution Department yard located at 1825 S. McLean Blvd. The Contractor shall have all salvaged material checked in by the storekeeper. Existing service lines to be abandoned shall be cut and capped. Existing meters, meter setters, rings and lids shall be returned by the contractor to 1825 S. McLean Blvd.

**45. Water Service Interruptions.** Requests for short term water interruptions shall be made to the City Water Distribution Division and will be subject to their approval. The Contractor Shall give written notice to any property owner, business, and/or tenants that will have water services interrupted at least 5 days in advance. Such notifications should indicate the time and date that the water will be turned off and when the service will be restored. No business, property owner, and/or tenants shall be without water service for more than 8 hours. Proposed tie-in locations which will affect water service to property owners shall be performed during non-peak hours.

**46. Erosion Control.** All existing and proposed erosion control measures including silt fencing, erosion control mat, straw bales, inlet barriers, and/or construction entrances shall be maintained throughout construction by the Contractor and until project is accepted by the City of Wichita. The on-site engineer shall complete weekly reports on the status of erosion control measures. The Contractor Shall be required to comply with maintenance and/or replacement of erosion control measures as determined by the on-site engineer until project is accepted by City of Wichita. Maintenance and/or replacement for erosion control measures to be paid for by Lump Sum bid item Maintain Existing BMP's.

**47. Disturbed Areas.** All areas disturbed during construction that will not be under proposed pavement shall be restored to match existing conditions per City specifications.

**48. Saw Cuts for Pavement Removal.** A saw cut of at least one-half the depth of existing surface courses or one-fourth the depth of the existing total pavement thickness shall be provided at locations where proposed construction abuts an existing surface course or pavement for which partial removal of that surface or pavement is required. Full-depth saw cuts shall be made in existing pavement requiring removal on straight and neat lines. Sawed joint to facilitate removal within three (3) feet of existing joints will not be permitted and for such instances the limits of removal shall extend to the existing joint. Such saw cuts will not be paid for directly and this cost shall be considered SUBSIDIARY to the removal of the surface or pavement.

**49. Pavement Removal and Replacement.** Contractor Shall Remove and Replace street pavement for water line construction. Removing and Replacing existing Asphalt surfaced pavement over old PC Concrete pavement, full-depth PC Concrete Pavement or full-depth Asphalt Pavement will be paid via Bid Item Pavement Removed and Replaced - Square Yards.

**50. Sand Fill, Flushed & Vibrated.** If any proposed Water Lines are installed by Open Cut methods under street pavement, they shall be backfilled with sand, flushed and vibrated, from 6 in. below pipes to within 2' below the bottom of the rock base or finish grade per Detail W-104. Sidewalk or Sidewalk Ramp zones to be sand filled, flushed and vibrated, from 6 in. below pipe to within bottom of sidewalk pavement. Costs to be SUBSIDIARY to water line construction.

**51. Underground Irrigation Systems.** Lawn irrigation line(s), sprinkler heads and valve boxes exist north of E. Murdock Avenue between health care facilities. Residential yards may also have lawn irrigation items that may be in conflict with construction of water line relocation work. The contractor is required to repair damage that includes, but is not entirely limited to, minor items such as pipe, irrigation head repair and/or replacement. These repairs shall be subsidiary to other items. The contractor is not expected to repair or reconfigure major components such as valves, controllers, backflow preventers, etc. but all existing connections to the service lines or meters shall be in place and working at the conclusion of the project. The contractor is required to protect major components from damage. Any damage caused due to negligence must be replaced at the contractor's expense.

**52. Grass Turf Restoration.** All existing grassy areas disturbed during construction shall be restored with Grass Sod, matching existing turf type. Restoration of disturbed areas shall include, but not be limited to, Top Soil Preparation, Fertilizer and Sod installation. All Turf Restoration / Sodding Work shall be performed in accordance with latest revised City of Wichita - Standard Specifications - For the Construction of Public Projects, and City of Wichita Administration Regulation 6.5 or current version. The Contractor Shall be responsible for restoring all areas disturbed by construction activities, including those outside construction limits shown on the plans. When the weather / season prevents the installation of Sod, the Contractor Shall be responsible for installing an Approved Erosion Control Blanket at back of curb (8' minimum width). The Temporary Erosion Control Blanket (if installed) shall be removed before Grass Sod is placed. All costs associated with installation and removal of Temporary Erosion Control Blanket, Turf Restoration and Grass Sod installation work shall be paid per Bid Item Sodding.

**53. Fence Removal and Replacement.** Private fences on City R/W may be removed for ease of construction. All fences shall be reset/replaced in a condition at least equivalent to the existing fence prior to removal. Contractor shall notify and coordinate with private fence owner in advance before fence removal.

**54. Erosion Control.** All existing and proposed erosion control measures including silt fencing, erosion control mat, straw bales, inlet barriers, and/or construction entrances shall be maintained throughout construction by the Contractor and until project is accepted by the City of Wichita. The on-site engineer shall complete weekly reports on the status of erosion control measures. The Contractor Shall be required to comply with maintenance and/or replacement of erosion control measures as determined by the on-site engineer until project is accepted by City of Wichita. Maintenance and/or replacement for erosion control measures to be paid for by Lump Sum bid item Maintain Existing BMP's.

**55. Disturbed Areas.** All areas disturbed during construction that will not be under proposed pavement shall be restored to match existing conditions per City specifications.

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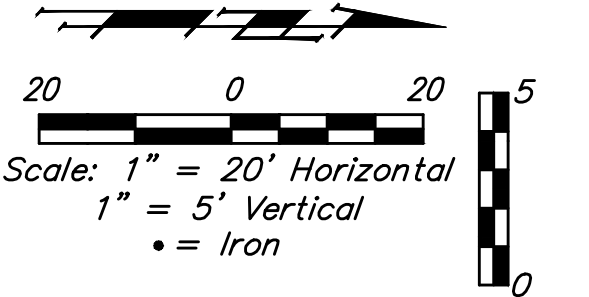
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LANCASTER ADD.

BOYCE AND TAYLORS ADD.



**BENCHMARKS**

BM #1:  
Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232. E Murdock Elev. = 1351.89 (NAVD88)

BM #2:  
Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave. Elev. = 1350.88 (NAVD88)

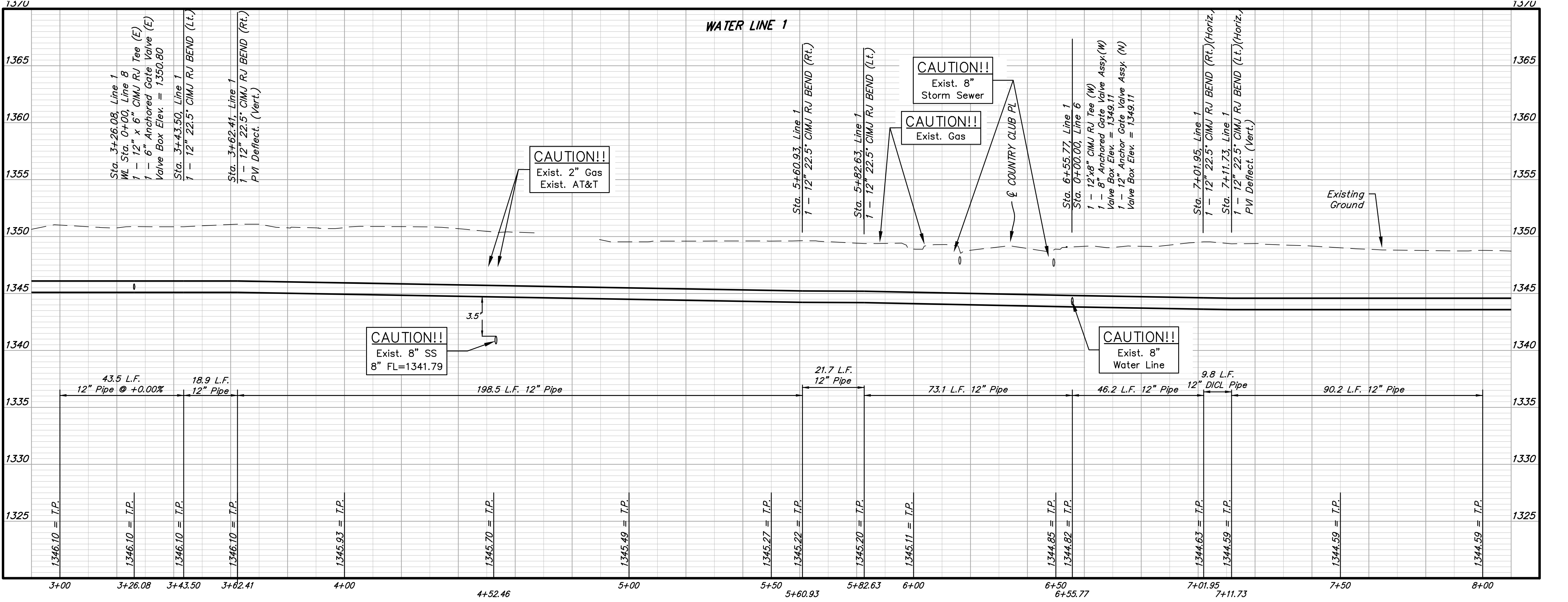
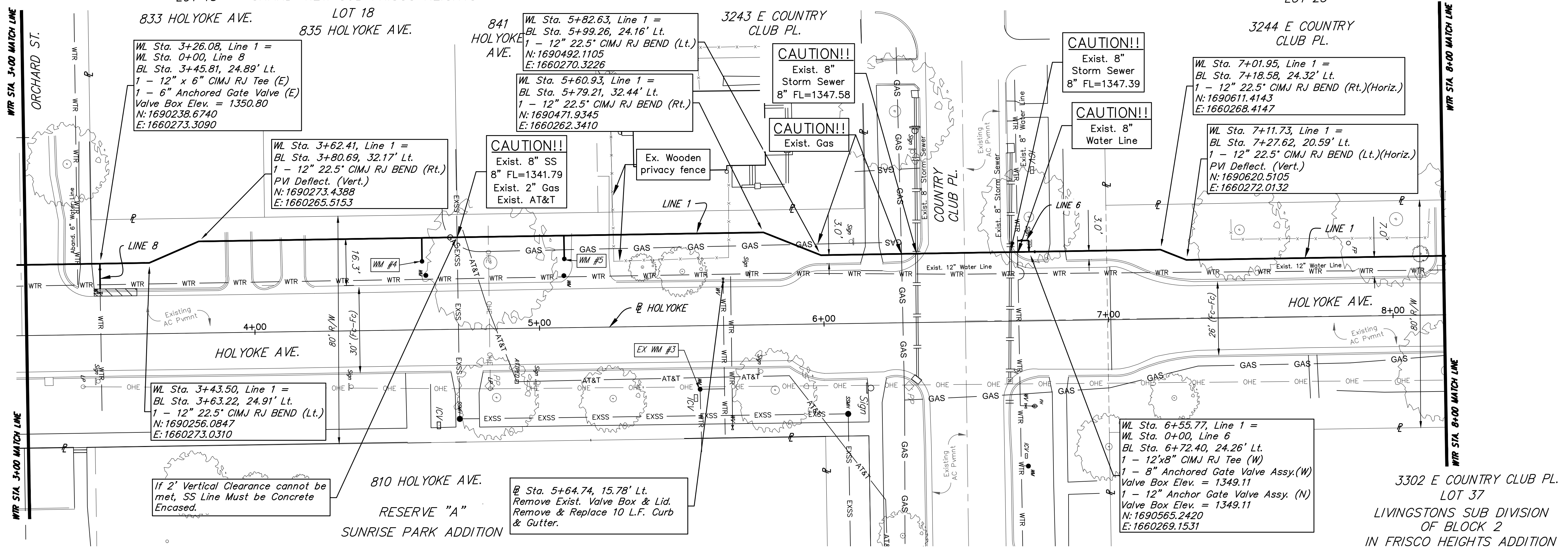
**NOTES:**  
Contractor to verify depth and location of existing utilities.

See "Water Meter Location" Table (Sheet 6) for Water Meter work to be performed.

Any P.C. Concrete Driveway or Street Pavement disturbed or damaged during Construction Shall be replaced. This removal and replacement work shall be considered SUBSIDIARY to "Site Restoration" Pay Item.

Contractor shall install Sand Backfill (Flushed and Vibrated), per City Specifications, at locations where a water line open cut trench crosses Sidewalk, Curb/Gutter, or Street Pavement.

SEE CONSTRUCTION SEQUENCE FOR WATER LINES (See Sheet 6)





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HOLYOKE AVE  
WATER REPLACEMENT

**WATER  
LINE 1  
PLAN & PROFILE**

WATER LINE  
IMPROVEMENTS

PROJECT NUMBER:  
22-10-E347

DESIGN: NBW DRAWN: AJV

DATE: October 30, 2023

SHEET OF  
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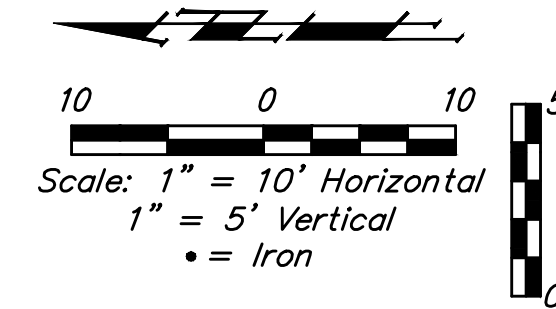


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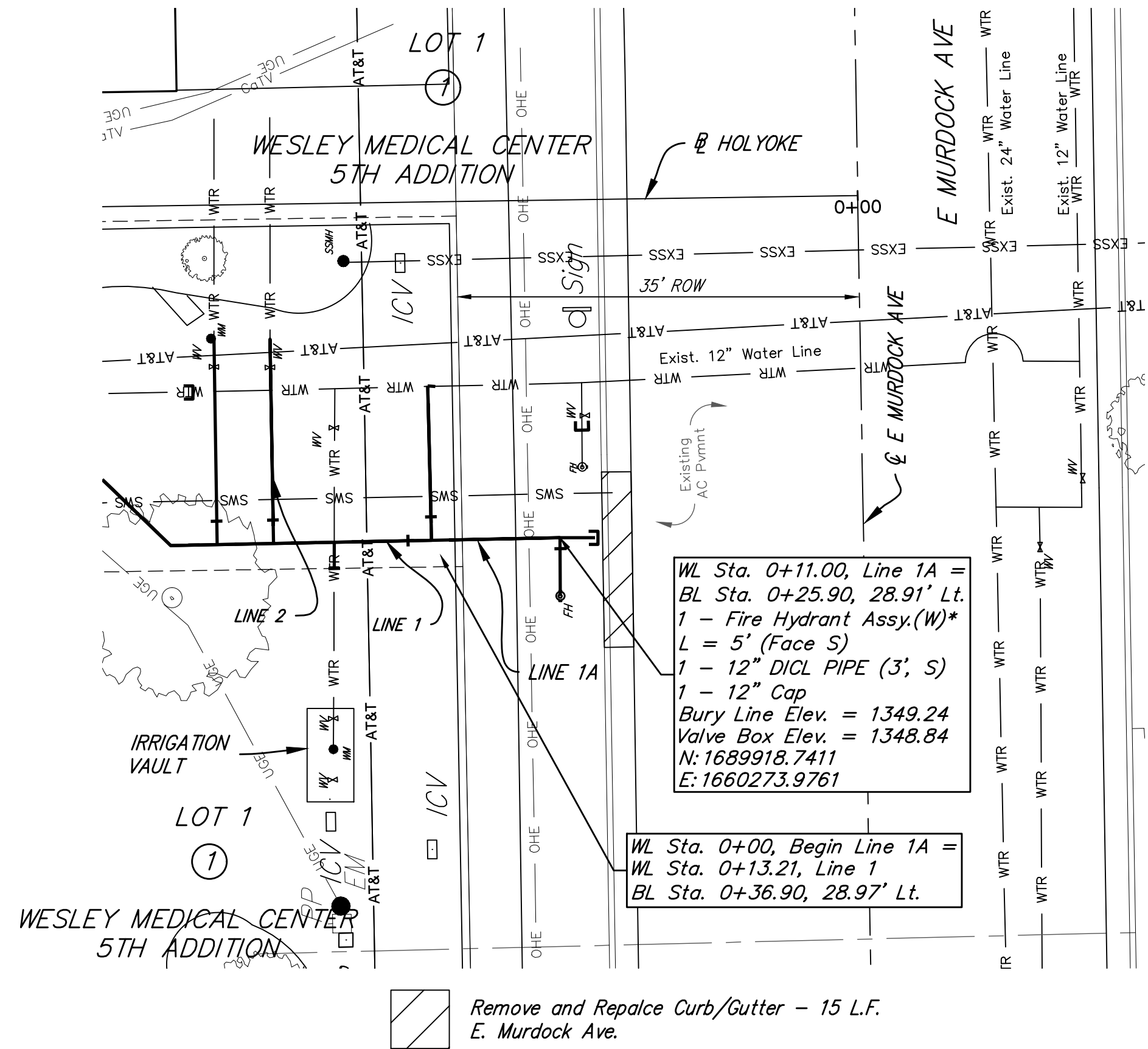
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\* Fire Hydrant Anchored Tee (12" x 6") shall be Restrained on both sides (N) & (S).



WL Sta. 0+11.00, Line 1A =  
BL Sta. 0+25.90, 28.91' Lt.  
1 - Fire Hydrant Assy.(W)\*  
L = 5' (Face S)  
1 - 12" DI CL PIPE (3', S)  
1 - 12" Cap  
Bury Line Elev. = 1349.24  
Valve Box Elev. = 1348.84  
N: 1689918.7411  
E: 1660273.9761

WL Sta. 0+00, Begin Line 1A =  
WL Sta. 0+13.21, Line 1  
BL Sta. 0+36.90, 28.97' Lt.

Remove and Replace Curb/Gutter - 15 L.F. E. Murdock Ave.

WATER METER NUMBER	WATER METER LOCATION						SHORT OR LONG	FOR INFO ONLY APPROX. PROP. LENGTH OF PIPE	PLAN METER CAN TOP ELEVATION	AS-BUILT METER CAN TOP ELEVATION	REMARKS
	LOT NO.	BLOCK NO.	PLAT	LINE NO.	STREET ADDRESS	LINE 1 PROP. STATION/DIRECTION					
EX. 1	1	1	WESLEY MEDICAL CENTER 5TH ADD.	1	3222 E. MURDOCK	---	0+55.52/11.4' Lt.	---	1352.40	---	Exist Water Meter Remains, Do Not Disturb
EX. 2	1	1	WESLEY MEDICAL CENTER 5TH ADD.	1	3232 E. MURDOCK	---	1+14/37' Lt.	---	1352.50	---	Exist Water Meter Remains, Do Not Disturb
EX. 3		RES. A	SUNRISE PARK ADD.	---	810 N HOLYOKE	---	5+56.12/22' Rt.	ABANDON	---	---	Remove. See General Note #39
4	18		GRAND FRISCO SUB HEIGHTS	1	835 N HOLYOKE	4+41/Rt.	4+60.33/19' Lt.	SHORT	5'	1350.30	
5	17		GRAND FRISCO SUB HEIGHTS	1	841 N HOLYOKE	4+91/Rt.	5+08.82/18' Lt.	SHORT	5'	1350.20	
6	26-27		BOYCE AND TAYLORS ADD.	1	917 N HOLYOKE	8+80/Lt.	8+93.01/17' Lt.	SHORT	5'	1350.80	
7	1-2		HYDE AND ELLIS ADD.	1	922 N HOLYOKE	8+86/Rt.	8+99.91/15' Rt.	LONG	36'	1350.80	
8	28-29		BOYCE AND TAYLORS ADD.	1	923 N HOLYOKE	9+31/Lt.	9+44.96/20' Lt.	SHORT	5'	1350.80	
9	3-4		HYDE AND ELLIS ADD.	1	926 N HOLYOKE	9+58/Rt.	9+71.41/18' Rt.	LONG	39'	1350.80	
EX. 10	4		BOYCE AND TAYLORS ADD.	---	929 N HOLYOKE	---	9+82.41/16' Lt.	ABANDON	---	---	Remove. See General Note #39
11	5-6		HYDE AND ELLIS ADD.	1	930 N HOLYOKE	9+89/Rt.	10+02.19/18' Rt.	LONG	39'	1350.80	
12	3		BUDETTI ADD.	1	937 N HOLYOKE	10+13/Lt.	10+30.47/16' Lt.	SHORT	5'	1350.80	
13	7-8		HYDE AND ELLIS ADD.	1	936 N HOLYOKE	10+57/Rt.	10+70.29/19' Rt.	LONG	39'	1350.80	
EX. 14	3		BUDETTI ADD.	---	937 N HOLYOKE	---	10+84.59/17' Lt.	ABANDON	---	---	Remove. See General Note #39
15	9-10		HYDE AND ELLIS ADD.	1	940 N HOLYOKE	10+85/Rt.	10+98.58/19' Rt.	LONG	39'	1350.80	
16	11-12		HYDE AND ELLIS ADD.	1	946 N HOLYOKE	11+47/Rt.	11+60.22/19' Rt.	LONG	39'	1350.80	
17	13-14		HYDE AND ELLIS ADD.	1	950 N HOLYOKE	12+06/Rt.	12+24.22/19' Rt.	LONG	39'	1350.80	
18	14-15		HYDE AND ELLIS ADD.	1	952 N HOLYOKE	12+11/Rt.	12+24.22/19' Rt.	LONG	39'	1350.80	

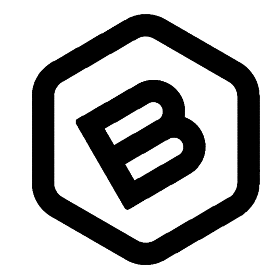
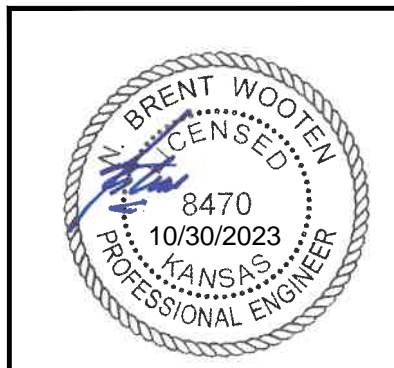
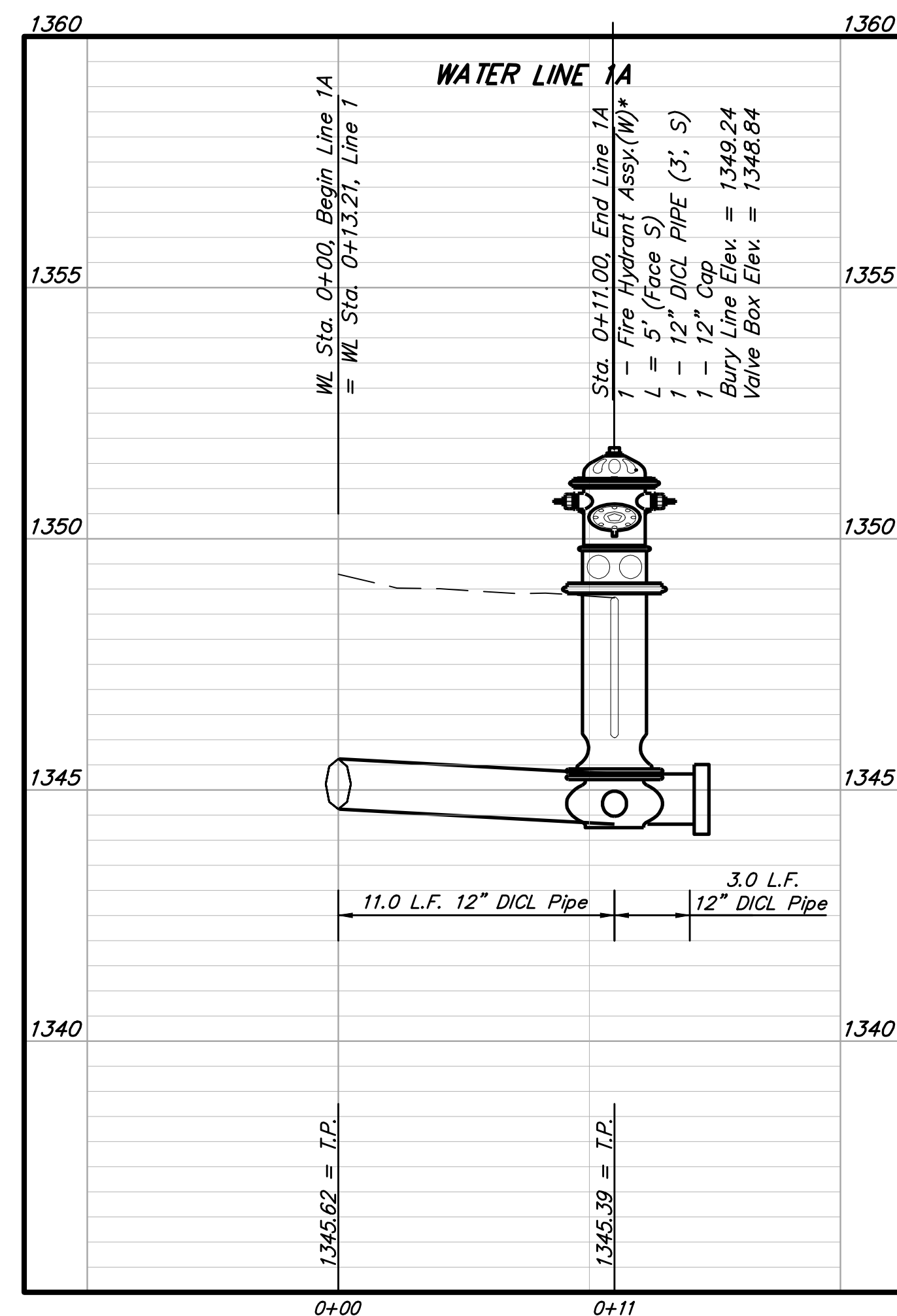
NOTES:  
For Residential Short and Long Water Services, Remove existing Water Meter, Meter Can and Setter. Install New Water Meter furnished by City of Wichita. Reuse existing ERT. Contractor shall provide new Tapping Saddle, 1" Corp Stop, 21" PVC Meter Can, 1" Meter Setter, Ring, Lid, 1" ADS Polyflex Potable Water Service Tubing (CTS) and necessary fittings. Connect to Owner's House Service Line. This work shall be paid for as Bid Items "Service Line, Long 1" and Service Line, Short 1".

For Water Meter locations to be Abandoned, Remove existing Ring, Lid, Setter and Backfill.

2-foot minimum vertical separation between water service lines and all sanitary sewer lines shall be maintained at crossings. 10-foot horizontal separation between water service lines and all sanitary sewer lines and manholes shall be maintained. Distances are to be measured from edge-to-edge, at the closest point.

**CONSTRUCTION SEQUENCE FOR WATER LINES**

- Install LINE 1 from about WL Sta. 0+10 to WL Sta. 12+73(END).
  - Install LINE 1A, LINE 5 and LINE 6.
- After LINE 1, LINE 1A, LINE 5 & LINE 6 Passes Pressure and Water Quality Tests:
- Install New Water Services from LINE 1 for Water Meter #'s 4 thru 9, 11 thru 13 and 15 thru 18.
  - Install LINE 4, then LINE 7 and then LINE 3 (See Sheet 7 & 9)
  - Shut down Existing 12" Water Main from near E. 9<sup>th</sup> St. N. to Murdock. To facilitate reconnecting new water services, remove existing 12" cast iron water pipe, service valves, valve boxes and lids, as necessary, from BL Sta. 0+37 to Sta. 0+57-16' Lt. Install 1-12" CIMJ RJ Cap (N) to existing 12" CI Water pipe near BL Sta. 0+57-16' Lt. From LINE 1, Reconnect Water Services for the following locations:
    - LINE 8. Connect to existing 6" water line (Fire & Domestic) to Wesley Rehabilitation Hospital.
    - 2" Domestic Line. Connect to existing Domestic Water Meter Setter for 3232 E. Murdock Ave. (Ex. WM #2) near WL Sta. 0+31-Rt.
    - LINE 2. Connect to existing 6" Fire Service Line to 3232 E. Murdock Ave.
    - 2" Irrigation Line. Connect to existing 2" Irrigation Line near WL Sta. 0+21-Lt.
  - Install remaining LINE 1 from WL Sta. 0+00 to 12" Gate Valve (E) near WL Sta. 0+10.
  - Cut & Cap existing 12" CI Water pipe near BL Sta. 12+85-15' Lt. at E. 9<sup>th</sup> St. N. (See Sheet 5).
  - Cut & Cap existing 8" PVC Water pipe near BL Sta. 2+88.5-32' Lt. at Orchard St. (See Sheet 3).
  - Abandon LINE 7 by cutting and capping new 4" DI CL Pipe at two (2) locations on LINE 7. (See Sheet 9).



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HOLYOKE AVE  
WATER REPLACEMENT

**WATER LINE 1A  
PLAN & PROFILE**

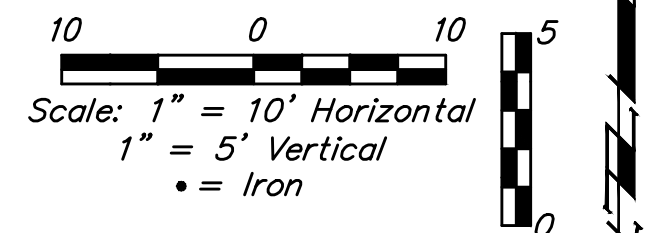
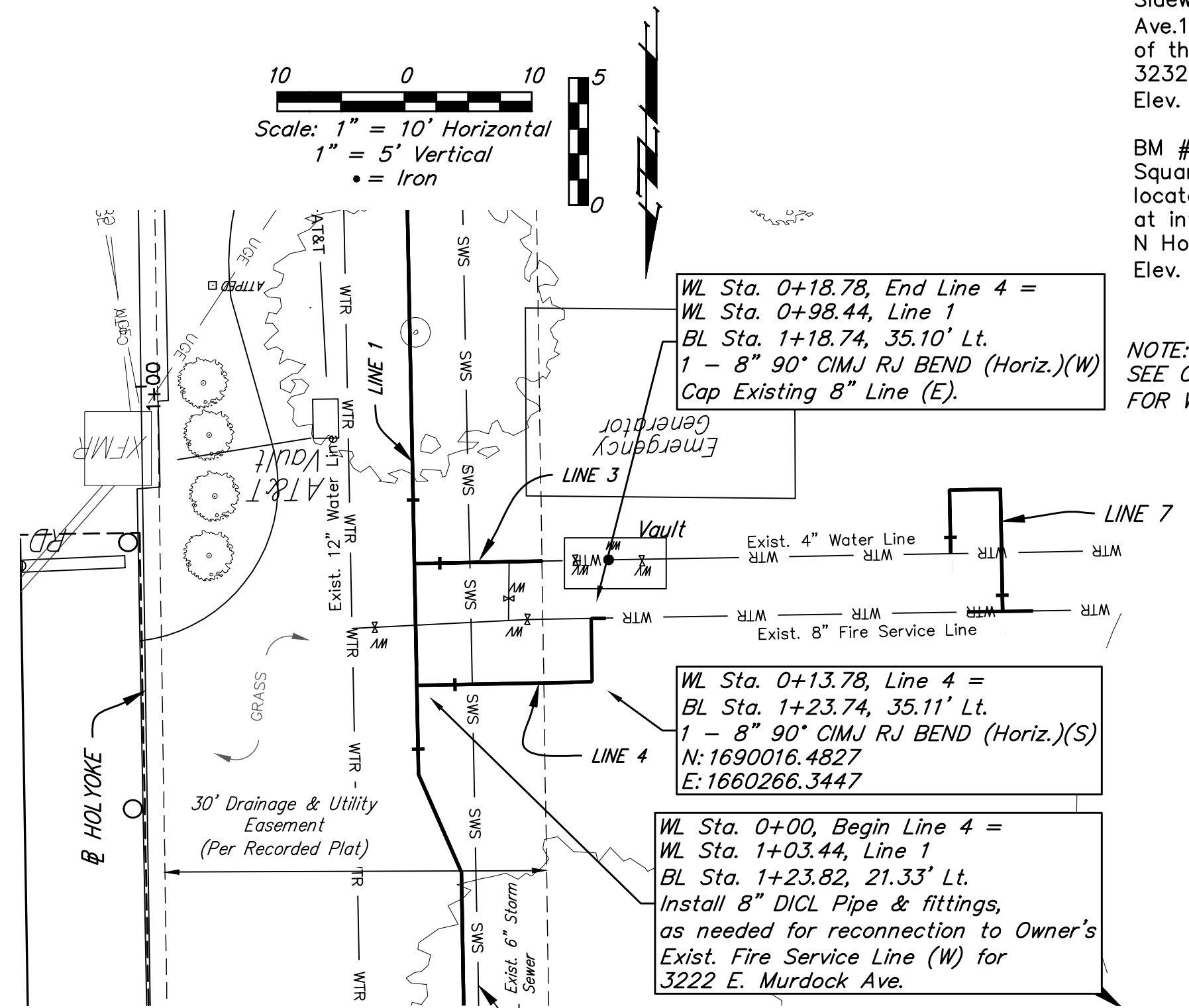
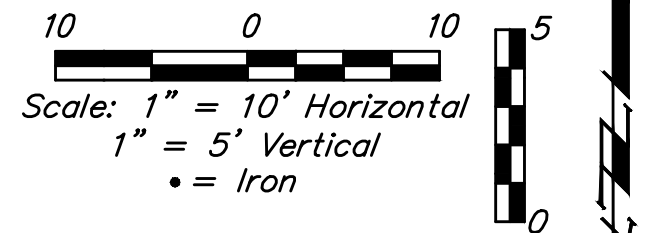
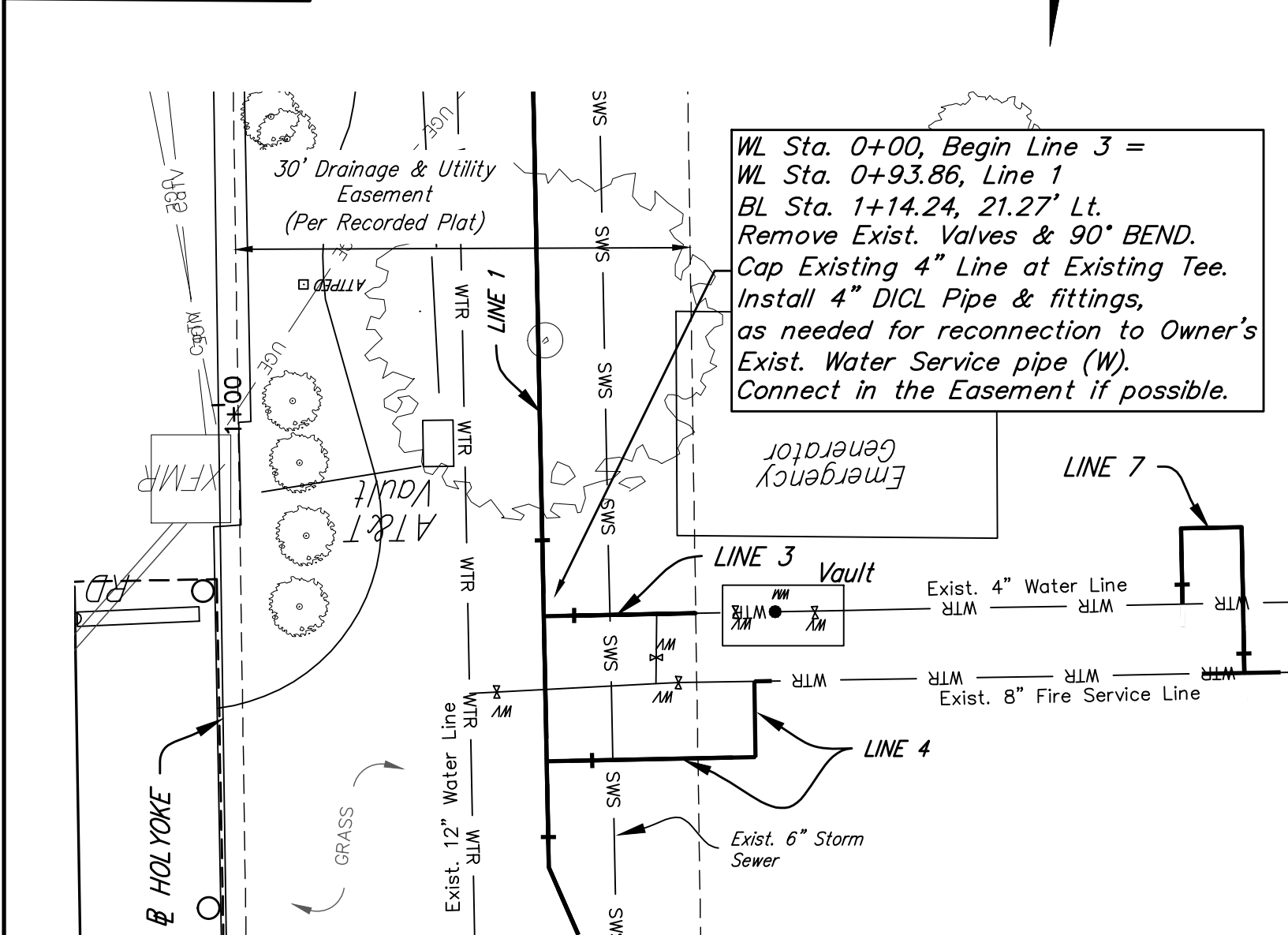
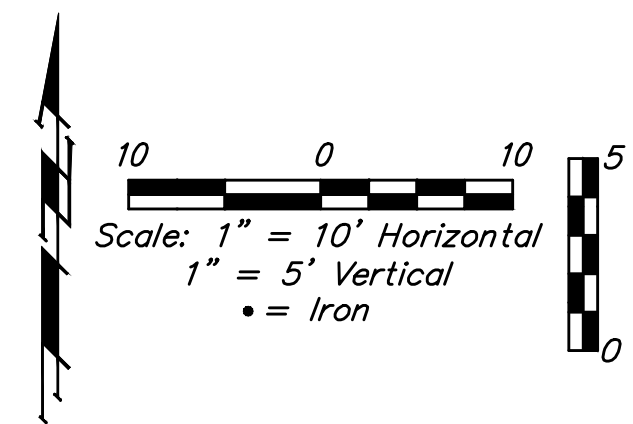
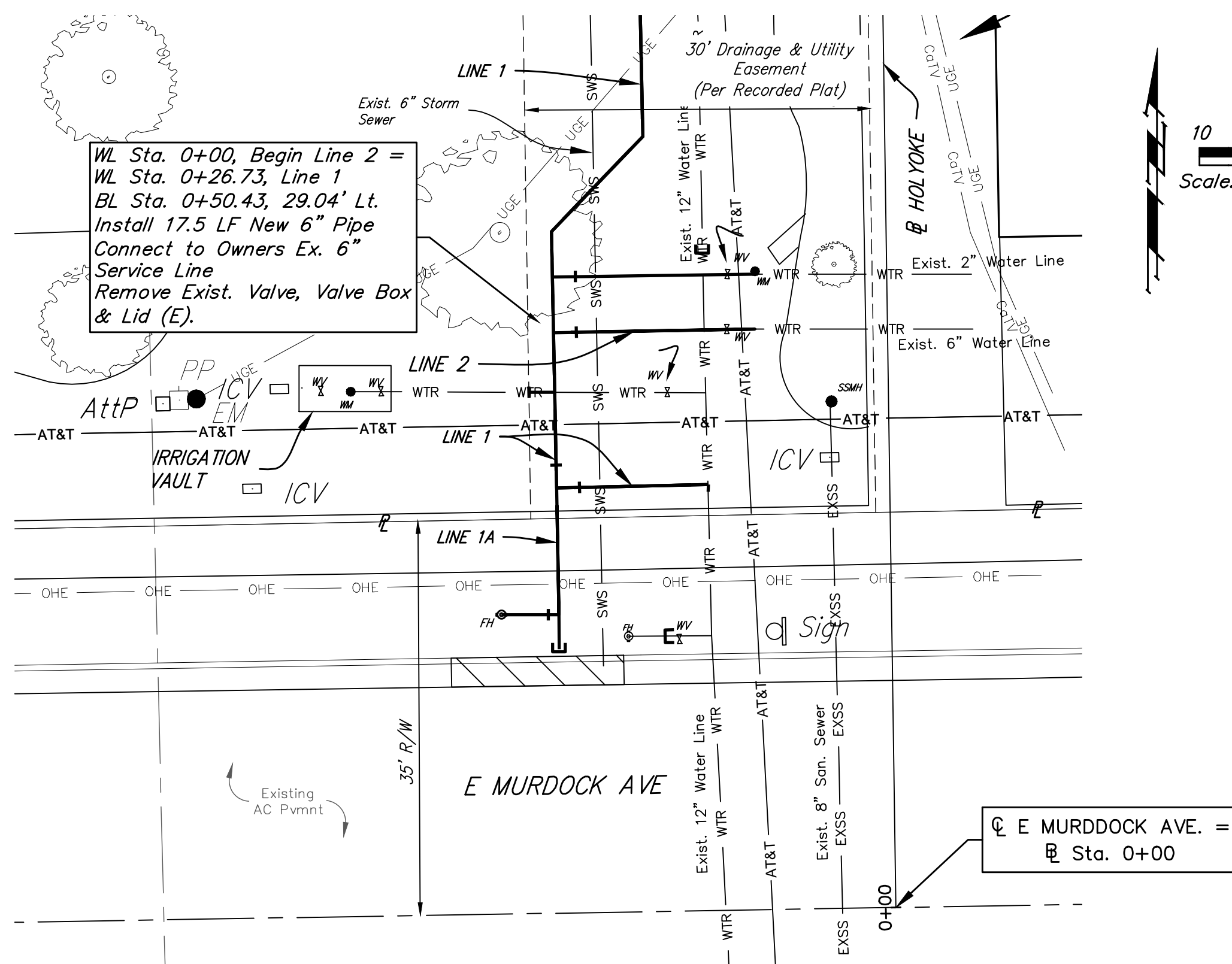
WATER LINE IMPROVEMENTS

PROJECT NUMBER:  
22-10-E347

DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023

SHEET OF  
**6 21**

File: E:\Projects\Holyoke Ave - Waterline Replacement\_22-10-E347\Engineering\Phase 1\PPW\PPW.dwg



**BENCHMARKS**

BM #1:  
 Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232. E Murdock  
 Elev. = 1351.89 (NAVD88)

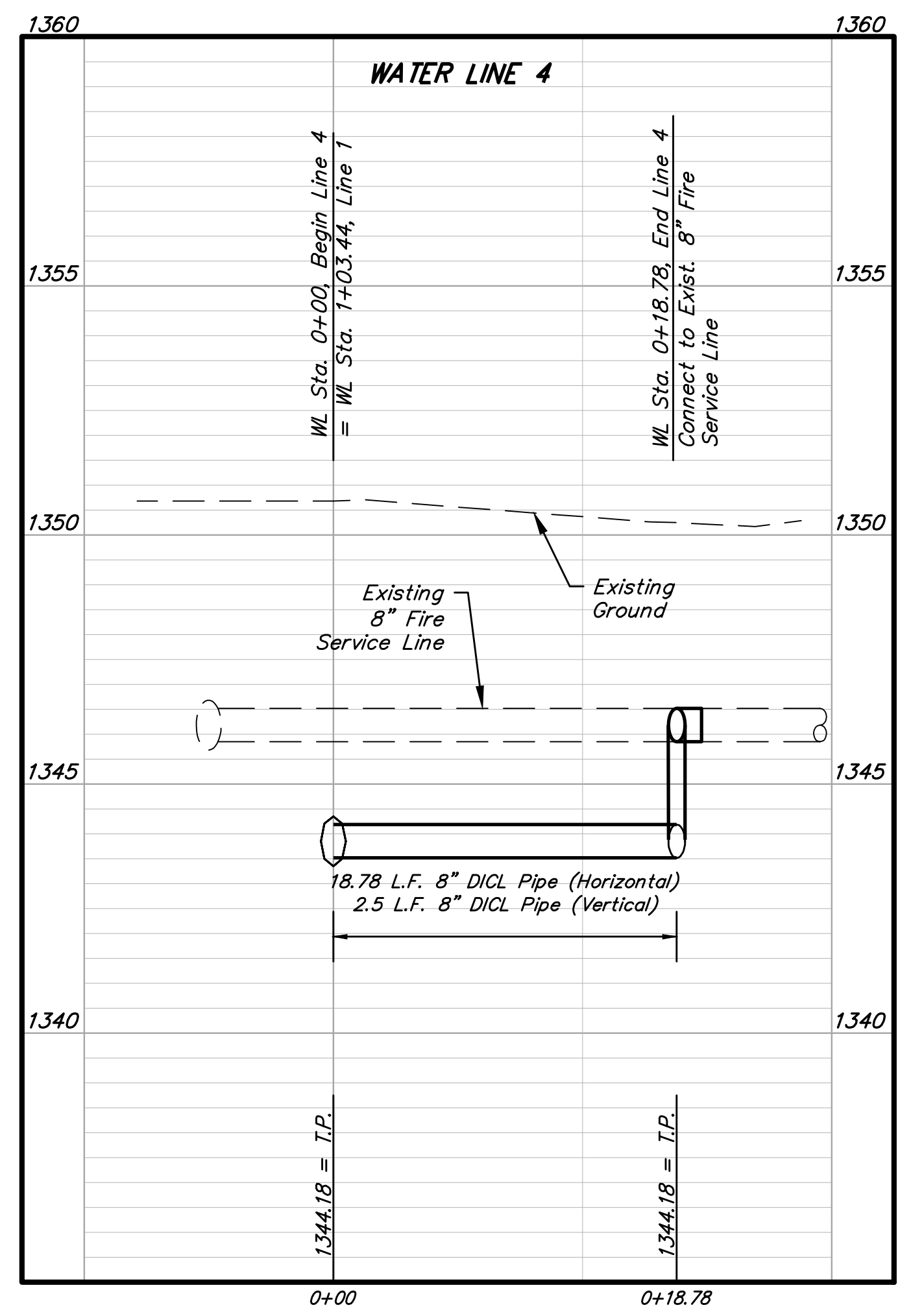
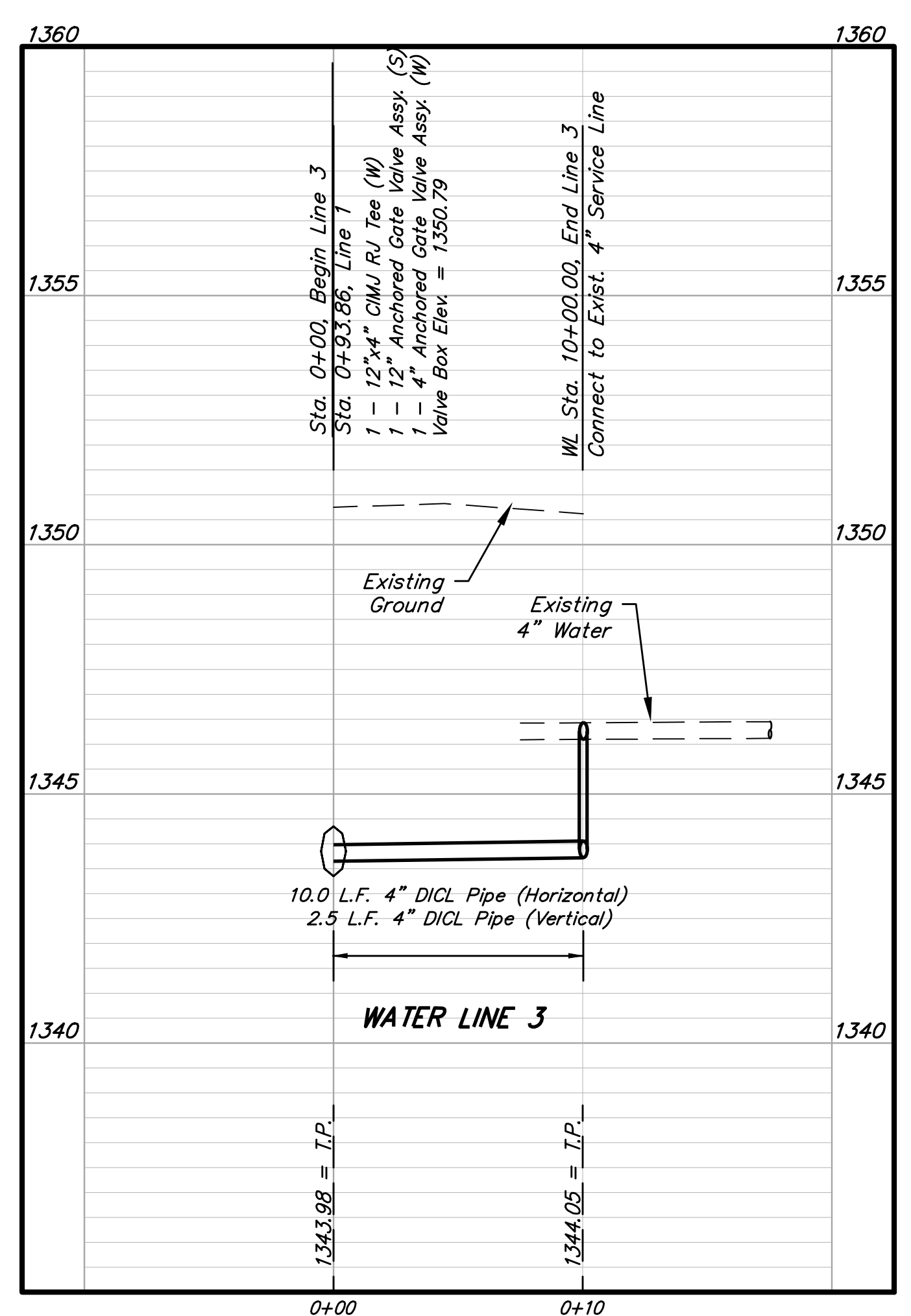
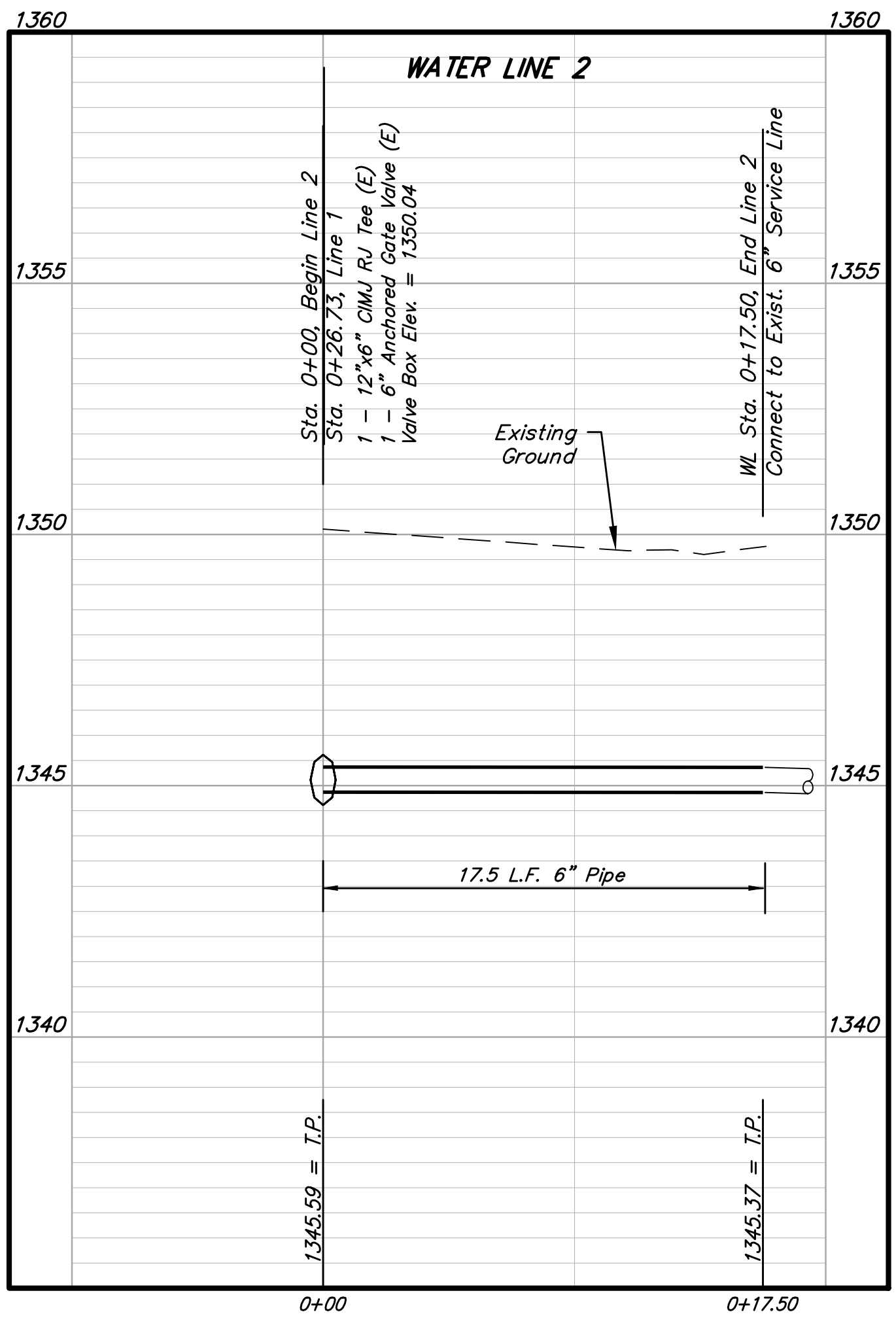
BM #2:  
 Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave.  
 Elev. = 1350.88 (NAVD88)

NOTE:  
 SEE CONSTRUCTION SEQUENCE FOR WATER LINES (See Sheet 6).

NOTE:  
 SEE CONSTRUCTION SEQUENCE FOR WATER LINE 2 (See Sheet 6).

NOTE:  
 INSTALLATION SEQUENCE (LINE 4, THEN LINE 7, THEN LINE 3) (See Sheet 9).

NOTE:  
 INSTALLATION SEQUENCE (LINE 4, THEN LINE 7, THEN LINE 3) (See Sheet 9).



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HOLYOKE AVE  
 WATER REPLACEMENT

**WATER LINES 2, 3 & 4  
 PLAN & PROFILE**

WATER LINE IMPROVEMENTS

PROJECT NUMBER:  
 22-10-E347

DESIGN: NBW DRAWN: AJV  
 DATE: October 30, 2023

SHEET OF  
 7 21

FILE: E:\Projects\Holyoke Ave - Waterline Replacement\_22-10-E347\Engineering\Phase 1\PPW\PPW.dwg

# BENCHMARKS

BM #1:  
Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232. E Murdock  
Elev. = 1351.89 (NAVD88)

BM #2:  
Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave.  
Elev. = 1350.88 (NAVD88)

**NOTE:**

Contractor shall install Sand Backfill (Flushed and Vibrated), per City Specifications, at locations where a water line open cut trench crosses Sidewalk, Curb/Gutter, or Street Pavement.

X City of Wichita has approved this Tree Removal, at Contractor's option, prior to New Water Line installation.

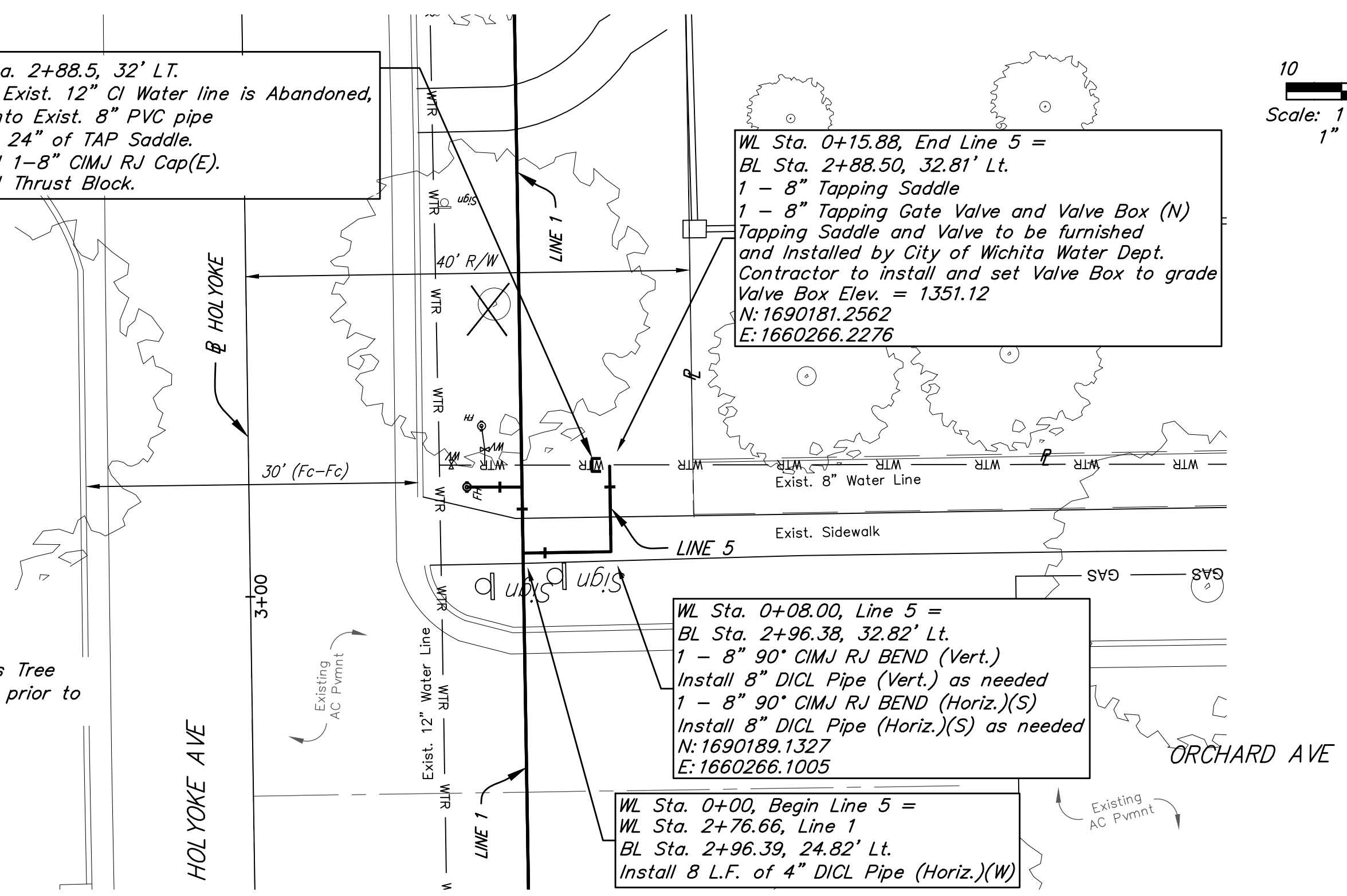
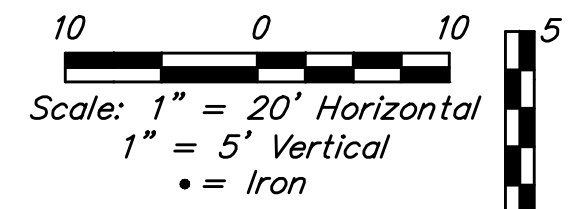
**NOTE:**  
SEE CONSTRUCTION SEQUENCE FOR WATER LINES (See Sheet 6).

BL Sta. 2+88.5, 32' Lt.  
After Exist. 12" CI Water line is Abandoned, Cut into Exist. 8" PVC pipe within 24" of TAP Saddle. Install 1-8" CIMJ RJ Cap(E). Install Thrust Block.

WL Sta. 0+15.88, End Line 5 =  
BL Sta. 2+88.50, 32.81' Lt.  
1 - 8" Tapping Saddle  
1 - 8" Tapping Gate Valve and Valve Box (N)  
Tapping Saddle and Valve to be furnished and Installed by City of Wichita Water Dept.  
Contractor to install and set Valve Box to grade  
Valve Box Elev. = 1351.12  
N: 1690181.2562  
E: 1660266.2276

WL Sta. 0+08.00, Line 5 =  
BL Sta. 2+96.38, 32.82' Lt.  
1 - 8" 90° CIMJ RJ BEND (Vert.)  
Install 8" DICL Pipe (Vert.) as needed  
1 - 8" 90° CIMJ RJ BEND (Horiz.)(S)  
Install 8" DICL Pipe (Horiz.)(S) as needed  
N: 1690189.1327  
E: 1660266.1005

WL Sta. 0+00, Begin Line 5 =  
WL Sta. 2+76.66, Line 1  
BL Sta. 2+96.39, 24.82' Lt.  
Install 8 L.F. of 4" DICL Pipe (Horiz.)(W)



COUNTRY CLUB PL

HOLYOKE AVE

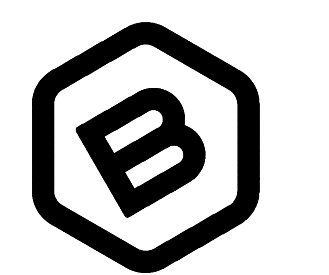
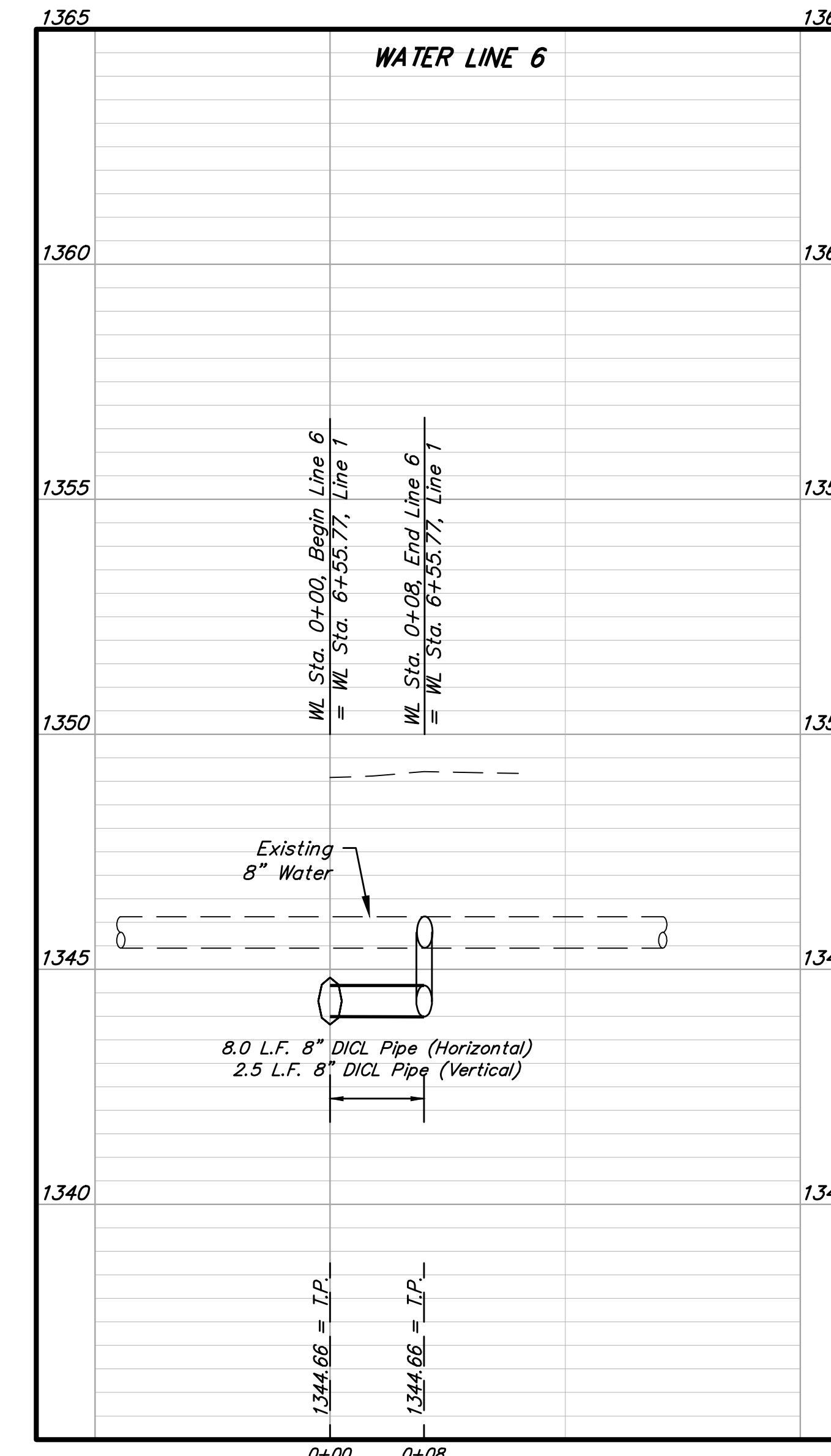
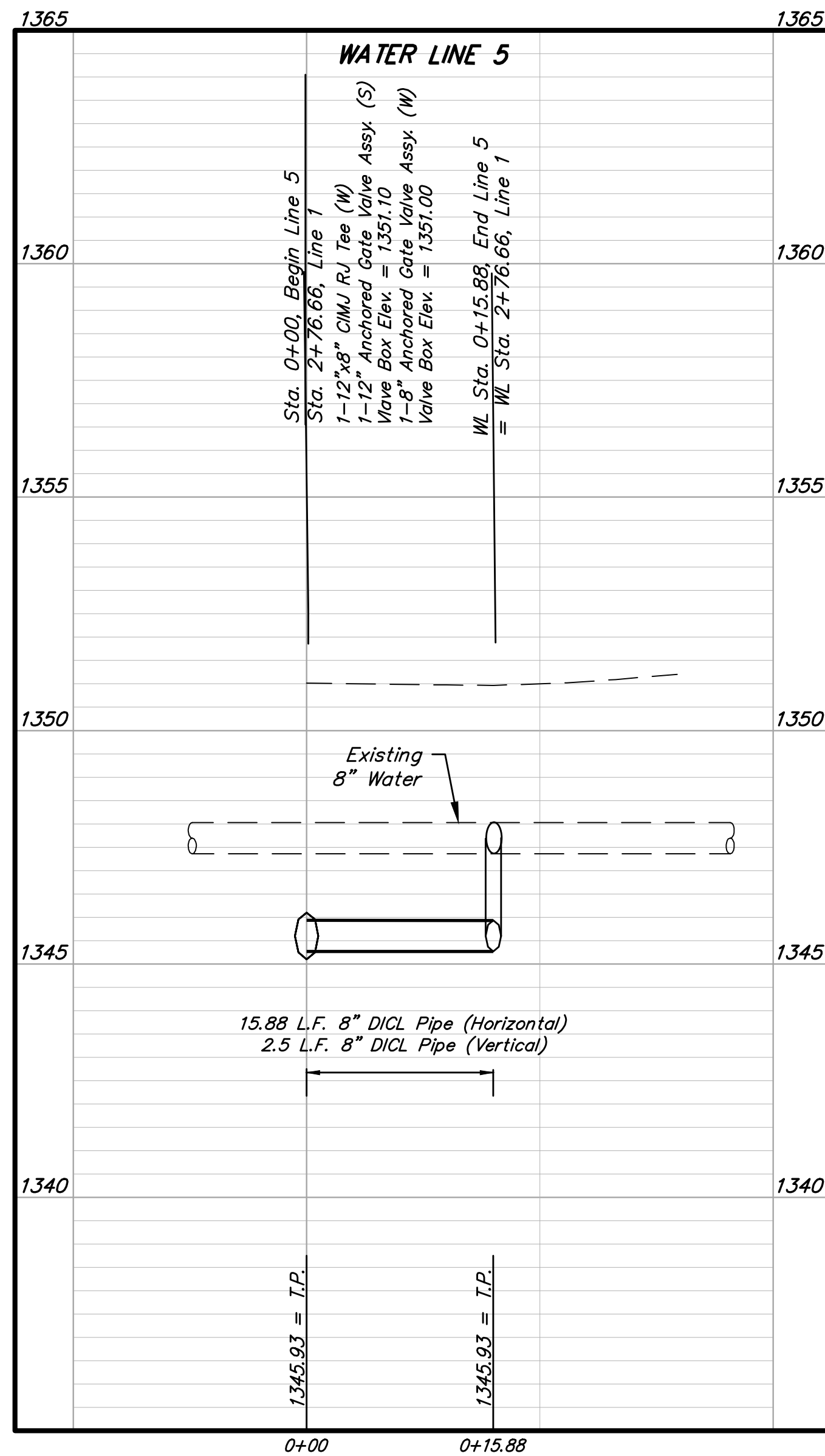
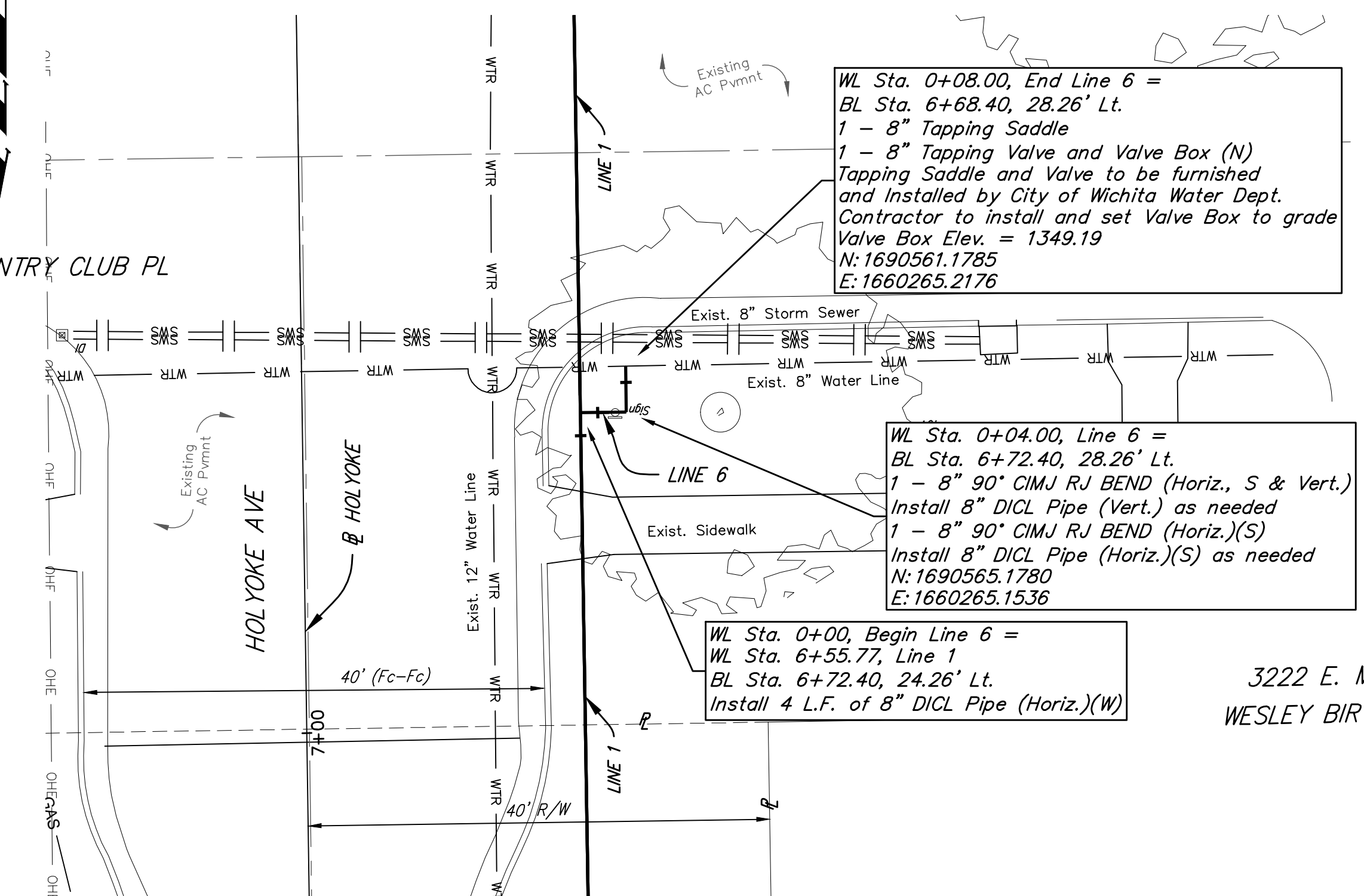
ORCHARD AVE

WL Sta. 0+08.00, End Line 6 =  
BL Sta. 6+68.40, 28.26' Lt.  
1 - 8" Tapping Saddle  
1 - 8" Tapping Valve and Valve Box (N)  
Tapping Saddle and Valve to be furnished and Installed by City of Wichita Water Dept.  
Contractor to install and set Valve Box to grade  
Valve Box Elev. = 1349.19  
N: 1690561.1785  
E: 1660265.2176

WL Sta. 0+04.00, Line 6 =  
BL Sta. 6+72.40, 28.26' Lt.  
1 - 8" 90° CIMJ RJ BEND (Horiz., S & Vert.)  
Install 8" DICL Pipe (Vert.) as needed  
1 - 8" 90° CIMJ RJ BEND (Horiz.)(S)  
Install 8" DICL Pipe (Horiz.)(S) as needed  
N: 1690565.1780  
E: 1660265.1536

WL Sta. 0+00, Begin Line 6 =  
WL Sta. 6+55.77, Line 1  
BL Sta. 6+72.40, 24.26' Lt.  
Install 4 L.F. of 8" DICL Pipe (Horiz.)(W)

3222 E. MURDOCK AVE  
WESLEY BIRTHCARE CENTER



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HOLYOKE AVE  
WATER REPLACEMENT  
**WATER LINES 5 & 6  
PLAN & PROFILE**

WATER LINE IMPROVEMENTS  
PROJECT NUMBER:  
22-10-E347  
DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023  
SHEET 8 OF 21

File: E:\Projects\Holyoke Ave - Waterline Replacement\_22-10-E347\Engineering\Phase 1\PPWP\PPWP.dwg

# BENCHMARKS

BM #1:  
Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232, E. Murdock  
Elev. = 1351.89 (NAVD88)

BM #2:  
Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave.  
Elev. = 1350.88 (NAVD88)

WL Sta. 0+07, Line 7 =  
BL Sta. 1+09, 65.4' Lt.  
After LINES 1, 3 & 4 are installed and Active, and existing 12" CI Water Pipe is Abandoned, Abandon LINE 7.  
Cut new 4" DICL Water Pipe.  
Install 2-4" CIMJ RT Caps (E and W).  
Install Thrust Blocks.

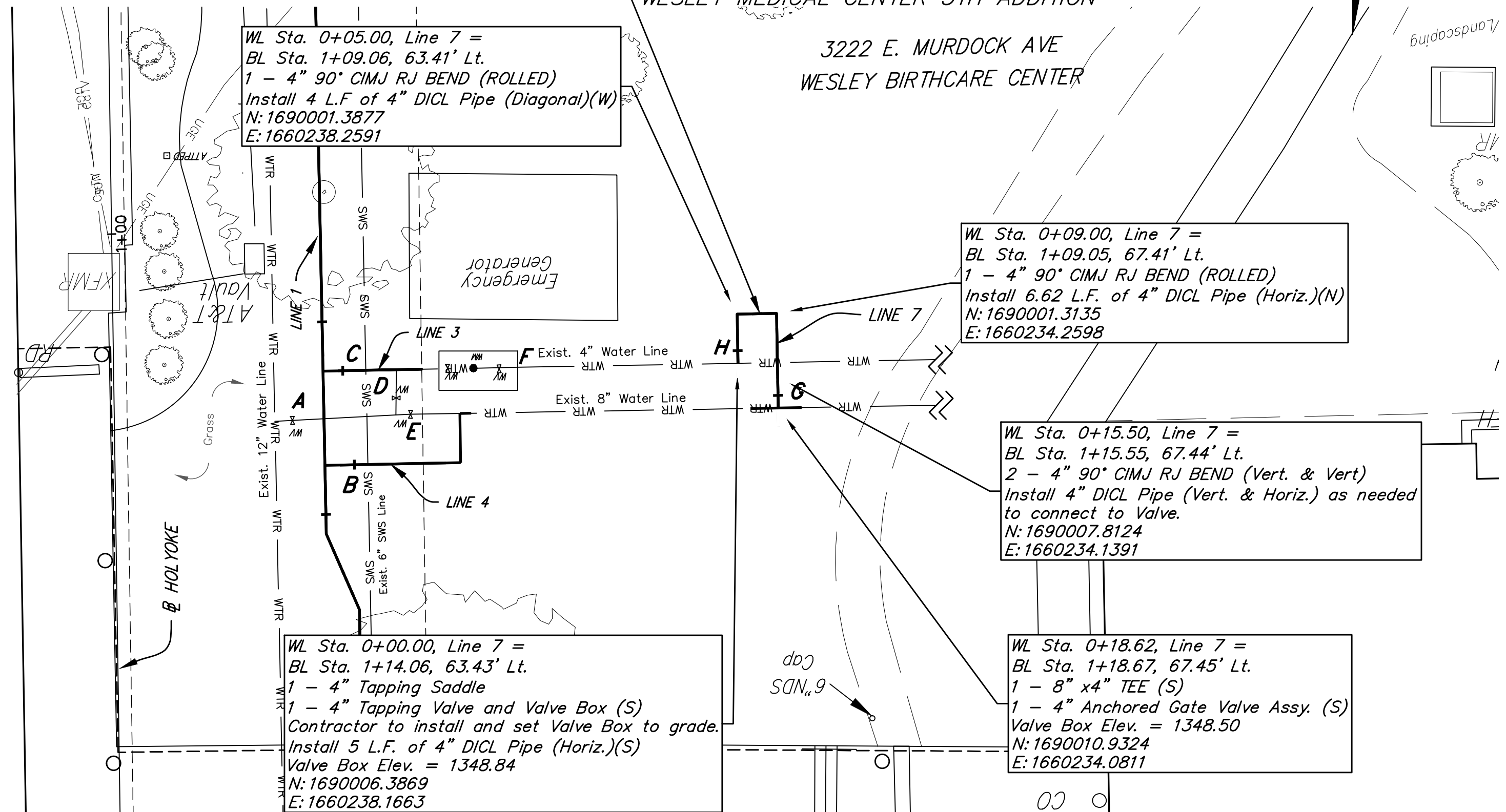
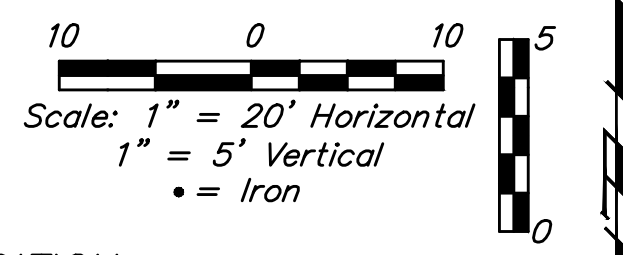
WL Sta. 0+05.00, Line 7 =  
BL Sta. 1+09.06, 63.41' Lt.  
1 - 4" 90° CIMJ RJ BEND (ROLLED)  
Install 4 L.F. of 4" DICL Pipe (Diagonal)(W)  
N: 1690001.3877  
E: 1660238.2591

WL Sta. 0+09.00, Line 7 =  
BL Sta. 1+09.05, 67.41' Lt.  
1 - 4" 90° CIMJ RJ BEND (ROLLED)  
Install 6.62 L.F. of 4" DICL Pipe (Horiz.)(N)  
N: 1690001.3135  
E: 1660234.2598

WL Sta. 0+15.50, Line 7 =  
BL Sta. 1+15.55, 67.44' Lt.  
2 - 4" 90° CIMJ RJ BEND (Vert. & Vert)  
Install 4" DICL Pipe (Vert. & Horiz.) as needed to connect to Valve.  
N: 1690007.8124  
E: 1660234.1391

WL Sta. 0+00.00, Line 7 =  
BL Sta. 1+14.06, 63.43' Lt.  
1 - 4" Tapping Saddle  
1 - 4" Tapping Valve and Valve Box (S)  
Contractor to install and set Valve Box to grade.  
Install 5 L.F. of 4" DICL Pipe (Horiz.)(S)  
Valve Box Elev. = 1348.84  
N: 1690006.3869  
E: 1660238.1663

WL Sta. 0+18.62, Line 7 =  
BL Sta. 1+18.67, 67.45' Lt.  
1 - 8" x4" TEE (S)  
1 - 4" Anchored Gate Valve Assy. (S)  
Valve Box Elev. = 1348.50  
N: 1690010.9324  
E: 1660234.0811



### CONSTRUCTION SEQUENCE FOR INSTALLATION OF WATER LINES 4, 7 & 3, WHILE MAINTAINING 4" DOMESTIC WATER SERVICE LINE TO 3222 E. MURDOCK AVE.:

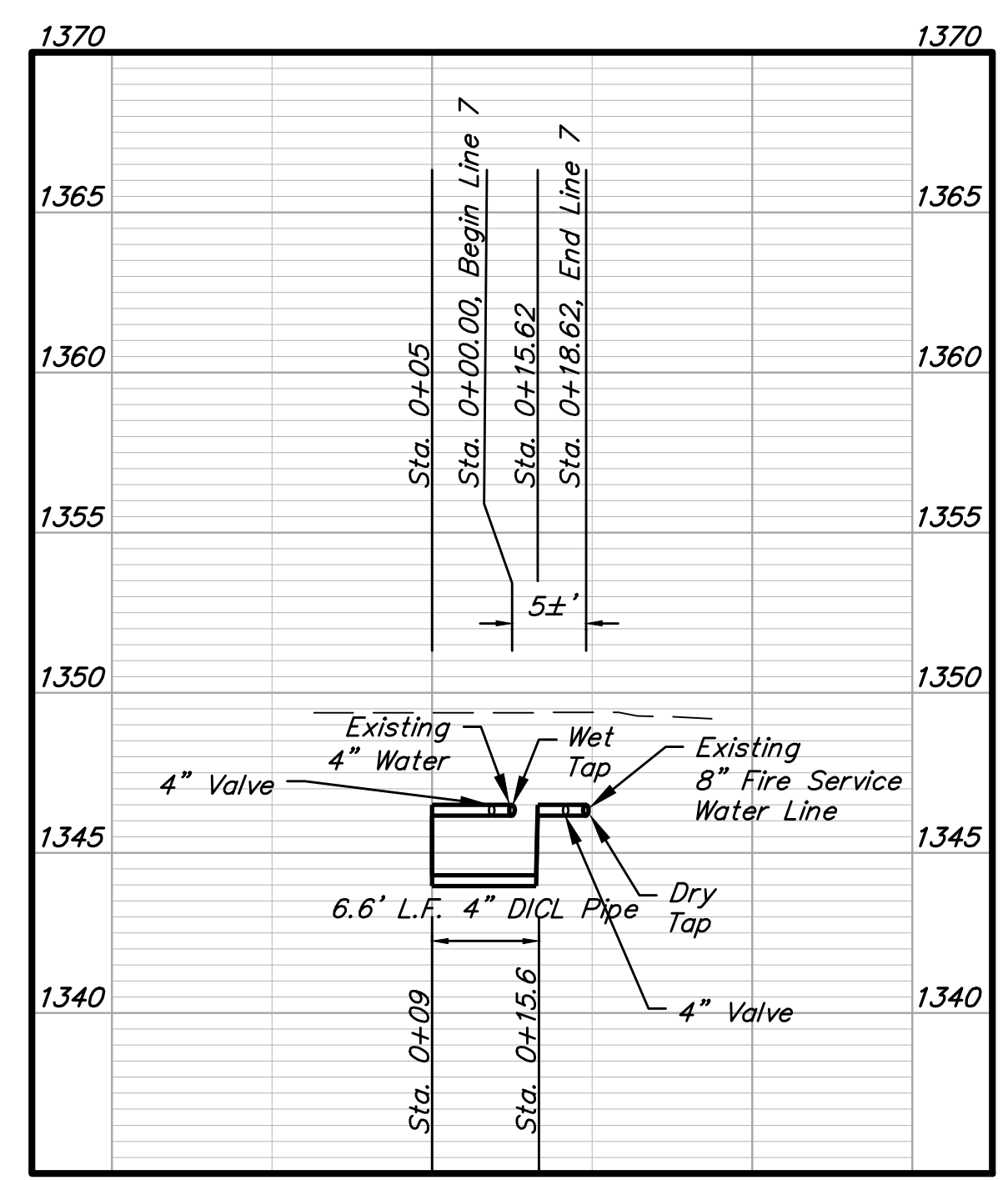
1. Install Water Line 1, 4" Valve (C) on Line 3 and 8" Valve (B) on Line 4. Obtain passing pressure and water quality tests for Water Line 1.
2. Water Line 4 Installation:  
Turn off 8" Fire Service Line by Closing Existing 8" Valve (E). Keep 8" Valve (B) Closed.  
Install Water Line 4 from Valve (B) to new 90° Bend at Existing 8" Fire Service Line.  
Open 8" Valve (B) for an active Fire Service Line.
3. Water Line 7 Installation:  
Wet TAP 4" Domestic Water Line. Close 4" TAP Valve (H).  
Close 8" Valve (B). Install Tee (8"x4") in Fire Service Line.  
Install remaining Water Line 7 items, including 4" Valve (G).  
Open 8" Valve (B) for an active Fire Service Line.
4. Water Line 3 Installation:  
Open 8" Valve (B), open 4" Valve (G) and open 4" Valve (H).  
Close Existing 8" Valve (A) and close Existing 4" Valve (F).  
Remove portions of old water lines and Existing Valves (D) & (E).  
Install Water Line 3 items.  
Open 4" Valves (C) & (F) along 4" Domestic Water Line.
5. Close 4" Valves (G) & (H).  
Remove Existing 8" Valve Box and Lid at Valve (A).

NOTE: Installation of Water Lines 3, 4 & 7 shall be made with clean, swabbed pipe and flushed upon completion of tie-ins. Contractor shall tap Line 7.

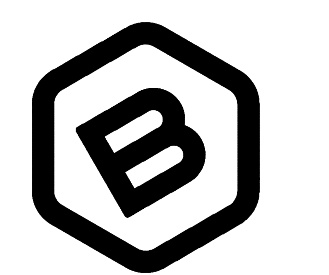
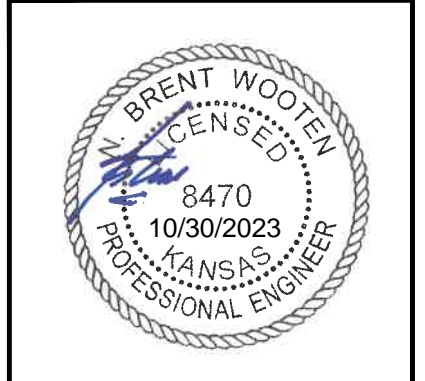
NOTE:  
SEE CONSTRUCTION SEQUENCE FOR WATER LINES (See Sheet 6).

NOTES:  
Installation Sequence (Line 4, then Line 7, then Line 3) (See Sheet 9).  
Utility Contractor Shall Tap 4" Domestic Water Line and Provide Tapping Saddle, 4" Gate Valve, Valve Box & Lid.

### LINE 7 LOOKING WEST



Pipe Lengths:  
5.0 L.F. 8" DICL Pipe (Horizontal)  
4.0 L.F. 8" DICL Pipe (Vertical)  
6.5 L.F. 8" DICL Pipe (Horizontal)  
2.5 L.F. 8" DICL Pipe (Vertical)  
3.12 L.F. 8" DICL Pipe (Horizontal)



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HOLYOKE AVE  
WATER REPLACEMENT  
**WATER LINE 7  
PLAN & PROFILE**

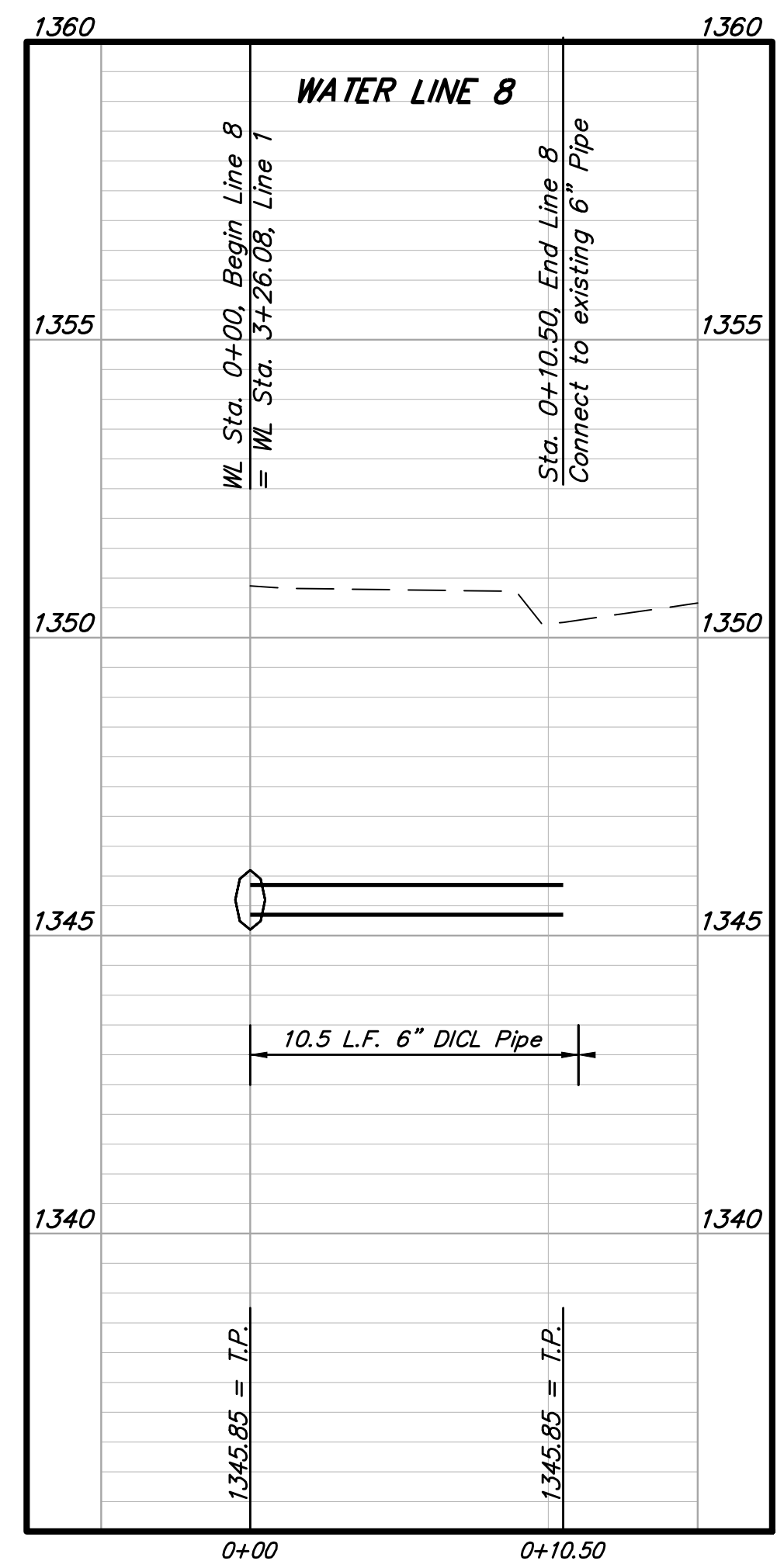
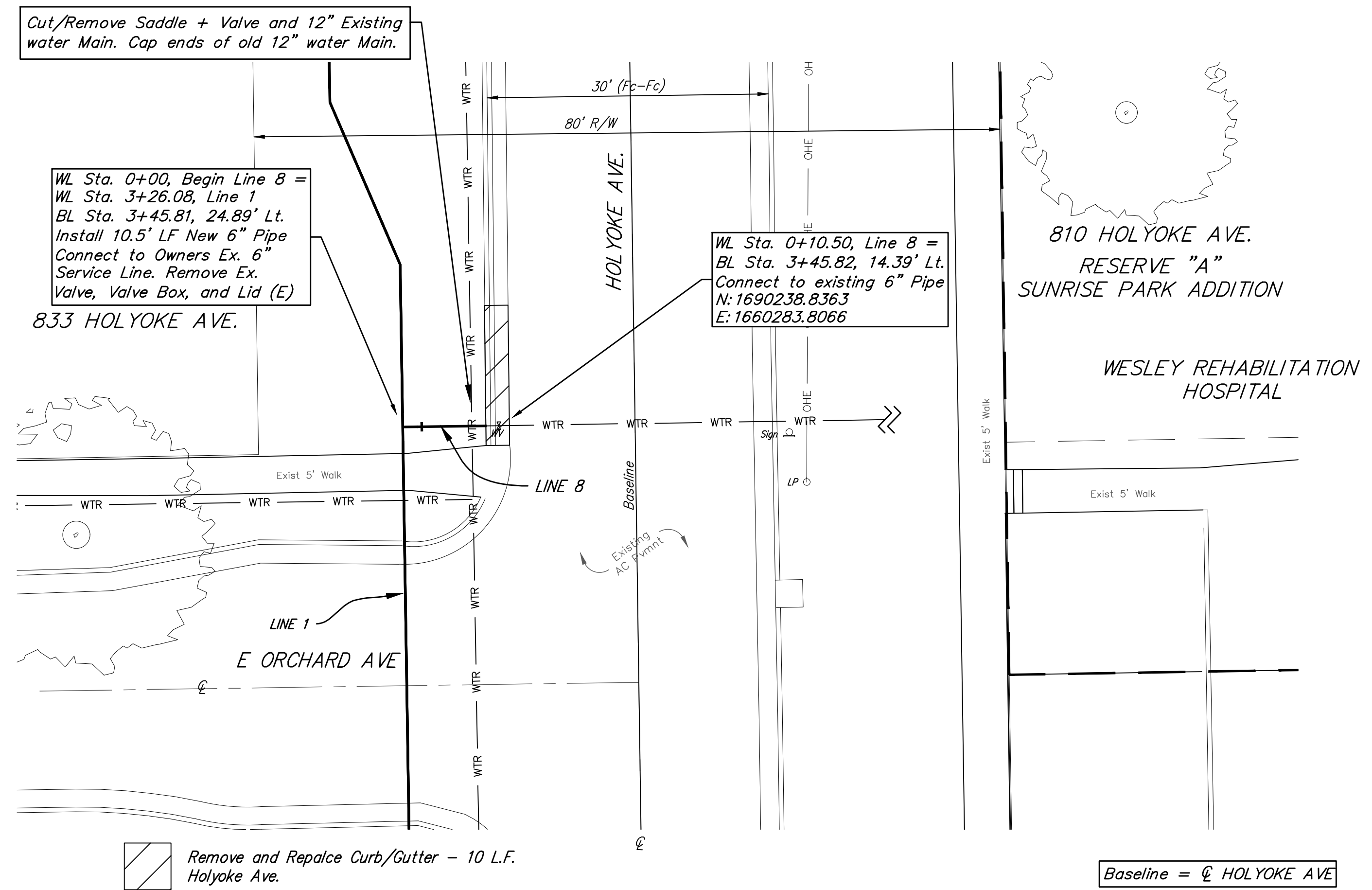
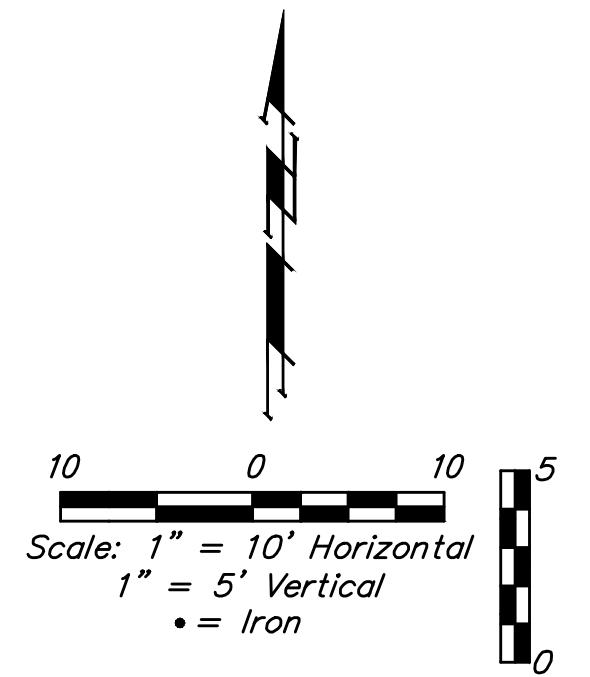
WATER LINE IMPROVEMENTS  
PROJECT NUMBER:  
22-10-E347  
DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023  
SHEET 9 OF 21

**BENCHMARKS**

BM #1:  
Cross cut on top of Concrete Sidewalk north of E. Murdock Ave. 17.3'± North and 3.1'± West of the SW Corner of Building 3232. E Murdock  
Elev. = 1351.89 (NAVD88)

BM #2:  
Square cut on top of curb located at the South Curb return at intersection of Orchard St & N Holyoke Ave.  
Elev. = 1350.88 (NAVD88)

NOTE:  
SEE CONSTRUCTION SEQUENCE FOR WATER LINES (See Sheet 6).





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HOLYOKE AVE  
WATER REPLACEMENT

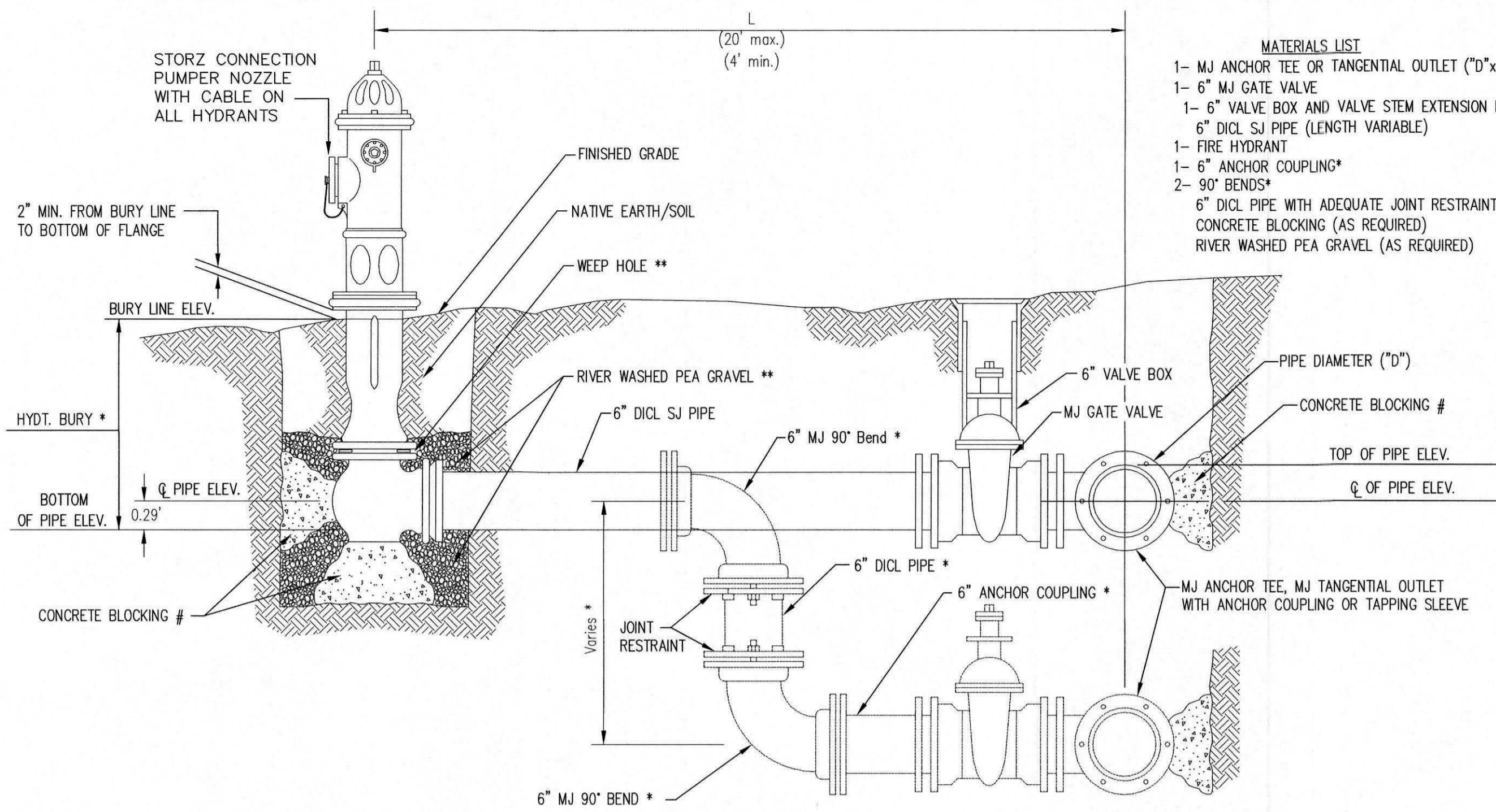
**WATER LINE 8  
PLAN**

WATER LINE IMPROVEMENTS

PROJECT NUMBER:  
22-10-E347

DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023

SHEET 10 OF 21



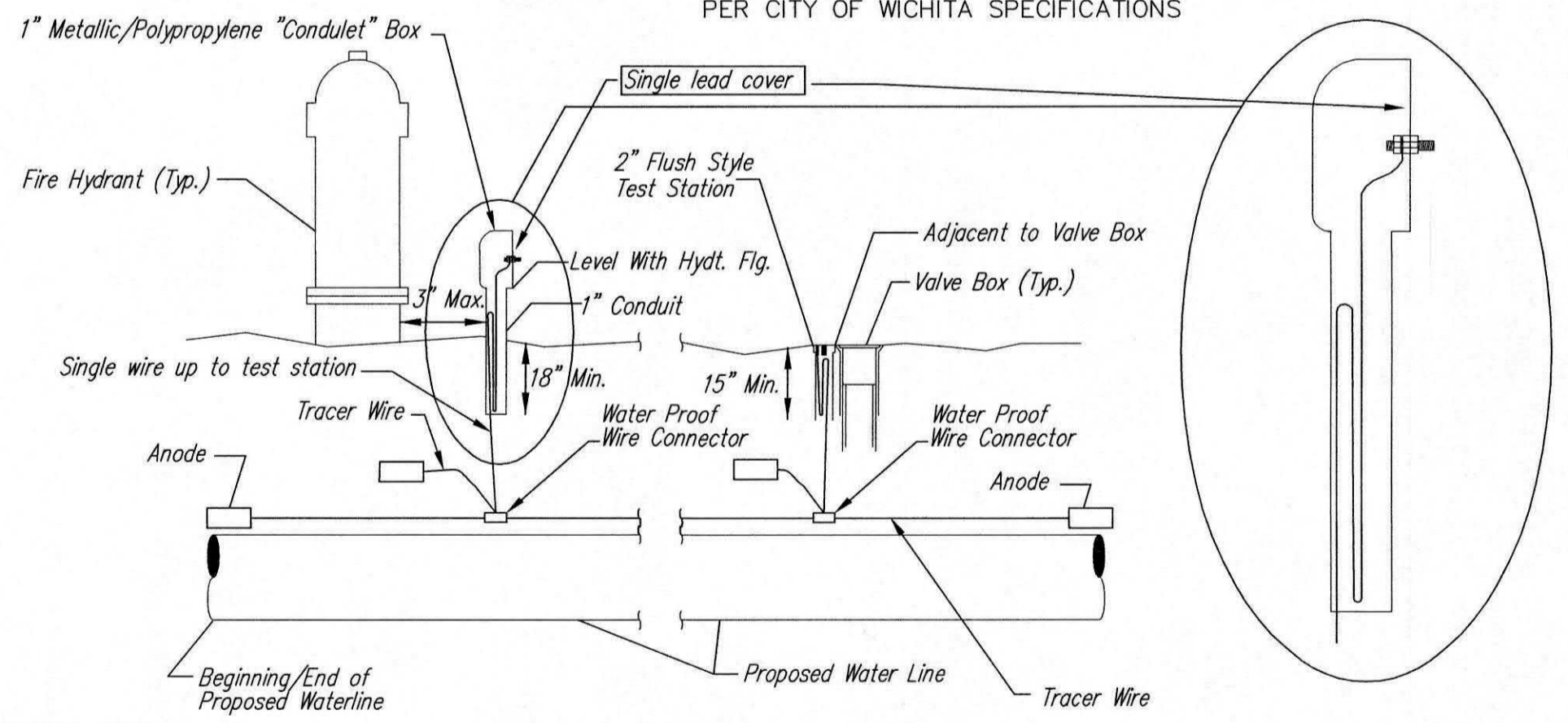
- MATERIALS LIST**
- 1- MJ ANCHOR TEE OR TANGENTIAL OUTLET ("D"x 6")
  - 1- 6" MJ GATE VALVE
  - 1- 6" VALVE BOX AND VALVE STEM EXTENSION IF REQUIRED \*
  - 6" DICL SJ PIPE (LENGTH VARIABLE)
  - 1- FIRE HYDRANT
  - 1- 6" ANCHOR COUPLING\*
  - 2- 90° BENDS\*
  - 6" DICL PIPE WITH ADEQUATE JOINT RESTRAINT \*
  - CONCRETE BLOCKING (AS REQUIRED)
  - RIVER WASHED PEA GRAVEL (AS REQUIRED)

\* IF THE REQUIRED HYDRANT BURY IS IN EXCESS OF 5', BUT LESS THAN 7', CONTRACTOR SHALL USE STANDARD 5' HYDRANT BURY AND HYDRANT BARREL EXTENSIONS AS NECESSARY. IF THE REQUIRED HYDRANT BURY IS GREATER THAN 7', CONTRACTOR SHALL USE 5' HYDRANT BURY, 2-MJ 90° BENDS, 6" ANCHOR COUPLING AND 6" DICL PIPE AS NECESSARY FOR VERTICAL ADJUSTMENT. THE CONTRACTOR SHALL PROVIDE ADEQUATE THRUST BLOCKING AT HYDRANT AND MEGALUGS, OR SIMILAR RESTRAINT BETWEEN 90° BENDS TO SECURE ALL FITTINGS DURING TESTING AND OPERATION. THE CONTRACTOR SHALL PROVIDE A VALVE STEM EXTENSION PER DETAIL THIS SHEET.

\*\* CAUTION: WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES. PLACE 1 CUBIC FOOT OF RIVER WASHED PEA GRAVEL AROUND EACH WEEP HOLE.

# CONCRETE THRUST BLOCKING SHALL BE KEPT CLEAR OF BOLTS, NUTS, AND MJ ACCESSORIES.

**FIRE HYDRANT ASSEMBLY**  
PER CITY OF WICHITA SPECIFICATIONS



**TRACER WIRE**  
Conductive type pipe locator/tracer wire shall be installed to locate all waterline pipe regardless of pipe material. The wire shall extend the entire length of the proposed pipe. The wire shall be taped to the waterline and pulled with the pipe. A waterproof connector shall be used at splice locations. A complete list of approved tracer wire and waterproof connectors can be found on the City of Wichita's website at [www.wichita.gov](http://www.wichita.gov).

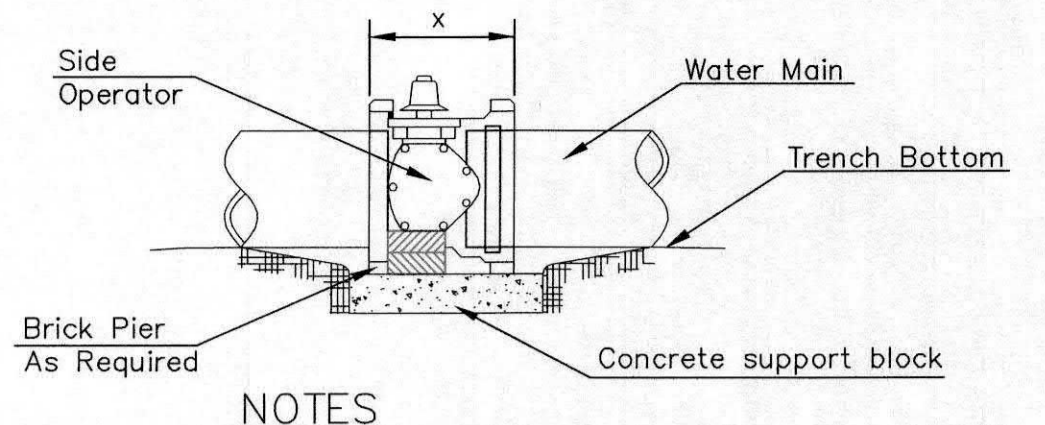
**WIRES**  
The tracer wire shall be Blue No. 12 AWG CCS with 45 mil HDPE insulation. To allow for grade adjustment, a minimum of 12" of excess wire shall be coiled at the bottom of the test station for all wires. Wire connectors shall be installed per manufacturer recommendations. Contractor shall attach wire being installed with proposed water main to any tracer wire installed with adjacent waterline projects.

**TEST STATIONS**  
The test station for fire hydrant application shall be a 1" "conduit" style station as manufactured by AGRA Industries with a removable solid cover having a single lead extending from the face or approved equal. The "conduit" style test station shall be attached to a 1" rigid galvanized conduit with a minimum length of 36" and plastic end bushing. The flush style shall have the word "WATER" stamped or molded into the lid. The test station for valve applications shall be a 2" flush style test station with wire connector on lid. Model # T2PH7B1LP Handley Industries or CD14\*TP SnakePit as manufactured by Copperhead Industries or approved equal. The flush style shall have the word "WATER" stamped or molded into the lid. All test stations shall be manufactured using molded blue tops or sufficiently coated with blue enamel paint. The tracer wire and the anode wire shall be installed to allow 12" of wire within the test station. The location of all test stations shall be recorded, and shown in the as-built drawings. Flush style test stations shall not be installed in pavement or sidewalk unless approved by the Engineer. Contractor shall extend tracer wire & move flush mount test station to nearest location out of pavement or sidewalk.

**ANODES**  
The anodes shall be 3 lb. bare zinc or magnesium. The anodes shall be buried at the same elevation as the waterline at each test station. The anodes shall be connected to 12 AWG CCS which shall be extended to the test station.

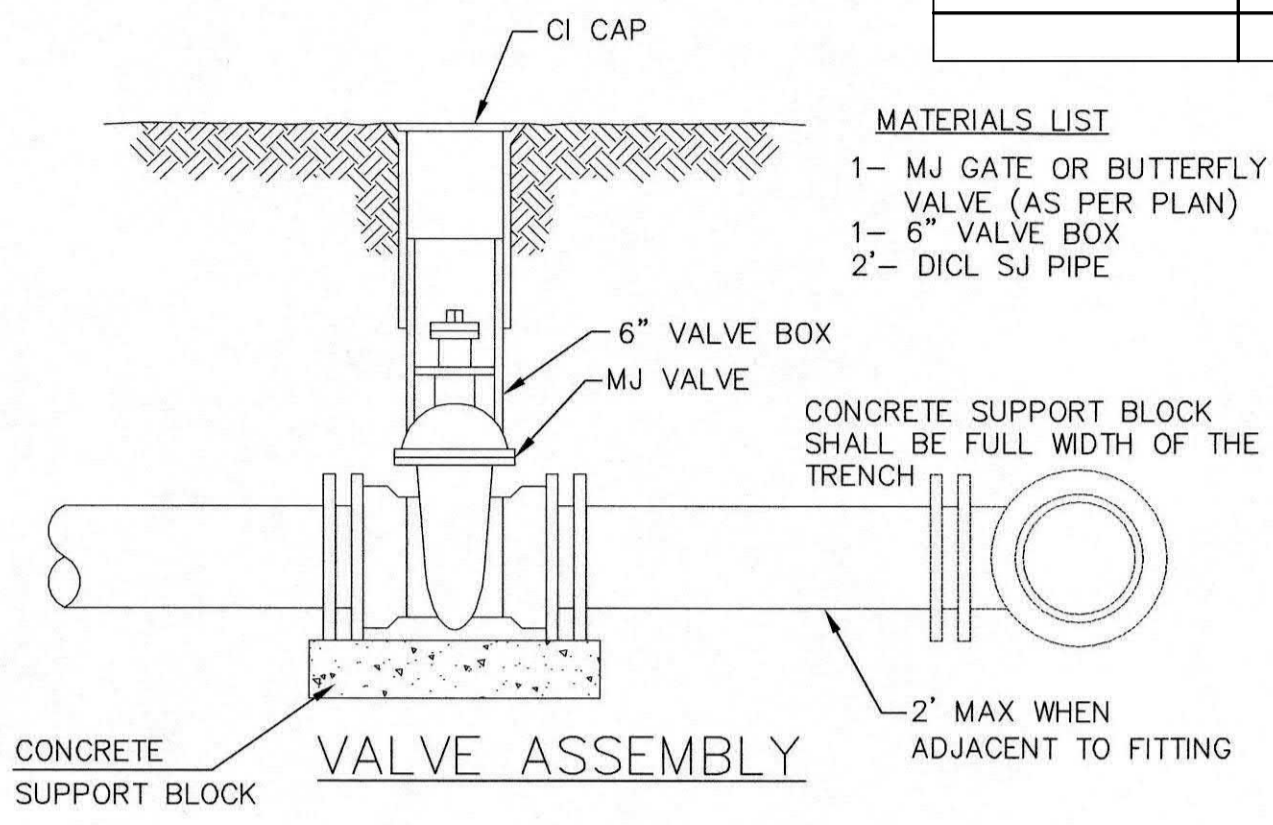
**TRACER WIRE DETAIL**  
COST IS SUBSIDIARY TO PIPE INSTALLATION

FIRE HYDRANTS REQUIRED				
STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED*	VALVE STEM EXT. REQUIRED (ft)*
0+11.00, Line 1A	1349.24	1345.32	4.5'	-
2+70.67, Line 1	1351.54	1346.10	6'	-
12+26.95, Line 1	1346.61	1341.42	6'	-

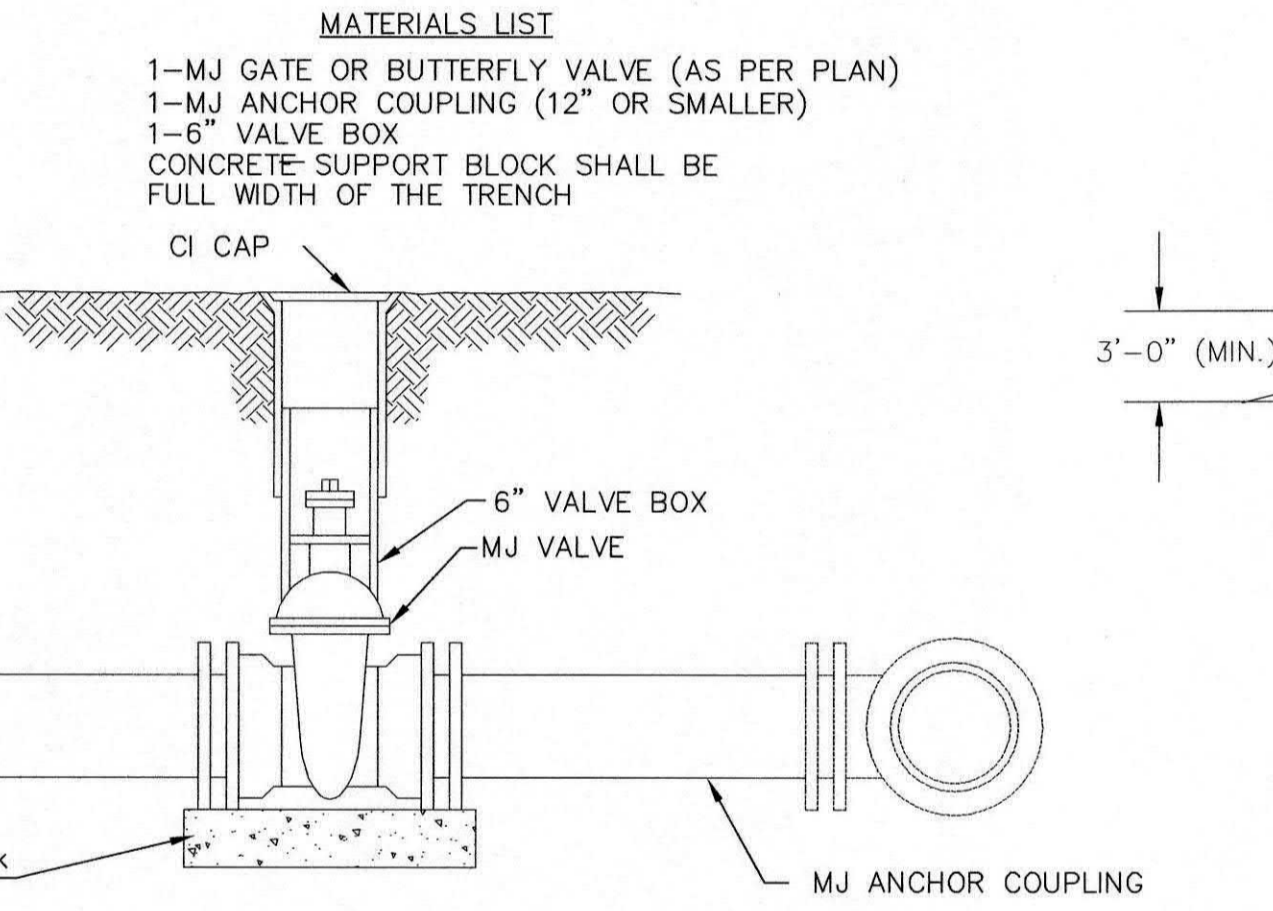


- NOTES**
- This detail covers Butterfly Valve installation, inclusive, regardless of type of pipe or joint used. 24" and larger lines to be detailed on plans.
  - 6" Valve Box and Cover required per City of Wichita Std. Specifications.
  - Conc. Support Block to be full width of trench.

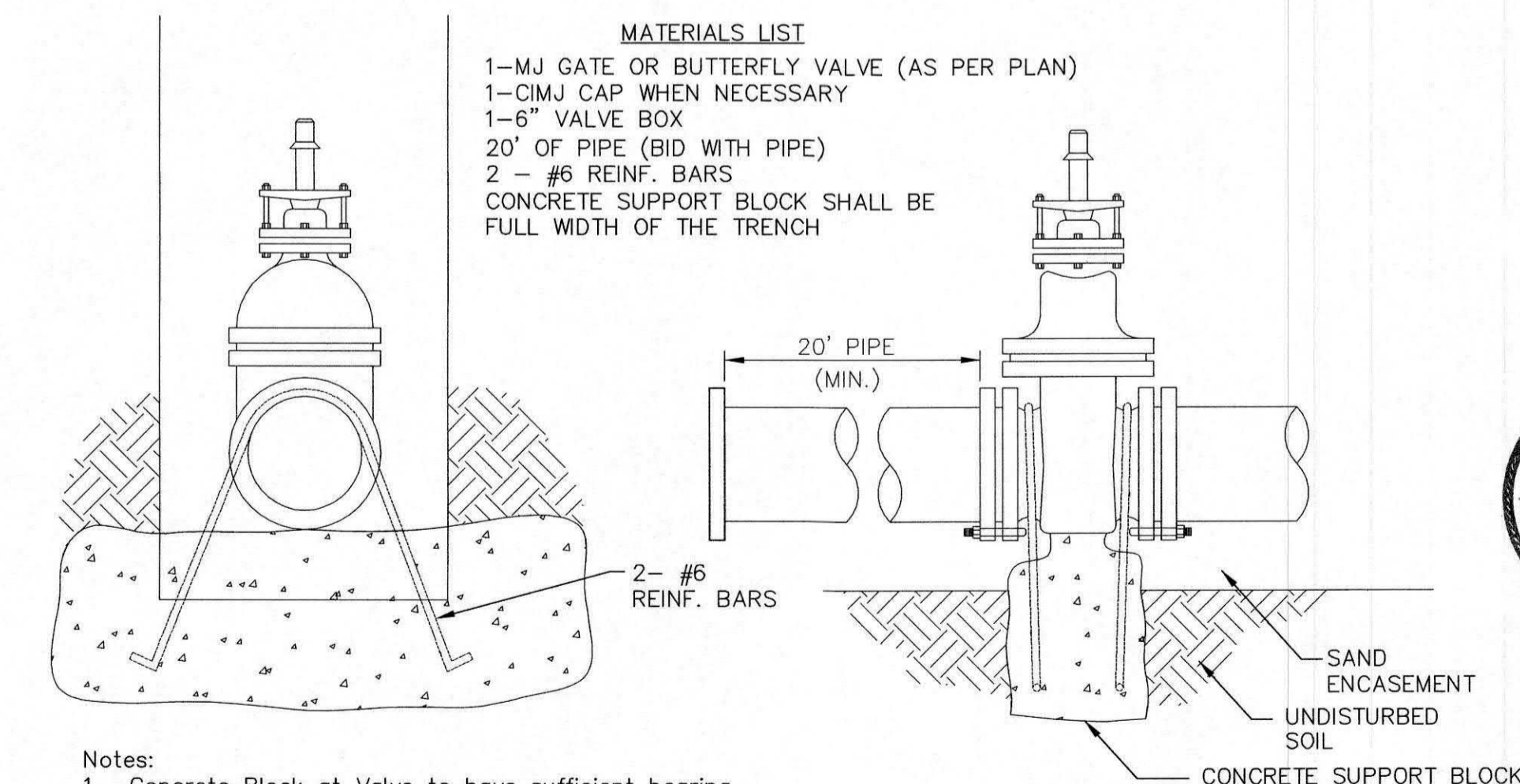
**CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION**



- MATERIALS LIST**
- 1- MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
  - 1- 6" VALVE BOX
  - 2'- DICL SJ PIPE



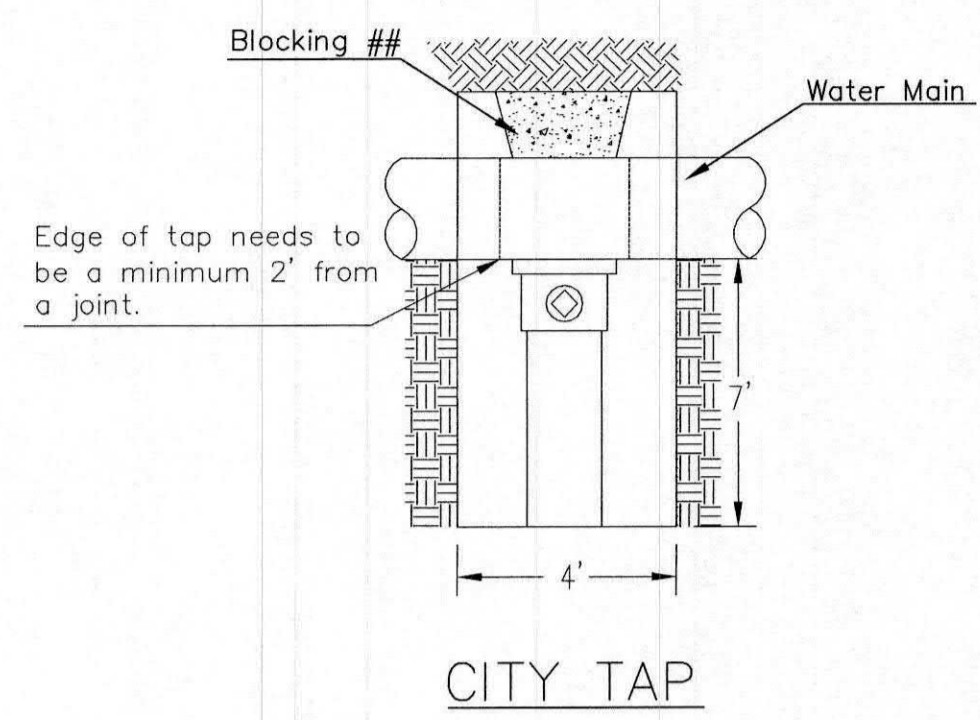
**ANCHORED VALVE ASSEMBLY**



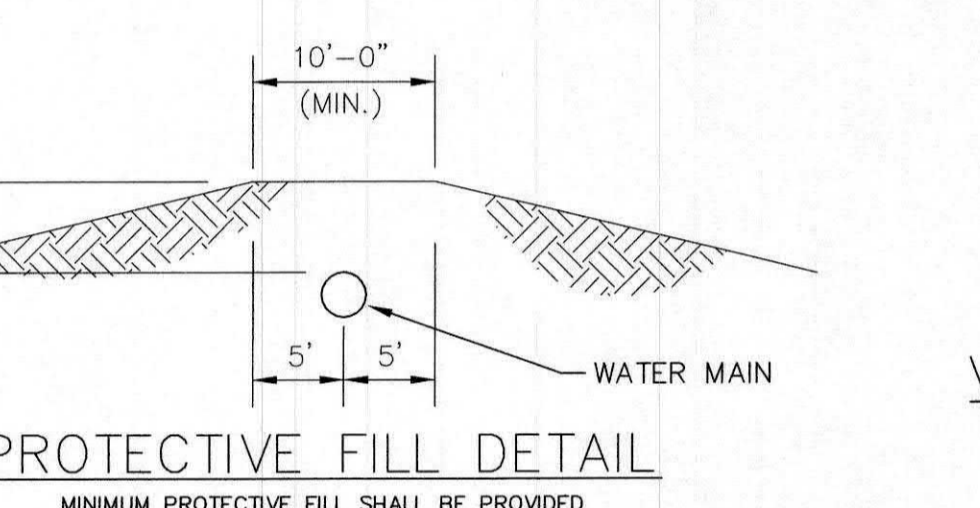
- Notes:**
- Concrete Block at Valve to have sufficient bearing in undisturbed soil to prevent thrust movement as shown in table at right. Field Engineer to determine thrust loading of undisturbed soil and final size of thrust block.
  - The thrust block shall be constructed such that bolts, nuts, and other MJ accessories are kept clear of concrete.
  - All valves at dead ends and at other locations as called out on the plans shall be blocked as shown here.

THRUST AT VALVES	
VALVE	THRUST AT 150 #/in <sup>2</sup>
4"	1809 lbs.
6"	4245 lbs.
8"	7540 lbs.
12"	16965 lbs.

**ANCHORED VALVE ASSEMBLY, SPECIAL**

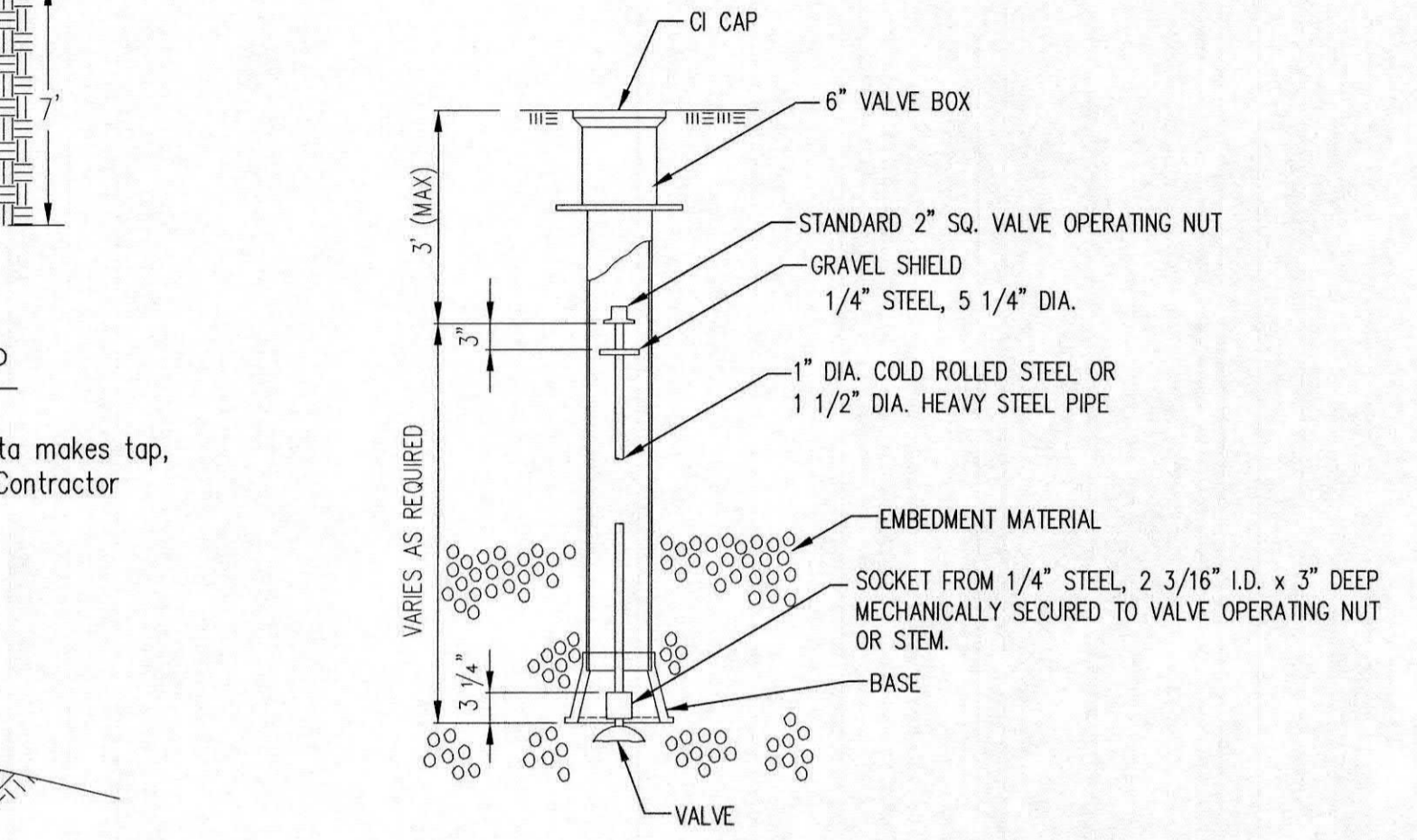


**CITY TAP**



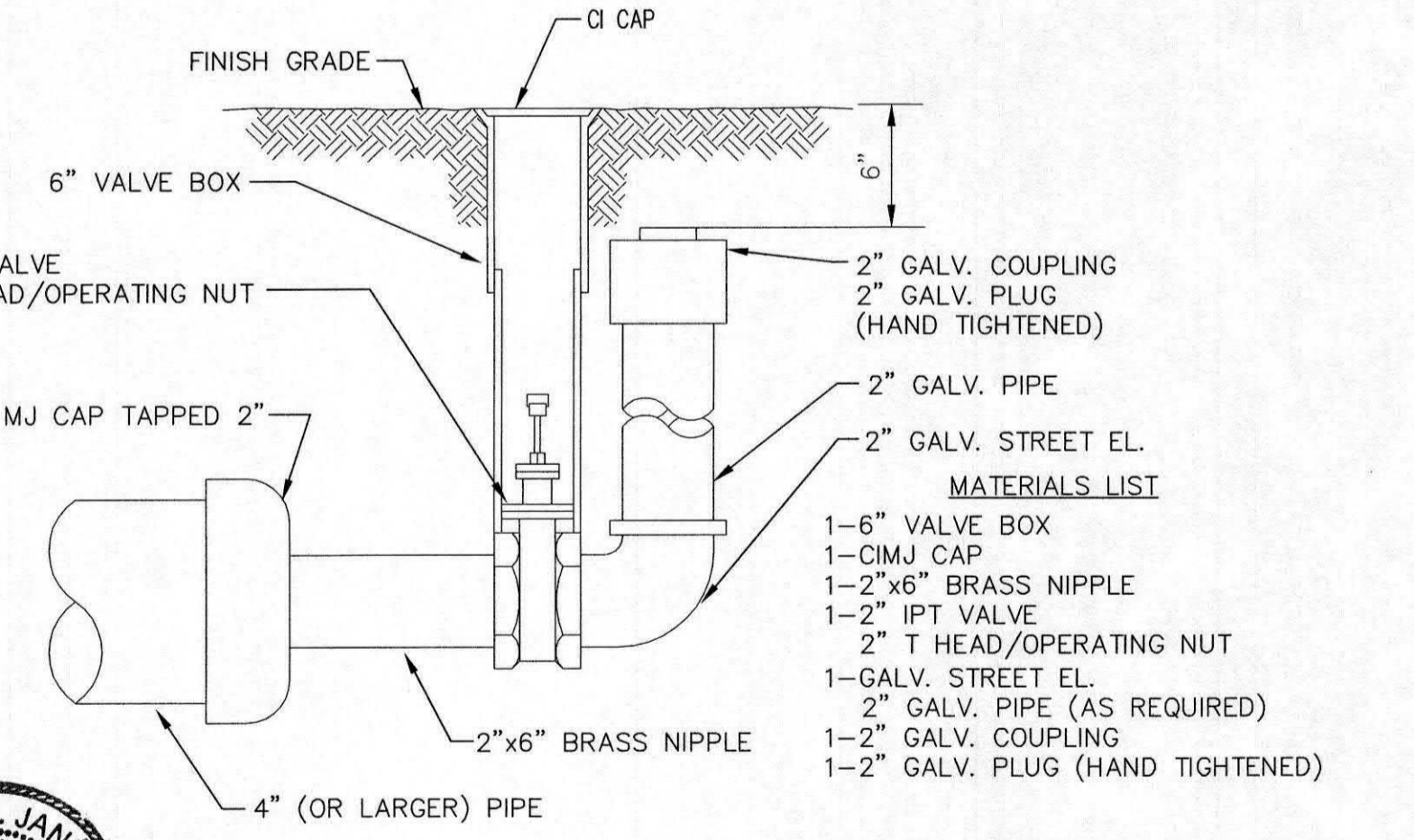
**PROTECTIVE FILL DETAIL**

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN 3". (COST SUBSIDIARY TO PIPE INSTALLATION)



**VALVE STEM EXTENSION DETAIL**

NOTE: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.



**2" BLOWOFF ASSEMBLY**



STANDARD WATER ASSEMBLY DETAIL

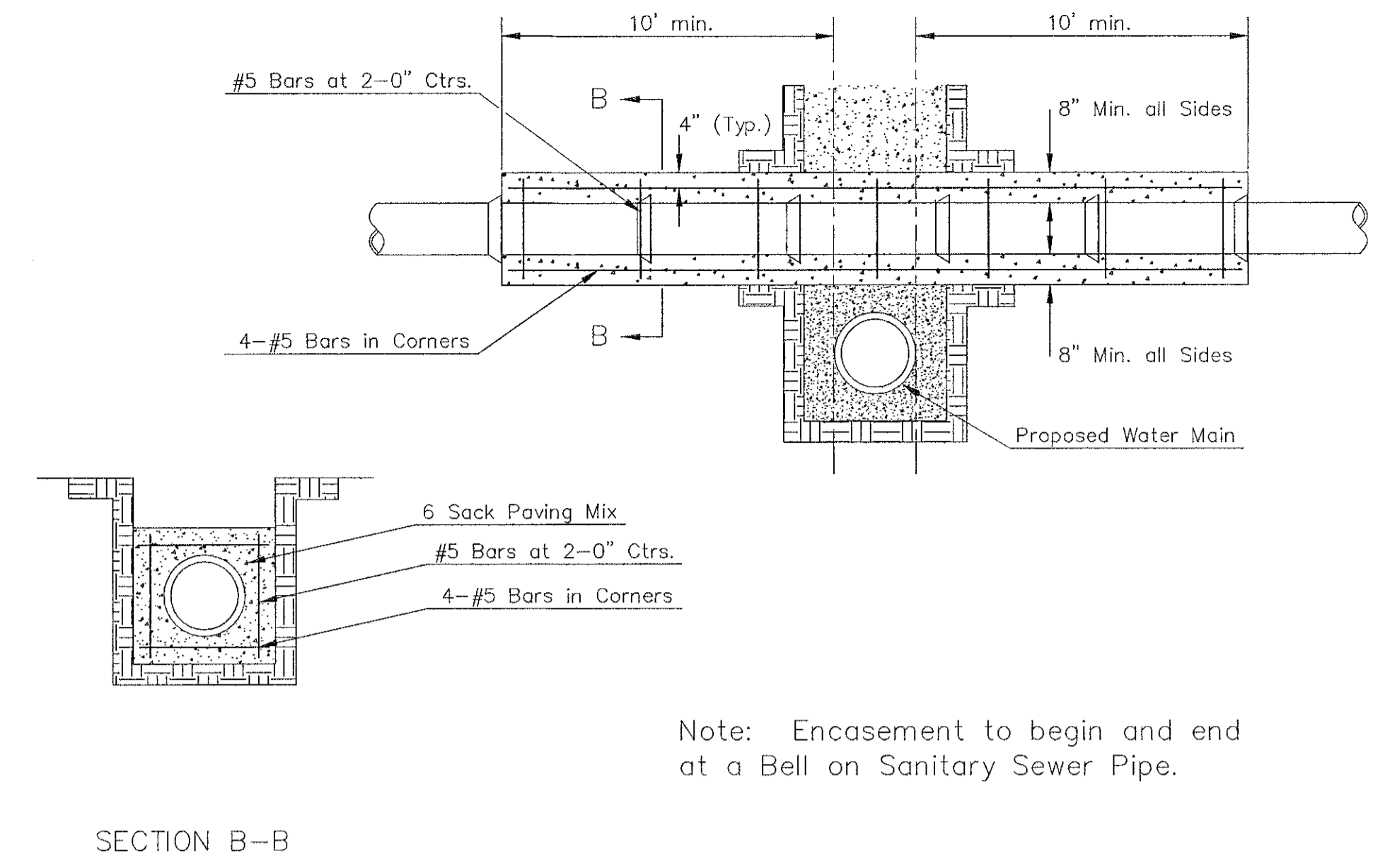
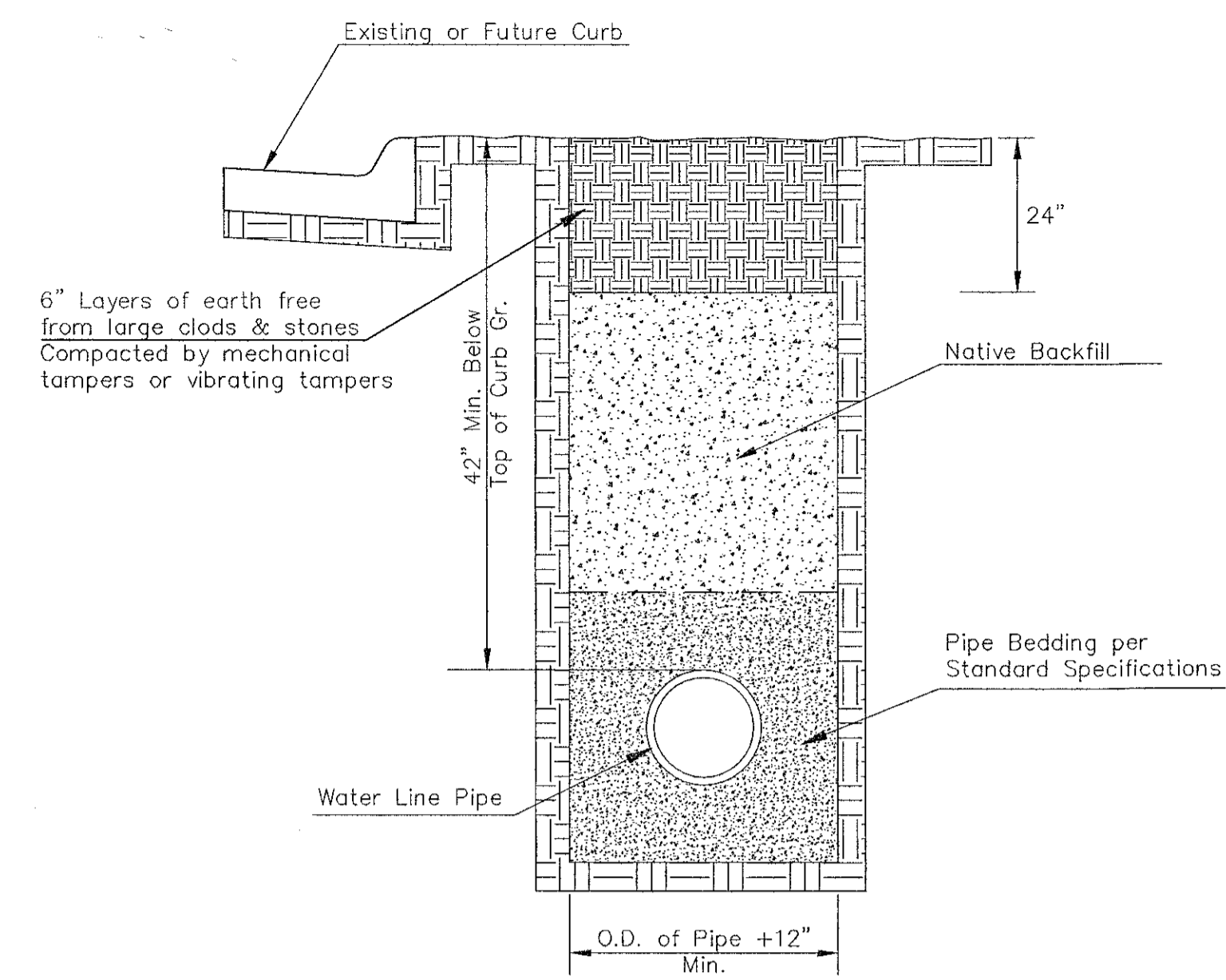
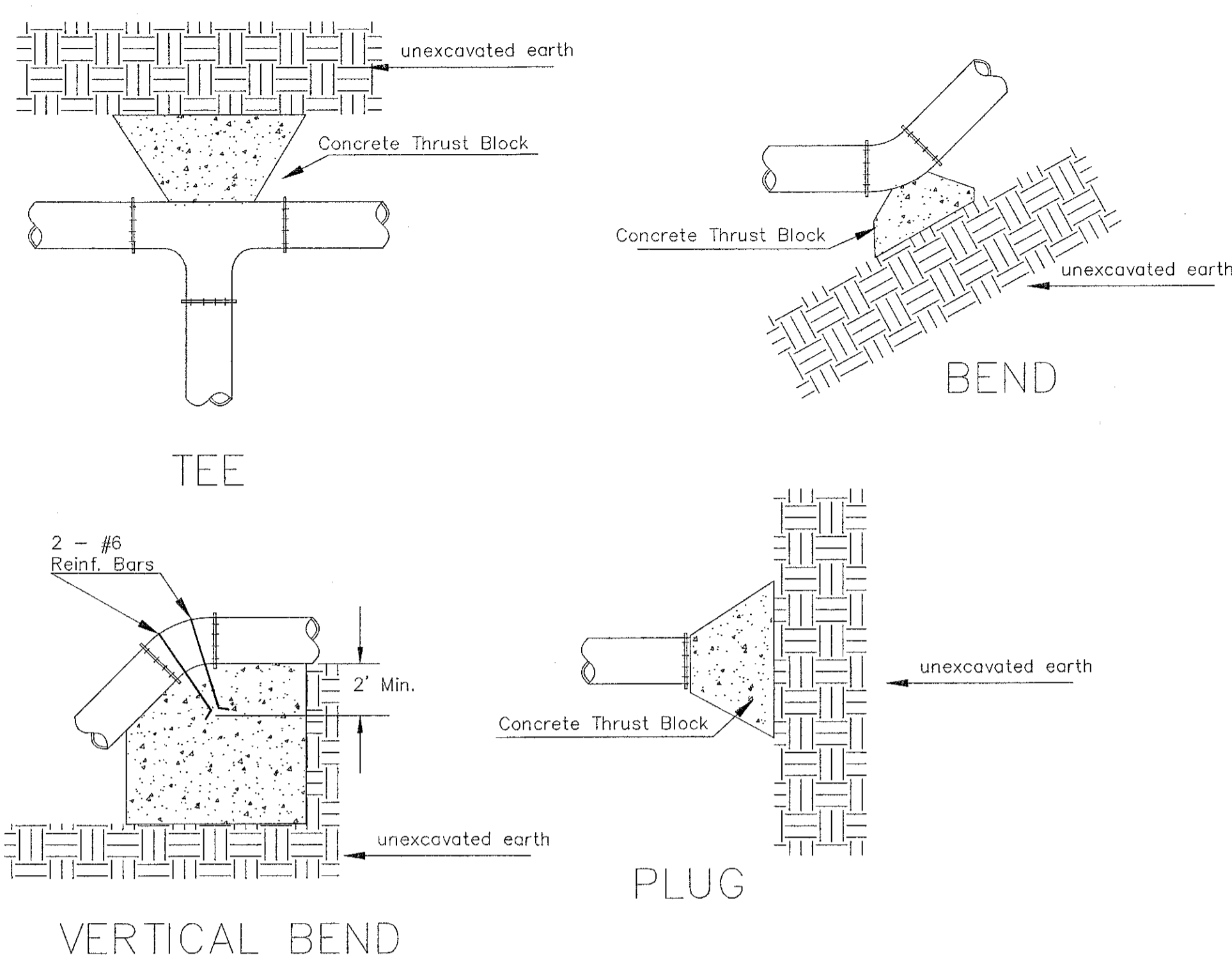
CITY ENGINEER  
**GARY JANZEN, P.E.**

PROJECT NUMBER	OCA NUMBER	DATE

CITY ENGINEER'S OFFICE  
CITY HALL - SEVENTH FLOOR  
455 NORTH MAIN STREET  
WICHITA, KANSAS 67202-1620  
(316) 268-4501

SHEET  
**11 of 21**

REVISED: OCTOBER 2016

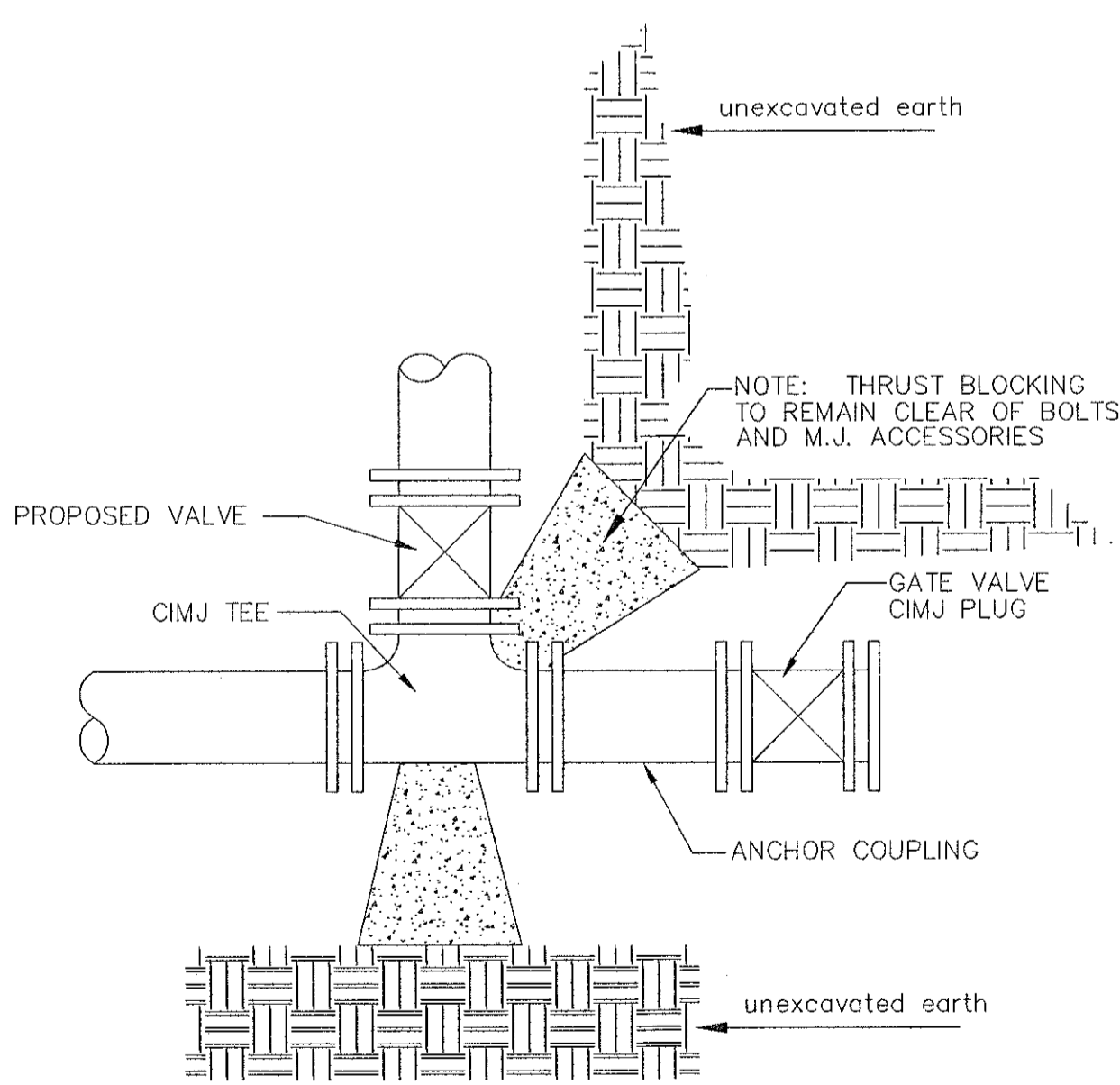


TRENCH COMPACTION IN ROAD RIGHT-OF-WAY

REINFORCED CONCRETE ENCASEMENT OF SANITARY SEWER

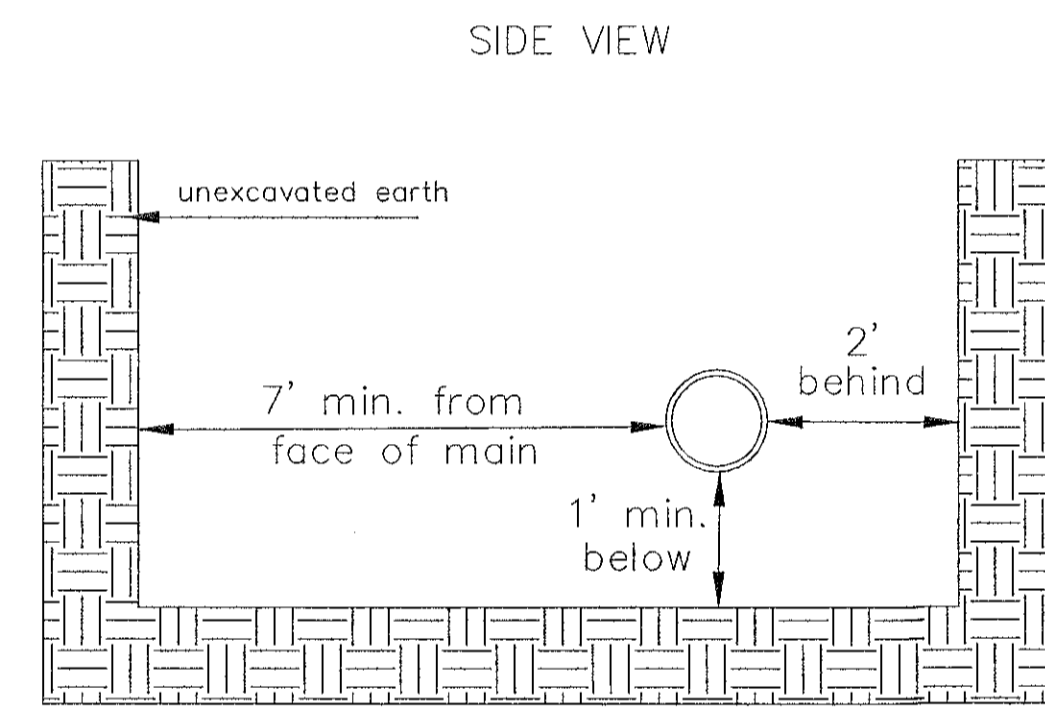
PIPE SIZE	THRUST AT FITTINGS IN TONS-AT 150#/IN <sup>2</sup> P					
	PLUG	90°	45°	22 1/2°	11 1/4°	TEE
6"	2.8	3.95	2.15	1.09	.55	2.8
8"	4.9	6.95	3.75	1.90	.96	4.9
12"	11.4	16.1	8.75	4.45	2.25	11.4
16"	20.15	28.5	15.4	7.85	3.95	20.15
20"	31.15	44.0	23.85	12.15	6.10	31.15
24"	44.55	63.0	34.1	17.4	8.75	44.55

TYPICAL THRUST BLOCKS

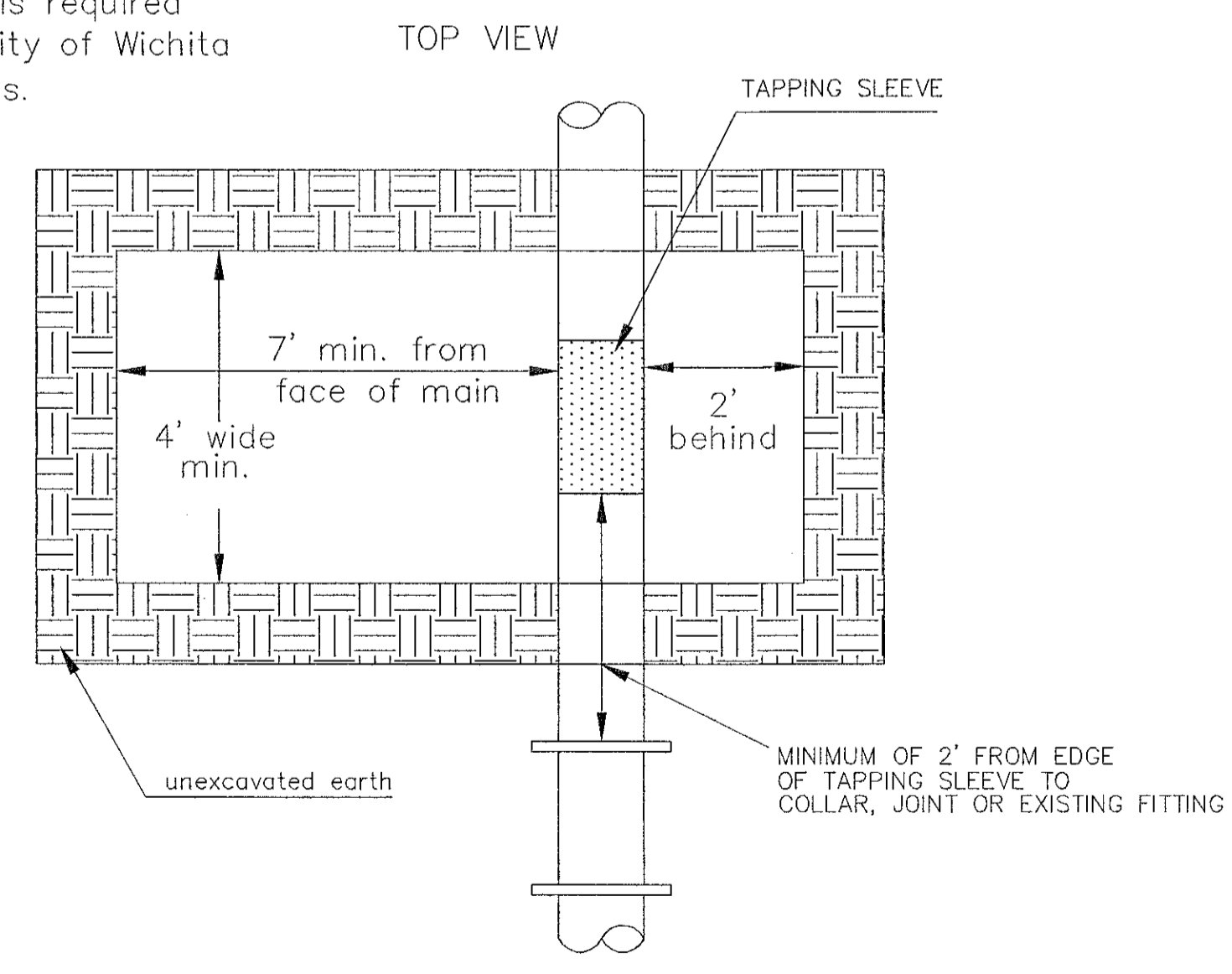


KEY BLOCK DETAIL

\* PLANS GOVERN UNLESS OTHERWISE NOTED ON PLANS

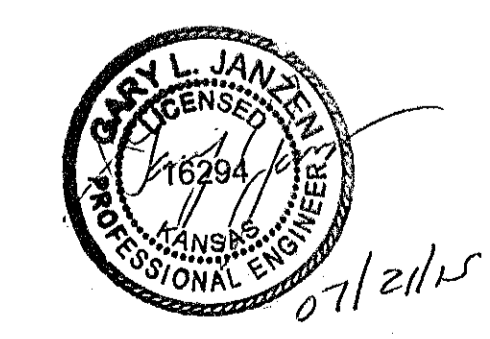
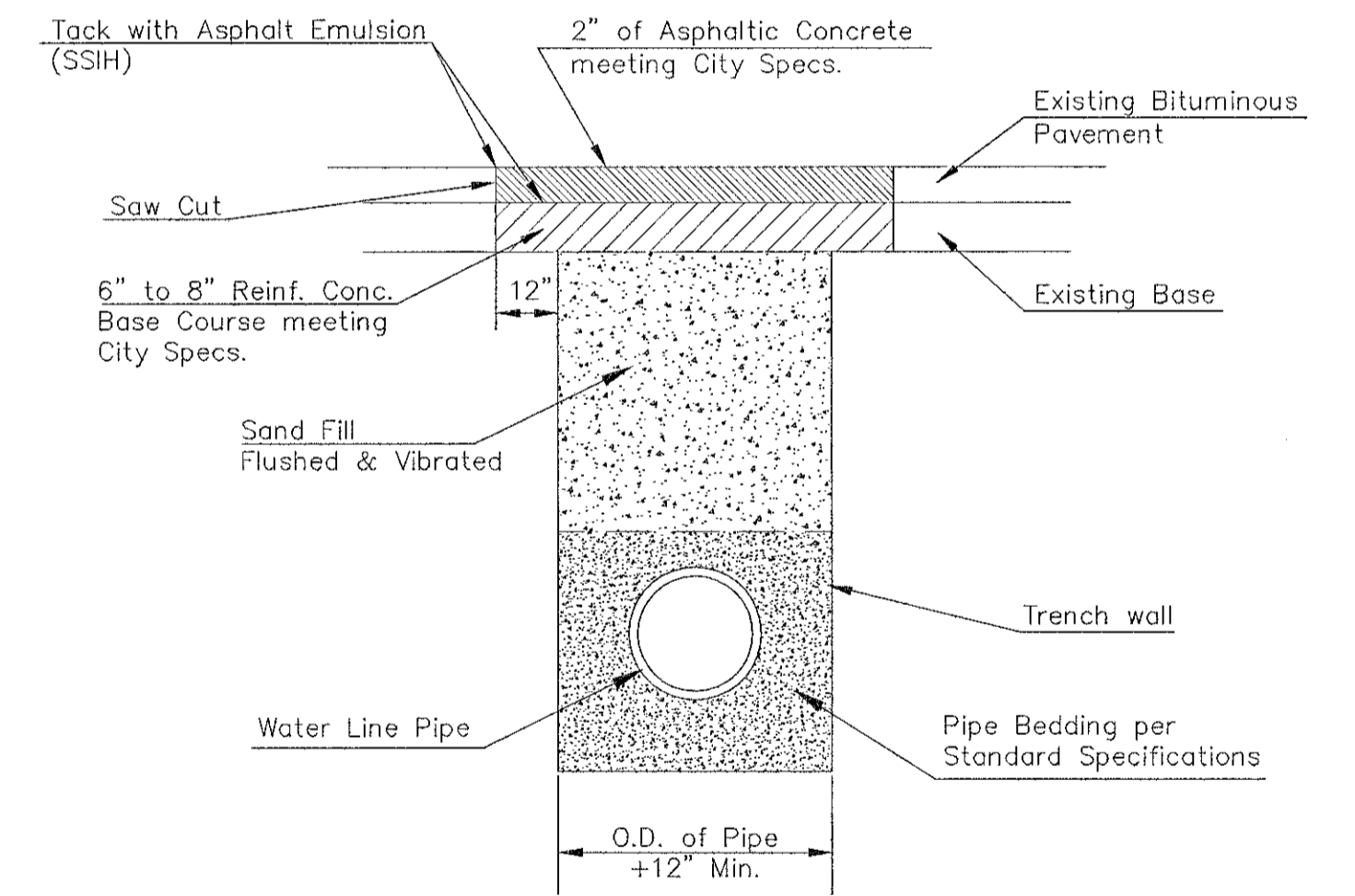


Note: When shoring is required it is to be per The City of Wichita Standard Specifications.



EXCAVATION FOR WET TAP

PAVEMENT REPLACEMENT & TRENCH COMPACTION UNDER EXISTING AND PROPOSED CITY ROADS



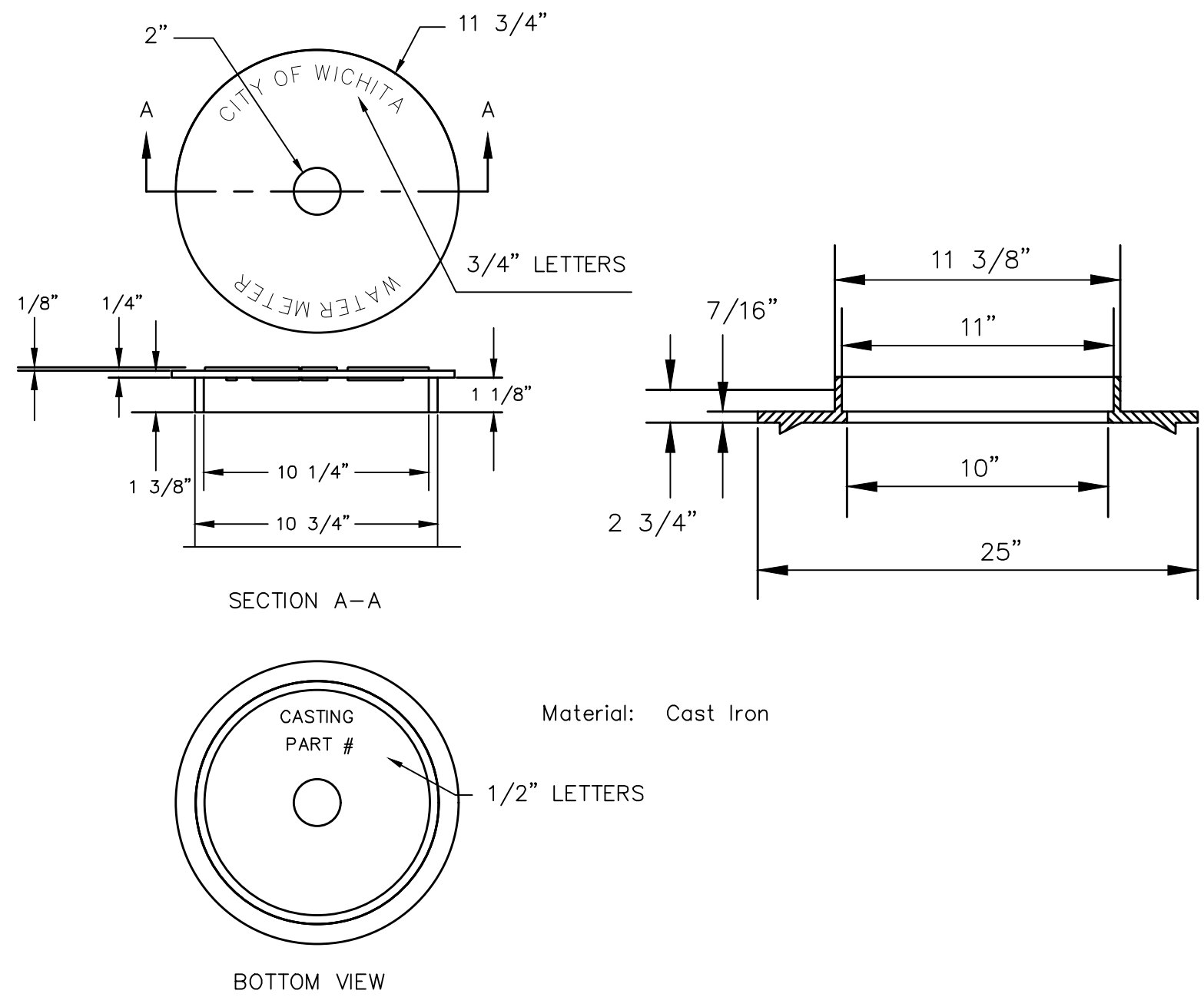
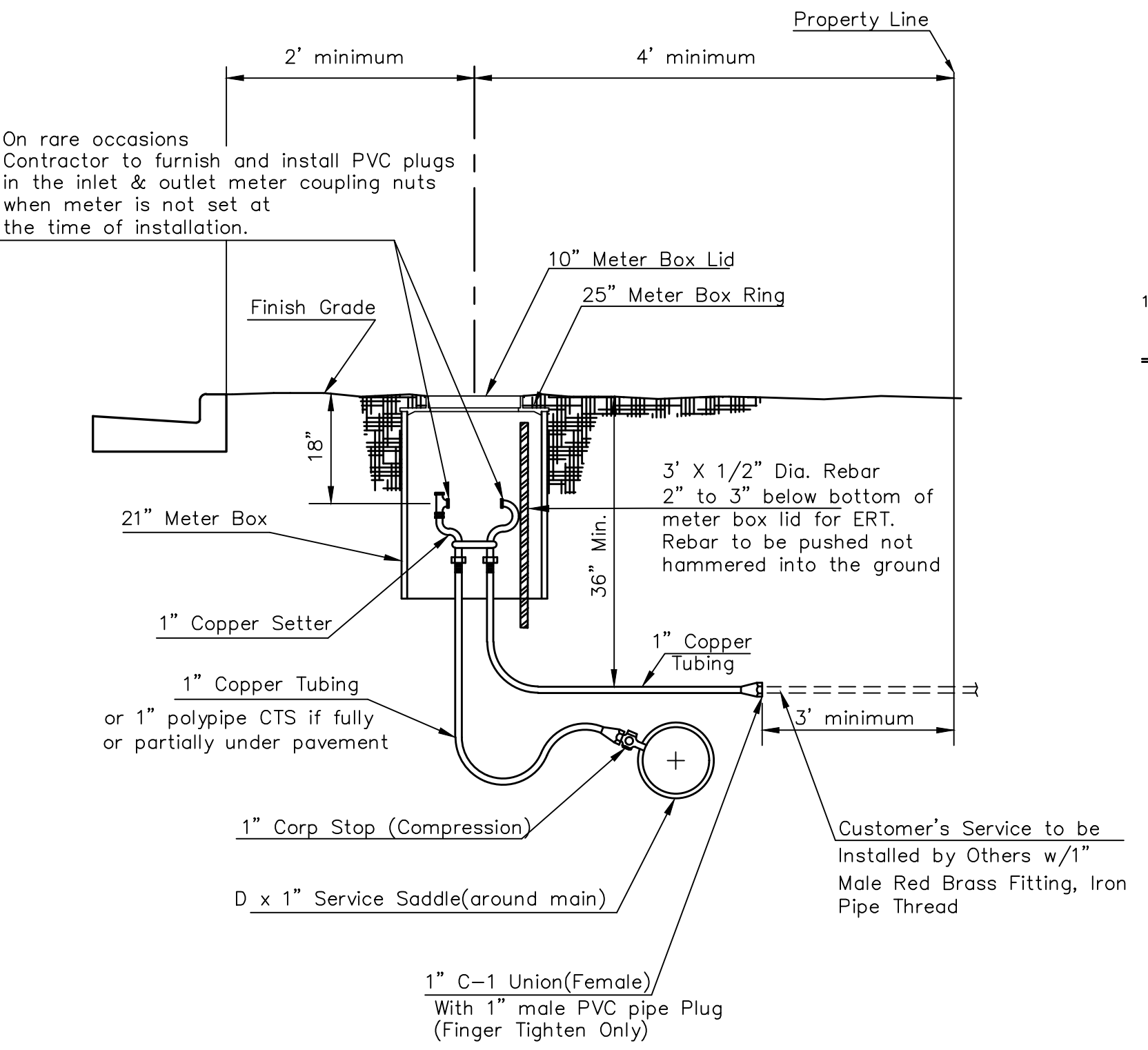
REVIS: JULY 2015

**MISCELLANEOUS WATER DETAILS**

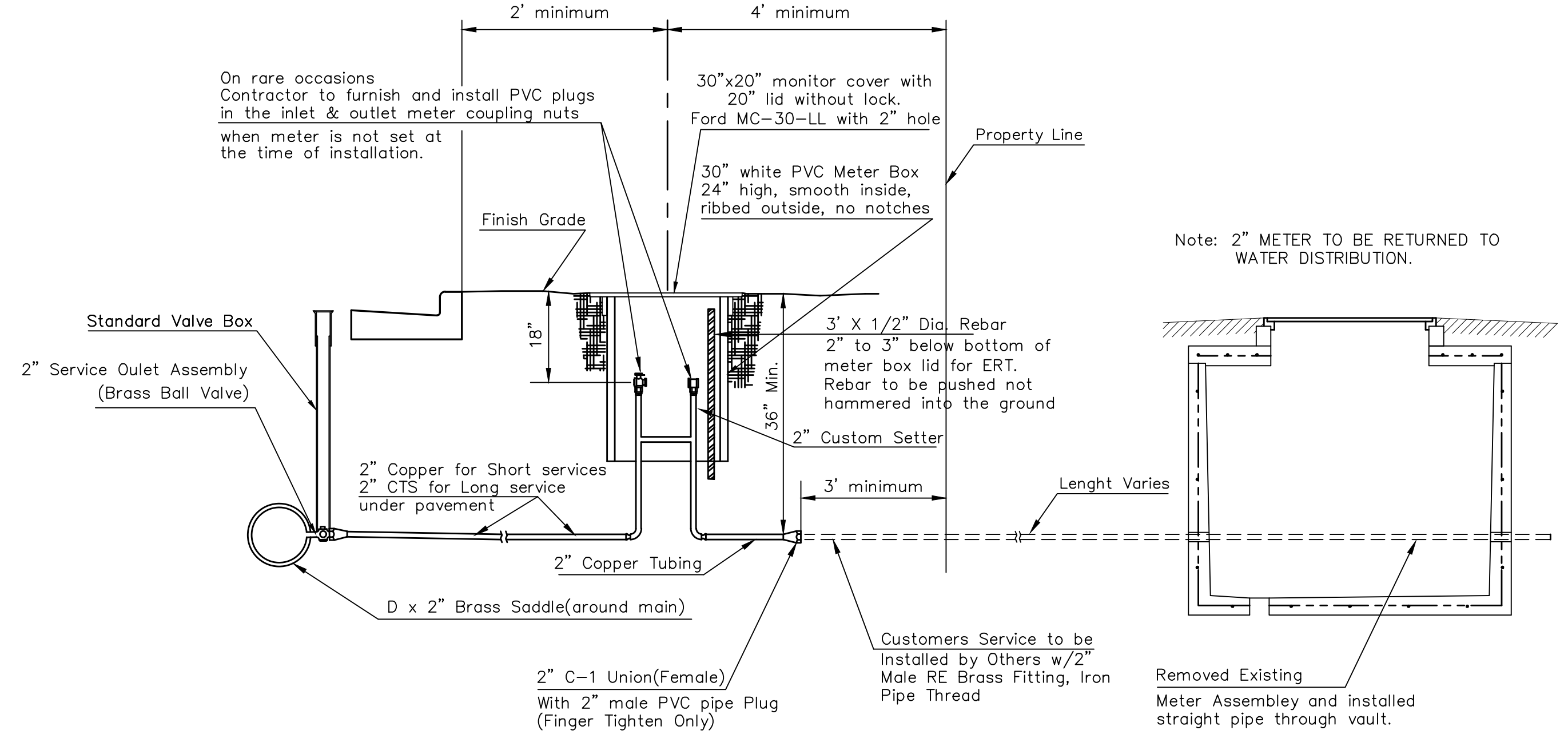
CITY ENGINEER  
**GARY JANZEN, P.E.**

PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET <b>12 of 21</b>

**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES ENGINEERING DIVISION



NOT TRAFFIC RATED RING & LID FOR 1" METER BOX



TYPICAL 2" METER SETTING

TYPICAL 2" METER SETTING INVOLVING EXISTING 2" METER VAULT

Note: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.

Note: ONE VALVE STEM EXTENSION FOR EACH VALVE BURIED GREATER THAN 5'.

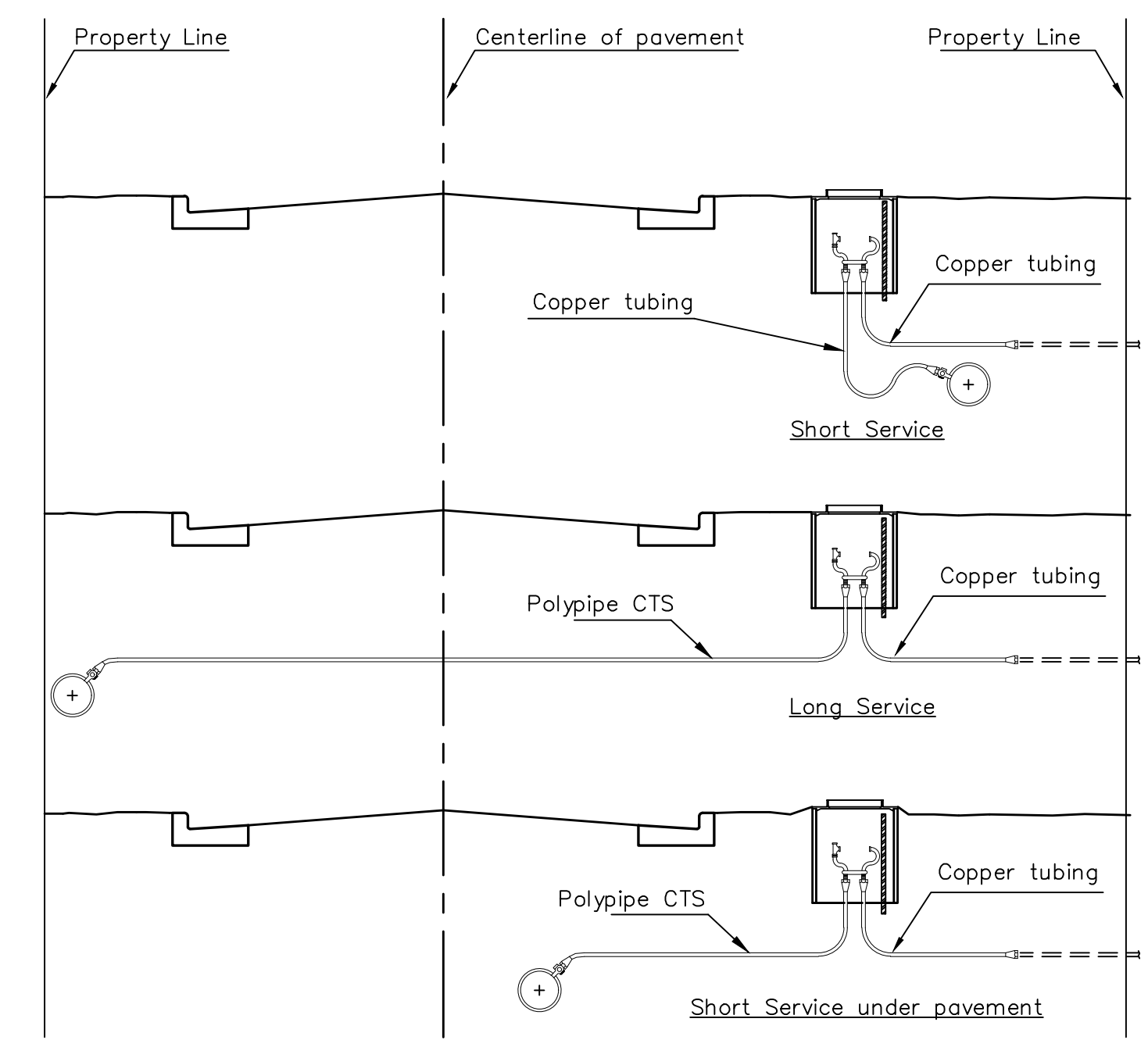
TYPICAL 1" METER SETTING

Minimum length of pigtail on consumer side is 36" of copper tubing from meter set.  
Bore hole under paving shall be a maximum of 2" in diameter and a minimum of 36" below top of pavement.  
Service Saddles are required on all mains.  
Meter boxes will be located on each lot to be served, as indicated in the SPECIAL PROVISIONS

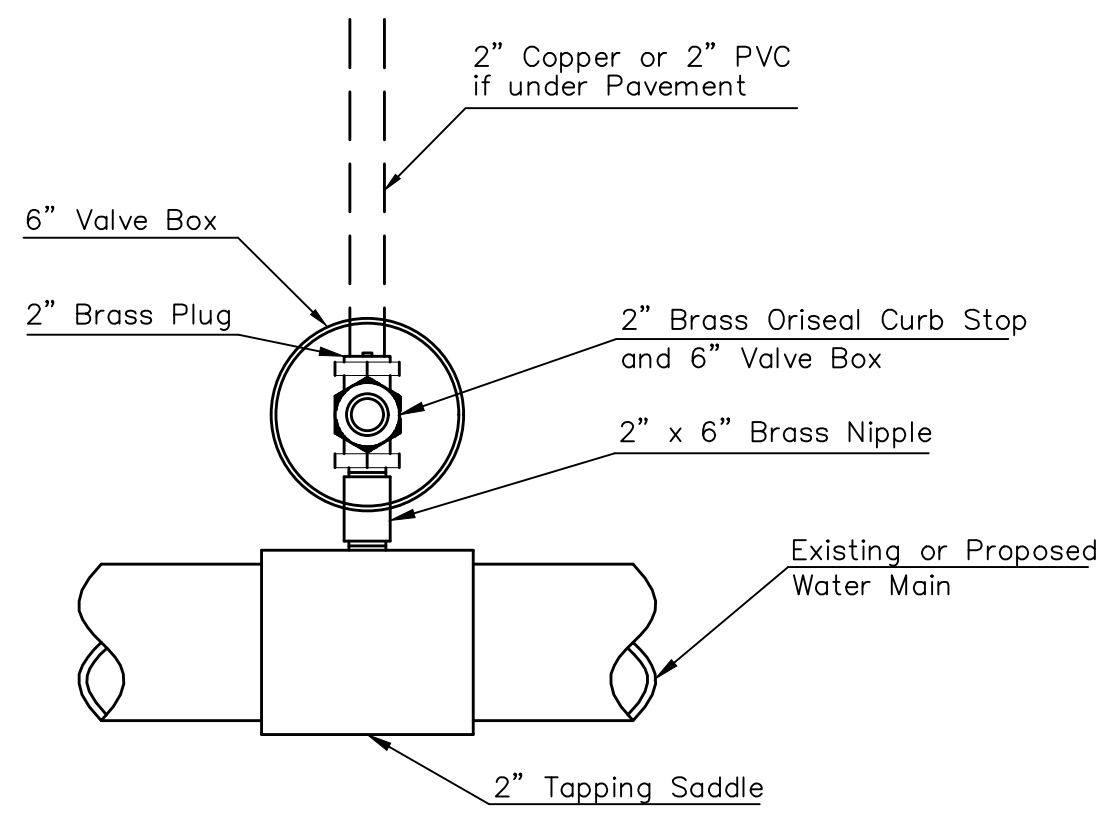
- 1 - Ø Mueller Thread Corporation Stop
- Ø Type "K" Copper Tubing
- 1 - Ø Copper to Iron Union (Male)
- 1 - Ø Brass Curb Stop (Iron to Iron)
- 2 - Øx4" Brass Nipple
- Air Release
- 2 - Ø Brass Elbows (90°)
- 1 - 1"x6" Brass Nipple
- 1 - 30" Monitor Cover
- 1 - 20" Meter Lid

NOTE:

THE 1 1/2" AIR RELEASE ASSEMBLY WILL TYPICALLY BE USED ON WATER MAINS 24" AND SMALLER, AS SPECIFICALLY DESIGNATED IN THE PLANS. COMBINATION AIR RELAEASE ASSEMBLIES WILL BE SPECIFICALLY DESIGNED FOR PROJECTS WITH LARGER MAINS, AND WILL BE INCLUDED IN THE PLANS.

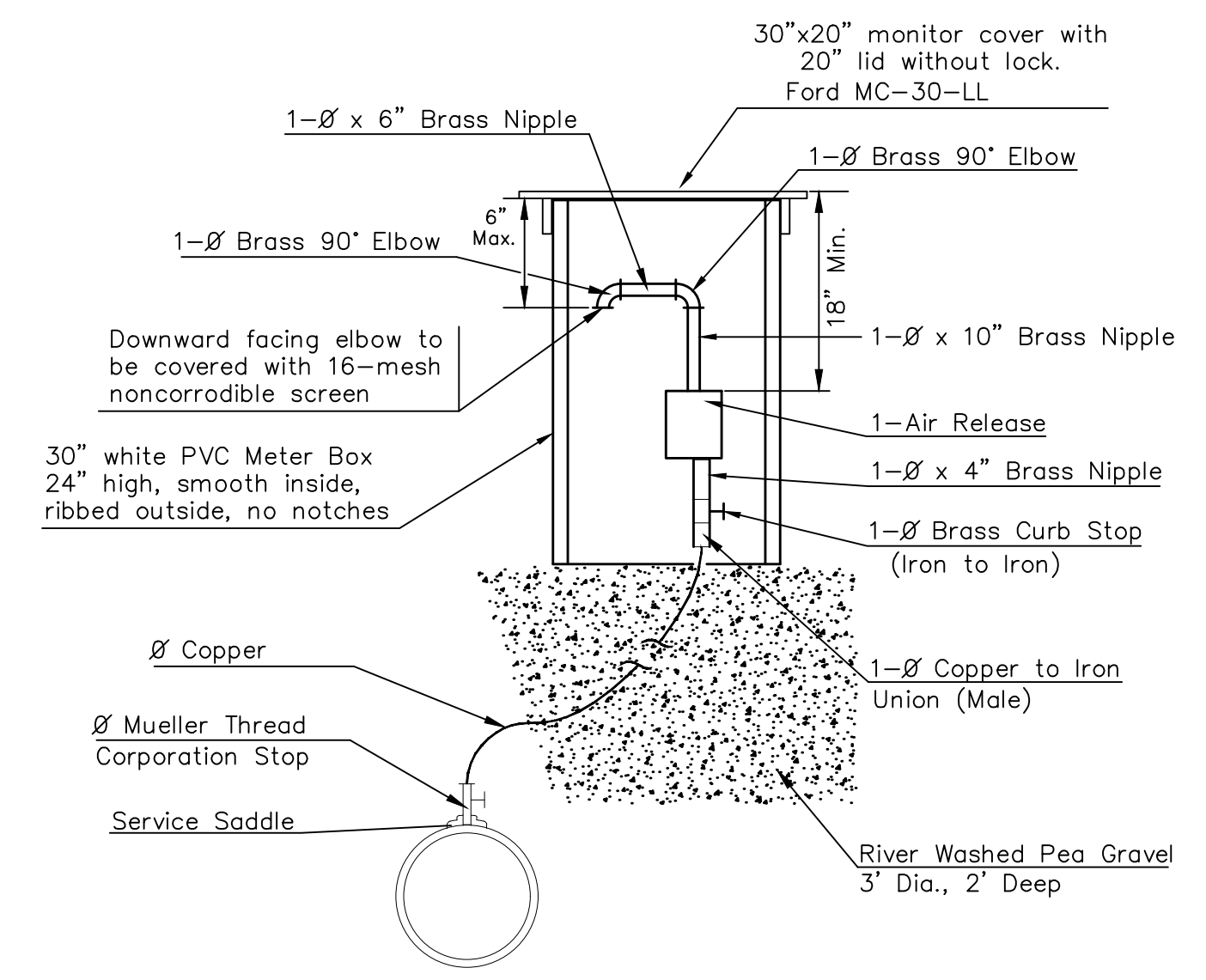


SERVICE TYPES



Note: Where the 2" Service Outlet Assembly is to be used to connect a 2" main to another main, the 2" valve shall be a 2" IPT Gate Valve. 2" ball or globe vavies shall not be approved for this use.

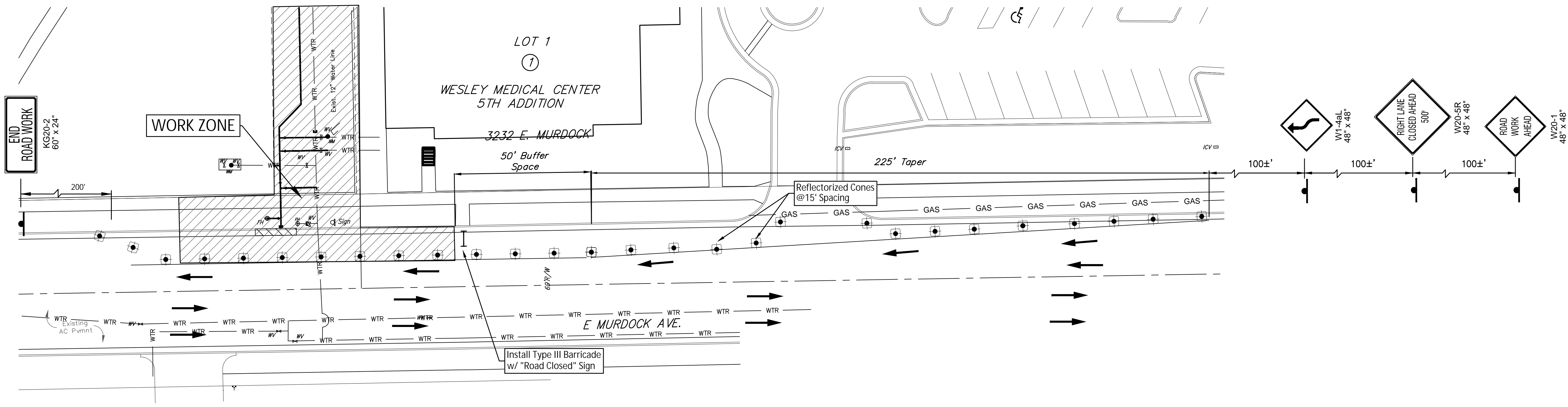
2" SERVICE OUTLET ASSEMBLY TOP VIEW



MATERIALS FOR 1" or 2" AIR RELEASE ASSEMBLY Ø = 1" or 2"



REVISED: NOVEMBER 2019	TM	3"x1/2" REBAR IN 1" & 2" METER SETTINGS FOR ERT.	
<p>CITY OF WICHITA</p> <p>PUBLIC WORKS &amp; UTILITIES ENGINEERING DIVISION</p>		<p>STANDARD WATER SERVICE DETAIL</p> <p>CITY ENGINEER</p> <p><b>GARY JANZEN, P.E.</b></p>	
		PROJECT NUMBER	OCA NUMBER
CITY ENGINEER'S OFFICE		SHEET	
CITY HALL - SEVENTH FLOOR		13 of 21	
455 NORTH MAIN STREET			
WICHITA, KANSAS 67202-1620			
(316) 268-4501			



UTILITY CROSSING SUMMARY TABLE

UTILITY	UTILITY CROSSING LOCATION	STATUS
EVERGY	OVERHEAD LINES (RUNNING EAST-WEST) ALONG NORTH SIDE E. MURDOCK AVE, NEAR WL-1 WORK ZONES	NO CONFLICT
EVERGY	OVERHEAD LINES (RUNNING EAST-WEST) ACROSS HOLYOKE AVE, CROSSES OVER WL-1 NEAR STATION 4+64	NO CONFLICT
EVERGY	OVERHEAD LINES (RUNNING NORTH-SOUTH) ALONG EAST SIDE E. HOLYOKE AVE, (FROM ORCHARD AVE TO COUNTRY CLUB PL.)	NO CONFLICT
EVERGY	OVERHEAD LINES (RUNNING EAST-WEST) CROSSES HOLYOKE AVE, AND WL-1 NEAR STA. 8+38	NO CONFLICT
EVERGY	OVERHEAD LINES (RUNNING EAST-WEST) ALONG SOUTH SIDE E. 9TH ST N., ADJACENT TO WL-1 WORK ZONE	NO CONFLICT
KANSAS GAS SERVICE	2" PE GAS LINE ALONG WEST SIDE HOLYOKE AVE CROSSES TO WL-1 WORK ZONE STA. 4+50 AND 5+72	CONTRACTOR TO VERIFY
KANSAS GAS SERVICE	4" PE GAS LINE (RUNNING EAST-WEST) ALONG SOUTH SIDE COUNTRY CLUB PL. CROSSES WL-1 NEAR STA. 6+11	CONTRACTOR TO VERIFY
KANSAS GAS SERVICE	RESIDENTIAL GAS SERVICE LINE CROSSES WL-1 NEAR STA. 8+84	CONTRACTOR TO VERIFY
KANSAS GAS SERVICE	RESIDENTIAL GAS SERVICE LINE CROSSES WL-1 NEAR STA. 9+27	CONTRACTOR TO VERIFY
KANSAS GAS SERVICE	2" PE GAS LINE (RUNNING NORTH-SOUTH) ALONG EAST SIDE HOLYOKE AVE FROM COUNTRY CLUB PL. TO E. 9TH ST N., ADJACENT TO WORK ZONES FOR RESIDENTIAL WATER SERVICE METER HOOK-UPS.	NO CONFLICT
KANSAS GAS SERVICE	2" PE GAS LINE (RUNNING EAST-WEST) ALONG SOUTH SIDE E. 9TH ST N., ADJACENT TO WL-1 WORK ZONE END STATION.	NO CONFLICT
AT&T	UNDERGROUND (RUNNING EAST-WEST) ALONG NORTH SIDE E. MURDOCK AVE, CROSSES WL-1 NEAR STA. 0+19	CONTRACTOR TO VERIFY
AT&T	UNDERGROUND CONDUIT (RUNNING EAST-WEST) CROSSES WL-1 NEAR STA. 4+55	CONTRACTOR TO VERIFY
AT&T	UNDERGROUND CABLE (RUNNING EAST-WEST) CROSSES WL-1 NEAR STA. 4+56	CONTRACTOR TO VERIFY
BLACK HILLS ENERGY	UNDERGROUND (RUNNING EAST-WEST) ALONG SOUTH SIDE E. MURDOCK AVE	NO CONFLICT
COX COMMUNICATION	NO UNDERGROUND LINES NOTED IN WATER LINE WORK ZONES	
CITY SANITARY SEWER	8" SANITARY SEWER LINE (RUNNING EAST-WEST) CROSSES HOLYOKE AVE AND WL-1 NEAR STA. 4+53	NO CONFLICT
CITY SANITARY SEWER	8" SANITARY SEWER LINE (RUNNING SW-NE) CROSSES HOLYOKE AVE AND WL-1 NEAR STA. 8+36	NO CONFLICT
CITY WATER	12" CAST IRON WATER MAIN (RUNNING NORT-SOUTH) ADJACENT TO WL-1 FROM MURDOCK AVE TO E. 9TH ST N.	NO CONFLICT
CITY WATER	8" PVC WATER MAIN (RUNNING SW-NE) ALONG SOUTH SIDE ORCHARD AVE, CROSSES WL-1 NEAR STA. 2+69	NO CONFLICT. WILL BE TAPPED
CITY WATER	ABANDONED 6" CAST IRON WATER MAIN (STILL UNDER PRESSURE) RUNNING EAST-WEST ALONG NORTH SIDE ORCHARD AVE, CROSSES WL-1 NEAR STA. 3+17	NO CONFLICT
CITY WATER	8" PVC WATER MAIN (RUNNING EAST-WEST) ALONG NORTH SIDE COUNTRY CLUB PL., CROSSES WL-1 NEAR STA. 6+52	NO CONFLICT. WILL BE TAPPED
CITY STORM SEWER	6" STORM SEWER LINE (RUNNING NORTH-SOUTH) FROM E. MURDOCK AVE'S NORTH CURB TO HOLYOKE AVE. TURN-OUT CURB, ADJACENT TO WL-1 WORK ZONE AND CROSSES NEAR STA. 0+41	CONTRACTOR TO VERIFY
CITY STORM SEWER	8" STORM SEWER LINE (RUNNING EAST-WEST) ALONG SOUTH SIDE OF COUNTRY CLUB PL., CROSSES WL-1 NEAR STA. 6+16	NO CONFLICT
CITY STORM SEWER	8" STORM SEWER LINE (RUNNING EAST-WEST) ALONG NORTH SIDE OF COUNTRY CLUB PL., CROSSES WL-1 NEAR STA. 6+49	NO CONFLICT
CITY STORM SEWER	18" STORM SEWER LINE (RUNNING SW-NE) ACROSS HOLYOKE AVE, ADJACENT TO WL-1 WORK ZONE NEAR STA. 12+48	NO CONFLICT
PRIVATE ELECTRICAL	UNDERGROUND (RUNNING SW-NE) CROSSES WL-1 NEAR STA. 0+54	CONTRACTOR TO VERIFY
PRIVATE WATER	2" WATER IRRIGATION LINE (RUNNING EAST-WEST) CROSSES WL-1 NEAR STA. 0+21	WILL BE RECONNECTED
PRIVATE WATER	2" WATER SERVIC LINE TO EAST HEALTH CARE FACILITY LOCATED EAST OF WL-1	WILL BE RECONNECTED
PRIVATE WATER	6" FIRE SERVICE LINE TO EAST HEALTH CARE FACILITY LOCATED EAST OF WL-1	WILL BE RECONNECTED
PRIVATE WATER	8" WATER LINE (RUNNING EAST-WEST) TO WEST HEALTH CARE FACILITY, CROSSES WL-1 NEAR STA. 0+99	WILL BE RECONNECTED
PRIVATE WATER	VARIOUS LAWN IRRIGATION LINES WILL BE IN CONFLICT WITH WATER LINE WORK ZONES	SEE GENERAL NOTE #51
PRIVATE WATER	REROUTING THE 4" DOMESTIC CURRENTLY SERVED FROM THE 8" FIRE SERVICE LINE	WILL BE RECONNECTED
PRIVATE COMMUNICATION	NO UNDERGROUND COMMUNICATION LINES NOTED IN WATER LINE WORK ZONES	

RECAPITULATION OF QUANTITIES  
HOLYOKE AVE. 12" WATER LINE REPLACEMENT

ITEM	QUANTITY	UNIT
Site Clearing	1	LS
Site Restoration	1	LS
Abandon Existing Water System	1	LS
Sodding	1	LS
Traffic Control	1	LS
Pavement Markings	1	LS
Signs, Existing, Removal and Replaced	1	LS
Pipe, WL 12" RJ PVC, including Directional Drill	1212	LF
Pipe, WL 12" DICL	78	LF
Pipe, WL 8" DICL	51	LF
Pipe, WL 6"	18	LF
Pipe, WL 6" DICL	11	LF
Pipe, WL 4" DICL	34	LF
Valve Assembly, Anchored Gate 4"	3	EACH
Valve Assembly, Anchored Gate 6"	2	EACH
Valve Assembly, Anchored Gate 8"	3	EACH
Valve Assembly, Anchored Gate 12"	6	EACH
Fire Hydrant Assembly	3	EACH
Fire Hydrant Removal	2	EACH
Service Reconnection, Water	4	EACH
Service Line, Long 1"	8	EACH
Service Line, Short 1"	5	EACH
Service Outlet Assembly, 2"	2	EACH
Concrete Encasement 8", Reinforced	40	LF
Concrete Pavement Removed & Replaced	16	SY
Concrete Sidewalk Removed	96	SF
Concrete Sidewalk Removed & Replaced	650	SF
Concrete C & G Rempved & Replaced	35	LF
Wheelchair Ramp Removed	4	EACH
Wheelchair Ramp w/Detectable Warnings	4	EACH
BMP, Back of Curb Protection	340	LF
BMP, Construction Entrance	1	EACH
BMP, Curb Inlet Protection	8	EACH
BMP, Silt Fence	50	LF
Signing, Elec. Portable Message	2	EACH
Tree Removed, Large	2	EACH

**BAUGHMAN COMPANY**

315 Ellis St.  
Wichita, KS 67211  
316-262-7271  
BaughmanCo.com

HOLYOKE AVE  
WATER REPLACEMENT

**TRAFFIC CONTROL  
E. MURDOCK AVE**

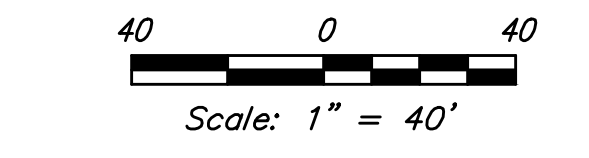
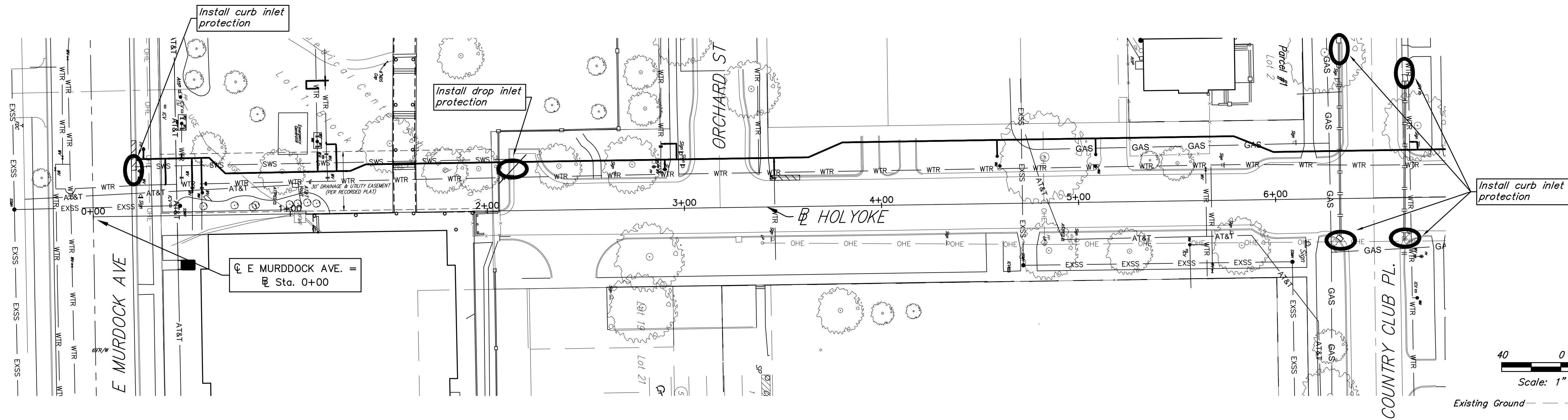
WATER LINE  
IMPROVEMENTS

PROJECT NUMBER:  
22-10-E347

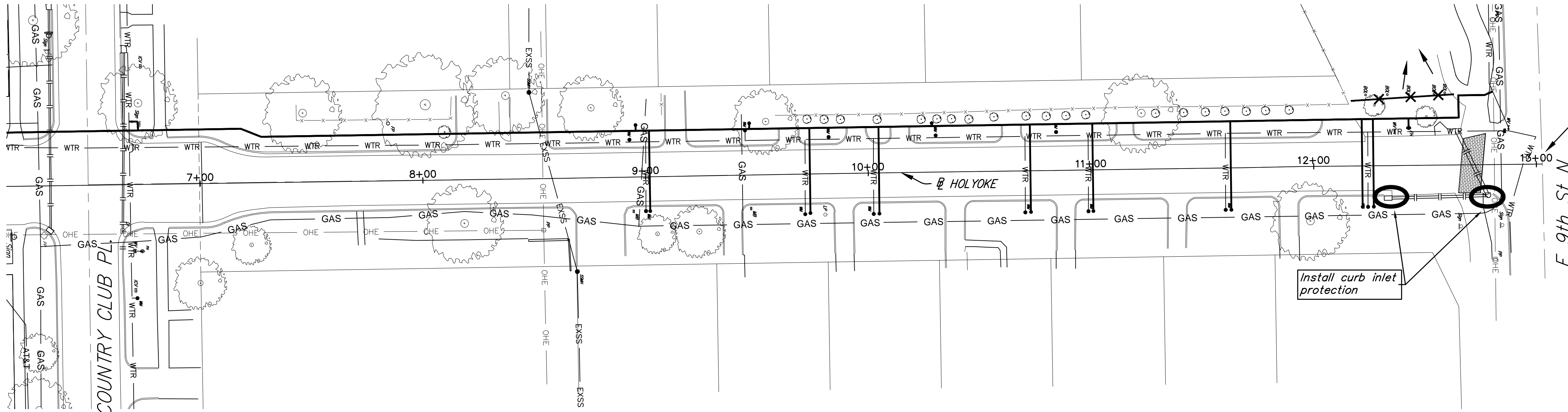
DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023

SHEET OF  
14 21

File: E:\Projects\Holyoke Ave - Waterline Replacement\_22-10-E347\Engineering\Phase 1\PPM\PPPW.dwg



- Existing Ground - - - - - 1364
- ✕ - SILT FENCING
- - BMP CURB INLET PROTECTION
- - BMP DROP INLET PROTECTION



☐ E 9th St N =  
Sta. 13+02.62

- NOTES:**
- Contractor shall make sure all erosion control is in place before project is accepted. This plan represents the minimum standard. Any additional erosion control measures shall be installed by the Contractor as needed.
  - Removal of Gravel Construction Entrance for pavement construction shall be included in bid item "Site Clearing & Restoration"
  - Contractor shall install BMP - Back of Curb Protection at disturbed areas, until grass sod is installed. 340 LF is an estimated quantity.
  - All grassy areas disturbed during construction shall receive grass Turf Restoration as per Cover Sheet General Note.

EROSION CONTROL MEASURE	INSTALL	MAINTAIN
CONSTRUCTION ENTRANCE (EA)	1	0
SILT FENCE (LF)	50	0
BMP - BACK OF CURB PROTECTION (L.F.)	340	0
BMP - CURB INLET PROTECTION	8	0
BMP - DROP INLET PROTECTION	0	0

\* ALL EXISTING BMPs INCLUDING CONSTRUCTION ENTRANCE, SEDIMENT BARRIERS, SILT FENCE, CUT-OFF TRENCH, AND EROSION CONTROL MAT SHALL BE MAINTAINED AND REPAIRED IF NECESSARY.

**BAUGHMAN COMPANY**

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Wichita, KS 67211  
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BaughmanCo.com

HOLYOKE AVE  
WATER REPLACEMENT

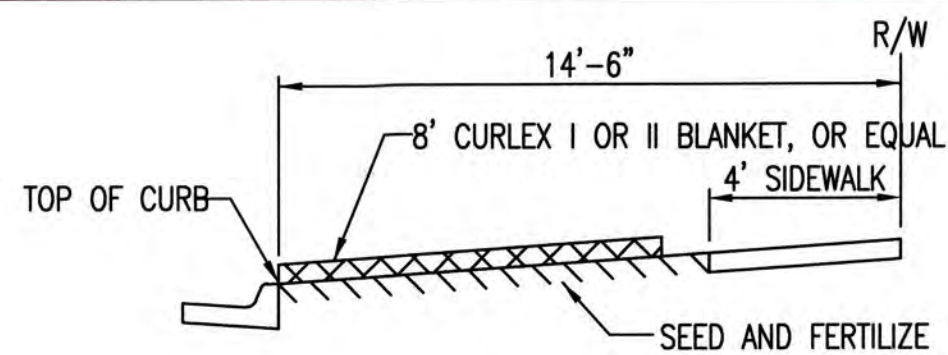
**EROSION CONTROL PLAN**

WATER LINE IMPROVEMENTS

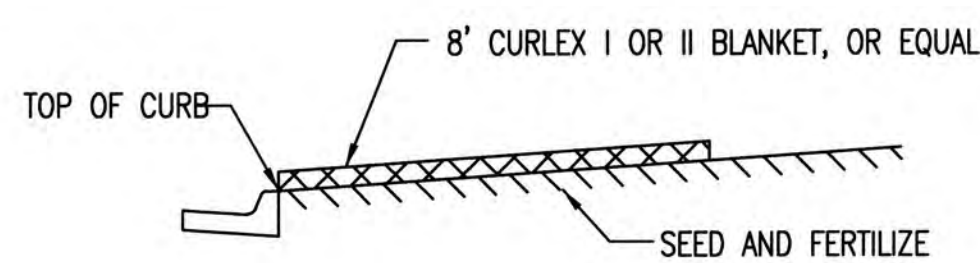
PROJECT NUMBER:  
22-10-E347

DESIGN: NBW DRAWN: AJV  
DATE: October 30, 2023

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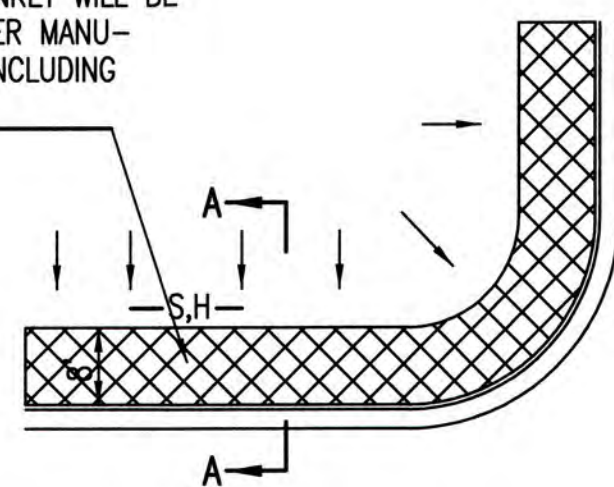


SECTION B-B

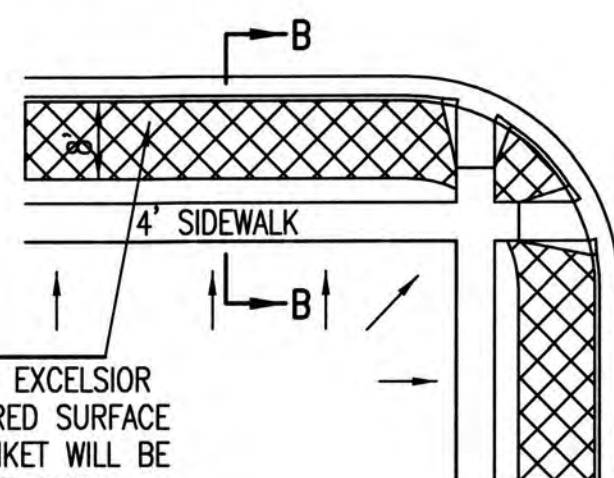


SECTION A-A

INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)



SOUTH STREET

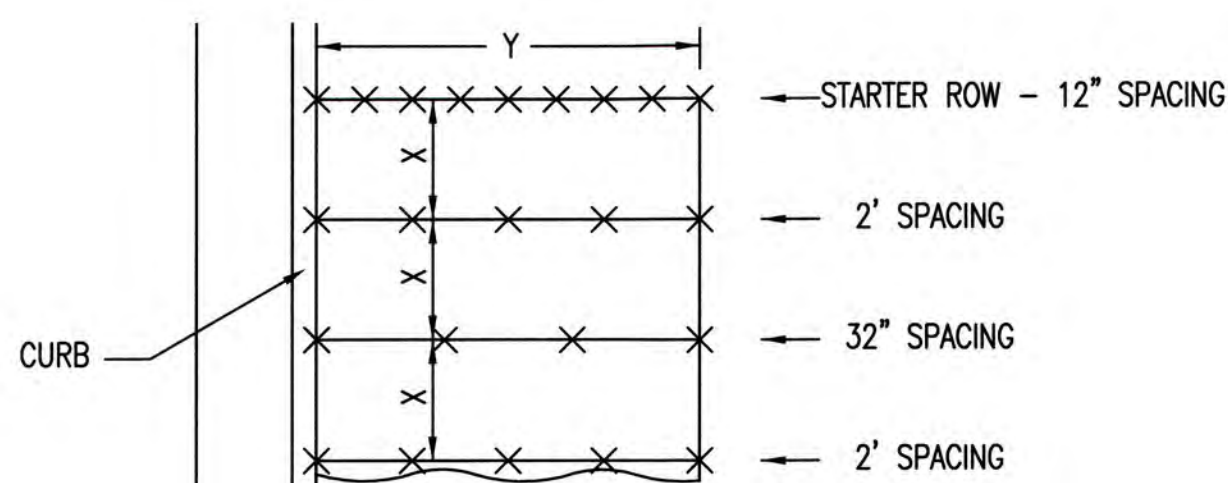


INSTALL 8' WIDE CURLEX I OR II EXCELSIOR BLANKET, OR EQUAL, ON PREPARED SURFACE BACK OF CURB. EDGE OF BLANKET WILL BE AT BACK OF CURB. INSTALL PER MANUFACTURERS RECOMMENDATION, INCLUDING STAPLES. (SEE DETAIL)

**GENERAL NOTES**

- EXCELSIOR MAT TO BE INSTALLED WHEN SOD IS NOT SPECIFIED ON PROJECT.
- EXCELSIOR BLANKET TO BE INSTALLED OVER SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
- AFTER INSTALLATION OF EXCELSIOR BLANKET, AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB AND INTO THE GUTTER, SUPPLEMENTAL EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS NEEDED, TO FIX THE PROBLEM.

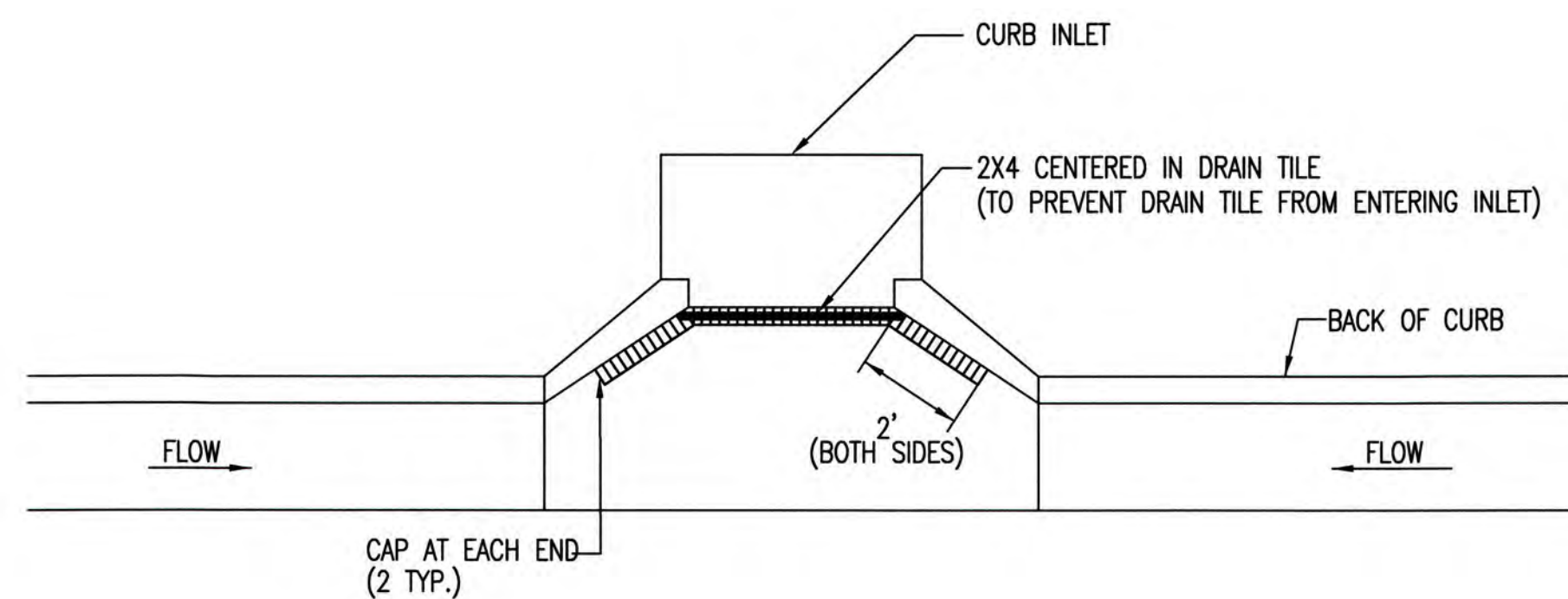
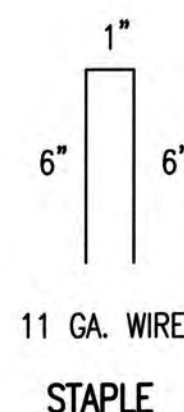
**BACK OF CURB PROTECTION DETAIL**



**STAPLE PATTERN**

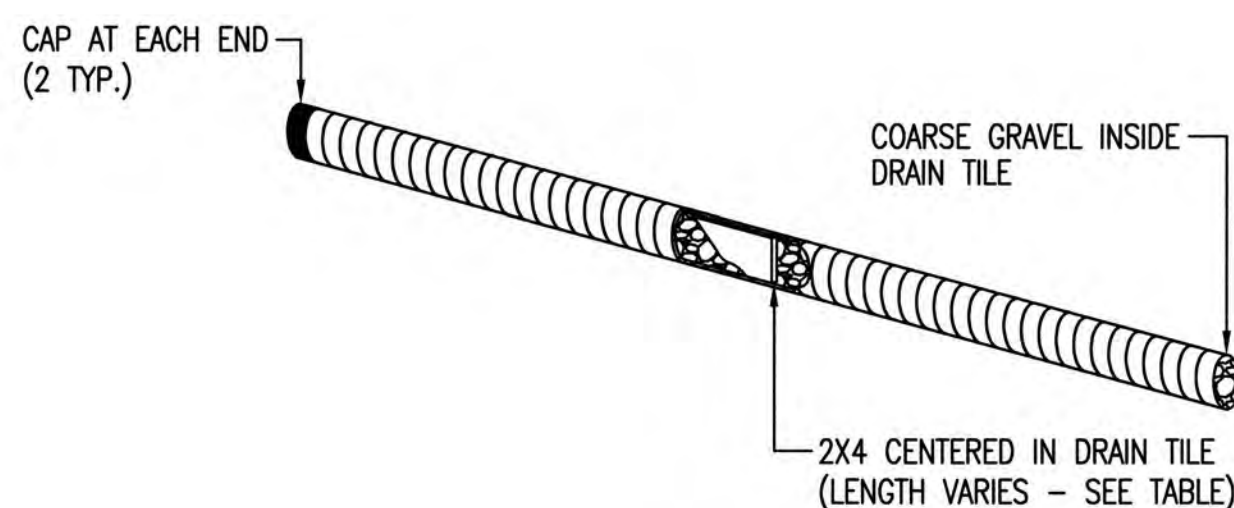
NOTES: USE 6" SEAM OVERLAP  
(X & Y = RECOMMENDED BY MANUFACTURE)

**DETAILS FOR APPROVED EROSION CONTROL MAT**

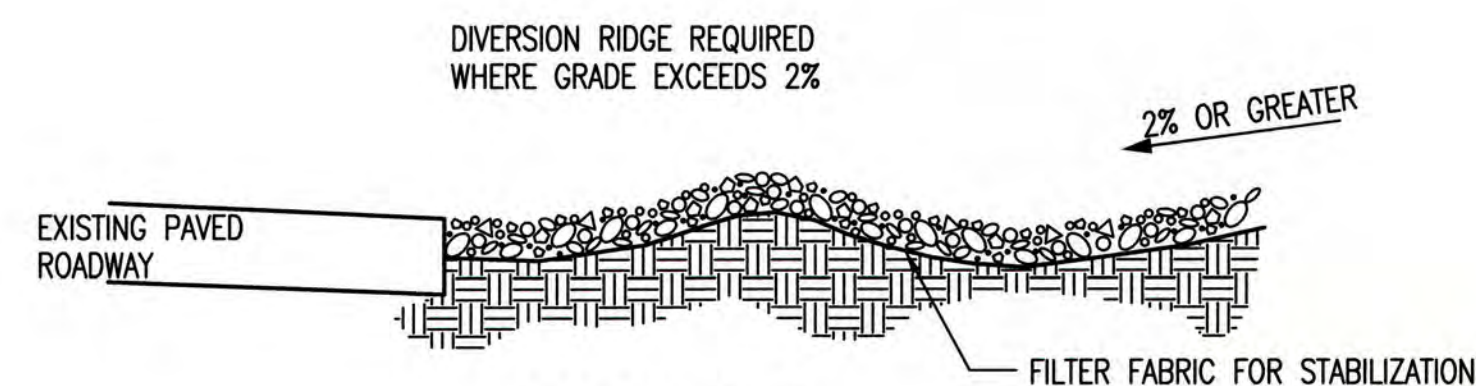


NOTE: PLACE 4" PERFORATED PVC PIPE, FILLED WITH 1/2"-1" DIA. GRAVEL, IN FRONT OF CURB INLET AS SHOWN.

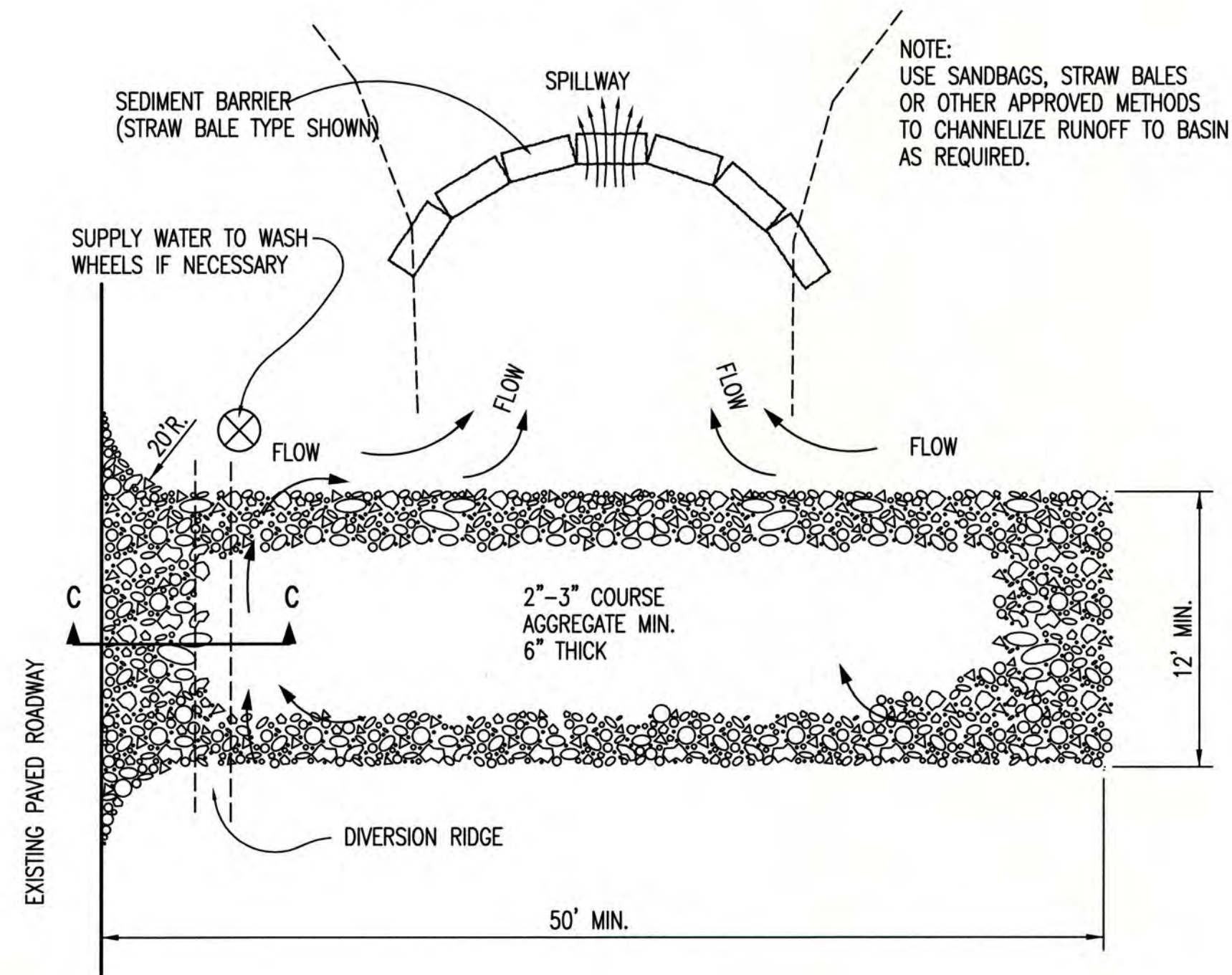
2X4 LENGTH	INLET TYPE	INLET OPENING
5'-6"	1-A	5'-0"
10'-6"	1-A	10'-0"
15'-6"	1-A	15'-0"



**CURB INLET PROTECTION**  
4" PERFORATED PIPE W/ GRAVEL



SECTION C-C



**STABILIZED CONSTRUCTION ENTRANCE**

**GENERAL NOTES**

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
- WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN, AS SHOWN ABOVE.
- DRIVE ENTRANCES ONTO RESIDENTIAL LOTS WILL NOT BE REQUIRED TO HAVE THE SEDIMENT BARRIER SHOWN, BUT WHEEL WASHING MAY BE REQUIRED IF STABILIZED ENTRANCE IS NOT SUFFICIENT TO KEEP MUD FROM BEING TRACKED ONTO ADJACENT STREET. ENTRANCE SHALL EXTEND FROM BACK OF CURB TO DWELLING.

REVISION DATE: MAY 2013

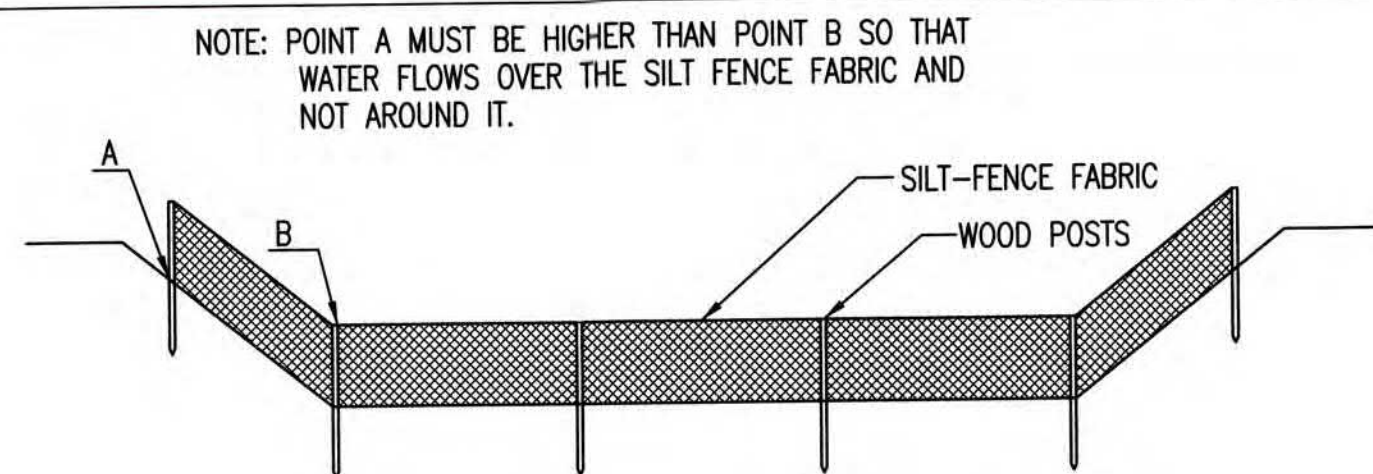


05/30/13

**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES  
ENGINEERING DIVISION

**BACK OF CURB PROTECTION,  
CURB INLET PROTECTION AND  
CONSTRUCTION ENTRANCE**

CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET <b>16 of 21</b>



**ELEVATION**  
**SILT FENCE DITCH CHECKS**  
(STREAM PROTECTION)

**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK, NOT OVER IT. SILT FENCE DITCH CHECKS OFTEN FAIL WHEN OVERTOPPED. SILT FENCE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE SILT FENCE SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE TOP OF THE LOW POINT OF THE FENCE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. SILT FENCE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. SILT FENCE SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED.

THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK DITCH GRADE (%)	SPACING CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS AT LEAST 12" DEEP BY 6" WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSTREAM SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE OF THE TRENCH. LINE TWO SIDES OF THE TRENCH WITH THE FABRIC AS SHOWN ON DETAIL. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE ON THE UPSLOPE SIDE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSTREAM OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 24". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

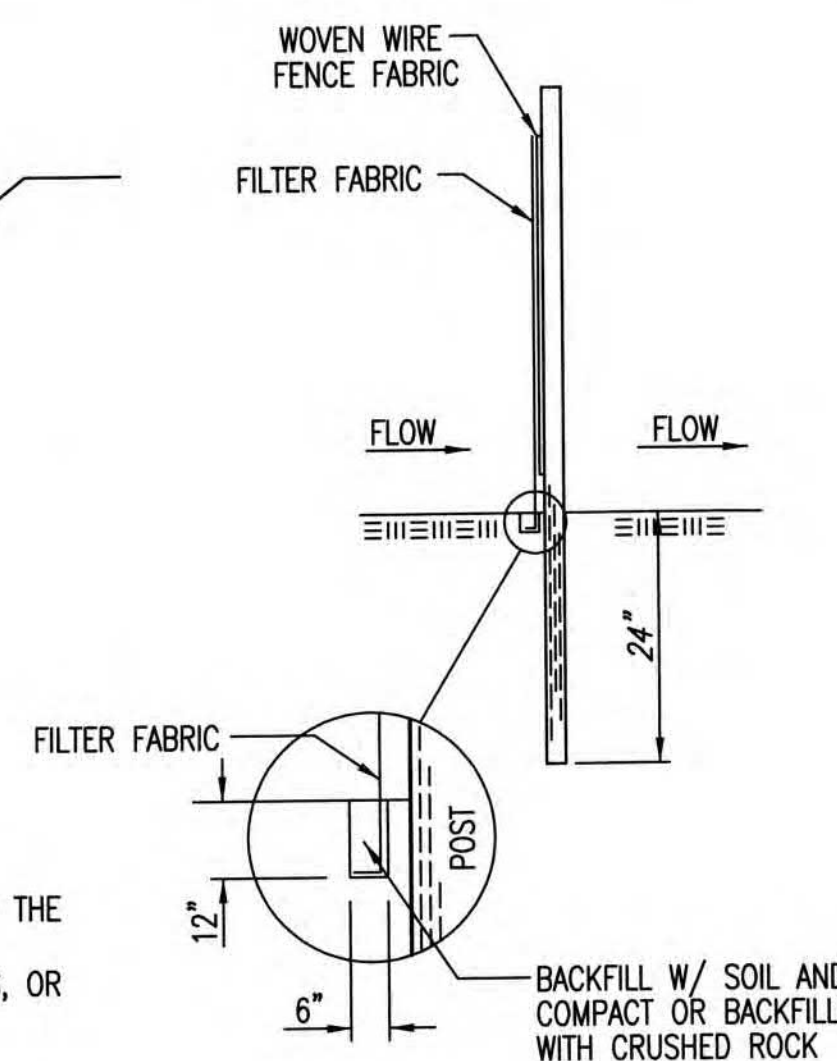
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WATER SHOULD FLOW THROUGH A SILT FENCE DITCH CHECK—NOT OVER IT. PLACE SILT FENCE IN DITCHES WHERE IT IS UNLIKELY THAT IT WILL BE OVERTOPPED. SILT FENCE INSTALLATIONS QUICKLY DETERIORATE WHEN WATER OVERTOPS THEM. DO NOT PLACE SILT FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE A SILT FENCE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE SILT FENCE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE FENCE IS HIGHER THAN THE LOW POINT ON THE TOP OF THE FENCE. DO NOT PLACE SILT FENCE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT.

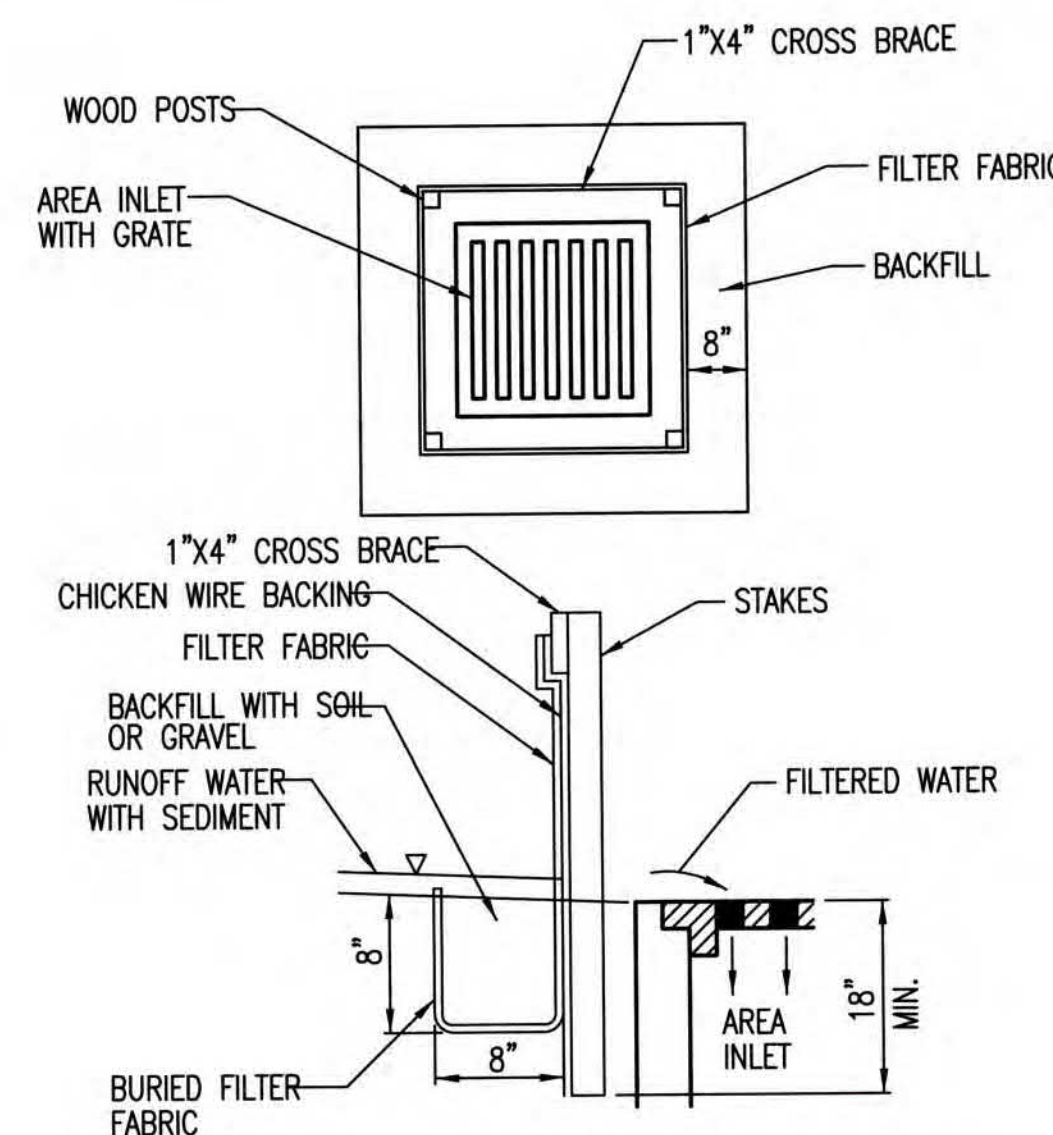
**INSPECTION AND MAINTENANCE:**

SILT FENCE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW AROUND THE DITCH CHECK?
- DOES WATER FLOW UNDER THE DITCH CHECK?
- DOES THE SILT FENCE SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



**ANCHOR TRENCH DETAIL**



**SILT FENCE BARRIERS FOR AREA INLETS**  
(INLET PROTECTION)

**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE WIRE OR POLYMERIC MESH BACKING USED TO HELP SUPPORT THE SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. THE MATERIAL USED TO FRAME THE TOPS OF THE POSTS SHOULD BE 1" BY 4" BOARDS. SILT FENCE FABRIC AND SUPPORT BACKING SHOULD BE ATTACHED TO THE WOODEN POSTS AND FRAME WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

PLACE A SILT FENCE DROP INLET BARRIER IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. WATER SHOULD FLOW THROUGH SILT FENCE, NOT OVER IT. SILT FENCE BARRIERS FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. WHEN USED AS A BARRIER FOR AREA INLETS, SILT FENCE FABRIC AND POSTS MUST BE SUPPORTED AT THE TOP BY A WOODEN FRAME. WHEN A SILT FENCE BARRIER FOR AREA INLETS IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 8" DEEP BY 8" WIDE. DRIVE POSTS TO A DEPTH OF AT LEAST 18" AROUND THE PERIMETER OF THE AREA INLET. THE DISTANCE BETWEEN POSTS SHOULD BE 4' OR LESS. IF THE DISTANCE BETWEEN TWO ADJACENT CORNER POSTS IS MORE THAN 4', ADD ANOTHER POST(S) BETWEEN THEM. CONNECT THE TOPS OF ALL THE POSTS WITH A WOODEN FRAME MADE OF 1" BY 4" BOARDS. USE NAILS OR SCREWS FOR FASTENING. ATTACH THE WIRE OR POLYMERIC-MESH BACKING TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC LONG ENOUGH TO WRAP AROUND THE PERIMETER OF THE AREA INLET. ADD MORE LENGTH FOR OVERLAPPING THE FABRIC JOINT. PLACE THE EDGE OF THE FABRIC IN THE TRENCH, STARTING AT THE OUTSIDE EDGE OF THE TRENCH. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT FENCE FABRIC SHOULD REMAIN EXPOSED. ATTACH THE SILT FENCE TO THE OUTSIDE OF THE POST/FRAME STRUCTURE WITH STAPLES, WIRE, ZIP TIES, OR NAILS. THE JOINT SHOULD BE OVERLAPPED TO THE NEXT POST.

NOTE: WHEN A SILT FENCE BARRIER FOR AREA INLET IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

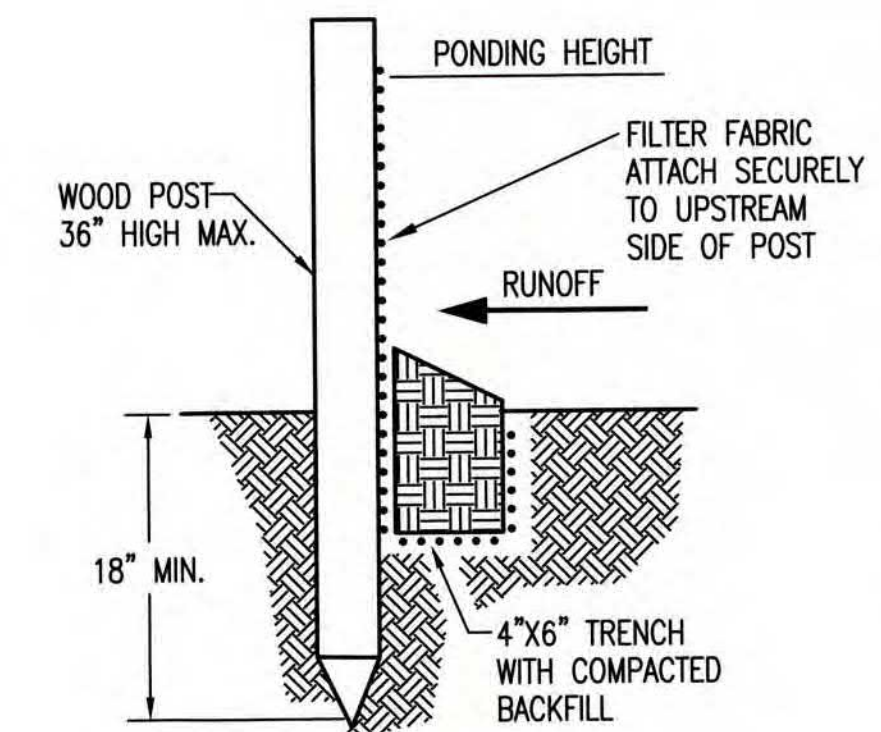
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WATER SHOULD FLOW THROUGH A SILT FENCE BARRIER FOR AREA INLET—NOT OVER IT. PLACE A SILT FENCE BARRIER FOR AREA INLET IN A LOCATION WHERE IT IS UNLIKELY TO BE OVERTOPPED. SILT FENCE BARRIER FOR AREA INLETS OFTEN FAIL WHEN REPEATEDLY OVERTOPPED. DO NOT PLACE POSTS ON THE OUTSIDE OF THE SILT FENCE BARRIER FOR AREA INLET. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT INSTALL SILT FENCE BARRIER FOR AREA INLETS WITHOUT FRAMING THE TOP OF THE POSTS. THE CORNER POSTS AROUND AREA INLETS ARE STRESSED IN TWO DIRECTIONS WHEREAS A NORMAL SILT FENCE IS ONLY STRESSED IN ONE DIRECTION. THIS ADDED STRESS REQUIRES MORE SUPPORT.

**INSPECTION AND MAINTENANCE:**

SILT FENCE BARRIER FOR AREA INLETS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW UNDER THE SILT FENCE?
- DOES THE SILT FENCE SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



**SILT FENCE BARRIERS**

**MATERIAL SPECIFICATION:**

SILT FENCE FABRIC SHOULD CONFORM TO THE AASHTO M288 96 SILT FENCE SPECIFICATION. THE POSTS USED TO SUPPORT THE SILT FENCE FABRIC SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. SILT FENCE FABRIC SHOULD BE ATTACHED TO THE WOODEN POSTS WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**PLACEMENT:**

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, SILT FENCE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. SILT FENCE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 6" DEEP BY 4" WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. ROLL OUT A CONTINUOUS LENGTH OF SILT FENCE FABRIC ON THE DOWNSLOPE SIDE OF THE TRENCH. PLACE THE EDGE OF THE FABRIC IN THE TRENCH STARTING AT THE TOP UPSLOPE EDGE. LINE ALL THREE SIDES OF THE TRENCH WITH THE FABRIC. BACKFILL OVER THE FABRIC IN THE TRENCH WITH THE EXCAVATED SOIL AND COMPACT. AFTER FILLING THE TRENCH, APPROXIMATELY 24" TO 36" OF SILT-FENCE FABRIC SHOULD REMAIN EXPOSED. LAY THE EXPOSED SILT FENCE UPSLOPE OF THE TRENCH TO CLEAR AN AREA FOR DRIVING IN THE POSTS. JUST DOWNSLOPE OF THE TRENCH, DRIVE POSTS INTO THE GROUND TO A DEPTH OF AT LEAST 18". PLACE POSTS NO MORE THAN 4' APART. ATTACH THE SILT FENCE TO THE ANCHORED POST WITH STAPLES, WIRE, ZIP TIES, OR NAILS.

**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**


WHEN PRACTICABLE, DO NOT PLACE SILT FENCE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. WHEN THE FLOW CONCENTRATES, IT OVERTOPS THE BARRIER AND THE SILT FENCE SLOPE BARRIER QUICKLY DETERIORATES. DO NOT PLACE SILT-FENCE POSTS ON THE UPSLOPE SIDE OF THE SILT FENCE FABRIC. IN THIS CONFIGURATION, THE FORCE OF THE WATER IS NOT RESTRICTED BY THE POSTS, BUT ONLY BY THE STAPLES (WIRE, ZIP TIES, NAILS, ETC.). THE SILT FENCE WILL RIP AND FAIL. DO NOT PLACE SILT FENCE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT SUFFICIENTLY ANCHORED, IT WILL WASH OUT. SILT FENCE SLOPE BARRIERS MUST BE DUG INTO THE GROUND—SILT FENCE AT GROUND LEVEL DOES NOT WORK BECAUSE WATER WILL FLOW UNDERNEATH.

**INSPECTION AND MAINTENANCE:**

SILT FENCE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

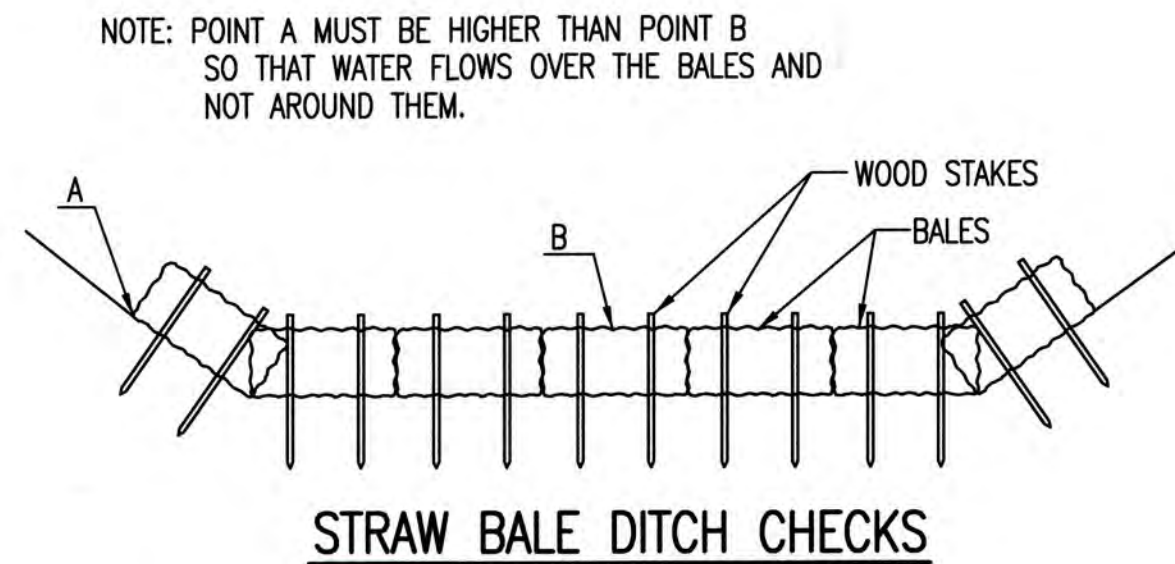
- ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
- DOES WATER FLOW UNDER THE SLOPE BARRIER?
- DO THE SILT FENCES SAG EXCESSIVELY?
- HAS THE SILT FENCE TORN OR BECOME DETACHED FROM THE POSTS?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013

 <b>CITY OF WICHITA</b> PUBLIC WORKS & UTILITIES ENGINEERING DIVISION			<b>SILT FENCE DITCH CHECK AND BARRIER DETAILS</b>		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>					
PROJECT NUMBER	OCA NUMBER	DATE			
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501			SHEET <b>17 of 21</b>		



05/30/13



**MATERIAL SPECIFICATION:**

BALE DITCH CHECKS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. OPTIONAL: THE DOWNSTREAM SCOUR APRON SHOULD BE CONSTRUCTED OF A DOUBLE-NETTED STRAW EROSION-CONTROL BLANKET AT LEAST 6' WIDE. OPTIONAL: THE METAL LANDSCAPE STAPLES USED TO ANCHOR THE EROSION-CONTROL BLANKET SHOULD BE AT LEAST 8" LONG.

**PLACEMENT:**

BALE DITCH CHECKS SHOULD BE PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. THE DITCH CHECK SHOULD EXTEND FAR ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. THIS PREVENTS WATER FROM FLOWING AROUND THE CHECK. STRAW BALE DITCH CHECKS SHOULD NOT BE PLACED IN DITCHES WHERE HIGH FLOWS ARE EXPECTED. ROCK CHECKS SHOULD BE USED INSTEAD. BALES SHOULD BE PLACED IN DITCHES WITH SLOPES OF 6% OR LESS. FOR SLOPES STEEPER THAN 6%, ROCK CHECKS SHOULD BE USED. THE FOLLOWING TABLE PROVIDES CHECK SPACING FOR A GIVEN DITCH GRADE:

DITCH CHECK SPACING DITCH GRADE (%)	CHECK SPACING (FEET)
0.5	200
1.0	200
2.0	100
3.0	65
4.0	50
5.0	40
6.0	30

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH PERPENDICULAR TO THE DITCH FLOWLINE THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. EXTEND THE TRENCH IN A STRAIGHT LINE ALONG THE ENTIRE LENGTH OF THE PROPOSED DITCH CHECK. PLACE THE SOIL ON THE UPSTREAM SIDE OF THE TRENCH-IT WILL BE USED LATER. OPTIONAL: ON THE DOWNSTREAM SIDE OF THE TRENCH, ROLL OUT A LENGTH OF EROSION-CONTROL BLANKET (SCOUR APRON) EQUAL TO THE LENGTH OF THE TRENCH. PLACE THE UPSTREAM EDGE OF THE EROSION-CONTROL BLANKET ALONG THE BOTTOM UPSTREAM EDGE OF THE TRENCH. THE EROSION CONTROL BLANKET SHOULD BE ANCHORED IN THE TRENCH WITH ONE ROW OF 8" LANDSCAPE STAPLES PLACED ON 18" CENTERS. THE REMAINDER OF THE EROSION-CONTROL BLANKET (THE PORTION THAT IS NOT LYING IN THE TRENCH) WILL SERVE AS THE DOWNSTREAM SCOUR APRON. THIS SECTION OF THE BLANKET SHOULD BE ANCHORED TO THE GROUND WITH 8" LANDSCAPE STAPLES PLACED AROUND THE PERIMETER OF THE BLANKET ON 18" CENTERS. THE REMAINDER OF THE BLANKET SHOULD BE ANCHORED USING TWO EVENLY SPACED ROWS OF 8" LANDSCAPE STAPLES ON 18" CENTERS PLACED PERPENDICULAR TO THE FLOWLINE OF THE DITCH. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSTREAM SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP AND EXTEND UPSTREAM NO MORE THAN 24".

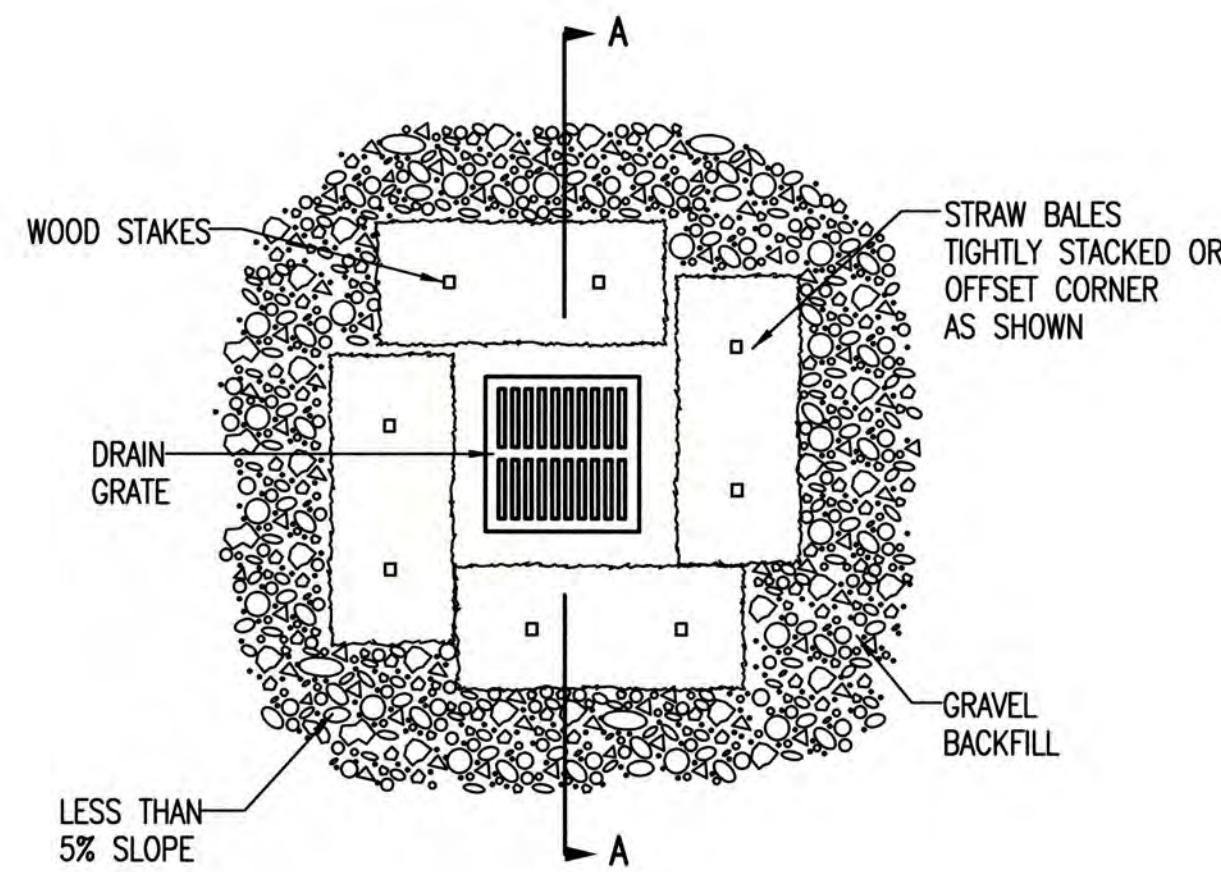
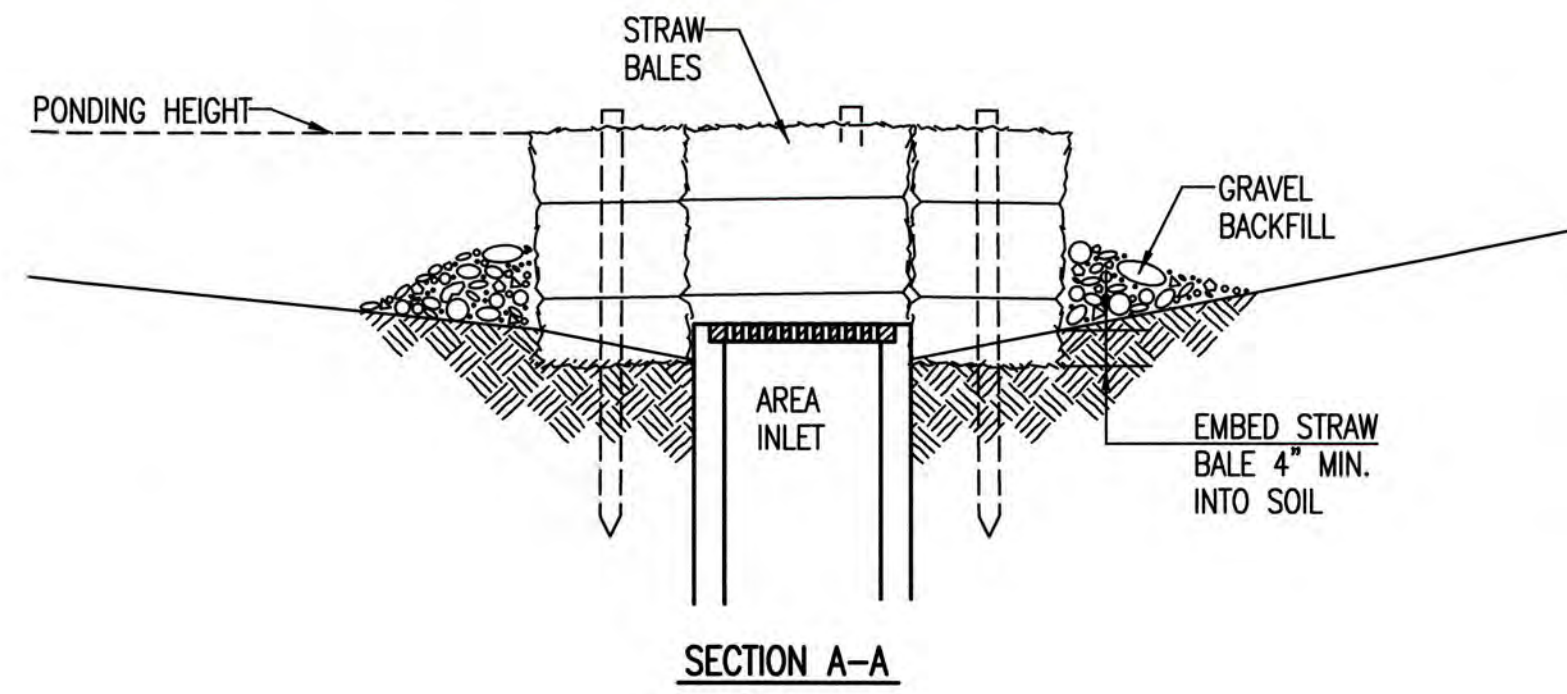
**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

DO NOT PLACE A BALE DITCH CHECK DIRECTLY IN FRONT OF A CULVERT OUTLET. IT WILL NOT STAND UP TO THE CONCENTRATED FLOW. DO NOT PLACE BALE DITCH CHECKS IN DITCHES THAT WILL LIKELY EXPERIENCE HIGH FLOWS. THEY WILL NOT STAND UP TO CONCENTRATED FLOW. FOLLOW PRESCRIBED DITCH-CHECK SPACING GUIDELINES. IF SPACING GUIDELINES ARE EXCEEDED, EROSION WILL OCCUR BETWEEN THE DITCH CHECKS. DO NOT ALLOW WATER TO FLOW AROUND THE DITCH CHECK. MAKE SURE THAT THE DITCH CHECK IS LONG ENOUGH SO THAT THE GROUND LEVEL AT THE ENDS OF THE CHECK IS HIGHER THAN THE TOP OF THE LOWEST CENTER BALE. DO NOT PLACE BALE DITCH CHECKS IN CHANNELS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE CHECK IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE DITCH CHECKS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE CHECK.

**INSPECTION AND MAINTENANCE:**

BALE DITCH CHECKS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW AROUND THE DITCH CHECK?
- DOES WATER FLOW UNDER THE DITCH CHECK?
- DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
- ARE ANY BALES AND/OR SCOUR APRONS (OPTIONAL) DISLODGED?
- ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE DITCH CHECK?



**STRAW BALE BARRIERS FOR AREA INLETS (INLET PROTECTION)**

**MATERIAL SPECIFICATION:**

BALE AREA INLET BARRIERS SHOULD BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

**PLACEMENT:**

BALE AREA INLET BARRIERS SHOULD BE PLACED DIRECTLY AROUND THE PERIMETER OF A DROP INLET. WHEN A BALE AREA INLET BARRIER IS LOCATED NEAR AN INLET THAT HAS STEEP APPROACH SLOPES, THE STORAGE CAPACITY BEHIND THE BARRIER IS DRASTICALLY REDUCED. TIMELY REMOVAL OF SEDIMENT MUST OCCUR FOR A BARRIER TO OPERATE PROPERLY IN THIS LOCATION.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH AROUND THE PERIMETER OF THE AREA INLET THAT IS AT LEAST 4" DEEP BY A BALE'S WIDTH WIDE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. SOME BALES MAY NEED TO BE SHORTENED TO FIT INTO THE TRENCH AROUND THE AREA INLET. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE RECEIVING SIDE OF THE BARRIER AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP. NOTE: WHEN A BALE AREA INLET BARRIER IS PLACED IN A SHALLOW MEDIAN DITCH, MAKE SURE THAT THE TOP OF THE BARRIER IS NOT HIGHER THAN THE PAVED ROAD. IN THIS CONFIGURATION, WATER MAY SPREAD ONTO THE ROADWAY CAUSING A HAZARDOUS CONDITION.

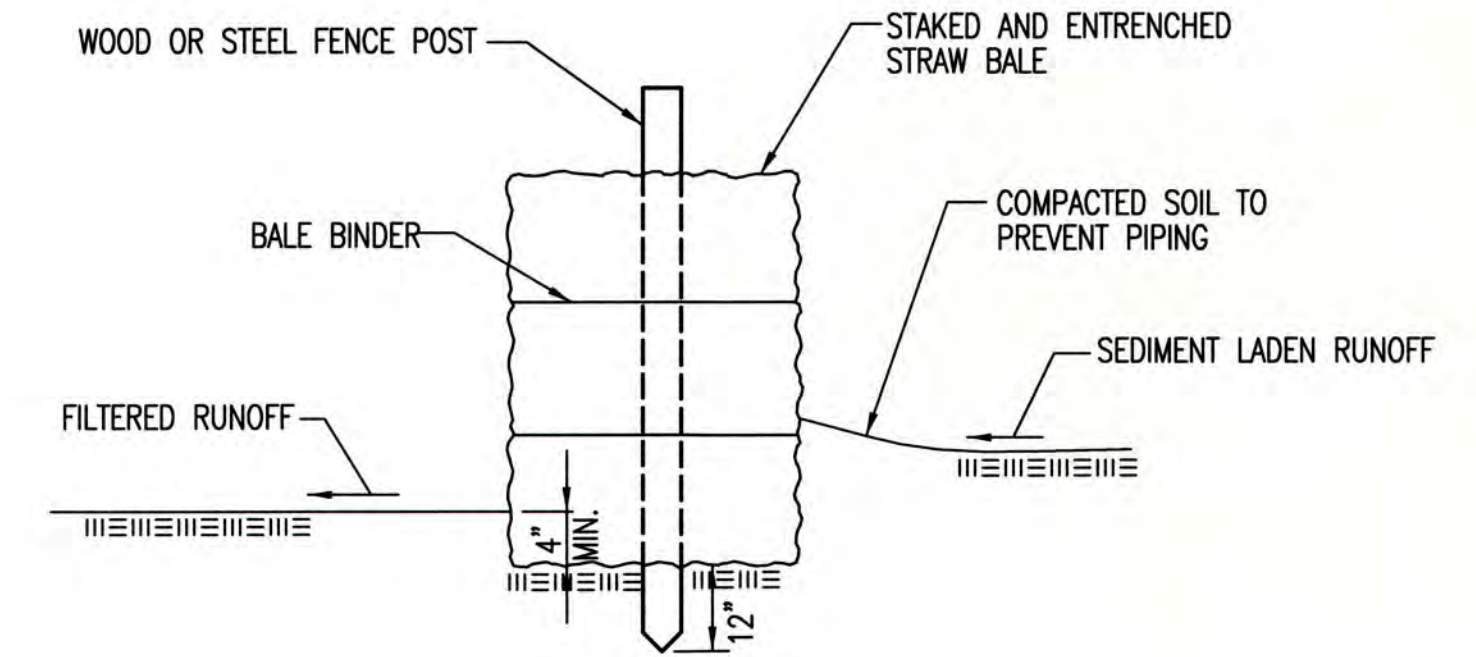
**LIST OF COMMON PLACEMENT INSTALLATION MISTAKES TO AVOID:**

BALES SHOULD BE PLACED DIRECTLY AGAINST THE PERIMETER OF THE AREA INLET. THIS ALLOWS OVERTOPPING WATER TO FLOW DIRECTLY INTO THE INLET INSTEAD OF ONTO NEARBY SOIL CAUSING SCOUR. BALE AREA INLET BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

**INSPECTION AND MAINTENANCE:**

BALE AREA INLET BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- DOES WATER FLOW UNDER THE AREA INLET BARRIER?
- DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
- ARE ANY BALES DISLODGED?
- ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE AREA INLET BARRIER?



**STRAW BALE BARRIERS**

**MATERIAL SPECIFICATION:**

BALE SLOPE BARRIERS MAY BE CONSTRUCTED OF WHEAT STRAW, OAT STRAW, PRAIRIE HAY, OR BROMEGRASS HAY THAT IS FREE OF WEEDS DECLARED NOXIOUS BY THE KANSAS STATE BOARD OF AGRICULTURE. THE STAKES USED TO ANCHOR THE BALES SHOULD BE A HARDWOOD MATERIAL WITH THE FOLLOWING MINIMUM DIMENSIONS: 2" SQUARE (NOMINAL) BY 4' LONG. TWINE SHOULD BE USED TO BIND BALES. THE USE OF WIRE BINDING IS PROHIBITED BECAUSE IT DOES NOT BIODEGRADE READILY.

**PLACEMENT:**

A SLOPE BARRIER SHOULD BE USED AT THE TOE OF A SLOPE WHEN A DITCH DOES NOT EXIST. THE SLOPE BARRIER SHOULD BE PLACED ON NEARLY LEVEL GROUND 5' TO 10' AWAY FROM THE TOE OF A SLOPE. THE BARRIER IS PLACED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE ADEQUATE STORAGE FOR SETTLING OUT SEDIMENT. WHEN PRACTICABLE, BALE SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. BALE SLOPE BARRIERS CAN ALSO BE PLACED ALONG RIGHT-OF-WAY FENCE LINES TO KEEP SEDIMENT FROM CROSSING ONTO ADJACENT PROPERTY. WHEN PLACED IN THIS MANNER, THE SLOPE BARRIER WILL NOT LIKELY FOLLOW CONTOURS.

**PROPER INSTALLATION METHOD:**

EXCAVATE A TRENCH THE LENGTH OF THE PLANNED SLOPE BARRIER THAT IS 4" DEEP AND A BALE'S WIDTH WIDE. MAKE SURE THAT THE TRENCH IS EXCAVATED ALONG A SINGLE CONTOUR. WHEN PRACTICABLE, SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. PLACE THE SOIL ON THE UPSLOPE SIDE OF THE TRENCH FOR LATER USE. PLACE THE BALES IN THE TRENCH, MAKING SURE THAT THEY ARE BUTTED TIGHTLY. TWO STAKES SHOULD BE DRIVEN THROUGH EACH BALE ALONG THE CENTERLINE OF THE DITCH CHECK, APPROXIMATELY 6" TO 8" IN FROM THE BALE ENDS. STAKES SHOULD BE DRIVEN AT LEAST 12" INTO THE GROUND. ONCE ALL THE BALES HAVE BEEN INSTALLED AND ANCHORED, PLACE THE EXCAVATED SOIL AGAINST THE UPSLOPE SIDE OF THE CHECK AND COMPACT IT. THE COMPACTED SOIL SHOULD BE NO MORE THAN 3" TO 4" DEEP.

**LIST OF COMMON PLACEMENT/INSTALLATION MISTAKES TO AVOID:**

WHEN PRACTICAL, DO NOT PLACE BALE SLOPE BARRIERS ACROSS CONTOURS. SLOPE BARRIERS SHOULD BE PLACED ALONG CONTOURS TO AVOID A CONCENTRATION OF FLOW. CONCENTRATED FLOW OVER A SLOPE BARRIER CREATES A SCOUR HOLE ON THE DOWNSLOPE SIDE OF THE BARRIER. THE SCOUR HOLE EVENTUALLY UNDERMINES THE BALES AND THE BARRIER FAILS. DO NOT PLACE BALE SLOPE BARRIERS IN AREAS WITH SHALLOW SOILS UNDERLAIN BY ROCK. IF THE BARRIER IS NOT ANCHORED SUFFICIENTLY, IT WILL WASH OUT. BALE SLOPE BARRIERS MUST BE DUG INTO THE GROUND. BALES AT GROUND LEVEL DO NOT WORK BECAUSE THEY ALLOW WATER TO FLOW UNDER THE BARRIER.

**INSPECTION AND MAINTENANCE:**

BALE SLOPE BARRIERS SHOULD BE INSPECTED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAINFALL OF 1/2" OR MORE. THE FOLLOWING IS A LIST OF QUESTIONS THAT SHOULD BE ADDRESSED DURING EACH INSPECTION:

- ARE THERE ANY POINTS ALONG THE SLOPE BARRIER WHERE WATER IS CONCENTRATING?
- DOES WATER FLOW UNDER THE SLOPE BARRIER?
- DOES WATER FLOW THROUGH SPACES BETWEEN ABUTTING BALES?
- ARE ANY BALES DISLODGED?
- ARE BALES DECOMPOSING DUE TO AGE AND/OR WATER DAMAGE?
- DOES SEDIMENT NEED TO BE REMOVED FROM BEHIND THE SLOPE BARRIER?

REVISION DATE: MAY 2013



**STRAW BALE DITCH CHECK AND BARRIER DETAILS**

CITY ENGINEER  
**GARY JANZEN, P.E.**

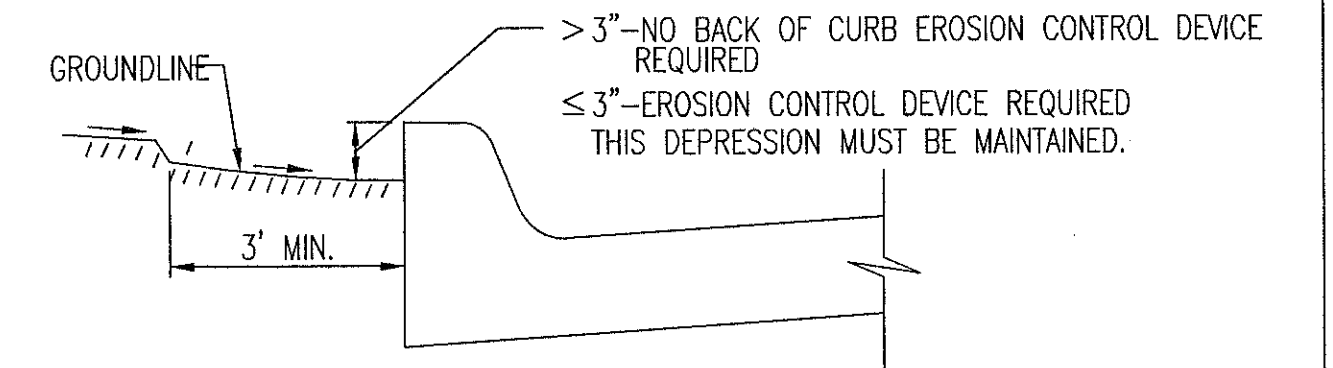
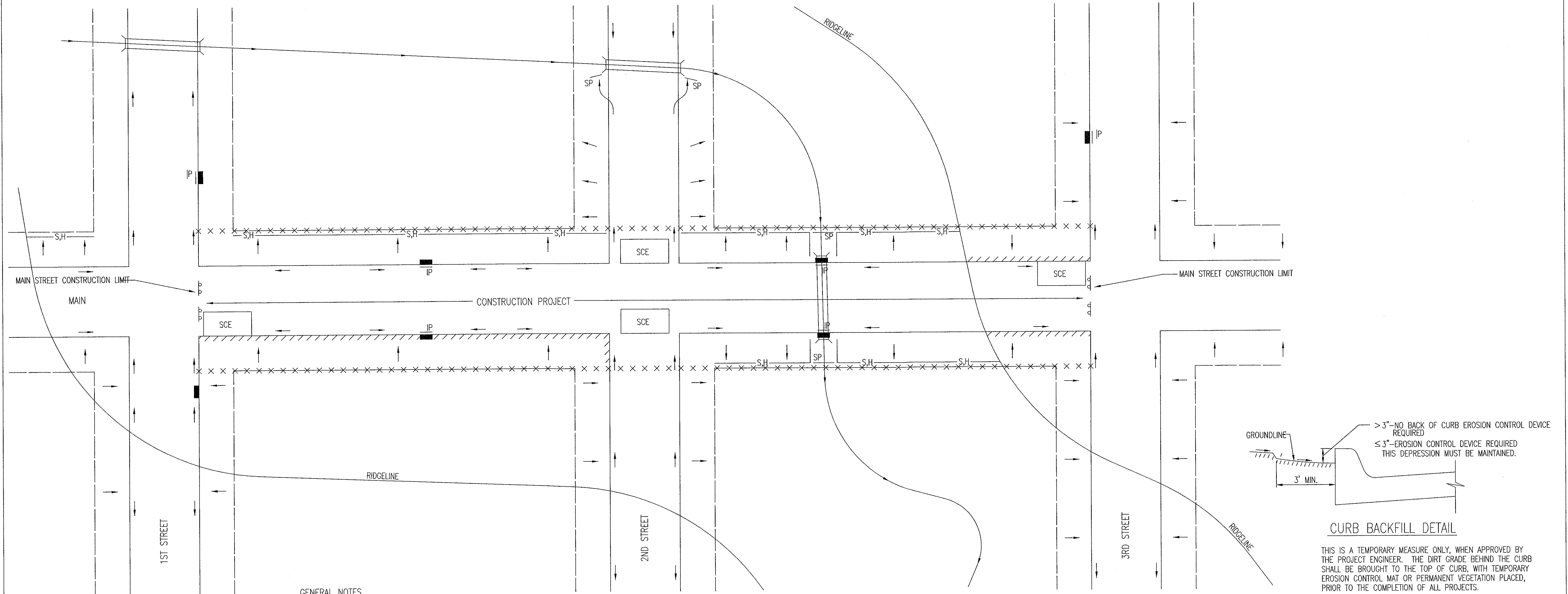
PROJECT NUMBER	OCA NUMBER	DATE
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CITY ENGINEER'S OFFICE  
CITY HALL - SEVENTH FLOOR  
455 NORTH MAIN STREET  
WICHITA, KANSAS 67202-1620  
(316) 268-4501

SHEET  
**18 of 21**

GENERAL NOTES

1. THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPES OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
2. EROSION CONTROL DEVICES MUST BE MAINTAINED BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROCESS AND UNTIL THE DISTURBED EARTH IS RESTABILIZED.
3. IF THE PROJECT WILL DISTURB 1 ACRE OR MORE, A FEDERAL/STATE NPDES STORMWATER PERMIT IS REQUIRED. A DETAILED STORMWATER POLLUTION PREVENTION PLAN, IS REQUIRED. THE EROSION CONTROL DEVICES SHOWN ON THIS SHEET ARE CONSIDERED TO BE THE MINIMUM TO BE SHOWN IN THE POLLUTION PREVENTION PLAN.
4. FOR PROJECTS DISTURBING LESS THAN 1 ACRE, CONTRACTORS ARE ENCOURAGED TO PREPARE STORMWATER POLLUTION PREVENTION PLANS PRIOR TO CONSTRUCTION. EROSION CONTROL DEVICES MUST BE USED ON ALL PROJECTS.
5. FAILURE TO USE AND MAINTAIN EROSION CONTROL DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE CONTRACTOR TO THE PENALTIES PROVIDED FOR THEREIN.
6. THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE A DIFFERENT DEVICE OTHER THAN THOSE SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED AS LONG AS THEY ARE EFFECTIVE AND MAINTAINED.



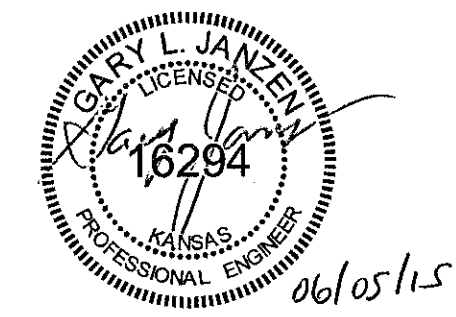
THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

GENERAL NOTES

1. THE INTENT OF ALL EROSION CONTROL DEVICES IS TO KEEP ALL SEDIMENT CONFINED TO THE CONSTRUCTION SITE, AND OUT OF ALL UNDERGROUND PIPES, DITCHES, LAKES, AND OTHER DRAINAGE FACILITIES, AND OFF OF STREETS.
2. THE POINT OF COMPLIANCE IS GENERALLY THE RIGHT-OF-WAY LINES WITHIN THE LIMITS OF CONSTRUCTION.
3. EROSION CONTROL DEVICES WILL BE REQUIRED AT ALL POINTS ALONG THE PROJECT WHERE DISTURBED EARTH CAN DRAIN ONTO PRIVATE PROPERTY.
4. INLET PROTECTION DEVICES WILL BE REQUIRED WHEREVER WATER CAN DRAIN OFF THE PROJECT SITE INTO AN INLET, INCLUDING ANY SIDE STREET INLETS.
5. EROSION CONTROL DEVICES SHALL BE INSTALLED AT CREEK CROSSINGS SO AS TO PREVENT SEDIMENT FROM ENTERING THEREIN.
6. STABILIZED CONSTRUCTION ENTRANCES SHALL BE PROVIDED, AS NEEDED, TO PREVENT MUD FROM TRACKING ONTO STREETS NOT UNDER CONSTRUCTION AND ON STREETS WITHIN THE PROJECT LIMITS IF TRAFFIC IS BEING MAINTAINED THROUGH THE PROJECT.
7. ANY MUD TRACKED ONTO STREETS MUST BE REMOVED AT THE END OF EACH WORK DAY.
8. THE CONTRACTOR WILL BE REQUIRED TO PLACE EROSION CONTROL DEVICES BACK OF CURB, WHENEVER WATER CAN DRAIN OVER CURB, TO KEEP ERODED SOIL OUT OF THE GUTTERLINES, IN ACCORDANCE WITH THE FOLLOWING:
  - A. THE DEVICE REQUIRED WILL BE APPROVED EROSION CONTROL MAT LISTED ON THE CITY'S APPROVED MATERIAL LIST. SAID BLANKET SHALL BE PLACED OVER THE APPROPRIATE SEED AND FERTILIZER, AS SPECIFIED IN THE PROJECT SPECIFICATIONS. (SEE SOIL EROSION BMPs - BACK OF CURB SEDIMENT BARRIER DETAILS)
  - B. THIS DEVICE SHALL BE INSTALLED IMMEDIATELY WHENEVER THE CURB IS BACKFILLED TO WITHIN 3" OF THE TOP OF CURB. (SEE CURB BACKFILL DETAIL) OTHER BMP'S MAY BE REQUIRED AT LOCATIONS WHERE CONCENTRATED FLOW CARRIES SEDIMENT OVER THE CURB.
  - C. ADDITIONALLY, OTHER EROSION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) WILL BE INSTALLED AT LOCATIONS OF CONCENTRATED FLOW RESULTING IN SEDIMENT OVERRUNNING THE MAT.
  - D. SHOULD THE PROJECT PLANS SPECIFY THAT THE RIGHT-OF-WAY IS TO BE SODDED, THE EXCELSIOR MAT WILL NOT BE REQUIRED SO LONG AS THE SOD IS PLACED WITHIN 48 HOURS AFTER CURB BACKFILL REACHES A HEIGHT OF 3" OR LESS FROM TOP OF CURB. (SEE CURB BACKFILL DETAIL)

LEGEND

- R-O-W LIMITS
- DRAINAGE FLOW PATH
- x x x x x R/W LIMIT WITHIN CONSTRUCTION LIMIT
- STORM WATER INLETS
- IP INLET PROTECTION
- S,H— SILT FENCE OR HAY BALE BARRIER
- SP STREAM PROTECTION
- [SCE] STABILIZED CONSTRUCTION ENTRANCE
- //// BACK OF CURB PROTECTION

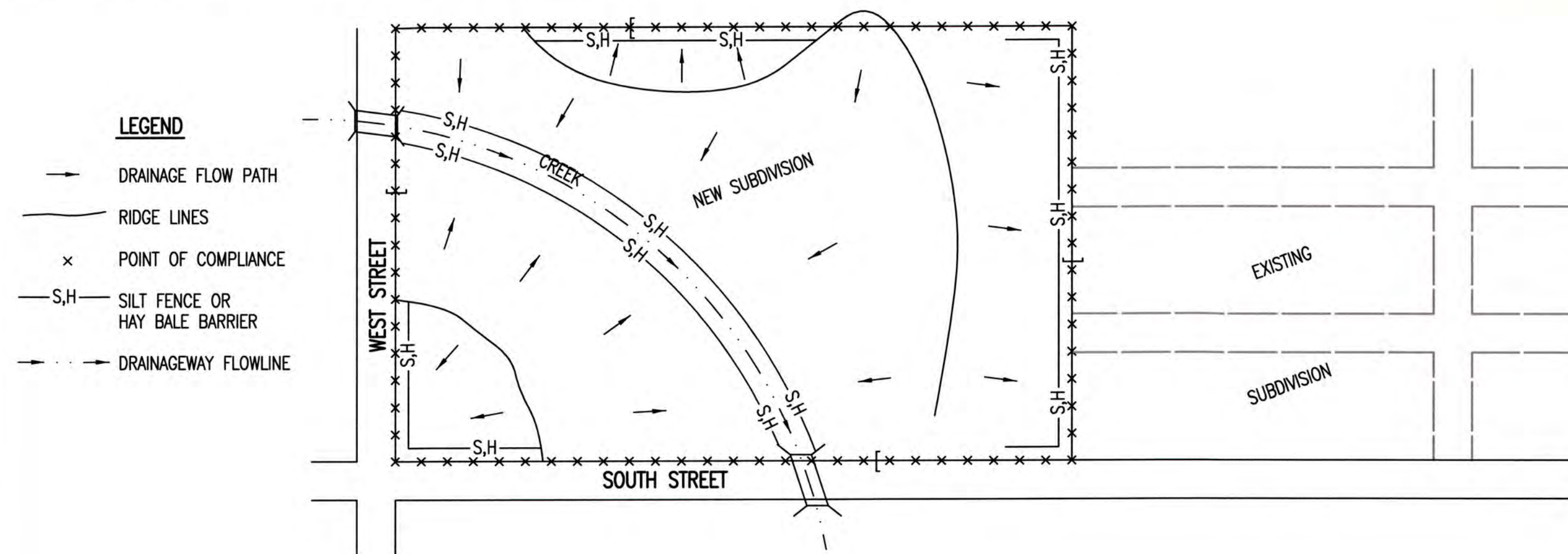


**CITY OF WICHITA**  
PUBLIC WORKS & UTILITIES  
ENGINEERING DIVISION

STREET IMPROVEMENT PROJECTS		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET <b>19 of 21</b>

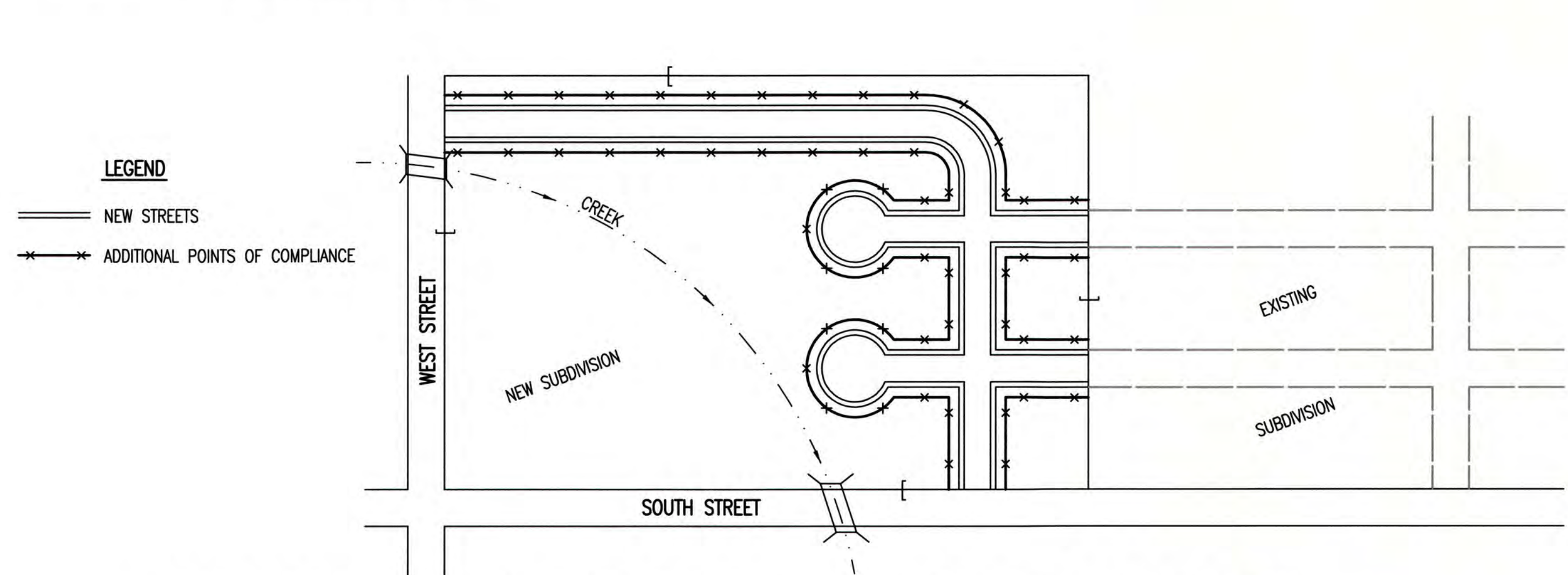
REVISION: JUNE 2015

**PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)**



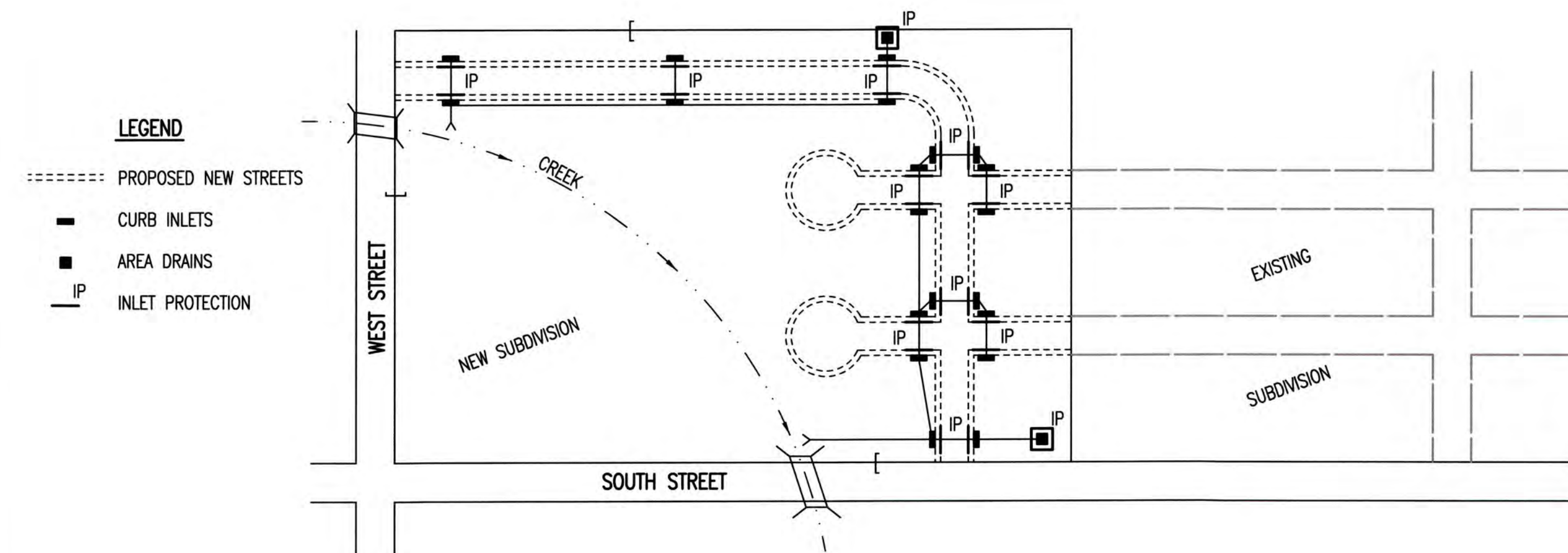
- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM THE SITE. SHOULD LAKES BE CONSTRUCTED WITHIN THE SUBDIVISION THAT WILL DISCHARGE DURING STORMS, THEY ARE ALSO A POINT OF COMPLIANCE.
- HAY BALES OR SILT FENCE MUST BE CONSTRUCTED ALONG THE PROPERTY LINE WHERE ON SITE WATER CAN DRAIN OFF THE PROPERTY. THESE EROSION CONTROL DEVICES WILL ALSO BE INSTALLED ALONG ANY DRAINAGE DITCH OR LAKE THAT CAN DISCHARGE.
- SHOULD SILT OR SEDIMENT ENTER THE DITCHES OR STREETS ON THE ADJACENT BOUNDARY STREETS, APPROPRIATE EROSION CONTROL DEVICES WILL BE PLACED WITHIN THE SUBDIVISION TO PREVENT THIS.
- ANY MUD TRACKED ONTO ADJACENT STREETS WILL BE REMOVED WITHIN 48 HOURS OR BY FRIDAY AT 6:00 PM, WHICHEVER IS EARLIER.
- CONTRACTORS WORKING WITHIN THE SITE WILL NOT BE REQUIRED TO USE INDIVIDUAL EROSION CONTROL DEVICES AS LONG AS THOSE SPECIFIED ABOVE ARE IN PLACE AND EFFECTIVE. CONTRACTORS WORKING ON THE BOUNDARY LINE STREETS OR ON ADJACENT PROPERTIES TO EXTEND UTILITIES ARE EXPECTED TO USE EROSION CONTROL DEVICES AT THEIR WORK LOCATIONS, AS NEEDED.
- UTILIZE STABILIZED CONSTRUCTION ENTRANCE AT ENTRANCE AND EXIT ONTO ANY EXISTING PUBLIC STREETS.
- IF THE INITIAL EARTH WORK AND UTILITIES ARE DONE AS PART OF A PUBLIC IMPROVEMENT PROJECT, THESE EROSION CONTROL DEVICES WILL BE INSTALLED BY THE CONTRACTOR AS SPECIFIED IN THE INDIVIDUAL PROJECT CONTRACTS. THE CONTRACTOR WILL MAINTAIN THESE DEVICES UNTIL COMPLETION OF THE CONTRACT, AT WHICH TIME THE DEVELOPER WILL ASSUME MAINTENANCE RESPONSIBILITIES. IF THESE CONTRACTS ARE NOT PUBLIC IMPROVEMENT PROJECTS, THE DEVELOPER WILL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING THESE DEVICES.
- WITHIN 14 DAYS OF COMPLETION OF EARTHWORK ACTIVITIES IN ANY GIVEN AREA, THAT AREA SHALL BE TEMPORARILY OR PERMANENTLY SEEDED AND MULCHED.

**PHASE 3 – STREET CONSTRUCTION**



- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, NEW STREETS ARE INSTALLED. ALL EROSION CONTROL DEVICES INSTALLED DURING PHASE 1 AND 2 MUST STILL BE MAINTAINED. THE POINT OF COMPLIANCE NOW SHIFTS TO THE BACK OF CURB ALONG EACH STREET.
- CURB OPENING INLET PROTECTION:  
 A. SUMP AREAS – INLET PROTECTION SHALL BE PROVIDED WHEN STREET SUBGRADE WORK IS COMPLETED.  
 B. NON-SUMP LOCATIONS – PROVIDE INLET PROTECTION AS SOON AS BASE COURSE ASPHALT IS INSTALLED, BEFORE THE SURFACE COURSE LIFT.
- EROSION CONTROL DEVICES WILL BE REQUIRED BACK OF CURB WHEREVER WATER CAN FLOW OVER THE CURB AND THE CURB HAS BEEN BACKFILLED TO WITHIN 3" OR LESS OF THE TOP OF CURB (SEE CURB BACKFILL DETAIL). FOR CURBS NOT YET ENTIRELY BACKFILLED (3" OR MORE BELOW TOP OF CURB), ADDITIONAL DEVICES WILL BE REQUIRED AT POINTS WHERE WATER BREAKS OVER CURB WHICH COULD RESULT IN THE PLACEMENT OF SEDIMENT IN THE GUTTER.
- SEE DETAIL SHEET FOR BACK OF CURB PROTECTION.
- THE BACK OF CURB PROTECTION SPECIFIED ON THIS PLAN MAY HAVE TO BE SUPPLEMENTED WITH HAY BALE OR SILT FENCE EROSION CONTROL DEVICES AT LOCATIONS WHERE CONCENTRATED FLOW RESULTS IN SEDIMENT BEING CARRIED OVER THE EXCELSIOR MATS.
- THE STREET CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING BACK OF CURB EROSION CONTROL DEVICES.
- THE INDIVIDUAL LOT OWNERS WILL BE RESPONSIBLE FOR MAINTAINING THE BACK OF CURB EROSION CONTROL DEVICES IN FRONT OF THEIR LOTS UNTIL SUCH TIME AS ADJACENT DISTURBED EARTH IS STABILIZED WITH GRASS OR SOD.

**PHASE 2 – INSTALLATION OF STORM SEWER**

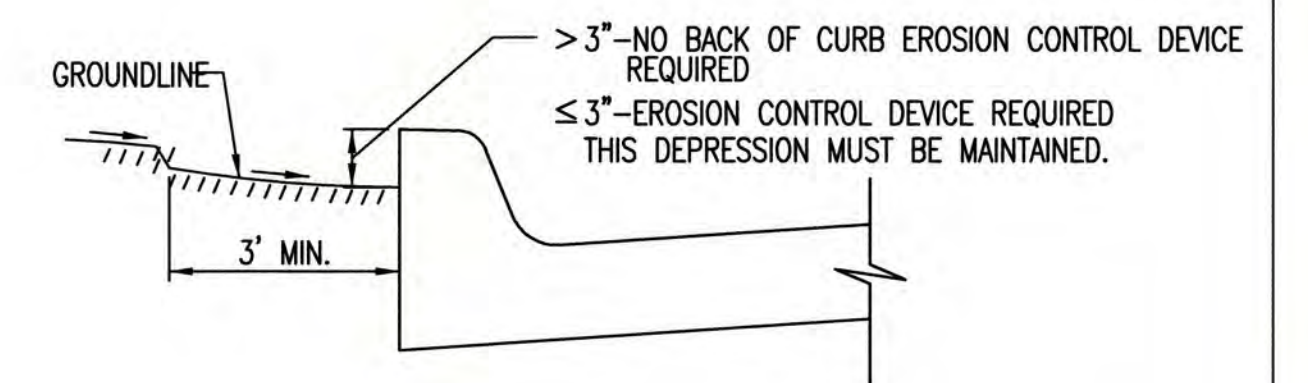


- DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
- AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST NOW BE PROTECTED SO ALL NEW INLETS BECOME POINTS OF COMPLIANCE.
- AREA DRAINS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, HAY BALE OR SILT FENCE PROTECTION WILL BE INSTALLED AROUND THEM.
- CURB OPENING INLETS – AS SOON AS WATER CAN FLOW INTO THESE DRAINS, INLET PROTECTION DEVICES MUST BE INSTALLED. IF WATER CANNOT FLOW INTO CURB INLETS UNTIL STREET CONSTRUCTION IS COMPLETE, THEN STREET CONTRACTOR WILL INSTALL INLET PROTECTION. SEE PHASE 3 – STREET CONSTRUCTION.
- THE STORM SEWER CONTRACTOR WILL BE RESPONSIBLE FOR INSTALLING THESE DEVICES.
- THE SUBDIVISION DEVELOPER WILL MAINTAIN THESE EROSION CONTROL DEVICES ONCE INSTALLED.
- ALL DISTURBED GROUND WILL BE FINAL GRADED AND TEMPORARILY OR PERMANENTLY SEEDED WITHIN 14 DAYS IF COMPLETION OF WORK IN ANY GIVEN PART OF THE SUBDIVISION.
- ONCE ALL DISTURBED GROUND DRAINING TO AN INLET HAS BEEN RESTABILIZED WITH GRASS OR SOD, THE SUBDIVISION DEVELOPER WILL BE RESPONSIBLE FOR PERMANENTLY REMOVING THE INLET PROTECTION.

**GENERAL NOTES**

- THE INTENT OF ALL EROSION CONTROL DEVICES IS TO PREVENT ERODED SOIL FROM ENTERING DITCHES, STORM SEWERS, LAKES, STREETS OR ANY OTHER OTHER DRAINAGE FEATURE.
- THIS SHEET IS INTENDED TO PROVIDE GUIDELINES AS TO WHAT TYPE OF EROSION CONTROL DEVICES WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS. CONTRACTORS ARE EXPECTED TO BID PROJECTS ACCORDINGLY.
- EROSION CONTROL DEVICES SHALL BE MAINTAINED DURING THE CONSTRUCTION PROCESS TO REMAIN EFFECTIVE. MAINTENANCE SHALL BE AS INDICATED ON SOIL EROSION BMP'S DETAIL SHEETS.
- PERSONS DESTROYING EROSION CONTROL DEVICES SHALL BE RESPONSIBLE FOR IMMEDIATELY REPAIRING THEM OR INSTALLING SUITABLE REPLACEMENT DEVICES.
- THE DEVELOPMENT OF ANY SUBDIVISION THAT DISTURBS 1 ACRE OR MORE WILL REQUIRE A FEDERAL/STATE NPDES STORMWATER PERMIT. THE PREPARATION OF A STORMWATER POLLUTION PREVENTION PLAN IS REQUIRED. EROSION CONTROL DEVICES ARE REQUIRED. THE DETAILS SHOWN ON THIS SHEET ARE THE MINIMUM STANDARDS TO BE SHOWN ON POLLUTION PREVENTION PLANS.
- FOR SUBDIVISIONS SMALLER THAN 1 ACRE, SOIL EROSION DEVICES ARE REQUIRED. ALSO, DEVELOPERS AND CONTRACTORS ARE ENCOURAGED TO DEVELOP POLLUTION PREVENTION PLANS FOR EACH PROJECT PRIOR TO CONSTRUCTION.
- FAILURE TO USE AND MAINTAIN SOIL EROSION DEVICES IS A VIOLATION OF SECTION 16.32 OF THE CITY CODE AND WILL SUBJECT THE SUBDIVISION DEVELOPER AND CONTRACTORS TO THE PENALTIES PROVIDED THEREIN.
- THE APPLICATION OF EROSION CONTROL DEVICES SHOWN ON THIS SHEET IS FOR SITUATIONS NORMALLY ENCOUNTERED. FROM TIME TO TIME, SITUATIONS WILL ARISE THAT MAY REQUIRE DEVICES OTHER THAN THAT SHOWN. EROSION CONTROL DEVICES, OTHER THAN THOSE SHOWN, MAY BE UTILIZED SO LONG AS THEY ARE EFFECTIVE AND MAINTAINED.
- A STABILIZED EARTH SURFACE IS DEFINED AS ONE THAT IS HARD SURFACED WITH CONCRETE, ASPHALT, OR THE LIKE, OR ONE ON WHICH 70% OF THE GRASS HAS GERMINATED ON THE ENTIRE SURFACE.

SEE DETAIL SHEET FOR BACK OF CURB PROTECTION DETAIL



**CURB BACKFILL DETAIL (STREET CONSTRUCTION ONLY)**

THIS IS A TEMPORARY MEASURE ONLY, WHEN APPROVED BY THE PROJECT ENGINEER. THE DIRT GRADE BEHIND THE CURB SHALL BE BROUGHT TO THE TOP OF CURB, WITH TEMPORARY EROSION CONTROL MAT OR PERMANENT VEGETATION PLACED, PRIOR TO THE COMPLETION OF ALL PROJECTS.

REVISION DATE: MAY 2013



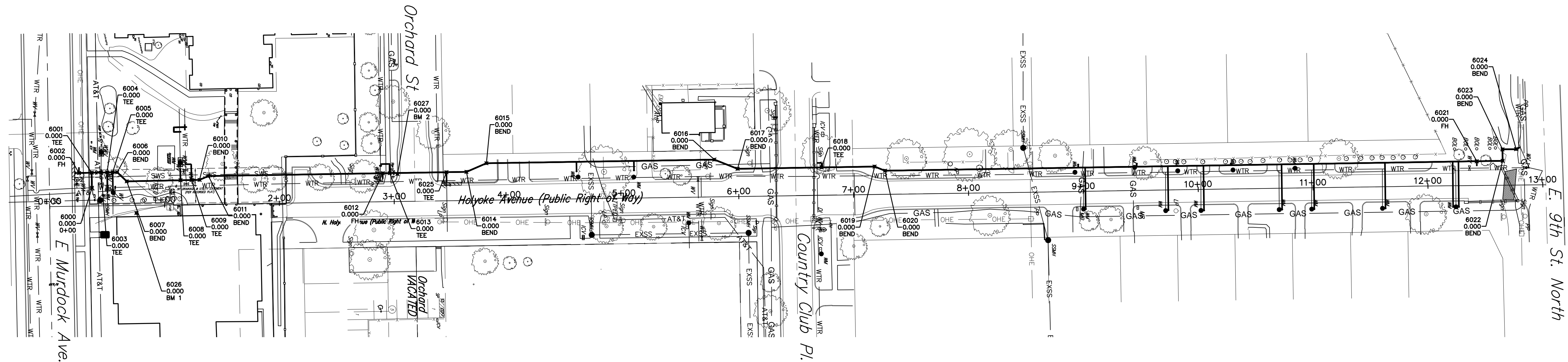
SUBDIVISION DEVELOPMENT PROCESS		
CITY ENGINEER <b>GARY JANZEN, P.E.</b>		
PROJECT NUMBER	OCA NUMBER	DATE
CITY ENGINEER'S OFFICE CITY HALL - SEVENTH FLOOR 455 NORTH MAIN STREET WICHITA, KANSAS 67202-1620 (316) 268-4501		SHEET <b>20 of 21</b>

# BENCHMARKS

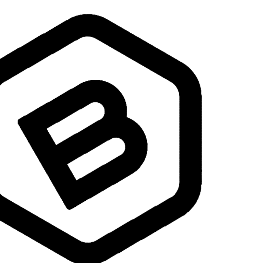
BM #1:  
 Cross cut on top of Concrete  
 Sidewalk north of E. Murdock  
 Ave. 17.3'± North and 3.1'± West  
 of the SW Corner of Building  
 3232. E Murdock  
 Elev. = 1351.89 (NAVD88)

BM #2:  
 Square cut on top of curb  
 located at the South Curb return  
 at intersection of Orchard St &  
 N Holyoke Ave.  
 Elev. = 1350.88 (NAVD88)

50 0 50  
 Scale: 1" = 50' Horizontal



COORDINATES			
Point #	Northing	Easting	Description
6000	1689930.06	1660286.96	0+00
6001	1689929.74	1660273.76	TEE
6002	1689918.74	1660273.98	FH
6003	1689938.07	1660273.59	TEE
6004	1689943.26	1660273.49	TEE
6005	1689948.09	1660273.39	TEE
6006	1689952.05	1660273.31	BEND
6007	1689960.32	1660281.25	BEND
6008	1690007.18	1660280.32	TEE
6009	1690016.76	1660280.12	TEE
6010	1690023.74	1660279.99	BEND
6011	1690031.44	1660276.62	BEND
6012	1690183.26	1660274.20	FH
6013	1690189.26	1660274.10	TEE
6014	1690256.08	1660273.03	BEND
6015	1690273.44	1660265.52	BEND
6016	1690471.93	1660262.34	BEND
6017	1690492.11	1660270.32	BEND
6018	1690565.24	1660269.15	TEE
6019	1690611.41	1660268.41	BEND
6020	1690620.51	1660272.01	BEND
6021	1691135.66	1660263.77	FH
6022	1691158.21	1660263.41	BEND
6023	1691158.05	1660253.42	BEND
6024	1691169.90	1660253.23	BEND
6025	1690238.67	1660273.31	TEE
6026	1689968.80	1660308.88	BM 1
6027	1690196.04	1660274.91	BM 2



**BAUGHMAN  
 COMPANY**

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 Wichita, KS 67211  
 316-262-7271  
 BaughmanCo.com

HOLYOKE AVE  
 WATER REPLACEMENT

COORDINATE  
 SHEET

WATER LINE  
 IMPROVEMENTS

PROJECT NUMBER:  
 22-10-E347

DESIGN: NBW DRAWN: AJV

DATE: October 30, 2023

SHEET OF  
 21 21