

**LIGHTING REQUIREMENTS**

- Intensity of illumination: In no instance shall the amount of illumination attributable to exterior lighting, as measured at the property line exceed 0.50 foot candles except as allowed along public right of ways. The use of shielded luminaires and careful fixture placement is encouraged so as to facilitate compliance with this requirement.
- Location: Light fixtures shall not be located within required transition strips.
- Flashing, flickering and other distracting lighting: Flashing, flickering and/or other lighting which may distract motorists is prohibited.
- Minimum lighting standards: All areas designated on required site plans for vehicular parking, loading, or circulation and used for any such purpose after sunset shall provide artificial illumination in such areas at a minimum intensity of 0.4 foot candles.
- Height of fixtures: Lighting shall be permitted at heights reasonable to meet the minimum illumination requirements while maintaining complete compliance with the intensity, location and orientation standards of this section.
- Special events lighting: Any temporary use having exterior lighting which is not in complete compliance with the requirements of this section shall require the approval of the Board of Aldermen.

**SANITARY SEWER NOTES**

- Underground utilities have been plotted from available information and therefore their location shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans, shall be the responsibility of the contractor and shall be located prior to any grading or construction of improvements.
- Gas, water and other underground utilities shall not conflict with the depth or horizontal location of existing or proposed sanitary and storm sewers, including house laterals.
- All existing site improvements disturbed, damaged or destroyed, which were to remain, shall be repaired or replaced to closely match preconstruction conditions.
- All PVC Sanitary sewer pipe shall meet the following standards, A.S.T.M. D-3034 SDR-35 with wall thickness compression joint A.S.T.M. D-3212. An appropriate rubber seal waterstop as approved by the sewer district shall be installed between P.V.C. pipe and manhole structures. (Note: All P.V.C. Force Main shall be C-900, Class 200 P.V.C.)
- The contractor shall prevent all storm, surface water, mud and construction debris from entering the existing sanitary sewer system.
- All sanitary sewer flowlines and tops built without elevations furnished by the engineer will be the responsibility of the sewer contractor.
- It is the responsibility of the contractor to adjust all sanitary manholes (that are affected by the development) to finish grade.
- Elements shall be provided for all sanitary sewers, storm sewers and all utilities as noted on the plans.
- All sanitary sewer construction and materials shall conform to the current construction standards of Public Water Supply District No. 2.
- The Public Water Supply District No. 2 shall be notified at least 48 hours prior to construction for coordination and inspection.
- All sanitary sewer building connections shall be designed so that the minimum vertical distance from the low point of the basement to the flowline of a sanitary sewer at the corresponding building connection shall not be less than the diameter of the pipe plus the vertical distance of 2-1/2 feet.
- All sanitary sewer manholes shall be waterproofed on the exterior in accordance with Missouri Dept. of Natural Resources specification 10 CSR-8 120(7)(E).
- All PVC sanitary sewer pipe is to be SDR-35 or equal with "clean" 1/2 inch to 1 inch granular stone bedding uniformly graded. The bedding shall extend from 4 inches below the pipe to springline at pipe, immediate backfill over pipe shall consist of same size "clean" or "minus" stone from springline of pipe to 6 inches above the top of pipe.
- All sanitary and storm sewer trench backfills shall be water jetted. Granular backfills will be used under pavement areas.
- All pipes shall have positive drainage through manholes. No flat base structures are allowed.
- Brick shall not be used on sanitary sewer manholes.
- Existing sanitary sewer service shall not be interrupted.
- Any permits, licenses, easements, or approvals required to work on public or private properties or roadways are the responsibility of the developer.
- "Type N" Lock-Type Cover and Locking Device (Lock-Lug) shall be used where lock-type covers are required.

**U.S.G.S. BENCHMARKS**

REFERENCE BENCHMARK: ELEV 867.66 NAVD 1929 datum (USGS) St. Charles County Geographic Reference Station "ORF" standard brass disc stamped "ORF 1931" in a square concrete post in a small mound 107' northwest of the northwest corner of a shed addition to an older barn; 20'-25' southwest of a small pond; 39' northeast of a lone pear tree and 24.9' northeast of a metal witness post and sign. Located at 1301 Bryan Road, 350' northwest of house.

SITE BENCHMARK: ELEV 611.55 Chiseled cross in the centerline of concrete headwall located approximately 41.6' east of the centerline of Hanley Road at centerline station 10+16.25.



**GENERAL NOTES**

- Underground utilities have been plotted from available information and therefore their locations shall be considered approximate only. The verification of the location of all underground utilities, either shown or not shown on these plans shall be the responsibility of the contractor, and shall be located prior to any grading or construction of the improvements.
- All trench backfills under paved areas shall be granular backfill and shall be compacted to 90% of the maximum density as determined by the "Modified AASHTO T-180 Compaction Test", (A.S.T.M.-D-1557). All other trench backfills may be earth material (free of large clods or stones). All trench backfills shall be water jetted.
- No area shall be cleared without the permission of the Project Engineer.
- All grades shall be within 0.2 feet of those shown on the Grading Plan.
- No slope shall be steeper than 3:1. All slopes shall be sodded or seeded and mulched.
- All construction and materials used shall conform to current City of Dardenne Prairie standards.
- All mechanical equipment to be screened from public view.
- Proposed building will comply with current American Disability Act requirements.
- See architectural drawing for all building dimensions, service connections, details, etc.
- All utilities shown are existing unless otherwise noted. All new utilities shall be located underground.
- All dimensions are to back of curb unless otherwise noted.
- All construction methods and practices shall conform with current O.S.H.A. Standards.
- All signs on the site or any structure must have sign permits approved by the City of Dardenne Prairie. Maximum height for a ground sign is 6 feet and shall not exceed 32 square feet in site per foot. Any ground sign must be a minimum of 5 feet from any Right-of-Way line and out of the sight distance triangle.
- Exterior lighting shall be shielded so that artificial light intensity at the property line will not exceed 0.5 footcandles except as allowed along public Right-of-Ways.
- All necessary utilities (public and private) will be available, functioning, and usable at the time any stage of the project or the total project is ready for occupancy.
- Developer must supply the City Construction inspectors with soil reports prior to or during site soil testing.
- After the improvement plans have been approved, but before obtaining a building occupancy permit, the developer must complete all public improvements under the inspection of all appropriate inspection agencies and in accordance with the approved improvement plans or post a lenders or escrow agreement insuring or guaranteeing the installation of public improvements. An engineer's estimate of probable construction cost for all public improvements needs to be submitted for review and approval by the city engineer prior to establishing escrow.
- All storm sewer pipes shall be gasket o-ring type.
- All water mains, valves, fittings, hydrants and related items are to be installed in accordance with the current St. Charles County Public Water Supply District Number 2 guidelines and specifications as approved by MoDNR on review number B1998-04.
- Forty-eight (48) hours notice shall be given to the Dardenne Prairie City Engineer, (636) 978-6008 before any grading operations are to begin to allow scheduling of required inspections.
- Forty-eight (48) hours notice shall be given to the Dardenne Prairie City Engineer, (636) 978-6008 before any storm sewer construction is to begin to allow scheduling of required inspections.
- All sidewalks, curb ramps, and accessible parking spaces shall be constructed in accordance with the current approved "Americans with Disabilities Act Accessibility Guidelines" (ADAAG) along with the required grades, construction materials, specifications and signage. If any conflict occurs between the above information and the plans, the ADAAG guidelines shall take precedence and the contractor prior to any construction shall notify the Project Engineer. Ensure at least one 6' wide handicap access aisle is provided and curb ramps do not project into handicap access aisles.
- A St. Charles County Highway Department Special Use Permit must be obtained before any work is allowed to commence in the Right-of-Way of any public road under St. Charles County's control and maintenance.

**ESTIMATED GRADING & CONSTRUCTION SCHEDULE**

=CLEARING	10/15/08 - 10/20/08
=INSTALL EROSION CONTROL	10/23/08
=GRADING	10/24/08 - 10/27/08
=BUILDING CONSTRUCTION	11/01/08 - 02/01/09
=UTILITY CONSTRUCTION	11/01/08 - 12/01/08
=PAVEMENT CONSTRUCTION	12/01/08 - 01/10/09
=FINISH GRADING, SEED AND MULCH	01/15/09 - 01/20/09

NOTE: DATES MAY VARY DUE TO INCIDENT WEATHER.

A PERMIT SET FOR

**~ST. WILLIAM APARTMENTS-LOT ONE~**

A TRACT OF LAND BEING PART OF LOT 5 OF THE DIVISION OF BATES LANDS IN FRACTIONAL SECTION 2, TOWNSHIP 46 NORTH, RANGE 2 EAST OF THE FIFTH PRINCIPAL MERIDIAN, ST. CHARLES COUNTY, MISSOURI

**GRADING NOTES**

- All fill placed under proposed storm and sanitary sewer lines and/or paved areas including trench backfills within and off the road right-of-way shall be compacted to 90 percent of maximum density as determined by the "Modified AASHTO T-180 Compaction Test" (ASTM D-1557). All tests shall be verified by a Soils Engineer concurrent with grading and backfilling operations. All test result reports shall be faxed to the Dardenne Prairie City Engineer. (636) 898-0923.
- All filled areas in proposed and existing roads shall be compacted from the bottom of the fill up to 90 percent maximum density as determined by the "Modified AASHTO T-180 Compaction Test" (ASTM D-1557). Paved areas in cuts shall meet the same compaction requirements. All tests shall be verified by a Soils Engineer concurrent with grading operations. All test result reports shall be faxed to the Dardenne Prairie City Engineer. (636) 898-0923.
- All wells and/or springs which may exist on this property should be located and sealed in a manner acceptable to the St. Charles County Highway and Building Department.
- All trash and debris on-site, either existing or from construction, must be removed and properly disposed of off-site.
- Soft soils in the bottom and banks of any existing or former sand pits or tributaries or any sediment basins or traps shall be removed, spread out and permitted to dry sufficiently in be used as fill. None of this material should be placed in proposed public Right-of-way locations or in any storm sewer location.
- All excavations, grading or filling shall have a finished grade not to exceed a 3:1 slope (33%).
- Temporary siltation control measures (structures) shall be maintained until vegetative cover is established at a sufficient density to provide erosion control on the site.
- Upon completion of storm sewers, siltation control shall be provided around all open sewer inlets and shall remain until the disturbed drainage areas have been properly stabilized.
- Where natural vegetation is removed during grading, vegetation shall be re-established in such a density as to prevent erosion.
- When mechanized land clearing activities are completed or suspended for more than 30 days, either temporary vegetation must be established or temporary siltation control measures must be put in place with the review and approval of the City Engineer.
- When grading operations are completed or suspended for more than 30 days, permanent grass must be established at sufficient density to provide erosion control on the site. Between permanent grass seeding periods, temporary cover shall be provided according to the City Engineer's recommendation.
- All finished grades (areas not to be disturbed by future improvement) in excess of 20% slopes (2:1) shall be mulched and seeded at the rate of 100 pounds per 1,000 square feet when seeded.
- All lots shall be seeded and mulched at the minimum rates defined in appendix "A" of the "Soil Sediment & Erosion Control Regulations" or seeded before an occupancy permit shall be issued except that a temporary occupancy permit may be issued by the Building Department in cases of undue hardship because of unfavorable ground conditions.

**PAVEMENT NOTES**

- Standard Pavement design shall comply with the City of Dardenne Prairie specifications.
- Pervious Concrete pavement shall be designed in accordance with procedures outlined in A.C.I. 211.3.
- Pervious concrete pavement installation shall be under the supervision of a RWMA certified pervious concrete installer.
- Pervious concrete pavement to be constructed with Type I Portland Cement per ASTM C150. Supplemental materials may be used such that no more than 25% by weight for Fly Ash and 50% by weight for Blast Furnace Slag is allowed.
- Aggregate shall consist of crushed limestone 1/4" to 3/8" in size conforming to ASTM 448B. No fine aggregate is allowed. Aggregate sizing shall comply with ADA guidelines regarding pavement surface roughness.
- Chemical admixtures may be used as determined by the concrete producer to improve the properties of the pervious concrete mixture to accommodate variability of ingredients, materials, weather and jobsite conditions and installation processes. Admixtures should be used in accordance with manufacturers instruction and recommendations.
- Pervious concrete mixture proportions will vary to accommodate local constraints, practices and materials. The pervious concrete mixture proportions shall be determined by the concrete producer based on trial batching.

**GRADING QUANTITY**

1,139 C.Y. CUT (INCLUDES SUBGRADES)  
4,916 C.Y. FILL (INCLUDES 8% SHRINKAGE)  
3,777 C.Y. SHORT

THE ABOVE QUANTITY IS AN APPROXIMATION ONLY NOT FOR BIDDING PURPOSES. CONTRACTORS SHALL VERIFY QUANTITIES PRIOR TO CONSTRUCTION.

**DARDENNE PRAIRIE SILT CONTROL NOTES**

- 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). Erosion control shall commence with grading and be maintained throughout the project until acceptance of the work by the Owner and/or the City of Dardenne Prairie. The Contractor's responsibilities include all design and implementation as required to prevent erosion and the depositing of silt. The Owner and/or City of Dardenne Prairie may, at their option, direct the Contractor in his methods as deemed fit to protect property and improvements. Any depositing of silts or mud onto 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 Dardenne Prairie.
- Installation of all perimeter sediment control shall be implemented as the first step of grading and within seven (7) days of grubbing the site.
- Inspection of siltation control devices shall take place once every seven days and within 24 hours of any one (1) inch per 24-hour rain event.
- Any siltation control in need of repair shall be fixed immediately.
- All slopes or drainage channels, once constructed to final grade, shall be seeded and mulched per specifications within seven (7) days.
- Silt fences shall be installed immediately around each storm sewer structure once final construction of each individual structure is complete.
- All siltation control devices shall remain in place until upstate areas have been permanently stabilized.

**SCHEDULE IMPLEMENTATION**

- Perimeter siltation control and construction entrance to be installed.
- Begin placing aggregate base in proposed paved areas once area has reached final grade to prevent erosion.
- Place silt fence around each storm sewer structure as it is completed.
- Immediately seed areas that are to be permanently seeded upon reaching final grade.

**SILTATION CONTROL DEVICE MAINTENANCE**

- Silt fence barriers shall be inspected immediately after each rainfall and at least daily during prolonged rainfall.
- Close attention shall be paid to the repair of damaged hoses and runs and undercutting beneath dikes.
- Necessary repairs to barriers or replacement of dikes shall be accomplished promptly.
- Sediment deposits should be removed after each rainfall. Sediment deposits shall be removed when the level of deposition reaches approximately one-half the height of the barrier.
- Any sediment deposits remaining in place after the silt fence barrier is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

**SILT FENCE SPECIFICATIONS**

- Silt fence to be woven geotextile fabric Mirafi 100X or equal.
- Fabric to be supported by metal tee post with spade base spaced on 5' centers with W6 x W6 1/2 x 1/2 gage welded wire fence.
- Fabric shall be unfranchised and backfilled. A trench shall be excavated a minimum of 6 inches deep for the length of the fence.
- The excavated soil shall be backfilled against the fence.
- Fence height shall be a minimum of 4 feet in height, with the fabric installed on the upstream side.
- Silt fences shall be used only on sheet flow conditions (not concentrated flow conditions).
- Silt fences shall be installed around all storm sewer structures inflow areas.

**VEGETATION ESTABLISHMENT For Urban Development Sites APPENDIX A**

<b>SEEDING RATES:</b>	
<b>PERMANENT:</b>	<ul style="list-style-type: none"> <li>Timothy - 30 lbs./ac.</li> <li>Smooth Bromes - 20 lbs./ac.</li> <li>Combed - 15 lbs./ac. AND Bromes 10 lbs./ac.</li> </ul>
<b>TEMPORARY:</b>	<ul style="list-style-type: none"> <li>Wheat or Rye - 150 lbs./ac. (25 lbs. per 1,000 sq. ft.)</li> <li>Oats - 120 lbs./ac. (20 lbs. per 1,000 sq. ft.)</li> </ul>
<b>SEEDING PERIODS:</b>	<ul style="list-style-type: none"> <li>Fescue or Bromes - March 1 to June 1</li> <li>August 1 to October 1</li> <li>Wheat or Rye - March 15 to November 1</li> <li>Oats - March 15 to September 15</li> </ul>
<b>MULCH RATES:</b>	100 lbs. per 1000 sq. ft. (4,350 lbs. per ac.)
<b>FERTILIZER RATES:</b>	<ul style="list-style-type: none"> <li>Nitrogen - 30 lbs./ac.</li> <li>Phosphorus - 30 lbs./ac.</li> <li>Potassium - 30 lbs./ac.</li> <li>Lime - 600 lbs./ac. ENM*</li> </ul>

\* ENM = effective neutralizing material as per State evaluation of quarried rock.

**DARDENNE PRAIRIE PROJECT #970730**

**STANDARD SYMBOLS & ABBREVIATIONS**

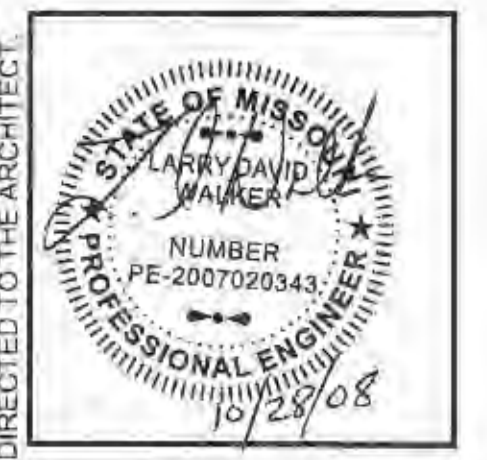
TREE OR BUSH	(Symbol)
LIGHT POLE	(Symbol)
SANITARY SEWER & MANHOLE	(Symbol)
STORM SEWER & INLET	(Symbol)
MAILBOX	(Symbol)
ELECTRIC LINE	(Symbol)
GAS LINE	(Symbol)
WATER LINE	(Symbol)
TELEPHONE LINE	(Symbol)
CABLE TV LINE	(Symbol)
OVERHEAD WIRE	(Symbol)
UTILITY POLE	(Symbol)
UTILITY POLE W/ DOWN GUY	(Symbol)
FIRE HYDRANT	(Symbol)
WATER VALVE	(Symbol)
WATER METER	(Symbol)
GAS VALVE	(Symbol)
ROAD SIGN	(Symbol)
TELEPHONE PEDESTAL	(Symbol)
FENCE	(Symbol)

**DEVELOPMENT NOTES:**

- Area of tract: 2.00 Acres  
Area to be disturbed: 1.33 Acres
- Current Zoning: Uptown Zoning District  
Proposed Zoning: Uptown Zoning District  
Transect Zone = T-5, Urban Center  
Transect Zone = T-5, Urban Center (City of Dardenne Prairie)
- Proposed Use: Senior Care Facility
- Area of Building: 11,784 SF (3 stories)
- Required building & parking setbacks:  
Front yard.....10 feet minimum, 12 feet maximum.  
Side yard.....10 feet minimum, 24 feet maximum.  
Rear yard.....10 feet minimum
- Parking Requirements & Provisions:  
Parking Required: 1 space per bedroom  
40 Units = 40 Spaces required  
Parking Proposed: 32 onsite (including 2 HO), & 8 offsite along Hanley Rd. Total Proposed: 41
- This property is served by the following utilities:  
Cuivre River Electric Cooperative Inc.  
Century Tel Company  
Public Water Supply District No. 2 - Water and Sanitary Sewer  
Laclede Gas Company  
Wentzville Fire Department
- According to the flood insurance rate map of St. Charles County Unincorporated areas (community-panel number 280315 0220 E, dated August 2, 1996). This tract lies within zone K, is defined as an area determined to be outside the 500 year floodplain.
- All necessary utilities (public and private) will be available, functioning and usable prior to any occupancy permits being issued.
- Detention requirements will be mitigated by utilizing "Green Site Design Practices" such as pervious pavement, rain gardens, vegetated swales, underground storage, etc. to limit the amount of runoff from this site. Final design of these items will be submitted with the construction plans.
- No Civic Zones are proposed for this development.
- The Public Frontage trees shall be a single species with shade canopies of a height that, at maturity, clears at least a one story building height.
- Landscaping shall consist primarily of durable species tolerant of soil compaction.
- Landscaping plant types shall conform to the approved city species list.
- All landscaping shall be pursuant to the Municipal Code Section 815.100-Requirements for Installation of Landscaping on Development Sites and Restrictions on Land Clearing, if credit based system.
- Developer requests a Warrant for revisions to Throughfare Assignment Plan Table 15c of City of Dardenne Prairie Smart Code.
- Photometric lighting plan will be provided for review and approval by the City of Dardenne Prairie during construction plan review and lighting values not in compliance with section 13.13 of Dardenne Prairie City Code Requirements following the installation of such exterior lighting shall be corrected by the owner.
- Any sign locations and sizes must be approved separately through the City of Dardenne Prairie.
- All rooftop mechanical units to be screened by parapet. Wall and ground mounted units to be screened by materials and/or landscaping.
- All new utilities shall be located underground.
- Property Owner: Cardinal Ritter Senior Services  
7601 Watson Rd.  
St. Louis, MO 63119  
Contact: Kevin Klingerman  
(314) 951-8000

**CIVIL DRAWINGS INDEX**

C101	Site Construction Notes
C102	Demolition Plan / Lot Split
C103	Site Plan
C104	Grading Plan
C104A	Sediment Control Plan
C105	Drainage Area Map
C106	Storm Water Management Plan
C106A	SternTech SC-740 Chamber Details
C107	Storm Sewer Profiles & Details
C108	Sanitary Sewer Plan & Profiles
C109	Construction Details
C110	Construction Details
C111	Construction Details
C112	Construction Details



A new 40 Unit Apartment for the Elderly  
**ST. WILLIAM APARTMENTS**  
CARDINAL RITTER SENIOR SERVICES  
1979 HANLEY RD, DARDENNE PRAIRIE, MO 63368  
DHUD # 085-EE-093-NP-WAH/MO36-S061-003

**TITLE SITE CONSTRUCTION NOTES**

COMM#	DATE
2007033	12 June 08

**REVISIONS**

08-13-08	PWSO Comments
09-12-08	Revise Offsite
09-23-08	Per City Comments
10-28-08	PWSO Comments

**C101**

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NOTIFY ARCHITECT IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE ARCHITECT. BAX PROJECT #: 03-12502DA









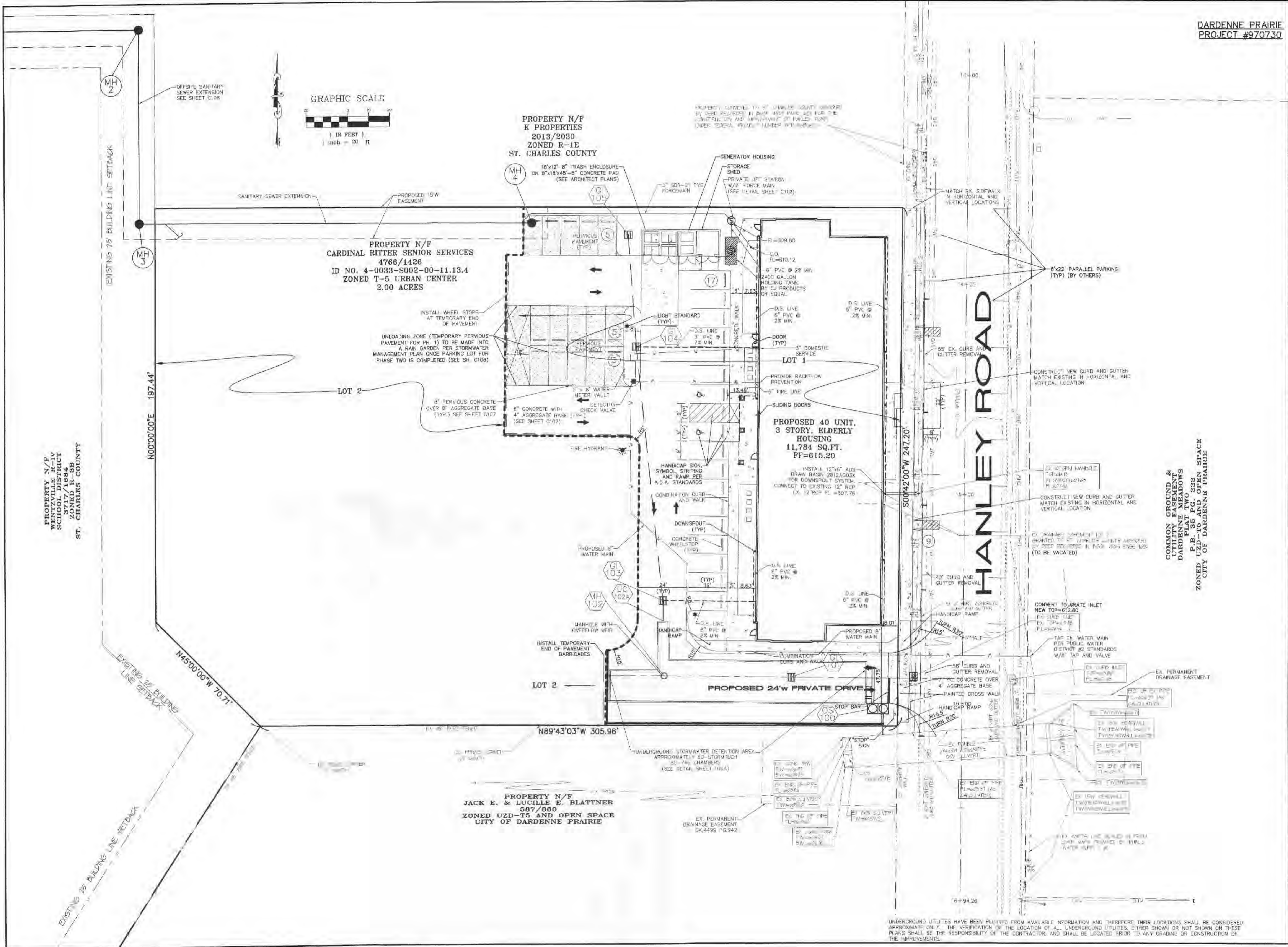
**ENGINEERING  
PLANNING  
SURVEYING**  
LARRY DAVID  
221 Point West Blvd.  
St. Charles, MO 63301  
636-828-6562  
FAX 636-828-1716

TITLE	
SITE PLAN	
REVISIONS	
08-13-08	PSWD Comments
08-12-08	Revise Office
08-23-08	Per City Comments
10-28-08	PSWD Comments

COMM#	DATE
2007033	12 June 08

**C103**

BAX PROJECT #: 03-12502DA



UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

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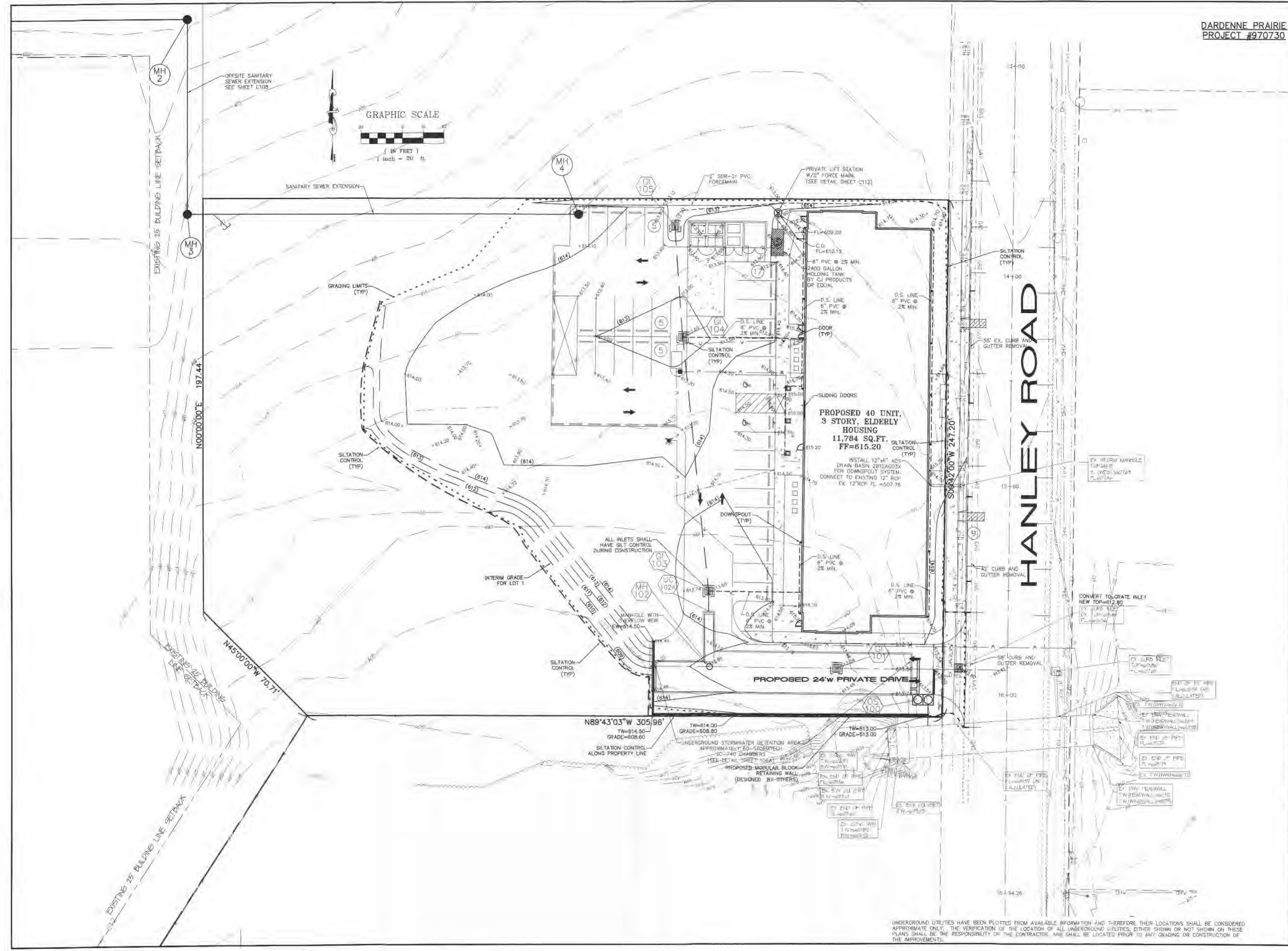
TITLE  
 GRADING PLAN

REVISIONS  
 08-13-08 PWSO Comments  
 09-12-08 Revise Office  
 09-23-08 Per City Comments  
 10-28-08 PWSO Comments

COMM# DATE  
 2007033 12 June 08

C104

BAX PROJECT #: 03-12502DA



UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

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 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

**TITLE**  
 DRAINAGE AREA  
 MAP

**REVISIONS**  
 08-13-08 PWSO Comments  
 09-12-08 Revise Offsite  
 09-23-08 Per City Comments  
 10-28-08 PWSO Comments

**COMM#** 2007033  
**DATE** 12 June 08

**C105**

BAX PROJECT #: 03-12502DA

**THIS SHEET FOR DRAINAGE PURPOSES ONLY  
 NOT TO BE USED FOR CONSTRUCTION**

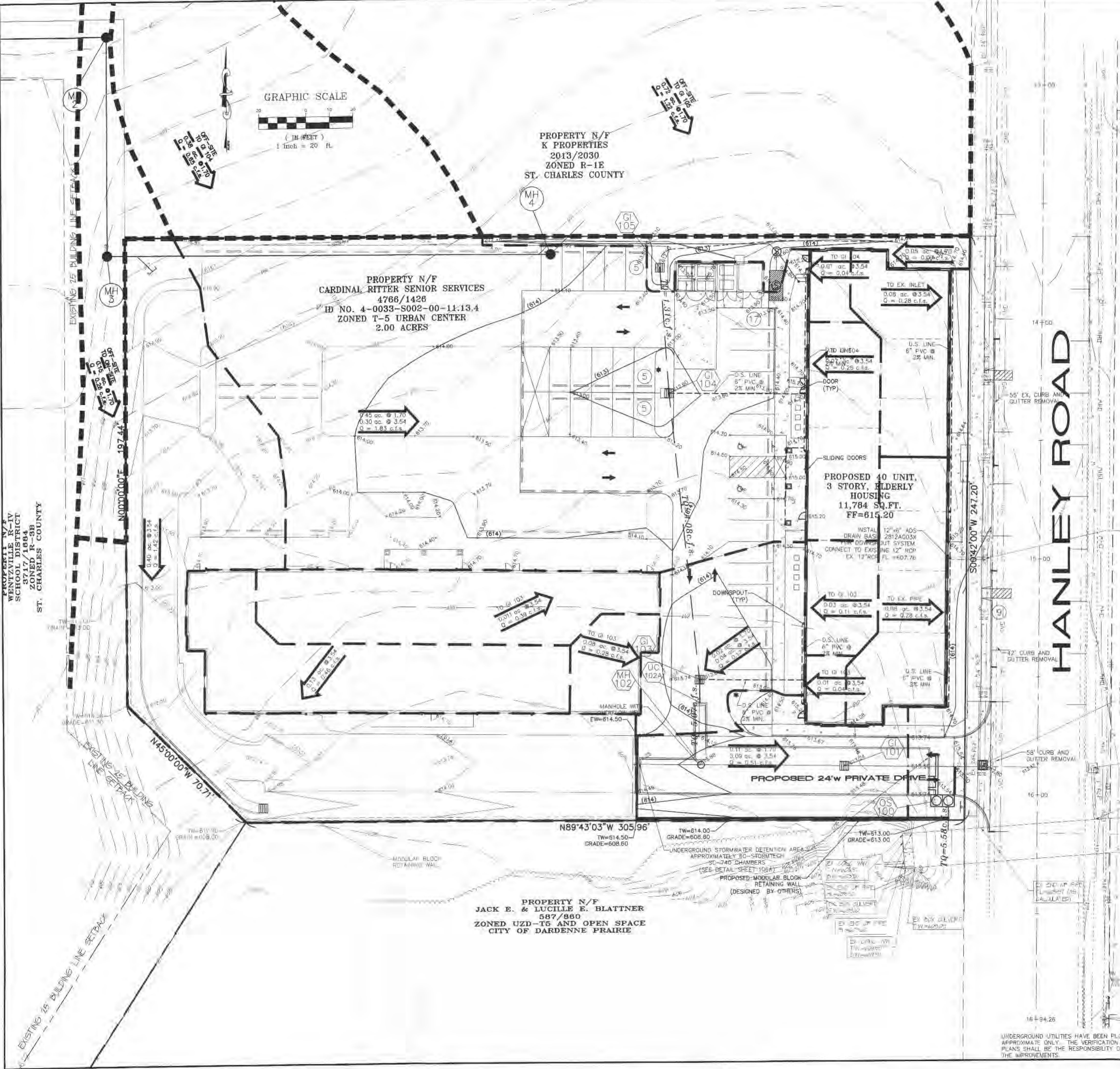
**DOWNSPOUT DRAINAGE DESIGN**  
 100yr. 1 hr. storm PI = 3.10 (100% Impervious)  
 $TQ = 3.10 (0.16 \text{ Ac.}) = 0.50 \text{ c.f.s.}$  (Max downspout flow)  
 $Q = 1.486/N \times R^{2/3} \times A \times S^{1/2}$  (Mannings Equation)  
 $Q (6" \text{ PVC}) = 3.75 \times 0.087 = 1.46 \text{ c.f.s.}$  (capacity)  
 Therefore capacity of 6" PVC = 1.46 c.f.s.  
 $0.50 \text{ c.f.s.} < 1.46 \text{ c.f.s.}$  (ok)  
 \* All downspout drains to be 6" PVC @ 2.0% min. slope

NOTE: LOT 2 GRADING SHOWN FOR ULTIMATE DESIGN OF THE DRAINAGE FLOW PATTERNS ONLY.

COMMON GROUND & UTILITY EASEMENT DARDENNE MEADOWS P.L. 85 P.C. 222 ZONED UZD-T5 AND OPEN SPACE CITY OF DARDENNE PRAIRIE

CONVERT TO GRATE INLET NEW TOP=612.80

P.I. FACTOR BASED ON DESIGN STORM OF 15YR. -20MIN. DURATION



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**TITLE**  
 STORMWATER  
 MANAGEMENT  
 PLAN

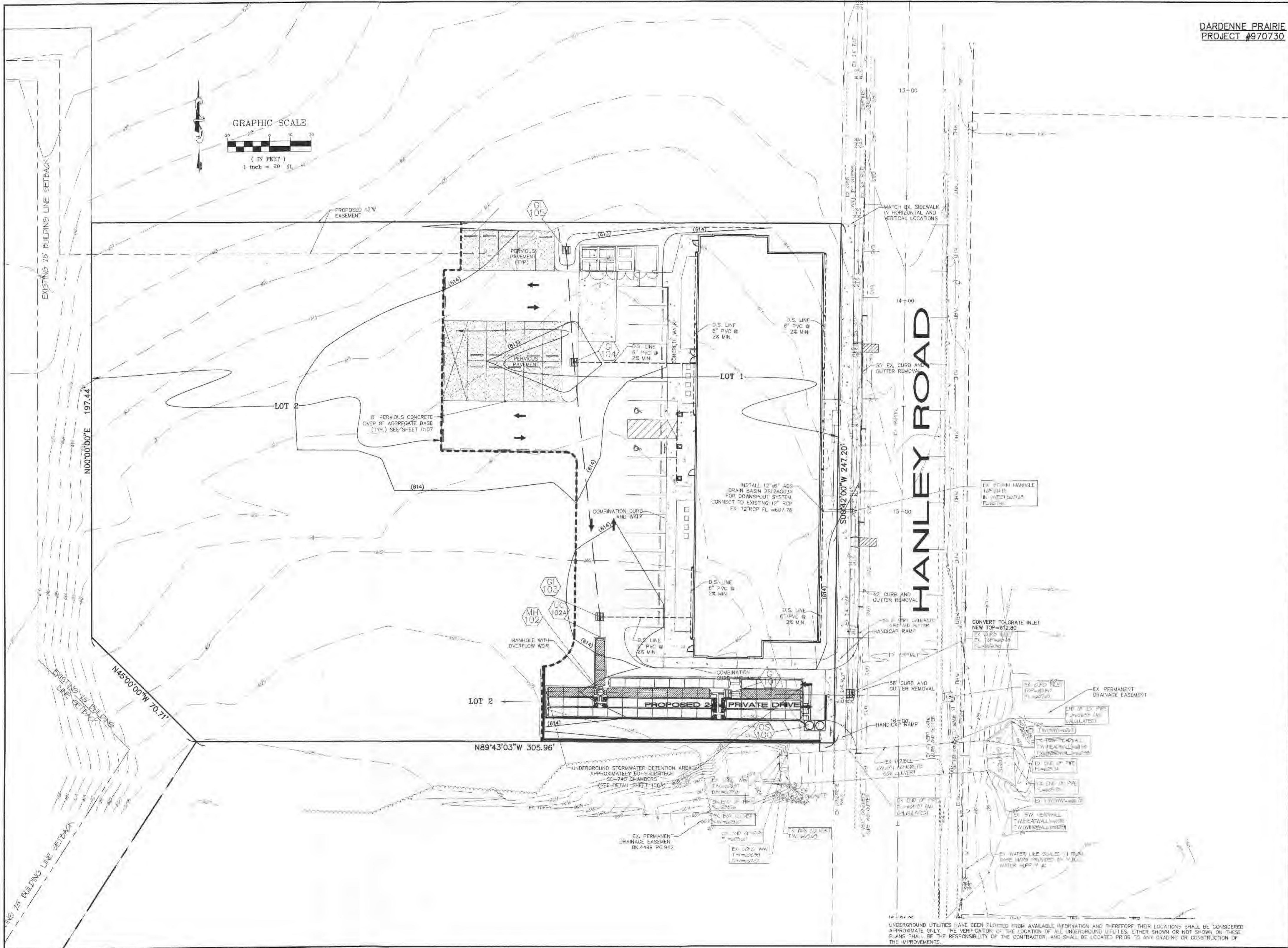
**REVISIONS**

08-13-08	PWSL Comments
09-12-08	Revise Office
09-23-08	Per City Comments
10-28-08	PWSL Comments

**COMM#** 2007033      **DATE** 12 June 08

**C106**

BAX PROJECT #: 03-12502DA



UNDERGROUND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE INFORMATION AND THEREFORE THEIR LOCATIONS SHALL BE CONSIDERED APPROXIMATE ONLY. THE VERIFICATION OF THE LOCATION OF ALL UNDERGROUND UTILITIES, EITHER SHOWN OR NOT SHOWN ON THESE PLANS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE LOCATED PRIOR TO ANY GRADING OR CONSTRUCTION OF THE IMPROVEMENTS.

EA:\DWG\A125001\PLANS\12502DA\_CROSS PLANS\Consolidated.dwg, STUDY: Stormwater Management, 10/29/2008 12:34:41 PM, Sta: 35, RW

NOTIFY ARCHITECT IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE ARCHITECT.









A new 40 Unit Apartment for the Elderly  
**ST. WILLIAM APARTMENTS**  
 CARDINAL RITTER SENIOR SERVICES  
 1979 HANLEY RD, DARDENNE PRAIRIE, MO 63368  
 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

**TITLE**  
 STORM SEWER  
 PROFILES  
 &  
 CONSTRUCTION  
 DETAILS

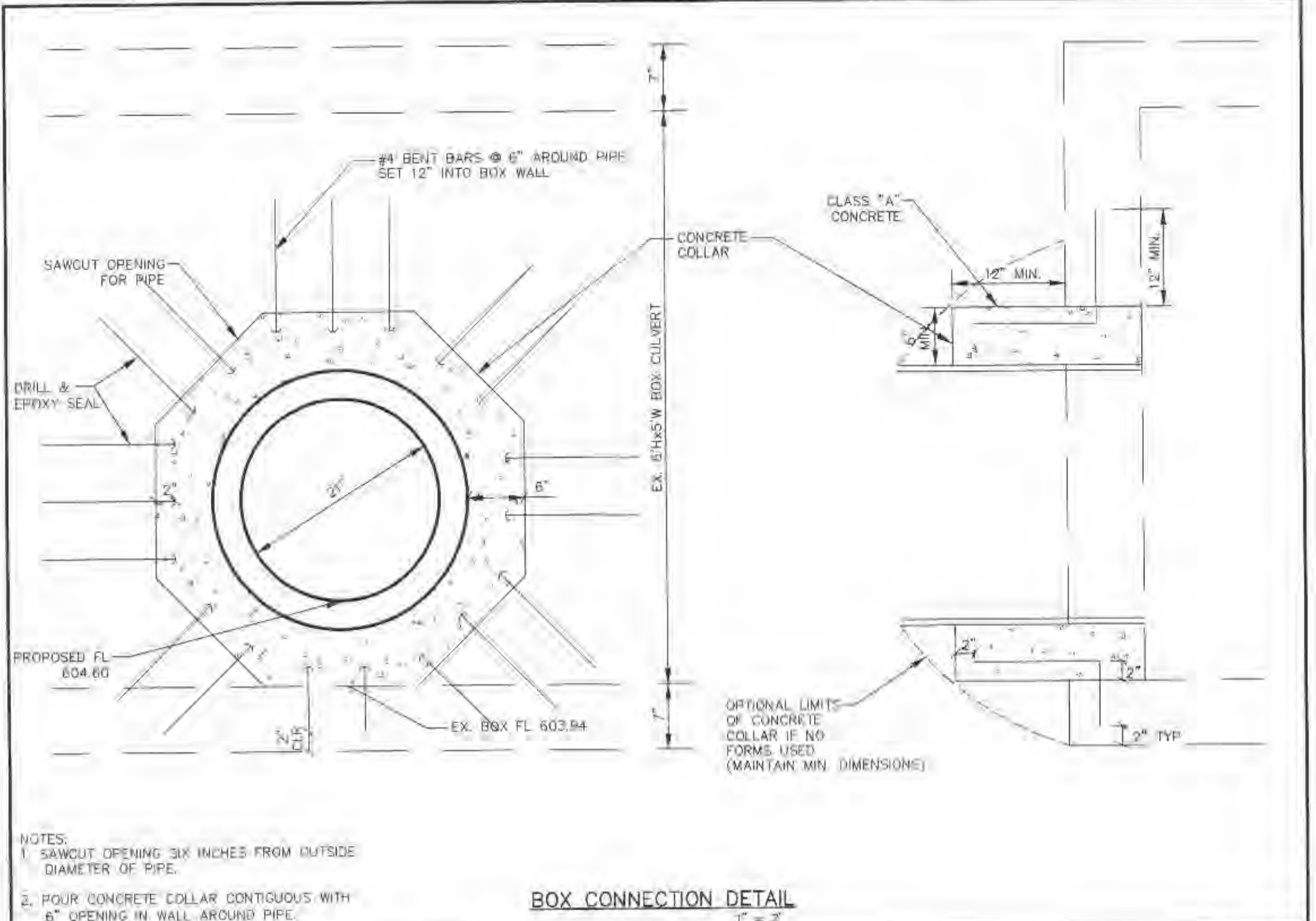
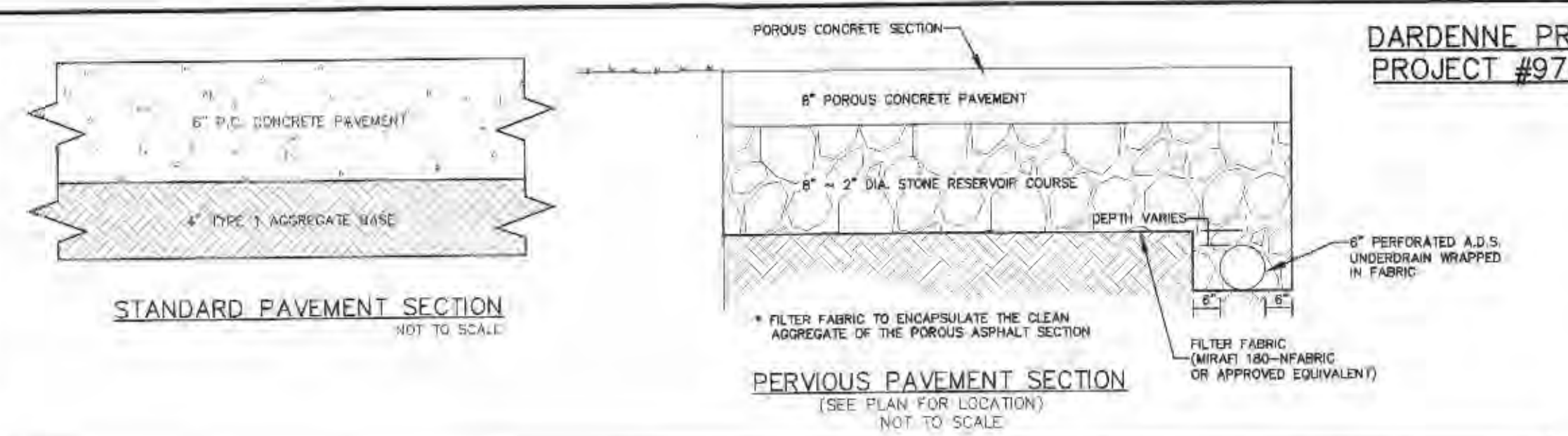
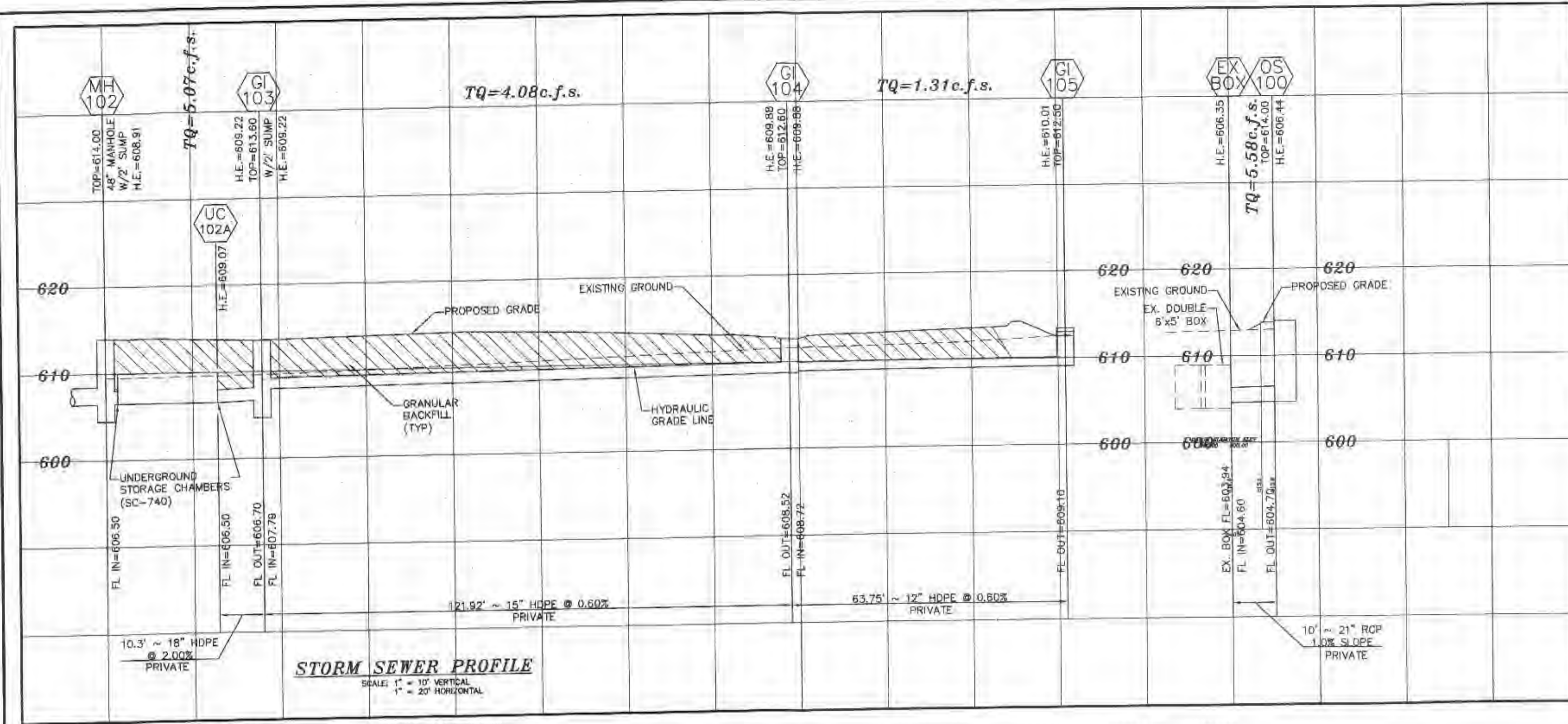
**REVISIONS**

08-13-08	PWSD Comments
09-12-08	Revise Office
09-23-08	Per City Comments
10-28-08	PWSD Comments

**COMM#** 2007033  
**DATE** 12 June 08

**C107**

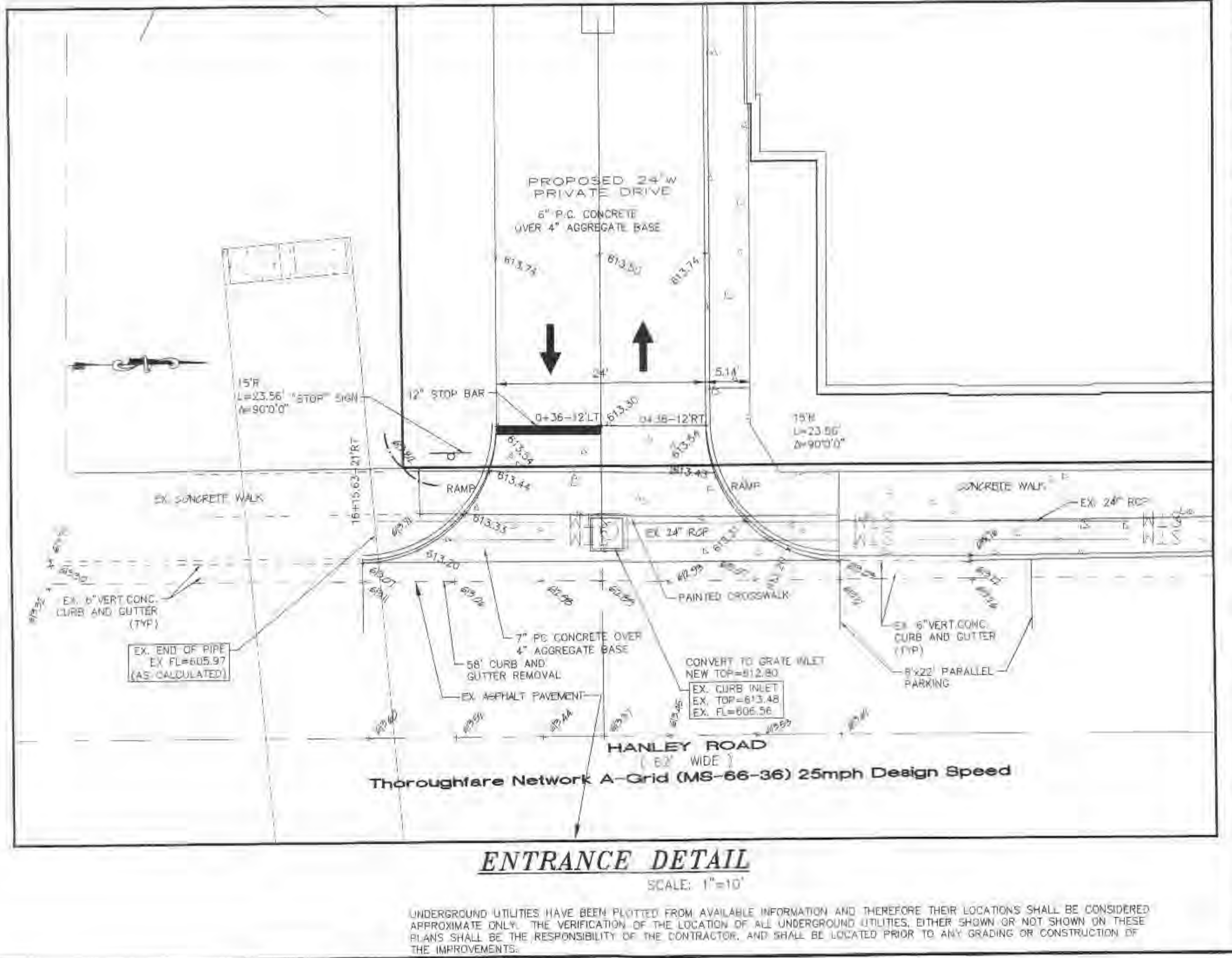
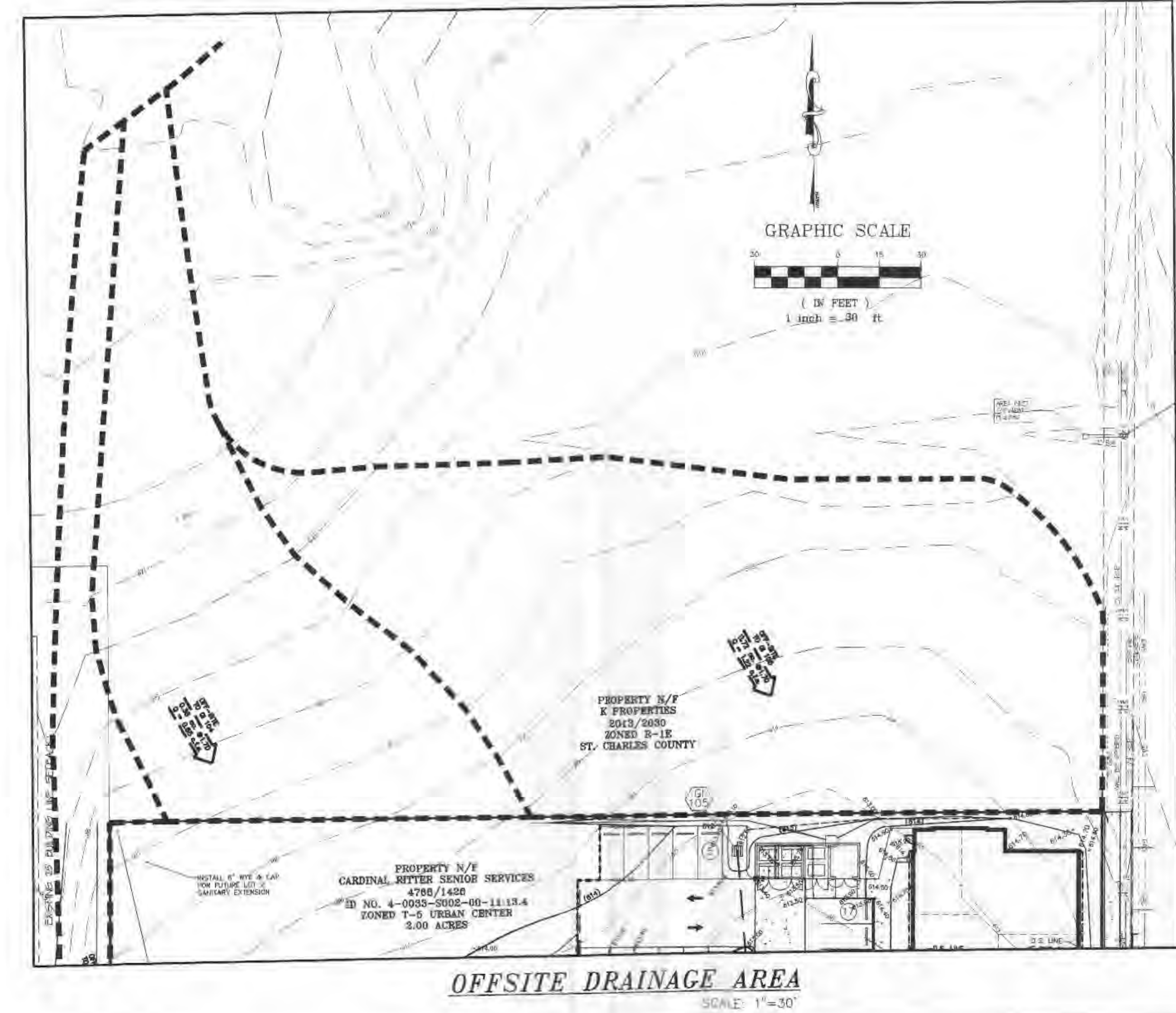
BAX PROJECT #: 03-12502DA



STATIONING: 12502DA 08-29-08 RLM DESIGN STORM: 15YR-20MIN

UP STR	LOW STR	L	SHA	UPPER FL IN	LOWER EL IN	FB	UPPER ST EL	DRP'S BY GR	UPPER BY R	LOWER BY R	EVAP GRADE	FP HEAD	VSL	VSL HEAD	UNCL CORRS	TO	P199 CAP	REMARKS		
G2	105	92	104	64	12	609.10	608.72	0.40	612.50	2.49	610.01	609.88	.00140	0.09	1.61	0.04	0.04	1.31	7.08	1
G1	103	MR	102	122	15	608.98	607.79	0.60	603.80	2.12	609.88	609.22	.00400	0.49	3.83	0.17	0.17	4.08	8.00	1
G1	103	UC	102A	170	19	609.76	606.30	1.34	613.60	4.38	609.22	609.97	.00230	0.28	2.91	0.13	0.13	9.07	14.64	3
G5	100	EX BOX	1.8	21	609.70	605.80	1.00	614.00	7.18	606.41	606.25	.00220	0.21	2.82	0.08	0.08	5.88	13.81	4	HW=609.07

\* INDICATES CRT/144/24PP



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 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

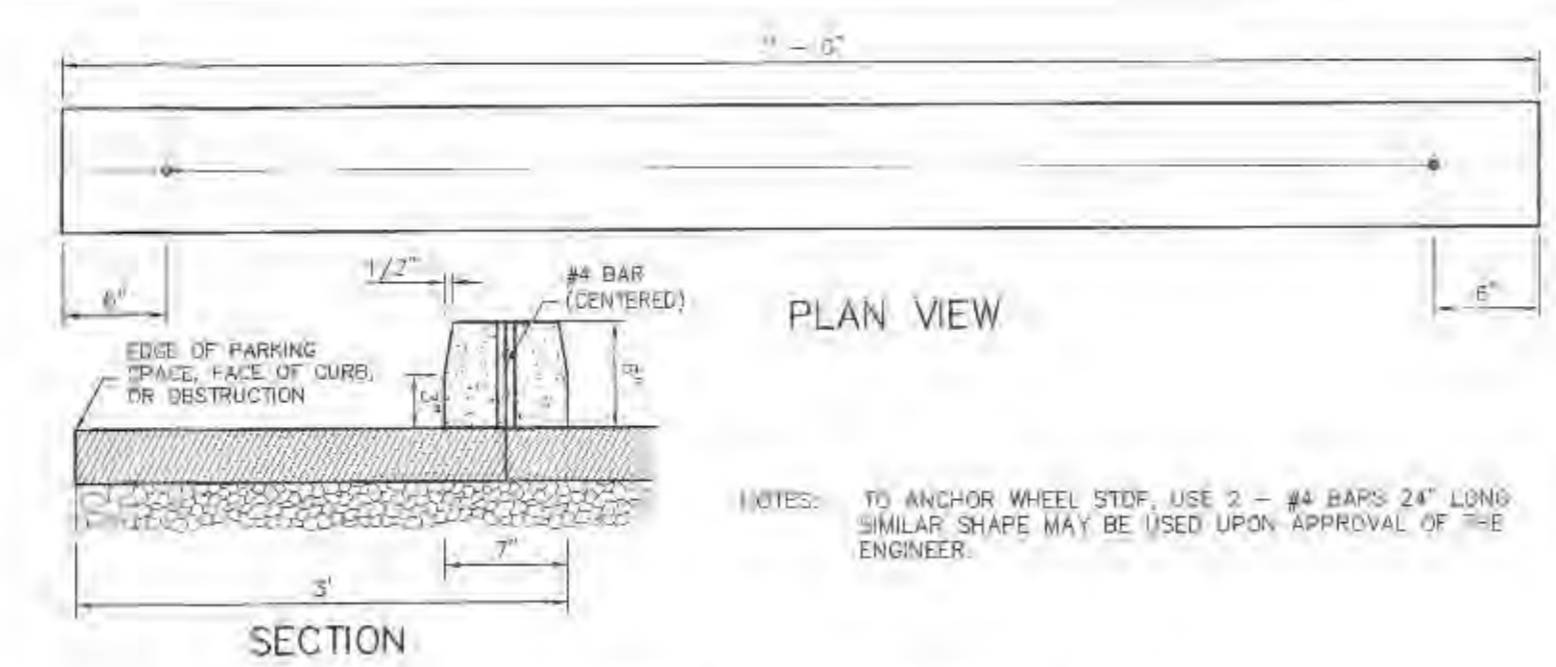
TITLE  
 CONSTRUCTION DETAILS

REVISIONS  
 08-13-09 PWSJ Comments  
 09-12-09 Revise Detail  
 09-23-09 Pw: City Comments  
 10-28-09 PWSJ Comments

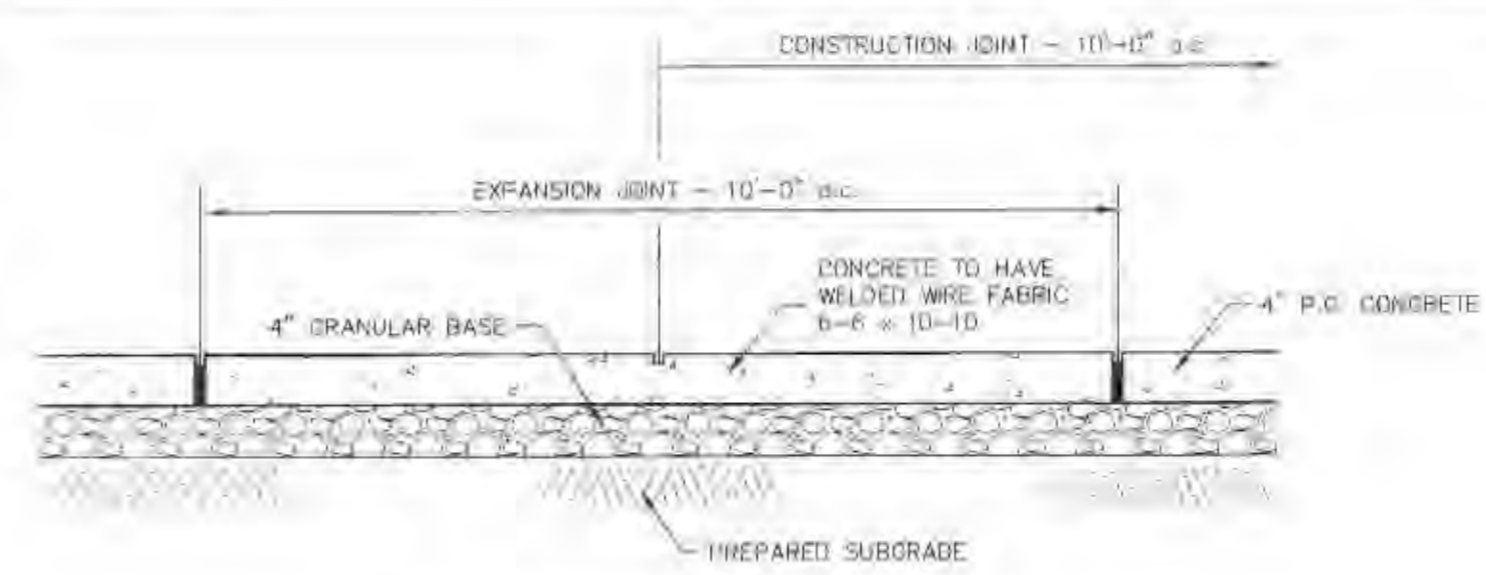
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 2007033 12 June 08

C109

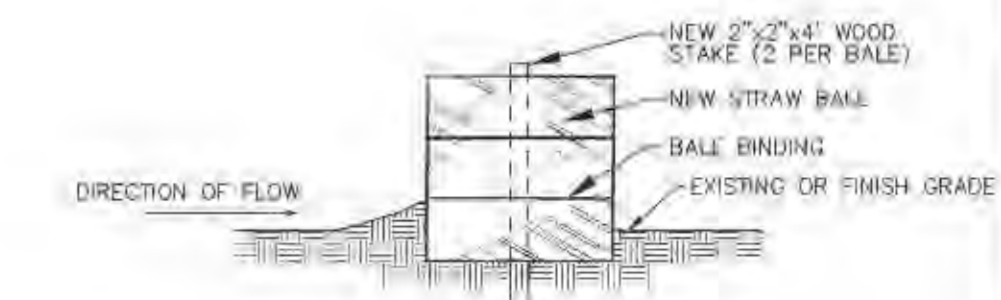
BAX PROJECT #: 03-12502DA



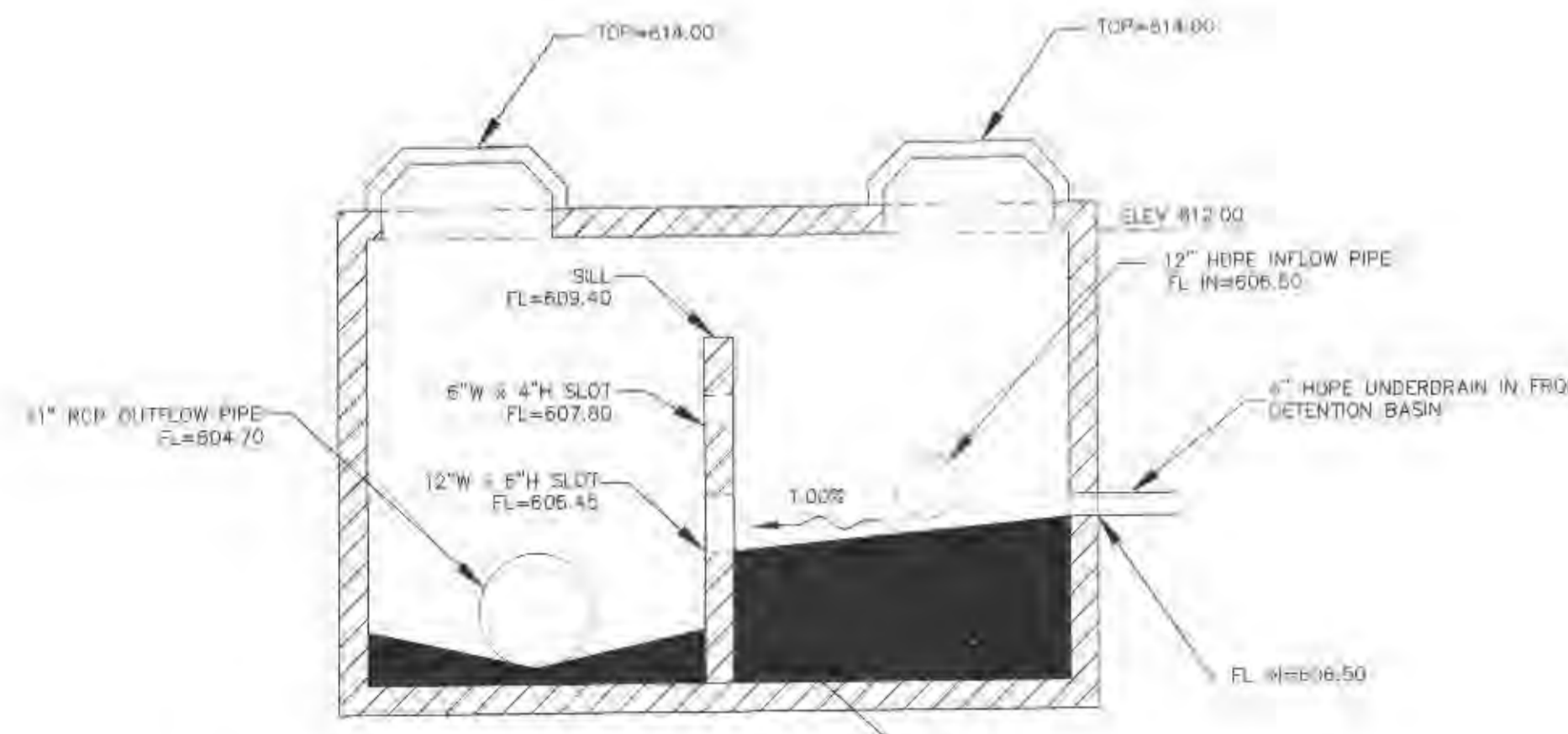
PRECAST CONCRETE WHEELSTOP



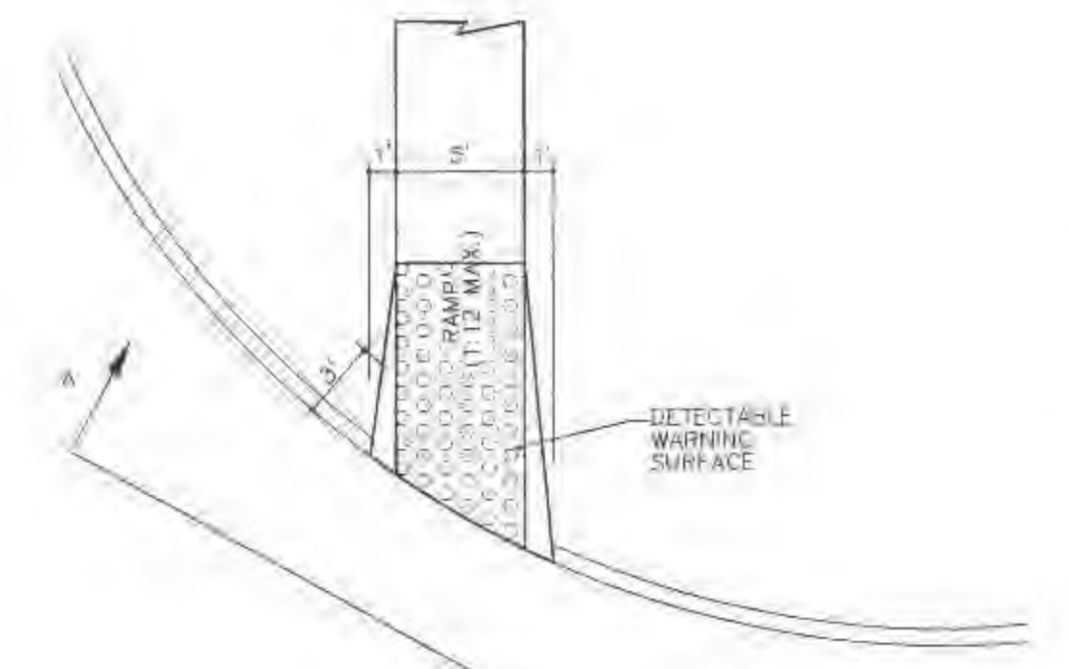
CONCRETE SIDEWALK DETAIL NOT TO SCALE



SEDIMENT BARRIER NOT TO SCALE



OUTFALL STRUCTURE SECTION B NOT TO SCALE

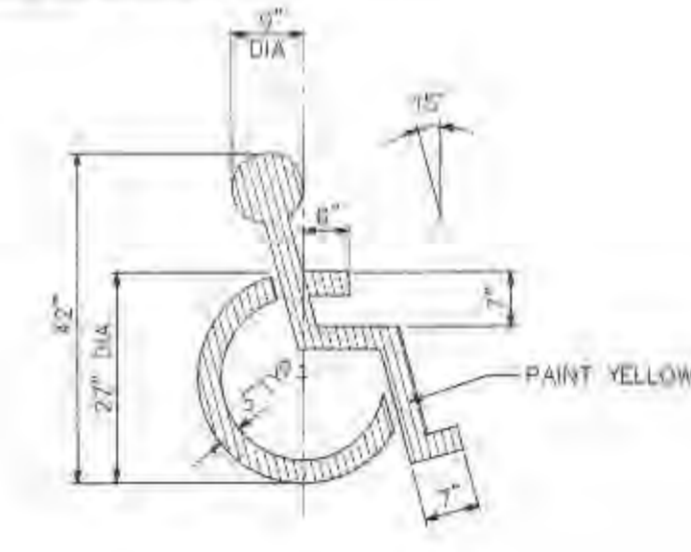


HANDICAPPED RAMP WITH DETECTABLE WARNING DETAIL NOT TO SCALE

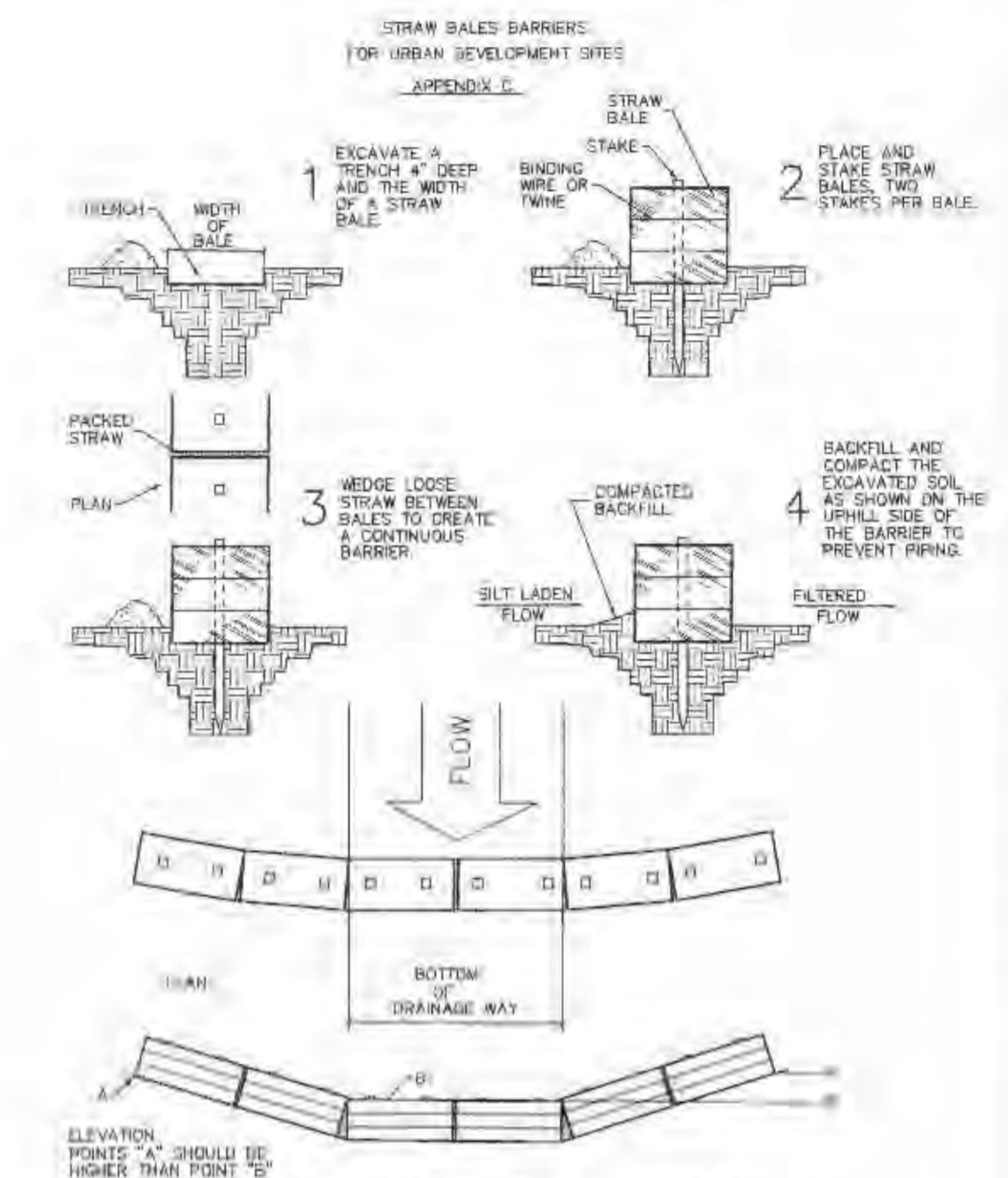


STANDARD SIGN FACE, STANDARD HIGHWAY DEPARTMENT, OR CITY STREET DEPARTMENT (PAUSE, LETTERS AND BORDERS ARE GREEN, THE HANDICAP LOGO SQUARE IS BLUE AND THE BACKGROUND IS WHITE, GALVANIZED U CHANNEL POST 1'-0" LONG, SET 3'-0" INTO GRADE, SET BOTTOM OF SIGN 4'-0" ABOVE FINISHED GRADE.

HANDICAP PARKING SIGN

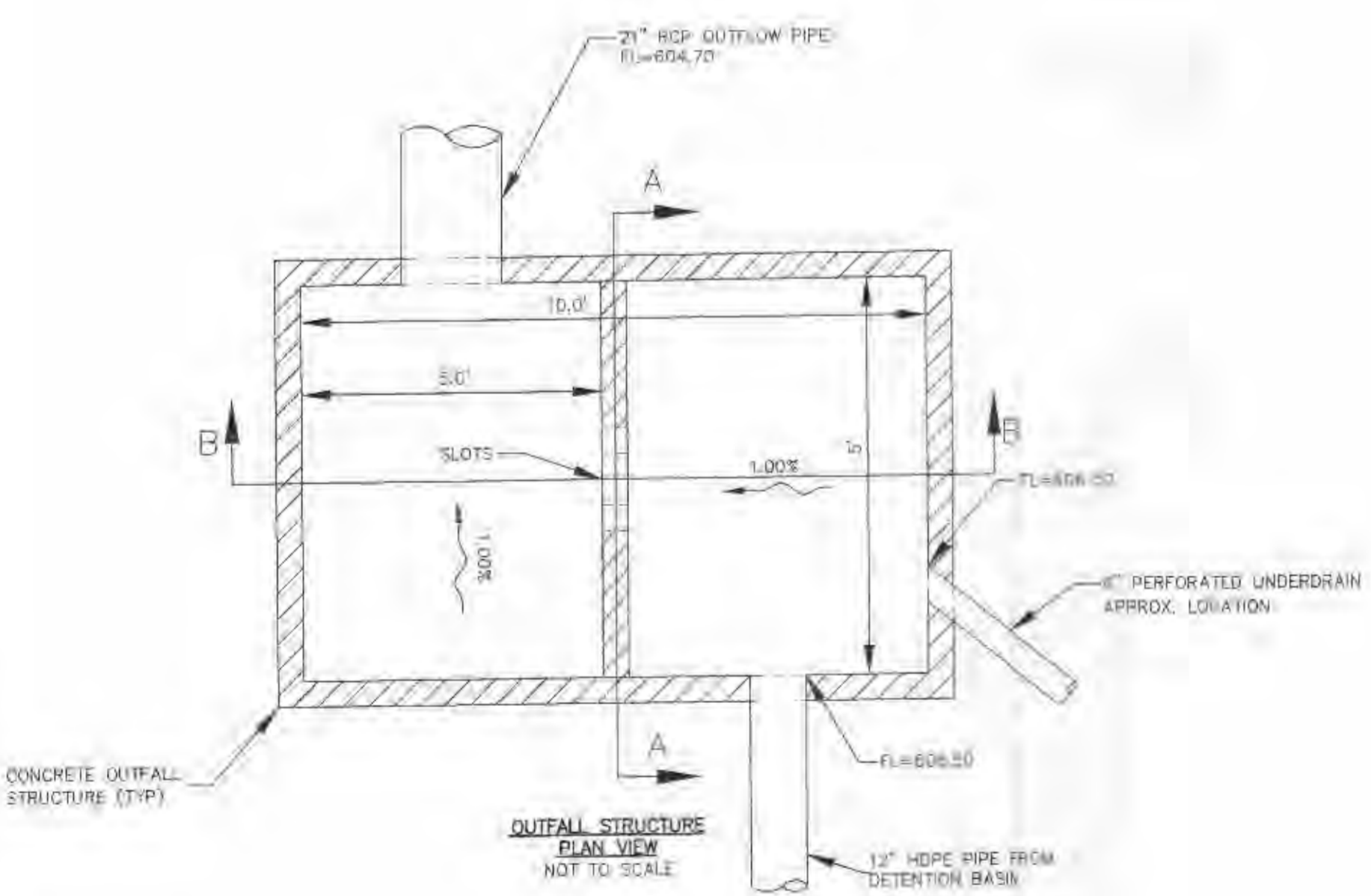


PAINTED HANDICAPPED PARKING SYMBOL NOT TO SCALE

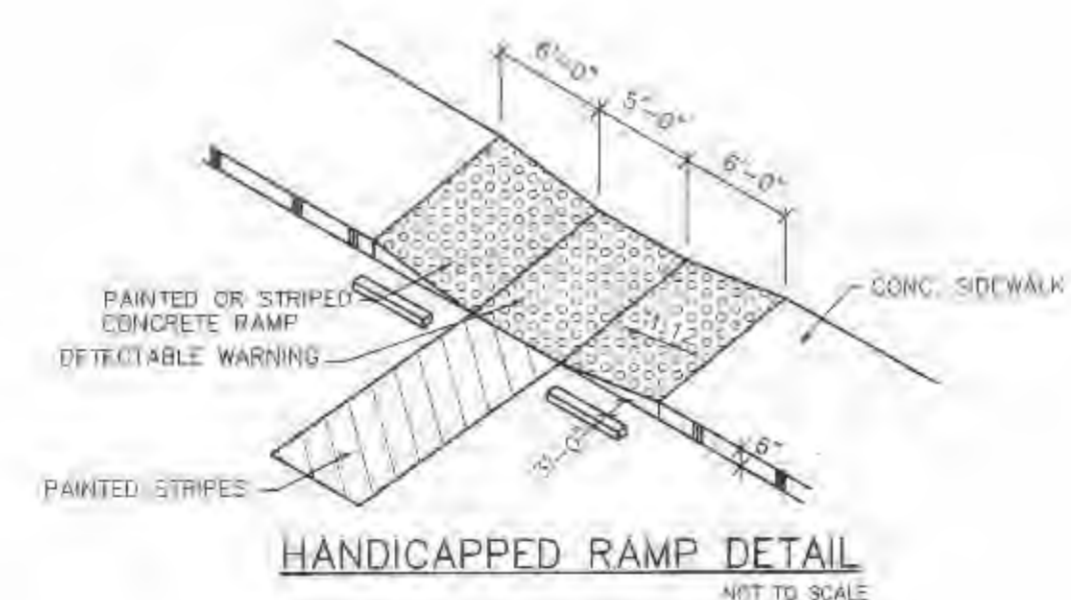


PLACEMENT AND CONSTRUCTION OF STRAW BALE BARRIER

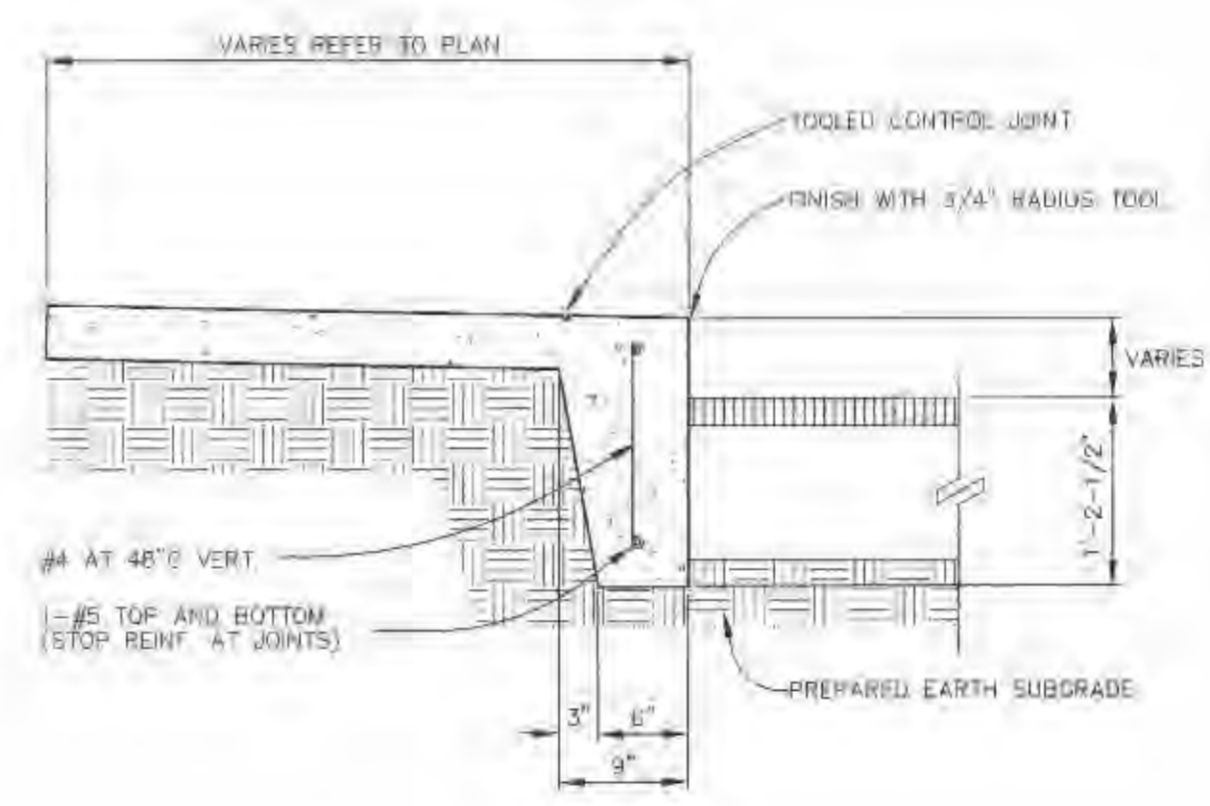
2 YR -20 MIN. HIGH WATER = 607.77  
 15 YR -20 MIN. HIGH WATER = 608.44  
 100 YR -20 MIN. HIGH WATER = 609.34  
 100 YR -20 MIN. LOW FLOW BLOCKED = 610.00



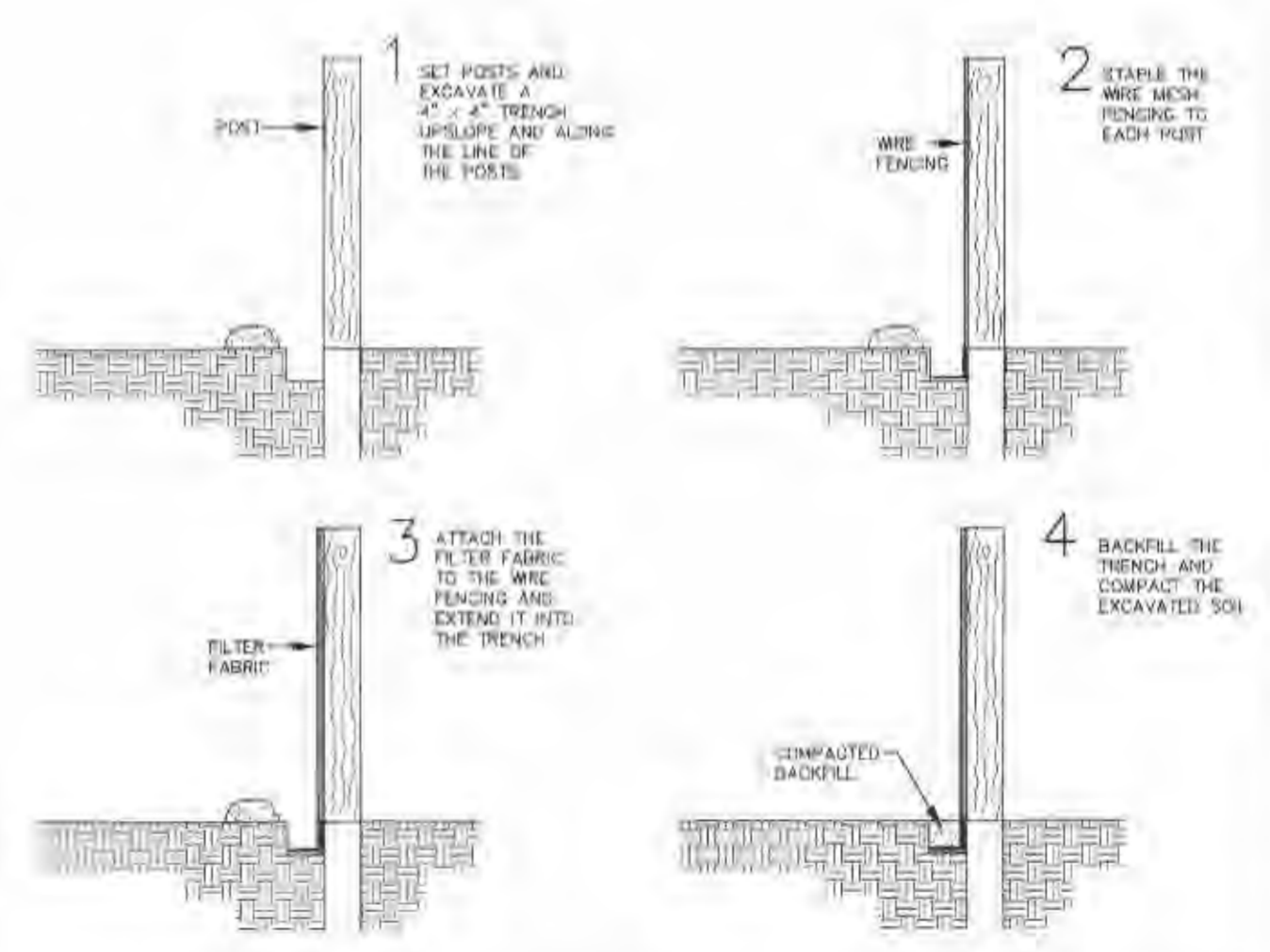
OUTFALL STRUCTURE PLAN VIEW NOT TO SCALE



HANDICAPPED RAMP DETAIL NOT TO SCALE

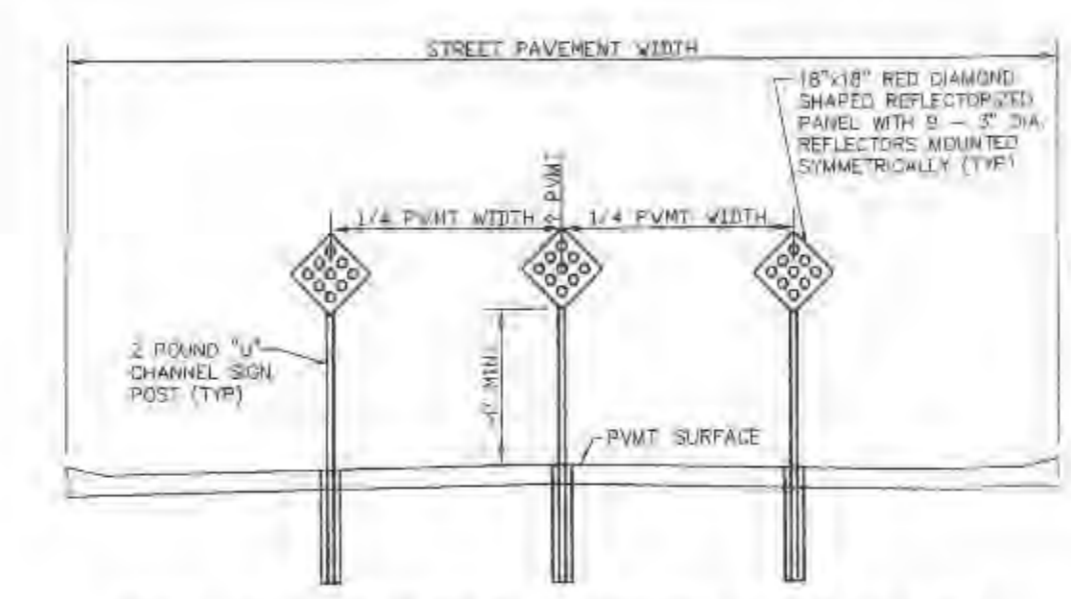


COMBINATION CURB AND WALK NOT TO SCALE



SILTATION FENCE DETAIL

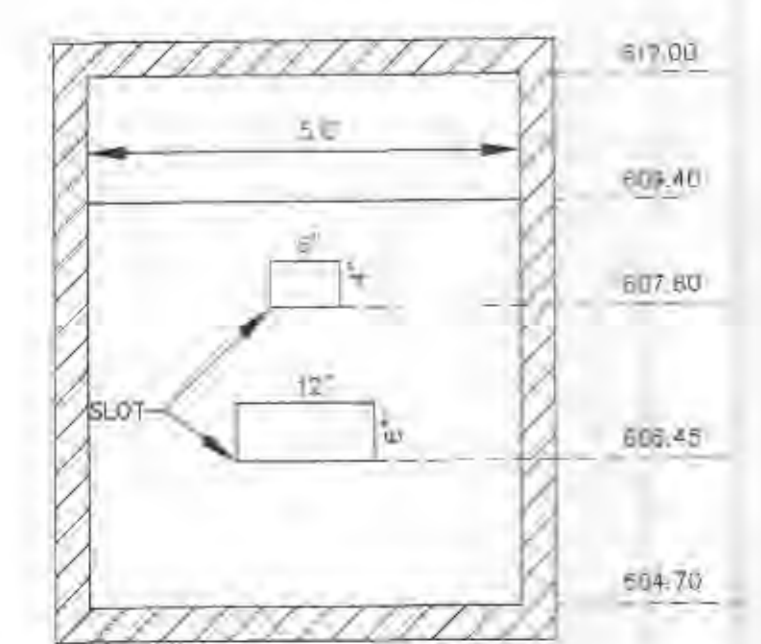
1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.  
 2. SHOULD THE FABRIC BECOME OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER WILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.  
 3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.  
 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DISPOSED TO CONFORM WITH THE EXISTING GRACE, PREPARED AND SAVED.



END OF PAVEMENT BARRICADE DETAIL NOT TO SCALE



TRASH ENCLOSURE PAVEMENT DETAIL NOT TO SCALE



OUTFALL STRUCTURE SECTION A NOT TO SCALE





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 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

**TITLE**  
 CONSTRUCTION  
 DETAILS

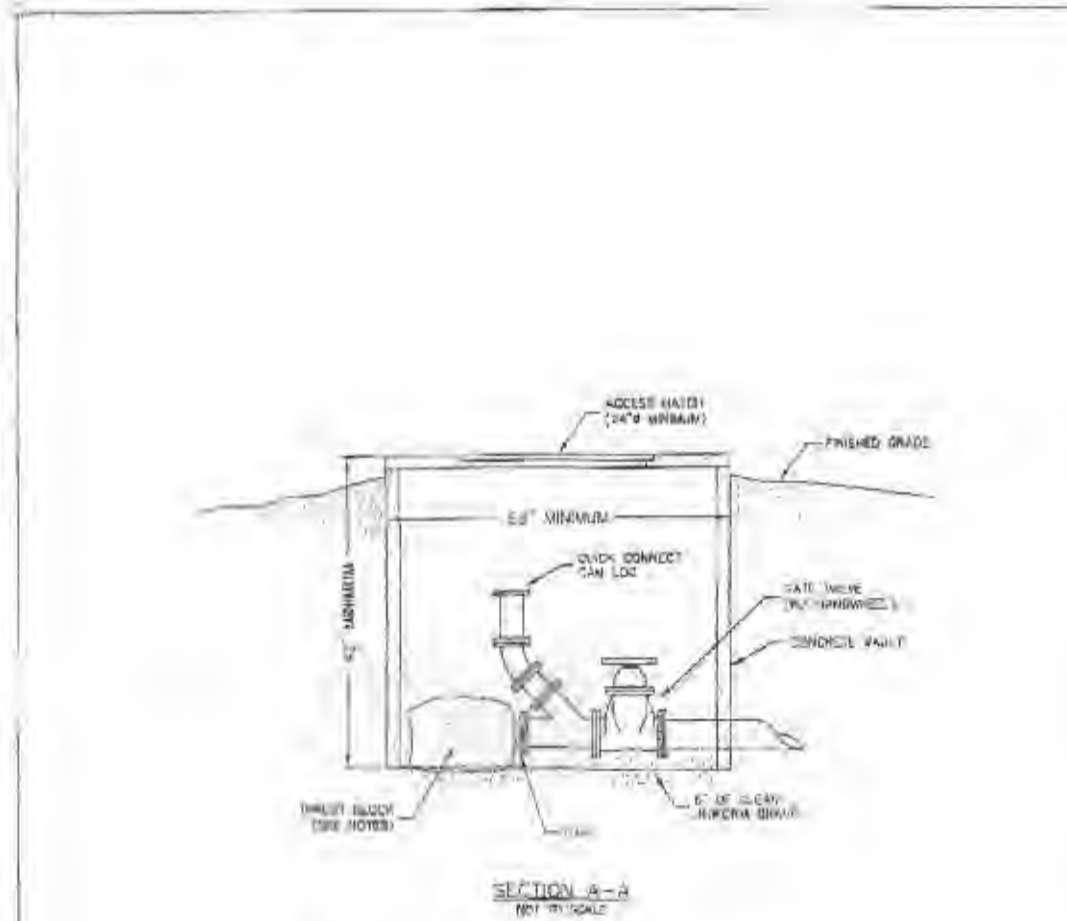
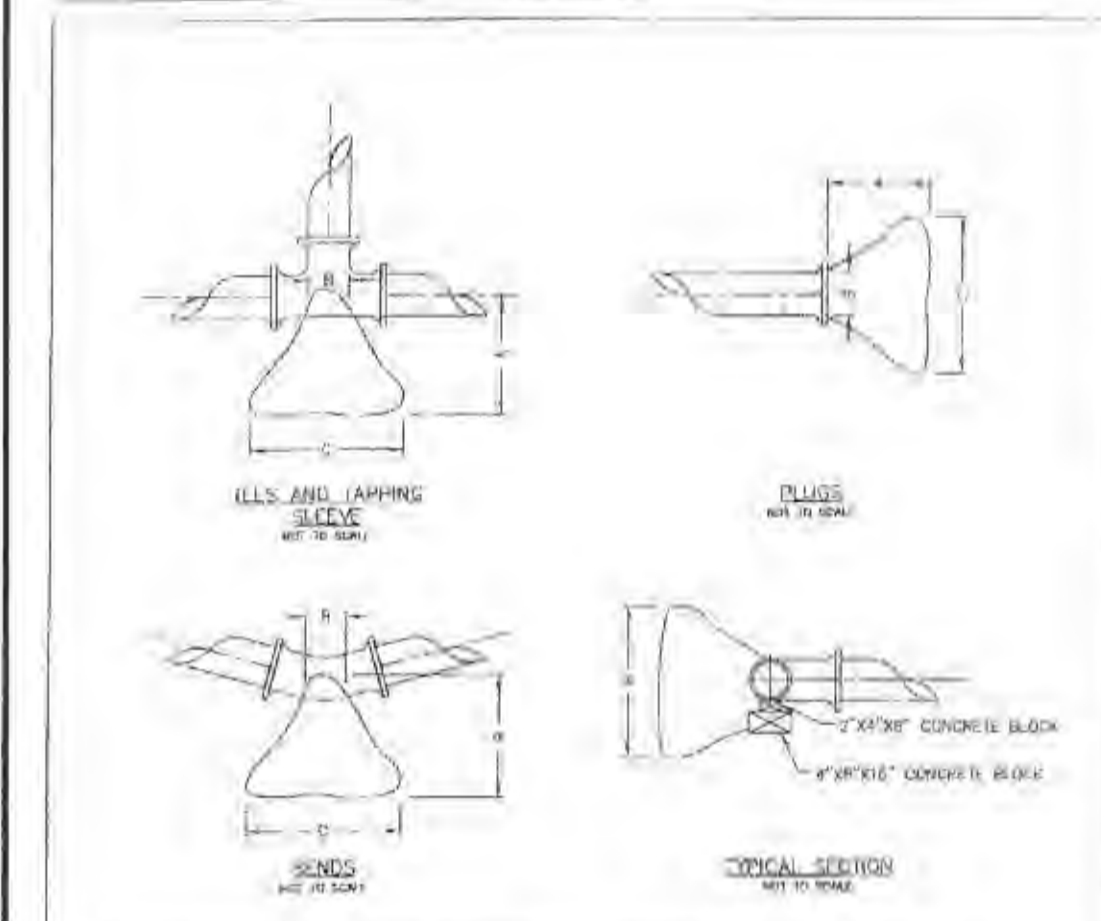
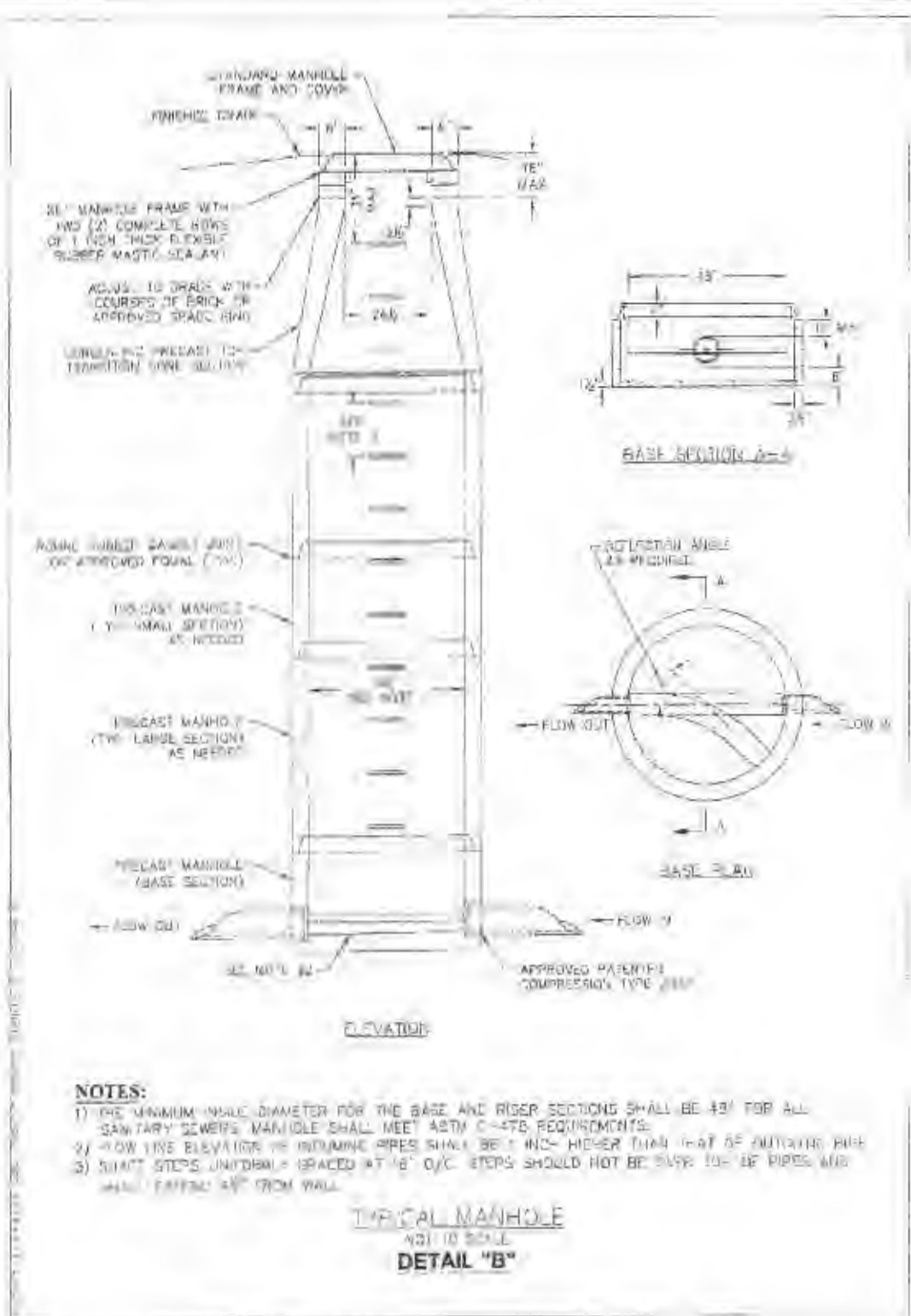
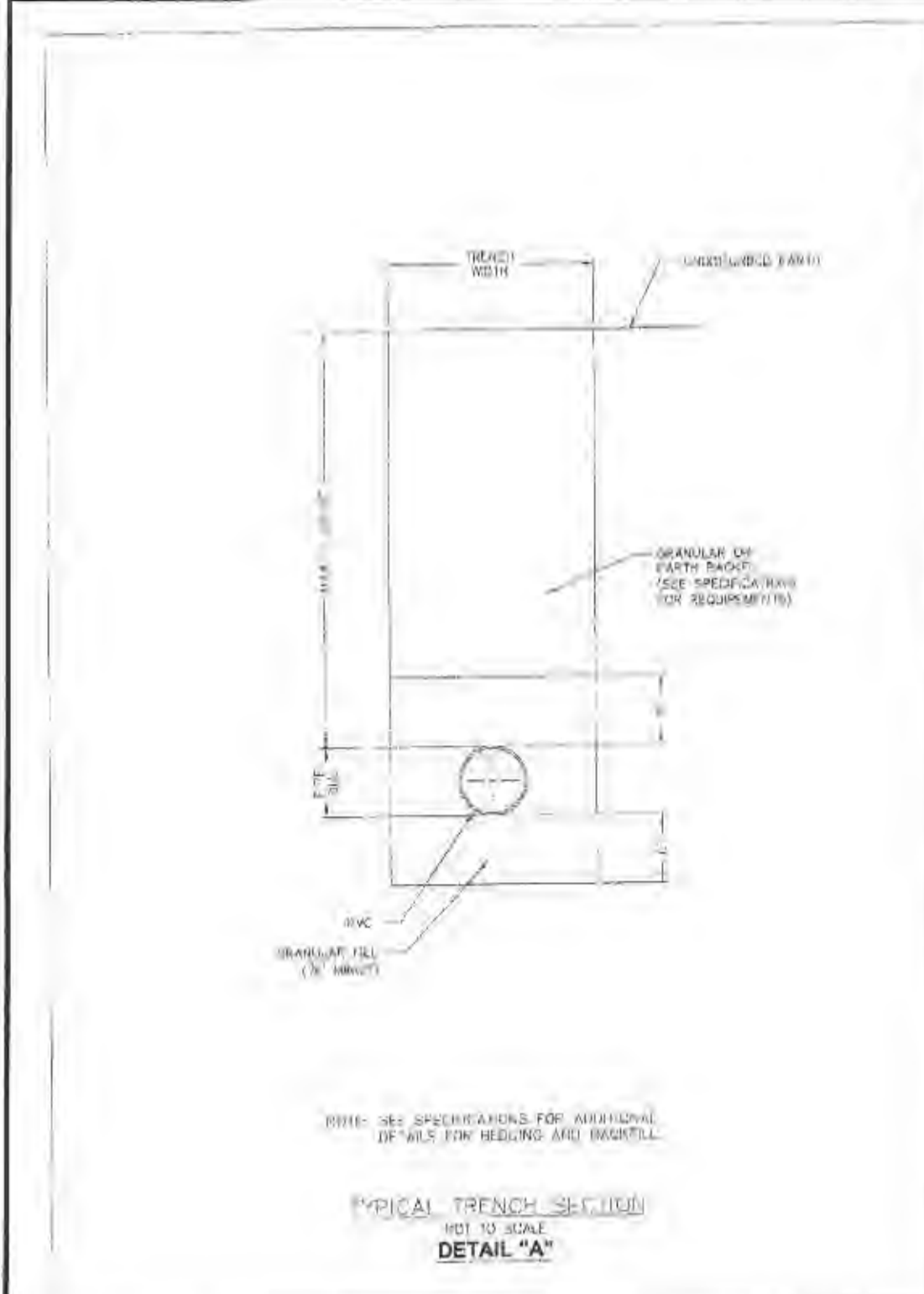
**REVISIONS**  
 08-13-08 PWSD Comments  
 09-12-08 Revise Offsite  
 09-23-08 Per City Comments  
 10-29-08 PWSD Comments

**COMM#** 2007033  
**DATE** 12 June 08

**C110**

BAX PROJECT #: 03-12502DA

NOTIFY ARCHITECT IN EVENTS OF DISCREPANCIES, OMISSIONS, AND/OR CONFLICTS IN THE DRAWINGS OR SPECIFICATIONS. THE CONTRACTOR IS NOT AUTHORIZED TO SCALE THE DRAWINGS. ALL QUESTIONS IN REFERENCE TO CONTRACT DOCUMENTS SHALL BE IMMEDIATELY DIRECTED TO THE ARCHITECT



**THRUST BLOCK DIMENSIONS - INCHES**

PIPE DIA.	ALL FTGS.			TEE PLUG TAPPING		90 DEGREE BEND		45 DEGREE BEND		22-1/2 BEND		11-1/4 BEND	
	A	B	C	H	C	H	C	H	C	H	C	H	
4	14	4	24	12	26	15	18	12	12	12	12	12	
6	18	6	36	18	36	24	30	18	24	12	12	12	
8	20	8	36	30	42	36	36	24	24	18	18	12	
10	20	10	48	36	66	36	36	36	28	24	18	18	
12	24	12	66	36	82	42	52	36	40	24	28	18	

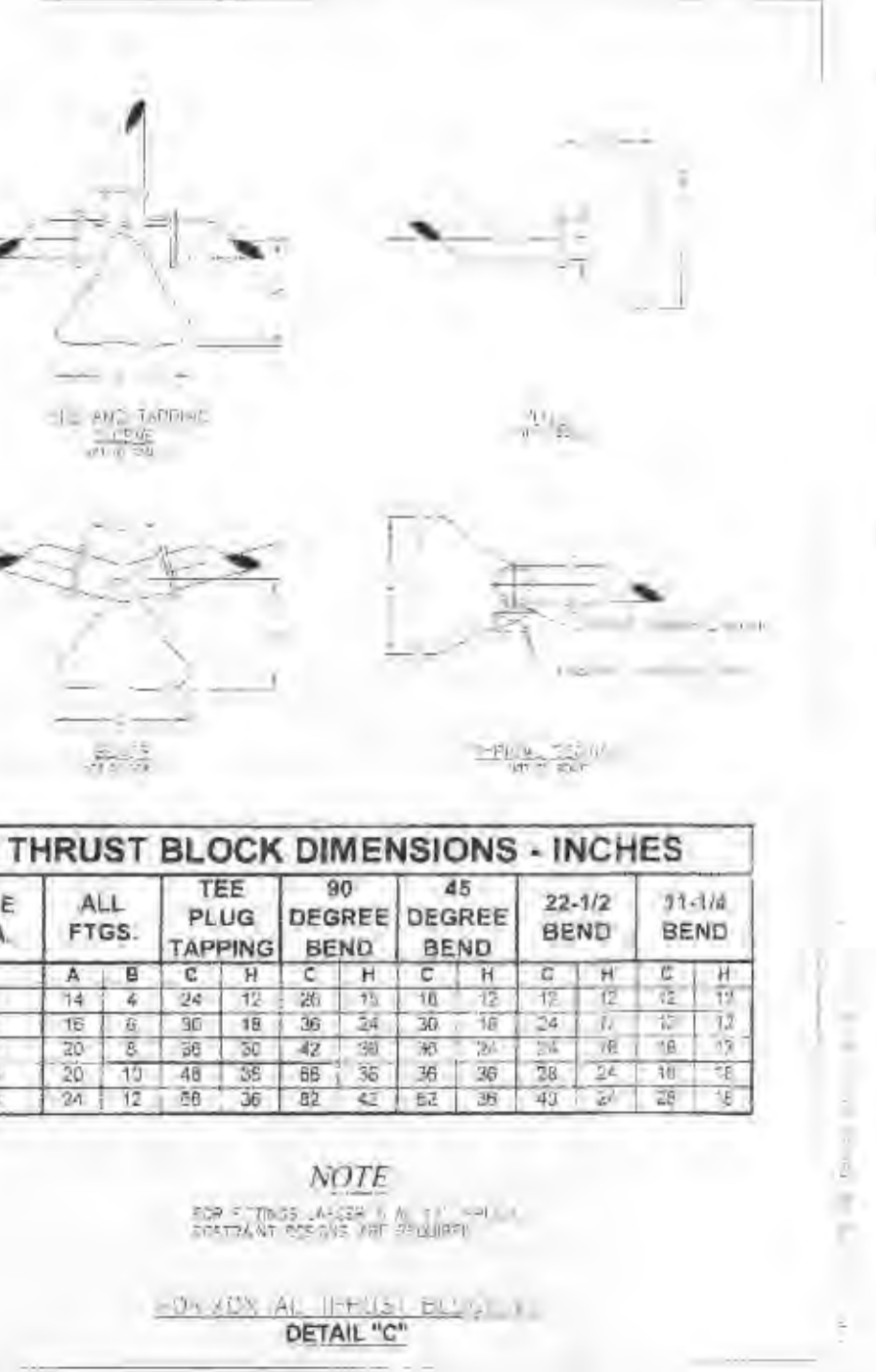
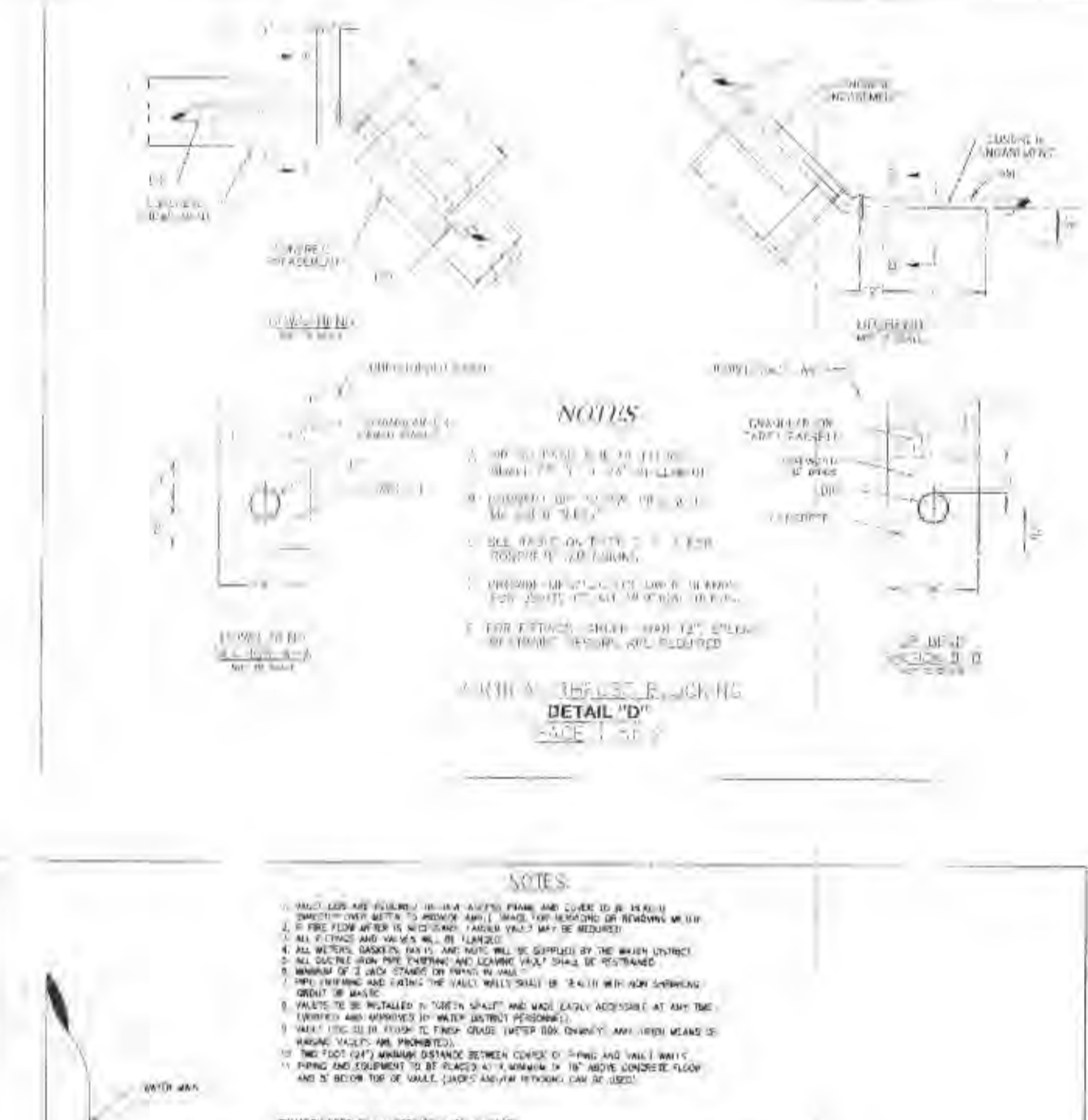
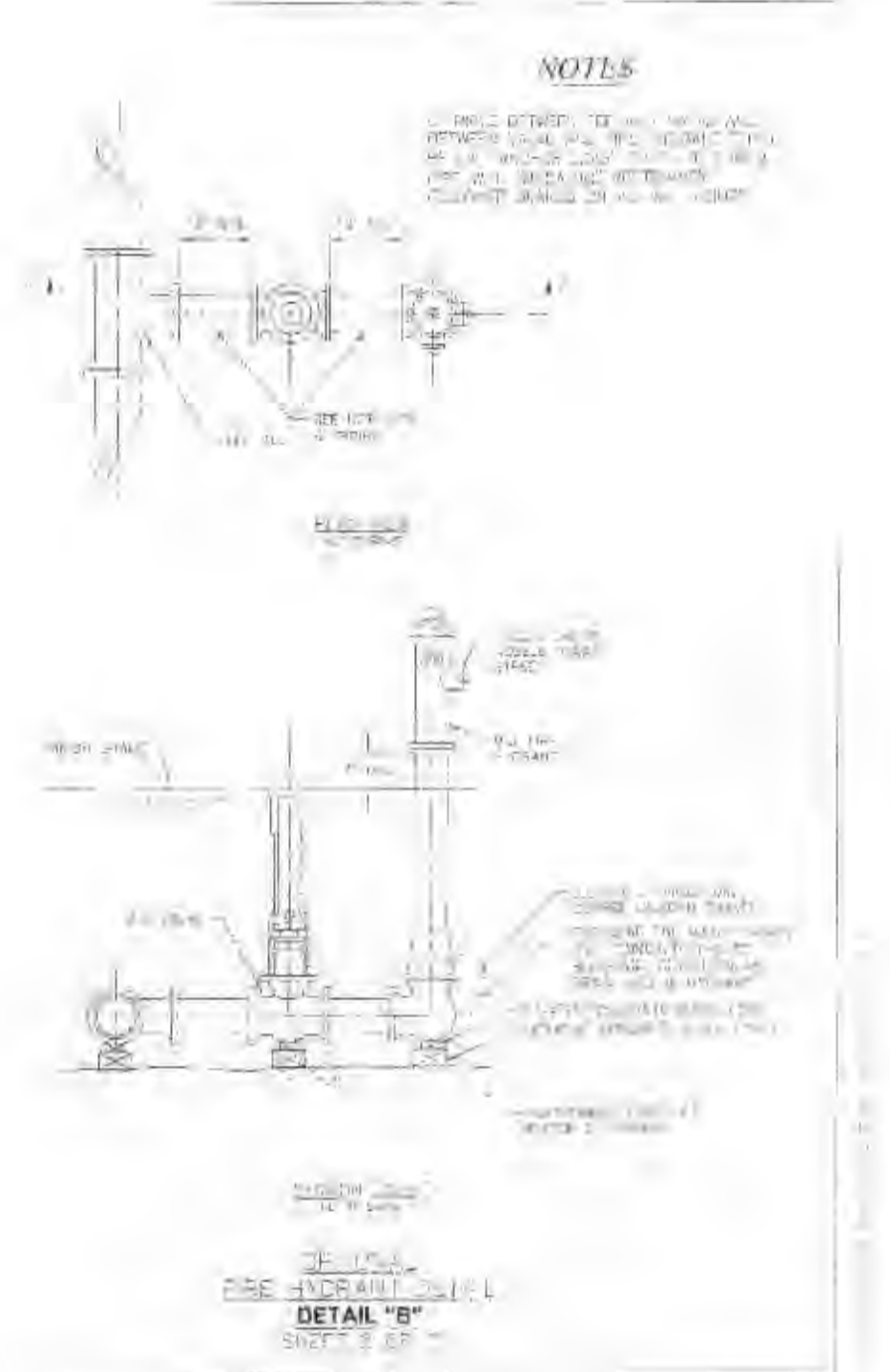
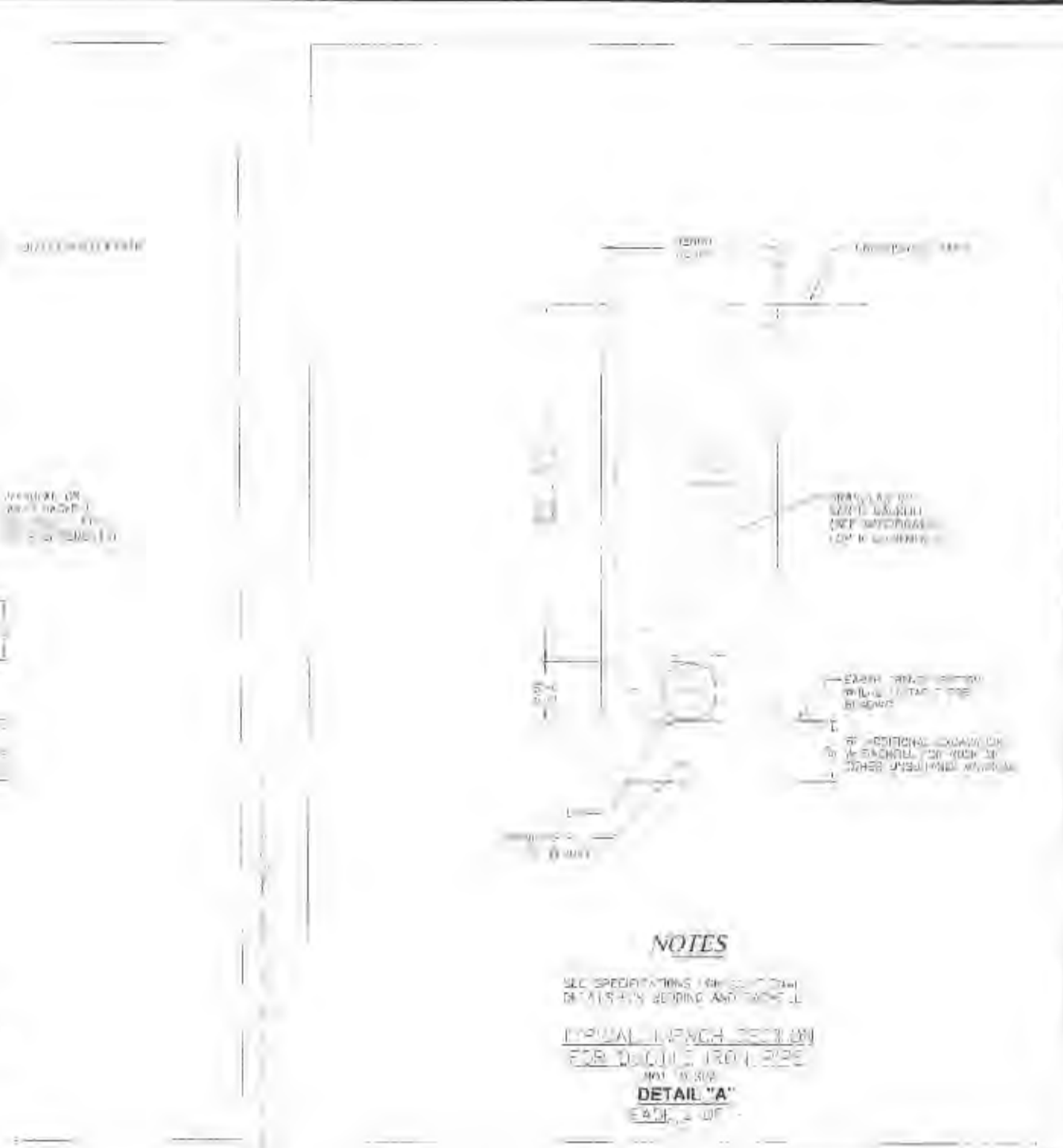
NOTE: FOR FITTINGS LARGER THAN 12" SPECIAL RESTRAINT DESIGN ARE REQUIRED.  
**HORIZONTAL THRUST BLOCKING FOR FORCE MAINS  
 DETAIL "D"**

NOTE: 1) SEE DETAIL "E" FOR THRUST BLOCK MINIMUM REQUIREMENTS.  
 2) FOR FITTINGS LARGER THAN 12" SPECIAL RESTRAINT DESIGN ARE REQUIRED.  
 3) SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR BEARING AND BRACE.  
**TERMINAL CLEANOUT  
 NOT TO SCALE  
 DETAIL "E"**

**SANITARY DETAILS**

PIPE SIZE	DEGREE BEND	DOWN BENDS				UP BENDS			
		W	H	L	H	L	W	H	L
4"	11 1/4"	16	12	18	12	12	12	12	12
	22 1/2"	18	18	24	12	12	12	12	12
	45"	18	18	30	12	12	12	12	18
6"	11 1/4"	24	18	18	12	12	12	12	12
	22 1/2"	24	18	24	12	12	12	12	12
	45"	24	18	48	12	12	12	12	48
8"	11 1/4"	24	18	24	12	12	12	12	18
	22 1/2"	24	18	42	12	12	12	12	24
	45"	24	18	48	12	12	12	12	24
10"	11 1/4"	30	24	24	18	18	18	18	18
	22 1/2"	30	24	42	18	18	18	18	24
	45"	30	24	72	18	18	18	18	36
12"	11 1/4"	30	24	30	18	18	18	18	18
	22 1/2"	30	24	54	18	18	18	18	30
	45"	30	24	72	24	18	18	18	30

NOTE: 1) SEE DETAIL "E" FOR THRUST BLOCK MINIMUM REQUIREMENTS.  
 2) FOR FITTINGS LARGER THAN 12" SPECIAL RESTRAINT DESIGN ARE REQUIRED.  
**HORIZONTAL THRUST BLOCKING FOR FORCE MAINS  
 DETAIL "D"**

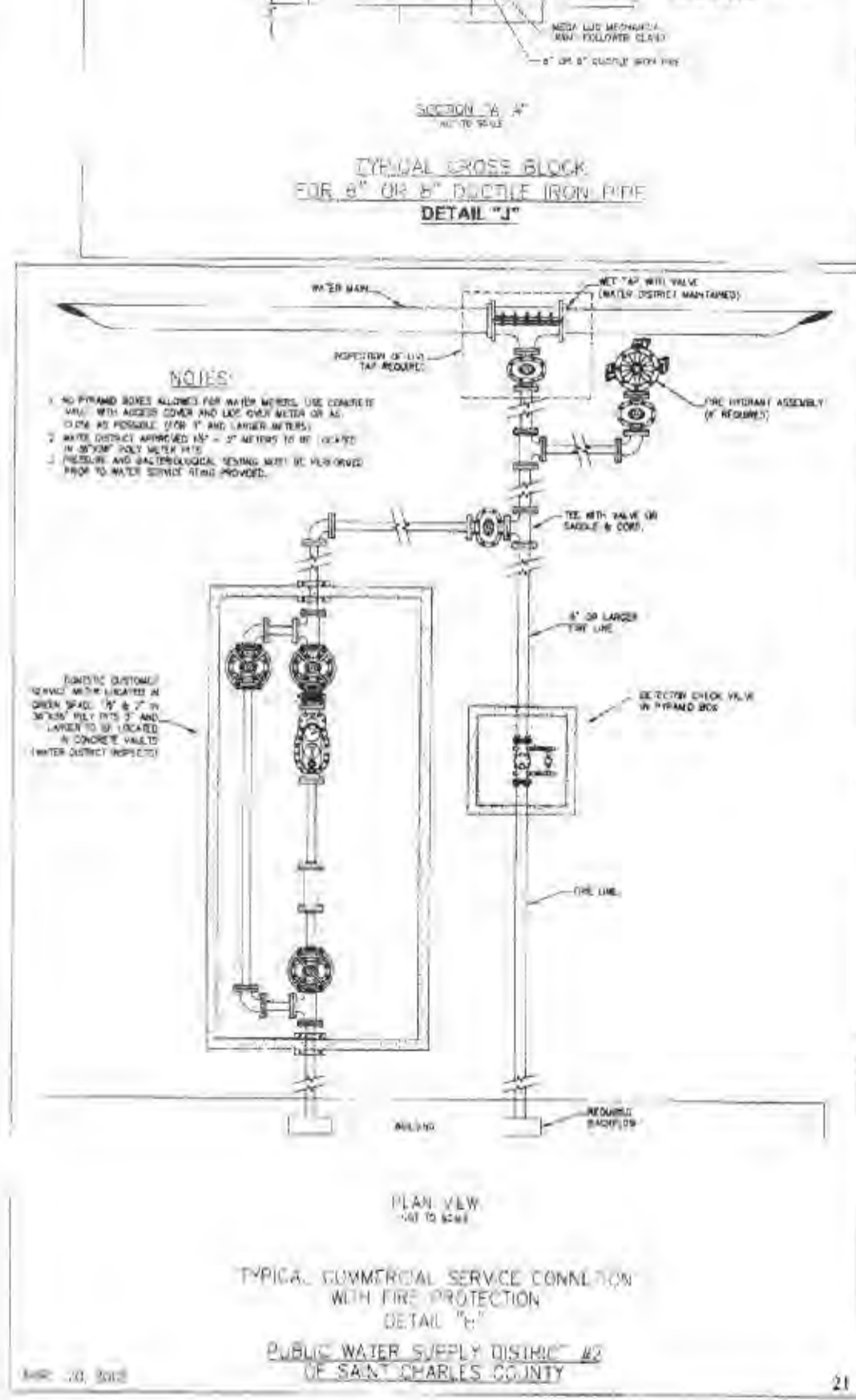
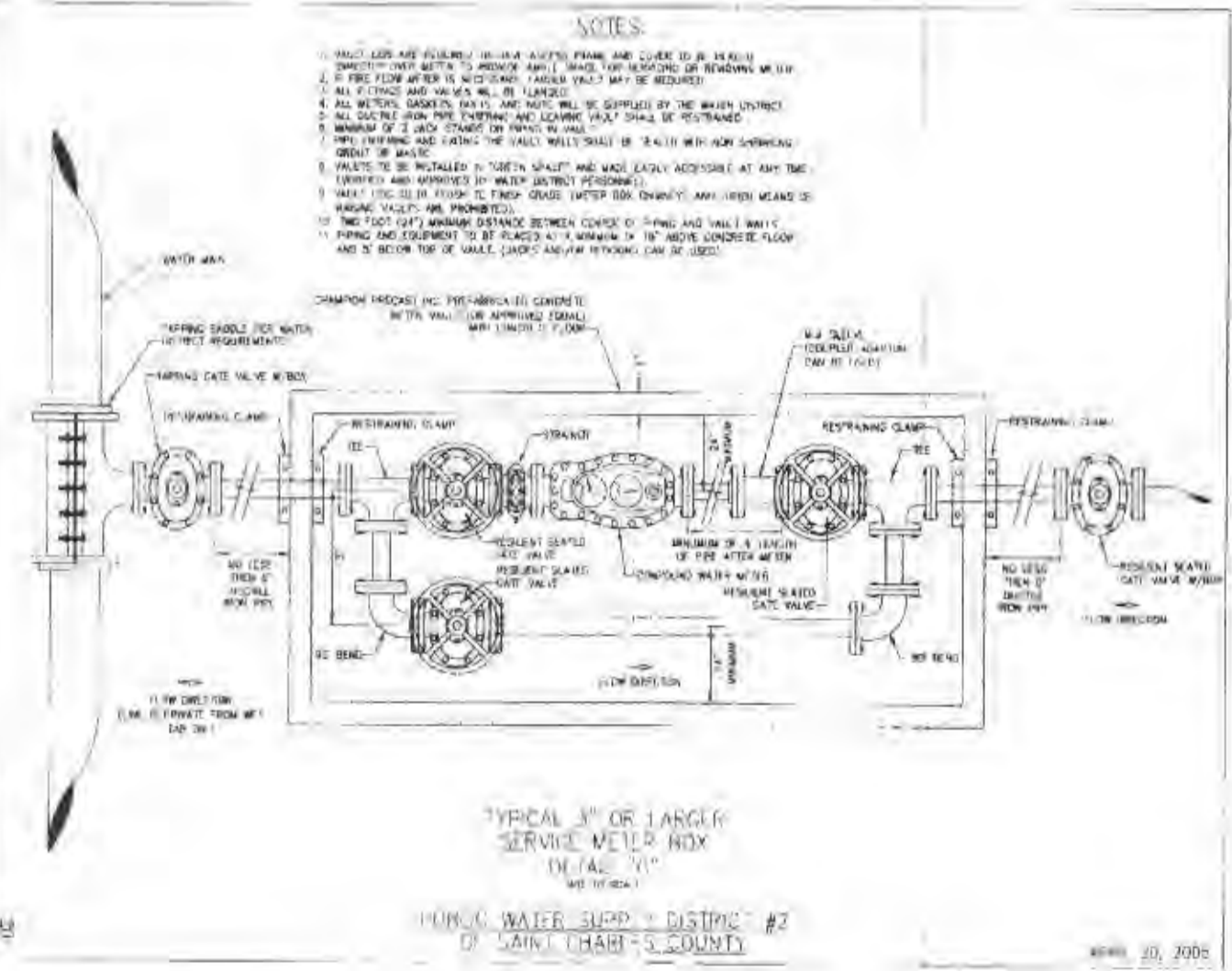


**THRUST BLOCK DIMENSIONS - INCHES**

PIPE DIA.	ALL FTGS.			TEE PLUG TAPPING		90 DEGREE BEND		45 DEGREE BEND		22-1/2 BEND		11-1/4 BEND	
	A	B	C	H	C	H	C	H	C	H	C	H	
4	14	4	24	12	26	15	18	12	12	12	12	12	
6	18	6	36	18	36	24	30	18	24	12	12	12	
8	20	8	36	30	42	36	36	24	24	18	18	12	
10	20	10	48	36	66	36	36	36	28	24	18	18	
12	24	12	66	36	82	42	52	36	40	24	28	18	

NOTE: 1) SEE DETAIL "E" FOR THRUST BLOCK MINIMUM REQUIREMENTS.  
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**HORIZONTAL THRUST BLOCKING FOR FORCE MAINS  
 DETAIL "D"**

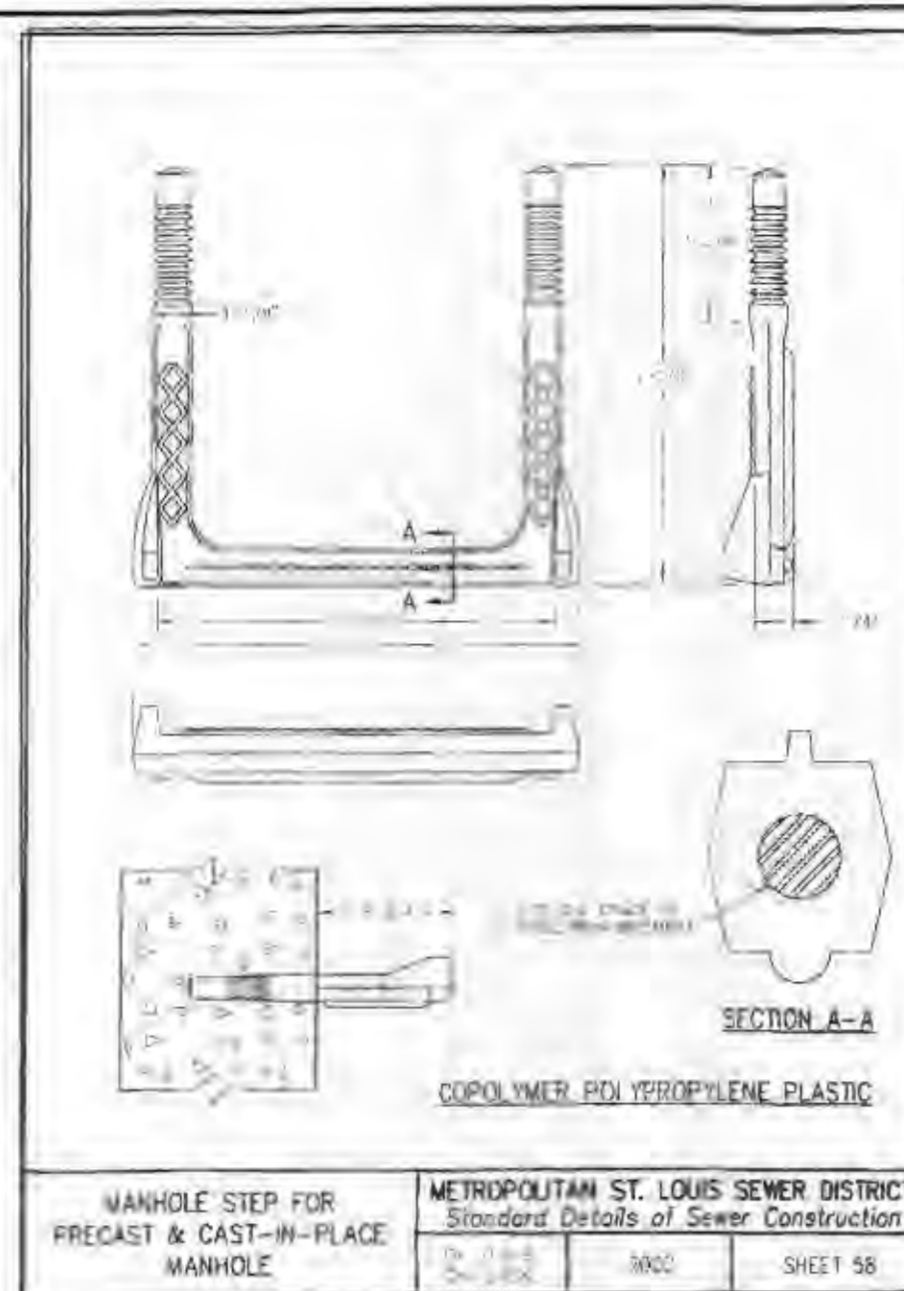
**WATER DETAILS**



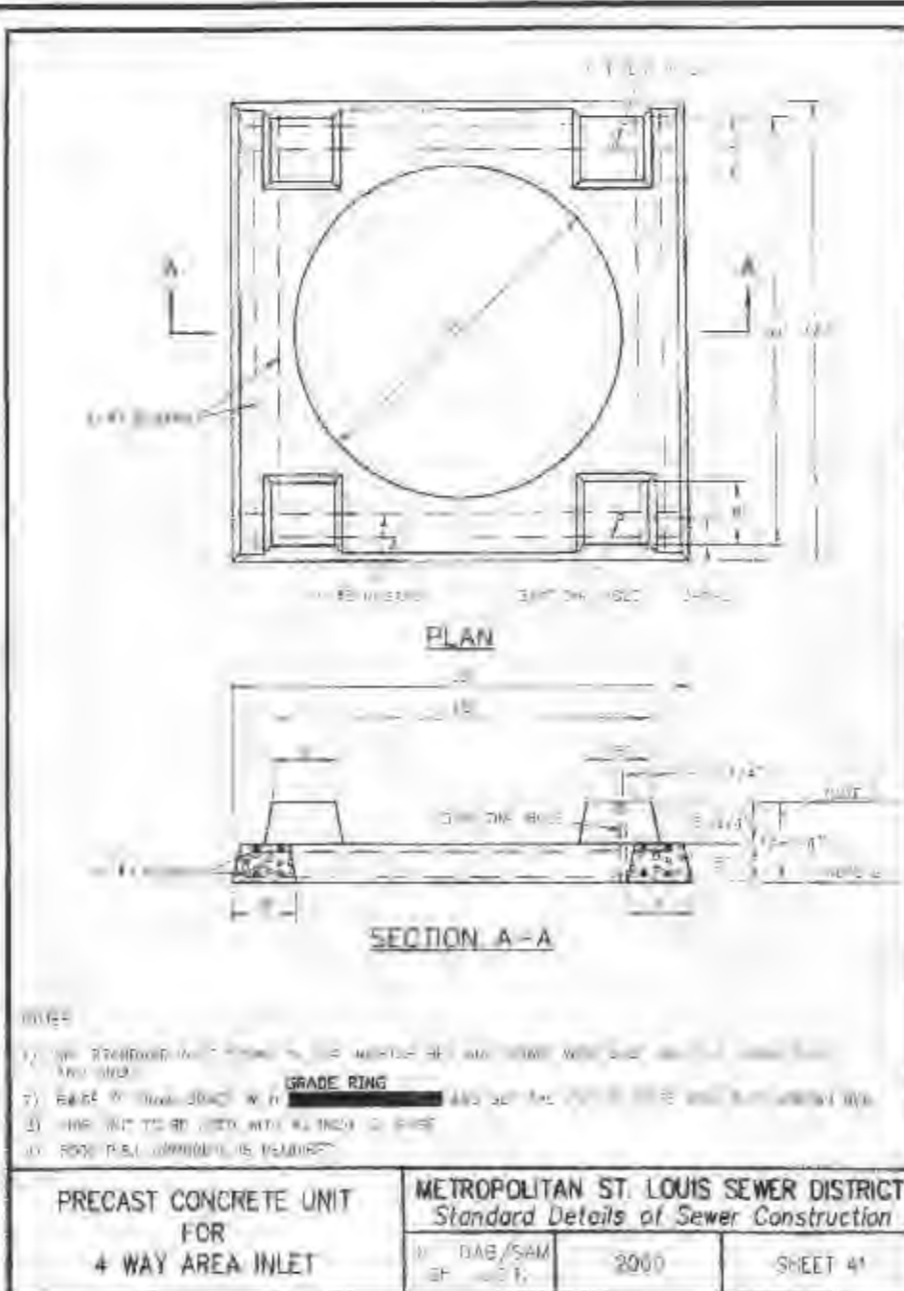
NOTE: 1) SEE DETAIL "E" FOR THRUST BLOCK MINIMUM REQUIREMENTS.  
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**HORIZONTAL THRUST BLOCKING FOR FORCE MAINS  
 DETAIL "D"**



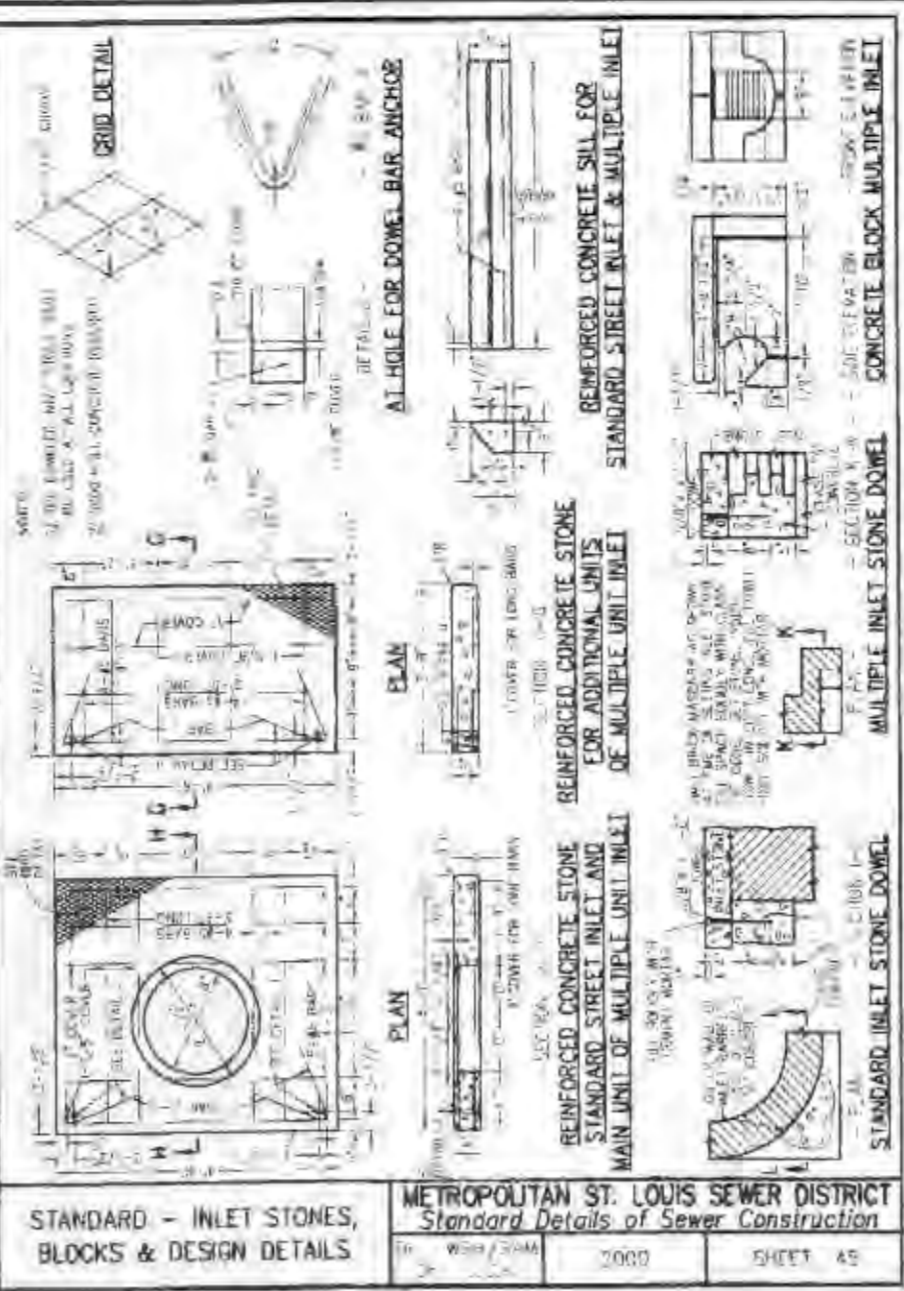
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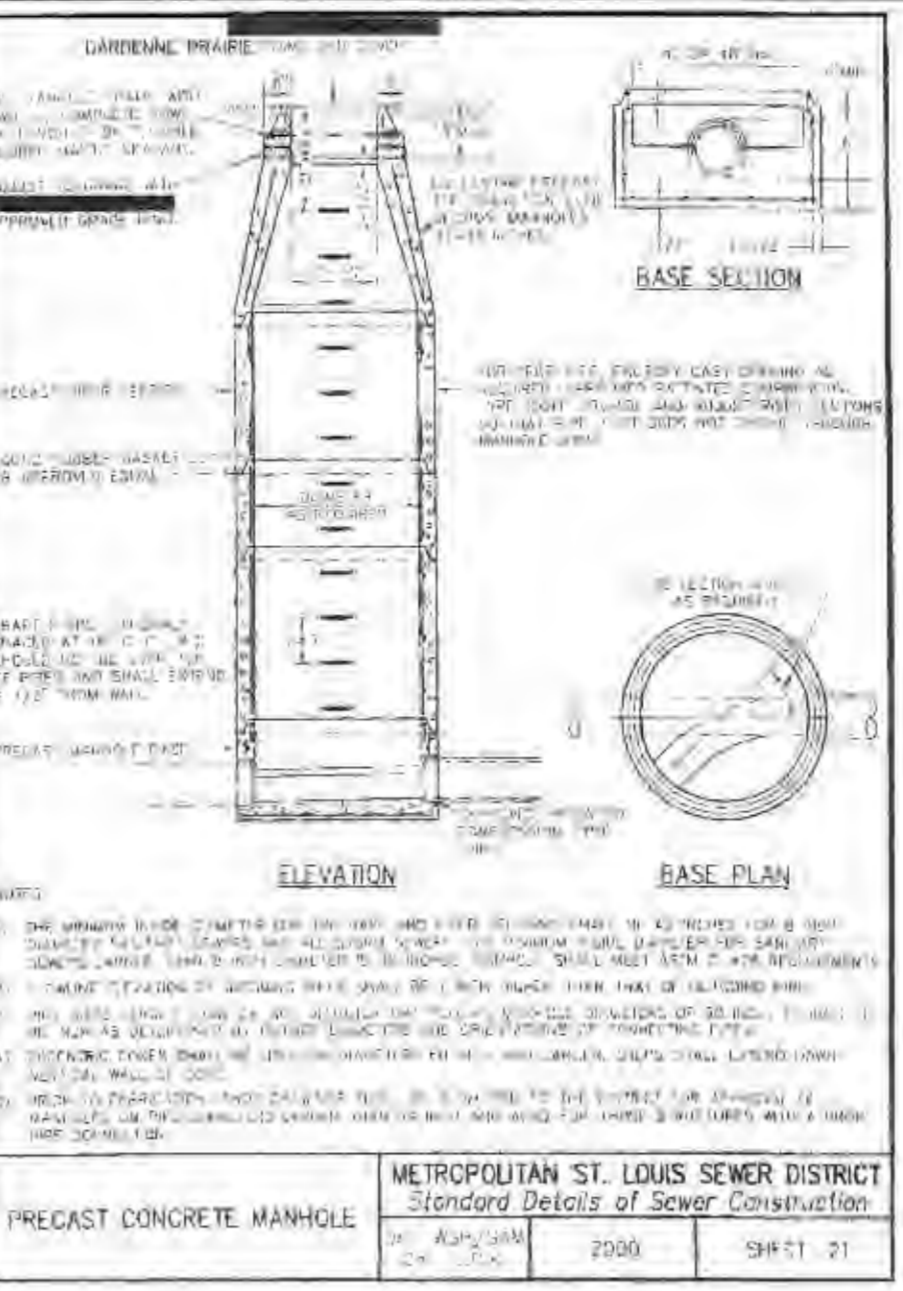
MANHOLE STEP FOR PRECAST & CAST-IN-PLACE MANHOLE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 58



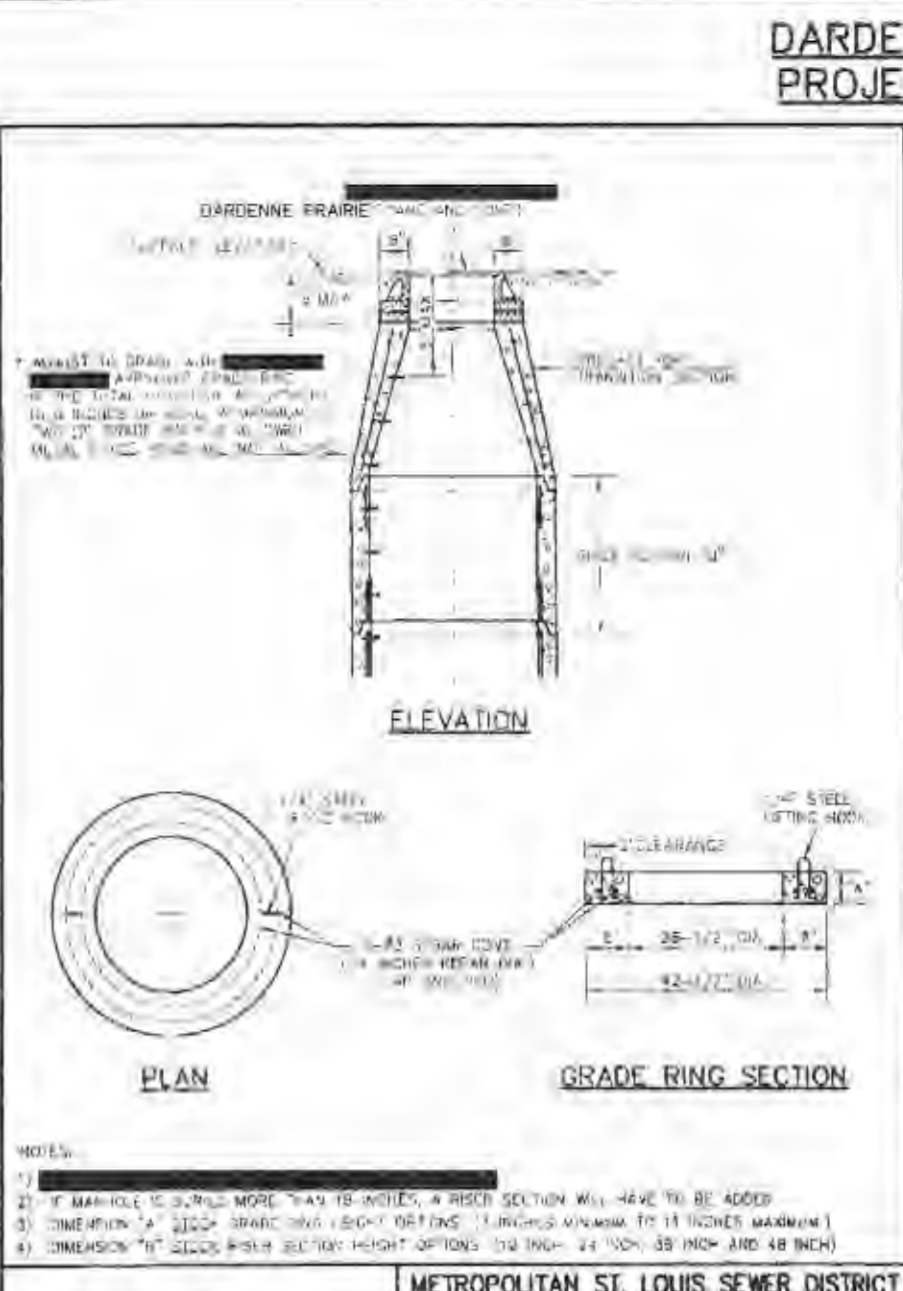
PRECAST CONCRETE UNIT FOR 4 WAY AREA INLET  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 41



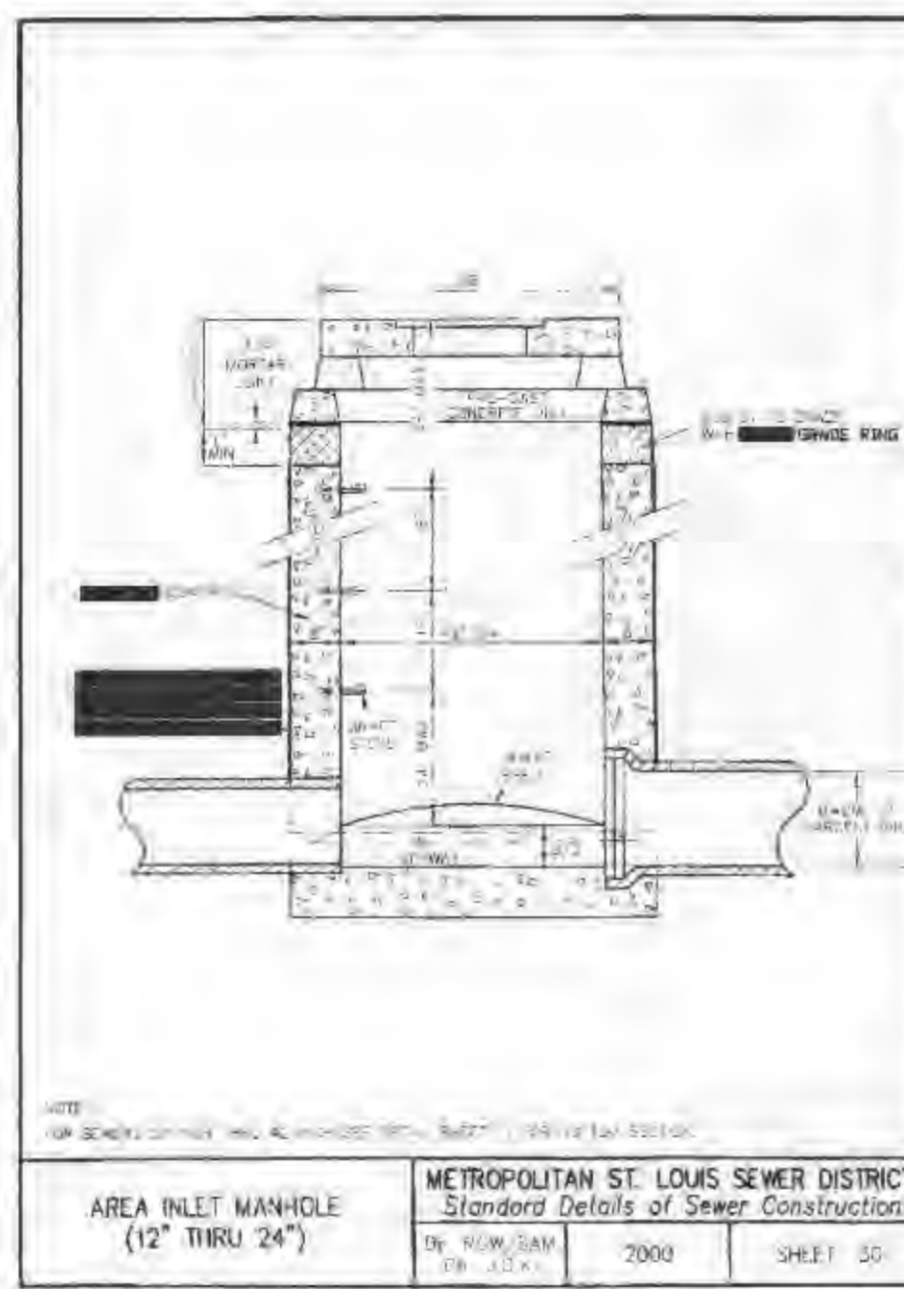
STANDARD - INLET STONES, BLOCKS & DESIGN DETAILS  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 45



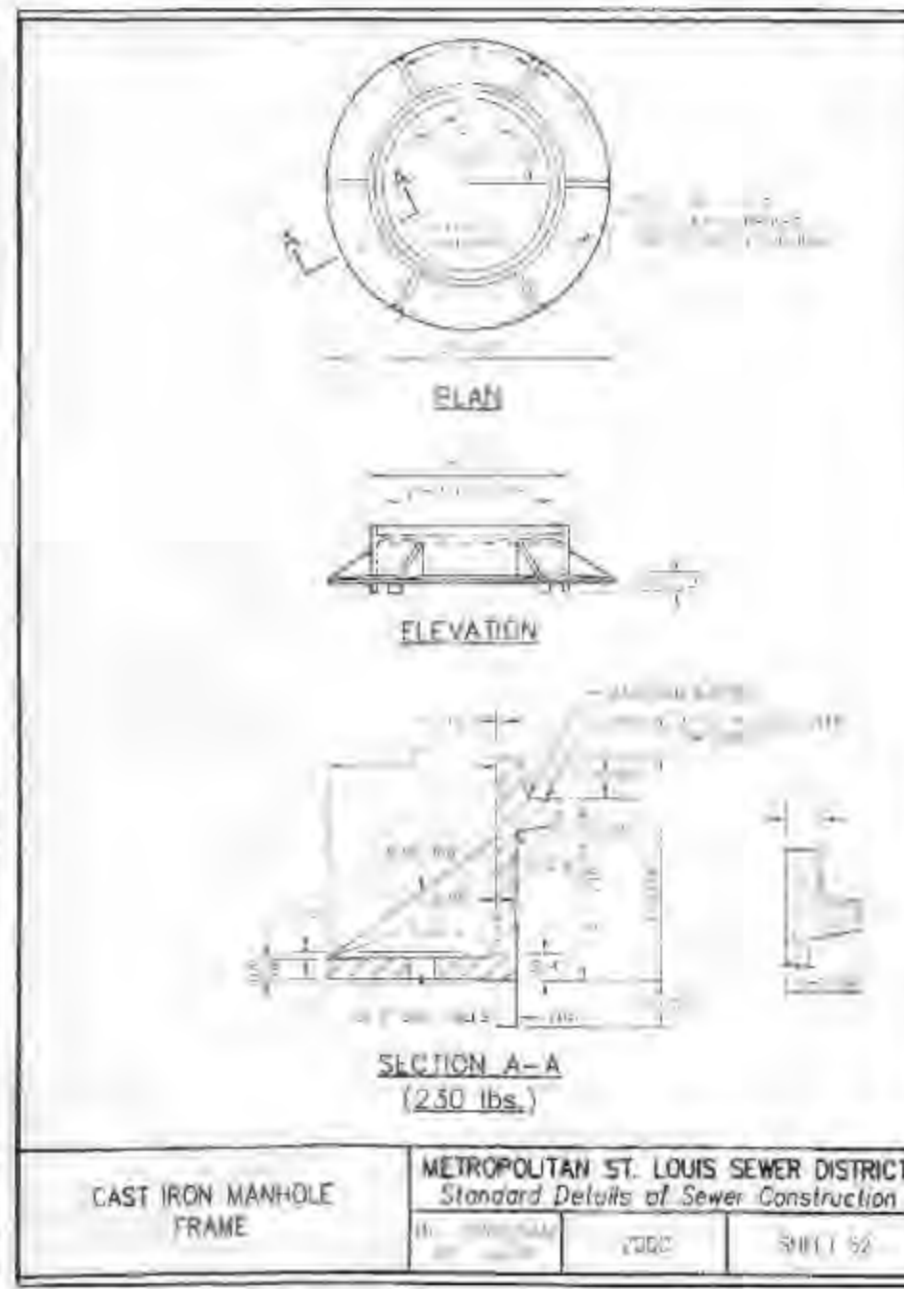
PRECAST CONCRETE MANHOLE  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 21



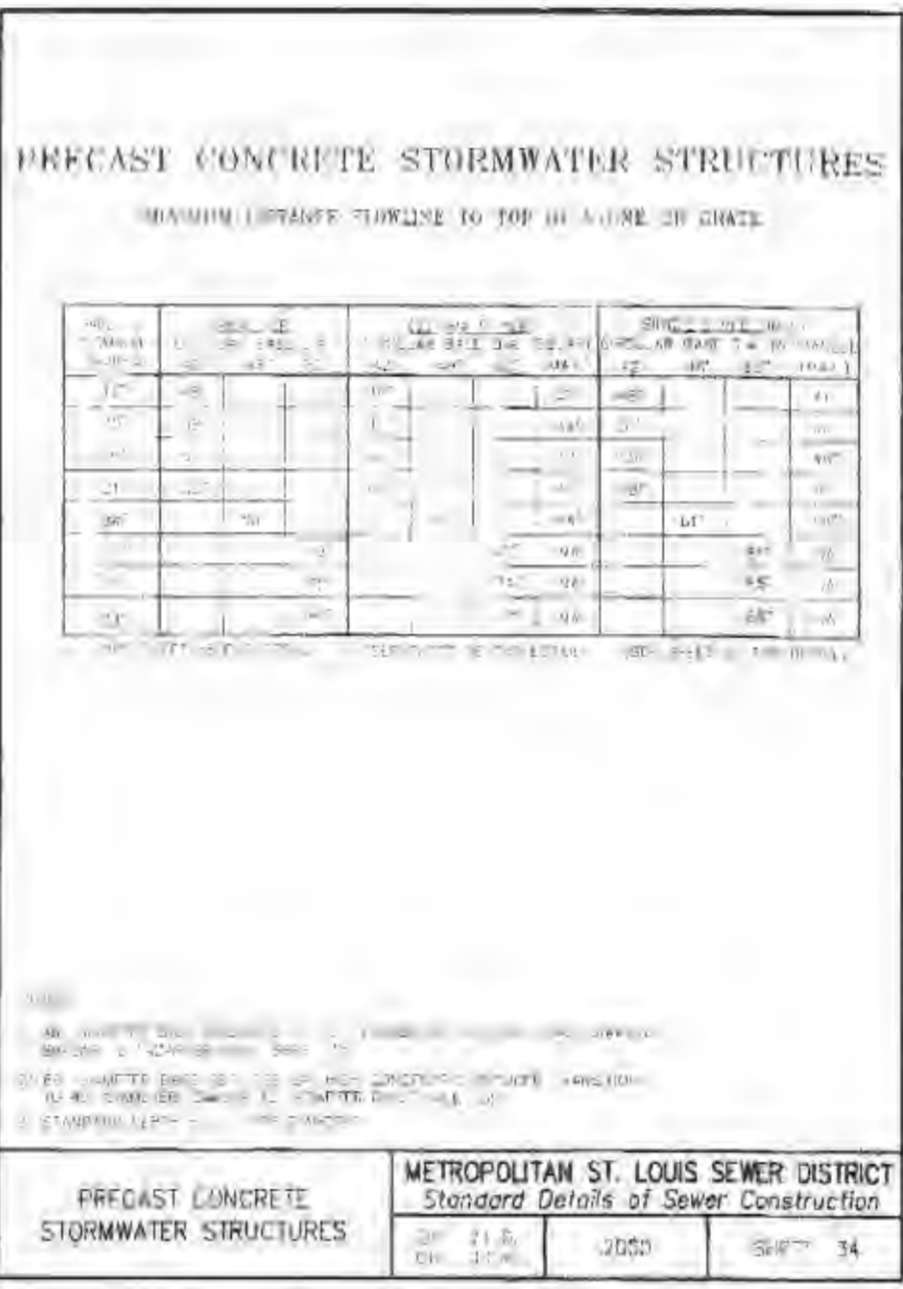
DARDENNE PRAIRIE PROJECT #970730  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 22



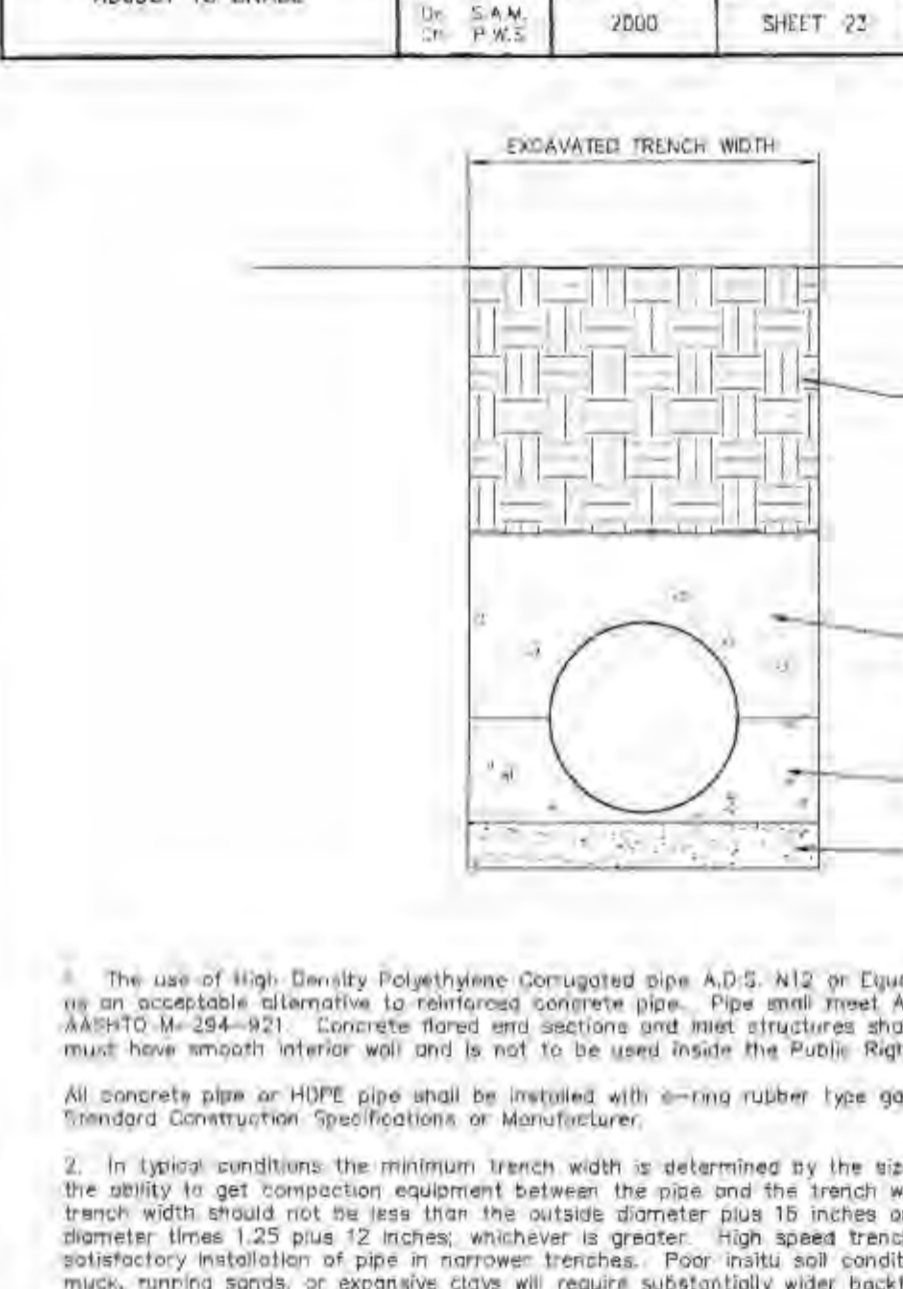
AREA INLET MANHOLE (12' THRU 24')  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 50



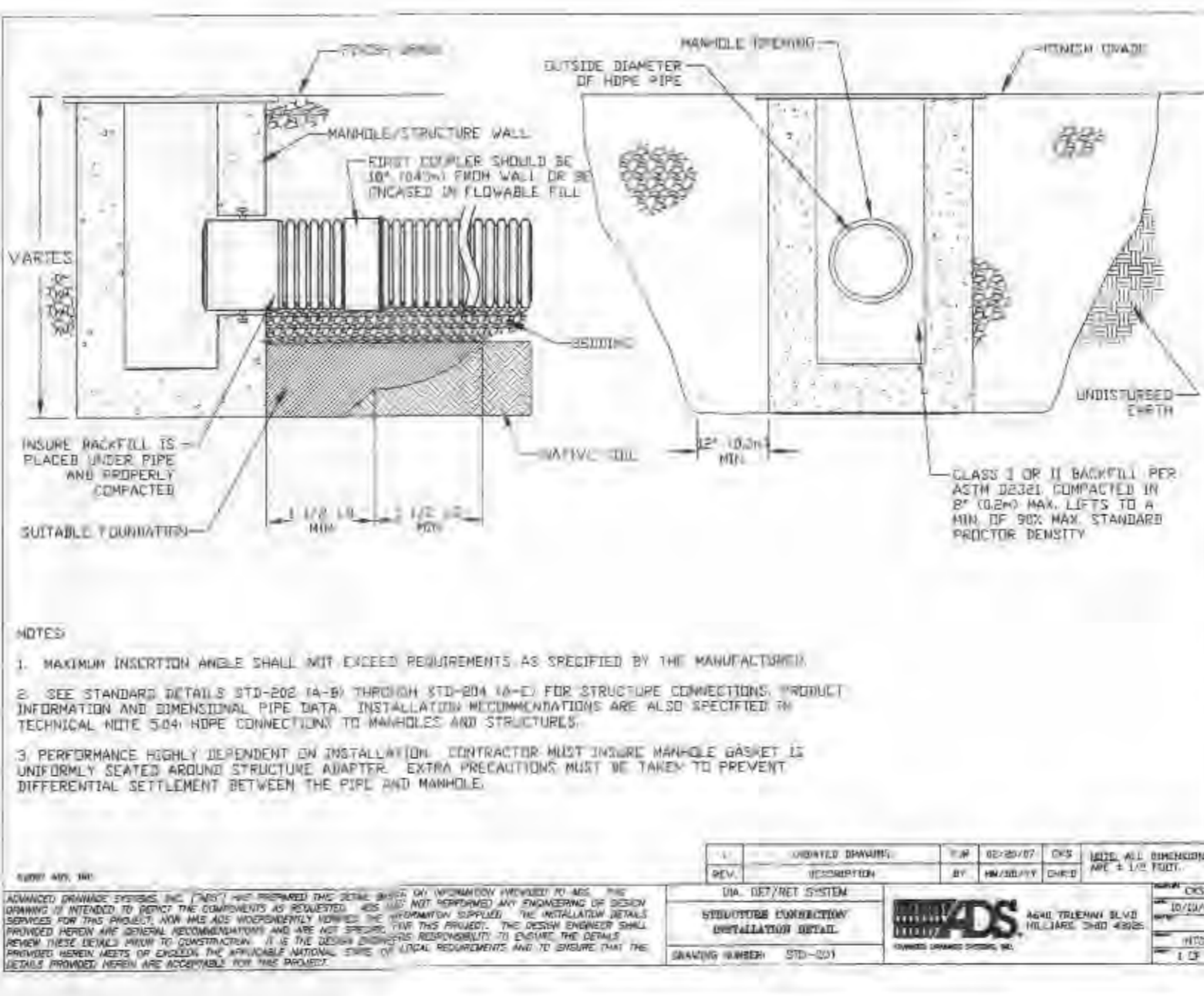
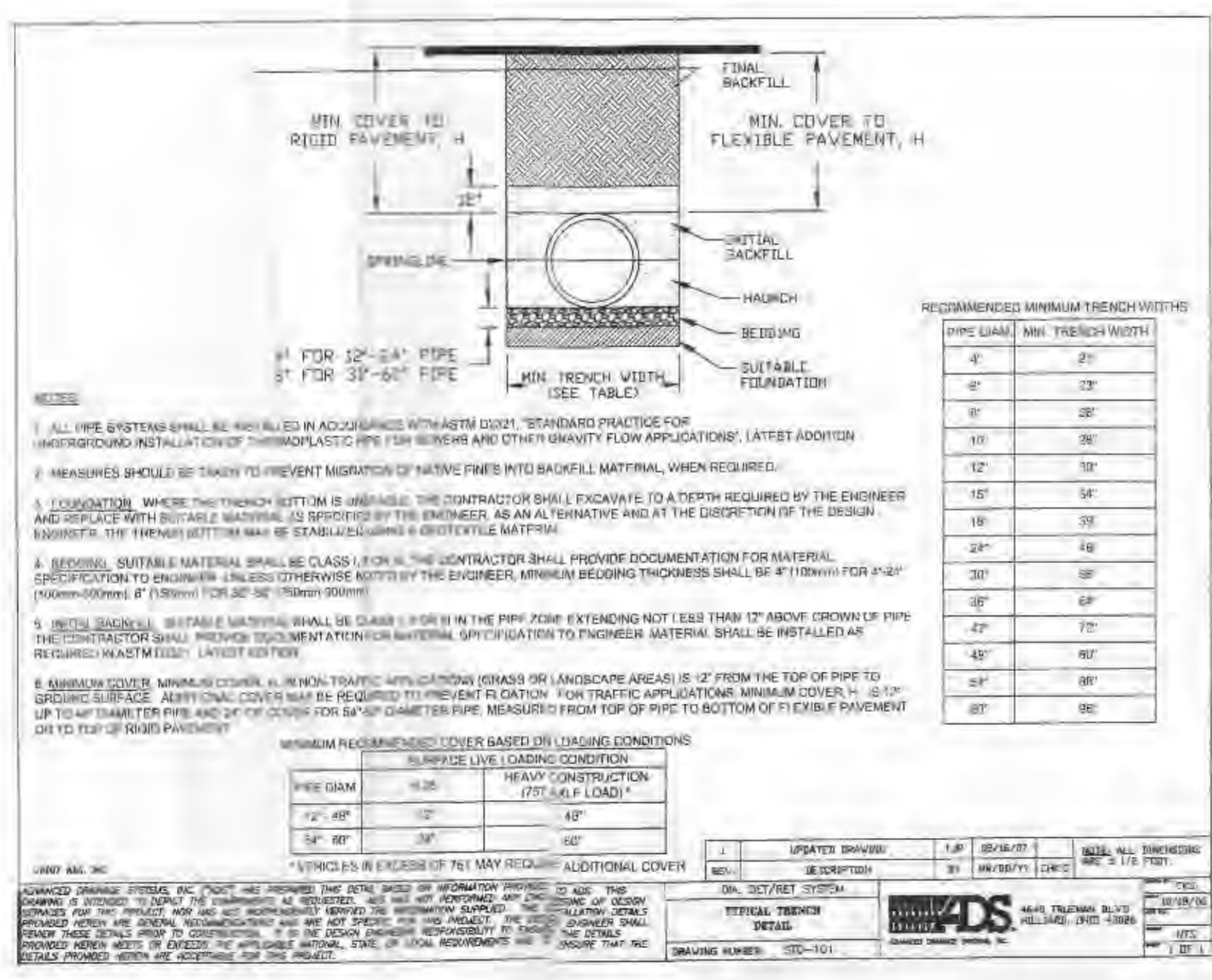
CAST IRON MANHOLE FRAME  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 52



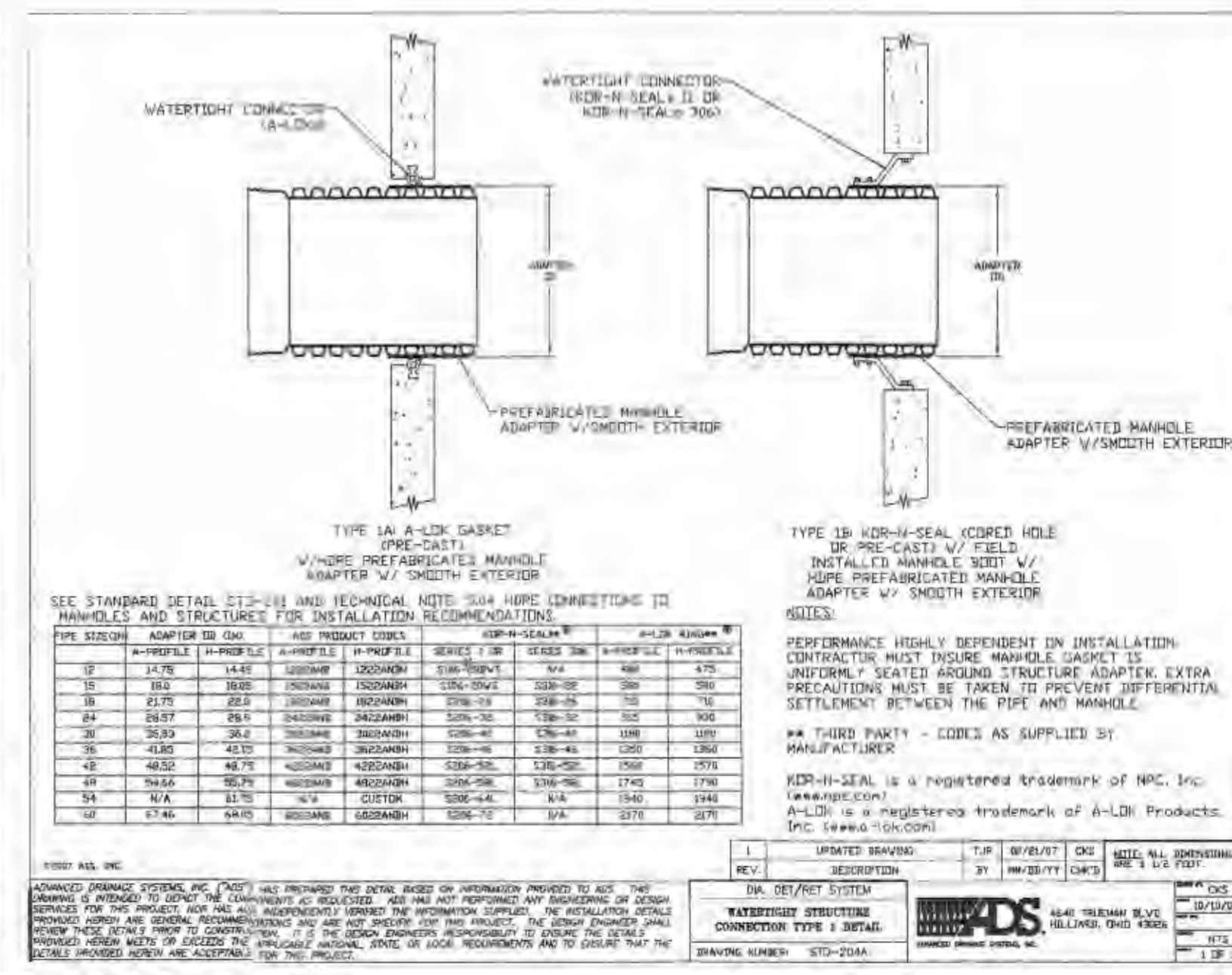
PRECAST CONCRETE STORMWATER STRUCTURES  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 34



H.D.P.E. PIPE DETAIL



MANHOLE OPENING  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 31



MANHOLE CONNECTION  
 METROPOLITAN ST. LOUIS SEWER DISTRICT  
 Standard Details of Sewer Construction  
 2000 SHEET 32



ENGINEERING  
 DRAWING  
 SURVEYING  
 LARRY DAVID  
 No. PE-2007020343  
 221 Park West Blvd.  
 St. Charles, MO 63301  
 636-928-5562  
 FAX 928-998-1718

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 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

**TITLE**  
 CONSTRUCTION DETAILS

**REVISIONS**

NO.	DATE	DESCRIPTION
08-13-08	PWSO Comments	
09-12-08	Review Office	
09-23-08	Per City Comments	
10-29-08	PWSO Comments	

**COMM#** 2007033 **DATE** 12 June 08

**C111**

**BAX PROJECT #:** 03-12502DA

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 DHUD # 085-EE-093-NP-WAH/MO36-S061-003

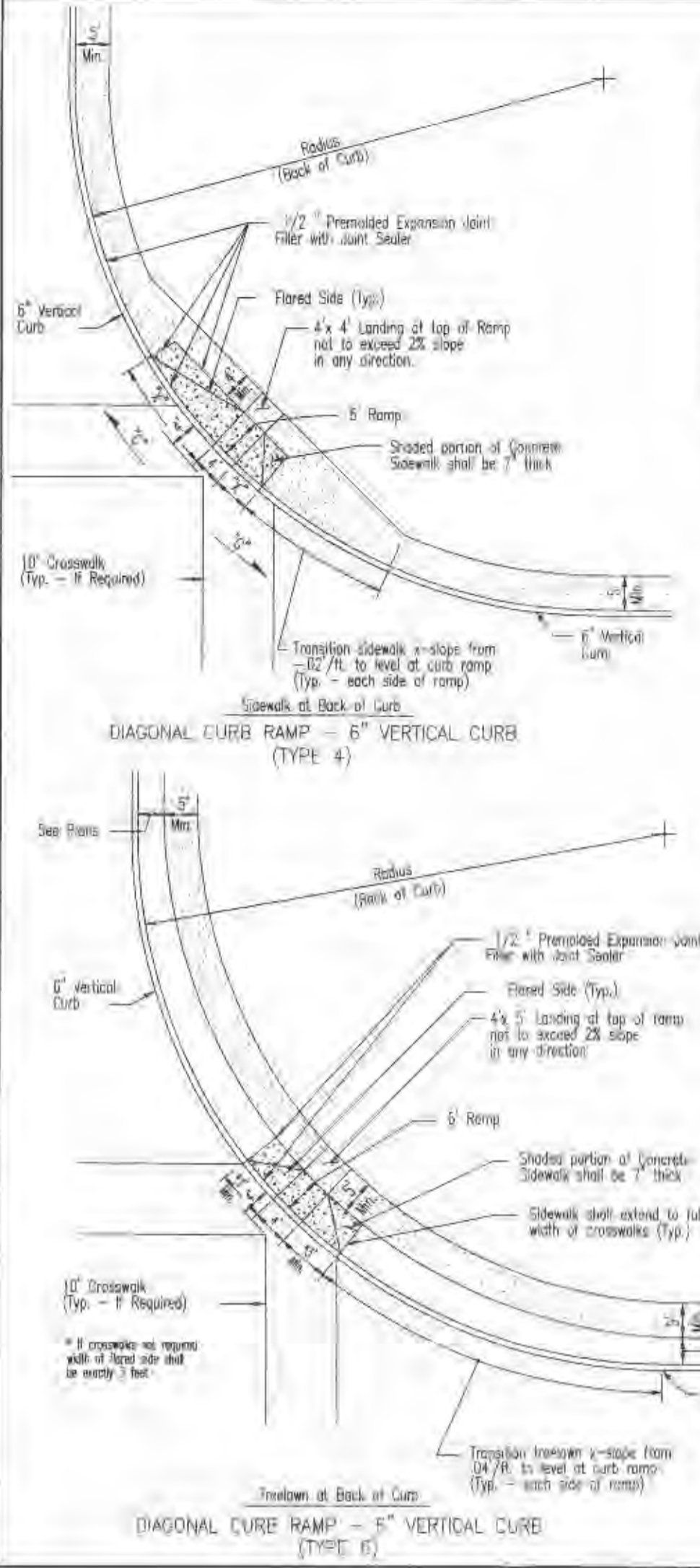
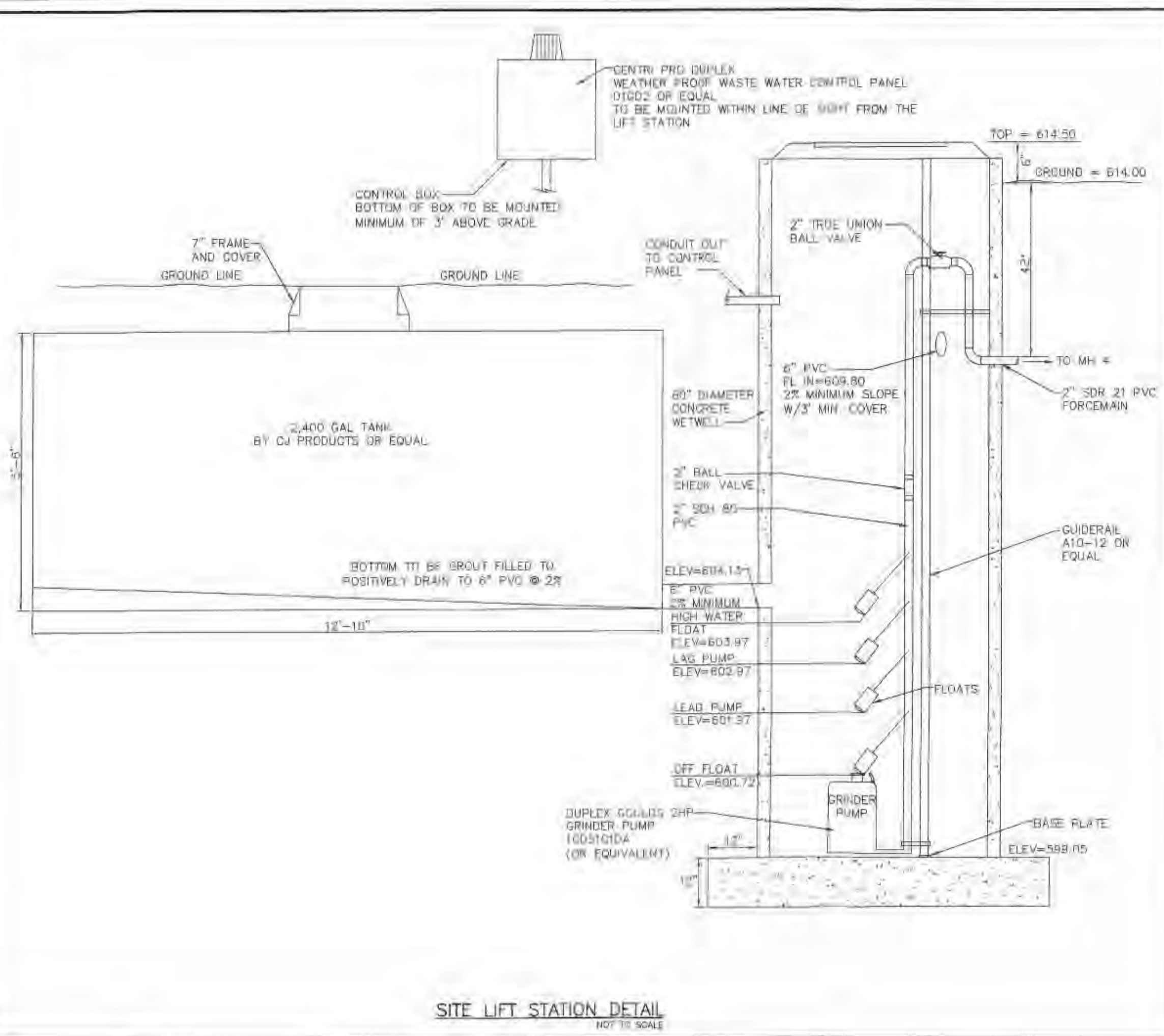
**TITLE**  
 CONSTRUCTION  
 DETAILS

**REVISIONS**  
 08-13-08 PWSO Comments  
 09-12-08 Revise Offset  
 09-23-08 Per City Comments  
 10-28-08 PWSO Comments

**COMM#** 2007033  
**DATE** 12 June 08

**C112**  
**S3**

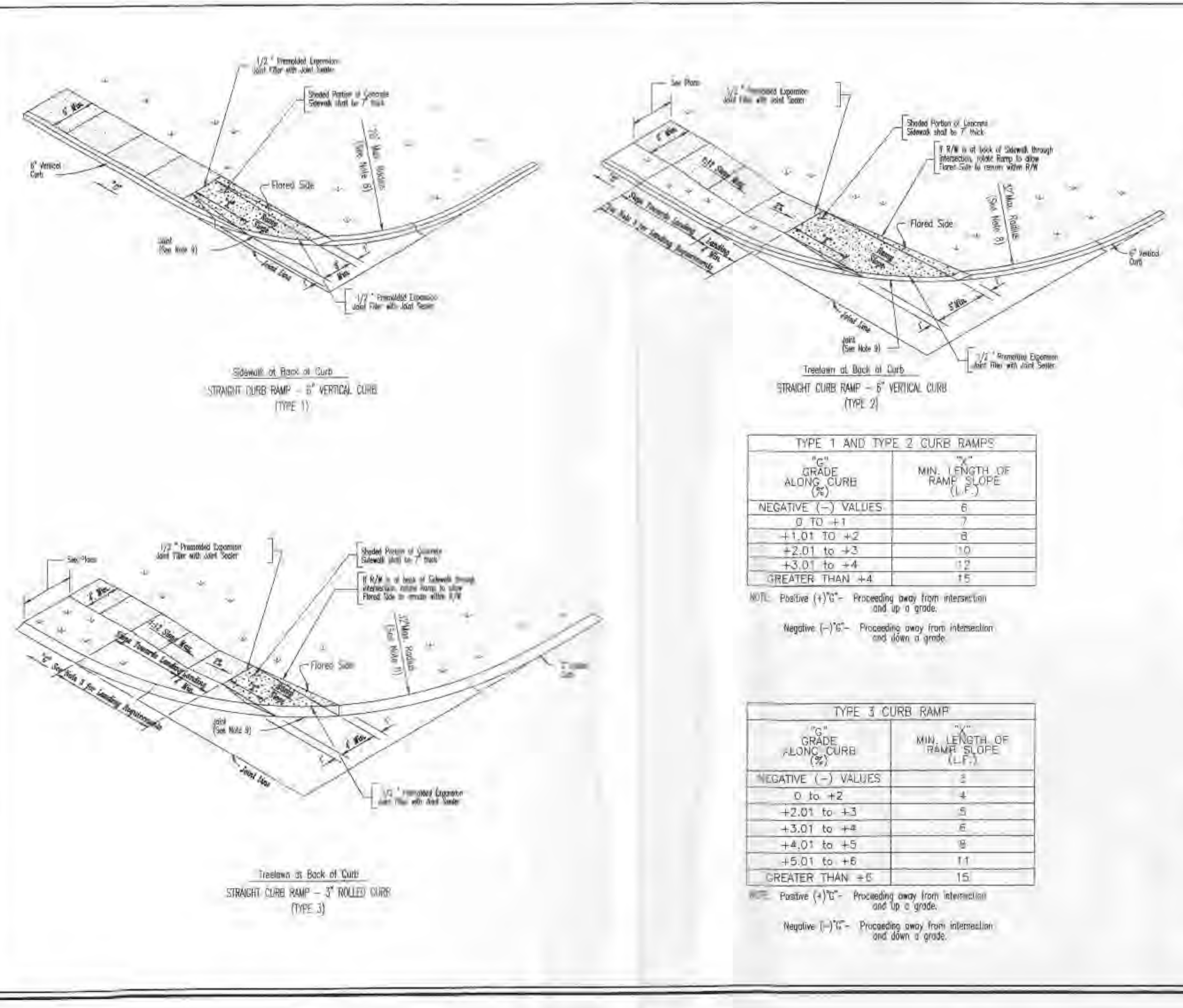
BAX PROJECT #: 03-12502DA



**TYPE 4 AND TYPE 5 CURB RAMP (WHERE PEDESTRIANS CAN WALK ACROSS RAMP)**

GRADE ALONG CURB THROUGH ROUNDING (S)	MIN. LENGTH OF FLARED SIDE ALONG CURB (L-F)
0 TO +1	5
+1.01 TO +2	6
+2.01 TO +3	7
+3.01 TO +4	8
+4.01 TO +5	9
+5.01 TO +6	10
GREATER THAN +6	11

- GENERAL NOTES**
- Do not scale drawing. Follow dimensions.
  - Sidewalk and sidewalk curb ramps shall be constructed in accordance with these details and the current approved Americans with Disabilities Act Accessibility Guidelines (ADAAG).
  - Minimum sidewalk width along 6" vertical curb shall be 5 feet. Minimum sidewalk width along 3" rolled curb shall be 4 feet.
  - Maximum sidewalk cross slope 0.02/ft.
  - All sidewalk sections shall be 4" thick, except where indicated as 7" thick by blocked portions shown on details. All sidewalk sections and curb ramps, regardless of thickness, shall be paid for on concrete sidewalk.
  - Where curb ramp meets pavement, bullnose will not be permitted.
  - If monolithic concrete curb is constructed, strike a dummy joint across bottom of ramp at curb line. If concrete curb is double-cast, block out pavement to provide full depth curb across ramp from outer point of curb taper to inner point of curb taper.
  - For sidewalk locations on Out-to-Side, refer to Pavement Construction Details.
  - For pavement longitudinal and transverse joints and details and for requirements and dimensions, refer to the Pavement Construction Details for Joints and Curbs, Sec. Div. C022.03.
  - For roadway cross slopes, pavement types, and thicknesses, refer to Standard Typical Section.
  - All curb ramps shall have a detectable warning complying with Americans with Disabilities Act Accessibility Guidelines (ADAAG).



**TYPE 1 AND TYPE 2 CURB RAMP**

GRADE ALONG CURB THROUGH ROUNDING (S)	MIN. LENGTH OF RAMP SLOPE (L-F)
0 TO +1	6
+1.01 TO +2	7
+2.01 TO +3	8
+3.01 TO +4	9
+4.01 TO +5	10
+5.01 TO +6	11
GREATER THAN +6	12

**TYPE 3 CURB RAMP**

GRADE ALONG CURB THROUGH ROUNDING (S)	MIN. LENGTH OF RAMP SLOPE (L-F)
0 TO +2	3
+2.01 TO +3	4
+3.01 TO +4	5
+4.01 TO +5	6
+5.01 TO +6	7
GREATER THAN +6	8

- GENERAL NOTES**
- Do not scale drawing. Follow dimensions.
  - Sidewalk and sidewalk curb ramps shall be constructed in accordance with these details and the current approved Americans with Disabilities Act Accessibility Guidelines (ADAAG).
  - Provide a landing at the top of each straight ramp when the grade along curb (S) is greater than +2% and less than +7%. For other values of including all required, no landing is required.
  - Minimum sidewalk width along 6" vertical curb shall be 5 feet. Minimum sidewalk width along 3" rolled curb shall be 4 feet.
  - Maximum sidewalk cross slope 0.02/ft.
  - All sidewalk sections shall be 4" thick, except where indicated as 7" thick by blocked portions shown on details. All sidewalk sections and curb ramps, regardless of thickness, shall be paid for on concrete sidewalk.
  - Where curb ramp meets pavement, bullnose will not be permitted.
  - Construct a dropped ramp when the maximum crown radius allowed for a straight ramp is exceeded.
  - If monolithic concrete curb is constructed, strike a dummy joint across bottom of ramp at curb line. If concrete curb is double-cast, block out pavement to provide full depth curb across ramp from outer point of curb taper to inner point of curb taper.
  - For sidewalk locations on Out-to-Side, refer to Pavement Construction Details.
  - For pavement longitudinal and transverse joints and details and for requirements and dimensions, refer to the Pavement Construction Details for Joints and Curbs, Sec. Div. C022.03.
  - For roadway cross slopes, pavement types, and thicknesses, refer to Standard Typical Section.
  - All curb ramps shall have a detectable warning complying with Americans with Disabilities Act Accessibility Guidelines (ADAAG).

SAINT CHARLES COUNTY  
 HIGHWAY DEPARTMENT  
 ST. CHARLES, MISSOURI  
**PAVEMENT CONSTRUCTION DETAILS**  
**CONCRETE SIDEWALK AND CURB RAMP**  
 DATE: June, 2002  
 DRAWING C808.10