

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE AVE
MORTON, PA 19061
(610)565-5553

ADDITIONS AND RENOVATIONS TO THE
FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY
INTERMEDIATE UNIT
701 HENDERSON BLVD.
FOLCROFT, PA 19032

DATE	DRAWN	CHECKED	DESCRIPTION
10/17/25	PSJ	GNH	Bid Set

PROJECT #: 17-DCIU-01
SHEET TITLE: EXISTING CONDITIONS PLAN

SHEET NUMBER: C-2

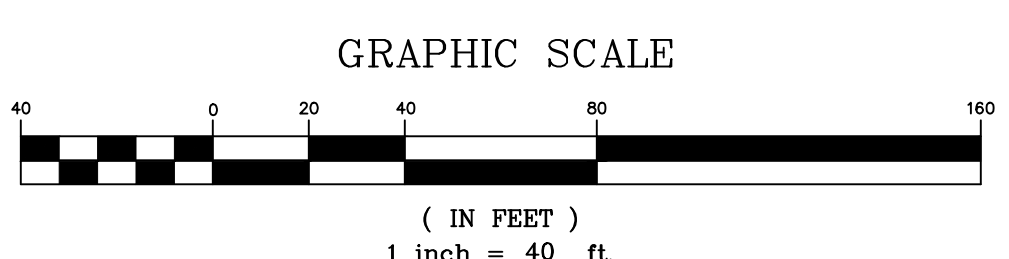
- GENERAL NOTES
- Map No. 20-05-075.000, Folio No. 20-00-00464-02, Area 10.000 Ac.
 - Owner: Del Co. Voc. Tech. School, c/o Business Office, 200 Yale Avenue, Morton, Pa. 19070
 - This property was physically surveyed by G. D. Houtman & Son, Inc. Elevations obtained utilizing Global Positioning System equipment per National Geodetic Datum of 1988. Bench Mark is Sanitary manhole in Henderson Boulevard at the southwest corner of the site - Rim = 39.45.
 - This property contains no 100 Year Flood Plain as shown on the Flood Insurance Rate Map, (FIRM), Delaware County, Pennsylvania, Panel 119 of 250 Map Number 42045C0119G, Map Revised September 2, 2015.
 - Present Zoning MC - Municipal Center District Requirements for Schools and Colleges Per Section 600-133
Min. Lot Area 2 Ac. Min.
Min. Lot width 150' min.
Setbacks
Front Yard 50' Min. each street
Side Yard 30' Min.
Rear Yard 50' Min.
Building Coverage 40% max.
Max. Impervious Coverage 60%
Max. Height 50' Max.
 - Reference Plan: Plan of Properties, Folcroft Industrial Park for Wilbur C. Henderson, prepared by Damon & Foster, Civil Engineers, dated May 16, 1966, last revised June 16, 1966.
 - Soil Type shown as per the Soil Survey for Chester and Delaware Counties, Pennsylvania, Series 1959, No. 19, Issued May 1963, Prepared by the United States Department of Agriculture.
BeB2 Beltsville silt loam, 0 to 3 percent slopes
BeB2 Beltsville silt loam, 3 to 8 percent slopes, moderately eroded
ByB2 Butertown silt loam, 3 to 8 percent slopes, moderately eroded
 - The majority of the parking areas contained vehicles during the site survey thereby limiting and hindering visibility of utility type structures, IE manholes, valves, inlets, clean outs etc. Verification and location of all subsurface features must be performed prior to the start of any construction.
 - Existing impervious coverage = 282,353 sf (64.8%)
Proposed impervious coverage = 261,954 s.f. (64.7%)

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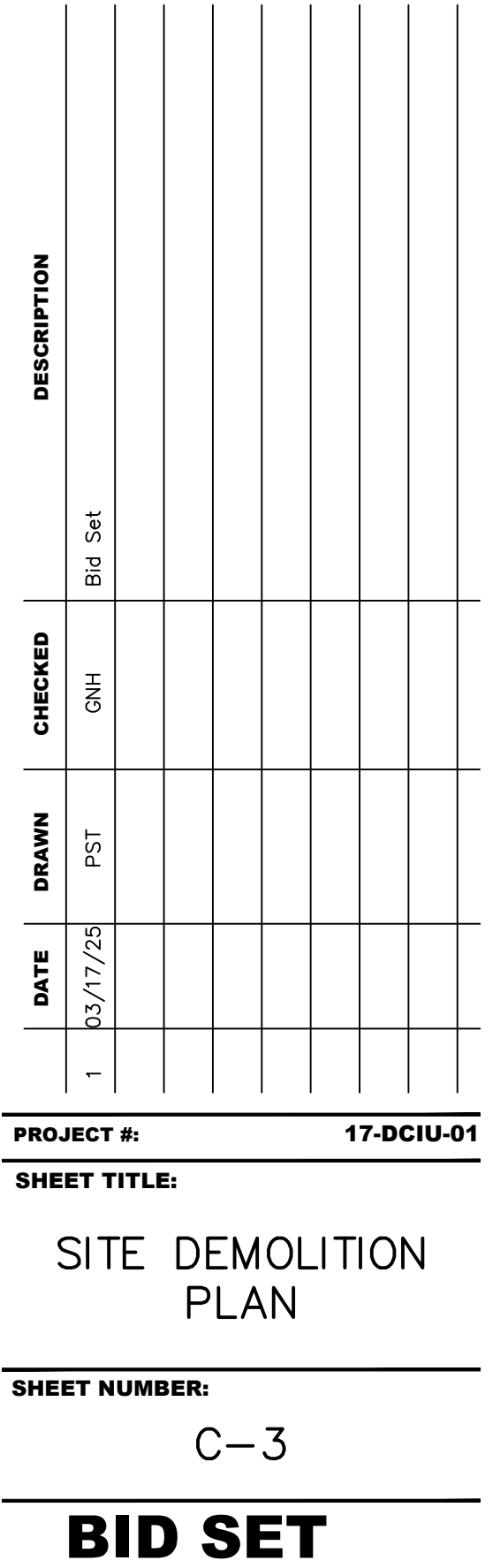
Notes: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depths of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective May 25, 2007.

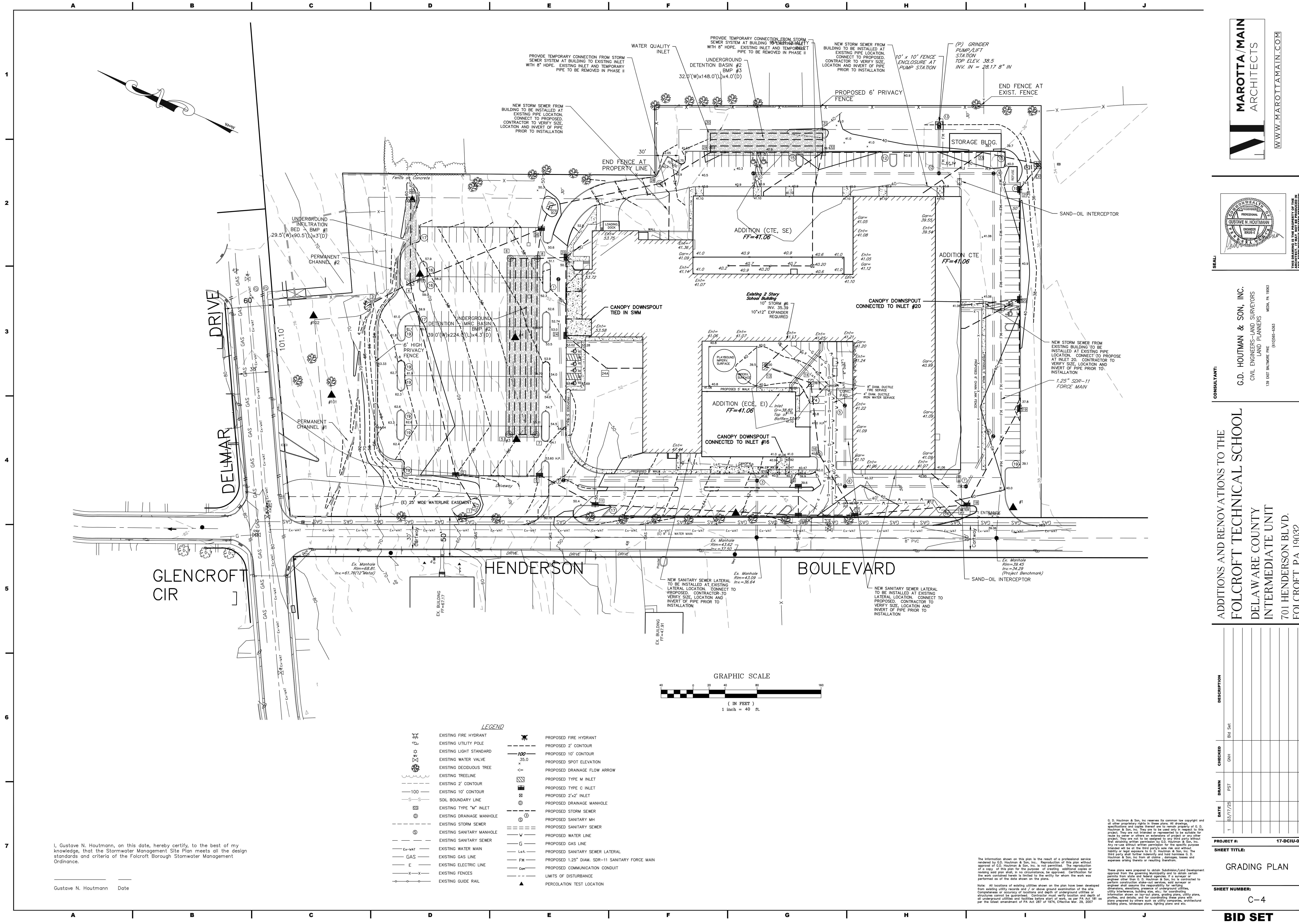
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- LEGEND
- EXISTING FIRE HYDRANT
 - EXISTING UTILITY POLE
 - EXISTING LIGHT STANDARD
 - EXISTING WATER VALVE
 - EXISTING DECIDUOUS TREE
 - EXISTING TREELINE
 - EXISTING 2" CONTOUR
 - EXISTING 10' CONTOUR
 - SOIL BOUNDARY LINE
 - EXISTING TYPE "M" INLET
 - EXISTING DRAINAGE MANHOLE
 - EXISTING STORM SEWER
 - EXISTING SANITARY MANHOLE
 - EXISTING WATER MAIN
 - EXISTING GAS LINE
 - EXISTING ELECTRIC LINE
 - EXISTING FENCES
 - EXISTING GUIDE RAIL
 - PERCOLATION TEST LOCATION



SOIL PERCOLATION NOTE:
DEEP HOLE AND PERCOLATION TESTING AT LOCATIONS 1-4 PERFORMED ON JANUARY 31, 2018. THE PERCOLATION RATE OBSERVED AT ALL LOCATIONS WAS 0.0 IN/HR.





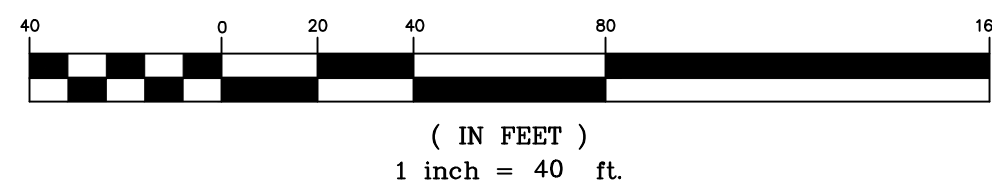
I, Gustavo N. Houtmann, on this date, hereby certify, to the best of my knowledge, that the Stormwater Management Site Plan meets all the design standards and criteria of the Folcroft Borough Stormwater Management Ordinance.

Gustavo N. Houtmann Date

LEGEND

- | | |
|---------------------------|---|
| EXISTING FIRE HYDRANT | PROPOSED FIRE HYDRANT |
| EXISTING UTILITY POLE | PROPOSED 2' CONTOUR |
| EXISTING LIGHT STANDARD | PROPOSED 10' CONTOUR |
| EXISTING WATER VALVE | PROPOSED SPOT ELEVATION |
| EXISTING DECIDUOUS TREE | PROPOSED DRAINAGE FLOW ARROW |
| EXISTING TREELINE | PROPOSED TYPE M INLET |
| EXISTING 2' CONTOUR | PROPOSED TYPE C INLET |
| EXISTING 10' CONTOUR | PROPOSED 2'x2' INLET |
| SOIL BOUNDARY LINE | PROPOSED DRAINAGE MANHOLE |
| EXISTING TYPE "M" INLET | PROPOSED STORM SEWER |
| EXISTING DRAINAGE MANHOLE | PROPOSED SANITARY MH |
| EXISTING STORM SEWER | PROPOSED SANITARY SEWER |
| EXISTING SANITARY MANHOLE | PROPOSED WATER LINE |
| EXISTING SANITARY SEWER | PROPOSED GAS LINE |
| EXISTING WATER MAIN | PROPOSED SANITARY SEWER LATERAL |
| EXISTING GAS LINE | PROPOSED 1.25" DIAM. SDR-11 SANITARY FORCE MAIN |
| EXISTING ELECTRIC LINE | PROPOSED COMMUNICATION CONDUIT |
| EXISTING FENCES | LIMITS OF DISTURBANCE |
| EXISTING GUIDE RAIL | PERCOLATION TEST LOCATION |

GRAPHIC SCALE



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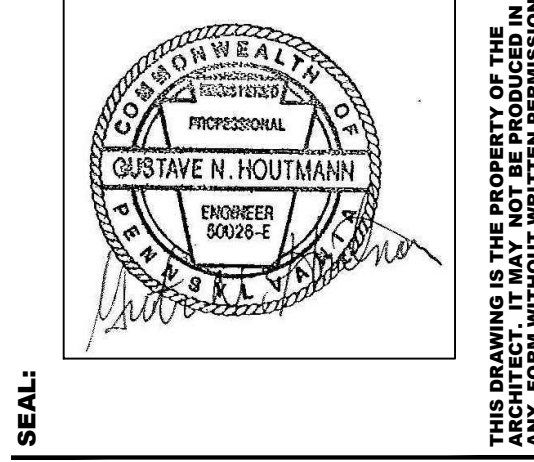
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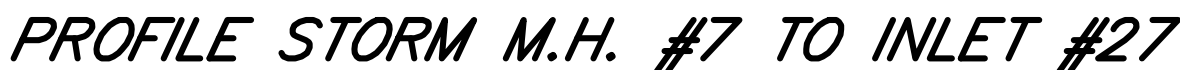
DATE	DRAWN	CHECKED	DESCRIPTION
10/17/25	PST	GNH	Bid Set

PROJECT #: 17-DCIU-01
SHEET TITLE: GRADING PLAN
SHEET NUMBER: C-4

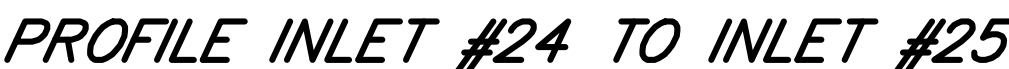
CONSULTANT:
G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BAYVIEW PIKE
MEDIA, PA 19063
(610)565-5553



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ARCHITECTS
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- NOTE:** RIM AND GRADE ELEVATIONS OF PROPOSED STORM AND SANITARY SEWER STRUCTURES MAY DIFFER FROM PHASE 1, AND FINAL GRADING. SEE LABELING PROVIDED AT EACH STRUCTURE. WHERE FINAL GRADE AND RIM ELEVATIONS ARE LOWER THAN PHASE 1, CONTRACTOR IS TO SUPPLY PRE-CAST STRUCTURES WITH GRADE RINGS SUCH THAT THE GRADE AND RIM ELEVATIONS OF THE STRUCTURES CAN BE LOWERED TO THE FINAL ELEVATIONS SPECIFIED WITH THE REMOVAL OF THE APPROPRIATE GRADE RING(S).

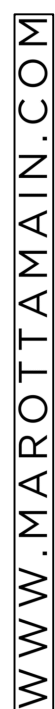


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These plans were prepared for the purpose of obtaining permits, profits, and details, and for coordinating these plans with utility plans prepared by others such as utility companies, architectural firms, etc.



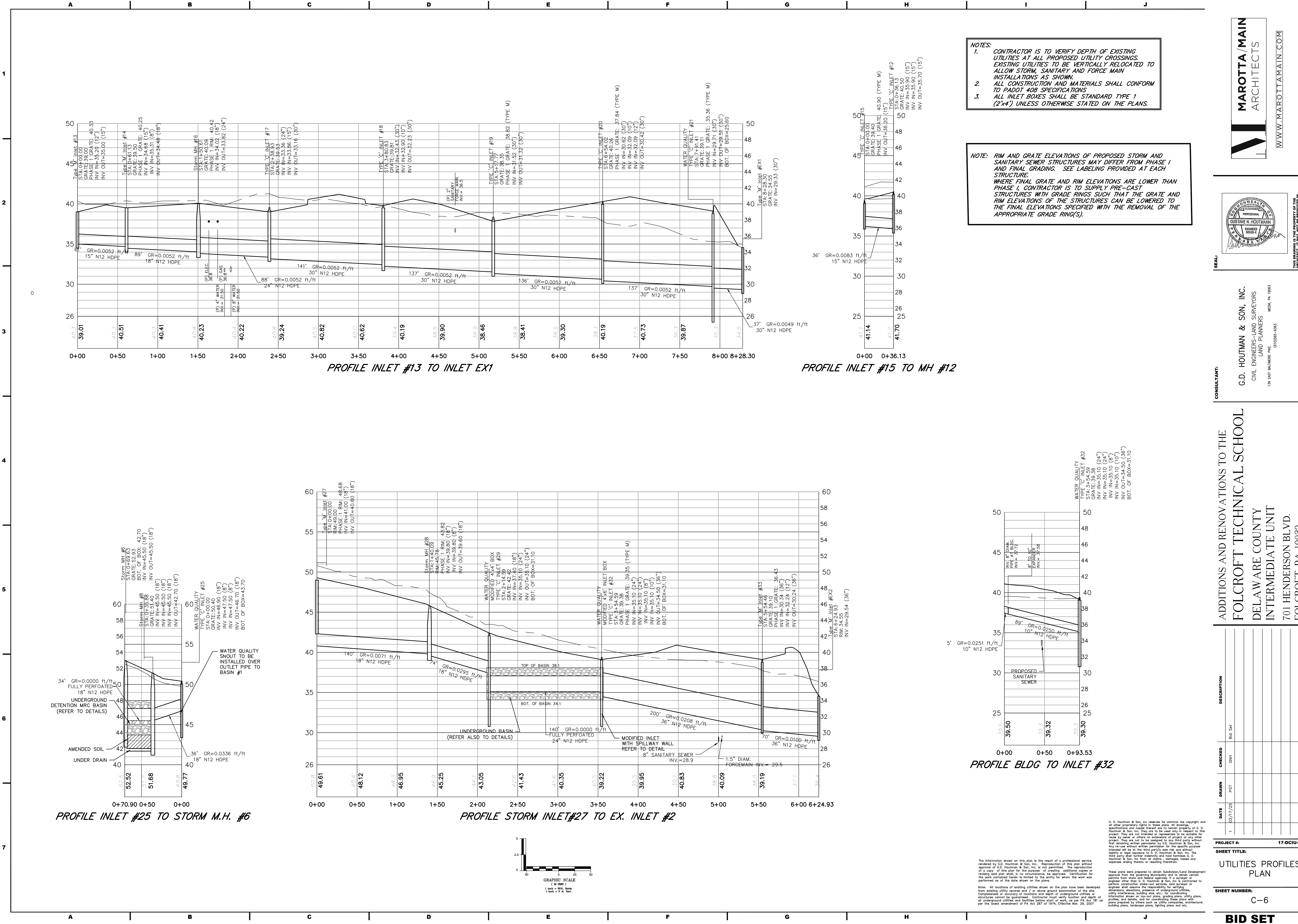
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MEDIA, PA 19063

ADDITIONS AND RENOVATIONS TO THE
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FOLCROFT, PA 19032

PROJECT #: 17-DCIU-01

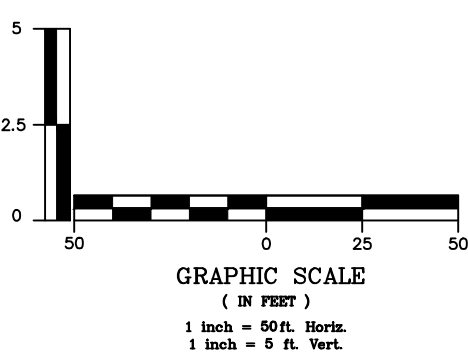
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C-5

BID SET





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701 HENDERSON BLVD.
FOLCROFT, PA 19032

DESCRIPTION

CHECKED

DRAWN

DA

PROJECT #: 17-DCIU-01

SHEET TITLE:

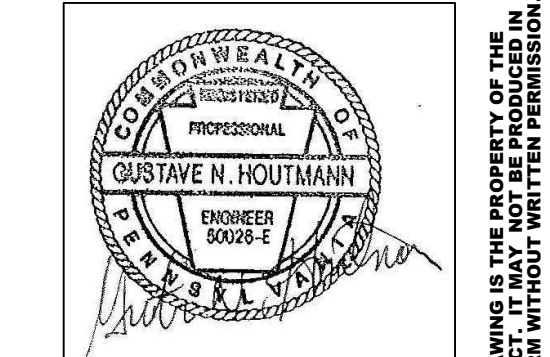
UTILITIES PROFILES PLAN

SHEET NUMBER:
C-7

ULTANT:

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS—LAND SURVEYORS
LAND PLANNERS

139 EAST BALTIMORE PIKE
MEDIA, PA 19063



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CONSULTANT:



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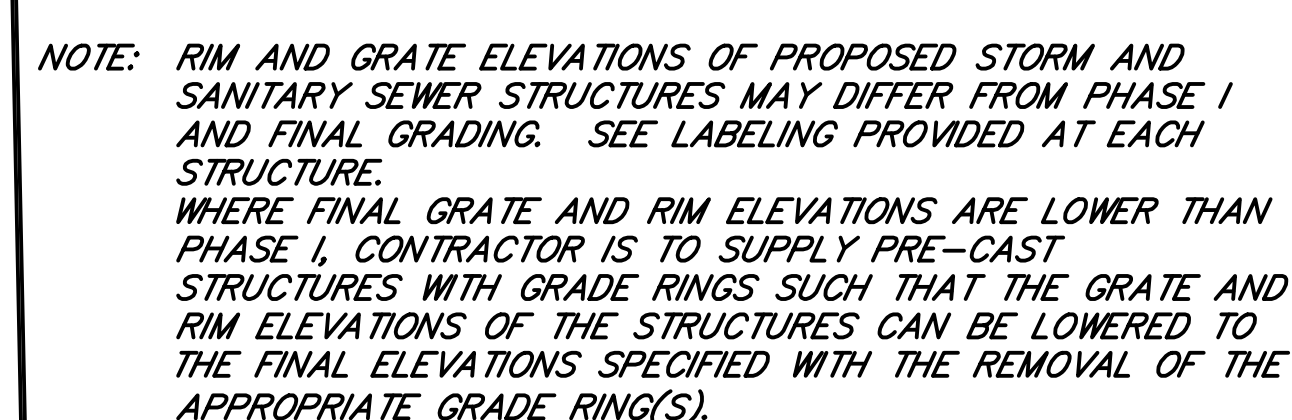
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INTERMEDIATE UNIT

PROJECT #: 17-DCIU-0

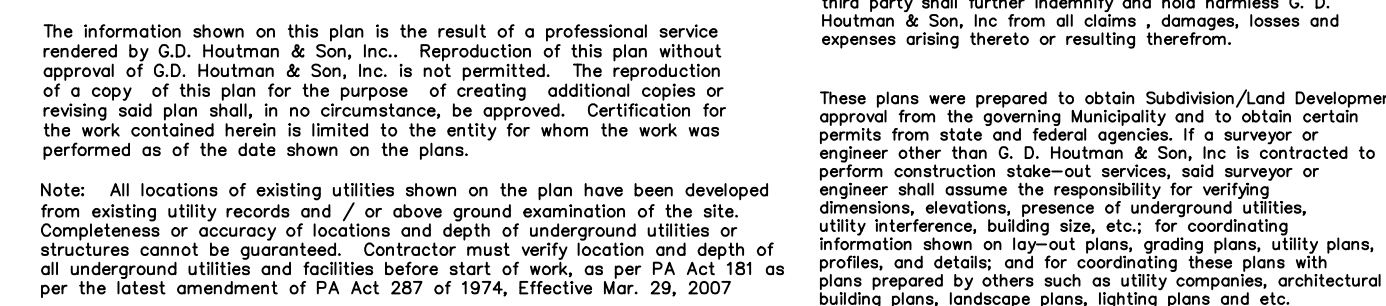
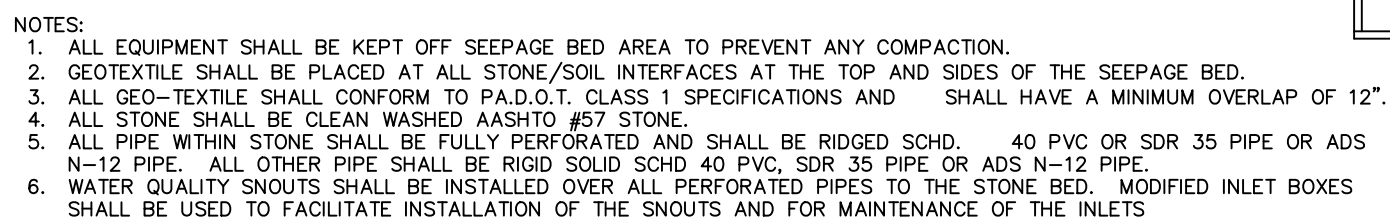
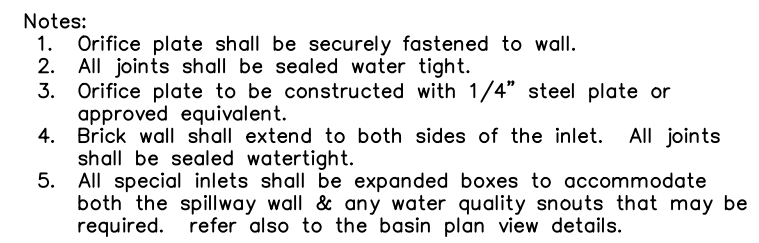
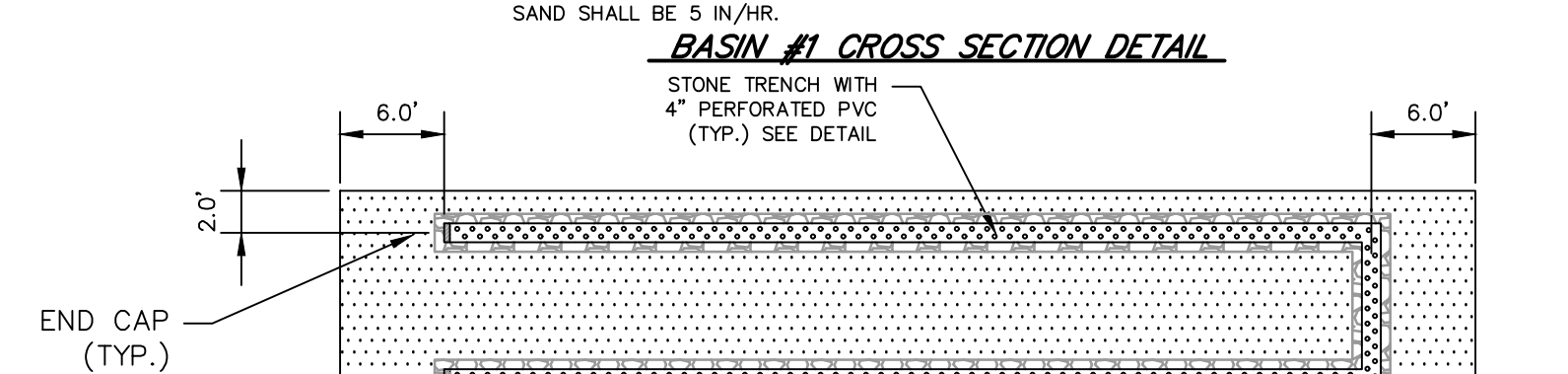
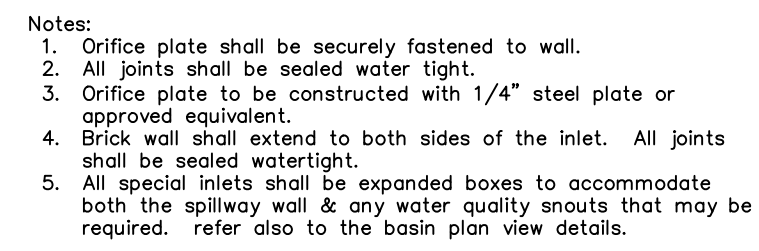
SHEET TITLE:

C-8



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3

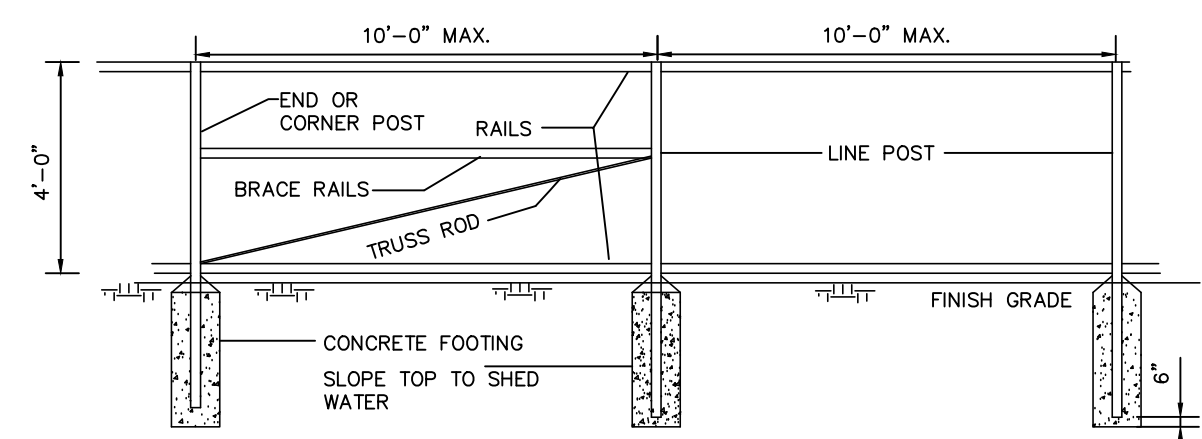
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701 HENDERSON BLVD.
FOLCROFT, PA 19032

PROJECT #: 17-DCIU-01

SHEET TITLE:

C-11

C-11

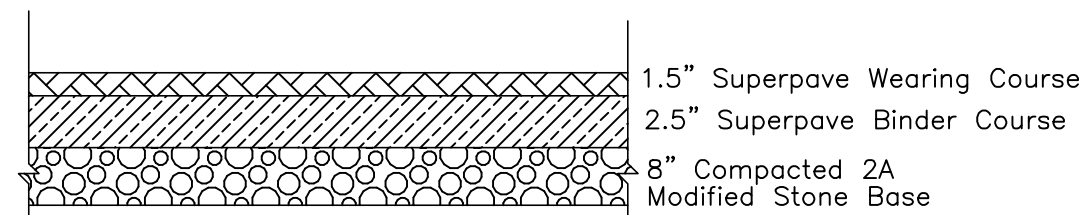


4' CHAIN LINK FENCE

Fence Height	Terminal Post	Line Post	Concrete Dim.
3 5'-5' ft	2-3/8 x 0 11	2-3/8x0 095	12" Diam X30'

Notes

1. Chain Link Fabric 11 gauge min.
2. Tension Bands Spacing 12" Max.
3. Wire Fabric Ties At Top Rail (Min. 5 ties between posts).
4. Top And Bottom Rails Min 1 5/8"x0.047"
5. If Bottom Tension Wire Is Specified Use Min. 9 Gauge
6. Wire Fabric Ties Min. 12" O.C.
7. Maximum Clear Spacing Allowed At Bottom - 2"
8. Truss Rod As Required
9. Post Caps (Standard) Required.
10. Materials supplied to meet AASHTO M181

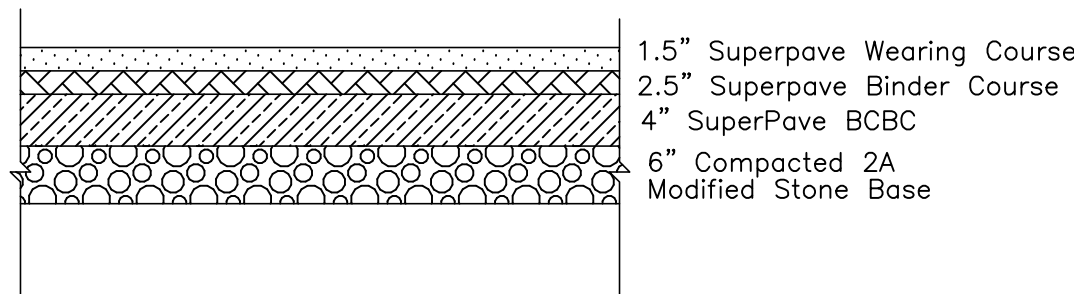


ON-SITE PAVING DETAIL

Wearing Course - 1.5" Superpave Volumetric Asphalt Mixture Design, 9.5mm, PG 64-22, HMA Wearing Course, 0.3-3 M Esals, SRL-H

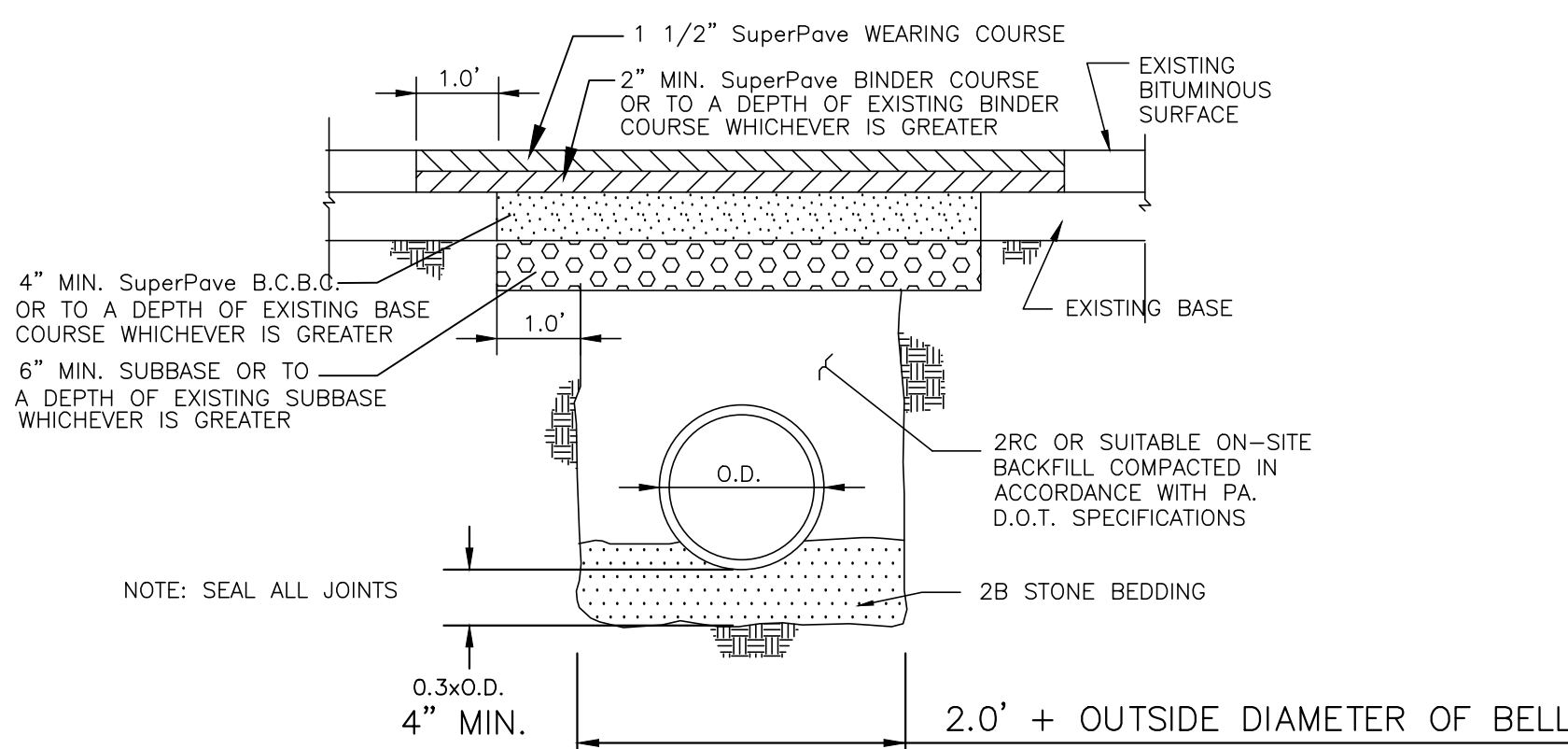
Binder Course - 2.5" Superpave Volumetric Asphalt Mixture Design, 19mm, PG 64-22, HMA Binder Course, 0.3-3 M Esals,

Subbase - 8.0" Subbase (No. 2A) Match existing depth if greater than 8"



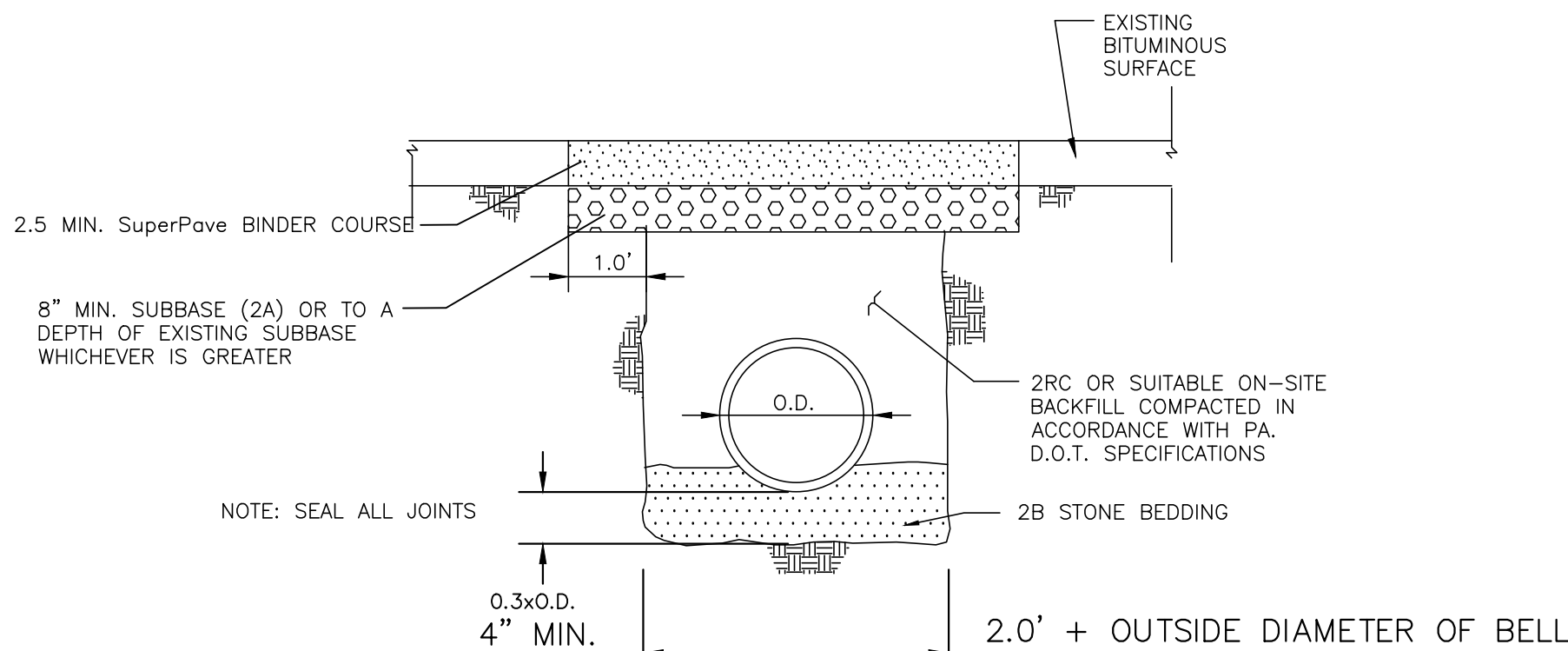
HENDERSON BLVD
PAVING SECTION

Wearing Course -	1.5" Superpave Volumetric Asphalt Mixture Design, 9.5mm, PG 64-22, HMA Wearing Course, 0.3-3 M Esals, SRI-H
Binder Course -	2.5" Superpave Volumetric Asphalt Mixture Design, 19mm, PG 64-22, HMA Binder Course, 0.3-3 M Esals,
Base Course -	6.0" Superpave Volumetric Asphalt Mixture Design, 25mm, PG 64-22, HMA Base Course, 0.3-3 M Esals,
Subbase -	6.0" SubBase (No. 2A) Match existing depth if greater than 6"



- NOTES:
1. EXPOSED VERTICAL AND HORIZONTAL SURFACES SHALL BE PREPARED AS PER PUB. 408, SECT. 401.3(f).
 2. TRENCHING DIMENSIONS ARE FOR STORM SEWER ONLY. FOR SANITARY SEWER DIMENSIONS, REFER TO SANITARY SEWER TRENCHING DETAIL.

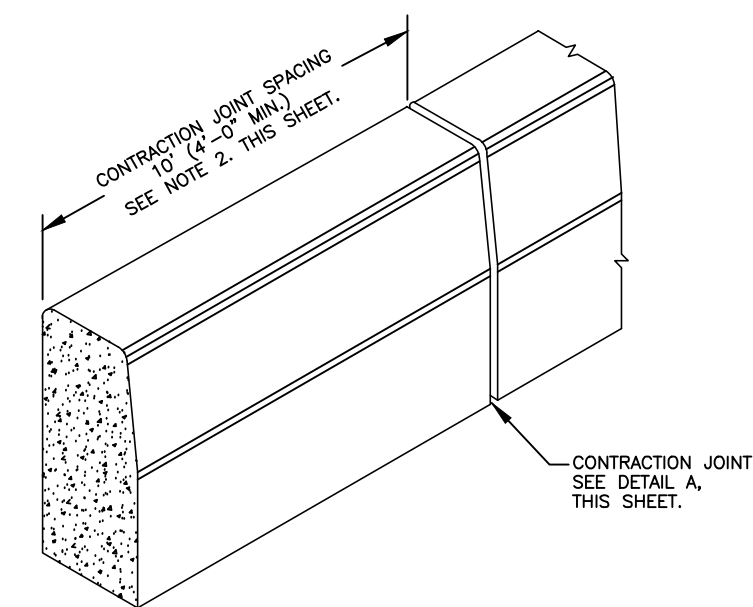
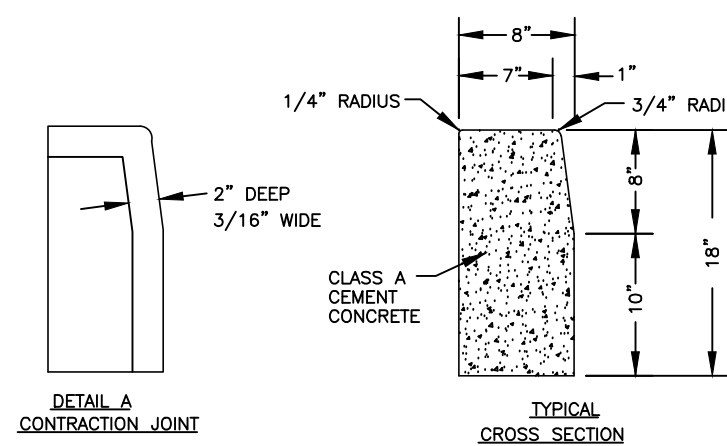
TRENCHING AND RESTORATION DETAIL



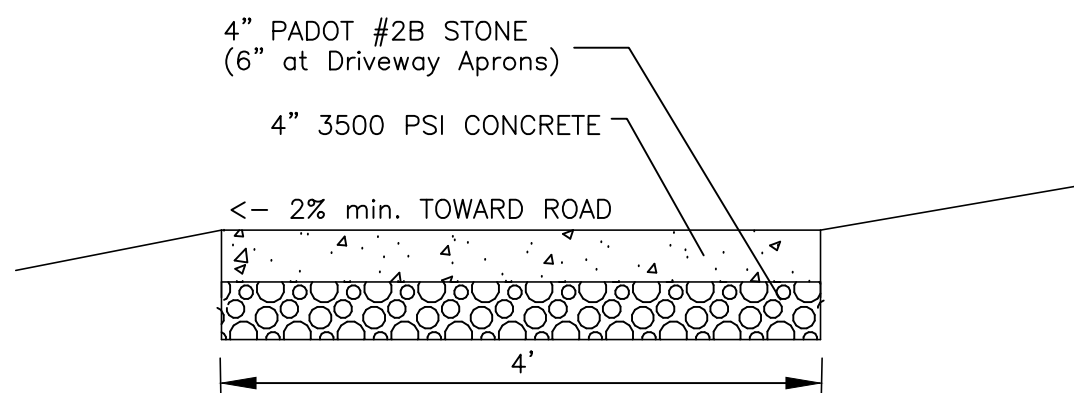
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TEMPORARY TRENCHING AND RESTORATION DETAIL

- NOTES:
1. ALL UTILITY TRENCHES IN EXISTING PAVING ARE TO RECEIVE TEMPORARY RESTORATION DETAIL



PLAIN CEMENT CONCRETE CURB - DETAIL



SIDEWALK DETAIL

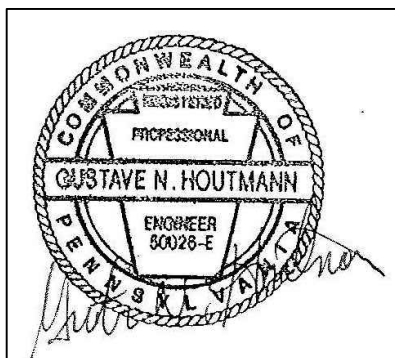
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SEAL:

G.D. HOUTMAN & SON, INC.

CIVIL ENGINEERS—LAND SURVEYORS

39 EAST BALTIMORE PIKE
MEDIA, PA 19063

1010-2000-0000

CONCLUSION:

ADDITIONS AND RENOVATIONS TO THE
FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY
INTERMEDIATE UNIT
701 HENDERSON BLVD.
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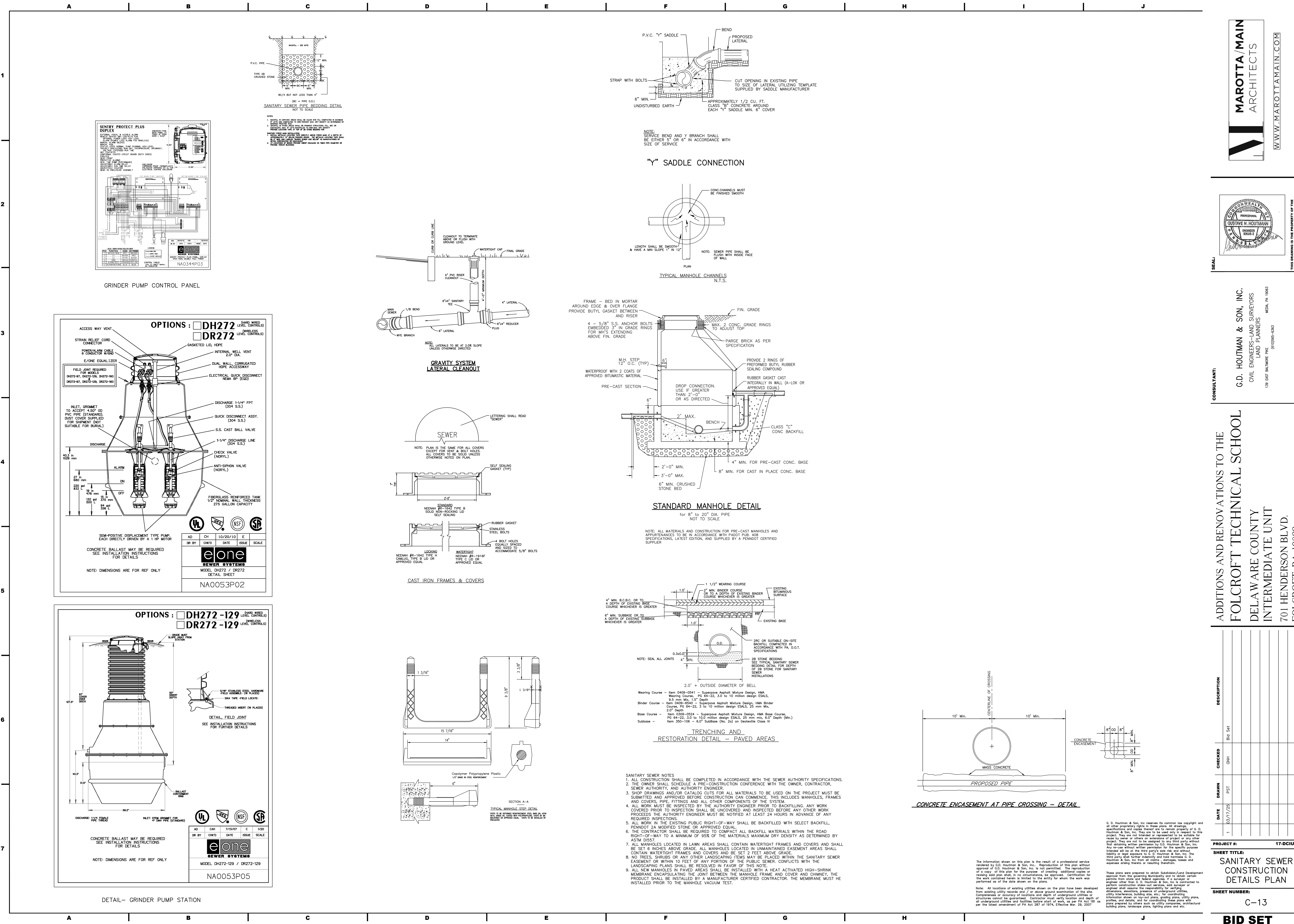
PROJECT #: 17-DCIU-01

CONSTRUCTION DETAILS PLAN

SHEET NUMBER:

C-12

BID SET



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SEAL:

CONSULTANT:
G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BAYVIEW AVE
MEAD, PA 19663
(610)568-5533

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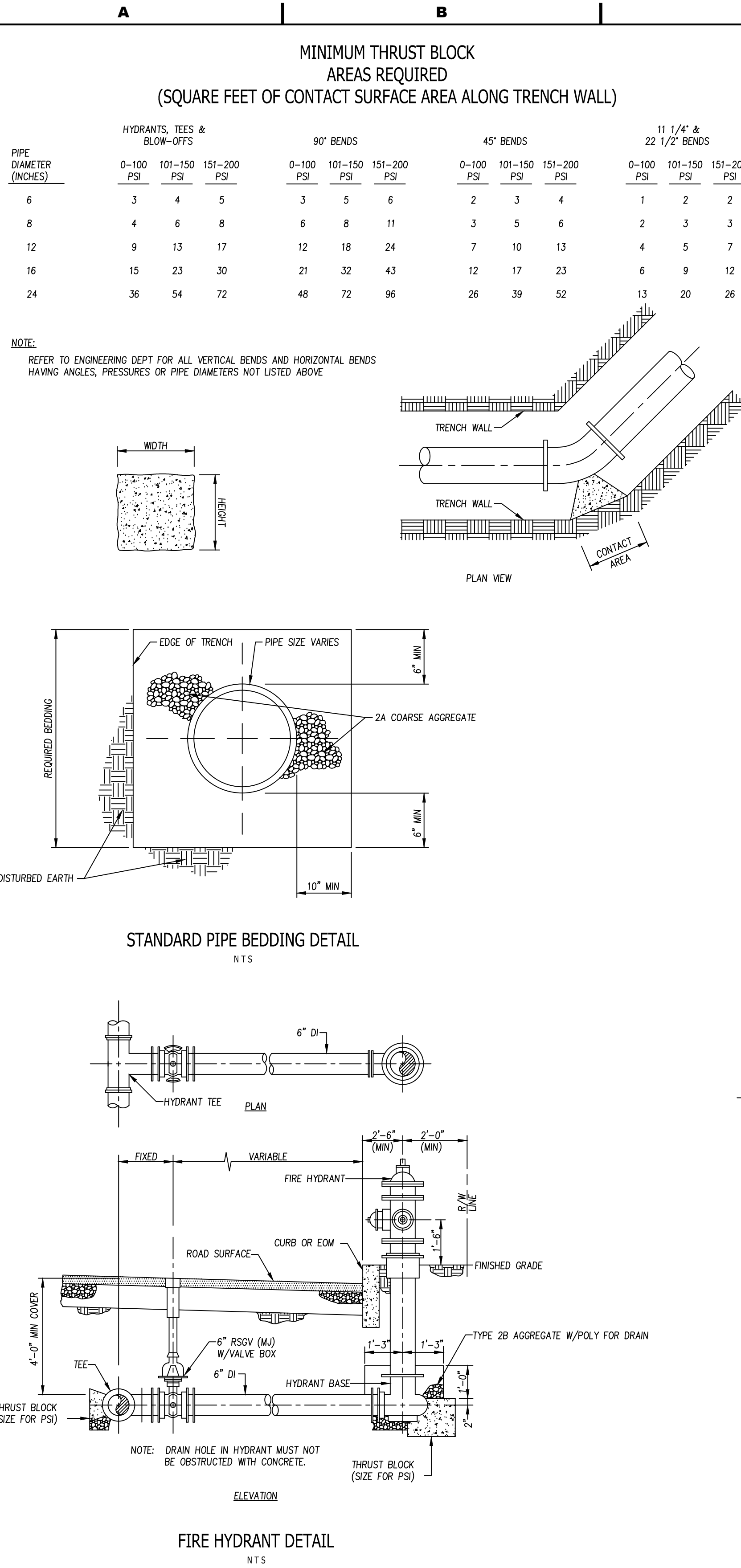
DESCRIPTION		CHECKED		DRAWN		DATE	
		PSH	GNH	PSH	GNH	10/17/25	
PROJECT #:		17-DCIU-01		SHEET TITLE:			
SHEET NUMBER:		C-13		SANITARY SEWER CONSTRUCTION DETAILS PLAN			

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These plans were prepared to obtain Subdivision/Land Development approval from the governing Municipality and to obtain certain permits from state and federal agencies. If a surveyor or engineer other than G. D. Houtman & Son, Inc. is contracted to perform any work on the project, the engineer or surveyor shall assume the responsibility for verifying dimensions, elevations, presence of underground utilities, utility interference, building area, etc., for coordinating these plans with plans prepared by others such as utility companies, architectural building plans, landscape plans, lighting plans and etc.

Note: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depths of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective Mar. 25, 2007.

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MINIMUM CONCRETE VOLUMES AND STEEL STRAP SIZES REQUIRED FOR BLOCKING 6", 8", & 12" VERTICAL BENDS

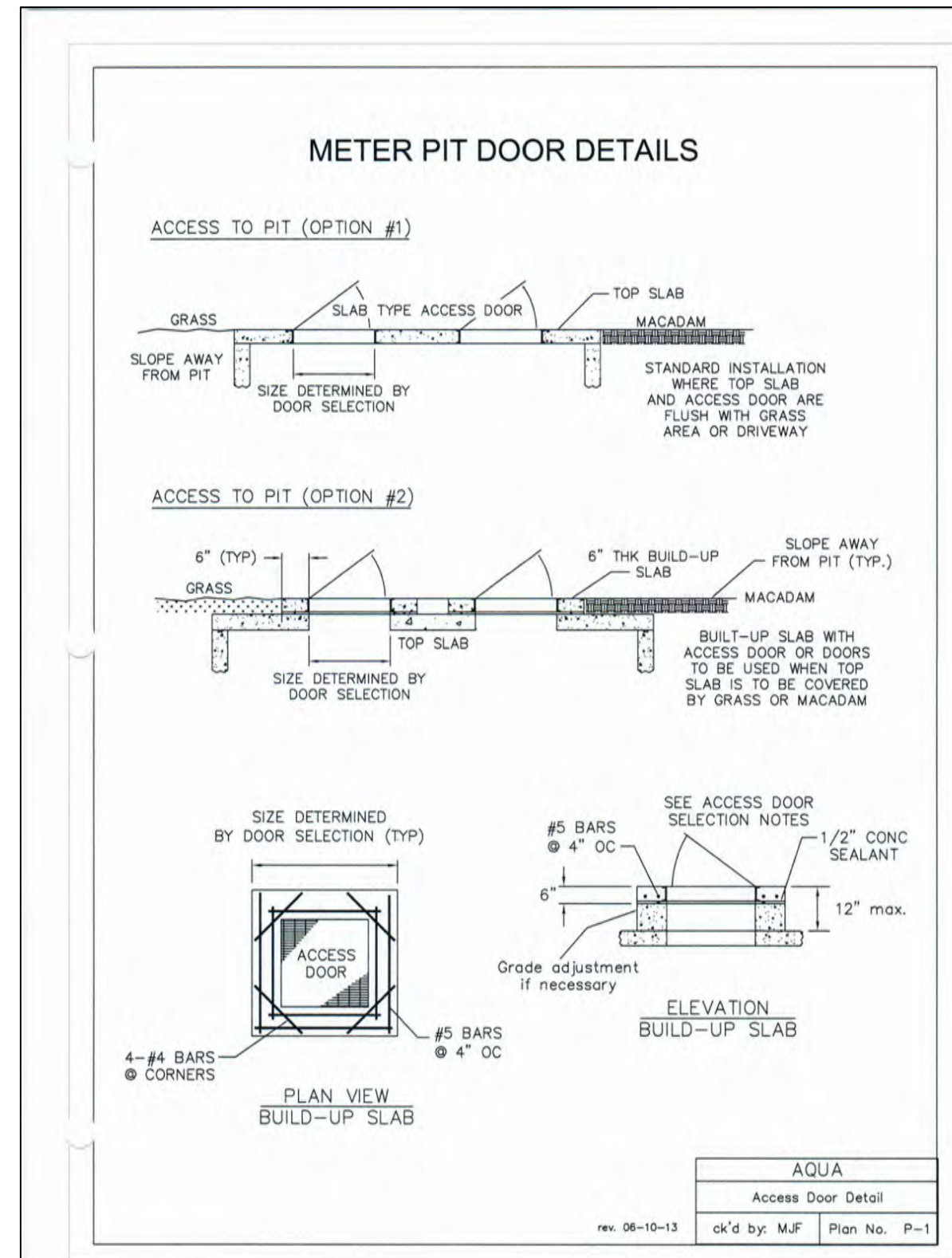
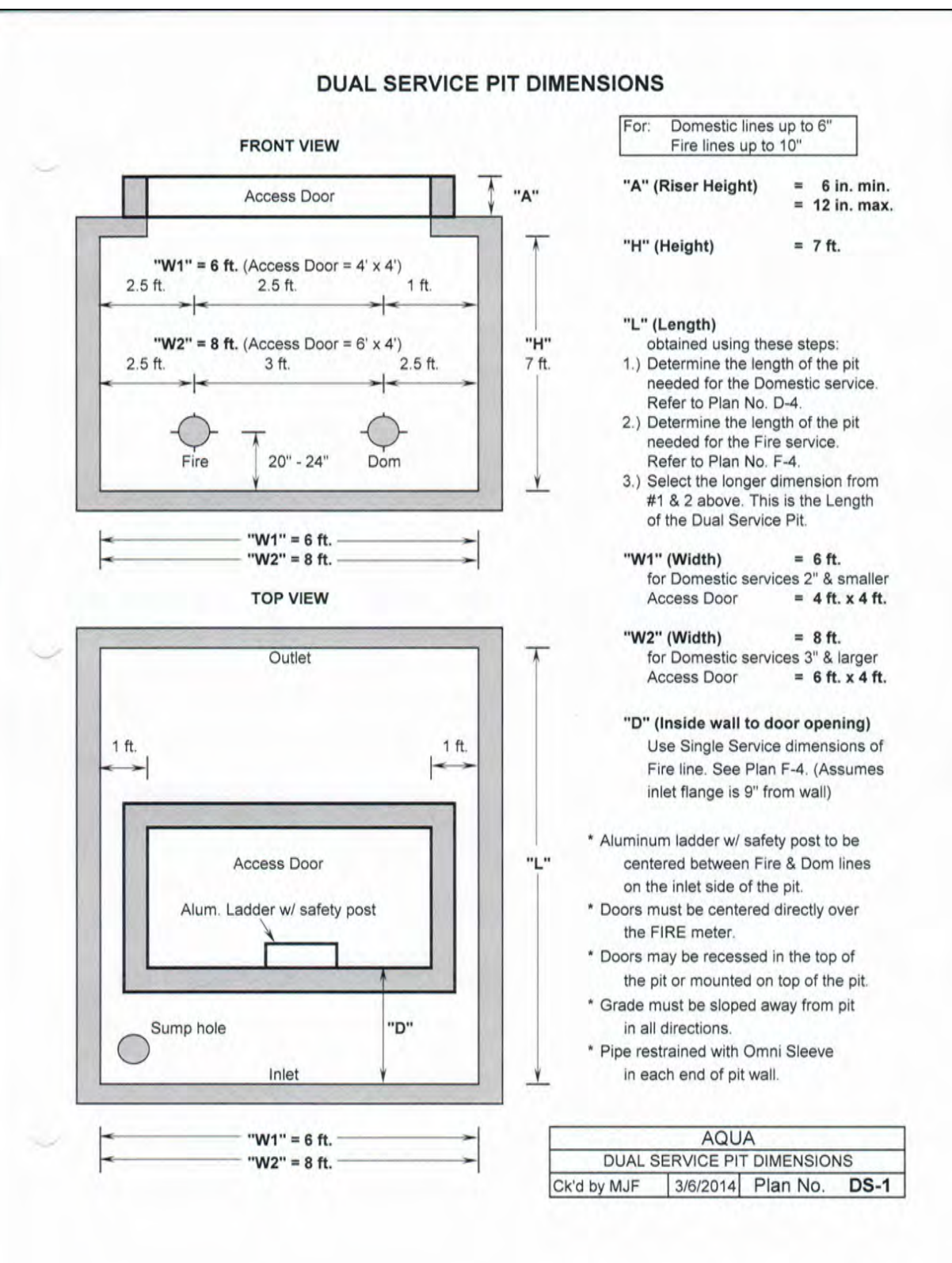
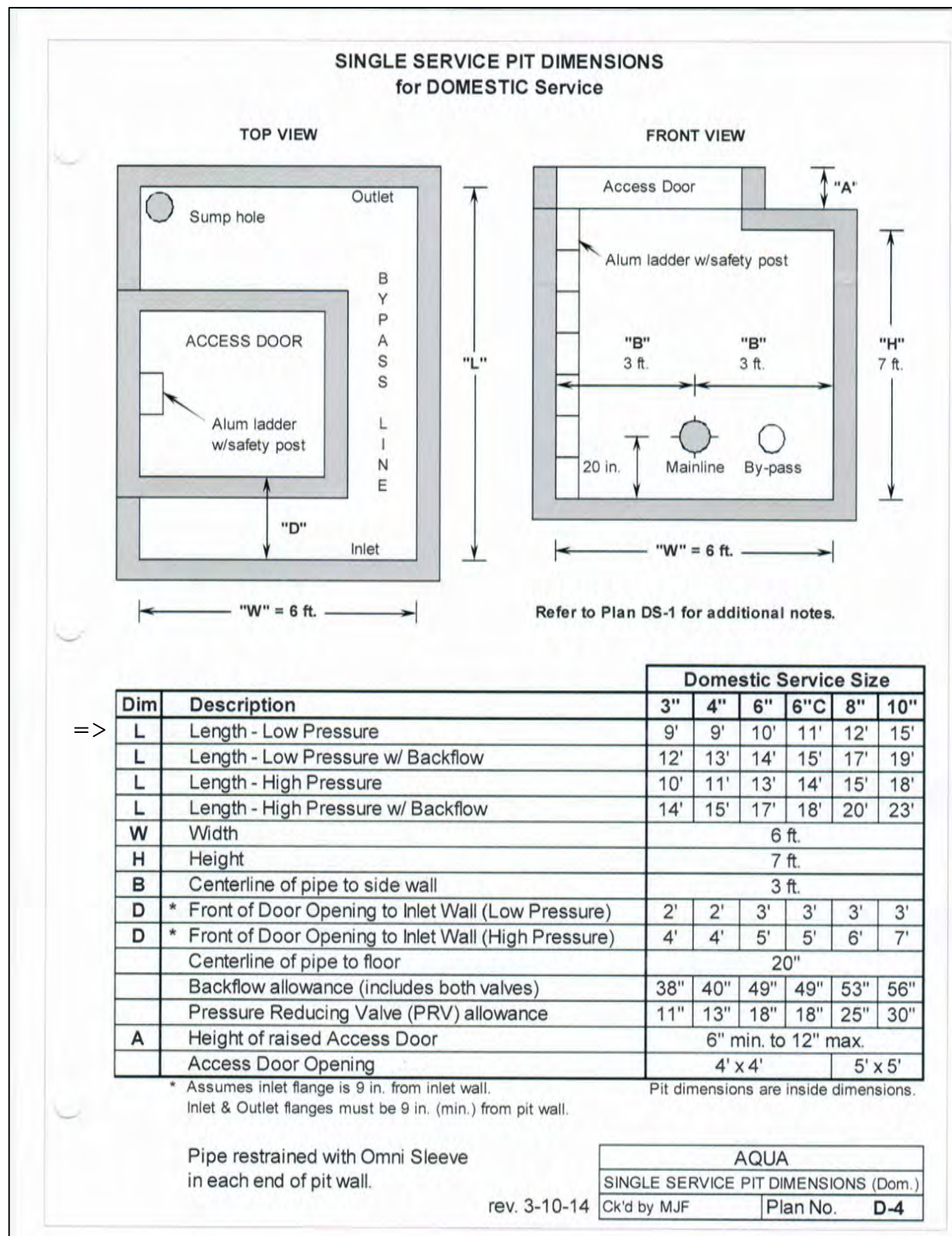
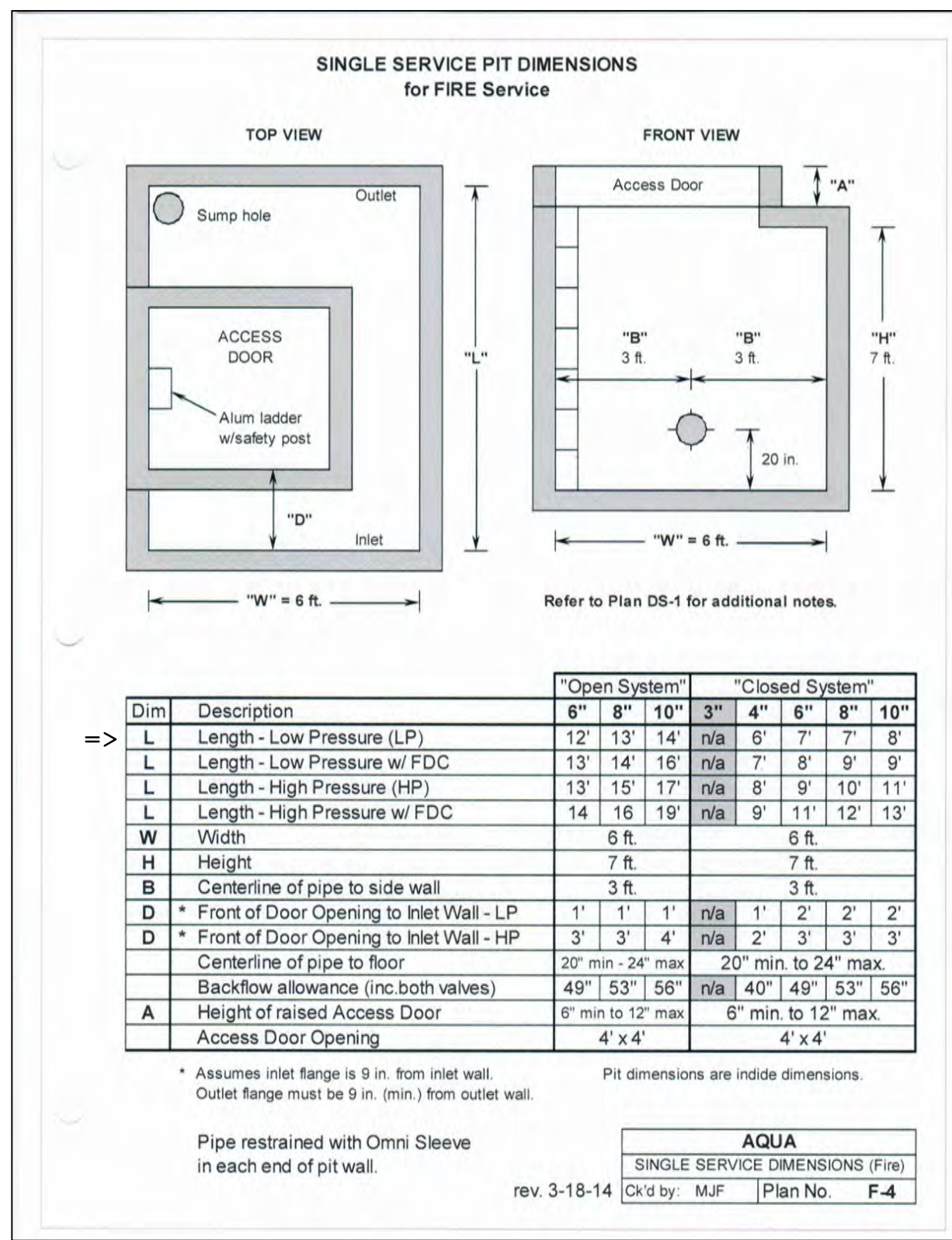
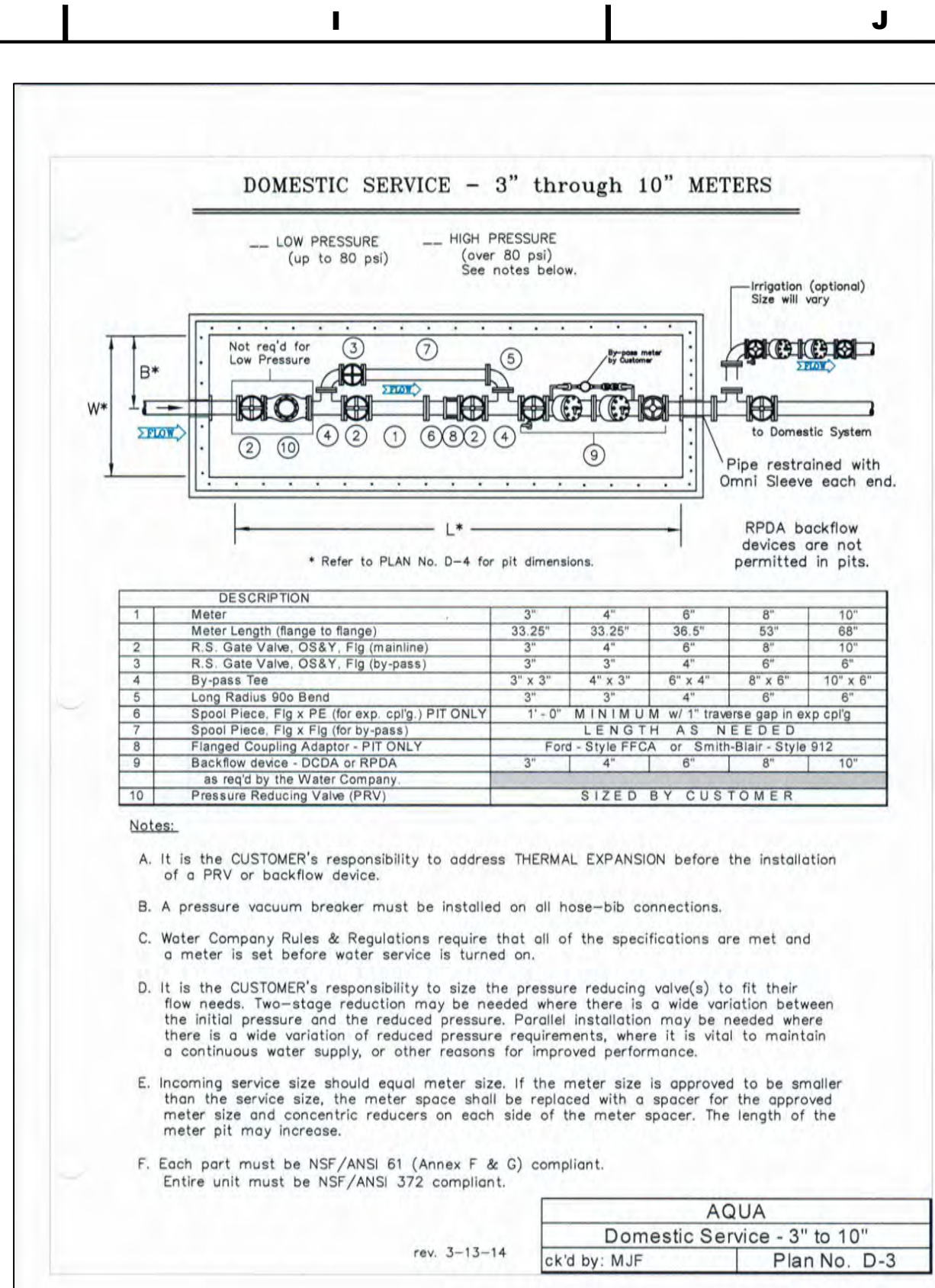
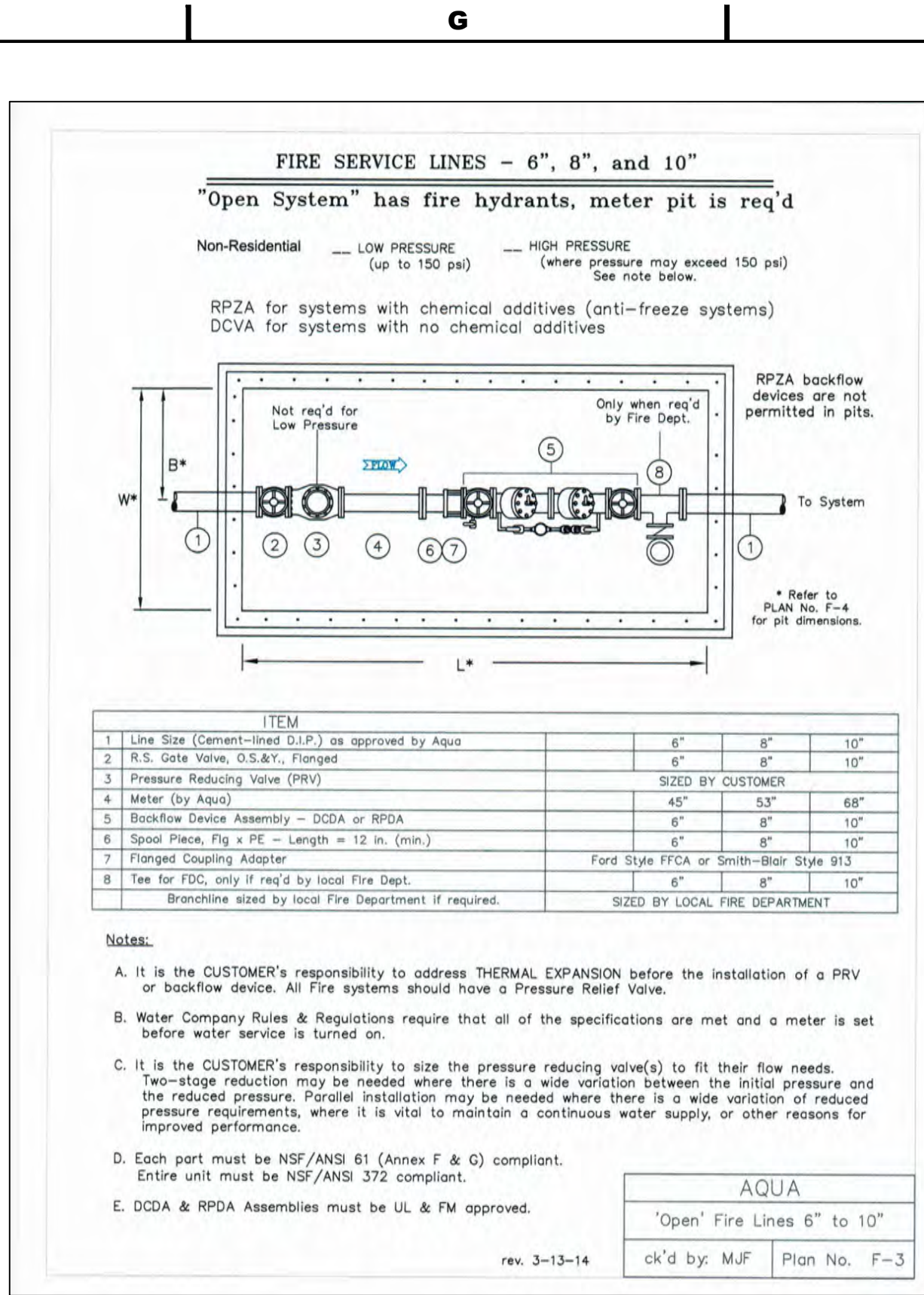
KEY	PIPE DIAMETER	PRESSURE (PSI)	BEND ANGLE	CONCRETE REQUIRED (CU YD)	STEEL STRAP SIZE	"R" STRAP RADIUS	ANCHOR BOLT DIAMETER "D" AND NUMBER REQUIRED PER STRAP	EMBEDMENT LENGTH
A	6"	0 - 100	ALL	1.0	1/4" x 2 1/2"	3 5/8"	(2) 1"	24"
A-1	6"	101 - 200	ALL	2.5	1/4" x 2 1/2"	3 5/8"	(2) 1"	36"
B	8"	0 - 100	ALL	2.0	3/8" x 3"	4 3/4"	(2) 1"	36"
B-1	8"	101 - 200	45°	3.0	3/8" x 3"	4 3/4"	(2) 1"	36"
B-2	8"	101 - 200	90°	4.0	3/8" x 3"	4 3/4"	(4) 1"	36"
C	12"	0 - 100	ALL	4.5	1/2" x 3"	6 3/4"	(4) 1"	36"
C-1	12"	101 - 200	45°	6.0	(2) 1/2" x 3"	6 3/4"	(4) 1"	36"
C-2	12"	101 - 200	90°	8.5	(2) 1/2" x 3"	6 3/4"	(4) 1"	36"

* - WHERE (2) 1" DIAMETER BOLTS ARE REQUIRED
(4) 3/4" DIAMETER BOLTS MAY BE USED

NOTES:

1. ALL STEEL SHALL CONFORM TO ASTM A-36
2. (2) STRAPS ARE REQUIRED, EACH WITH (4)-1" DIAMETER ANCHOR BOLTS FOR CASES C-1 AND C-2
3. REFER TO AQUA DRAWING E-4403 FOR USE AS PIPE AND VALVE CLAMP
4. CONTRACT ENGINEERING DEPARTMENT FOR DESIGN ON PRESSURE EXCEEDING 200 PSI OR IF PIPE SIZE IS LARGER THAN 12"
5. COAT ALL EXPOSED METAL WITH 12 MILS OF ROKOTE.
6. BOLT LENGTH WILL EQUAL "EMBEDMENT LENGTH" + SHIM + 1/2" OD OF PIPE + 3-1/2"

REVISED: PRESSURE CHART, VALUES WERE 101 TO 150; NOW 101 TO 200
SBP 8/17/2016



METER PIT DIMENSIONS BASED ON OPEN FIRE SERVICE LINE - 8" W X 13' L X 7' H

MAROTTA/MAIN ARCHITECTS
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SEAL:
GUSTAVE N. HOUTMAN
REGISTERED PROFESSIONAL ENGINEER
NO. 10000
PA. 000000

CONSULTANT:
G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BACHMERE AVE
PHILADELPHIA, PA 19103
(610)585-5553

**ADDITIONS AND RENOVATIONS TO THE FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY INTERMEDIATE UNIT
701 HENDERSON BLVD.
FOLCROFT, PA 19032**

DATE	DRAWN	CHECKED	PROJECT	SHEET TITLE
10/17/2014	PSH	GMH	17-DCIU-01	WATER SERVICE DETAILS PLAN

SHEET NUMBER: C-14

REQUIRED PLANTINGS ANALYSIS

Required Building Plantings

Parking Lot Trees:

600-87.B(2) - The interior of each parking lot constructed or enlarged shall have at least one three-inch-caliper deciduous shade tree for every 15 parking spaces,

Number of proposed surface parking spaces - 301

Required umber of parking lot trees - $301/15 = 21$ Trees

600.115.C(2). Requires a landscape strip not less than six (6) feet wide at the front and one (1) side of the building within which one (1) tree or two (2) bushes shall be placed for every fifteen (15) feet at the front and one (1) side of the building

Main Building/ - Length of front and one side of the building - 848 ft.

Additions Required shrubs - $(848/15) * 2 = 114$

DECIDUOUS TREES - PARKING LOT

SYMBOL	QUANTITY	BOTANIC/Common NAME	SIZE	SPECS
A	7	Acer rubrum 'Red Sunset' Red Sunset Red Maple	3.0" c.	B&B
G	14	Gleditsia triacanthos 'Inermis' Inermis Thornless Honeycusc	3.0" c.	B&B

Total Parking Lot Trees Required -9

Total Parking Lot Trees Provided - 11

SHRUB PLANTINGS

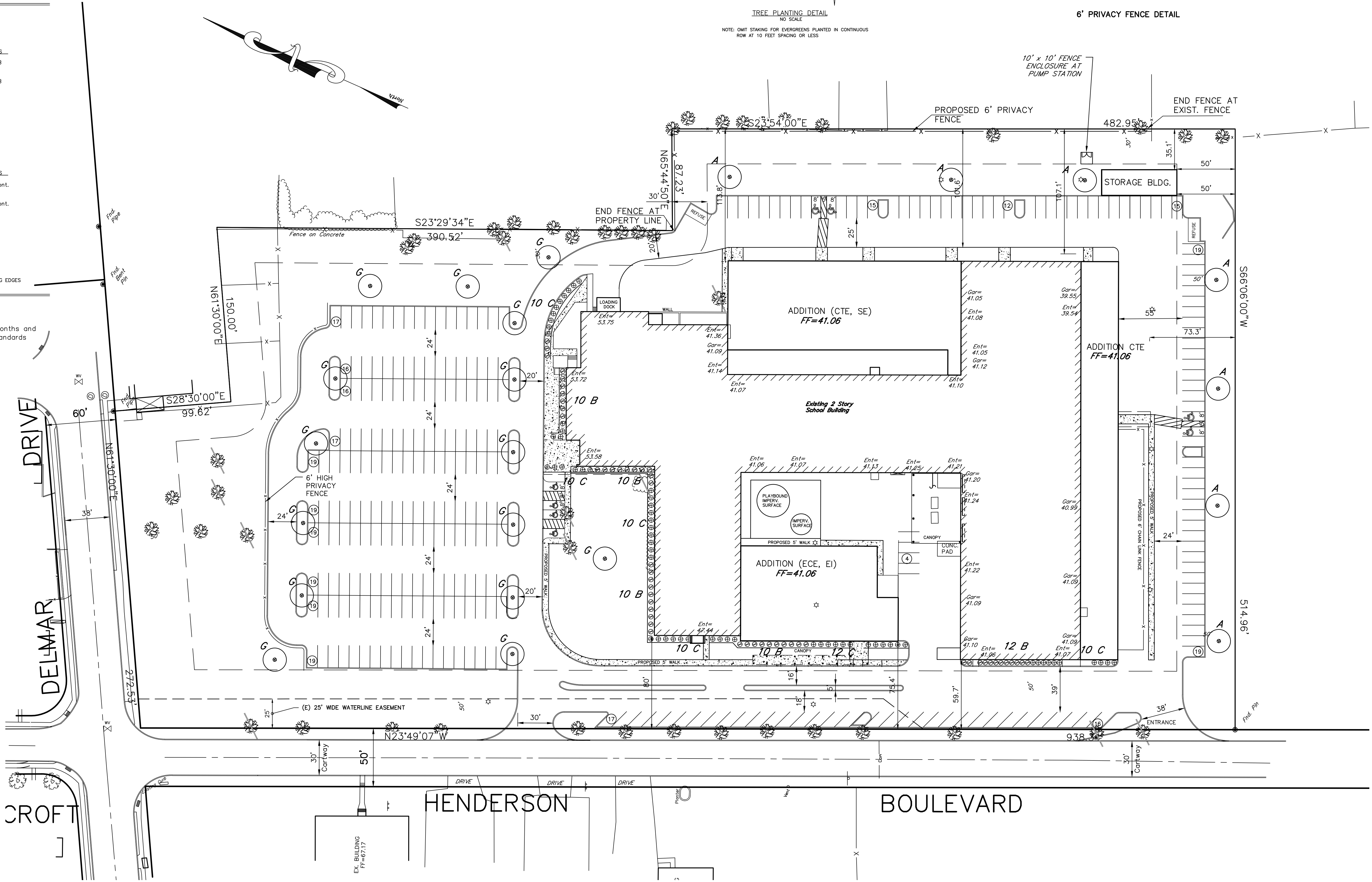
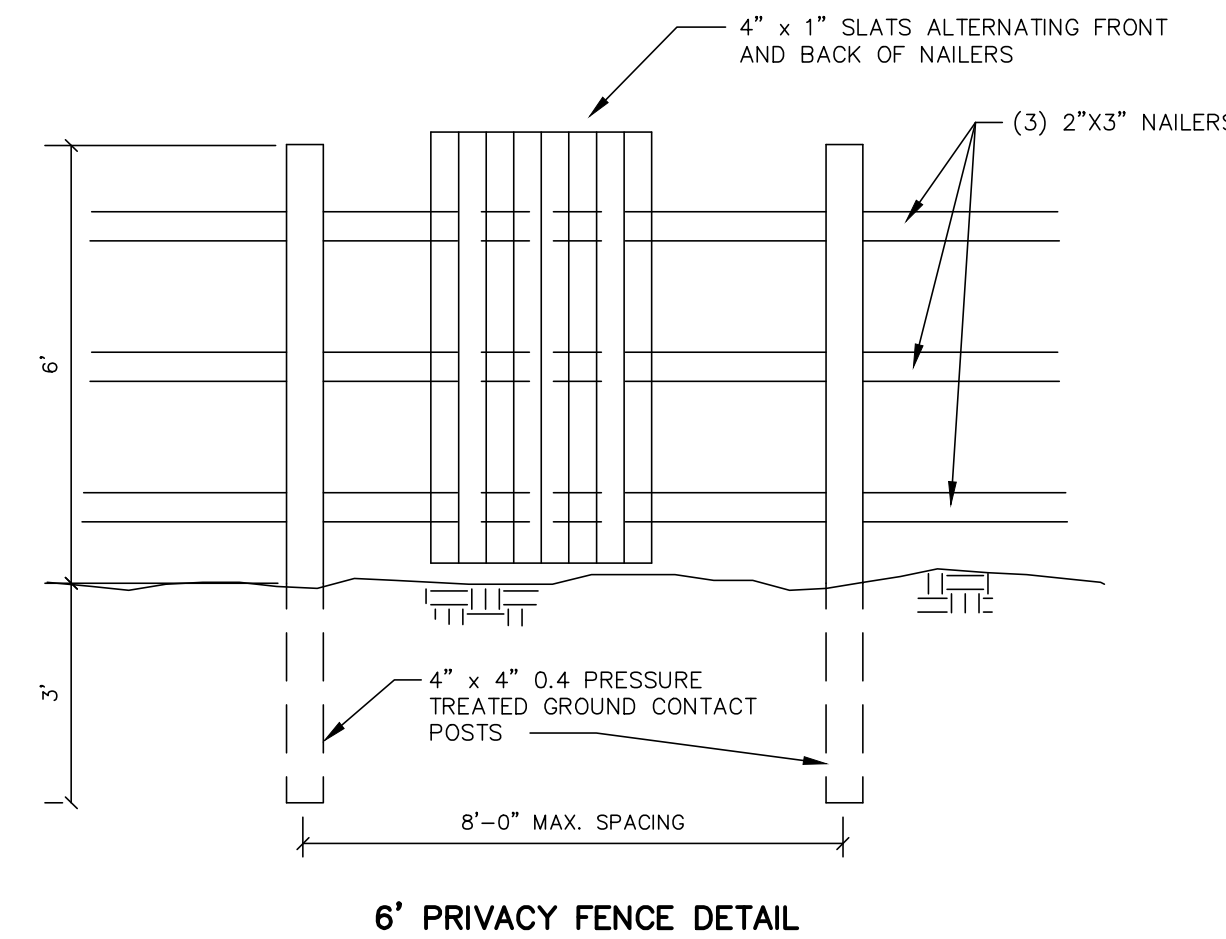
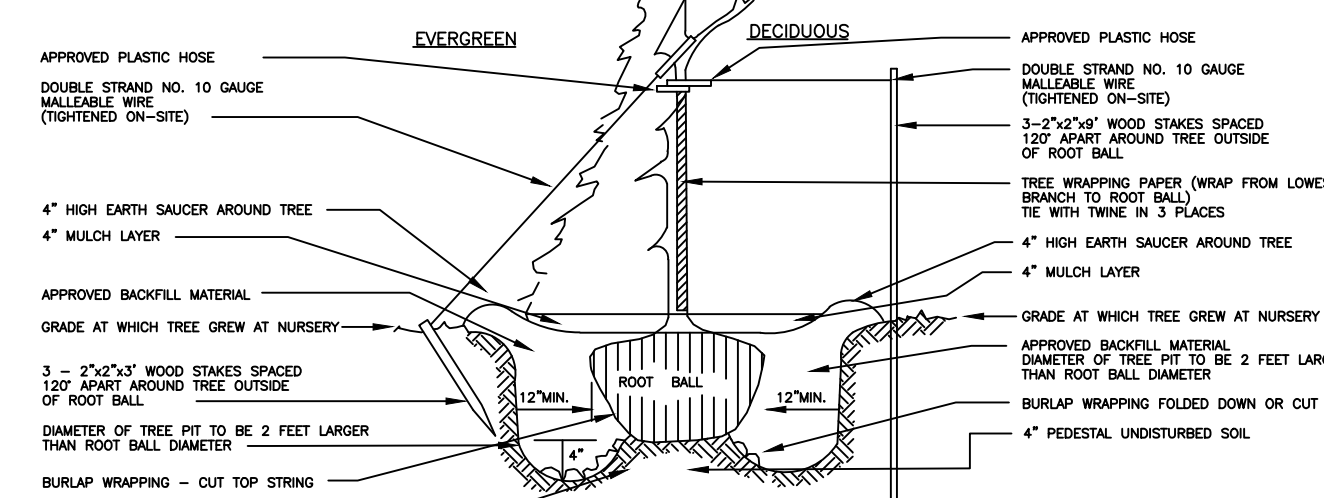
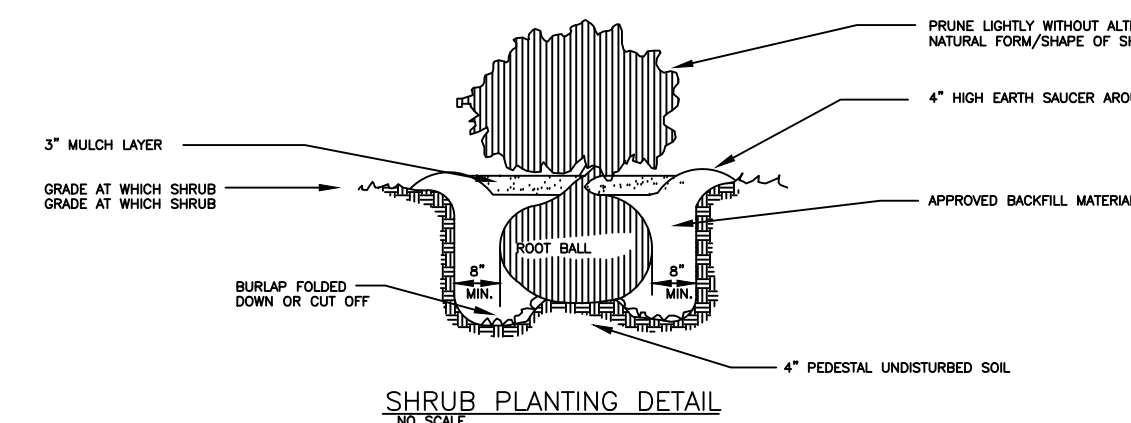
SYMBOL	QUANTITY	BOTANIC/Common NAME	SIZE	SPECS
C	62	Cephalotaxus ham 'Prostrata' Spreading False Yew	15-18"ht/spd	#3 cont.
B	52	Buxus x. Wintergreen Dwarf Boxwood Hybrid	15-18"ht/spd	#3 cont.

Total Shrubs Required - 114

Total Shrubs Provided - 114

**** NOTE: ALL SHUB PLANTING SHALL HAVE MULCH BEDS AND/OR PLANTING EDGES DEFINED BY A HARDCAPPED EDGE OR SIMILAR

NOTE:
All trees and shrubs shall be guaranteed for a period of 18 months and shall conform to the standard of the publication "American Standards for Nursery Stock"



LEGEND

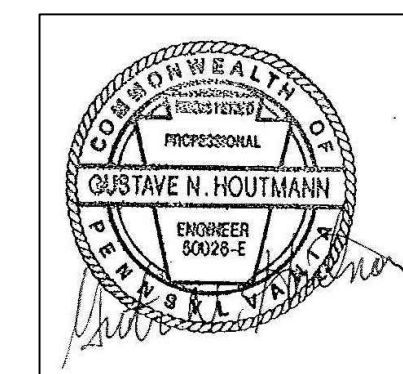
EXISTING FIRE HYDRANT	PROPOSED 2' CONTOUR
EXISTING UTILITY POLE	PROPOSED 10' CONTOUR
EXISTING LIGHT STANDARD	PROPOSED SPOT ELEVATION
EXISTING WATER VALVE	PROPOSED DRAINAGE FLOW ARROW
EXISTING DECIDUOUS TREE	PROPOSED 18" SILT FENCE
EXISTING TREELINE	PROPOSED TYPE M INLET
EXISTING 2' CONTOUR	PROPOSED 2'x2' INLET
EXISTING 10' CONTOUR	PROPOSED STORM SEWER
SOIL BOUNDARY LINE	PROPOSED WATER LINE
EXISTING TYPE "M" INLET	PROPOSED GAS LINE
EXISTING DRAINAGE MANHOLE	EXISTING FENCES
EXISTING STORM SEWER	PROPOSED 1.25' DIAM. SDR-11 SANITARY FORCE MAIN
EXISTING SANITARY MANHOLE	LIMITS OF DISTURBANCE
EXISTING WATER MAIN	
GAS	
EXISTING ELECTRIC LINE	
EXISTING FENCES	
EXISTING GUIDE RAIL	

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G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE AVE
FOLCROFT, PA 19032
(610)584-4333

ADDITIONS AND RENOVATIONS TO THE
FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY
INTERMEDIATE UNIT
701 HENDERSON BLVD.
FOLCROFT, PA 19032

DATE	DRAWN	CHECKED	DESCRIPTION
03/17/25	PST	GHM	1

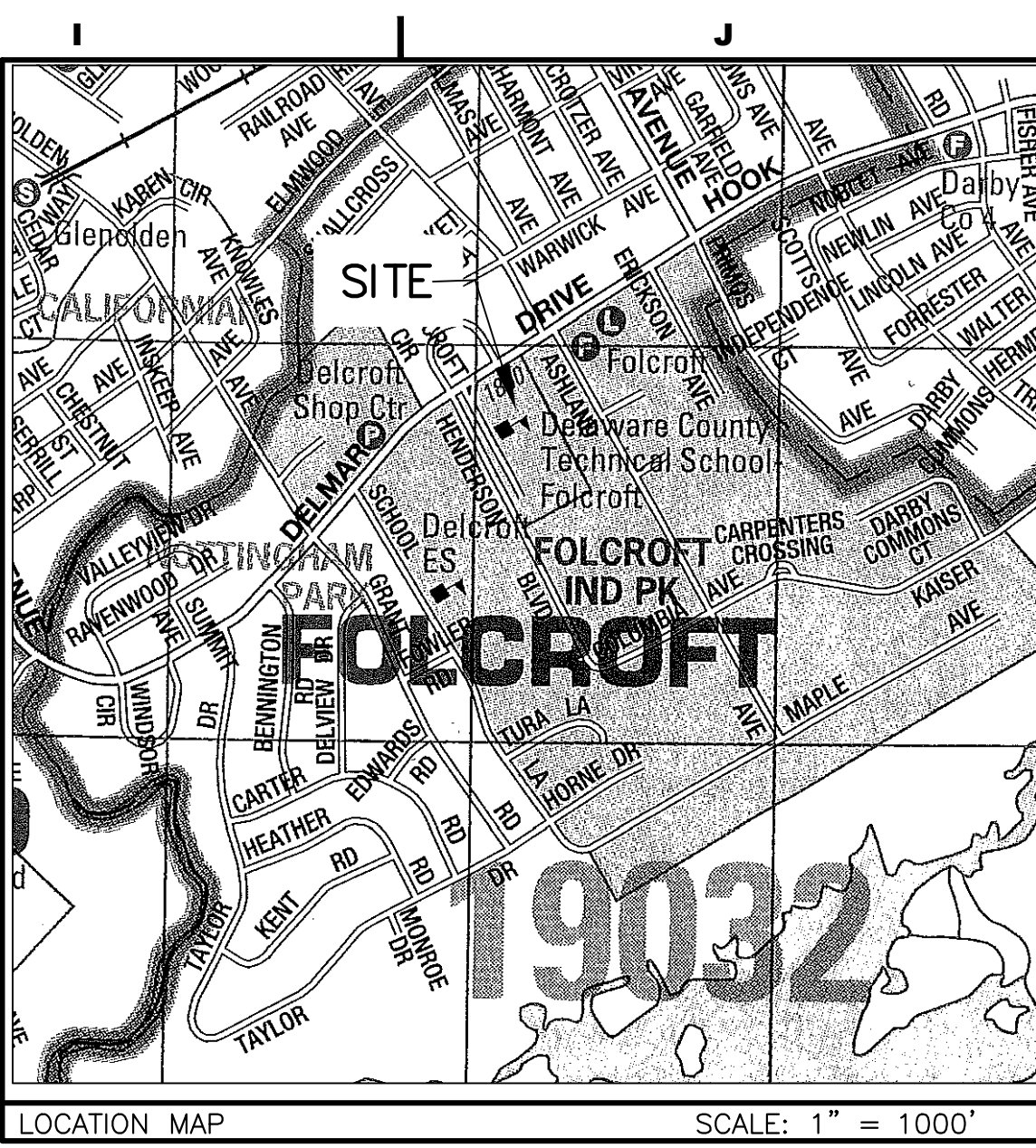
PROJECT #: 17-DCIU-01
SHEET TITLE:

LANDSCAPE PLAN

SHEET NUMBER:

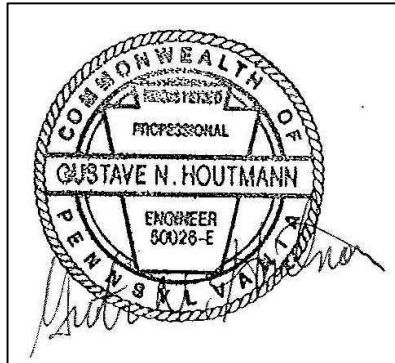
C-15

BID SET



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ARCHITECTS

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SEAL:

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS—LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE
MEDIA, PA 19063

E MEDA, PA 19063

3

CONSULTANT:

ADDITIONS AND RENOVATIONS TO THE
FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY
INTERMEDIATE UNIT
701 HENDERSON BLVD.
FOLCROFT, PA 19032

[illegible]

PROJECT #: 17-DCIU-01

TRAFFIC CONTROL & STRIPING PLAN

SHEET NUMBER:

C-16

BID SET

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Notes: All locations of existing utilities shown on the plan have been developed from existing utility records and / or show ground examination of the site. The location of underground utilities shown on this plan is based on information that is not guaranteed. Contractor must verify location and depth of all utilities shown on this plan prior to construction. (Reference is made to the latest amendment of PA 28-147 of 1974, effective March 29, 2007)

This plan was prepared to obtain Subdivision/ Land Development Department approval to create a subdivision. It is not to be used for permits from state and federal agencies if a surveyor or engineer is required. It is not to be used for any other purpose or to perform construction state-wide or federal. said surveyor or engineer shall be responsible for the accuracy of the information shown on drawings, elevations, presence of underground utilities, and any other information shown on this plan. grading plans, utility plans, and other plans shall be prepared by a professional engineer or surveyor prepared by any other such as utility companies, architecture or engineering firms.

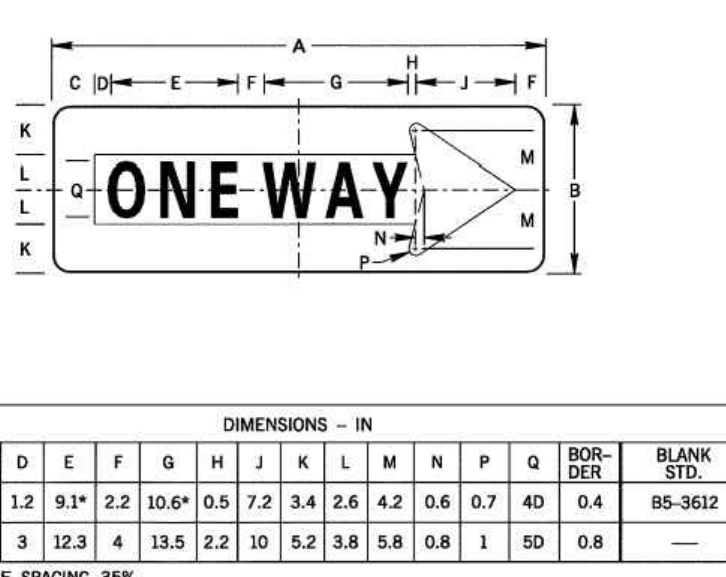
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R6-1R
HORIZONTAL RIGHT ONE-WAY SIGN

(a) Justification. The Horizontal Right One-Way Sign (R6-1R) shall be authorized for use to indicate a street, roadway, or alley upon which vehicular traffic is permitted to travel in only one direction. When the central island of a roundabout allows for installation of signs, the R6-1R sign may be used instead of or in addition to Roundabout Directional Arrow (R6-6) arrow signs to direct traffic counter-clockwise around the central island.

(b) Placement. At unsignalized intersections, the R6-1R sign shall be placed on the near right-hand side of the far side of the roadway as to face traffic entering or crossing the one-way street. At signalized intersections, the R6-1R sign shall be placed either near the appropriate signal faces, on poles holding the traffic signals, on mast arms, or above the roadway, or at the locations specified for unsignalized intersections. When used on the central island of a roundabout, the mounting height of a R6-1R sign should be at least 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way.

(c) Size. The standard size of the R6-1R sign for single lane conventional highways shall be 36" x 12". The standard size for multi-lane conventional highways and expressways shall be 54" x 18". See General Notes for additional guidance.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
36" x 12"	3	1.2	9.1"	2.2	10.6"	0.5	7.2	3.4	2.6	4.2	0.6	0.7	4.0	0.4	BS-3612
54" x 18"	5	3	12.3	4	13.8	2.2	10	5.2	3.8	5.8	0.8	1	5.0	0.8	—

* REDUCE SPACING 30%.

COLOR:
ARROW AND BORDER:
WHITE (REFLECTORIZED)
BACKGROUND AND LEGEND:
BLACK (NON-REFLECTORIZED)

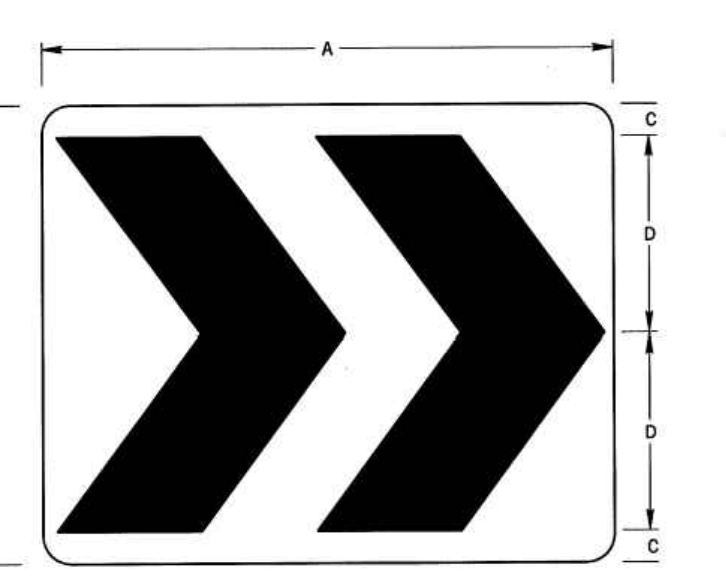
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R6-4
ROUNDABOUT DIRECTIONAL (2 CHEVRONS) SIGN

Justification. The Roundabout Directional (2 Chevrons) Sign (R6-4) shall be installed on the central island of roundabouts with single lane approaches to indicate the direction of travel within the circular roadway. The Horizontal Right One-Way Sign (R6-1R) shall be installed directly above the R6-4 whenever the R6-4 is used.

Placement. The R6-4 shall be placed on the central island opposite the roundabout entrances. A reduced mounting height of at least 4 feet is permitted.

Size. The standard size of the R6-4 shall be 24"x30". On multi-lane approaches or whenever special circumstances indicate the need for larger signs, the R6-4A or R6-4B shall be used.

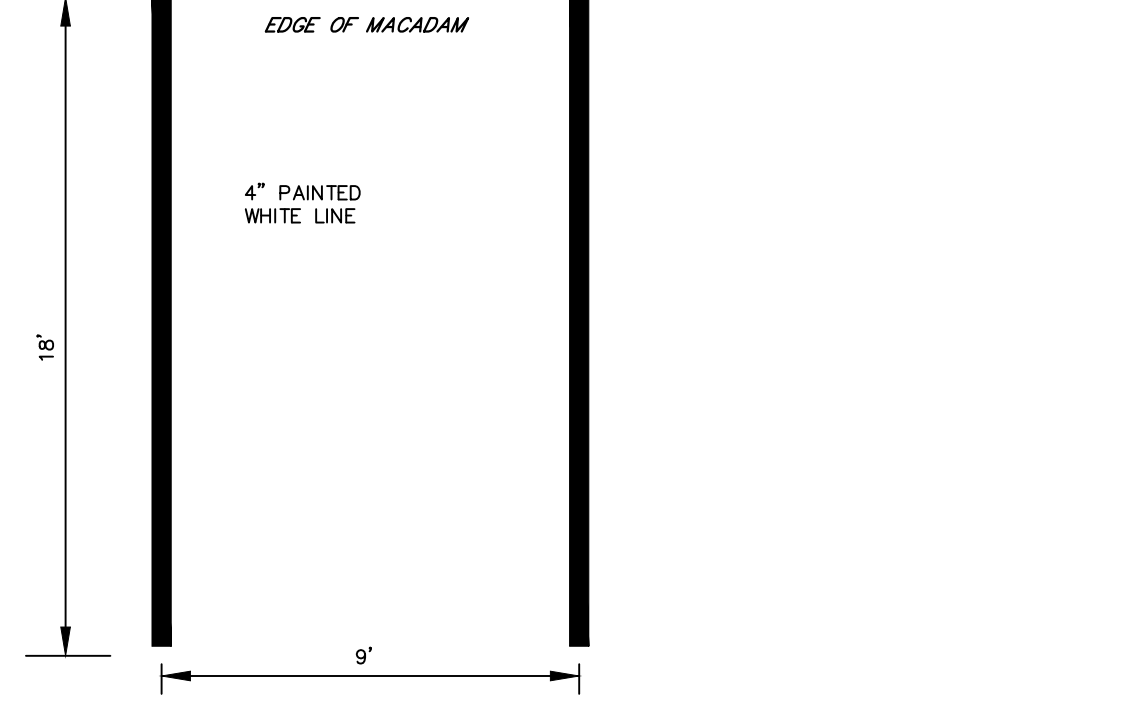


DIMENSIONS - IN										
SIGN SIZE A x B	C	D	E	F	G	H	MAR- GIN	BOR- DER	BLANK STD.	
30" x 24"	1.7	10.3	0.7	7.4	6.0	0.5	—	—	BS-3024	

COLOR:
CHEVRONS:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

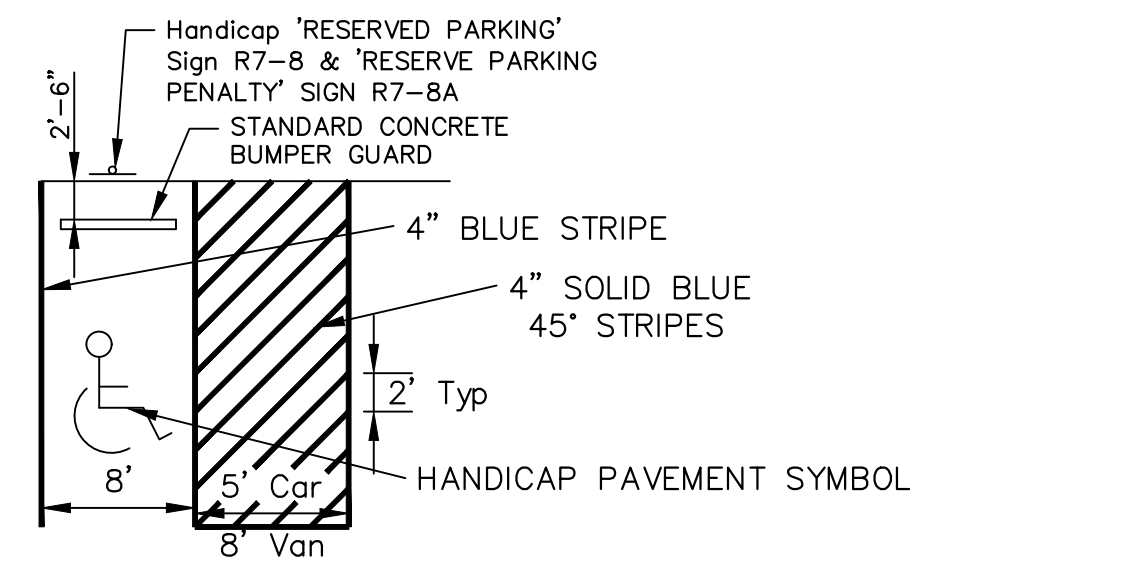
TYPICAL PARKING SPACE DIMENSIONS - DETAIL



EDGE OF MACADAM
4" PAINTED WHITE LINE
15'

PAVEMENT MARKING SPECIFICATIONS:

- PAVEMENT-MARKING PAINT: LATEX, WATERBORNE EMULSION, LEAD AND CHROMATE FREE, READY MIXED, COMPLYING WITH PS TT-1952, TYPE II, WITH DRYING TIME OF LESS THAN THREE MINUTES.
- COLORS: AS INDICATED ON THE TRAFFIC CONTROL PLANS OR DETAILS.



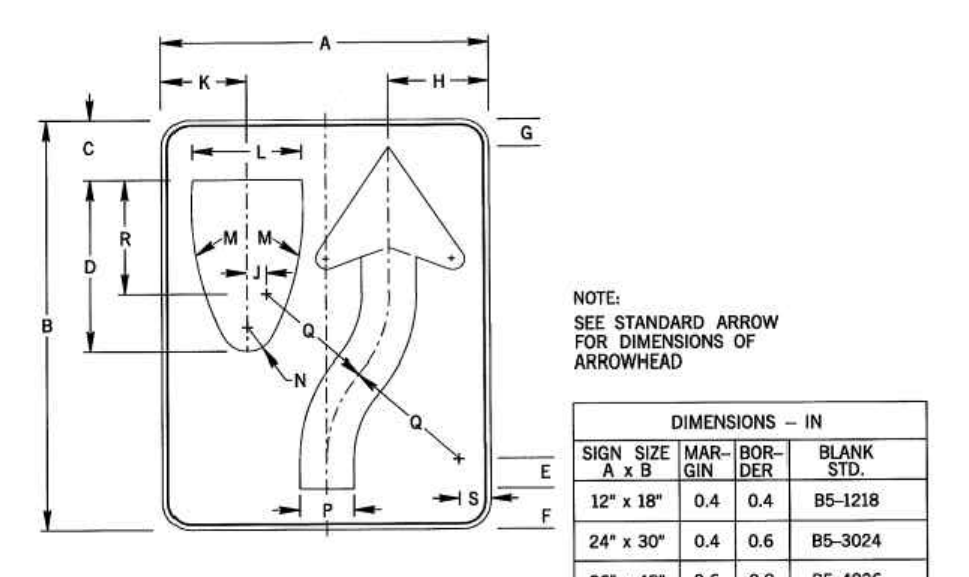
Handicap "RESERVED PARKING" Sign R7-8 & "RESERVED PARKING" PENALTY SIGN R7-8A
STANDARD CONCRETE BUMPER GUARD
4" BLUE STRIPE
4" SOLID BLUE 45° STRIPES
Typ
8' Van
8' Van
HANDICAP PAVEMENT SYMBOL
N.T.S.

HANDICAP PARKING SPACES DETAIL
N.T.S.

R4-7
KEEP RIGHT SIGN

The Keep Right Sign (R4-7) may be used at the ends of medians, pathways, loading islands, and refuge islands, at traffic islands and at corners, where it is required to keep to the right of all other vehicles. The R4-7 sign may not always be necessary at intermediate ends of divided islands and medians and should not be used with other signs that already mark locations where motorists know they must pass on the right.

The standard size of the R4-7 sign is 24" x 30", except on expressways the standard size is 36" x 48". It may also be desirable to install a Object Marker (OM-3) on the same sign post with the top of the marker at an appropriate height.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
12" x 18"	4	5.5	1.1	5.3	3.3	3.9	0.4	0.5	5.5	1.9	0.8	1.8	4.2	4.2	BS-1218
24" x 30"	6	8.5	1.6	8.2	5.2	5.8	0.6	0.8	8.2	3.0	1	4	9	8.4	—
36" x 48"	8	12.8	2.2	12.5	7.4	8.2	0.8	1	12.5	4.0	1.2	6	13.8	13.8	BS-3648
48" x 60"	10	16.8	2.8	16.5	9.4	10.2	1	1.2	16.5	4.8	1.4	8	18.8	18.8	—

NOTE: SEE STANDARD ARROW FOR DIMENSIONS OF ARROWHEAD

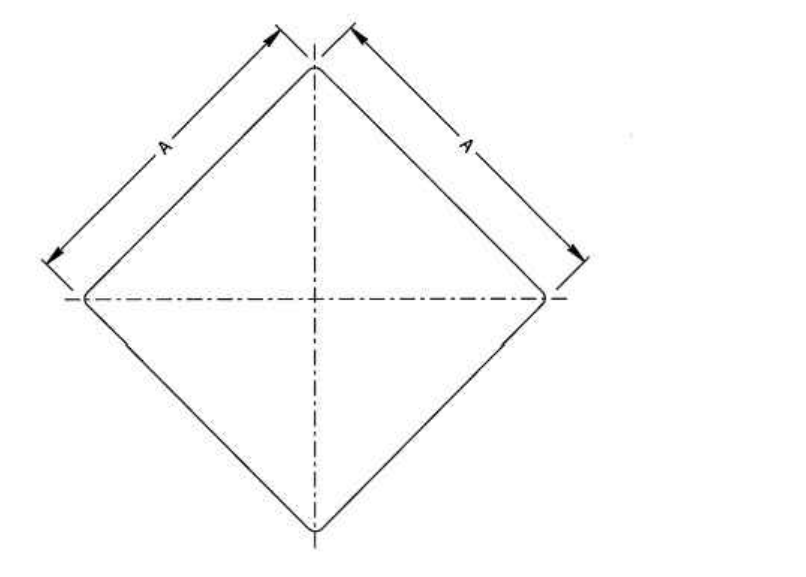
COLOR:
LEGEND, ARROW AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

OMI-3
OBJECT MARKER

The Object Marker (OMI-3) shall be authorized for use to mark obstructions located within the roadway such as bridge piers, and the approach and abutment. This marker may be placed with other signs where appropriate.

The OMI-3 marker is a 18" x 18" yellow reflectorized blank.



DIMENSIONS - IN										
SIGN SIZE A x B	C	D	E	F	G	H	MAR- GIN	BOR- DER	BLANK STD.	
18" x 18"	—	—	—	—	—	—	—	—	BS-18	

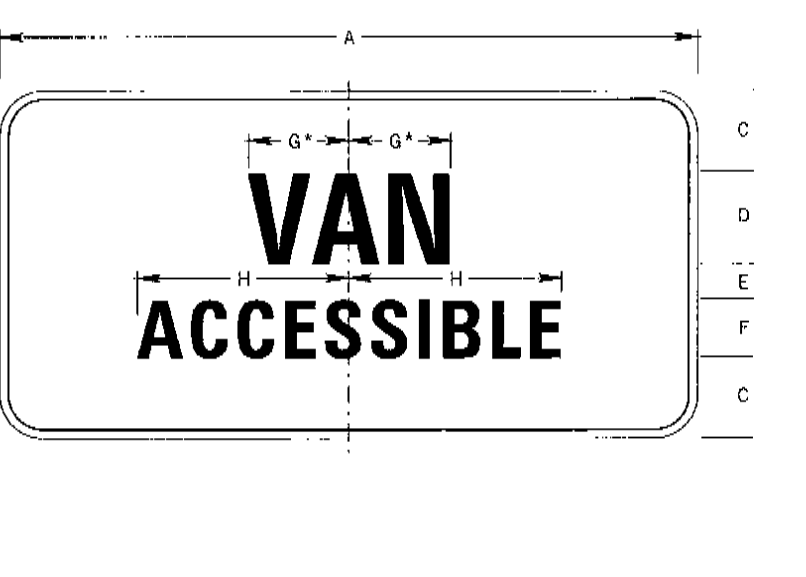
COLOR:
BACKGROUND:
YELLOW (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R7-8B
VAN ACCESSIBLE SIGN

The Van Accessible Sign (R7-8B) may be used as a supplemental sign to indicate that a parking space signed with the Reserved Parking Sign (R7-8) is of sufficient size for use by the disabled to accommodate vans displaying a handicapped or severely disabled veteran registration plate or placard.

One in every eight reserved parking spaces for the disabled, but not less than one, shall be designated with the R7-8B sign. When used, the R7-8B sign shall be placed immediately below the Reserved Parking Sign (R7-8).



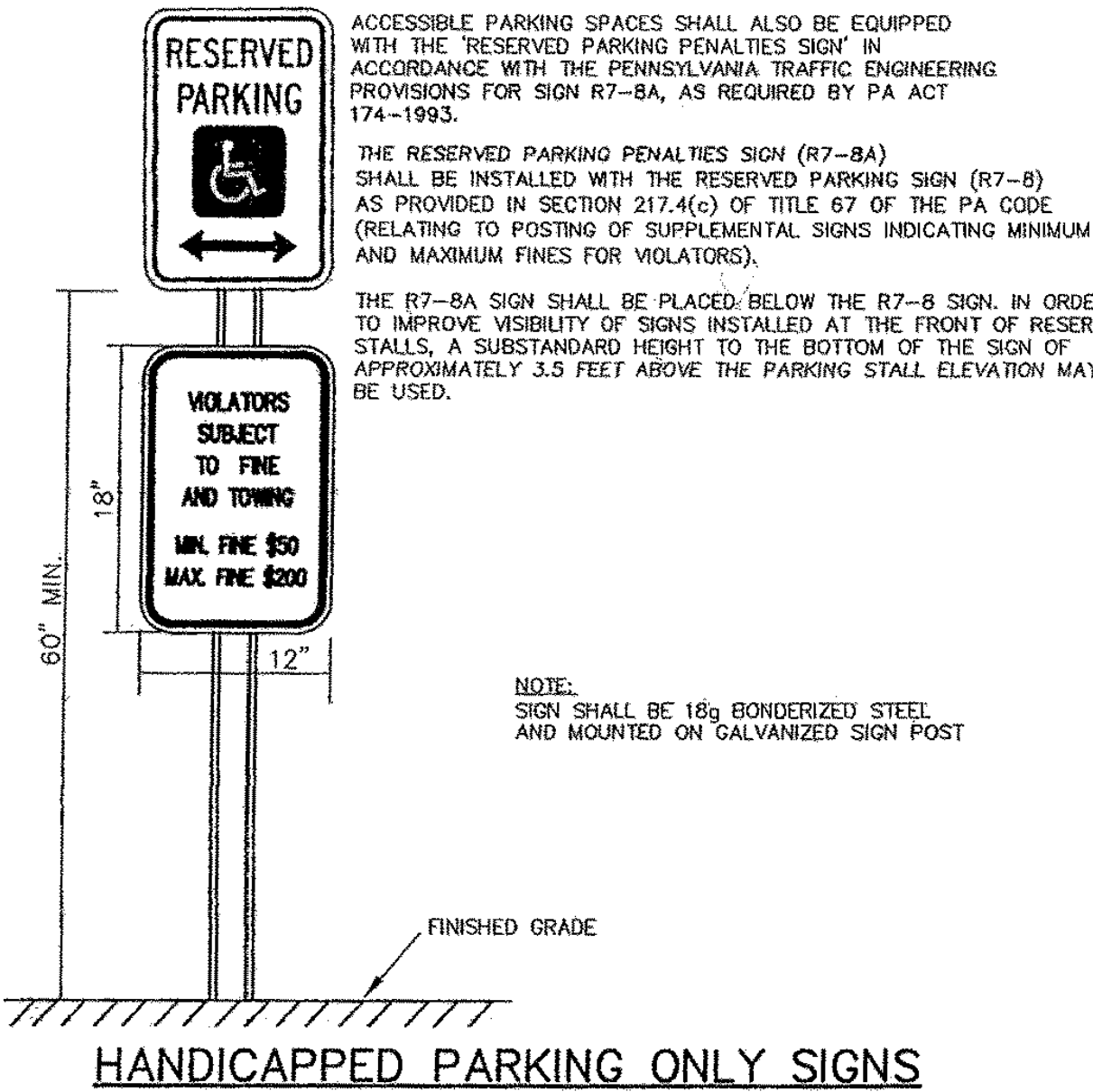
DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	4.5	4.0	4	5.0	4.0	12.3	7.1	12.4	0.5	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	5.5	5.0	4.5	6.0	5.0	14.4	8.5	14.4	0.6	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	8	6.0	6	8.0	6.0	18.5	11.4	18.5	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

NOTE: * INCREASE SPACING 50%

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

RESERVED PARKING
HANDICAPPED PARKING ONLY SIGNS
N.T.S.



ACCESSIBLE PARKING SPACES SHALL ALSO BE EQUIPPED WITH THE "RESERVED PARKING PENALTIES SIGN" IN ACCORDANCE WITH THE PENNSYLVANIA TRAFFIC ENGINEERING PROVISIONS FOR SIGN R7-8A, AS REQUIRED BY PA ACT 174-1993.

THE RESERVED PARKING PENALTIES SIGN (R7-8A) SHALL BE INSTALLED WITH THE RESERVED PARKING SIGN (R7-8) AS PROVIDED IN SECTION 217.4(c) OF TITLE 67 OF THE PA CODE (RELATING TO POSTING OF SUPPLEMENTAL SIGNS INDICATING MINIMUM AND MAXIMUM FINES FOR VIOLATORS).

THE R7-8A SIGN SHALL BE PLACED BELOW THE R7-8 SIGN IN ORDER TO IMPROVE VISIBILITY OF SIGNS INSTALLED AT THE FRONT OF RESERVED SPACES. A SUBSTANDARD HEIGHT TO THE BOTTOM OF THE SIGN OF APPROXIMATELY .55 FEET ABOVE THE PARKING STALL ELEVATION MAY BE USED.

NOTE: SIGN SHALL BE 16g BONDORIZED STEEL AND MOUNTED ON GALVANIZED SIGN POST

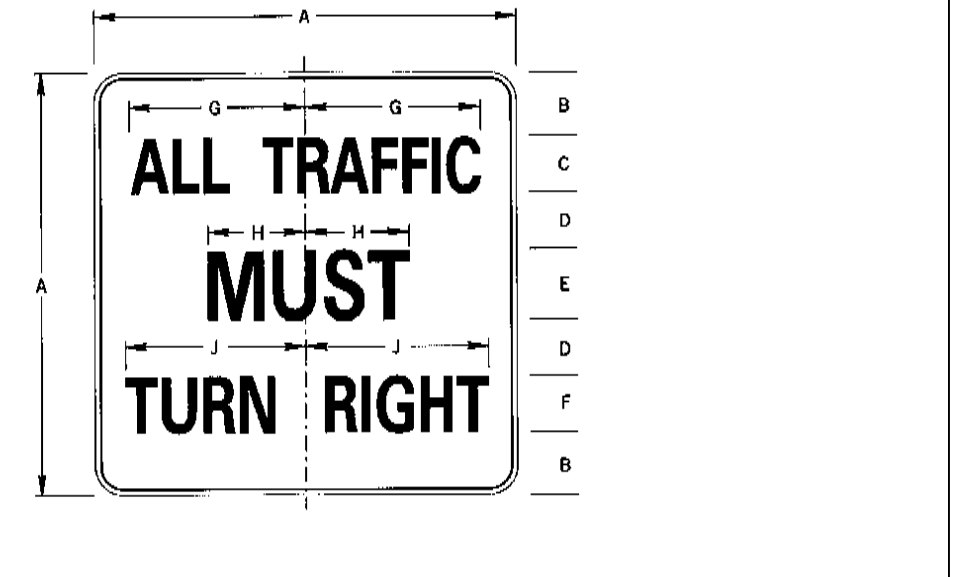
FINISHED GRADE

R3-7-1R
ALL TRAFFIC MUST TURN RIGHT SIGN

The All Traffic Must Turn Right Sign (R3-7-1R) may be used when traffic in all lanes of an approach to an intersection must turn right and may also be used as a supplement to the overhead Right Turn Sign (R3-480).

When used, the R3-7-1R sign should be placed at the intersection with a second sign an adequate distance in advance of the intersection. When used as a supplement to the R3-480 sign, it should be placed an adequate distance in advance of the intersection.

The standard size of the R3-7-1R sign for single lane conventional highways shall be 30" x 30". The standard size for multi-lane conventional highways shall be 36" x 36". See General Notes for additional guidance.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	4.5	4.0	4	5.0	4.0	12.3	7.1	12.4	0.5	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	5.5	5.0	4.5	6.0	5.0	14.4	8.5	14.4	0.6	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	8	6.0	6	8.0	6.0	18.5	11.4	18.5	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

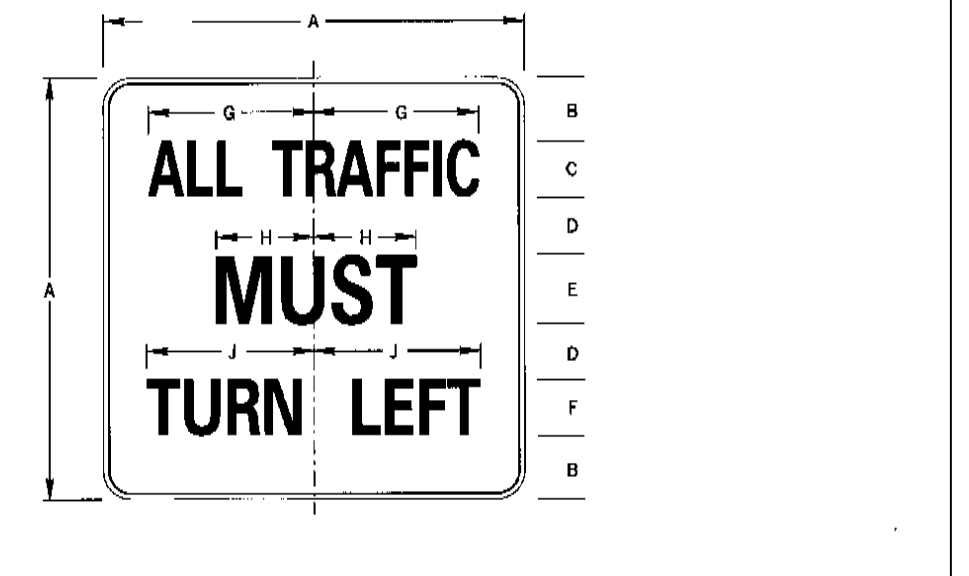
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R3-7-1L
ALL TRAFFIC MUST TURN LEFT SIGN

The All Traffic Must Turn Left Sign (R3-7-1L) may be used when traffic in all lanes of an approach to an intersection must turn left and may also be used as a supplement to the overhead Left Turn Sign (R3-481).

When used, the R3-7-1L sign should be placed at the intersection with a second sign an adequate distance in advance of the intersection. When used as a supplement to the R3-481 sign, it should be placed an adequate distance in advance of the intersection.

The standard size of the R3-7-1L sign for single lane conventional highways shall be 30" x 30". The standard size for multi-lane conventional highways shall be 36" x 36". See General Notes for additional guidance.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	4.5	4.0	4	5.0	4.0	12.3	7.1	12.4	0.5	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	5.5	5.0	4.5	6.0	5.0	14.4	8.5	14.4	0.6	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	8	6.0	6	8.0	6.0	18.5	11.4	18.5	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R7-8B
VAN ACCESSIBLE SIGN

The Van Accessible Sign (R7-8B) may be used as a supplemental sign to indicate that a parking space signed with the Reserved Parking Sign (R7-8) is of sufficient size for use by the disabled to accommodate vans displaying a handicapped or severely disabled veteran registration plate or placard.

One in every eight reserved parking spaces for the disabled, but not less than one, shall be designated with the R7-8B sign. When used, the R7-8B sign shall be placed immediately below the Reserved Parking Sign (R7-8).



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	4.5	4.0	4	5.0	4.0	12.3	7.1	12.4	0.5	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	5.5	5.0	4.5	6.0	5.0	14.4	8.5	14.4	0.6	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	8	6.0	6	8.0	6.0	18.5	11.4	18.5	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

NOTE: * INCREASE SPACING 50%

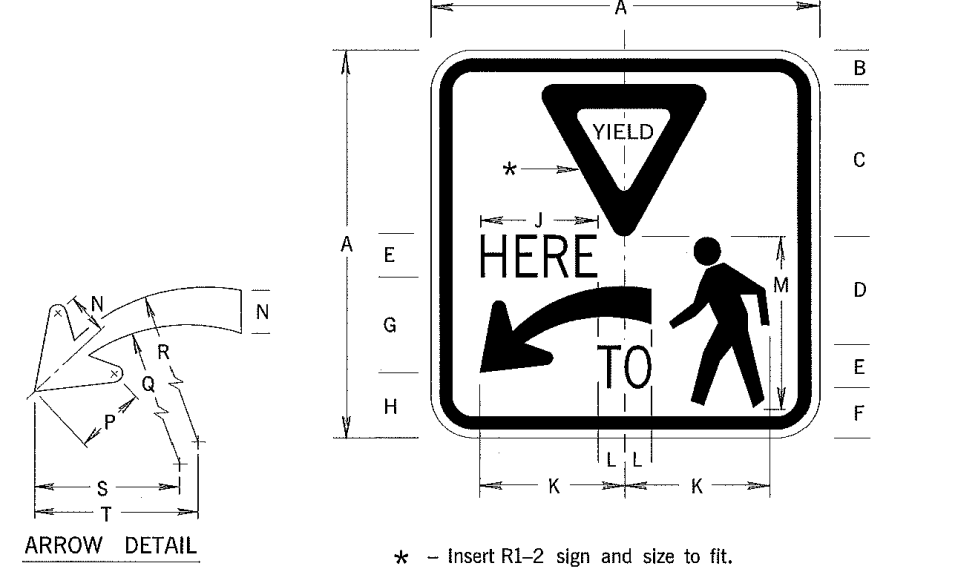
COLOR:
LEGEND AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R1-5L
YIELD HERE TO PEDESTRIAN WITH LEFT ARROW SIGN

(a) Justification. The Yield Here to Pedestrian with Left Arrow Sign (R1-5L) shall be used on the right side of the roadway, adjacent to a yield line in advance of an unsignalized midblock crosswalk that crosses a multi-lane approach. The R1-5L sign may also be used on approaches to unsignalized midblock crosswalks over R-flooded areas.

(b) Placement. When used, the R1-5L sign and yield line should be installed 20 to 50 feet in advance of the nearest crosswalk line. If a Pedestrian Sign (W11-2) has been post-mounted at the crosswalk location where a R1-5L is used on the approach, the R1-5L sign shall not be placed on the same post as to block the user's view of the W11-2 sign.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	3.2	1.4	10	4.0	4.8	8.8	6	10.6	13.2	2.4	15.6	0.6	0.8	0.8	BS-36
ARROW DETAIL	N	P	Q	R	S	T									
DIMENSIONS	3.2	5.4	13.2	14.4	12	13.4									

* - Insert R1-2 sign and size to fit.

COLOR:
YIELD SYMBOL AND THE LEGEND YIELD:
RED (REFLECTORIZED)
OTHER LEGEND SYMBOL AND BORDER:
BLACK (NON-REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

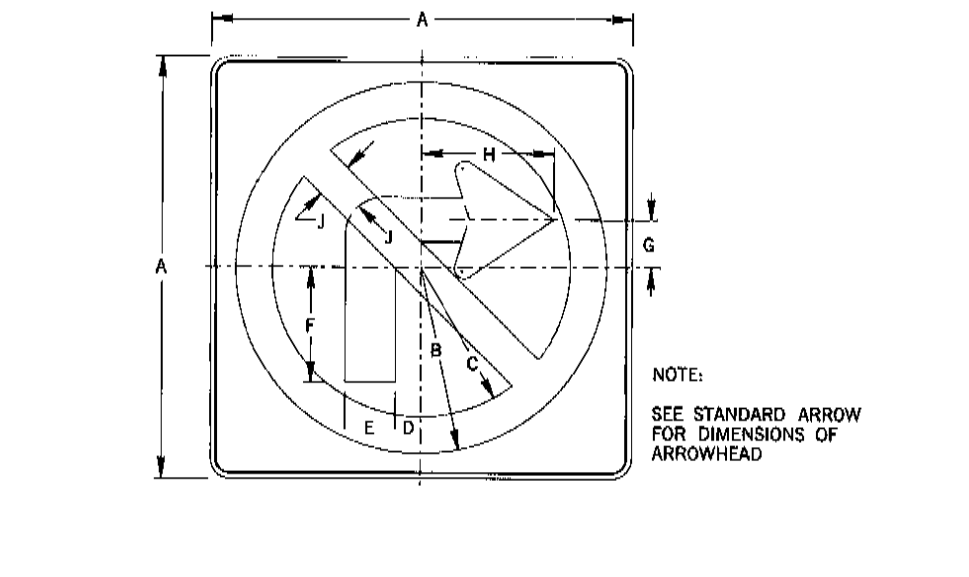
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 11-07-13
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R3-1
NO RIGHT TURN SIGN

(a) Justification. The No Right Turn Sign (R3-1) shall be authorized to prohibit right turns.

(b) Placement. The R3-1 sign shall be placed at the near right-hand corner of the intersection. An auxiliary sign with the same message may be used in advance of the intersection.

(c) Size. The standard size of the R3-1 sign for single lane conventional highways shall be 24" x 24" for post-mounted signs and 30" x 30" for overhead installations. The standard size for multi-lane conventional highways and for expressways shall be 36" x 36". See General Notes for additional guidance.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
24" x 24"	10.5	8.5	1.5	2.6	6.4	2.8	7.4	2	0.4	0.6	0.6	0.6	0.6	0.6	BS-24
30" x 30"	13.2	10.5	1.8	3.2	8.2	3.4	9.4	2.6	0.4	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	15.8	12.8	2.2	3.8	9.6	4.1	11.1	3	0.8	1	0.8	1	0.8	1	BS-36
48" x 48"	21	17	3	5	13	5.5	15	4	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

NOTE: SEE STANDARD ARROW FOR DIMENSIONS OF ARROWHEAD

COLOR:
ARROW AND BORDER:
BLACK (NON-REFLECTORIZED)
CIRCLE AND DIAGONAL:
RED (REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

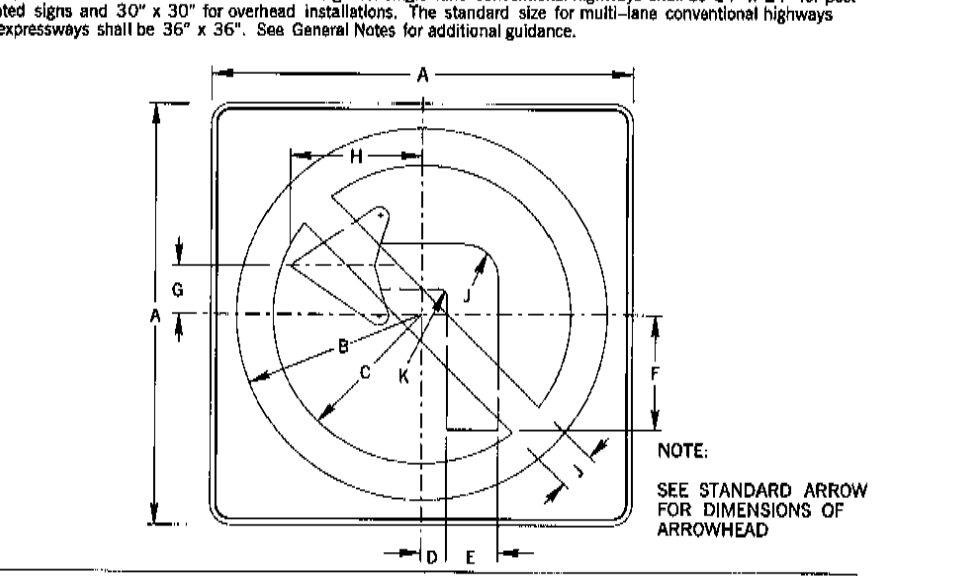
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R3-2
NO LEFT TURN SIGN

(a) Justification. The No Left Turn Sign (R3-2) shall be authorized for use to prohibit left turns.

(b) Placement. The R3-2 sign shall be placed at the intersection with a second sign an adequate distance in advance of the intersection. When used as a supplement to the R3-482 sign, it should be placed an adequate distance in advance of the intersection.

(c) Size. The standard size of the R3-2 sign for single lane conventional highways shall be 30" x 30". The standard size for multi-lane conventional highways and for expressways shall be 36" x 36". See General Notes for additional guidance.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	4.5	4.0	4	5.0	4.0	12.3	7.1	12.4	0.5	0.8	0.8	0.8	0.8	0.8	BS-30
36" x 36"	5.5	5.0	4.5	6.0	5.0	14.4	8.5	14.4	0.6	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	8	6.0	6	8.0	6.0	18.5	11.4	18.5	0.8	1.2	0.8	1.2	0.8	1.2	BS-48

NOTE: SEE STANDARD ARROW FOR DIMENSIONS OF ARROWHEAD

COLOR:
ARROW AND BORDER:
BLACK (NON-REFLECTORIZED)
CIRCLE AND DIAGONAL:
RED (REFLECTORIZED)
BACKGROUND:
WHITE (REFLECTORIZED)

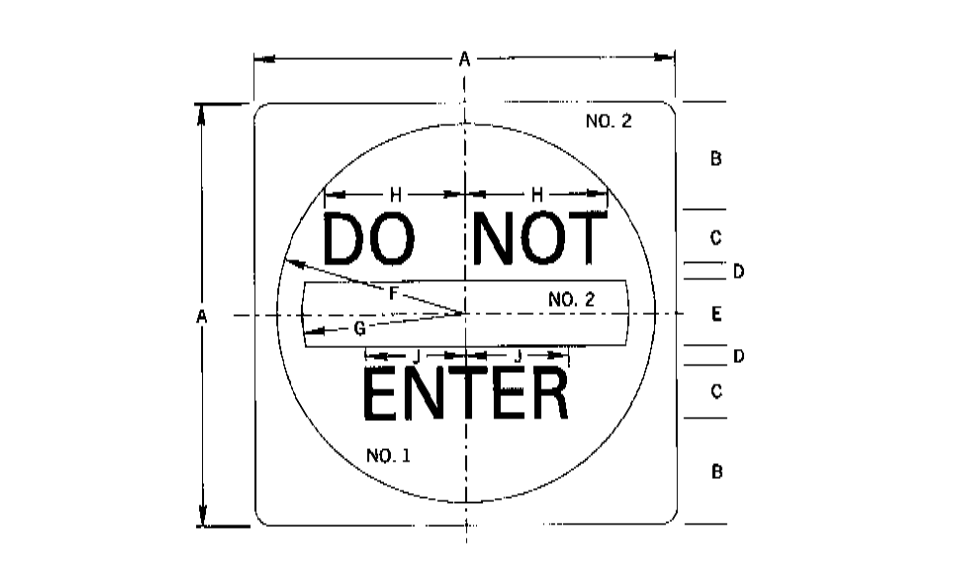
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R5-1
DO NOT ENTER SIGN

(a) Justification. The Do Not Enter Sign (R5-1) shall be authorized for use to prohibit traffic from entering a restricted road section.

(b) Placement. The R5-1 sign should normally be mounted on the right-hand side of the roadway, facing traffic entering the roadway or ramp in the wrong direction. However, a second sign on the left-hand side of the roadway may be justified, particularly where traffic may be approaching in a turn.

(c) Size. The standard size of the R5-1 sign shall be 30" x 30" for single lane conventional highways, 36" x 36" for multi-lane conventional highways and expressways, and 48" x 48" for freeways.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
30" x 30"	6.6	4.0	1.9	5	14.6	12.4	9.9	7.9	0.9	0.9	0.9	0.9	0.9	0.9	BS-30
36" x 36"	7.6	5.0	2.4	6	17.6	15	12.4	9.8	0.8	0.8	0.8	0.8	0.8	0.8	BS-36
48" x 48"	11	6.0	3	8	23.6	20	14.9	11.8	0.8	0.8	0.8	0.8	0.8	0.8	BS-48

COLOR:
NO:
LEGEND:
BACKGROUND:
RED (REFLECTORIZED)
NO. 2:
BACKGROUND:
WHITE (REFLECTORIZED)

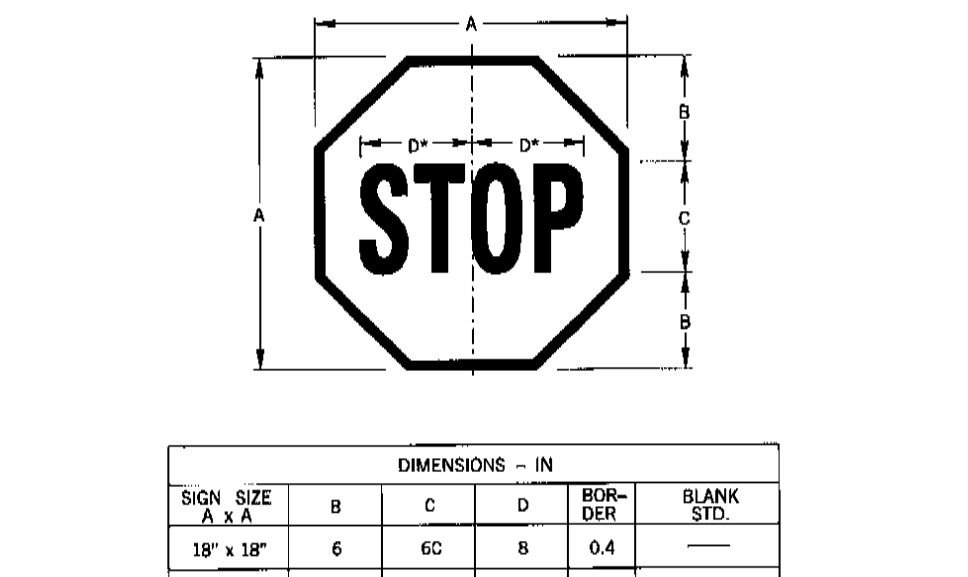
APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R1-1
STOP SIGN

(a) Justification. The Stop Sign (R1-1) shall be authorized for use on those streets or highways which intersect with a through highway or at a stop intersection so designated by the Department with reference to State designated highways or road authorities with reference to highways under their jurisdiction. The R1-1 sign is also authorized for use in work zones involving one-lane, two-way roadways. At intersections where all approaches are controlled by an R1-1 sign, a supplemental ALL-WAY STOP (R1-5P) shall be installed below each R1-1 sign.

(b) Placement. Where local authorities designate any highway as a through highway or stop intersection which will intersect or affect a State-designated highway, approval of such designation shall first be obtained from the Department. Approval of the R1-1 sign shall not require the approval of the Department or local authorities when the conditions stipulated in the Department's Temporary Traffic Control Guidelines are satisfied.

(c) Size. The standard size R1-1 sign shall be 30" x 30" for single lane conventional highways and 36" x 36" for multi-lane conventional highways. The 24" x 24" size shall only be used for stops with restrictive physical conditions and vehicle usage that prohibit the installation of the standard size R1-1. A sign that is mounted back-to-back with a R1-1 sign should stay within the edges of the R1-1 sign. If necessary, the size of the R1-1 sign should be increased so that any other sign installed back-to-back with it remains within the edges of the R1-1 sign.



DIMENSIONS - IN															
SIGN SIZE A x B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	BLANK STD.
18" x 18"	6	6	—	—	—	—	—	—	—	—	—	—	—	—	BS-18
24" x 24"	8	8	—	—	—	—	—	—	—	—	—	—	—	—	BS-24
30" x 30"	10	10	—	—	—	—	—	—	—	—	—	—	—	—	BS-30
36" x 36"	12	12	—	—	—	—	—	—	—	—	—	—	—	—	BS-36
48" x 48"	16	16	—	—	—	—	—	—	—	—	—	—	—	—	BS-48

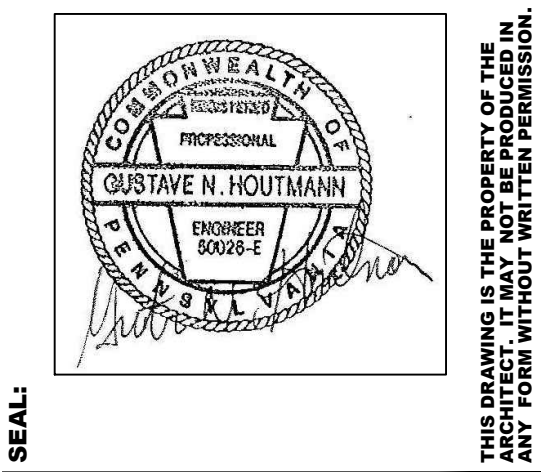
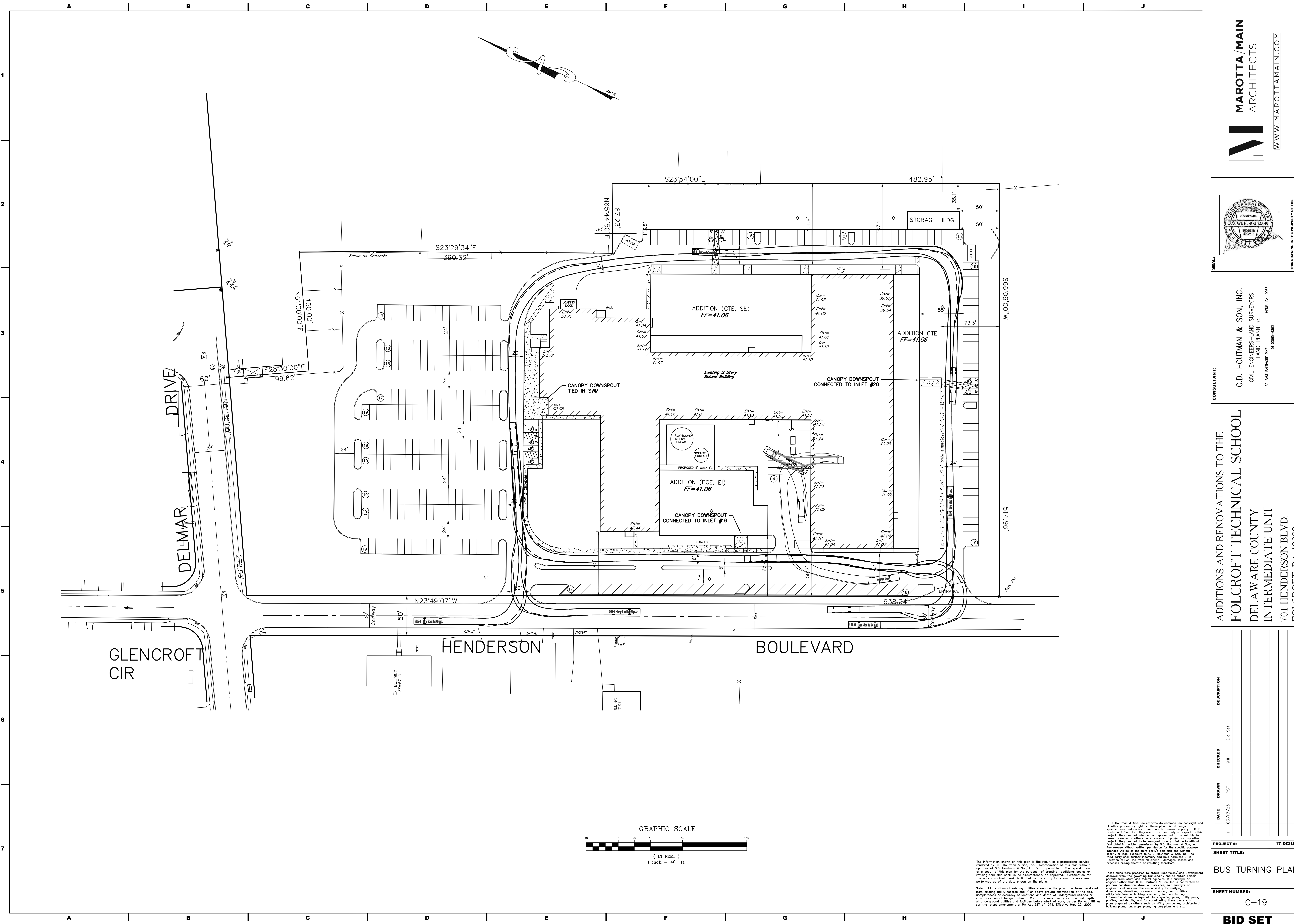
* REDUCE SPACING 40%

COLOR:
LEGEND AND BORDER:
WHITE (REFLECTORIZED)
BACKGROUND:
RED (REFLECTORIZED)

APPROVED FOR THE SECRETARY OF TRANSPORTATION
By: *C. P. Row* Date: 02-29-12
Chief, Traffic Engineering and Permits Section
Bureau of Maintenance and Operations

R1-2
YIELD SIGN

(a) Justification. The Yield Sign (R1-2) shall be authorized for use when it is necessary to assign the right-of-way but when a full stop is not necessary at all times, however, a full stop may be used when an adequate acceleration lane is provided. For a yield-controlled channelized right-turn movement onto a roadway without an acceleration lane and for an entrance ramp onto a freeway or expressway without an acceleration lane, a No Large Area (W11-



CONSULTANT:

G.D. HOUTMAN & SON, INC.
CIVIL ENGINEERS-LAND SURVEYORS
LAND PLANNERS
139 EAST BALTIMORE PIKE
MEDIA, PA 19063
(610)568-5553

ADDITIONS AND RENOVATIONS TO THE
FOLCROFT TECHNICAL SCHOOL
DELAWARE COUNTY
INTERMEDIATE UNIT
701 HENDERSON BLVD.
FOLCROFT, PA 19032

DATE	DRAWN	CHECKED	DESCRIPTION
03/17/25	PST	GWH	Bid Set

PROJECT #: 17-DCIU-01
SHEET TITLE:

BUS TURNING PLAN

SHEET NUMBER:

C-19

BID SET

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Notes: All locations of existing utilities shown on the plan have been developed from existing utility records and / or above ground examination of the site. Completeness or accuracy of locations and depth of underground utilities or structures cannot be guaranteed. Contractor must verify location and depth of all underground utilities and facilities before start of work, as per PA Act 181 as per the latest amendment of PA Act 287 of 1974, Effective May 25, 2007.

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