

GENERAL NOTES:

1. City of Wichita Datum.
2. Contractor will be required to provide a minimum advance notice of twenty-four (24) hours to utility companies prior to starting any excavation as follows:

Kansas One-Call 1-800-344-7233

The Contractor must notify the following in case of an emergency:

Cox Cable	262-4270 or 263-2061
Kansas Gas & Electric - Gas	263-7511
Kansas Gas & Electric - Electric	264-1141
Arkla Gas Company	942-8350 or 263-8161
Southwestern Bell Tel. Co.	1-571-2611
City of Wichita Water Department	268-4908
City of Wichita Sewer Maintenance	268-4071

3. Existing utility lines 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.

4. 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 site location. Locations that, in the opinion of the Engineer, 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 of 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.

5. The Contractor shall be responsible for maintaining continuous flow of sewage through construction. Contractor's proposed method for maintaining sewage flow shall be approved by the Engineer. Cost of maintaining flow of sewage through construction will not be paid for directly and this cost shall be considered subsidiary to the other pay items of the work.

6. The Contractor shall be responsible for preserving property irons. The Contractor will be required to re-establish any property irons which are damaged or destroyed by construction operations. Such irons shall be re-established by a licensed land surveyor in accordance with state laws.

7. Trees and shrubs in public right-of-way which are in direct conflict with proposed new construction shall be removed by the Contractor with the Engineer's approval. Trees and shrubs which are not in direct conflict with the proposed new construction shall be saved and protected from damage.

8. Contractor shall vacuum test all manholes according to the City of Wichita standard specifications.

9. The tops of all Manholes to be set 0.4 feet above existing ground unless otherwise noted.

10. All areas disturbed by sewer construction, i.e. R/W, easements, and adjacent properties shall be restored with the same grass/sod as per AR 78.

11. Contractor shall maintain all existing BMP(s) on project site during construction. Contractor shall repair or replace any existing BMP(s) that are damaged (Cost subsidiary to site restoration). If BMP(s) were damaged prior to contractor beginning work on project, notify construction inspector or engineer.

12. Contractor shall backfill trench with sand and flush per City of Wichita specifications.

13. Traffic control as necessary shall be per the latest addition of the MUTCD.

14. Depth & location of all existing utilities shown must be field verified.

CONSTRUCTION PLANS WATER LINE EXTENSIONS

Lots 1 and 2, Block 1 and Lot 1, Block 2 Killarney Plaza Second Addition

TO
THE CITY OF WICHITA, KANSAS

JAMES ARMOUR, P.E. - CITY ENGINEER
1357 PPW

BENCH MARKS

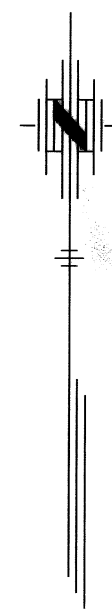
City of Wichita Bench #3 from plat of Killarney Plaza Second Addition "I" cut on top curb at W. end of N.W. Return at 36th & Inwood. Elev. 183.53'(City Datum) Elev. 1187.40'(1929 NAVD)

INDEX

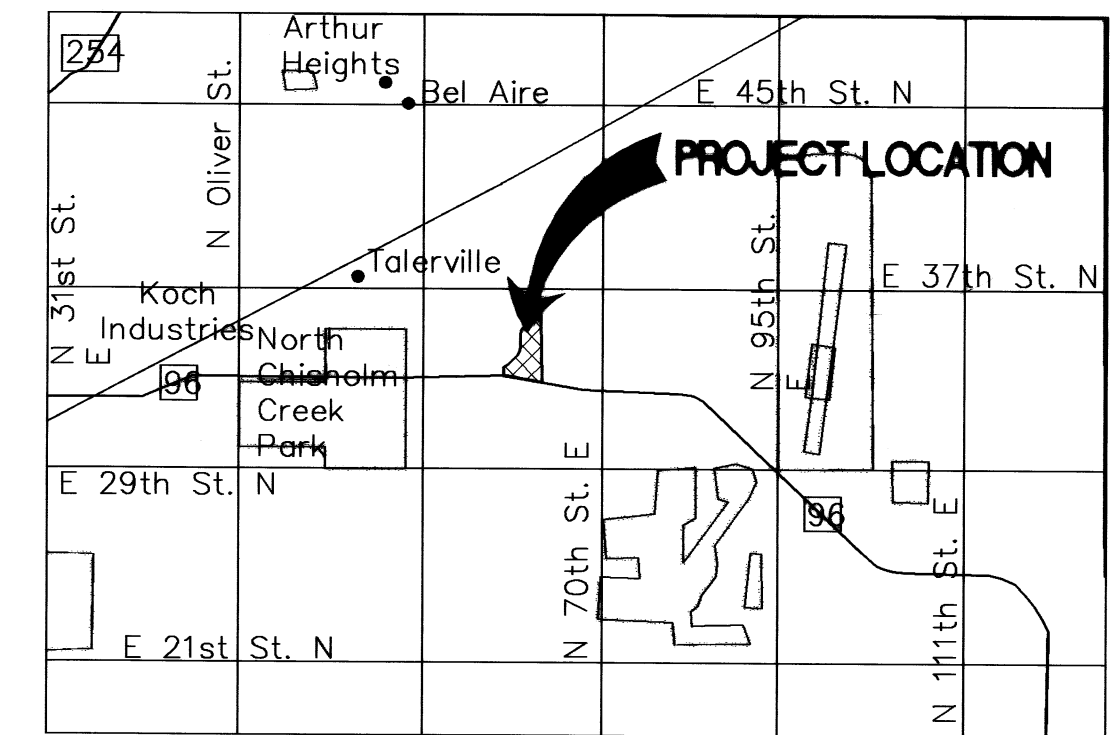
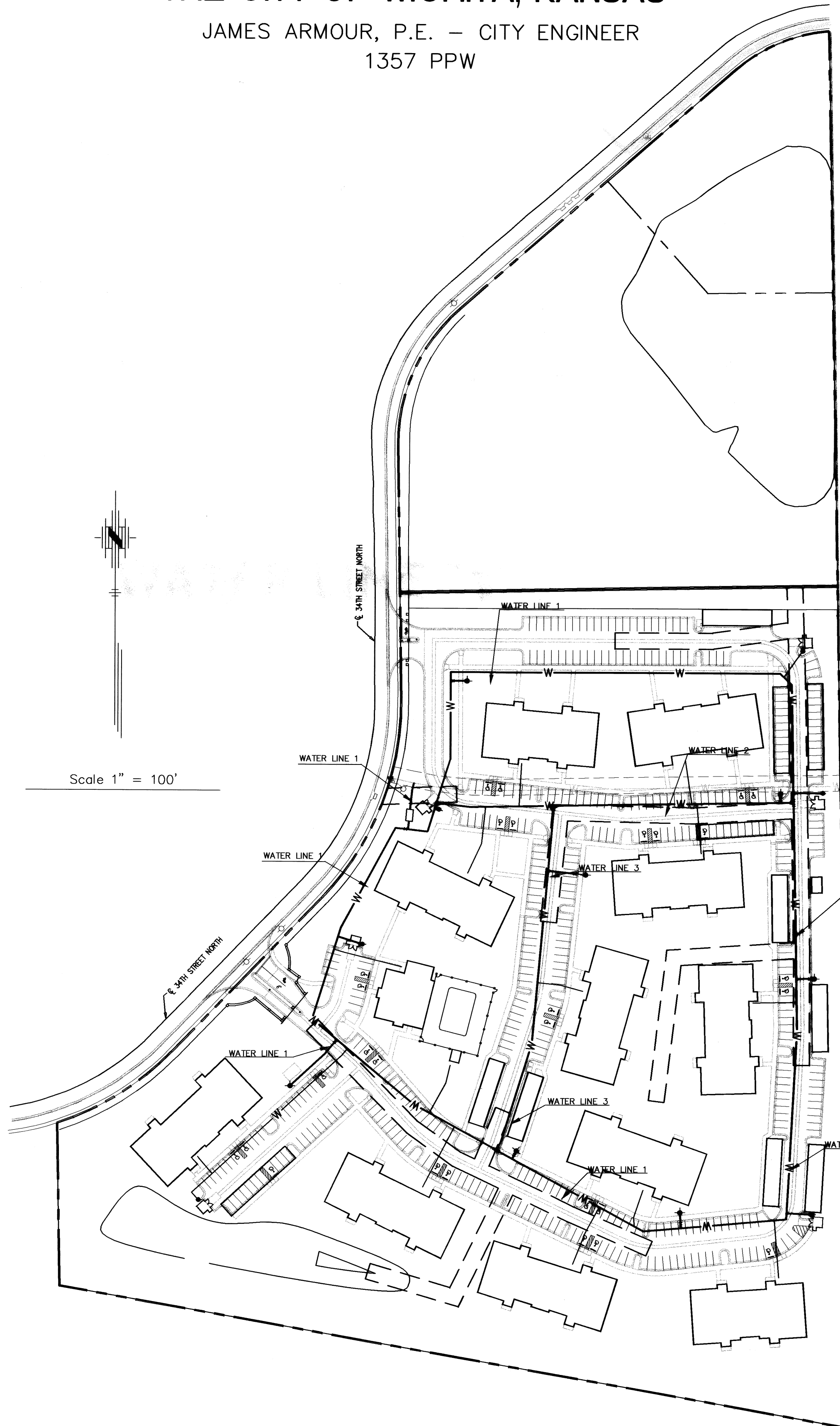
TITLE SHEET	SHEET 1
PLAN AND PROFILE	SHEET 2-6
WATERLINE DETAILS	SHEET 7
VAULT DETAILS	SHEET 8
EROSION CONTROL DETAILS	SHEET 9-13

LEGEND

- | | | | |
|--|--------------|--|---------------|
| | Fire Hydrant | | Fire Hydrant |
| | Yard Hydrant | | 8" Gate Valve |



Scale 1" = 100'



LOCATION MAP
No Scale

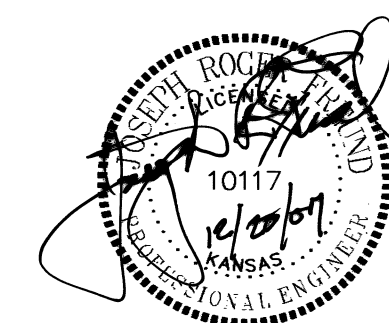
APPROVED AS NOTED
BY CITY ENGINEER OF WICHITA,
BY WICHITA WATER & SEWER DEPARTMENT,
& BY WICHITA FIRE DEPARTMENT

Public Works 11/10/08
Water & Sewer 1/17/08
Fire 1-22-08

NOTE TO CONTRACTORS
Inspection and testing for the waterline is to be provided by a Licensed Consulting Engineering Firm under contract with the Owner/Developer. Said inspection to be in accordance with the City of Wichita standard construction engineering practices and certified by a Professional Engineer Licensed in the state of Kansas. No work shall be performed in dedicated easements or public right-of-way by the Contractor without such inspection nor shall any work be commenced without written authorization by the City Engineer. All Construction and Materials shall comply with the City of Wichita Specifications and Standards (on file and available in the City Engineer's Office).

Private Property:
Installation and testing for the fire protection line is to be performed by a City of Wichita licensed fire protection contractor in accordance with the fire codes as adopted by the City of Wichita. All material and construction practices for the fire protection line shall comply with the fire codes as adopted by the City of Wichita (available from the City of Wichita Fire Department). The Contractor shall not commence work without notification and approval of the Wichita Fire Department. Inspection of the fire protection line is to be provided by a licensed Engineering Firm under contract with the Owner/Developer and the Fire Department. The contractor shall not start work until the project inspector is assigned to the project and present on the site. Any work done without inspection will be required to be uncovered for inspection.

AS BUILTS:
CONTRACTOR: Mies
INSPECTOR: LARRY GANN
COMPANY: K.E. Miller
DATE: 5/19/08

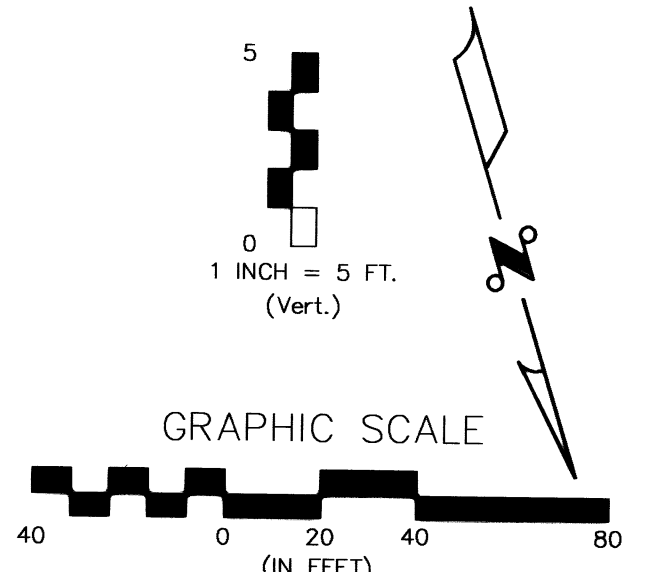
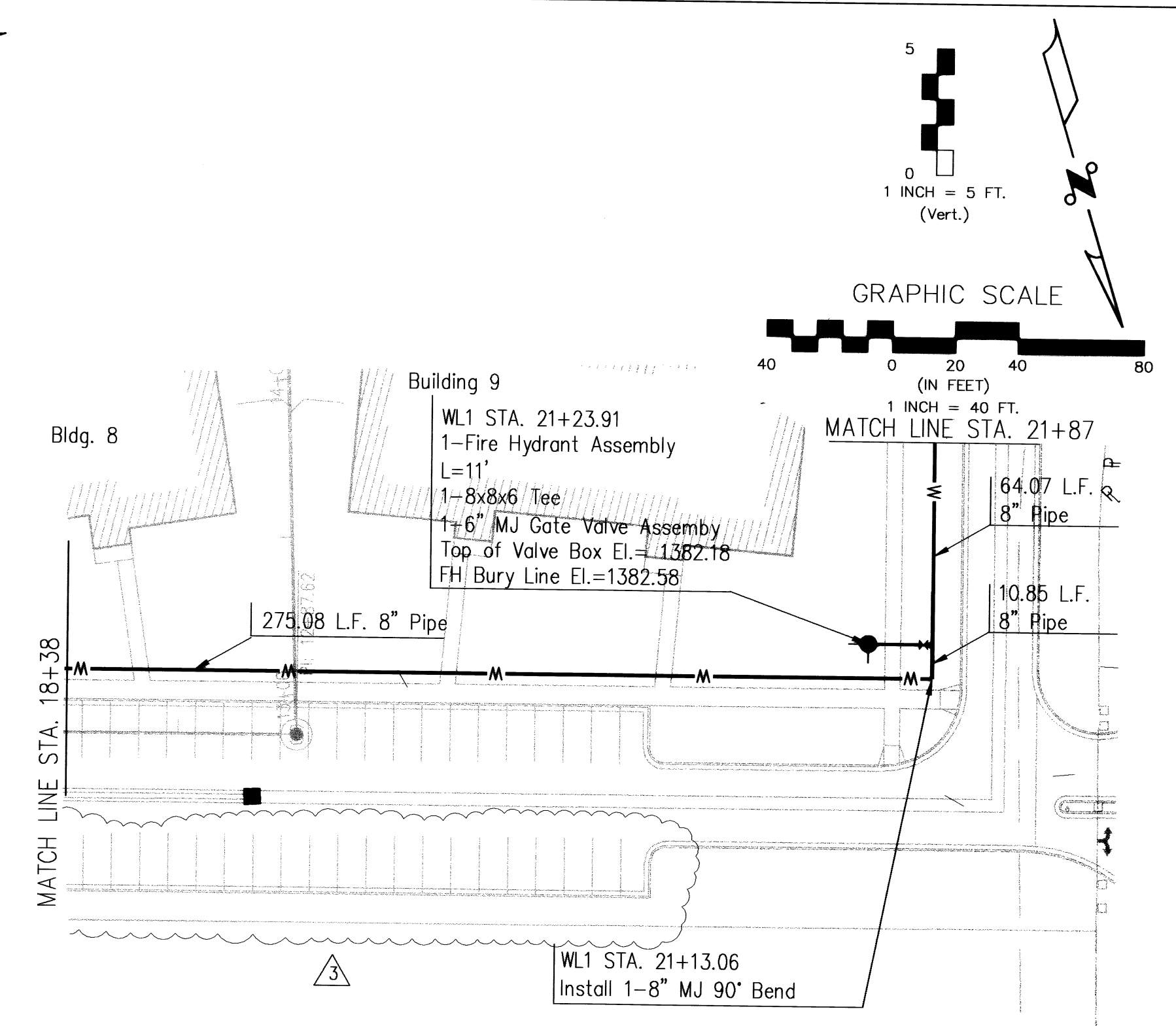
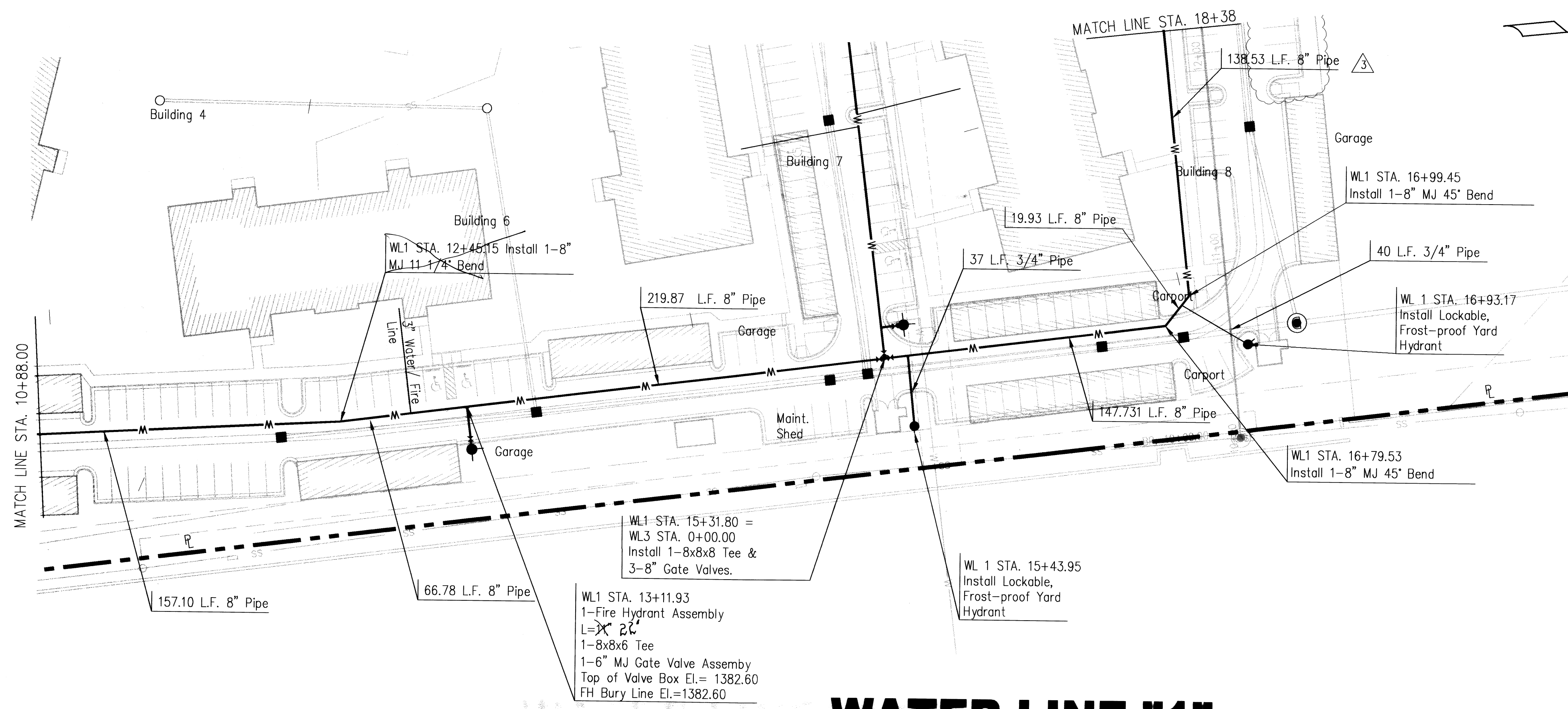


AUGUST 2007

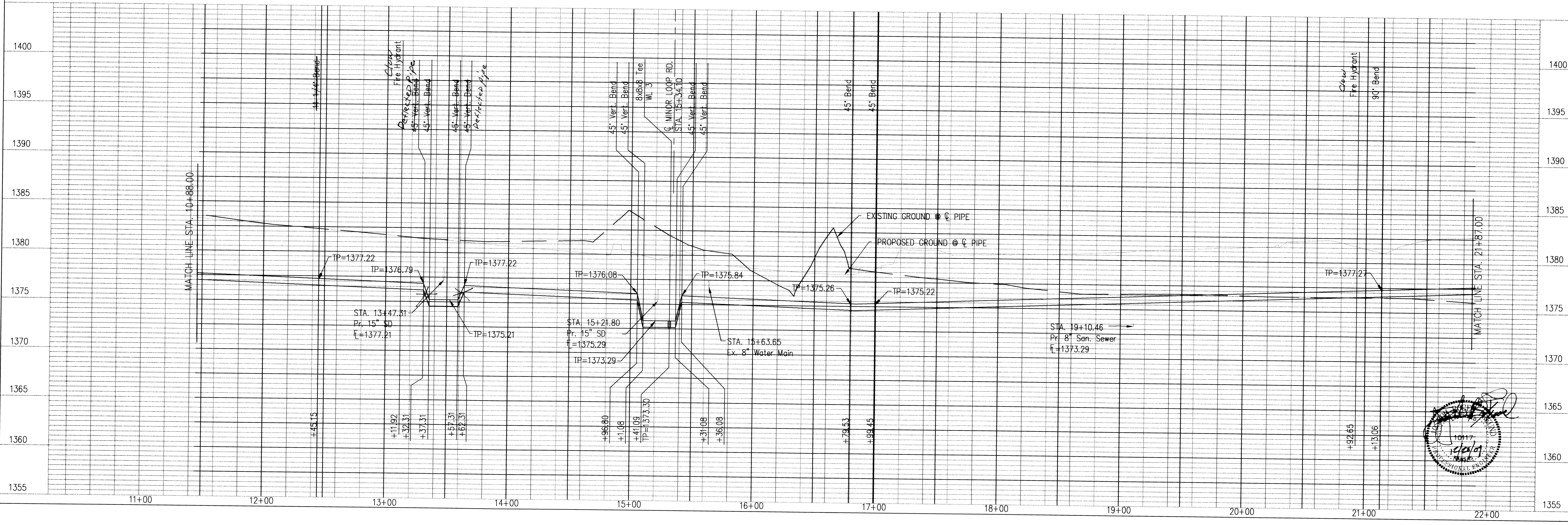
PLANS PREPARED
BY



POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 FAX 316/685-4444

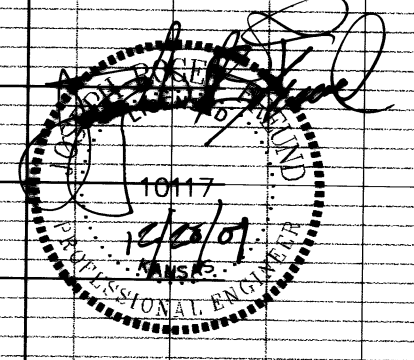
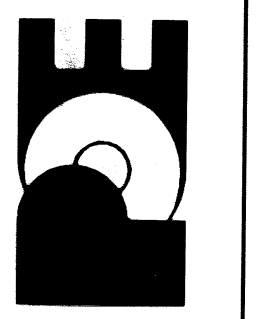


WATER LINE "1"

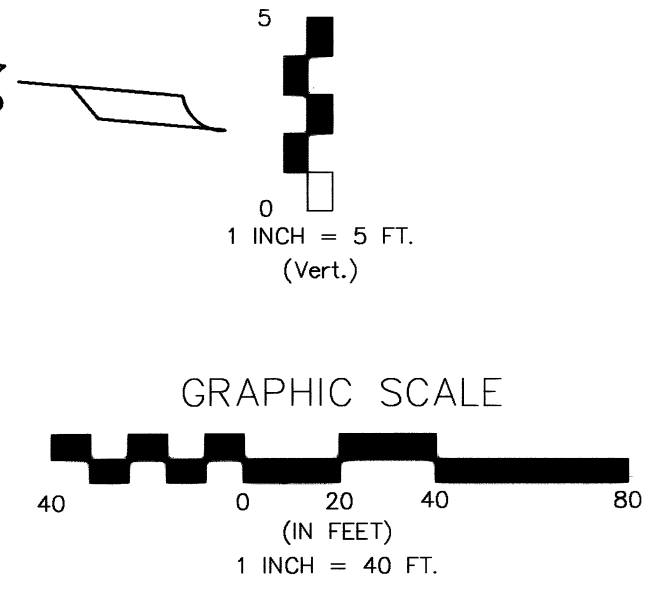
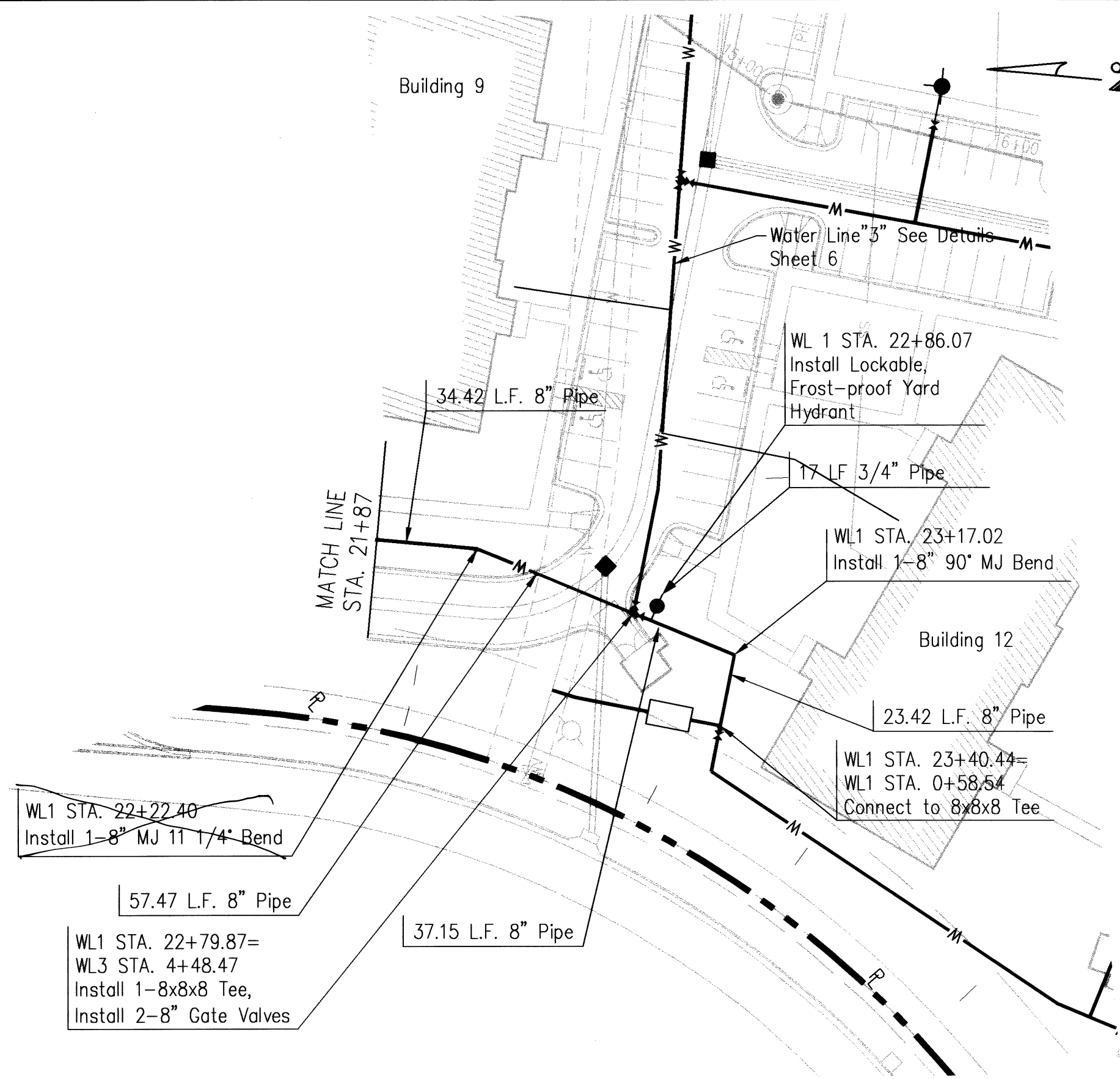


Engineer:	JRF	Sheet:	B-31-07
Designer:	K/W	Date:	11-09-07
Project:	Webber Group Inwood Apartments	Scale:	As Shown
Client:	Webber Group Inwood Apartments	Revision:	3
Drawn by:	JRF	Checked by:	JRF
Approved by:	JRF	Deleted:	3 GARAGES

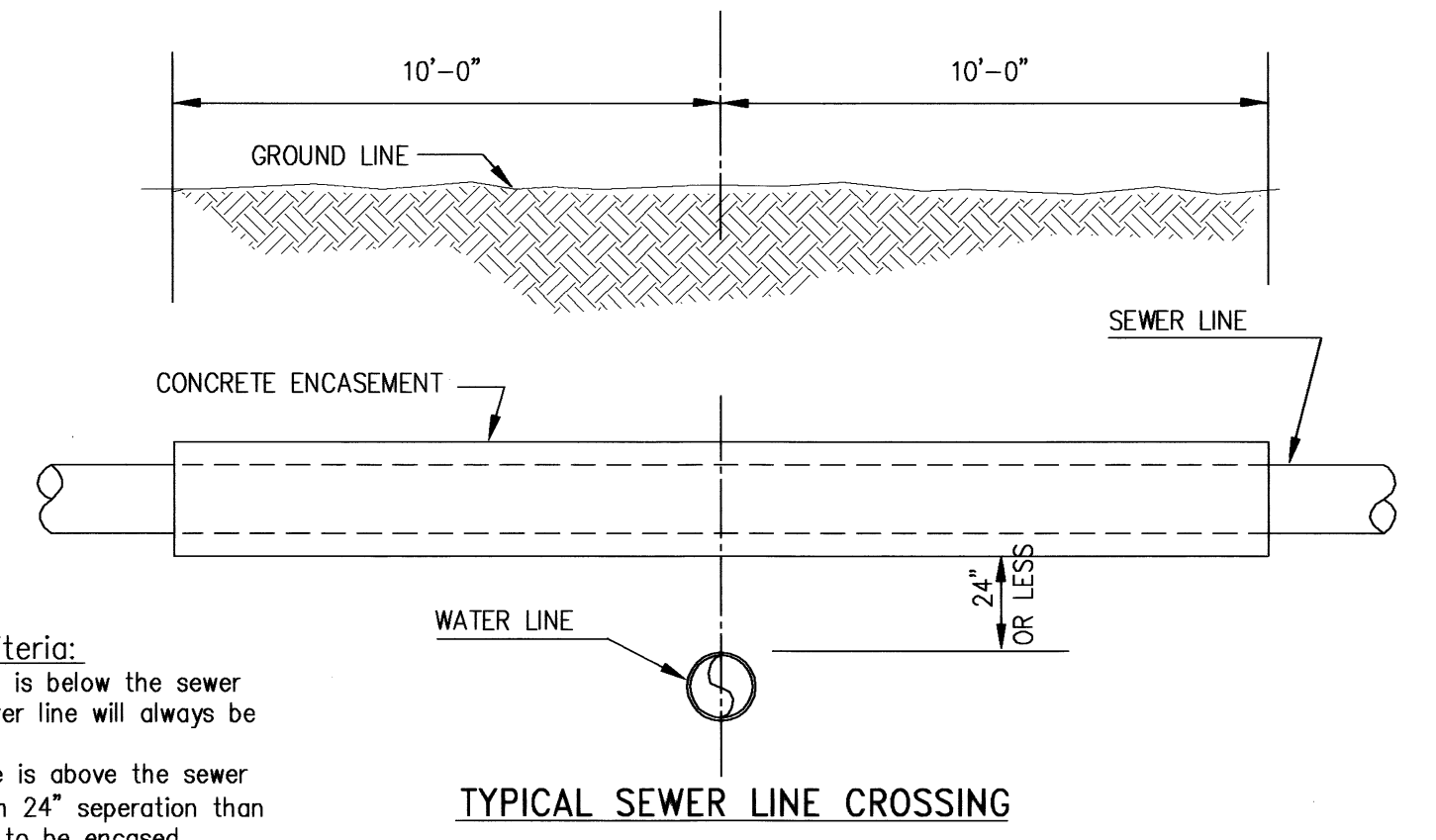
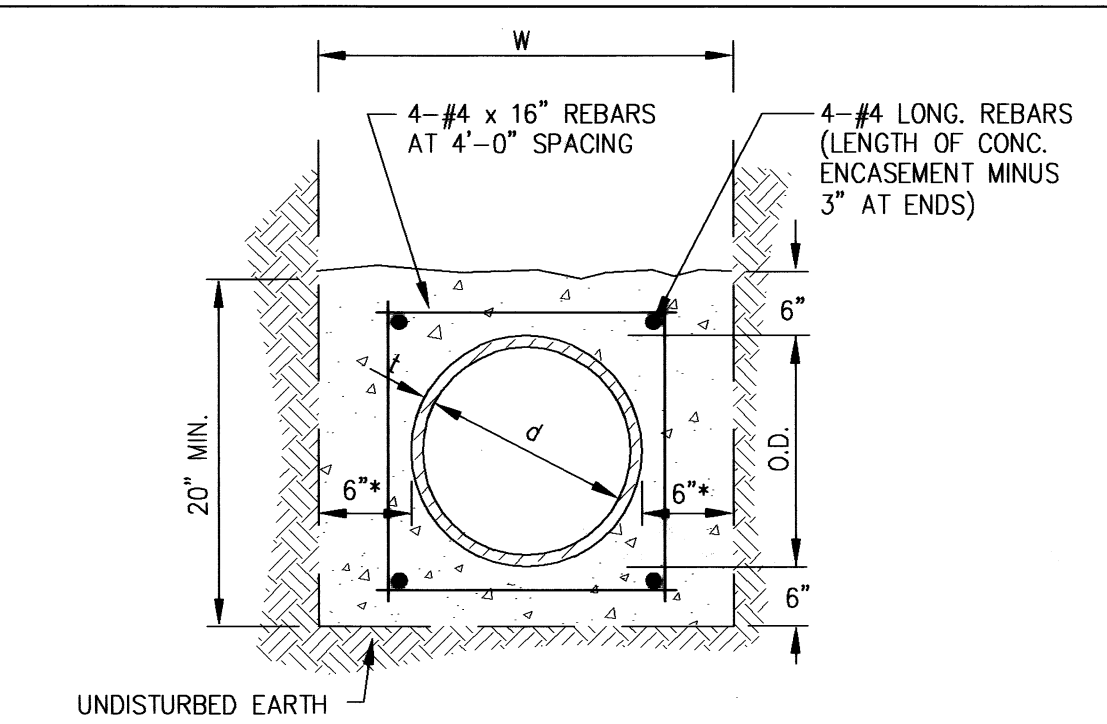
POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444



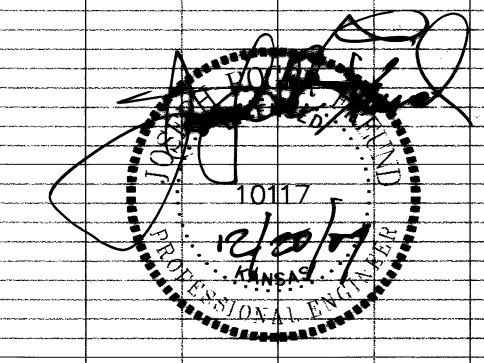
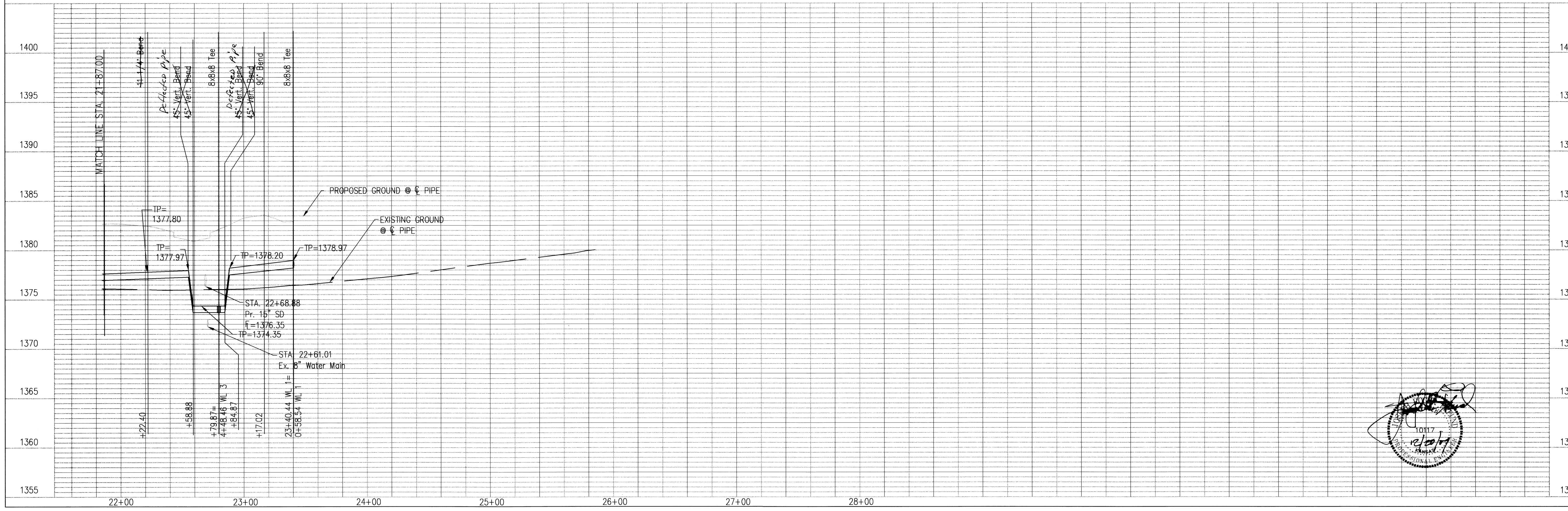
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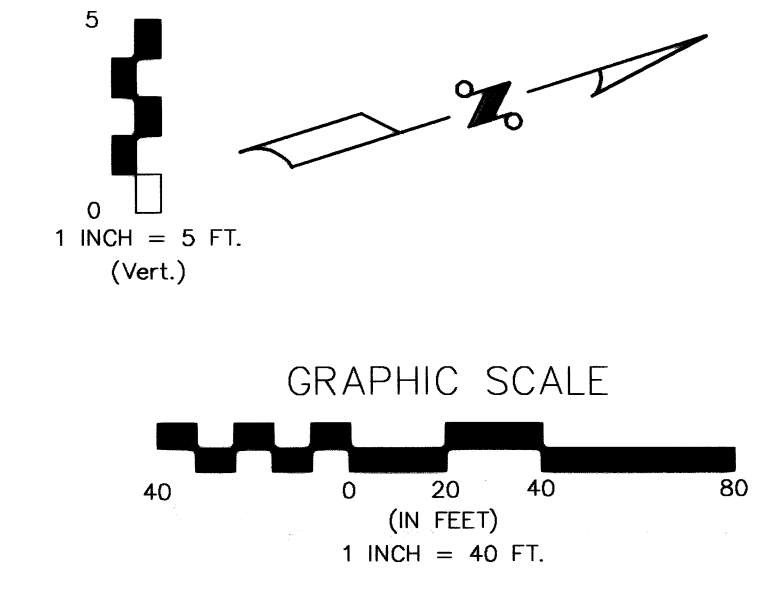
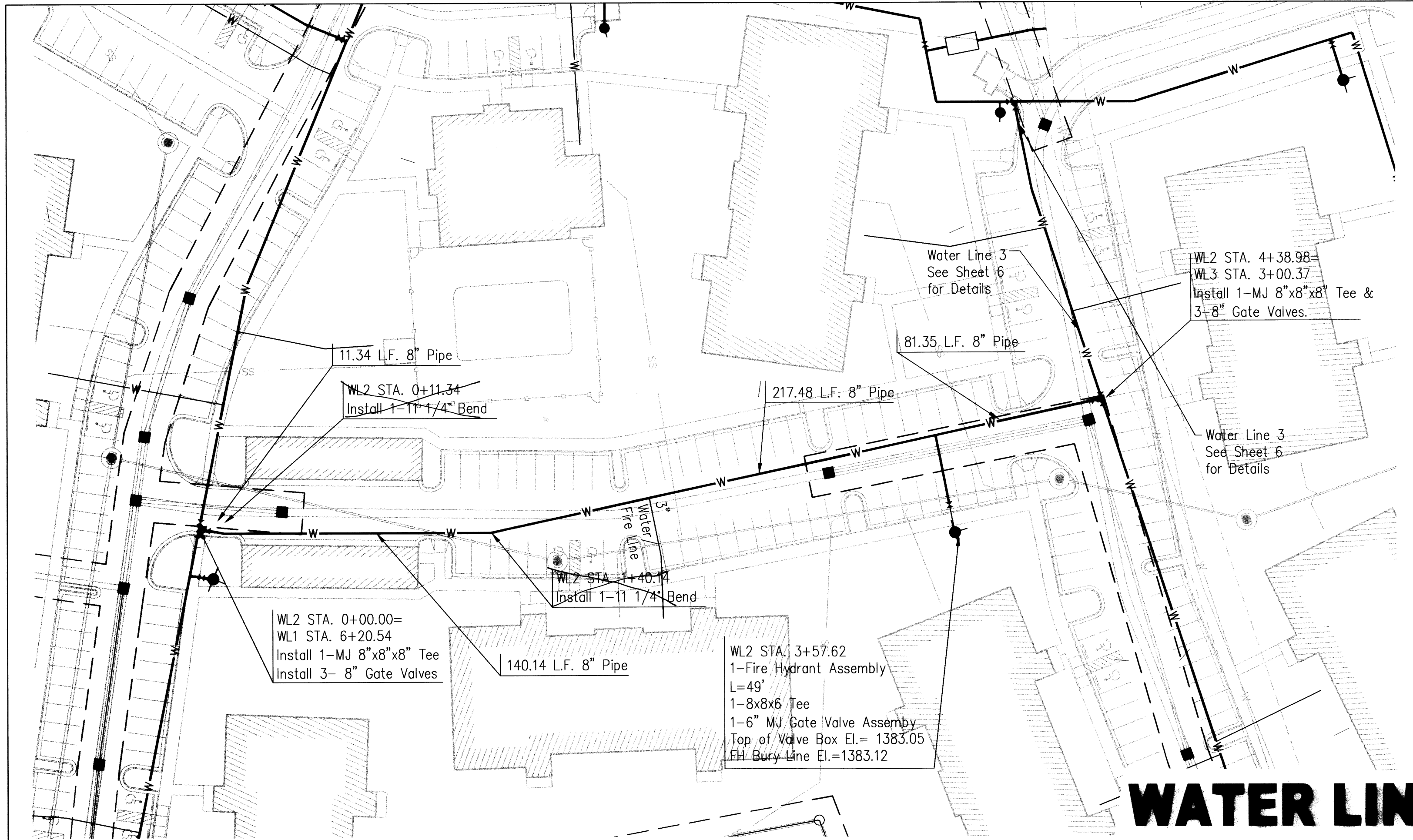
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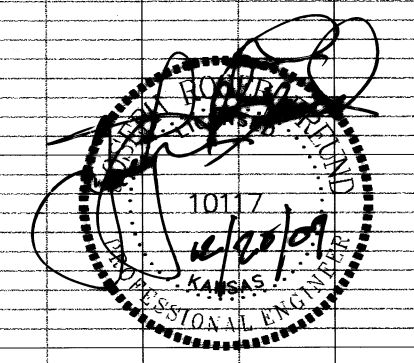
- Encasement Criteria:**
1. If the water line is below the sewer line than the sewer line will always be encased.
 2. If the water line is above the sewer line and less than 24" separation than the sewer line is to be encased.
 3. If the water line is above the sewer line and more than 24" separation than no encasement is needed.



PLAN & PROFILE WATER LINE "1" Webber Group Inwood Apartments	
No.	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Date	
By	
Approved	
Revision	
POE & ASSOCIATES, INC. CONSULTING ENGINEERS 3940 L. Central, Suite 200 ■ Wichita, KS 67208-0242 Phone 316/685-4114 ■ FAX 316/685-4444	
Engineer:	JRF
Designer:	KJW
Poe Job No.:	1909
Date:	8-31-07
Sheet 4 C-47 of 13	



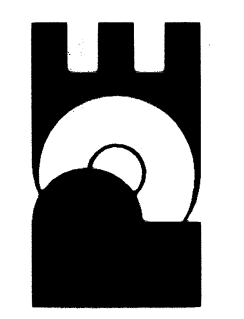
WATER LINE "2"



No.	Date	By	Approved	Revision
1				
2				
3				

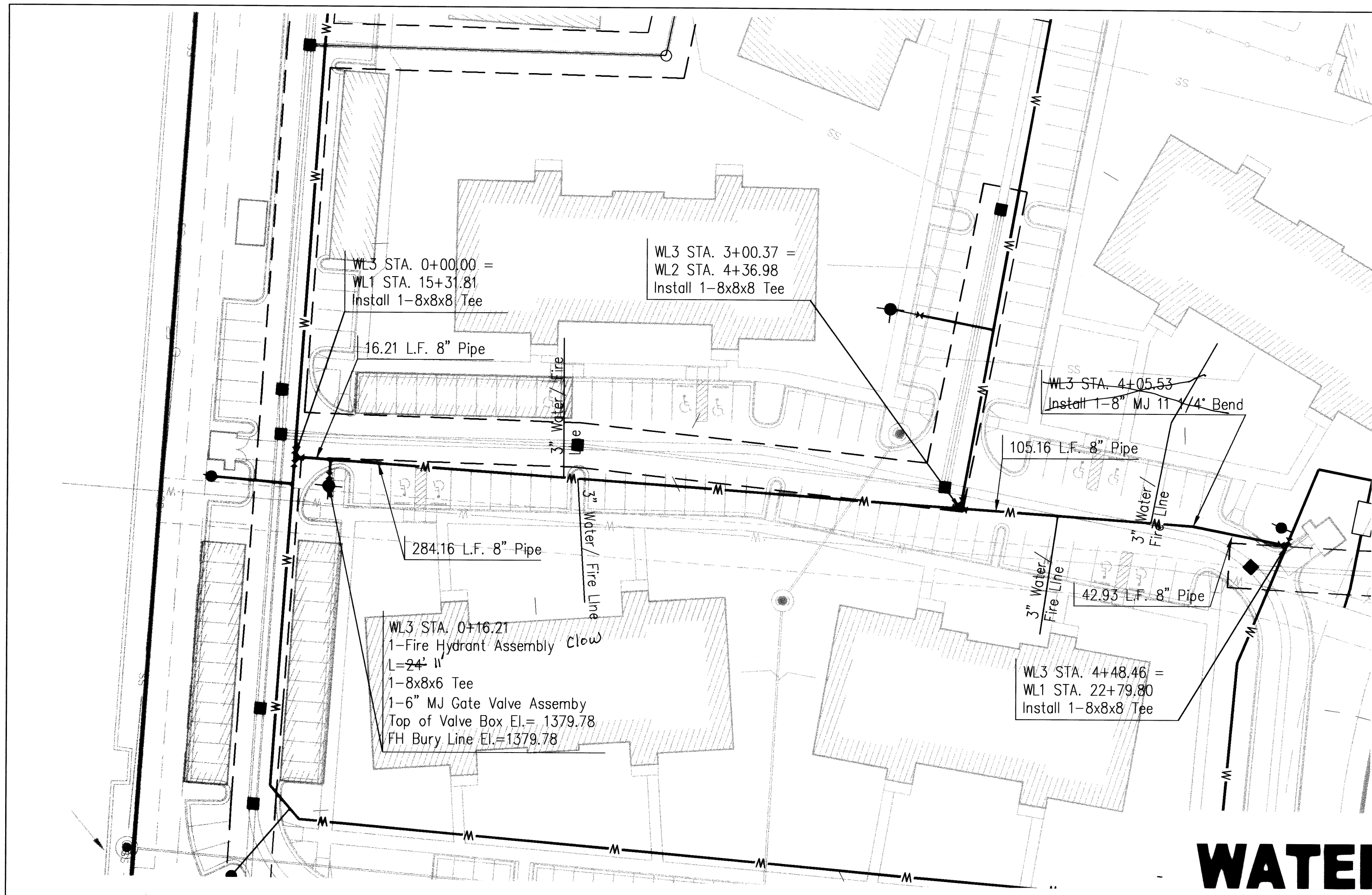
PLAN & PROFILE
WATER LINE "2"
 Webber Group
 Inwood Apartments

POE & ASSOCIATES, INC.
 CONSULTING ENGINEERS
 3940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
 Phone 316/685-4114 ■ FAX 316/685-4444

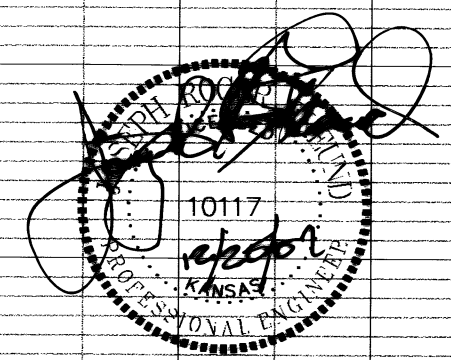
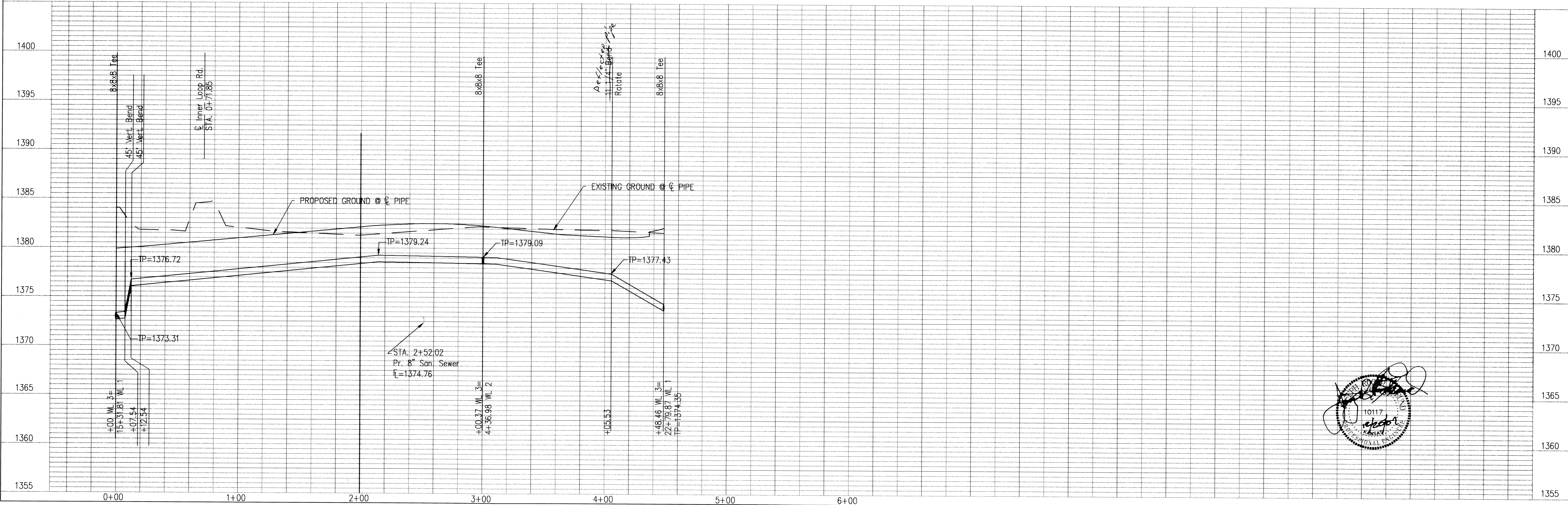
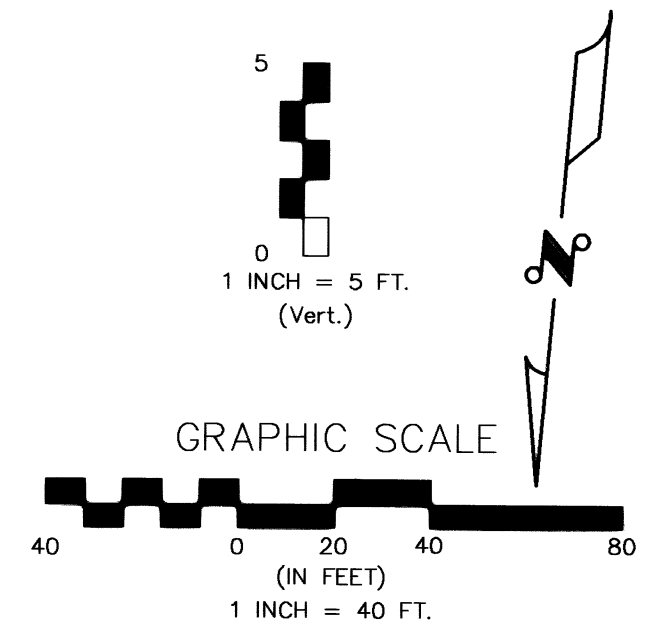


Engineer: JRF
 Designer: k/w
 P.O. Job No.: 1909
 Sheet 5
 Date: 8-31-07

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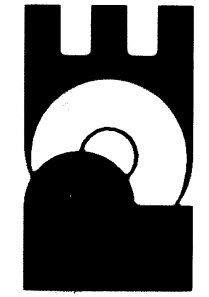


WATER LINE "3"

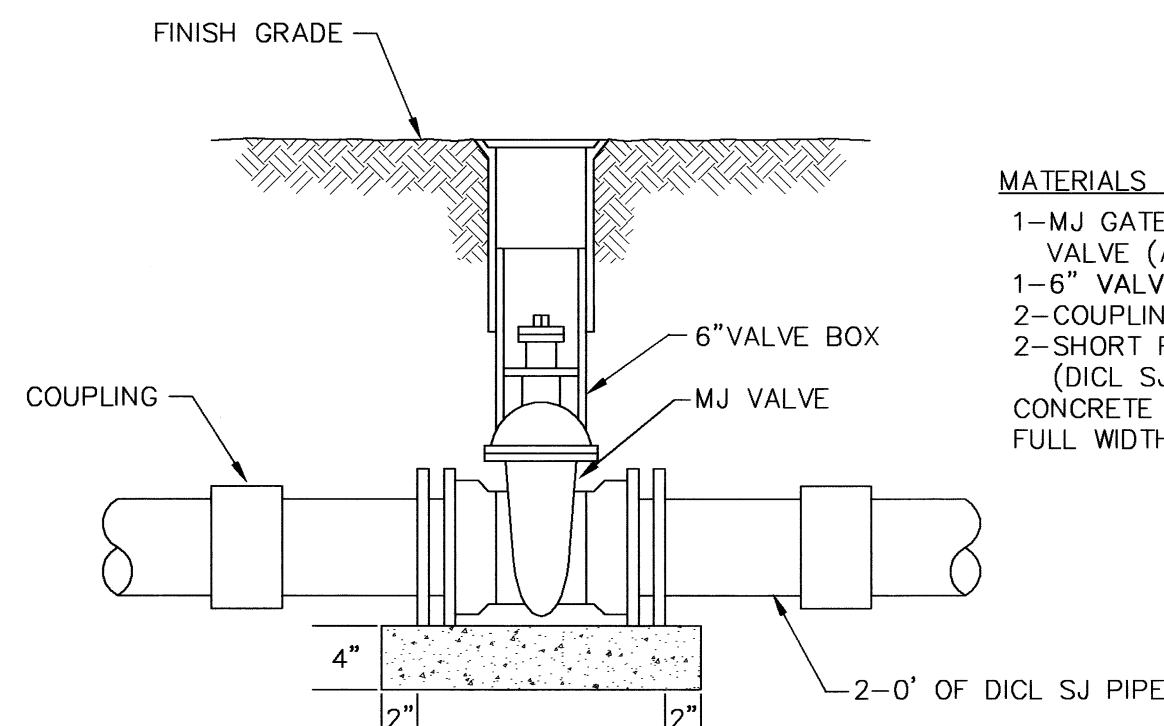


PLAN & PROFILE WATER LINE "3" Webber Group Inwood Apartments	
Engineer:	JRF
Designer:	KJW
Proj. Job No.:	1909
Date:	8-31-07
Sheet	6
of 13	

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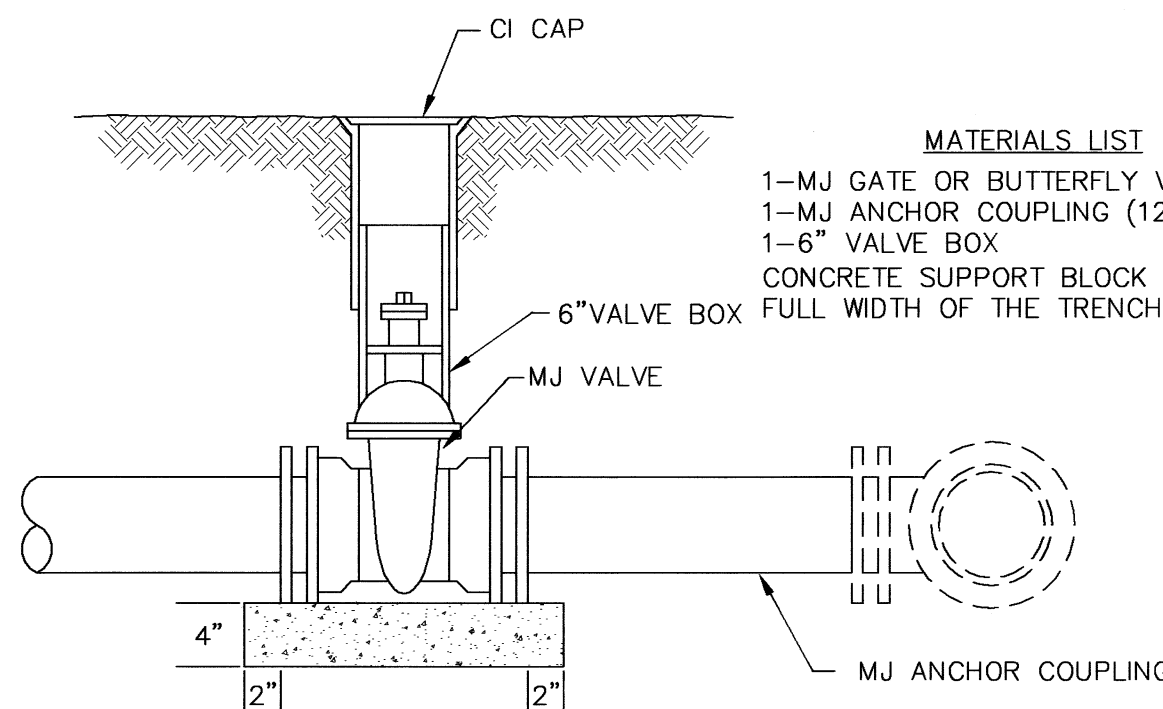


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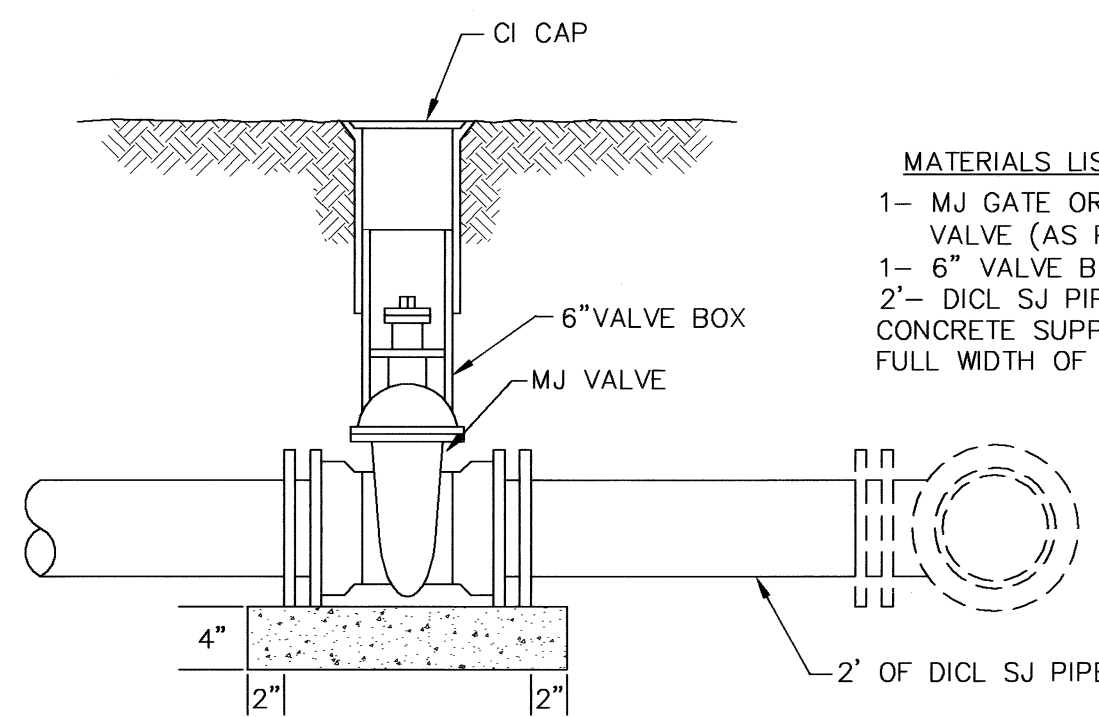
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - 2-COUPINGS
 - 2-SHORT PCS. (D.I.C.L. S.J. PIPE)
- CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

LINE VALVE ASSEMBLY



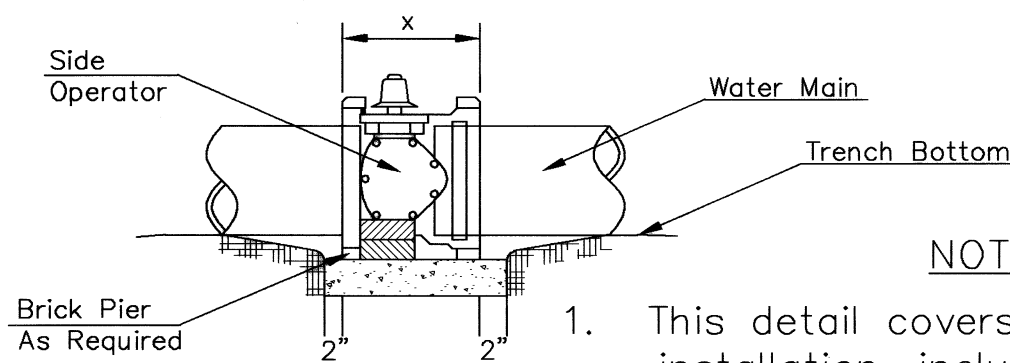
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-MJ ANCHOR COUPLING (1/2" OR SMALLER)
 - 1-6" VALVE BOX
- CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

ANCHORED VALVE ASSEMBLY



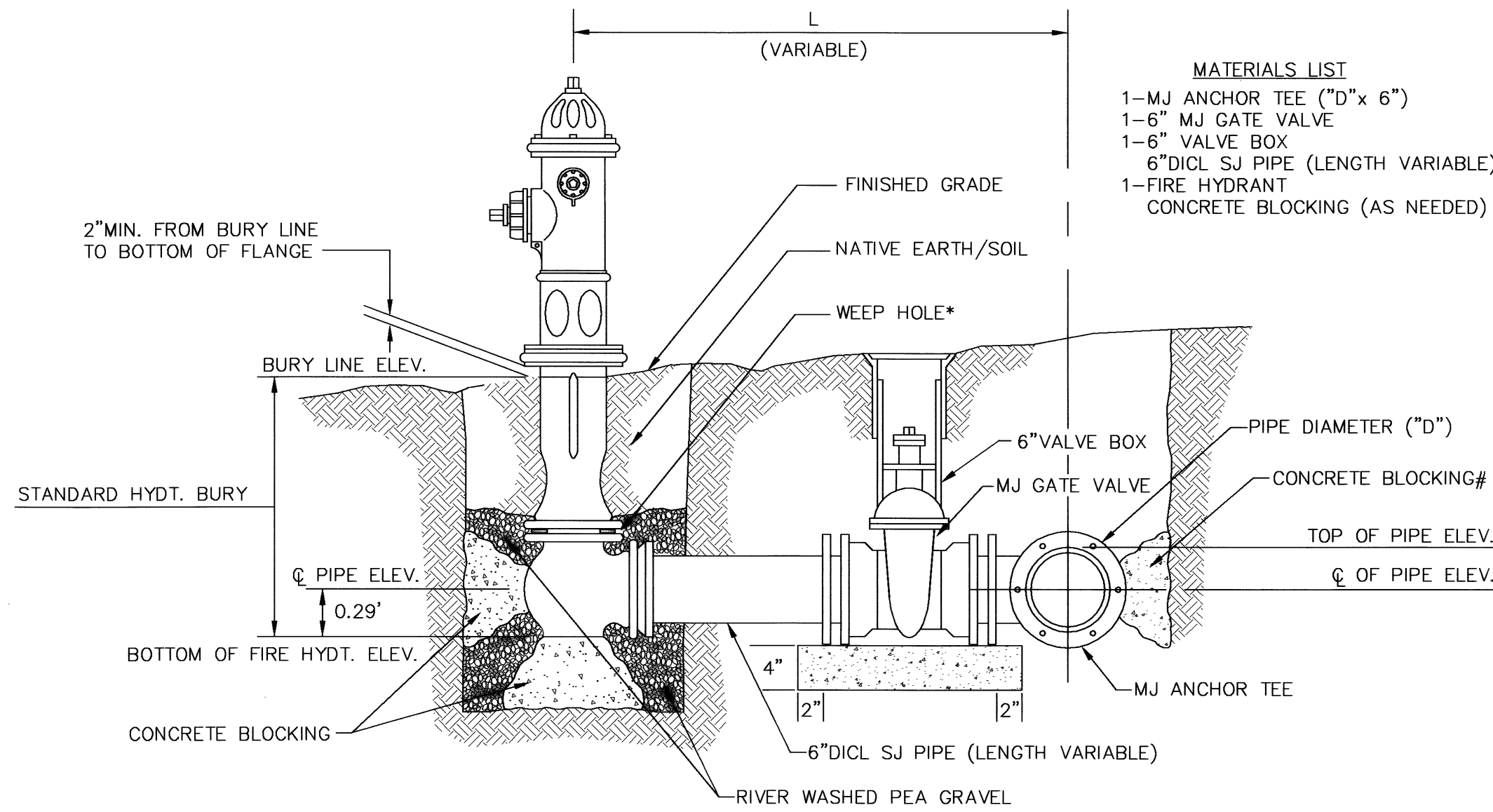
- MATERIALS LIST**
- 1-MJ GATE OR BUTTERFLY VALVE (AS PER PLAN)
 - 1-6" VALVE BOX
 - 2-D.I.C.L. S.J. PIPE
- CONCRETE SUPPORT BLOCK SHALL BE FULL WIDTH OF THE TRENCH

VALVE ASSEMBLY



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

CONCRETE SUPPORT BLOCKING FOR BUTTERFLY VALVE INSTALLATION



- MATERIALS LIST**
- 1-MJ ANCHOR TEE ("D" x 6")
 - 1-6" MJ GATE VALVE
 - 1-6" VALVE BOX
 - 6"D.I.C.L. S.J. PIPE (LENGTH VARIABLE)
 - 1-FIRE HYDRANT
 - CONCRETE BLOCKING (AS NEEDED)

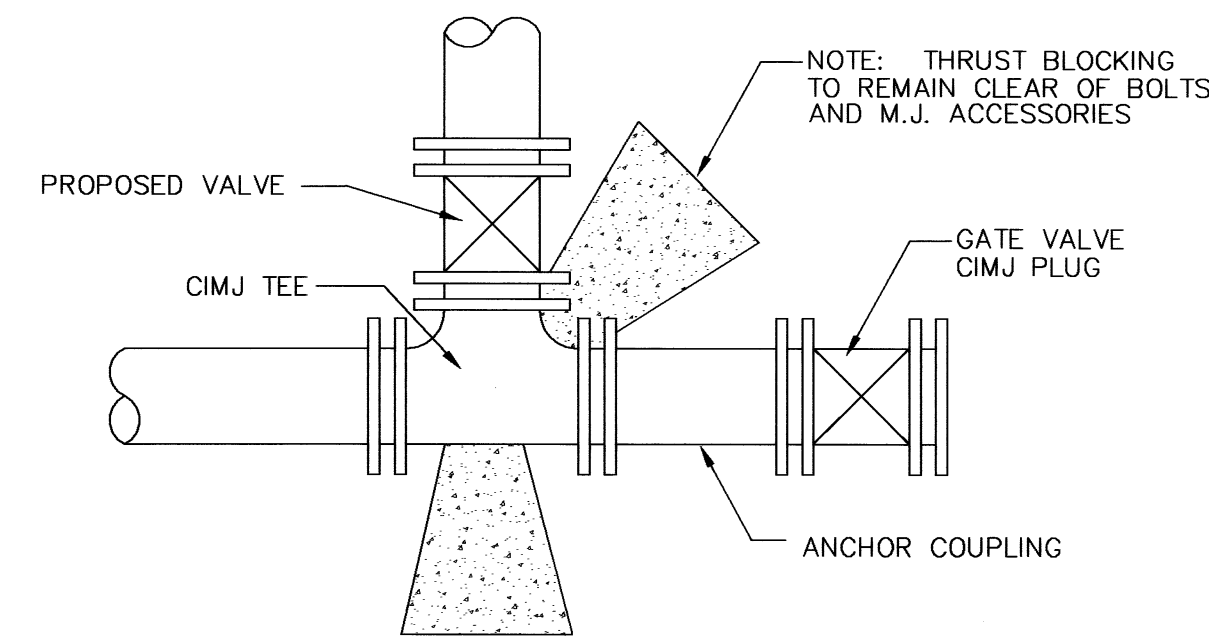
* CAUTION! WEEP HOLES TO BE KEPT CLEAR DURING CONSTRUCTION AND BACKFILL. CONCRETE FOR THRUST BLOCKING SHALL NOT OBSTRUCT WEEP HOLES.

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

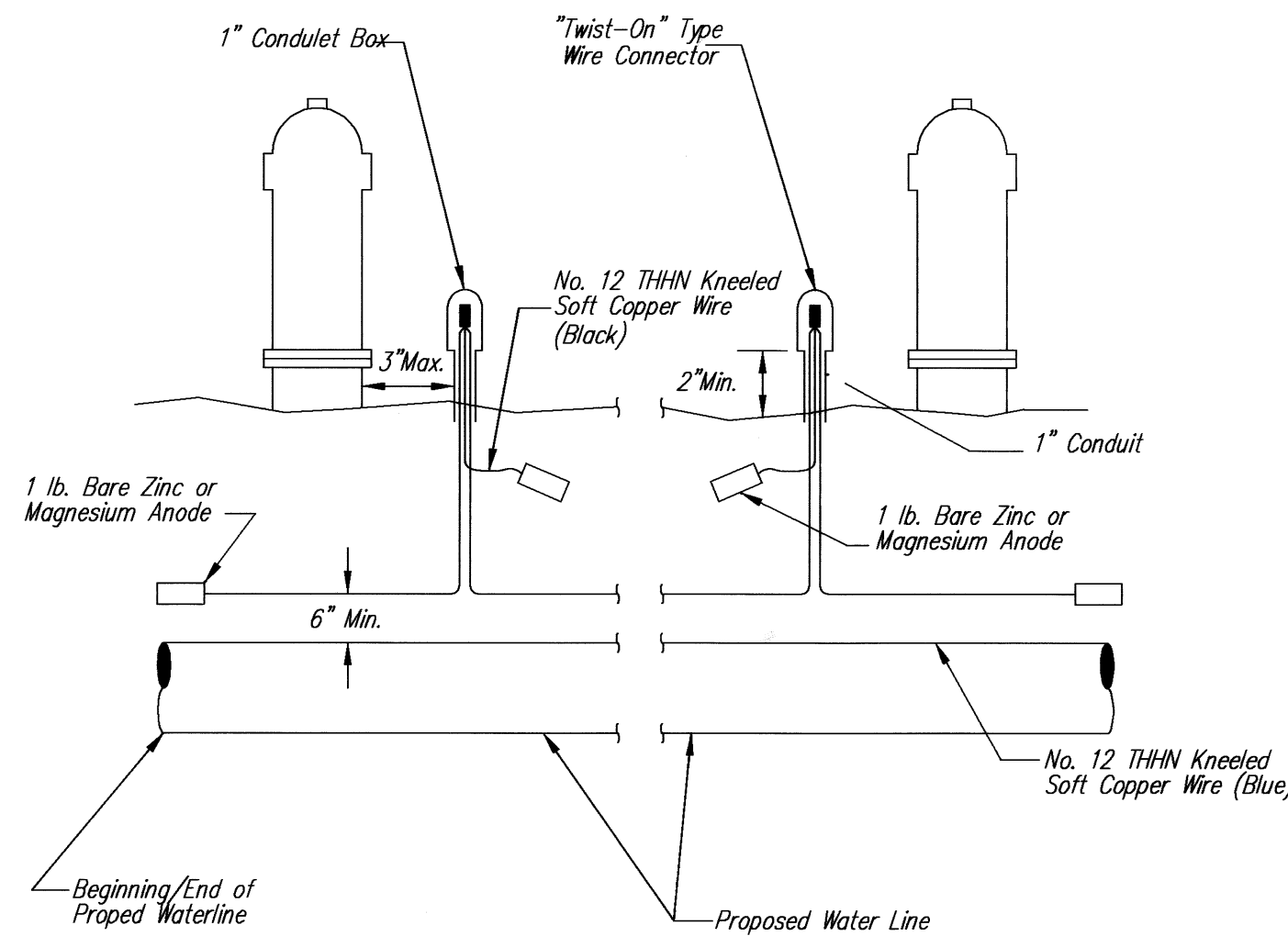
FIRE HYDRANT ASSEMBLY
PER CITY OF WICHITA SPECIFICATIONS

FIRE HYDRANTS REQUIRED				
LINE NO.	STATION	BURY LINE ELEVATION	TOP OF PIPE ELEVATION	FIRE HYDRANT BURY REQUIRED
1	3+68.31	84.31	79.19	5 1/2'
1	6+42.75	84.12	79.95	5 1/2'
1	8+78.60	85.02	78.89	7'
1	10+18.81	86.11	78.26	7'
1	13+11.92	82.32	76.93	6'
1	24+82.55	82.45	77.15	5 1/2'
2	3+56.84	84.68	79.43	5'
3	0+16.31	80.38	76.81	4 1/2'

All Fire Hydrant were low (STORZ)



KEY BLOCK DETAIL



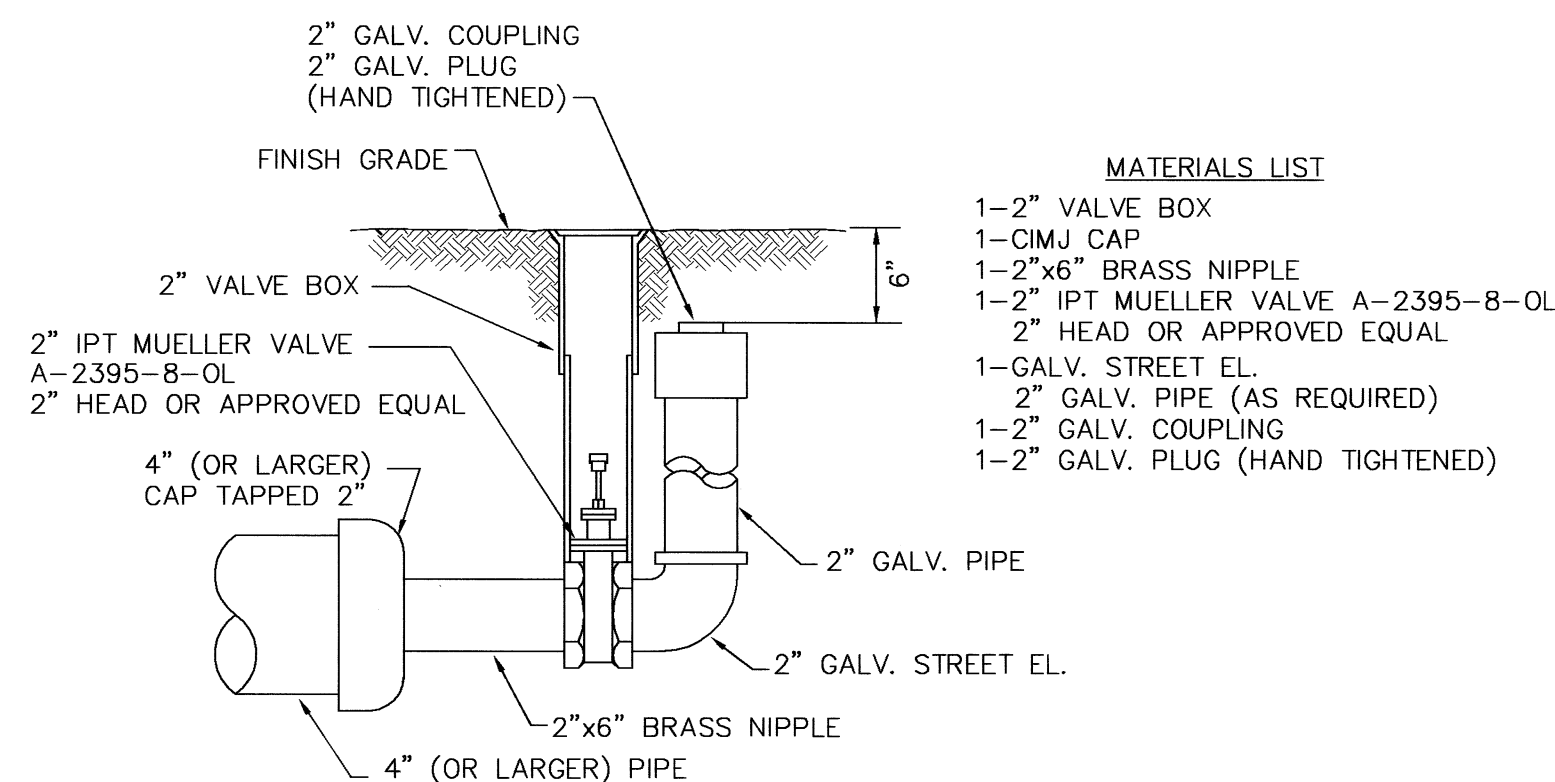
TRACER WIRE

Conductive type pipe locator/tracer wire shall be installed to locate Polyvinyl Chloride (PVC), or any nonmetallic, waterline pipes. The wire shall be installed 6 inches above the proposed pipe, and shall extend the entire length of the proposed pipe. In directional drilling applications, the wire shall be taped to the top of the waterline and pulled with the pipe. Split-bolt connectors or crimpers shall be used at splice locations. Electrical tape shall cover all splices so no bare wire is exposed. Test stations shall be installed adjacent to all fire hydrants along the proposed alignment. At each test station, the tracer wire shall be connected to a 1 lb. zinc or magnesium anode. This connection shall be made using a "twist-on" wire connector which shall splice the blue tracer wire from each direction to a black wire leading to the anode. The anode shall be installed a minimum of 5 feet away from the water line. Anodes shall also be attached to the tracer wire at both the beginning and the end of the proposed improvement. A typical layout of the tracer wire and test station is provided in the above figure.

WIRE: The tracer wire shall be blue No. 12 THHN kneeled soft copper wire with thermal plastic insulation. The insulation shall be heat, oil, and gasoline resistant as manufactured by Temple Electrical or approved equal.

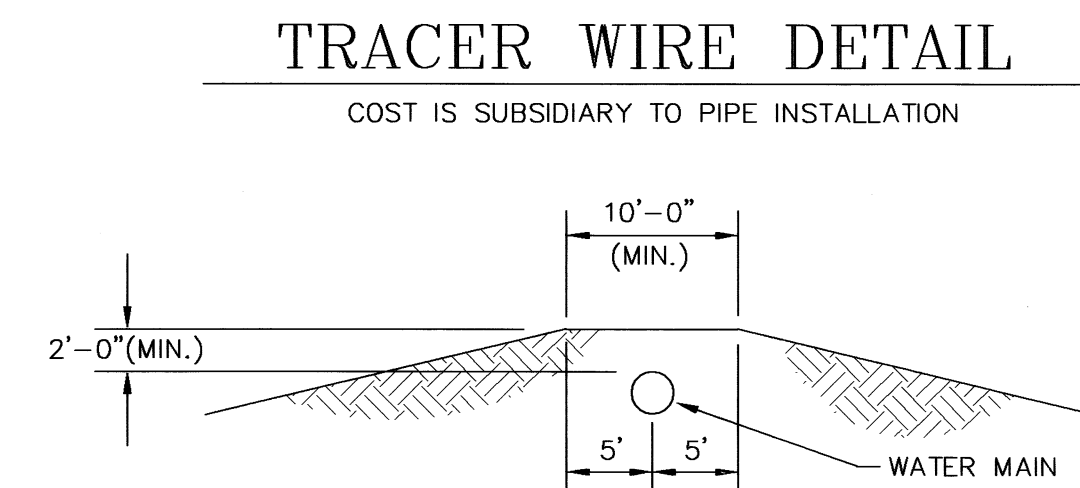
TEST STATIONS: The test station shall be a 1 inch conduit style test station as manufactured by COTT Manufacturing Company or approved equal and shall be provided with a removable solid cover with no leads extending from it. The test station shall be attached to a 1 inch conduit (min. length of 36 inches). Both the conduit and the test station shall be coated with weather resistant blue enamel paint. The tracer wire and the anode wire connection shall be installed to allow 10 inches of wire within the test box. Test stations shall be provided at each fire hydrant (a max. distance of 3 inches). The location of all test stations shall be approved by the construction engineer, recorded, and shown in the as-built drawings.

ANODES: The anodes shall be 1 lb. bare zinc or magnesium. The anodes shall be buried a minimum of 5 feet deep at each test station. The anodes shall be connected to black No. 12 THHN kneeled soft copper wire which shall be extended to the test station. Adequate length of the insulated black wire shall be attached to each anode to provide 10 inches within the test box.



- MATERIALS LIST**
- 1-2" VALVE BOX
 - 1-CIMJ CAP
 - 1-2"x6" BRASS NIPPLE
 - 1-2" IPT MUELLER VALVE A-2395-8-OL
 - 2" HEAD OR APPROVED EQUAL
 - 1-GALV. STREET EL.
 - 2" GALV. PIPE (AS REQUIRED)
 - 1-2" GALV. COUPLING
 - 1-2" GALV. PLUG (HAND TIGHTENED)

2" BLOWOFF ASSEMBLY



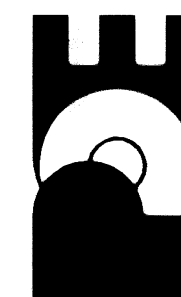
PROTECTIVE FILL DETAIL

MINIMUM PROTECTIVE FILL SHALL BE PROVIDED IN ALL INSTANCES WHERE COVER OVER THE PROP. WATER LINE IS LESS THAN (2) FEET. (COST SUBSIDIARY TO PIPE INSTALLATION)

WATER LINE DETAILS

Inwood Apartments
Webber Group

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
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Phone 316/685-4114 ■ FAX 316/685-4444

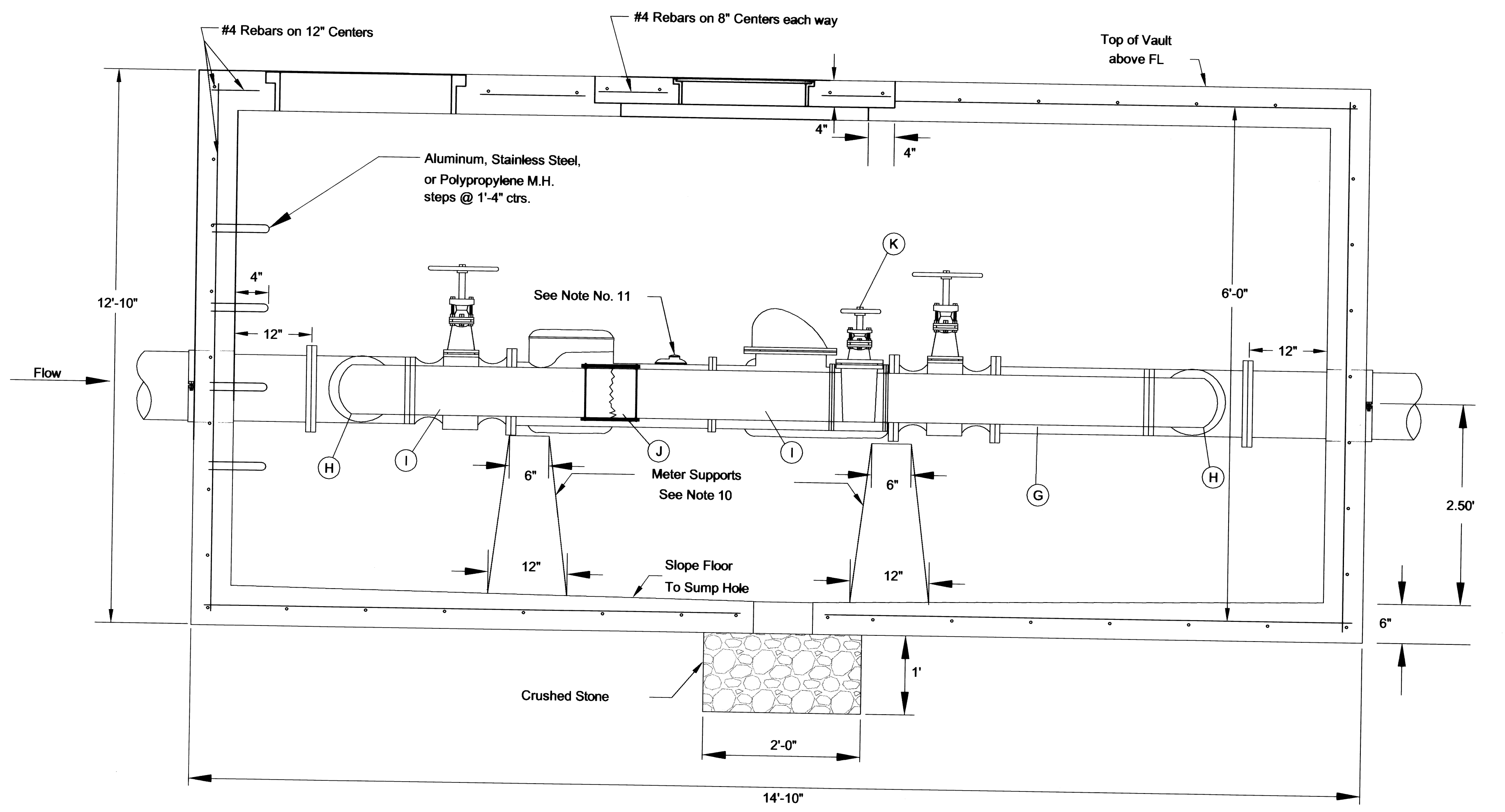
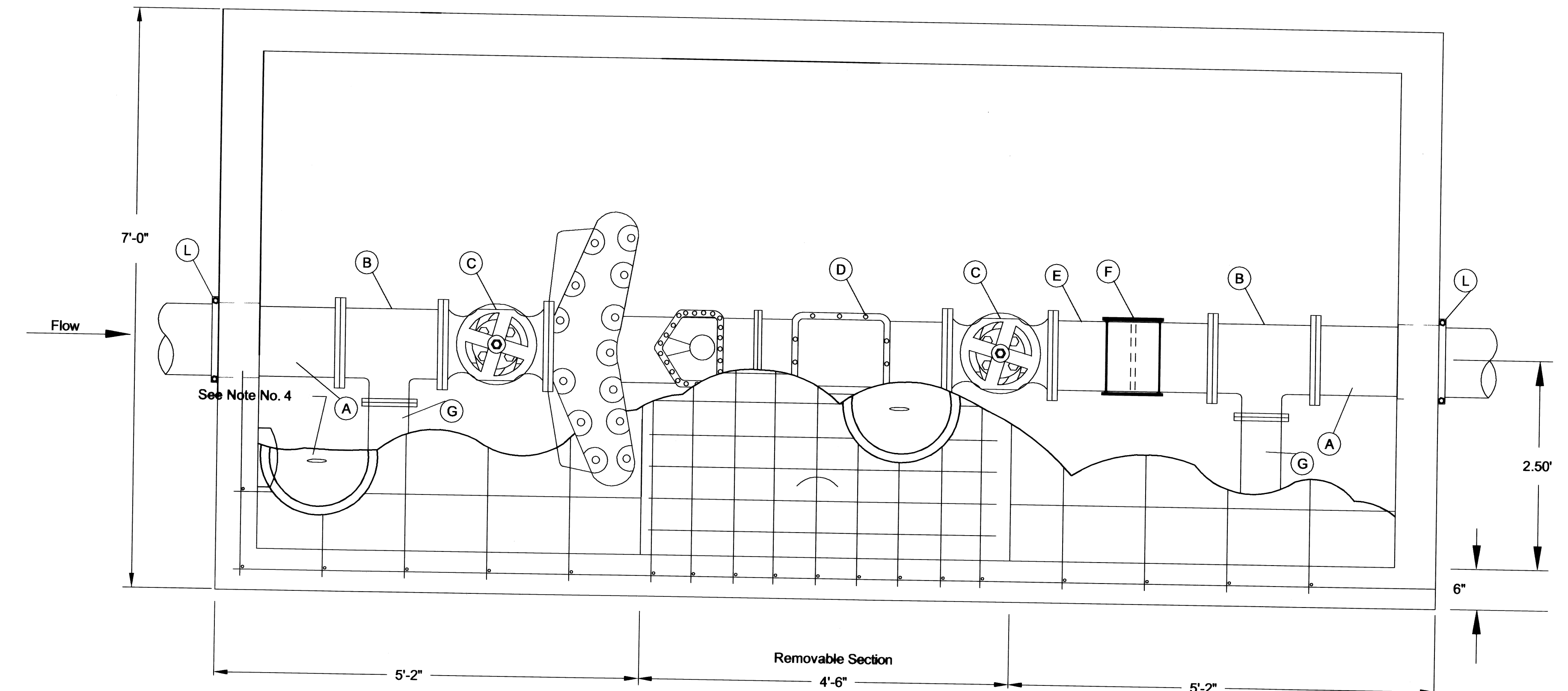


Engineer: JRF
Designer: k/w
Poe Job No.: 1909
Date: 12-07

Notes:

- When the standard vault dimensions are not applicable, such as when additional space is required for special pipe, fittings, additional meters, etc., the design engineer shall design a vault with the required dimensions for Water & Sewer Dept. approval and Public Works approval.
- The vault shall be poured concrete, cement blocks (voids to be completely filled with 2500 P.S.I. concrete), or approved precast structure (such as Clutter Inc. vaults approved 8/1/2000). The intent of these details shall not be limited by drawings or standards of precast structures.
- Vault location to be determined by Wichita Water & Sewer prior to construction and approved by Department's field supervisor prior to installation. A final inspection will be required for acceptance. Vault location standards include but not limited to: not to be located where subjected to vehicular loads, not to be located in any right-of-way or utility easement, and must be located on the property being served.
- The manhole ring and lid shall be Neenah R-6034 Frame with Type "C" Solid Lid and Drop Down Handle or US Foundry APS-30x30 (Aluminum). Where applicable the standard 10" Wichita Water & Sewer pattern meter reading lid and ring shall be located directly above water meter register. All meter registers shall have an approved lid directly vertical above. All joints of concrete to concrete or metal to concrete in the construction of the vault shall have an approved water tight mastic joint seal.
- Any fittings or appurtenances required to achieve proper elevation of pipe through the vault shall be provided by the contractor and appropriately noted on as-builts submitted by the inspecting engineer. Such fittings shall be a minimum of 2' from the exterior wall of vault.
- For all services larger than 2" the contractor shall provide an outlet flange connection as shown 12-inches from the inside wall. Inlet and outlet wall sleeves shall be provided and installed by the contractor and shall be in alignment with one another. The inlet and outlet pipe shall be ductile iron pipe, cement lined, Class 150 per Standard Specifications and shall be continuous through vault wall and joint no less than two(2) feet from the exterior wall of vault. Flanges of inlet and outlet pipes shall be in proper alignment and bolt pattern shall be rotated in such a way that valves and other fittings shall be in their proper vertical alignment when installed.
- For all services 4" and larger the contractor shall install a mega lug, restrained joint, or approved equal on the exterior walls of the vault, which shall be manufactured of ductile iron conforming to ASTM A 536-80, heat treated to a minimum hardness of 370 BHN and have a working pressure of at least 250 P.S.I. For all services smaller than 4" the contractor shall install an approved vault clamp on the exterior walls of the vault.
- All valves, meters, assemblies, and fittings shall be provided with sufficient concrete or other approved supports to the vault floor.
- The "Confined Space Warning" sign shall be fastened to the top of all vaults. If necessary for landscaping or site considerations, the sign may be fastened to the vault lid if it does not impede access to the handle. Acceptable materials: Aluminum 73415HH, Plastic 73439HH, or S.A. Vinyl 73463HH.
- Meter Supports may be poured in place or pre-cast.
- Water Department to furnish water meter. Meter is to be installed by the contractor. The Contractor shall reimburse the Water Department for the cost of the meter.

L	8" Vault Clamps
K	6" Gate Valve, Wheel Operated
J	6" Flex Coupling
I	6" CI Pipe, FL x PE
H	6" CI 90° Bend, FL x FL
G	6" CI Pipe FL x FL
F	8" Flex Coupling
E	8" CI Pipe FL x PE
D	8" x 2" Rockwell D.R.F.S. Meter
C	8" Gate Valve, Wheel Operated
B	8" x 6" CI Flanged Tee
A	8" Ductile Iron Pipe, Flanged End



WATER LINE DETAILS

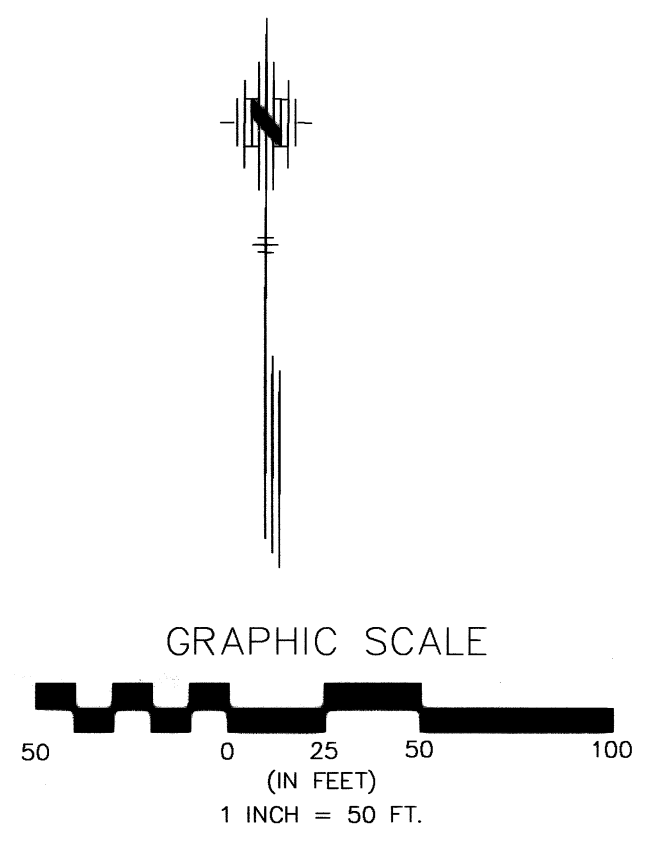
Inwood Apartments
Webber Group

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
Phone 316/685-4114 ■ FAX 316/685-4444

PE

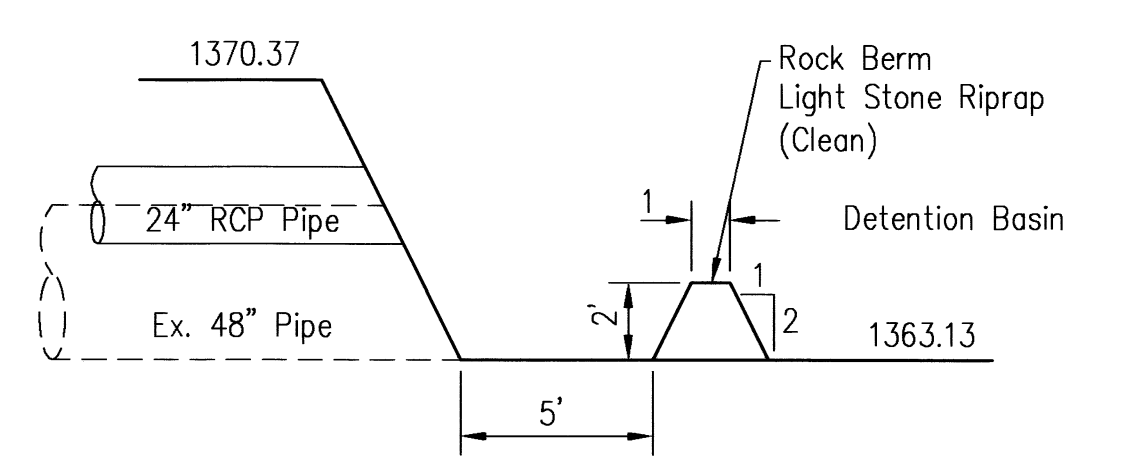
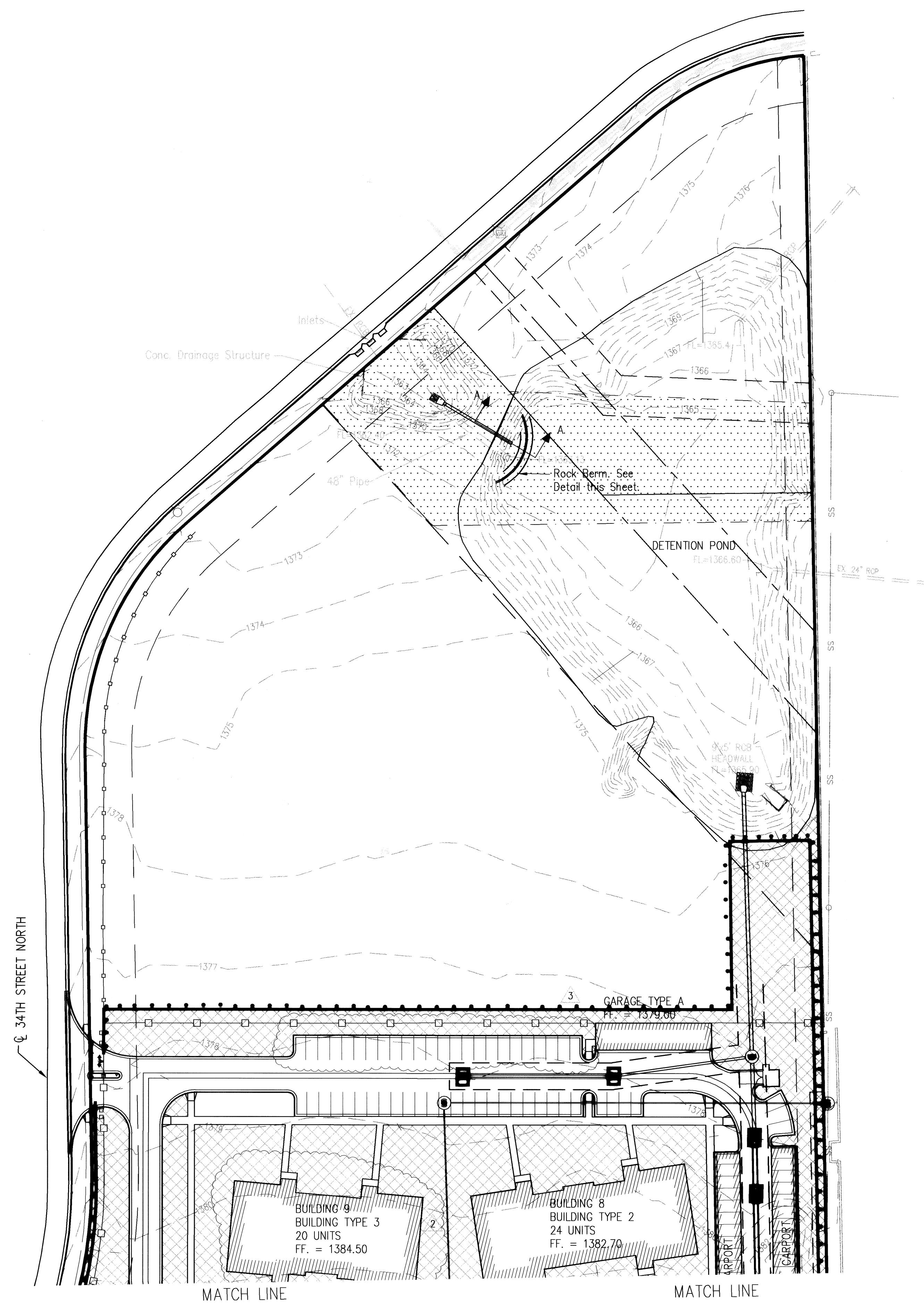
Engineer: JRF
Designer: k/jw
Pos. Job No.: 1909
Date: 12-07

Sheet 8 of 13



LEGEND

- Silt Fence
- Straw Bales
- Inlet Protection
- Construction Entrance
- Permanent Seeding Area (See Landscape Plans for seeding specifications)

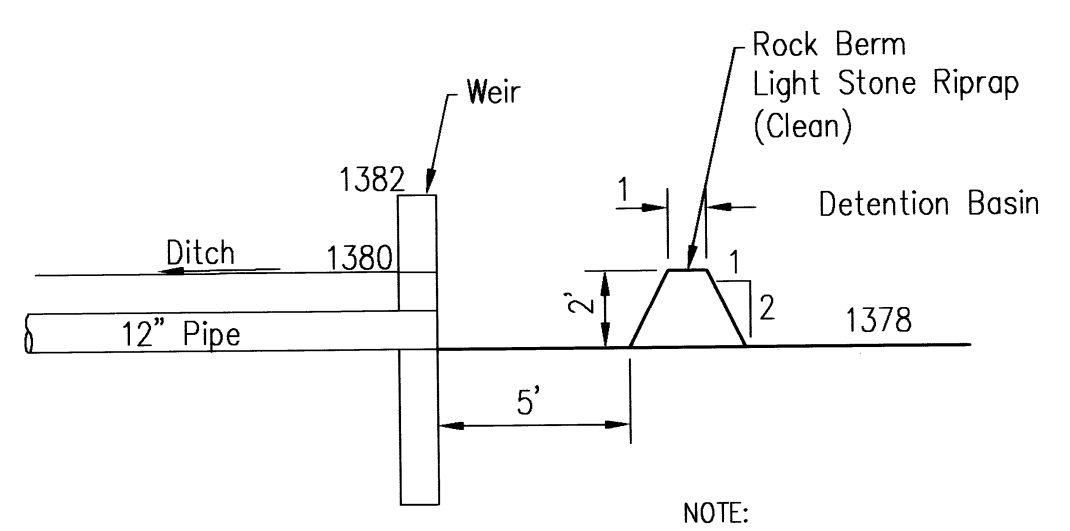
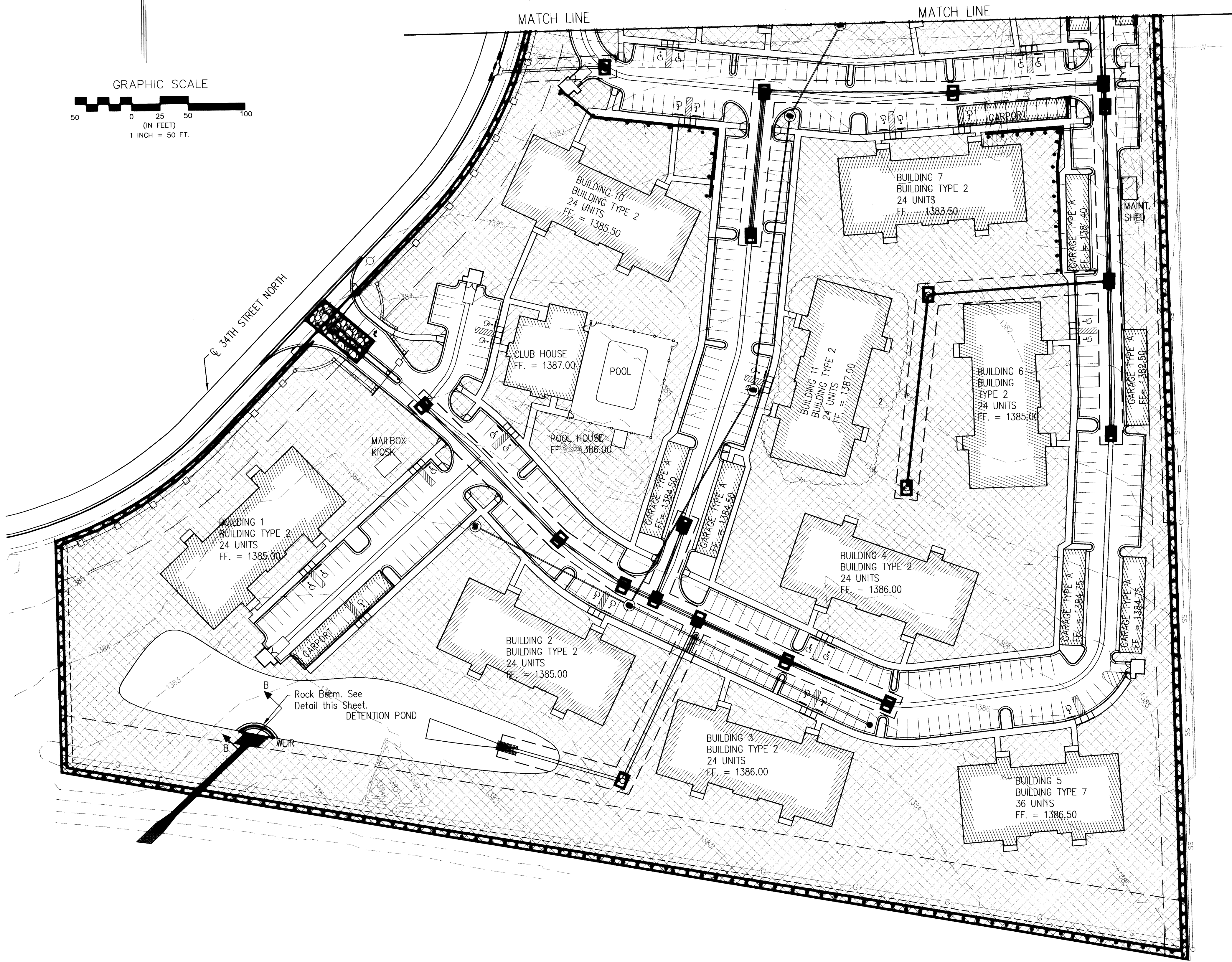
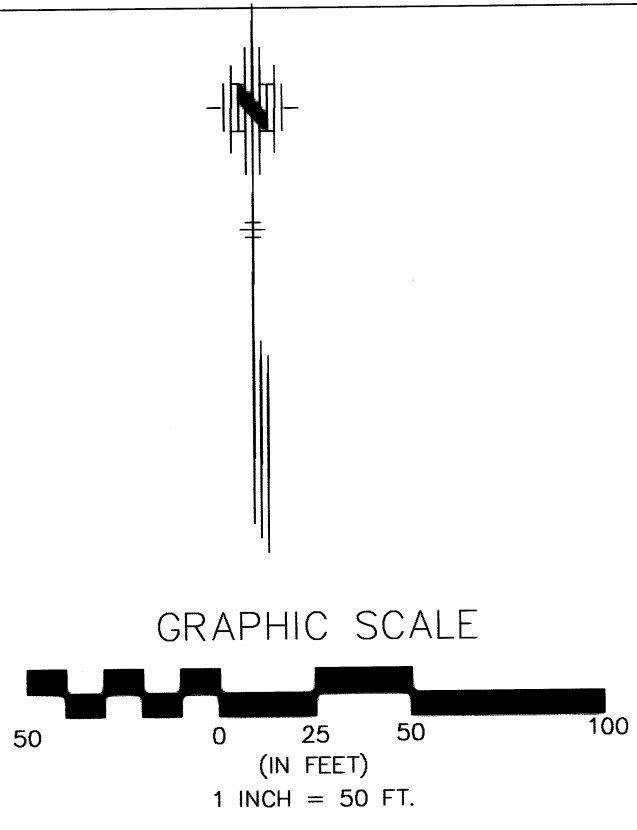


SECTION A-A
Scale 1"=5'

NOTE:
Rock berm to be constructed prior to disturbance of top soil.
Rock berm shall be removed at completion of project.

No.	Date	By	Approved	Revision	
1					
2					
3	11-09-07	KJW	JRF		DELETED 3 GARAGES
4	09-14-07	KJW	JRF		BUILDING NUMBERING CLARIFICATION
EROSION CONTROL					
Inwood Apartments					
Webber Group					
POE & ASSOCIATES, INC. CONSULTING ENGINEERS 5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242 Phone 316/685-4114 ■ FAX 316/685-4444					
Engineer:	JRF				
Designer:	KJW				
Poe Job No.:	1909				
Date:	12-07				
Sheet	9				
C-52	of 13				

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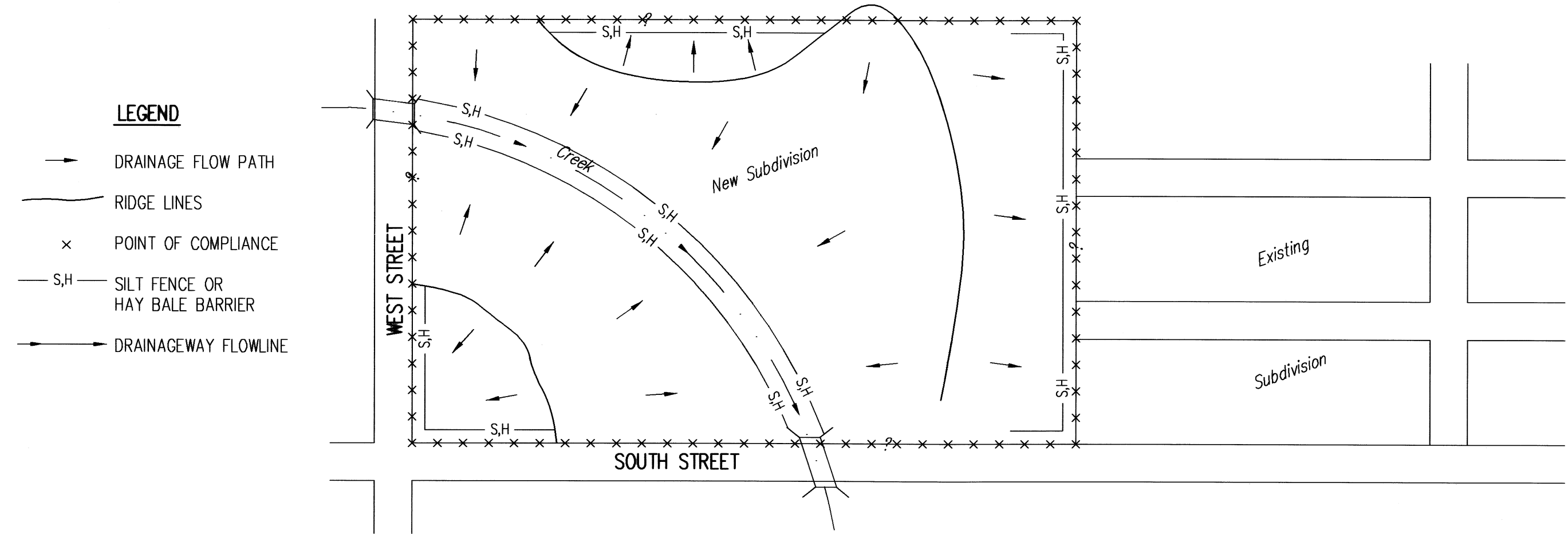
NOTE:
Rock berm shall be constructed once detention pond and weir are complete.
Rock berm shall be removed at completion of project.

SECTION B-B
Scale 1"=5'

Engineer:	uRF	By:	Approved:	Revision:
Designer:	kiw	Date:		
Pos. Job No.:	1909	No.:	1	
Date:	12-07			
Sheet 10 of 13		EROSION CONTROL		
C-53		Inwood Apartments Webber Group		
POE & ASSOCIATES, INC. CONSULTING ENGINEERS 5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242 Phone 316/685-4114 ■ FAX 316/685-4444		BUILDING NUMBERING CLARIFICATION		

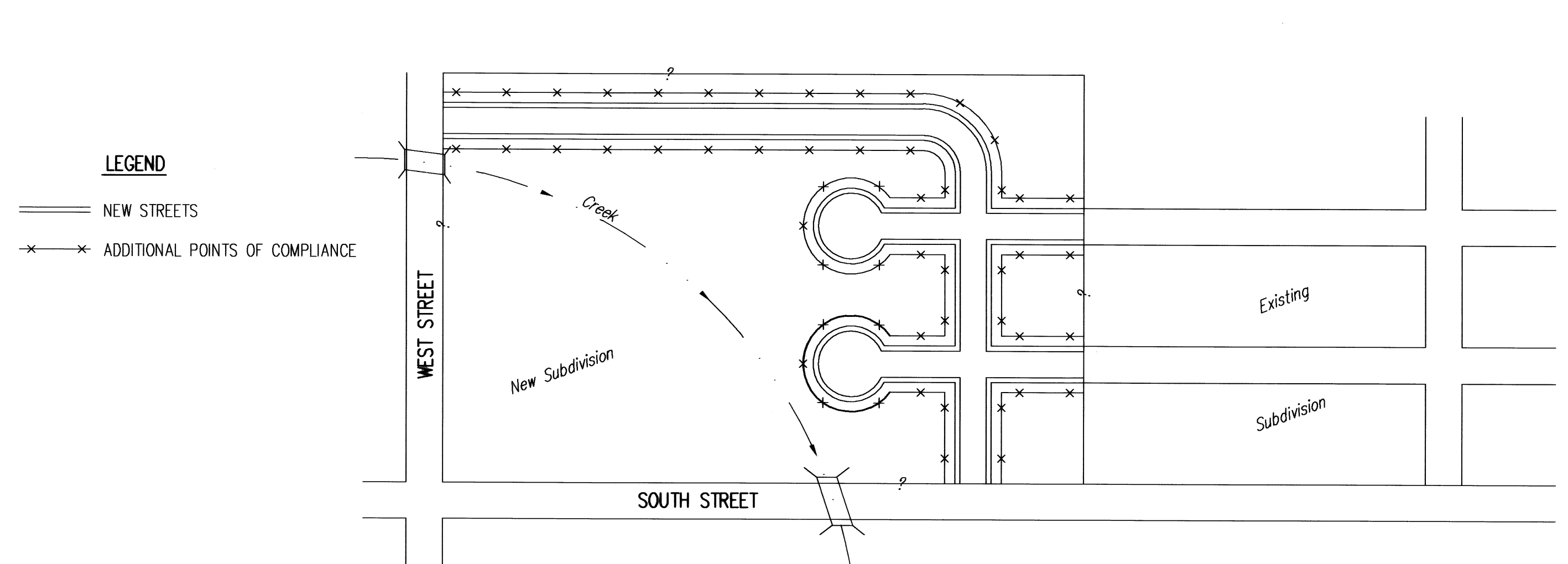
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PHASE 1 – INITIAL EARTHWORK AND UTILITIES (EXCEPT STORM SEWER)



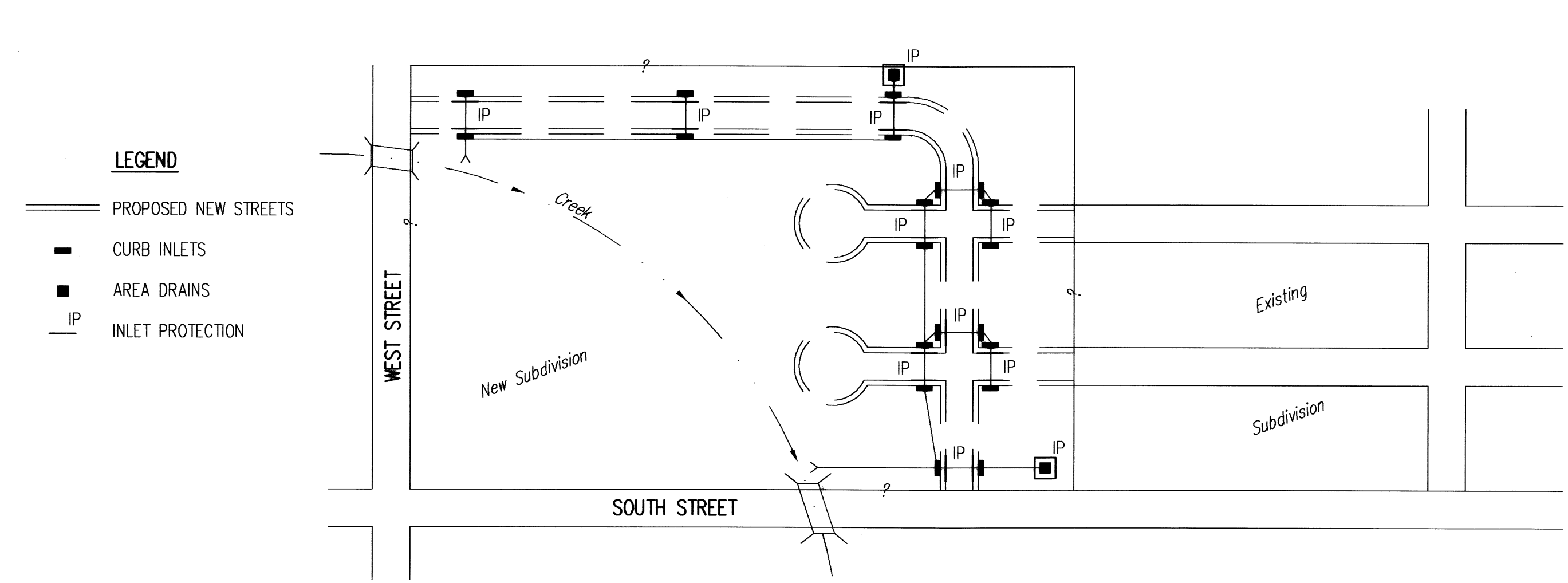
- LEGEND**
- DRAINAGE FLOW PATH
 - RIDGE LINES
 - x POINT OF COMPLIANCE
 - S.H- SILT FENCE OR HAY BALE BARRIER
 - DRAINAGEWAY FLOWLINE
- DURING THIS PHASE OF SUBDIVISION CONSTRUCTION, THE POINTS OF COMPLIANCE ARE THE PERIMETER BOUNDARIES AND ANY DRAINAGE WAYS OR STORM SEWERS DRAINING THROUGH OR FROM 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 THE 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



- LEGEND**
- == NEW STREETS
 - x-x-x-x ADDITIONAL POINTS OF COMPLIANCE
- 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

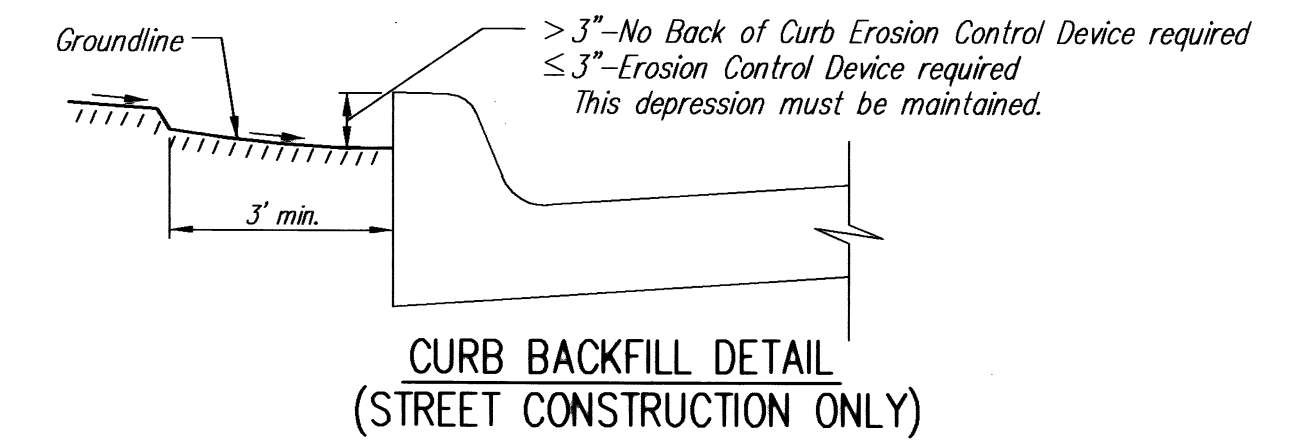


- LEGEND**
- == PROPOSED NEW STREETS
 - CURB INLETS
 - AREA DRAINS
 - IP INLET PROTECTION
- DURING THIS PHASE OF SUBDIVISION DEVELOPMENT, ALL EROSION CONTROL DEVICES REQUIRED IN PHASE 1 SHALL REMAIN IN PLACE AND BE MAINTAINED.
 - AS NEW STORM SEWERS, WITH INLETS, ARE INSTALLED, THE STORM SEWERS MUST 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.

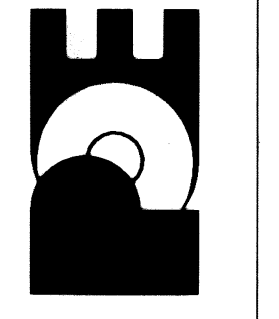
SEE DETAIL SHEET FOR BACK OF CURB SEDIMENT BARRIER DETAILS



SOIL EROSION BMP's	
SUBDIVISION DEVELOPMENT PROCESS	
CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
PROJECT NUMBER	OCA NO.
DATE	
JUNE 2006	

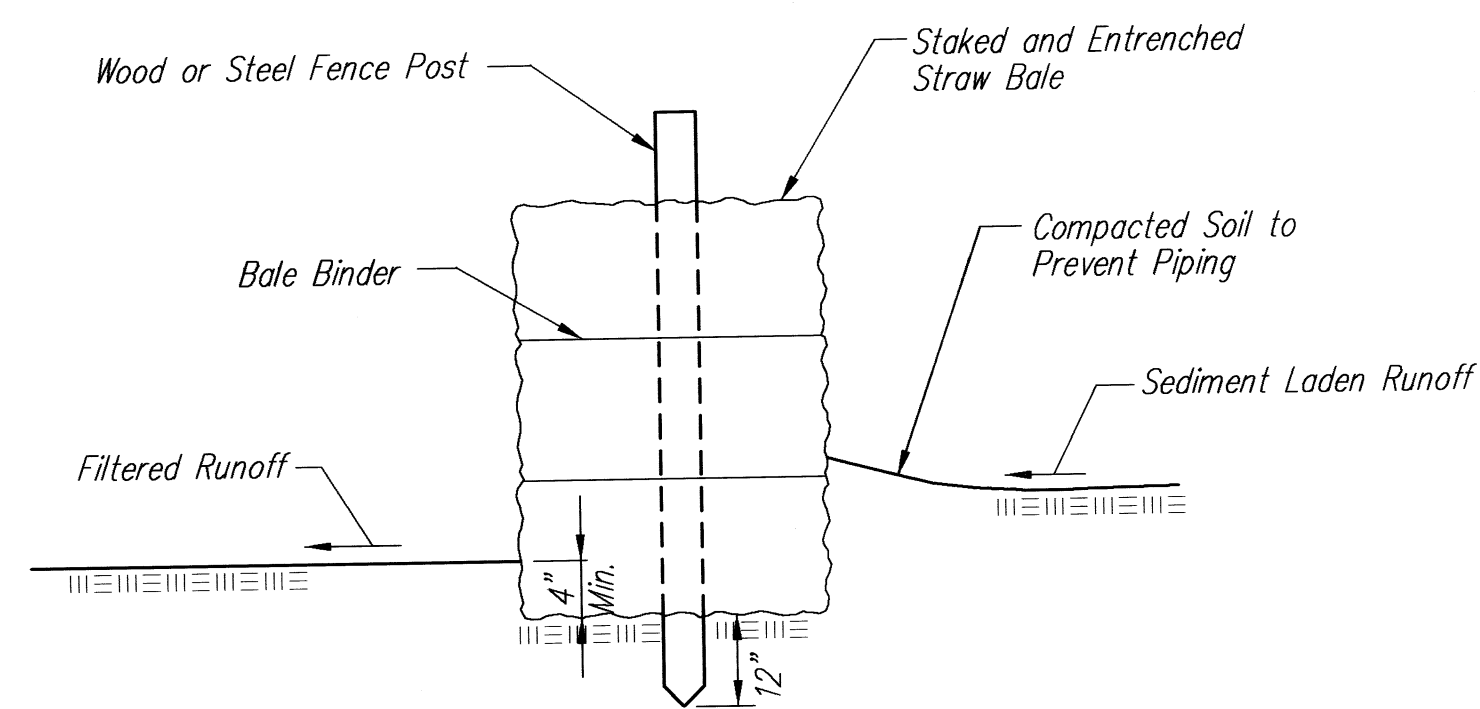
WATER IMPROVEMENTS
EROSION CONTROL DETAILS
 Inwood Apartments
 Webber Group

POE & ASSOCIATES, INC.
CONSULTING ENGINEERS
 5940 E. Central, Suite 200 ■ Wichita, KS 67208-4242
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Engineer:	JRF	1909
Designer:	KJW	
Post Job No.:		
Date:		12-07
Sheet 11		
C-54 of 13		

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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:

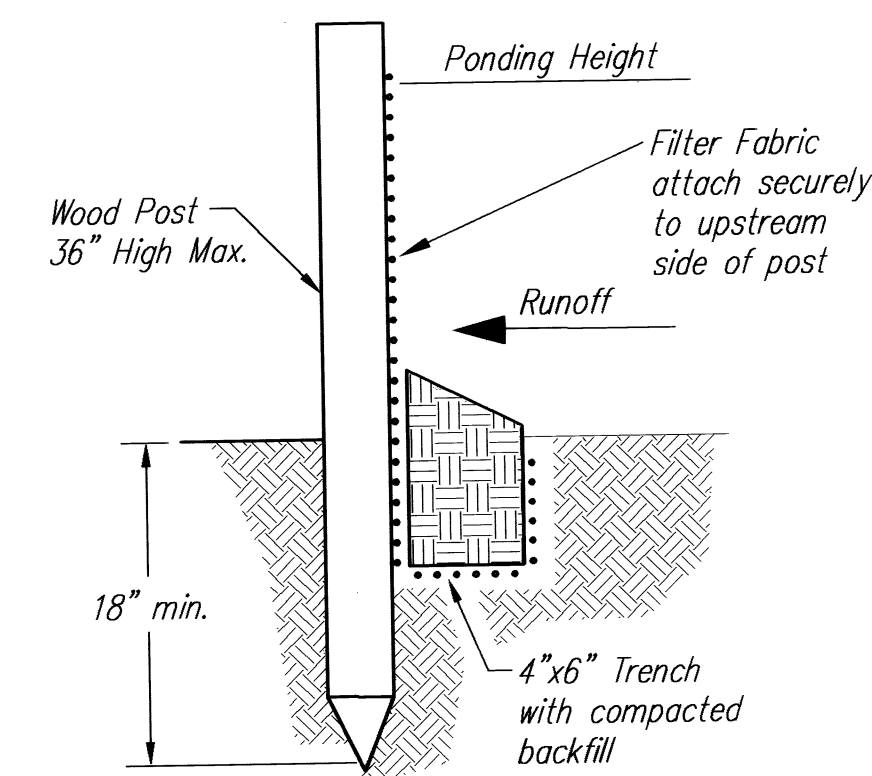
Excavate a trench the length of the planned slope barrier that is 4" deep and a bale's width wide. Make sure that the trench is excavated along a single contour. When practicable, slope barriers should be placed along contours to avoid a concentration of flow. Place the soil on the upslope side of the 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:



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:

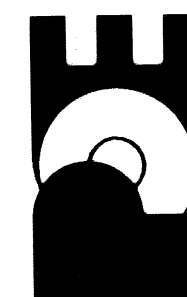
Silt fence slope barriers should be inspected every 7 days and within 24 hours of a rainfall of 1/2" or more. The following is a list of questions that should be addressed during each inspection:

No.	Date	By	Approved	Revision

EROSION CONTROL

Inwood Apartments
Webber Group

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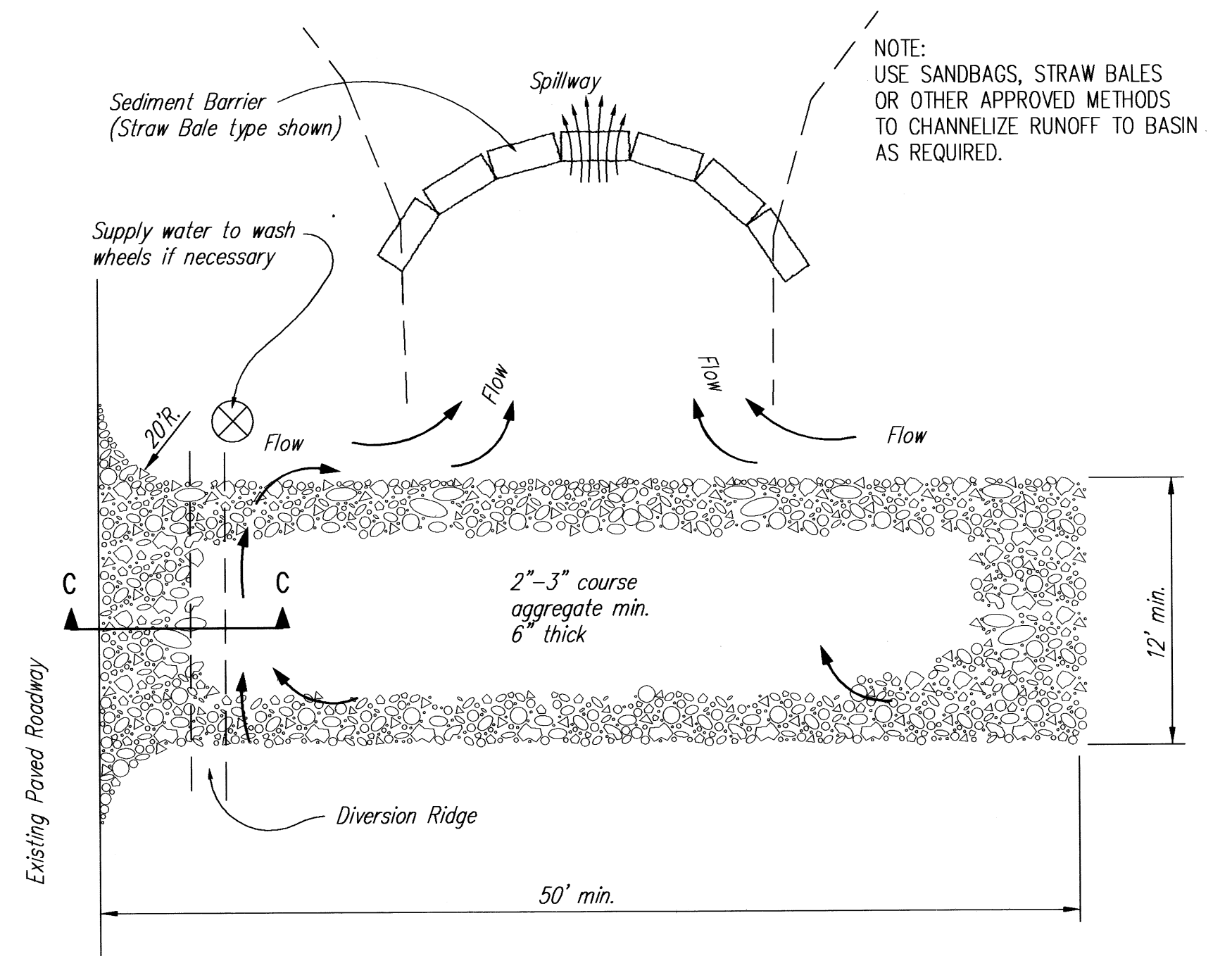
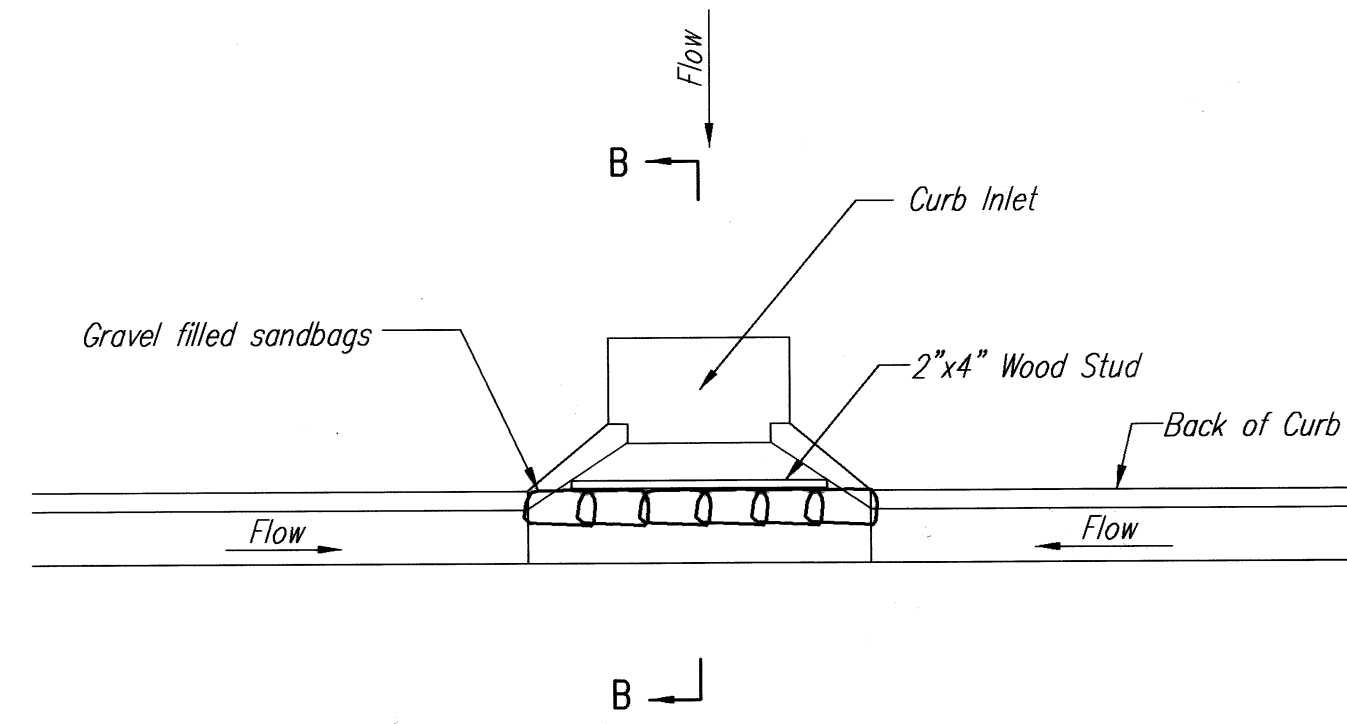
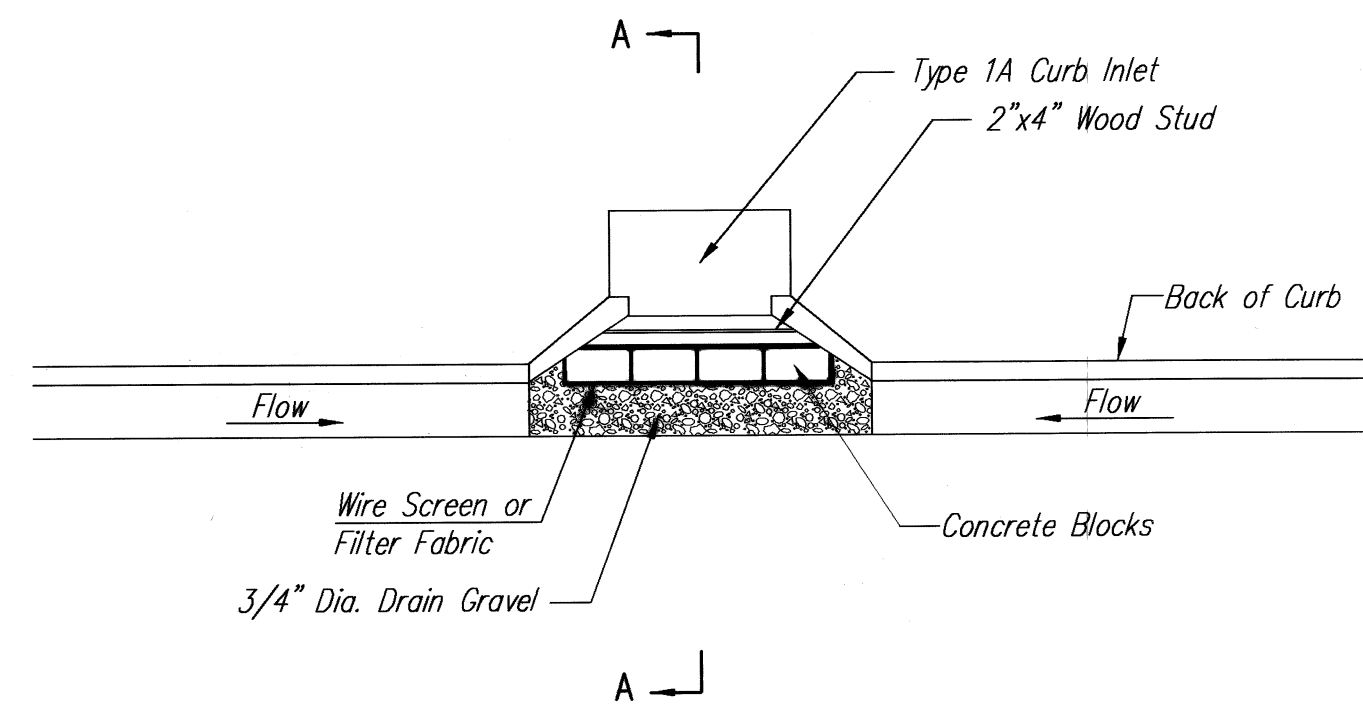
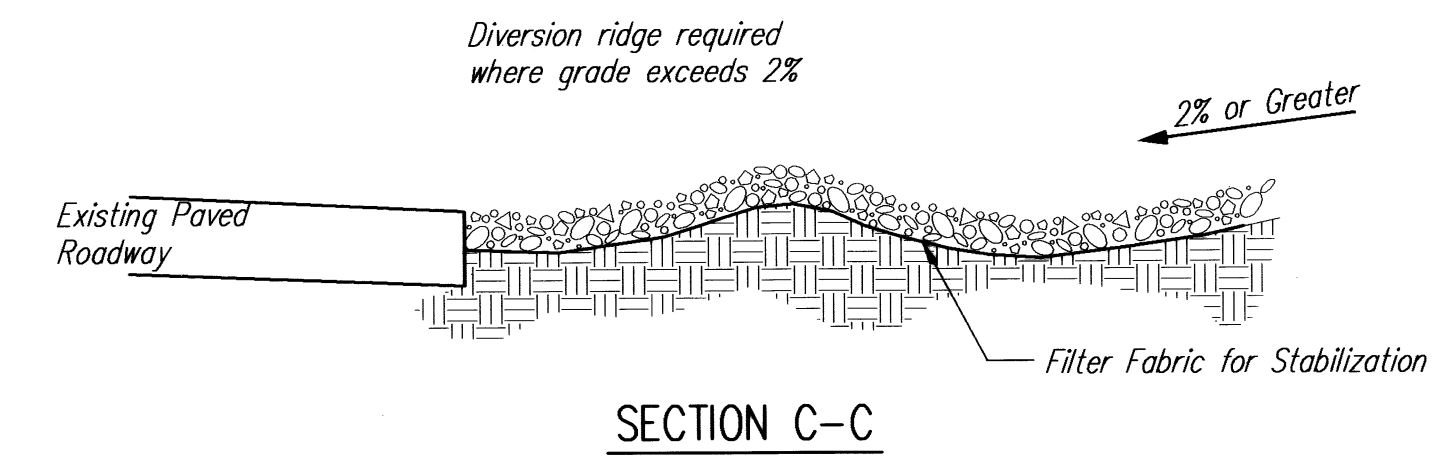
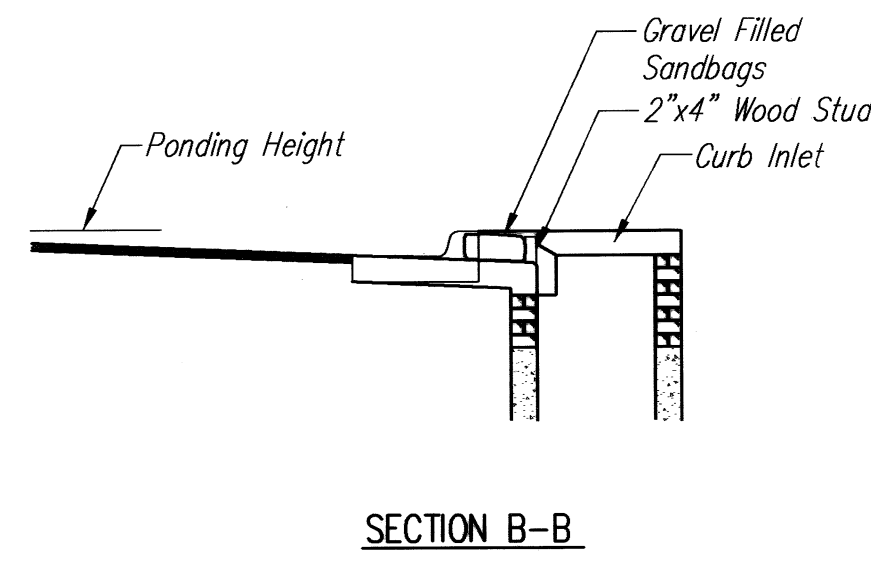
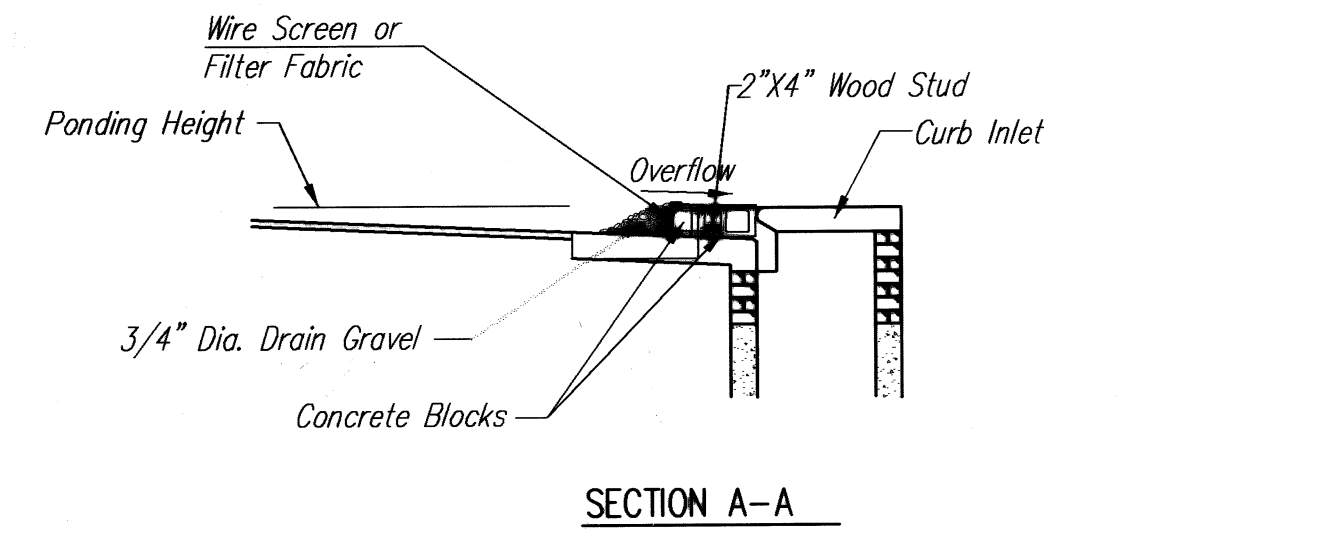
Engineer: JRF
Designer: k/jw
Poe Job No.: 1909
Date: 12-07

Sheet 12 of 13



SOIL EROSION BMPs	
BARRIER DETAILS	
CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
PROJECT NUMBER	OCA NO.
DATE	JUNE 2006

C-55 of 13



**CURB INLET GRAVEL FILTERS
(INLET PROTECTION-RESIDENTIAL STREETS ONLY)**

NOTE: Other types of curb inlet protection may be approved by the city so long as equal protection is provided.

A gravel inlet filter shall be installed at sump locations on residential streets. This type of protection is not to be used on arterial or collector streets at any time that it would pose an undue traffic hazard.

Instructions for Installing:

- STEP 1: Place concrete blocks around the inlet as shown on drawing. Insert 2x4 board as shown.
- STEP 2: Wrap 1/2" mesh wire screen around the concrete blocks.
- STEP 3: Place 1" to 1-1/2" diameter rock around the blocks and wire screen. Be sure the rock extends down from the top of the concrete block.
- STEP 4: To prevent damage to vehicles, signs warning drivers about the structures may be necessary. An alternative installation is the use of gravel bags supported by a 2"x4" board to prevent collapsing.

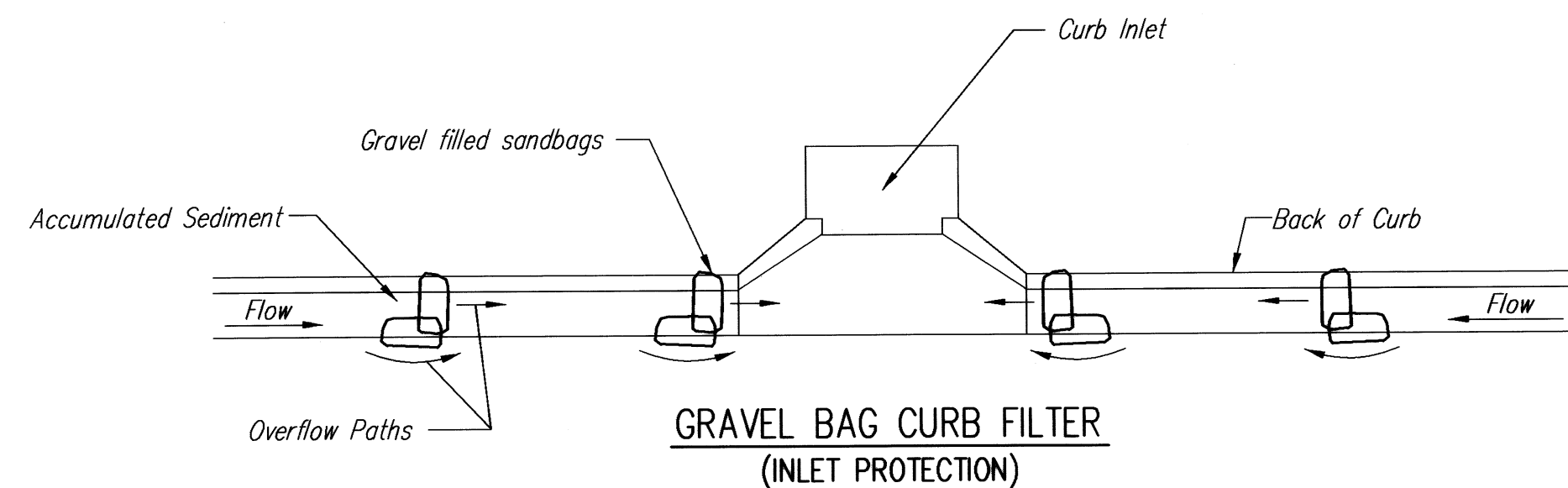
Use of rock with diameters smaller than 1" in the bag may result in clogging of pores and reduce the amount of water flowing into an inlet.

Maintenance:

All curb inlet gravel filters shall be inspected and repaired after each runoff event. Sediment deposits are to be removed once material is within 8 cm (3 inches) of the top of any block. Periodically, the gravel shall be raked to increase infiltration and filtering of runoff waters. Accumulated sediment is to be removed immediately from roads and streets.

**CURB INLET SANDBAG FILTERS
(INLET PROTECTION)**

NOTE: Other types of curb inlet protection may be approved by the City so long as equal protection is provided.



NOTE: Place two or more sets of bags in a manner that results in maximum support. The flow line bag must be lower than top of curb.

CURB SEDIMENT TRAPS

When inlets are located on streets having a grade (i.e., sump conditions do not exist), installing gravel (or sand) bags in the gutter flow line to create small sediment traps can be considered. Gravel bags are recommended over sand bags to allow for drainage.

If the spacing between bags becomes too large, little sediment may be trapped. Spacing of bags should be completed using the table or graph that illustrates placement distances based upon street slope. When installed in the gutter, bag tops must be lower than the sidewalk.

Spacing:

Gravel bags are to be placed according to street grades using the following table or graph that appears below.

GRADE (%)	SPACING (FEET)
0.5	75
1.0	45
2.0	18
3.0	12
4.0	9
5.0	6

Maintenance:

Collected sediment shall be removed after every runoff event. Bags that are destroyed by vehicular traffic or through natural deterioration are to be immediately replaced.

STABILIZED CONSTRUCTION ENTRANCE

NOTES:

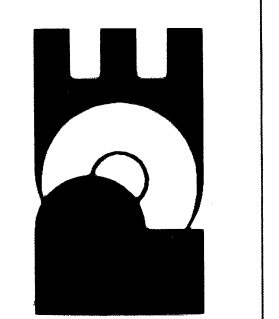
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. 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.
4. 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.



SOIL EROSION BMPs	
BARRIER DETAILS	
CHRISTOPHER M. CARRIER, P.E. STORM WATER ENGINEER	
PROJECT NUMBER	OCA NO.
DATE JUNE 2006	

Engineer:	JRF	By	Approved
Designer:	k/jw	Date	
Post Job No.:	1909	No.	
Date:	12-07	Revision	

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EROSION CONTROL
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