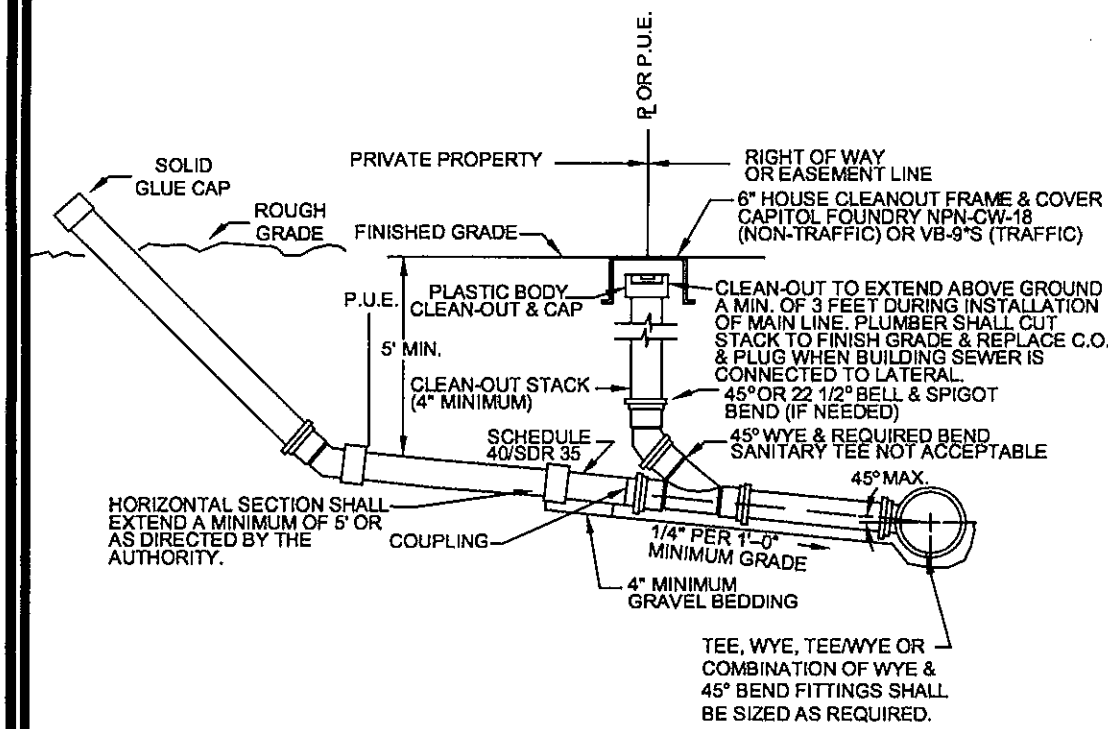


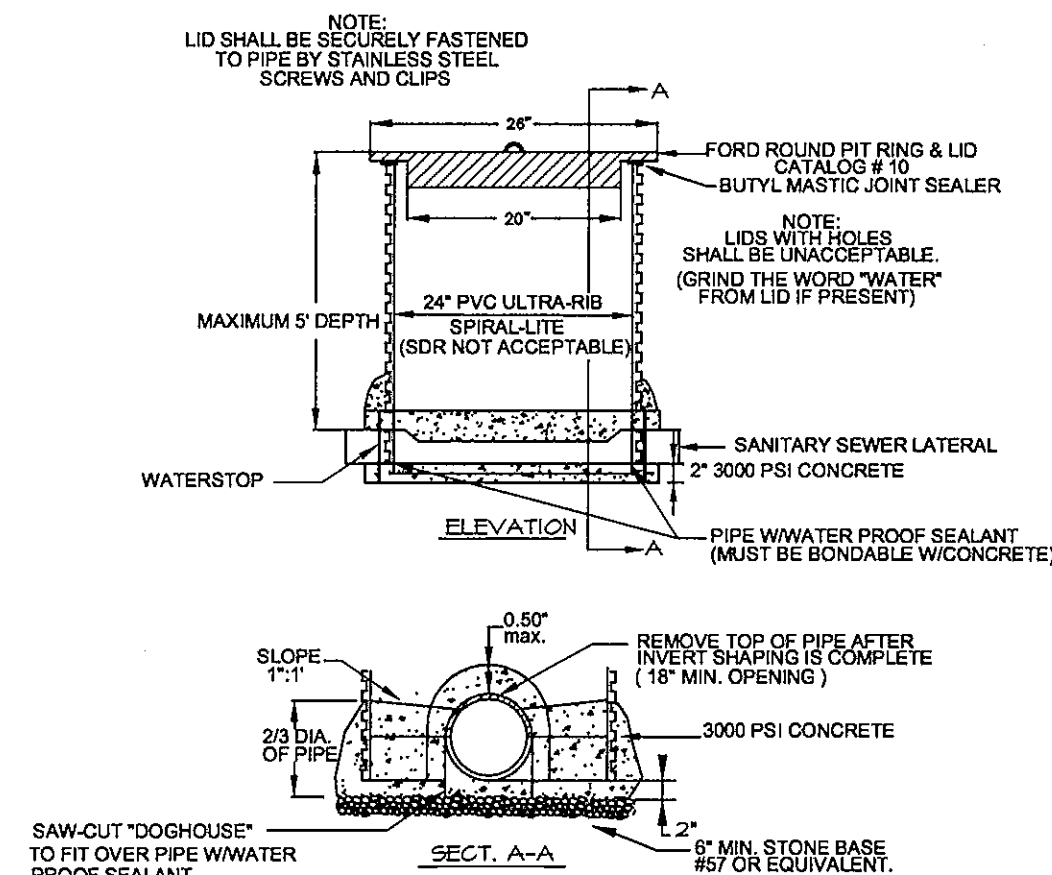
1. TRAFFIC BEARING BOB REQUIRED IN TRAFFIC AREAS.
2. ALL PIPE AND FITTINGS SHALL BE OF SIMILAR MATERIAL.
3. ALL PIPE SHALL BE OF THE SAME SIZE.
4. NO BENDS ARE ALLOWED IN THE LATERAL FROM THE MAIN TO THE CLEANOUT/STACK WYE. (EXCEPT AS NOTED)
5. ALARMS/TESTING ON INVERTIVE MAINS WILL BE PERFORMED BY WESTERN VIRGINIA WATER AUTHORITY.
6. PIPING BETWEEN CLEANOUT TO BE INSTALLED PER BOCA CODE.
7. MINIMUM LATERAL SIZE:
 - 4" FOR RESIDENTIAL SERVICE
 - 6" FOR NON-RESIDENTIAL SERVICE
8. MINIMUM COVER FOR ALL SEWER LATERALS SHALL BE THREE(3) FEET.
9. PROPERTY OWNER RESPONSIBLE FOR INSTALLING CLEANOUT ON PROPERTY LINE WHEN MAINTENANCE OCCURS.



WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS					
REVISION DATE					
07/01/04		SANITARY SEWER LATERAL			S-08

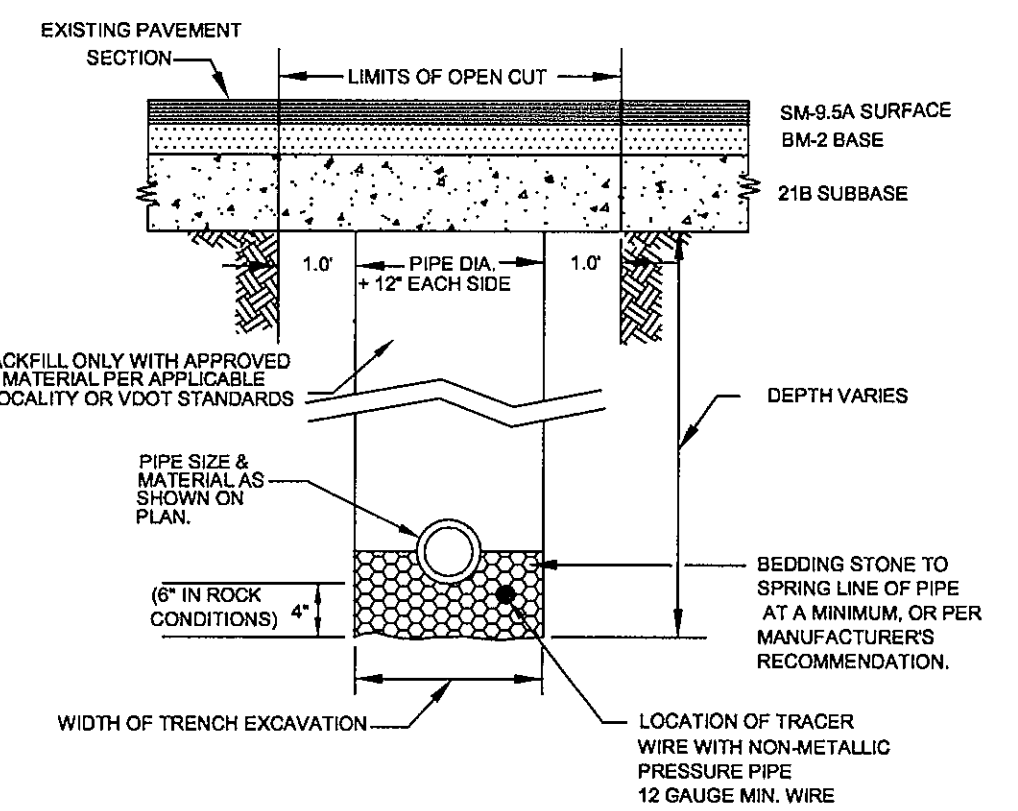
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WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE		
07/10/04		
	TRAFFIC BEARING CLEANOUT BOX	S-14



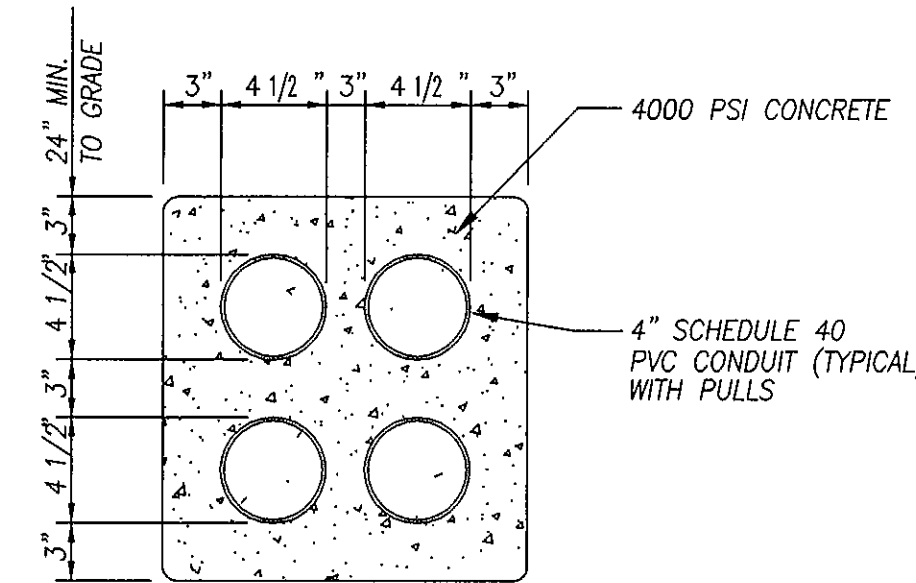
- NOTES:**
- 1. NOT ACCEPTABLE FOR USE IN TRAFFIC AREAS OR AREAS SUBJECT TO FLOODING.**
 - 2. VACUUM OR EXPLANTATION TESTING SHALL BE USED. VACUUM TESTING SHALL MEET THE SAME STANDARD FOR CONCRETE MANHOLES. EXPLANTATION TESTING SHALL HAVE NO LEAKAGE WITHIN 1 HOUR.**
 - 3. "AquaBlok" WASTEWATER ACCESS CHAMBERS MAY BE SUBSTITUTED. TRAFFIC BEARING BOXES WILL BE REQUIRED IF INSTALLED IN TRAFFIC AREAS. TESTING OF "AquaBlok" SHALL BE BY APPLICABLE PLUMBING CODE FOR SEWER LATERALS.**

4. 2' DIA. CONCRETE WELL CASING
3000 PSI MAY BE SUBSTITUTED
FOR ULTRA-RIB PIPE. ANY VERT.
JOINTS IN THE CASING PIPE MUST
BE BY BELL & SPIGOT
CONNECTION WITH MASTIC.



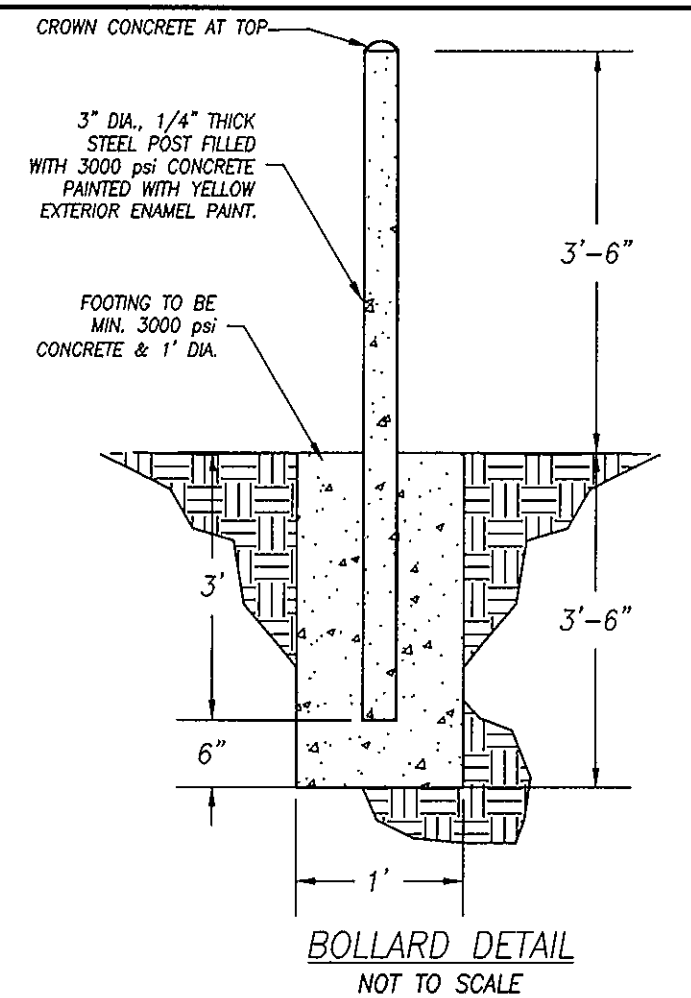
- NOTES:
- A. IN ROANOKE COUNTY, THE CONTRACTOR SHALL PROVIDE THE OPEN CUT WITH A MINIMUM TOP SURFACE OF 2" VDOT SHA, BASIC COURSE OF 3" VDOT BMA, AND SUBBASE OF 4" VDOT C18, ORS REQUIRED BY VDOT. IN ROANOKE CITY, CONTRACTOR SHALL MATCH EXISTING PAVEMENT LAYERS WITH VDOT STANDARD SPECIFICATIONS.
- B. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE AS SPECIFIED BY VDOT OR APPLICABLE LOCALITY.
- C. IN CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR SECURING ALL REQUIRED PERMITS FROM VDOT AND/OR APPLICABLE LOCALITY.
- D. ALL WATER LINES BENEATH PAVEMENT SHALL BE DUCTILE IRON UNLESS INSTALLED IN CASING PIPE OR BY DIRECTIONAL DRILLING.
- E. IN AREAS SUBJECT TO VEHICULAR TRAFFIC, BEDDING STONE AND FILL SHALL BE PLACED IN 6" LIFT MAXIMUM COMPACTED TO AT LEAST 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.
- F. ALL SEWER LINE WATER SHALL BE BEDDED IN COMPACTED GRANULAR MATERIAL. BEDDING REQUIREMENTS FOR SEWER LINE SHALL BE COMPATIBLE TO AT LEAST 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D 698.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE	BEDDING AND BACKFILL UNDER PAVEMENT	G-02
07/01/04		



DETAIL DUCT BANK
NOT TO SCALE

COORDINATE INSTALLATION DEPTH WITH DEPTH OF MANHOLES. IN NO CASE SHOULD DEPTH BE LESS THAN 24" OR GREATER THAN 42". USE MINIMUM MH-2 BASE HEIGHT PRACTICAL WITH FLAT TOP SLAB TO MEET DEPTH REQUIREMENTS.

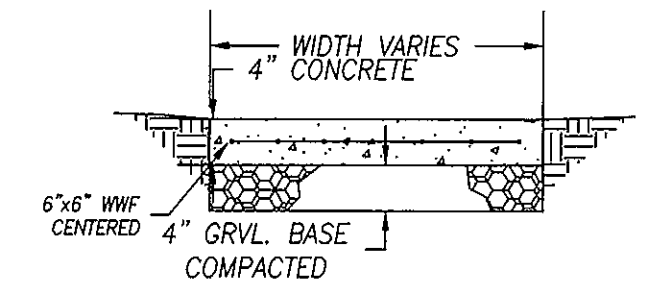


1. LOCATION OF CORNER POSTS SHALL BE DETERMINED FROM STAKES AND PROPERTY PINS INSTALLED BY A REGISTERED LAND SURVEYOR. IF THE STAKES ARE NOT PRESENT OR DO NOT CONFORM TO THE SITE PLAN, CONSULT WITH THE OWNER.
2. CORNERS AND GATE POST FOR SITE SHALL BE 4" (INSIDE DIA.) GALVANIZED PIPE. LINE POSTS SHALL BE 2" (INSIDE DIA.) GALVANIZED PIPE.
3. CORNER POSTS SHALL BE SET WITHIN ONE INCH OF DIMENSIONS INDICATED ON THE SITE PLAN.
4. FENCE POSTS SHALL BE VERTICALLY PLUMB IN ALL PLANES WITHIN 1/2 INCH.
5. CORNER POST FOUNDATIONS SHALL BE A MINIMUM THREE FEET DEEP OR SIX INCHES BELOW THE FROST LINE, WHICHEVER IS GREATER, WITH MINIMUM THREE INCH CLEARANCE BETWEEN BOTTOM OF POST AND BOTTOM OF THE FOUNDATION.
6. CONCRETE SHALL COMPLY WITH THE STANDARDS OF THE AMERICAN CONCRETE INSTITUTE, THE CONCRETE REINFORCING STEEL INSTITUTE, AND APPLICABLE ASTM REQUIREMENTS.
7. FOUNDATION FOR LINE POSTS SHALL BE 12 INCHES IN DIAMETER. FOUNDATION FOR GATE AND CORNER POSTS SHALL BE 18 INCHES IN DIAMETER.
8. CORNER POSTS AND GATE POSTS SPACING SHALL BE EQUAL WITH A TWELVE FOOT MAXIMUM SPACING. GATE POST SPACING AND SPECIFIC LOCATIONS SHALL BE IN ACCORDANCE WITH SITE PLAN AND SHALL BE VERIFIED WITH PROJECT MANAGER.
9. ALL CORNER POSTS EXCEPT GATE POSTS SHALL BE CAPPED WITH A COMBINATION CAP AND BARB WIRE SUPPORTING ARM. GATE POSTS SHALL BE TWELVE INCHES HIGHER THAN CORNER OR LINE POSTS TO PROVIDE FOR TERMINATION OF BARBED WIRE. GATE POSTS SHALL BE CAPPED WITH STANDARD CAP.
10. ALL CORNER AND GATE POSTS SHALL BE 3/8" DIAMETER 3/8" DIAMETER DIAGONAL TRUSS RODS WITH TURNBUCKLES HORIZONTAL BRACE RODS, 1-1/2" DIAMENSION PIPE, SHALL BE INSTALLED BETWEEN POSTS.
11. A TOP RAIL (1-3/8" I.D.) GALVANIZED PIPE SHALL BE INSTALLED BETWEEN POSTS.

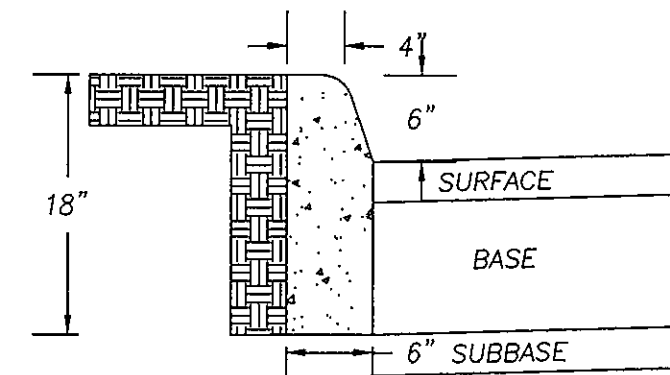
1. ALL WIRE, FABRIC, FITTINGS, HARDWARE AND STEEL MEMBERS USED FOR SITE AREA FENCING, GUY ANCHOR FENCING AND ACCESS ROAD GATES SHALL BE HOT DIPPE GALVANIZED OR OTHER APPROVED NON-CORROSIVE MATERIAL.
2. ALL NON-CORROSIVE MATERIAL SHALL BE APPROVED BY THE OWNER.
3. ANY DAMAGE TO GALVANIZING OR NON-CORROSIVE COATING DURING CONSTRUCTION SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S RECOMMENDED METHOD.
4. IF FINAL GRADE IS APPLIED PRIOR TO FENCE INSTALLATION, ALL SPOILS REMOVED TO INSTALL THE FENCE POSTS AND FENCE ACCESSORIES SHALL BE REMOVED FROM SITE OR APPROPRIATELY BLENDED INTO SURROUNDING GRADE TO PREVENT GIBBS FROM BLEMISHING SITE AESTHETICS.
5. EXCESS FENCE MATERIAL SHALL BE REMOVED FROM THE SITE.
6. ACTUATORS FOR SECURITY GATES BY MASTER HALCO AND SECURITY ACCESS SYSTEM BY RICHMOND ALARM COMPANY. COORDINATE WITH SUPPLIERS.
7. SEE SITE ELECTRICAL PLANS FOR GROUNDING DETAILS.

1. FENCE FABRIC SHALL BE EIGHT FOOT HIGH, UNLESS OTHERWISE SPECIFIED, #9 GAUGE, GALVANIZED CHAIN LINK FABRIC WITH TWISTED TOP SELVAGE AND KNUCKLED BOTTOM SELVAGE.
2. FABRIC SHALL BE TENSIONED PER MANUFACTURER'S RECOMMENDATIONS TO PRESENT A NEAT APPEARANCE. A MAXIMUM OF ONE (1) BARBED WIRE SHALL BE INSTALLED BETWEEN FABRIC AND FINAL ORDE.
3. FABRIC SHALL BE SECURED AT CORNER AND GATE POSTS USING STRETCHER BARS AND TENSION BAND CLIPS.
4. FABRIC SHALL BE SECURED TO THE TOP RAIL AND BRACE RODS USING THE CLIPS.
5. THREE RUNS OF 4-POINT GALVANIZED BARBED WIRE SHALL BE INSTALLED ALONG TOP OF FENCE. BARBED WIRE SHALL BE TENSIONED PER MANUFACTURER'S RECOMMENDATIONS TO PRESENT A NEAT APPEARANCE.
6. INSTALL TENSION WIRE ALONG BOTTOM OF FABRIC.

1. ALL JOINTS BETWEEN TUBULAR GATE MEMBERS SHALL BE WELDED OR HEAVY FITTINGS PROVIDING RIGID AND WATERTIGHT CONNECTIONS.
2. GATE HINGES SHALL PROVIDE FOR 180 DEGREE RADIUS GATE SWING. ALL HINGE NUTS SHALL BE ON THE INSIDE AND DOUBLE-NUT TO PREVENT UNAUTHORIZED ENTRY.
3. GATE STOPS SHALL BE INSTALLED AND SHALL HOLD GATE IN "OPEN" POSITION.
4. BARBED WIRE GUARD SHALL BE INSTALLED ON TOP OF GATES. ADEQUATE CLEARANCE SHALL BE MAINTAINED TO ALLOW GATE OPERATION.
5. GATE SHALL BE INSTALLED PLUMB AND SHALL OPEN AND CLOSE FREELY.
6. USE MINIMUM THREE FOOT SECTION BETWEEN GATE POST AND CORNER POST. GATE POST SHALL NOT BE SHARED AS A CORNER POST.



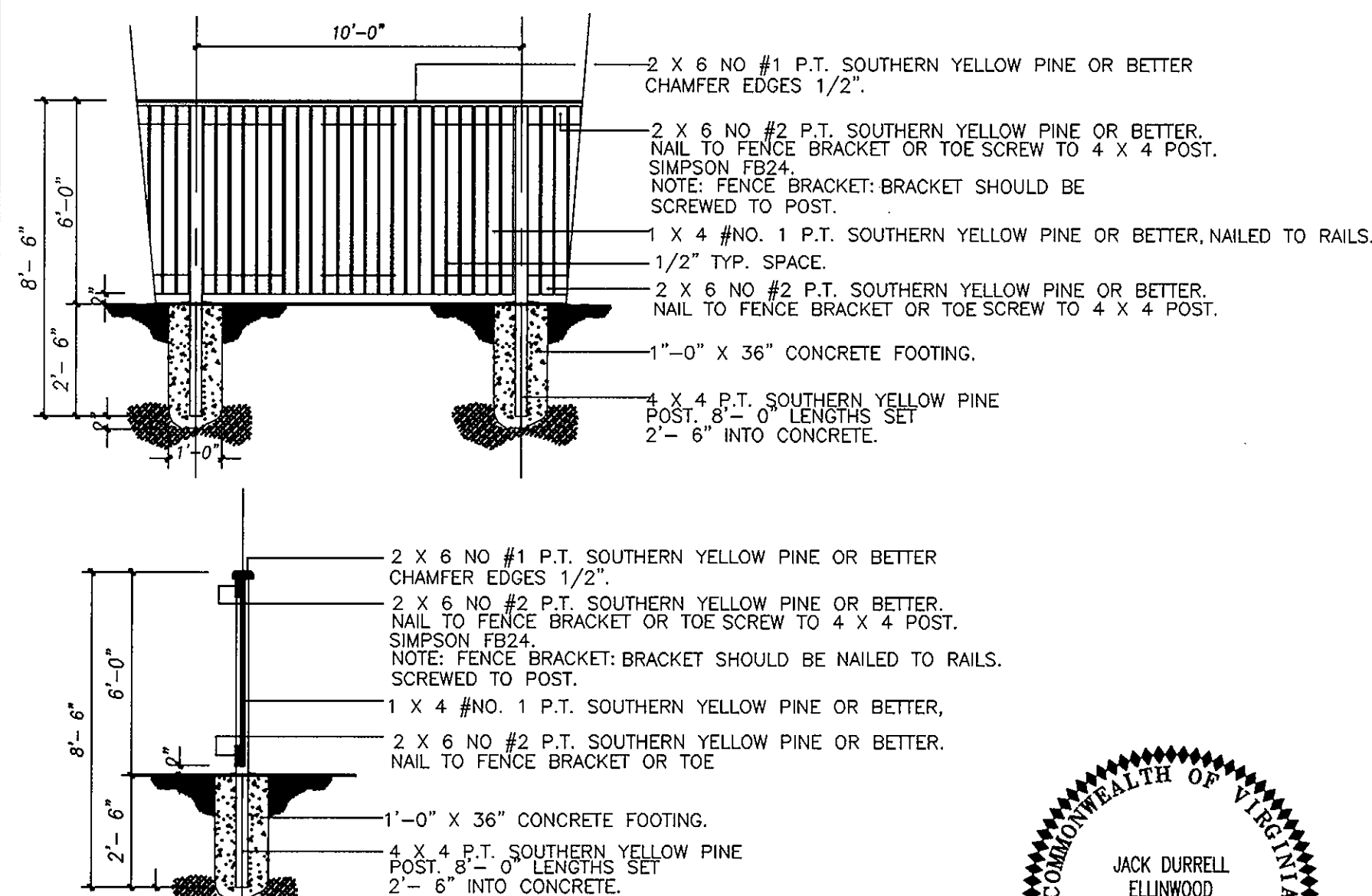
LIGHT DUTY CONCRETE
NOT TO SCALE



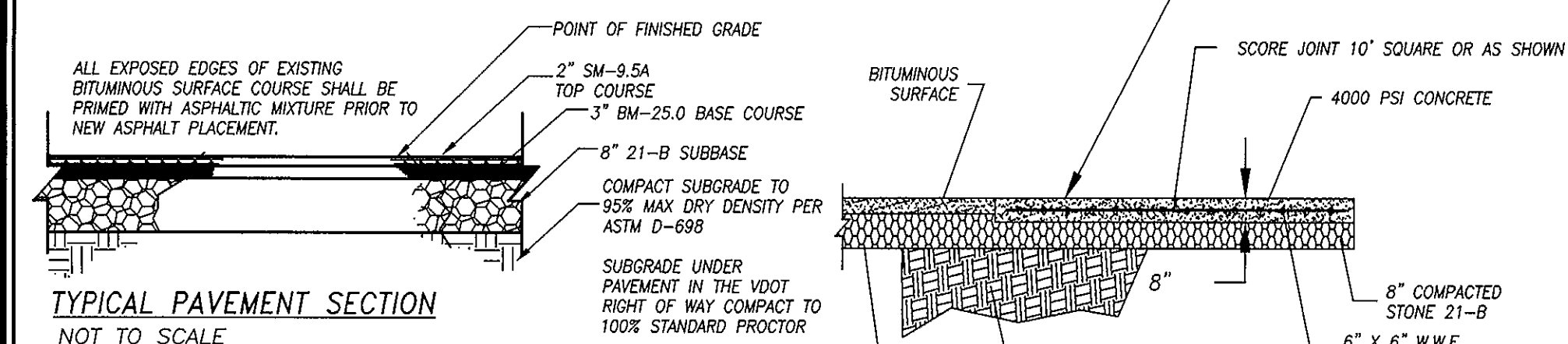
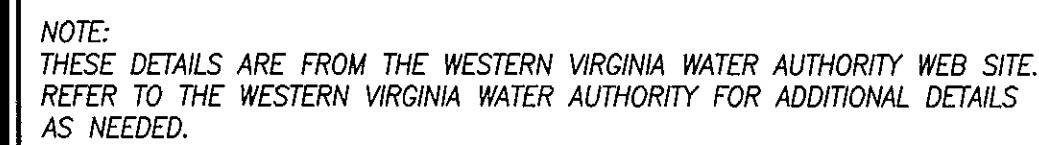
THIS ITEM SHALL BE CAST IN PLACE
CONCRETE TO BE VDOT CLASS A3.

THE DEPTH OF CURB MAY BE REDUCED AS MUCH AS 3" (15" DEPTH) OR INCREASED AS MUCH AS 3" (21" DEPTH) IN ORDER THAT THE BOTTOM OF CURB WILL COINCIDE WITH THE TOP OF A COURSE OF THE PAVEMENT SUBSTRUCTURE. OTHERWISE, THE DEPTH IS TO BE 18" AS SHOWN. NO ADJUSTMENT IN THE PRICE BID IS TO BE MADE FOR A DECREASE OR INCREASE IN DEPTH.

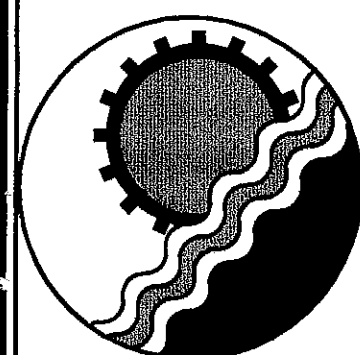
CG-2 CURB
NOT TO SCALE



BOARD ON BOARD FENCE
NOT TO SCALE

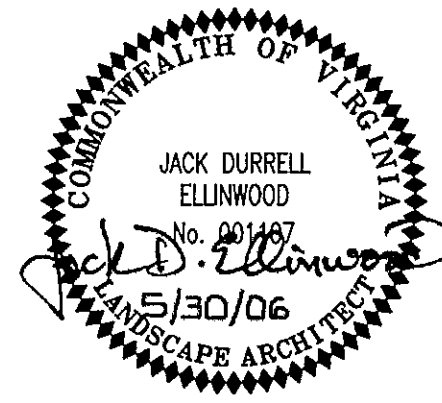


PAVING DENSITY PER ASTM D-698
HEAVY DUTY CONCRETE - DUMPSTER PAD & APPROACH ARPON
NOT TO SCALE



ENGINEERING CONCEPTS, INC.

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No.	Revision	By	Appd	Date	Drawn	DRB
1	COMMENTS CO AND VDOT	DRB	JDE	05-09-06	Designed	JDE
2	COMMENTS CO 05-25-06 AND VDOT 05-23-06	DRB	JDE	05-30-06	Checked	JDE
					Approved	JDE
						JDE

VERIZON WIRELESS BUILDING ADDITION
PHASE II THIRLANE ROAD

MISCELLANEOUS DETAILS
ROANOKE COUNTY, VIRGINIA

SCALE: NONE

MAR. 27, 2006

PROJECT: 05083

C-502