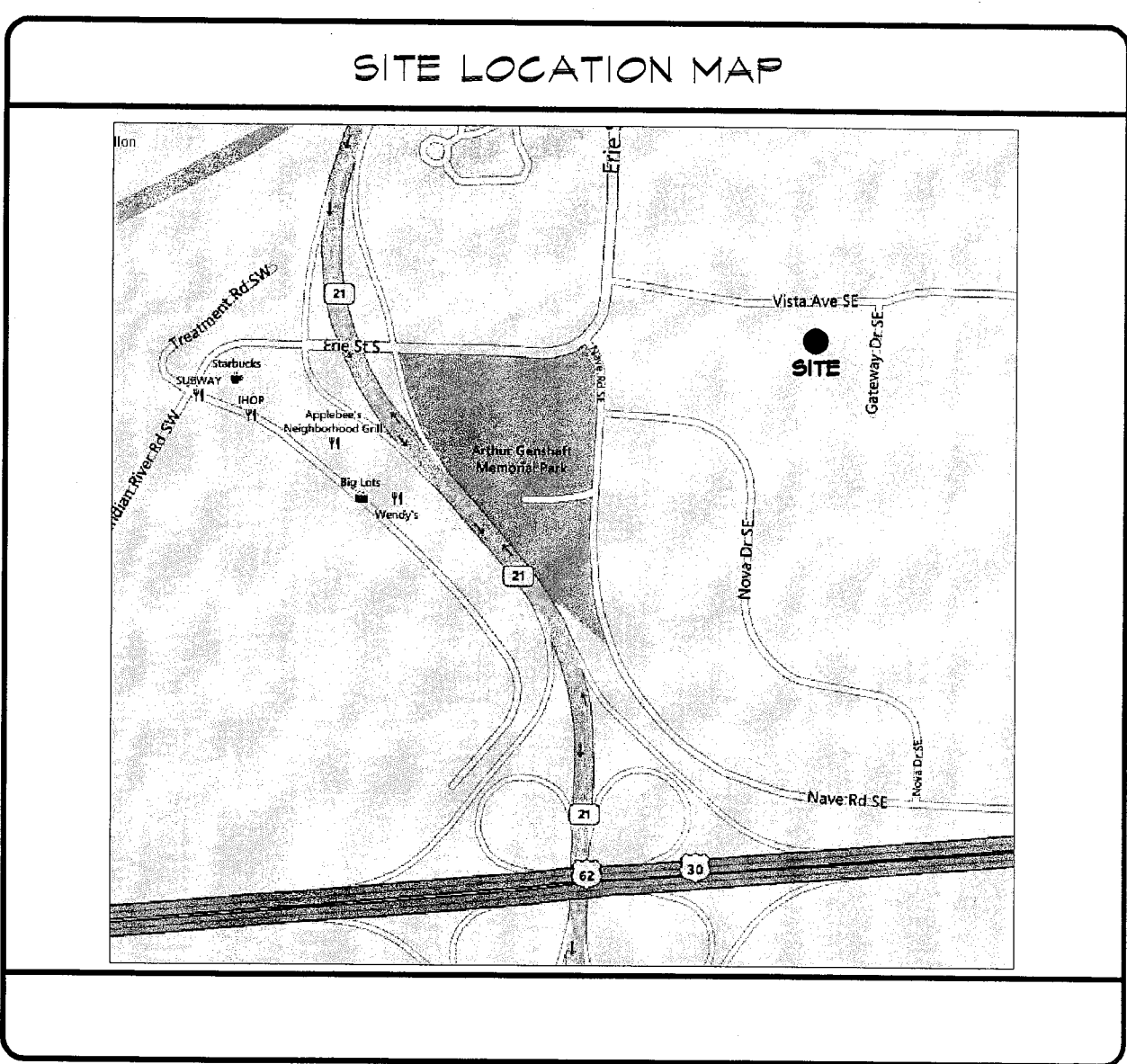


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CODE & REGULATORY DATA - 2011 OBC			
USE GROUP: B/F-1 NON SEPARATED.		TYPE OF CONSTRUCTION (AS PER OBC CHAPTER 6) II-B	
		FIRE SUPPRESSION SYSTEM COMPLETE FIRE SUPPRESSION SYSTEM DESIGNED & INSTALLED AS PER NFPA 13	
AREA	ALLOWABLE AREA	ACTUAL	
B (PER OBC 501.3)	UNLIMITED	4,672 SF	
F-1 (PER OBC 501.3)	UNLIMITED	82,800 SF	
TOTAL	UNLIMITED	87,472 SF	
HEIGHT	ALLOWABLE HEIGHT LIMITATIONS AS PER OBC TABLE 503	ACTUAL	
B	3 STORIES UP TO 55'	ONE STORY, 14'-0"	
F-1	2 STORIES UP TO 55'	ONE STORY, 31'-2"	
FIRE RATINGS:	ALLOWABLE FIRE RATINGS AS PER OBC TABLE 601 & 602	ACTUAL	
STRUCTURAL FRAME	0 HRS	0 HRS	
BEARING WALLS	0 HRS	0 HRS	
NON-BEARING WALLS & PARTITIONS	0 HRS	0 HRS	
FLOOR CONSTRUCTION	0 HRS	0 HRS	
ROOF CONSTRUCTION	0 HRS	0 HRS	
INTERIOR FINISHES	REQUIRED AS PER OBC TABLE 803.5	ACTUAL	
WALLS & CEILINGS	CLASS A	N/A	
VERTICAL EXITS & PASSAGEWAYS	CLASS B	CLASS A	
EXIT ACCESS CORRIDORS & OTHER EXITWAYS	CLASS C	CLASS B	
ROOMS & ENCLOSED SPACES			
		MISCELLANEOUS	
		ALLOWABLE AS PER OBC	ACTUAL
		B=300', F-1=250'	B=175', F-1=220'
		46	25
		828	25
		MINIMUM NUMBER OF EXITS (TABLE 1021.1)	B=2, F-1=3
		MINIMUM CORRIDOR FIRE RESISTANCE RATING (TABLE 1017.1)	0 HRS
		MINIMUM FLOOR DEFLECTION & LIVE LOADS (SEC. 1604.3 & 1607.6)	0 HRS
		SLAB ON GRADE - B	100 PSF
		SLAB ON GRADE - F-1	250 PSF
		MINIMUM ROOF LIVE LOAD (SEC. 1607.1)(2)	20 PSF
		GROUND SNOW LOAD, S_g (SEC. 1608.2)	20 PSF
		SNOW EXPOSURE FACTOR, C_e (TABLE 1608.3.1)	1.0
		SNOW IMPORTANCE FACTOR, I_s (TABLE 1604.5)	1.0
		THERMAL FACTOR, C_t (TABLE 1608.3.2)	1.0
		FLAT ROOF SNOW LOAD, S_f (SEC. 1608.3)	20.0 PSF
		COLLATERAL LOADS	N/A
		EXPOSURE FACTOR (SEC. 1604.4)	B
		BASIC WIND SPEED (SEC. 1604.3)	90 MPH
		WIND IMPORTANCE FACTOR, I_w (TABLE 1604.5)	1.0
		SEISMIC USE GROUP (TABLE 1604.5, SEC. 1619)	GROUP 1
		SEISMIC DESIGN SPECTRAL RESPONSE COEFFICIENT (SEC. 1619.5.4)	0.25
		S_{DS}	0.09
		SEISMIC SITE CLASS (TABLE 1619.5.5)	D
		SEISMIC FORCE RESISTANCE SYSTEM (SEC. 1619.6)	D
		ANALYSIS PROCEDURE (SEC. 1619.6)	FRAME & BEARING WALL SYSTEMS
		LOAD BEARING VALUE OF SOILS (SEC. 1804)	EQUIVALENT LATERAL FORCE METHOD
		(PRESUMPTIVE VALUES)	N/A
		SOIL IS TO BE TESTED AFTER EXCAVATION. NOTIFY ENGINEER IMMEDIATELY OF ANY READINGS BELOW PRESUMPTIVE VALUE	2,000 PSF
		FIRE PROTECTION SYSTEM WILL BE DESIGNED BY A LICENSED FIRE PROTECTION DESIGNER AND WILL BE SUBMITTED FOR PERMIT UNDER SEPARATE COVER.	



- ADA REGULATIONS
- THE OWNER AND CONTRACTOR SHALL FURNISH AND INSTALL ALL SITE AND BUILDING ACCESSORIES AND MISCELLANEOUS DESIGN DETAILS IN THE FIELD FOR FULL COMPLIANCE WITH THE AMERICAN DISABILITIES ACT INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- 1) SITE AND BUILDING ACCESS: WALKS, SURFACE TEXTURES, CURB CUTS, RAMPS, PARKING SPACES, ETC.
 - 2) INTERIOR ACCESS: CORRIDORS, DOORS, FLOORING, HANDRAILS, STAIRS, ETC.
 - 3) DOOR HARDWARE: THRESHOLDS, CLOSERS, DOOR KNOBS, PULLS, HINGES, ETC.
 - 4) PLUMBING AND ELECTRICAL FIXTURES: WATER CLOSETS, LAVATORIES, DRINKING FOUNTAINS, MIRRORS, GRAB BARS, PUBLIC PHONES, ELEVATOR CONTROLS, SWITCH DEVICES, EMERGENCY WARNING SYSTEMS, ETC.

A DESIGN/BUILD PROJECT FOR:

PREMIER INDUSTRIAL SUPPLY, INC.

480 NOVA DRIVE SE MASSILLON, OHIO 44646

Campbell

CONSTRUCTION

CONSTRUCTION SERVICES

CONSTRUCTION MANAGEMENT

DESIGN-BUILD SPECIALISTS • SINCE 1953



1159 BLACHLEYVILLE RD., WOOSTER, OH 44691 330/262-5186
1 PARK CENTRE DR., WADSWORTH, OH 44281 330/336-8786

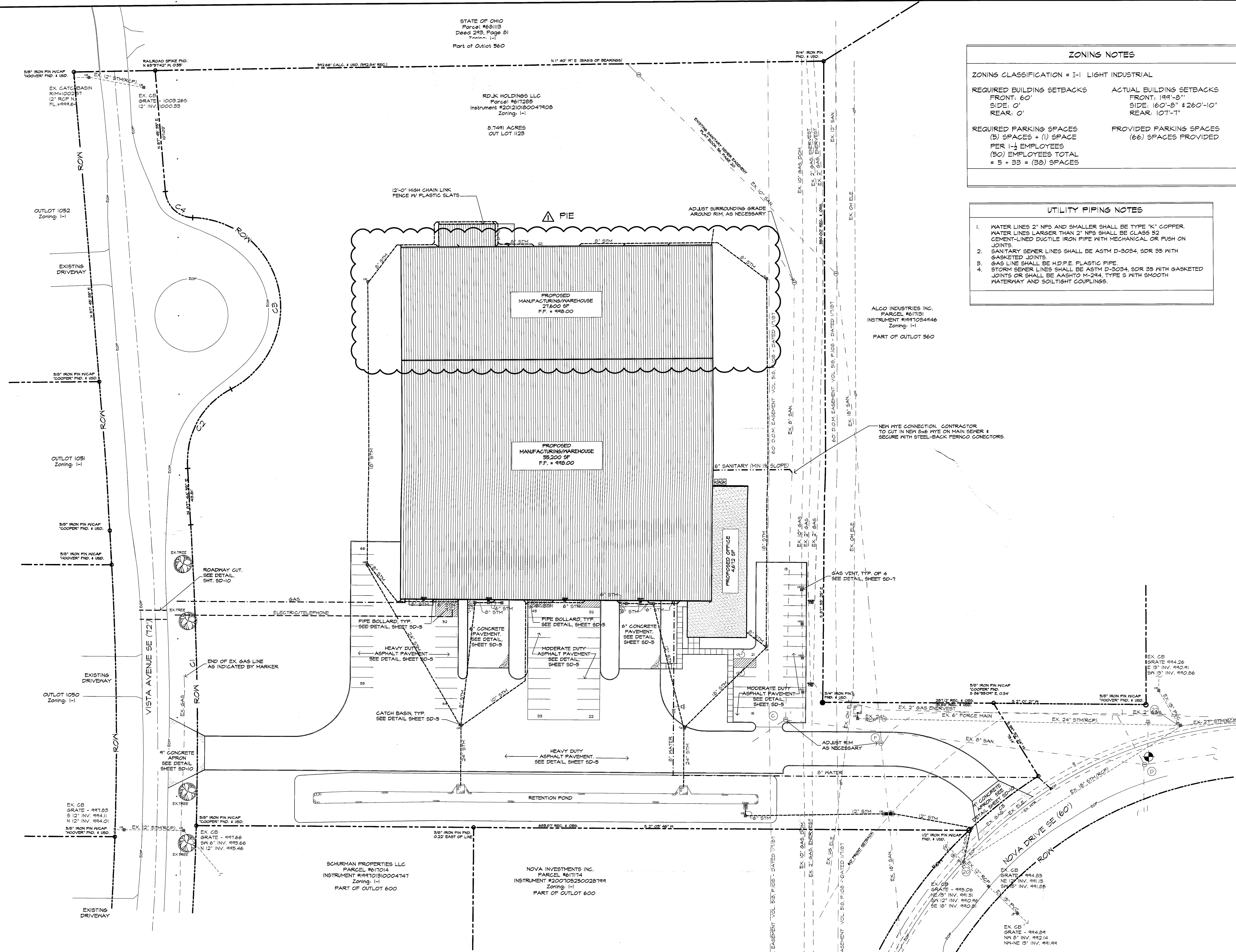
WWW.CAMPBELL-CONSTRUCTION.COM
AN EQUAL OPPORTUNITY EMPLOYER

Approved by the Massillon City Engineer this _____
Day of _____, 20 ____
Keith A. Dylewski, P.E., P.S.

Only approved signed plans by the
City Engineer are to
be used for construction.

3/15/13
Ransel set showing East Building Addition
P/S

W. John Schmitt, P.E.
3-12-13



ZONING NOTES	
ZONING CLASSIFICATION = I-1 LIGHT INDUSTRIAL	
REQUIRED BUILDING SETBACKS	ACTUAL BUILDING SETBACKS
FRONT: 60'	FRONT: 199'-8"
SIDE: 0'	SIDE: 160'-8" & 260'-10"
REAR: 0'	REAR: 107'-1"
REQUIRED PARKING SPACES	PROVIDED PARKING SPACES
(5) SPACES + (1) SPACE PER 1-1 EMPLOYEES (50) EMPLOYEES TOTAL = 5 + 33 = (38) SPACES	(66) SPACES PROVIDED

- UTILITY PIPING NOTES
1. WATER LINES 2" NPS AND SMALLER SHALL BE TYPE "K" COPPER. WATER LINES LARGER THAN 2" NPS SHALL BE CLASS 52 CEMENT-LINED DUCTILE IRON PIPE WITH MECHANICAL OR PUSH ON JOINTS.
 2. SANITARY SEWER LINES SHALL BE ASTM D-3034, SDR 35 WITH GASKETED JOINTS.
 3. GAS LINE SHALL BE HDPE PLASTIC PIPE.
 4. STORM SEWER LINES SHALL BE ASTM D-3034, SDR 35 WITH GASKETED JOINTS OR SHALL BE AASHTO M-294, TYPE S WITH SMOOTH WATERWAY AND SOILTIGHT COUPLINGS.

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NEW FACILITY FOR
PREMIER INDUSTRIAL SUPPLY, INC.
480 NOVA DRIVE SE
MASSILLON, OH 44646

STATE OF OHIO
WILLIAM D. SLUNGH
E-63683
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS
3-14-13

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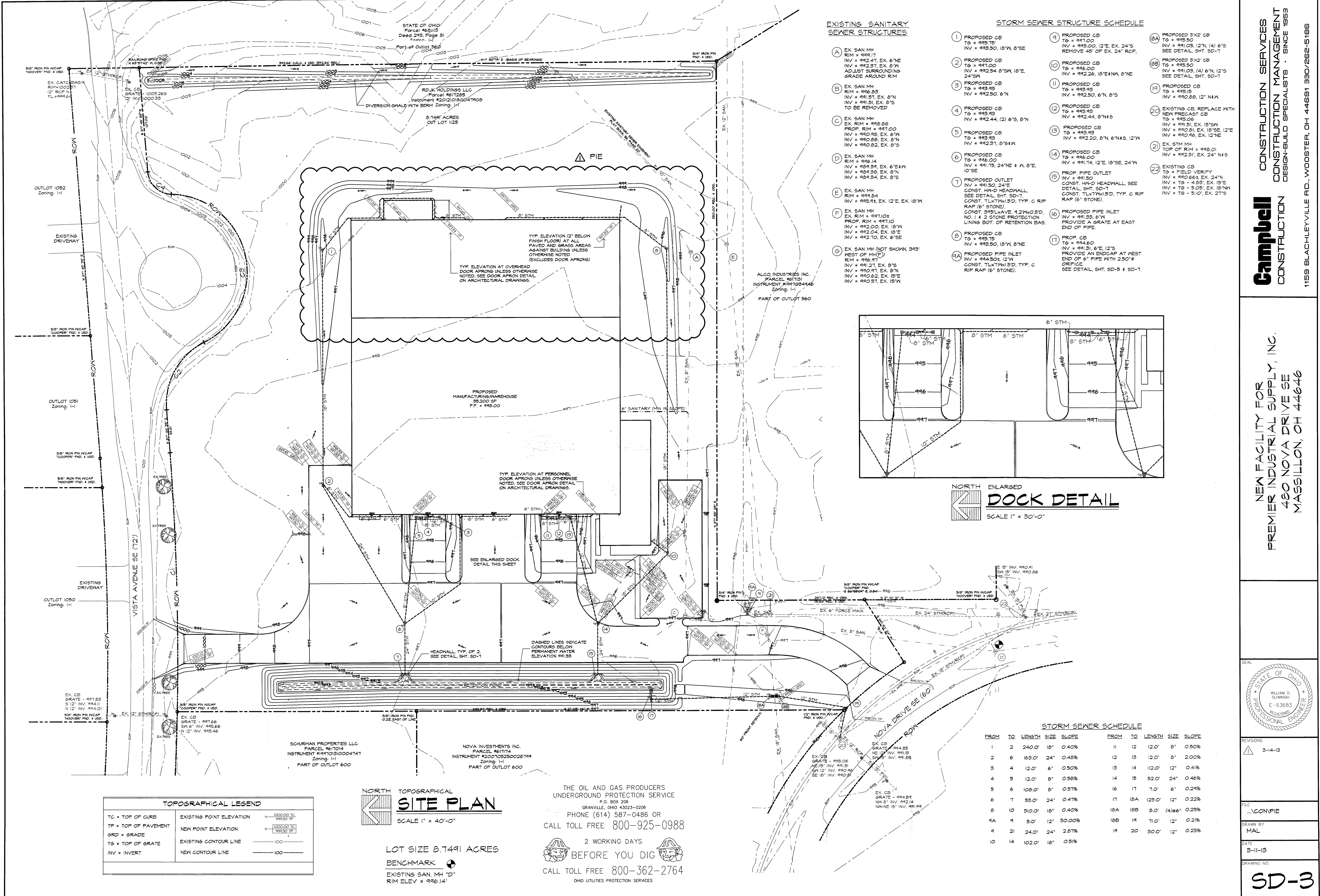
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DATE
3-11-13

DRAWING NO.
SD-2

NORTH
GENERAL & UTILITY
SITE PLAN
SCALE 1" = 40'-0"

LOT SIZE 8.7491 ACRES
BENCHMARK
EXISTING SAN. MH "D"
RIM ELEV = 996.14'



TOPOGRAPHICAL LEGEND	
TC = TOP OF CURB	EXISTING POINT ELEVATION
TP = TOP OF PAVEMENT	NEW POINT ELEVATION
GRD = GRADE	EXISTING CONTOUR LINE
TS = TOP OF GRATE	NEW CONTOUR LINE
INV = INVERT	

NORTH
TOPOGRAPHICAL
SITE PLAN
SCALE 1" = 40'-0"

THE OIL AND GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
P.O. BOX 206
GRANVILLE, OHIO 43021-0206
PHONE (614) 587-0486 OR
CALL TOLL FREE 800-925-0988

LOT SIZE 8.7491 ACRES
BENCHMARK
EXISTING SAN. MH "D"
RIM ELEV = 996.14'

2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICES

EXISTING SANITARY SEWER STRUCTURES

- A EX. SAN. MH
RIM = 999.17
INV = 992.47, EX. 6' NE
INV = 992.57, EX. 8' W
ADJUST SURROUNDING
GRADE AROUND RIM
- B EX. SAN. MH
RIM = 996.83
INV = 991.57, EX. 8' N
INV = 991.51, EX. 8' S
TO BE REMOVED
- C EX. SAN. MH
EX. RIM = 999.83
PROP. RIM = 997.00
INV = 990.98, EX. 6' W
INV = 990.88, EX. 8' N
INV = 990.82, EX. 8' S
- D EX. SAN. MH
RIM = 996.14
INV = 994.94, EX. 6' E 1/4 W
INV = 994.38, EX. 8' N
INV = 994.34, EX. 8' S
- E EX. SAN. MH
RIM = 999.84
INV = 995.94, EX. 12' E, EX. 18' W
- F EX. SAN. MH
RIM = 997.102
PROP. RIM = 997.10
INV = 992.00, EX. 18' W
INV = 992.04, EX. 18' E
INV = 992.70, EX. 6' SE
- G EX. SAN. MH (NOT SHOWN, 343'
WEST OF MH (C))
RIM = 996.47
INV = 991.27, EX. 8' S
INV = 990.97, EX. 8' N
INV = 990.62, EX. 15' E
INV = 990.57, EX. 15' W

STORM SEWER STRUCTURE SCHEDULE

- 1 PROPOSED CB
TS = 995.75
INV = 995.50, 18' W, 8' SE
- 2 PROPOSED CB
TS = 997.00
INV = 992.34 8' SW, 18' E,
24' SW
- 3 PROPOSED CB
TS = 993.43
INV = 992.50, 6' N
- 4 PROPOSED CB
TS = 993.93
INV = 992.44, (2) 6' S, 8' N
- 5 PROPOSED CB
TS = 993.93
INV = 992.37, 8' S 1/4 W
- 6 PROPOSED CB
TS = 996.00
INV = 991.74, 12' E, 18' SE, 24' W,
10' SE
- 7 PROPOSED OUTLET
INV = 991.50, 24' E
CONST. H&D HEADWALL, SEE
DETAIL, SHT. SD-7
CONST. TLX/TXK/S'D, TYP. C RIP
RAP (6' STONE).
- 8 PROPOSED PIPE INLET
NO. 1 & 2 STONE PROTECTION
LINING BOT. OF RETENTION BAS.
- 9 PROPOSED CB
TS = 995.75
INV = 995.50, 18' W, 8' SE
- 10 PROPOSED CB
TS = 996.00
INV = 992.26, 18' E 1/4 N, 8' NE
SEE DETAIL, SHT. SD-7
- 11 PROPOSED CB
TS = 993.43
INV = 992.50, 6' N, 8' S
- 12 PROPOSED CB
TS = 993.93
INV = 992.44, 6' N 1/2 S
- 13 PROPOSED CB
TS = 993.93
INV = 992.20, 8' N, 6' N 1/2 S, 12' W
- 14 PROPOSED CB
TS = 996.00
INV = 991.74, 12' E, 18' SE, 24' W
- 15 PROP. PIPE OUTLET
INV = 991.50
CONST. H&D HEADWALL, SEE
DETAIL, SHT. SD-7
CONST. TLX/TXK/S'D, TYP. C RIP
RAP (6' STONE).
- 16 PROPOSED PIPE INLET
INV = 991.50, 6' E, 12' S
PROVIDE AN ENDCAP AT WEST
END OF 6" PIPE WITH 2.50' 6"
ORIFICE.
SEE DETAIL, SHT. SD-5 & SD-7.
- 18A PROPOSED 3'x2' CB
TS = 995.50
INV = 991.05, 12' N, (4) 6' S
SEE DETAIL, SHT. SD-7
- 18B PROPOSED 3'x2' CB
TS = 995.50
INV = 991.05, (4) 6' N, 12' S
SEE DETAIL, SHT. SD-7
- 19 PROPOSED CB
TS = 995.15
INV = 990.88, 12' N 1/4 W
- 20 EXISTING CB, REPLACE WITH
NEW PRECAST CB
TS = 995.06
INV = 991.51, EX. 15' SW
INV = 990.81, EX. 18' SE, 12' E
INV = 990.96, EX. 12' NE
- 21 EX. STM. MH
TOP OF RIM = 998.01
INV = 992.31, EX. 24' N 1/2 S
- 22 EXISTING CB
TS = FIELD VERIFY
INV = 990.66, EX. 24' N
INV = TS - 4.83', EX. 15' E
INV = TS - 5.05', EX. 18' W
INV = TS - 5.10', EX. 21' S

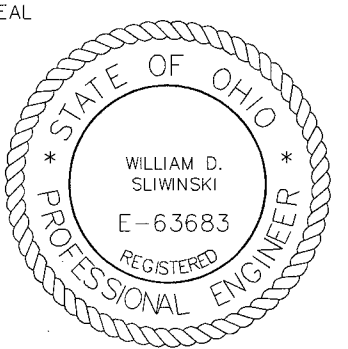
NORTH
ENLARGED
DOCK DETAIL
SCALE 1" = 30'-0"

STORM SEWER SCHEDULE

FROM	TO	LENGTH	SIZE	SLOPE	FROM	TO	LENGTH	SIZE	SLOPE
1	2	240.0'	18"	0.40%	12	13	12.0'	8"	0.50%
2	6	163.0'	24"	0.48%	12	13	12.0'	8"	2.00%
3	4	12.0'	6"	0.50%	13	14	112.0'	12"	0.41%
4	5	12.0'	8"	0.58%	14	15	52.0'	24"	0.46%
5	6	108.0'	8"	0.57%	16	17	7.0'	6"	0.24%
6	7	59.0'	24"	0.47%	17	18A	123.0'	12"	0.22%
8	10	310.0'	18"	0.40%	18A	18B	8.0'	(4) 6"	0.25%
9A	9	5.0'	12"	30.00%	18B	19	71.0'	12"	0.21%
9	21	24.0'	24"	2.87%	19	20	30.0'	12"	0.23%
10	14	102.0'	18"	0.51%					

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480 NOVA DRIVE SE
MASSILLON, OH 44646



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SD-3

- 1) ALL DIMENSIONS ARE FROM THE POINT AT THE NORTH END OF THE WEST PROPERTY LINE.
- 2) ALL DIMENSIONS ARE TO THE BACK OF THE CURB.

[illegible]

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SEAL

STATE OF OHIO

WILLIAM D. SLIWINSKI

E-63683

REGISTERED

PROFESSIONAL ENGINEER

REVISIONS

NO.	DESCRIPTION	DATE
1	3-14-13	

FILE
... \CON\PIE

DRAWN BY
MAL

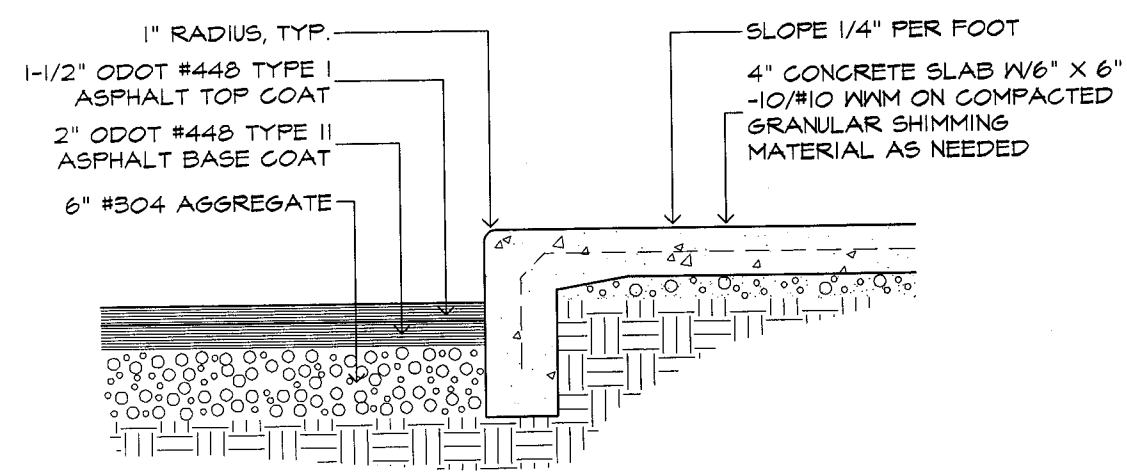
DATE
3-11-13

DRAWING NO.

SD-4

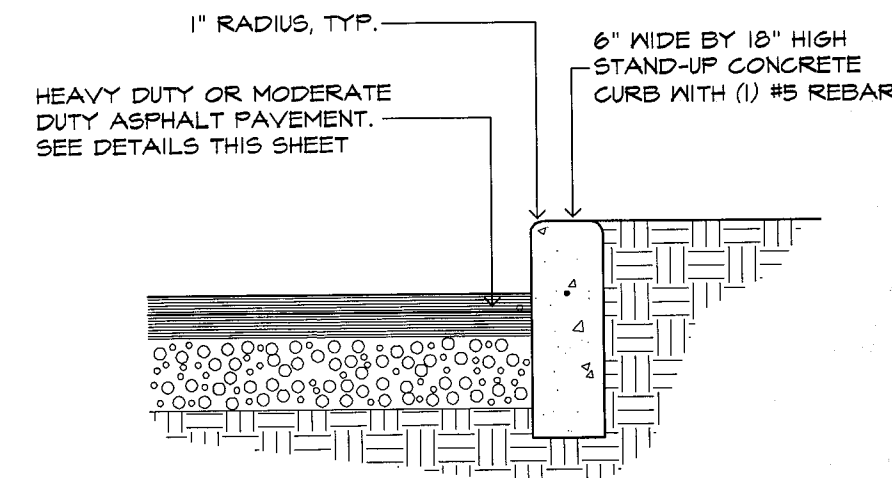
BENCHMARK 
EXISTING SAN. MH "D"
RIM ELEV = 996.14'

NORTH
DIMENSIONAL
SITE PLAN
SCALE 1" = 30'-0"



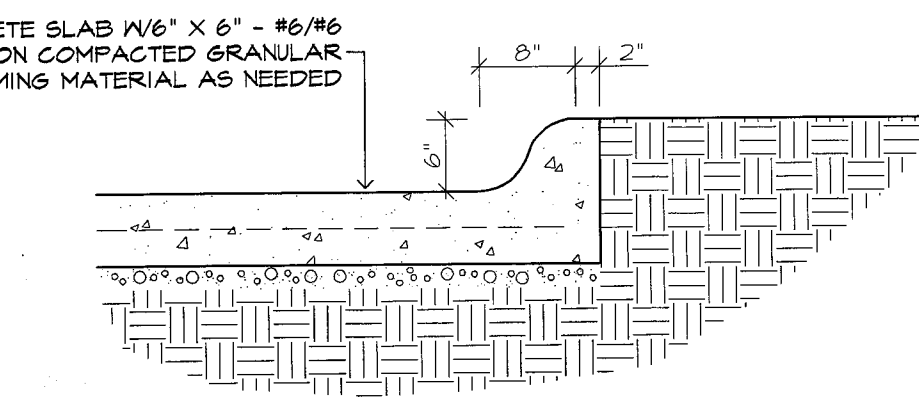
INTEGRAL CURB DETAIL

SCALE = NO SCALE



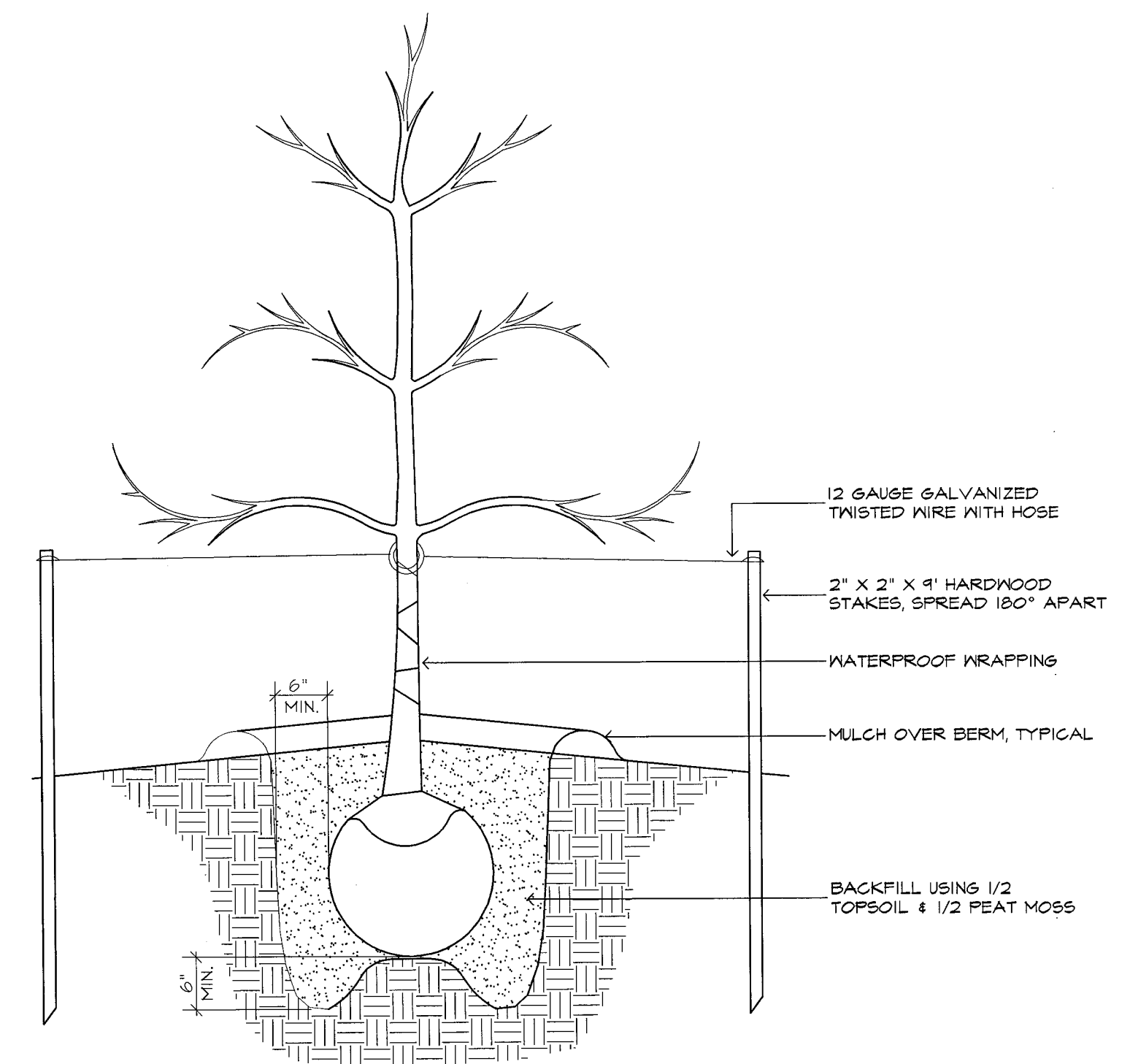
STAND-UP CURB DETAIL

SCALE = NO SCALE



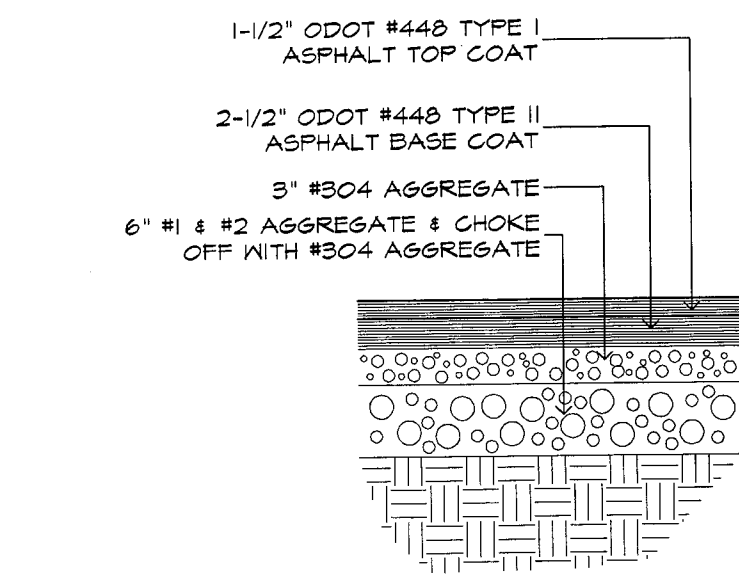
ROLLED CURB DETAIL

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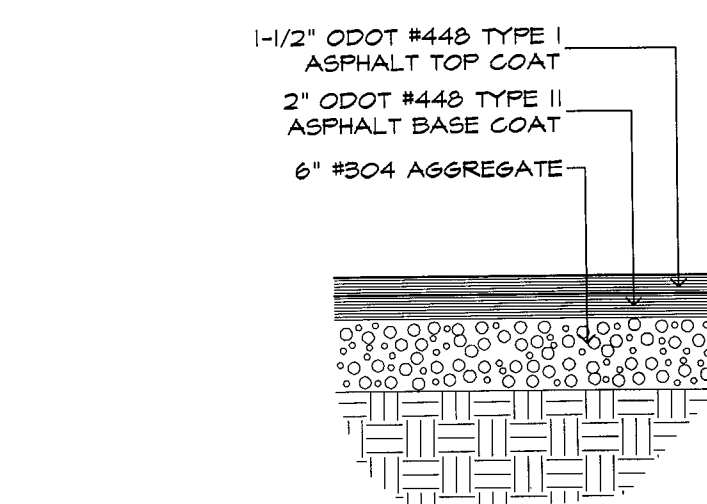
PLANTING DETAIL

SCALE = NO SCALE



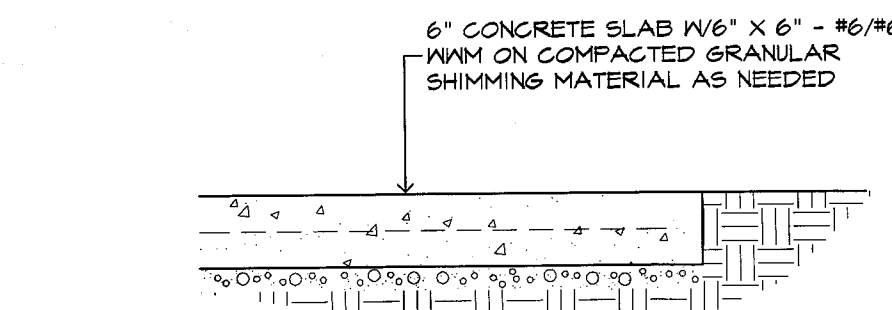
H.D. ASPHALT PAVEMENT DETAIL

SCALE = NO SCALE



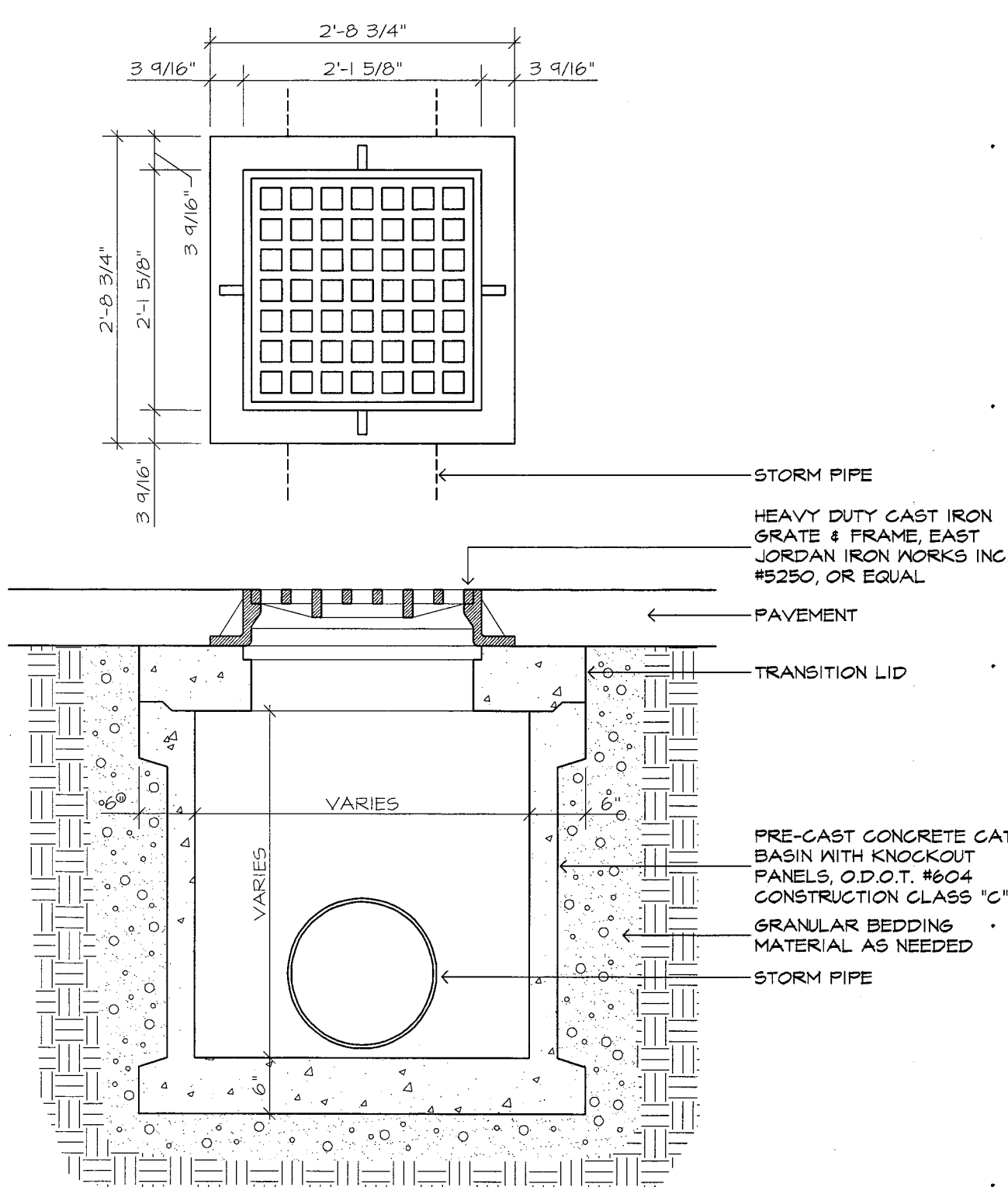
M.D. ASPHALT PAVEMENT DETAIL

SCALE = NO SCALE



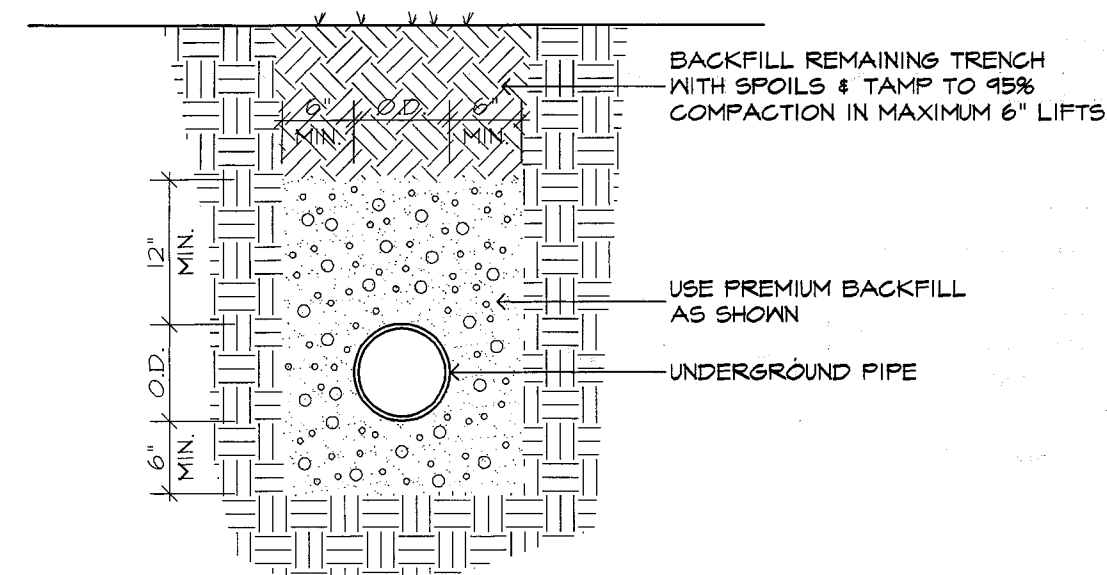
CONCRETE PAVEMENT DETAIL

SCALE = NO SCALE



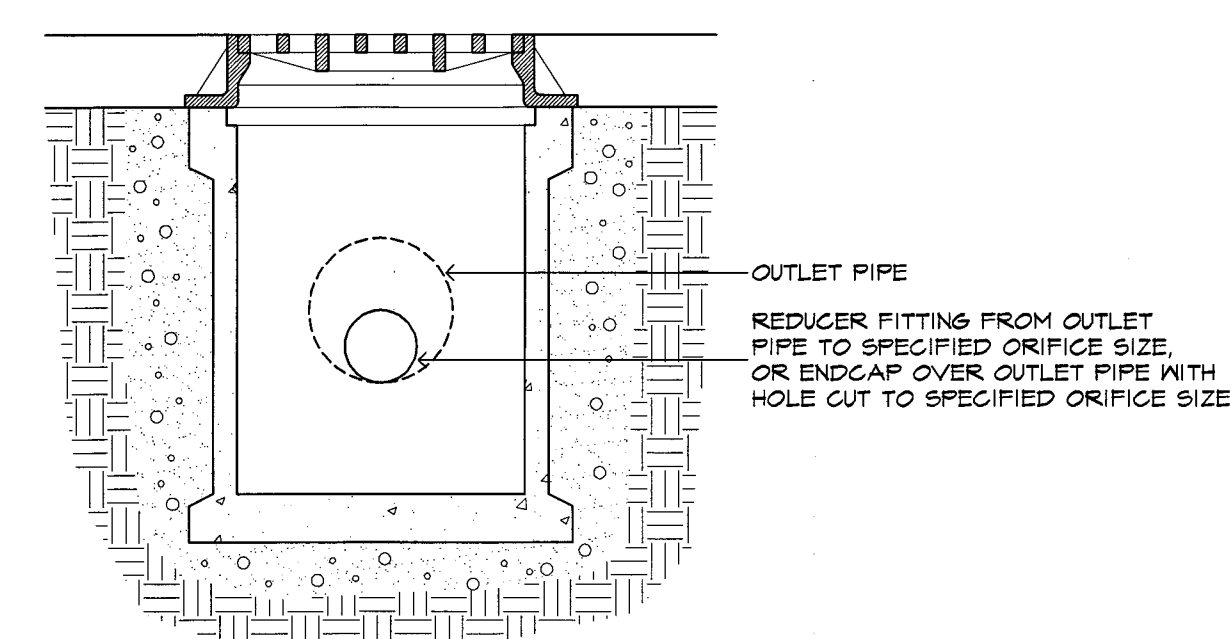
CATCH BASIN DETAIL

SCALE = NO SCALE



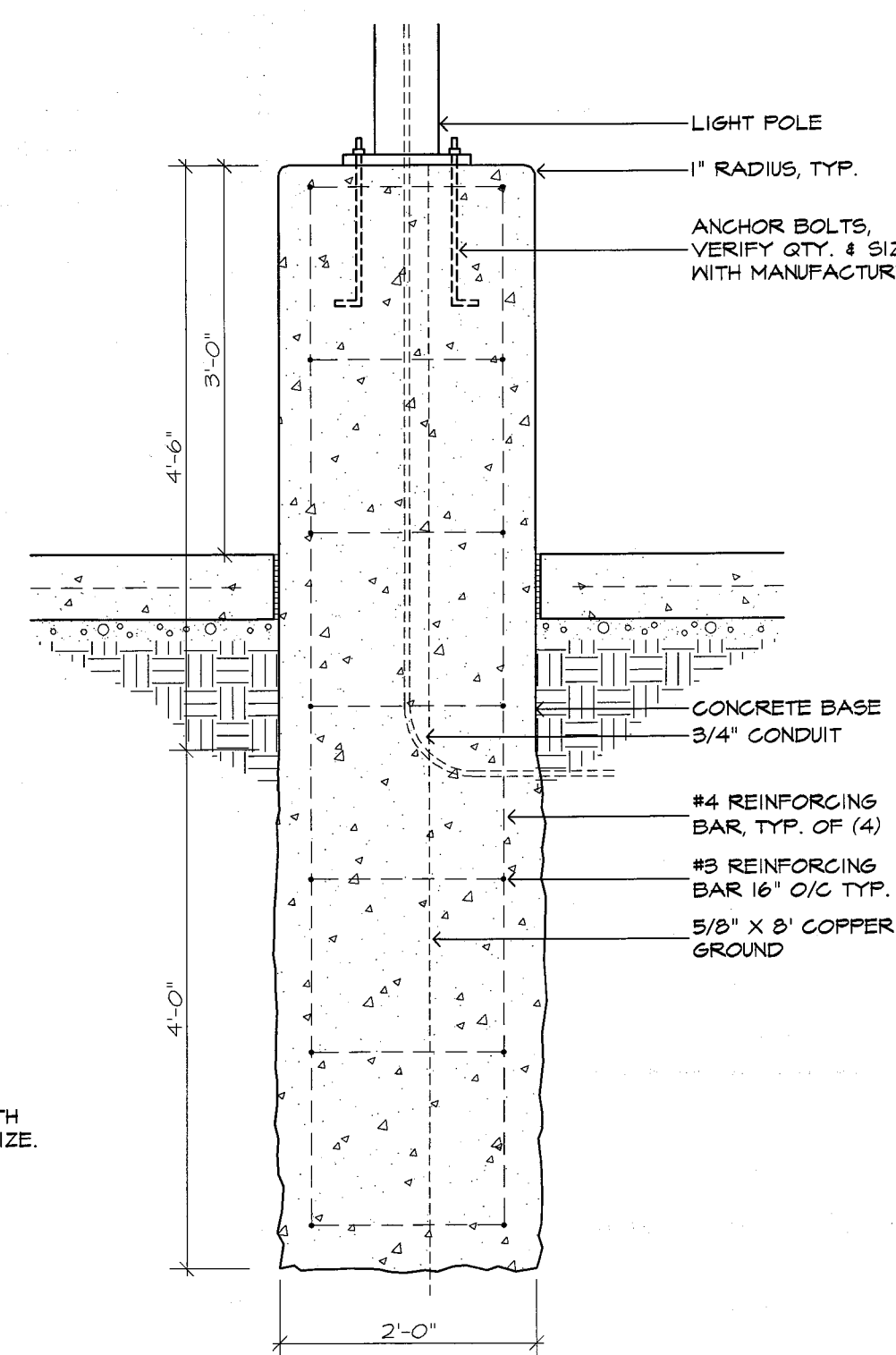
TRENCH DETAIL

SCALE = NO SCALE



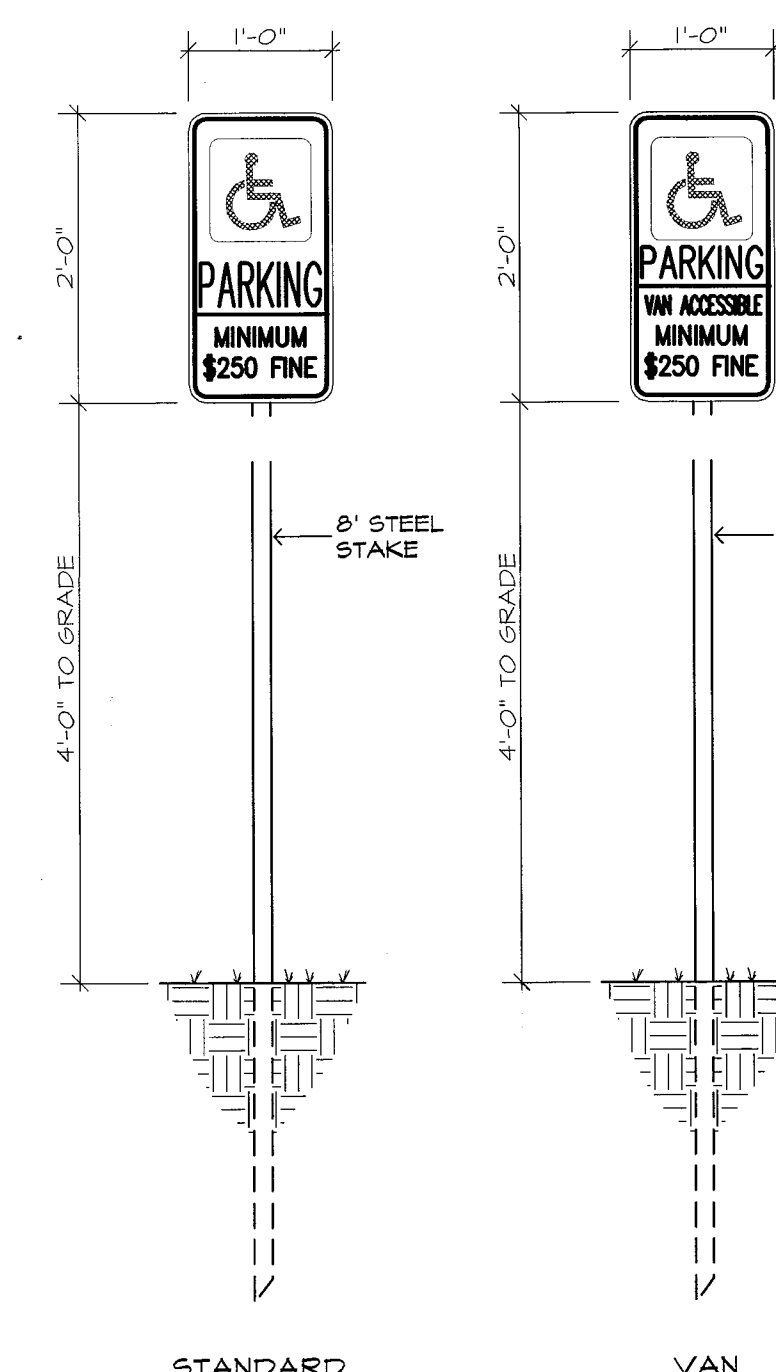
CATCH BASIN ORIFICE DETAIL

SCALE = NO SCALE



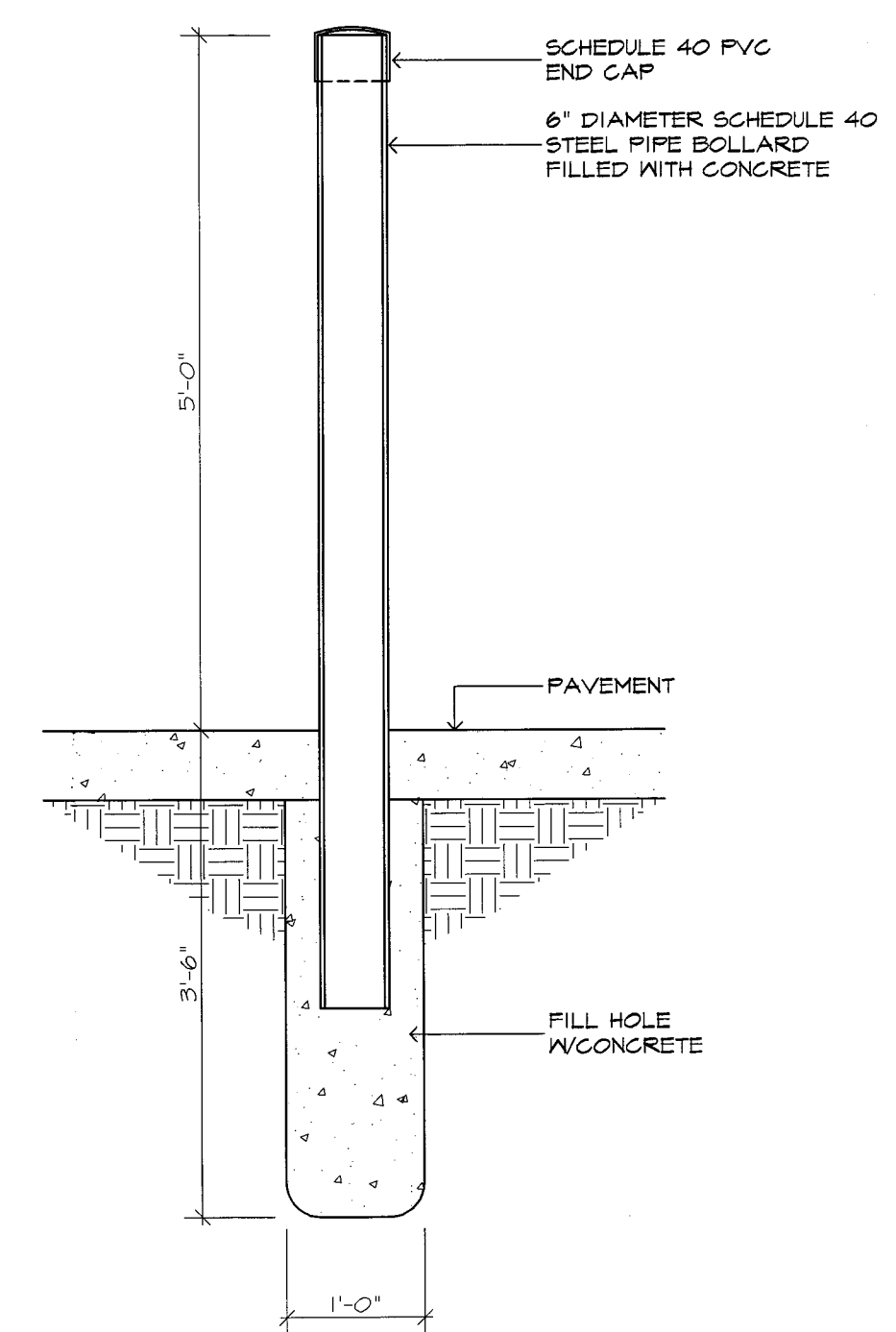
LIGHT POLE BASE DETAIL

SCALE = NO SCALE



HC. PARKING SIGN DETAILS

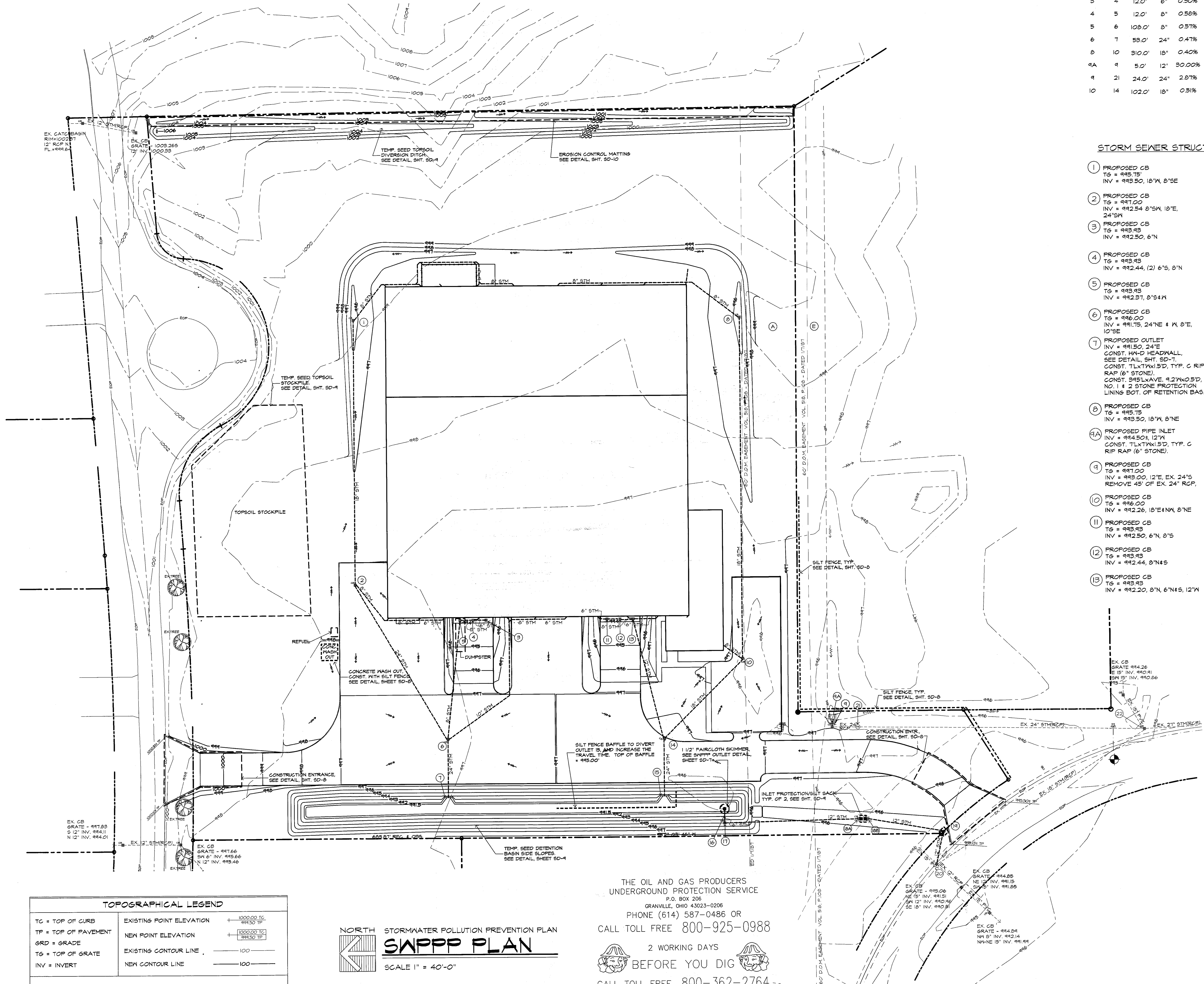
SCALE = NO SCALE



PIPE BOLLARD DETAIL

SCALE = NO SCALE

SWPPP NOTES:
1. THE CONTRACTOR SHALL PREVENT AND/OR REDUCE AND CONTROL SOIL EROSION RESULTING FROM THE PROPOSED IMPROVEMENTS. THE USE OF SILT FENCING, JUTE MATTING, TEMPORARY SEEDING, SILT CHECKS, INLET PROTECTION AROUND ALL CATCH BASINS, STABILIZED CONSTRUCTION ENTRANCES, ETC. WILL BE REQUIRED. SEDIMENT CONTROL STRUCTURES/DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL FOR RAINWATER AND LAND DEVELOPMENT - CHS'S STANDARDS FOR STORM WATER MANAGEMENT, LAND DEVELOPMENT AND URBAN STREAM PROTECTION. SEDIMENT CONTROL DEVICES MUST BE INSTALLED PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES. THE CONTRACTOR SHALL FOLLOW THE REQUIREMENTS SET FORTH ON THE APPROVED STORMWATER POLLUTION PREVENTION PLAN IF APPLICABLE, OR AS DETAILED ON THE CONSTRUCTION PLANS, AS SPECIFIED BY THE CITY OF MASSILLON.
2. CONSTRUCTION LIMITS ARE THE ENTIRE SITE, 8.7491 AC. DISTURBED AREA IS 8.7491 AC.
3. AT THE COMPLETION OF THE PROJECT, A DETENTION AS-BUILT SURVEY IS REQUIRED TO MEET THE REQUIREMENTS OF THE MASSILLON CITY ENGINEER.



TOPOGRAPHICAL LEGEND	
TC = TOP OF CURB	EXISTING POINT ELEVATION
TP = TOP OF PAVEMENT	NEW POINT ELEVATION
GRD = GRADE	EXISTING CONTOUR LINE
TG = TOP OF GRATE	NEW CONTOUR LINE
INV = INVERT	

NORTH
STORMWATER POLLUTION PREVENTION PLAN
SWPPP PLAN
SCALE 1" = 40'-0"

THE OIL AND GAS PRODUCERS
UNDERGROUND PROTECTION SERVICE
P.O. BOX 206
GRANVILLE, OHIO 43023-0206
PHONE (614) 587-0486 OR
CALL TOLL FREE 800-925-0988
2 WORKING DAYS
BEFORE YOU DIG
CALL TOLL FREE 800-362-2764
OHIO UTILITIES PROTECTION SERVICES

STORM SEWER SCHEDULE

FROM	TO	LENGTH	SIZE	SLOPE	FROM	TO	LENGTH	SIZE	SLOPE
1	2	240.0'	18"	0.40%	11	12	12.0'	8"	0.50%
2	6	163.0'	24"	0.48%	12	13	12.0'	8"	2.00%
3	4	12.0'	6"	0.50%	13	14	112.0'	12"	0.41%
4	5	12.0'	8"	0.58%	14	15	52.0'	24"	0.46%
5	6	108.0'	8"	0.57%	16	17	7.0'	6"	0.29%
6	7	53.0'	24"	0.47%	17	18A	123.0'	12"	0.22%
8	10	310.0'	18"	0.40%	18A	18B	8.0'	(4) 8"	0.25%
9A	9	5.0'	12"	30.00%	18B	19	71.0'	12"	0.21%
9	21	24.0'	24"	2.87%	19	20	30.0'	12"	0.23%
10	14	102.0'	18"	0.51%					

STORM SEWER STRUCTURE SCHEDULE

- PROPOSED CB
TG = 995.75'
INV = 995.50, 18"W, 8"SE
- PROPOSED CB
TG = 997.00
INV = 992.54 8"SW, 18"E, 24"SW
- PROPOSED CB
TG = 995.43
INV = 992.50, 6"N
- PROPOSED CB
TG = 993.43
INV = 992.44, (2) 6"S, 8"N
- PROPOSED CB
TG = 993.43
INV = 992.37, 8"SW
- PROPOSED CB
TG = 996.00
INV = 991.75, 24"NE & N, 8"E, 10"SE
- PROPOSED OUTLET
INV = 991.50, 24"E
CONST. HW-D HEADWALL, SEE DETAIL, SHT. SD-7.
CONST. TLXTW/1.5D, TYP. C RIP RAP (6" STONE).
CONST. 345LXAVE, 9.2"WX0.5'D, NO. 1 & 2 STONE PROTECTION LINING BOT. OF RETENTION BAS.
- PROPOSED CB
TG = 995.75
INV = 995.50, 18"W, 8"NE
- PROPOSED PIPE INLET
INV = 994.50, 12"W
CONST. TLXTW/1.5D, TYP. C RIP RAP (6" STONE).
- PROPOSED CB
TG = 997.00
INV = 995.00, 12"E, EX. 24"S
REMOVE 45' OF EX. 24" ROP.
- PROPOSED CB
TG = 996.00
INV = 992.26, 18"E&N, 8"NE
- PROPOSED CB
TG = 993.43
INV = 992.50, 6"N, 8"S
- PROPOSED CB
TG = 993.43
INV = 992.44, 8"N&S
- PROPOSED CB
TG = 993.43
INV = 992.20, 8"N, 6"N&S, 12"W
- PROPOSED CB
TG = 996.00
INV = 991.74, 12"E, 18"SE, 24"W
- PROP. PIPE OUTLET
INV = 991.50
CONST. HW-D HEADWALL, SEE DETAIL, SHT. SD-7.
CONST. TLXTW/1.5D, TYP. C RIP RAP (6" STONE).
- PROPOSED PIPE INLET
INV = 991.53, 6"W
PROVIDE A GRATE AT EAST END OF PIPE.
- PROP. CB
TG = 994.60
INV = 991.31, 6"E, 12"S
PROVIDE AN ENDGAP AT WEST END OF 6" PIPE WITH 2.50' 8" ORIFICE
SEE DETAIL, SHT. SD-5 & SD-7.
- PROPOSED 3'X2' CB
TG = 995.50
INV = 991.05, 12"N, (4) 6"S
SEE DETAIL, SHT. SD-7
- PROPOSED 3'X2' CB
TG = 995.50
INV = 991.03, (4) 6"N, 12"S
SEE DETAIL, SHT. SD-7
- PROPOSED CB
TG = 995.15
INV = 990.88, 12" N&W
- EXISTING CB, REPLACE WITH NEW PRECAST CB
TG = 995.06
INV = 991.51, EX. 18"SW
INV = 990.51, EX. 18"SE, 12"E
INV = 990.96, EX. 12"NE
- EX. 5TH MH
TOP OF RIM = 998.01
INV = 992.31, EX. 24" N&S

LOT SIZE 8.7491 ACRES
BENCHMARK
EXISTING SAN. MH "D"
RIM ELEV = 996.14'

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CONSTRUCTION MANAGEMENT
DESIGN-BUILD SPECIALISTS • SINCE 1953

NEW FACILITY FOR
PREMIER INDUSTRIAL SUPPLY, INC.
480 NOVA DRIVE SE
MASSILLON, OH 44646

STATE OF OHIO
WILLIAM D. SLIMMON
E-63563
REGISTERED PROFESSIONAL ENGINEER

REVISIONS
3-14-13

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MAL

DATE
3-11-13

DRAWING NO.
SD-6

1159 BLACHLEYVILLE RD., WOOSTER, OH 44691 330/262-5186

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① DRAINAGE AREAS

NO.	ATTOR	AGENTS	AMOUNT	CORRECT	CORRECT	CORRECT	D	L	TG	INV	CORRE	REMARKS
—	Ac	Ac	Ac	—	—	—	IN.	FT	FT	FT	FT	—
1	3.161	2.404	0.575	0.36	0.96	0.504	18"	240'	95.75	93.50	0.75'	
2	0.377	0	0.377			0.360	24"	163'	97.00	92.54	2.46'	
3	0.046	0.016	0.030			0.021	6"	12.0'	93.93	92.50	0.93'	
4	0.150	0	0.150			0.160	8"	12.0'	93.93	92.44	0.82'	
5	0.035	0	0.035			0.160	8"	108.0'	93.93	92.37	0.89'	
6	1.467	0.361	1.106			0.812	24"	53.0'	96.00	91.75	2.25'	
7	—	—	—			—	24"	—	94.5	91.50	1.0'	
8	1.727	1.411	0.316			0.469	18"	310'	95.75	93.50	0.75'	
9A	0.528	0.528	0			0.360	12"	5.0'	—	94.50	—	
9	—	—	0			—	24"	24.0'	97.00	93.00	2.0'	DOES NOT FLOW THRU DETENT. BAS.
10	0.367	0	0.367			0.160	18"	102.0'	96.00	92.24	2.24'	
11	0.172	0	0.172			0.160	8"	12.0'	93.93	92.50	0.76'	
12	0.019	0	0.019			0.160	8"	12.0'	93.93	92.44	0.82'	
13	0.312	0	0.312			0.160	12"	112.0'	93.93	92.20	0.73'	
14	0.430	0.081	0.349			0.847	24"	52.0'	96.00	91.74	2.22'	
15	—	—	—			—	24"	—	94.50	91.50	1.00'	
16	0.581	0.581	0			0.360	6"	7.0'	92.75	91.33	0.92'	
17	—	—	—			—	12"	123.0'	93.75	91.31	1.44'	
18A	0.124	0.124	0			0.360	6", 12"	8.0'	95.30	91.05	3.42'	DOES NOT FLOW THRU DETENT. BAS.
18B	0	0	0			—	6", 12"	71.0'	95.50	91.03'	3.41'	DOES NOT FLOW THRU DETENT. BAS.
19	0.080	0.080	0			0.360	12"	30.0'	95.15	90.88'	3.21'	DOES NOT FLOW THRU DETENT. BAS.
20	—	—	—			—	—	—	90.81'	2.75'	—	
21	—	—	—			—	—	—	98.01	92.31'	3.64'	
22	—	—	—			—	—	—	—	90.66'	—	

Z=4.574, Z=5.5%, Z=3.978

AVG=0.609

AREA FLOWING TO DETENTION BASIN: CB 9, CB 18A, CB 18B, & CB 19 DO NOT FLOW TO DETENTION BASIN

Attor = 9.574 Ac CB 9A CB 9B CB 9C CB 9D CB 9E CB 9F CB 9G CB 9H CB 9I CB 9J CB 9K CB 9L CB 9M CB 9N CB 9O CB 9P CB 9Q CB 9R CB 9S CB 9T CB 9U CB 9V CB 9W CB 9X CB 9Y CB 9Z CB 10A CB 10B CB 10C CB 10D CB 10E CB 10F CB 10G CB 10H CB 10I CB 10J CB 10K CB 10L CB 10M CB 10N CB 10O CB 10P CB 10Q CB 10R CB 10S CB 10T CB 10U CB 10V CB 10W CB 10X CB 10Y CB 10Z CB 11A CB 11B CB 11C CB 11D CB 11E CB 11F CB 11G CB 11H CB 11I CB 11J CB 11K CB 11L CB 11M CB 11N CB 11O CB 11P CB 11Q CB 11R CB 11S CB 11T CB 11U CB 11V CB 11W CB 11X CB 11Y CB 11Z CB 12A CB 12B CB 12C CB 12D CB 12E CB 12F CB 12G CB 12H CB 12I CB 12J CB 12K CB 12L CB 12M CB 12N CB 12O CB 12P CB 12Q CB 12R CB 12S CB 12T CB 12U CB 12V CB 12W CB 12X CB 12Y CB 12Z CB 13A CB 13B CB 13C CB 13D CB 13E CB 13F CB 13G CB 13H CB 13I CB 13J CB 13K CB 13L CB 13M CB 13N CB 13O CB 13P CB 13Q CB 13R CB 13S CB 13T CB 13U CB 13V CB 13W CB 13X CB 13Y CB 13Z CB 14A CB 14B CB 14C CB 14D CB 14E CB 14F CB 14G CB 14H CB 14I CB 14J CB 14K CB 14L CB 14M CB 14N CB 14O CB 14P CB 14Q CB 14R CB 14S CB 14T CB 14U CB 14V CB 14W CB 14X CB 14Y CB 14Z CB 15A CB 15B CB 15C CB 15D CB 15E CB 15F CB 15G CB 15H CB 15I CB 15J CB 15K CB 15L CB 15M CB 15N CB 15O CB 15P CB 15Q CB 15R CB 15S CB 15T CB 15U CB 15V CB 15W CB 15X CB 15Y CB 15Z CB 16A CB 16B CB 16C CB 16D CB 16E CB 16F CB 16G CB 16H CB 16I CB 16J CB 16K CB 16L CB 16M CB 16N CB 16O CB 16P CB 16Q CB 16R CB 16S CB 16T CB 16U CB 16V CB 16W CB 16X CB 16Y CB 16Z CB 17A CB 17B CB 17C CB 17D CB 17E CB 17F CB 17G CB 17H CB 17I CB 17J CB 17K CB 17L CB 17M CB 17N CB 17O CB 17P CB 17Q CB 17R CB 17S CB 17T CB 17U CB 17V CB 17W CB 17X CB 17Y CB 17Z CB 18A CB 18B CB 18C CB 18D CB 18E CB 18F CB 18G CB 18H CB 18I CB 18J CB 18K CB 18L CB 18M CB 18N CB 18O CB 18P CB 18Q CB 18R CB 18S CB 18T CB 18U CB 18V CB 18W CB 18X CB 18Y CB 18Z CB 19A CB 19B CB 19C CB 19D CB 19E CB 19F CB 19G CB 19H CB 19I CB 19J CB 19K CB 19L CB 19M CB 19N CB 19O CB 19P CB 19Q CB 19R CB 19S CB 19T CB 19U CB 19V CB 19W CB 19X CB 19Y CB 19Z CB 20A CB 20B CB 20C CB 20D CB 20E CB 20F CB 20G CB 20H CB 20I CB 20J CB 20K CB 20L CB 20M CB 20N CB 20O CB 20P CB 20Q CB 20R CB 20S CB 20T CB 20U CB 20V CB 20W CB 20X CB 20Y CB 20Z CB 21A CB 21B CB 21C CB 21D CB 21E CB 21F CB 21G CB 21H CB 21I CB 21J CB 21K CB 21L CB 21M CB 21N CB 21O CB 21P CB 21Q CB 21R CB 21S CB 21T CB 21U CB 21V CB 21W CB 21X CB 21Y CB 21Z CB 22A CB 22B CB 22C CB 22D CB 22E CB 22F CB 22G CB 22H CB 22I CB 22J CB 22K CB 22L CB 22M CB 22N CB 22O CB 22P CB 22Q CB 22R CB 22S CB 22T CB 22U CB 22V CB 22W CB 22X CB 22Y CB 22Z

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② DETENTION VOLUME, WQV, WQV ELEV., PRE & POST TC

ELEV. (FT)	AREA (SF)	WQV (CF)	WQV ELEV. (FT)	PRE TC	POST TC
91.31	32.54 (INTERNAL)	0	0	91.31	91.31
91.50	3569	648	648	91.50	91.50
92.00	4789	2090	2738	92.00	92.00
93.00	7239	6014	8752	93.00	93.00
94.00	9748	8494	17,245	94.00	94.00
95.00	12,375	11,002	28,307	95.00	95.00
96.00	15,084	13,730	42,036	96.00	96.00
97.00	17,856	16,470	58,506	97.00	97.00

2A) LAG METHOD FOR TC

PRE: $\Delta H = 1004 - 992.4 = 11.6'$, $L = 989'$, $S = 0.01173$
 PRE TC = 34.8 min

POST: $\Delta H = 1004 - 991.5 = 12.5'$, $L = 843'$, $S = 0.01483$
 POST TC = 21.4

③ DETENTION SUMMARY

F	P	PRE Q.W	POST Q.W	DETENT. Q.W	PEAK ELW	STORAGE	REMARKS
YRS	IN	CFS	CFS	CFS	FT	CF	(-)
1	2.15	2.26	8.98	0.31	94.09	18,183	POST Q; $\leq$ PRE Q; $z=1, 2, 5, 10, 25, 50, 100$
2	2.35	3.00	10.56	0.33	94.45	21,936	
5	3.05	5.99	16.37	1.41	95.06	29,038	
10	3.45	7.90	19.81	2.64	95.37	33,022	
25	3.90	10.19	23.74	4.31	95.72	37,852	
50	4.45	13.14	28.60	7.33	96.12	43,865	
100	4.65	14.25	30.38	9.67	96.21	45,222	WEIR ELEV. = 96.00

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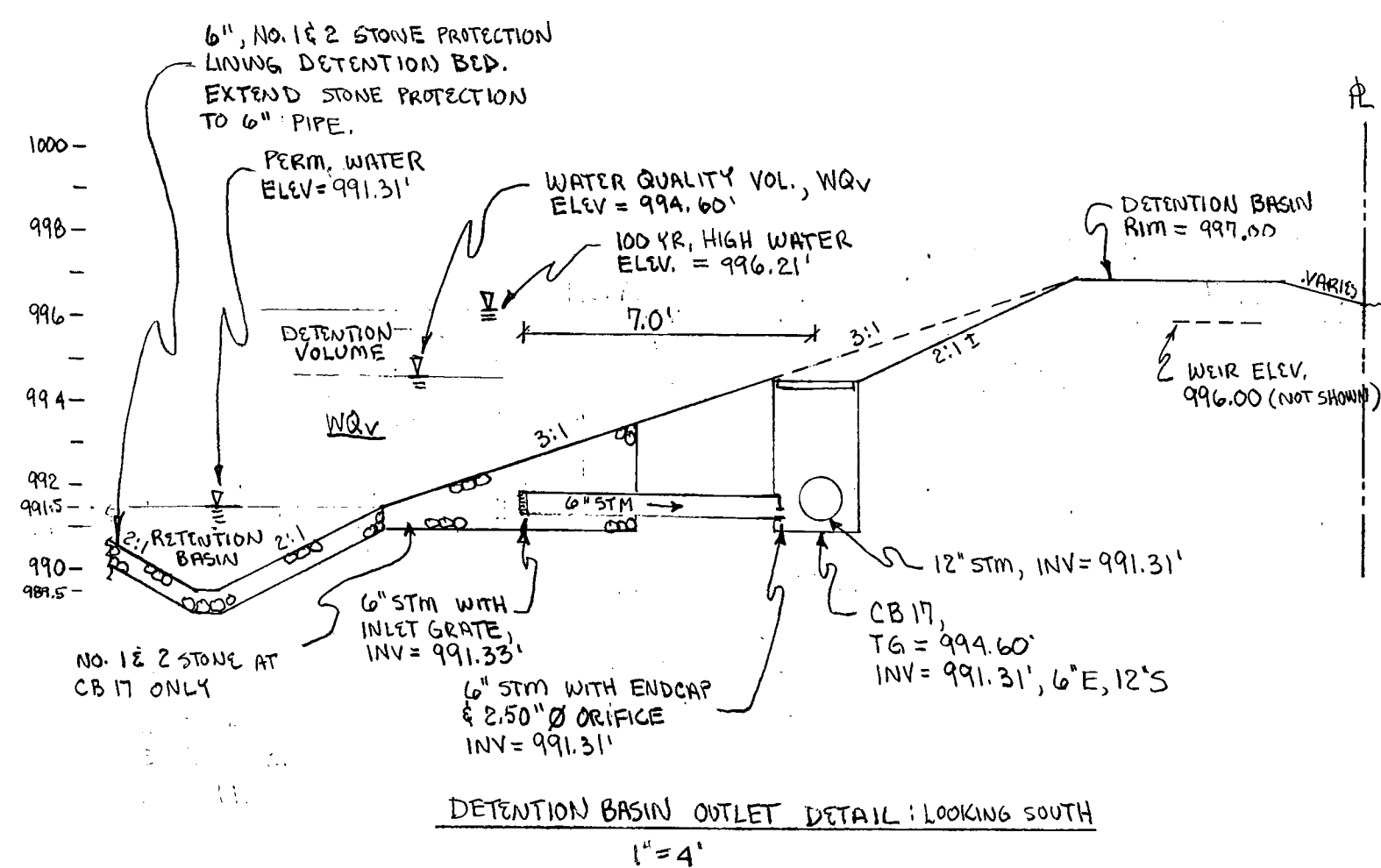
④ ORIFICE SIZE $Q_o = C_o A_o \sqrt{2gh_{wc}}$

$$h_{wc} = (94.60' - 93.31')/2 = 0.645' \quad Q_o = \frac{23,622 \text{ CF}}{[48 \text{ HR} \times 3600 \text{ S/HR}]} = 0.1367 \text{ CFS}$$

$$Q_o = C_o A_o \sqrt{2gh} \Rightarrow A_o = \frac{Q_o}{C_o \sqrt{2gh}} = \frac{0.1367 \text{ CFS}}{0.60 \sqrt{2(32.2 \text{ FT/S}^2)(0.645')}} = 0.03535 \text{ SF}$$

$$1.75 D_o^2 = A_o \Rightarrow D_o = \sqrt{\frac{A_o}{1.75}} = \sqrt{\frac{0.03535 \text{ SF}}{1.75}} = 0.212' = 2.55" \text{ SAY } 2.5" \text{ Ø}$$

⑤ OUTLET DETAIL, CB 17



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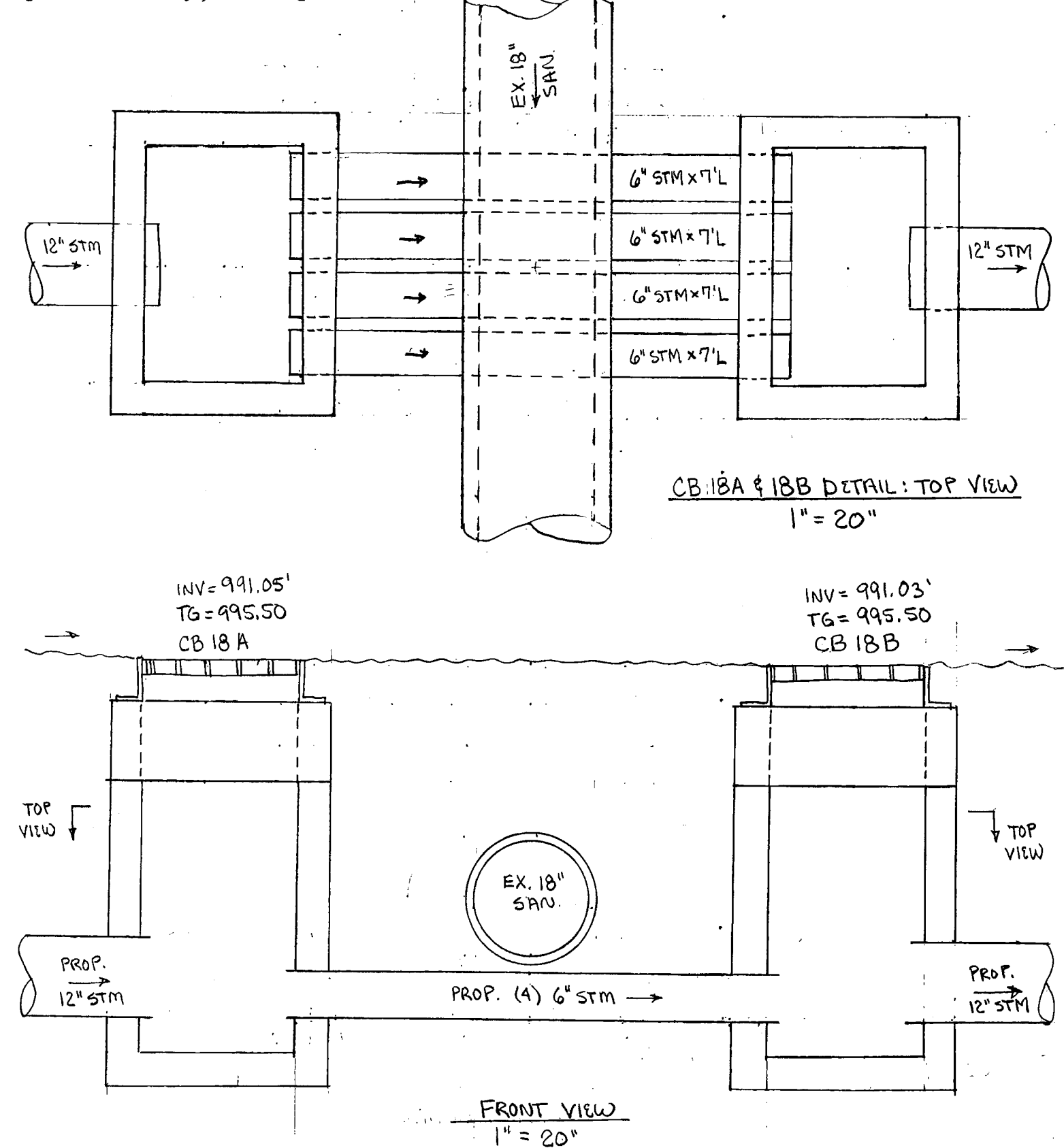
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⑥ CB 18A & 18B DETAIL



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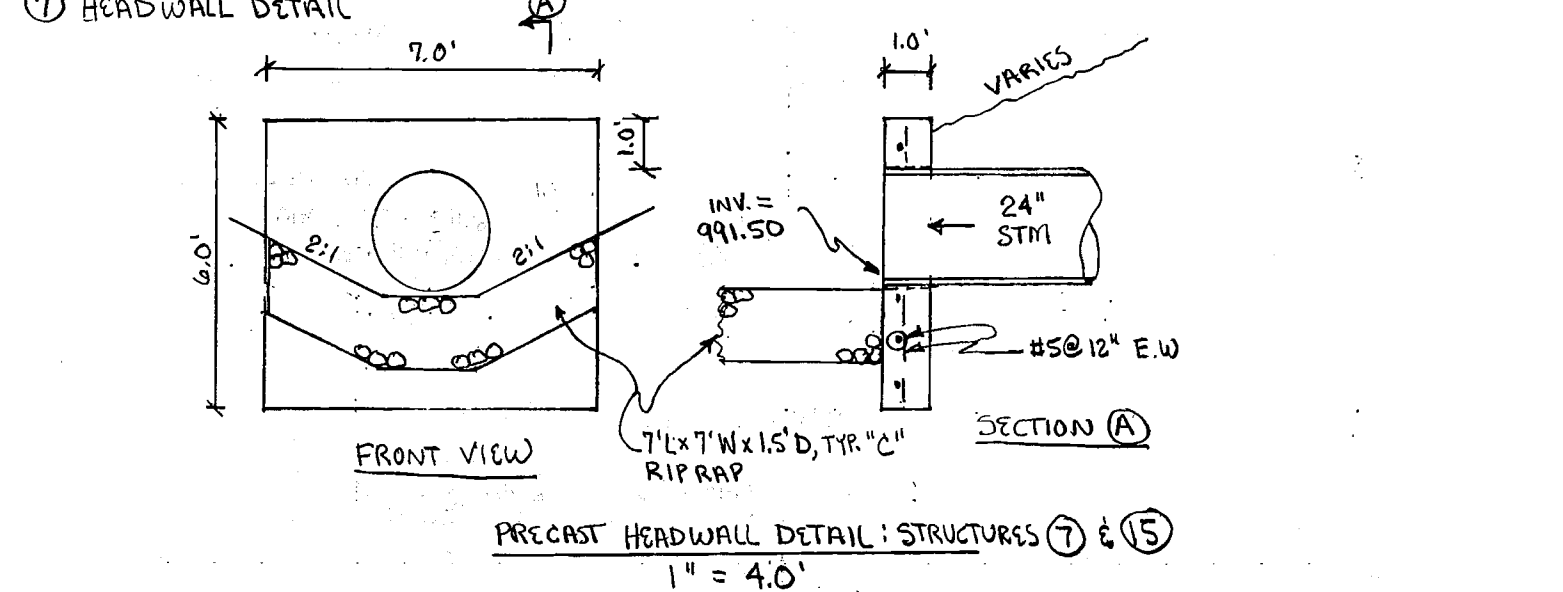
CONSTRUCTION

CONSTRUCTION SERVICES

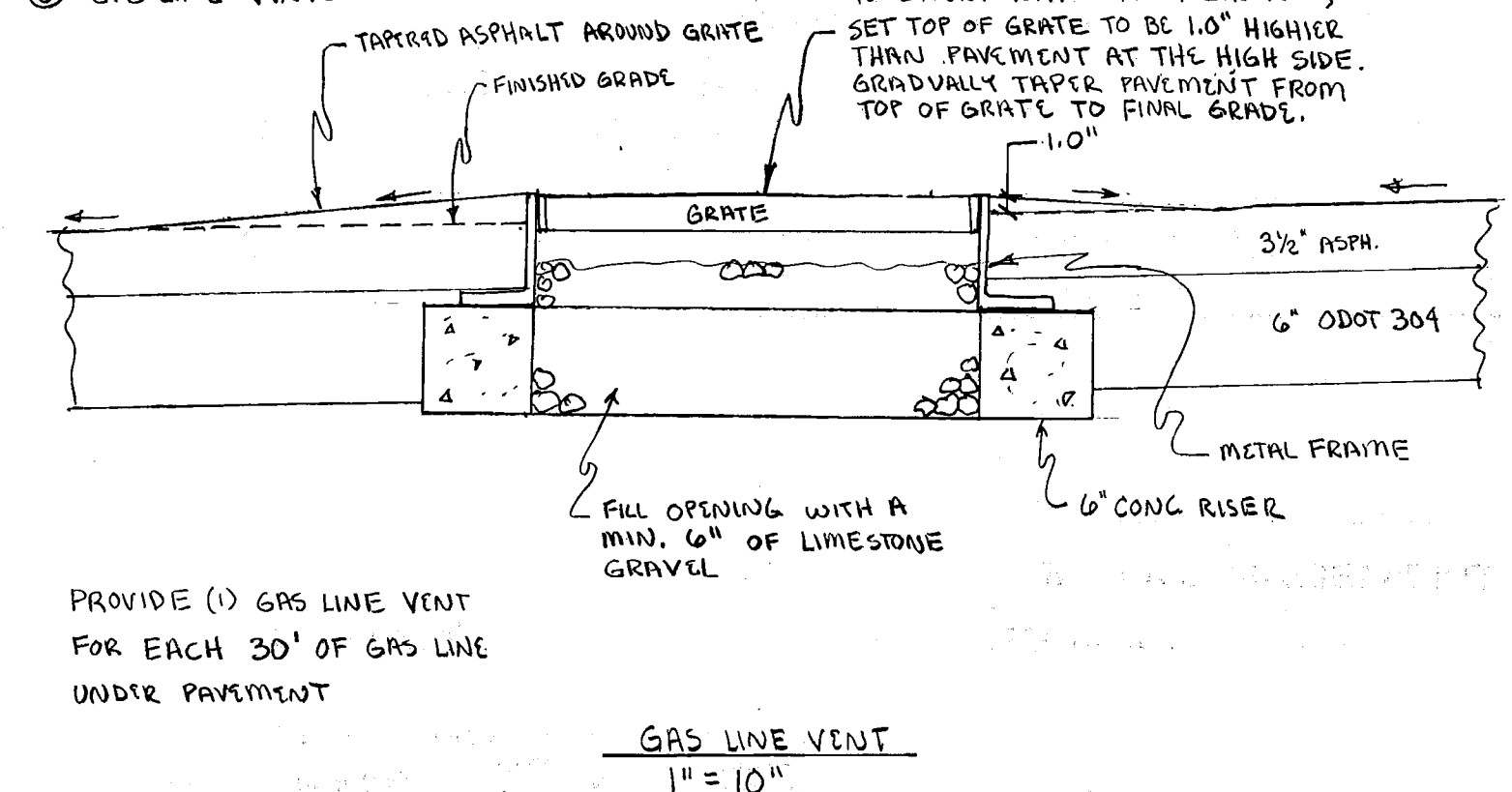
CONSTRUCTION MANAGEMENT

FACILITIES MAINTENANCE

⑦ HEADWALL DETAIL



⑧ GAS LINE VENTS



PROVIDE (1) GAS LINE VENT FOR EACH 30' OF GAS LINE UNDER PAVEMENT

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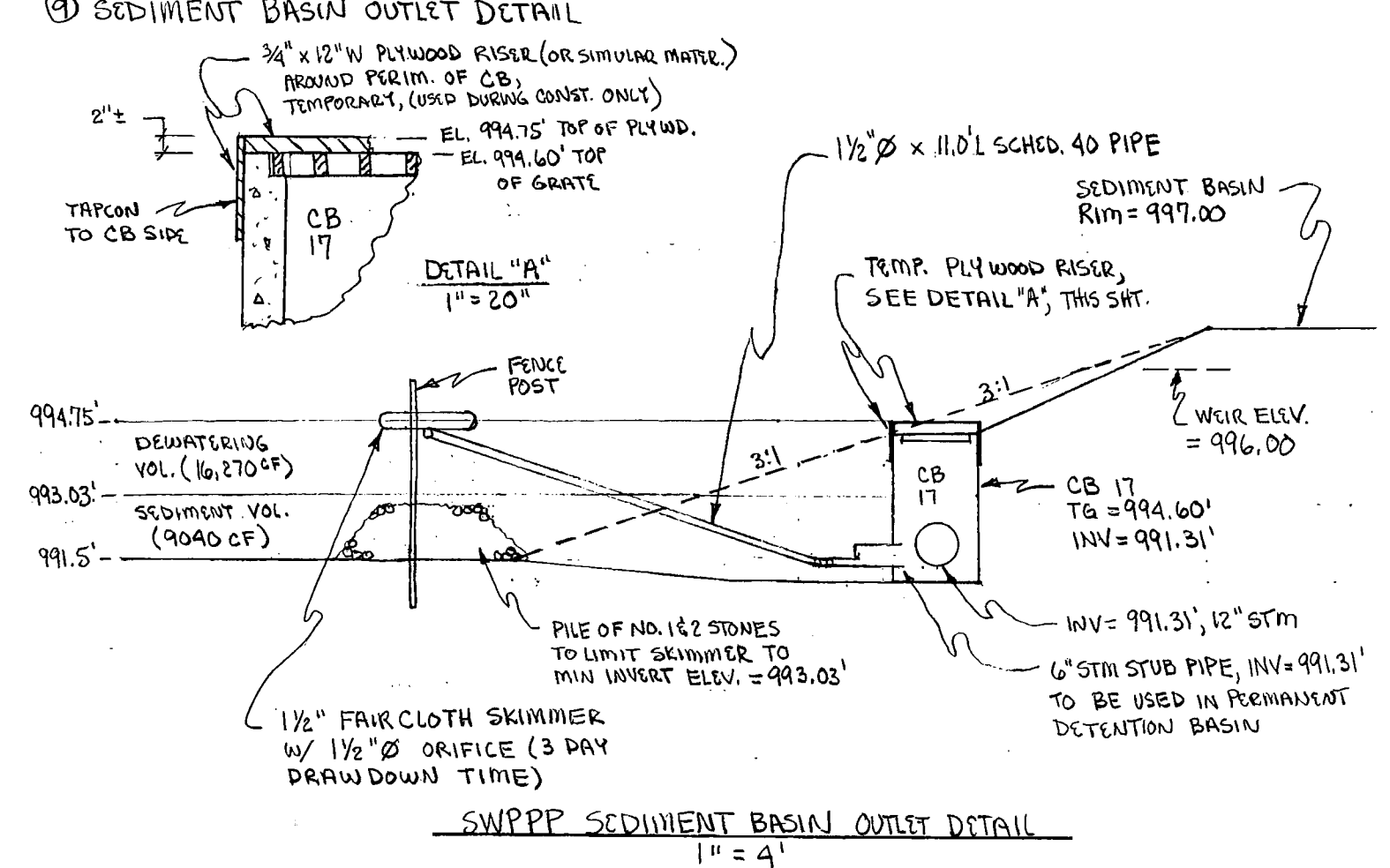
CONSTRUCTION

CONSTRUCTION SERVICES

CONSTRUCTION MANAGEMENT

FACILITIES MAINTENANCE

⑨ SEDIMENT BASIN OUTLET DETAIL



⑩ SEDIMENT BASIN CALCULATIONS

DISTURBED AREA = 8.749 AC	CONTRIB. AREA = 8.842 AC
REQ'D SEDIMENT BASIN VOL.: 2800 CF/AC x 8.842 AC = 24,758 CF	USE 25,306 CF
REQ'D SEDIMENT VOLUME: 1000 CF/AC x 8.842 AC = 8842 CF	USE 9040 CF
REQ'D DEWATERING VOLUME: 1800 CF/AC x 8.842 AC = 15,916 CF	USE 16,270 CF

ELEV. (FT)	CUM. VOL. (CF)
93.00	8752 CF
94.00	17,245 CF
95.00	28,307 CF
96.00	42,036 CF
97.00	58,506 CF
98.00	77,036 CF
99.00	97,566 CF
99.31	100,000 CF

TOP OF SEDIM. VOL. = 993.0 + $\frac{28,307}{8842} = 993.32'$ TOP OF DEWATERING VOL. = 994.0 + $\frac{16,270}{11,916} = 994.13'$

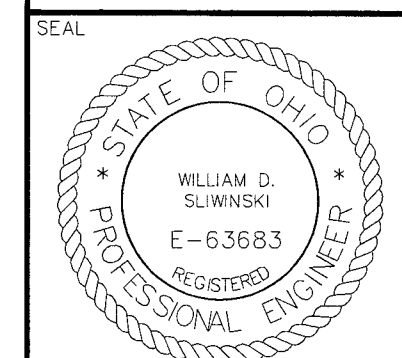
SAY 994.15'

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PREMIER INDUSTRIAL SUPPLY, INC.
480 NOVA DRIVE SE
MASSILLON, OH 44646



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SWPPP NOTES:

1. Nature and type of Construction Activity. The project consist of a proposed 59,872 sf industrial building on undeveloped land in an Industrial park.
2. Total Site Area = 8.7491 AC. Total Disturbed Area = 8.7491 AC.
3. Stormwater runoff coefficients: C & CN
C_grass = 0.36 CN_grass = 74
C_paved = 0.96 CN_paved = 98
4. Impervious Area = 3.978 AC, Total Site = 8.7491 AC, % Impervious = 45.5%
5. Existing Soil. Existing soil is WrB(Wheeling Silt Loam, 2 to 6% slope), WrC(Wheeling Silt Loam, 6 to 12% slope), CpB (Chili Silt Loam, 2 to 6% slope).
6. Prior Land Use. Undeveloped Industrial Park land.
7. Immediate Receiving Stream. Un-named tributary to the Tuscarawas River.
8. Limits of Construction. The limits of construction is the entire site, 8.7491 AC.
9. See site plans for locations of erosion and sediment control practices. Erosion and sediment control practices consist of silt fence, sediment basin, construction entrance, erosion control matting, permanent and temporary seeding.
10. Permanent Detention Basin Drainage Area and Volume.
A_total = 8.842 AC, A_grass = 4.864 AC, A_paved = 3.978 AC, Ave C = 0.630
Proposed Detention Storage = 50,281 CF, Actual Detention Storage = 44,715 CF,
% Capacity = 44715/50,281 = 89.0 %.
11. Post Stormwater Quality Volume (WQv), Wet Detention Basin.
WQv = 23,622 CF, A = 8.7491 AC, WQv Orifice = 2.5" diameter.
12. NOI Permit No. = 3GC06294*AG.

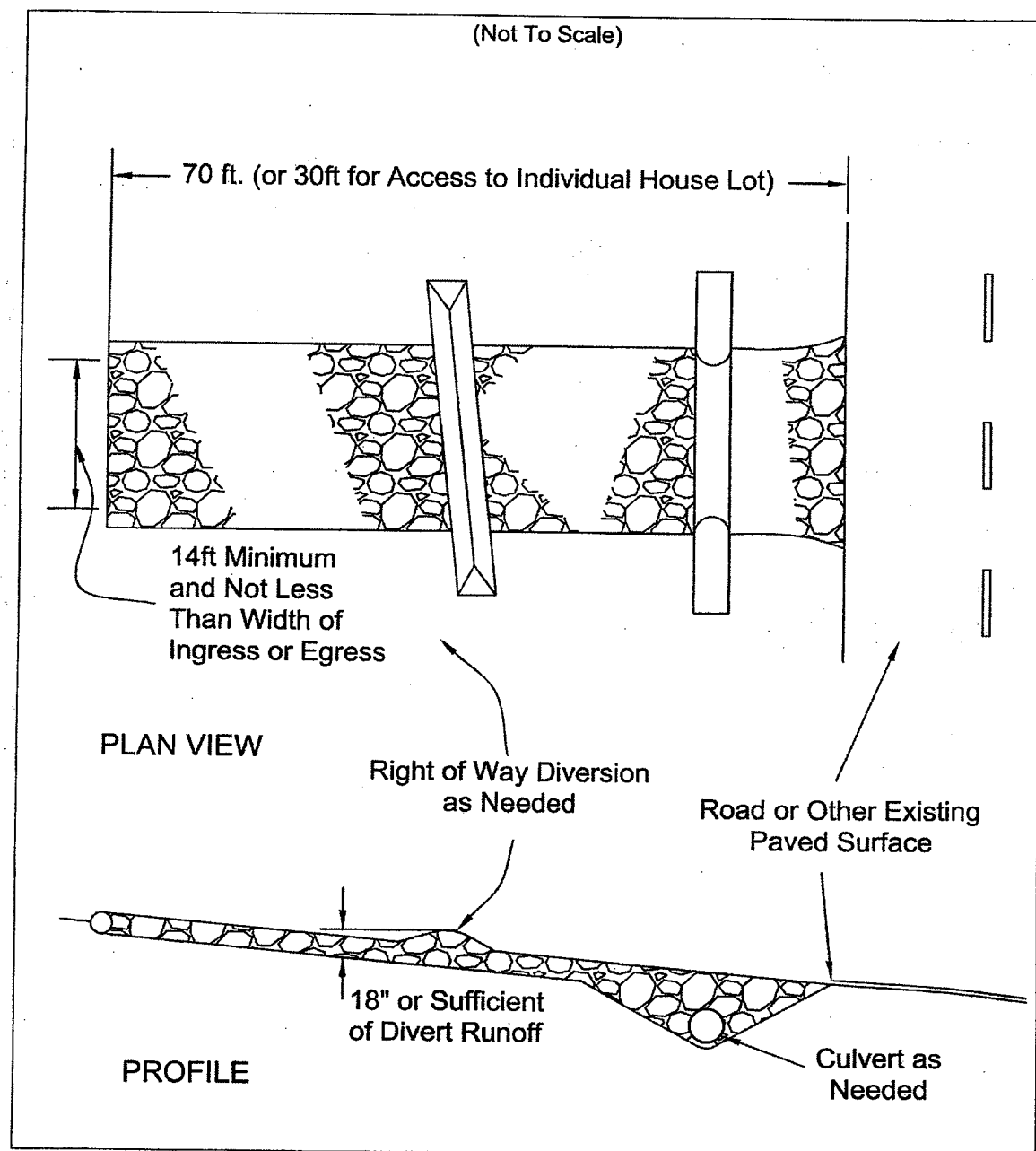
Construction & Erosion Control Sequence.

No.	Days	Events
1.	0	Massillon Engineering Approval
2.	4	Construct north and south construction entrances. Construct silt fence in SE corner.
3.	14	Construct Detention/Sediment Basin; construct outlet pipes and CB 17, 18A, 18B, 19; construct sediment basin outlet; construct headwalls 7 and 15, stub pipes east of sediment basin, temporary plug pipe ends. Do not install stone protection at this time.
4.	24	Strip topsoil and stockpile.
5.	3	Construct permanent diversion ditch at east property line.
5.	2	Temporary seed topsoil stockpile, east diversion ditch, and sediment basin side slopes.
6.	150	Rough grade and construct building.
7.	14	Construct storm sewer system. CB1 to 6 and CB8 to 14.
8.	21	Construct new pavement.
9.	10	Landscape and seeding. Permanently stabilize site with permanent grass seed. After site is 70% stabilized, remove all temporary erosion control measures.
10.	3	Convert Sediment Basin to Permanent Detention Basin. Remove skimmer and install 2.50" diameter orifice. Install detention stone protection.

I, the undersigned, certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

WILLIAM SLOWINSKI
William Slowinski PE
1-4-13

Specifications
for
Construction Entrance



CHAPTER 7 Soil Stabilization 19

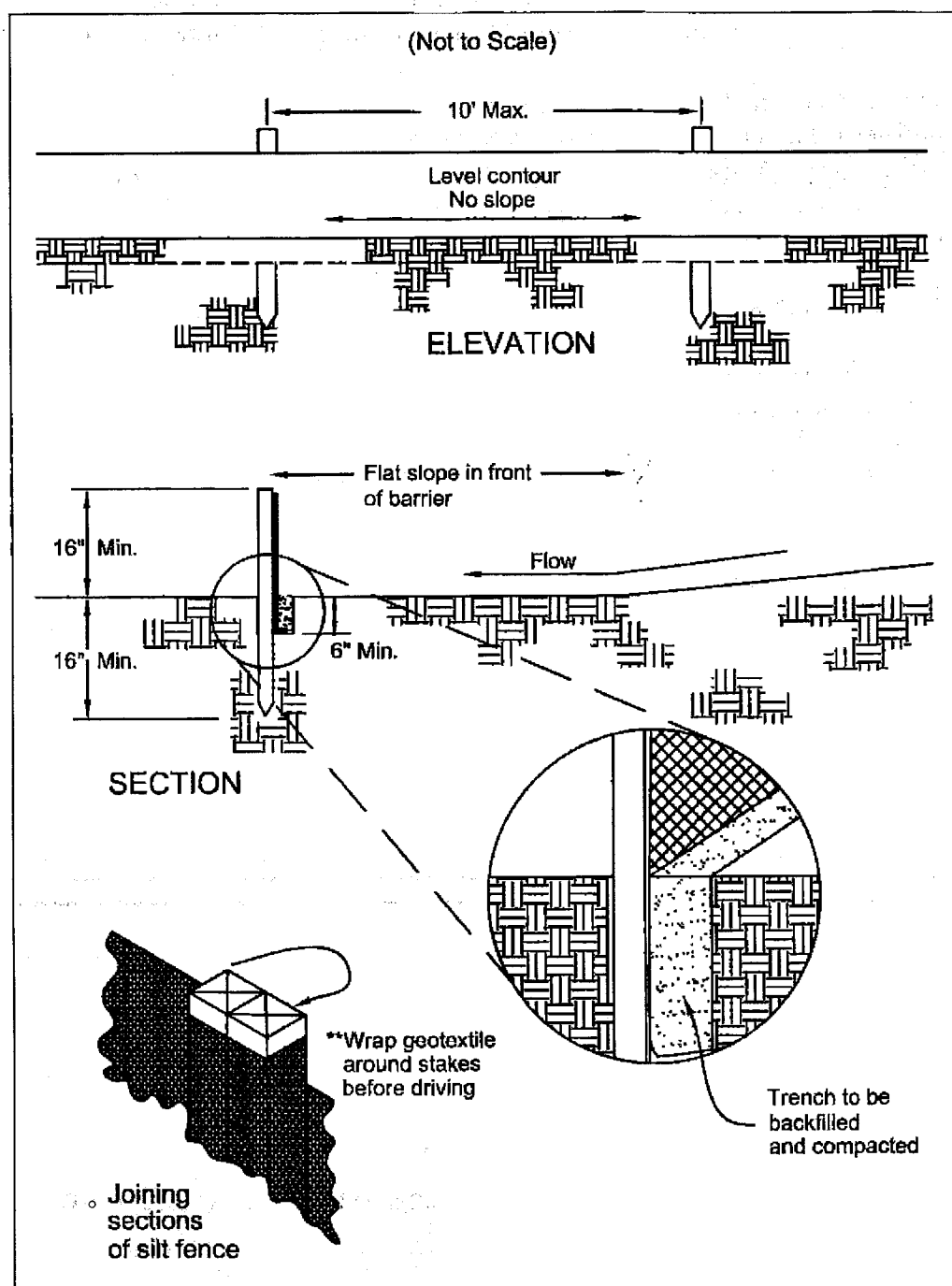
Specifications
for
Construction Entrance

1. Stone Size—ODOT # 2 (1.5-2.5 inch) stone shall be used, or recycled concrete equivalent.
2. Length—The Construction entrance shall be as long as required to stabilize high traffic areas but not less than 70 ft. (exception: apply 30 ft. minimum to single residence lots).
3. Thickness -The stone layer shall be at least 6 inches thick for light duty entrances or at least 10 inches for heavy duty use.
4. Width -The entrance shall be at least 14 feet wide, but not less than the full width at points where ingress or egress occurs.
5. Geotextile -A geotextile shall be laid over the entire area prior to placing stone. It shall be composed of strong rot-proof polymeric fibers and meet the following specifications:
6. Timing—The construction entrance shall be installed as soon as is practicable before major grading activities.
7. Culvert -A pipe or culvert shall be constructed under the entrance if needed to prevent surface water from flowing across the entrance or to prevent runoff from being directed out onto paved surfaces.
8. Water Bar -A water bar shall be constructed as part of the construction entrance if needed to prevent surface runoff from flowing the length of the construction entrance and out onto paved surfaces.
9. Maintenance -Top dressing of additional stone shall be applied as conditions demand. Mud spilled, dropped, washed or tracked onto public roads, or any surface where runoff is not checked by sediment controls, shall be removed immediately. Removal shall be accomplished by scraping or sweeping.
10. Construction entrances shall not be relied upon to remove mud from vehicles and prevent off-site tracking. Vehicles that enter and leave the construction-site shall be restricted from muddy areas.
11. Removal—the entrance shall remain in place until the disturbed area is stabilized or replaced with a permanent roadway or entrance.

Figure 7.4.1

Geotextile Specification for Construction Entrance	
Minimum Tensile Strength	200 lbs.
Minimum Puncture Strength	80 psi.
Minimum Tear Strength	50 lbs.
Minimum Burst Strength	320 psi.
Minimum Elongation	20%
Equivalent Opening Size	EOS < 0.6 mm.
Permittivity	1x10 ⁻³ cm/sec.

Specifications
for
Silt Fence



Specifications
for
Silt Fence

1. Silt fence shall be constructed before upslope land disturbance begins.
 2. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
 3. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
 4. Silt fence shall be placed on the flattest area available.
 5. Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
 6. The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
 7. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an approximately uniform trench depth.
 8. The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 6-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
 9. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground, (see details).
 10. Maintenance—Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1) the layout of the silt fence shall be changed, 2) accumulated sediment shall be removed, or 3) other practices shall be installed.
- Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.
- Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.
- Criteria for silt fence materials
1. Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in. nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
 2. Silt fence fabric – See chart below.

Table 6.3.2 Minimum criteria for Silt Fence Fabric (ODOT, 2002)

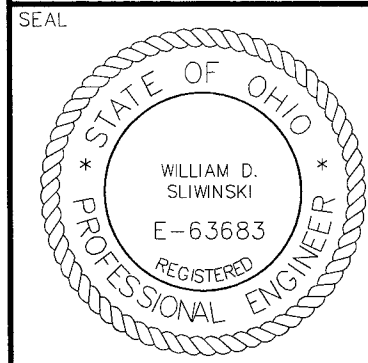
FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 80 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	A ¹ TM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10 ⁻² sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

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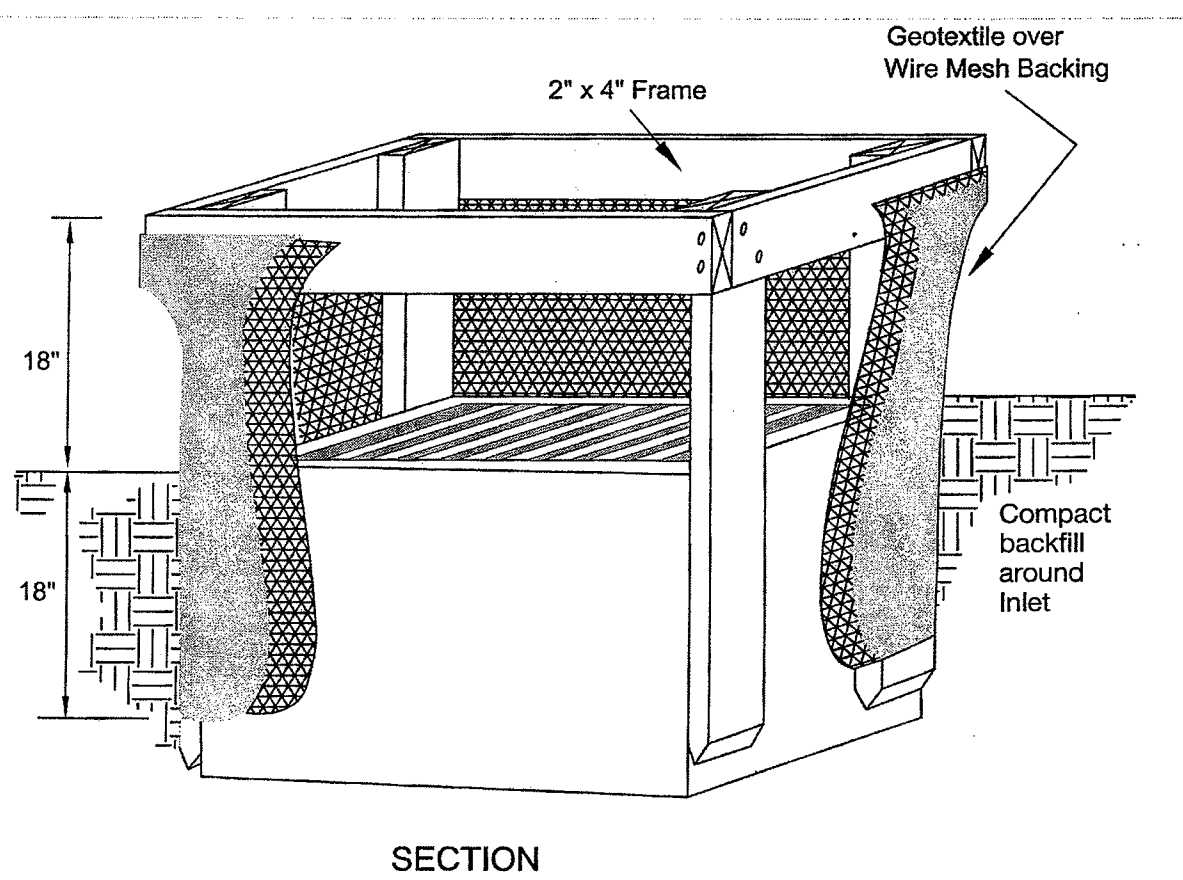
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Specifications
for
Geotextile Inlet Protection



1. Inlet protection shall be constructed either before upslope land disturbance begins or before the inlet becomes functional.
2. The earth around the inlet shall be excavated completely to a depth at least 18 inches.
3. The wooden frame shall be constructed of 2-inch by 4-inch construction grade lumber. The 2-inch by 4-inch posts shall be driven one (1) ft. into the ground at four corners of the inlet and the top portion of 2-inch by 4-inch frame assembled using the overlap joint shown. The top of the frame shall be at least 6 inches below adjacent roads if ponded water will pose a safety hazard to traffic.
4. Wire mesh shall be of sufficient strength to support fabric with water fully impounded against it. It shall be stretched tightly around the frame and fastened securely to the frame.
5. Geotextile material shall have an equivalent opening size of 20-40 sieve and be resistant to sunlight. It shall be stretched tightly around the frame and fastened securely. It shall extend from the top of the frame to 18 inches below the inlet notch elevation. The geotextile shall overlap across one side of the inlet so the ends of the cloth are not fastened to the same post.
6. Backfill shall be placed around the inlet in compacted 6-inch layers until the earth is even with notch elevation on ends and top elevation on sides.
7. A compacted earth dike or check dam shall be constructed in the ditch line below the inlet if the inlet is not in a depression. The top of the dike shall be at least 6 inches higher than the top of the frame.

CHAPTER 6 Sediment Controls 39

Specifications
for
Temporary Seeding

Mulching Temporary Seeding

1. Applications of temporary seeding shall include mulch, which shall be applied during or immediately after seeding. Seedings made during optimum seeding dates on favorable, very flat soil conditions may not need mulch to achieve adequate stabilization.
2. Materials:
 - Straw—If straw is used, it shall be unrotted small-grain straw applied at a rate of 2 tons per acre or 90 lbs./1,000 sq. ft. (2-3 bales)
 - Hydroseders—If wood cellulose fiber is used, it shall be used at 2000 lbs./ac. or 46 lb./1,000-sq.-ft.
 - Other—Other acceptable mulches include mulch mattings applied according to manufacturer's recommendations or wood chips applied at 6 ton/ac.
3. Straw Mulch shall be anchored immediately to minimize loss by wind or water. Anchoring methods:
 - Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but left to a length of approximately 6 inches.
 - Mulch Netting—Netting shall be used according to the manufacturers recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
 - Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petrosel, Terra Track or equivalent may be used at rates recommended by the manufacturer.
 - Wood-Cellulose Fiber—Wood-cellulose fiber binder shall be applied at a net dry wt. of 750 lb./ac. The wood-cellulose fiber shall be mixed with water and the mixture shall contain a maximum of 50 lb./100 gal.

36 CHAPTER 7 Soil Stabilization

Specifications
for
Sediment Basins

1. Sediment basins shall be constructed and operational before upslope land disturbance begins.
2. Site Preparation -The area under the embankment shall be cleared, grubbed, and stripped of any vegetation and root mat. The pool area shall be cleared as needed to facilitate sediment cleanout. Gullies and sharp breaks shall be sloped to no steeper than 1:1. The surface of the foundation area will be thoroughly scarified before placement of the embankment material.
3. Cut-Off Trench -The cutoff trench shall be excavated along the centerline of the embankment. The minimum depth shall be 3 ft. unless specified deeper on the plans or as a result of site conditions. The minimum bottom width shall be 4 ft., but wide enough to permit operation of compaction equipment. The trench shall be kept free of standing water during backfill operations.
4. Embankment -The fill material shall be free of all sod, roots, frozen soil, stones over 6 in. in diameter, and other objectionable material. The placing and spreading of the fill material shall be started at the lowest point of the foundation and the fill shall be brought up in approximately 6 in. horizontal layers or of such thickness that the required compaction can be obtained with the equipment used. Construction equipment shall be operated over each layer in a way that will result in the required compaction. Special equipment shall be used when the required compaction cannot be obtained without it. The moisture content of fill material shall be such that the required degree of compaction can be obtained with the equipment used.
5. Pipe Spillway -The pipe conduit barrel shall be placed on a firm foundation to the lines and grades shown on the plans. Connections between the riser and barrel, the anti-seep collars and barrel and all pipe joints shall be watertight. Selected backfill material shall be placed around the conduit in layers and each layer shall be compacted to at least the same density as the adjacent embankment. All compaction within 2 ft. of the pipe spillway will be accomplished with hand-operated tamping equipment.
6. Riser Pipe Base -The riser pipe shall be set a minimum of 6 in. in the concrete base.
7. Trash Racks -The top of the riser shall be fitted with trash racks firmly fastened to the riser pipe.
8. Emergency Spillway - The emergency spillway shall be cut in undisturbed ground. Accurate construction of the spillway elevation and width is critical and shall be within a tolerance of 0.2 ft.
9. Seed and Mulch -The sediment basin shall be stabilized immediately following its construction. In no case shall the embankment or emergency spillway remain bare for more than 7 days.
10. Sediment Cleanout -Sediment shall be removed and the sediment basin restored to its original dimensions when the sediment has filled one-half the pond's original depth or as indicated on the plans. Sediment removed from the basin shall be placed so that it will not erode.
11. Final removal - Sediment basins shall be removed after the upstream drainage area is stabilized or as indicated in the plans. Deviating and removal shall NOT cause sediment to be discharged. The sediment basin site and sediment removed from the basin shall be stabilized.

20 CHAPTER 6 Sediment Controls

Specifications
for
Permanent Seeding

Site Preparation

1. Subsoiler, plow, or other implement shall be used to reduce soil compaction and allow maximum infiltration. (Maximizing infiltration will help control both runoff rate and water quality.) Subsoiling should be done when the soil moisture is low enough to allow the soil to crack or fracture. Subsoiling shall not be done on slip-prone areas where soil preparation should be limited to what is necessary for establishing vegetation.
2. The site shall be graded as needed to permit the use of conventional equipment for seedbed preparation and seeding.
3. Topsoil shall be applied where needed to establish vegetation.

Seedbed Preparation

1. Lime—Agricultural ground limestone shall be applied to acid soil as recommended by a soil test. In lieu of a soil test, lime shall be applied at the rate of 100 pounds per 1,000-sq. ft. or 2 tons per acre.
2. Fertilizer—Fertilizer shall be applied as recommended by a soil test. In place of a soil test, fertilizer shall be applied at a rate of 25 pounds per 1,000-sq. ft. or 1000 pounds per acre of a 10-10-10 or 12-12-12 analyses.
3. The lime and fertilizer shall be worked into the soil with a disk harrow, spring-tooth harrow, or other suitable field implement to a depth of 3 inches. On sloping land, the soil shall be worked on the contour.

Seeding Dates and Soil Conditions

Seeding should be done March 1 to May 31 or August 1 to September 30. If seeding occurs outside of the above-specified dates, additional mulch and irrigation may be required to ensure a minimum of 80% germination. Tillage for seedbed preparation should be done when the soil is dry enough to crumble and not form ribbons when compressed by hand. For winter seeding, see the following section on dormant seeding.

Dormant Seedings

1. Seedings should not be made from October 1 through November 20. During this period, the seeds are likely to germinate but probably will not be able to survive the winter.
2. The following methods may be used for "Dormant Seeding":

- From October 1 through November 20, prepare the seedbed, add the required amounts of lime and fertilizer, then mulch and anchor. After November 20, and before March 15, broadcast the selected seed mixture. Increase the seeding rates by 50% for this type of seeding.
- From November 20 through March 15, when soil conditions permit, prepare the seedbed, lime and fertilize, apply the selected seed mixture, mulch and anchor. Increase the seeding rates by 50% for this type of seeding.
- Apply seed uniformly with a cyclone seeder, drill, cultipacker seeder, or hydro-seeder (slurry may include seed and fertilizer) on a firm, moist seedbed.
- Where feasible, except when a cultipacker type seeder is used, the seedbed should be firmed following seeding operations with a cultipacker, roller, or light drag. On sloping land, seeding operations should be on the contour where feasible.

Mulching

1. Mulch material shall be applied immediately after seeding. Dormant seeding shall be mulched. 100% of the ground surface shall be covered with an approved material.
2. Materials
 - Straw—If straw is used it shall be unrotted small-grain straw applied at the rate of 2 tons per acre or 90 pounds (two to three bales) per 1,000-sq. ft. The mulch shall be spread uniformly by hand or mechanically applied so the soil surface is covered. For uniform distribution of hand-spread mulch, divide area into approximately 1,000-sq.-ft. sections and spread two 45-lb. bales of straw in each section.
 - Hydroseders—If wood cellulose fiber is used, it shall be applied at 2,000 lb./ac. or 46 lb./1,000 sq. ft.
 - Other—Other acceptable mulches include rolled erosion control mattings or blankets applied according to manufacturer's recommendations or wood chips applied at 6 tons per acre.

44 CHAPTER 7 Soil Stabilization

Specifications
for
Temporary Seeding

Table 7.8.1 Temporary Seeding Species Selection

Seeding Dates	Species	Lb./1000 ft ²	Lb./Acre
March 1 to August 15	Oats	3	128 (4 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Perennial Ryegrass	1	40
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	55
	Perennial Ryegrass	3.25	142
	Creeping Red Fescue	0.4	17
	Kentucky Bluegrass	0.4	17
August 16th to November	Oats	3	128 (3 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Rye	3	112 (2 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Wheat	3	120 (2 bushel)
	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Perennial Rye	1	40
November 1 to Feb. 29	Tall Fescue	1	40
	Annual Ryegrass	1	40
	Annual Ryegrass	1.25	40
	Perennial Ryegrass	3.25	40
	Creeping Red Fescue	0.4	40
	Kentucky Bluegrass	0.4	40
	Use mulch only or dormant seeding		

Note: Other approved species may be substituted.

1. Structural erosion and sediment control practices such as diversions and sediment traps shall be installed and stabilized with temporary seeding prior to grading the rest of the construction site.
2. Temporary seed shall be applied between construction operations on soil that will not be graded or reworked for 21 days or greater. These idle areas shall be seeded within 7 days after grading.
3. The seedbed should be pulverized and loose to ensure the success of establishing vegetation. Temporary seeding should not be postponed if ideal seedbed preparation is not possible.
4. Soil Amendments—Temporary vegetation seeding rates shall establish adequate stands of vegetation, which may require the use of soil amendments. Base rates for lime and fertilizer shall be used.
5. Seeding Method—Seed shall be applied uniformly with a cyclone spreader, drill, cultipacker seeder, or hydroseder. When feasible, seed that has been broadcast shall be covered by raking or dragging and then lightly tamped into place using a roller or cultipacker. If hydroseding is used, the seed and fertilizer will be mixed on-site and the seeding shall be done immediately and without interruption.

CHAPTER 7 Soil Stabilization 35

3. Straw and Mulch Anchoring Methods

Straw mulch shall be anchored immediately to minimize loss by wind or water.

- Mechanical—A disk, crimper, or similar type tool shall be set straight to punch or anchor the mulch material into the soil. Straw mechanically anchored shall not be finely chopped but, generally, be left longer than 6 inches.
- Mulch Netting—Netting shall be used according to the manufacturer's recommendations. Netting may be necessary to hold mulch in place in areas of concentrated runoff and on critical slopes.
- Asphalt Emulsion—Asphalt shall be applied as recommended by the manufacture or at the rate of 160 gallons per acre.

- Synthetic Binders—Synthetic binders such as Acrylic DLR (Agri-Tac), DCA-70, Petrosel, Terra Track or equivalent may be used at rates specified by the manufacturer.
- Wood Cellulose Fiber—Wood cellulose fiber shall be applied at a net dry weight of 750 pounds per acre. The wood cellulose fiber shall be mixed with water with the mixture containing a maximum of 50 pounds cellulose per 100 gallons of water.

Irrigation

Permanent seeding shall include irrigation to establish vegetation during dry weather or on adverse site conditions, which require adequate moisture for seed germination and plant growth.

Irrigation rates shall be monitored to prevent erosion and damage to seeded areas from excessive runoff.

Table 7.10.2 Permanent Seeding

Seed Mix	Seeding Rate		Notes:
	Lbs./acre	Lbs./1,000 Sq. Feet	
General Uses			
Creeping Red Fescue	20-40	1/2-1	For close mowing & for waterways with <2.0 ft/sec velocity
Domestic Ryegrass	10-20	1/4-1/2	
Kentucky Bluegrass	20-40	1/2-1	
Tall Fescue	40-50	1-1 1/4	
Turf-type (dwarf) Fescue	90	2 1/4	
Slopes Banks or Cut Slopes			
Tall Fescue	40-50	1-1 1/4	
Crown Vetch	10-20	1/4-1/2	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Flat Pea	20-25	1/2-3/4	Do not seed later than August
Tall Fescue	20-30	1/2-3/4	
Road Ditches and Swales			
Tall Fescue	40-50	1-1 1/4	
Turf-type (Dwarf) Fescue	90	2 1/4	
Kentucky Bluegrass	5	0.1	
Lawns			
Kentucky Bluegrass	100-120	2	For shaded areas
Perennial Ryegrass		2	
Kentucky Bluegrass	100-120	2	
Creeping Red Fescue		1-1/2	

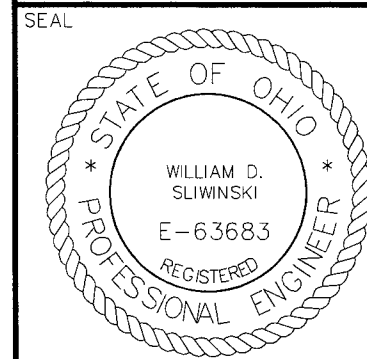
Note: Other approved seed species may be substituted.

CHAPTER 7 Soil Stabilization 45

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NEW FACILITY FOR
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480 NOVA DRIVE SE
MASSILLON, OH 44646



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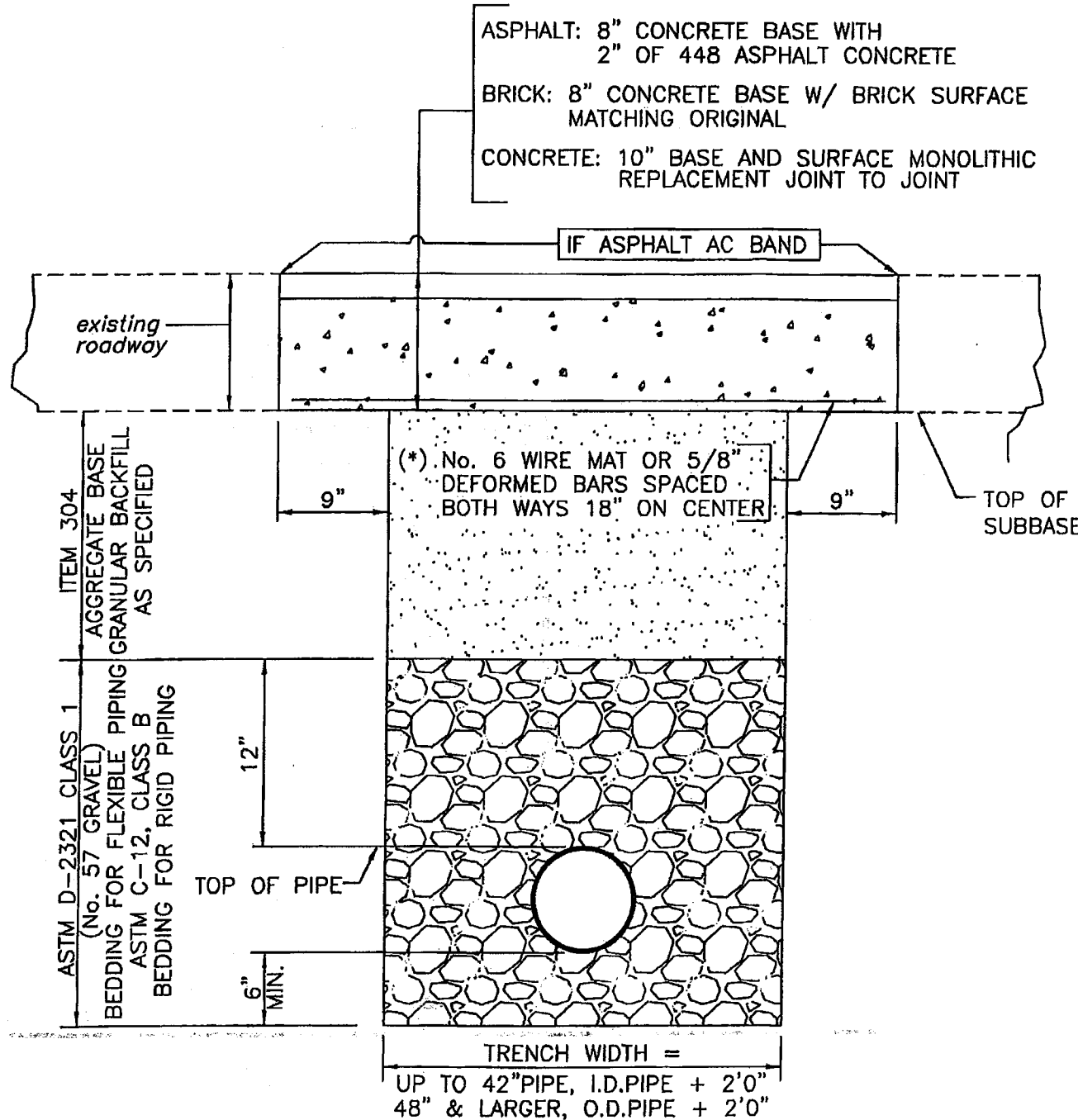
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1-6-13

DRAWING NO.

SD-9

Kathy Catanzaro-Perry, Mayor
Massillon
City of Champions
CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1788

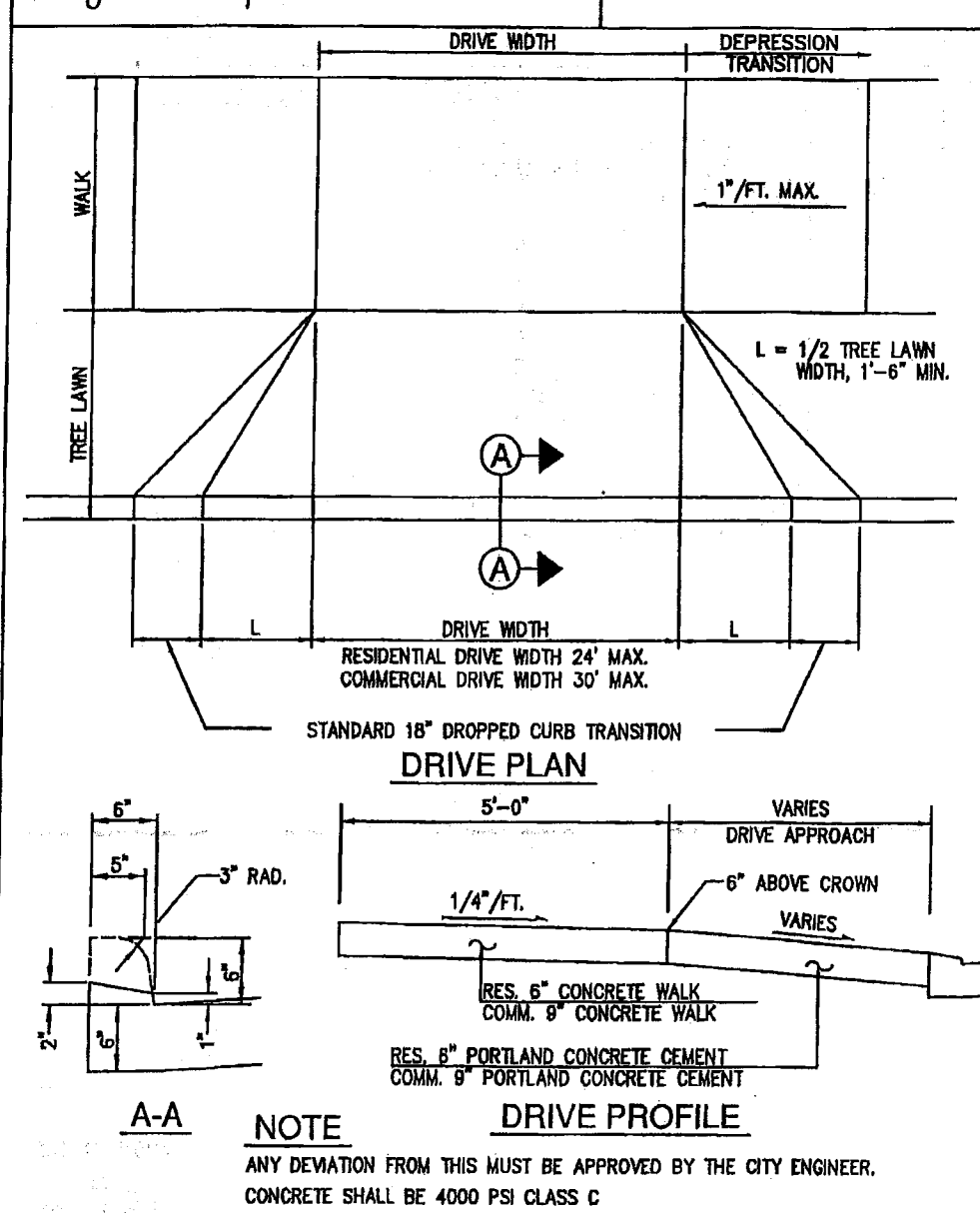
TRENCH DETAIL
WITHIN
ROADWAY/DRIVEWAY



- NOTES
- 1) CONCRETE BASE SHALL BE OF 1:2:4, 6 BAG MIX, PORTLAND CEMENT CONCRETE USING HIGH EARLY STRENGTH CEMENT AND IT MUST BE CURED AT LEAST 48 HRS.
 - (*) MUST BE USED WHEN WIDTH OF TRENCH IS GREATER THAN 3' AT THE SUBBASE. FIBER CONCRETE, BASE MAY BE USED IN LIEU OF THE BARS.

Kathy Catanzaro-Perry, Mayor
Massillon
City of Champions
CITY OF MASSILLON ENGINEERING
151 LINCOLN WAY EAST
MASSILLON, OHIO (330)830-1722
FAX: (330)830-1788

DRIVEWAY APPROACH
DETAIL



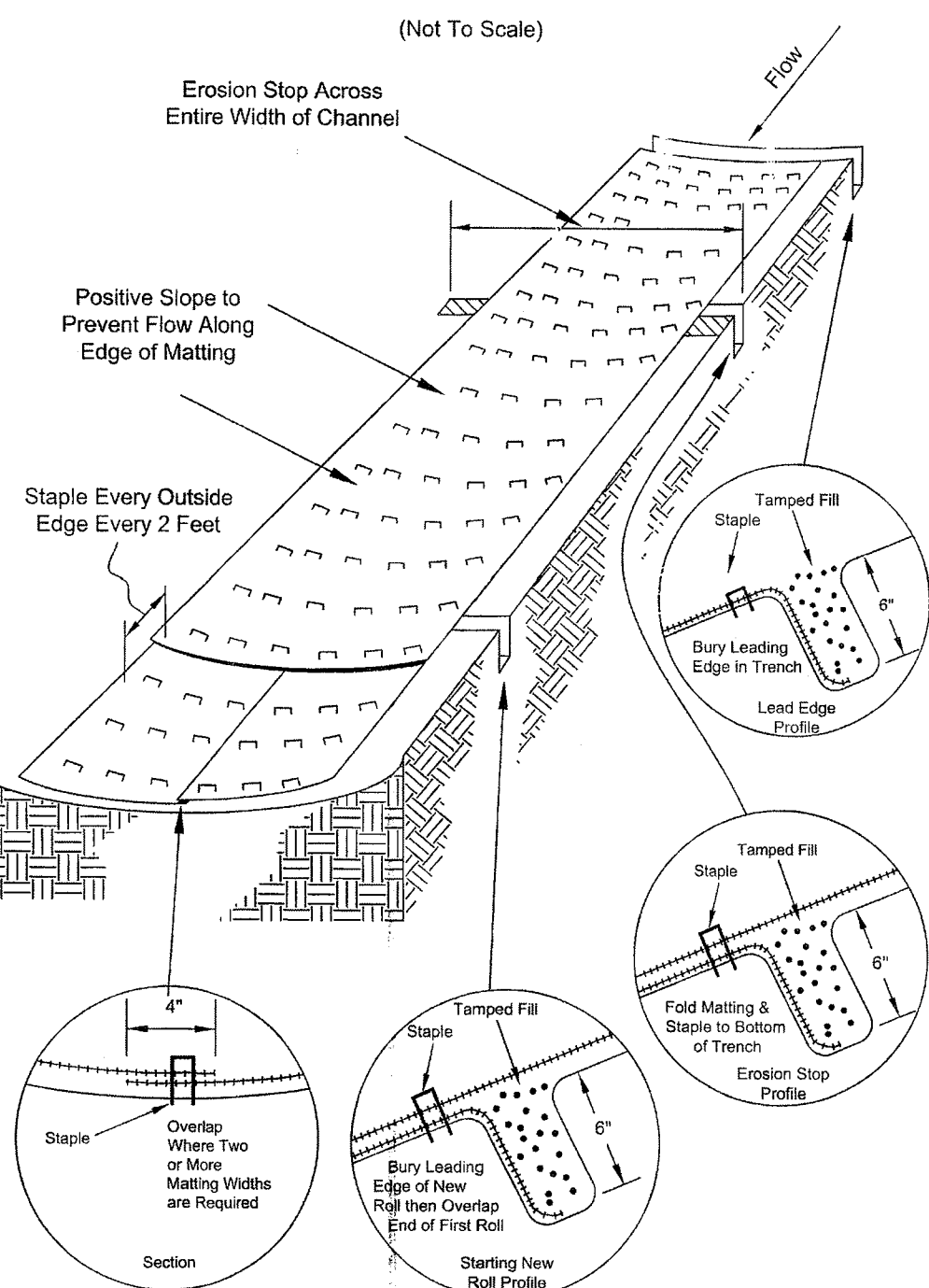
NOTE
ANY DEVIATION FROM THIS MUST BE APPROVED BY THE CITY ENGINEER.
CONCRETE SHALL BE 4000 PSI CLASS C

Specifications
for
Temporary Rolled Erosion Control Product

1. Channel/Slope Soil Preparation Grade and compact area of installation, preparing seedbed by loosening 2"-3" of topsoil above final grade. Incorporate amendments such as lime and fertilizer into soil. Remove all rocks, clods, vegetation or other debris so that installed RECP will have direct contact with the soil surface.
2. Channel/Slope Seeding Apply seed to soil surface prior to installation. All check slots, anchor trenches, and other disturbed areas must be reseeded. Refer to the Permanent Seeding specification for seeding recommendations.
3. Excavate top and bottom trenches (12"x6"). Intermittent erosion check slots (6"x6") may be required based on slope length. Excavate top anchor trench 2' x 3' over crest of the slope.
4. If intermittent erosion check slots are required, install RECP in 6"x6" slot at a maximum of 30' centers or the mid point of the slope. RECP should be stapled into trench on 12" centers.
5. Install RECP in top anchor trench, anchor on 12" spacings, backfill and compact soil.
6. Unroll RECP down slope with adjacent rolls overlapped a minimum of 3". Anchor the seam every 18". Lay the RECP loose to maintain direct soil contact, do not pull taught.
7. Overlap roll ends a minimum of 12" with upslope RECP on top for a shingle effect. Begin all new rolls in an erosion check slot if required, double anchor across roll every 12".
8. Install RECP in bottom anchor trench (12"x6"), anchor every 12". Place all other staples throughout slope at 1 to 2.5 per square yard dependant on slope. Refer to manufacturer's anchor guide.
9. Excavate initial anchor trench (12"x6") across the lower end of the project area.
10. Excavate intermittent check slots (6"x6") across the channel at 30' intervals along the channel.
11. Excavate longitudinal channel anchor slots (4"x4") along both sides of the channel to bury the edges. Whenever possible extend the RECP 2'-3' above the crest of channel side slopes.
12. Install RECP in initial anchor trench (downstream) anchor every 12", backfill and compact soil.
13. Roll out RECP beginning in the center of the channel toward the intermittent check slot. Do not pull taught. Unroll adjacent rolls upstream with a 3" minimum overlap (anchor every 18") and up each channel side slope.
14. At top of channel side slopes install RECP in the longitudinal anchor slots, anchor every 18".
15. Install RECP in intermittent check slots. Lay into trench and secure with anchors every 12", backfill with soil and compact.
16. Overlap roll ends a minimum of 12" with upstream RECP on top for a shingling effect. Begin all new rolls in an intermittent check slot, double anchored every 12".
17. Install upstream end in a terminal anchor trench (12"x6"); anchor every 12", backfill and compact.
18. Complete anchoring throughout channel at 2.5 per square yard using suitable ground anchoring devices (U shaped wire staples, metal geotextile pins, plastic stakes, and triangular wooden stakes). Anchors should be of sufficient length to resist pullout. Longer anchors may be required in loose sandy or gravelly soils.

CHAPTER 7 Soil Stabilization 55

Specifications
for
Temporary Rolled Erosion Control Product



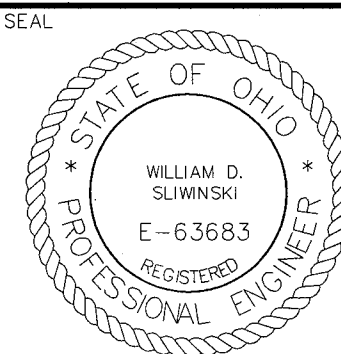
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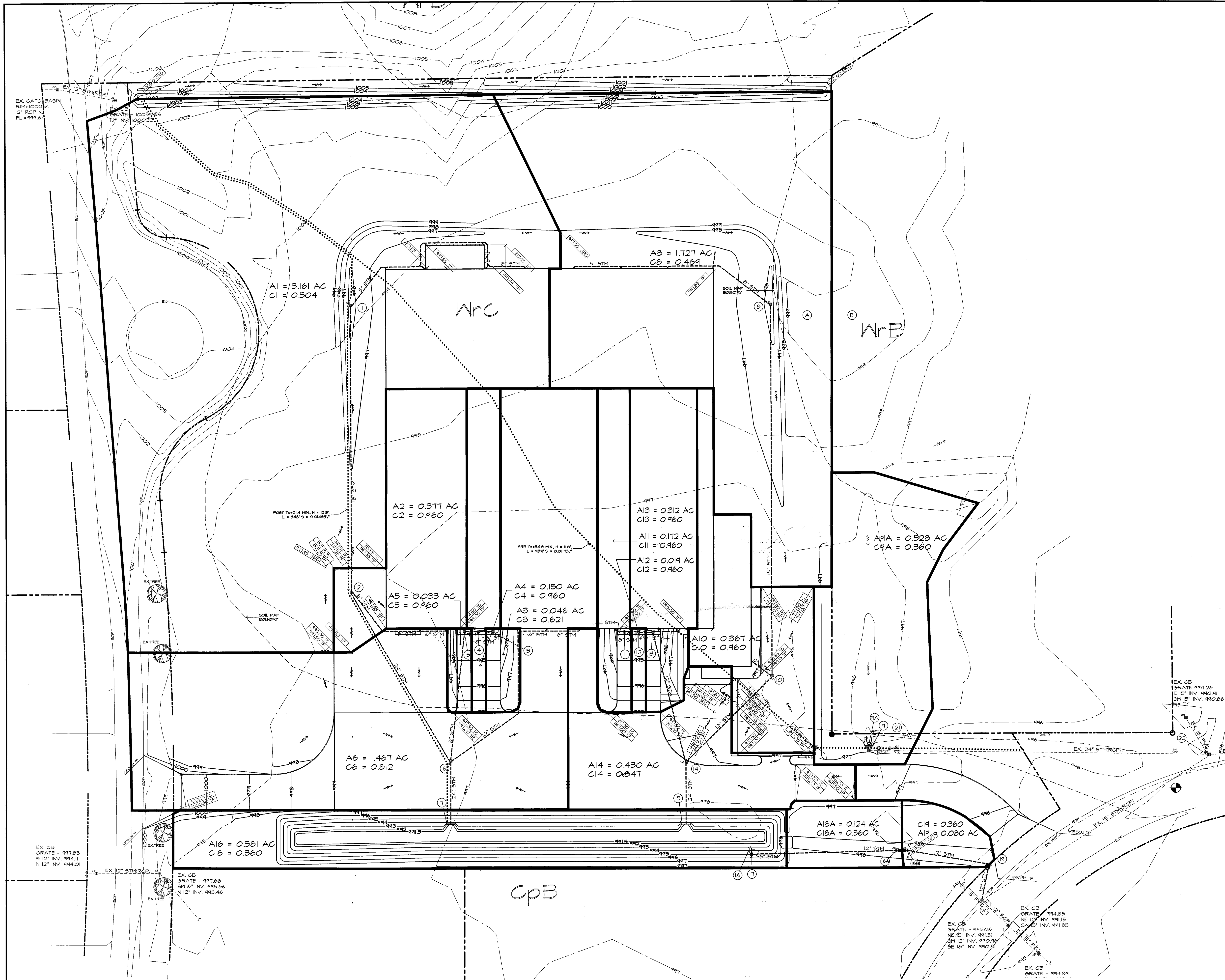
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SD-10



STORM SEWER SCHEDULE									
FROM	TO	LENGTH	SIZE	SLOPE	FROM	TO	LENGTH	SIZE	SLOPE
1	2	240.0'	18"	0.40%	11	12	12.0'	8"	0.50%
2	6	163.0'	24"	0.48%	12	13	12.0'	8"	2.00%
3	4	12.0'	6"	0.50%	13	14	112.0'	12"	0.41%
4	5	12.0'	8"	0.58%	14	15	52.0'	24"	0.46%
5	6	108.0'	8"	0.57%	16	17	7.0'	6"	0.24%
6	7	53.0'	24"	0.47%	17	18A	123.0'	12"	0.22%
8	10	310.0'	18"	0.40%	18A	18B	8.0'	(4) 8"	0.25%
9A	9	5.0'	12"	20.00%	18B	19	71.0'	12"	0.21%
9	21	24.0'	24"	2.87%	19	20	30.0'	12"	0.23%
10	14	102.0'	18"	0.51%					

STORM SEWER STRUCTURE SCHEDULE

(1) PROPOSED CB TS = 995.75' INV = 993.50, 18'W, 8'SE	(14) PROPOSED CB TS = 996.00 INV = 991.74, 12'E, 18'SE, 24'W
(2) PROPOSED CB TS = 991.00 INV = 992.54, 6'SW, 18'E, 24'SW	(15) PROP. PIPE OUTLET INV = 991.50 CONST. HW-D HEADWALL, SEE DETAIL, SHT. SD-7 CONST. TLXTW/SD, TYP. C RIP RAP (6" STONE).
(3) PROPOSED CB TS = 993.93 INV = 992.50, 6'N	(16) PROPOSED PIPE INLET INV = 991.53, 6'W PROVIDE A GRATE AT EAST END OF PIPE.
(4) PROPOSED CB TS = 993.93 INV = 992.44, (2) 6'S, 8'N	(17) PROP. CB TS = 994.60 INV = 991.31, 6'E, 12'S PROVIDE AN ENDCAP AT WEST END OF 6" PIPE WITH 2.50' Ø ORIFICE. SEE DETAIL, SHT. SD-5 & SD-7.
(5) PROPOSED CB TS = 993.93 INV = 992.37, 8'SW	(18A) PROPOSED 3'X2' CB TS = 995.50 INV = 991.03, 12'N, (4) 6'S SEE DETAIL, SHT. SD-7
(6) PROPOSED CB TS = 996.00 INV = 991.75, 24'NE & W, 8'E, 10'SE	(18B) PROPOSED 3'X2' CB TS = 995.50 INV = 991.03, (4) 6'N, 12'S SEE DETAIL, SHT. SD-7
(7) PROPOSED OUTLET INV = 991.50, 24'E CONST. HW-D HEADWALL, SEE DETAIL, SHT. SD-7. CONST. TLXTW/SD, TYP. C RIP RAP (6" STONE). CONST. 345'LXAVE. 9.2'Wx0.5'D, NO. 1 & 2 STONE PROTECTION LINING BOT. OF RETENTION BAS.	(19) PROPOSED CB TS = 995.15 INV = 990.88, 12' N&W
(8) PROPOSED CB TS = 995.75 INV = 993.50, 18'W, 8'NE	(20) EXISTING CB, REPLACE WITH NEW PRECAST CB TS = 995.06 INV = 991.51, EX. 15'SW INV = 990.81, EX. 18'SE, 12'E INV = 990.46, EX. 12'NE
(9A) PROPOSED PIPE INLET INV = 994.50, 12'W CONST. TLXTW/SD, TYP. C RIP RAP (6" STONE).	(21) EX. STM MH TOP OF RIM = 998.01 INV = 992.31, EX. 24' N&S
(9) PROPOSED CB TS = 991.00 INV = 993.00, 12'E, EX. 24'S REMOVE 45' OF EX. 24" RCP,	(22) EXISTING CB TS = FIELD VERIFY INV = 990.66, EX. 24'N INV = TS - 4.83', EX. 15'E INV = TS - 5.05', EX. 18'W INV = TS - 5.10', EX. 27'S
(10) PROPOSED CB TS = 996.00 INV = 992.26, 18'E&NW, 8'NE	
(11) PROPOSED CB TS = 993.93 INV = 992.50, 6'N, 8'S	
(12) PROPOSED CB TS = 993.93 INV = 992.44, 8'N&S	
(13) PROPOSED CB TS = 993.93 INV = 992.20, 8'N, 6'N&S, 12'W	

FLOOD ZONE = ZONE "X"

SOIL TYPES

NrB - WHEELING SILT LOAM, 2 TO 6% SLOPE

Nrc - WHEELING SILT LOAM, 6 TO 12% SLOPE

CpB CHILI SILT LOAM, 2 TO 6% SLOPE

TOPOGRAPHICAL LEGEND		
TC = TOP OF CURB	EXISTING POINT ELEVATION	+ 1000.00 TO 995.50 TP
TP = TOP OF PAVEMENT	NEW POINT ELEVATION	+ 1000.00 TO 995.50 TP
GRD = GRADE	EXISTING CONTOUR LINE	100
TS = TOP OF GRATE	NEW CONTOUR LINE	100
INV = INVERT		

NORTH

DRAINAGE MAP

SCALE 1" = 40'-0"

LOT SIZE 8.7491 ACRES

BENCHMARK

EXISTING SAN. MH "D"

RIM ELEV = 996.14'

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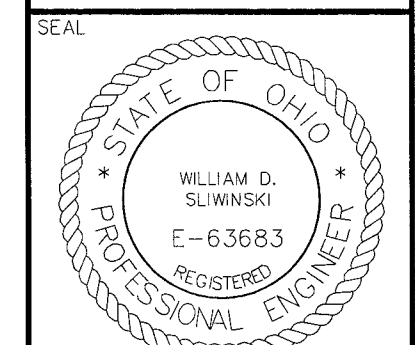
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