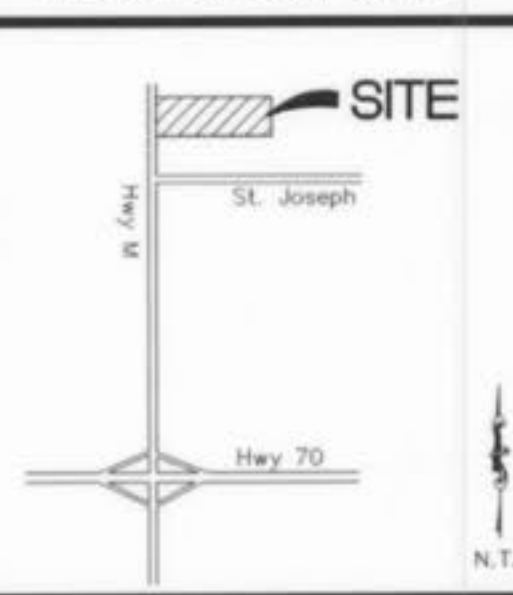


# AS-BUILT PLANS Proposed Office Building

OF A TRACT OF LAND BEING PART OF SECTION 21,  
TOWNSHIP 47 NORTH, RANGE 3 EAST  
ST. CHARLES COUNTY, MISSOURI

## LOCATION MAP



## INSTALLATION OF WATER MAINS

"ALWAYS KEEP THE WATER MAIN ON EASEMENT"

- The Pipe should have a Minimum Pressure Rating (PR) of 200 PSI or SDR-21 for 8" and C-900 class 150 or SDR 18 for 12" or larger pipes. All water mains of PVC Material shall be certified by NSF and listed in NSF Standard 61. NSF stands for NSF International which is an agency that certifies materials, such as pipe, valves, etc., for use in potable water systems among other things. Standards 61 is the (ANSI/NSF Standard 61) is a listing of certified drinking water components. The Missouri DNR requires that products which come in contact with drinking water be listed in NSF Standard 61. If the pipe is NSF certified, it will have a stamp on the pipe that says "NSF-pw".
- Fire Hydrants must be Mueller Steamers Centurion and painted yellow in color and all valves must be Mueller Mechanical joint resilient wedge gate valve. A fire hydrant is required at the end of all dead end waterlines, including those which may be extended at a later date.
- All fire hydrants are to have valves flanged to the tee and (with a total length of 38" or less) hydrants swivel anchored to the valve. Clean 1" rock should be used to backfill above the weep holes of the fire hydrant.
- The contractor shall place all fire hydrants between 1.5 feet and 3 feet from the Parking lot curb (measured from the edge of the fire hydrant). The curbline should be set 6" higher in elevation than the top of curb.
- These water bends (45 degrees, 22 1/2 degrees, 11 1/4 degrees), are to be made with mechanical joint fittings using mega lugs up to 10" diameter, 12" or larger requires mega lugs and concrete blocking. Concrete not to be on nuts or bolts. Ninety degree bends are not allowed. The first slip joint, up and down stream after fittings, should be restrained per pipe manufacturer specs.
- Tees, 4-ways, etc. shall have concrete blocking. Concrete not to be on nuts or bolts.
- Rocky soils shall require bedding 6" under and 6" over water pipe.
- Concrete encasement required, to DNR Specification, when crossing storm or sanitary sewers. Sanitary: Vertical is 18", horizontal is 10". Storm: vertical is 12", horizontal is 5".
- Must attach coated solid core, 12 gauge copper tracer wire, taped to the top of pipe. All copper wire must run up the outside of the PVC SDR 21 valve box and 1 to be tucked inside the valve box under the water lid.
- Use 3M waterproof splice kits for all splicing of tracer wire.
- A chlorine test is required. It must initially test at 25 PPM, or greater, and 24 hours later 10 PPM must be present. It must be tested by the City of O'Fallon Water Department Inspector, and have 24 hours notice prior to that inspection. The main will be tested for CL2 every 1,200' of pipe.
- If chlorine test fails then the main must be re-chlorinated.
- Coliform samples should be collected every 1,200'.
- Final Pressure Test: The water main must be pumped up to 125 PSI, and maintain this pressure for one hour without any drop in pressure. City of O'Fallon Water Department may require higher pressure test if deemed necessary.
- All waterline construction shall conform to current City of O'Fallon Water Standards and Specifications.

- The contractor shall place the "streamer" outlet of a fire hydrant towards the street.
- Backfill no debris larger than 6" in diameter.
- City of O'Fallon Water Department shall be notified at least 48 hours prior to the construction of water mains for coordination and inspections.
- All open mains should be properly capped when the main is unattended for more than 4 hours. Duct tape the end closed so it is visually seen.
- Notify City of O'Fallon Water Department when work stops and when the Contractor will not be continuing work. Twenty-four (24) hour notice is required notifying when work will continue.
- All water mains are to be installed in a straight line (no bends in individual pipes). A 5% deflection in joints is allowed. Bends around cut-de-sacs are to be made with 22 1/2 degree elbows.
- Small field changes may be made by City of O'Fallon Inspector. Larger changes have to be resubmitted by the Developer's Engineer for approval.
- As-Built drawings must be sent to City of O'Fallon Water Company before the project can be considered Final. (Ex. Showing location changes of elbows, elevations, easements, etc.)

NOTE: 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS

THE EXISTING SEWER LENGTHS, SIZES, FLOWLINES, DEPTHS OF STRUCTURES AND SEWERS AND LOCATIONS WITH RESPECT TO EXISTING OR PROPOSED EASEMENTS HAVE BEEN MEASURED. THE RESULTS OF THOSE MEASUREMENTS ARE SHOWN ON THIS SET OF FINAL MEASUREMENT PLANS.

SIGNED:  
MO. PROFESSIONAL LAND SURVEYOR  
WILLIAM S. KANKOLENSKI 2197 S-2197  
DATE: \_\_\_\_\_

ASBUILTS NOTE:  
ALL DISTANCE AND SLOPE CALCULATIONS ARE FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE.

## GENERAL NOTES

- All corrugated steel pipe shall conform to the requirements of AASHTO M-36 and shall be fully coated with bituminous material conforming to the requirements of AASHTO M-190. Corrugated steel pipe shall be helical pipe with reformed ends. Pipes shall be joined using either huggar bands with rubber o-ring gaskets or universal corrugated bands with sponge neoprene gaskets. All gasket materials shall conform to ASTM D-1056.
- All standard curb inlets are to have front-of-inlet 2' (two feet) behind curb, within public right-of-way, unless otherwise noted.
- Concrete Pipe Joints shall be M.S.D. Type "A" Approved Compression Joints and shall conform to the requirements of the Specification for Joints and Circular Concrete Sewer and Culvert Pipe, using flexible, watertight, rubber-type gaskets A.S.T.M. C-443. Band-Type Gaskets depending entirely on cement for adhesion and resistance to displacement during jointing shall not be used.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- All trench backfills under paved areas shall be granular backfill, and water jetted. All other trench backfills may be earth material (free of large clods or stones) and shall be water jetted.
- Easements shall be provided for storm sewers, sanitary sewers, and all utilities.
- Gas, water, and other underground utilities shall not conflict with the depth or horizontal location of existing and proposed sanitary and storm sewers including house laterals.
- The contractor shall place all fire hydrants within (2') feet of the street curb.
- The contractor shall place the "streamer" outlet of the fire hydrant toward the street.
- Gas, water, and other underground utilities shall not conflict in depth of horizontal location of existing and proposed sanitary and storm sewers including house laterals.
- Seeding and Mulching will be required if work is suspended for more than 30 days or if work is within 30 days of finished grading.
- All Sanitary laterals to be installed must meet City of O'Fallon Sanitary Sewer District guidelines.
- The Developer must supply City Construction Inspectors with soil reports prior to or during site soil testing.
- The contractor shall assume complete responsibility for controlling all siltation and erosion of the project area. The Contractor shall use whatever means necessary to control erosion and siltation including, but not limited to, staked straw bales and/or siltation fabric fences (possible methods of control are detailed in the plan). Control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of O'Fallon and/or MDDOT. The contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The owner and/or the City of O'Fallon and/or MDDOT may at their option direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silt or mud on new or existing pavement or in new or existing storm sewers or swales shall be removed after each rain and affected areas cleaned to the satisfaction of the Owner and/or the City of O'Fallon and/or MDDOT.
- Lighting Values will be reviewed on site prior to the final occupancy inspection. Corrections will need to be made if not in compliance with City Standards.
- All filled places under proposed storm and sanitary sewer, proposed roads and/or paved areas shall be compacted to 90% of maximum density as determined by the Modified AASHTO T-180 Compaction Test or 95% of maximum density as determined by the Standard Proctor Test AASHTO T-99. All tests shall be verified by a soils engineer concurrent with grading and backfilling operations.
- No slopes shall be steeper than 3:1.

## DEVELOPMENT NOTES

- Owner/Developer/Prepared For:  
Mckelvey Properties  
2310 Hwy 94 S. Outer Rd.  
St. Charles, MO 63303  
(636) 928-9111
- Area of Tract= 3.44 Acres
- Present Zoning - C-2 (Commercial) & R-1 (Residential)
- Proposed Use - Retail
- Setback Requirements:  
Front Yard Setback Twenty Five (25) feet  
Side Yard Setback- None  
Rear Yard Setback - Ten (10) feet
- All utilities are located underground.
- Parking Calculations:  
Proposed use: retail space  
10 plus 1 for every 400 sq. ft. over 2,000 sq. ft.  
Development Required-40  
Provided - 64 including 2 handicapped
- Pavement shall be 3" Type C mix over 8" Type 1 aggregate.
- Utilities:  
Water: City of O'Fallon  
Sanitary: City of O'Fallon  
Electric: Ameren UE  
Gas: St. Charles Gas Company  
School: Fort Zumwalt  
Fire: O'Fallon
- According to FIRM Map Panel Number 29183C0230E Dated 1996 this parcel is located within zone A of the 100-y flood plain.
- Additional Calculations:  
Building Coverage 14,000 sq. ft.  
Landscape Area within parking 1,381 sq. ft.  
Pavement Area 18,460 sq. ft.
- All rooftop will be screened by increased parapet wall height.
- There are no current plans for the remaining residential property.
- The site will tie into the existing sanitary electric and water lines located along North Main the storm water will discharge into the existing creek.
- All Storm Sewer Construction must meet the current standards and specifications of the City of O'Fallon.
- All Sanitary Sewer Construction must meet the current standards and specifications of the City of O'Fallon.
- All sign locations and sizes must be approved separately through the Planning Division.
- Electric will be served underground.
- The detention basin is not in the 100 year flood plain.

## SEWER MEASUREMENTS

## DEVELOPER

MCKELVEY PROPERTIES

2310 Highway 94  
South Outer Road  
St. Charles, MO 63303  
(636) 928-9111

## AS-BUILTS ADDED BY BAX ENGINEERING, MARCH 2004

### ENGINEERS AUTHENTICATION

The responsibility for the professional engineering liability on this project is hereby limited to the set of plans authenticated by the seal, signature and date hereunder attached. Responsibility is disclaimed for all other engineering plans involved in the project and specifically excludes revisions after this date unless reauthenticated.

SITE BENCHMARK: RM 69 Elevation =  
456.02 Chissled "L" on top of wingwall  
in northeast corner of Old Highway 79,  
bridge over Belleau Creek.  
BAX AS-BUILT PROJECT NO. 02-11806

ORDER NO.

ORD-NUM

DATE

7/07/01

C-1

## INDEX

C-1 COVER SHEET  
C-2 SITE PLAN  
C-3 DETAILS  
C-4 PROFILES

## LEGEND

	SANITARY STRUCTURE	C.O.	CLEAN OUT
	STORM STRUCTURE	T.B.R.	TO BE REMOVED
	TEST HOLE	T.B.R.&R.	TO BE REMOVED & RELOCATED
	POWER POLE	T.B.P.	TO BE PROTECTED
	LIGHT STANDARD	T.B.A.	TO BE ABANDONED
	CURB INLET	B.C.	BASE OF CURB
	DOUBLE CURB INLET	T.C.	TOP OF CURB
	GRATE INLET (EXISTING)	T.W.	TOP OF WALL
	AREA INLET (EXISTING)	TYP.	TYPICAL
	DOUBLE AREA INLET	U.N.O.	UNLESS NOTED OTHERWISE
	FLARED END SECTION	U.I.P.	USE IN PLACE
	END PIPE	-57-	EXISTING CONTOUR
	ENERGY DISSIPATOR	-57B-	PROPOSED CONTOUR
	MANHOLE	-57C-	TREE LINE
	REINFORCED CONCRETE PIPE	-6" 57D-	SAN. SEWER (EXISTING)
	CORRUGATED METAL PIPE	-6" 57E-	SAN. SEWER (PROPOSED)
	CAST IRON PIPE	-12" 57F-	STORM DRAIN (EXISTING)
	POLYVINYL CHLORIDE	-12" 57G-	STORM DRAIN (PROPOSED)
	VITRIFIED CLAY PIPE	o	PHONE BOX
	GUY WIRE	JP	IRON PIPE
	SIGN	-w-	WATER LINE, SIZE
	POST	HP	HYDRANT
	WATER METER	CP	CONCRETE PAVEMENT
	WATER VALVE	WV	PLACED RIP-RAP W/UNDERLAIN FABRIC
	WATER SHUT OFF	SW	SWALE
	GAS VALVE		

TITLE PAGE  
AS-BUILT PLANS

T.L. DWYER DESIGN  
1208 MISSOURI AVENUE  
ST. LOUIS, MO 63104  
TEL: (314) 494-5555 FAX: (413) 562-0392

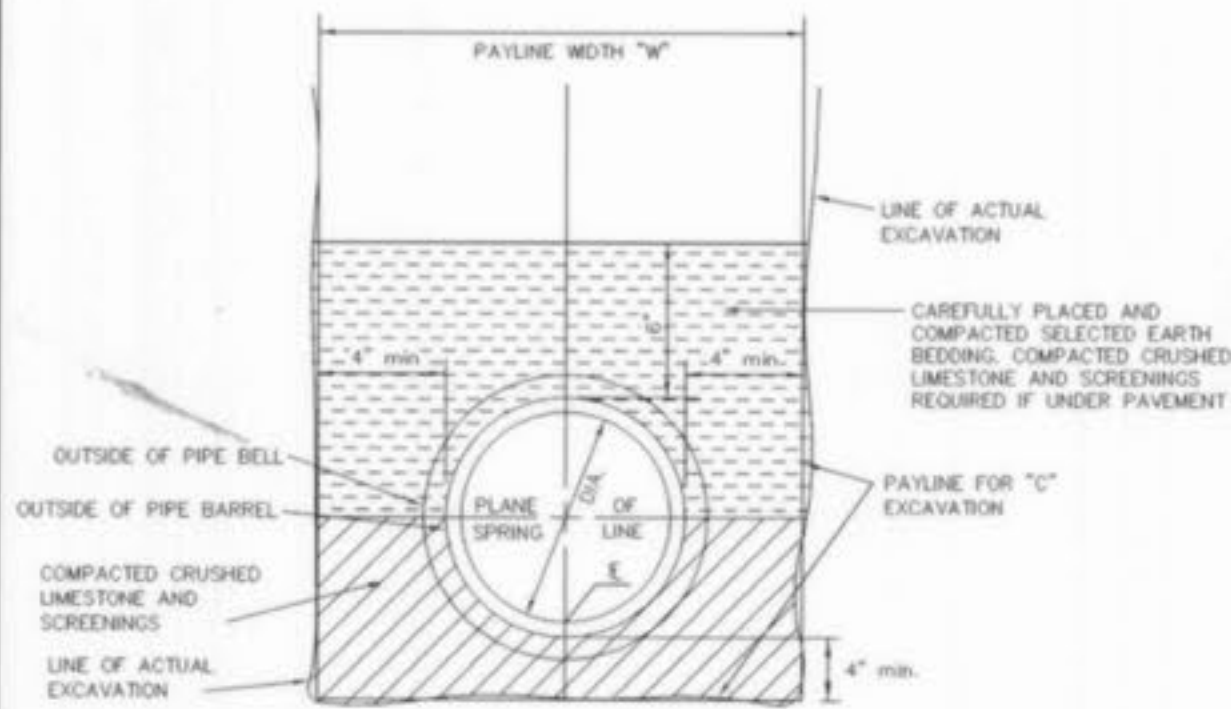
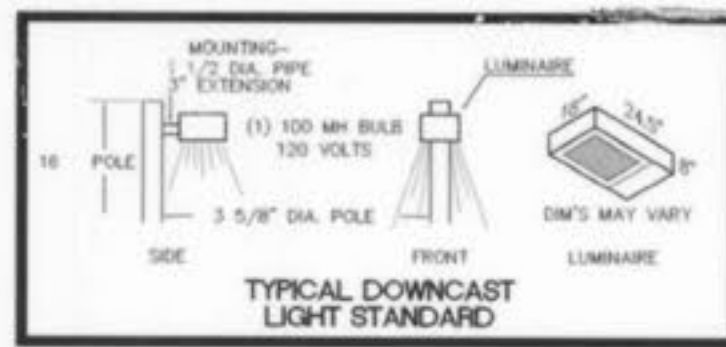
Shops on Main

Shops on Main AIB





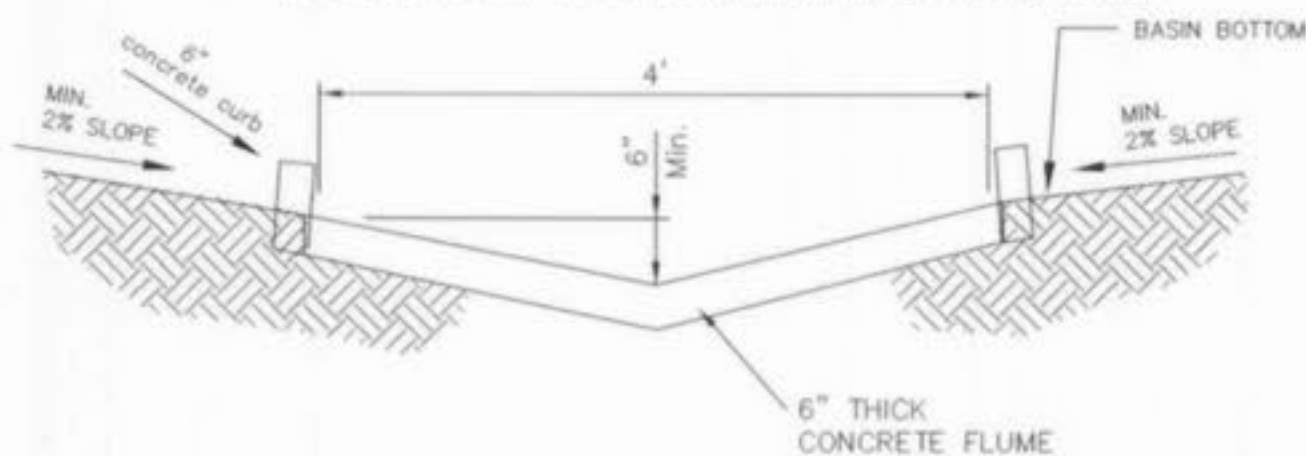




PIPE BEDDING CLASS "C"  
MODIFIED FOR REINFORCED CONCRETE PIPE

NOTES:

1. CONCRETE SHALL BE 3000 p.s.i. STRENGTH AT 28 DAYS.
2. 1/2" PREFORMED FIBER JOINT WITH JOINT SEALER TO BE CONSTRUCTED AS TRANSVERSE JOINT AT 50' INTERVALS.
3. MINIMUM CHANNEL SLOPE TO BE 1.0%
4. BASIN BOTTOM TO SLOPE A MINIMUM OF 2% TO FLUME



DETENTION BASIN  
CONCRETE FLUME DETAIL

**VEGETATIVE ESTABLISHMENT FOR URBAN DEVELOPMENT SITES**

**APPENDIX A**  
Seeding Rates:

**Permanent:**  
Tall Fescue - 30 lbs./ac.  
Smooth Brome - 20 lbs./ac.  
Combined Fescue - 15 lbs./ac. and Brome - 10 lbs./ac.

**Temporary:**  
Wheat or Rye - 150 lbs./ac. (3.5 lbs. per 1000 square foot)  
Oats - 120 lbs./ac. (2.75 lbs. per 1000 square foot)

**Seeding Periods:**  
Fescue or Brome: March 1 to June 1  
Wheat or Rye: August 1 to October 1  
Oats: March 15 to November 1

**Mulch Rates:**  
100 lbs. Per 1000 sq. ft. (4356 lbs. per acre)

**Fertilizer Rates:**  
Nitrogen: 30 lbs./ac.  
Phosphate: 30 lbs./ac.  
Potassium: 30 lbs./ac.  
Lime: 600 lbs./ac. ENM\*

\*ENM - Effective Neutralizing Material as per State evaluation of quarried rock.

**STRAIGHT CURB RAMP (TYPE 1)**

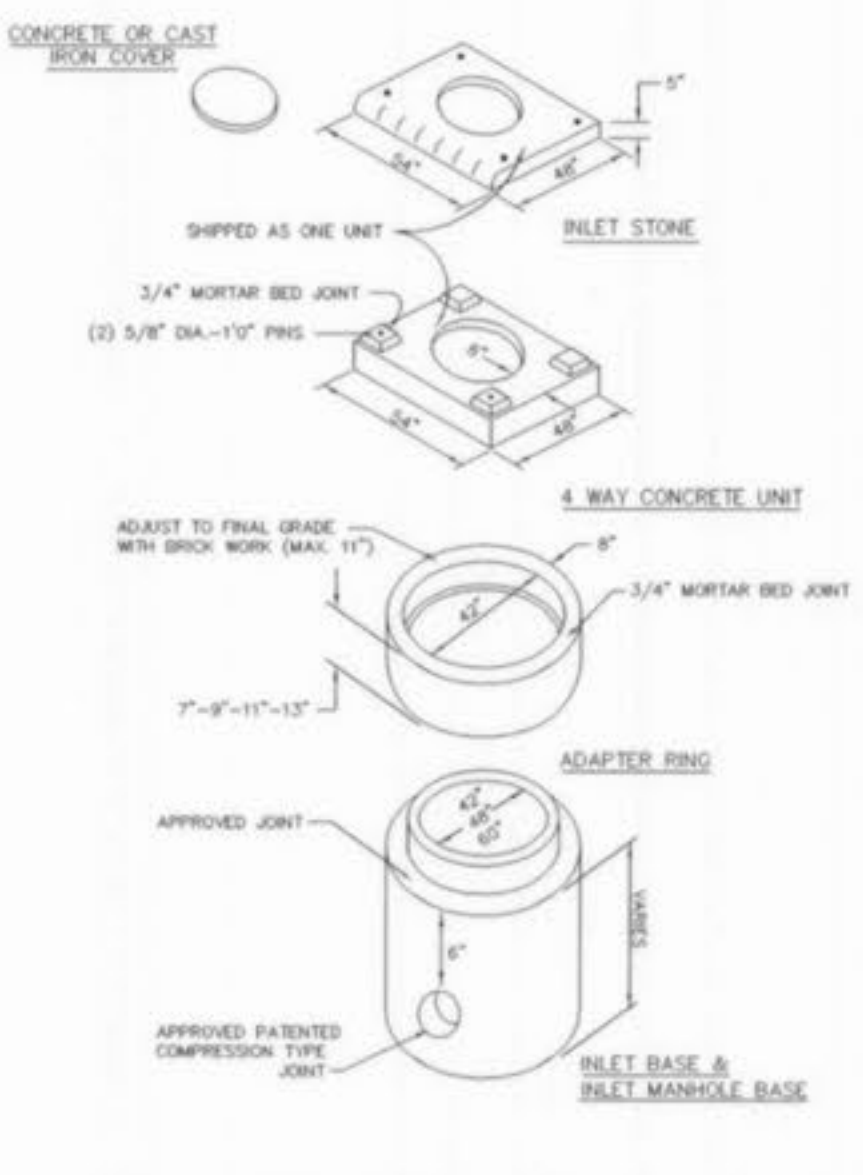
**GENERAL NOTES:**

1. Do not scale drawings. Follow dimensions.
2. Sidewalk and sidewalk curb ramps shall be constructed in accordance with these details and the current specifications approved "Intersect with Disability Act Accessibility Guidelines" (IGAGS).
3. Provide a landing at the top of each straight ramp when the Grade Along Path (GAP) is greater than 1:25 and less than 1:15. For other values of "V", usability of negative (-) values, no landing is required.
4. Minimum sidewalk width along "V" marked curb shall be 5 feet. Minimum sidewalk width along "Y" marked curb shall be 4 feet.
5. Maximum sidewalk cross slope 1:50 / 2%.
6. All sidewalk sections shall be 4" thick, except where indicated otherwise by double portions shown in details. All sidewalk sections and curb ramps, regardless of thickness, shall be paid for as "Concrete Sidewalk".
7. Where curb ramps meet pavement, ballcote will not be permitted.
8. Construct a dropped ramp when the maximum corner radius allowed for a straight ramp is exceeded.
9. If integral concrete curb is constructed, strike a demarcation along bottom of ramp at curb line. If concrete curb is elevated, block and pavement to grade. All depth curb ramps shall be paid for as "Curb Ramp" to curb line to curb face of curb top.
10. For sidewalk locations on Gut-Or-Side, refer to "Paved Area Construction Details".
11. For pavement longitudinal and transverse joint and detail and for tie requirements and dimensions, refer to the Paved Area Construction Details for "Joints and Curb". Standard Drawing C0222.
12. For roadway cross slopes, pavement types, and thicknesses, refer to "Standard Typical Section".

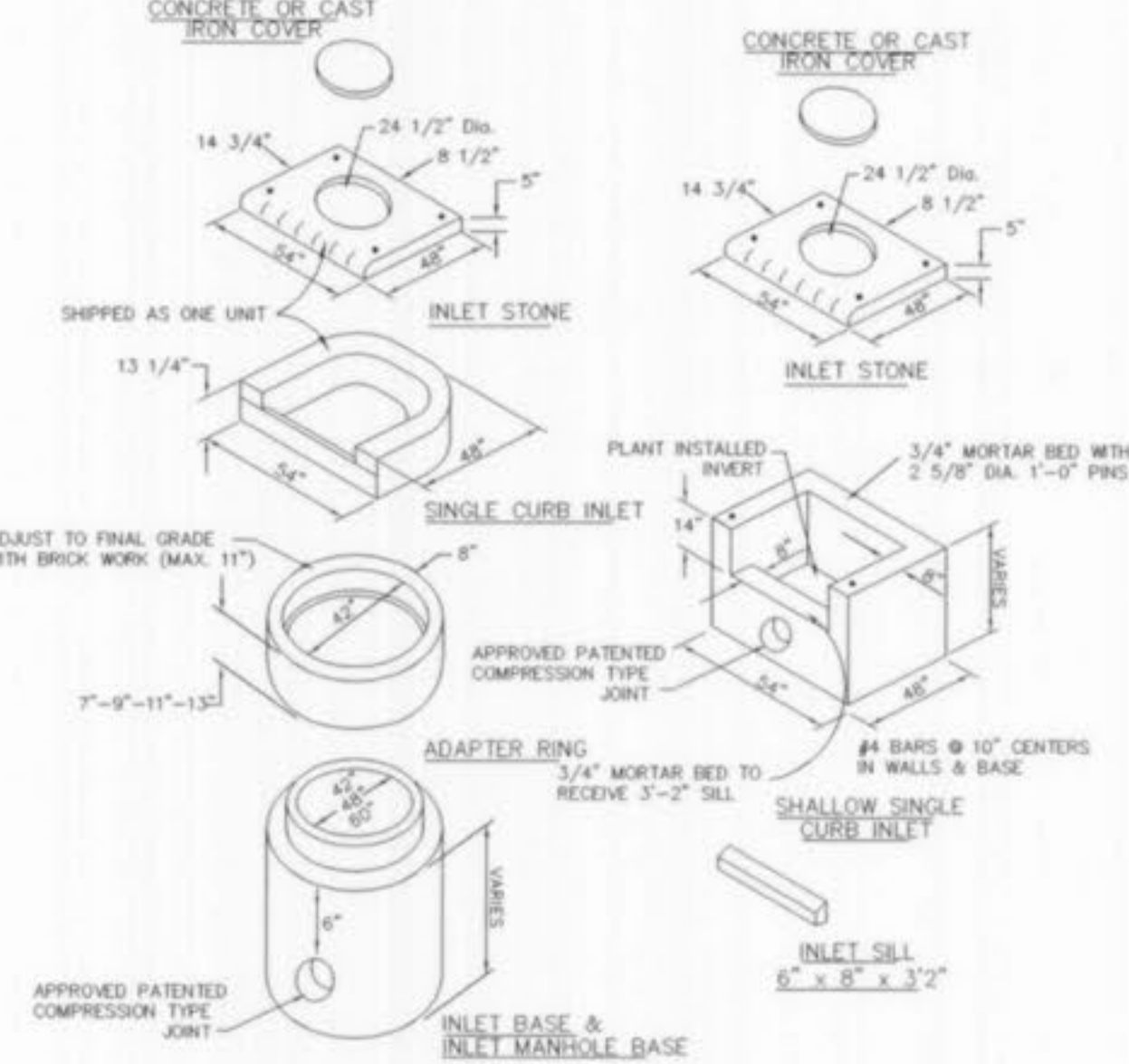
**"V" (Drain along curb) "Y" (Min. length of ramp slope - 1:1)**

Negative values (-)	5'
0 to +1'	7'
+1.0' to +2'	8'
+2.0' to +3'	10'
+3.0' to +4'	12'
Greater than +4'	15'

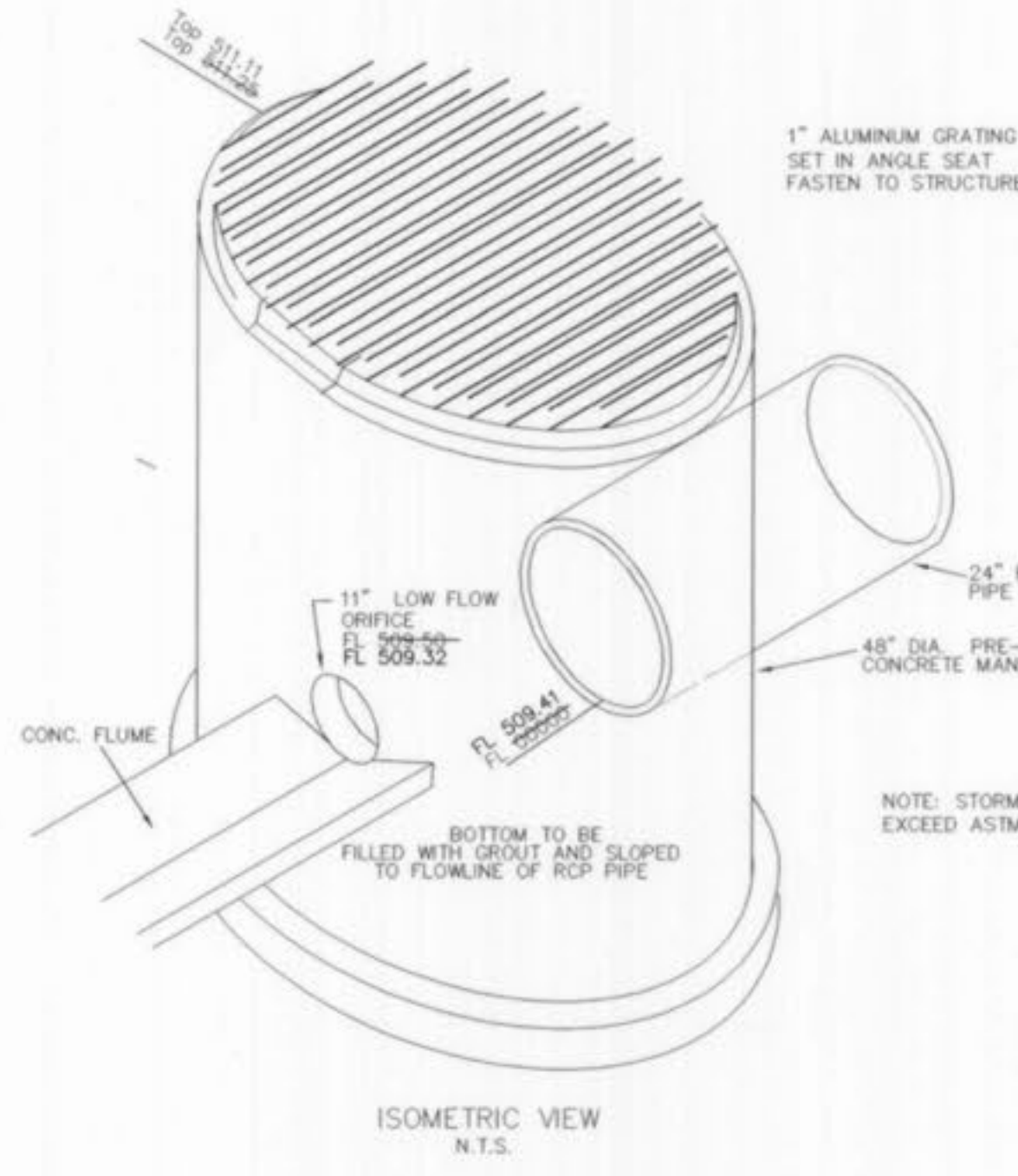
Note: Positive (+) "V" - Proceeding away from intersection and up a grade.  
Negative (-) "Y" - Proceeding away from intersection and down a grade.



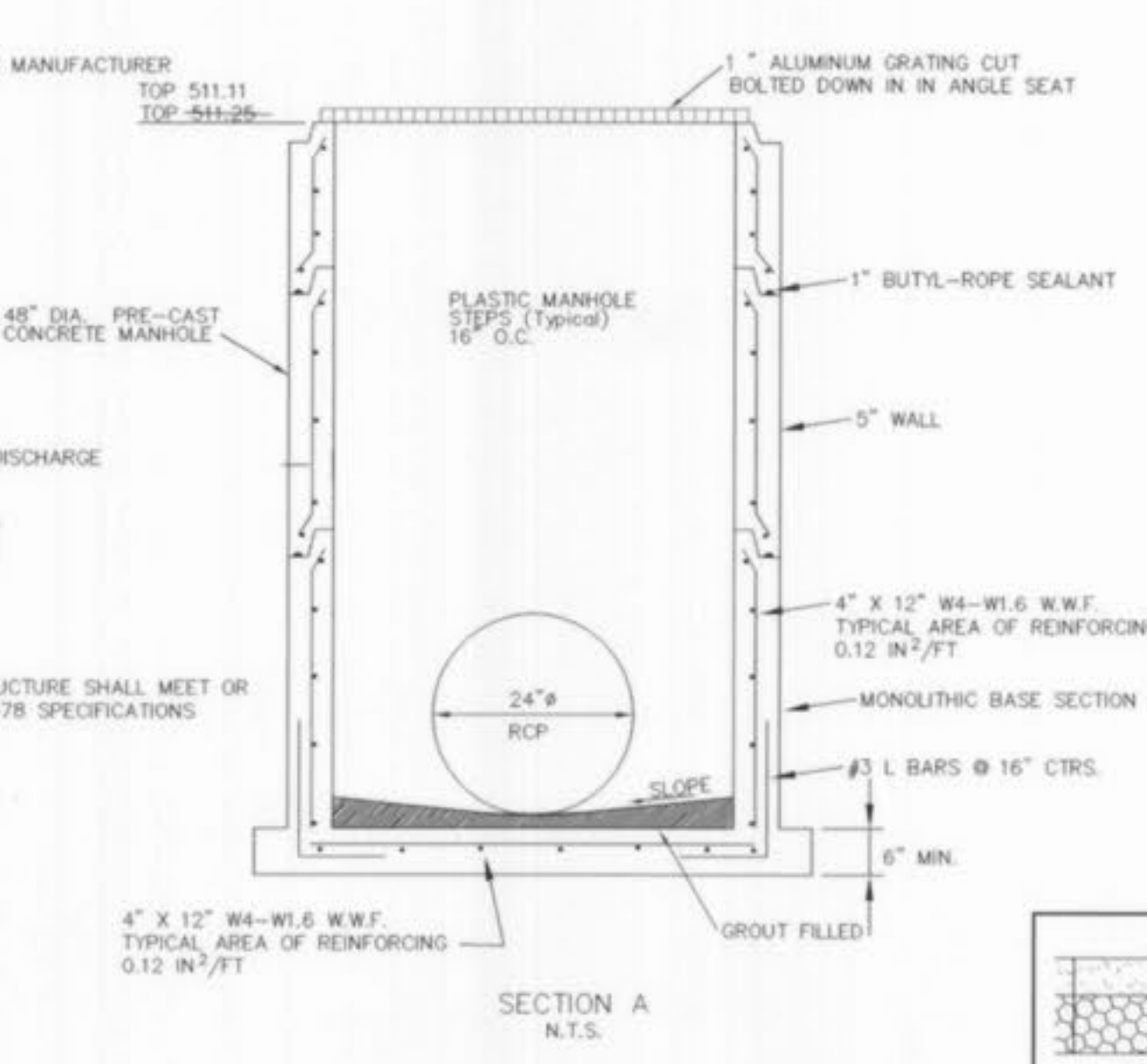
AREA INLET PRECAST CONCRETE



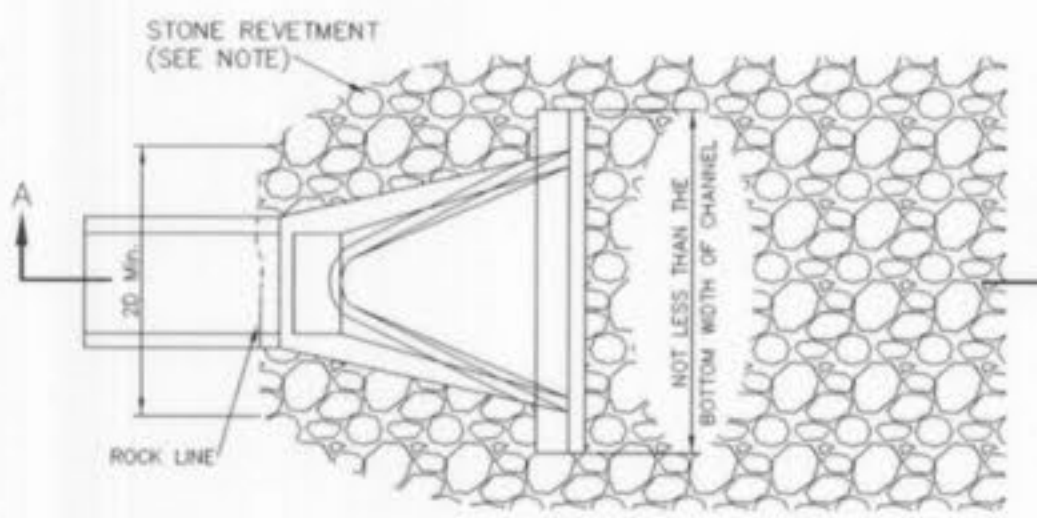
SINGLE STREET INLET  
PRECAST CONCRETE



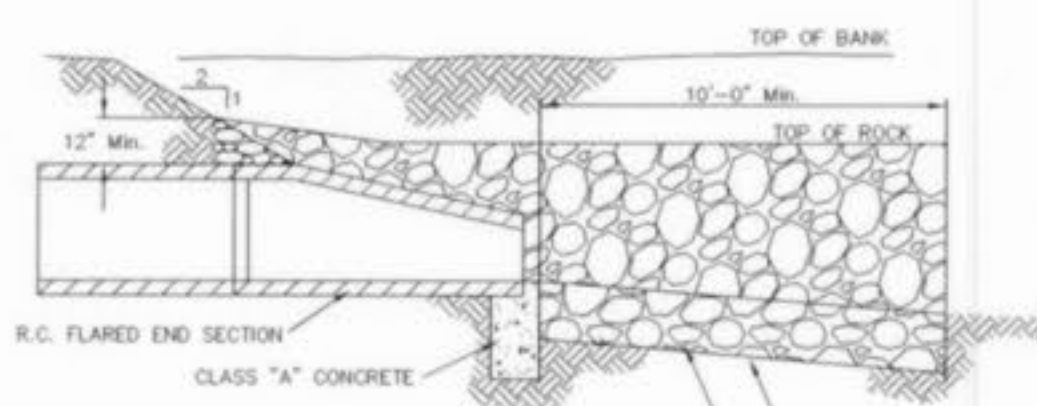
DETENTION STRUCTURE DETAIL



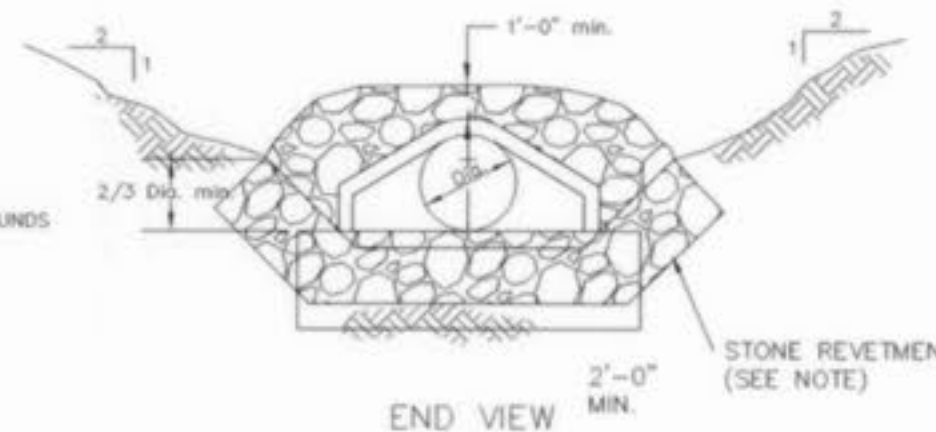
AS-BUILTS ADDED BY BAX  
ENGINEERING, MARCH 2004



PLAN VIEW



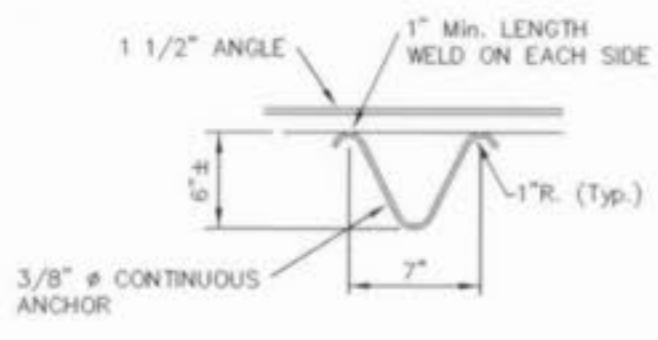
SECTION A-A



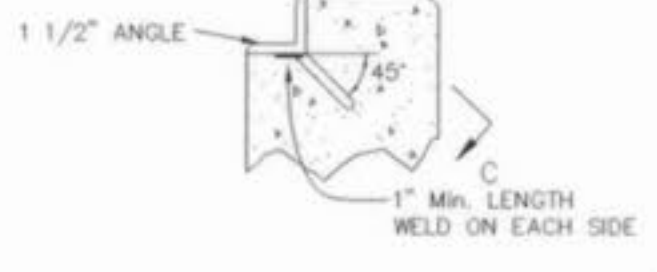
END VIEW

FLARED END SECTION

NOTES:  
1. STONE FOR HEAVY STONE REVETMENT SHALL BE SOUND, DURABLE, AND FREE FROM CRACKS AND OTHER STRUCTURAL DEFECTS THAT WOULD CAUSE IT TO DETERIORATE. IT SHALL NOT CONTAIN ANY SOAPSTONE, SHALE, OR OTHER MATERIAL EASILY DISINTEGRATED. THE STONE SHALL BE AT LEAST 12 INCH IN THICKNESS PERPENDICULAR TO THE SLOPE AND ALL BLOCKS SHALL WEIGH NOT LESS THAN 50 POUNDS AND AT LEAST 80# SHALL NOT WEIGH NOT LESS THAN 100 POUNDS.  
Filter fabric to be placed under stone.

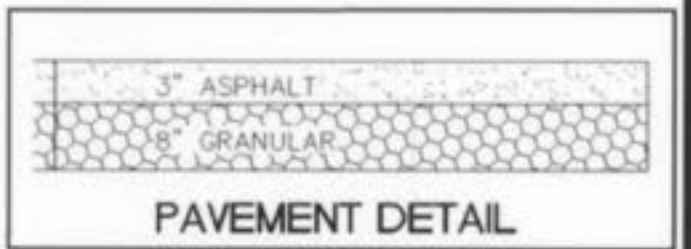


SECTION C

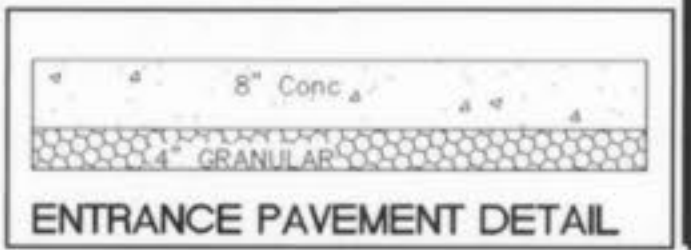


DETAIL OF CONTINUOUS  
ANCHOR FOR ANGLE SEAT  
N.T.S.

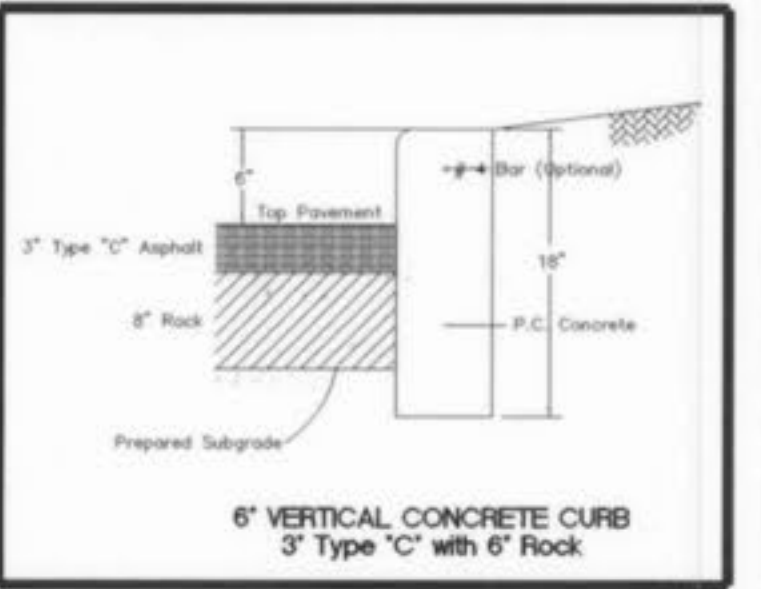
NOTE: ANGLE SEAT TO RECEIVE 2 COATS OF EPOXY PAINT PRIOR TO INSTALLING GRATE.



PAVEMENT DETAIL



ENTRANCE PAVEMENT DETAIL



6" VERTICAL CONCRETE CURB  
3" Type "C" with 6" Rock

DETAILS

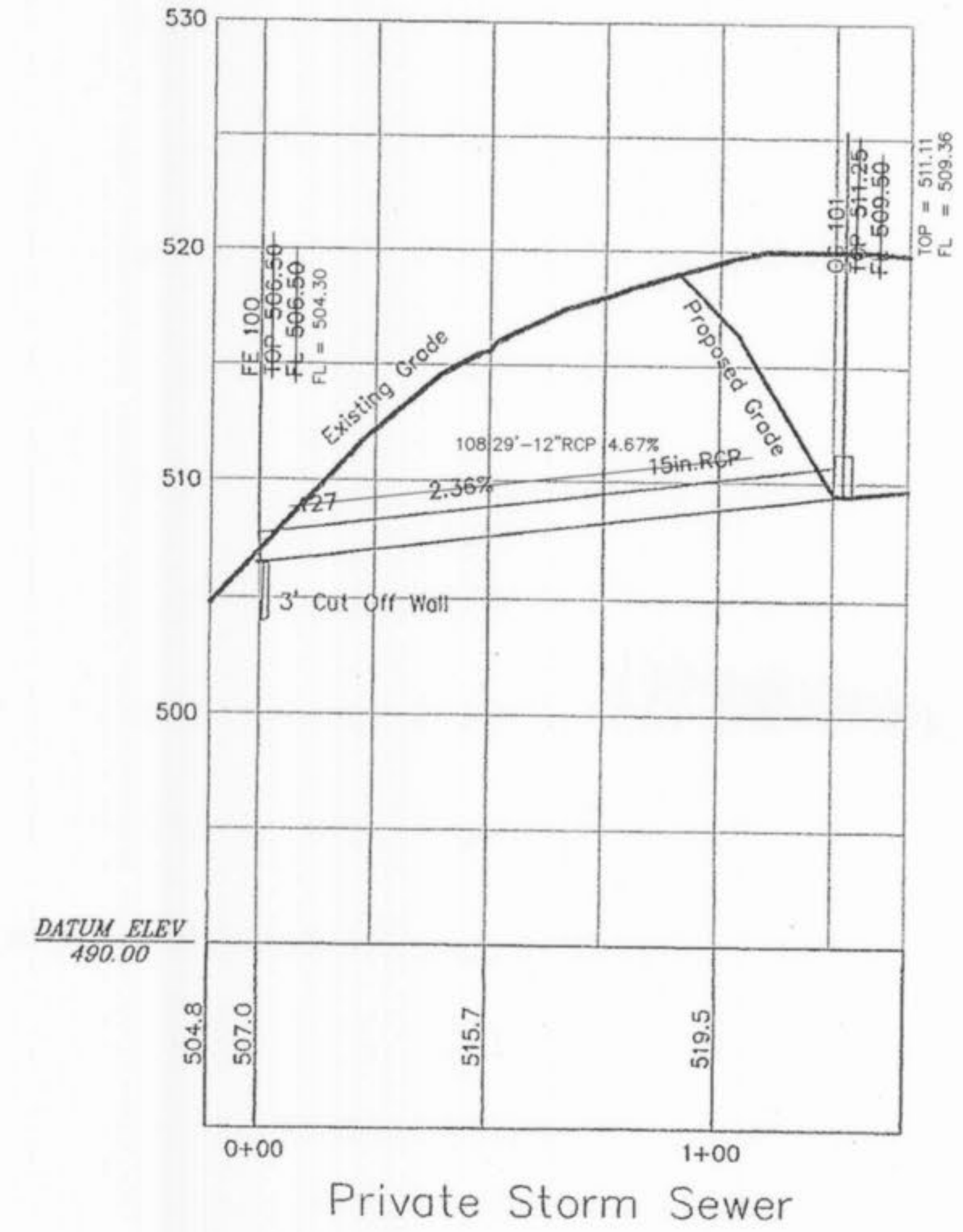
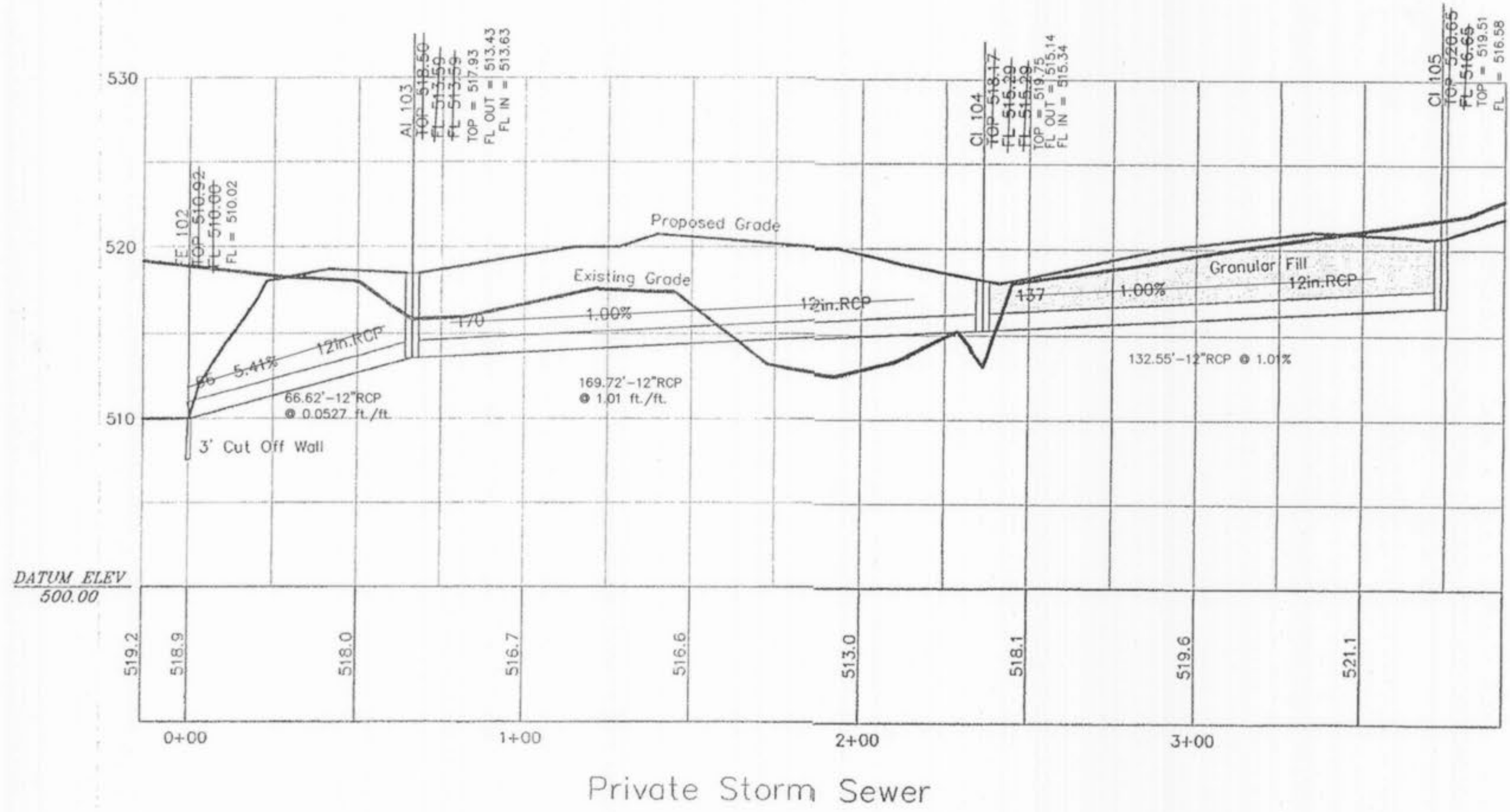
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C3





Horizontal Scale 1" = 40'  
Vertical Scale 1" = 8'

UPP STR	LOW STR	L	DIA	UPPER FL LN	LOWER FL LN	PS	UPPER ST EL	DEPTH HY GR	UPPER HY EL	LOWER HY EL	HYDR GRADE	FR HEAD	VEL	VEL HEAD	JUNC LOSS	TURN LOSS	TQ	PIPE CAP
GI105	CI104	136	12	516.58	515.35	0.90	519.51	2.11	517.40	516.93	.00280	0.38	2.39	0.09	0.09	0.00	1.88	3.38
CI104	AI103	170	12	515.15	513.86	0.76	519.75	2.82	516.93	514.86	.01000	1.70	4.55	0.32	0.31	0.06	3.57	3.11
AI103	FE102	67	12	513.66	510.02	5.46	517.93	3.77	514.16*	512.02	.01350	0.90	5.27	0.43	0.28	0.14	4.14	8.33

AS-BUILTS ADDED BY BAX ENGINEERING, MARCH 2004



PROFILES

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TEL: (314) 494-5555 FAX: (314) 502-0392

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