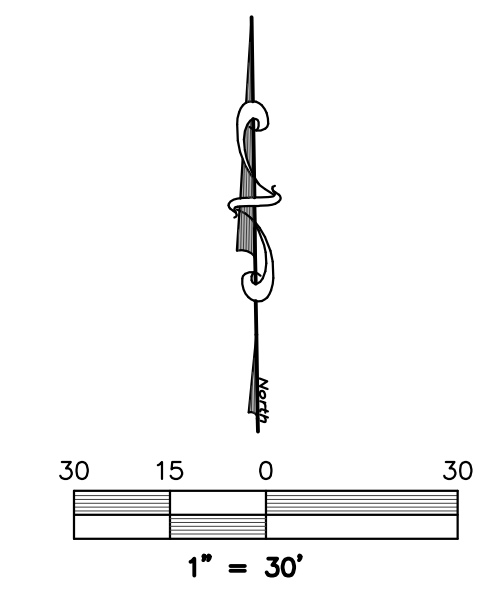


VICINITY MAP
NOT TO SCALE



LEGEND

- = PROPERTY LINE
- - - - - = EX. WATER
- - - - - = EX. SANITARY SEWER
- ⊙ = EX. SS MANHOLE
- = EX. SS CLEANOUT
- ⊙ = EX. GAS METER
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- = PROPOSED FIRELANE & ACCESS ESMT
- = PROPOSED 8" PAVING

AS-BUILT
OCTOBER 27, 2009
GERALD E. MONK, P.E.

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SITE & DIMENSION CONTROL PLAN

THOMAS DEVELOPMENTS

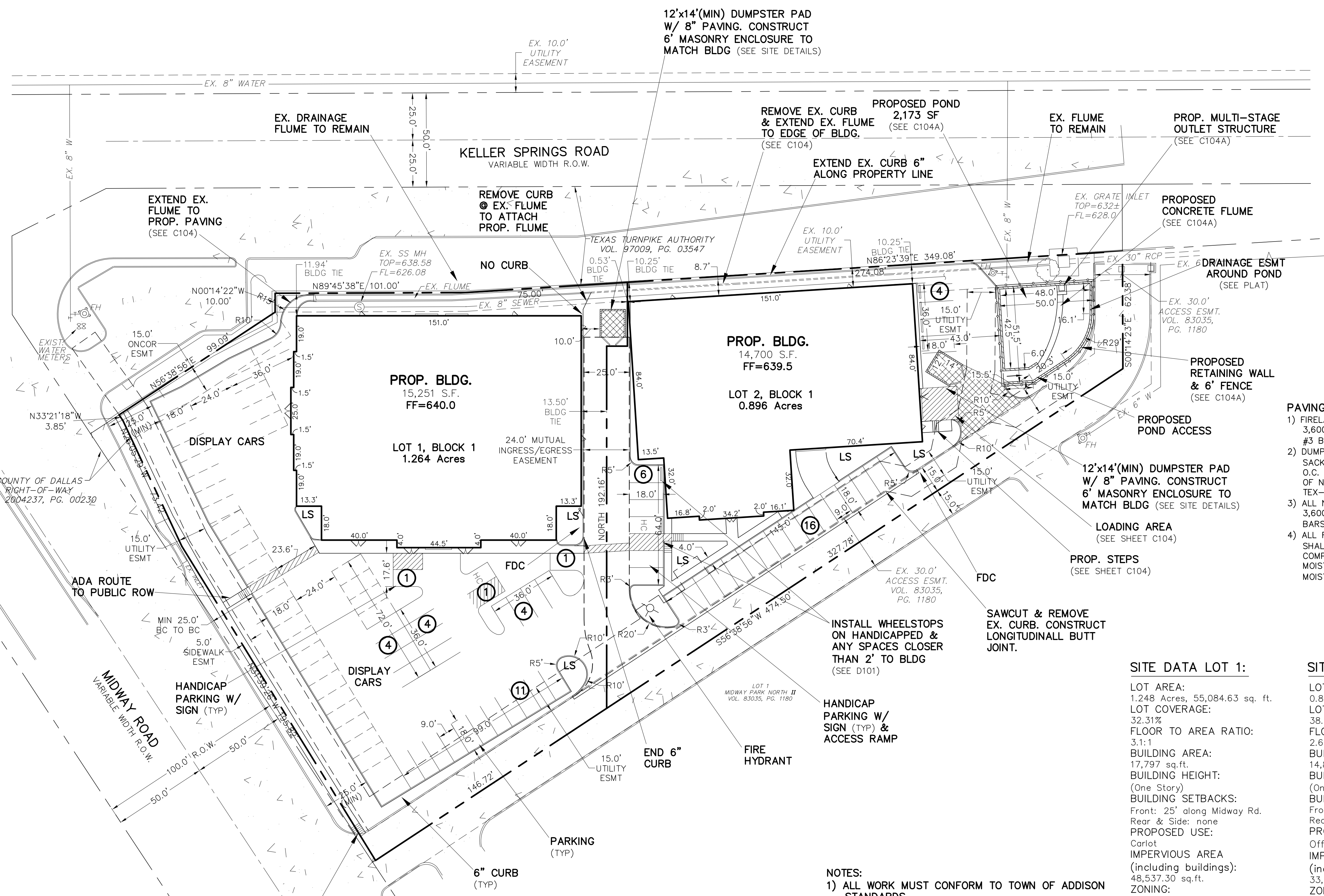
THOMAS DEVELOPMENTS
LOTS 1 & 2, BLOCK 1, 2.16 Acres
Town of Addison, Dallas County, Texas

developer
TOM SPAGNOLA
3211 Valley Forge Drive, McKinney, Texas 75070
972 926-8086 Fax 972 481-1640

prepared by
MONK CONSULTING ENGINEERS
1200 W. State Street, Garland Texas 75040
972 272-1763 Fax 972 272-8761

PROJECT NO.: 2007-24

date: 8/13/08 scale: 1" = 30' sheet: C101



GENERAL NOTES

- Buildings 500 square feet or greater shall be sprinkled. Alternative fire protective measures may be approved by the Building Inspector and Fire Department.
- Fire lanes shall be designed and constructed per town standards.
- Handicapped parking areas shall be designed and provided per town standards and shall comply with requirements of the current adopted Uniform Building Code.
- Mechanical units, dumpsters and trash compactors shall be screened in accordance with the Zoning Ordinance
- All signage contingent upon Building Inspection Department Approval.
- Approval of the site plan is not final until all engineering plans are approved.
- Please contact the Building Inspection Department to determine the type of construction and occupancy group.
- All electrical transmission, distribution and service lines must be underground.
- Sidewalks and accessible routes shall have a slope no greater than 5% and a cross fall of no greater than 2% unless otherwise noted.

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- SEE STD. DETAILS SHEETS FOR PRIVATE DETAILS. ALL PRIVATE DETAILS ARE SUPERSEDED BY STANDARD TOWN DETAILS.
- SEE PLAT FOR ALL INFORMATION REGARDING EASEMENTS, PROPERTY LINES, ETC.
- ALL DIMENSIONS ARE FACE OF CURB TO FACE OF CURB UNLESS OTHERWISE NOTED.

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SITE DATA LOT 1:

LOT AREA: 1.248 Acres, 55,084.63 sq. ft.
LOT COVERAGE: 32.31%
FLOOR TO AREA RATIO: 3.1:1
BUILDING AREA: 17,797 sq.ft.
BUILDING HEIGHT: (One Story)
BUILDING SETBACKS: Front: 25' along Midway Rd. Rear & Side: none
PROPOSED USE: Carlot
IMPERVIOUS AREA (including buildings): 48,537.30 sq.ft.
ZONING:

PARKING:
Parking Required = 26
1 SP per 300sf Office (2782/300=10)
1 SP per 1000sf Warehouse (15015/1000=16)
Handicapped Provided = 1
Total Provided = 26
LANDSCAPE AREA: Required: 5,508 sq.ft. (10% of 55,085) Provided: 6,547.33 sq.ft.

SITE DATA LOT 2:

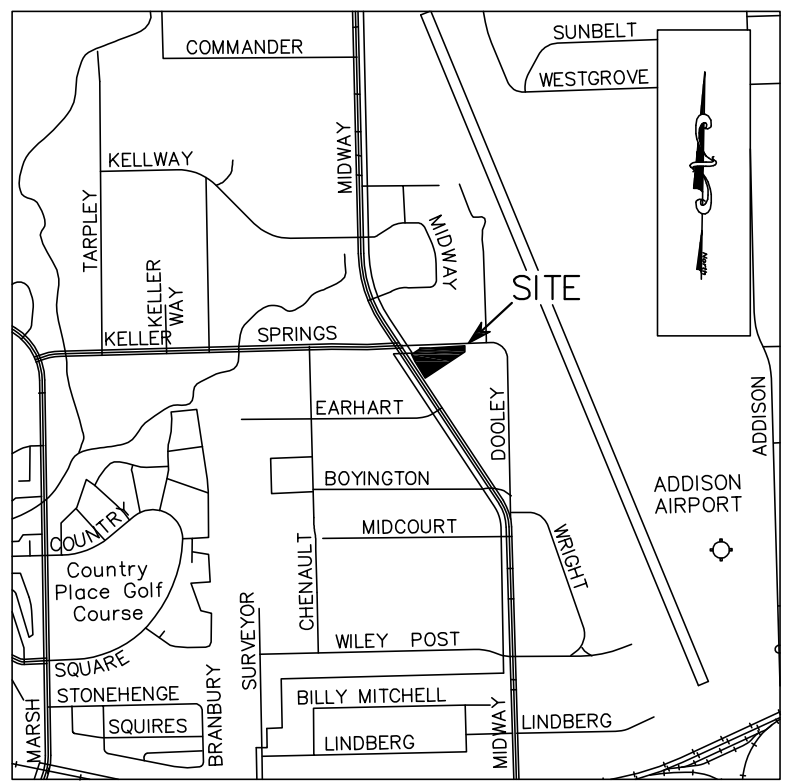
LOT AREA: 0.896 Acres, 39,014.30 sq. ft.
LOT COVERAGE: 38.19%
FLOOR TO AREA RATIO: 2.6:1
BUILDING AREA: 14,899 sq.ft.
BUILDING HEIGHT: (One Story)
BUILDING SETBACKS: Front: none Rear & Side: none
PROPOSED USE: Office/Warehouse
IMPERVIOUS AREA (including buildings): 33,893.11 sq.ft.
ZONING:

PARKING:
Parking Required = 21
1 SP per 300sf Office (2215/300=8)
1 SP per 1000sf Warehouse (12684/1000=13)
Handicapped Provided = 1
Total Provided = 26
LANDSCAPE AREA: Required: 3,901 sq.ft. (10% of 39,014) Provided: 5,121.2 sq.ft.

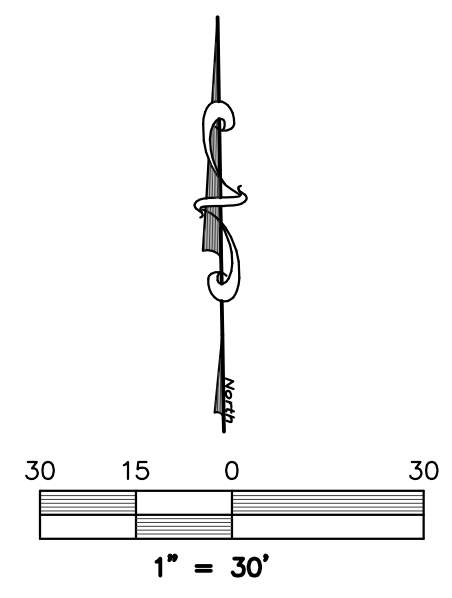
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EASTING 2,466,177.089'
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- (P) = PROP. FIRE HYDRANT

PROPOSED FIRELANE & ACCESS ESMT

revised date:	note
4/1/09	Revised DCCA & FDC locations
4/15/09	Revised FDC location

AS-BUILT
OCTOBER 27, 2009
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UTILITY PLAN

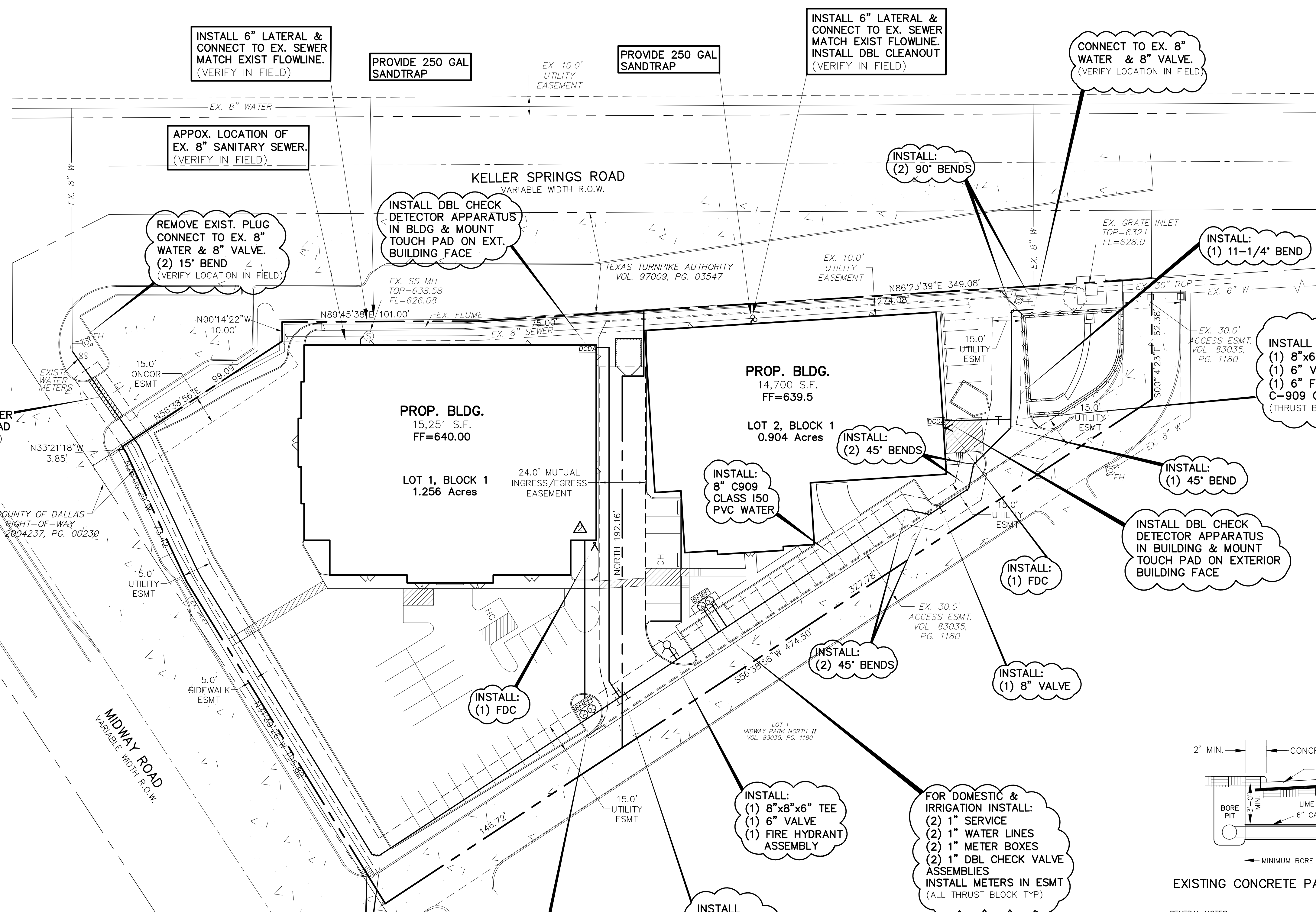
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PROJECT NO.: 2007-24

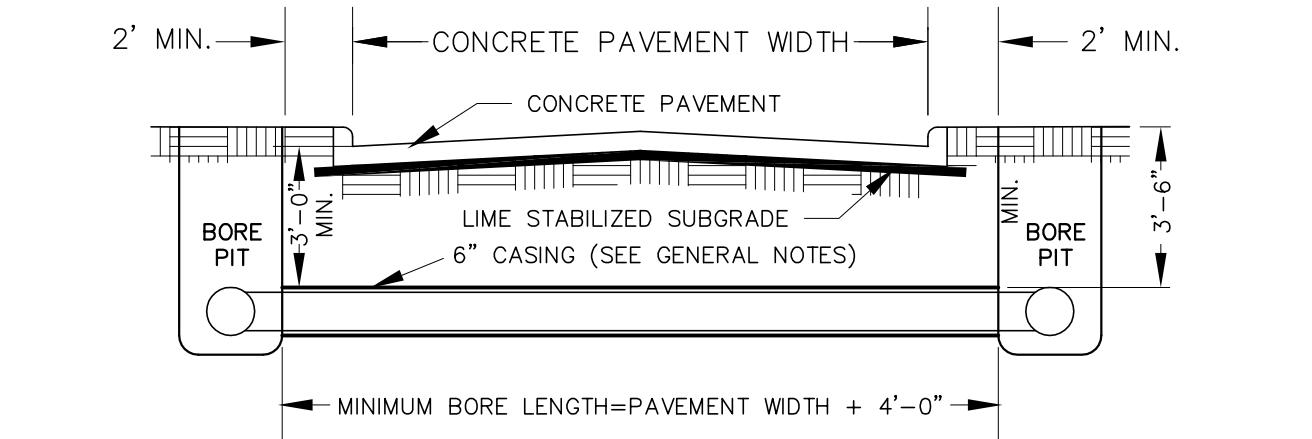
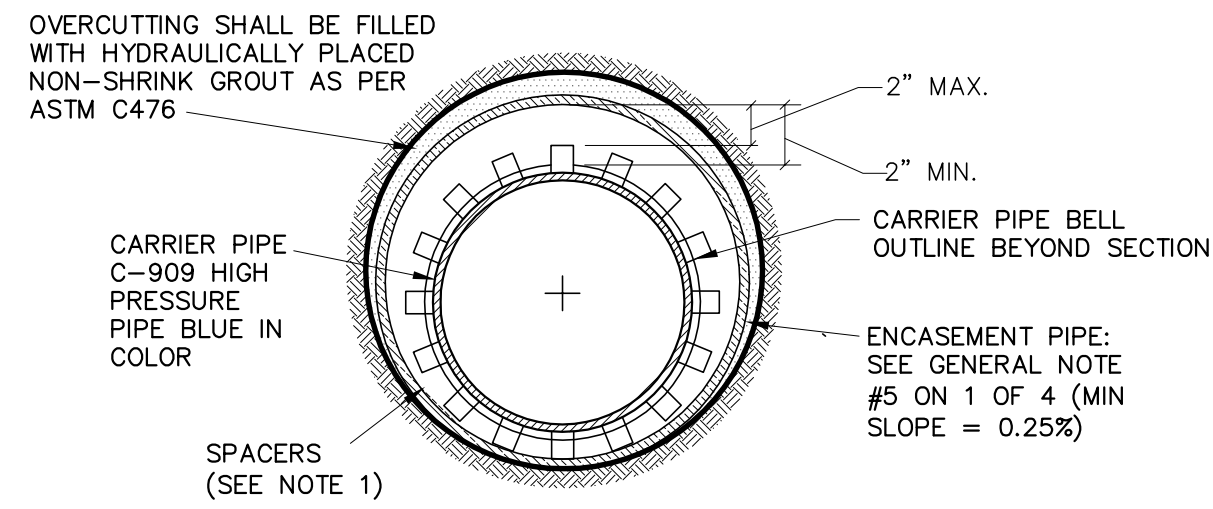
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FOR DOMESTIC & IRRIGATION INSTALL:
(2) 1" SERVICE
(2) 1" WATER LINES
(2) 1" METER BOXES
(2) 1" DBL CHECK VALVE ASSEMBLIES
INSTALL METERS IN ESMT (ALL THRUST BLOCK TYP)

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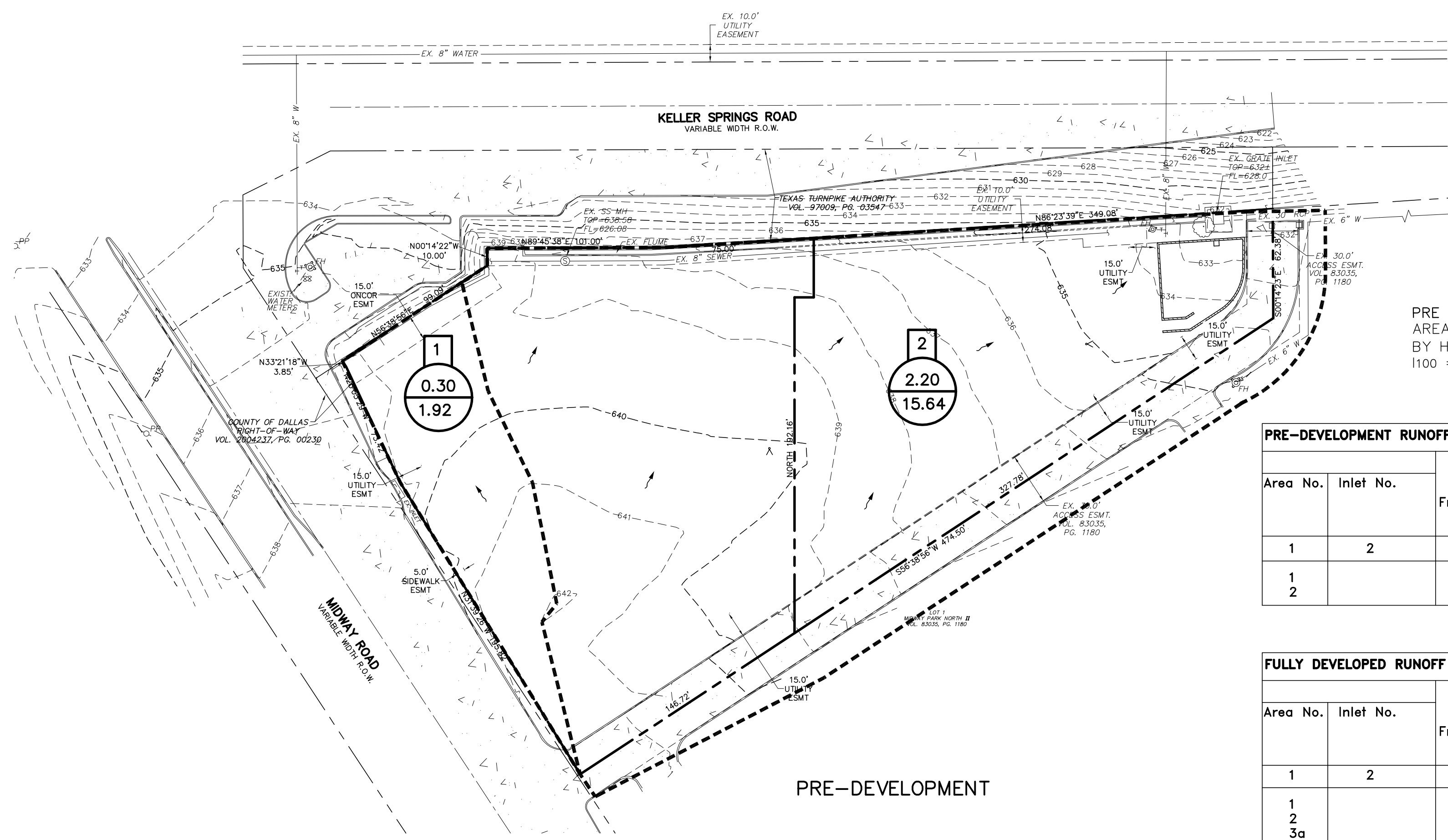
EXISTING CONCRETE PAVEMENT UTILITY INSTALLATION BORE

- GENERAL NOTES:**
- THE USE OF A CASING PIPE WILL BE BASED UPON THE SPECIFIC PROJECT AND SOIL CONDITIONS. THE APPROVED PLANS WILL SHOW THE CASING PIPE WHERE REQUIRED AND THE REQUIRED MATERIALS AS SHOWN IN THE TOWN OF ADDISON STANDARD DETAILS. IN ALL CASES THE INSTALLATION SHALL CONFORM WITH THE GOVERNING AUTHORITY'S STANDARDS.
 - WHERE A BORE PIT EXCEEDS (5) FIVE FEET IN DEPTH THE CONTRACTOR SHALL INSTALL SHORING OF THE PIT WALLS AS REQUIRED BY TEXAS STATE LAW (HB 662 AND HB 665) REGARDING THE SAFETY SYSTEMS TO BE USED DURING TRENCH EXCAVATION (AS STATED IN THE OCCUPATION SAFETY AND HEALTH ADMINISTRATION STANDARDS).
 - ALL BORE PITS SHALL BE BACKFILLED WITHIN FORTY EIGHT (48) HOURS OF UTILITY INSTALLATION. NO BORE PIT SHALL REMAIN OPEN IN EXCESS OF SEVENTY TWO (72) HOURS WITHOUT SHORING TO PREVENT CAVING OF PIT WALLS.
 - WHERE A BORE IS TO BE PARTIALLY OR COMPLETELY ABANDONED, SAID BORE SHALL BE COMPLETELY FILLED WITH HYDRAULICALLY PLACED CEMENT GROUT.
 - CORRUGATED METAL PIPE SHALL NOT BE ACCEPTED AS AN ENCASEMENT PIPE. ONLY DUCTILE IRON PIPE, REINFORCED CONCRETE PIPE, OR HIGH DENSITY STEEL PIPE DESIGNED TO SUIT THE EXISTING SOIL CONDITIONS SHALL BE USED.

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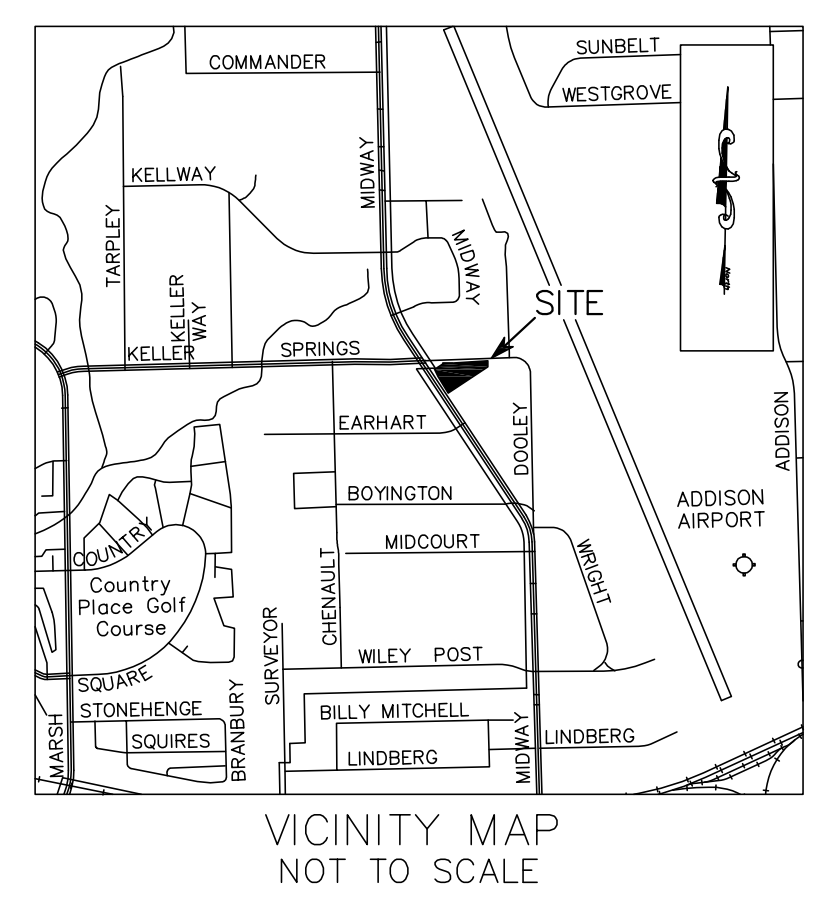
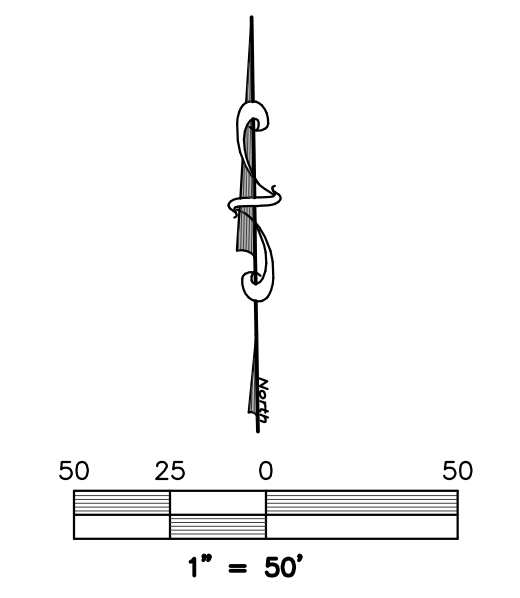
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PRE AREA RUNOFF REFERENCE:
 AREA DA-8W, ADDISON AIRPORT ADDITION,
 BY HDR ENGINEERS DATED 9/9/96
 I100 = 7.9 I50 = 10.6 FOR TUNNEL

PRE-DEVELOPMENT RUNOFF DESIGN CALCULATIONS

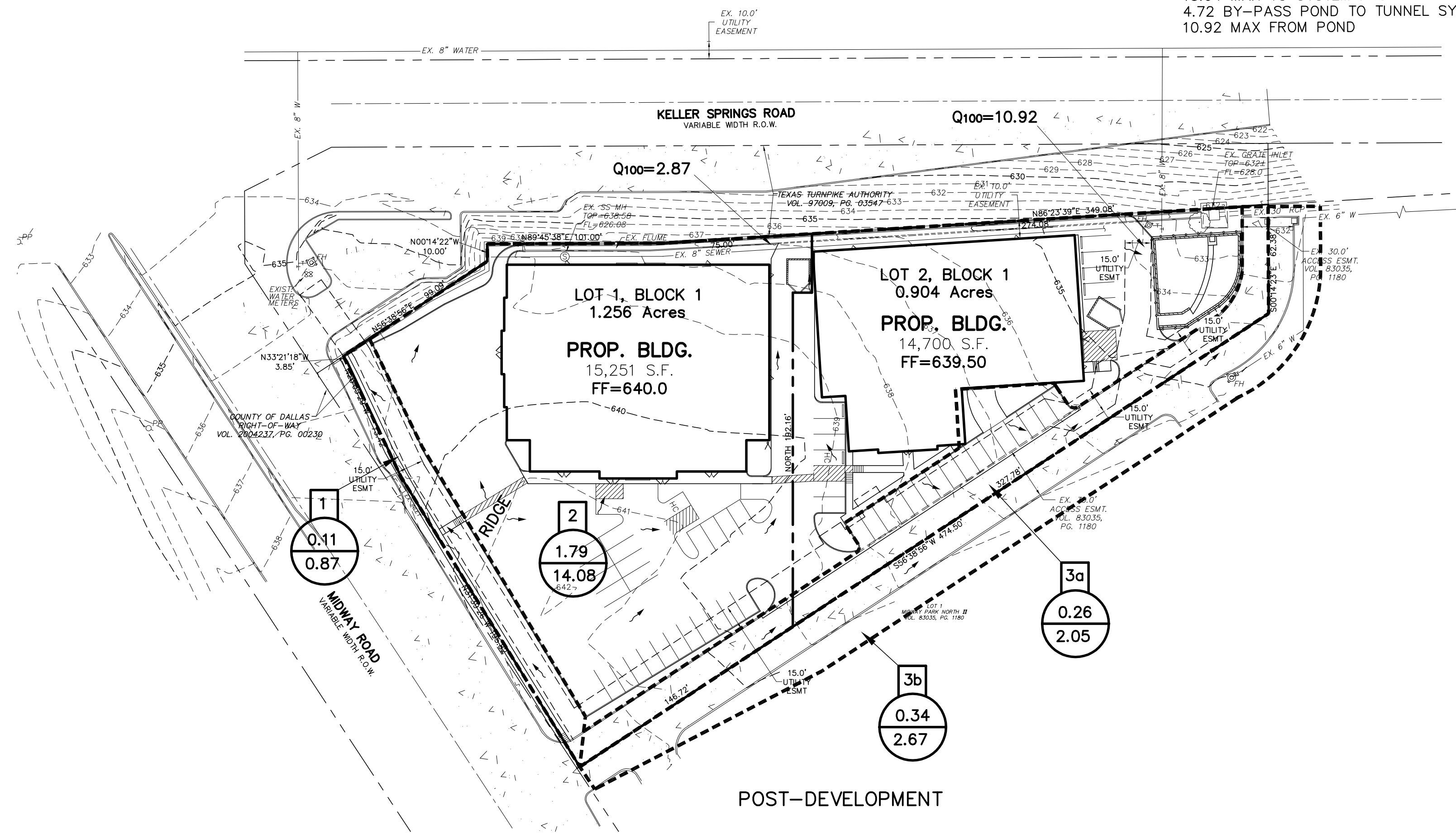
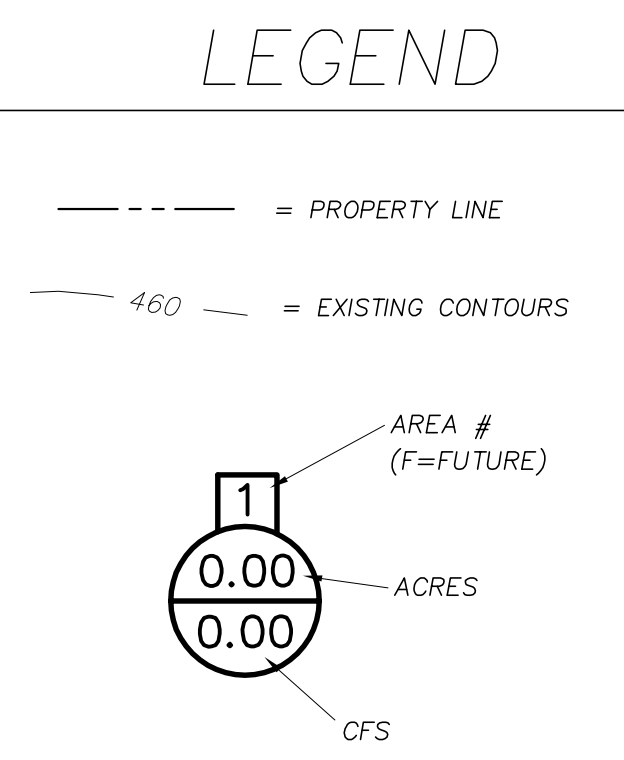
Area No.	Inlet No.	Design Storm Frequency (yrs)	AREA RUNOFF			Area Ac.	Q (c.f.s.)	Remarks
			Time of Conc. (min)	Intensely In./hr "I"	Runoff Coeff. "C"			
1	2	100	10	8.0	0.8	0.30	1.92	To Midway Rd. To exist. flume
2	100	14	7.9	0.9	2.20	15.64		
Total Flow						2.50	17.56	

FULLY DEVELOPED RUNOFF DESIGN CALCULATIONS

Area No.	Inlet No.	Design Storm Frequency (yrs)	AREA RUNOFF			Area Ac.	Q (c.f.s.)	Remarks
			Time of Conc. (min)	Intensely In./hr "I"	Runoff Coeff. "C"			
1	100	10	8.74	0.9	0.11	0.87	To Midway Rd. To POND	
2	100	10	8.74	0.9	1.79	14.08		
3a	100	10	8.74	0.9	0.26	2.05	To Ex. Inlet A To Ex. Inlet B	
3b	100	10	8.74	0.9	0.34	2.67		
Total Flow						2.50	19.67	

NOTE:
 15.64 MAX TO SYSTEM FROM EX. AREA DA-8W
 4.72 BY-PASS POND TO TUNNEL SYSTEM
 10.92 MAX FROM POND

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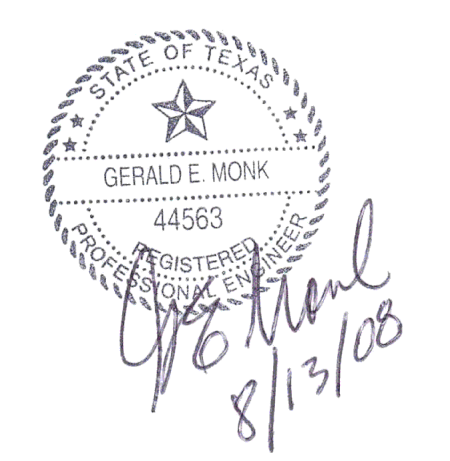


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AS-BUILT
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 GERALD E. MONK, P.E.



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LOCAL DRAINAGE AREA MAP

THOMAS DEVELOPMENTS

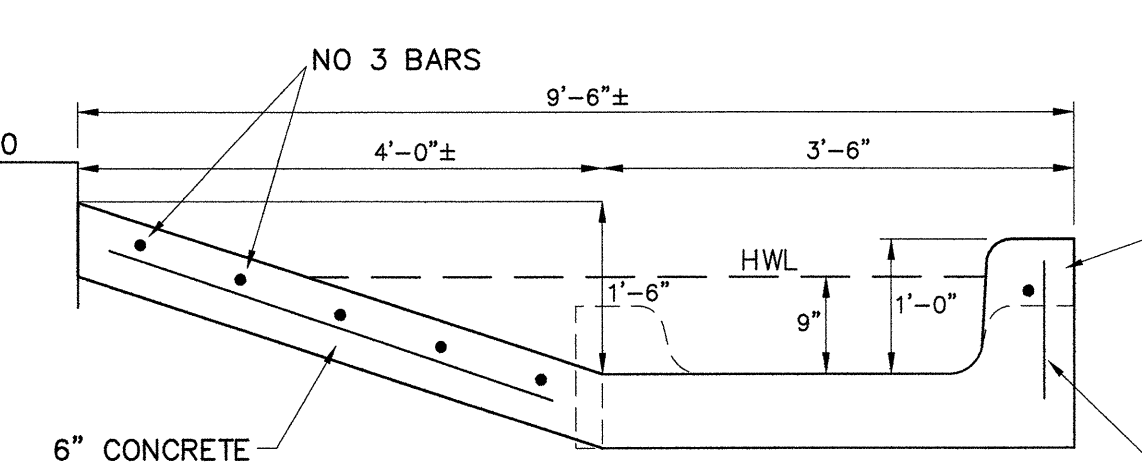
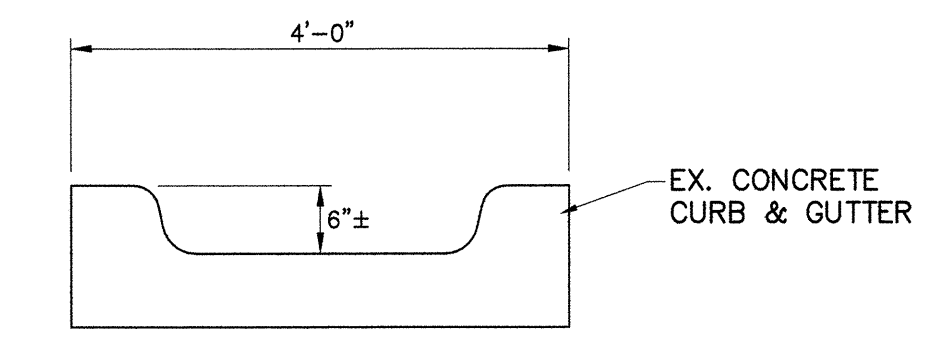
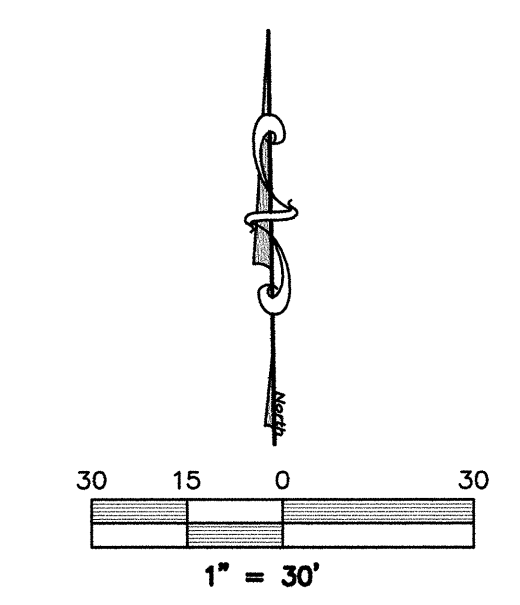
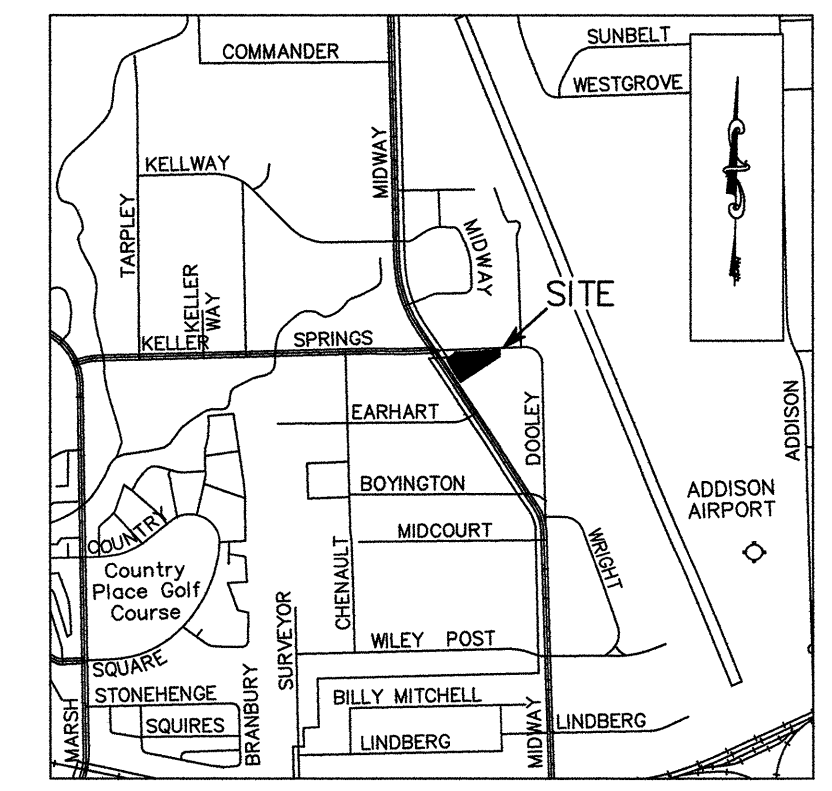
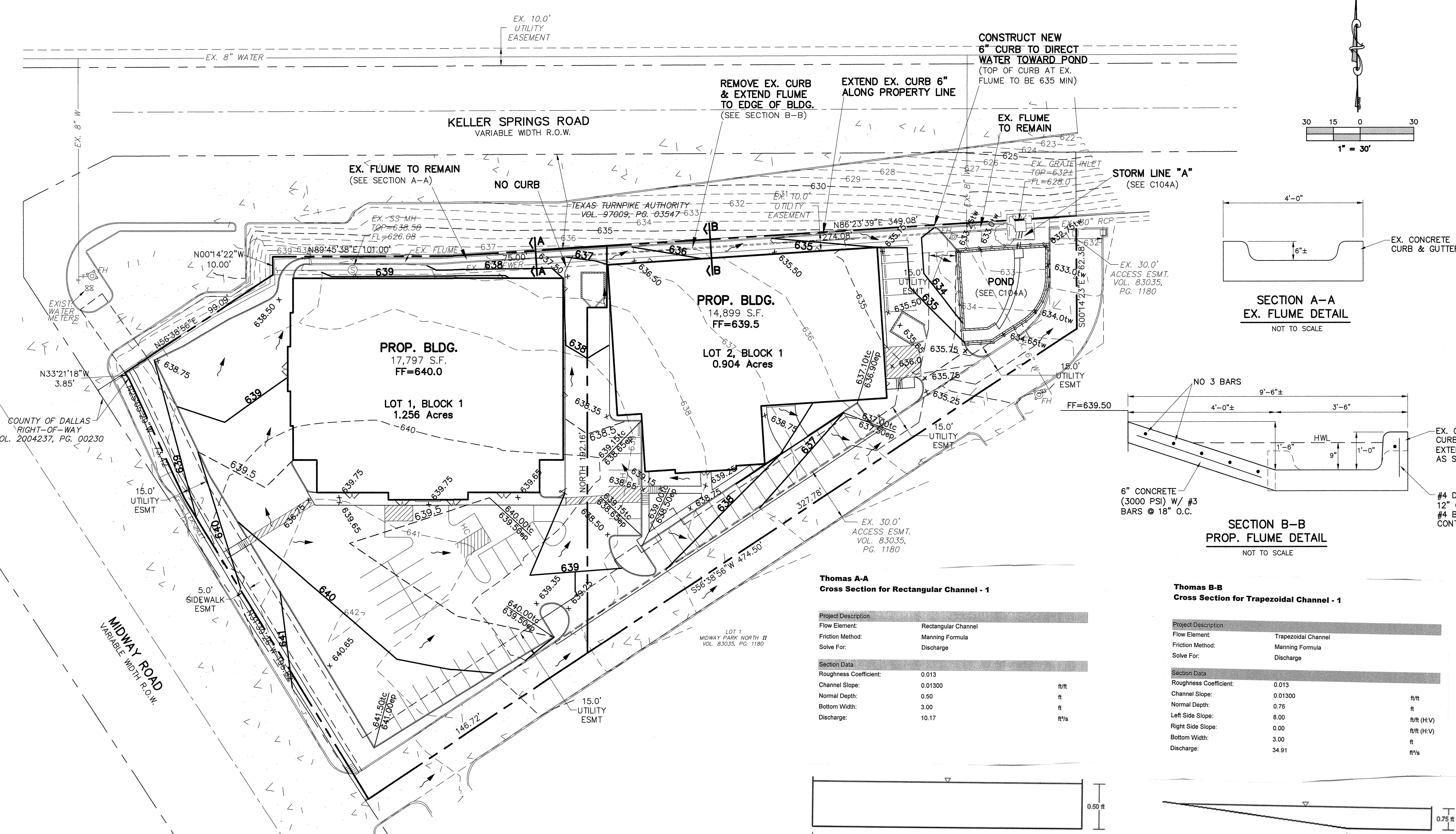
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 LOTS 1 & 2, BLOCK 1, 2.16 Acres
 Town of Addison, Dallas County, Texas

developer
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PROJECT NO.: 2007-24

date: 8/13/08 scale: 1" = 50' sheet: **C103**



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Thomas A-A
Cross Section for Rectangular Channel - 1

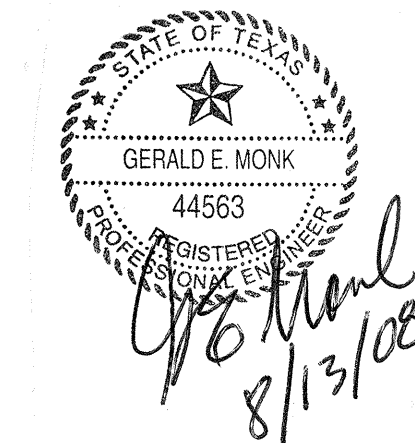
Project Description	
Flow Element:	Rectangular Channel
Friction Method:	Manning Formula
Solve For:	Discharge
Section Data	
Roughness Coefficient:	0.013
Channel Slope:	0.01300
Normal Depth:	0.50
Bottom Width:	3.00
Discharge:	10.17

Thomas B-B
Cross Section for Trapezoidal Channel - 1

Project Description	
Flow Element:	Trapezoidal Channel
Friction Method:	Manning Formula
Solve For:	Discharge
Section Data	
Roughness Coefficient:	0.013
Channel Slope:	0.01300
Normal Depth:	0.75
Left Side Slope:	8.00
Right Side Slope:	0.00
Bottom Width:	3.00
Discharge:	34.91

AS-BUILT
OCTOBER 27, 2009
Gerald E. Monk
GERALD E. MONK, P.E.

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BENCHMARK:
NORTHING 7,035,436.612'
EASTING 2,466,177.089'
ELEVATION 531.46'

GRADING PLAN

THOMAS DEVELOPMENTS

THOMAS DEVELOPMENTS
LOTS 1 & 2, BLOCK 1, 2.16 Acres
Town of Addison, Dallas County, Texas

developer
TOM SPAGNOLA
3211 Valley Forge Drive, McKinney, Texas 75070
972 926-8086 Fax 972 481-1640

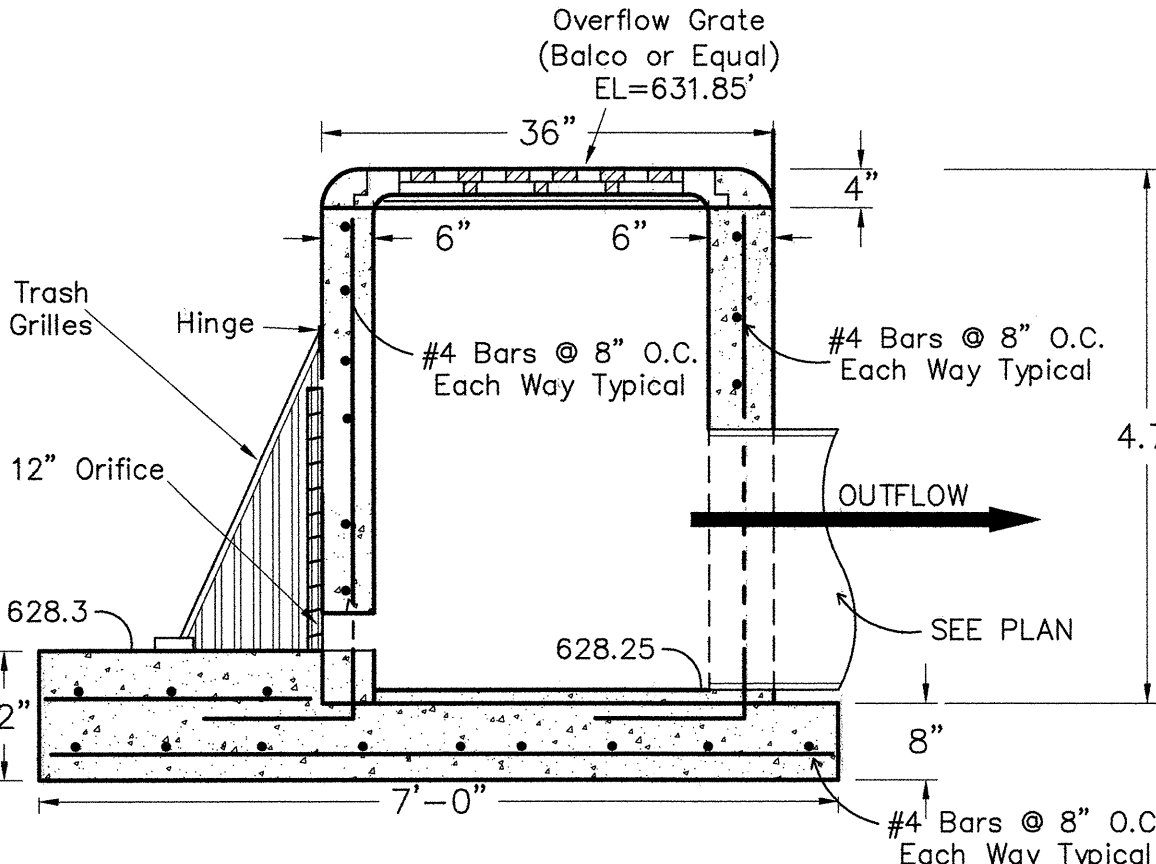
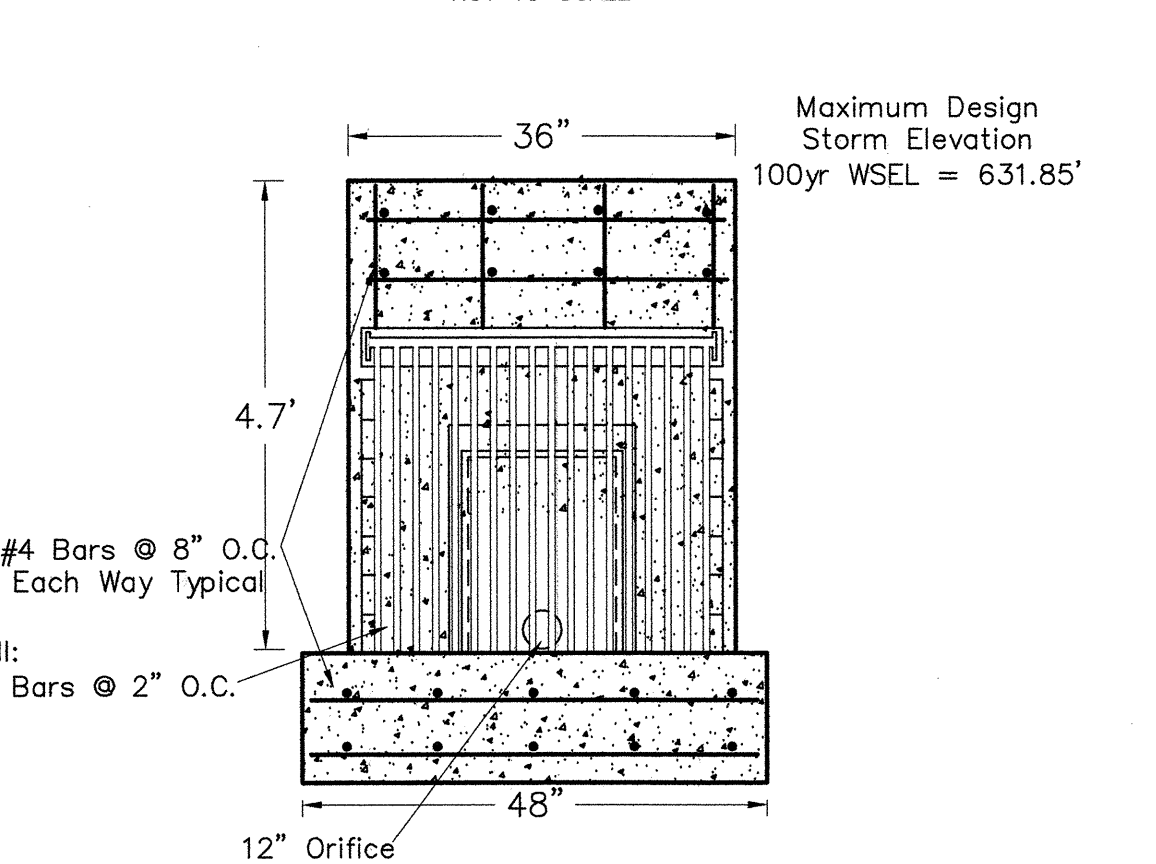
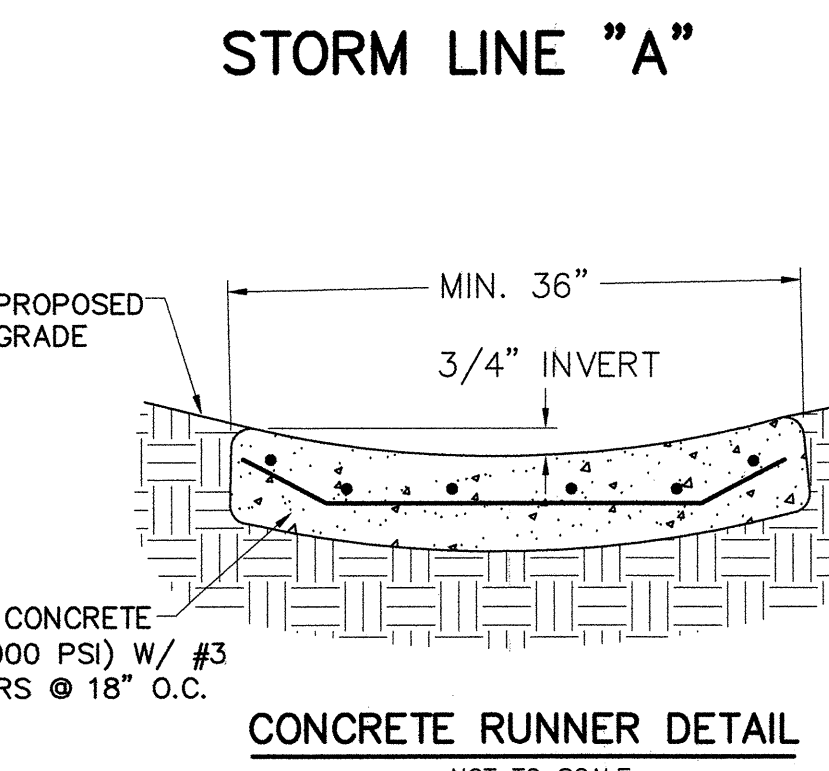
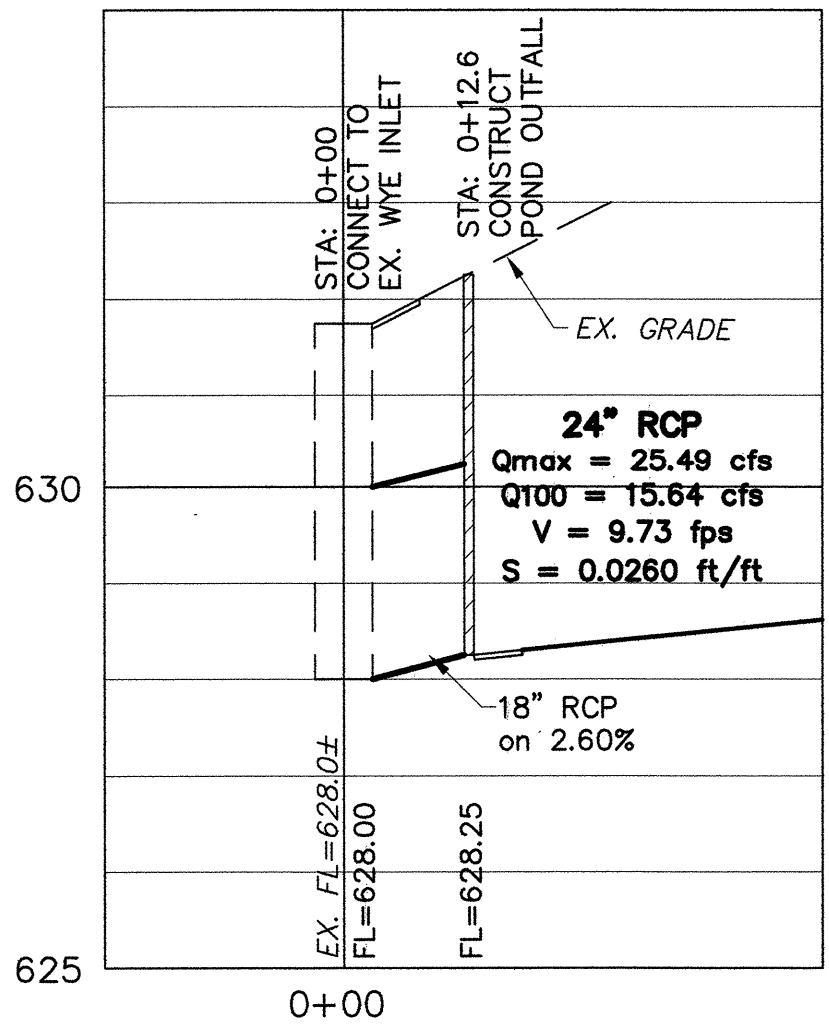
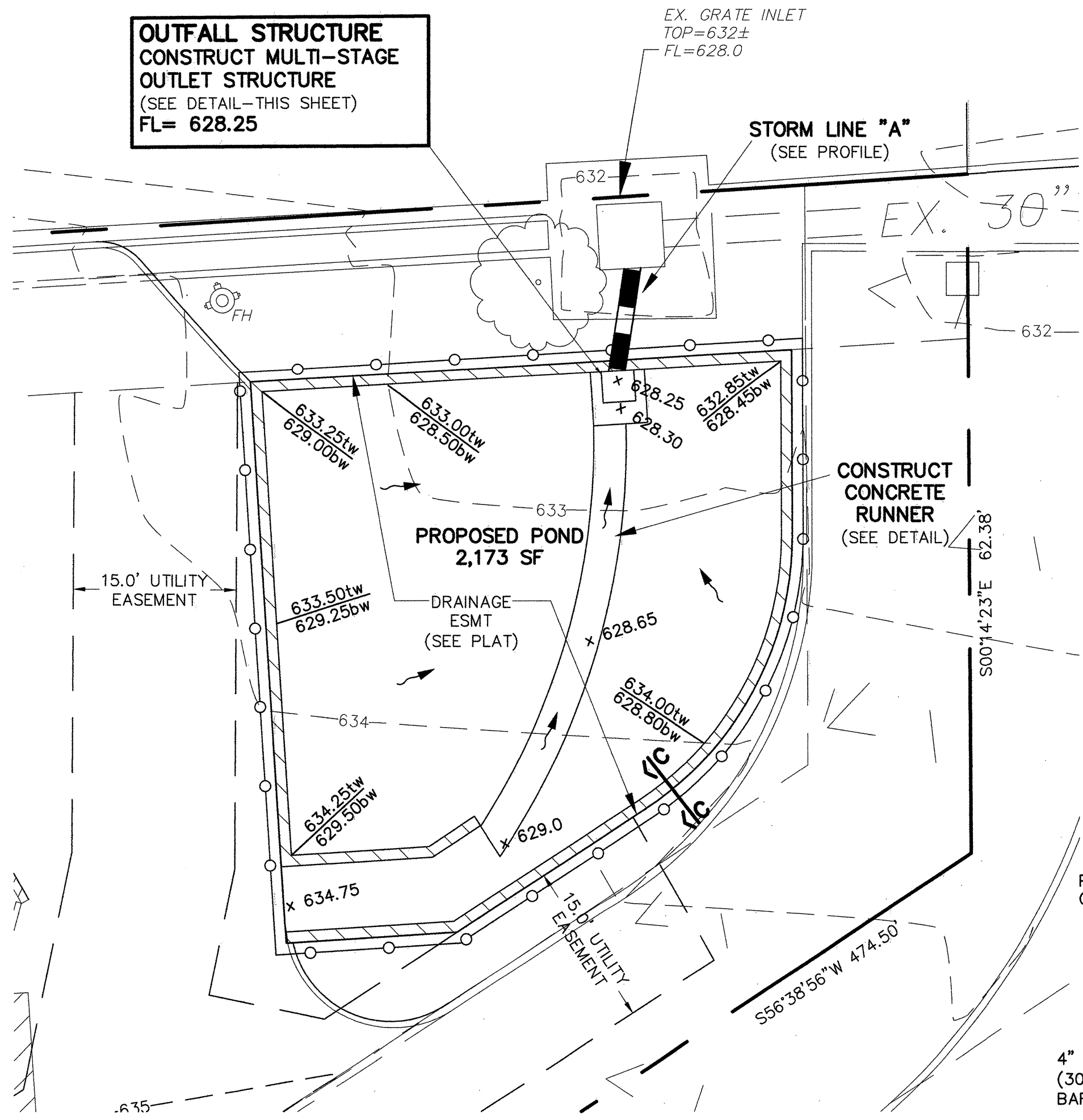
prepared by
MONK CONSULTING ENGINEERS
1200 W. State Street, Garland Texas 75040
972 272-1763 Fax 972 272-8761

PROJECT NO.: 2007-24

date: 8/13/08 scale: 1" = 30' sheet: C104

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**OUTFALL STRUCTURE
CONSTRUCT MULTI-STAGE
OUTLET STRUCTURE**
(SEE DETAIL-THIS SHEET)
FL= 628.25



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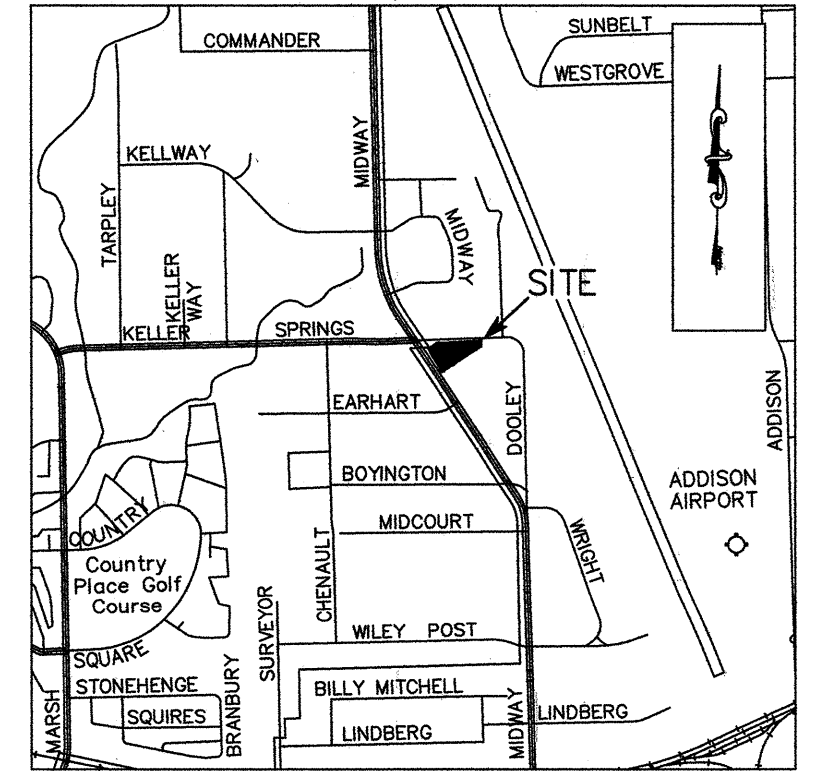
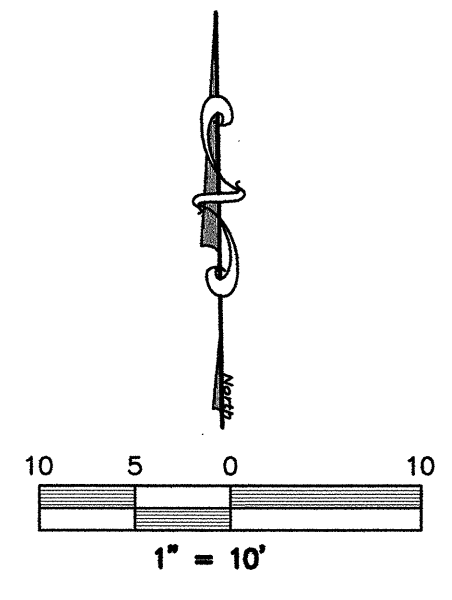
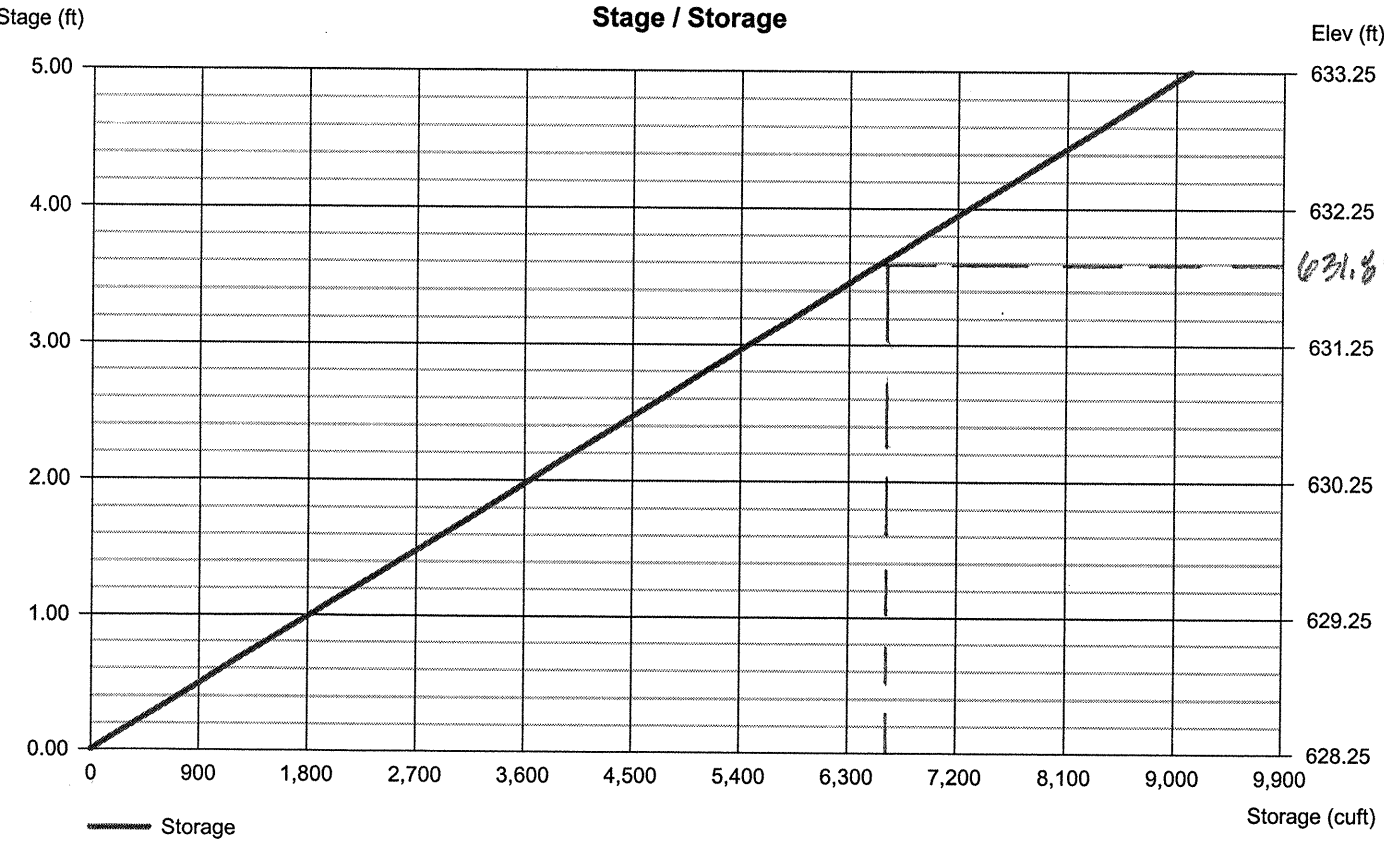
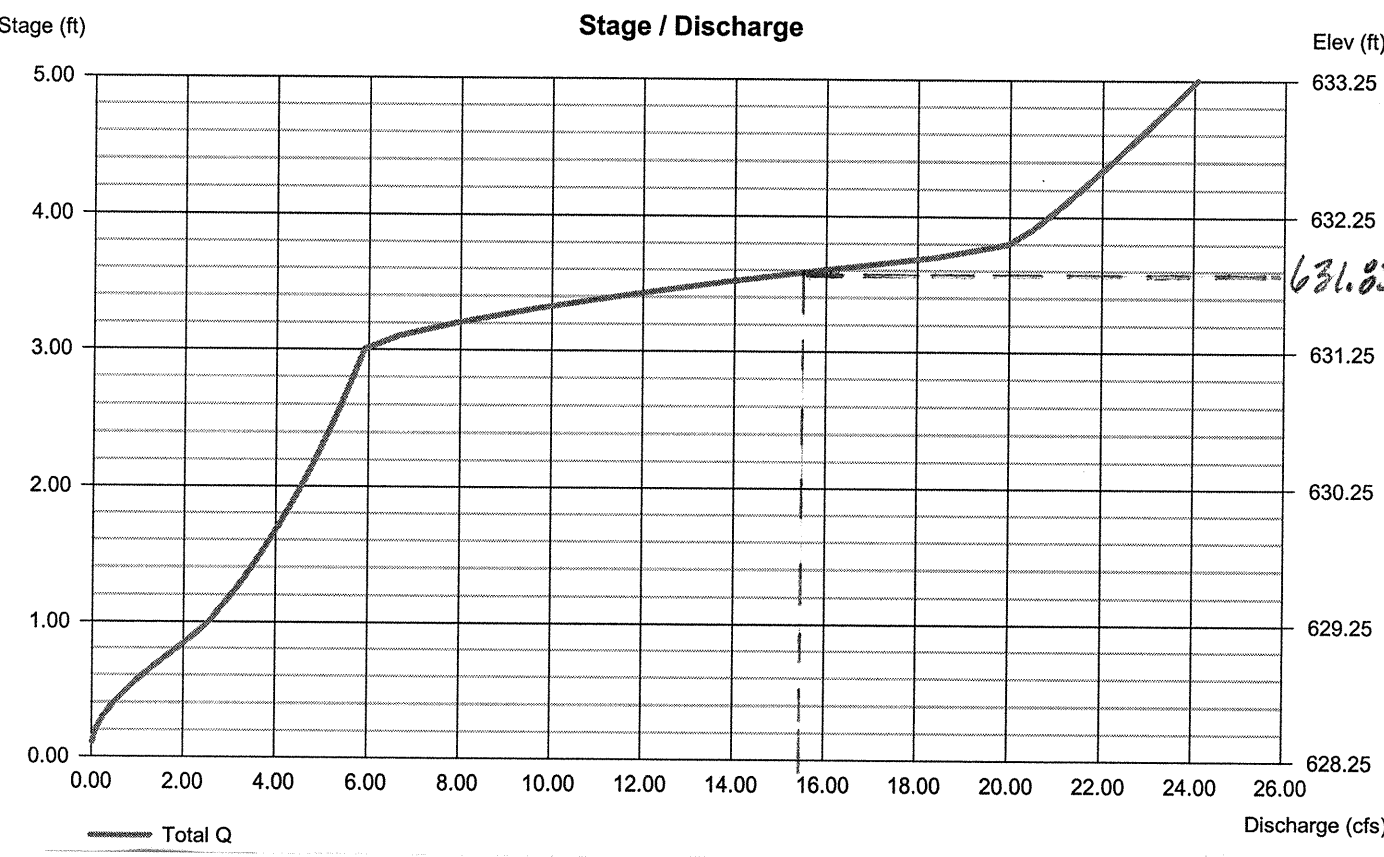
Pond Report

Hydroflow Hydrographs by Intellisolve v9.01
Wednesday, Apr 16, 2008
Pond No. 1 - Thomas Dev.-New Pond
Pond Data
Contours - User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 628.25 ft

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	628.25	1,825	0	0
1.00	629.25	1,825	1,825	1,825
2.00	630.25	1,825	1,825	3,650
3.00	631.25	1,825	1,825	5,475
4.00	632.25	1,825	1,825	7,299
5.00	633.25	1,825	1,825	9,124

Culvert / Orifice Structures				Weir Structures			
[A]	[B]	[C]	[Pr/Rsr]	[A]	[B]	[C]	[D]
Rise (in) = 18.00	12.00	0.00	0.00	Crest Len (ft) = 6.00	0.00	0.00	0.00
Span (in) = 18.00	12.00	0.00	0.00	Crest El. (ft) = 631.25	0.00	0.00	0.00
No. Barrels = 1	1	0	0	Weir Coeff. = 3.33	3.33	3.33	3.33
Invert El. (ft) = 628.25	628.30	0.00	0.00	Weir Type = Riser	---	---	---
Length (ft) = 25.00	0.00	0.00	0.00	Multi-Stage = Yes	No	No	No
Slope (%) = 0.00	0.00	0.00	n/a	Exfil. (in/hr) = 0.000	(by Wet area)		
N-Value = .013	.013	.013	n/a	TW Elev. (ft) = 0.00			
Orifice Coeff. = 0.60	0.60	0.60	0.60				
Multi-Stage = n/a	No	No	No				

Note: Culvert/Orifice outflows are analyzed under inlet and outlet control. Weir risers are checked for orifice conditions.



VICINITY MAP
NOT TO SCALE

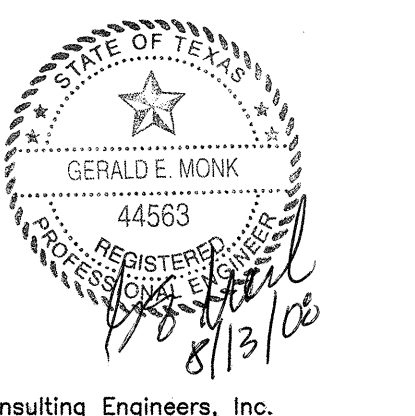
LEGEND

- = PROPERTY LINE
- EX. W = EX. WATER
- EX. SS = EX. SANITARY SEWER
- (S) = EX. SS MANHOLE
- (CO) = EX. SS CLEANOUT
- (G) = EX. GAS METER
- (WM) = EX. WATER METER
- (FH) = EX. FIRE HYDRANT
- (V) = EX. WATER VALVE
- EXIST. or EX. = EXISTING
- ESMNT. = EASEMENT
- LS = LANDSCAPE
- BC = BACK OF CURB
- B-B = BACK OF CURB TO BACK OF CURB
- CL = CENTERLINE
- (P) = PROP. FIRE HYDRANT
- (F) = PROPOSED FIRELANE & ACCESS ESMT

AS-BUILT
OCTOBER 27, 2009
Gerald E. Monk
GERALD E. MONK, P.E.

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Drainage/Detention Calculations
Modified Rational

Onsite Existing Conditions

A =	2.20 acres
C =	0.90
Tc =	14.00 minutes
Iwo =	7.90 in/hr
Q =	15.64 cfs

By-Pass to Existing Inlet at end of Access Street
2.2 acres to existing Street inlet
-0.6 acres to existing Street inlet
1.6 acres to pond

Onsite proposed Conditions

A =	1.00 acres
C =	1.00
Tc =	5.00 minutes
Iwo =	10.60 in/hr
Q =	16.96 cfs

Time (min.)	I-100yr	C	A (acres)	Q (cfs)	Inflow (cf)	Outflow (cf)	Storage (cf)
1	11	1.00	1.60	17.60	1056	880	176
5	10.6	1.00	1.60	16.96	5098	1320	3768
10	8.8	1.00	1.60	14.08	8448	1760	6688
15	7.7	1.00	1.60	12.32	11088	1732	-644
20	6.9	1.00	1.60	11.04	13248	14078	-830
30	5.75	1.00	1.60	9.20	16560	18770	-2210
40	4.9	1.00	1.60	7.84	18816	23463	-4647
50	4.4	1.00	1.60	7.04	21120	28156	-7036
60	4	1.00	1.60	6.40	23040	32848	-9808
70	3.6	1.00	1.60	5.76	24192	37541	-13349
80	3.3	1.00	1.60	5.28	25344	42233	-16889
90	3.1	1.00	1.60	4.96	26784	46926	-20142
100	2.9	1.00	1.60	4.64	27840	51619	-23779
110	2.7	0.90	1.60	3.89	25661	56311	-30650
120	0	0.90	1.60	0.00	0	0	0

BENCHMARK:
NORTHING 7,035,436.612'
EASTING 2,466,177.089'
ELEVATION 531.46

STORM PROFILE & POND REQUIREMENTS
THOMAS DEVELOPMENTS

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LOTS 1 & 2, BLOCK 1, 2.16 Acres
Town of Addison, Dallas County, Texas

developer
TOM SPAGNOLA
3211 Valley Forge Drive, McKinney, Texas 75070
972 926-8086 Fax 972 481-1640

consultant
JERRY DEFOE
1806 Eastern Hills, Garland, Texas 75043
972 240-5800 Fax 972 240-5818

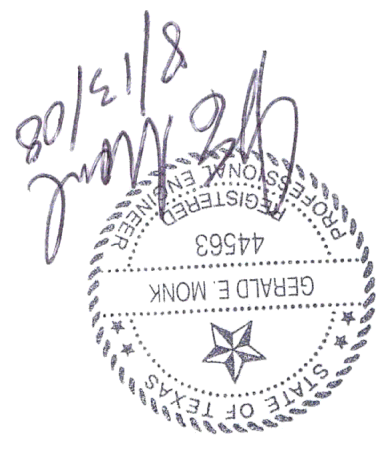
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1200 W. State Street, Garland Texas 75040
972 272-1763 Fax 972 272-8761

PROJECT NO.: 2007-24
date: 8/13/08 scale: 1" = 10' sheet: C104A

PROJECT NO.: 2007-24
 MONK CONSULTING ENGINEERS
 1200 W. State Street, Fort Worth, Texas 76040
 972 272-1763 Fax 972 272-8761
 prepared by
 TOM SAVANNA
 3211 Valley Forge Drive, McKinney, Texas 75070
 972 926-8086 Fax 972 481-1640
 Town of Addison, Dallas County, Texas

THOMAS DEVELOPMENTS
SWPPP PLAN

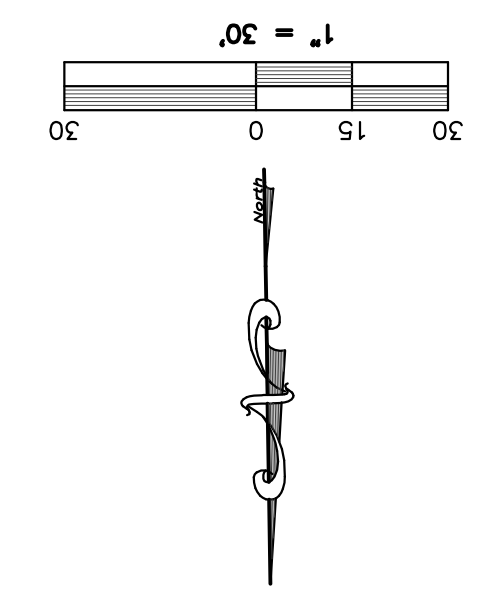
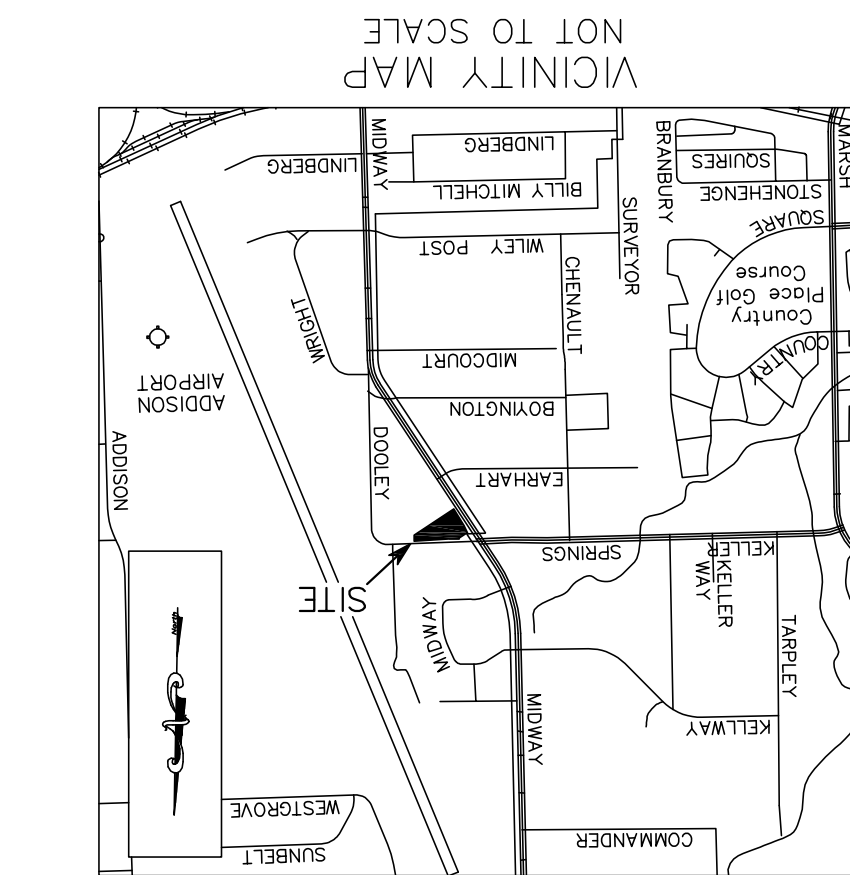
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AS-BUILT
 OCTOBER 27, 2009
 GERALD E. MONK, P.E.

LEGEND

—	= EX. WATER
—	= EX. SANITARY SEWER
—	= EX. SS MANHOLE
—	= EX. SS CLEANOUT
—	= EX. GAS METER
—	= EX. WATER METER
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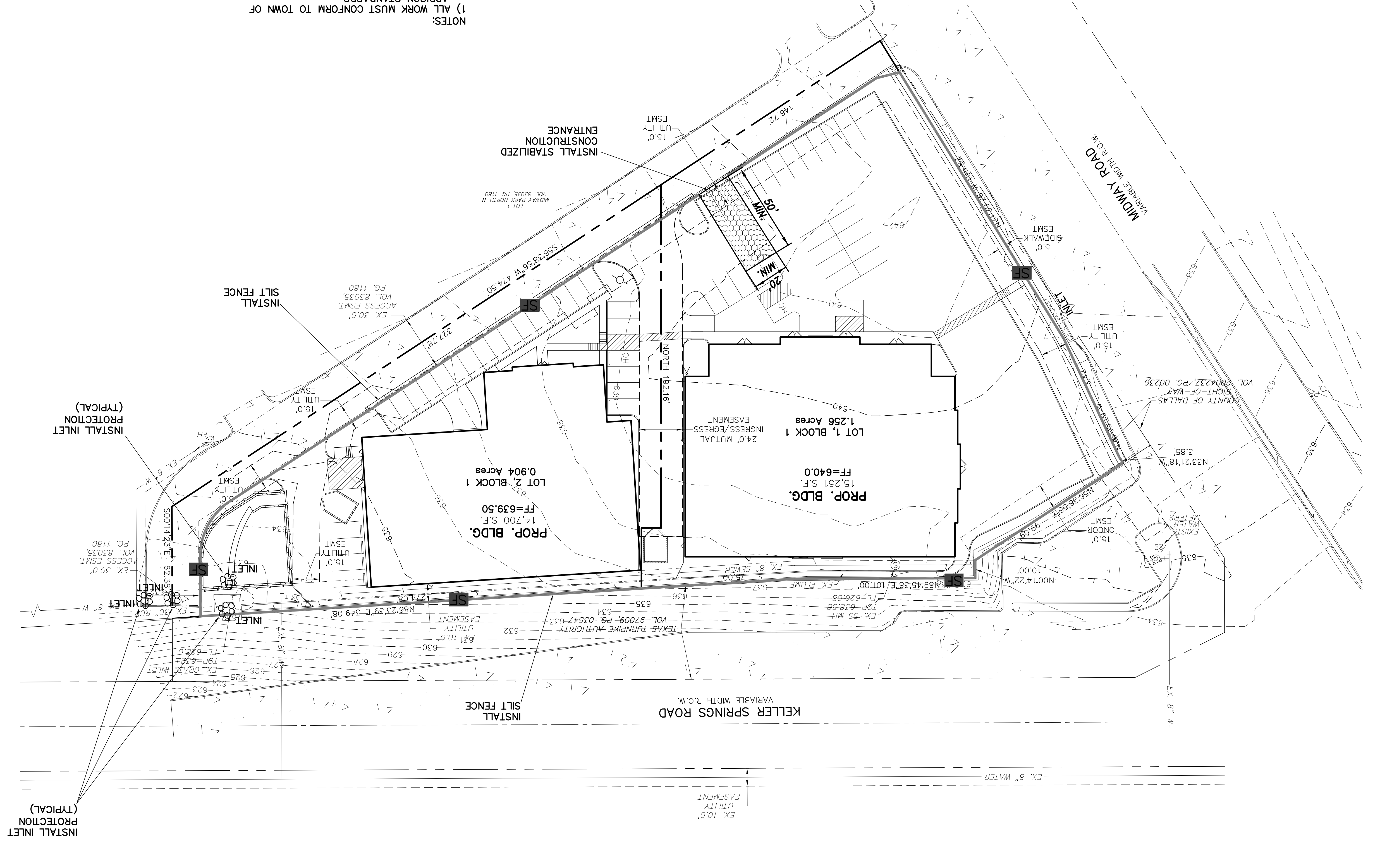
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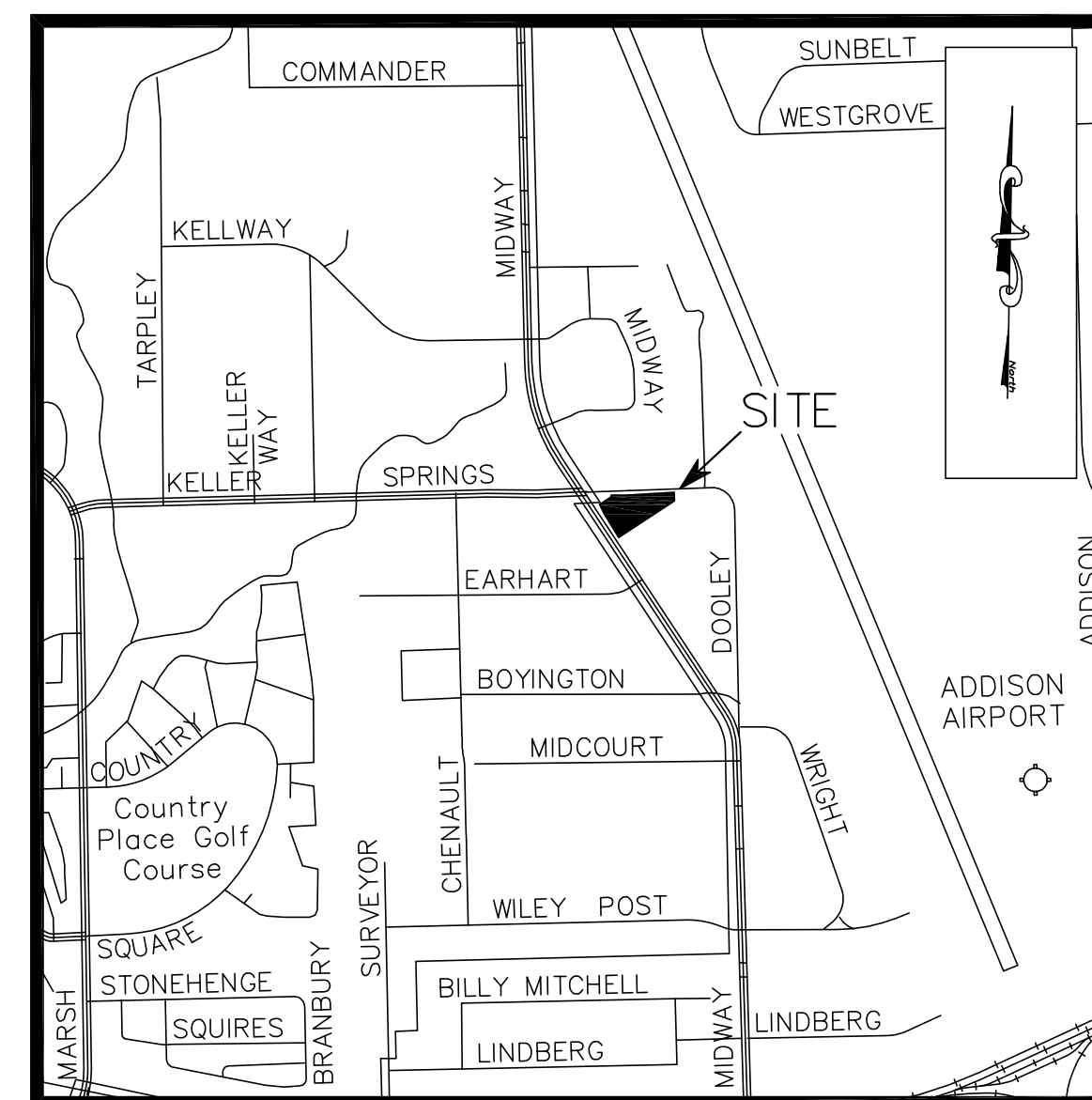
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SITE IMPROVEMENT PLANS
 for the
THOMAS DEVELOPMENTS
 15980 MIDWAY ROAD
 2.16 Acres of the
THOMAS DEVELOPMENTS
 Block 1, Lots 1 & 2
 Town of Addison
 Dallas County, Texas
 PW #2007-016



Location Map

NOT TO SCALE

DEVELOPER:

TOM SPAGNOLA
 3211 Valley Forge Drive, McKinney, Texas 75070
 (972) 926-8086 Fax (972) 481-1640

MONK CONSULTING ENGINEERS, INC.

GERALD E. MONK, P.E.

1200 W. State Street ~ Garland Texas 75040 (972) 272-1763 Fax (972) 272-8761
 jerry@monkconsulting.com

INDEX

SHEET NO.	DESCRIPTION
C100	Cover Sheet Plat
C101	Site & Dimension Control Plan
C102	Site Utility Plan
C103	Local Drainage Area Map
C104	Grading & Drainage Plan
C105	Erosion Control Plan
PL001	Landscape Plan
PL002	Irrigation Plan
D101	Site Details
D102	BMP Details

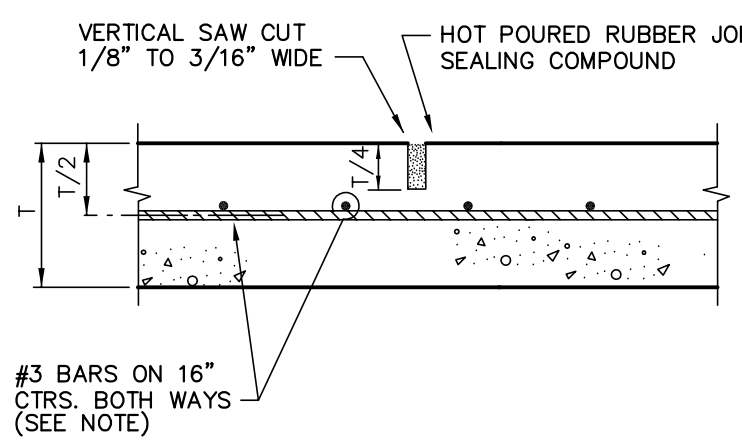
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2 nd	3/24/08
3 rd	4/16/08
4 th	8/13/08

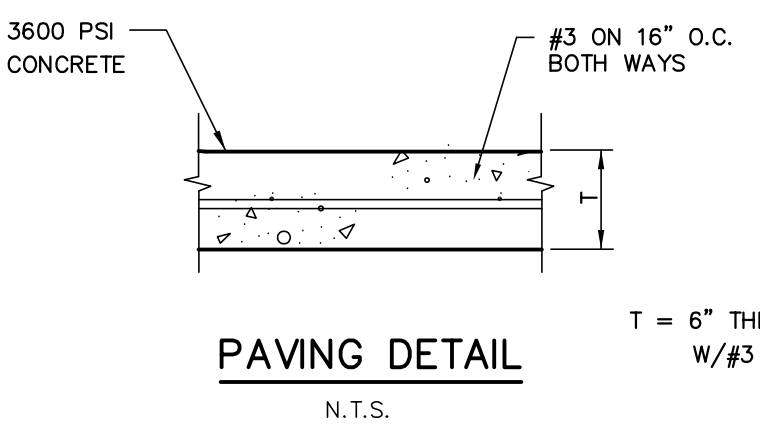
AS-BUILT
 OCTOBER 27, 2009
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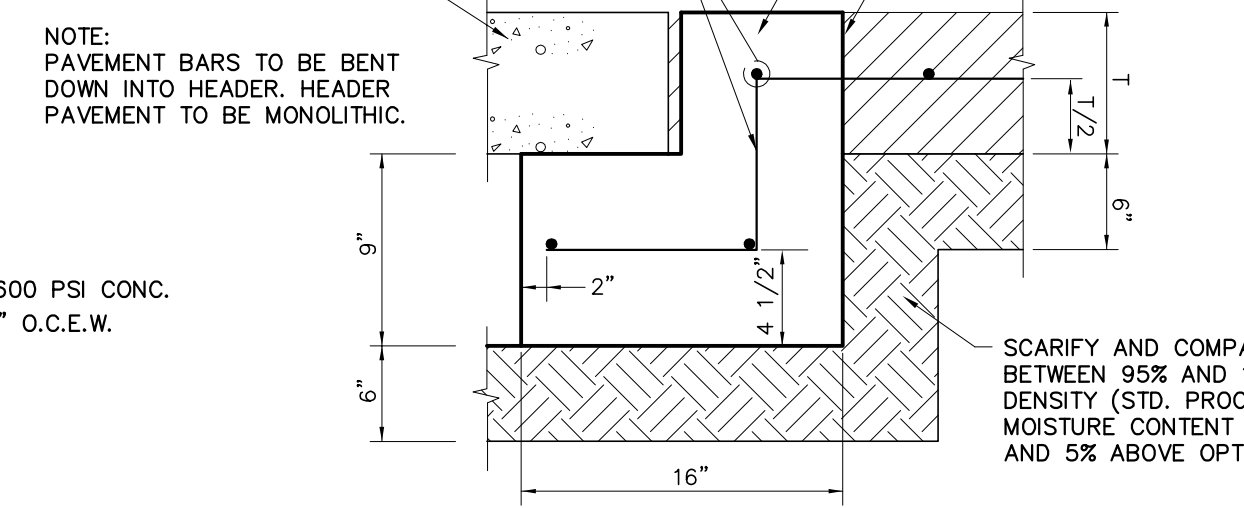
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2	city plan review comments	(R) ALL	3/25/08



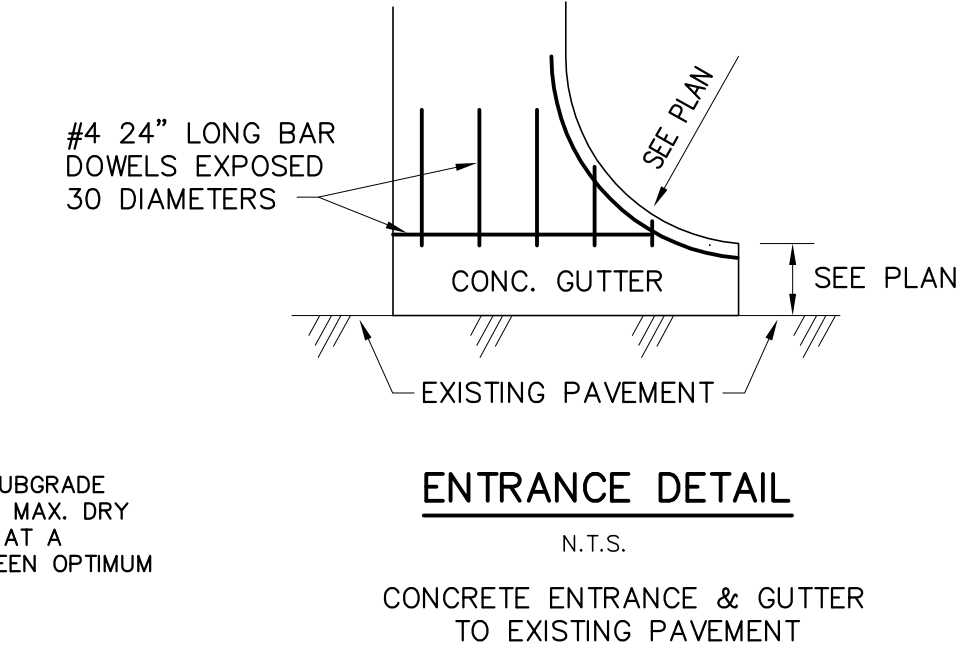
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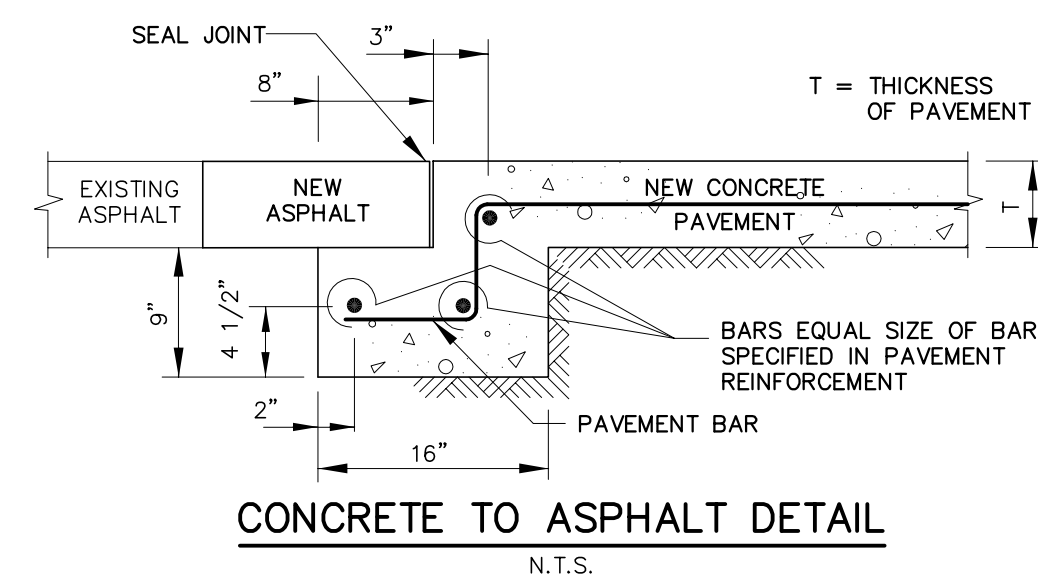
PAVING DETAIL
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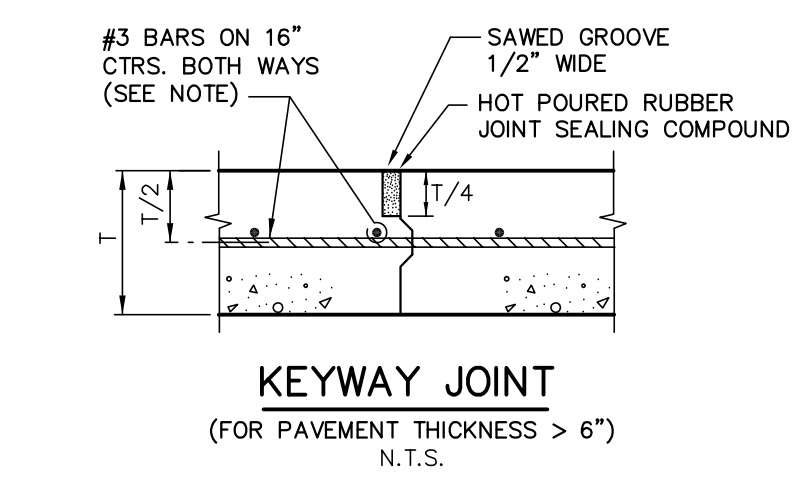
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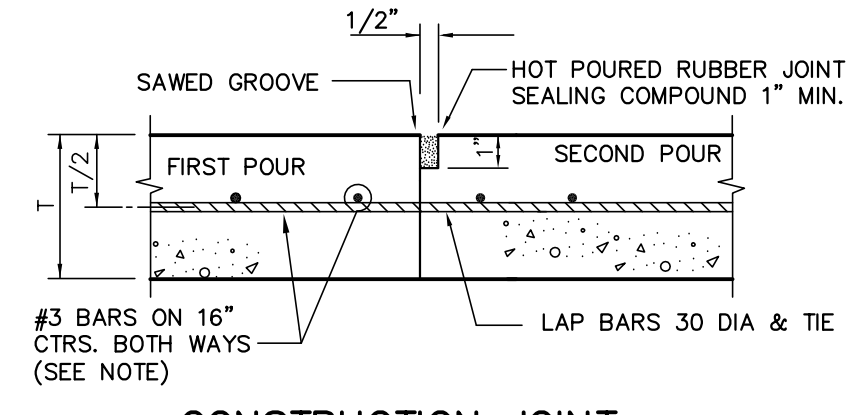
ENTRANCE DETAIL
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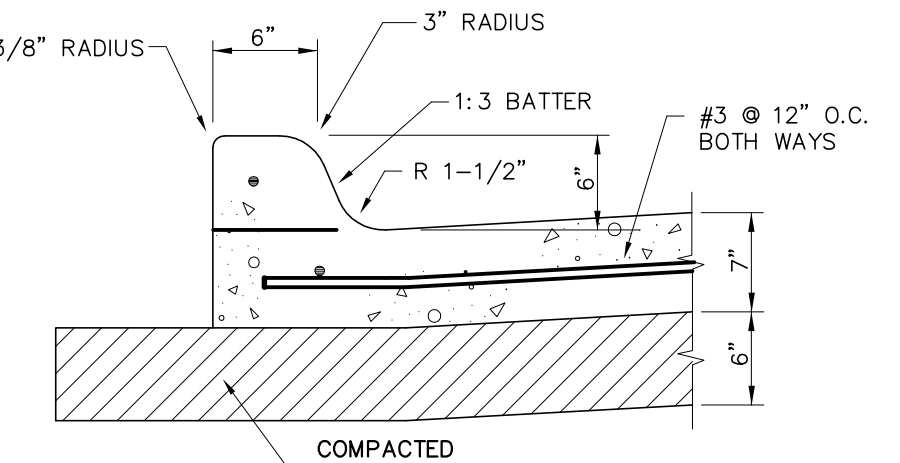
CONCRETE TO ASPHALT DETAIL
N.T.S.



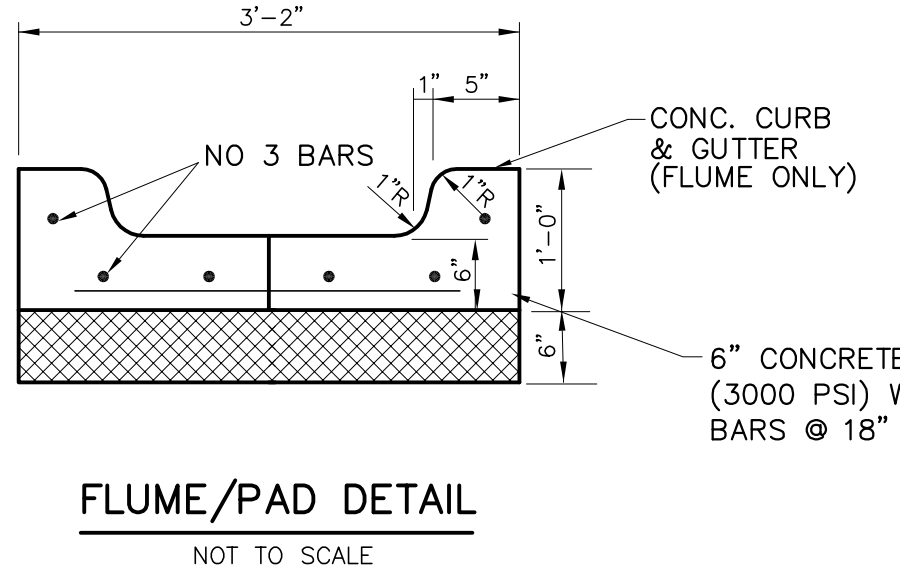
KEYWAY JOINT
(FOR PAVEMENT THICKNESS > 6")
N.T.S.



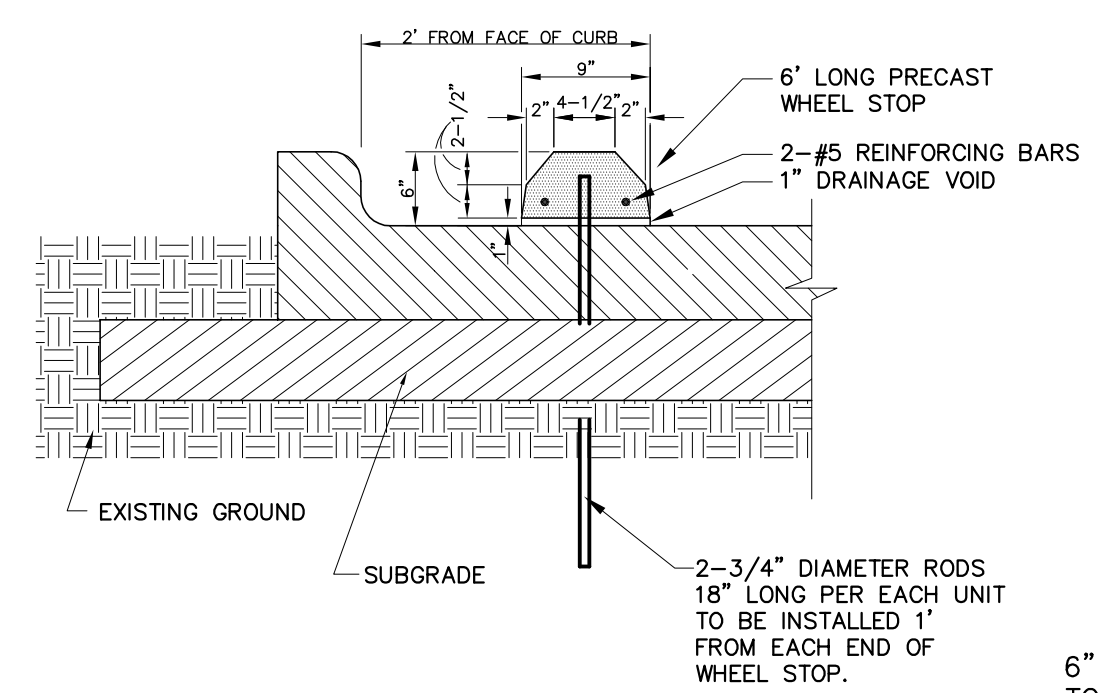
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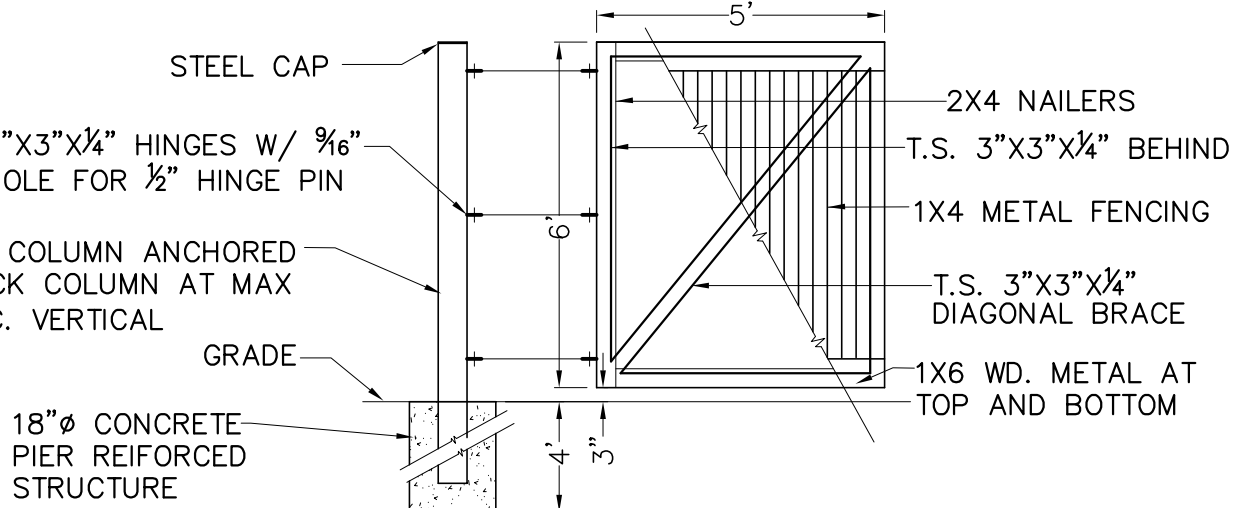
INTEGRAL CURB
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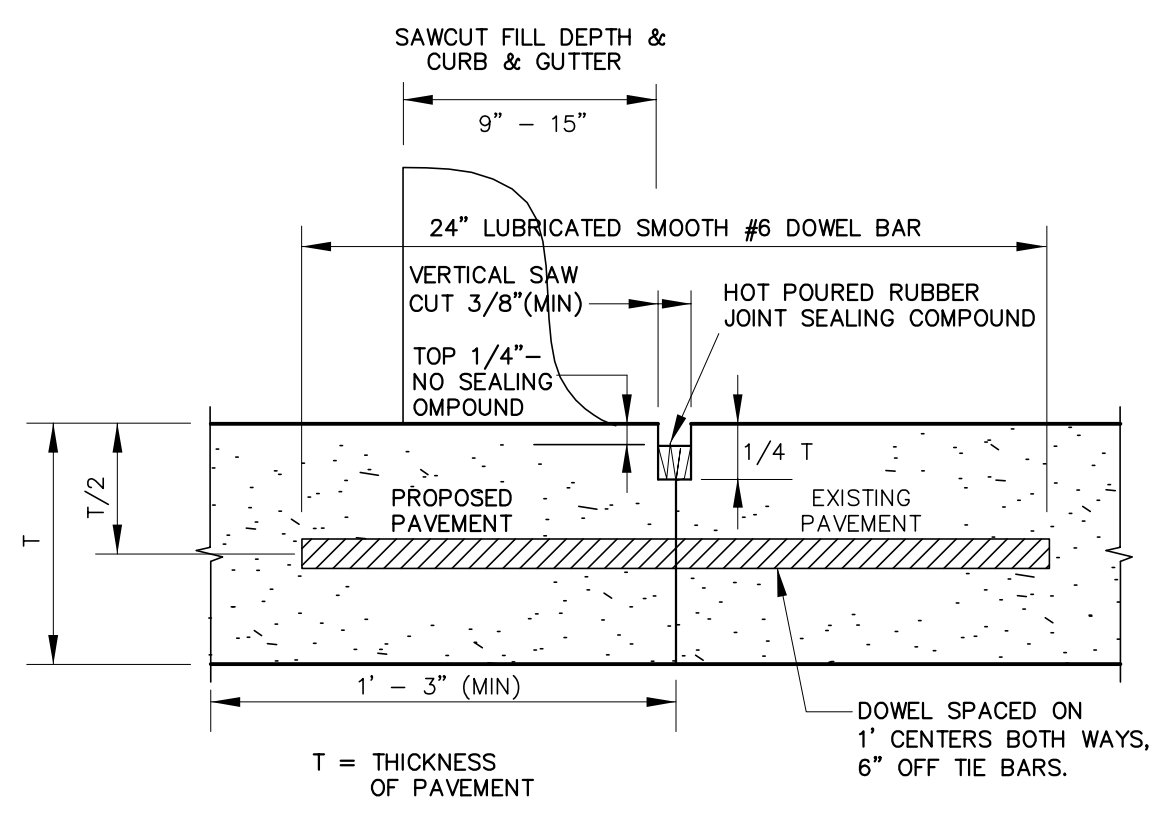
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NOT TO SCALE



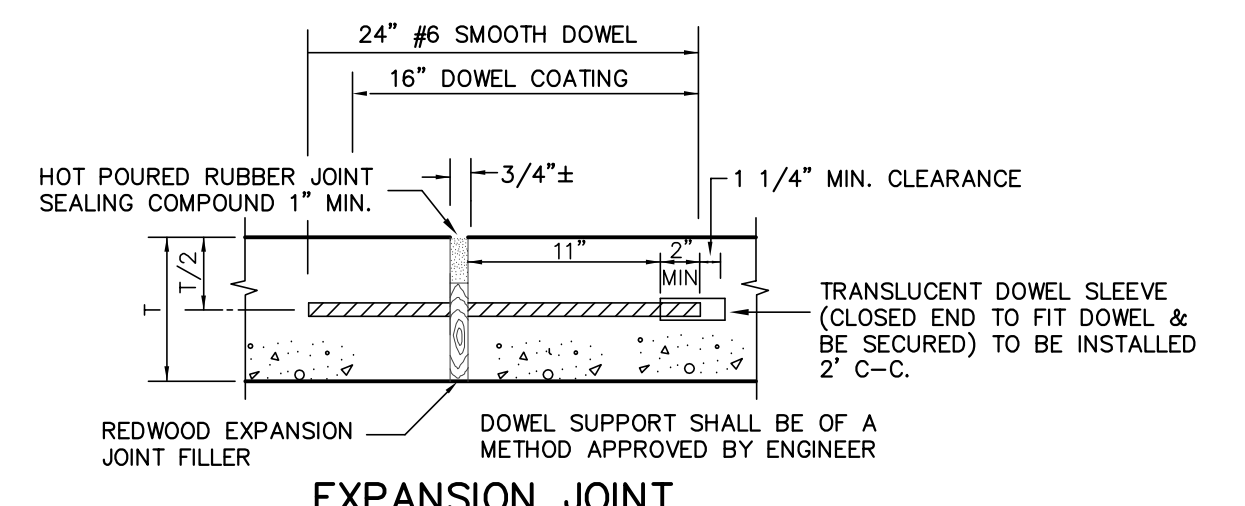
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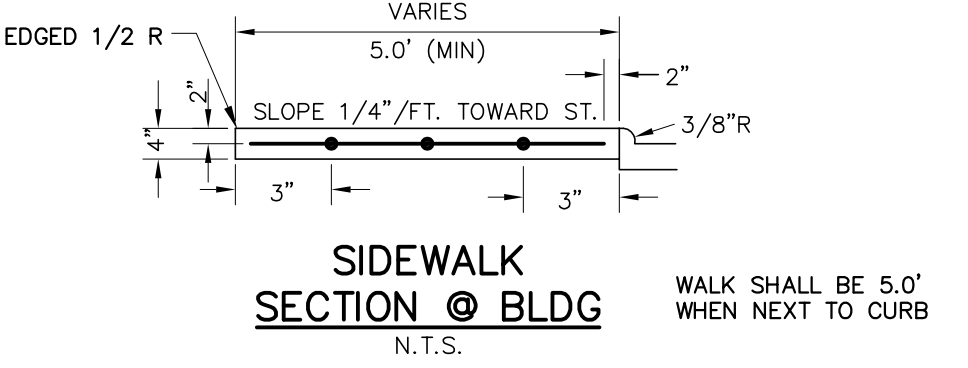
DUMPSTER GATE DETAIL
N.T.S.



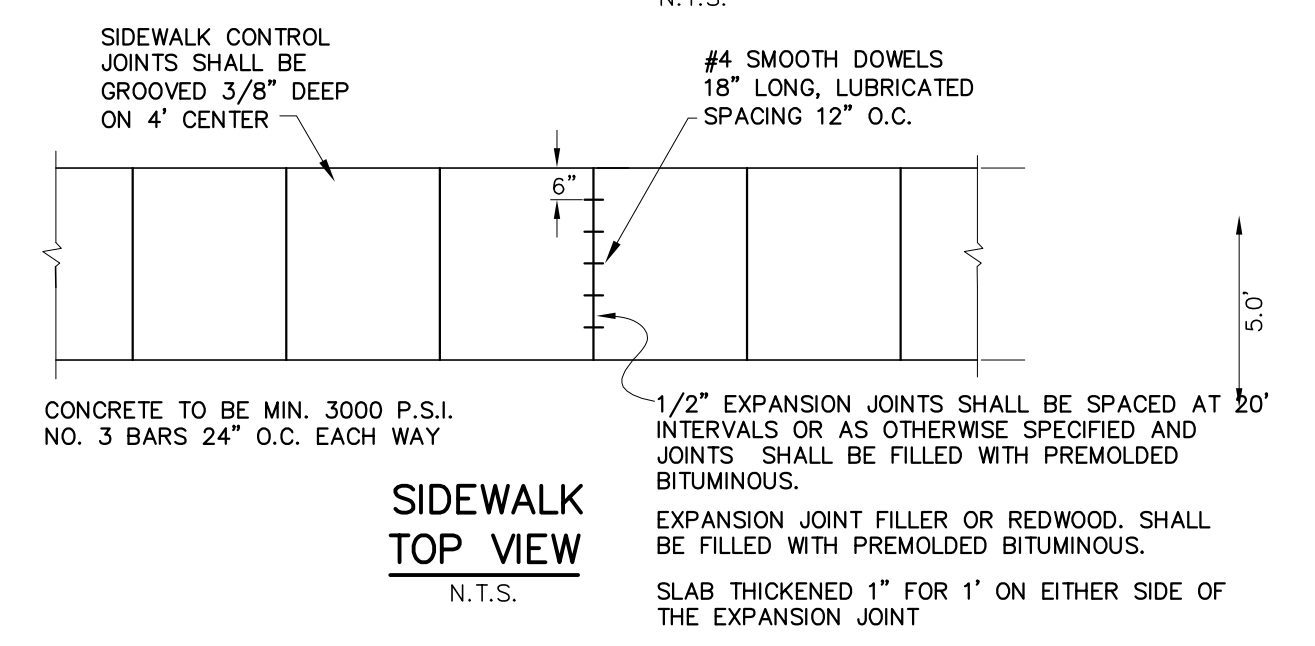
LONGITUDINAL BUTT JOINT
(NEW TO OLD CONCRETE)
N.T.S.



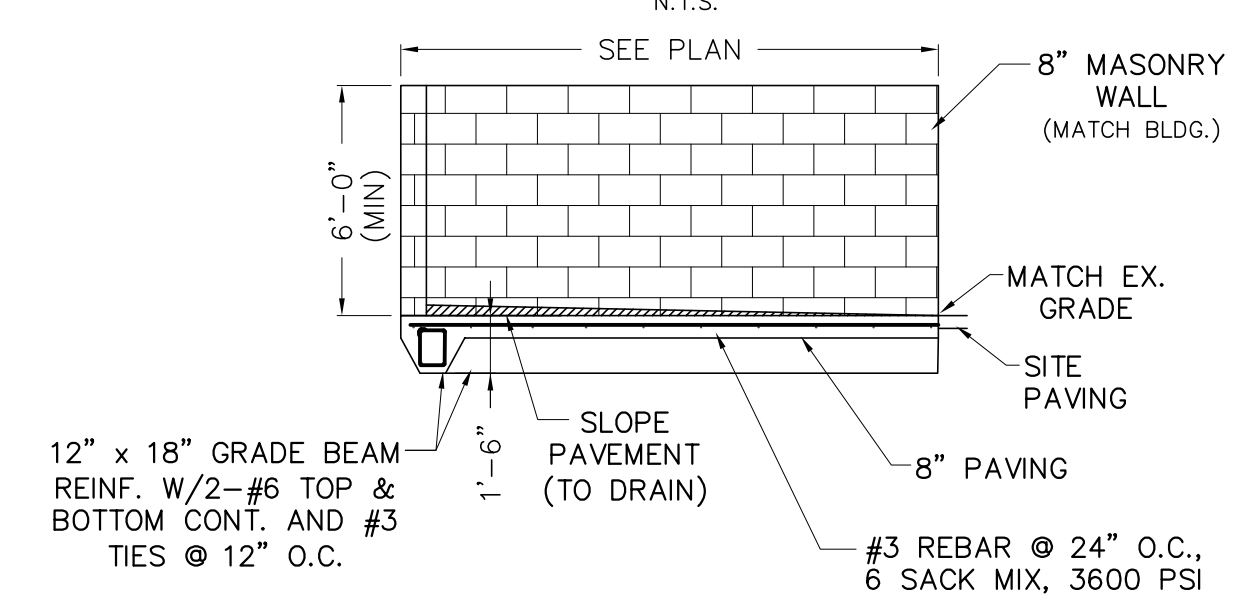
EXPANSION JOINT
(SPACED 600 FT. MAXIMUM; LOCATE AT STRUCTURES AND AT INTERSECTION P.C.'S & P.T.'S)
N.T.S.



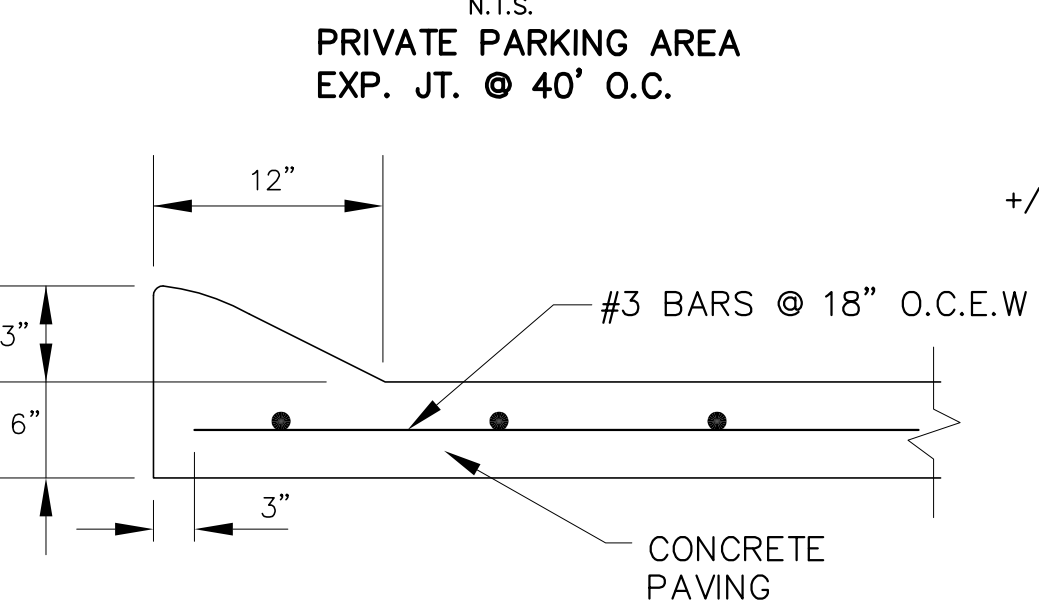
SIDEWALK SECTION @ BLDG
N.T.S.



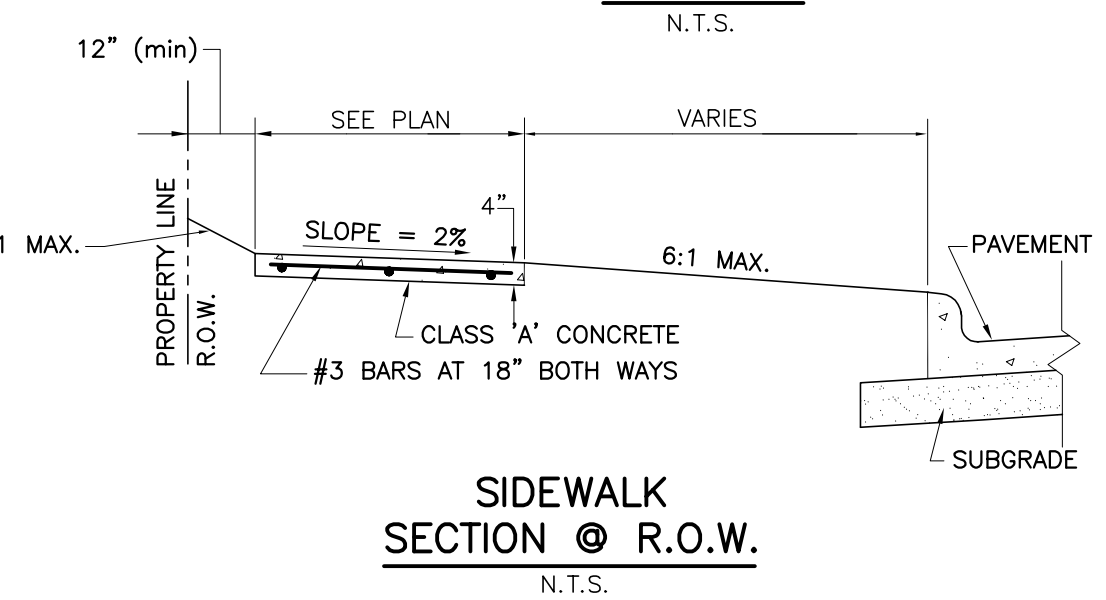
SIDEWALK TOP VIEW
N.T.S.



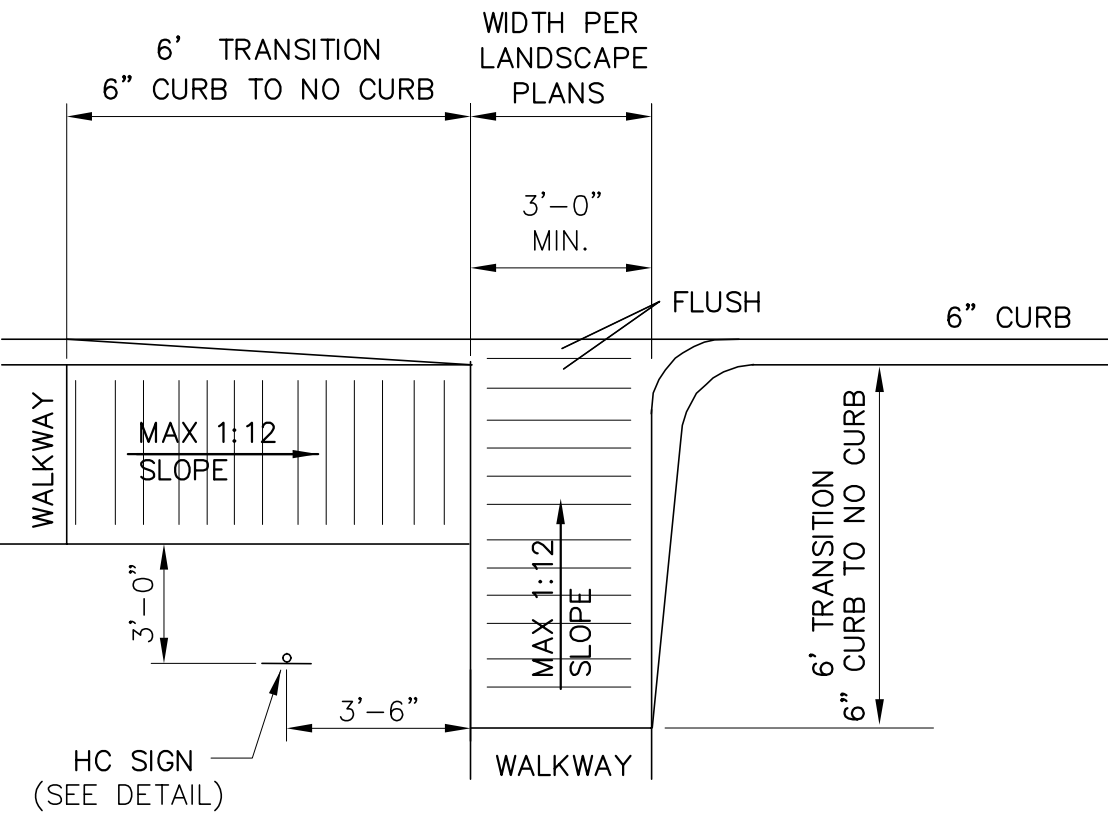
DUMPSTER PAD DETAIL
N.T.S.



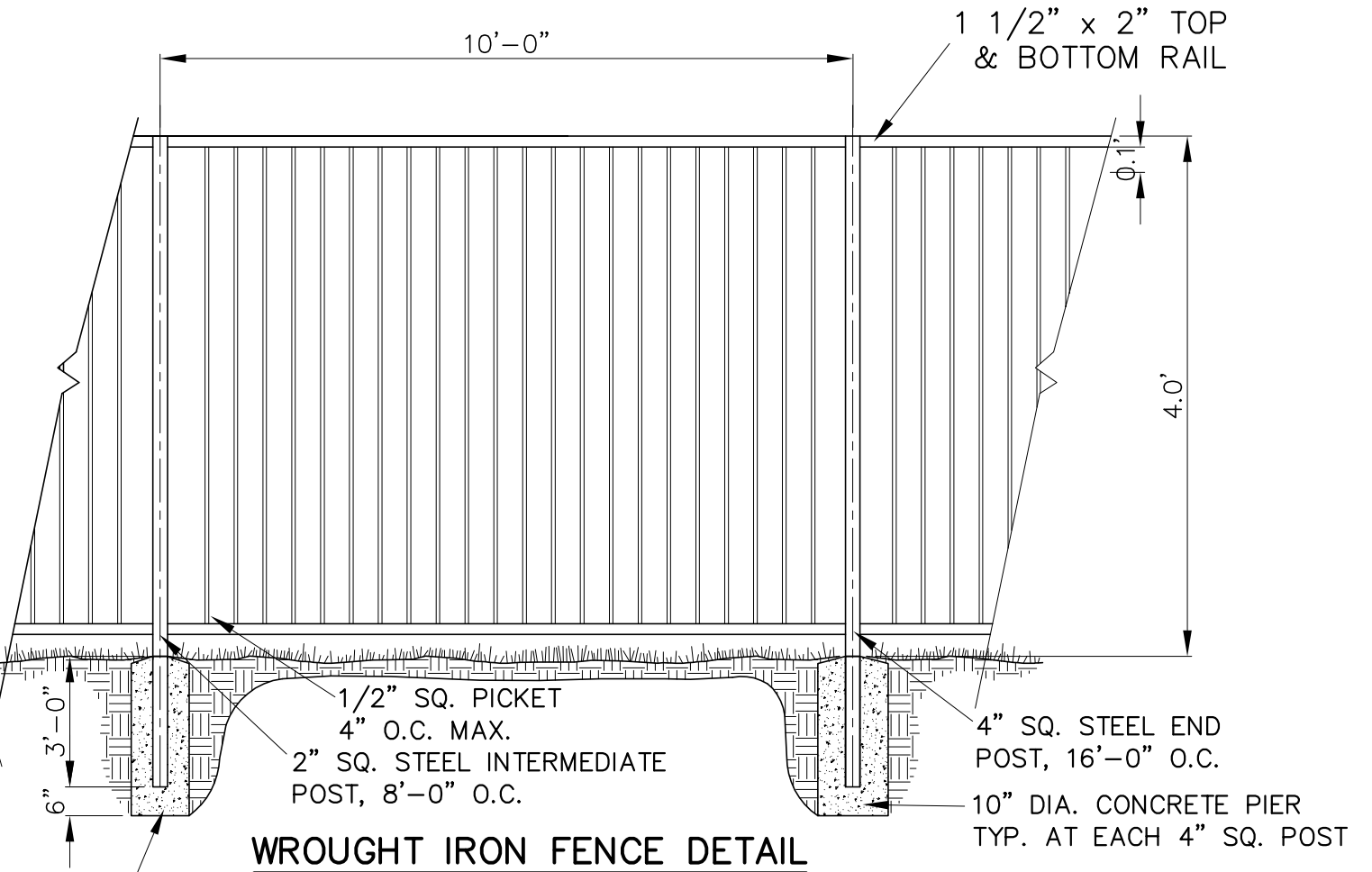
MOUNTABLE MONOLITHIC CURB
N.T.S.



SIDEWALK SECTION @ R.O.W.
N.T.S.

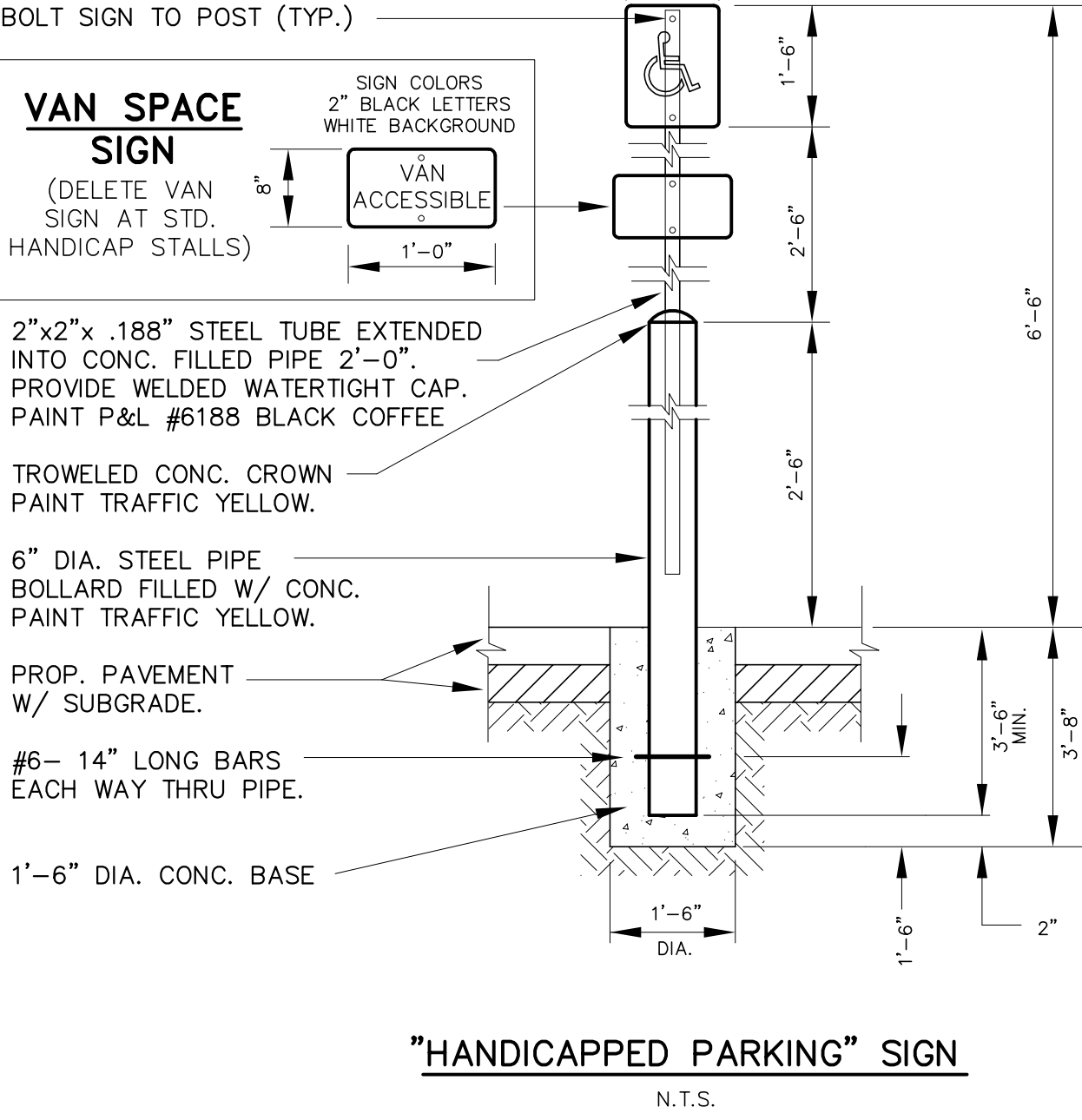


BARRIER FREE RAMP
N.T.S.



WROUGHT IRON FENCE DETAIL
N.T.S.

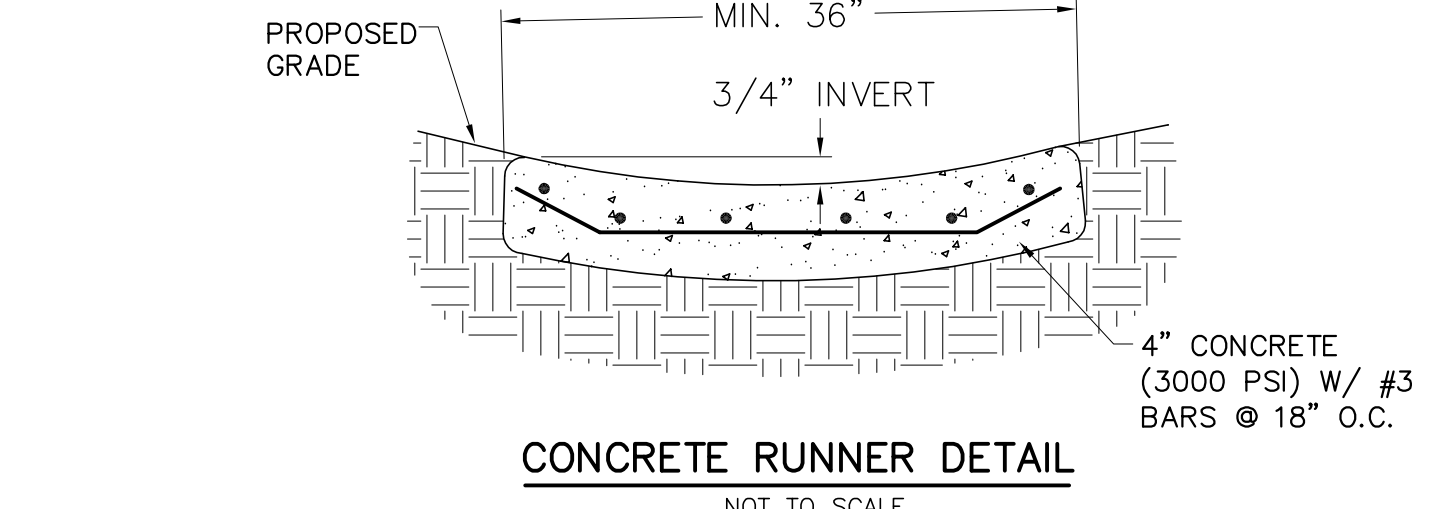
- NOTES:
- NO. 5 SMOOTH DOWEL BAR MAY BE USED IN 5" AND 8" PAVEMENT THICKNESS.
 - LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT (CONTRACTOR'S OPTION.)
 - DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF MECHANICAL RIG. DRILLING BY HAND IS NOT ACCEPTABLE! PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE!



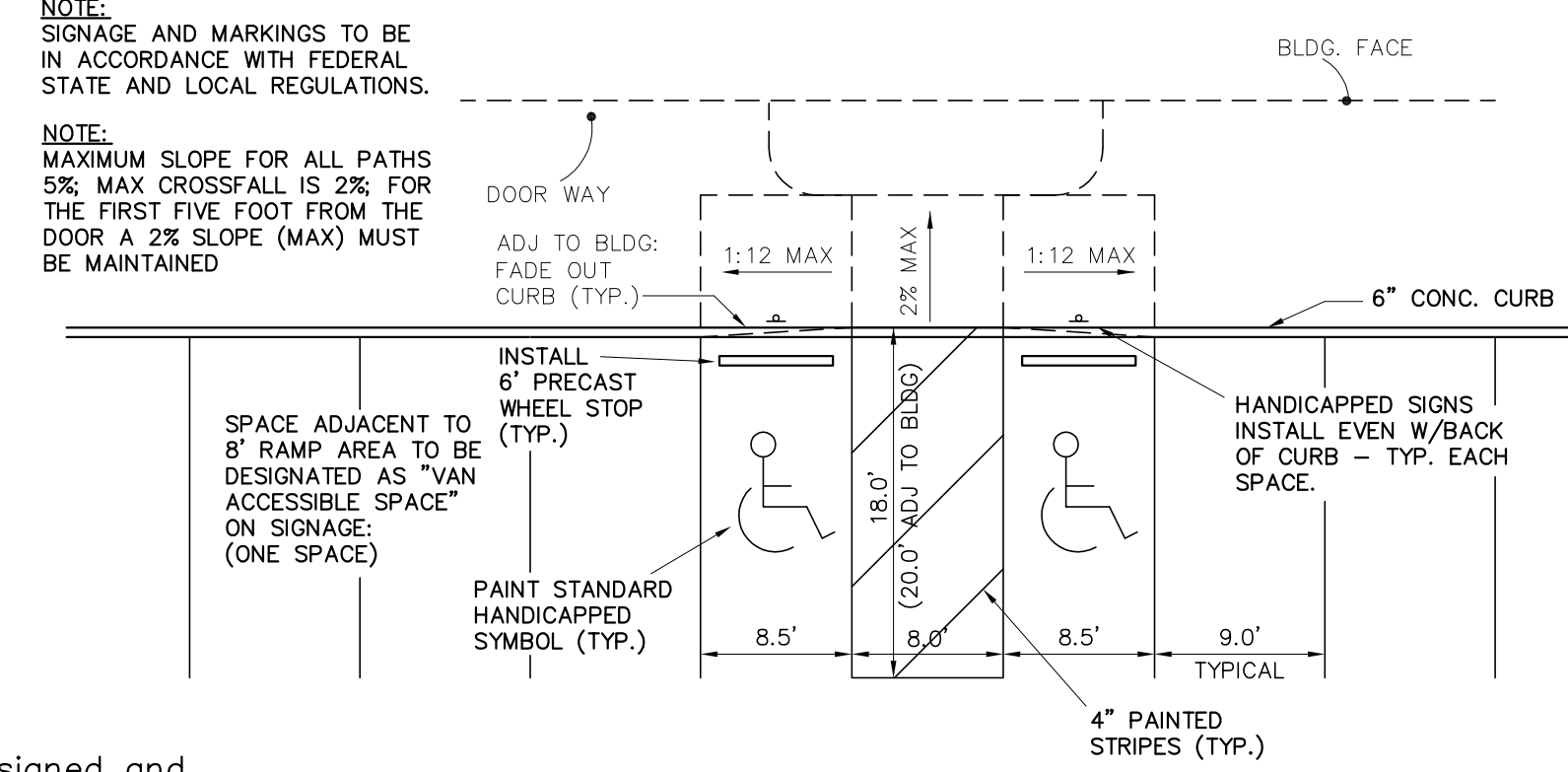
\"/>

- SIGN COLORS
- BACKGROUND - WHITE
 - SYMBOL - BLUE
- NOTE: PROVIDE SIGNAGE AT END OF STALL AT LOCATIONS W/ ACCESSIBLE DESIGNATION TO ACT AS BUMPER STOP. 1'-0"x1'-6"x .080" ALUM. HANDICAPPED PARKING SIGN. SIGN TO READ "RESERVED PARKING" W/ IDENTIFICATION SYMBOL, BOLT TO STEEL TUBE W/ 3/8" CADMIUM PLATED BOLTS, NUTS & WASHERS.
- NOTE: HANDICAPPED PARKING SIGN SHALL CONFORM WITH ALL CURRENT AND LOCAL CODES AND REGULATIONS.

NOTE: Handicapped parking areas shall be designed and provided per town standards and shall comply with requirements of the current adopted Uniform Building Code.



CONCRETE RUNNER DETAIL
NOT TO SCALE



HANDICAP PARKING/STRIPING DETAIL
TYPICAL

- PAVING NOTES:**
- FIRELANE & APPROACHES TO BE 6" THICK, 3,600 psi, 6 SACK MIX, REINFORCED WITH #3 BARS @ 16" ON CENTER. (O.C.) LIME SUBGRADE TO BE 6" THICK.
 - DUMPSTER PAD TO BE 8" THICK, 3,600 psi, 6 SACK MIX, REINFORCED WITH #3 BARS @ 16" O.C. THE SUBGRADE SHALL HAVE A DENSITY OF NO LESS THAN 95% TSHP TEST METHOD TEX-113
 - ALL NON-FIRELANE PAVING CAN BE 6" THICK, 3,600 psi, 6 SACK MIX, REINFORCED WITH #3 BARS @ 16" O.C.
 - ALL FILL AND LIME SUBGRADE SHALL BE PLACED ON 8" LIFTS AND COMPACTED TO 95% OF STD. PROCTOR @ OPTIMUM MOISTURE. (UNLESS OTHERWISE NOTED)

8" DIA. CONCRETE PIER TYP. AT EACH 2" SQ. POST

- NOTES:**
- ALL WORK MUST CONFORM TO TOWN STANDARDS.
 - ALL WORK IN PUBLIC RIGHT-OF-WAY SHALL CONFORM TO TOWN AND/OR TxDOT* STANDARDS AND DETAILS
 - ALL PRIVATE DETAILS ARE SUPERSEDED BY STANDARD TOWN DETAILS.

AS-BUILT
OCTOBER 27, 2009
GERALD E. MONK, P.E.



INFORMATION SHOWN ON THESE PLANS WAS FURNISHED BY THE CONTRACTOR. ALL RESPONSIBILITY FOR THE ACCURACY BELONGS TO THE CONTRACTOR.

SITE DETAILS

DETAIL SHEETS

prepared by
MONK CONSULTING ENGINEERS
1200 W. State Street, Garland Texas 75040
972 272-1763 Fax 972 272-8761

Inlet Protection

Concrete blocks or other dam device
 Pavement (if present)
 Sediment ponding area (1' Min, 2' Max Depth)
 Inlet
 Outfall
 Compacted Soil

Cross Section

DESCRIPTION
 Inlet protection consists of a variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric, inlet inserts, and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water.

PRIMARY USE
 Inlet protection should be considered a secondary defense in site erosion control due to the limited effectiveness and applicability of the technique. It is normally used in new developments that include new inlets or roads with new curb inlet or during major repairs to existing roadways.

Inlet protection has limited use in developed areas due to the potential for flooding, traffic safety, pedestrian safety, and maintenance problems. Inlet protection can reduce sediment in storm sewer systems by serving as a back up system to onsite controls or by reducing sediment loads from controls with limited effectiveness.

APPLICATIONS
 Different inlet protection variations are used for different conditions as follows:

- Filter barrier protection (similar to a silt fence barrier around the inlet) is appropriate when the drainage area is less than one acre and the basin slope is less than five (5) percent. This type of protection is not applicable in paved areas.
- Block and gravel (crushed stone, recycled concrete is also appropriate) protection is used when flows exceed 0.5 c.f.s., and it is necessary to allow for overtopping to prevent flooding.
- Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain system. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. The impoundment shall be sized such that the volume of excavation shall be equal to 1800 to 3600 cubic feet per acre of disturbed area entering the inlet for full effectiveness.

DESIGN CRITERIA

- Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.
- Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- Where applicable, filter fabric, posts, and wire backing shall meet the material requirements specified in BMP Fact Sheet S-1, Silt Fence.
- Filter gravel shall be 3/4 inch (Block and Gravel Protection) or 1-1/2 to 2 inch (Excavated Impoundment Protection) washed stone containing no fines. Angular shaped stone is preferable to rounded shapes.
- Concrete blocks shall:
 - Maximum depth of flow shall be eight (8) inches or less.
 - Positive drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, excess flows shall be routed through established swales, streets, or other watercourses to minimize damage due to flooding.
- Filter Barrier Protection
 Silt Fence shall consist of nylon geotextile supported by wire mesh, W1.4 x W1.4, and galvanized steel posts set a minimum of 1 foot depth and spaced not more than 5 feet on center. A 6 inch wide trench is to be cut 6 inches deep at the toe of the fence to allow the fabric to be laid below the surface and backfilled with compacted earth or gravel. This entrenchment prevents any bypass of runoff under the fence.
- Block and Gravel Protection (Curb and Drop Inlets)
 Concrete blocks are to be placed on their sides in a single row around the perimeter of the inlet, with ends abutting. Opening in the block should face outward, not upward. 1/2" x 1/2" wire mesh shall then be placed over the outside face of the blocks covering the holes. Filter stone shall then be piled against the wire mesh to the top of the blocks with the base of the stone being a minimum of 18 inches from the blocks. Alternatively, where loose stone is a concern (street, etc.), the filter stone may be placed in appropriately sized geotextile fabric bags. Periodically, when the stone filter becomes clogged, the stone must be removed and cleaned in a proper manner or replaced with new stone and piled back against the wire mesh.
- Excavated Impoundment Protection
 An excavated impoundment shall be sized to provide a storage volume of between 1800 and 3600 cubic feet per acre of disturbed area. The trap shall have a minimum depth of one foot and a maximum depth of 2 feet as measured from the top of the inlet and shall have sideslopes of 2:1 or flatter. Weep holes are to be installed in the inlet walls to allow for the complete dewatering of the trap. When the storage capacity of the impoundment has been reduced by one-half, the silt shall be removed and disposed in a proper manner.
- Inlet inserts are commercially available to remove sediment, constituents (pollutants) adsorbed to sediment, and oil and grease. Maintenance is required to remove sediment and debris that could clog the filters. Inlet inserts must have a bypass function to prevent flooding from clogging or high flows.

LIMITATIONS
 Special caution must be exercised when installing inlet protection on publicly traveled streets or in developed areas. Ensure that inlet protection is properly designed, installed and maintained to avoid flooding of the roadway or adjacent properties and structures.

Inlet protection is only viable at low point inlets. Inlets that are on a slope cannot be effectively protected because storm water will bypass the inlet and continue downstream, causing an overland condition at inlets downstream.

MAINTENANCE REQUIREMENTS
 s often as required by the TPDES Construction General Permit, Appendix A). When silt fence is used and the fabric becomes clogged, it should be cleaned or, if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the inlet protection device. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using filter stone, when the filter stone becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of stone at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the inlet.

SPECIFICATIONS
 Specifications for construction of this item may be found in the Standard Specifications for Public Works Construction - North Central Texas Council of Governments, Section 201.5 Inlet Protection.

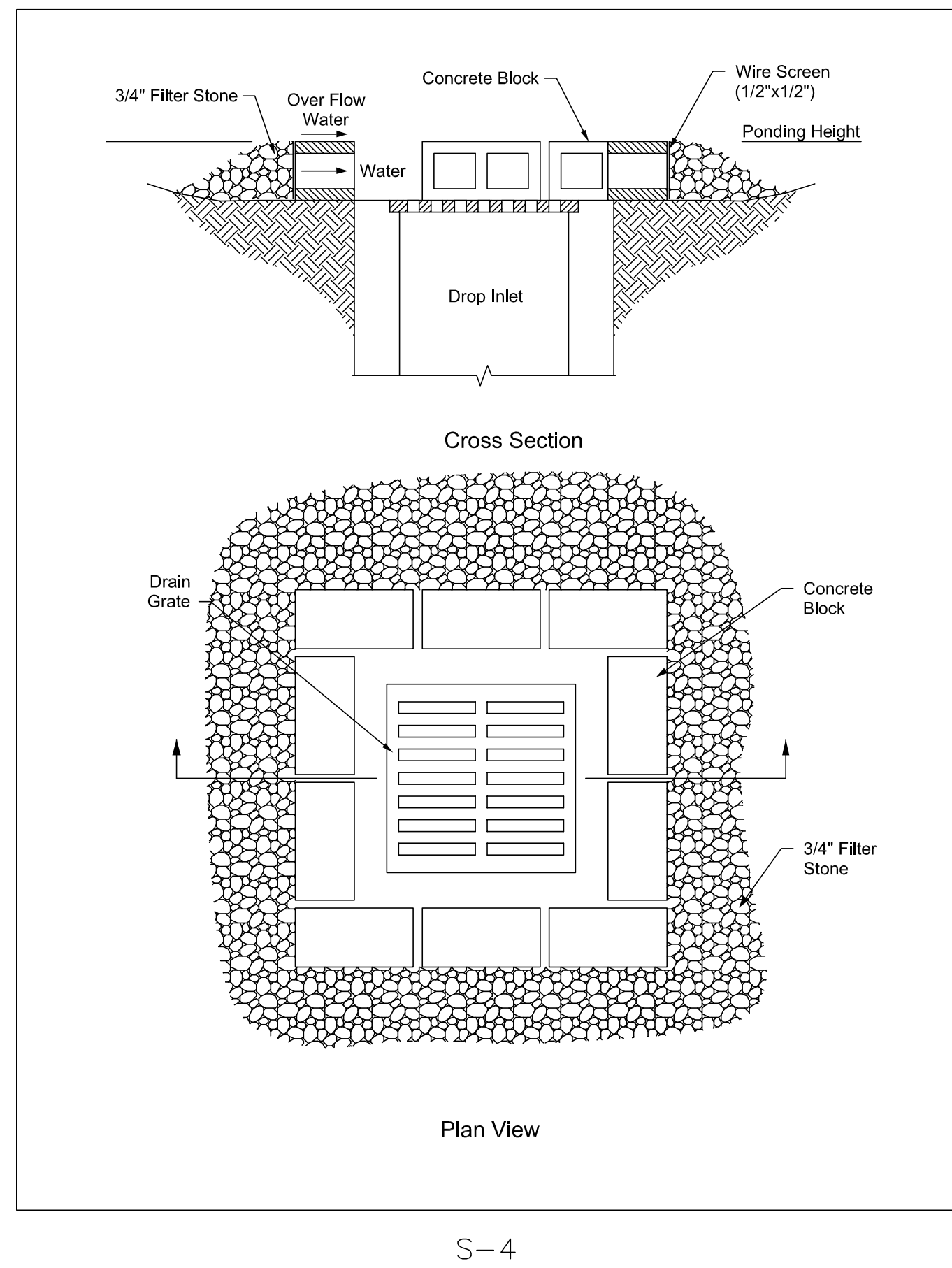
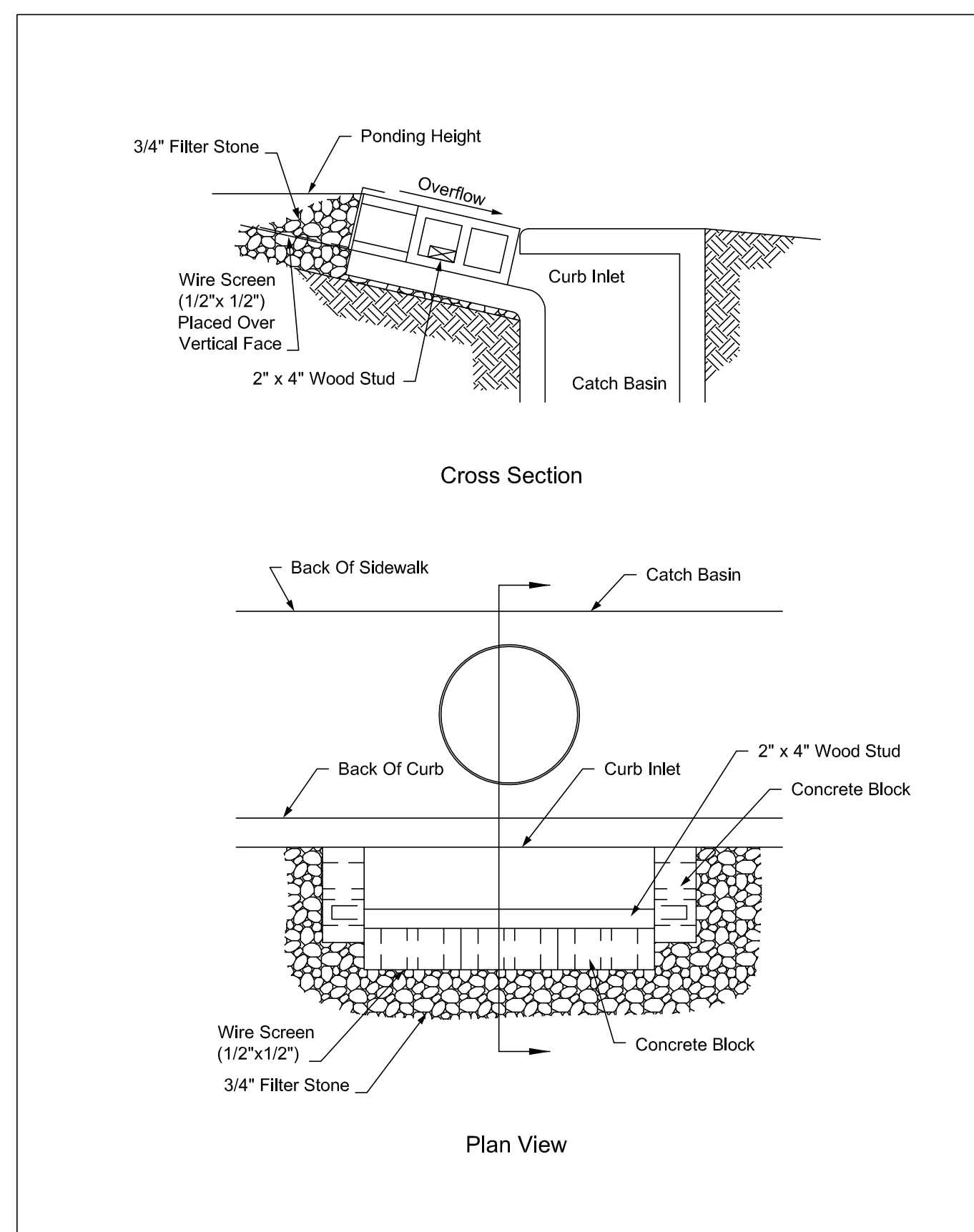
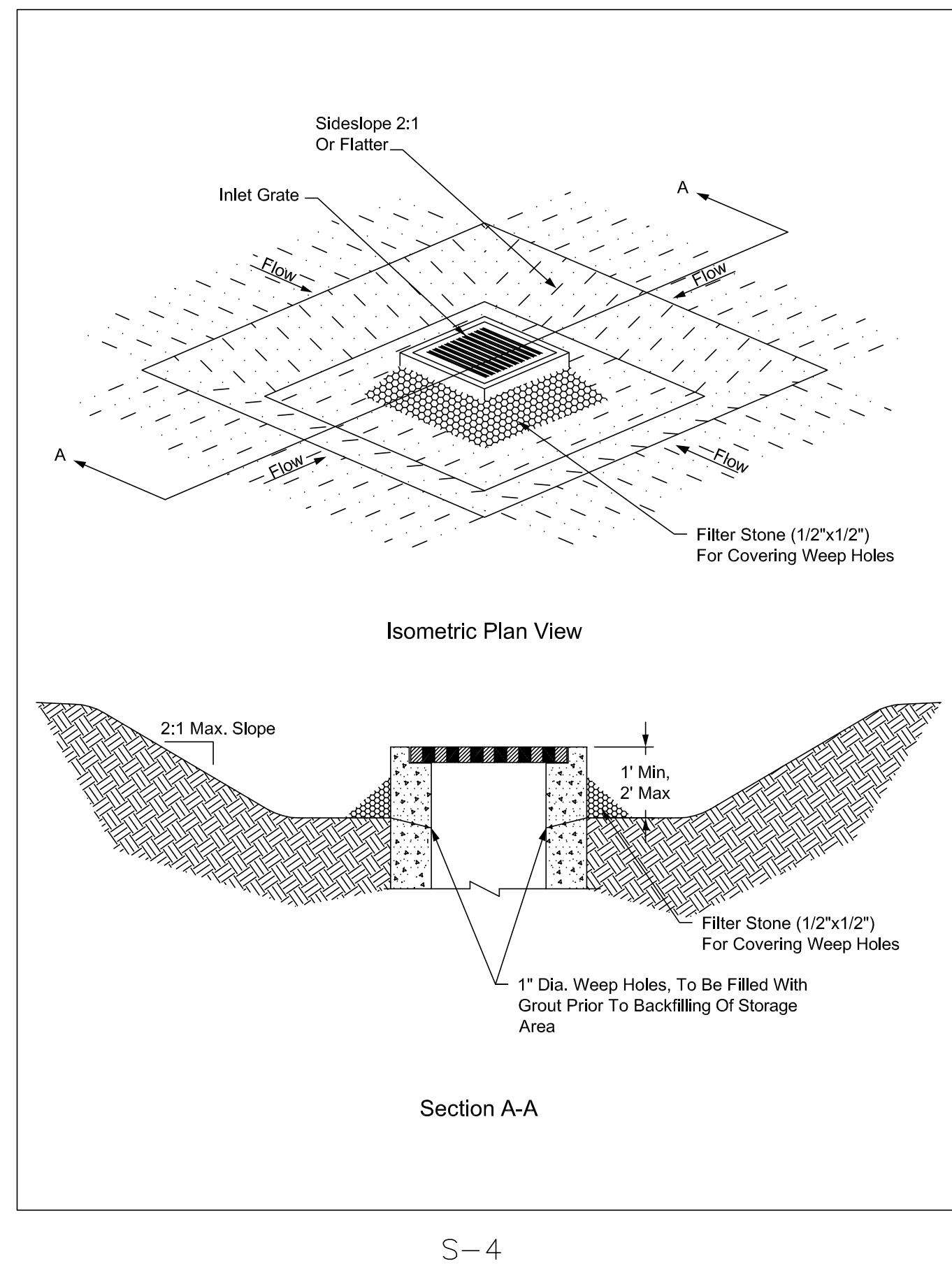
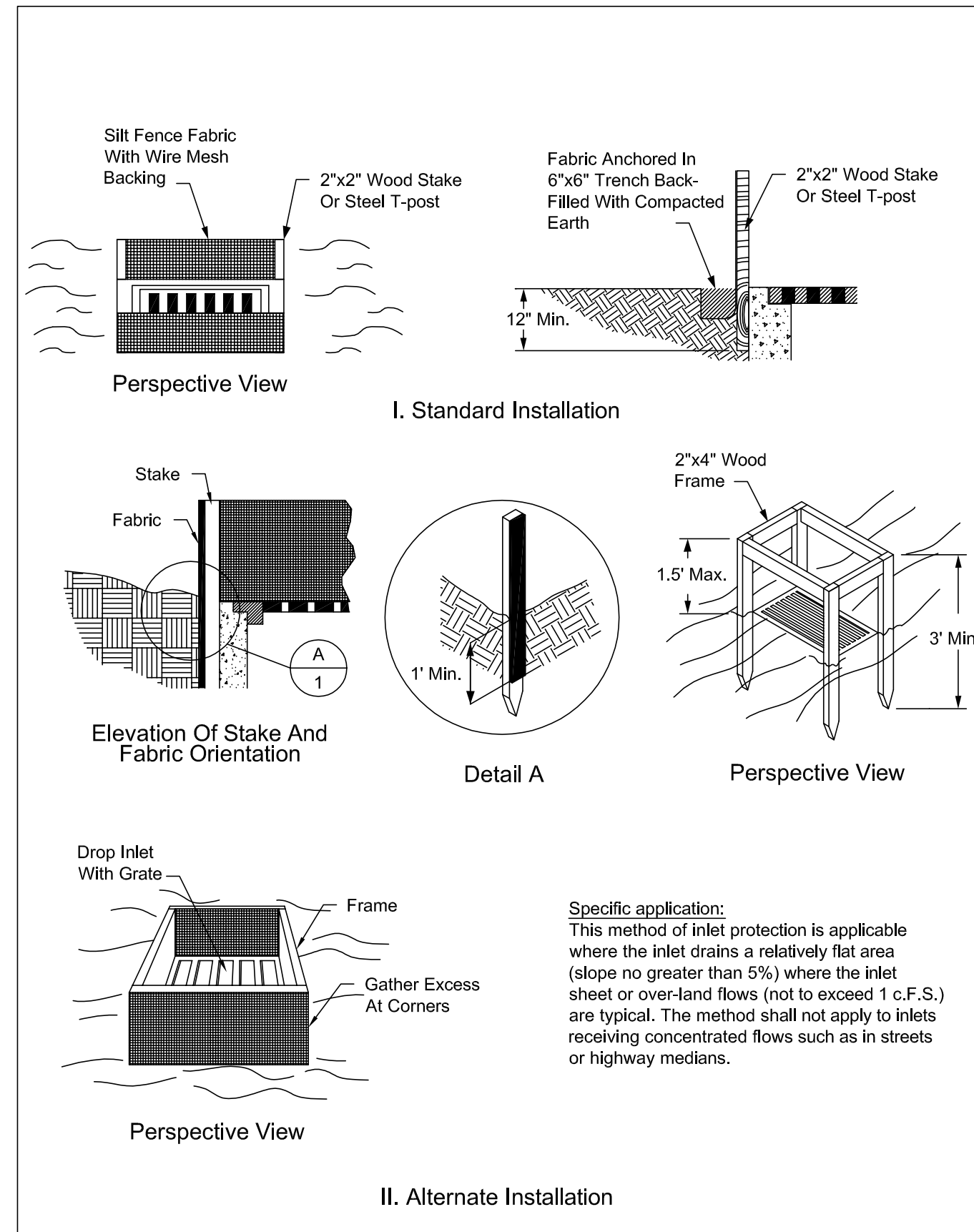
Applications
 Perimeter Control
 Slope Protection
 Sediment Trapping
 Channel Protection
 Temporary Stabilization
 Permanent Stabilization
 Waste Management
 Housekeeping Practices

Targeted Constituents
 Sediment
 Nutrients
 Oil & Grease
 Floatable Materials
 Other Construction Wastes

Implementation Requirements
 Capital Costs
 Maintenance
 Training
 Suitability for Slopes > 5%

Legend
 Significant Impact
 Medium Impact
 Low Impact
 Unknown or Questionable Impact

Varies
 S-4



AS-BUILT
 OCTOBER 27, 2009
 GERALD E. MONK, P.E.

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BMP DETAILS

DETAIL SHEETS

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scale: sheet:
 N.T.S. **D102**