TRAINER BOROUGH

NEW BOROUGH ADMINISTRATION, POLICE & COMMUNITY CENTER

TOWNSHIP LINE ROAD TRAINER, PA 19061

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COVER SHEET

NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE –
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. T–1
SHEET OF

MATERIAL INDICATIONS

- ACOUSTICAL TILE
- ALUMINUM
- BRICK
- CONCRETE
- CONC. MASONRY UNIT
- EARTH
- EIFS
- GLASS
- GYPSUM BOARD
- INSULATION – BATT
- INSULATION – RIGID
- MARBLE
- PLYWOOD
- STEEL
- STONE
- WOOD – FINISH
- WOOD – ROUGH

GRAPHIC SYMBOLS

- DETAIL (1 / A8.1)
- EXTERIOR OR INTERIOR ELEVATION (1 / A–3)
- SECTION CUT (1 / A–6)
- COLUMN REFERENCE (1 / A)
- TITLE REFERENCE (1 DWG–TITLE; DWG–NO.; SCALE: SCALE)
- REVISION SYMBOL (X)
- ROOM NUMBER (100)
- DOOR NUMBER (201 / 2)
- WINDOW NUMBER (W#)
- WALL TAG (X)
- TOILET ACCESSORY (1)
- CENTER LINE
- DIRECTION ARROW

ABBREVIATIONS

A	AB	ANCHOR BOLT
	ACFL	ACCESS FLOOR
	ACOUS	ACOUSTICAL
	ACT	ACOUSTICAL CEILING TILE
	AD	AREA DRAIN
	ADD	ADDENDUM
	ADDL	ADDITIONAL
	ADJ	ADJUSTABLE
	ADJ	ADJACENT
	ADMIN	ADMINISTRATION
	AFF	ABOVE FINISH FLOOR
	AHU	AIR HANDLING UNIT
	ALT	ALTERNATE
	ALUM	ALUMINUM
	ANUN	ANNUNCIATOR
	AP	ACCESS PANEL
	APC	ARCHITECTURAL PRECAST CONCRETE
	APROX	APPROXIMATE
	ARCH	ARCHITECTURAL
	AUTO	AUTOMATIC
	AWT	ACOUSTICAL WALL TREATMENT
B	BA	BUILDING ACCESSORY
	BBD	BULLETIN BOARD
	BC	BRICK COURSES
	BD	BOARD
	BFE	BOTTOM FOOTING ELEVATION
	BG	BUMPER GUARD
	BIT	BITUMINOUS
	BKT	BRACKET
	BLDG	BUILDING
	BLKG	BLOCKING
	BLT	BORROWED LIGHT
	BLW	BELOW
	BM	BEAM
	BO	BY OWNER
	BOF	BY OWNER FUTURE
	BOT	BOTTOM
	BR	BRICK
	BRG	BEARING
	BRL	BRICK LEDGE
	BSMT	BASEMENT
	BTWN	BETWEEN
	BUR	BUILT–UP ROOFING
C	C	CHANNEL
	C DISP	CUP DISPENSER
	CAB	CABINET
	CG	CORNER GUARD
	CH	COAT HOOK
	CJT	CONTROL JOINT
	CCTV	CLOSED CIRCUIT TELEVISION
	CD	COILING DOOR
	CG	COILING GRILLE
	CL	CENTER LINE
	CL	CLASS
	CLG	CEILING
	CLR	CLEAR
	CM	CONSTRUCTION MANAGER
	CMU	CONCRETE MASONRY UNIT
	CO	CLEANOUT
	CO	CASED OPENING
	COL	COLUMN
	COMB	COMBINATION/–ED
	CONC	CONCRETE
	CONF	CONFERENCE
	CONN	CONNECT/–ED,/–ION
	CONST	CONSTRUCTION
	CONT	CONTINUE/OUS
	CONTR	CONTRACT/OR
	COORD	COORDINATE
	CORR	CORRIDOR
	CPT	CARPET
	CT	CERAMIC TILE
	CTR	CENTER
	CTSK	COUNTERSUNK
	CUH	CABINET UNIT HEATER
	CW	CURTAIN WALL
	CW	COLD WATER
	CYL	CYLINDER
D	D	DEPTH OR DEEP
	DEMO	DEMOLITION
	DEPR	DEPRESSION
	DEPT	DEPARTMENT
	DET	DETAIL/S
	DF	DRINKING FOUNTAIN
	DIA	DIAMETER
	DIAG	DIAGONAL
	DIFF	DIFFUSER
	DIM	DIMENSION
	DISP	DISPENSER
	DIST	DISTRIBUTION
	DIV	DIMISION
	DJT	DUMMY JOINT
	DN	DOWN
	DP	DEMOUNTABLE PARTITION
	DP	DATA PROCESSING
	DR	DOOR
	DS	DOWNSPOUT
	DW	DUMBWAITER
	DWG	DRAWING
	DWLS	DOWELS
E	E	EXTERIOR
	EXIST	EXISTING
	EC	ELECTRIC CABINET
	EF	EXHAUST FAN
	EIFS	EXTERIOR INSULATION AND FINISH SYSTEM
	EJT	EXPANSION JOINT
	EL	ELEVATION
	ELEC	ELECTRICAL
	ELEV	ELEVATOR
	EMERG	EMERGENCY
	ENCL	ENCLOSURE
	ENTR	ENTRANCE
	EO	ELECTRICAL OUTLET
	EP	EXPLOSION PROOF
	EQ	EQUAL
	EQUIP	EQUIPMENT
	ES	END SECTION
	EWC	ELECTRIC WATER COOLER
	EXA	EXHAUST AIR
	EXC	EXCAVATE/–ED/–ION
	EXH	EXHAUST HOOD
	EXIST	EXISTING
F	FA	FIRE ALARM
	FB	FIRE BLANKET
	FD	FLOOR DRAIN
	FDN	FOUNDATION
	FDV	FIRE DEPARTMENT VALVE
	FE	FIRE EXTINGUISHER
	FGS	FOAM GASKET SEAL
	FH	FIRE HOSE
	FHP	FULL HEIGHT PARTITION
	FHV	FIRE HOSE VALVE
	FIN	FINISH
	FIXT	FIXTURE
	FL	FLOOR
	FL	FLOW LINE
	FLASH	FLASHING
	FLEX	FLEXIBLE
	FLG	FLANGE
	FLUOR	FLUORESCENT
	FP	FIRE PROOFING
	FRMG	FRAMING
	FS	FULL SIZE
	FS	FLOOR SINK
	FSTOP	FIRESTOPPING
	FT	FOOT/FEET
	FTG	FOOTING
	FTR	FIN TUBE RADIATION
	FURR	FURRING
	FUT	FUTURE
G	GA	GAUGE
	GAL	GALLONS
	GALV	GALVANIZED
	GB	GRAB BAR
	GB	GRADE BEAM
	GC	GENERAL CONTRACTOR
	GEN	GENERATOR
	GEN	GENERAL
	GL	GLASS
	GMU	GLASS MASONRY UNIT
	GR	GRADE
	GYB	GYPSUM BOARD
	GYP SHGT	GYPSUM SHEATHING
H	H	HIGH
	HB	HOSE BIB
	HD	HAND DRYER
	HDCP	HANDICAP
	HDR	HEADER
	HDW	HARDWARE
	HM	HOLLOW METAL
	HORIZ	HORIZONTAL
	HPT	HIGHPOINT
	HR	HANDRAIL
	HT	HEIGHT
	HTR	HEATER
	HVAC	HEATING, VENTILATING, AIR CONDITIONING
	HW	HOT WATER
	HWD	HARDWOOD
I	IC	INTERCOM
	ID	INSIDE DIAMETER
	IN	INCH
	INSUL	INSULATION
	INT	INTERIOR
	ISO	ISOLATION
J	JAN	JANITOR
	JB	JUNCTION BOX
	JST	JOIST
	JT	JOINT
K	KO	KNOCK OUT
L	L	ANGLE
	L	LAVATORY
	LAV	LAVATORY
	LB	POUND
	LCD	LINEAR CEILING DIFFUSER
	LF	LINE FIGURED
	LIN	LINEAR
	LKR	LOCKER
	LLH	LONG LEG HORIZONTAL
	LLV	LONG LEG VERTICAL
	LMC	LINEAR METAL CEILING
	LOC	LOCATION OR LOCATE
	LPT	LOW POINT
	LS	LAWN SPRINKLING
	LT	LIGHT
	LTG	LIGHTING
	LVR	LOUVER
	LWC	LINEAR WOOD CEILING
M	M	MIDDLE
	MB	MARKER BOARD
	MAN	MANUAL
	MATL	MATERIAL
	MAX	MAXIMUM
	MBD	MARKER BOARD
	MC	MEDICINE CABINET
	MCU	MODULAR COOLING UNIT
	MECH	MECHANICAL
	MEMB	MEMBRANE
	MET	METAL
	MEZZ	MEZZANINE
	MFR	MANUFACTURER
	MH	MANHOLE
	MHC	MATERIAL HANDLING CONVEYOR
	MIN	MINIMUM
	MIR	MIRROR
	MISC	MISCELLANEOUS
	MO	MASONRY OPENING
	MONO	MONOLITHIC
	MPC	METAL PAN CEILING
	MPU	MULTI–PURPOSE UNIT
	MTD	MOUNTED
	MTR	MOTOR
	MULL	MULLION
N	NA	NOT APPLICABLE
	NIC	NOT IN CONTRACT
	NO	NUMBER
	NOM	NOMINAL
	NRC	NOISE REDUCTION COEFFICIENT
O	OC	ON CENTER
	OD	OUTSIDE DIAMETER
	OFF	OFFICE
	OH	OVERHEAD
	OP	OPERABLE PARTITION
	OPER	OPERATOR
	OPNG	OPENING
	OPP	OPPOSITE
	ORD	OVERFLOW ROOF DRAIN
P	PART	PARTITION
	PB	PUSH BUTTON
	PC	PRECAST CONCRETE
	PCD	PAPER CUP DISPENSER
	PED	PEDESTAL
	PL	PLATE
	PL	PROPERTY LINE
	PLAM	PLASTIC LAMINATE
	PLBG	PLUMBING
	PLS	PLASTER
	PLW	PLYWOOD
	PNL	PANEL
	PR	PAIR
	PRELIM	PRELIMINARY
	PRES	PLASTIC RESIN
	PRESS	PRESSURE
	PRIM	PRIMARY
	PROJ	PROJECTION
	PRV	POWER ROOF VENTILATOR
	PT	PAINT
	PTC	PAPER TOWEL CABINET
	PTR	PRINTER
	PVC	POLYVINYL CHLORIDE
Q	QT	QUARRY TILE
R	R	RADIUS
	R	RISER
	RA	RETURN AIR
	RAD	RADIATION
	RB	RESILIENT BASE
	RD	ROOF DRAIN
	RE	RELOCATE EXISTING
	REC	RECESSED
	REF	REFERENCE
	REFR	REFRIGERATOR
	REG	REGISTER
	REINF	REINFORCE/–ED/–ING
	REM	REMOVE
	REQD	REQUIRED
	RET	RETAINING
	REV	REVERSE
	REV	REVISE
	RF	RESILIENT FLOOR
	RH	ROOF HATCH
	RM	ROOM
	RO	ROUGH OPENING
	RS	ROUGH SLAB
	RWC	RAIN WATER CONDUCTOR
S	S	SINK
	SCHED	SCHEDULE
	SD	SHOWER DRAIN
	SD	SMOKE DAMPER
	SDISP	SOAP DISPENSER
	SECT	SECTION
	SECY	SECRETARY
	SF	STORE FRONT
	SF	SQUARE FOOT
	SH	SHOWER
	SHD	SHOWER HEAD
	SHT	SHEET
	SHTG	SHEATHING
	SIM	SIMILAR
	SL	SEALER
	SLNT	SEALANT
	SLV	SLEEVE
	SM	SURFACE MOUNTED
	SNC	SANITARY NAPKIN CABINET
	SND	SANITARY NAPKIN DISPOSER
	SOG	SLAB ON GRADE
	SP	STANDPIPE
	SPEC	SPECIFICATIONS
	SPR	SINGLE PLY ROOF
	SQ	SQUARE
	SQ YD	SQUARE YARD
	SR	SERVICE RECEPTOR
	SS	SERVICE SINK
	SST	STAINLESS STEEL
	ST	STREET
	ST	STONE TILE
	STC	SOUND TRANSMISSION
	STD	STANDARD
	STL	STEEL
	STN	STONE
	STNL	STONE LEDGE
	STOR	STORAGE
	STRUCT	STRUCTURAL
	STS	STEEL STRUCTURE
	SUPV	SUPERVISOR
	SUSP	SUSPENDED
	SW	STEEL WINDOWS
	SW	SWITCH
	SWD	SOFTWOOD
	SYM	SYMMETRICAL
T	T	TOP
	TAN	TANGENT
	TBD	TACKBOARD
	TC	TIME CLOCK
	TCAB	TOWEL CABINET
	TDISP	TISSUE DISPENSER
	TDR	TRENCH DRAIN
	TEL	TELEPHONE
	TEMP	TEMPERATURE
	TER	TERRAZZO
	TG	TONGUE & GROOVE
	THRES	THRESHOLD
	TPH	TOILET PAPER HOLDER
	TR	TREAD
	TRANSF	TRANSFORMER
	TS	TUBE SECTION
	TV	TELEVISION
	TYP	TYPICAL
U	U	URINAL
	UC	UNDERCUT
	UFD	UNDER FLOOR DUCT
	UG	UNDERGROUND
	UH	UNIT HEATER
	UNFIN	UNFINISHED
	UNO	UNLESS NOTED OTHERWISE
	US	UTILITY SHELF
	UTIL	UTILITY
V	VC	VALVE CABINET
	VENT	VENTILATION
	VERT	VERTICAL
	VEST	VESTIBULE
	VR	VAPOR RETARDER
	VTR	VENT THROUGH ROOF
W	W	WIDTH/WIDE
	W	WIDE FLANGE
	W/	WITH
	W/O	WITHOUT
	WC	WATER CLOSET
	WC	WALL COVERING
	WD	WOOD
	WDW	WINDOW
	WG	WALL GUARD
	WH	WALL HYDRANT
	WHCH	WHEELCHAIR
	WHTR	WATER HEATER
	WP	WATERPROOF
	WR	WASTE RECEPTACLE
	WS	WEATHERSTRIP
	WSCT	WAINSCOT

GENERAL NOTES

1. THE ENUMERATION OF PARTICULAR ITEMS OF WORK IN ONE PORTION OF THE CONTRACT DOCUMENTS SHALL NOT BE CONSTRUED TO EXCLUDE OTHER ITEMS NECESSARY OR IMPLIED THEREFROM.

2. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF ALL PARTS OF THE WORK SO THAT NO WORK SHALL BE LEFT IN AN UNFINISHED OR INCOMPLETE CONDITION, OWING TO ANY DISAGREEMENT BETWEEN THE VARIOUS SUBCONTRACTORS, OR THE SUBCONTRACTORS AND THE CONTRACTOR AS TO WHERE THE WORK OF ONE BEGINS OR ENDS IN RELATION TO THE WORK OF THE OTHER.

3. ALL WORK SHALL CONFORM TO APPLICABLE INDUSTRY AND MANUFACTURER'S PUBLISHED STANDARDS FOR ALL REQUIREMENTS IN THESE DRAWINGS AND SPECIFICATIONS. ANY CONFLICTING REQUIREMENTS OF THE SOURCES LISTED ABOVE SHALL BE BROUGHT TO THE ARCHITECT'S ATTENTION PRIOR TO PROCEEDING WITH WORK.

4. ALL WORK NOTED 'N.I.C.' IS NOT MEANT TO BE PART OF THE CONSTRUCTION AGREEMENT.

5. THE CONTRACTOR SHALL PAY FOR AND COORDINATE THE REMOVAL AND LEGAL DISPOSAL OF MATERIALS AND RUBBISH WITH THE BUILDING OWNER.

6. DO NOT SCALE DRAWINGS; DIMENSIONS GOVERN: LARGE SCALE DETAILS GOVERN OVER SMALL SCALE DETAILS. THE GENERAL CONTRACTOR SHALL NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES, OMISSIONS AND/OR CONFLICTS BEFORE COMMENCEMENT OF WORK.

7. UNLESS NOTED OTHERWISE, ALL GYPSUM BOARD SURFACES ARE TO RECEIVE ONE PRIMER COAT AND TWO FINISH COATS OF PAINT.

8. DIMENSIONS NOTED AS 'HOLD' SHALL NOT VARY BY MORE THAN 1/8" FROM SIDE TO SIDE OR FROM FRONT TO BACK, FINISHED SURFACE TO FINISHED SURFACE.

9. GLASS ASSEMBLIES AND GLAZING SHALL CONFORM TO ALL APPLICABLE STATE CODES AND GOVERNING AUTHORITIES, INCLUDING OSHA AND CRSC GLAZING SAFETY STANDARDS.

10. WALL AND/OR CEILING ASSEMBLIES THAT ARE IDENTIFIED WITH A FIRE RESISTIVE RATING SHALL BE CONSTRUCTED PER PRODUCT MANUFACTURER'S SPECIFICATIONS AND THE REQUIREMENTS OF ALL APPLICABLE CURRENT CODES AND GOVERNING BODIES.

11. DIMENSIONS SHOWN ARE TO FINISH FACE OF WALL UNLESS SPECIFICALLY NOTED OTHERWISE.

12. PROVIDE EXPANSION AND CONTROL JOINTS IN ALL WORK AS PER PRODUCT MANUFACTURER'S STANDARDS.

13. THE CONTRACTOR SHALL PERFORM ALL WORK IN ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES.

14. ALL INTERIOR FINISH MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES, ORDINANCES AND REGULATORY AGENCIES.

15. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON ANY ONE SHEET ARE TO BE APPLIED TO RELATED DRAWINGS AND DETAILS.

16. A FINISH OR FIRE RATING INDICATION ON A WALL SHALL MEAN THE ENTIRE LENGTH AND HEIGHT OF WALL IS TO BE FINISHED OR FIRE–RATED AS INDICATED.

17. WHEN UNDIMENSIONED PARTITIONS APPEAR IN CONJUNCTION WITH DOOR OPENINGS, THE DOOR WIDTH AND THE DOOR FRAME DETAILS DETERMINE THE LOCATION OF ADJACENT WALLS AND FRAMES.

18. DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE DETAILED. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

19. THE CONTRACTOR SHALL COORDINATE ALL MECHANICAL AND ELECTRICAL FLOOR AND WALL SLEEVES, CONDUIT AND ALL MECHANICAL, ELECTRICAL, PLUMBING, FIRE PROTECTION, STRUCTURAL AND ARCHITECTURAL DRAWINGS.

20. ALL PIPE, DUCTS AND BUS DUCTS THAT PENETRATE FLOOR SLABS OR WALL PARTITIONS SHALL BE INSTALLED IN A MANNER THAT WILL PRESERVE THE MOISTURE RESTIVENESS, FIRE RATING, AND STRUCTURAL INTEGRITY OF THE SPACE.

21. INTERIOR PARTITION MOVEMENT CONTROL:

A. PROVIDE FOR VERTICAL MOVEMENT AT THE HEAD OF ALL GYPSUM DRYWALL CONSTRUCTION AS INDICATED IN THE NOTES AND ON THE DRAWINDS. CUT STUDS TO ALLOW FOR VERTICAL MOVEMENT; DO NOT FASTEN STUDS TO HEAD RUNNER CHANNEL. FASTEN DRYWALL TO STUDS ONLY.

B. HORIZONTAL CONTROL JOINTS ARE TO OCCUR AT NOT MORE THAN 12'–0" O.C. IN THE VERTICAL DIRECTION, UNLESS NOTED OTHERWISE.

C. VERTICAL CONTROL JOINTS FOR ANY WALL LENGTH ARE TO OCCUR AT NOT MORE THAN 30'–0" O.C. IN THE HORIZONTAL DIRECTION, UNLESS NOTED OTHERWISE.

D. THE TYPICAL MOVEMENT OF THE STRUCTURE DUE TO DEFLECTION AT THE HEAD OF THE WALL CONSTRUCTION RUNNING TO THE UNDERSIDE OF THE STRUCTURE SHALL BE PLUS OR MINUS 1/2".

22. CONTRACTOR SHALL PLAN HIS WORK TO PROVIDE ADEQUATE PROTECTION FOR THE PERSONS AND PROPERTY AT ALL TIMES, AND EXECUTE THE WORK IN SUCH A MANNER TO AVOID ANY HAZARD TO PERSONS AND PROPERTY AS PER CITY AND LOCAL CODE REQUIREMENTS.

2015 INTERNATIONAL BUILDING CODE

CHAPTER 11 ACCESSIBILITY – BUILDING SHALL COMPLY w/ 2015 CHAPTER 11 & ANSI A117.1–2009

NEW BOROUGH BUILDING

OCCUPANCY GROUP – B' BUSINESS
CONSTRUCTION TYPE – 5B
TABLE 504.4 AND 506.2 – ALLOWABLE AREA 36,000 SF/FLOOR (3) STORIES
TOTAL BUILDING AREA – 10,046 SF – (1) STORY

TABLE 601 FIRE RESISTANCE RATING: TYPE 5B

PRIMARY STRUCTURAL FRAME	0 HR.
EXTERIOR BEARING WALLS	0 HR.
INTERIOR BEARING WALLS	0 HR.
NON BEARING WALLS	0 HR.
FLOOR CONSTRUCTION	0 HR.
ROOF CONSTRUCTION	0 HR.

TABLE 803.9 INTERIOR WALL & CEILING FINISH REQUIREMENT
CORRIDORS: B
ROOMS & ENCLOSED SPACES: C

TABLE 1004.1.2 COMPUTED OCCUPANCY

BUSINESS AREA –	7,912 SF/100 GROSS = 79.12 PEOPLE
INSTITUTIONAL AREA –	1,649 SF/120 GROSS = 13.74 PEOPLE
COUNCIL CHAMBERS –	1,265 SF/5 NET = 253 PEOPLE

TOTAL = 345.86 PEOPLE COMPUTED

903.2.1.3 AUTOMATIC SPRINKLER SYSTEM – NOT REQUIRED, BUT PROVIDED

1005 EGRESS WIDTH
STAIRWAYS 619 x .3 = 185 IN. REQUIRED
OTHER EGRESS COMPONENTS 619 x .2 = 123 IN. REQUIRED

1006.1 MEANS OF EGRESS ILLUMINATION– REQUIRED

1013.1 EXIT SIGNS– REQUIRED

TABLE 1006.3.1 MINIMUM NUMBER OF EXITS REQUIRED – 2 PROVIDED – 7

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE w/ SPRINKLERS – 250' MAX.

NEW COMMUNITY CENTER

OCCUPANCY GROUP – 'A3' ASSEMBLY
CONSTRUCTION TYPE – 2B
TABLE 504.4 AND 506.2 – ALLOWABLE AREA 38,000 SF/FLOOR (3) STORIES
TOTAL BUILDING AREA – 11,970 SF – (1) STORY

406.4.2 VENTILATION AND MECHANICAL–
A MECHANICAL VENTILATION SYSTEM SHALL BE PROVIDED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE.

TABLE 601 FIRE RESISTANCE RATING: TYPE 2B

PRIMARY STRUCTURAL FRAME	0 HR.
EXTERIOR BEARING WALLS	0 HR.
INTERIOR BEARING WALLS	0 HR.
NON BEARING WALLS	0 HR.
FLOOR CONSTRUCTION	0 HR.
ROOF CONSTRUCTION	0 HR.

TABLE 803.9 INTERIOR WALL & CEILING FINISH REQUIREMENT
ROOMS & ENCLOSED SPACES: C

903.2.1.3 AUTOMATIC SPRINKLER SYSTEM – PROVIDED

TABLE 1004.1.2 COMPUTED OCCUPANCY

ASSEMBLY AREA	7,635 SF/15 NET +184 SEATS = 693 PEOPLE
KITCHEN AREA	275 SF/200 GROSS = 1.38 PEOPLE

TOTAL = 694 PEOPLE COMPUTED

1005.1 EGRESS WIDTH
STAIRWAYS 619 x .3 = 185 IN. REQ.'D
OTHER EGRESS COMPONENTS 619 x .2 = 123 IN. REQ'D

1006.1 MEANS OF EGRESS ILLUMINATION– REQUIRED

1013.1 EXIT SIGNS– REQUIRED

TABLE 1006.3.1 MINIMUM NUMBER OF EXITS REQUIRED – 2 PROVIDED – 8

TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE w/ SPRINKLERS – 300' MAX.

PROJECT TEAM

OWNER
TRAINER BOROUGH
824 MAIN ST.
TRAINER, PA 19061
PHONE: 610–497–3838
CONTACT: MARK POSSENTI

STRUCTURAL
TD&H ENGINEERING
105 CHESLEY DR./SUITE 203
MEDIA, PA 19063
PHONE: 610–565–3492
CONTACT: MARY BARFIELD, P.E., S.E.

SITE IMPROVEMENTS
KELLY & CLOSE ENGINEERS
1786 WILMINGTON PIKE/SUITE 300
GLEN MILLS, PA 19342
PHONE: 610–358–9363
CONTACT: QAMAR AHMAD, P.E., M.S.C.E.

M E P FP
ADVANCE ENGINEERING INC.
5561 PENNELL RD.
MEDIA, PA 19063
PHONE: 610–361–0700
CONTACT: DEREK FINK, P.E.

ARCHITECTURAL
LINN ARCHITECTS
1140 N. PROVIDENCE ROAD
MEDIA, PA. 19063
PHONE: 610–566–7044
FAX: 610–566–3323
CONTACT: MIKE COSENTINO, R.A.

ALLOWANCES

ALLOWANCE NO. 1
LUMP SUM ALLOWANCE: INCLUDE $50,000.00 LUMP SUM ALLOWANCE FOR UNSUITABLE SOILS AND FOUNDATION MODIFICATIONS.

ALLOWANCE NO. 2
CONTINGENCY ALLOWANCE: INCLUDE A CONTINGENCY ALLOWANCE OF $100,000.00 FOR USE ACCORDING TO OWNER'S WRITTEN INSTRUCTIONS.

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610–566–7044
FAX: 610–566–3258

GENERAL NOTES & CODE INFO.
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE –
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. T–2
SHEET OF

PRELIMINARY / FINAL LAND DEVELOPMENT AND REVERSE SUBDIVISION PLANS

FOR

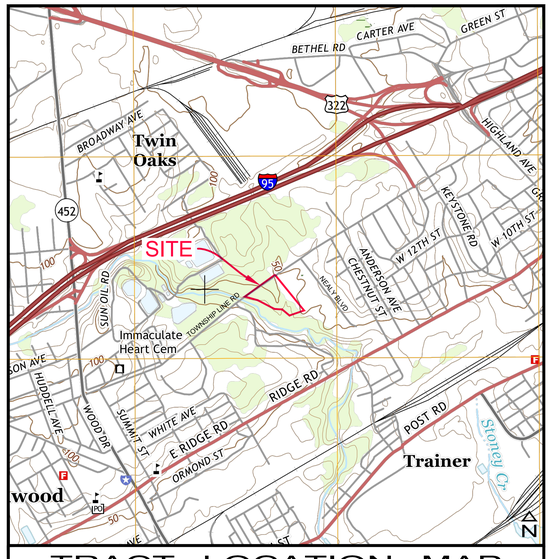
TRAINER BOROUGH

MUNICIPAL BUILDINGS

TRAINER BOROUGH, DELAWARE COUNTY

FEBRUARY 27, 2019

	SHEET INDEX
SHEET No.	DESCRIPTION
1	COVER SHEET
2	GENERAL INFORMATION SHEET
3	SITE AND REVERSE SUBDIVISION PLAN
4	EXISTING FEATURES PLAN / ENVIRONMENTAL RESOURCE AND SITE ANALYSIS MAP
5	GRADING PLAN
6	UTILITY PLAN
7	PROFILES
8	LANDSCAPE PLAN
9	LIGHTING PLAN
10	EROSION AND SEDIMENT CONTROL PLAN (STAGE-1)
11	EROSION AND SEDIMENT CONTROL PLAN (STAGE-2)
12	EROSION AND SEDIMENT CONTROL PLAN (STAGE-3)
13	EROSION AND SEDIMENT CONTROL NOTES
14	EROSION AND SEDIMENT CONTROL DETAILS
15	POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN
16	POST-CONSTRUCTION STORMWATER MANAGEMENT NOTES & FACILITY DETAILS
17	POST-CONSTRUCTION STORMWATER MANAGEMENT STORM SEWER DETAILS
18	SITE CONSTRUCTION DETAILS
19	SANITARY SEWER DETAILS
20	WATER AND UTILITY SERVICE DETAILS



TRACT LOCATION MAP

Scale: 1" = 1,000'

APPLICANT/OWNER:

TRAINER BOROUGH
824 MAIN STREET
TRAINER, PA 19061

SITE ADDRESS:

TOWNSHIP LINE ROAD
TRAINER, PA 19061
TRAINER BOROUGH, DELAWARE COUNTY, PA
TAX FOLIO NO's:
46-00-00485-63 AND 46-00-00485-64

PROJECT SERIAL No.: 20181351368

BEFORE YOU DIG ANYWHERE

IN... PENNSYLVANIA

STOP! CALL 1-800-242-1776 (TOLL FREE)

PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE
PENNSYLVANIA ONE CALL SYSTEM, Inc.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

ACT NUMBER 287 OF 1974 as AMENDED UTILITY USER LIST

UTILITIES:

THE FOLLOWING COMPANIES WERE NOTIFIED BY THE PENNSYLVANIA ONE CALL SYSTEM (1-800-242-1776) AND REQUESTED TO MARK OUT UNDERGROUND FACILITIES AFFECTING AND SERVICING THIS SITE. THE UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS BASED UPON THE UTILITY COMPANIES RESPONSE TO THIS REQUEST. SERIAL NUMBERS: 20181351368

UTILITY COMPANY	CONTACT
CHESTER WATER AUTHORITY	bpmacewen@chesterwater.com
COMCAST CABLEVISION	richard_kain@cable.comcast.com
PECO ENERGY C/O USIC	nikkiasimpkins@usicllc.com
ENTERPRISE PRODUCTS	rparks@eprod.com
MONROE ENERGY LLC	caroline.kerr@monroe-energy.com
TRANSCONTINENTAL GAS/WILLIAMS GAS	dan.schweitzer@williams.com
TRAINER BOROUGH	gam129@aol.com

REV.	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	Q.A.
3	7/30/19	PER DCCD REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS FOR E&SC/NPDES RESUBMISSION	Q.A.
2	4/22/19	PER DCCD COMMENTS FROM EMAIL DATED 4/16/19	Q.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCCD E&SC/NPDES SUBMISSION	Q.A.

STORMWATER CERTIFICATION:

THE OWNER IS AWARE OF ITS OBLIGATION IN PERPETUITY TO MAINTAIN THE STORM SEWER NETWORK AND THE STORMWATER FACILITIES IN WORKING ORDER AT ALL TIMES IN ACCORDANCE WITH THE TRAINER BOROUGH ORDINANCE, AND ACKNOWLEDGES THE STORMWATER MANAGEMENT FACILITIES TO BE PERMANENT FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER THE APPROVAL OF A REVISED PLAN BY TRAINER BOROUGH. THIS ACKNOWLEDGEMENT AND RESPONSIBILITY SHALL BECOME THE CONTINUING OBLIGATION. THE OWNER ALSO RECOGNIZES THAT SHOULD THEY BE UNABLE OR UNWILLING TO MAINTAIN THE PROPOSED STORMWATER MANAGEMENT FACILITIES IN PROPER WORKING ORDER, TRAINER BOROUGH HAS THE RIGHT, BUT NOT THE OBLIGATION, TO MAKE SUCH REPAIRS AND LIEN THE PROPERTY IN ORDER TO RECOUP ALL INCURRED EXPENSES. ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY TRAINER BOROUGH AND A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE CONSERVATION DISTRICT FOR A DETERMINATION OF ADEQUACY.

_____ _____
DATE OWNER'S REPRESENTATIVE

CERTIFICATION OF OWNERSHIP AND ACKNOWLEDGMENT OF LAND DEVELOPMENT AND REVERSE SUBDIVISION PLAN:

COMMONWEALTH OF PENNSYLVANIA COUNTY OF DELAWARE

ON THIS, _____ DAY OF _____, 20____ BEFORE ME, THE UNDERSIGNED PERSONALLY APPEARED, _____ WHO BEING DULY SWORN ACCORDING TO THE LAW, DEPOSE AND SAY THAT I AM AN AUTHORIZED REPRESENTATIVE OF THE OWNER OF THE PROPERTIES SHOWN ON THIS PLAN, THAT THE LAND DEVELOPMENT PLAN AND REVERSE SUBDIVISION THEREOF WAS MADE AT THE OWNER'S DIRECTION, AND THAT THE OWNER ACKNOWLEDGES THE SAME TO BE THE OWNER'S ACT AND PLAN AND DESIRES THE SAME TO BE RECORDED AS SUCH ACCORDING TO LAW.

WITNESS MY HAND AND SEAL THE DAY AND DATE ABOVE WRITTEN

_____
BY: OWNER'S REPRESENTATIVE:

NOTARY PUBLIC

MY COMMISSION EXPIRES _____, 20____

CERTIFICATION FOR MAINTENANCE OF SITE IMPROVEMENTS:

I HEREBY CERTIFY THAT _____ ACCEPTS RESPONSIBILITY FOR MAINTENANCE OF SITE IMPROVEMENTS INDICATED ON THESE PLANS. MAINTENANCE SHALL BE PERFORMED IN ACCORDANCE WITH THE BOROUGH ORDINANCES, PLAN NOTES, AGREEMENTS AND THE POST CONSTRUCTION STORMWATER MANAGEMENT PLAN.

_____ _____ _____
DATE NAME SIGNATURE

PLAN PREPARER'S STATEMENT:

I HEREBY CERTIFY THAT THE PLAN SHOWN AND DESCRIBED HEREON, AS WELL AS ALL RELATED DRAWINGS AND DOCUMENTS SUBMITTED HEREWITH, ARE TRUE AND CORRECT TO THE ACCURACY REQUIRED BY, AND ARE IN COMPLIANCE WITH, THE DELAWARE COUNTY SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ADOPTED BY TRAINER BOROUGH, THE TRAINER BOROUGH STORMWATER ORDINANCE AND ZONING ORDINANCE (EXCEPT AS/IF NOTED), AND WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

_____ _____ _____
DATE QAMAR AHMAD PE # 054481-E

SURVEYOR'S CERTIFICATION:

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, ON THIS THE _____ DAY OF _____, 20____, THIS PLAT AND SURVEY WERE PERFORMED IN ACCORDANCE WITH THE LATEST MINIMUM STANDARDS FOR BOUNDARY SURVEYS SECTION OF THE MANUAL OF PRACTICE FOR PROFESSIONAL LAND SURVEYORS IN THE COMMONWEALTH OF PENNSYLVANIA, AS ADOPTED BY THE PENNSYLVANIA SOCIETY OF LAND SURVEYORS.

_____ _____ _____
DATE ROBERT J. SNYDER PLS # 38747-E

CERTIFICATION FOR RECOMMENDATION OF APPROVAL BY THE BOROUGH PLANNING COMMISSION:

APPROVAL RECOMMENDED BY THE TRAINER BOROUGH PLANNING COMMISSION ON THIS _____ DAY OF _____, 20____.

_____
CHAIRPERSON

_____
MEMBER

NOTE: PLANNING COMMISSION REVIEW AND RECOMMENDATION WERE NOT ABLE TO BE OBTAINED AS NO PLANNING COMMISSION WAS IN EXISTENCE AT THE TIME THE PLANS WERE SUBMITTED FOR APPROVAL.

CERTIFICATION OF APPROVAL BY THE BOROUGH COUNCIL:

APPROVED BY RESOLUTION OF THE COUNCIL OF TRAINER BOROUGH ON THIS _____ DAY OF _____, 20____.

_____
CHAIRPERSON

_____
BOROUGH MANAGER

CERTIFICATION OF REVIEW BY THE BOROUGH ENGINEER:

REVIEWED BY THE TRAINER BOROUGH ENGINEER, ON THIS _____ DAY OF _____, 20____.

_____
BOROUGH ENGINEER

CERTIFICATION OF REVIEW BY THE DELAWARE COUNTY PLANNING COMMISSION:

REVIEWED BY THE DELAWARE COUNTY PLANNING COMMISSION, ON THIS _____ DAY OF _____, 20____.

_____
MEMBER

PLAN TO BE RECORDED SHEET 1 OF 3

RECORD PLAN NOTE:

SHEETS 1, 2 AND 3 OF 20 OF THIS PLAN SET SHALL BE RECORDED AT THE DELAWARE COUNTY RECORDER OF DEEDS.

CERTIFICATION BY DELAWARE COUNTY TAX ASSESSOR:

DELAWARE COUNTY TAX ASSESSOR'S VERIFICATION OF CURRENT FOLIO NUMBER.

_____ _____ _____
FOLIO NUMBER(S) INITIALS DATE

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1786 Wilmington Pike/Suite 300
Glen Mills, Pennsylvania 19342
610.358.9363 fax 610.358.9376

ORIGINAL PLANS BEAR A REGISTRATION SEAL IN BLUE INK

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL QAMAR AHMAD ENGINEER PE054481E

date:	FEBRUARY 27, 2019
scale:	N.T.S.
drawn by:	N.D.K. / K.L.F.
checked by:	Q.A.
dwg. name:	F-Cover.dwg
project no.:	2018-008

SHEET 1 of 20

LEGEND

EXISTING		PROPOSED
⊕	SITE BENCHMARK	
	ZONING BOUNDARY	
	PROPERTY LINE	
	ADJOINING PROPERTY LINE	
○I.P. □MON.	IRON PIN, MONUMENT, NAIL	○I.P. □MON.
	RIGHT-OF-WAY	
	BUILDING SETBACK LINE	
	BUILDING	
	EDGE OF PAVEMENT	
	CURB	
	SIDEWALK	
	ASPHALT PAVING	
	WALL	
-x-x-x-x-	FENCE	-x-x-x-x-
	GUIDE RAIL	
	WHEELSTOP/BUMPERBLOCK	
	ROAD/STREET NAME SIGN	
252	2' CONTOUR	252
250	10' CONTOUR	250
	REGULATED SLOPES (WITHIN LOD)	
	STEEP SLOPES (15 to 25%)	
	VERY STEEP SLOPES (> 25%)	
	PERMANENT RIPRAP/OUTLET PROTECTION	
	STORM SEWER	
	STORM SEWER ROOF DRAIN	
Ⓓ	STORM STRUCTURE	Ⓓ
SAN SAN	SANITARY SEWER MAIN	
FM FM	SANITARY SEWER FORCEMAIN	
SL SL	SANITARY SEWER LATERAL	SL SL
Ⓢ	SANITARY SEWER STRUCTURE	Ⓢ
W W	WATER MAIN	W W
WS WS	WATER SERVICE LINE (DOMESTIC)	WS WS
FS FS	WATER SERVICE (FIRE)	FS FS
	WATER LINE STRUCTURE	
G G	GAS MAIN	G G
	GAS LINE STRUCTURE	
OHE OHE	OVERHEAD ELECTRIC LINE	OHE
UGE UGE	UNDERGROUND ELECTRIC LINE	UGE
Ⓔ Ⓣ	ELECTRIC/CABLE/TELEPHONE SYMBOLS	Ⓔ Ⓣ
OHT OHT	OVERHEAD TELEPHONE LINE	OHT
UGT UGT	UNDERGROUND TELEPHONE LINE	UGT
OHU OHU	OVERHEAD GENERAL/COMBINED UTILITY LINE	OHU
UGU UGU	UNDERGROUND GENERAL/COMBINED UTILITY LINE	UGU
CATV	CABLE TELEVISION LINE	CATV
	LIGHTING FIXTURE	
	MATURE TREELINE	
	TREELINE	
	TREE (DECIDUOUS, EVERGREEN)	
	LAKE/STREAM/W.O.U.S.	
	WETLAND BOUNDARY	
	SOIL BOUNDARY	

GRADING NOTES:

1. PROVIDE POSITIVE DRAINAGE AWAY FROM PROPOSED BUILDINGS, IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC) REQUIREMENTS. (MINIMUM GRASS SLOPE OF 5% TO BE MAINTAINED WITHIN TEN (10) FEET OF THE BUILDING.)
2. ALL SPOT SHOTS REPRESENT BOTTOM OF CURB ELEVATIONS UNLESS INDICATED OTHERWISE. ALL ON-SITE CURB SHALL HAVE A 6" REVEAL, ALL CURB WITHIN PENNDOT AND/OR BOROUGH RIGHT-OF-WAY SHALL HAVE 8" REVEAL. TRANSITIONS FROM 6" TO 8" CURBS SHALL BE MADE AT THE LOCATIONS SHOWN ON THE PLANS.
3. DOOR LOCATIONS AS SHOWN ARE APPROXIMATE, IF DOOR LOCATIONS SHOWN ON ARCHITECTURAL PLANS DIFFER, NOTIFY DESIGN ENGINEER TO VERIFY OR ADJUST GRADING AS APPROPRIATE.
4. FILL SHOULD BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING EIGHT (8) INCHES IN LOOSE THICKNESS AND COMPACTED WITH A SMOOTH-DRUM VIBRATORY ROLLER, WHERE POSSIBLE. WHERE COMPACTION BY HAND-OPERATING EQUIPMENT IS NECESSARY, FILL MATERIAL SHOULD BE PLACED IN HORIZONTAL LIFTS NOT EXCEEDING SIX (6) INCHES IN LOOSE THICKNESS. THE OPTIMUM LIFT THICKNESS SHOULD BE DETERMINED IN THE FIELD WITH TEST PASSES OF THE CHOSEN COMPACTION EQUIPMENT. THE FILL MATERIAL SHOULD BE PLACED AT, OR EVENLY NOMINALLY FROM, THE OPTIMUM MOISTURE CONTENT AS DETERMINED IN ACCORDANCE WITH THE STANDARD PROCTOR TEST (ASTM STANDARD D-698) AND COMPACTED TO A MINIMUM PERCENTAGE OF THE MAXIMUM DRY DENSITY AS INDICATED IN THE "COMPACTION CRITERIA" TABLE BELOW:

COMPACTION CRITERIA	
FILL AREA	PERCENT OF MAXIMUM DRY DENSITY PER STANDARD PROCTOR TEST (ASTM STANDARD D-698)
SLAB-ON-GRADE, FOUNDATION SUPPORT, PAVED AREAS AND WALKWAYS	98
BERMS	95
NON-STRUCTURAL / LANDSCAPE	92

5. IN CASE OF DISCREPANCIES BETWEEN PLANS OR RELATIVE TO OTHER PLANS, THE SITE PLAN WILL TAKE PRECEDENCE. IMMEDIATELY NOTIFY THE OWNER AND ENGINEER IN WRITING OF ANY CONFLICTS.
6. CONTRACTOR SHALL SECURE ALL NECESSARY PERMITS AND APPROVALS FOR ALL OFF-SITE MATERIAL SOURCES AND DISPOSAL FACILITIES. CONTRACTOR SHALL SUPPLY A COPY OF APPROVALS TO ENGINEER AND OWNER PRIOR TO INITIATING WORK.

RETAINING WALL NOTE:

1. DESIGN AND PLANS FOR RETAINING WALLS EXCEEDING 4 FEET IN HEIGHT AND RETAINING WALL FENCES, HANDRAILS AND GUARDS COMPLYING WITH THE CURRENT INTERNATIONAL BUILDING CODE (IBC) STANDARDS ADOPTED BY THE BOROUGH SHALL BE PROVIDED SEPARATELY PRIOR TO CONSTRUCTION. THE PLANS SHALL BE PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN PENNSYLVANIA AND SHALL BE REVIEWED AND APPROVED BY THE BOROUGH ENGINEER PRIOR TO CONSTRUCTION.

EROSION AND SEDIMENT CONTROL NOTES:

1. REFER TO EROSION AND SEDIMENT CONTROL PLANS AND DETAIL SHEETS INCLUDED IN THIS PLANS SET FOR EROSION AND SEDIMENT CONTROL NOTES, SEQUENCING AND DETAILS.
2. A CHAPTER 102 "ADEQUACY LETTER" IS REQUIRED FROM THE DELAWARE COUNTY CONSERVATION DISTRICT.

FIRE PROTECTION NOTES:

1. PROPOSED FIRE LANES, SIGNAGE AND MARKINGS ARE SUBJECT TO APPROVAL BY THE TRAINER BOROUGH FIRE MARSHAL.
2. FIRE HYDRANTS SHALL BE LOCATED WITHIN 600' OF PROPOSED BUILDINGS, AS MEASURED ALONG STREETS AND FIRE LANES/LANES AS REQUIRED BY SECTION 811(B)(6)(a) OF THE DELAWARE COUNTY PLANNING DEPARTMENT SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ADOPTED BY TRAINER BOROUGH, SUBJECT TO APPROVAL BY THE BOROUGH FIRE MARSHALL.
3. MINIMUM FLOW OF 1,000 GPM AT 20 PSI RESIDUAL PRESSURE IS REQUIRED FOR FIRE PROTECTION AS REQUIRED FOR COMMERCIAL BUILDINGS BY SECTION 811(B)(5)(b)(C) OF THE DELAWARE COUNTY PLANNING DEPARTMENT SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ADOPTED BY TRAINER BOROUGH, SUBJECT TO CHANGE PER BUILDINGS' FIRE PROTECTION DESIGN INCLUDED IN THE ARCHITECTURAL PLANS APPROVED BY THE BOROUGH FIRE MARSHAL.

AIRPORT DISTRICT OVERLAY NOTES:

1. THIS SITE IS LOCATED WITHIN APPROACH SURFACE ZONE OF PHILADELPHIA INTERNATIONAL AIRPORT PER AIRPORT SURFACE FIGURE INCLUDED AS ATTACHMENT-2 IN THE BOROUGH ZONING ORDINANCE (ZO).
2. AS ILLUSTRATED IN ZO SECTION 265-31.A, A NOTIFICATION IS REQUIRED TO BUREAU OF AVIATION (BOA) BY SUBMITTING PENNDOT FORM AV-57 TO OBTAIN AN OBSTRUCTION REVIEW FOR THE PROPOSED DEVELOPMENT. THE BOA RESPONSE INDICATING DETERMINATION OF NO PENETRATION OF AIR SPACE MUST BE INCLUDED WITH BUILDING PERMIT APPLICATION(S). IF BOA RESPONSE INDICATES DETERMINATION OF A PENETRATION OF AIR SPACE, THE APPLICANT MAY SEEK A VARIANCE IN ACCORDANCE WITH ZO SECTION 265-32, AS APPLICABLE.
3. THE PROPOSED DEVELOPMENT IS SUBJECT TO "USE RESTRICTIONS" CONTAINED IN ZO SECTION 265-33 AND "OBSTRUCTION MARKING AND LIGHTING REQUIREMENTS" OF ZO SECTION 265-35.

UTILITY NOTES:

GENERAL:

1. ALL MATERIALS AND CONSTRUCTION FOR UTILITIES, SANITARY SEWER, WATER AND STORM SEWER SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ENTITY OR AUTHORITY HAVING JURISDICTION.
2. ALL UTILITY LINES INCLUDING, BUT NOT LIMITED TO, ELECTRIC, GAS, LIGHTING, CABLE TELEVISION, AND TELEPHONE, SHALL BE PLACED UNDERGROUND.
3. ALL UTILITIES MUST MAINTAIN AN 18" MINIMUM VERTICAL CLEARANCE. WHERE SAID CLEARANCES CAN NOT BE MET, CONCRETE ENCASEMENT MAY BE USED. IN NO CASE SHALL MINIMUM CLEARANCE BE LESS THAN 6". SEE CONCRETE ENCASEMENT DETAIL.
4. RELATION BETWEEN SANITARY SEWERS AND WATERMAINS:
   A. WHEREVER POSSIBLE, SANITARY SEWERS SHALL BE INSTALLED TO MAINTAIN A 10 FOOT HORIZONTAL AND/OR 24" VERTICAL SEPARATION FROM WATERMAINS. SHOULD LOCATION CONDITIONS PREVENT SEPARATION OF 10', A SEWER MAY BE LAID CLOSER THAN 10' TO A WATER MAIN IF:
      a.) IT IS LAID IN A SEPARATE TRENCH;
      b.) IT IS LAID IN THE SAME TRENCH WITH WATERMAIN LOCATED AT ONE SIDE OF A BENCH OF UNDISTURBED EARTH.
      c.) IN EITHER CASE, THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18" BELOW THE BOTTOM (INVERT) OF THE WATERMAIN.
   B. WHENEVER SEWERS MUST CROSS WATERMAINS OR UTILITIES, A MINIMUM OF 24" OF VERTICAL CLEARANCE SHALL BE MAINTAINED. IF NOT ATTAINABLE, A 6" CONCRETE ENCASEMENT SHALL BE PROVIDED. DUCTILE IRON PIPE SHALL BE UTILIZED AT CROSSINGS WITH CONCRETE ENCASEMENTS. THIS PIPE SHALL BE CONSISTENTLY DUCTILE IRON PIPE BETWEEN THE TWO MANHOLES OF THE AFFECTED AREA.
5. DURING BULK EARTHWORK, ALL FILL WITHIN 10 FEET OF EITHER SIDE OF THE CENTERLINE OF ANY STORM SEWER, SANITARY SEWER, WATER, FIRE PROTECTION, GAS, ELECTRIC LINES, ANY OTHER UTILITY, OR RELATED FITTINGS AND STRUCTURES; AND TO 5 FEET ABOVE PROPOSED INVERT SHALL BE COMPACTED TO A MINIMUM OF 95%-MODIFIED PROCTOR DENSITY.
6. ALL UTILITY WORK IN ROAD RIGHT-OF-WAY SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE UTILITY COMPANY STANDARDS AND THE STANDARDS OF THE AGENCY (PENNDOT OR BOROUGH) HAVING JURISDICTION ON THE SUBJECT ROAD.
7. ALL UTILITY BUILDING CONNECTIONS (GAS, ELECTRIC, CABLE, PHONE, ETC.) SHALL BE PER ARCHITECTURAL PLANS AND APPLICABLE UTILITY COMPANY PLANS. ANY CONNECTIONS SHOWN ON THESE PLANS SHALL BE CONSIDERED APPROXIMATE, AND ARE SUBJECT TO CHANGE PER ARCHITECTURAL PLANS AND THE APPLICABLE UTILITY COMPANY PLANS.
8. GAS/ELECTRIC/CABLE/TELEPHONE SERVICE – ALL SIZES, MATERIALS AND DETAILS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH PLANS PROVIDED BY THE RESPECTIVE UTILITY COMPANIES. ANY SERVICES SHOWN ON THESE PLANS SHALL BE CONSIDERED APPROXIMATE IN NATURE.
9. WHERE WATERMAINS, LATERALS, GAS, ELECTRIC, AND/OR OTHER UTILITY LINES CONFLICT WITH STORM AND GRAVITY SANITARY SEWER LINES. WATERMAINS, LATERALS, GAS, ELECTRIC, AND/OR OTHER UTILITY LINES ARE TO DIP UNDER SAID CONFLICTS USING 45 DEGREE BENDS (MAX).
10. THE MINIMUM DISTANCE BETWEEN THE PLACEMENT OF TREES, LIGHT POLES, ETC. AND UTILITY SERVICE LINES SHALL BE A MINIMUM OF 10 FEET, UNLESS A LESSER DISTANCE IS ALLOWED DUE TO SITE CONSTRAINTS.
11. ALL EXISTING UTILITY LINES TO BE ABANDONED IN PLACE, SHALL BE CAPPED AND/OR PLUGGED IN ACCORDANCE WITH UTILITY COMPANY, OWNER AND BOROUGH REQUIREMENTS.
12. LOCATIONS OF ALL EXISTING AND PROPOSED SERVICES ARE APPROXIMATE AND MUST BE CONFIRMED INDEPENDENTLY WITH LOCAL UTILITY COMPANIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
13. ALL UTILITIES AND SERVICES INCLUDING BUT NOT LIMITED TO GAS, WATER, ELECTRIC, SANITARY AND STORM SEWER, TELEPHONE, CABLE, FIBER OPTIC CABLE, ETC. WITHIN THE LIMITS OF DISTURBANCE SHALL BE VERTICALLY AND HORIZONTALLY LOCATED. THE CONTRACTOR SHALL USE AND COMPLY WITH THE REQUIREMENTS OF THE APPLICABLE UTILITY NOTIFICATION SYSTEM TO LOCATE ALL THE UNDERGROUND UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION AT NO COST TO THE OWNER.
14. THE CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST OSHA STANDARDS AND REGULATIONS, OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE 'MEANS AND METHODS' REQUIRED TO MEET THE INTENT AND PERFORMANCE CRITERIA OF OSHA, AS WELL AS ANY OTHER ENTITY THAT HAS JURISDICTION FOR EXCAVATION AND/OR TRENCHING PROCEDURES.
15. THE TOPS OF EXISTING MANHOLES, INLET STRUCTURES, AND SANITARY CLEANOUT TOPS SHALL BE ADJUSTED, IF REQUIRED TO MATCH PROPOSED GRADES IN ACCORDANCE WITH ALL APPLICABLE STANDARDS.
16. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF SITE PLAN DOCUMENTS AND ARCHITECTURAL DESIGN FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, DOOR ACCESS, AND EXTERIOR GRADING. THE UTILITY SERVICE SIZES ARE TO BE DETERMINED BY THE ARCHITECT. THE CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES AND SERVICES WITH INDIVIDUAL COMPANIES, TO AVOID CONFLICTS AND ENSURE PROPER DEPTHS ARE ACHIEVED. THE JURISDICTION UTILITY REQUIREMENTS SHALL ALSO BE MET, AS WELL AS COORDINATING THE UTILITY TIE-INS/CONNECTIONS PRIOR TO CONNECTION TO THE EXISTING UTILITY/SERVICE. WHERE CONFLICTS EXIST WITH THESE SITE PLANS, OWNER AND ENGINEER ARE TO BE NOTIFIED PRIOR TO CONSTRUCTION TO RESOLVE SAME.
17. WHERE UTILITY PIPES ARE TO BE CONSTRUCTED IN FILL AREAS, ALL FILL LEVELS SHALL BE CARRIED TO AND COMPACTED TO A MINIMUM HEIGHT OF 12" ABOVE THE TOP OF THE PIPES. THE TRENCH SHOULD THEN BE EXCAVATED FOR INSTALLATION OF THE PIPES.

STORM WATER:

1. AN NPDES GENERAL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES IS REQUIRED. THE NPDES PERMIT APPLICATION BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE FOR THE SITE, AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL.
2. REFER TO PROFILES FOR PIPE DATA AND STRUCTURAL ELEVATIONS.
3. ALL STORM SEWER MATERIALS SHALL BE IN ACCORDANCE WITH PENNDOT FORM 408 SPECIFICATIONS, SECTION 601. ALL STORM SEWER PIPE SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE, TYPE 'S', SMOOTH LINED WITH BELL AND SPIGOT GASKET JOINTS UNLESS INDICATED OTHERWISE.
4. ROOF DRAIN-ALL ROOF DRAIN PIPES SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE, TYPE 'S' SMOOTH LINED WITH BELL AND SPIGOT GASKET JOINTS IN ACCORDANCE WITH PENNDOT FORM 408 SPECIFICATIONS, SECTION 601. ALL ROOF DRAINS FOR WHICH DETAILS ARE NOT PROVIDED ON THESE PLANS, SHALL BE MINIMUM 6" HDPE WITH A SLOPE OF MINIMUM 1/4" PER FOOT AND A MINIMUM COVER OF 2 FEET, OR AS SPECIFIED BY THE ARCHITECTURAL PLANS. USE APPROPRIATE HDPE FITTINGS WITH CLEANOUT AT DOWNSPOUT AND DRAIN CONNECTIONS. ANY ROOF DOWNSPOUT LOCATIONS SHOWN ON THESE PLANS ARE APPROXIMATE. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS.
5. ALL ENDWALLS AND FLARED END SECTIONS SHALL HAVE ANTI-INTRUSION GRATES INSTALLED (SEE DETAILS).
6. REFER TO APPLICABLE SHEETS OF THESE PLANS FOR NOTES AND DETAILS PERTAINING TO STORMWATER MANAGEMENT FACILITIES.
7. REFER TO "POST CONSTRUCTION STORMWATER MANAGEMENT PLANS" INCLUDED IN THESE PLANS FOR SCHEDULES AND PROCEDURES FOR INSPECTION AND MAINTENANCE OF STORMWATER MANAGEMENT FACILITIES.
8. ALL PROPOSED STORM SEWER INLETS SHALL HAVE BICYCLE SAFE GRATES.

SANITARY SEWAGE:

1. PADEP SEWAGE FACILITIES PLANNING MODULE EXEMPTION APPROVAL IS REQUIRED.
2. THE SITE IS SERVICED BY A PUBLIC SANITARY SEWER SYSTEM BY THE DELAWARE COUNTY REGIONAL WATER QUALITY CONTROL AUTHORITY (DELCORA).
3. SANITARY SEWER SYSTEM LOCATED ON THE SITE WILL BE OWNED, OPERATED, AND MAINTAINED BY THE PROPERTY OWNER (TRAINER BOROUGH).
4. GRAVITY SANITARY SEWER AND LATERALS: UNLESS INDICATED OTHERWISE, ALL SANITARY SEWER MAINS SHALL BE 8" PVC SDR-35 PIPE AND SHALL HAVE MINIMUM COVER OF 36". REFER TO PROFILES FOR PIPE DATA AND STRUCTURAL ELEVATIONS. ALL SANITARY SEWER LATERALS SHALL BE 4" (MIN.) PVC SDR-26 PIPE, OR SIZES INDICATED ON THE UTILITIES PLAN. LATERALS SHALL HAVE A MINIMUM SLOPE OF ¼" PER FOOT, MAXIMUM SLOPE OF 1" PER FOOT AND MINIMUM COVER OF 48".
5. ALL CONSTRUCTION, INSTALLATION AND AIR TESTING SHALL BE IN ACCORDANCE WITH DELCORA STANDARDS AND SPECIFICATIONS, TRAINER BOROUGH SANITARY SEWER ORDINANCE, AND PADEP DOMESTIC WASTEWATER FACILITIES MANUAL, PART III, SECTION 25, AS APPLICABLE. THEY SHALL SUPERCEDE IN THE CASE OF ANY CONFLICT WITH THESE PLANS.
6. SANITARY LATERAL LOCATIONS SHOWN ARE APPROXIMATE, AND ARE SUBJECT TO CHANGE PER ARCHITECTURAL PLANS OF THE BUILDINGS.
7. WHEN A NEW SANITARY MAIN IS TIED INTO AN EXISTING ACTIVE MANHOLE, THE NEW LINE SHALL BE PLUGGED AND REMAIN PLUGGED UNTIL ALL TESTING HAS BEEN COMPLETED AND APPROVED BY DELCORA.
8. IN ACCORDANCE WITH THE PADEP DOMESTIC WASTEWATER FACILITIES MANUAL, PART 1.b GENERAL INFORMATION, NO PERMIT IS REQUIRED FROM PADEP IF THE FOLLOWING TWO (2) CRITERIA ARE MET:
   A. THE PROPOSED SEWER EXTENSION CAN COLLECT NO MORE THAN THE VOLUME OF SEWAGE FROM TWO HUNDRED FIFTY (250) ADDITIONAL SINGLE FAMILY DWELLING UNITS OR THEIR EQUIVALENT.
   B. THE PROPOSED SEWER MAIN IS NOT TO BE MORE THAN 8" DIAMETER.

   ACCORDINGLY, NO PADEP CONSTRUCTION PERMIT IS REQUIRED FOR THIS PROJECT FOR THE PROPOSED EXTENSION OF SANITARY SEWERS SINCE BOTH OF THE ABOVE CRITERIA HAVE BEEN MET.
9. CONDUCT OF ALL SEWAGE DISCHARGE TO WASTEWATER MANAGEMENT SYSTEM OF DELCORA IS SUBJECT TO DELCORA STANDARDS, RULES, AND REGULATIONS.
10. LOW PRESSURE SANITARY SEWER (LPSS) SHALL BE 2" DR26 SDR-11 PIPE. LPSS SHALL HAVE A MINIMUM 4 FT COVER FROM TOP OF LPSS TO FINAL GRADE.
11. WHEN LPSS CONFLICT WITH STORM SEWERS, WATER MAINS/SERVICE LINES OR ANY OTHER UTILITIES, LPSS TO DIP UNDER SAID CONFLICT USING 45° BENDS MAXIMUM.
12. REFER TO EQUIPMENT MANUFACTURER'S INSTALLATION GUIDES AS APPLICABLE.
13. PRIOR TO DISCHARGING ANY WASTES CONTAINING FATS, OILS OR GREASES INTO THE DELCORA SANITARY SEWER SYSTEM, THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE INSTALLATION OF A DELCORA APPROVED GREASE INTERCEPTOR AND SAMPLING MANHOLE. IF A GREASE INTERCEPTOR IS FOUND APPLICABLE, ITS TYPE AND LOCATION SHALL BE APPROVED BY DELCORA PRIOR TO OBTAINING A BUILDING PERMIT.

WATER:

1. THIS SITE IS SERVICED BY A PUBLIC WATER SUPPLY SYSTEM OWNED BY CHESTER WATER AUTHORITY.
2. WATER AVAILABILITY LETTER DATED APRIL 5, 2019, HAS BEEN PROVIDED BY CHESTER WATER AUTHORITY.
3. WATERMAIN AND SERVICE – ALL SIZES, MATERIALS AND DETAILS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH CHESTER WATER AUTHORITY STANDARDS AND SPECIFICATIONS. THEY SHALL SUPERCEDE IN THE CASE OF ANY CONFLICT WITH THESE PLANS. THE WATER MAIN, VALVES, METERS AND HYDRANTS SHOWN ON THIS PLAN SHALL BE CONSIDERED APPROXIMATE IN NATURE. CONTRACTOR SHALL VERIFY THE LIMITS OF WATER SYSTEM TO BE INSTALLED PRIOR TO CONSTRUCTION. ALL WATER SYSTEM COMPONENTS SHALL BE DISINFECTED, TESTED AND PASS IN ACCORDANCE WITH CHESTER WATER AUTHORITY REQUIREMENTS. MINIMUM COVER OF ALL WATERMAIN AND SERVICES SHALL BE 48".
4. NUMBER OF PROPOSED FIRE HYDRANTS = 1. FIRE HYDRANT LOCATION IS SUBJECT TO APPROVAL BY THE TRAINER BOROUGH FIRE MARSHAL.
5. ALL WATERMAINS SHALL BE EIGHT (8") INCH DUCTILE IRON PIPE (DIP) THICKNESS CLASS 52, DOUBLE CEMENT LINED AND COATED OUTSIDE WITH A BITUMINOUS SEAL COAT MEETING ANSI/AWWA C110/A21.10 AND C111/A21.11 PUSH-ON JOINT TYPE WITH GASKET PER CHESTER WATER AUTHORITY SPECIFICATIONS. FITTINGS SHALL BE CLASS 350#, DUCTILE IRON COMPACT OR FULL BODY MECHANICAL JOINT FITTINGS. WATER SERVICES TO EACH OF THE BUILDINGS (DOMESTIC AND FIRE) SHALL BE SIZED TO MATCH THE ARCHITECTURAL PLANS, AND MEET THE SAME SPECIFICATIONS AS WATERMAINS.
6. WATER DISTRIBUTION SYSTEM LOCATED ON THE SITE WILL BE OWNED, OPERATED, AND MAINTAINED BY THE PROPERTY OWNER. SINCE THE WATER SYSTEM WILL BE CONNECTED TO THE CHESTER WATER AUTHORITY SYSTEM, ALL MATERIALS, CONSTRUCTION AND TESTING SHALL BE IN ACCORDANCE WITH CHESTER WATER AUTHORITY REQUIREMENTS.
7. REFER TO ARCHITECTURAL PLANS BY OTHERS FOR BUILDINGS WATER PIPING, VALVES, METERS, ETC. ANY BUILDING SERVICE SIZES AND LOCATIONS SHOWN ON THESE PLANS SHALL BE CONSIDERED APPROXIMATE ONLY AND ARE SUBJECT TO CHANGE PER ARCHITECTURAL PLANS OF THE BUILDINGS.
8. A MINIMUM PRESSURE OF 30 PSI SHALL BE PROVIDED FOR WATER SUPPLY TO THE PROPOSED BUILDINGS AS REQUIRED FOR COMMERCIAL BUILDINGS BY SECTION 811(B)(5)(b)(1) OF THE DELAWARE COUNTY PLANNING DEPARTMENT SUBDIVISION AND LAND DEVELOPMENT ORDINANCE ADOPTED BY TRAINER BOROUGH, SUBJECT TO CHANGE PER BUILDINGS' WATER SUPPLY SYSTEM DESIGN INCLUDED IN THE ARCHITECTURAL PLANS.

GAS:

1. REFER TO SEPARATE UTILITY PLANS PREPARED BY OTHERS FOR PLANS AND DETAILS OF PROPOSED GAS MAINS, SERVICES, AND APPURTENANCES. THEY SHALL SUPERCEDE IN THE CASE OF ANY CONFLICT WITH THESE PLANS.
2. GAS MAIN EXTENSION AND CONNECTION TO PROPOSED BUILDINGS, SHALL BE PER PECO AND CURRENT INTERNATIONAL BUILDING CODE (IBC) STANDARDS.
3. ALL APPLICABLE LOCAL, STATE AND FEDERAL APPLICATIONS, FEES, APPROVALS, AND PERMITS SHALL BE OBTAINED BY THE APPLICANT PRIOR TO GAS LINE EXTENSION.

ELECTRIC/PHONE/CABLE/INTERNET:

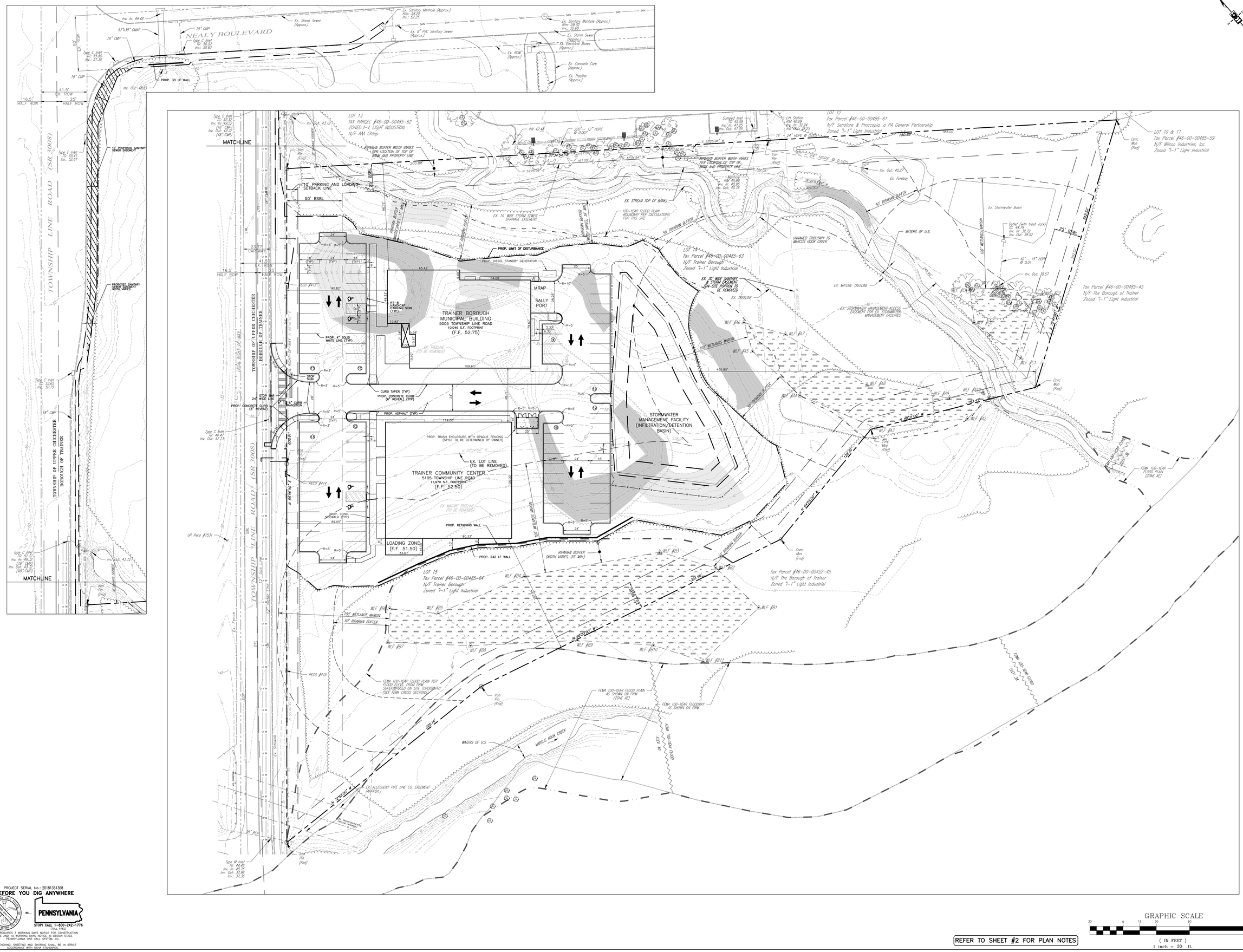
1. REFER TO SEPARATE UTILITY PLANS PREPARED BY OTHERS FOR PLANS AND DETAILS OF PROPOSED ELECTRIC, PHONE, CABLE AND INTERNET SERVICES. THEY SHALL SUPERCEDE IN THE CASE OF ANY CONFLICT WITH THESE PLANS.
2. ELECTRIC, PHONE, CABLE AND INTERNET EXTENSION AND CONNECTION TO PROPOSED BUILDINGS SHALL BE PER APPLICABLE UTILITY COMPANIES AND CURRENT INTERNATIONAL BUILDING CODE (IBC) STANDARDS.
3. ALL APPLICABLE LOCAL, STATE AND FEDERAL APPLICATIONS, FEES, APPROVALS AND PERMITS SHALL BE OBTAINED BY THE APPLICANT PRIOR TO ELECTRIC, PHONE, CABLE AND INTERNET EXTENSIONS.

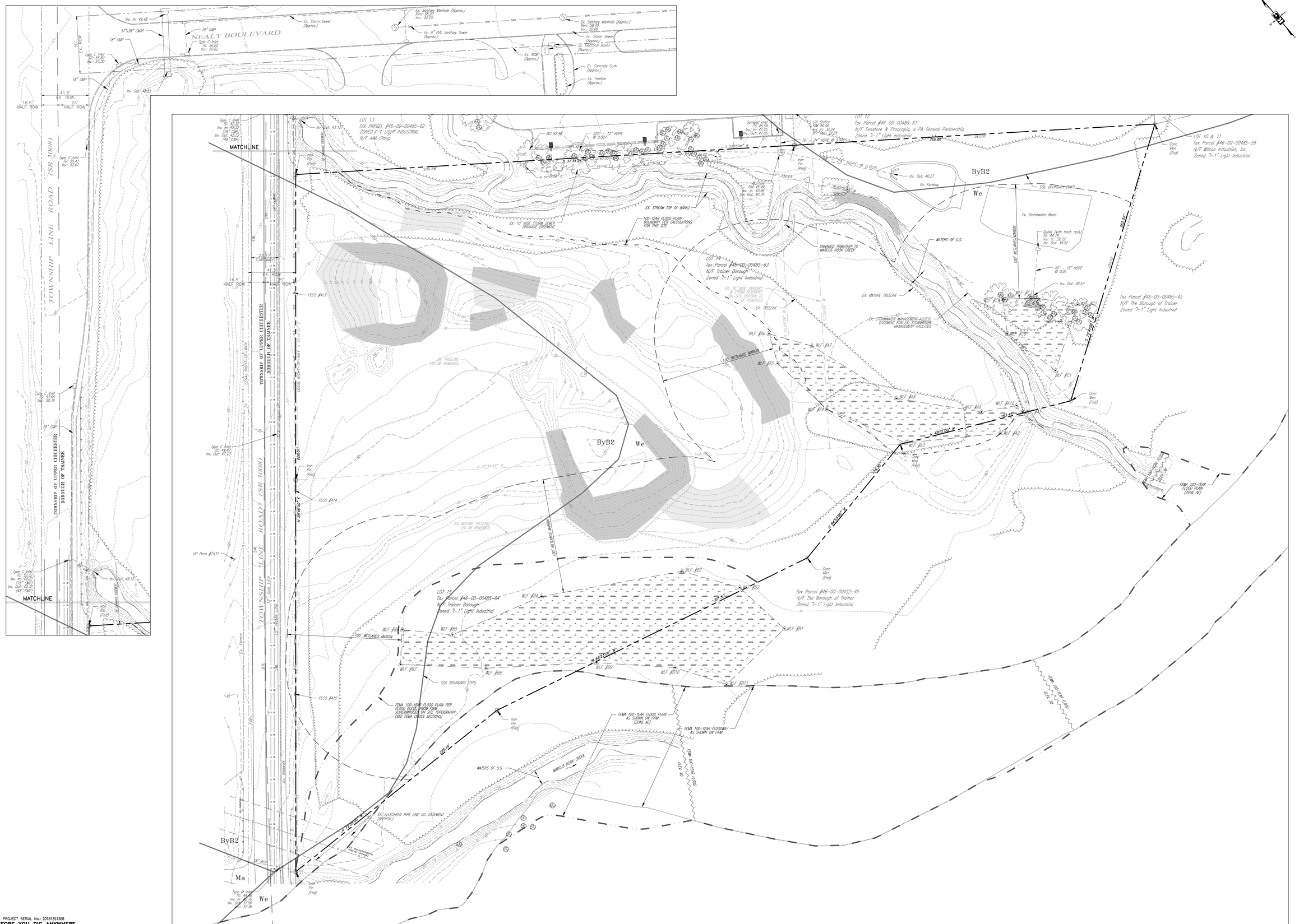
GENERAL NOTES:

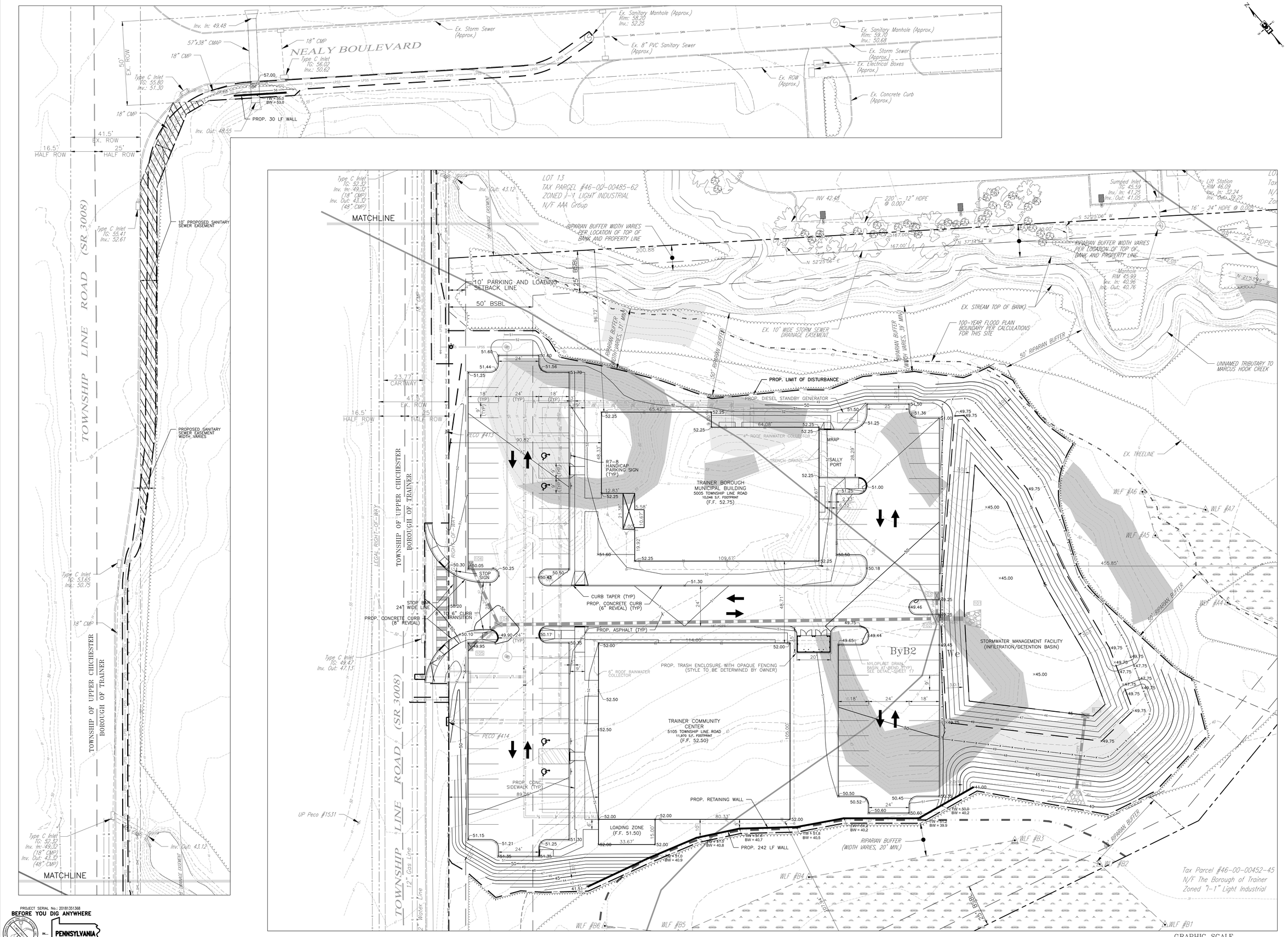
1. THE ZONING OF THIS PROPERTY IS "I-1" INDUSTRIAL DISTRICT. THE PROPOSED USES ARE PERMITTED IN THIS ZONING DISTRICT AS NOTED BELOW.
   - BOROUGH BUILDING: "OFFICE USE" PERMITTED BY ZONING ORDINANCE SECTION 265-25(A)(1)(e).
   - COMMUNITY BUILDING: "OTHER NECESSARY PUBLIC SERVICE USES" PERMITTED BY ZONING ORDINANCE 265-25(A)(1)(k).
2. P.N.D.I. PROJECT ENVIRONMENTAL REVIEW, PROJECT SEARCH ID # PNDI-657080, WAS CONDUCTED ON 5/31/18, WHICH INDICATED NO IMPACTS.
3. WETLANDS AND WATERS SHOWN ON THE PLANS ARE BASED ON THE FIELD INVESTIGATIONS CONDUCTED BY ENVIRONMENTAL MANAGEMENT & CONSULTING, INC., ON 5/22/18, LOCATED ON THE PLANS AS ILLUSTRATED IN SURVEY NOTE #3 INCLUDED ON THIS SHEET. NO DISTURBANCE IS PROPOSED IN WETLANDS OR WATERS.
4. SUBSURFACE SOILS EXPLORATION AND INFILTRATION TESTING FOR DESIGN OF STORMWATER MANAGEMENT FACILITIES IS PERFORMED BY ENVIRONMENTAL MANAGEMENT & CONSULTING, INC. (REFER TO THEIR REPORT DATED FEBRUARY 5, 2019, FOR DETAILS).
5. A PORTION OF THE SITE IS LOCATED WITHIN FEMA 100-YEAR FLOODPLAIN AND FLOODWAY AREAS ASSOCIATED WITH MARCUS HOOK CREEK, AS ILLUSTRATED IN SURVEY NOTE #6. NO FILL OR DISTURBANCE IS PROPOSED IN THESE FLOODPLAIN AND FLOODWAY AREAS. THERE ARE NO FEMA FLOODPLAIN OR FLOODWAY AREAS ASSOCIATED WITH THE UNNAMED TRIBUTARY OF MARCUS HOOK CREEK LOCATED ON THE SITE. 100-YEAR FLOODPLAIN AREA HAS BEEN SHOWN FOR THIS TRIBUTARY BASED ON 50 FT SETBACK FROM TOP OF BANKS IN ACCORDANCE WITH PADEP STANDARDS FOR NON-CALCULATED FLOODPLANS. THE MINOR FILL OR DISTURBANCE PROPOSED ALONG BOUNDARY OF THIS FLOODPLAIN AREA IS NOT ANTICIPATED TO CAUSE ANY INCREASE IN THE FLOOD ELEVATIONS.
6. SOIL BOUNDARIES, CLASSIFICATIONS AND CHARACTERISTICS INCLUDED IN THESE PLANS ARE ACCORDING TO THE UNITED STATES DEPARTMENT OF AGRICULTURE'S WEB SOIL SURVEY. REFER TO "EROSION AND SEDIMENT CONTROL NOTES" SHEET INCLUDED IN THESE PLANS FOR SOILS INFORMATION.
7. ALL BUILDINGS AND STRUCTURES AND ACTIVITIES IN SUCH BUILDINGS MUST CONFORM TO ALL APPLICABLE BUILDING CODES, FIRE PREVENTION CODES, AND BOROUGH ORDINANCES.
8. NO PHASING OF SITE WORK IS PROPOSED. THE CONTRACTOR RESERVES THE RIGHT TO PHASE CONSTRUCTION WITH THE CONSENT OF THE BOROUGH, THE BOROUGH ENGINEER, AND THE DELAWARE COUNTY CONSERVATION DISTRICT.
9. OWNER OR ITS NOMINEE IS RESPONSIBLE FOR THE CONSTRUCTION AND MAINTENANCE OF ALL IMPROVEMENTS SHOWN ON THESE PLANS, INCLUDING STORMWATER MANAGEMENT FACILITIES, UNLESS NOTED OTHERWISE.
10. A BLANKET EASEMENT IS ESTABLISHED THROUGHOUT THE SITE TO PROVIDE ANY JURISDICTIONAL AUTHORITY PERSONNEL ACCESS FROM ADJACENT PUBLIC ROADS TO AND AROUND ALL STORM SEWER, COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES (STORM SEWER SYSTEMS, STORMWATER MANAGEMENT BMPs, OUTFALL STRUCTURES, ETC.),

CONSTRUCTION NOTES:

1. **ALL MATERIALS AND CONSTRUCTION SHALL BE IN ACCORDANCE WITH TRAINER BOROUGH STANDARDS AND PENNDOT SPECIFICATIONS "PUBLICATION FORM 408 SPECIFICATIONS."**
2. IT IS BROUGHT TO THE CONTRACTOR'S ATTENTION THAT THE OWNER MAY HAVE PREPARED OTHER SPECIFIC RESOURCES, TECHNICAL REPORTS, DESIGN DOCUMENTS, ET. AL. RELATED TO THIS PROJECT, INCLUDING BUT NOT LIMITED TO: SURVEYS, GEOTECHNICAL REPORTS, ENVIRONMENTAL REPORTS AND/OR WETLANDS REPORTS. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THESE DOCUMENTS FROM THE OWNER AND ADHERING TO THE REQUIREMENTS, SPECIFICATIONS, ETC. CONTAINED IN THESE DOCUMENTS. CONTRACTOR SHALL BRING TO THE ATTENTION OF THE OWNER AND ENGINEER ANY CONFLICTS BETWEEN THESE DOCUMENTS AND THE PLANS FOR REVIEW AND RESOLUTION.
3. THE CONTRACTOR SHALL BE FAMILIAR WITH AND RESPONSIBLE FOR ANY/ALL CERTIFICATIONS, INSPECTIONS, ETC. REQUIRED BY ALL GOVERNING JURISDICTIONAL AGENCIES DURING AND AFTER CONSTRUCTION FOR SIGN-OFF AND CERTIFICATE OF OCCUPANCY ISSUANCE, INCLUDING BUT NOT LIMITED TO PROCUREMENT OF SERVICES, SCHEDULING OF FIELD OBSERVATIONS AND COORDINATION WITH REPRESENTATIVES OF THE APPROPRIATE PARTIES.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE REGULATIONS AND STANDARDS OF THE APPLICABLE GOVERNING AUTHORITY.
5. THE GEOTECHNICAL REPORT AND RECOMMENDATIONS SET FORTH THEREIN FOR BUILDING CONSTRUCTION AND STRUCTURAL FILLS (TO BE PREPARED BY OTHERS) ARE A PART OF THE REQUIRED CONSTRUCTION DOCUMEN


MATCHLINE
TOWNSHIP LINE ROAD (SR 3008)
TOWNSHIP OF UPPER CHICHESTER
BOROUGH OF TRAINER
NEALY BOULEVARD
PROP. 30 LF WALL
PROP. 10' PROPOSED SANITARY SEWER EASEMENT
PROPOSED SANITARY SEWER EASEMENT WIDTH, VARIES
LOT 13
TAX PARCEL #46-00-00485-62
ZONED I-1 LIGHT INDUSTRIAL
N/F AAA Group
LOT 12
Tax Parcel #46-00-00485-61
N/F Senatore & Proccopio, a PA General Partnership
Zoned I-1 Light Industrial
LOT 10 & 11
Tax Parcel #46-00-00485-59
N/F Wilson Industries, Inc.
Zoned I-1 Light Industrial
LOT 14
Tax Parcel #46-00-00485-63
N/F Trainer Borough
Zoned I-1 Light Industrial
LOT 15
Tax Parcel #46-00-00485-64
N/F Trainer Borough
Zoned I-1 Light Industrial
Tax Parcel #46-00-00485-45
N/F The Borough of Trainer
Zoned I-1 Light Industrial
Tax Parcel #46-00-00452-45
N/F The Borough of Trainer
Zoned I-1 Light Industrial
TRAINER BOROUGH MUNICIPAL BUILDING
5005 TOWNSHIP LINE ROAD
10,046 S.F. FOOTPRINT
(F.F. 52.75)
TRAINER COMMUNITY CENTER
5105 TOWNSHIP LINE ROAD
11,970 S.F. FOOTPRINT
(F.F. 52.50)
MRAP SALLY PORT
STORMWATER MANAGEMENT FACILITY (INFILTRATION/DETENTION BASIN)
LOADING ZONE (F.F. 51.50)
10' PARKING AND LOADING SETBACK LINE
50' BSBL
25' BSBL
PROP. LIMIT OF DISTURBANCE
PROP. DIESEL STANDBY GENERATOR
EX. 30' WIDE SANITARY & STORM EASEMENT (ON-SITE PORTION TO BE REMOVED)
EX. 10' WIDE STORM SEWER DRAINAGE EASEMENT
EX. STREAM TOP OF BANK
100-YEAR FLOOD PLAIN BOUNDARY PER CALCULATIONS FOR THIS SITE
RIPARIAN BUFFER WIDTH VARIES PER LOCATION OF TOP OF BANK AND PROPERTY LINE
50' RIPARIAN BUFFER
100' WETLANDS MARGIN
WATERS OF U.S.
UNNAMED TRIBUTARY TO MARCUS HOOK CREEK
MARCUS HOOK CREEK
EX. MATURE TREELINE
EX. STORMWATER MANAGEMENT/ACCESS EASEMENT FOR EX. STORMWATER MANAGEMENT FACILITIES
EX. LOT LINE (TO BE REMOVED)
PROP. 4" SOLID WHITE LINE (TYP)
PROP. CONCRETE CURB (6" REVEAL) (TYP)
PROP. ASPHALT (TYP)
PROP. TRASH ENCLOSURE, WITH OPAQUE FENCING (STYLE TO BE DETERMINED BY OWNER)
PROP. CONC. SIDEWALK (TYP)
PROP. RETAINING WALL
PROP. 242 LF WALL
CURB TAPER (TYP)
STOP BAR 24" WIDE LINE
STOP SIGN
87-8 HANDICAP PARKING SIGN (TYP.)
FEMA 100-YEAR FLOOD PLAIN PER FLOOD RATES, FIRM FIRM SUPERIMPOSED ON SITE TOPOGRAPHY (SEE FEMA CROSS SECTIONS)
FEMA 100-YEAR FLOOD PLAIN AS SHOWN ON FIRM (ZONE AE)
FEMA 100-YEAR FLOODWAY AS SHOWN ON FIRM
FEMA 100-YEAR FLOOD PLAIN (ZONE AE)
EX. ALLEGHENY PIPE LINE CO. EASEMENT (APPROX.)
RIPARIAN BUFFER (WIDTH VARIES, 20' MIN.)
WLF #1 – WLF #11
PECO #414
PECO #415
UP Peco #1531
Ex. Fence
Ex. Sidewalk
Ex. Storm Sewer (Approx.)
Ex. Sanitary Manhole (Approx.)
Ex. 8" PVC Sanitary Sewer
Ex. Electrical Boxes (Approx.)
Ex. ROW (Approx.)
Ex. Concrete Curb (Approx.)
Ex. Treeline (Approx.)
Ex. Stormwater Basin
Outlet (with trash rack) Inv. In: 44.79 Inv. In: 39.22 Inv. Out: 39.52
Inv. Out: 38.57
Inv. Out: 40.27
Ex. Foreboy
Sumped Inlet Inv. In: 40.53 Inv. In: 41.03 Inv. Out: 41.05
LH Station MH #2 Inv. In: 39.24 Inv. Out: 39.25
Manhole RIM: 45.99 Inv. In: 40.96 Inv. Out: 40.76
Type C Inlet Inv. In: 49.48
Type C Inlet Inv. In: 49.10 (18" CMP) Inv. Out: 43.10 (48" CMP)
Type C Inlet Inv. In: 49.32 (18" CMP) Inv. Out: 43.32 (48" CMP)
Type C Inlet Inv. In: 49.67 Inv. Out: 47.13
Type M Inlet Inv. In: 45.76 Inv. Out: 37.96 Inv: 37.56
Type C Inlet Inv. In: 55.80 Inv. In: 51.30
Type C Inlet Inv. In: 56.02 Inv.: 50.62
Type C Inlet Inv. In: 55.61 Inv.: 52.61
Type C Inlet Inv. In: 55.61 Inv.: 50.75
Type C Inlet Inv. In: 55.50 Inv.: 52.10 (18" CMP) Inv. Out: 43.10 (48" CMP)
57"x38" CMP
18" CMP
Inv. In: 49.48
Inv. Out: 48.55
Inv. Out: 43.13
Inv. Out: 43.12
Inv. Out: 47.13
Inv. Out: 43.13
INV 42.66
220' @ 0.007 12" HDPE
167.00'
N 37°34'54" W
S 37°34'54" E
S 52°25'06" W
N 52°25'06" E
16" 24" HDPE @ 1.00%
HDPE @ 9.00%
40" – 15" HDPE @ 0.01
750.88'
583.00'
252.62'
455.85'
154.44'
N 49°31'00" E
S 49°31'00" W
N 55°46'47" E
S 55°46'47" W
N 37°30'01" W
S 37°30'01" E
N 52°30'01" W
S 52°30'01" E
N 37°29'37" W
S 37°29'37" E
N 52°29'37" W
S 52°29'37" E


NEALY BOULEVARD
TOWNSHIP LINE ROAD (SR 3008)
TOWNSHIP OF UPPER CHICHESTER
BOROUGH OF TRAINER
MATCHLINE
LOT 13
TAX PARCEL #46-09-00485-62
ZONED I-A LIGHT INDUSTRIAL
N/F AAA Group
LOT 12
Tax Parcel #46-00-00485-61
N/F Senatore & Proccopio, a PA General Partnership
Zoned 7-1" Light Industrial
LOT 10 & 11
Tax Parcel #46-00-00485-59
N/F Wilson Industries, Inc.
Zoned 7-1" Light Industrial
LOT 14
Tax Parcel #46-00-00485-63
N/F Trainer Borough
Zoned 7-1" Light Industrial
LOT 15
Tax Parcel #46-00-00485-64
N/F Trainer Borough
Zoned 7-1" Light Industrial
Tax Parcel #46-00-00485-45
N/F The Borough of Trainer
Zoned 7-1" Light Industrial
Tax Parcel #46-00-00452-45
N/F The Borough of Trainer
Zoned 7-1" Light Industrial
EX. STREAM TOP OF BANK
100-YEAR FLOOD PLAIN BOUNDARY PER CALCULATIONS FOR THIS SITE
EX. 10' WIDE STORM SEWER DRAINAGE EASEMENT
EX. 30' WIDE SANITARY & STORM EASEMENT (NOT FOR VERIFICATION TO BE REMOVED)
EX. TREELINE
EX. MATURE TREELINE
EX. STORMWATER MANAGEMENT-ACCESS EASEMENT FOR EX. STORMWATER MANAGEMENT FACILITIES
UNNAMED TRIBUTARY TO MARCUS HOOK CREEK
WATERS OF U.S.
100' WETLANDS MARGIN
SOIL BOUNDARY (TYP)
Ex. Stormwater Basin
Ex. Foreboy
Outlet (with trash rack) Inv. In: 44.72 Inv. Out: 39.72
40" - 15" HDPE @ 0.01
22" - 12" HDPE @ 0.007
30" HDPE @ 0.005
16" - 24" HDPE @ 0.01
Sumped Inlet Inv. In: 40.59 Inv. Out: 41.05
Lift Station RIM 46.00 Inv. In: 39.24 Inv. Out: 39.25
Manhole RIM 45.99 Inv. In: 40.96 Inv. Out: 40.76
Inv. Out: 43.55
Inv. Out: 43.13
Inv. Out: 40.27
Inv. Out: 38.57
Inv. Out: 43.12
Inv. Out: 47.13
Inv. Out: 49.55
Inv. In: 49.48
Inv. In: 49.10
Inv. Out: 43.10
Inv. Out: 43.10
Inv. Out: 50.62
Inv. Out: 52.61
Inv. Out: 50.75
Inv. In: 55.80
Inv. Out: 51.30
Inv. In: 55.10
Inv. In: 55.61
Inv. Out: 55.61
Inv. In: 49.42
Inv. Out: 47.13
Inv. In: 49.10
Inv. Out: 43.10
Inv. In: 49.32
Inv. Out: 43.10
Inv. In: 44.76
Inv. Out: 37.56
Inv. In: 44.76
Inv. Out: 37.56
Ex. Sanitary Manhole (Approx.) Rim: 58.20 Inv.: 52.25
Ex. Sanitary Manhole (Approx.) Rim: 59.70 Inv.: 53.65
Ex. 8" PVC Sanitary Sewer (Approx.)
Ex. Storm Sewer (Approx.)
Ex. Electrical Boxes (Approx.)
Ex. ROW (Approx.)
Ex. Concrete Curb (Approx.)
Ex. Treeline (Approx.)
Ex. Fence
Ex. Sidewalk
Ex. Guiderail
Ex. Utility Pole
Ex. Telephone Pole
Ex. Overhead Utility Lines
Ex. Underground Telephone Line
Ex. Underground Electric Line
Ex. Underground Gas Line
Ex. Underground Water Line
Ex. Underground Storm Sewer
Ex. Underground Sanitary Sewer
Ex. Underground Cable Line
Ex. Underground Fiber Optic Line
Ex. Underground Communication



REFER TO SHEET #2 FOR PLAN NOTES

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PROJECT SERIAL No.: 20181351368
BEFORE YOU DIG ANYWHERE
IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776 (TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE
PENNSYLVANIA ONE CALL SYSTEM, Inc.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS

CERTIFICATE OF DESIGN
I HEREBY CERTIFY THAT THE DESIGN SHOWN ON THESE PLANS IS IN COMPLIANCE WITH THE APPLICABLE REGULATIONS CONTAINED IN THE ZONING ORDINANCE OF THE BOROUGH OF TRAINER AND THAT I AM A REGISTERED PROFESSIONAL ENGINEER IN THE COMMONWEALTH OF PENNSYLVANIA.
COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL — JAMES C. KELLY — PE045481
DATE: 8/15/19

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1 West Baltimore Pike, Suite 100
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	O.A.
3	7/29/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	O.A.
2	7/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASE/NPDES SUBMISSION	O.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASE/NPDES SUBMISSION	O.A.

date: FEBRUARY 27, 2019
scale: 1" = 20'
drawn by: N.D.K. / K.L.F.
checked by: O.A.
dwg. name: F-Grade.dwg
project no.: 2018-006

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
GRADING PLAN

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SHEET 5 of 20

NEALY BOULEVARD

TOWNSHIP LINE ROAD (SR 3008)

TOWNSHIP OF UPPER CHICHESTER
BOROUGH OF TRAINER

MATCHLINE

Inv. In: 49.48
57"x38" CMAP
18" CMP
Type C Inlet
TC: 56.02
Inv.: 50.62
Type C Inlet
TC: 55.80
Inv.: 51.30
AIR RELIEF VALVE
57.00
LPSS
IW = 56.0
BW = 53.0
PROP. 30 LF WALL
Inv. Out: 48.55
Ex. Storm Sewer (Approx.)
788 LF
1.25" HDPE LPSS MAIN
Ex. Sanitary Manhole (Approx.)
Rim: 58.20
Inv.: 52.25
Inv.: 53.70 (PROP. 1.25" HDPE LPSS)
Ex. 8" PVC Sanitary Sewer (Approx.)
Ex. Sanitary Manhole (Approx.)
Rim: 59.70
Inv.: 50.68
Ex. Storm Sewer (Approx.)
Ex. Electrical Boxes (Approx.)
Ex. ROW (Approx.)
Ex. Concrete Curb (Approx.)
Ex. Treeline (Approx.)
50' EX. ROW
41.5' EX. ROW
16.5' HALF ROW
25' HALF ROW
10' PROPOSED SANITARY SEWER EASEMENT
PROPOSED SANITARY SEWER EASEMENT WIDTH VARIES
788 LF
1.25" HDPE LPSS
Type C Inlet
TC: 55.41
Inv.: 52.61
Type C Inlet
TC: 53.65
Inv.: 50.75
18" CMP
Type C Inlet
TC: 52.32
Inv. In: 49.32
(18" CMP)
Inv. Out: 43.32
(48" CMP)
Inv. Out: 43.12
MATCHLINE

LOT 13
TAX PARCEL #46-00-00485-62
ZONED I-1 LIGHT INDUSTRIAL
N/F AAA Group

Type C Inlet
TC: 52.32
Inv. In: 49.32
(18" CMP)
Inv. Out: 43.32
(48" CMP)
Inv. Out: 43.12
MATCHLINE
RIPARIAN BUFFER WIDTH VARIES PER LOCATION OF TOP OF BANK AND PROPERTY LINE
200.88'
10' PARKING AND LOADING SETBACK LINE
50' BSBL
25' BSBL
SHUTOFF VALVE
PROP. "E/ONE" PUMP STATION
1.25"x1.25"x1.25" TEE
END LINE FLUSHING STATION
8+00
35 LF 1.25" HDPE LPSS
23.77' CARTWAY
41.5' EX. ROW
16.5' HALF ROW
25' HALF ROW
18' (TYP)
24' (TYP)
2.5" W
8" FS
9' (TYP)
ELCO #413
8"x8"x4" WYE
4" 45° BEND
184 LF 8" PVC SAN. SEWER @ 2% SLOPE
R7-8 HANDICAP PARKING SIGN (TYP)
12.83'
5.58'
21.38'
10.67'
19.92'
90.92'
48.33'
TOWNSHIP OF UPPER CHICHESTER
BOROUGH OF TRAINER
LEGAL RIGHT-OF-WAY
STOP SIGN
STOP BAR 24" WIDE LINE
6" TO 6" CURB TRANSITION
PROP. CONCRETE CURB (8" REVEAL)
EX. 12" WATER MAIN
SHUTOFF VALVE*
12"x12"x8" TAPPING TEE*
8" W
60.68'
REFER TO CWA DRAWINGS FOR DETAILS
METER PIT*
3"x2.5" REDUCER
WATER VALVE (TYP.)
8" FS
8"x8"x8" TEE
3" W
3"x3"x3" TEE
3"x2" REDUCER
8"x6" REDUCER
PECO #414
N 55°46'49" E
50'
PROP. CONC. SIDEWALK (TYP.)
89.35'
6" FS
2" W
TOWNSHIP LINE ROAD (SR 3008)
12" Gas Line
2" Water Line
UP Peco #1531
Type C Inlet
TC: 52.32
Inv. In: 49.32
(18" CMP)
Inv. Out: 43.32
(48" CMP)
Inv. Out: 43.12
MATCHLINE
Type C Inlet
TC: 49.47
Inv. Out: 47.13
Type C Inlet
TC: 55.41
Inv.: 52.61
18" CMP
10' DRAINAGE EASEMENT
Inv. Out: 43.12
INV. 42.48
220' - 12" HDPE @ 0.007
Sumped Inlet
TC: 45.59
Inv. In: 41.25
Inv. Out: 41.05
Lift Station
RIM 46.09
Inv. In: 37.24
Inv. Out: 39.25
16' - 24" HDPE @ 0.00%
24" HDPE
S 52°25'06" W
40.00'
S 37°34'54" E
167.00'
N 37°34'54" W
167.00'
N 52°25'06" E
RIPARIAN BUFFER WIDTH VARIES PER LOCATION OF TOP OF BANK AND PROPERTY LINE
145.05'
Manhole
RIM 45.99
Inv. In: 40.96
Inv. Out: 40.76
N 21°53'39" W
EX. STREAM TOP OF BANK)
EX. 10' WIDE STORM SEWER DRAINAGE EASEMENT
100-YEAR FLOOD PLAIN BOUNDARY PER CALCULATIONS FOR THIS SITE
50' RIPARIAN BUFFER
RIPARIAN BUFFER WIDTH VARIES, 38' MIN.
50' RIPARIAN BUFFER
UNNAMED TRIBUTARY TO MARCUS HOOK CREEK
PROP. LIMIT OF DISTURBANCE
PROP. DIESEL STANDBY GENERATOR
4" PVC SAN. SEWER LATERAL @ MIN. 2% SLOPE & 3' COVER
Inv. (U/S): 48.75
Inv. (D/S): 44.25
4" ROOF RAINWATER COLLECTOR
2.5" WATER SERVICE TO BLDG.
8" FIRE SERVICE TO BLDG.
64.08'
MRAP
SALLY PORT
TRENCH DRAINS
28.29'
TRAINER BOROUGH MUNICIPAL BUILDING
5005 TOWNSHIP LINE ROAD
10,046 S.F. FOOTPRINT
(F.F. 52.75)
79.67'
2.33'
6.33'
109.67'
CURB TAPER (TYP)
PROP. CONCRETE CURB (6" REVEAL) (TYP)
PROP. ASPHALT (TYP)
18" HDPE
114.00'
4" PVC SAN. SEWER LATERAL @ MIN. 2% SLOPE & 3' COVER
Inv. (U/S): 49.50
Inv. (D/S): 45.26
6" ROOF RAINWATER COLLECTOR
PROP. TRASH ENCLOSURE WITH OPAQUE FENCING (STYLE TO BE DETERMINED BY OWNER)
TRAINER COMMUNITY CENTER
5105 TOWNSHIP LINE ROAD
11,970 S.F. FOOTPRINT
(F.F. 52.50)
105.00'
U.G. ELECTRIC SERVICE TO BLDG. (TYP)
U.G. TELEPHONE/CABLE SERVICE TO BLDG. (TYP)
U.G. GAS SERVICE TO BLDG. (TYP)
6" FIRE SERVICE TO BLDG.
2" WATER SERVICE TO BLDG.
PROP. RETAINING WALL
80.33'
LOADING ZONE
(F.F. 51.50)
15.00'
33.67'
PROP. 242 LF WALL
RIPARIAN BUFFER (WIDTH VARIES, 20' MIN.)
STORMWATER MANAGEMENT FACILITY (INFILTRATION/DETENTION BASIN)
NYLOPLAST DRAIN BASIN AT BEND (TYP) SEE DETAIL, SHEET 17
455.85'
50' RIPARIAN BUFFER
N 84°53'02" W
301.50'
RIPARIAN BUFFER
LOT 14
Tax Parcel #46-00-00485-63
N/F Trainer Borough
Zoned "I-1" Light Industrial
LOT 15
Tax Parcel #46-00-00485-64
N/F Trainer Borough
Zoned "I-1" Light Industrial
Tax Parcel #46-00-00452-45
N/F The Borough of Trainer
Zoned "I-1" Light Industrial

REFER TO SHEET #2 FOR PLAN NOTES

GRAPHIC SCALE
20 0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

PROJECT SERIAL No.: 20181351368
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IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776
(TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION
PHASE, NOT INCLUDING DAY OF NOTICE OR DAY OF START.
PENNSYLVANIA ONE CALL SYSTEM, INC.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

DOCUMENT PREPARED BY OR UNDER THE SUPERVISION OF:
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JAMES C. KELLY
PE044851
JAMES C. KELLY, P.E.

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1 West Baltimore Pike, Suite 100
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

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date: FEBRUARY 27, 2019
scale: 1" = 20'
drawn by: N.D.K. / K.L.F.
checked by: O.A.
dwg. name: F-UTIL.dwg
project no.: 2018-006

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
UTILITY PLAN

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

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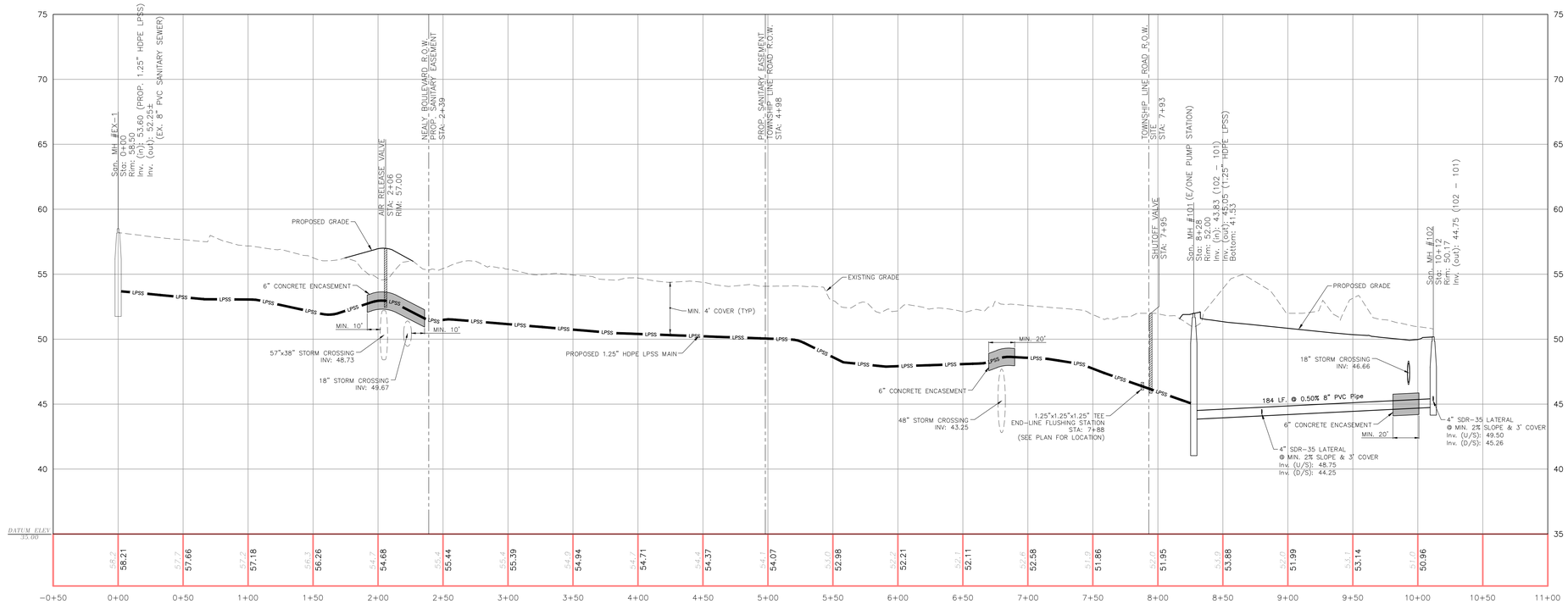
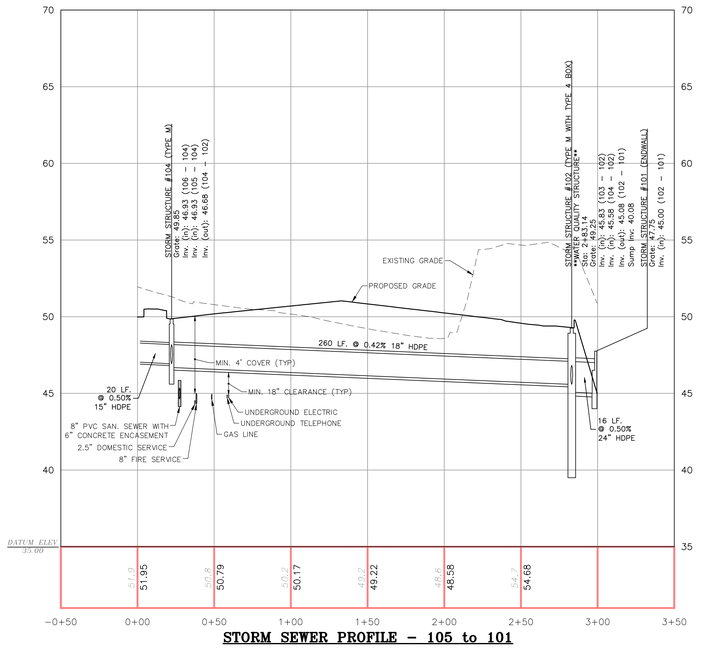
SHEET 6 of 20

SUBMITTALS APPROVAL NOTE:
CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.

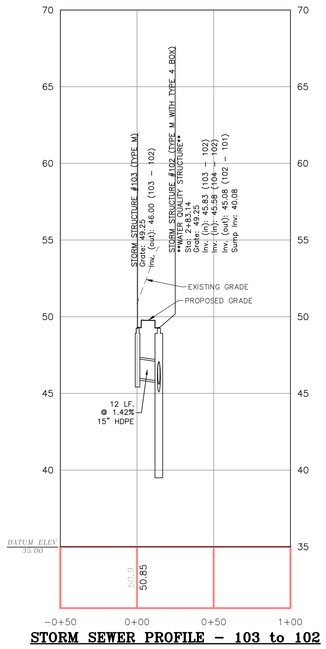


SANITARY SEWER PROFILE
(Sta. −0+50 to 11+00)
Scale:
1" = 20' Horizontal; 1" = 2' Vertical

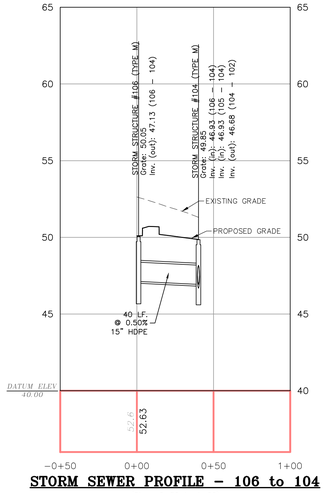
NOTES:
1. REFER TO EQUIPMENT MANUFACTURER INSTALLATION GUIDE.
2. FOR TRENCHING SEE TYPICAL DETAIL.
3. ALL ELECTRICAL WORK MUST BE INSPECTED AND CERTIFIED IN ACCORDANCE WITH THE TRAINER BOROUGH BUILDING CODE.
4. CONTRACTOR INSTALLING PUMP STATION AND LATERAL SHALL TIE CONTINUOUS LATERAL INTO COMPRESSION FITTING ON VALVE ASSEMBLY.



STORM SEWER PROFILE – 105 to 101
(Sta. −0+50 to 3+50)
Scale:
1" = 20' Horizontal; 1" = 2' Vertical



STORM SEWER PROFILE – 103 to 102
(Sta. −0+50 to 1+00)
Scale:
1" = 20' Horizontal; 1" = 2' Vertical



STORM SEWER PROFILE – 106 to 104
(Sta. −0+50 to 1+00)
Scale:
1" = 20' Horizontal; 1" = 2' Vertical

REFER TO SHEET #2 FOR PLAN NOTES

PROFESSIONAL ENGINEER'S SEAL & SIGNATURE
COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL ENGINEER
JAMES C. KELLY
PE044481

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
One Wilmington West Corp. Ctr.
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV'I	DATE	DESCRIPTION	BY
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3	7/29/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS PER BOROUGH REVIEW COMMENTS & DCED E&S/NPDES RESUBMISSION	O.A.
2	4/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&S/NPDES SUBMISSION	O.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&S/NPDES SUBMISSION	O.A.

date: FEBRUARY 27, 2019
scale: 1" = 40'
drawn by: N.D.K. / K.L.F.
checked by: O.A.
dwg. name: F-Prof.dwg
project no.: 2018-009

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
PROFILES

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SHEET 7 of 20

20 0 10 20 40

GRAPHIC SCALE
1 inch = 20 feet

DELAWARE COUNTY SUBDIVISION AND LAND DEVELOPMENT REQUIREMENTS ZONING DISTRICT : I-1 (LIGHT INDUSTRIAL DISTRICT) CODE LANGUAGE	REQUIRED	PROPOSED
817-1. (C) STREET REQUIREMENTS		
C. SHADE TREES SHALL BE PROVIDED ALONG ALL STREETS WHERE THERE ARE NO EXISTING STREET TREES. NO LESS THAN ONE 3" CAL. DECIDUOUS TREE SHALL BE PLANTED FOR EACH 30 LF OF STREET LENGTH.		
TOWNSHIP LINE RD: 355 LF / 30 LF = 11.8 STREET TREES	12 STREET TREES	12 STREET TREES
871-1. (D) LANDSCAPING OF PARKING AND LOADING AREA		
3) c. EACH PARKING LOT SHALL HAVE ONE 3" MIN. CAL. SHADE TREE FOR EVERY 5 PARKING SPACES.		
PARKING SPACES: 88 SPACES / 5 SPACES = 17.6 TREES	*17.6 SHADE TREES*	*18 SHADE TREES*
871-1. (E) BUILDING PERIMETER PLANTING		
2) ONE 3" - 3½" CAL. DECIDUOUS TREE PER 100 LF OF BLDG PERIMETER. IN ADDITION, TWO 8' - 10' H. FLOWERING TREES OR EVERGREEN TREES MUST BE PROVIDED PER 100 LF OF BLDG PERIMETER.		
BLDG ONE PERIMETER: 438 LF / 100 LF = 4.38 DECIDUOUS TREES	4 DECIDUOUS TREES	4 DECIDUOUS TREES
8.76 FLOWERING OR EVERGREEN TREES	9 FLOWERING/ EVERGREEN TREES	9 EVERGREEN TREES
BLDG TWO PERIMETER: 425 LF / 100 LF = 4.25 DECIDUOUS TREES	4 DECIDUOUS TREES	4 DECIDUOUS
8.50 FLOWERING OR EVERGREEN TREES	9 FLOWERING/ EVERGREEN TREES	9 EVERGREEN TREES
3) THREE EVERGREEN AND/OR DECIDUOUS SHRUBS SHALL BE PLANTED PER 20 LF OF BUILDING PERIMETER.		
BLDG ONE PERIMETER: 438 LF / 20 LF = 21.9 SHRUBS BLDG TWO PERIMETER: 425 LF / 20 LF = 21.25 SHRUBS	22 SHRUBS 21 SHRUBS	33 SHRUBS 21 SHRUBS

PLANT SCHEDULE

Quantity	Symbol	Scientific Name	Common Name	Size
871-1. STREET REQUIREMENTS				
TREES				
10		*ACER GINNALA*	AMUR MAPLE	3" - 3½" CAL., SPACING AS SHOWN
2		*HALESIA CAROLINA*	CAROLINA SILVERBELL	3" - 3½" CAL., SPACING AS SHOWN
871-1. PARKING REQUIREMENTS				
TREES				
10		*CELTIS OCCIDENTALIS*	HACKBERRY	3" - 3½" CAL., SPACING AS SHOWN
8		*PLATANUS X ACERIFOLIA*	LONDON PLANE TREE	3" - 3½" CAL., SPACING AS SHOWN
871-1. BUILDING PERIMETER REQUIREMENTS				
TREES				
8		*GINKGO BILOBA 'PRINCETON SENTRY'*	'PRINCETON SENTRY' GINKGO	3" - 3½" CAL., SPACING AS SHOWN
10		*PICEA OMORIKA*	SERBIAN SPRUCE	6-8' HT., SPACING AS SHOWN
8		*CRYPTOMERIA JAPONICA 'RADICANS'*	'RADICANS' JAPANESE CEDAR	6-8' HT., SPACING AS SHOWN
28		*JUNIPERUS SQUAMATA EXPANSA 'PARSONII'*	PARSON'S JUNIPER	12-18" HT., 30-36" SPACING.
15		*ILEX CRENATA 'SKY PENCIL'*	'SKY PENCIL' JAPANESE HOLLY	30-36" HT., 30-36" SPACING.
11		*Prunus laurocerasus 'Schipkaensis'*	SKIP LAUREL	30-36" HT., 30-36" SPACING.
200		*CALAMAGROSTIS x ACUTIFLORA 'KARL FOERSTER'*	'KARL FOERSTER' FEATHER REED GRASS	1 GAL. CONT.
200		*ASSORTED PERENNIALS*	(SALVIA 'MAY NIGHT', LIRIOPE, RUDBECKIA 'HIRTA', SHASTA DAISY 'BECKY')	1 GAL. CONT.

PLANTING NOTES:

1. ALL PLANTS SHALL BE OF SPECIMEN QUALITY.
2. ALL PLANTS SHALL CONFORM WITH THE MOST CURRENT VERSION OF THE "AMERICAN STANDARD FOR NURSERY STOCK" OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
3. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF (24) TWENTY-FOUR MONTHS.
4. ALL LINES AND GRADE WORK NOT PRESENTLY ESTABLISHED AT THE SITE SHALL BE LAID OUT BY A REGISTERED LAND SURVEYOR OR PROFESSIONAL CIVIL ENGINEER EMPLOYED BY THE CONTRACTOR IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. BASE PLAN INFORMATION PROVIDED FROM KELLY & CLOSE ENGINEERS DATED, 02/04/2019.
6. THIS PLAN IS TO BE USED FOR LANDSCAPING SITE IMPROVEMENTS PURPOSES ONLY.
7. ALL TREES SHALL BE PROVIDED WITH A 3" DEEP SAUCER, CONSISTING OF SHREDDED OAK BARK MULCH.
8. ALL PLANTS SHALL BE THOROUGHLY WATERED BY THE CONTRACTOR AT LEAST (3) THREE TIMES. FURTHER WATERING SHALL BE REQUIRED IN THE ABSENCE OF NATURAL RAINFALL.
9. ALL TREES AND SHRUBS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO PLANTING. ALL PLANT MATERIAL SHALL BE LAID OUT IN THE FIELD BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
10. LOCATION OF ALL UNDERGROUND UTILITIES SHALL BE VERIFIED AND MARKED IN THE FIELD PRIOR TO ANY DIGGING OPERATIONS.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING EXISTING TREES AND PLANT MATERIAL WITHIN THE AREA OF PROPOSED IMPROVEMENTS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSING OF ALL DEBRIS OFF-SITE, CLEAN-UP OF ALL PAVED AREAS (ROADWAYS, SIDEWALKS, ETC.) AND RESTORATION OF ALL DISTURBED LAWN AREAS.
13. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR ANY DAMAGE TO UNDERGROUND UTILITIES.
14. CONTRACTOR SHALL PROVIDE SCREENED PLANTING SOIL WHERE PLANTING IS TO OCCUR. 36" DEPTH. 6" DEPTH AT LAWN AREAS.
15. NO TREE SHALL BE PLANTED THAN 10 FEET FROM AND UNDERGROUND UTILITY.
16. ALL LINES ARE PARALLEL OR PERPENDICULAR UNLESS SHOWN OTHERWISE.
17. VERIFY LAYOUT OF ALL PROPOSED WORK TO EXISTING CONDITIONS. REPORT DISCREPANCIES BEFORE ANY CLEARING OR EXCAVATION IS DONE.
18. PROVIDED STAKED LAYOUT ON SITE FOR OWNER AND LANDSCAPE ARCHITECTS REVIEW PRIOR TO COMMENCING WORK.
19. ALL DIMENSIONS SHOWN ARE TO FACE OF MATERIALS, UNLESS SHOWN OTHERWISE.
20. V.I.F. = VERIFY IN FIELD.

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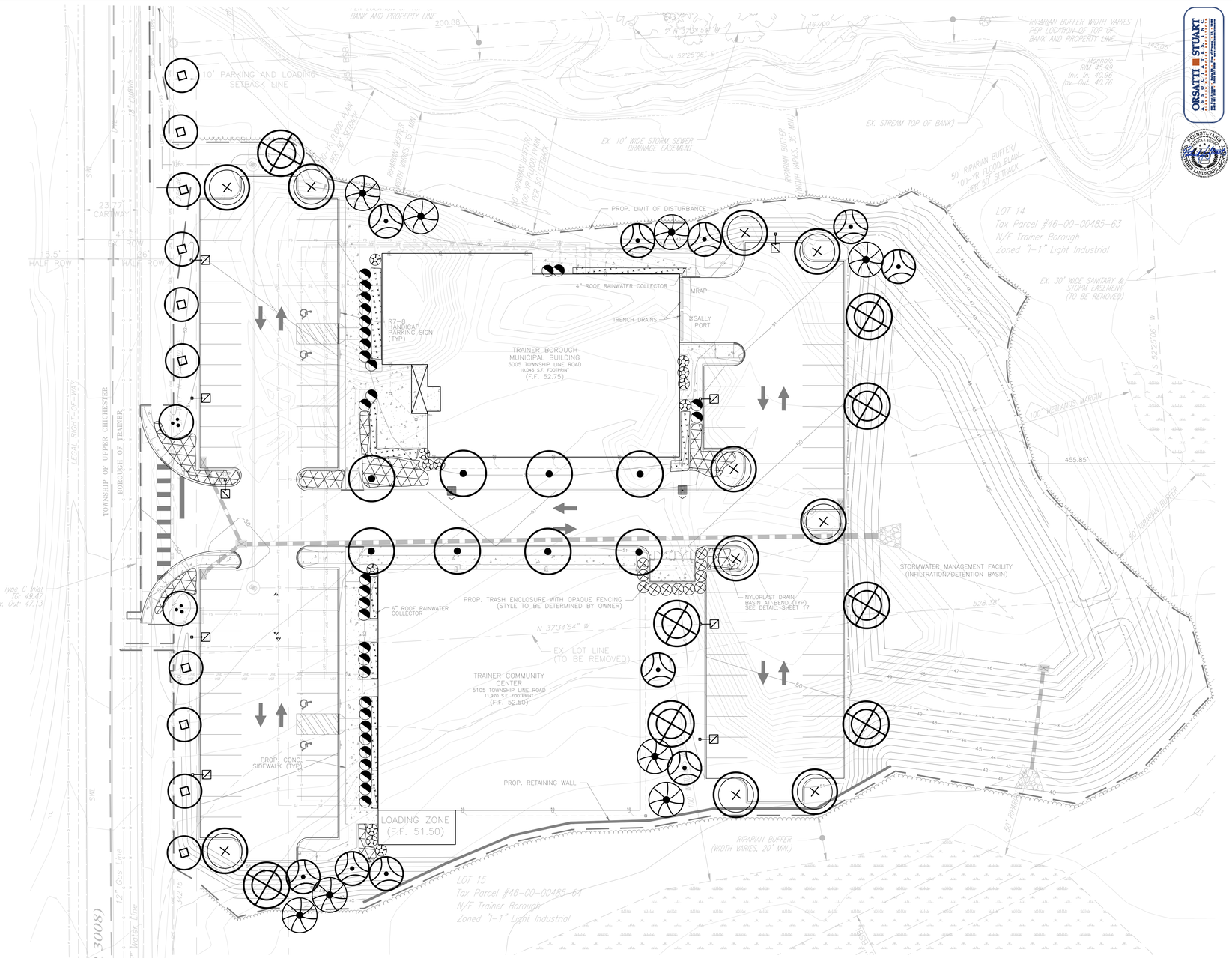
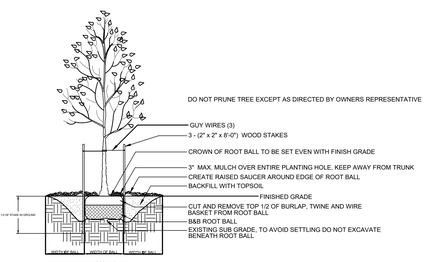
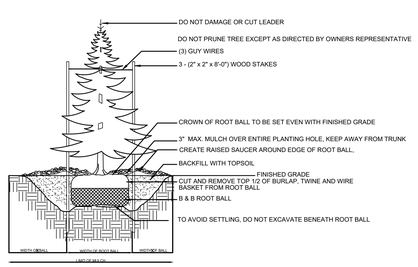




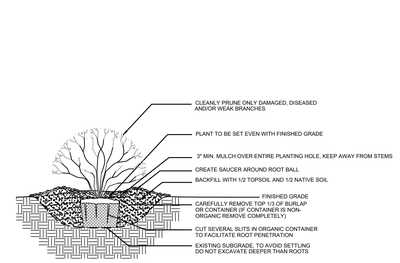
NOTES:
1. DO NOT DAMAGE MAIN ROOTS OR ROOT BALL WHEN INSTALLING TREE STAKE.
2. WATER THOROUGHLY AFTER INSTALLATION.
3. REMOVE STAKES TWO YEARS OR LESS AFTER INSTALLATION.
4. CONTRACTOR IS NOT TO USE TREE WRAP

TYPICAL DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



SPECIFICATIONS:
1. DO NOT DAMAGE MAIN ROOTS OR DESTROY ROOT BALL WHEN INSTALLING TREE STAKE.
2. WATER THOROUGHLY AFTER INSTALLATION.
3. REMOVE STAKES TWO YEARS OR LESS AFTER INSTALLATION.

TYPICAL EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



NOTES:
1. WATER THOROUGHLY AFTER INSTALLATION.
2. FOR PLANTING BED INSTALLATION EXCAVATE ENTIRE SHRUB BED AS SHOWN ON PROJECT DRAWINGS.

TYPICAL SHRUB PLANTING DETAIL
NOT TO SCALE

ORSATTI STUART ARCHITECTS, LLC
1 Bridge Street, Suite 100, Phoenixville, PA 19460
610.933.1100 www.orsattistuart.com

PENNSYLVANIA LANDSCAPE ARCHITECTURAL REGISTRATION BOARD

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Bromsgrove
786 Wilmington Pike/Suite 300
West Chester, PA 19382
610.388.9363 fax 610.388.9374

REV.	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	
3	7/26/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS FOR E&S/NPDES RESUBMISSION	
2	7/5/19	PER BOROUGH ENGINEER COMMENTS & DCED E&S/NPDES SUBMISSION	Q.A.
1	5/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&S/NPDES SUBMISSION	

date: FEBRUARY 27, 2019
scale: 1" = 20'
drawn by: T.A.S.
checked by: P.J.S.
dwg. name:
project no.: 2018-008

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY, PA

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS
LANDSCAPE PLAN

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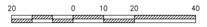
SHEET 8 of 20



D-Series Size 0
LED Area Luminaire

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA: 0.95 ft² (.09 m²)

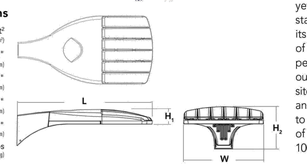
Length: 26" (66.0 cm)

Width: 13" (33.0 cm)

Height$_1$: 3" (7.60 cm)

Height$_2$: 7" (17.8 cm)

Weight (max): 16 lbs (7.25 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

A+ Capable options indicated by this color background.

Ordering Information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED

Series	LEDs	Color temperature	Distribution	Voltage	Mounting
DSX0 LED	**Forward optics** P1 P4 P7 P2 P5 P3 P6 **Rotated optics** P10[1] P12[1] P11[1] P13[1]	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium TSVS Type V very short TSS Type V short T5M Type V medium T5W Type V wide BLC Backlight control[2] LCCO Left corner cutoff[2] RCCO Right corner cutoff[2]	MVOLT[3,4] 120[4] 208[4] 240[4] 277[4] 347[4,5] 480[4,5]	**Shipped included** SPA Square pole mounting RPA Round pole mounting WBA Wall bracket SPUMBA Square pole universal mounting adaptor[6] RPUMBA Round pole universal mounting adaptor[6] **Shipped separately** KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)[7]

Control options		Other options	Finish (required)
Shipped installed NLTAIR2 nLight AIR generation 2 enabled[8,9] PIRHN Network, high/low motion/ambient sensor[10] PER NEMA twist-lock receptacle only (control ordered separate)[11] PER5 Five-pin receptacle only (control ordered separate)[11,12] PER7 Seven-pin receptacle only (leads exit fixture) (control ordered separate)[11,12] DMG 0-10V dimming extend out back of housing for external control (control ordered separate)	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc[13,14] PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc[13,14] PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[13,14] PIRH1FC3V High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[13,14] FAO Field adjustable output[15]	**Shipped installed** HS House-side shield[16] SF Single fuse (120, 277, 347V)[4] DF Double fuse (208, 240, 480V)[4] L90 Left rotated optics[1] R90 Right rotated optics[1] DDL Diffused drop lens[16] **Shipped separately** BS Bird spikes[17] EGS External glare shield[17]	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

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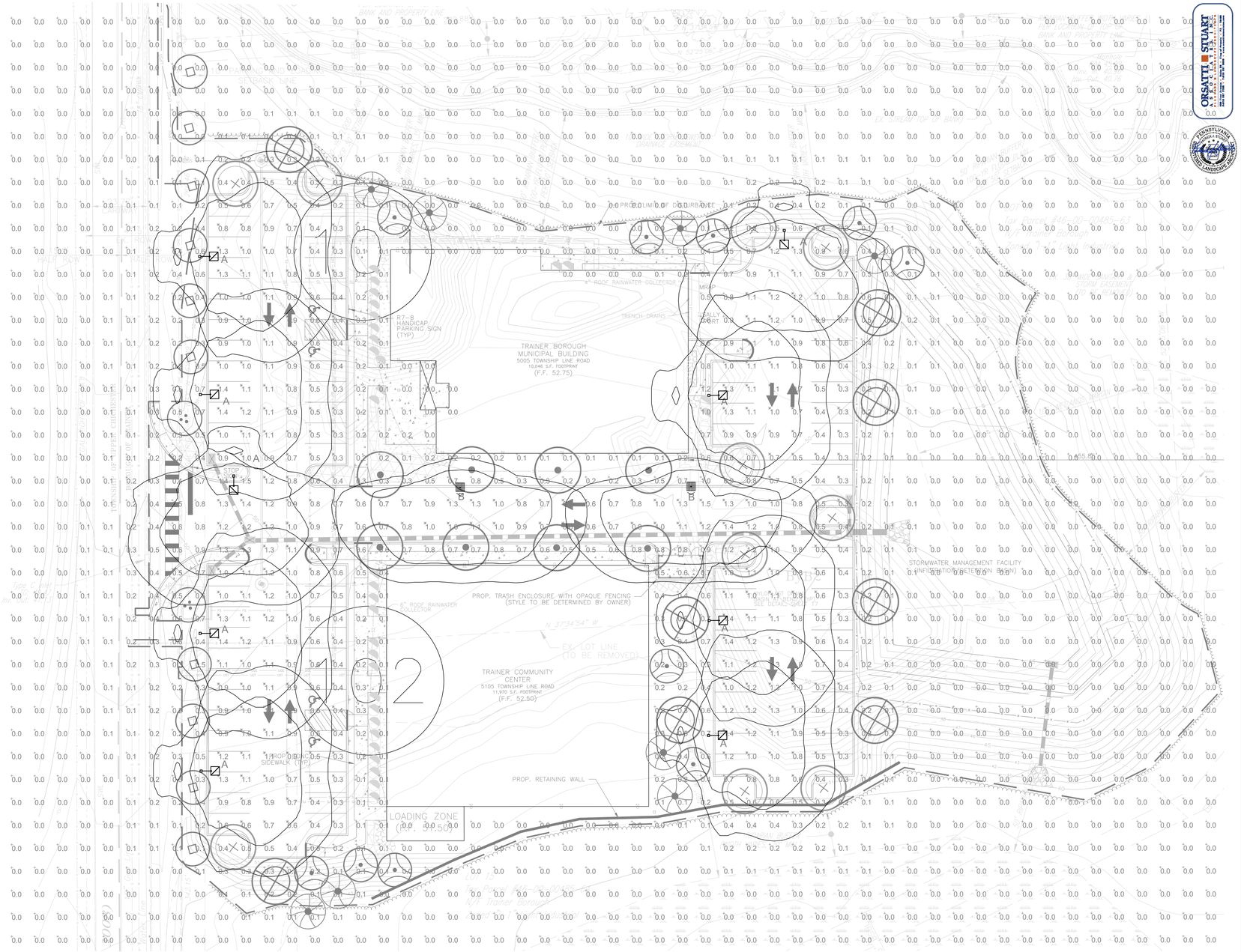

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Parking Lot	⨯	0.8 fc	1.5 fc	0.2 fc	7.5:1	4.0:1
Site	+	0.2 fc	1.5 fc	0.0 fc	N/A	N/A

Note

1. Fixtures Mounted at 20'
2. Calculations Taken at Grade
3. Calculations are estimations based on the information provided and may vary with actual conditions

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	A	9	Lithonia Lighting	DSX0 LED P1 30K TFTM MVOLT	DSX0 LED P1 30K TFTM MVOLT	LED	1	DSX0_LED_P1_30K_TFTM_MVOLT.ies	4373	0.95	38
	B	2	Lithonia Lighting	DSX0 LED P1 30K T3M MVOLT	DSX0 LED P1 30K T3M MVOLT	LED	1	DSX0_LED_P1_30K_T3M_MVOLT.ies	4248	0.95	38

PROJECT SERIAL No.: 20181351368
BEFORE YOU DIG ANYWHERE
IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776 (TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE
PENNSYLVANIA ONE CALL SYSTEM, INC.
ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

OBSATTE STUART ARCHITECTS, LLC
PENNSYLVANIA REGISTERED ARCHITECTURAL FIRM

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1515 Wilmington Pike, Suite 103
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9376

REV.	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	Q.A.
3	7/26/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS FOR L&D/NPDES RESUBMISSION	
2	5/15/19	PER DCED REVIEW LETTER DATED 4/15/19 & OTHER MINOR REVISIONS FOR L&D/NPDES SUBMISSION	
1	2/26/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED L&D/NPDES SUBMISSION	

date: FEBRUARY 27, 2018
scale: 1" = 20'
drawn by: T.A.S.
checked by: P.J.S.
dwg. name:
project no.: 2018-008

TRAINER BOROUGH
MUNICIPAL BUILDINGS
TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY, PA

PRELIMINARY/FINAL LAND DEVELOPMENT PLANS
LIGHTING PLAN

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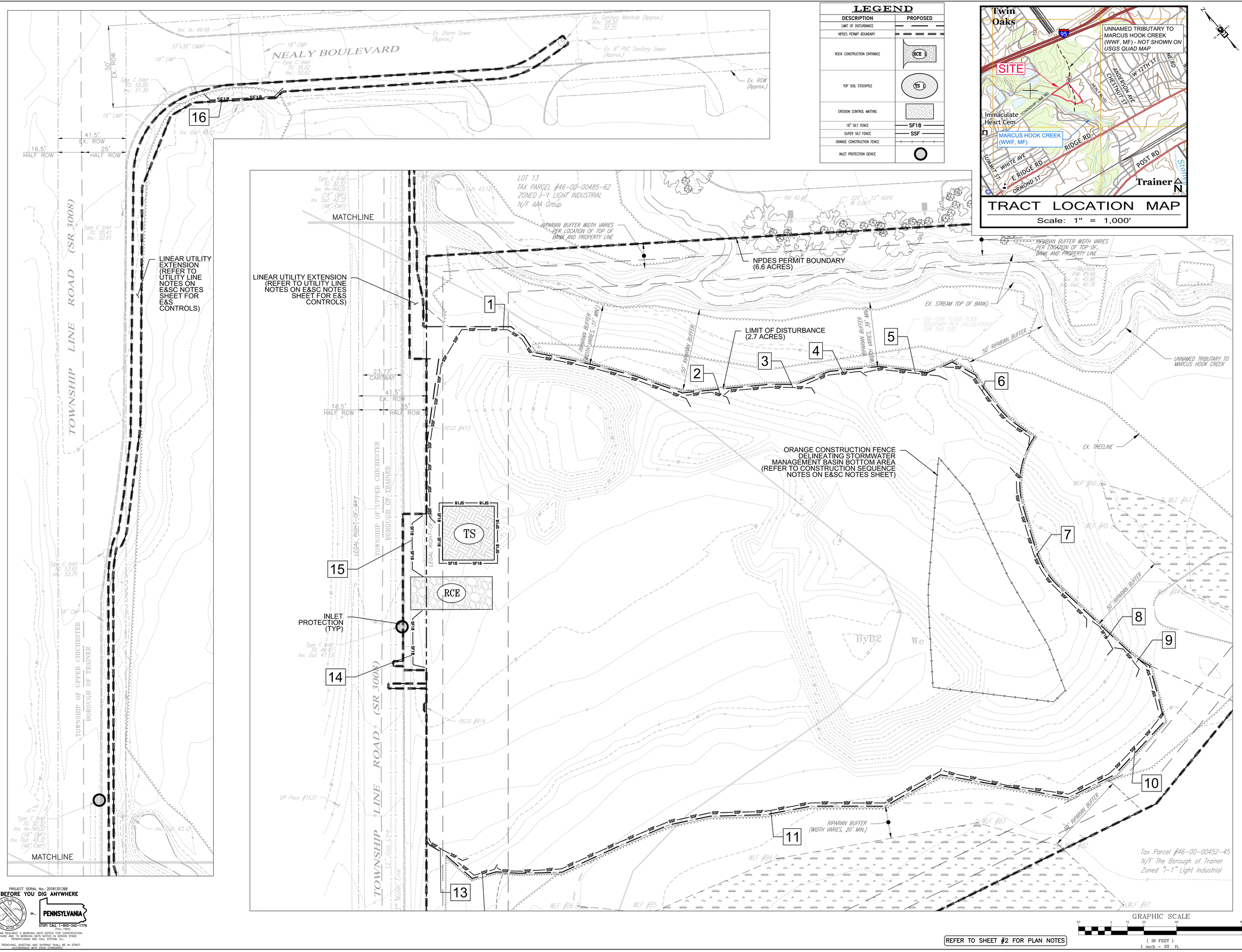
SHEET 9 of 20

LEGEND

DESCRIPTION	PROPOSED
LIMIT OF DISTURBANCE	
NPDES PERMIT BOUNDARY	
ROCK CONSTRUCTION ENTRANCE	RCE
TOP SOIL STOCKPILE	TS
EROSION CONTROL MATTING	
18" SILT FENCE	SF18
SUPER SILT FENCE	SSF
ORANGE CONSTRUCTION FENCE	
INLET PROTECTION DEVICE	

TRACT LOCATION MAP

Scale: 1" = 1,000'



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

REFER TO SHEET #2 FOR PLAN NOTES

PROJECT SERIAL No.: 20181351368

BEFORE YOU DIG ANYWHERE

IN... PENNSYLVANIA

STOP! CALL 1-800-242-1776 (TOLL FREE)

PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE. PENNSYLVANIA ONE CALL SYSTEM, Inc.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

PROFESSIONAL ENGINEER CERTIFICATION: I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA. JAMES C. KELLY, P.E. PE044481

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1 West Baltimore Pike, Suite 1
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV.	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	O.A.
3	7/29/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	O.A.
2	7/29/19	PER DCED REVIEW LETTER DATED 5/7/19	O.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&SC/NPDES SUBMISSION	O.A.

date: FEBRUARY 27, 2019
scale: 1"=20'
drawn by: O.A.
checked by: N.D.K. / K.L.F.
dwg. name: F-EnS.dwg
project no.: 2018-006

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
EROSION AND SEDIMENT CONTROL PLAN (STAGE-1)

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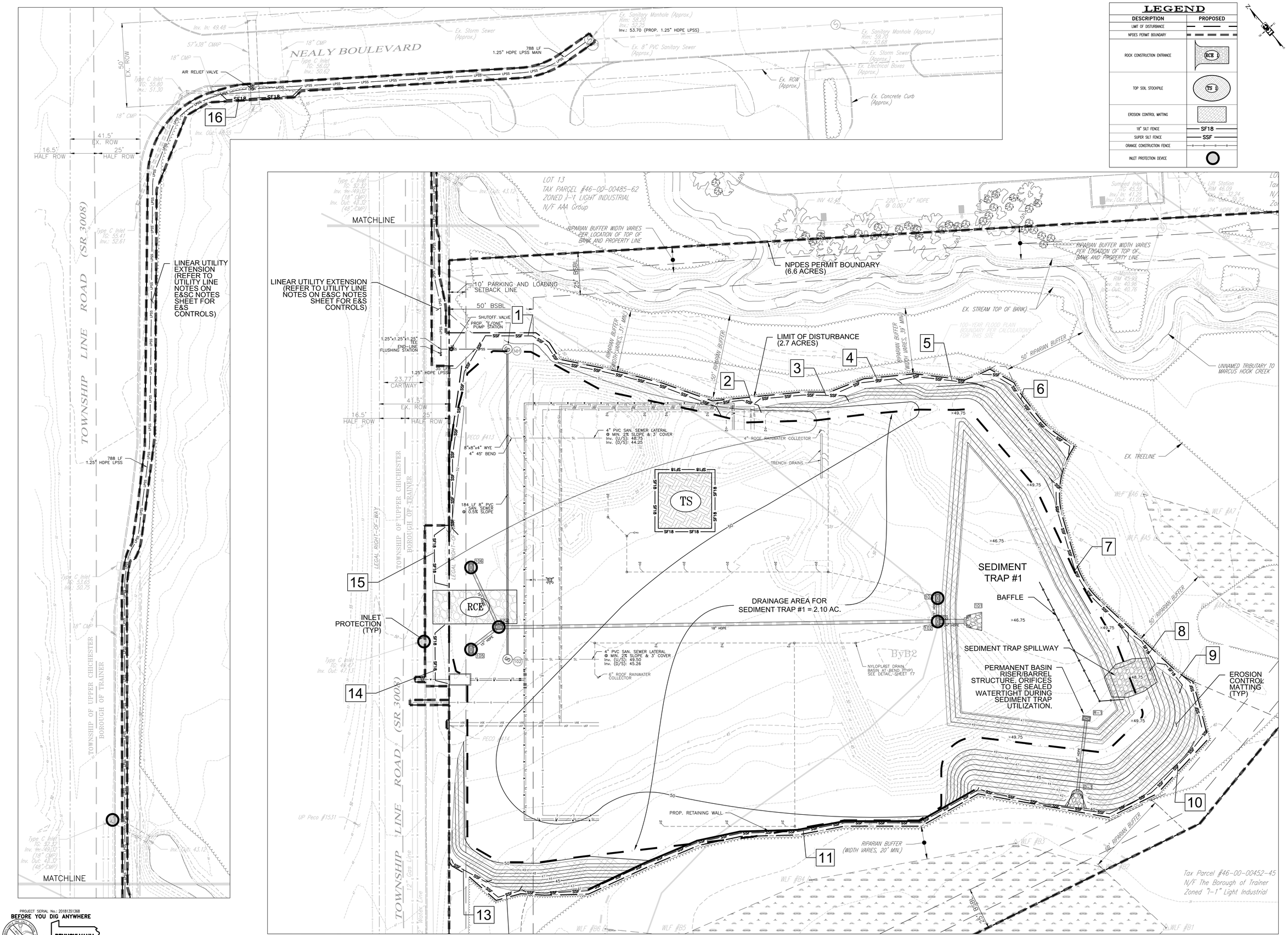

LEGEND

DESCRIPTION	PROPOSED
LIMIT OF DISTURBANCE	
NPDES PERMIT BOUNDARY	
ROCK CONSTRUCTION ENTRANCE	RCE
TOP SOIL STOCKPILE	TS
EROSION CONTROL MATTING	
18" SILT FENCE	SF18
SUPER SILT FENCE	SSF
ORANGE CONSTRUCTION FENCE	
INLET PROTECTION DEVICE	

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

REFER TO SHEET #2 FOR PLAN NOTES

PROJECT SERIAL No.: 20181351368
BEFORE YOU BY ANYWHERE
IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776 (TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE.
PENNSYLVANIA ONE CALL SYSTEM, Inc.
ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

DOCUMENTS PREPARED BY OTHERS FOR THIS PROJECT ARE NOT CERTIFIED BY THE PREPARER OF THIS PLAN AS TO ACCURACY, ADEQUACY OR COMPLETENESS.

COMMONWEALTH OF PENNSYLVANIA — JAMES C. KELLY — ENGINEER — PROFESSIONAL ENGINEER — REGISTERED PROFESSIONAL — PE044481

K&C
KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1260 Woodlane Road, Suite 201
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV	DATE	DESCRIPTION	BY
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1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&SC/NPDES SUBMISSION	O.A.

date: FEBRUARY 27, 2019
scale: 1" = 20'
drawn by: N.D.K. / K.L.F.
checked by: O.A.
dwg. name: F-ESnS.dwg
project no.: 2018-006

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
EROSION AND SEDIMENT CONTROL PLAN (STAGE-2)

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SHEET 11 of 20

LEGEND

DESCRIPTION	PROPOSED
LIMIT OF DISTURBANCE	
NPDES PERMIT BOUNDARY	
ROCK CONSTRUCTION ENTRANCE	RCE
TOP SOIL STOCKPILE	TS
EROSION CONTROL MATTING	
18" SILT FENCE	SF18
SUPER SILT FENCE	SSF
ORANGE CONSTRUCTION FENCE	
INLET PROTECTION DEVICE	

NEALY BOULEVARD

TOWNSHIP LINE ROAD (SR 3008)

MATCHLINE

LOT 13
TAX PARCEL #46-00-00485-62
ZONED I-1 LIGHT INDUSTRIAL
N/F AAA Group

NPDES PERMIT BOUNDARY (6.6 ACRES)

LIMIT OF DISTURBANCE (2.7 ACRES)

LINEAR UTILITY EXTENSION (REFER TO UTILITY LINE NOTES ON E&SC NOTES SHEET FOR E&S CONTROLS)

TRAINER BOROUGH MUNICIPAL BUILDING
3505 TOWNSHIP LINE ROAD
16,040 S.F. FOOTPRINT
(F.F. 52.75)

TRAINER COMMUNITY CENTER
5105 TOWNSHIP LINE ROAD
11,970 S.F. FOOTPRINT
(F.F. 52.50)

SEDIMENT TRAP #1 (CONVERT TO SWM BASIN)

DRAINAGE AREA FOR SEDIMENT TRAP #1 = 2.04 AC.

STORMWATER MANAGEMENT FACILITY (INFILTRATION/DETENTION BASIN)

PERMANENT BASIN RISER/BARREL STRUCTURE. ORIFICES TO BE SEALED WATERTIGHT DURING SEDIMENT TRAP UTILIZATION.

CONVERT TO PERMANENT EMERGENCY SPILLWAY

Tax Parcel #46-00-00452-45
N/F The Borough of Trainer
Zoned "I-1" Light Industrial

REFER TO SHEET #2 FOR PLAN NOTES

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

PROJECT SERIAL No.: 20181351368
BEFORE YOU DIG ANYWHERE
IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776
(TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE
PENNSYLVANIA ONE CALL SYSTEM, Inc.

ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ADHERENCE WITH OSHA STANDARDS

PROFESSIONAL ENGINEER'S CERTIFICATION: I HEREBY CERTIFY THAT THE ENGINEERING PLANS APPROVED HEREIN ARE DESIGNED IN ACCORDANCE WITH THE CURRENT DELAWARE COUNTY ORDINANCE AND ACCEPTED ENGINEERING PRACTICES. COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER PE044351 JAMES C. KELLY, JR., P.E.

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1 Veterans Way, Suite 100
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

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date: FEBRUARY 27, 2019
scale: 1" = 20'
drawn by: O.A. / K.L.F.
checked by:
dwg. name: F-ESnS.dwg
project no.: 2018-009

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
EROSION AND SEDIMENT CONTROL PLAN (STAGE-3)

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SHEET 12 of 20

INTENT OF EROSION & SEDIMENT CONTROL PROGRAM

THE INTENT OF THIS PROGRAM IS TO PREVENT ACCELERATED EROSION OF THE EXPOSED SITE SOILS DURING THE CONSTRUCTION AND PERMANENT LIFE PERIODS OF THE DEVELOPMENT. THE PROGRAM REQUIRES RETENTION OF ALL SEDIMENT ON THE CONSTRUCTION SITE TO MINIMIZE THE IMPACT OF DEVELOPMENT ON EXISTING STREAMS AND AQUATIC HABITAT PROPERTIES. THESE INTENTIONS AND PURPOSES WILL BE ACHIEVED BY MINIMIZING THE EXPOSURE TIME OF POTENTIALLY ERODIBLE SOILS THROUGH THE INSTALLATION OF TEMPORARY OR PERMANENT EROSION AND SEDIMENT CONTROL FACILITIES. THE INTENT OF THIS PROGRAM SHOULD BE UNDERSTOOD AND IMPLEMENTED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. VARIOUS CONSTRUCTION PRACTICES SHALL BE APPRISED OF THIS PROGRAM AND DIRECTED TO PREVENT UNDUE DISTURBANCE OF PREPARED AND PROTECTED SURFACES.

RECEIVING WATERCOURSE AND WATERSHED

THE PROJECT'S RECEIVING WATERCOURSES ARE MARCUS HOOK CREEK AND AN UNNAMED TRIBUTARY TO MARCUS HOOK CREEK, WHICH HAVE A PA CODE, TITLE 25, CHAPTER 93 DESIGNATED USE CLASSIFICATIONS OF WARM WATER FISHES (WWF) AND MIGRATORY FISHES (MF). THERE IS NO EXISTING USE INDICATED FOR THESE WATERCOURSES. THE PROJECT IS LOCATED WITHIN THE DELAWARE RIVER WATERSHED.

STANDARD EROSION & SEDIMENT CONTROL PLAN NOTES

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING AS WELL AS CUTS AND FILLS SHALL BE DONE IN ACCORDANCE WITH THE APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE DELAWARE COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE DELAWARE COUNTY CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.
5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCING. GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN. THESE AREAS MUST BE CLEARLY MARKED AND FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAP(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILES SHALL BE DRY AND FLATTER.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE DELAWARE COUNTY CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, BURNED, DUMPED, OR DISCHARGED AT THE SITE.
11. ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE DELAWARE COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.
12. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.
14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND CORRECTIVE MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, REMULCHING AND RENETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
16. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE BY THE END OF EACH WORK DAY AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
17. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
18. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES ~~ 6 TO 12 INCHES ON COMPACTED SOILS ~~ PRIOR TO PLACEMENT OF TOPSOIL. AREAS TO BE VEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILL OUTSLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
19. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
20. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
21. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
22. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
23. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
24. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
25. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE, CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 100 FEET OF A SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
26. IMMEDIATELY AFTER EARTH DISTURBANCE ACTIVITIES CEASE IN ANY AREA OR SUBAREA OF THE PROJECT, THE OPERATOR SHALL STABILIZE ALL DISTURBED AREAS, DURING NON-GERMINATING MONTHS, MULCH OR PROTECTIVE BLANKETING SHALL BE APPLIED AS DESCRIBED IN THE TEMPORARY STABILIZATION SPECIFICATION. AREAS NOT AT FINISHED GRADE WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR, MAY BE STABILIZED IN ACCORDANCE WITH THE TEMPORARY STABILIZATION SPECIFICATIONS. THOSE AREAS WHICH WILL NOT BE REACTIVATED WITHIN 1 YEAR SHALL BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION SPECIFICATIONS.
27. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
28. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE DELAWARE COUNTY CONSERVATION DISTRICT OR THE DEPARTMENT.
29. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE DELAWARE COUNTY CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
30. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT CONTROL BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORMWATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE UNDERTAKEN ONLY DURING THE GERMINATING SEASON.
31. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE DELAWARE COUNTY CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
32. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO $10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
33. CONCRETE WASH WATER SHALL BE HANDLED IN THE MANNER DESCRIBED ON THE E&SC PLAN. IN NO CASE SHALL IT BE ALLOWED TO ENTER SURFACE WATERS OR GROUNDWATER SYSTEMS.
34. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
35. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
36. SEDIMENT BASINS AND/OR TRAPS SHALL BE KEPT FREE OF ALL CONSTRUCTION WASTE, WASH WATER, AND OTHER DEBRIS HAVING POTENTIAL TO CLOG THE BASIN/TRAP OUTLET STRUCTURES AND/OR POLLUTE THE SURFACE WATERS.
37. SEDIMENT BASINS SHALL BE PROTECTED FROM UNAUTHORIZED ACTS BY THIRD PARTIES.
38. ANY DAMAGE THAT OCCURS IN WHOLE OR IN PART AS A RESULT OF BASIN OR TRAP DISCHARGE SHALL BE IMMEDIATELY REPAIRED BY THE PERMITTEE IN A PERMANENT MANNER SATISFACTORY TO THE MUNICIPALITY, LOCAL CONSERVATION DISTRICT, AND THE OWNER OF THE DAMAGED PROPERTY.
39. UPON REQUEST, THE APPLICANT OR HIS CONTRACTOR SHALL PROVIDE AN AS-BUILT (RECORD DRAWING) FOR ANY SEDIMENT BASIN OR TRAP TO THE MUNICIPAL ENGINEER, DELAWARE COUNTY CONSERVATION DISTRICT, OR THE DEPARTMENT.
40. EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR STEEPER, WITHIN 100 FEET OF A SURFACE WATER, AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.
41. THE NPDES BOUNDARY IS EQUAL TO THE LIMITS OF DISTURBANCE FOR THE SITE AND ANY OFF-SITE AREAS WITHIN THE LIMITS OF DISTURBANCE THAT ARE THE RESPONSIBILITY OF THE DEVELOPER TO INSTALL. EXAMPLES OF OFF-SITE FACILITIES INCLUDE UTILITIES AND ROADWAY IMPROVEMENTS.
42. FILL MATERIAL FOR EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIAL, LARGE STONES, AND OTHER OBJECTIONABLE MATERIALS. THE EMBANKMENT SHALL BE COMPACTED IN MAXIMUM 8 INCH LAYERED LIFTS AT 95% DENSITY.
43. DISTURBED AREAS SHALL BE STABILIZED UPON COMPLETION OF TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITIES.
44. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.

CONSTRUCTION SEQUENCE NOTES

1. AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE DELAWARE COUNTY CONSERVATION DISTRICT TO AN ON-SITE PRE-CONSTRUCTION MEETING.
2. UPON INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST 3 DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO THE DEPARTMENT OF DELAWARE COUNTY CONSERVATION DISTRICT.
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THESE PLAN DRAWINGS. DEVIATION FROM THE SEQUENCE MUST BE APPROVED BY THE DELAWARE COUNTY CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION. EACH STEP OF THE SEQUENCE SHALL BE COMPLETED BEFORE PROCEEDING TO THE NEXT STEP, EXCEPT WHERE NOTED.
5. AS NEEDED AND ONLY WITH APPROVAL FROM THE DELAWARE COUNTY CONSERVATION DISTRICT, THE CONTRACTOR MAY PERFORM STEPS SIMULTANEOUSLY OR IN A DIFFERENT ORDER THAN PROPOSED IN THE CONSTRUCTION SEQUENCE ON THESE PLANS.
6. THE BOROUGH SHALL BE NOTIFIED AT LEAST 2 WORKING DAYS PRIOR TO STARTING ANY LAND DISTURBANCE.

CONSTRUCTION SEQUENCE

STAGE 1 – PERIMETER EROSION AND SEDIMENT CONTROLS

1. INSTALL CONSTRUCTION TRAILER AND STAGING AREA (LOCATION TO BE DETERMINED BY CONTRACTOR).
2. INSTALL ROCK CONSTRUCTION ENTRANCE.
3. INSTALL ORANGE CONSTRUCTION FENCE ALONG LIMITS OF DISTURBANCE AND PROPOSED INFILTRATION/DETENTION BASIN BOTTOM.
4. INSTALL PERIMETER E&S CONTROLS SHOWN ON PLAN, INCLUDING SILT FENCE, SUPER SILT FENCE, AND STORM INLET PROTECTION DEVICES.
5. STABILIZE ALL AREAS DISTURBED BY PERIMETER CONTROLS INSTALLATIONS IN ACCORDANCE WITH SURFACE STABILIZATION CRITERIA FOR TEMPORARY COVER.
6. PERFORM CLEARING AS NEEDED WITHIN THE DISTURBANCE AREA. (NOTE: ANY EROSION CONTROL MEASURES DAMAGED OR DESTROYED BY CLEARING SHALL BE IMMEDIATELY REPAIRED OR REPLACED.)

STAGE 2 – BULK GRADING AND UTILITY CONSTRUCTION

1. INSTALL ADDITIONAL E&S CONTROLS SHOWN ON PLAN, INCLUDING EMBANKMENT SEDIMENT TRAP #1, AND ADDITIONAL SILT FENCE PROTECTION AS NEEDED.
   A. REFER TO "TYPICAL EMBANKMENT SEDIMENT TRAP CONSTRUCTION SEQUENCE" AND "TYPICAL INFILTRATION/DETENTION BASIN CONSTRUCTION SEQUENCE" FOR CONSTRUCTION OF EMBANKMENT SEDIMENT TRAP #1. (NOTE: THE INFILTRATION/DETENTION BASIN AREA WILL BE USED FOR SEDIMENT TRAP #1.)
   B. EMBANKMENT SEDIMENT TRAP #1 IS LOCATED IN THE AREA OF PERMANENT STORMWATER MANAGEMENT FACILITY (INFILTRATION/DETENTION BASIN). ONLY TRACK MOUNTED LOW PRESSURE (≤4 PSI) CONSTRUCTION EQUIPMENT IS PERMITTED WITHIN THIS AREA TO AVOID LOSS OF INFILTRATION CAPACITY OF UNDERLYING SOILS DUE TO COMPACTION.
2. INSTALL EROSION CONTROL MATTING ON 3:1 AND STEEPER SLOPES CREATED WITH INSTALLATION OF EMBANKMENT SEDIMENT TRAP.
3. ROUGH GRADE SITE AND INSTALL RETAINING WALLS. STORE SURPLUS MATERIAL AT DESIGNATED TEMPORARY STOCKPILE LOCATIONS. (NOTE: ONLY TRACK MOUNTED LOW PRESSURE (≤4 PSI) CONSTRUCTION EQUIPMENT IS PERMITTED IN AREAS OF PROPOSED STORMWATER MANAGEMENT FACILITY TO AVOID LOSS OF INFILTRATION CAPABILITY OF UNDERLYING SOILS DUE TO COMPACTION.)
4. INSTALL EROSION CONTROL MATTING ON 3:1 AND STEEPER SLOPES CREATED WITH ROUGH GRADING OF SITE.
5. CONSTRUCT SANITARY SEWER SYSTEM AND LATERALS STARTING AT DOWNSTREAM END WITH CONNECTION TO EXISTING SANITARY MANHOLE IN NEALY BOULEVARD, INCLUDING INSTALLATION OF LPSS LOCATED OFF-SITE IN/ALONG TOWNSHIP LINE ROAD AND NEALY BOULEVARD. REFER TO UTILITY LINE INSTALLATION NOTES.
6. CONSTRUCT STORM SEWER INCLUDING ROOF RUNOFF COLLECTION SYSTEMS.
7. INSTALL WATER MAIN AND ALL OTHER UTILITIES.

STAGE 3 – SITE CONSTRUCTION, ROAD IMPROVEMENTS, E&S CONTROLS REMOVAL, FINAL STABILIZATION

1. CONSTRUCT CURB, STONE BASE AND BINDER COURSE IN PAVING AREAS.
2. CONSTRUCT BUILDINGS AND CONNECT SEWER AND WATER LATERALS, ROOF RUNOFF COLLECTION SYSTEMS, AND OTHER UTILITIES.
3. INSTALL SIDEWALK.
4. FINISH GRADE ALL DISTURBED AREAS.
5. STABILIZE ALL DISTURBED AREAS USING PERMANENT SEEDING IN ACCORDANCE WITH SPECIFICATIONS FOR PERMANENT COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.
6. INSTALL LANDSCAPING AND LIGHTING.
7. INSTALL WEARING COURSE IN PAVING AREAS.
8. REQUEST THE DELAWARE COUNTY CONSERVATION DISTRICT (DCCD) AND THE BOROUGH TO CONDUCT A SITE INSPECTION FOR APPROVAL OF CONVERSION OF EMBANKMENT SEDIMENT TRAP #1 TO PERMANENT INFILTRATION/DETENTION BASIN AND REMOVAL OF REMAINING EROSION AND SEDIMENT CONTROLS. THE SITE INSPECTION TO VERIFY PERMANENT STABILIZATION OF ALL DISTURBED AREAS IS REQUIRED BY DCCD AND THE BOROUGH (NOTE: PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS)REMOVE SEDIMENTS/WATER FROM SUMP OF WATER QUALITY INLET BY PUMPING INTO A SEDIMENT FILTER BAG AND INSTALL SNOUT HOOD ON OUTLET PIPE OF THE INLET. SEE "TYPICAL WATER QUALITY STRUCTURE CONSTRUCTION SEQUENCE."
9. CONVERT EMBANKMENT SEDIMENT TRAP TO PERMANENT INFILTRATION/DETENTION BASIN (FOLLOW "TYPICAL SEDIMENT TRAP REMOVAL & CONVERSION SEQUENCE").
10. REMOVE SEDIMENTS/WATER FROM SUMP OF WATER QUALITY INLET BY PUMPING INTO A SEDIMENT FILTER BAG AND INSTALL SNOUT HOOD ON OUTLET PIPE OF THIS INLET. SEE "TYPICAL WATER QUALITY STRUCTURE CONSTRUCTION SEQUENCE."
11. COMPLETE OFF-SITE ROAD IMPROVEMENTS ALONG TOWNSHIP LINE ROAD IN ACCORDANCE WITH PENNDOT APPROVED H.O.P. PLANS.
12. WHEN ALL AREAS ARE STABILIZED WITH A PERMANENT VEGETATIVE COVER, NOTIFY DELAWARE COUNTY CONSERVATION DISTRICT FOR APPROVAL TO REMOVE ALL E&S CONTROLS. VEGETATED AREAS SHALL BE CONSIDERED PERMANENTLY STABILIZED WHEN A UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING AND OTHER MOVEMENTS.
13. REMOVE ALL REMAINING E&S CONTROLS.
14. STABILIZE THE AREAS DISTURBED BY ABOVE REMOVAL OF CONTROLS IN ACCORDANCE WITH THE SURFACE STABILIZATION CRITERIA FOR PERMANENT COVER.
15. INSTALL PAINTED STRIPING ON PARKING LOTS AND DRIVEWAYS.

TYPICAL EMBANKMENT SEDIMENT TRAP CONSTRUCTION SEQUENCE

1. CLEAR AND GRUB AREA FOR SEDIMENT TRAP.
2. STRIP TOPSOIL FROM CLEARED AREA AND STORE AT DESIGNATED STOCKPILE LOCATION.
3. CUT AND FILL AS NECESSARY TO CONSTRUCT SEDIMENT TRAP PER GRADING SHOWN ON THE PLAN FOR STAGE-2. THE INFILTRATION/DETENTION BASIN AREA WILL BE USED FOR SEDIMENT TRAP #1. FOLLOW TYPICAL INFILTRATION/DETENTION BASIN CONSTRUCTION SEQUENCE" AS APPLICABLE.

NOTE: THE TEMPORARY SEDIMENT TRAP BOTTOM ELEV. IS A MINIMUM OF 1 FT ABOVE THE PERMANENT BASIN BOTTOM OF THE PCSM INFILTRATION FACILITY.

4. INSTALL PERMANENT RISER AND OUTLET PIPE AS SHOWN ON PLAN (SEE TYPICAL INFILTRATION/DETENTION BASIN CONSTRUCTION SEQUENCE). SEAL PERMANENT OUTLET STRUCTURE ORIFICES WITH EITHER BRICK AND MORTAR, WOOD, ALUMINUM OR STEEL.
5. COMPLETE CONSTRUCTION OF EMBANKMENT AND SPILLWAY PER EMBANKMENT SEDIMENT TRAP DETAIL.
6. INSTALL SEDIMENT BAFFLES IF APPLICABLE.
7. INSTALL CLEANOUT STAKE MARKED WITH CLEANOUT ELEVATION.
8. INSTALL EROSION CONTROL MATTING ON ALL SLOPES 3:1 OR STEEPER WHICH DO NOT HAVE STONE LINING.
9. STABILIZE ENTIRE DISTURBED AREA (WHICH DOES NOT HAVE STONE LINING) IN ACCORDANCE WITH THE SURFACE STABILIZATION CRITERIA FOR TEMPORARY COVER.

TYPICAL INFILTRATION/DETENTION BASIN CONSTRUCTION SEQUENCE

1. CLEAR AND GRUB TRAP/BASIN AREA.
2. STRIP TOPSOIL FROM CLEARED AREA AND STORE AT DESIGNATED STOCKPILE LOCATIONS.
3. INSTALL BASIN OUTLET PIPE & PERMANENT OUTLET STRUCTURE.

THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

4. INSTALL TEMPORARY COVER ON ALL ORIFICES/OPENINGS PROVIDED IN THE WALLS AND TOP OF THE OUTLET STRUCTURE FOR TEMPORARY USE OF THE BASIN AS SEDIMENT TRAP.
5. CONSTRUCT KEY TRENCH, CLAY CORE, AND EMBANKMENT.

NOTES:
   A. ONLY TRACK-MOUNTED LOW-PRESSURE (≤4.0 PSI) VEHICLES/EQUIPMENT IS PERMITTED IN THE BASIN BED AREA DELINEATED BY ORANGE CONSTRUCTION FENCING TO AVOID LOSS OF INFILTRATION CAPABILITY DUE TO COMPACTION OF UNDERLYING SOILS.
   B. CONSTRUCT ENTIRE EMBANKMENT TO FULL HEIGHT WITHOUT EMERGENCY SPILLWAY FOR TEMPORARY USE OF THE BASIN AS SEDIMENT TRAP. EMERGENCY SPILLWAY SHALL BE CONSTRUCTED DURING FINAL EXCAVATION/GRADING OF BASIN.

THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

6. GRADE REMAINING AREA OF THE TRAP/BASIN AS SHOWN ON STAGE 2 OF THE PLAN.

NOTE: ONLY TRACK-MOUNTED LOW-PRESSURE (≤4.0 PSI) VEHICLES/EQUIPMENT IS PERMITTED IN THE BASIN BED AREA DELINEATED BY ORANGE CONSTRUCTION FENCING TO AVOID LOSS OF INFILTRATION CAPABILITY DUE TO COMPACTION OF UNDERLYING SOILS.

THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

7. STABILIZE TRAP/BASIN BOTTOM AND INSIDE SLOPES UP TO CLEANOUT ELEVATION WITH TEMPORARY SEEDING IN ACCORDANCE WITH THE SPECIFICATIONS FOR TEMPORARY COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.
8. STABILIZE ALL REMAINING DISTURBED AREAS IN ACCORDANCE WITH THE SPECIFICATIONS FOR PERMANENT COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.

THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

TYPICAL SEDIMENT TRAP REMOVAL & BASIN CONVERSION SEQUENCE

1. DEWATER THE TRAP / BASIN USING FILTER BAG DETAIL OR BASIN DEWATERING DETAIL.
2. REMOVE SEDIMENT.

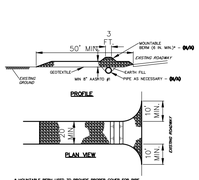
THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

3. UNPLUG ALL ORIFICES / OPENINGS IN THE PERMANENT OUTLET STRUCTURE WALLS AND INSTALL THEIR REQUIRED TRASH RACKS.

THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

4. REMOVE BAFFLES AND CLEANOUT STAKE.
5. REMOVE EMBANKMENT SPILLWAY AND CONSTRUCT PERMANENT EMERGENCY SPILLWAY. REGRADE THE BASIN BOTTOM AREA TO THE PROPOSED FINAL GRADES.

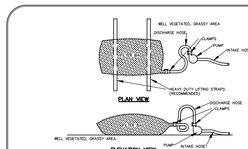
NOTES:
   A. THE TEMPORARY SEDIMENT TRAP BOTTOM ELEV. IS A MINIMUM OF 1 FT ABOVE THE PERMANENT BASIN BOTTOM OF THE PCSM



NOTES:

- REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.
- RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.
- **(N/A) –** MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.
- MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

STANDARD CONSTRUCTION DETAIL #3-1
ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



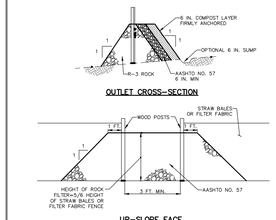
NOTES:

- LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED 7" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. MOE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS, % RETAINED	ASTM D-4751	80 SIEVE

- A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL, UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.
- BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS, WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%, FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.
- NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.
- THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.
- THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.
- FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD CONSTRUCTION DETAIL #3-16
PUMPED WATER FILTER BAG
NOT TO SCALE

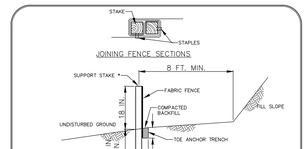


NOTES:

A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A SILT FENCE OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW, ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6
ROCK FILTER OUTLET
NOT TO SCALE



NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 30 IN. MINIMUM. STAKES SHALL BE HARDWOOD OR EQUIVALENT STEEL (U OR T) STAKES.

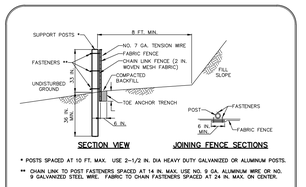
SILT FENCE SHALL BE PLACED AT LEVEL, EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

ANY SECTION OF SILT FENCE WHICH HAS BEEN UNDERMINED OR TOPPED SHALL BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET (STANDARD CONSTRUCTION DETAIL # 4-6).

FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-7
STANDARD SILT FENCE (18" HIGH)
NOT TO SCALE



* POSTS SPACED AT 10 FT. MAX. USE 2-1/2 IN. DIA HEAVY DUTY GALVANIZED OR ALUMINUM POSTS.

** CHAIN LINK TO POST FASTENERS SPACED AT 14 IN. MAX. USE NO. 9 GA. ALUMINUM WIRE OR NO. 9 GALVANIZED STEEL WIRE. FABRIC TO CHAIN FASTENERS SPACED AT 24 IN. MAX. ON CENTER.

NOTES:

FABRIC SHALL HAVE THE MINIMUM PROPERTIES AS SHOWN IN TABLE 4.3 OF THE PA DEP EROSION CONTROL MANUAL.

FABRIC WIDTH SHALL BE 42 IN. MINIMUM.

POSTS SHALL BE INSTALLED USING A POSTHOLE DRILL.

CHAIN LINK SHALL BE GALVANIZED NO. 11.5 GA. STEEL WIRE WITH 2-1/4 IN. OPENING; NO. 11 GA. ALUMINUM COATED STEEL WIRE WITH 2-1/4 IN. OPENING; STEEL WIRE WITH 2-1/2 GALVANIZED NO. 9 GA. STEEL ALUMINUM COATED WITH GALVANIZED NO. 11 GA. STEEL INTERMEDIATE WIRES; OR NO. 9 GA. STEEL TENSION WIRE TO BE INSTALLED HORIZONTALLY THROUGH HOLES AT TOP AND BOTTOM OF CHAIN-LINK FENCE OR ATTACHED WITH HOG RINGS AT 5 FT MAX. CENTERS.

SILT FENCE SHALL BE PLACED AT LEVEL, EXISTING GRADE. BOTH ENDS OF THE FENCE SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH HALF THE ABOVE GROUND HEIGHT OF THE FENCE.

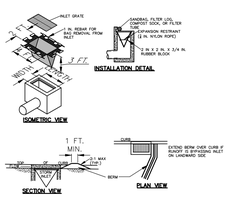
FENCE SHALL BE REMOVED AND PROPERLY DISPOSED OF WHEN TRIBUTARY AREA IS PERMANENTLY STABILIZED.

STANDARD CONSTRUCTION DETAIL #4-10
SUPER SILT FENCE
NOT TO SCALE

TABLE 4.3
FABRIC PROPERTIES FOR SILT FENCE

FABRIC PROPERTY	MINIMUM ACCEPTABLE VALUE	TEST METHOD
GRAB TENSILE STRENGTH (LB)	120	ASTM D1682
ELONGATION AT FAILURE (%)	20% MAX.	ASTM D1682
MULLEN BURST STRENGTH (PSI)	200	ASTM D3786
TRAPEZOIDAL TEAR STRENGTH (LB)	50	
PUNCTURE STRENGTH (LB)	40	ASTM D751 (MODIFIED)
SLURRY FLOW RATE (GAL/MIN/SF)	0.3	ASTM 5141
EQUIVALENT OPENING SIZE	30	US STD. SIEVE CW-02215
ULTRAVIOLET RADIATION STABILITY (%)	80	ASTM G-26
ADAPTED FROM NEW YORK DEC AND PENNDOT PUB 408.		

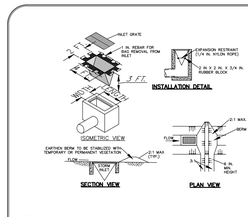
SUBMITTALS APPROVAL NOTE:
CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.



NOTES:

- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
- ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.
- AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
- INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW BYPASS OCCURS. DAMAGED OR CLOGGED BAGS SHALL BE REPAIRED OR REPLACED IMMEDIATELY. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
- DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

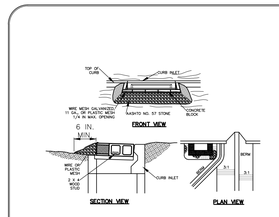
STANDARD CONSTRUCTION DETAIL #4-15
FILTER BAG INLET PROTECTION - TYPE C INLET
NOT TO SCALE



NOTES:

- MAXIMUM DRAINAGE AREA = 1/2 ACRE.
- INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.
- ROLLED EARTHEN BERM IN ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR REMAIN PERMANENTLY.
- AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 LBS., A MINIMUM BURST STRENGTH OF 200 PSI, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 LBS. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A NO. 40 SIEVE.
- INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OR WHEN FLOW BYPASS OCCURS. DAMAGED OR CLOGGED BAGS SHALL BE REPAIRED OR REPLACED IMMEDIATELY. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.
- DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-16
FILTER BAG INLET PROTECTION - TYPE M INLET
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA = 1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

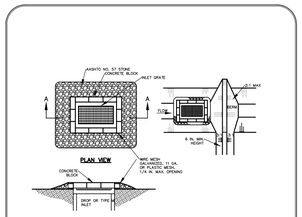
ROLLED EARTHEN BERM SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. (APPLICABLE)

DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.

STANDARD CONSTRUCTION DETAIL #4-17
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE C INLET
NOT TO SCALE



NOTES:

MAXIMUM DRAINAGE AREA =1 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLET TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS NOT LOCATED AT A LOW POINT.

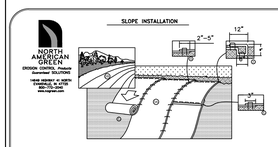
ROLLED EARTHEN BERM IN ROADWAY SHALL BE PROVIDED AND MAINTAINED IMMEDIATELY DOWN GRADIENT OF THE PROTECTED INLET UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM ON ROADWAY SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. EARTHEN BERM IN CHANNEL SHALL BE MAINTAINED UNTIL PERMANENT STABILIZATION IS COMPLETED OR TO REMAIN PERMANENTLY.

TOP OF BLOCK SHALL BE AT LEAST 6 INCHES BELOW ADJACENT ROADS IF PONDED WATER WOULD POSE A SAFETY HAZARD TO TRAFFIC.

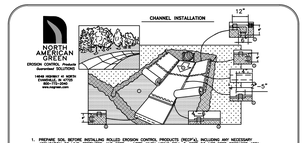
SEDIMENT SHALL BE REMOVED WHEN IT REACHES HALF THE HEIGHT OF THE STONE. DAMAGED OR CLOGGED INSTALLATIONS SHALL BE REPAIRED OR REPLACED IMMEDIATELY.

FOR SYSTEMS DISCHARGING TO HQ OR EV SURFACE WATER, A 6 INCH THICK COMPOST LAYER SHALL BE SECURELY ANCHORED ON OUTSIDE AND OVER TOP OF STONE. COMPOST SHALL MEET THE STANDARDS IN TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL. (APPLICABLE)

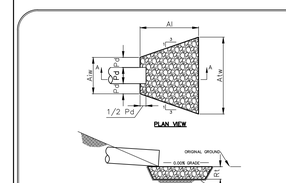
STANDARD CONSTRUCTION DETAIL #4-18
STONE AND CONCRETE BLOCK INLET PROTECTION - TYPE M INLET
NOT TO SCALE


SLOPE INSTALLATION
NORTH AMERICAN GREEN
EROSION CONTROL Products
Guaranteed SOLUTIONS
YOUR ORDER # / SITE #
SHIP TO / JOB NAME
MATTING TYPE
www.nagreen.com
2"-5"
12"
3"
4"
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECPs), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECP'S.
3. ROLL THE RECP'S (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM 4, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE ENDS OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2"-5" OVERLAP DEPENDING ON RECP'S TYPE.
5. CONSECUTIVE RECP'S SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATELY 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECP'S WIDTH.
NOTE:
IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECP's.
STAPLE PATTERN
3.3'
6"
3'
3.3'
5.7 STAPLES PER SQ. YD.
REV. 01-05

EROSION CONTROL MATTING:
SLOPE INSTALLATION
NOT TO SCALE



EROSION CONTROL MATTING:
CHANNEL INSTALLATION
NOT TO SCALE



OUTLET NO.	PIPE DIA Pd (IN)	RIPRAP SIZE R_{50}	RIPRAP THICK. Rt (IN)	APRON LENGTH A1 (FT)	APRON INITIAL WIDTH A1w (FT)	APRON TERMINAL WIDTH A1w (FT)
101	24	R-4	18	9	7	11
O-1	18	R-5	27	8	5	13

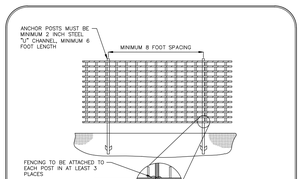
NOTES:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

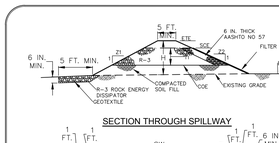
STANDARD CONSTRUCTION DETAIL #9-2
RIPRAP APRON AT PIPE OUTLET
NO FLARED ENDWALL
NOT TO SCALE



NOTES:

1. CONSTRUCTION FENCING SHALL BE INSTALLED ALONG THE LIMIT OF DISTURBANCE SHOWN ON THE PLAN.
2. FENCE SHALL BE MINIMUM 4 FEET HIGH AND CONSTRUCTED OF DURABLE, HIGHLY VISIBLE MATERIAL.

ORANGE CONSTRUCTION FENCING DETAIL
N.T.S.



TRAP NO.	Z1 (FT)	Z2 (FT)	H (FT)	h (FT)	EMBANK. TOP ELEV., ETE (FT)	SPILLWAY CREST ELEV., SCE (FT)	CLEAN OUT ELEV., COE (FT)	BOTTOM ELEV., BE* (FT)	SPILLWAY WIDTH, SW (FT)
1	3	3	3.00	1.00	49.75	48.75	47.75	46.75	10

NOTES:

EMBANKMENT OUTLET SHALL BE COMPOSED ENTIRELY OF ROCK ABOVE CLEAN OUT ELEVATION (COE). MAIN BODY OF EMBANKMENT SHALL BE COMPACTED IN LAYERS NOT EXCEEDING 9 IN. IN THICKNESS. A ROCK FILTER OUTLET OF AASHTO #57 STONE ON SMALLER SIZE STONE SHALL BE CONSTRUCTED AT THE CLEAN OUT ELEVATION. A 6 IN. LAYER OF CLEAN SAND SHALL BE INSTALLED ON TOP OF THE AASHTO #57 STONE AND SECURELY ANCHORED IN HQ WATERSHEDS. 24 IN. DIAMETER COMPOST SOCK(S) SHALL BE USED IN PLACE OF FILTER FABRIC AND AASHTO #57 STONE IN EV WATERSHEDS.

FILL MATERIAL FOR THE EMBANKMENTS SHALL BE FREE OF ROOTS, OR OTHER WOODY VEGETATION, ORGANIC MATERIALS, LARGE STONES AND OTHER OBJECTIONABLE MATERIAL. UNLESS THE EMBANKMENT IS CONSTRUCTED IN LAYERED LIFTS OF NOT MORE THAN 9 IN. THE MAXIMUM ROCK SIZE SHALL BE NO GREATER THAN 6 IN.

UPON COMPLETION, THE EMBANKMENT SHALL BE SEEDED AND MULCHED OR OTHERWISE STABILIZED ACCORDING TO THE SPECIFICATIONS OF THE E&S PLAN DRAWINGS.

ALL SEDIMENT TRAPS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT.

ACCESS FOR SEDIMENT REMOVAL AND OTHER REQUIRED MAINTENANCE ACTIVITIES SHALL BE PROVIDED.

A CLEAN OUT STAKE SHALL BE PLACED NEAR THE CENTER OF EACH TRAP. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED THE CLEAN OUT ELEVATION ON THE STAKE AND THE TRAP RESTORED TO THE DESIGN DIMENSIONS. DISPOSE OF MATERIALS REMOVED FROM

NPDES PERMIT BOUNDARY
= 6.6 AC.

LIMIT OF DISTURBANCE
= 2.7 AC.

RIPARIAN BUFFER AREA
PER BOROUGH ORDINANCE
(NOT A PROJECT SWM BMP)
(TYP)

P.O.I.

MATCHLINE

MATCHLINE

NEALY BOULEVARD

TOWNSHIP LINE ROAD (SR 3008)

TOWNSHIP OF UPPER CHICHESTER
BOROUGH OF TRAINER

TRAINER BOROUGH
MUNICIPAL BUILDING
5005 TOWNSHIP LINE ROAD
10,046 S.F. FOOTPRINT
(F.F. 52.75)

TRAINER COMMUNITY CENTER
5105 TOWNSHIP LINE ROAD
11,970 S.F. FOOTPRINT
(F.F. 52.50)

LOADING ZONE
(F.F. 51.50)

STORMWATER
MANAGEMENT FACILITY
(INFILTRATION/DETENTION
BASIN)

SW-1

SW-2

MRAP

SALLY
PORT

LOT 10 & 11
Tax Parcel #46-00-00485-59
N/F Wilson Industries, Inc.
Zoned "I-1" Light Industrial

LOT 12
Tax Parcel #46-00-00485-61
N/F Senatore & Proccopio, a PA General Partnership
Zoned "I-1" Light Industrial

LOT 13
TAX PARCEL #46-00-00485-62
ZONED I-1 LIGHT INDUSTRIAL
N/F 444 Group

LOT 14
Tax Parcel #46-00-00485-63
N/F Trainer Borough
Zoned "I-1" Light Industrial

LOT 15
Tax Parcel #46-00-00485-64
N/F Trainer Borough
Zoned "I-1" Light Industrial

Tax Parcel #46-00-00485-45
N/F The Borough of Trainer
Zoned "I-1" Light Industrial

Tax Parcel #46-00-00452-45
N/F The Borough of Trainer
Zoned "I-1" Light Industrial

RIPARIAN BUFFER WIDTH VARIES PER LOCATION OF TOP OF BANK AND PROPERTY LINE

50' RIPARIAN BUFFER

10-YEAR FLOOD PLAIN BOUNDARY PER CALCULATIONS FOR THIS SITE

EX. 10' WIDE STORM SEWER DRAINAGE EASEMENT

EX. 30' WIDE SANITARY & STORM EASEMENT (TO BE REMOVED)

EX. STORMWATER MANAGEMENT/ACCESS EASEMENT FOR EX. STORMWATER MANAGEMENT FACILITIES

PROP. 242 LF WALL

PROP. 30 LF WALL

PROP. RETAINING WALL

PROP. TRASH ENCLOSURE WITH OPAQUE FENCING (STYLE TO BE DETERMINED BY OWNER)

PROP. DIESEL STANDBY GENERATOR

PROP. ASPHALT (TYP)

PROP. CONCRETE CURB (6" REVEAL) (TYP)

PROP. CONC. SIDEWALK (TYP)

PROP. CONCRETE CURB (8" REVEAL)

CURB TAPER (TYP)

PROP. 4" SOLID WHITE HDPE (TYP)

PROP. 6" SOLID WHITE HDPE

PROP. 24" SOLID WHITE HDPE

PROP. 18" SOLID WHITE HDPE

PROP. 12" SOLID WHITE HDPE

788 LF 1.25" HDPE LPSS MAIN

1.25" HDPE LPSS

PROPOSED SANITARY SEWER EASEMENT WIDTH VARIES

LF PROPOSED SANITARY SEWER EASEMENT

SHUTOFF VALVE PROP. LPSS

PROP. LPSS PUMPING STATION

AIR RELIEF VALVE

4" PVC SAN. SEWER LATERAL @ MIN. 2% SLOPE & 3' COVER Inv. (O/S) 44.25

4" PVC SAN. SEWER LATERAL @ MIN. 2% SLOPE & 3' COVER Inv. (O/S) 45.26

6" ROOF RAINWATER COLLECTOR

4" ROOF RAINWATER COLLECTOR

2.5" WATER SERVICE TO BLDG. W/ FIRE SPRINKLER BLDG.

TRENCH DRAIN

U.G. ELECTRIC SERVICE TO BLDG. (TYP)

U.G. TELEPHONE/CABLE SERVICE TO BLDG. (TYP)

U.G. GAS SERVICE TO BLDG. (TYP)

6" FIRE SERVICE TO BLDG.

2" WATER SERVICE TO BLDG.

NYLOPLAST DRAIN BASIN (8" BOSS) (TYP) SEE DETAIL SHEET 17

STEER TO DOWNSPOUT DRAINAGE PIPE

STOP SIGN

ACCESS RAMP

PECO #414

PECO #415

PECO #417

UP Peco #1531

Ex. Fence

Ex. Stormwater Basin

Outlet (with trash rack) Inv. In. 39.32 Inv. Out. 38.52

40" - 15" HDPE @ 0.01

Inv. Out. 38.57

Ex. Forebay

Ex. MATURE TREELINE

EX. TREELINE

WATERS OF U.S.

UNNAMED TRIBUTARY TO MARCUS HOOK CREEK

MARCUS HOOK CREEK

ALLEGHENY PIPE LINE CO. EASEMENT (APPROX.)

SOIL BOUNDARY (TYP)

FEMA 100-YEAR FLOOD PLAIN PER FLOOD ELEVS. FROM FEM SUPERIMPOSED ON SITE TOPOGRAPHY (SEE FEMA CROSS SECTIONS)

FEMA 100-YEAR FLOOD PLAIN AS SHOWN ON FIRM (ZONE AE)

FEMA 100-YEAR FLOODWAY AS SHOWN ON FIRM

FEMA 100-YEAR FLOOD PLAIN (ZONE AE)

FEMA 100-YEAR FLOOD ELEV. 38

FEMA 100-YEAR FLOOD ELEV. 40

WLF #1 WLF #2 WLF #3 WLF #4 WLF #5 WLF #6 WLF #7 WLF #8 WLF #9 WLF #10 WLF #11 WLF #12 WLF #13 WLF #14 WLF #15 WLF #16 WLF #17

ByB2 We Ma

S 37°54'54" E 750.68'

N 37°54'54" W 528.38'

N 40°07'00" W 264.00'

S 27°40'00" W 264.00'

N 40°07'00" W 264.00'

N 55°49'47" E 1,100.00'

N 55°49'47" E 1,100.00'

INFILTRATION TESTING LOCATIONS (*)						
TEST NUMBER	EXST. ELEV. (FT.)	TEST-1 ELEV. (FT.)	TEST-2 ELEV. (FT.)	LATITUDE	LONGITUDE	AVG. INFILTRATION RATE (IN/HR)
SW-1	51.0	47.0	45.0	N 39.832773	W 75.412483	3.00
SW-2	51.5	44.5	43.5	N 39.833038	W 75.412462	3.25

(*)TEST LOCATIONS FOR TEST RESULTS USED IN PROPOSED INFILTRATION FACILITIES DESIGN.

STORMWATER CERTIFICATION:

THE OWNER IS AWARE OF ITS OBLIGATION IN PERPETUITY TO MAINTAIN THE STORM SEWER NETWORK AND THE STORMWATER FACILITIES IN WORKING ORDER AT ALL TIMES IN ACCORDANCE WITH TRAINER BOROUGH ORDINANCE, AND ACKNOWLEDGES THE STORMWATER MANAGEMENT FACILITIES TO BE PERMANENT FIXTURES THAT CAN BE ALTERED OR REMOVED ONLY AFTER THE APPROVAL OF A REVISED PLAN BY TRAINER BOROUGH AND DETERMINATION OF ADEQUACY FROM THE CONSERVATION DISTRICT. THIS ACKNOWLEDGEMENT AND RESPONSIBILITY SHALL BECOME THE CONTINUING OBLIGATION. THE OWNER ALSO RECOGNIZES THAT SHOULD THEY BE UNABLE OR UNWILLING TO MAINTAIN THE PROPOSED STORMWATER MANAGEMENT FACILITIES IN PROPER WORKING ORDER, THAT TRAINER BOROUGH HAS THE RIGHT BUT NOT THE OBLIGATION, TO MAKE SUCH REPAIRS AND LIEN THE PROPERTY IN ORDER TO RECOUP ALL INCURRED EXPENSES. ANY REVISION TO THE APPROVED DRAINAGE PLAN MUST BE APPROVED BY TRAINER BOROUGH, AND A REVISED EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE CONSERVATION DISTRICT FOR A DETERMINATION OF ADEQUACY.

_____ _____
DATE OWNER'S REPRESENTATIVE

PLAN PREPARER'S STATEMENT:

I, _____, ON THIS THE _____ DAY OF _____, 20____ HEREBY CERTIFY THAT THE STORMWATER MANAGEMENT SITE PLAN MEETS ALL DESIGN STANDARDS AND CRITERIA OF THE TOWNSHIP OF TRAINER BOROUGH STORMWATER MANAGEMENT ORDINANCE.

_____ _____ _____
DATE QAMAR AHMAD, P.E. PE #054481-E

DRAINAGE AREAS DISCHARGE LOCATIONS	
AREA #	DISCHARGE LOCATION
5	WATER QUALITY INLET
5,6	STORMWATER MANAGEMENT FACILITY (INFILTRATION/DETENTION BASIN)
1,2,3,4	BYPASS

LEGEND

DESCRIPTION	SYMBOL
DRAINAGE AREA BOUNDARY	
INFILTRATION TESTING LOCATION	SW
DRAINAGE AREA IDENTIFICATION	2
LIMIT OF DISTURBANCE	
NPDES PERMIT BOUNDARY	
PROPERTY LINE	
EXISTING 2' CONTOUR	362
PROPOSED 2' CONTOUR	362
SOIL BOUNDARY	
SOIL IDENTIFICATION	GeC
STORM SEWER	
STORM INLET	
STORM MANHOLE	D
TREELINE	
WETLANDS	
PROPOSED IMPERVIOUS AREA	

GRAPHIC SCALE
30 0 15 30 60 120
(IN FEET)
1 inch = 30 ft.

PROJECT SERIAL No.: 20181351368
BEFORE YOU DIG ANYWHERE
IN... PENNSYLVANIA
STOP! CALL 1-800-242-1776
(TOLL FREE)
PA LAW REQUIRES 3 WORKING DAYS NOTICE FOR CONSTRUCTION PHASE AND 10 WORKING DAYS NOTICE IN DESIGN STAGE
PENNSYLVANIA ONE CALL SYSTEM, Inc.
ALL TRENCHING, SHEETING AND SHORING SHALL BE IN STRICT ACCORDANCE WITH OSHA STANDARDS.

CONSTRUCTION PLANS TO BE USED FOR CONSTRUCTION, AS BUILT, NOT APPROVED FOR PERMITTING PURPOSES
COMMONWEALTH OF PENNSYLVANIA
QAMAR AHMAD
ENGINEER
PROFESSIONAL ENGINEER
PE054481
QA 8/15/19

K&C
KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1260 Liberty Ridge Drive, Suite 200
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	Q.A.
3	7/29/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	Q.A.
2	4/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASE/NPDES SUBMISSION	Q.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASE/NPDES SUBMISSION	Q.A.

date: FEBRUARY 27, 2019
scale: 1" = 30'
drawn by: N.D.K. / K.L.F.
checked by: Q.A.
dwg. name: F-PCSM.dwg
project no.: 2018-0061

TRAINER BOROUGH
MUNICIPAL BUILDINGS
TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
POST-CONSTRUCTION
STORMWATER MANAGEMENT PLAN

PCSM PLAN SHEET 1 OF 3

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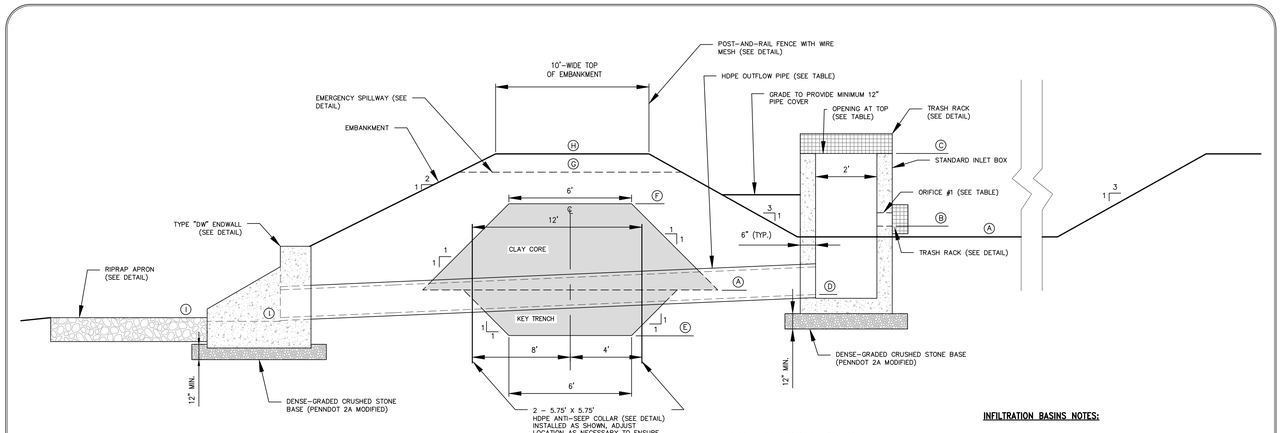
SHEET
15
of 20



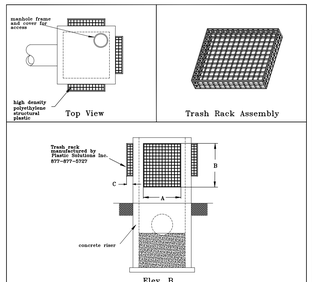
TYPICAL CROSS-SECTION
N.T.S.

STORMWATER MANAGEMENT FACILITY DATA												
	ELEVATIONS									DIMENSIONS		
SWMF#	A	B	C	D	E	F	G	H	I	ORIFICE #1 DIA OR W x H (IN)	OPENING AT TOP DIA OR L x W (IN)	OUTFLOW PIPE DIAMETER (IN)	OUTFLOW PIPE LENGTH (FT)
1	45.00	45.00	47.25	41.00	43.00	46.75	47.75	49.75	40.00	4.5	45.2 x 24	15	44

STORMWATER MANAGEMENT FACILITY (SWMF) INFILTRATION & DETENTION BASIN DETAIL

INFILTRATION BASINS NOTES:

1. BASIN SLOPES SHALL BE STABILIZED USING EROSION CONTROL MATTING PER PLAN AND SPECIFICATIONS.
2. 12" MINIMUM COVER SHALL BE MAINTAINED ABOVE PIPES.
3. HDPE PIPE JOINTS SHALL BE SOIL AND WATER-TIGHT.
4. ANY SEDIMENT ACCUMULATED DURING CONSTRUCTION SHALL BE REMOVED FROM THE BASIN PRIOR TO BOTTOM PLANTING.
5. CLAY CORE AND KEY TRENCH SHALL BE CONSTRUCTED WITH SUCCESSIVE THIN LAYERS (9-INCH MAXIMUM) OF CLAY OR SANDY CLAY MATERIAL, COMPACT EACH LAYER THOROUGHLY AT OPTIMUM MOISTURE CONDITIONS BEFORE PLACING THE NEXT LAYER.
6. IF ROCK IS ENCOUNTERED WHILE EXCAVATING THE BASIN BOTTOM, IT SHALL BE REMOVED TO PROVIDE A TWO (2) FOOT SEPARATION BETWEEN THE ROCK AND BASIN BOTTOM. A BUFFER / FILTER MEDIA SHALL BE INSTALLED IN THE AREA BETWEEN THE ROCK AND BASIN BOTTOM.



TRASH RACK DATA					
		DIMENSIONS (IN)			
TRASH RACK I.D.	ASSOCIATED STORM STRUCTURE I.D.	(A)	(B)	(C)	
*	*	*	*	*	

* TO BE PROVIDED BY CONTRACTOR WITH SHOP DRAWINGS, TO SUIT APPLICABLE OPENING SIZES.

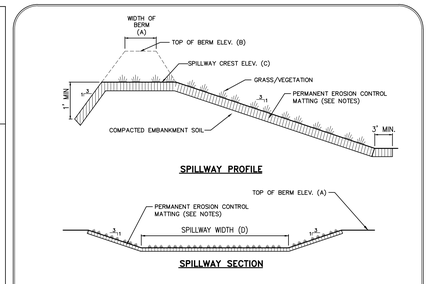
NOTE:

PROVIDE A 6" THICK STONE FILTER LAYER AROUND TRASH RACK FOR ANY ORIFICE SMALLER THAN A 3" DIAMETER.

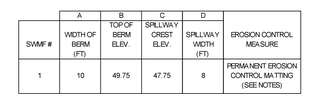
NOTE: CUSTOM SIZES AVAILABLE UPON REQUEST

FLAT ROOF TRASH RACK

PLASTIC SOLUTIONS INC. P.O. Box 4386 Rochester, IN 2975 877-877-5727 www.plastic-solutions.com



SPILLWAY PROFILE



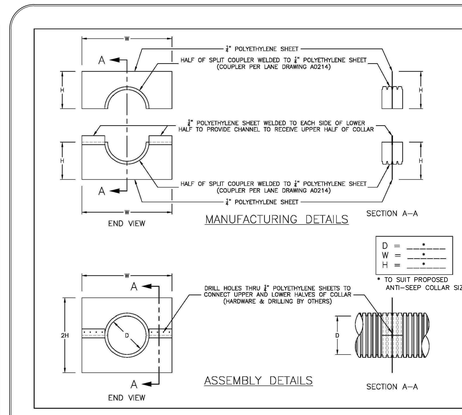
SPILLWAY SECTION

A	B	C	D	
SWMF #	WIDTH OF BERM (FT)	TOP OF BERM ELEV.	SPILLWAY CREST ELEV.	SPILLWAY WIDTH (FT)	EROSION CONTROL MEASURE
1	10	49.75	47.75	8	PERMANENT EROSION CONTROL MATTING (SEE NOTES)

NOTES:

1. PERMANENT EROSION CONTROL MATTING (P.E.C.M.) SHALL BE P300, AS MANUFACTURED BY NORTH AMERICAN GREEN, OR APPROVED EQUAL. SEE "EROSION AND SEDIMENT CONTROL NOTES AND DETAILS" FOR ADDITIONAL INFORMATION.
2. P.E.C.M. SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

EMERGENCY SPILLWAY DETAIL
NOT TO SCALE



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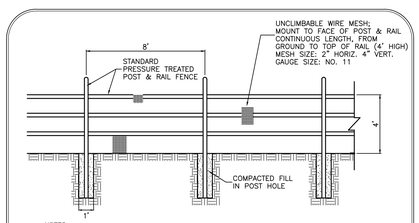
Page Number:	1 OF 1
Date Drawn:	9/9/09
Drawn By:	JCH

LANE ENTERPRISES, INC. TWO-PIECE HDPE ANTI-SEEP COLLAR

NOTE:

REFER TO STORMWATER MANAGEMENT FACILITIES TYPICAL CROSS SECTIONS FOR DIMENSIONS.

ANTI-SEEP COLLAR DETAIL
NOT TO SCALE



NOTES:
1. THIS FENCE TO BE INSTALLED AROUND ALL BASINS.
2. WIRE MESH AND FASTENERS SHALL BE GALVANIZED.
3. INSTALL GATES AT INDICATED LOCATIONS ON THE PLANS.

BASIN POST & RAIL FENCE WITH WIRE MESH DETAIL
NOT TO SCALE

SOILS INFORMATION														
SYMBOL	NAME	DEPTH TO SEASONAL HIGH WATER TABLE	DEPTH TO BEDROCK	HYDROLOGIC SOIL GROUP	HYDRIC RATING (%)	UNITED SOIL CLASS. I.D.	SUSCEPTIBILITY TO EROSION BY WATER	RISK OF CORROSION		BUILDINGS WITHOUT BASEMENTS	LOCAL ROADS AND STREETS	SHALLOW EXCAVATIONS	EMBANKMENTS	LAWNS AND LANDSCAPING	ROADFILL SOURCE	TOPSOIL SOURCE
							K FACTOR (≤0.37 = EROSION RESISTANT; >0.37 = EASILY ERODED) *	UNCOATED STEEL	CONCRETE							
ByB2	BUTLERTOWN SILT LOAM, 2 TO 8 PERCENT SLOPES, MODERATELY ERODED	≥4-48 IN.	25-40 IN.	C	NOT HYDRIC - (0%)	ML	0.49	HIGH	MODERATE	VERY LIMITED - 2,3,8	VERY LIMITED - 2,3,6,7,8	SOMEWHAT LIMITED - 2,9,10	SOMEWHAT LIMITED - 2,10,12	SOMEWHAT LIMITED - 2,10,18	POOR - 7,10,23	FAIR - 18,23,26
Mo ***	MADE LAND, GRAVELLY MATERIALS	60 IN.	20-99 IN.	A	NOT HYDRIC - (0%)	CL	0.32	LOW	LOW	NOT LIMITED	VERY LIMITED 2,3,4,6,7,8,16,27	SOMEWHAT LIMITED - 2,9,10	VERY LIMITED 2,10,11,12,13,27	VERY LIMITED - 2,10,18,19,27	POOR - 7,10,16,23	FAIR - 18,23,24,25,26
We	WEHADKEE SILT LOAM	0-6 IN.	> 80 IN.	B/D	NOT HYDRIC - (0%)	CL-ML	0.43	HIGH	MODERATE	VERY LIMITED - 1,2	VERY LIMITED - 2,4,6,7	SOMEWHAT LIMITED - 2,4,9,10	VERY LIMITED - 2,10,12	VERY LIMITED - 2,4,10	POOR - 10,23	POOR - 23

REASONS FOR LIMITATIONS: 1 – SLOPE, 2 – DEPTH TO SATURATED ZONE, 3 – DEPTH TO THIN CEMENTED PAN, 4 – FLOODING, 5 – SHRINK-SWELL, 6 – FROST ACTION, 7 – LOW STRENGTH, 8 – DEPTH TO THICK CEMENTED PAN, 9 – UNSTABLE EXCAVATION WALLS, 10 – DUSTY, 11 – SEEPAGE, 12 – PIPING, 13 – THIN LAYER, 14 – SEEPAGE, BOTTOM LAYER, 15 – FILTERING CAPACITY, 16 – DEPTH TO BEDROCK, 17 – SLOW WATER MOVEMENT, 18 – LOW EXCHANGE CAPACITY, 19 – DROUGHTY, 20 – LARGE STONES CONTENT, 21 – GRAVEL CONTENT, 22 – COBBLE CONTENT, 23 – WETNESS, 24 – HARD TO RECLAIM (ROCK FRAGMENTS), 25 – ROCK FRAGMENTS, 26 – TOO ACID, 27 – PONDING

* CLASSIFICATIONS IDENTIFIED IN DEP E&SPC MANUAL, MARCH 2012.

** BASED ON SOILS DOMINANT COMPONENT.

*** SOIL TYPE LOCATED OUTSIDE PROPOSED LIMIT OF DISTURBANCE.

SUBMITTALS APPROVAL NOTE:
CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.

OWNER / APPLICANT

TRAINER BOROUGH

824 MAIN STREET

TRAINER, PA 19061

SITE ADDRESS

TOWNSHIP LINE ROAD

TRAINER, PA 19061

TRAINER BOROUGH, DELAWARE COUNTY

PLAN REFERENCE

THE RECORDED PLANS REFERRED TO IN THE INSPECTION AND MAINTENANCE NOTES ARE THE LAND DEVELOPMENT AND REVERSE SUBDIVISION PLANS, PREPARED BY KELLY AND CLOSE ENGINEERS AND SURVEYORS.

RECEIVING WATERCOURSE AND WATERSHED

THE PROJECT'S RECEIVING WATERCOURSES ARE MARCUS HOOK CREEK AND AN UNNAMED TRIBUTARY TO MARCUS HOOK CREEK, WHICH HAVE A PA CODE, TITLE 25, CHAPTER 93 DESIGNATED USE CLASSIFICATIONS OF WARM WATER FISHES (WWF), AND MIGRATORY FISHES (MF). THERE IS NO EXISTING USE INDICATED FOR THESE RECEIVING WATERCOURSES. THE PROJECT IS LOCATED WITHIN THE DELAWARE RIVER WATERSHED.

DRAINAGE AREAS COVER TYPES

COVER TYPES WITHIN THE DRAINAGE AREAS FOR THE POST-CONSTRUCTION STORMWATER BMPs ARE TURF GRASS, ROOFS, ASPHALT PAVING, CONCRETE PAVING, AND WOODED AREAS.

STORMWATER MANAGEMENT BMPs

THE FOLLOWING STORMWATER BMPs ARE ASSOCIATED WITH THIS PROJECT:

- STORM SEWER NETWORK
- ONE (1) INFILTRATION / DETENTION BASIN
- TWO (2) RIPRAP APRONS
- TWO (2) ROOF DRAIN COLLECTION SYSTEMS
- ONE (1) WATER QUALITY STRUCTURE -- STRUCTURE #102
- TWO (2) POLLUTANT CONTROL MEASURES
  - •• NATIVE SPECIES USE (LANDSCAPING)
  - •• PARKING LOT / DRIVEWAY SWEEPING

OWNERSHIP AND OPERATION/INSPECTION/MAINTENANCE RESPONSIBILITY NOTES

THE STORMWATER MANAGEMENT BMPs, ALONG WITH THE STORM SEWER SYSTEMS, ARE THE RESPONSIBILITY (i.e., OPERATION / INSPECTION / MAINTENANCE) OF THE OWNER LISTED ON THIS PLAN, OR SUBSEQUENT SITE OWNERS.

GENERAL INSPECTION AND MAINTENANCE NOTES

1. STORMWATER BMPs SHALL BE INSPECTED TO ENSURE THAT THEY CONTINUE TO REFLECT THE DESIGN / SPECIFICATIONS SHOWN IN THE RECORDED PLANS.
2. INSPECTIONS SHALL BE PERFORMED BY INDIVIDUALS QUALIFIED TO INSPECT THE APPLICABLE TYPE OF FACILITIES AND FAMILIAR WITH THEIR DESIGN AND PERFORMANCE REQUIREMENTS SO THAT MAINTENANCE AND/OR REPAIRS CAN BE PROPERLY IDENTIFIED. MAINTENANCE AND/OR REPAIR WORK SHALL ALSO BE INSPECTED BY SUCH INDIVIDUALS TO ENSURE ITS SATISFACTORY COMPLETION.
3. MAINTENANCE AND/OR REPAIR WORK SHALL BE COMPLETED TO RESTORE THE FACILITIES TO THEIR ORIGINAL DESIGN IN ACCORDANCE WITH CONSTRUCTION DETAILS AND SPECIFICATIONS INCLUDED IN THE RECORDED PLANS.
4. SEDIMENT, TRASH, DEBRIS AND/OR DAMAGED MATERIALS COLLECTED DURING MAINTENANCE SHALL BE DISPOSED OF IN AN ACCEPTABLE MANNER IN ACCORDANCE WITH APPLICABLE LAW(S) AND REGULATION(S).
5. VEGETATED AREAS DISTURBED BY REPAIRS AND / OR MAINTENANCE PROCEDURES SHALL BE RE-GRADED, SEEDED, STABILIZED, AND RESTORED TO THE CONDITIONS AS DEPICTED ON THE RECORDED PLANS.
6. INSPECTIONS REPORTS AND MONITORING RECORDS SHALL BE KEPT AND, ALONG WITH THE POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN, BE AVAILABLE FOR REVIEW BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION OR CONSERVATION DISTRICT.
7. A BLANKET EASEMENT IS ESTABLISHED OVER THE ENTIRE SITE TO PROVIDE THE MIDDLETOWN TOWNSHIP PERSONNEL ACCESS FROM ADJACENT PUBLIC ROADS TO AND AROUND ALL STORM SEWER, COLLECTION, CONVEYANCE, AND MANAGEMENT FACILITIES (STORM SEWER SYSTEMS, STORMWATER MANAGEMENT BMPs, OUTFALL STRUCTURES, ETC.),

STORM SEWER REFERENCE NOTE

REFER TO SHEETS 6, 7, AND 17 OF THE RECORDED PLANS FOR ALL STORM SEWER INFORMATION.

STORM SEWER SYSTEMS INSPECTION AND MAINTENANCE REQUIREMENTS

1. REMOVAL AND DISPOSAL OF TRASH AND DEBRIS: ONCE EVERY 3 MONTHS AND AFTER ALL MAJOR STORMS, TRASH AND DEBRIS SHOULD BE REMOVED FROM THE STORM SEWER SYSTEMS (i.e., INLET GRATES AND STRUCTURES) TO PREVENT THE COMPONENTS FROM BECOMING CLOGGED OR INOPERABLE DURING STORM EVENTS. DISPOSAL OF TRASH AND DEBRIS MUST COMPLY WITH ALL LOCAL, STATE, COUNTY AND FEDERAL REGULATIONS. ONLY SUITABLE DISPOSAL AND RECYCLING SITES SHOULD BE USED.
2. ICE AND SNOW REMOVALS: SNOW AND ICE ACCUMULATION SHOULD BE MONITORED AND REMOVED FROM INLET GRATES AND THE INLET AND OUTLET PIPE WITHIN STORM SEWER STRUCTURES TO ASSURE THE CONTINUED FUNCTIONING DURING THE WINTER MONTHS.
3. DAMAGE REPAIRS: ONCE EVERY YEAR AND AFTER ALL MAJOR STORMS, ALL COMPONENTS OF THE STORM SEWER SYSTEMS (i.e., STRUCTURES, PIPES, AND INLET GRATES) SHALL BE INSPECTED FOR ANY DAMAGE AND OPERATIONAL PROBLEMS AND REPAIRS SHALL BE MADE AS NECESSARY TO RESTORE THEIR NORMAL OPERATION.

STORMWATER MANAGEMENT FACILITIES REFERENCE NOTE

A. ABOVE-GROUND INFILTRATION / DETENTION BASIN: ONCE EVERY 3 MONTHS AND AFTER ALL MAJOR STORMS, PERFORM THE FOLLOWING MAINTENANCE ACTIVITIES:

- A.A. INFLOW AND OUTFLOW STRUCTURES: INSPECT ALL BASIN INFLOW STRUCTURES (WATER QUALITY STRUCTURE AND ENDWALL) AND OUTFLOW STRUCTURES (RISER AND ENDWALL) FOR DEBRIS. REMOVE ALL DEBRIS AND SEDIMENT IF GREATER THAN 6" IN DEPTH.
- A.B. BASIN INTERIOR: INSPECT FOR TRASH AND ACCUMULATED SEDIMENT. REMOVE TRASH AND SEDIMENTS IF ACCUMULATED DEPTH IS GREATER THAN 12 INCHES. IF VEHICLE / EQUIPMENT ACCESS IS NEEDED IN BASIN BOTTOM FOR MAINTENANCE, ONLY TRACK-MOUNTED VEHICLES / EQUIPMENT SHOULD BE USED TO AVOID LOSS OF INFILTRATION CAPABILITY OF SOILS DUE TO COMPACTION.
- A.C. EMBANKMENTS: INSPECT SIDE SLOPES AND TOP OF EMBANKMENT AREA FOR SIGNS OF EROSION DAMAGE. REPAIR ALL DAMAGE BY RE-GRADING AND STABILIZATION AS NECESSARY.
- A.D. EMERGENCY SPILLWAY: INSPECT SPILLWAY FOR SIGNS OF EROSION DAMAGE AND REPAIR ALL DAMAGE BY RE-GRADING AND STABILIZATION AS NECESSARY.
- A.E. BASIN PERIMETER FENCING: INSPECT FOR SIGNS OF DAMAGE AND REPAIR AS NEEDED.

B. RIPRAP APRONS

- B.A. ONCE EVERY 3 MONTHS AND AFTER ALL MAJOR STORMS, INSPECT RIPRAP APRON STONES AND RE-INSTALL OR REPLACE IF STONES HAVE BEEN DISLODGED.
- B.B. ONCE EVERY YEAR AND AFTER ALL MAJOR STORMS, AREA BELOW RIPRAP APRONS UP TO THE ON-SITE RECEIVING STREAM SHALL BE INSPECTED FOR ANY DAMAGE DUE TO EROSION AND REPAIRED BY VEGETATIVE STABILIZATION AND MATTING IF NECESSARY

C. WATER QUALITY STRUCTURE

- C.A. SEDIMENT REMOVAL: ONCE EVERY 3 MONTHS AND AFTER ALL MAJOR STORMS, INSPECT WATER QUALITY STRUCTURE FOR SEDIMENT ACCUMULATION AND REMOVE SEDIMENT IF NECESSARY FOLLOWING THE STEPS BELOW:
  - C.A.A. REMOVE GRATE OR COVER.
  - C.A.B. SKIM OFF OILS AND FLOATABLES.
  - C.A.C. MEASURE DEPTH OF SEDIMENT, IF ANY, COLLECTED AT STRUCTURE BOTTOM. IF SEDIMENT IS GREATER THAN 12" DEEP, VACUUM OR MANUALLY REMOVE SEDIMENT.
  - C.A.D. REPLACE GRATE OR COVER.
- C.B. ONCE EVERY YEAR AND AFTER EVERY MAJOR RAINFALL EVENT, ALL COMPONENTS OF THE STRUCTURE, INCLUDING SNOUT HOODS WHERE APPLICABLE, SHALL BE INSPECTED FOR ANY DAMAGE AND REPAIRS SHALL BE MADE AS NECESSARY TO RESTORE THEIR NORMAL OPERATION AND STRUCTURAL INTEGRITY.

D. ROOF DRAIN COLLECTION SYSTEMS

- D.A. ANNUALLY AND AFTER ALL MAJOR STORM EVENTS, THE FOLLOWING INSPECTION AND MAINTENANCE SHALL BE PERFORMED:
  - D.A.A. INSPECT ROOF SCUPPERS AND FILTERS, GUTTERS, DOWNSPOUTS, AND ANY VISIBLE COMPONENTS OF ROOF DRAIN COLLECTION SYSTEM FOR DAMAGE.
  - D.A.B. FOR EXTERNAL DOWNSPOUT LOCATIONS, OPEN TEE FITTING AT JUNCTION OF DOWNSPOUT AND ROOF RUNOFF COLLECTION SYSTEM, INSPECT FOR DAMAGE, AND REMOVE ANY DEBRIS ENCOUNTERED.
  - D.A.C. VACUUM DEBRIS FROM SUMPED PORTION OF ROOF DRAIN STRUCTURES.

E. POLLUTANT CONTROL MEASURES

- E.A. NATIVE SPECIES USE: LANDSCAPING DESIGN HAS INCLUDED NATIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE TO REDUCE THE NITROGEN LOAD IN THE SITES RUNOFF. ACCORDINGLY, MAINTENANCE OF ALL LANDSCAPING AND VEGETATION SHALL BE DONE USING NATIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.
- E.B. PARKING LOT / DRIVEWAY SWEEPING: ONCE EVERY 3 MONTHS, PARKING LOT AREAS AND DRIVEWAYS WITHIN THE WORK AREA SHOWN ON THE RECORDED PLANS SHALL BE VACUUM-SWEPT TO HELP REDUCE POLLUTANTS IN THE SITES RUNOFF.

GEOTECHNICAL REFERENCE NOTE

TESTING LOCATIONS SHOWN ON THIS PLAN CORRESPOND TO THE INFORMATION CONTAINED IN THE "INFILTRATION TEST REPORT FOR ON-LOT DISPOSAL OF STORMWATER", DATED FEBRUARY 5, 2019, PREPARED BY ENVIRONMENTAL MANAGEMENT & CONSULTING.

CONSTRUCTION WASTE / RECYCLING NOTE

ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.

TYPICAL INFILTRATION/DETENTION BASIN CONSTRUCTION SEQUENCE

1. CLEAR AND GRUB TRAP/BASIN AREA.
2. STRIP TOPSOIL FROM CLEARED AREA AND STORE AT DESIGNATED STOCKPILE LOCATIONS.
3. INSTALL BASIN OUTLET PIPE & PERMANENT OUTLET STRUCTURE.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
4. INSTALL TEMPORARY COVER ON ALL ORIFICES/OPENINGS PROVIDED IN THE WALLS AND TOP OF THE OUTLET STRUCTURE FOR TEMPORARY USE OF THE BASIN AS SEDIMENT TRAP #1.
5. CONSTRUCT KEY TRENCH, CLAY CORE, AND EMBANKMENT.
   NOTES:
   A. ONLY TRACK-MOUNTED LOW-PRESSURE (≤4.0 PSI) VEHICLES/EQUIPMENT IS PERMITTED IN THE BASIN BED AREA DELINEATED BY ORANGE CONSTRUCTION FENCING TO AVOID LOSS OF INFILTRATION CAPABILITY DUE TO COMPACTION OF UNDERLYING SOILS.
   B. CONSTRUCT ENTIRE EMBANKMENT TO FULL HEIGHT WITHOUT EMERGENCY SPILLWAY FOR TEMPORARY USE OF THE BASIN AS SEDIMENT TRAP. EMERGENCY SPILLWAY WILL BE CONSTRUCTED DURING BASIN CONVERSION (SEE "SEDIMENT TRAP REMOVAL AND BASIN CONVERSION SEQUENCE").
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
6. GRADE REMAINING AREA OF THE TRAP/BASIN AS SHOWN ON STAGE 2 OF THE PLAN.
   NOTE: ONLY TRACK-MOUNTED LOW-PRESSURE (≤4.0 PSI) VEHICLES/EQUIPMENT IS PERMITTED IN THE BASIN BED AREA DELINEATED BY ORANGE CONSTRUCTION FENCING TO AVOID LOSS OF INFILTRATION CAPABILITY DUE TO COMPACTION OF UNDERLYING SOILS.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
7. STABILIZE TRAP/BASIN BOTTOM AND INSIDE SLOPES UP TO CLEANOUT ELEVATION WITH TEMPORARY SEEDING IN ACCORDANCE WITH THE SPECIFICATIONS FOR TEMPORARY COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.
8. STABILIZE ALL OTHER DISTURBED AREAS WITH PERMANENT SEEDING IN ACCORDANCE WITH THE SPECIFICATIONS FOR PERMANENT COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

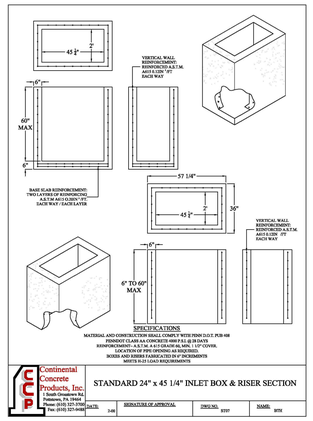
TYPICAL SEDIMENT TRAP REMOVAL & BASIN CONVERSION SEQUENCE

1. DEWATER THE TRAP / BASIN USING FILTER BAG DETAIL OR BASIN DEWATERING DETAIL.
2. REMOVE ACCUMULATED SEDIMENT.
3. UNPLUG ALL ORIFICES / OPENINGS IN THE PERMANENT OUTLET STRUCTURE WALLS AND INSTALL THEIR REQUIRED TRASH RACKS.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
4. REMOVE BAFFLES AND CLEANOUT STAKE.
5. REMOVE EMBANKMENT SPILLWAY AND CONSTRUCT PERMANENT EMERGENCY SPILLWAY. REGRADE THE BASIN BOTTOM AREA TO THE PROPOSED FINAL GRADES.
   NOTES:
   A. THE TEMPORARY SEDIMENT TRAP BOTTOM ELEV. IS A MINIMUM OF 1 FT ABOVE THE PERMANENT BASIN BOTTOM OF THE PCSM INFILTRATION FACILITY.
   B. ALL STONES OF THE TEMPORARY SEDIMENT TRAP SPILLWAY SHALL BE REMOVED AND THE PERMANENT BASIN EMERGENCY SPILLWAY SHALL BE CONSTRUCTED BY SOIL FILLING AS NECESSARY, COMPACTING, AND INSTALLATION OF THE PROPOSED PERMANENT EROSION CONTROL MAT (SEE EMERGENCY SPILLWAY DETAIL ON SHEET 16).
   C. ONLY TRACK-MOUNTED LOW-PRESSURE (≤4.0 PSI) VEHICLES / EQUIPMENT IS PERMITTED IN THE BASIN BED AREA DELINEATED BY ORANGE CONSTRUCTION FENCING TO AVOID LOSS OF INFILTRATION CAPABILITY DUE TO COMPACTION OF UNDERLYING SOILS.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
6. IN THE BASIN BED (FLOOR) AREA SCARIFY SOIL TO A DEPTH OF 8" BELOW THE PROPOSED BASIN'S FINAL GRADE.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
7. STABILIZE ALL DISTURBED AREAS WITH PERMANENT SEEDING IN ACCORDANCE WITH THE SPECIFICATIONS FOR PERMANENT COVER INCLUDING INSTALLATION OF EROSION CONTROL MATTING WHERE APPLICABLE.
   NOTE: INSTALL PERMANENT TURF REINFORCEMENT MAT IN THE EMERGENCY SPILLWAY AS SHOWN IN THE PLANS AND DETAILS.
   THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND QUALIFIED PERSONNEL SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

TYPICAL WATER QUALITY STRUCTURE CONSTRUCTION SEQUENCE

1. VERIFY SUMP DEPTH IN STRUCTURE IS IN ACCORDANCE WITH INFORMATION PROVIDED IN "WATER QUALITY STRUCTURE DETAIL". THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND A LICENSED PROFESSIONAL OR DESIGNEE SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
2. CENTER THE SNOUT DIRECTLY OVER THE OUTLET PIPE SO THAT THE ENTIRE PIPE IS COVERED AND THE LOWER EDGE OF THE HOOD IS AT LEAST 1/2 THE PIPE DIAMETER BELOW THE LOWEST INSIDE POINT OF THE PIPE (DEEPER IS EVEN BETTER).
3. DRILL 6 EQUALLY SPACED 7/16" HOLES THROUGH THE SNOUT FLANGE.
4. MARK AND DRILL CATCH BASIN AND INSTALL THE TAMP-IN LEAD ANCHORS.
   4.1. DRILL A 3/4"HOLE INTO THE BASE MATERIAL TO THE REQUIRED DEPTH (APPROXIMATELY 1-1/4" DEEP.)
   4.2. BLOW THE HOLE CLEAN OF DUST AND OTHER MATERIAL.
   4.3. INSERT THE ANCHOR INTO THE HOLE. NARROW END OF CONE MUST POINT OUT, LEAD SHIELD SLIDES OVER CONE.
   4.4. POSITION THE SETTING TOOL OR A 9/16 SOCKET AGAINST THE ANCHOR OUTER CONE. (THE OUTER RIM OF THE TOOL OR SOCKET SHOULD SEAT ONTO THE LEAD SHIELD RIM.) SET THE ANCHOR BY DRIVING THE LEAD SLEEVE OVER THE CONE USING SEVERAL SHARP HAMMER BLOWS. BE SURE THE ANCHOR IS AT THE REQUIRED EMBEDMENT DEPTH (FLUSH OR SLIGHTLY BELOW FACE OF CONCRETE).
5. ATTACH THE 1" VENT PIPE ADAPTER IN THE PREDRILLED HOLE IN THE TOP OF THE SNOUT USING THE 2 FLAT O RING GASKETS AND PVC LOCK-NUT SUPPLIED IN KIT. INSTALL WITH THE FEMALE PIPE ADAPTER UP AND A WASHER ON EACH SIDE OF THE SNOUT SHELL. TIGHTEN LOCK-NUT HAND TIGHT.
6. REMOVE PSA BACKING AND WITH FIRM PRESSURE, ATTACH GASKET STRIP TO BACK OF SNOUT FLANGE AND TRIM EXCESS.
7. ATTACH THE SNOUT TO THE CATCH BASIN WALL WITH 3/8" DIAMETER STAINLESS STEEL BOLTS. DO NOT OVER TIGHTEN; 10-15 FOOT POUNDS SHOULD BE SUFFICIENT. THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND A LICENSED PROFESSIONAL OR DESIGNEE SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
8. CUT THE ANTI-SIPHON VENT STACK TO LENGTH AND ATTACH TO HOOD AT FEMALE PIPE ADAPTER WITH PVC CEMENT. THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND A LICENSED PROFESSIONAL OR DESIGNEE SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
9. ATTACH 90 DEGREE ELBOW TO VENT STACK WITH PVC CEMENT. ENSURE THAT THE ELBOW OPENING IS ACCESSIBLE FOR MAINTENANCE AND INSPECTION. THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND A LICENSED PROFESSIONAL OR DESIGNEE SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.
10. CLEAN SEDIMENT ACCUMULATION FROM BOTTOM OF STRUCTURE AND DISPOSE OF SEDIMENT TO PREVENT FROM RE-ENTERING STRUCTURE. THIS IS A CRITICAL STAGE OF THE IMPLEMENTATION OF THE PROJECT'S BMPs AND A LICENSED PROFESSIONAL OR DESIGNEE SHALL PROVIDE APPROPRIATE SUPERVISION DURING THIS ENTIRE STEP.

RESOLUTIONS FOR SOIL LIMITATIONS		



SPECIFICATIONS

MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB 408 PENNSYLVANIA CLASS AA CONCRETE 4000 P.S.I. @ 28 DAYS REINFORCEMENT= A.S.T.M. A-615 GRADE 60, MIN. 1 1/2" COVER. CONCRETE SHALL BE PLACED MONOLITHICALLY BODIES AND JOINTS ARE FABRICATED IN 8" INCREMENTS MEETS H-20 LOAD REQUIREMENTS

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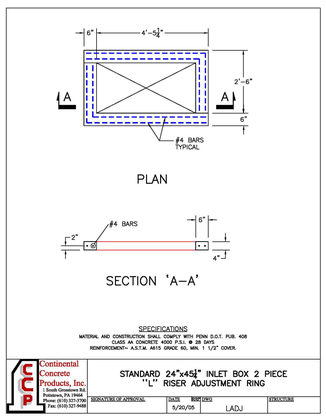
DATE:	SIGNATURE OF APPROVAL	DWG NO.	STRUCTURE
2-06		STD7	NAME: WTH

STANDARD 24" x 45 1/4" INLET BOX & RISER SECTION



SPECIFICATIONS

MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB. 408 CLASS AA CONCRETE 4000 P.S.I. @ 28 DAYS REINFORCEMENT= A.S.T.M. A615 GRADE 60, MIN. 1 1/2" COVER. CONCRETE SHALL BE PLACED MONOLITHICALLY

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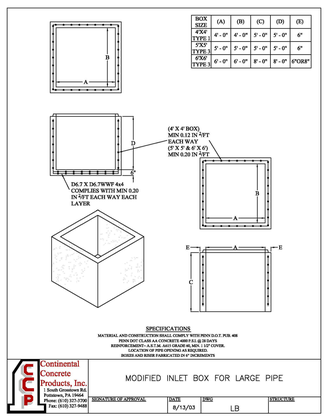
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	5/30/08	LADJ	

STANDARD 24"x45 1/4" INLET BOX 2 PIECE "L" RISER ADJUSTMENT RING



BOX SIZE	(A)	(B)	(C)	(D)	(E)
4'X4' TYPE 1	4'-0"	4'-0"	5'-0"	5'-0"	6"
5'X5' TYPE 3	5'-0"	5'-0"	5'-0"	5'-0"	6"
7'X7' TYPE 5	7'-0"	6'-0"	8'-0"	8'-0"	6"DIA#

(4'X 4' BOX) MIN 0.12 IN^2/FT EACH WAY (5' X 5' & 6' X 6') MIN 0.20 IN^2/FT

D6.7 X D6.7@WF4x4 COMPLIES WITH MIN 0.20 IN^2/FT EACH WAY EACH LAYER

SPECIFICATIONS

MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB. 408 PENN DOT CLASS AA CONCRETE 4000 P.S.I. @ 28 DAYS REINFORCEMENT= A.S.T.M. A615 GRADE 60, MIN. 1 1/2" COVER. CONCRETE SHALL BE PLACED MONOLITHICALLY BODIES AND RISER FABRICATED IN 8" INCREMENTS

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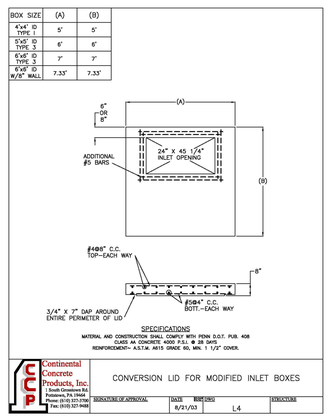
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	8/13/03	LB	

MODIFIED INLET BOX FOR LARGE PIPE



SPECIFICATIONS

MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB. 408 CLASS AA CONCRETE 4000 P.S.I. @ 28 DAYS REINFORCEMENT= A.S.T.M. A615 GRADE 60, MIN. 1 1/2" COVER.

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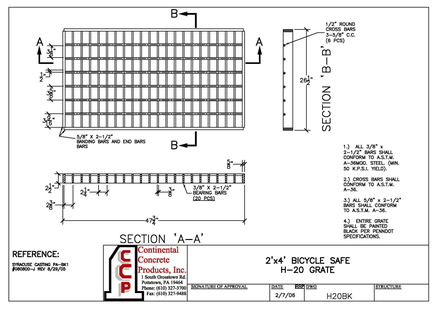
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	8/21/03	L4	

CONVERSION LID FOR MODIFIED INLET BOXES

REFERENCE: STRUCTURE CASTING No.-261 (#260602-) REV 8/28/08

STORM SEWER AND STRUCTURES NOTES:

1. STORM STRUCTURES SHALL BE THOSE SHOWN ON THIS PLAN, AS MANUFACTURED BY CONTINENTAL CONCRETE PRODUCTS, INC., OR APPROVED EQUAL MEETING PENNDOT STANDARDS FOR MATERIAL AND CONSTRUCTION.
2. AS FOUND NECESSARY BY CONTRACTOR, ANY STORM STRUCTURE MAY BE INCREASED IN SIZE TO ACCOMMODATE PROPOSED PIPING CONNECTIONS OR TO ALLOW PROPER INSTALLATION OF SNOUT HOODS.
3. ALL STORM SEWER PIPE SHALL BE HIGH-DENSITY POLYETHYLENE, N-12 ST IB, AS MANUFACTURED BY ADVANCE DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL.
4. REFER TO POST-CONSTRUCTION STORMWATER MANAGEMENT DETAILS FOR WATER QUALITY STRUCTURE DETAIL AND CUSTOM STORM STRUCTURES DETAILS.



1.) ALL 3/8" x 2-1/2" BARS SHALL CONFORM TO A.S.T.M. A-36, GRADE 36KSI, NO R.P.M.I. WELDS.

2.) CROSS BARS SHALL CONFORM TO A.S.T.M. A-36.

3.) ALL 5/8" x 2-1/2" BARS SHALL CONFORM TO A.S.T.M. A-36.

4.) ENTIRE GRATE SHALL BE PAINTED BLACK PER PENNDOT SPECIFICATIONS.

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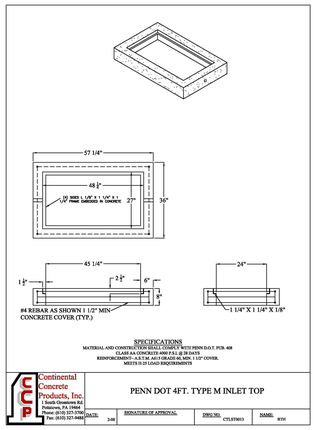
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	2/7/08	H20BK	

2'x4' BICYCLE SAFE H-20 GRATE

SUBMITTALS APPROVAL NOTE:

CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.



SPECIFICATIONS

MATERIAL AND CONSTRUCTION SHALL COMPLY WITH PENN D.O.T. PUB. 408 CLASS AA CONCRETE 4000 P.S.I. @ 28 DAYS REINFORCEMENT= A.S.T.M. A615 GRADE 60, MIN. 1 1/2" COVER. CONCRETE SHALL BE PLACED MONOLITHICALLY MEETS H-20 LOAD REQUIREMENTS

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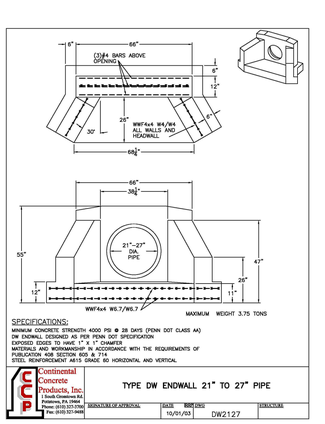
DATE:	SIGNATURE OF APPROVAL	DWG NO.	STRUCTURE
2-06		CTLET8923	NAME: WTH

PENN DOT 4FT. TYPE M INLET TOP



SPECIFICATIONS:

MINIMUM CONCRETE STRENGTH 4000 PSI @ 28 DAYS (PENN DOT CLASS AA) DW ENDWALL DESIGNED AS PER PENN DOT SPECIFICATION EXPOSED EDGES TO HAVE 1" X 1" CHAMFER MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408 SECTION 605 & 714 STEEL REINFORCEMENT A615 GRADE 60 HORIZONTAL AND VERTICAL

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SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	10/01/03	DW2127	

TYPE DW ENDWALL 21" TO 27" PIPE

SPECIFICATIONS:

MINIMUM CONCRETE STRENGTH 4000 PSI @ 28 DAYS (PENN DOT CLASS AA) DW ENDWALL DESIGNED AS PER PENN DOT SPECIFICATION EXPOSED EDGES TO HAVE 1" X 1" CHAMFER MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408 SECTION 605 & 714 STEEL REINFORCEMENT A615 GRADE 60 HORIZONTAL AND VERTICAL

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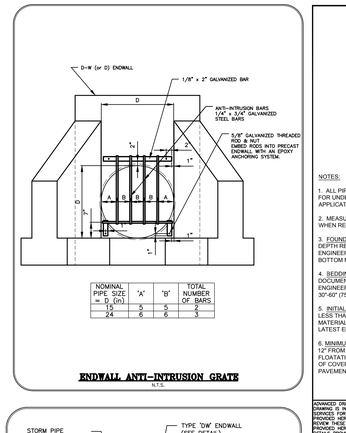
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	10/01/03	DW1218	

TYPE 'DW' ENDWALL 12" TO 18" PIPE



SPECIFICATIONS:

MINIMUM CONCRETE STRENGTH 4000 PSI @ 28 DAYS (PENN DOT CLASS AA) DW ENDWALL DESIGNED AS PER PENN DOT SPECIFICATION EXPOSED EDGES TO HAVE 1" X 1" CHAMFER MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408 SECTION 605 & 714 STEEL REINFORCEMENT A615 GRADE 60 HORIZONTAL AND VERTICAL

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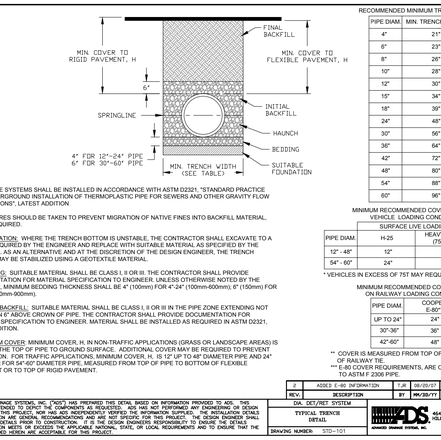
SIGNATURE OF APPROVAL	DATE	BOM DWG	STRUCTURE
	10/01/03	DW1218	

TYPE 'DW' ENDWALL 12" TO 18" PIPE

ENDWALL ANTI-INTRUSION GRATE

NTS



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm), 6" (150mm) FOR 30"-60" (750mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
54" - 60"	24"	60"

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

MINIMUM RECOMMENDED COVER BASED ON RAILWAY LOADING CONDITIONS

PIPE DIAM.	COOPER E-80
UP TO 24"	24"
30"-36"	36"
42"-60"	48"

** COVER IS MEASURED FROM TOP OF PIPE TO BOTTOM OF RAILWAY TIE.
*** E-80 COVER REQUIREMENTS, ARE ONLY APPLICABLE TO ASTM F 2306 PIPE.

REV.	DESCRIPTION	BY	DATE
3	ADDED E-80 INFORMATION	T.J.R.	06/20/07
2		MW/JS/TT	04/13
1			

DA. DET/RET SYSTEM

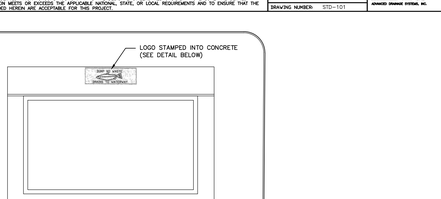
TYPICAL TRENCH DETAIL

DRAWING NUMBER: STD-101

ADS — 4640 TRUEMAN BLVD. HILLIARD, OHIO 43026 — ADVANCED DRAINAGE SYSTEMS, INC.

SCALE: NONE — DATE: 06/20/07 — DRAWING NO.: STD-101 — REV: 3 — SHT: 1 OF 1

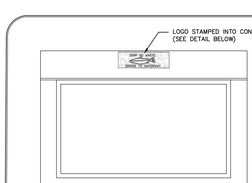
ADVANCED DRAINAGE SYSTEMS, INC. ("ADS") AND ITS EMPLOYEES PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. ADS EMPLOYEES MAY HAVE ASSISTED IN THE PREPARATION OF THIS DETAIL BASED ON THEIR EXPERIENCE WITH SIMILAR PROJECTS. ADS PROVIDED SERVICES FOR THIS PROJECT, NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEETS OR EXCEEDS THE APPLICABLE FEDERAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.



RIPRAP APRON I.D.	ASSOCIATED STORM PIPE DIAMETER (IN)	ASSOCIATED STORM STRUCTURE I.D.	STONES CLASS SIZE	L (FT)	W1 (FT)	W2 (FT)	D (IN)
101	24	101	R-4	9	7	11	18
0-1	18	0-1	R-5	8	5	13	27

RIPRAP APRON DETAIL

NTS

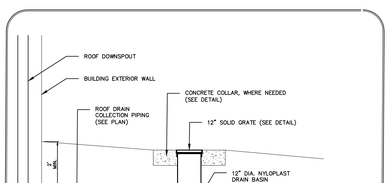


LOGO DETAIL

NOTE: TYPE C INLET SHOWN FOR REFERENCE ONLY. INCLUDE STAMP ON ALL INLETS REGARDLESS OF TYPE.

"DUMP NO WASTE" DETAIL

NTS

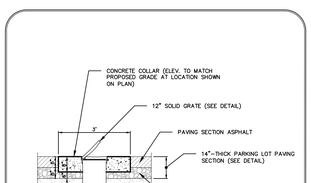


NOTES:

1. APPLICABLE ONLY TO EXTERIOR DOWNSPOUT LOCATIONS.
2. ROOF DRAIN COLLECTION PIPING MATERIAL SHALL BE HDPE OR PVC.
3. ROOF DRAIN COLLECTION PIPING SHALL MAINTAIN 2% SLOPE (MIN.) TOWARDS DISCHARGE POINT.
4. 2' MINIMUM COVER TO BE MAINTAINED OVER ROOF DRAIN PIPE AT ALL LOCATIONS.

ROOF DRAIN STRUCTURE DETAIL

NOT TO SCALE

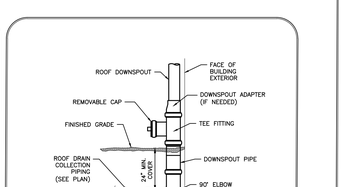


NOTES:

1. CONCRETE COLLAR IS APPLICABLE TO DRAIN BASIN INSTALLATION WHERE VEHICULAR AND HEAVY EQUIPMENT TRAFFIC IS ANTICIPATED.
2. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 4,000 PSI.

CONCRETE COLLAR FOR NYLOPLAST STRUCTURE

NOT TO SCALE

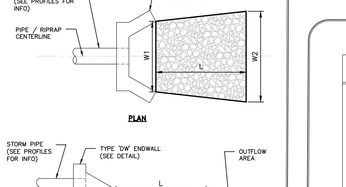


NOTES:

1. APPLICABLE ONLY TO EXTERIOR DOWNSPOUT LOCATIONS.
2. ROOF DRAIN COLLECTION PIPING MATERIAL SHALL BE HDPE OR PVC.
3. ROOF DRAIN COLLECTION PIPING SHALL MAINTAIN 2% SLOPE (MIN.) TOWARDS DISCHARGE POINT.
4. 2' MINIMUM COVER TO BE MAINTAINED OVER ROOF DRAIN PIPE AT ALL LOCATIONS.

ROOF DRAIN COLLECTION DETAIL

NOT TO SCALE

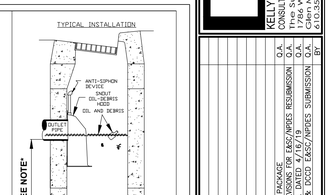


NOTES:

1. ALL HDDSS AND TRAPS FOR CATCH BASINS AND WATER QUALITY STRUCTURES SHALL BE AS MANUFACTURED BY:
   BEST MANAGEMENT PRODUCTS, INC.
   53 MT. ARCHER RD.
   LYME, CT 06371
   TEL: (860) 434-0800 (860) 434-3195 FAX
   TOLL FREE: (800) 504-4008 OR (888) 434-0277
   WEB SITE: www.bmpinc.com
   OR PRE-APPROVED EQUAL
2. ALL HOODS SHALL BE CONSTRUCTED OF A GLASS REINFORCED RESIN COMPOSITE WITH ISO GEL COAT EXTERIOR FINISH WITH A MINIMUM ELEVEN LAMINATE THICKNESS.
3. ALL HOODS SHALL BE EQUIPPED WITH A WATERTIGHT ACCESS PORT, A MOUNTING FLANGE, AND AN ANTI-SIPHON VENT PIPE AND ELBOW AS SHOWN (SEE CONFIGURATION DETAIL).
4. THE SIZE AND POSITION OF THE HOOD SHALL BE DETERMINED BY OUTLET PIPE SIZE AS PER MANUFACTURER'S RECOMMENDATION (INDUST SIZE ALWAYS LARGER THAN PIPE SIZE).
5. THE BOTTOM OF THE HOOD SHALL EXTEND DOWNWARD A MINIMUM DISTANCE EQUAL TO 1/2 THE OUTLET PIPE DIAMETER WITH A MINIMUM DISTANCE OF 6" FOR PIPES <24" I.D.
6. THE ANTI-SIPHON VENT SHALL EXTEND ABOVE HOOD BY MINIMUM OF 3" AND A MAXIMUM OF 12" ACCORDING TO STRUCTURE CONFIGURATION.
7. THE SURFACE OF THE STRUCTURE WHERE THE HOOD IS MOUNTED SHALL BE FINISHED SMOOTH AND FREE OF LOOSE MATERIAL AND PIPE SHALL BE FINISHED FLUSH TO WALL.
8. THE HOOD SHALL BE SECURELY ATTACHED TO STRUCTURE WALL WITH 3/8" STAINLESS STEEL BOLTS AND EXPANSION CONE ANCHORS AS SUPPLIED BY MANUFACTURER. (SEE INSTALLATION DETAIL).
9. INSTALLATION INSTRUCTIONS SHALL BE FURNISHED WITH MANUFACTURER SUPPLIED INSTALLATION KIT. INSTALLATION KIT SHALL INCLUDE:
   A. PVC ANTI-SIPHON VENT PIPE AND ELBOW
   B. PVC ANTI-SIPHON VENT PIPE AND ADAPTER
   C. OIL-RESISTANT CRUSHED CELL FOAM GASKET WITH PSA BACKING
   D. 3/8" STAINLESS STEEL BOLTS
   E. ANCHOR SHIELDS

US Patent # 6126817

INSTALLATION DETAIL



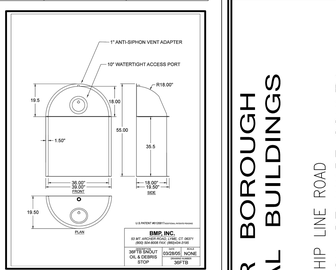
HOOD SPECIFICATION FOR CATCH BASINS AND WATER QUALITY STRUCTURES

DESCRIPTION	DATE	SCALE
OIL- DEBRIS HOOD SPECIFICATION AND INSTALLATION (TYPICAL)	09/08/00	NONE

DRAWING NUMBER: SP-SN

ADDITIONAL NOTES:

1. SNOUT HOODS TO BE THE MODELS SHOWN IN THIS DETAIL, AS MANUFACTURED BY BMP, INC., OR APPROVED EQUAL.
2. SNOUT HOODS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS.
3. CONTRACTOR SHALL VERIFY ADEQUATE STRUCTURE DIMENSIONS FOR INSTALLATION OF SNOUT HOODS PRIOR TO PRODUCT ORDERING.
4. WATER QUALITY STRUCTURE SUMP BOTTOMS SHALL BE MEASURED FROM THE OUTFLOW PIPE INVERT.
5. SNOUT HOOD MODELS AND STRUCTURE TYPES HAVE BEEN DETERMINED BASED ON WATER QUALITY CALCULATIONS AND REPRESENT THE MINIMUM REQUIREMENT.



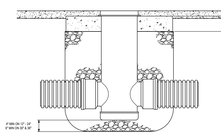
WATER QUALITY STRUCTURE DETAIL

NTS

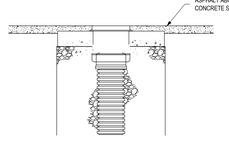
WATER QUALITY STRUCTURE INFORMATION						
STORM STRUCTURE I.D.	OUTLET PIPE DIAMETER (IN)	SNOUT HOOD MODEL	SUMP DEPTH (IN)	REQUIRED STRUCTURE INSIDE AREA [6 x OUTLET PIPE AREA] (SF)	SUGGESTED STRUCTURE TYPE
102	24	36FTB	60	18.9	4'x4' INLET BOX

ASPHALT INSTALLATION

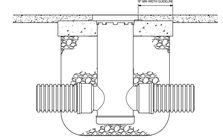
DRAIN BASIN



INLINE DRAIN



ROAD & HIGHWAY



STRUCTURE SIZE	H-20 GRATE OPTIONS			
12"	N/A	STANDARD	SOLID	2X2 R&H	N/A
15"	N/A	STANDARD	SOLID	2X2 R&H	N/A
18"	N/A	STANDARD	SOLID	2X2 R&H	2X3 R&H
24"	N/A	STANDARD	SOLID	2X2 R&H	2X3 R&H
30"	PEDESTRIAN	STANDARD	SOLID	2X2 R&H	2X3 R&H
36"	PEDESTRIAN	STANDARD	SOLID	2X2 R&H	2X3 R&H

1 - THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

2 - TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH NYLOPLAST HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER, OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE HEREFROM, FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN, EXCEPT BY SPECIFIC WRITTEN PERMISSION FROM NYLOPLAST. ©2011 NYLOPLAST

DRAWN BY	EBC	MATERIAL
DATE	4-4-06	
REVISED BY	MBH	PROJECT NO./NAME
DATE	06-12-18	
DWG SIZE	A	SCALE 1:30 SHEET 1 OF 1

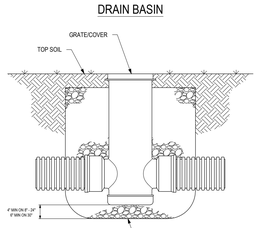
Nyloplast — 3130 VERONA AVE. BUFORD, GA 30518 PHN (770) 932-3443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: DRAIN BASIN, INLINE DRAIN, & ROAD & HIGHWAY (H-20 TRAFFIC LOAD) ASPHALT INSTALLATION DETAIL

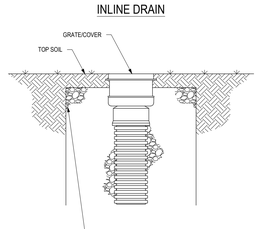
DWG NO. 7001-110-188 REV F

NON TRAFFIC INSTALLATION

DRAIN BASIN



INLINE DRAIN



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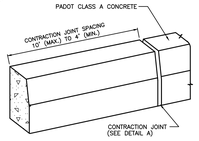
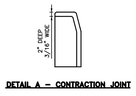
DRAWN BY	CJA	MATERIAL
DATE	9-30-99	
REVISED BY	MBH	PROJECT NO./NAME
DATE	03-11-16	
DWG SIZE	A	SCALE 1:25 SHEET 1 OF 1

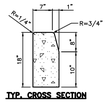
Nyloplast — 3130 VERONA AVE. BUFORD, GA 30518 P



ISOMETRIC VIEW



DETAIL A – CONTRACTION JOINT

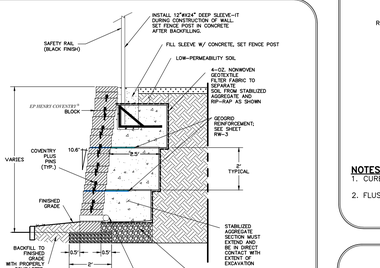


TYP. CROSS SECTION

NOTES:
1. CURB MATERIALS & INSTALLATION SHALL BE IN ACCORDANCE WITH PADOT RC-64.
2. EXPANSION JOINTS TO BE PLACED EVERY 40 FEET.

PLAIN CEMENT CONCRETE CURB DETAIL

N.T.S.

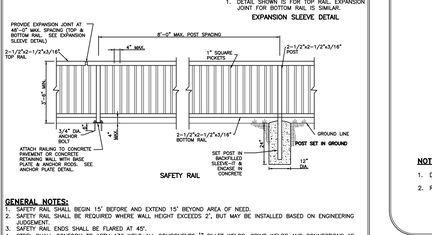


*ENSURE SYSTEMS APPROVED FOR USE WITH SLEEVE-IT ARE LIMITED TO THE FOLLOWING HEIGHTS
CHAIN LINK – UP TO 8-FT; PRIVACY – UP TO 6-FT (WOODEN, PVC, METAL); POST SIZE 4"x4" MAX.

WALL NOTES:
1. PROPOSED HEIGHT OF WALLS VARIES SEE PLANS.
2. ANY LANDSCAPE WALL IN EXCESS OF 4' HIGH SHALL BE CONSIDERED A RETAINING WALL AND WILL REQUIRE DESIGNED SHOP DRAWINGS AND CALCULATIONS BY A QUALIFIED LICENSED ENGINEER AND SUBMITTED TO THE TOWNSHIP ENGINEER FOR REVIEW AND APPROVAL. SEE SEALED DRAWINGS BY OTHERS FOR FULL DESIGN DETAILS.
3. PROPOSED WALLS SHALL BE SEGMENTED BLOCK BY **EP HENRY, COVENTRY WALL PLUS, DAKOTA BLEND COLOR.**
4. SAFETY RAILS TO BE INSTALLED ALONG THE TOP OF RETAINING WALLS, PER PLANS.

GENERAL NOTE:
DETAIL SHOWN IS FOR TOP RAIL. EXPANSION JOINT FOR BOTTOM RAIL IS SIMILAR.

EXPANSION SLEEVE DETAIL

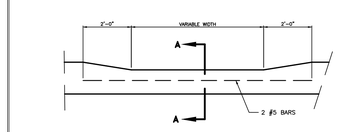


SAFETY RAIL

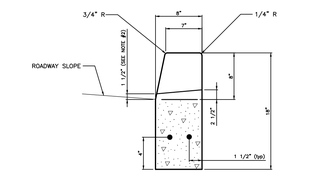
GENERAL NOTES:
1. SAFETY RAIL SHALL BEGIN 15' BEFORE AND EXTEND 15' BEYOND AREA OF NEED.
2. SAFETY RAIL SHALL BE REQUIRED WHERE WALL HEIGHT EXCEEDS 2', BUT MAY BE INSTALLED BASED ON ENGINEERING JUDGEMENT.
3. SAFETY RAIL ENDS SHALL BE FLARED AT 45°.
4. STEEL SHALL CONFORM TO ASTM A36 WELD ALL COMPONENTS ¼" FILLET WELDS. GRIND WELDS AND CONNECTIONS AS REQUIRED TO PROVIDE A SMOOTH SURFACE, FREE OF BURRS.
5. FIELD PAINT SAFETY RAIL BLACK AFTER INSTALLATION AS SPECIFIED IN THE CONTRACT DOCUMENTS.
6. EXPANSION SLEEVE DETAIL SHOWN IS FOR TOP RAIL. EXPANSION JOINT FOR BOTTOM RAIL IS SIMILAR.
7. ALTERNATE ALUMINUM DESIGN MAY BE ALLOWED PROVIDING THAT THE HEIGHT AND SPACING LIMITATIONS SHOWN ARE MET.
8. WALLS IN EXCESS OF 4 FEET IN HEIGHT ARE CONSIDERED RETAINING WALL AND SHALL BE DESIGNED BY A QUALIFIED LICENSED ENGINEER.

WALL WITH SAFETY RAIL DETAIL

N.T.S.



PLAN VIEW

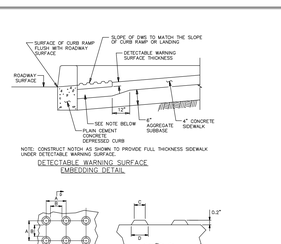


SECTION A-A

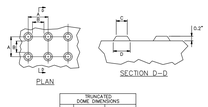
NOTES:
1. CURB MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH PADOT RC-64.
2. FLUSH FOR ADA ACCESS (ZERO CURB REVEAL)

DEPRESSED CURB DETAIL

N.T.S.



DETECTABLE WARNING SURFACE EMBEDDING DETAIL



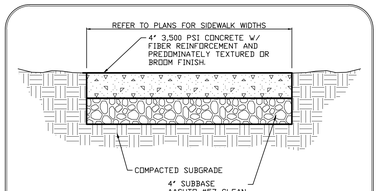
TRUNCATED DOME DIMENSIONS		
DIM	MIN	MAX
A	1.6"	2.4"
B	0.65"	1.3"
C	(1)	(1)
D	1.6"	2.4"

DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAILS

NOTES:
1. DETECTABLE WARNING DEVICE WIDTH TO BE MINIMUM 2 FEET.
2. REFER TO PLAN FOR DETECTABLE WARNING DEVICE LOCATION AND ORIENTATION.

DETECTABLE WARNING DEVICE DETAIL

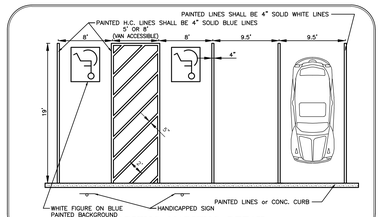
N.T.S.



SIDEWALK DETAIL

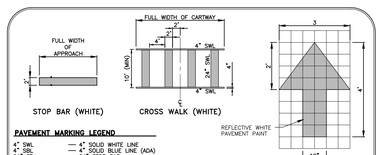
N.T.S.

w:dwg dtl



PARKING MARKING DETAIL

N.T.S.



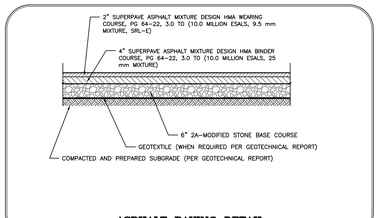
PAVEMENT MARKING LEGEND
4" SWL — 4" SOLID WHITE LINE
4" SBL — 4" SOLID BLUE LINE (ADA)
24" ST — 24" STOP BAR

STRIPING NOTE:
STOP LINE
1. STOP LINES ARE SOLID WHITE LINES THAT COMPLETELY TRAVERSE ALL TRAFFIC LANES ON EACH APPROACH.

PAVEMENT MARKING NOTE:
1. ALL PAVEMENT MARKINGS SHALL BE PER PADOT FORM 408 SPECIFICATIONS LATEST EDITION.

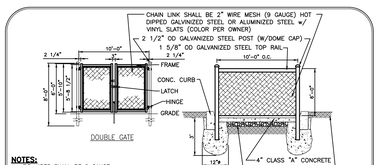
PAVEMENT MARKING DETAIL

N.T.S.



ASPHALT PAVING DETAIL

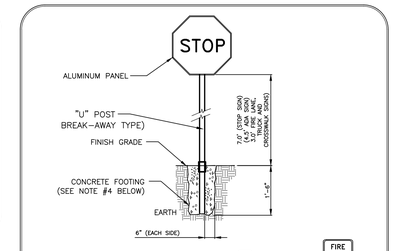
N.T.S.



NOTES:
1. TIE WIRES SHALL BE 9 GAUGE.
2. HOG RINGS TO BE 12 GAUGE.
3. TOP AND BOTTOM TENSION WIRE PER ASTM A824, TYPE I.
4. VINYL SLATS WOVEN INTO CHAIN LINK FENCING ALL AROUND.
5. USE 1 5/8" O.D. MIDDLE RAIL ON FENCE 10' HIGH & GREATER.
6. INSTALL FENCE IN ACCORDANCE WITH ASTM F567.
7. THE OWNER HAS THE OPTION TO SELECT A VARIATION OF THIS DETAIL, FOR AESTHETIC AND FUNCTIONALITY CONSIDERATIONS.

TYPICAL NON-COMBUSTABLE TRASH ENCLOSURE DETAIL

N.T.S.



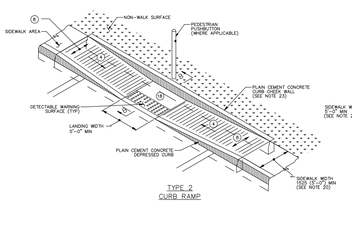
NOTE:
1. SIGNS SHALL BE INSTALLED IN ACCORDANCE WITH ALL PADOT SPECIFICATIONS.
2. SIGN SIZES, COLORS, MATERIALS AND MOUNTING HEIGHT PER PENNDOT PUB. 236 SPECS.
3. ALL SIGNS SHALL BE BREAKAWAY TYPE INSTALLATIONS IN ACCORDANCE WITH CURRENT PENNDOT SPECIFICATIONS.
4. IF ACCEPTABLE TO OWNER, DIRECT DRIVE POSTS SHALL BE INSTALLED IN LIEU OF THE CONCRETE FOOTING SHOWN IN THIS DETAIL.

SIGN DETAIL

N.T.S.

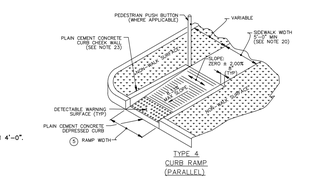
CURB RAMPS AND SIDEWALK CONSTRUCTION NOTES:

① SIDE FLARES 10.00% MAX SLOPE.
② IF THE LANDING IS INDICATED TO BE LESS THAN 4'-0", CONSTRUCT SIDE FLARES 8.33% MAX. SLOPE.
③ 8.33% MAX RAMP SLOPE.
④ CURB RAMP WIDTH IS EQUAL TO SIDEWALK WIDTH WHEN THE SIDEWALK WIDTH IS GREATER THAN OR EQUAL TO THE MINIMUM 4'-0".
⑤ SLOPE VARIES SEE RAMP DETAILS.
⑥ 2'-0" ROLLED TRANSITION.
⑦ SLOPE: ZERO ±2.00%
⑧ THE C DIMENSION IS 50% TO 65% OF THE D DIMENSION.
⑨ CONSTRUCTION JOINTS ARE SHOWN TO DEPICT A 90 DEGREE GRID. ACTUAL SIZE AND SHAPE MAY VARY.
⑩ 8.00% MAX CHANGE IN GRADE BETWEEN ROAD SURFACE AND DRIVEWAY. (6.00% APRON SLOPE PLUS 2.00% STREET CROSS SLOPE)
⑪ CURB RAMPS REQUIRE A 4'-0" MINIMUM LANDING WITH A MAXIMUM CROSS SLOPE AND LONGITUDINAL SLOPE OF 2.00% WHERE PEDESTRIANS PERFORM TURNING MANEUVERS. SEE DETAILS FOR LOCATIONS AND DIMENSIONS.
⑫ MINIMUM SIDEWALK WIDTH 5'-0" (SEE NOTE 20).
⑬ 8.00% MAX CHANGE IN GRADE BETWEEN DRIVEWAY SURFACE AND SIDEWALK.
⑭ LOCATE ONE CORNER OF THE DWS AT THE BACK OF CURB. NO OTHER POINT ON THE LEADING EDGE OF THE DWS MAY BE MORE THAN 60" AWAY FROM THE FACE OF CURB.
⑮ NEW CONSTRUCTION MUST COMPLY WITH RECOMMENDED LOCATIONS. FOR ALTERATION PROJECTS LOCATE PEDESTRIAN PUSHBUTTONS, TO THE MAXIMUM EXTENT FEASIBLE, AS FOLLOWS:
– ADJACENT TO A LEVEL NON-SLIP SURFACE TO PROVIDE ACCESS FROM A WHEELCHAIR, AND WHERE THERE IS A NON-SLIP WHEELCHAIR ACCESSIBLE ROUTE TO THE RAMP,
– WITHIN 5'-0"OF THE CROSSWALK EXTENDED.
– BETWEEN 1'-6" AND 10'-0" OF THE EDGE OF CURB, SHOULDER OR PAVEMENT.
– PARALLEL TO THE CROSSWALK TO BE USED.
⑯ MOUNT PEDESTRIAN PUSHBUTTON 42" ABOVE THE SIDEWALK OR FINISHED GRADE TO THE CENTER OF THE PUSHBUTTON AND 10" MAX LATERALLY FROM LANDING.

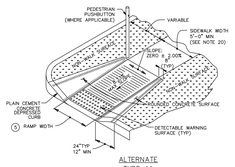


TYPE 2 CURB RAMP

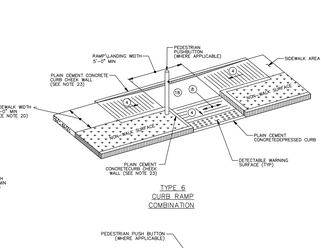
ASSISTANT DISTRICT EXECUTIVE APPROVAL REQUIRED IF LANDING FOR TURNING MANEUVER IS NOT ENTIRELY ON SIDEWALK



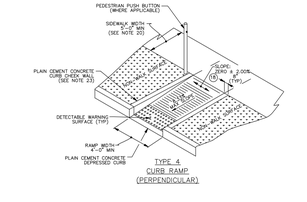
TYPE 4 CURB RAMP (PARALLEL)



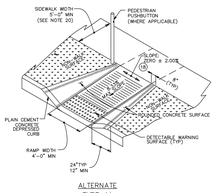
ALTERNATE TYPE 4A CURB RAMP (PARALLEL)



TYPE 6 CURB RAMP COMBINATION



TYPE 4 CURB RAMP (PERPENDICULAR)



ALTERNATE TYPE 4A CURB RAMP (PERPENDICULAR)

GENERAL CONSTRUCTION NOTES:
1. PROVIDE MATERIALS AND CONSTRUCTION MEETING THE REQUIREMENTS OF PUBLICATION 408, SECTIONS 350, 409, 630, 676 AND 694
2. PROVIDE EXPANSION JOINT MATERIAL 1/2" THICK WHERE CURB RAMP ADJOINS ANY RIGID PAVEMENT, SIDEWALK OR STRUCTURE WITH THE TOP OF JOINT FILLER FLUSH WITH ADJACENT CONCRETE SURFACE.
3. CONSTRUCT CURB RAMPS WITH A MINIMUM 4'-0" X 4'-0" CLEAR SPACE BEYOND THE CURB FACE, WITHIN THE WIDTH OF THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE. SEE PENNDOT DETAILS RC-67M, SHEET 7 FOR CROSSWALK DETAILS.
4. SEAL JOINTS WITH AN APPROVED SEALING MATERIAL.
5. PROVIDE SLIP RESISTANT TEXTURE ON CURB RAMP BY COARSE BROOMING TRANSVERSE TO THE SLOPE OF THE RAMP. EXTEND TEXTURE THE FULL WIDTH AND LENGTH OF THE CURB RAMP INCLUDING FLARE SIDE RAMPS.
6. MODIFY CONSTRUCTION DETAILS TO ADAPT DIMENSIONS TO EXISTING CURB HEIGHTS WHERE THE CURB IS LESS THAN THE STANDARD 8" HEIGHT.
7. CURB RAMP AND SIDE FLARE LENGTHS ARE VARIABLE AND BASED ON CURB HEIGHT AND THE SIDEWALK SLOPE.
8. TO AVOID CHASING GRADE INDEFINITELY WHEN TRAVERSING THE HEIGHT OF CURB, RAMP LENGTH NOT TO EXCEED 15'-0". ADJUST RAMP SLOPE AS NEEDED TO PROVIDE ACCESS TO THE MAXIMUM EXTENT FEASIBLE.
9. NON-WALK AREA IS AN OBSTRUCTED OR GRASS/NON-PAVED AREA ADJACENT TO THE PEDESTRIAN ACCESS ROUTE THAT IS NOT USED BY THE PEDESTRIAN FOR ACCESS.
10. THE DETAILS DEPICT PEDESTRIAN PUSHBUTTON POLES TO ILLUSTRATE THE RECOMMENDED PLACEMENT OF PEDESTRIAN PUSHBUTTONS. FOR ALTERATION PROJECTS, PROVIDE ACCESS TO PEDESTRIAN PUSHBUTTONS TO THE MAXIMUM EXTENT FEASIBLE. INSTALL PEDESTRIAN PUSHBUTTON STUB POLES, WHERE APPLICABLE, SO AS NOT TO CREATE PEDESTRIAN OBSTRUCTIONS.
11. NOTE NOT APPLICABLE.
12. ALIGN DETECTABLE WARNING DOMES ON A SQUARE GRID TO DIRECT PEDESTRIANS TO THE CROSS WALK AND OPPOSITE CURB RAMP ACROSS THE INTERSECTION.
13. PROVIDE DETECTABLE WARNING SURFACES (DWS) 24" MINIMUM (IN THE DIRECTION OF PEDESTRIAN TRAVEL) ACROSS FULL WIDTH OF RAMP AT THE GRADE BREAK NEAR STREET EDGE. PROVIDE DWS THAT CONTRAST VISUALLY WITH ADJACENT WALKWAY SURFACES, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT FOR THE FULL WIDTH OF RAMP.
14. FOR NEW CONSTRUCTION, DO NOT EXCEED 2.00% CROSS SLOPE ON THE CURB RAMP, CROSSWALKS OR PEDESTRIAN ACCESSIBLE ROUTE.
15. FOR NEW CONSTRUCTION AND ALTERATIONS, CONSTRUCT CURB RAMP AND FLARE SLOPES WITH THE FLATTEST SLOPE POSSIBLE. THE SLOPES INDICATED IN THE DETAILS SHOW THE MAX SLOPE ALLOWABLE. SLOPES THAT EXCEED THOSE INDICATED IN THE DETAILS, OR CONTRACT DOCUMENTS AS APPLICABLE, WILL NOT BE ACCEPTED AND WILL BE RECONSTRUCTED.
16. CONSTRUCT SIDEWALKS AT A LONGITUDINAL SLOPE NOT TO EXCEED 5.00%. FOR ROADWAY PROFILE SLOPES THAT EXCEED 5.00%, CONSTRUCT PARALLEL SIDEWALKS ADJACENT TO ROADWAY AT A LONGITUDINAL SLOPE NOT TO EXCEED ROADWAY PROFILE SLOPE.
17. THE CHANGE IN GRADE AT THE BOTTOM OF THE CURB RAMP AND ADJOINING ROAD SURFACE IS NOT TO EXCEED AN ALGEBRAIC DIFFERENCE OF 11.00%. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A CURB RAMP, LANDING OR BLENDED TRANSITION IS NOT TO EXCEED 5.00%. SEE SHEET 8 FOR DETAILS.
18. THE CONSTRUCTION STANDARDS DEPICTED ARE MOST APPROPRIATE FOR NEW CONSTRUCTION. ALL CONSTRUCTION MUST MEET THE STANDARDS CONTAINED HEREIN UNLESS OTHERWISE NOTED OR DIRECTED.
19. ALL SLOPES ARE MEASURED WITH RESPECT TO A LEVEL PLANE. THEREFORE, THE LENGTH OF RAMP IS NOT SOLELY DEPENDANT ON THE HEIGHT OF CURB. (FOR EXAMPLE, A 6" CURB DOES NOT NECESSARILY MEAN A RAMP LENGTH OF 6'-0" FOR A 12:1 SLOPE.
20. SIDEWALK WIDTH MAY BE REDUCED TO 4'-0", WHEN PASSING AREAS 5'-0" X 5'-0" ARE PROVIDED EVERY 200'.
21. THE TRAVEL LANE IS DEFINED BY THE OUTSIDE EDGE OF THE WHITE PAVEMENT MARKING LINE. IF A WHITE PAVEMENT MARKING LINE DOES NOT EXIST, THE TRAVEL LANE IS DEFINED BY THE CONTRACT DOCUMENTS.
22. CONSTRUCT DEPRESSED CURB FOR CURB RAMPS FLUSH TO ADJACENT ROADWAY. GRADE EDGE OF ROAD ELEVATIONS AT THE FLOW LINE TO ENSURE POSITIVE DRAINAGE AND PREVENT PONDING. FOR LEVEL LANDINGS BEHIND DEPRESSED CURB, ADJUST SLOPES TO PROVIDE POSITIVE DRAINAGE.
23. CHECK WALLS ARE PERMITTED WHEN ADJACENT TO NON-WALK AREAS OR ELEVATION DIFFERENCES CANNOT BE ACCOMMODATED BY FLARES OR GRADING. GRADE GRASS AREAS OR OTHER NON-WALK AREAS AT 3:1 MAXIMUM. DO NOT INSTALL CHEEK WALLS THAT INTERSECT THE PEDESTRIAN ACCESS ROUTE.
24. CONSTRUCT TOP OF PLAIN CEMENT CONCRETE DEPRESSED CURB TO BE FLUSH WITH ADJACENT SURFACES (RAMPS, SIDEWALKS, FLARES).
25. FOR CURB RAMPS THAT LEAD TO A SINGLE CROSSWALK, THE RAMP (EXCLUDING FLARES) TO BE FULLY INSIDE OF MARKED CROSSWALK LINES. SEE PENNDOT DETAILS RC67M, SHEET 7 FOR DETAILS.
26. A 4'-0" MAXIMUM DIGITAL DISPLAY LEVEL WILL BE USED TO VERIFY THE SLOPES OF CURB RAMPS AND SIDEWALKS.
27. INSTALL DUMMY JOINTS WHERE RAMPS, TURNING SPACES, FLARES, AND SIDEWALKS ABUT.
28. CONSTRUCT DEPRESSED CURB SLOPE TO MATCH ROADWAY PROFILE AND HAVE A FLUSH CONNECTION. TRANSITION CURB RAMP CROSS SLOPE TO MATCH ROADWAY PROFILE AS GRADUALLY AS POSSIBLE. DO NOT EXCEED 3.00% PER 1'-0" CROSS SLOPE RATE OF CHANGE WHEN TRANSITIONING TO ROADWAY PROFILE.
29. DO NOT SCORE OR MAKE GROOVES ON SLOPED SURFACES. LINES SHOWN ON DETAILS ARE FOR ILLUSTRATION ONLY. SEE NOTE 5.

SUBMITTALS APPROVAL NOTE:
CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.

DOCUMENTS, PLANS, OR DESIGNS SHOWN OR DESCRIBED HEREIN ARE NOT TO BE USED FOR CONSTRUCTION, BIDDING OR PERMIT PURPOSES UNLESS SIGNED AND SEALED BY A REGISTERED PROFESSIONAL.
COMMONWEALTH OF PENNSYLVANIA
JAMES C. KELLY
ENGINEER
PE044611
REGISTERED PROFESSIONAL
8/15/19

K&C
KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1 Summit Square, Suite 200
Glen Mills, Pennsylvania 19342
610.358.9262 fax 610.358.9272

REV	DATE	DESCRIPTION	BY
4	8/15/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	O.A.
3	7/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASC/NPRES SUBMISSION	O.A.
2	5/29/19	UPDATED PLANS FOR BID PACKAGE	O.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED EASC/NPRES SUBMISSION	O.A.

date: FEBRUARY 27, 2019
scale: N.T.S.
drawn by: N.D.K. / K.L.F. O.A.
checked by:
dwg. name: 2018-009-Const.dwg
project no.: 2018-009

TRAINER BOROUGH
MUNICIPAL BUILDINGS
TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
SITE CONSTRUCTION DETAILS

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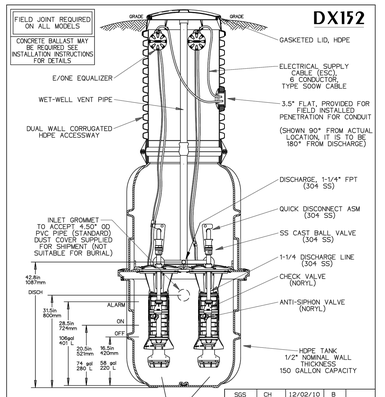
SHEET
18
of 20

DX152



NOTE:
THE PUMP ASSEMBLIES ARE LISTED BY ETL TO FACTORY MUTUAL (FM) STANDARDS FOR CLASS I, DIVISION I, GROUP D, THE LEVEL CONTROL SYSTEM, INTEGRAL TO THE PUMP, IS INTRINSICALLY SAFE (THE STATION IS NOT PART OF THE LISTING).
* ALSO AVAILABLE APPROVED BY CSA FOR CLASS 1, DIVISION 1, GROUP D

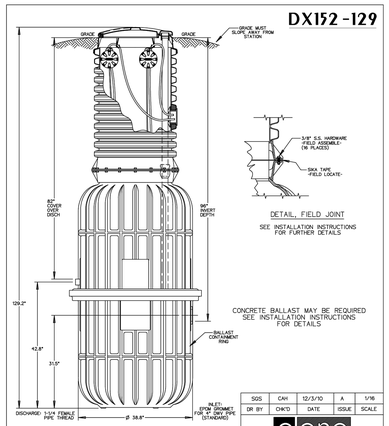
SGS	CH	12/02/10	B	
DR BY	CHK'D	DATE	ISSUE	SCALE

e/one SEWER SYSTEMS

MODEL DX152, EXPLOSIONPROOF PUMP
DETAIL SHEET

NA0202P02

DX152-129



NOTE:
THE PUMP ASSEMBLIES ARE LISTED BY ETL TO FACTORY MUTUAL (FM) STANDARDS FOR CLASS I, DIVISION I, GROUP D, THE LEVEL CONTROL SYSTEM, INTEGRAL TO THE PUMP, IS INTRINSICALLY SAFE (THE STATION IS NOT PART OF THE LISTING).
*ALSO AVAILABLE APPROVED BY CSA FOR CLASS 1, DIVISION 1, GROUP D

SGS	CAH	12/3/10	A	1/16
DR BY	CHK'D	DATE	ISSUE	SCALE

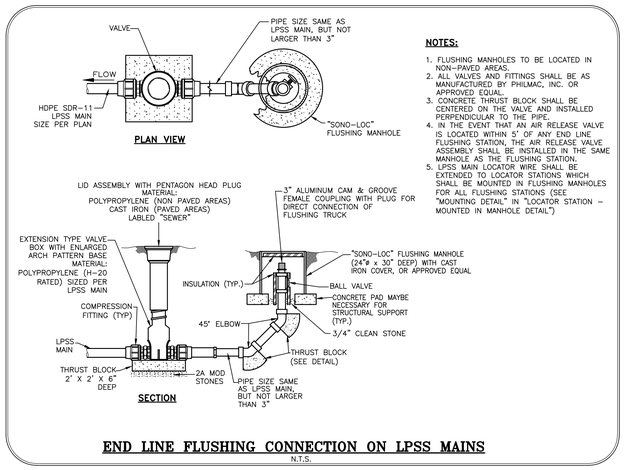
e/one SEWER SYSTEMS

MODEL DX152-129
EXPLOSIONPROOF PUMP

NA0202P03

END LINE FLUSHING CONNECTION ON LPSS MAINS

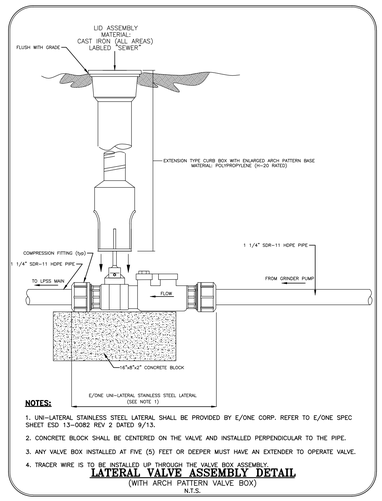
N.T.S.



NOTES:

1. FLUSHING MANHOLES TO BE LOCATED IN NON-PAVED AREAS.
2. ALL VALVES AND FITTINGS SHALL BE AS MANUFACTURED BY PHILMAC, INC. OR APPROVED EQUAL.
3. CONCRETE THRUST BLOCK SHALL BE CENTERED ON THE VALVE AND INSTALLED PERPENDICULAR TO THE PIPE.
4. IN THE EVENT THAT AN AIR RELEASE VALVE IS LOCATED WITHIN 5' OF ANY END LINE FLUSHING STATION, THE AIR RELEASE VALVE ASSEMBLY SHALL BE INSTALLED IN THE SAME MANHOLE AS THE FLUSHING STATION.
5. LPSS MAIN LOCATOR WIRE SHALL BE EXTENDED TO LOCATOR STATIONS WHICH SHALL BE MOUNTED IN FLUSHING MANHOLES FOR ALL FLUSHING STATIONS (SEE "MOUNTING DETAIL" IN "LOCATOR STATION – MOUNTED IN MANHOLE DETAIL")

NOTE:
FACTORY STARTUP SHALL BE PROVIDED FOR THE PROPOSED PUMP STATION AND LOW PRESSURE SANITARY SEWER SYSTEM.



NOTES:

1. UNI-LATERAL STAINLESS STEEL LATERAL SHALL BE PROVIDED BY E/ONE CORP. REFER TO E/ONE SPEC SHEET ESD 13-0082 REV 2 DATED 9/13.
2. CONCRETE BLOCK SHALL BE CENTERED ON THE VALVE AND INSTALLED PERPENDICULAR TO THE PIPE.
3. ANY VALVE BOX INSTALLED AT FIVE (5) FEET OR DEEPER MUST HAVE AN EXTENDER TO OPERATE VALVE.
4. TRACER WIRE IS TO BE INSTALLED UP THROUGH THE VALVE BOX ASSEMBLY.

LATERAL VALVE ASSEMBLY DETAIL

(WITH ARCH PATTERN VALVE BOX)

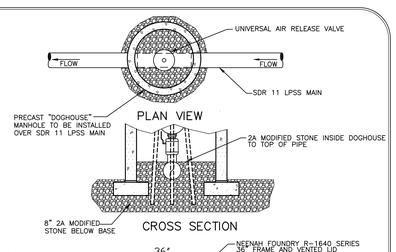
N.T.S.

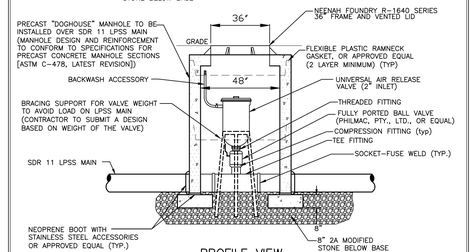
SUBMITTALS APPROVAL NOTE:

CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.

NOTES:

1. REFER TO SHEET 20 FOR UTILITY TRENCH BACKFILL DETAIL AND UTILITY TRENCH AND PAVEMENT RESTORATION DETAILS.
2. REFER TO DETAILS INCLUDED IN AGREEMENT(S) WITH AND/OR PERMITS ISSUED BY CHESTER WATER AUTHORITY AND OTHER UTILITY COMPANIES WHICH WILL SUPERCEDE THESE DETAILS IN CASE OF ANY CONFLICTS.





NOTES:
1. ANNULUS BETWEEN SEWER LINE AND DOGHOUSE CUTOUT SHALL BE GROUTED.
2. MANHOLE FRAME AND COVER WITH THE WORDS "SANITARY SEWER" CAST IN THE COVER
3. ALL CONCRETE MANHOLES TO BE 4,000 PSI TO MEET OR EXCEED ASTM C478. ALL CEMENT TO BE TYPE II ACID RESISTANT. REINFORCING AREA OF 0.20 sq. in/ft FOR WALL SECTION MIN. TO MEET OR EXCEED ASTM A 185.
4. MANHOLES SHALL HAVE TWO COATS OF TAR EXPOXY COATING OR APPROVED EQUAL, APPLIED TO THE INTERIOR AND EXTERIOR SURFACE. THE FIRST COAT SHALL BE RED. THE SECOND COAT SHALL BE BLACK. MIN COAT THICKNESS SHALL BE 16 mils.
5. A MAXIMUM OF 2 LAYERS OF PRECAST CONCRETE RINGS, IF REQUIRED.
6. MANHOLE SHALL NOT BE LOCATED WITHIN ROADSIDE SWALES OR GUTTERS. RELOCATION MAY BE NECESSARY.
7. IN THE EVENT THAT AN AIR RELEASE VALVE IS LOCATED WITHIN 5' OF ANY END LINE FLUSHING STATION, THE AIR RELEASE VALVE ASSEMBLY SHALL BE INSTALLED IN THE SAME MANHOLE AS THE FLUSHING STATION.

DOGHOUSE MANHOLE OVER UNIVERSAL AIR RELEASE VALVE

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1400 Unionville-Wawaset Road
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

BY	DESCRIPTION	DATE	REV
O.A.	UPDATED PLANS FOR BID PACKAGE	8/15/19	4
O.A.	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	7/29/19	3
O.A.	PER DCED REVIEW LETTER DATED 5/7/19	6/28/19	2
BY	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED, EASC/NPDES SUBMISSION	3/29/19	1

date: FEBRUARY 27, 2019
scale: N.T.S.
drawn by: N.D.K. / K.L.F.
checked by: O.A.
dwg. name: F-DIs-Const.dwg
project no.: 2018-009

DIGITALLY SIGNED AND SEALED FOR HARD COPY REPRESENTATION. REFER TO BLUE INK SIGNATURE
COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER OWEN ANTHONY KELLY III PE049481

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
SANITARY SEWER DETAILS

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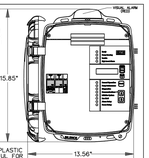
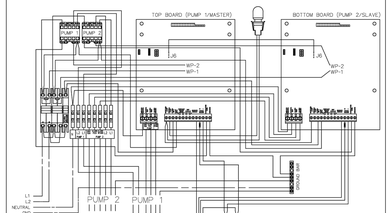
SHEET 19 of 20

SENTRY PROTECT PLUS DUPLEX

EXTERNAL VISUAL & AUDIBLE ALARM
REMOTE SENTRY DRY CONTACTS FOR
OPTIONAL POWER LOSS HIGH LEVEL ALARM (POWER LOSS ALARM FOR WIRELESS)
MANUAL ALARM SILENCE
MANUAL RUN
STATUS LEDS: NORMAL, PUMP RUNNING, HIGH LEVEL, TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, LEAKAGE, EXTENDED RUN TIME
DRY CONTACTS
CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
PADLOCK
DEAD FRONT
PREDICTIVE ALARMS
REAL TIME PUMP PERFORMANCE
ADJUSTABLE ALARM DELAY
ADJUSTABLE RUN TIME DELAY
HOUR/CYCLE COUNTER
NEMA 4X ENCLOSURE ASSEMBLY



ENCLOSURE:
CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



OLD / NEW WIRE COLOR MAP

PIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	L2	WHITE	BLACK
4	GND	GREEN	GRNYEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

SGS	02/03/12	PJD	-	02/13/12
DR BY	DATE	CHK'D	ISSUE	DATE

e/one SEWER SYSTEMS

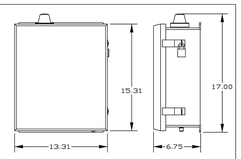
SENTRY PROTECT PLUS PANEL, DUPLEX
240V 60Hz DOUBLE POLE POWER

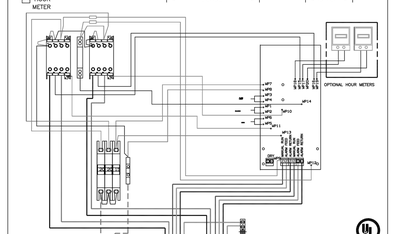
NA0344P03

DUPLEX ALTERNATING PANEL T-260

EXTERNAL VISUAL & AUDIBLE ALARM
EXTERNAL LATCHING MANUAL SILENCE
MANUAL RUN
PUMP RUN INDICATORS
CONFORMAL COATED CIRCUIT BOARD
PADLOCK
REDUNDANT RUN
ALARM DRY CONTACT
NEMA 4X ENCLOSURE ASSEMBLY
CORROSION PROOF FIBERGLASS APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE

OPTIONS:
☐ HOUR METER





FIN	FUNCTION	2000S	EXTREME
1	MANUAL RUN	RED	BROWN
2	L1	BLACK	RED
3	N	WHITE	BLACK
4	GRD	GREEN	GRNYEL
5	ALARM FEED	ORANGE	YELLOW
6	ALARM RETURN	BLUE	BLUE

AD	01/04/08	-	1156
DR BY	CHK'D	DATE	ISSUE	SCALE

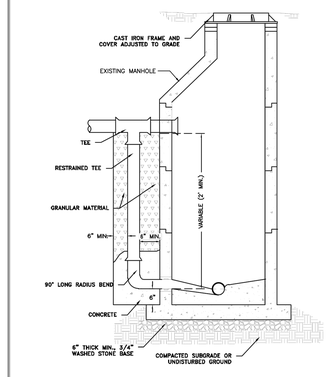
e/one SEWER SYSTEMS

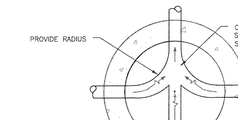
DUPLEX,120V SPLIT TIME ALT PNL
120V SINGLE POLE POWER
WIRED LEVEL POWER

LM000371 P1

FORCE MAIN DISCHARGE MANHOLE DETAIL

N.T.S.



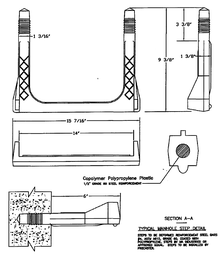


TYPICAL MANHOLE CHANNELS

NOT TO SCALE

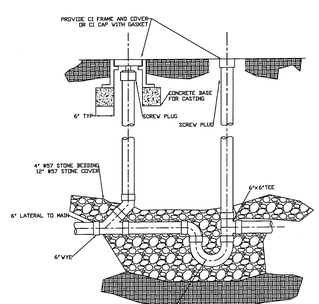
SANITARY SEWER SYSTEM MANHOLE CHANNEL DETAIL

N.T.S.



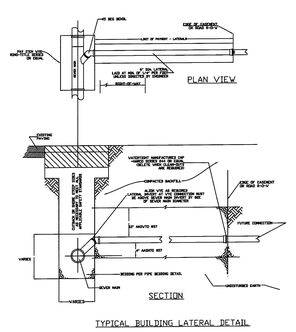
SANITARY SEWER SYSTEM MANHOLE STEPS DETAIL

N.T.S.



SANITARY SEWER BUILDING TRAP DETAIL

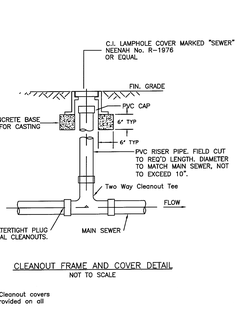
N.T.S.



TYPICAL BUILDING LATERAL DETAIL

SANITARY SEWER SYSTEM TYPICAL LATERAL DETAIL

N.T.S.



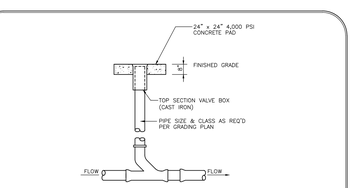
CLEANOUT FRAME AND COVER DETAIL

NOT TO SCALE

Cast Iron Cleanout covers shall be provided on all cleanouts

SANITARY SEWER SYSTEM CLEANOUT COVER DETAIL

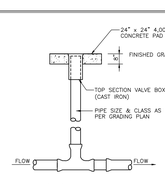
N.T.S.



See Specifications for approved bedding material.

ONE WAY CLEAN-OUT

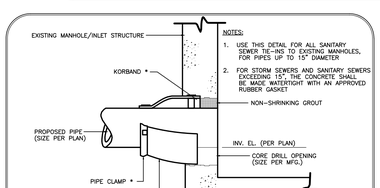
N.T.S.



See Specifications for approved bedding material.

TWO WAY CLEAN-OUT

N.T.S.

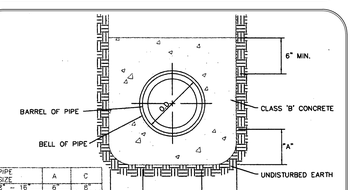


NOTES:
1. USE THIS DETAIL FOR ALL SANITARY SEWER TIE-INS TO EXISTING MANHOLES, FOR PIPES UP TO 15" DIAMETER
2. FOR STORM SEWERS AND SANITARY SEWERS EXCEEDING 15", THE CONCRETE SHALL BE MADE WATERTIGHT WITH AN APPROVED RUBBER GASKET

* – ADAPTER TO BE KOR-N-SEAL, OR EQUAL. AVAILABLE SIZES: 4, 6, 8, 10, 12, and 15 INCH

MANHOLE/INLET PIPE ADAPTER DETAIL

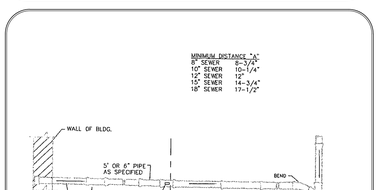
N.T.S.

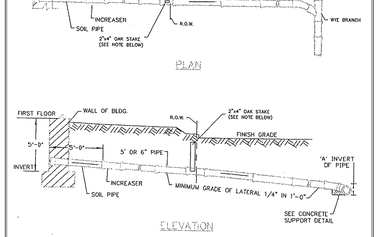


PIPE SIZE	A	C
8" - 18"	2"	6"
18" - 48"	5"	12"
54" - 84"	10"	15"

CONCRETE ENCASEMENT

N.T.S.



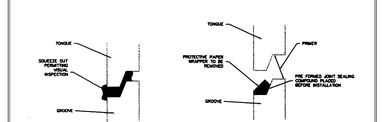


NOTE:
THE CONTRACTOR WILL MARK THE END OF ALL LATERALS WITH A 2" x 4" OAK STAKE, THE TOP TO REMAIN ±12" BELOW FINISH GRADE.

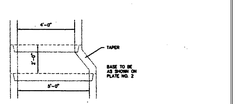
IN NO CASE SHALL INVERT OF BLDG. CONNECTION BE LESS THAN 4' BELOW FINISH GRADE.

TYPICAL BLDG. CONNECTION FIRST FLOOR SERVICE

N.T.S.



DETAIL NO. 1

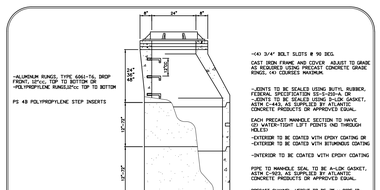


5'-0" DIA. PRE-CAST MANHOLE TRANSITION DETAIL

NOTES:
1. STEEL TEMPLATE TO BE SUPPLIED BY MANHOLE MANUFACTURER IN ORDER TO FORM PROPER RECESS IN CONCRETE.
2. RISER AND CONE SECTIONS TO BE ADEQUATELY REINFORCED IN ACCORDANCE WITH ASTM SPECIFICATION C-478.

PRE-CAST MANHOLES JOINTS AND TRANSITION DETAILS

N.T.S.



TYPICAL A-LOK SECTION
OR APPROVED EQUAL

SHALLOW MANHOLE NOTE:

MANHOLES LESS THAN 5' DEEP SHALL NOT HAVE TOP CONE SECTIONS. THE FRAME AND COVER SHALL BE ATTACHED TO A REINFORCED PRECAST CONCRETE SLAB.

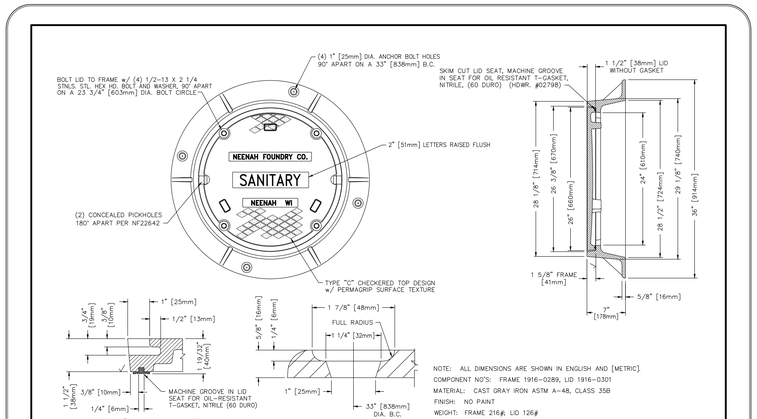
ADDITIONAL NOTES:

1. ALL SANITARY SEWER MANHOLES SHALL ALSO RECEIVE PLASTIC INSERTS UNDER THE COVER TO PREVENT SURFACE INFLOW.
2. REFER TO SEPARATE DETAILS FOR STANDARD SANITARY, WATER-TIGHT SANITARY AND STORM FRAME AND COVER DETAILS.
3. MANHOLES SHALL BE INSTALLED ON A FIRM BASE CONSISTING OF 6" CONCRETE OR 6" COMPACTED 2A MODIFIED STONE.
4. ALL MATERIALS CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH PADOT ROADWAY CONSTRUCTION STANDARDS #C-36.
5. MANHOLES SHALL BE IN ACCORDANCE WITH ATLANTIC CONCRETE PRODUCTS, INC. OR APPROVED EQUAL.
6. THE VOID AREA BETWEEN THE PRECAST CHANNEL AND THE MANHOLE WALL (GAP BETWEEN END OF PIPE AND START OF CHANNEL) SHALL BE FILLED WITH NON-SHRINK GROUT.

48" DIA. MANHOLE

MAXIMUM PIPE O.D. – 31.5" FOR 180 DEG. THRU 125 DEG. DEFLECTION
25" FOR 90 DEG. DEFLECTION

N.T.S.



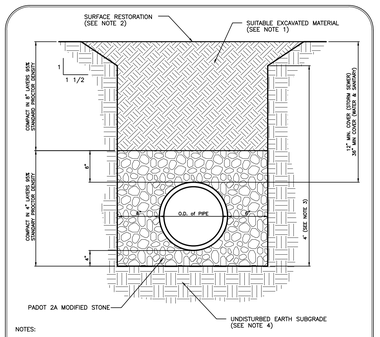
NOTE: ALL DIMENSIONS ARE SHOWN IN ENGLISH AND [METRIC]
COMPONENT NO'S: FRAME 1916-0289, LID 1916-0301
MATERIAL: CAST GRAY IRON ASTM A-48, CLASS 35B
FINISH: NO PAINT
WEIGHT: FRAME 216#, LID 126#

DR. CSK	SCALE: N.T.S.	ITEM: R-1916-F FRAME AND BOLTED PLATEN LID GASKETED w/ "T" SEAL, LETTERED "SANITARY"
CH.		
APP.	DW. CHK.	NEENAH FOUNDRY COMPANY NEENAH, WISCONSIN 54956
DATE: 11-14-94		R-1916 455 B

CAD. DWG. REF.: 1916 455.DWG-3

WATER-TIGHT SANITARY SEWER MANHOLE FRAME and COVER DETAIL

N.T.S.



NOTES:

1. FOR NON-PAVED AREAS, SUITABLE EXCAVATED MATERIAL SHALL BE CLEAN, DRY NON-FROZEN EARTH WITH A MAXIMUM STONE SIZE OF 6 INCHES. FOR PAVED AREAS, REFER TO APPROPRIATE RESTORATION DETAIL FOR REQUIRED BACKFILL TO GRADE.

2. FOR NON-PAVED AREAS, REFER TO SEED OR HYDROSEED SPECIFICATION. INSTALL JUTE MAT OR ROCK FILTER BERMS AS NEEDED ON SLOPES TO PREVENT ACCELERATED EROSION. FOR PAVED AREAS, REFER TO APPROPRIATE RESTORATION DETAIL.

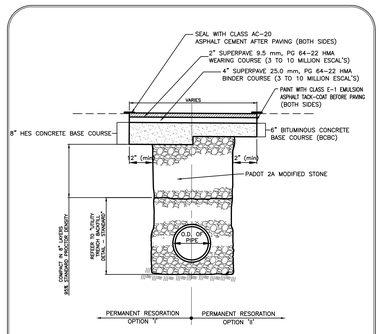
3. FOR TRENCHES EXCEEDING 4 FEET IN HEIGHT, UPPER SECTION OF TRENCH SHALL BE CUT BACK A MINIMUM OF 1 1/2 HORIZONTAL TO 1 VERTICAL. IN LIEU OF A CUT BACK, PROPER SHORING MAY BE USED WHEN APPROVED BY THE ENGINEER. TRENCH RESTORATION SHALL BE IN ACCORDANCE WITH OSHA REGULATIONS. WHERE OSHA REGULATIONS ARE MORE STRINGENT THAN THIS DETAIL, OSHA REGULATIONS SHALL TAKE PRECEDENCE.

4. USE THIS DETAIL FOR EXCAVATION IN ROCK AND UNSUITABLE SUBGRADE. WHERE UNSUITABLE SUBGRADE IN ENCOUNTERED, INSTALL A 12" MINIMUM LAYER OF PADOT #4 STONE BALLAST TO STABILIZE SUBGRADE, PRIOR TO INSTALLING PIPE BEDDING.

5. USE THIS DETAIL ALSO FOR INSTALLING UTILITIES WITHIN NEW ROADS AND PARKING LOTS. REFER TO TYPICAL PAVING SECTIONS FOR SURFACE CONSTRUCTION.

UTILITY TRENCH BACKFILL DETAIL – STANDARD

N.T.S.



NOTES:

1. WHERE THIS DETAIL CONTRADICTS THE PADOT DETAIL, THE PADOT DETAIL SHALL TAKE PRECEDENCE.

2. ALL STREET ROADWAY PAVEMENTS SHALL BE CUT BY A MECHANICAL SAW OR PAVING CUTTER.

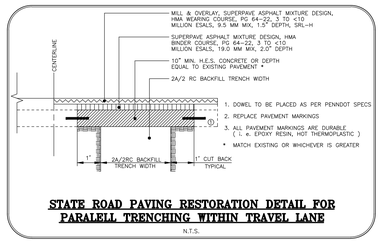
3. ANY ITEMS (I.E., CURB, PAVED SURFACES OUTSIDE THE LIMIT OF WORK, ETC.) DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF TEMPORARY PAVEMENT UNTIL IT IS REPLACED WITH PERMANENT PAVEMENT.

5. BITUMINOUS MATERIAL FOR BASE AND SURFACE COURSES OR PERMANENT PAVEMENT REPLACEMENT SHALL NOT BE PLACED WHEN THE AIR TEMPERATURE IS 40° F OR LOWER; NOR WHEN THE TEMPERATURE OF THE PAVEMENT, BASE, OR BINDER ON WHICH IT IS TO BE PLACED IS 40° F OR LOWER.

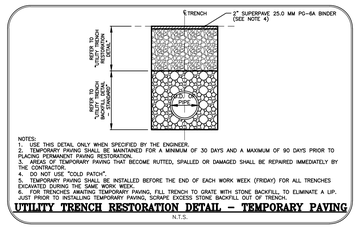
UTILITY TRENCH RESTORATION DETAIL – PADOT ROAD

N.T.S.



STATE ROAD PAVING RESTORATION DETAIL FOR PARALELL TRENCHING WITHIN TRAVEL LANE

N.T.S.



NOTES:
1. USE THIS DETAIL ONLY WHEN SPECIFIED BY THE ENGINEER.
2. TEMPORARY PAVING SHALL BE MAINTAINED FOR A MINIMUM OF 30 DAYS AND A MAXIMUM OF 90 DAYS PRIOR TO PLACING PERMANENT PAVING RESTORATION.
3. REMOVE TEMPORARY PAVING THAT BECOME RUTTED, SPALLED OR DAMAGED SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR.
4. DO NOT USE "COLD PATCH".
5. TEMPORARY PAVING SHALL BE INSTALLED BEFORE THE END OF EACH WORK WEEK (FRIDAY) FOR ALL TRENCHES EXCAVATED DURING THE SAME WORK WEEK.
6. PRIOR TO INSTALLING TEMPORARY PAVING, FILL TRENCH TO GRATE WITH STONE BACKFILL, TO ELIMINATE A LIP. JUST PRIOR TO INSTALLING TEMPORARY PAVING, SCRAPE EXCESS STONE BACKFILL OUT OF TRENCH.

UTILITY TRENCH RESTORATION DETAIL – TEMPORARY PAVING

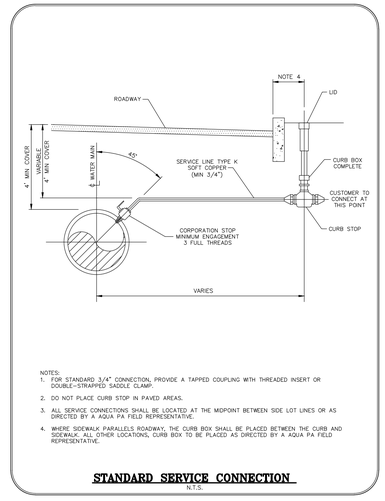
N.T.S.

SUBMITTALS APPROVAL NOTE:

CONTRACTOR SHALL SUBMIT ALL REQUIRED SHOP DRAWINGS AND DOCUMENTATION FOR THE PROPOSED STORM, SANITARY, AND STREET MATERIALS TO THE DESIGN ENGINEER AND RECEIVE APPROVAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION RELATED TO SAID ITEMS.

NOTES:

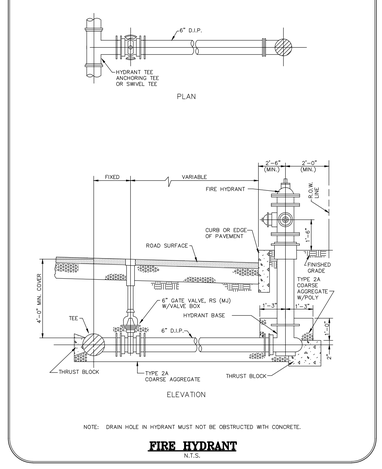
REFER TO DETAILS INCLUDED IN AGREEMENT(S) WITH AND/OR PERMITS ISSUED BY CHESTER WATER AUTHORITY AND OTHER UTILITY COMPANIES WHICH WILL SUPERCEDE THESE DETAILS IN CASE OF ANY CONFLICTS.



NOTES:
1. FOR STANDARD 3/4" CONNECTION, PROVIDE A TAPPED COUPLING WITH THREADED INSERT OR DOUBLE-STRAPPED SADDLE CLAMP.
2. DO NOT PLACE CURB STOP IN PAVED AREAS.
3. ALL SERVICE CONNECTIONS SHALL BE LOCATED AT THE MIDPOINT BETWEEN SIDE LOT LINES OR AS DIRECTED BY A AQUA PA FIELD REPRESENTATIVE.
4. WHERE SIDEWALK PARALLELS ROADWAY, THE CURB BOX SHALL BE PLACED BETWEEN THE CURB AND SIDEWALK. ALL OTHER LOCATIONS, CURB BOX TO BE PLACED AS DIRECTED BY A AQUA PA FIELD REPRESENTATIVE.

STANDARD SERVICE CONNECTION

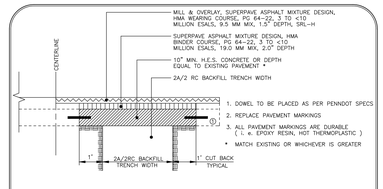
N.T.S.



NOTE: DRAIN HOLE IN HYDRANT MUST NOT BE OBSTRUCTED WITH CONCRETE.

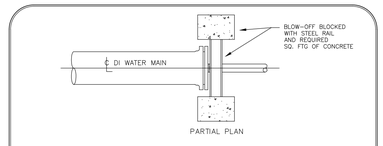
FIRE HYDRANT

N.T.S.



STATE ROAD PAVING RESTORATION DETAIL FOR PARALELL TRENCHING WITHIN TRAVEL LANE

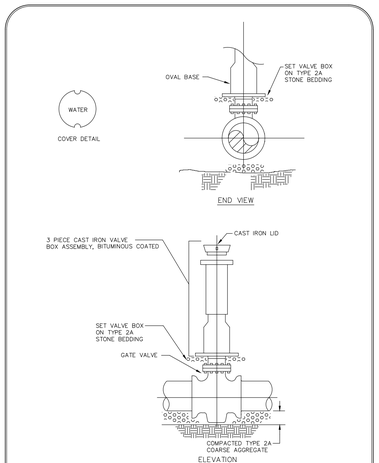
N.T.S.



NOTE:
DETAIL SHOWS A TYPICAL 2" BO ON A 8" TJ PIPE. PLUGS USED FOR BO'S TO MATCH MAIN SIZE & JOINTS.

STANDARD 2" BLOW-OFF

N.T.S.



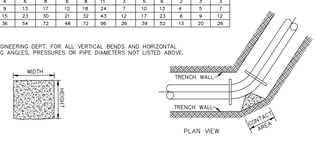
STANDARD GATE VALVE AND VALVE BOX

N.T.S.

MINIMUM THRUST BLOCK AREAS REQUIRED
(SQUARE FEET OF CONTACT SURFACE AREA ALONG TRENCH WALL)

PIPE DIAMETER	HYDRANTS, TEES & BLOW-OFFS			90° BENDS			45° BENDS			11 1/4° & 22 1/2° BENDS		
	100 P.S.I.	150 P.S.I.	200 P.S.I.	100 P.S.I.	150 P.S.I.	200 P.S.I.	100 P.S.I.	150 P.S.I.	200 P.S.I.	100 P.S.I.	150 P.S.I.	200 P.S.I.
4"	3	4	5	3	5	6	2	3	4	1	2	2
8"	4	6	8	6	8	11	3	5	6	2	3	3
12"	9	13	17	12	18	24	7	10	13	4	5	7
16"	15	23	30	21	32	43	12	17	23	6	9	12
24"	36	54	72	48	72	96	26	39	52	13	20	26

NOTE:
REFER TO ENGINEERING DEPT. FOR ALL VERTICAL BENDS AND HORIZONTAL BENDS HAVING ANGLES, PRESSURES OR PIPE DIAMETERS NOT LISTED ABOVE.



THRUST BLOCK DETAIL

N.T.S.

KELLY & CLOSE ENGINEERS
CONSULTING ENGINEERS & SURVEYORS
The Summit at Brandywine
1260 Liberty Ridge Drive, Suite 110
Glen Mills, Pennsylvania 19342
610.358.9263 fax 610.358.9272

REV'I	DATE	DESCRIPTION	BY
4	8/15/19	UPDATED PLANS FOR BID PACKAGE	G.A.
3	7/30/19	PER DCED REVIEW LETTER DATED 6/7/19 & OTHER MINOR REVISIONS	G.A.
2	4/29/19	PER DCED, CHESTER WATER AUTH. & DELAWARE COUNTY REVIEWS	G.A.
1	3/29/19	PER BOROUGH SOLICITOR & ENGINEER COMMENTS & DCED E&SC/NPDES SUBMISSION	G.A.

date: FEBRUARY 27, 2019
scale: N.T.S.
drawn by: N.D.K. / K.L.F.
checked by: G.A.
dwg. name: F-01s-Const.dwg
project no.: 2018-009

PRELIMINARY / FINAL LAND DEVELOPMENT PLANS
WATER AND UTILITY SERVICE DETAILS

TRAINER BOROUGH MUNICIPAL BUILDINGS

TOWNSHIP LINE ROAD
TRAINER BOROUGH, DELAWARE COUNTY

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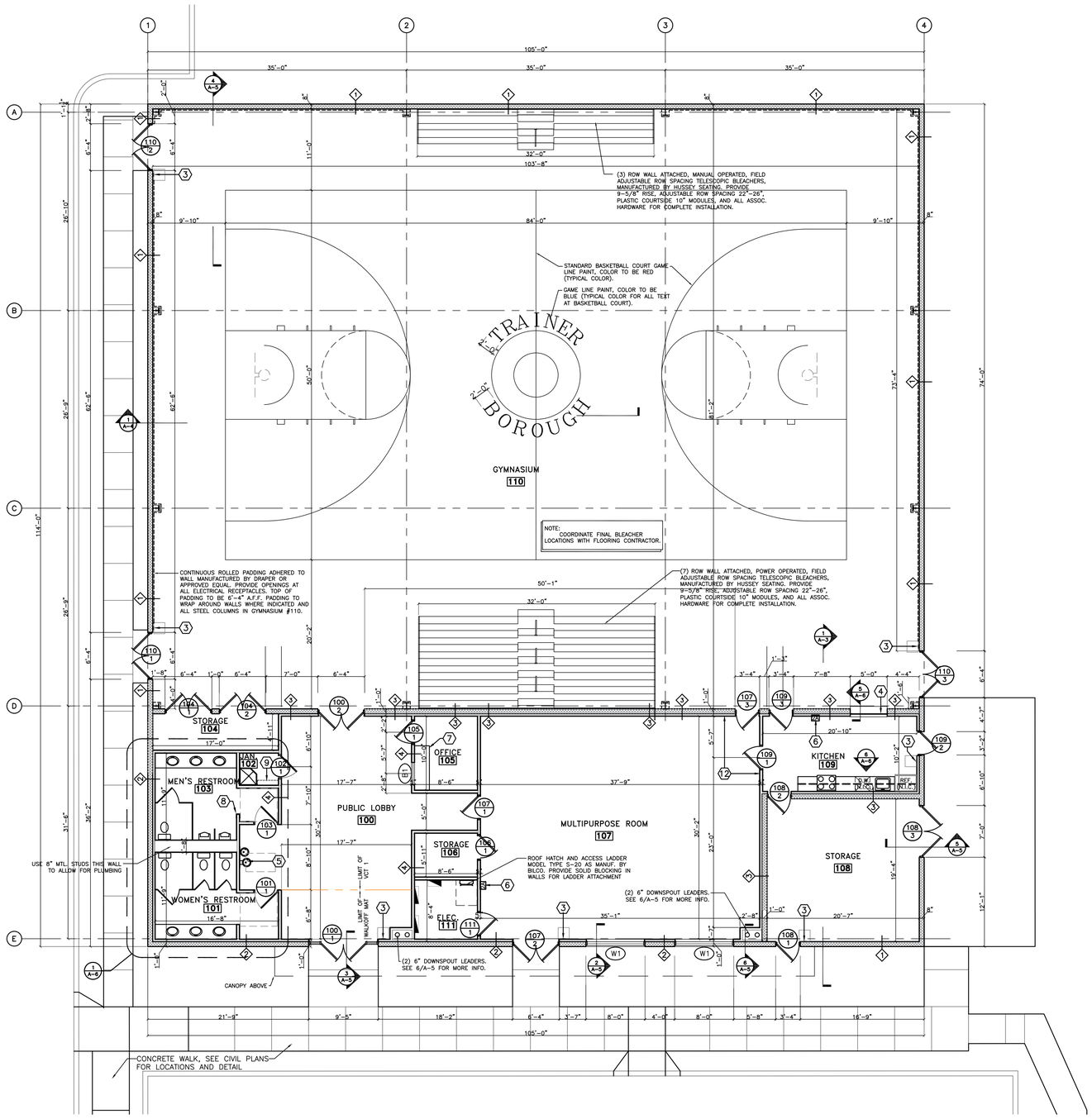
SHEET 20 of 20



1 / A-1 **PROPOSED FLOOR PLAN**
COMMUNITY CENTER SCALE: 1/8"=1'-0"

WALL LEGEND
COMMUNITY CENTER

- EXTERIOR WALL – 8" REINFORCED CMU w/ INSULATED CORES TO COMPLY w/ 2015 IBC R-9.5 CONTINUOUS, GROUND FACE @ EXTERIOR.
- EXTERIOR WALL – 8" REINFORCED GROUND FACE CMU w/ INSULATED CORES TO COMPLY w/ 2015 IBC R-9.5 CONTINUOUS, 3-5/8" 20 GA. MTL. STUDS @ 16" O.C. w/ 3-1/2" (R-13) FACED BATT INSULATION AND 5/8" GYP. BOARD AT INTERIOR. RUN STUDS TIGHT TO DECK ABOVE.
- INTERIOR WALL – 8" REINFORCED PAINTED CMU w/ 3-5/8" 20 GA. MTL. STUDS @ 16" O.C. w/ 3-1/2" (R-13) UNFACED BATT INSULATION AND 5/8" GYP. BD.
- INTERIOR WALL – 3-5/8" 20 GA. MTL. STUDS @ 16" O.C. w/ 3-1/2" (R-13) UNFACED BATT INSULATION w/ 5/8" GYP. BD. @ BOTH SIDES.

KEYNOTES
COMMUNITY CENTER

1. RESERVED
2. RESERVED
3. TACTILE EXIT SIGN MOUNTED ON STRIKE SIDE OF DOOR @ 48"-60" A.F.F. TO BRAILLE.
4. JAMB MTD., STAINLESS STL., CRANK OPERTATED ROLLING COUNTER DOOR AND FRAME, MODEL #651 AS MANUF. BY OVERHEAD DOOR CO. OR APPROVED EQUAL. PROVIDE ALL ASSOC. HARDWARE FOR COMPLETE INSTALLATION.
5. ADA ACCESSIBLE HIGH/LOW WATER FOUNTAIN w/ SPOUT MTD. 36" MAX. AF.F. SEE PLUMBING PLANS FOR FXITURE INFORMATION.
6. 2A FIRE EXTINGUISHER MTD. 48" TO TOP FURNITURE SUPPLIED & INSTALLED BY OWNER.
7. RESERVED
8. VINYL CORNER GUARDS – MODEL #SGU AS MANUFACTURED BY JC– INDUSTRIES, 48" IN LENGTH WITH 2" WINGS.
9. STAINLESS STL. MOP & BROOM RACK MANUF. BY ASI MODEL #1308–3 OR APPROVED EQ., MOUNT 66" A.F.F. FROM BTM. OF MOP STRIP.
10. RESERVED
11. RESERVED
12. PROVIDE SOLID BLOCKING IN WALL FOR TVs OR SHELVING AS REQ. VERIFY FINAL LOCATION WITH OWNER.

LINN ARCHITECTS
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
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FAX: 610-566-3258
ARCHITECTURE
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INTERIOR DESIGN

PROPOSED FLOOR PLAN
NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

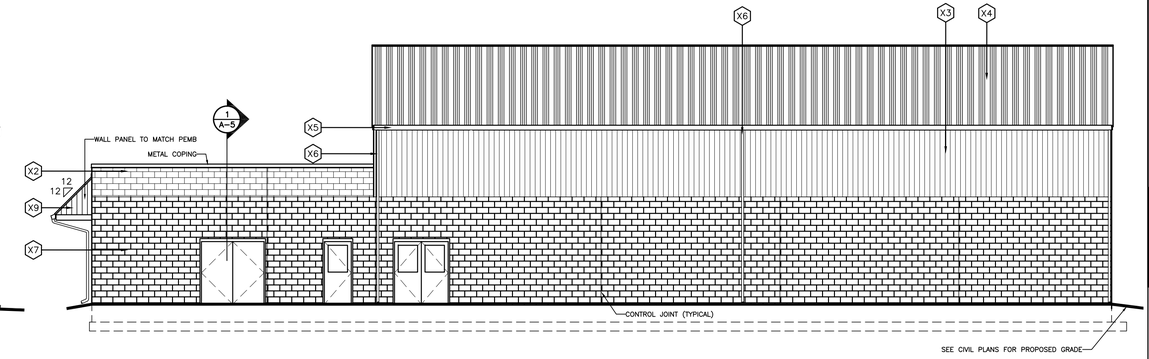
REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE 1/8"=1'-0"
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. A-1
SHEET OF

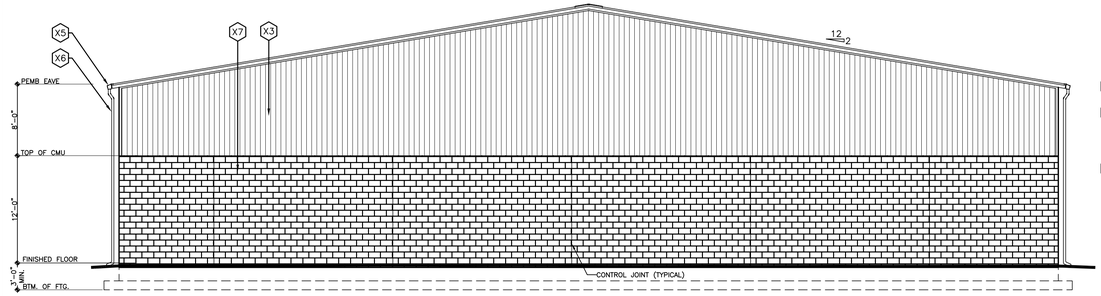
1 A-2 **PROPOSED FRONT ELEVATION**

COMMUNITY CENTER SCALE: 1/8"=1'-0"



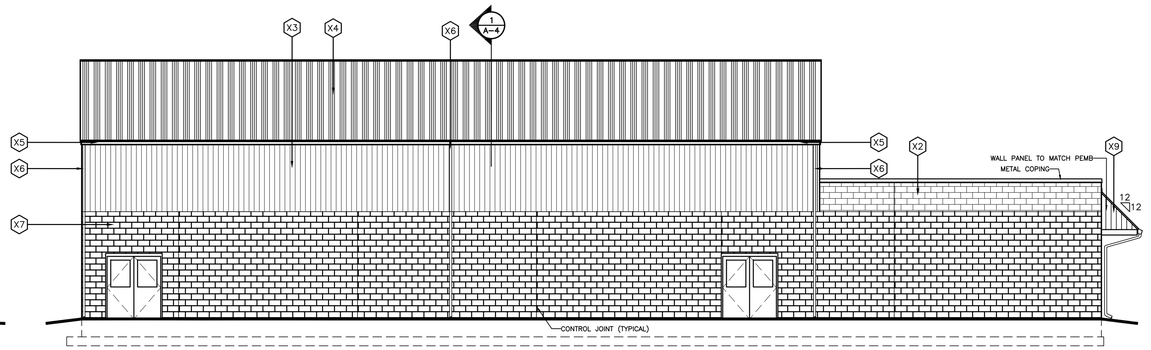
2 A-2 **PROPOSED RIGHT SIDE ELEVATION**

COMMUNITY CENTER SCALE: 1/8"=1'-0"



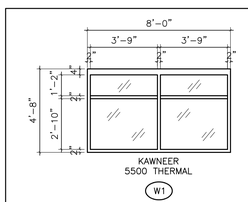
3 A-2 **PROPOSED REAR ELEVATION**

COMMUNITY CENTER SCALE: 1/8"=1'-0"



4 A-2 **PROPOSED LEFT SIDE ELEVATION**

COMMUNITY CENTER SCALE: 1/8"=1'-0"



WINDOW NOTES:

1. 'W1' WINDOWS TO BE KAWNEER'S 5500 THERMAL WINDOWS OR APPROVED EQUAL. ALL WINDOWS TO HAVE 1" INSULATED GLASS, THERMALLY BROKEN.
2. GLASS ADJACENT TO DOORS AND WITHIN 18" OF FLOOR TO BE TEMPERED SAFETY GLASS
3. EXTERIOR FRAME COLOR TO BE BLACK

EXTERIOR WINDOW TYPES
COMMUNITY CENTER

EXTERIOR FINISH SCHEDULE - COMMUNITY CENTER

TAG	MATERIAL/ MANUF.	STYLE/COLOR	REMARKS
X1	5/4x8 TRIM/AZEK OR APPROVED EQUAL	TRADITIONAL/WHITE	
X2	GROUND FACE CMU/FIZZANO BROS	F-520	
X3	METAL WALL PANELS BY BUILDING MANUF.	TBD	
X4	METAL ROOF PANELS BY BUILDING MANUF.	TBD	
X5	ALUMINUM GUTTER	WHITE	6" BOX
X6	.050 ALUM. RWC	WHITE	3"x4"
X7	GROUND FACE CMU/FIZZANO BROS	F-518	
X8	ALUMINUM PIN MTD. LETTERS	BLACK	SEE ELEVATION FOR INDIVIDUAL LETTER HEIGHT
X9	STANDING SEAM METAL ROOF SYSTEM/ATAS OR APPROVED EQ.	DUTCH SEAM/MRD150/15" KYNAR 500 FINISH/REDWOOD	

NOTES:
1.) CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL
2.) REFER TO SPECIFICATIONS FOR MORE INFORMATION

LINN ARCHITECTS
ARCHITECTURE
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INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-3258

REGISTERED ARCHITECT
COMMONWEALTH OF PENNSYLVANIA
ARCHITECT
LICENSE NO. RA-009431-X

PROPOSED EXTERIOR ELEVATIONS
NEW MUNICIPAL BUILDINGS - COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

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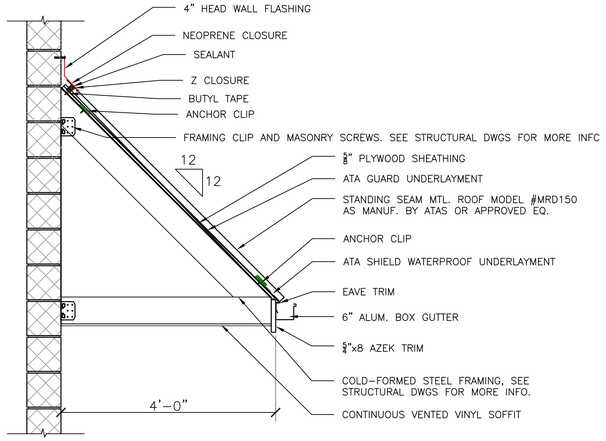
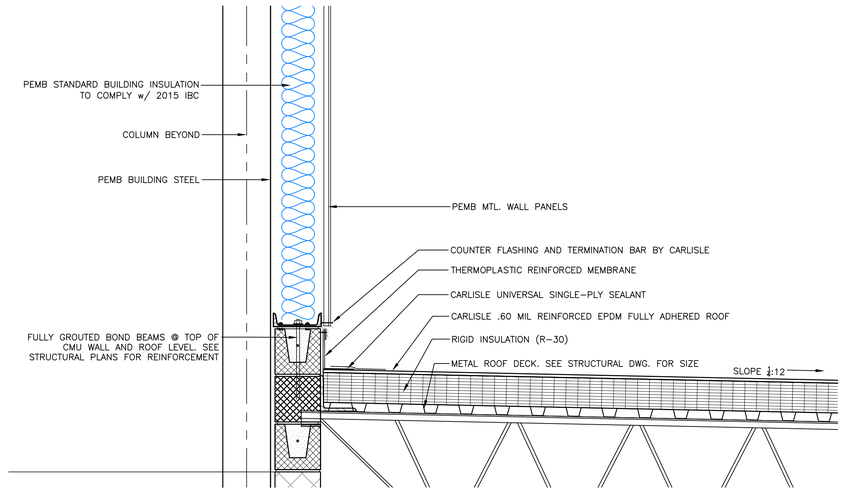
SHEET NO. A-2 SHEET OF



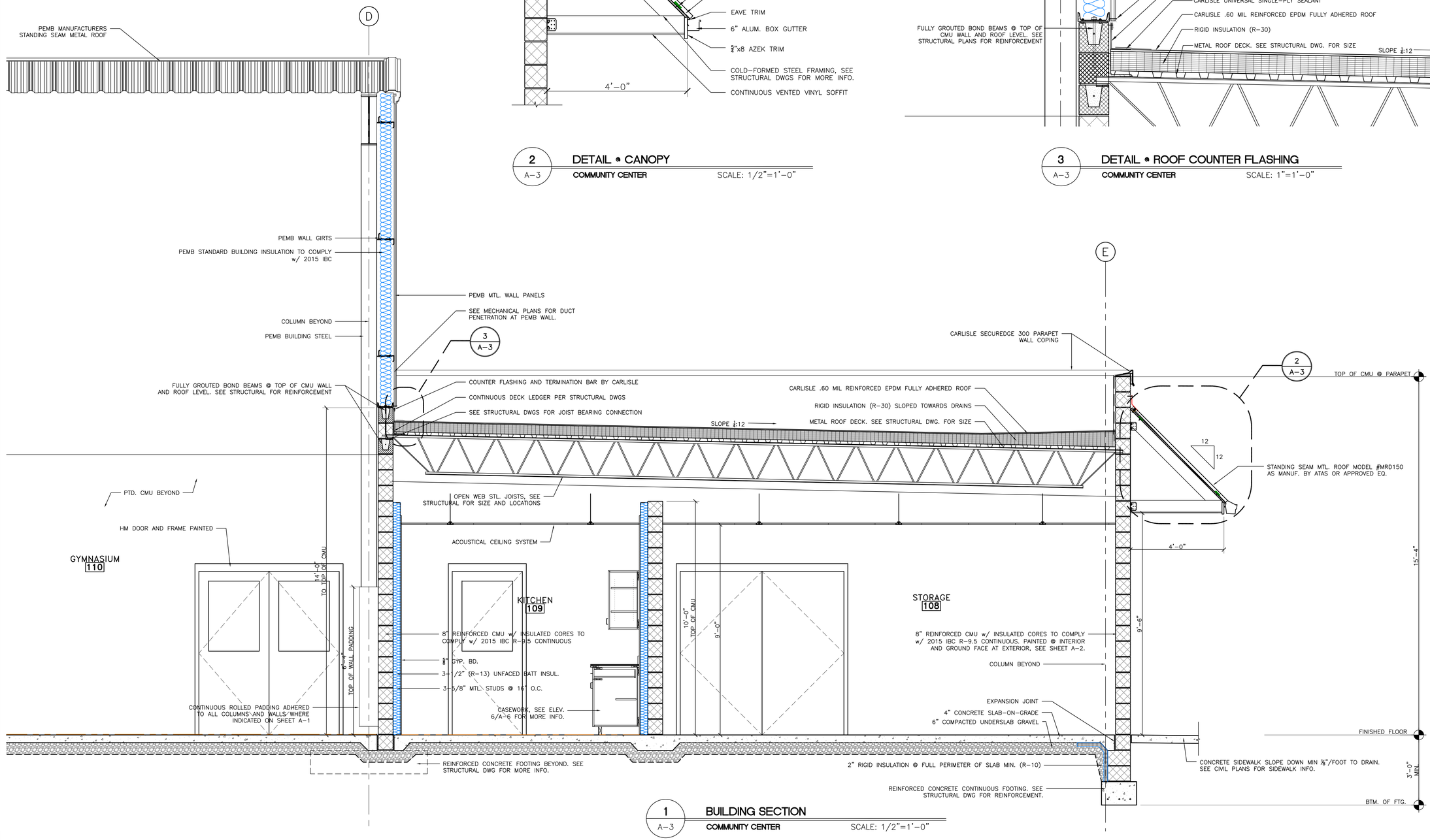
2 A-3 **DETAIL @ CANOPY**

COMMUNITY CENTER SCALE: 1/2"=1'-0"



3 A-3 **DETAIL @ ROOF COUNTER FLASHING**

COMMUNITY CENTER SCALE: 1"=1'-0"



1 A-3 **BUILDING SECTION**

COMMUNITY CENTER SCALE: 1/2"=1'-0"

REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA ROBERT J. LINN JR. LICENSE NO. RA-009451-X

LINN ARCHITECTS
1140 N. PROVIDENCE ROAD
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PROPOSED BUILDING SECTION- COMMUNITY CENTER
NEW MUNICIPAL BUILDINGS - COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
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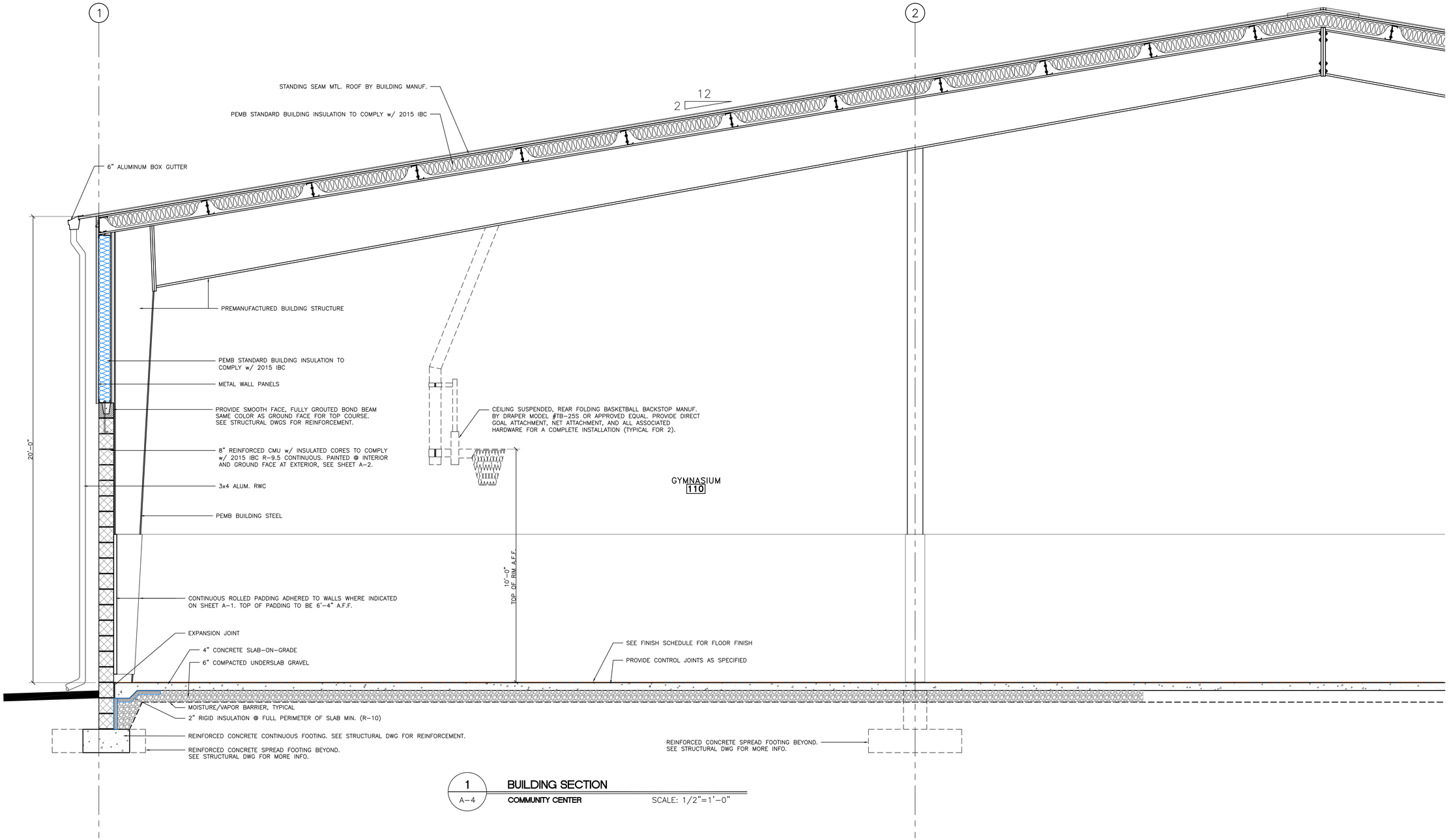
PROJ. NO. 17214

SHEET NO. A-3
SHEET OF



1 / A-4 **BUILDING SECTION**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

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FAX: 610-566-9258

REGISTERED ARCHITECT
COMMONWEALTH OF PENNSYLVANIA
ARCHITECT
RA-009451-X

PROPOSED BUILDING SECTION- COMMUNITY CENTER
NEW MUNICIPAL BUILDINGS - COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

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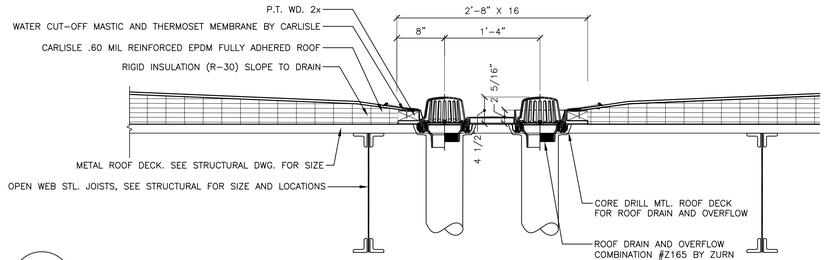
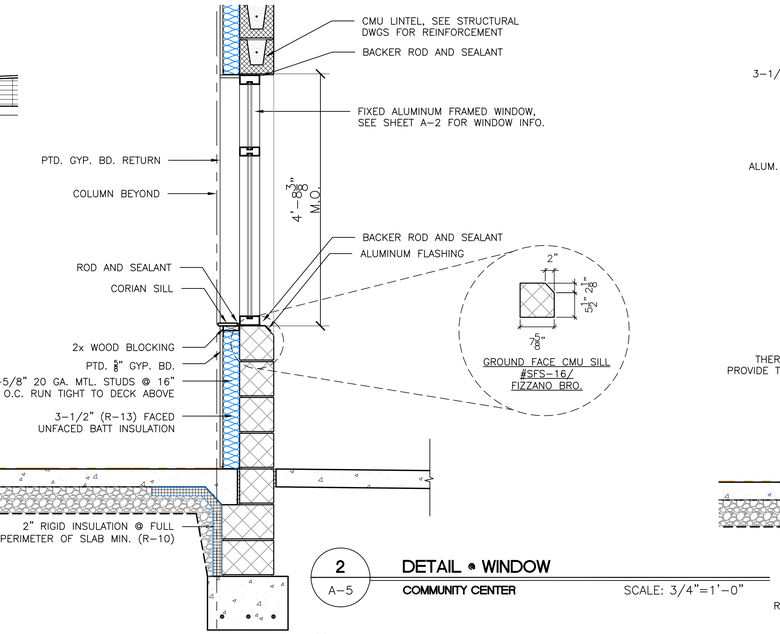
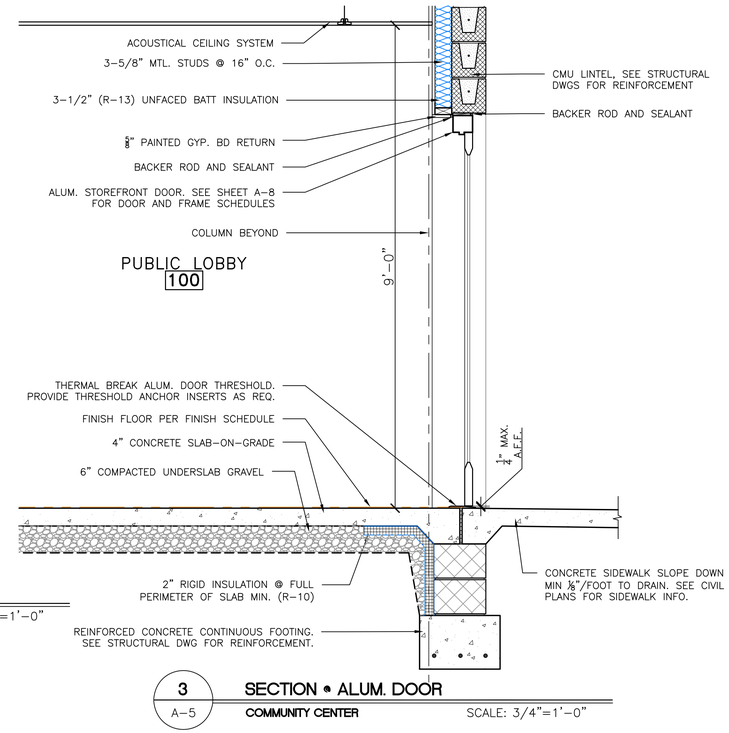
SHEET OF



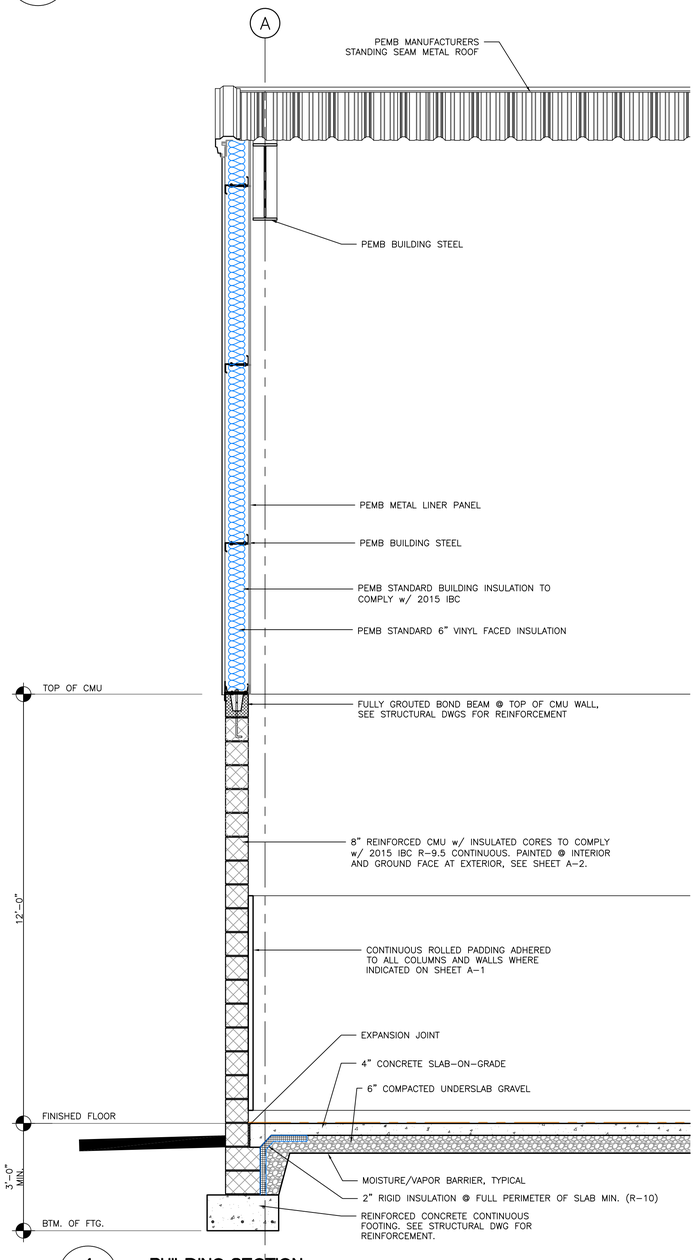
1 A-5 **DETAIL • ROOF DRAIN AND OVERFLOW**
COMMUNITY CENTER SCALE: 1"=1'-0"



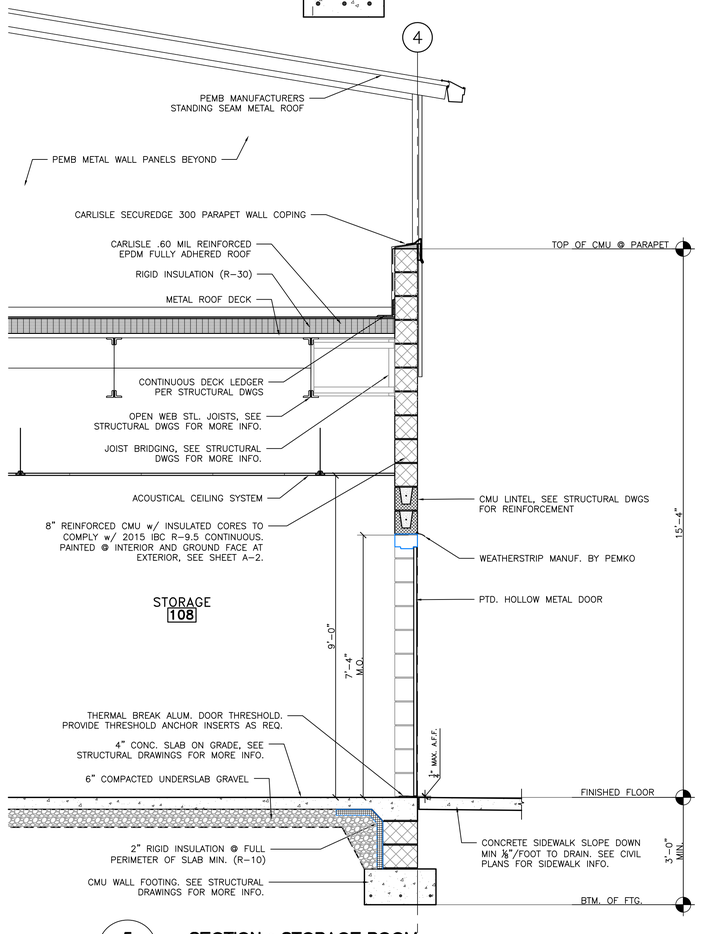
2 A-5 **DETAIL • WINDOW**
COMMUNITY CENTER SCALE: 3/4"=1'-0"



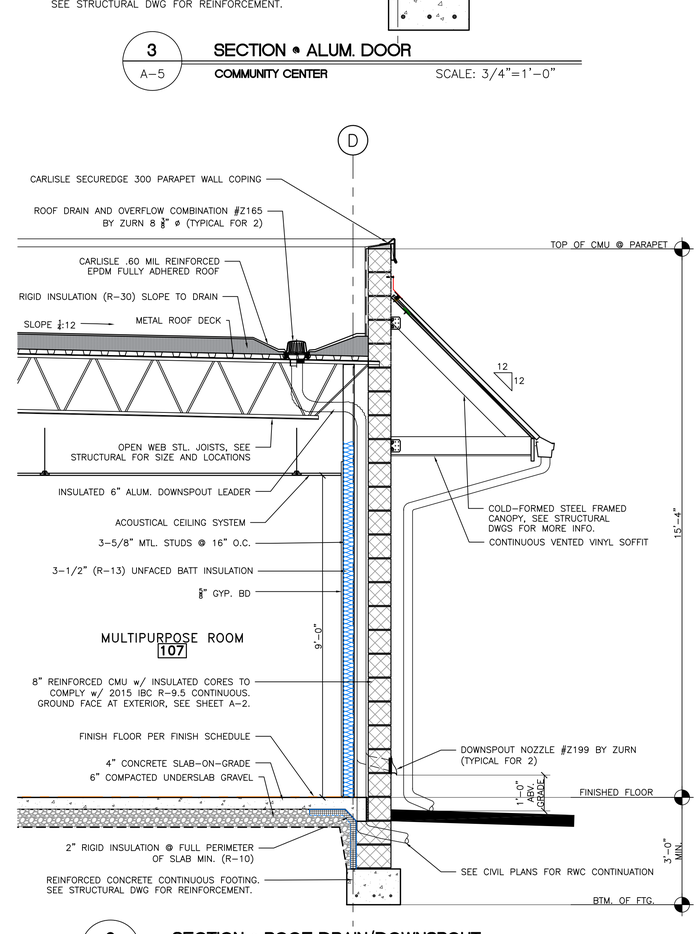
3 A-5 **SECTION • ALUM. DOOR**
COMMUNITY CENTER SCALE: 3/4"=1'-0"



4 A-5 **BUILDING SECTION**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



5 A-5 **SECTION • STORAGE ROOM**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



6 A-5 **SECTION • ROOF DRAIN/DOWNSPOUT**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

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BUILDING SECTIONS & DETAILS
NEW MUNICIPAL BUILDINGS - COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

NO.	REVISIONS DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

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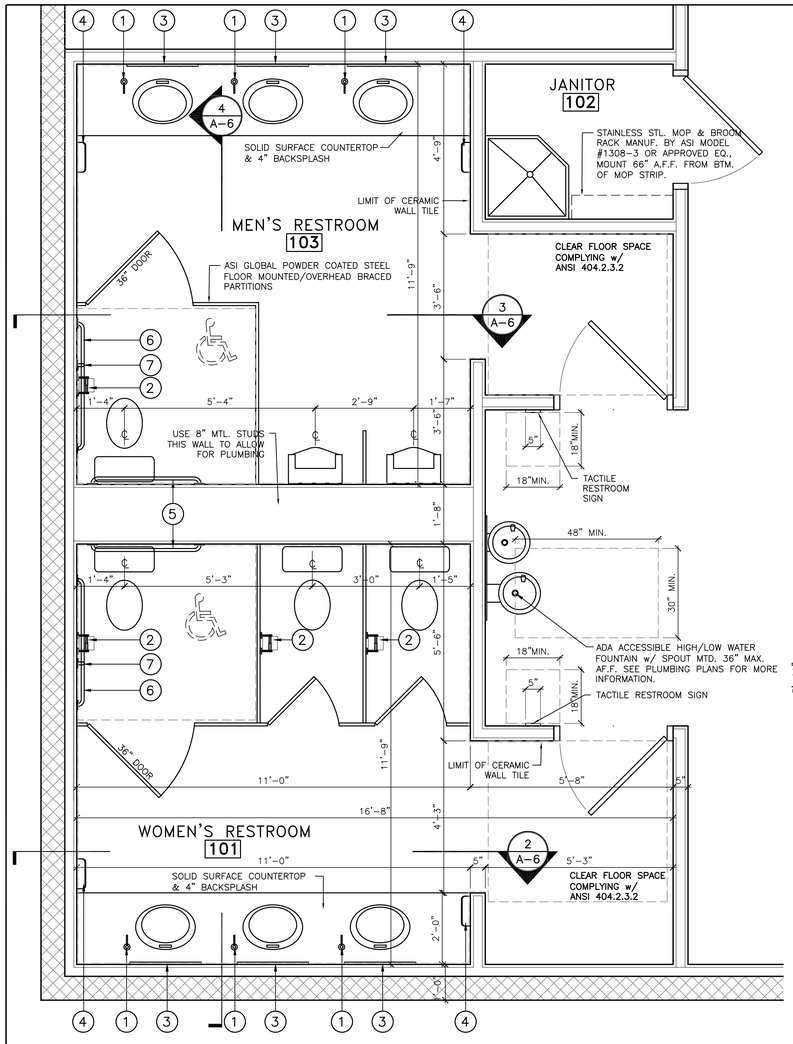
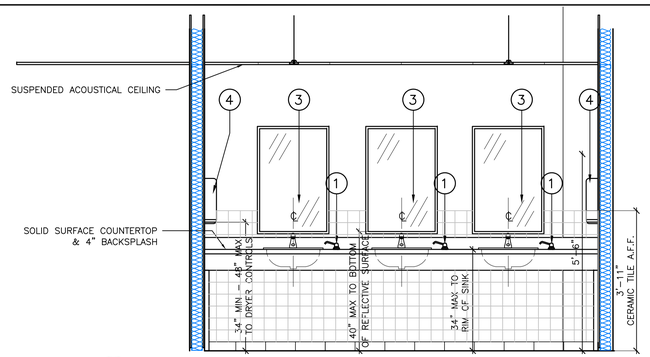
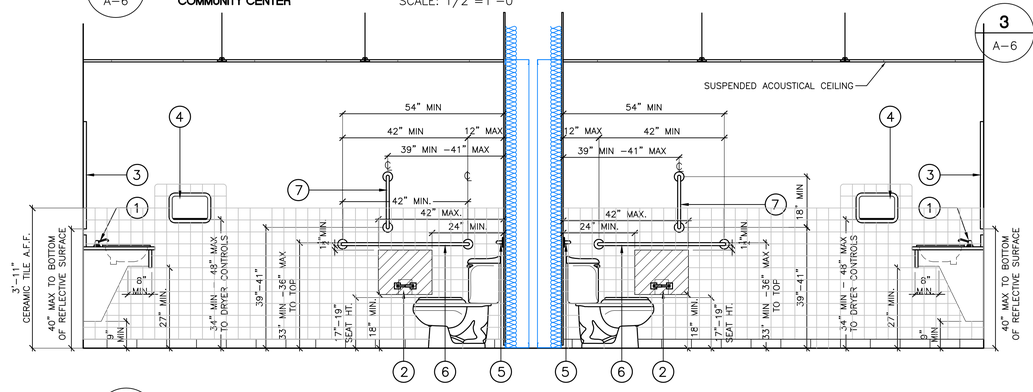
SHEET NO. A-5
SHEET OF



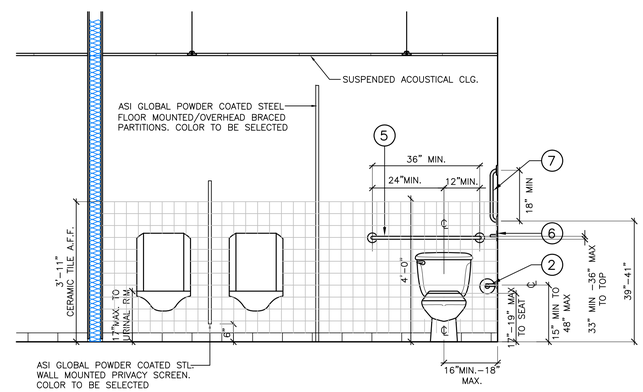
1 A-6 **ENLARGED RESTROOM PLAN**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



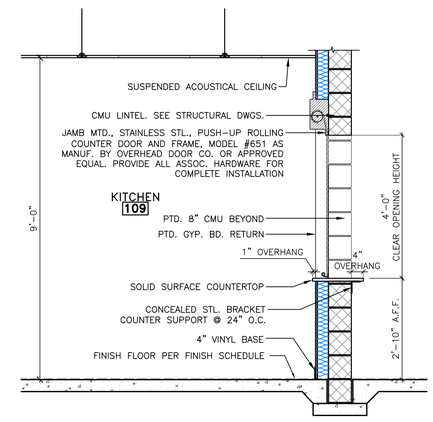
2 A-6 **RESTROOM ELEVATION**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



4 A-6 **RESTROOM ELEVATION**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



3 A-6 **RESTROOM ELEVATION**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

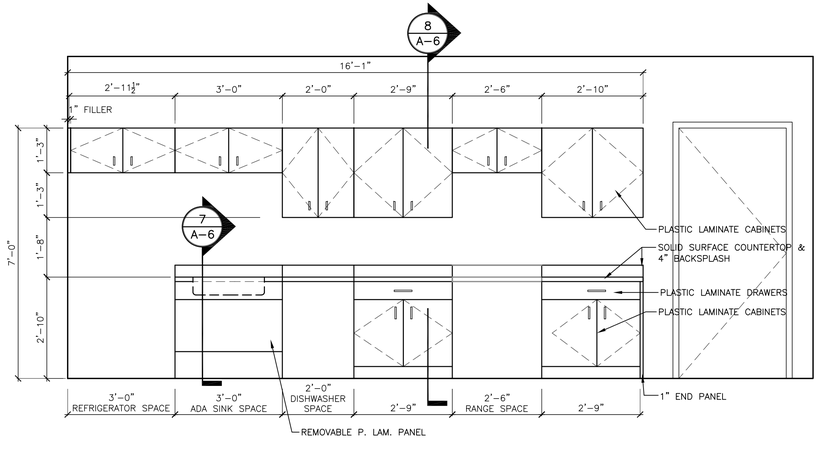


5 A-6 **INTERIOR SECTION @ COUNTER DOOR**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

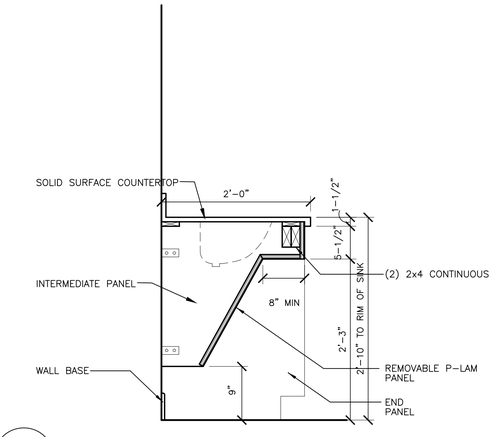
TOILET ACCESSORY SCHEDULE – COMMUNITY CENTER

DESIG	MANUF.	CAT. #	ITEM	MTG.	FINISH	MTG. HEIGHT	TOTAL QTY.
1	ASI	0332-D	COUNTER MOUNTED SOAP DISP.	SURFACE	STAIN. STL.	34" A.F.F.	6
2	ASI	7035-S	TOIL. PAPER DISPENSER	SEMI-RECESSED	STAIN. STL.	SEE MOUNTING LOCATION	4
3	ASI	0600-2436	24x36 MIRROR	SURFACE	STAIN. STL.	40" MAX TO BOTTOM OF REFLECTIVE SURFACE	6
4	XLERATOR	XL-SB-208-277	AIR HAND DRYER + RECESS KIT	RECESSED	STAIN. STL.	48" MAX TO CONTROLS	4
5	ASI	3800 x 36	REAR GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	2
6	ASI	3800 x 42	SIDE GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	2
7	ASI	3800 x 18	VERT GRAB BAR	SURFACE	STAIN. STL.	39" MIN TO 41" MAX A.F.F TO BOTTOM	2

NOTES:
1. PROVIDE WOOD BLOCKING AS REQUIRED FOR ALL ACCESSORIES
2. PROVIDE ADA APPROVED INSULATION ON ALL EXPOSED PLUMBING

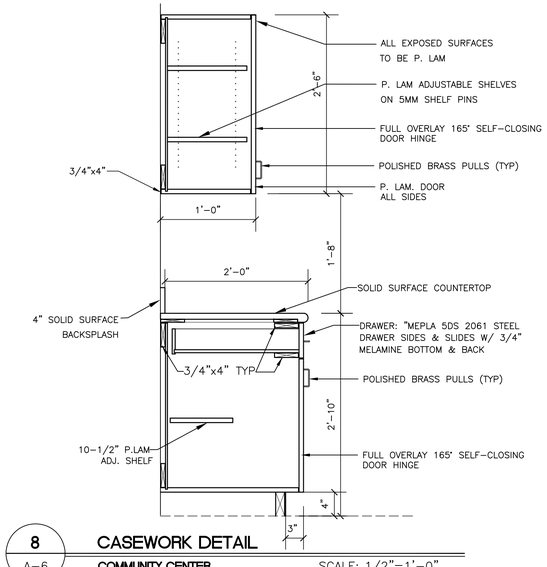


6 A-6 **CASEWORK ELEVATION @ KITCHEN #109**
COMMUNITY CENTER SCALE: 1/2"=1'-0"



7 A-6 **CASEWORK DETAIL**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

CASEWORK NOTES:
1. ALL EXPOSED SURFACES TO BE PLASTIC LAMINATE
2. ALL INTERIOR SURFACES TO BE PLASTIC LAMINATE
3. ALL COUNTERTOPS TO BE SOLID SURFACE
4. ALL COUNTERTOPS TO RECEIVE 4" SOLID SURFACE BACKSPLASH
5. ALL CABINETS TO INCLUDE SHELVES
6. CONTRACTOR TO CONFIRM ALL APPLIANCES WITH OWNER



8 A-6 **CASEWORK DETAIL**
COMMUNITY CENTER SCALE: 1/2"=1'-0"

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FAX: 610-566-3258

RESTROOM PLANS & CASEWORK DETAILS
NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

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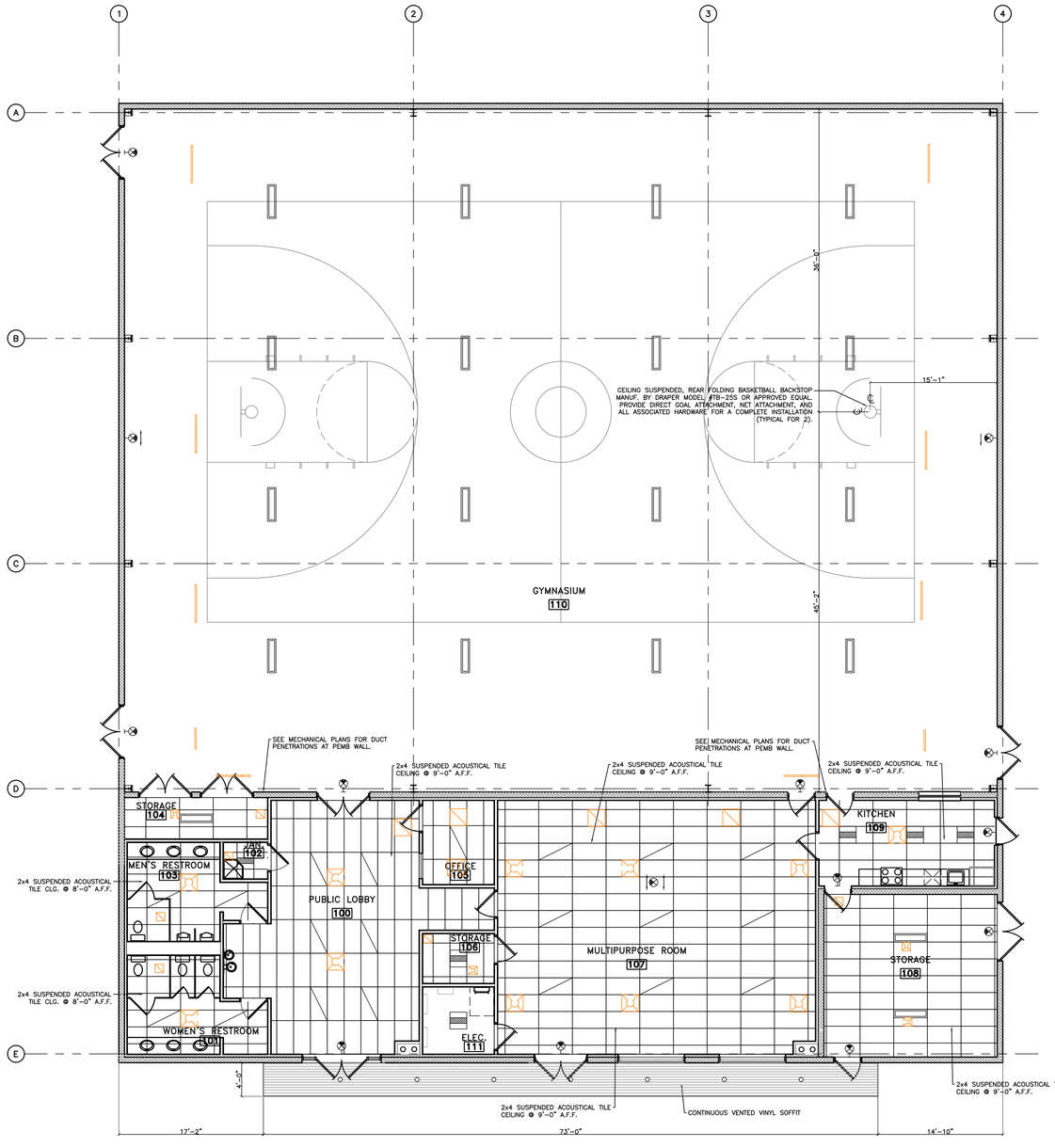
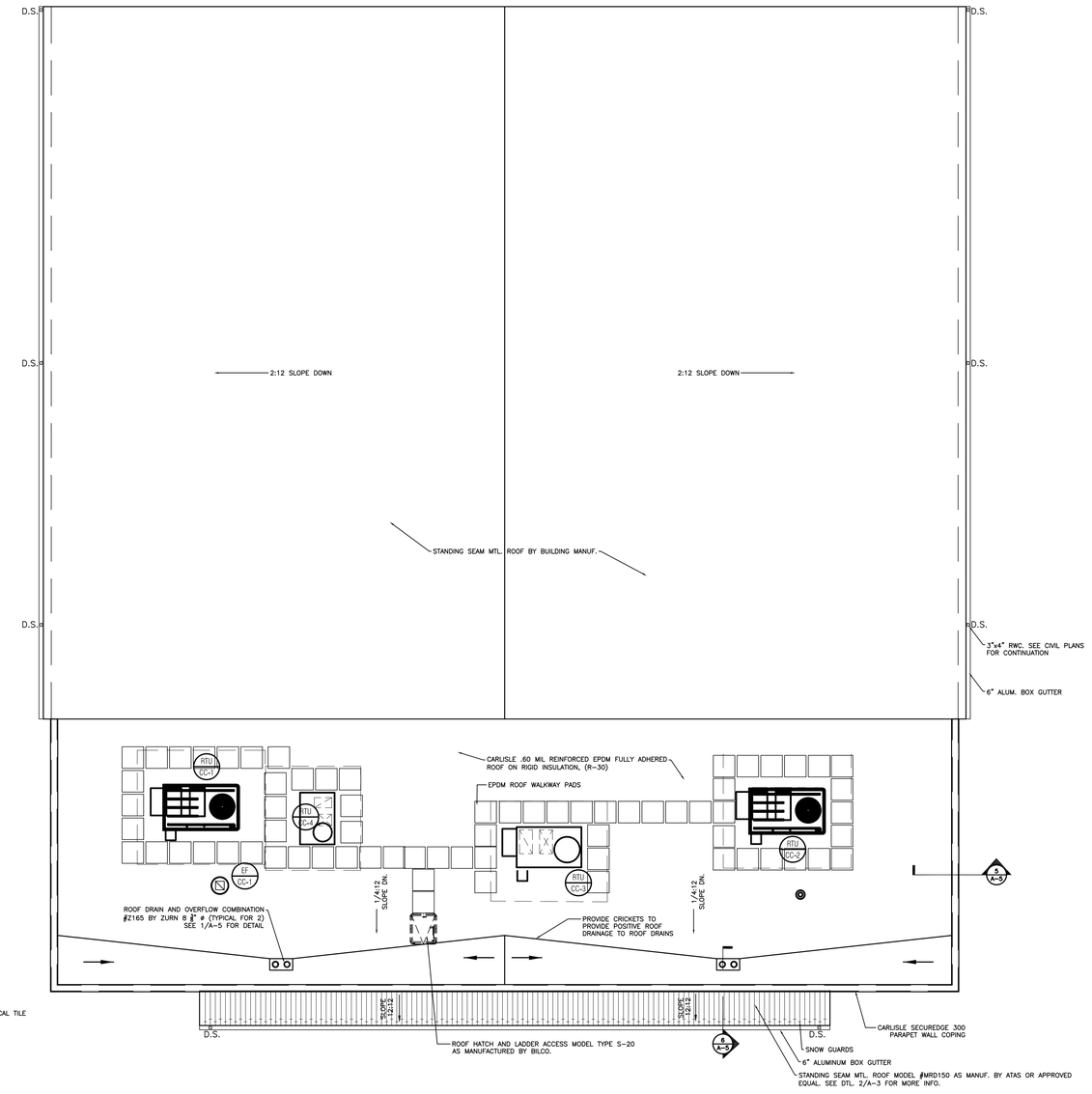
SHEET NO. A-6
SHEET OF





1 A-7 **PROPOSED REFLECTED CEILING PLAN**
COMMUNITY CENTER SCALE: 1/8"=1'-0"

2 A-7 **PROPOSED ROOF PLAN**
COMMUNITY CENTER SCALE: 1/8"=1'-0"

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MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-9258

REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA ROBERT J. LINN SEAL NO. RA-009041

RCP & ROOF PLAN
NEW MUNICIPAL BUILDINGS - COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

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SHEET OF

DOOR AND FRAME SCHEDULE – COMMUNITY CENTER

DOOR NO.	SIZE W	SIZE H	SIZE T	DOOR TYPE	DOOR MAT.	DOOR CORE	DOOR GLASS	DOOR FOB	FRAME TYPE	FRAME MAT.	FIRE RATING LAB.	HINGES QT.	HINGES ITEM	LOCKS QT.	LOCKS ITEM	EXIT DEVICES QT.	EXIT DEVICES ITEM	CLOSERS QT.	CLOSERS ITEM	BOLT QT.	BOLT ITEM	KICK PLATE QT.	KICK PLATE ITEM	SWEEPS QT.	SWEEPS ITEM	THRESHOLD QT.	THRESHOLD ITEM	LATCH QT.	LATCH ITEM	ASTRAGAL QT.	ASTRAGAL ITEM	STOPS QT.	STOPS ITEM	GASKETING QT.	GASKETING ITEM	DOOR NO.	REMARKS
100–1	(2)3°	7°	1¾	D	ALUM.	INSUL.	TEMP.		6	ALUM.		2/2	1C/1D			1/1	3A/3B	2	4B					2	7A	1	8A					2	11B			100–1	
100–2	(2)3°	7°	1¾	B	WD	SC	WIRE		5	HM		6	1A			2	3D	2	4C			4	6A							1	10A					100–2	
101–1	3°	7°	1¾	A	WD	SC			1	HM		3	1A	1	2E			1	4C			1	6A									1	11A			101–1	
102–1	3°	7°	1¾	A	WD	SC			1	HM		3	1A	1	2A			1	4A			1	6A													102–1	UNDERCUT DOOR 1"
103–1	3°	7°	1¾	A	WD	SC			1	HM		3	1A	1	2E			1	4C			1	6A									1	11A			103–1	
104–1	(2)3°	7°	1¾	A	WD	SC			5	HM		6	1A	2	2D			2	4A	1	5A	2	6A					1	9A							104–1	
104–2	(2)3°	7°	1¾	A	WD	SC			5	HM		6	1A	2	2D			2	4A	1	5A	2	6A					1	9A							104–2	
105–1	3°	7°	1¾	A	WD	SC			1	HM		3	1A	1	2B			1	4A			1	6A													105–1	
106–1	(2)3°	7°	1¾	A	WD	SC			3	HM		6	1A	2	2D			2	4A	1	5A	2	6A	1	7A	1	8A	1	9A							106–1	
107–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM		3	1A	1	2B			1	4C			2	6A			1	8C					1	11A			107–1	
107–2	(2)3°	7°	1¾	D	HM	INSUL.	TEMP.		5	HM		6	1A	2	2A	1/1	3A/3B	1	4C			2	6A	2	7A	1	8A			1	10A			1/2	12B/12C	107–2	
107–3	3°	7°	1¾	B	WD	SC	WIRE		2	HM		3	1A	1	2C			1	4B			2	6A									1	11A			107–3	
108–1	3°	7°	1¾	A	HM	INSUL.			1	HM		3	1A	1	2A			1	4B							1	8A					1	11B	1/2	12B/12C	108–1	
108–2	3°	7°	1¾	B	WD	SC	WIRE		2	HM		3	1A	1	2C			1	4D			1	6A									1	11A			108–2	
108–3	(2)3⁶	7°	1¾	E	HM	INSUL.			7	HM		6	1A			1/1	3A/3B	1	4C								8A/8B			1	10A			1/2	12B/12C	108–3	
109–1	3°	7°	1¾	B	WD	SC	WIRE		2	HM		3	1A	1	2C			1	4A			2	6A			1	8C									109–1	
109–2	3°	7°	1¾	C	HM	INSUL.	WIRE		1	HM		3	1A	1	2A			1	4B					1	7A	1	8A/8B					1	11B	1/2	12B/12C	109–2	
109–3	3°	7°	1¾	C	WD	SC	WIRE		2	HM		3	1A	1	2C			1	4B			2	6A									1	11A			109–3	
110–1	(2)3°	7°	1¾	C	HM	INSUL.	WIRE		5	HM		6	1B			2	3C	1	4C					2	7A	1	8A/8B			1	10A	2	11B	1/2	12B/12C	110–1	
110–2	(2)3°	7°	1¾	C	HM	INSUL.	WIRE		5	HM		6	1B			2	3C	1	4C					2	7A	1	8A/8B			1	10A	2	11B	1/2	12B/12C	110–2	
110–3	(2)3°	7°	1¾	C	HM	INSUL.	WIRE		5	HM		6	1B			2	3C	1	4C					2	7A	1	8A/8B			1	10A	2	11B	1/2	12B/12C	110–3	

NOTES:
1.) COORDINATE FINAL KEYING WITH OWNER.

MATERIAL SPECIFICATIONS – COMMUNITY CENTER

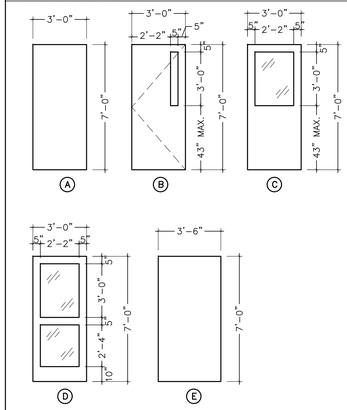
ITEM	MANUFACTURER	STYLE OR CATALOG #	COLOR	REMARKS
FLOORS				
VCT 1	TARKETT	12"x12"x1/8"	TO BE SELECTED	
CERAMIC FLOOR TILE 1	DALTILE	12x12	TO BE SELECTED	
SPORTS VINYL	TARKETT SPORTS INDOOR	OMNISPORTS 9.4 MM	TO BE SELECTED	
CARPET TILE 1	PATCRAFT	24x24	TO BE SELECTED	PROVIDE $30/SQ. YD. ALLOWANCE FOR MATERIAL
WALK OFF CARPET TILE 1	PATCRAFT	24x24/WALK RIGHT IN II	TO BE SELECTED	
BASE				
CERAMIC BASE TILE 1	DALTILE	4" COVE BASE	TO BE SELECTED	
VINYL	TARKETT	4" COVE BASE	TO BE SELECTED	
VENTED VINYL	TARKETT	4" VENTED COVE BASE	TO BE SELECTED	
WALLS				
CERAMIC WALL TILE 1	DALTILE	4x4 WALL TILE	TO BE SELECTED	
PAINT WALLS	SHERWIN WILLIAMS	EGG SHELL FINISH	TO BE SELECTED	
PAINT DOOR FRAMES	SHERWIN WILLIAMS	SEMI GLOSS FINISH	TO BE SELECTED	
FRP	CRANE COMPOSITES	GLASBORD	TO BE SELECTED	
WALL PAD	DRAPER	ECO VISION	TO BE SELECTED	
CEILING				
2x4 ACOUSTICAL TILE 1	ARMSTRONG	ULTIMA TEGULAR TILE	#1901 WHITE	w/ PRELUDE XL 15/16 GRID

NOTES:
1) ALL FINAL FINISH SELECTIONS (COLORS, MATERIALS, ETC.) TO MATCH EXISTING, AND TO BE REVIEWED AND APPROVED BY OWNER
2) PROVIDE MOISTURE RESISTANT GYP. BOARD AT RESTROOMS AND JANITOR CLOSET WALLS
3) ALL INTERIOR WOOD DOORS TO BE STAINED AND FRAMES TO BE PAINTED – COLOR TO MATCH EXISTING.
4) ALL NEW WALLS TO BE PAINTED WITH (1) COAT OF PRIMER/SEALER AND (2) COATS OF PAINT. EXPOSED BLOCK SHALL RECEIVE BLOCK FILLER AND (1) COAT OF PAINT.
5) ALL CARPET BASED ON PATCRAFT MODULAR STYLES, CONTACT TODD GOLDEN @ 610–312–8677
6) ALL CARPET BASED ON PATCRAFT MODULAR STYLES, CONTACT TODD GOLDEN @ 610–312–8677

INTERIOR ROOM FINISH SCHEDULE – COMMUNITY CENTER

#	ROOM NAME	FLOORS MATERIALS: VCT 1	CERAMIC FLOOR TILE 1	WALK–OFF CARPET TILE 1	SPORTS VINYL	CARPET TILE 1	NONE	BASES MATERIALS: CERAMIC BASE TILE 1	4" VINYL	VENTED VINYL COVE	NONE	WALLS MATERIALS: G.W.B. PAINTED	CMU PAINTED	CERAMIC WALL TILE 1	FRP	WALL PAD	MTG.	CEILINGS MATERIALS: 2X4 ACT 1	GYP. BD.	MTG. SUSPENSION HEIGHT	REMARKS
100	PUBLIC LOBBY	●		●					●			●						●		9'–0"	SEE 1/A–1 FOR LIMIT OF WALK–OFF CARPET
101	WOMEN'S RESTROOM		●					●				●		●			47"	●		8'–0"	
102	JANITOR		●						●						●		96"	●		8'–0"	
103	MEN'S RESTROOM		●					●				●		●			47"	●		8'–0"	
104	STORAGE	●							●			●						●		9'–0"	PROVIDE WALL BASE @ GWB WALLS ONLY
105	OFFICE	●							●			●						●		9'–0"	
106	STORAGE	●							●			●	●					●		9'–0"	
107	MULTIPURPOSE ROOM					●			●			●						●		9'–0"	
108	STORAGE	●							●			●						●		9'–0"	
109	KITCHEN	●							●									●		9'–0"	
110	GYMNASIUM				●					●			●			●				–	
111	ELECTRICAL						●		●			●						●		–	PROVIDE WALL BASE @ GWB WALLS ONLY

DOOR TYPES
COMMUNITY CENTER

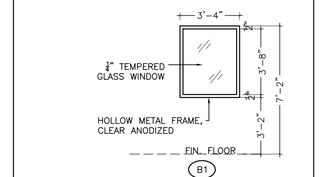


DOOR NOTES:

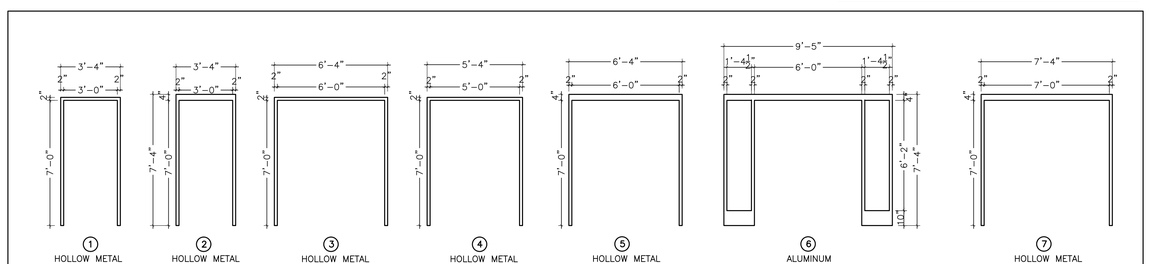
1. ALL DOORS TO BE PROVIDED WITH LEVER HANDLES
2. ALL HOLLOW METAL DOORS TO BE 16 GAUGE. ALL EXTERIOR HOLLOW METAL FRAMES TO BE 14 GAUGE. ALL HOLLOW METAL FRAMES SHALL BE PROVIDED WITH REINFORCING AT THE HINGE, JAMB, STRIKE, AND CLOSER LOCATIONS. HOLLOW METAL FRAMES IN FRAME OPENINGS SHALL BE KNOCKDOWN FRAMES.
3. ALL HOLLOW METAL DOORS AND FRAMES SHALL BE PAINTED, SEE FINISH SCHEDULE. ALL WOOD DOORS TO BE STAIN GRADE.
4. ALL DOORS SHALL RECEIVE SILENCER PADS AT HM FRAME. PROVIDE ROCKWOOD #608 OR #609
5. ALL EXTERIOR HM DOORS AND FRAMES SHALL RECEIVE FACTORY APPLIED A60 GALVANIZED FINISH. PROVIDE FIELD APPLIED GALVANIZED FINISH AS A RESULT OF FIELD PREPARATION AND/OR HARDWARE INSTALLATION.
6. ALL RATED DOORS TO HAVE UL LABELS
7. THRESHOLDS, WEATHERSTRIPPING & SWEEPS TO BE INSTALLED PER MANF. INSTRUCTIONS
8. DOOR TYPE "D" –MEDIUM STILE AND 10" BOTTOM RAIL, 1" INSULATING TEMPERED GLASS
9. OWNER TO SUPPLY AND INSTALL WIRING AND POWER SUPPLY FOR NEW CARD READERS. CONTRACTOR RESPONSIBLE FOR PREPPING DOOR AND FRAMES FOR KEY FOBS AND CONDUIT LOCATIONS.
10. ALL EXTERIOR DOOR WINDOW PANES TO BE TINTED
11. ALL PUSH/PULL HARDWARE TO INCLUDE SIGN MOUNTED ON BOTH SIDES OF DOOR

HARDWARE ITEM SCHEDULE – COMMUNITY CENTER

	ITEM NUMBER	DESCRIPTION	FINISH	MANUFACTURER
HINGES	1A	TA714FT	US26D	MCKINNEY
	1B	TA386 FT NRP	US32D	MCKINNEY
	1C	147	626	RIXSON
	1D	M19	626	RIXSON
LOCK SET	2A	DG3 8204 CRNJ MK (STOREROOM)	US26D	SARGENT
	2B	DG3 8204 CRNJ MK (OFFICE)	US26D	SARGENT
	2C	DG3 8237 CRNJ MK (CLASSROOM)	US26D	SARGENT
	2D	8293 CRNJ (DUMMY)	US26D	SARGENT
	2E	RM3301–24 (PULL)/RM1030H (PUSH)	US32D	ROCKWOOD
EXIT DEVICES	3A	DG3 16 MD/WD8610 106 MK	US32D	SARGENT
	3B	DG3 16 MD/WD8610 MK	US32D	SARGENT
	3C	(12) MD/WD8610	US32D	SARGENT
	3D	DG3 (12) NB8713 ETNJ MK	US32D	SARGENT
CLOSERS	4A	10–X36 (SURFACE)	630	RIXON
	4B	MC 281 O/P9	EN	SARGENT
	4C	DA MC 281 O/P9	EN	SARGENT
BOLT	5A	DG3 4877 MK	US26D	SARGENT
KICK	6A	K1050 10" HIGH CSK BEV	US32D	ROCKWOOD
SWEEPS	7A	3452CNB x LENGTH REQUIRED	–	PEMKO
THRESHOLD	8A	273x3AFG MSES25SS	–	PEMKO
	8B	346CxDOOR WIDTH + 4" (RAIN GUARD)	–	PEMKO
	8C	TILE TO CARPET TRIM	ALUM.	–
LATCHES	9A	592	US26D	ROCKWOOD
ASTRAGAL	10A	29324CNB TKSP8	–	PEMKO
STOPS	11A	RM861/RM855	US26D	ROCKWOOD
	11B	1–X36	630	RIXSON
GASKETING	12A	S44BL	–	PEMKO
	12B	29313CPK TKSP8	–	PEMKO
	12C	217AV TKSP8	–	PEMKO



INTERIOR WINDOW TYPES
COMMUNITY CENTER



FRAME TYPES
COMMUNITY CENTER

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INTERIOR FINISH, DOOR & FRAME SCHEDULES
NEW MUNICIPAL BUILDINGS – COMMUNITY CENTER
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE 1/4"=1'–0"
DRAWN BY
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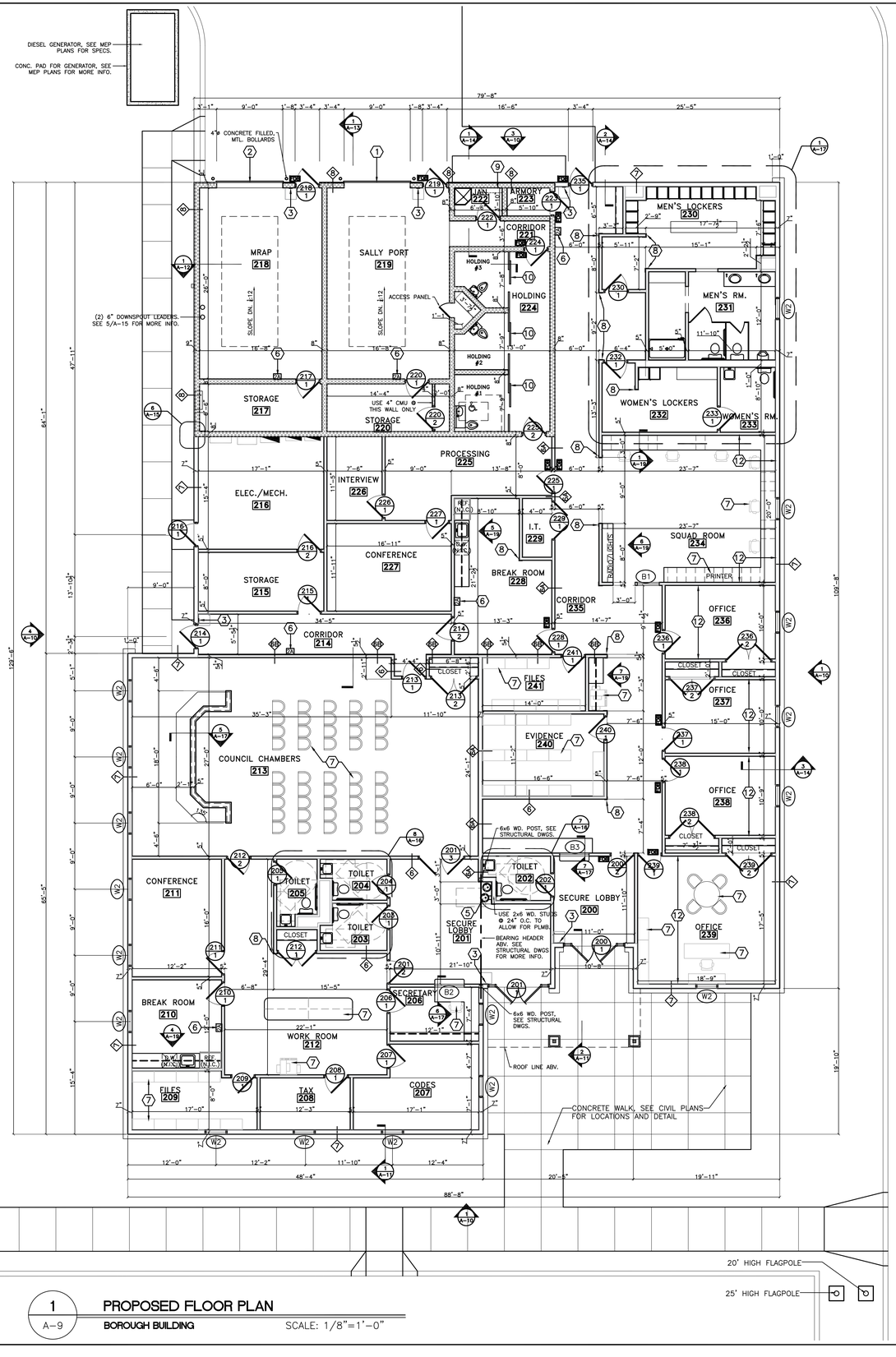
SHEET NO. A–8 OF



1 A-9 **PROPOSED FLOOR PLAN**

BOROUGH BUILDING SCALE: 1/8"=1'-0"

WALL LEGEND
BOROUGH BUILDING

- INTERIOR WALL – 8" REINFORCED CMU PAINTED
- INTERIOR WALL – 2x4 WD. STUDS @ 16" O.C. w/ 3-½" (R-13) BATT INSULATION, ⅝" GYP. BD. @ BOTH SIDES
- INTERIOR BEARING WALL – 2x6 WD. STUDS @ 16" O.C. w/ 3-½" (R-13) BATT INSULATION, ⅝" GYP. BD. @ BOTH SIDES. RUN WALL TIGHT TO BTM. OF TRUSS.
- INTERIOR SHEAR WALL – 2x4 WD. STUDS @ 16" O.C. w/ ½" PLYWOOD SHEATHING @ ONE SIDE, 3-½" (R-13) BATT INSULATION, ⅝" GYP. BD. @ BOTH SIDES. RUN WALL TIGHT TO BTM. OF TRUSS.
- EXTERIOR WALL – 2x6 WD. STUDS @ 24" O.C. w/ 5-½" (R-19) BATT INSULATION, 5/8" GYP. BD. @ INTERIOR. 1/2" EXTERIOR SHEATHING, TYVEK FLUID APPLIED WEATHER BARRIER, AND VINYL SIDING AT EXTERIOR.
- EXTERIOR WALL – 8" REINFORCED CMU w/ 1x3 WD. FURRING @ 16" O.C., TYVEK FLUID APPLIED WEATHER BARRIER, AND VINYL SIDING.

KEYNOTES
BOROUGH BUILDING

1. 9'-0"x9'-0" OVERHEAD DOOR MODEL #850 MANUF. BY OVERHEAD DOOR CO. OR APPROVED EQUAL. PROVIDE RMX MEDIUM DUTY OPERATOR AND ALL ASSOC. HARDWARE FOR COMPLETE INSTALLATION.
2. 9'-0"x12'-0" OVERHEAD DOOR MODEL #850 MANUF. BY OVERHEAD DOOR CO. OR APPROVED EQUAL. PROVIDE RMX MEDIUM DUTY OPERATOR AND ALL ASSOC. HARDWARE FOR COMPLETE INSTALLATION.
3. TACTILE EXIT SIGN MOUNTED ON STRIKE SIDE OF DOOR @ 48"–60" A.F.F. TO BRAILLE.
4. RESERVED
5. ADA ACCESSIBLE HIGH/LOW WATER FOUNTAIN w/ SPOUT MTD. 36" MAX. AF.F. SEE PLUMBING PLANS FOR FIXTURE INFORMATION.
6. 2A FIRE EXTINGUISHER MTD. 48" TO TOP
7. FURNITURE SUPPLIED & INSTALLED BY OWNER.
8. VINYL CORNER GUARDS – MODEL #SGU AS MANUFACTURED BY JC– INDUSTRIES, 48" IN LENGTH WITH 2" WINGS.
9. STAINLESS STL. MOP & BROOM RACK MANUF. BY ASI MODEL #1308–3 OR APPROVED EQ., MOUNT 66" A.F.F. FROM BTM. OF MOP STRIP.
10. SEMI–TR SECURITY GRATING AND SLIDING DOOR, PROVIDE FOLGER ADAMS TRACK AND HANGER #102–3G AND KEY LOCK PER WILCO PRODUCTS OR APPROVED EQUAL
11. ADJUSTABLE SHELF ON K&V BRACKETS WITH ROD
12. PROVIDE SOLID BLOCKING IN WALL FOR TVs OR SHELVING AS REQ. VERIFY FINAL LOCATION WITH OWNER.

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REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA ROBERT A. LINN JR. LIC. NO. RA-009615-X

PROPOSED FLOOR PLAN – BOROUGH BLDG.
NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE 1/8"=1'-0"
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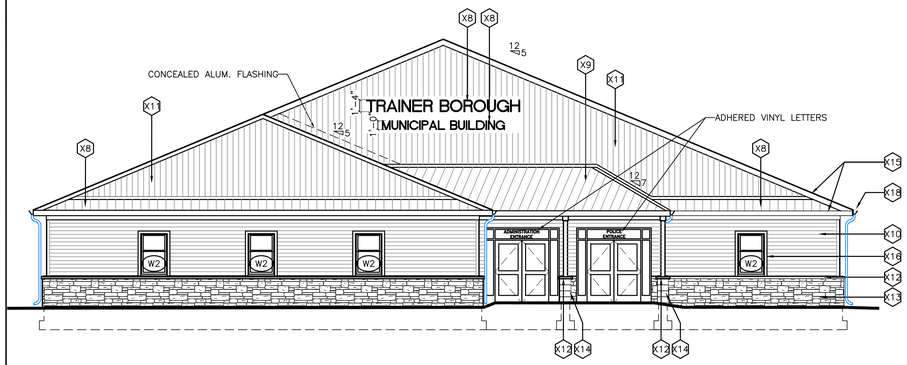
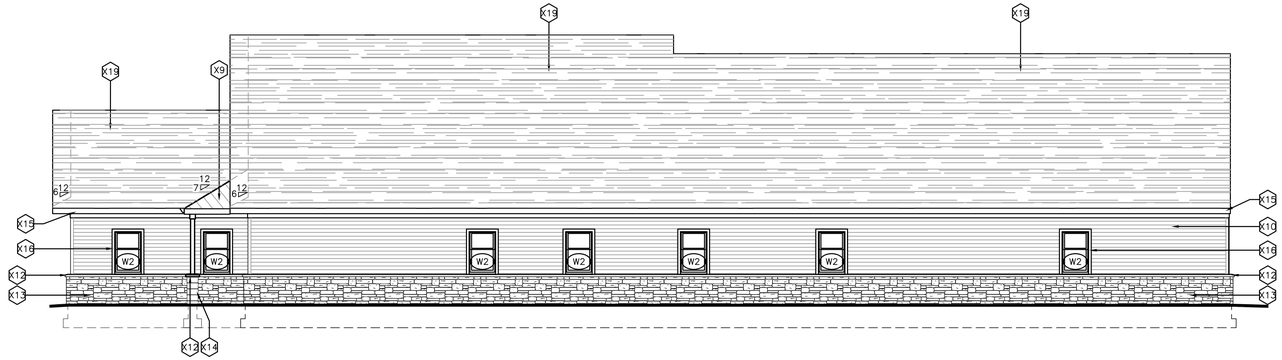
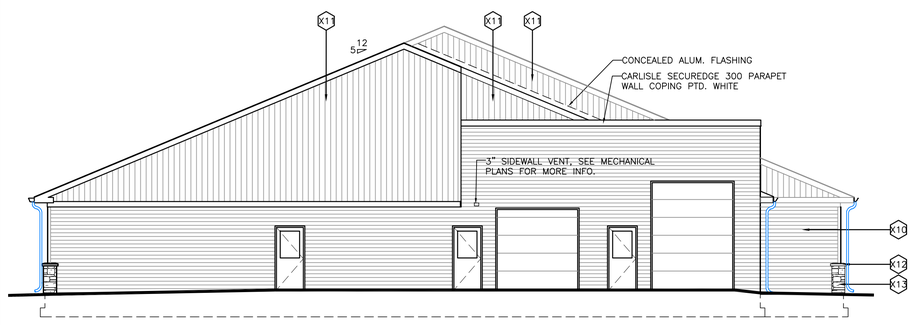
SHEET NO. A-9 SHEET OF



1 A-10 **PROPOSED FRONT ELEVATION**
BOROUGH BUILDING SCALE: 1/8"=1'-0"



2 A-10 **PROPOSED RIGHT SIDE ELEVATION**
BOROUGH BUILDING SCALE: 1/8"=1'-0"



3 A-10 **PROPOSED REAR ELEVATION**
BOROUGH BUILDING SCALE: 1/8"=1'-0"

4 A-10 **PROPOSED LEFT SIDE ELEVATION**
BOROUGH BUILDING SCALE: 1/8"=1'-0"

NOTES:

1. DOUBLE-HUNG WINDOWS TO BE SPECIFIED AROUND ANDERSEN 400 SERIES WINDOWS OR APPROVED EQUAL.
2. DOUBLE-HUNG WINDOWS SHALL INCLUDE CASING, SASH LOCKS AND SCREENS.
3. GLASS ADJACENT TO DOORS AND WITHIN 18" OF FLOOR TO BE TEMPERED SAFETY GLASS
4. GLASS TO BE INSULATED LOW-E F
5. EXTERIOR FRAME COLOR TO BE BLACK

EXTERIOR WINDOW TYPES
BOROUGH BUILDING

EXTERIOR FINISH SCHEDULE - BOROUGH BLDG.

TAG	MATERIAL/ MANUF.	STYLE/COLOR	REMARKS
X8	ALUMINUM PIN MTD. LETTERS	BLACK	SEE ELEVATION FOR INDIVIDUAL LETTER HEIGHT
X9	STANDING SEAM METAL ROOF SYSTEM/ATAS OR APPROVED EQ.	DUTCH SEAM/MRD150/15" KYNAR 500 FINISH/REDWOOD	
X10	HORIZONTAL VINYL SIDING/CERTAINTEED OR APPROVED EQ.	MONOGRAM DUTCH LAP/DESERT TAN	CONTRACTOR TO PROVIDE SAMPLES
X11	BOARD & BATTEN VINYL SIDING/CERTAINTEED OR APPROVED EQ.	COLOR - NATURAL CLAY	CONTRACTOR TO PROVIDE SAMPLES
X12	CAST STONE SILL	MODEL #SL465/COALISLAND - LIGHT BUFF	PROFILE PER DWG 3/A-14
X13	STONE VENEER/QUARRYCUT THIN STONE	HERSHEY POINT/SQUARES & STRIPS	CONTACT MIKE CLEMENT @ DIENER BRICK COMPANY 856-858-2000
X14	CAST STONE VENEER	MODEL #SL465/COALISLAND - LIGHT BUFF	PROFILES PER PLAN
X15	5/4x8 TRIM/AZEK OR APPROVED EQUAL	TRADITIONAL/WHITE	
X16	5/4x4 TRIM/AZEK OR APPROVED EQUAL	TRADITIONAL/WHITE	
X17	COLUMN WRAP/AZEK OR APPROVED EQUAL	TRADITIONAL/WHITE	
X18	ALUMINUM 5" K GUTTER W/ 3x4 RWC	KYNAR 500 FINISH KYNAR 500 FINISH, COLOR WHITE	
X19	ASPHALT SHINGLES/CERTAINTEED	LANDMARK DIMENSIONAL SHINGLE/DRIFTWOOD	

NOTES:
1.) CONTRACTOR TO SUBMIT SAMPLES FOR APPROVAL
2.) REFER TO SPECIFICATIONS FOR MORE INFORMATION

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PROPOSED ELEVATIONS - BOROUGH BLDG.
NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
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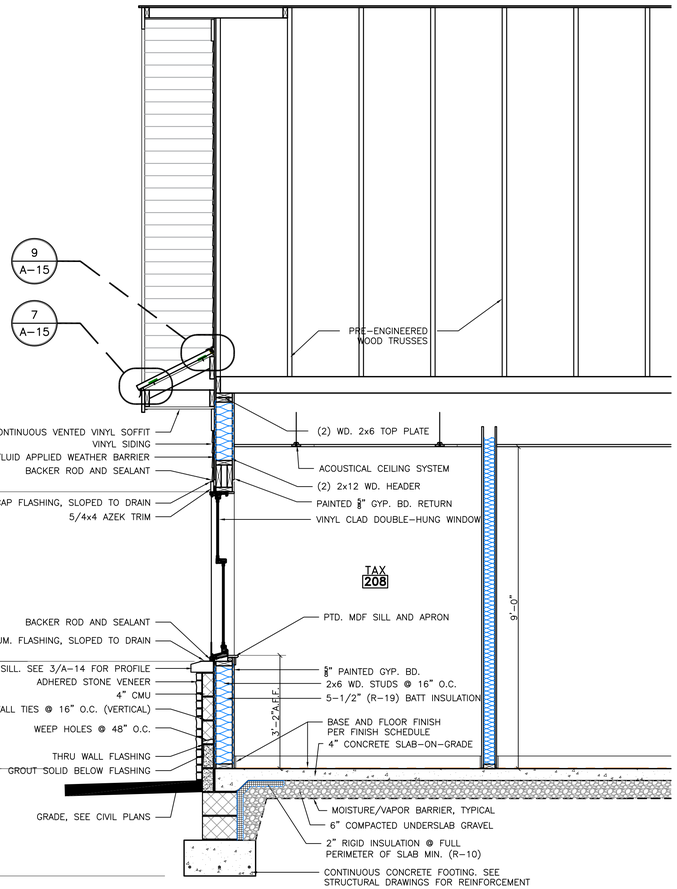
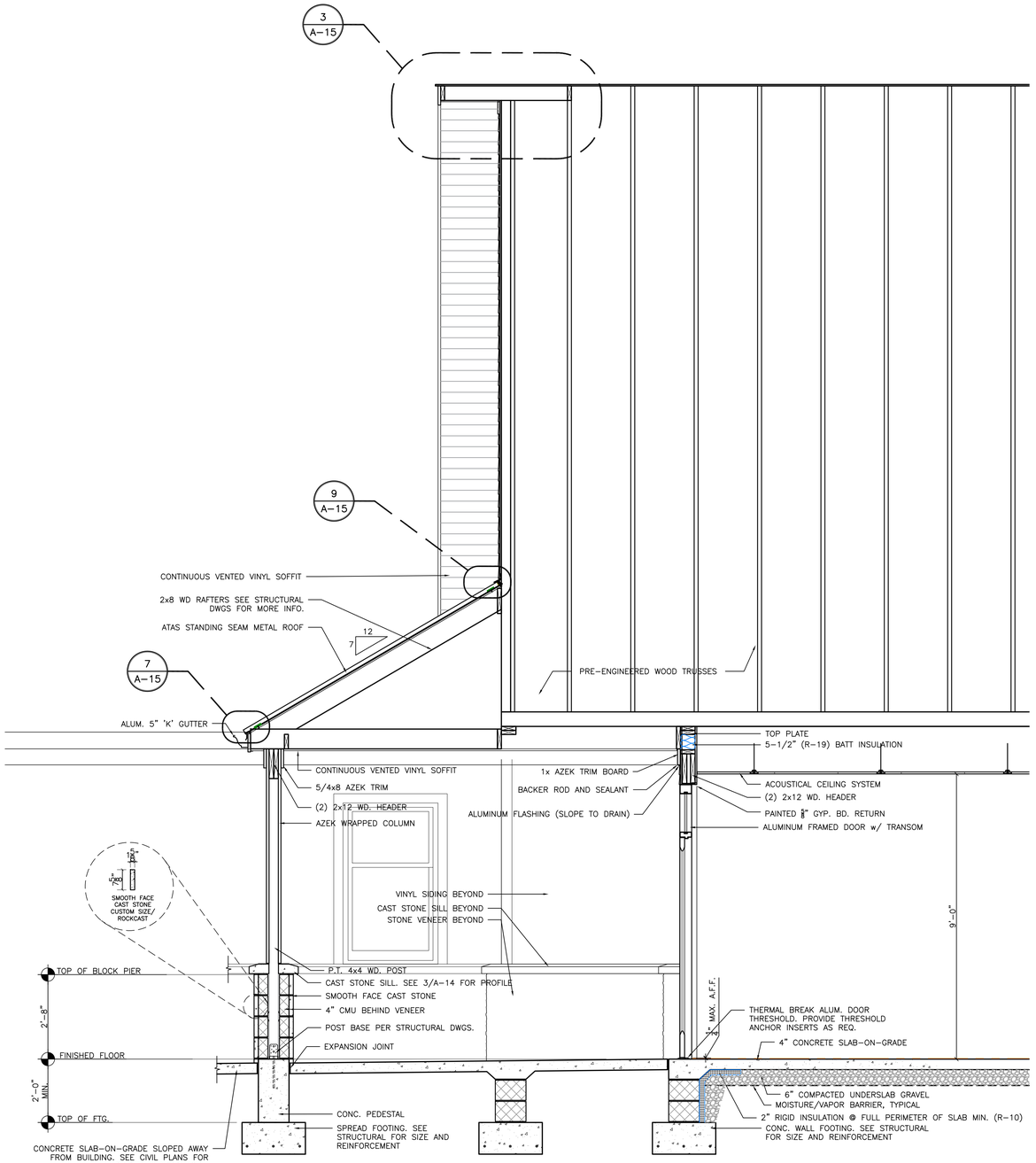
SHEET OF



1 A–11 **PROPOSED BUILDING SECTION**
BOROUGH BUILDING SCALE: 1/2"=1'–0"



2 A–11 **PROPOSED BUILDING SECTION**
BOROUGH BUILDING SCALE: 1/2"=1'–0"

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PROPOSED BUILDING SECTION
NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING
BOROUGH OF TRAINER
TRAINER PA, 19061

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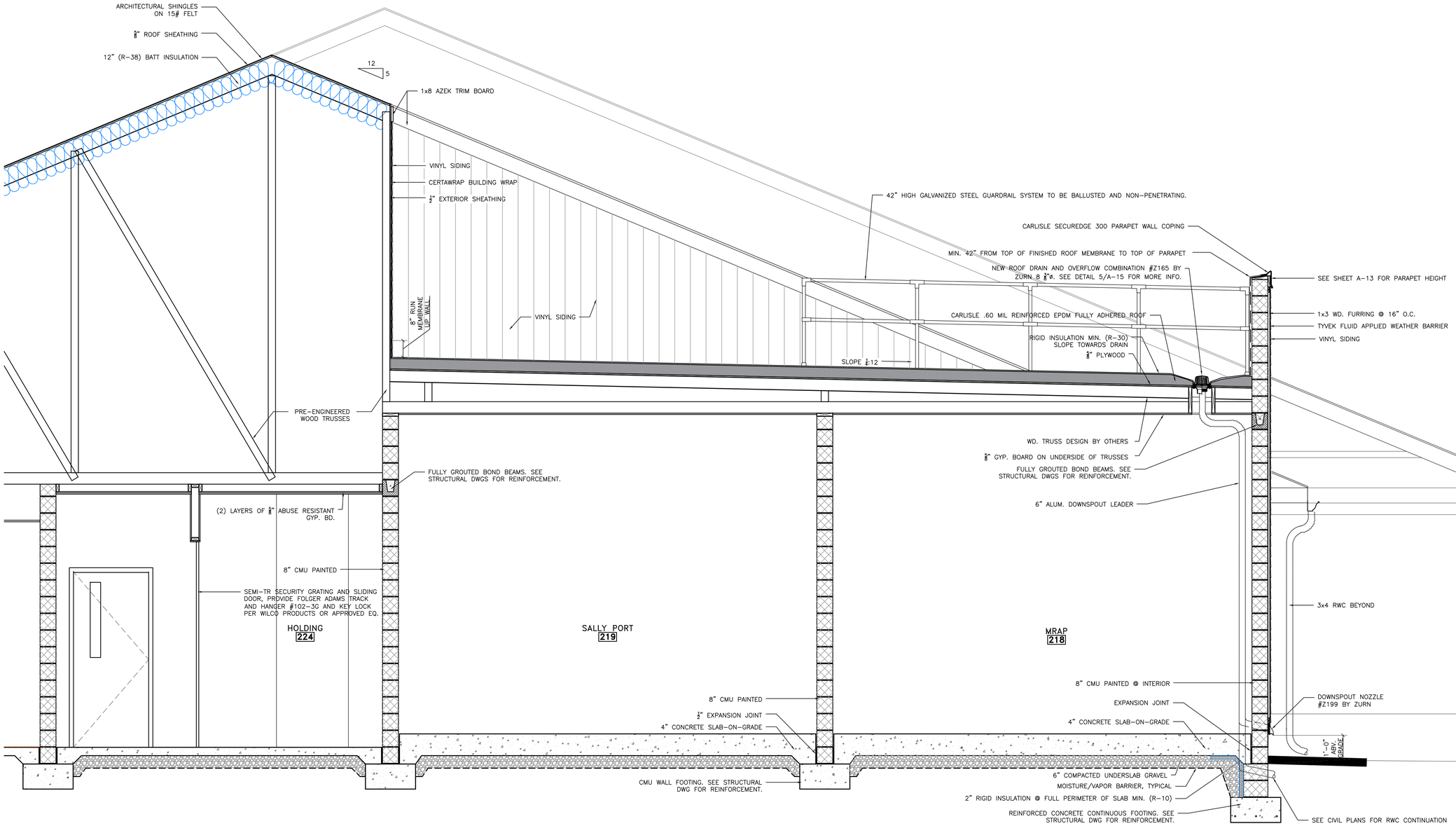

1 / A-12 **PROPOSED BUILDING SECTION**

SCALE: 1/2"=1'-0"

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FAX: 610-566-9258

PROPOSED BUILDING SECTION

NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING

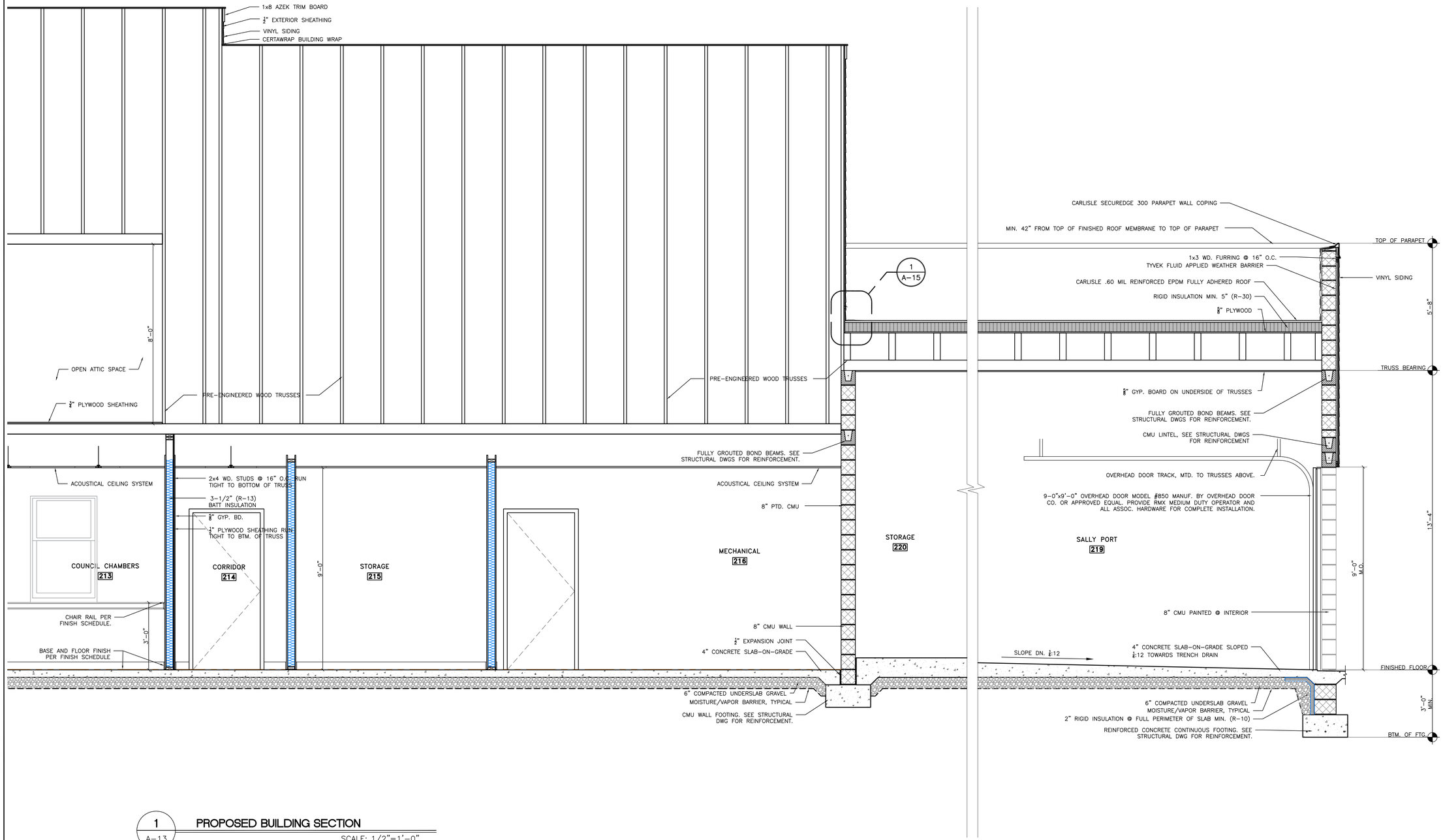
BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19 | SCALE 1/8"=1'-0" | DRAWN BY | CHECKED BY | PROJ. NO. 17214

SHEET NO. A-12 SHEET OF



1 / A-13 **PROPOSED BUILDING SECTION**

SCALE: 1/2"=1'-0"

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-9258

PROPOSED BUILDING SECTION

NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING

BOROUGH OF TRAINER

TRAINER PA, 19061

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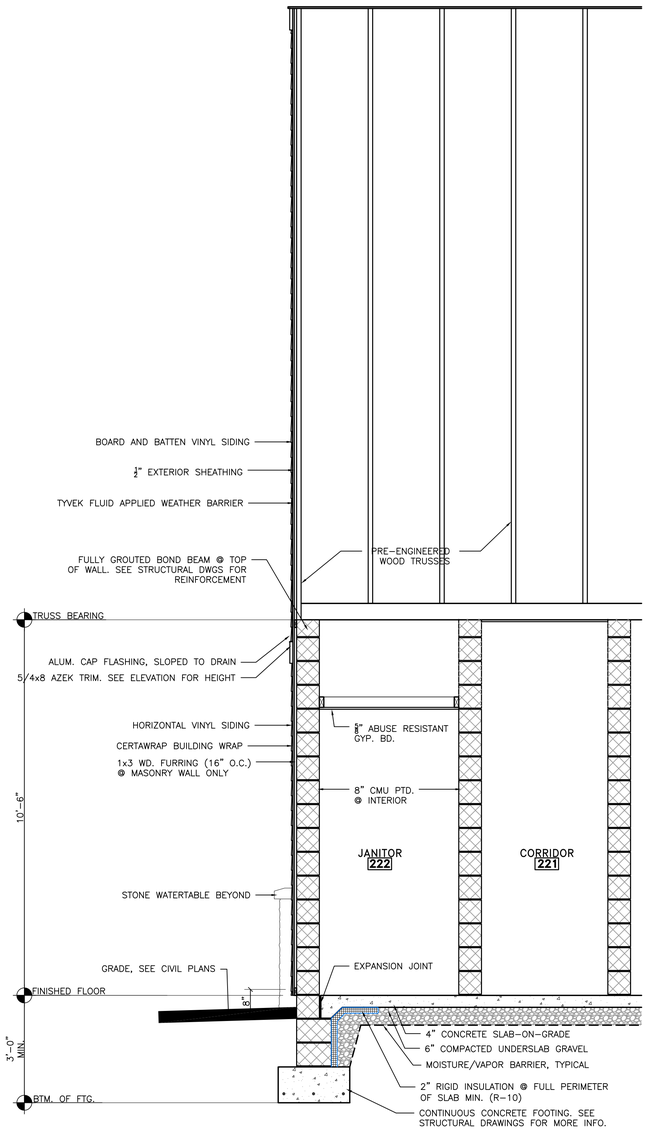
CHECKED BY
PROJ. NO. 17214

SHEET NO. A-13 SHEET OF



1 A-14 **PROPOSED BUILDING SECTION**

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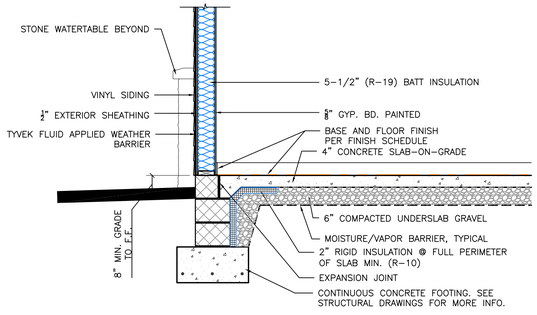

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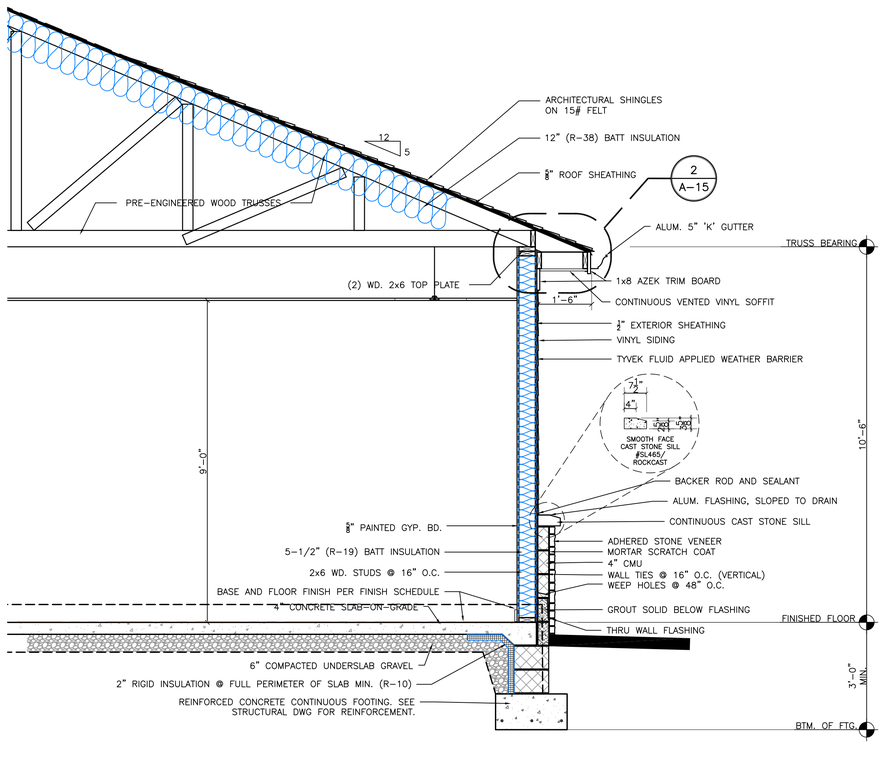

3 A-14 **PROPOSED BUILDING SECTION**

BOROUGH BUILDING SCALE: 1/2"=1'-0"

LINN ARCHITECTS
ARCHITECTURE
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SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
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PROPOSED BUILDING SECTION

NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING

BOROUGH OF TRAINER

TRAINER PA, 19061

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1	ISSUED FOR BIDDING	8/26/19

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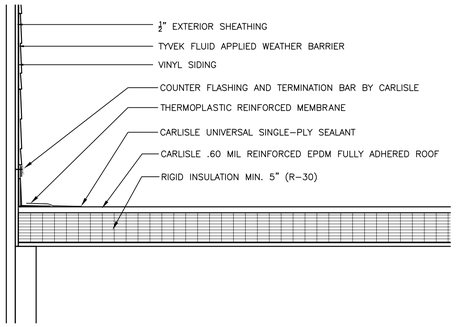
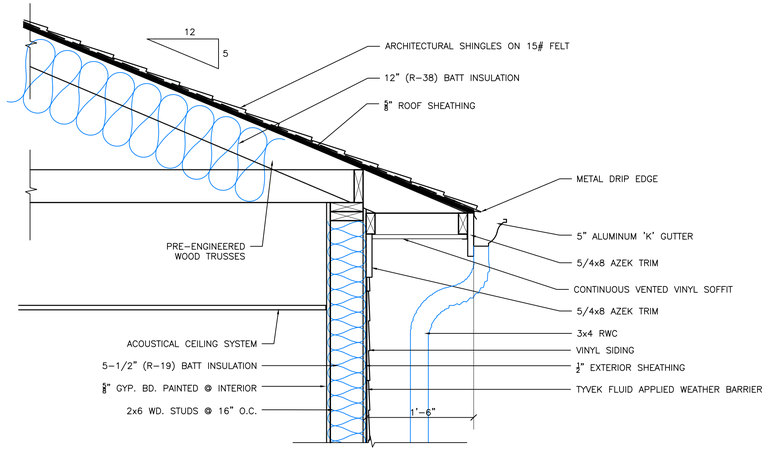
CHECKED BY:
PROJ. NO. 1/214

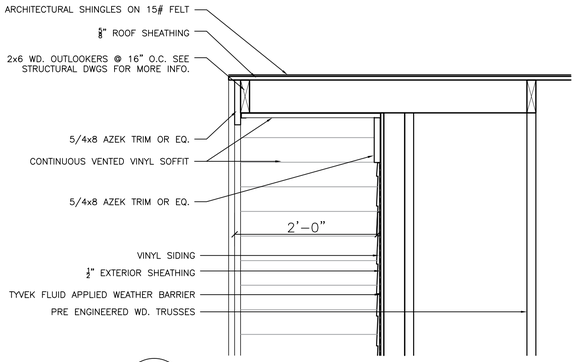
SHEET NO. A-14 SHEET OF



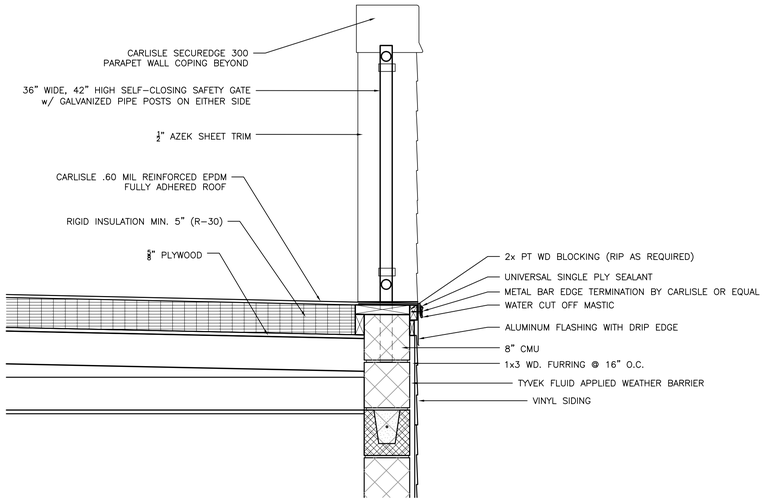
1 A-15 **FLASHING DTL. @ FLAT ROOF**
BOROUGH BUILDING SCALE: 1"=1'-0"



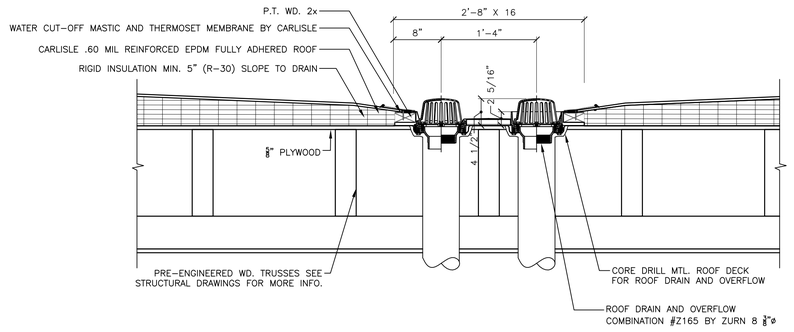
2 A-15 **EAVE DETAIL**
BOROUGH BUILDING SCALE: 1"=1'-0"



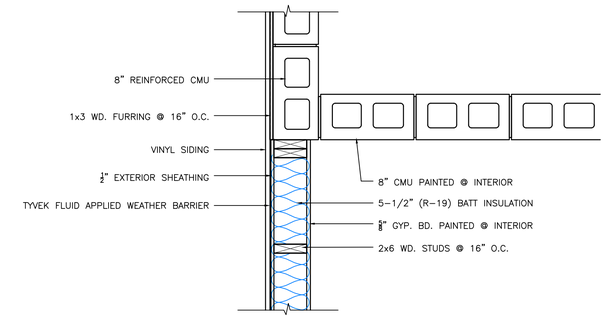
3 A-15 **ROOF DETAIL**
BOROUGH BUILDING SCALE: 1"=1'-0"



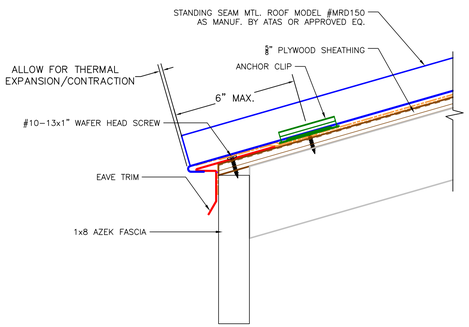
4 A-15 **ROOF GATE DETAIL**
BOROUGH BUILDING SCALE: 1"=1'-0"



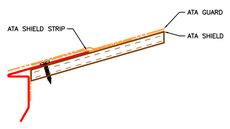
5 A-15 **DOWNSPOUT DETAIL**
BOROUGH BUILDING SCALE: 1"=1'-0"



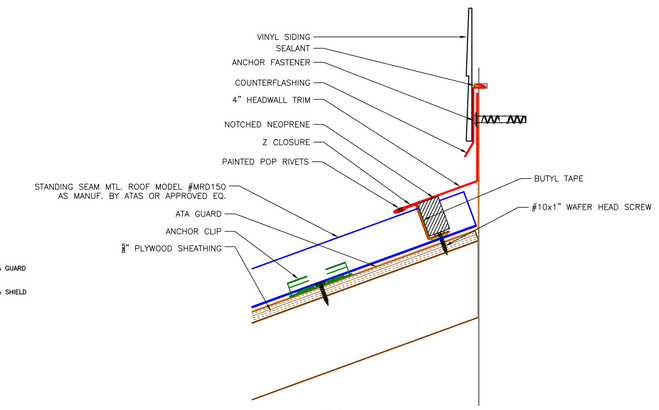
6 A-15 **WALL SECTION (TYP.)**
BOROUGH BUILDING SCALE: 1"=1'-0"



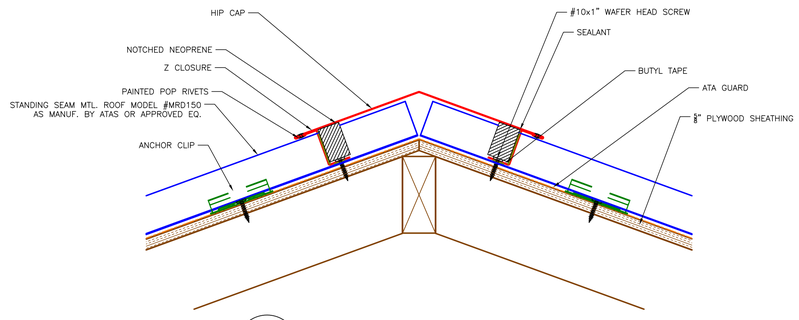
7 A-15 **EAVE DETAIL @ MTL. ROOF**
BOROUGH BUILDING SCALE: N.T.S.



8 A-15 **UNDERLAYMENT DETAIL @ MTL. ROOF**
BOROUGH BUILDING SCALE: N.T.S.



9 A-15 **HEADWALL TRIM DETAIL @ MTL. ROOF**
BOROUGH BUILDING SCALE: N.T.S.



10 A-15 **HIP CAP DETAIL @ MTL. ROOF**
BOROUGH BUILDING SCALE: N.T.S.

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INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-3258

PROPOSED BUILDING SECTION

NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING
BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
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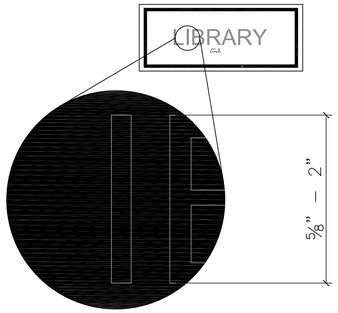
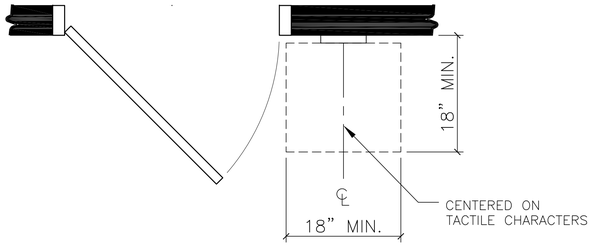
CHECKED BY
PROJ. NO. 17214

SHEET NO. A-15
SHEET OF



1 A-16 **TYPICAL CHARACTER HEIGHT**

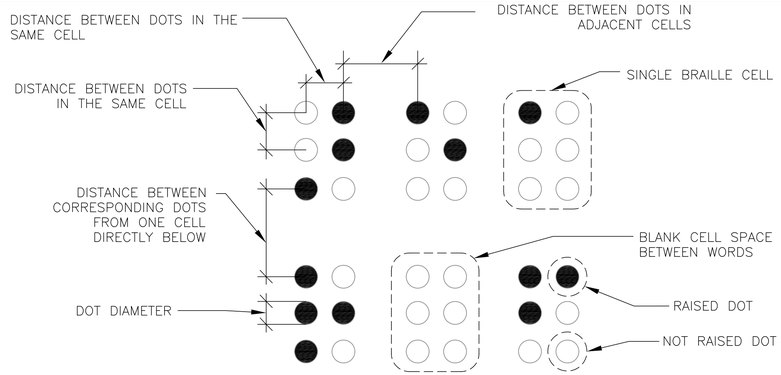
SCALE: NOT TO SCALE

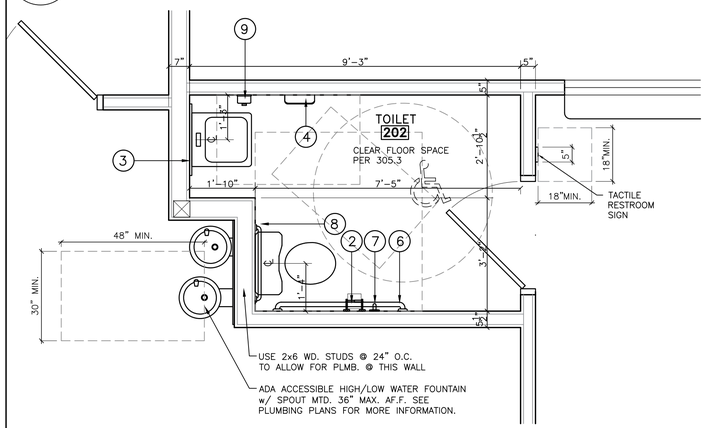


2 A-16 **TYPICAL LOCATION OF TACTILE SIGNS**

• DOORS

SCALE: 1/2"=1'-0"

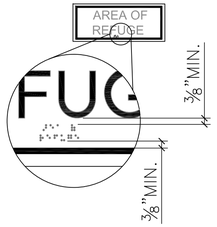




7 A-16 **ENLARGED TOILET ROOM PLAN**

BOROUGH BUILDING

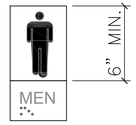
SCALE: 1/2"=1'-0"



NOTE:
BRAILLE SHALL BE 48" MINIMUM & 60" MAXIMUM ABOVE FINISH FLOOR, MEASURED TO THE BASELINE OF THE BRAILLE CELLS.

5 A-16 **TYPICAL POSITION OF BRAILLE**

SCALE: 1/2"=1'-0"

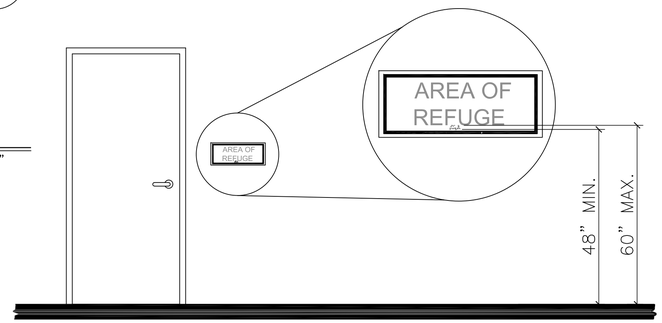


3 A-16 **TYPICAL PICTOGRAM FIELD**

SCALE: 1/2"=1'-0"

4 A-16 **TYPICAL BRAILLE MEASUREMENT**

SCALE: 1/2"=1'-0"

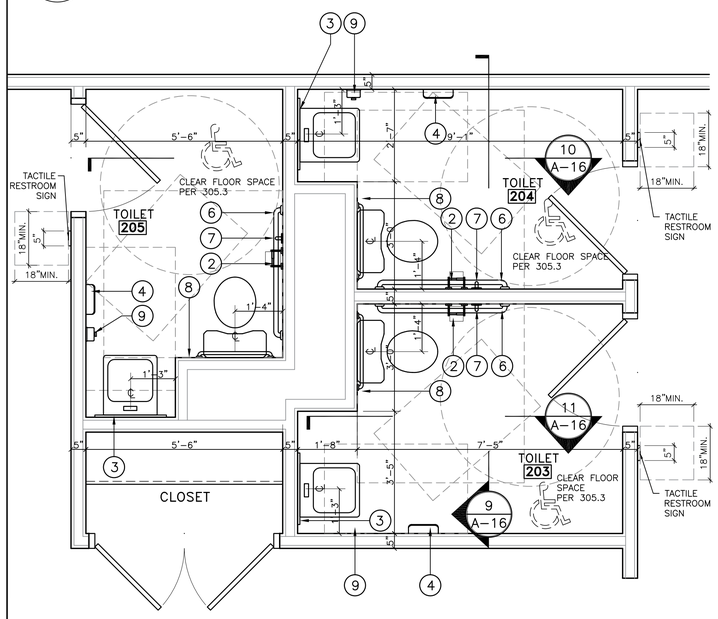


6 A-16 **TYPICAL HEIGHT OF TACTILE CHARACTERS**

SCALE: NOT TO SCALE

TOILET RM. ACCESSORY SCHEDULE – BOROUGH BLDG.							
DESIG	MANUF.	CAT. #	ITEM	MTG.	FINISH	MTG. HEIGHT	TOTAL QTY.
1	ASI	0332-D	COUNTER MOUNTED SOAP DISP.	SURFACE	STAIN. STL.	34" A.F.F.	2
2	ASI	7035-S	TOIL. PAPER DISPENSER	SEMI-RECESSED	STAIN. STL.	SEE MOUNTING LOCATION	7
3	ASI	0600-2436	24x36 MIRROR	SURFACE	STAIN. STL.	40" MAX TO BOTTOM OF REFLECTIVE SURFACE	7
4	XLERATOR	XL-SB-208-277	AIR HAND DRYER + RECESS KIT	RECESSED	STAIN. STL.	48" MAX TO CONTROLS	4
5	ASI	3800 x 36	REAR GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	2
6	ASI	3800 x 42	SIDE GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	6
7	ASI	3800 x 18	VERT GRAB BAR	SURFACE	STAIN. STL.	39" MIN TO 41" MAX A.F.F TO BOTTOM	6
8	ASI	3800 x 24	REAR GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	4
9	ASI	0347	SOAP DISPENSER	SURFACE	STAIN. STL.	48" MAX TO CONTROLS (REACH RANGE: VARIES)	5
10	ASI	–	TOILET PARTITIONS	FLOOR	POWDER CT.	–	–
11	ASI	8203	FOLDING SHOWER BENCH	SURFACE	STAIN. STL.	17" TO 19" A.F.F TO TOP OF SEAT	1
12	ASI	3800 x 48	BACK WALL SHOWER GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	1
13	ASI	3800 x 24	SIDE WALL SHOWER GRAB BAR	SURFACE	STAIN. STL.	33" MIN TO 36" MAX A.F.F TO TOP	1
14	–	–	1'-8"x5'-2" BENCH	FLOOR	WD./STAIN. STL.	WITH STAINLESS STL. LEGS MTD. 18" AFF	1
15	–	–	1'-8"x4'-6" BENCH	FLOOR	WD./STAIN. STL.	WITH STAINLESS STL. LEGS MTD. 18" AFF	2
16	–	–	1'-6"x9'-0" BENCH	FLOOR	WD./STAIN. STL.	WITH STAINLESS STL. LEGS MTD. 18" AFF	1
17	ASI	0210	PAPER TOWEL DISPENSER	SURFACE	STAIN. STL.	48" MAX. TO DISPENSER	3

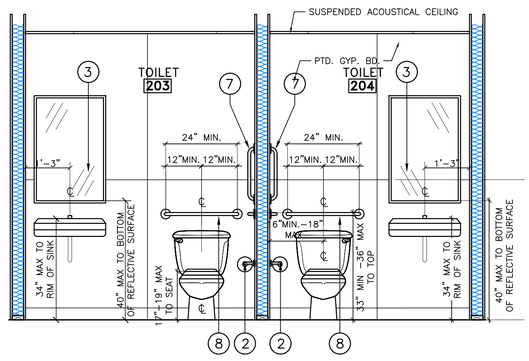
NOTES:
1. PROVIDE WOOD BLOCKING AS REQUIRED FOR ALL ACCESSORIES.
2. PROVIDE ADA APPROVED INSULATION ON ALL EXPOSED PLUMBING



8 A-16 **ENLARGED TOILET ROOM PLAN**

BOROUGH BUILDING

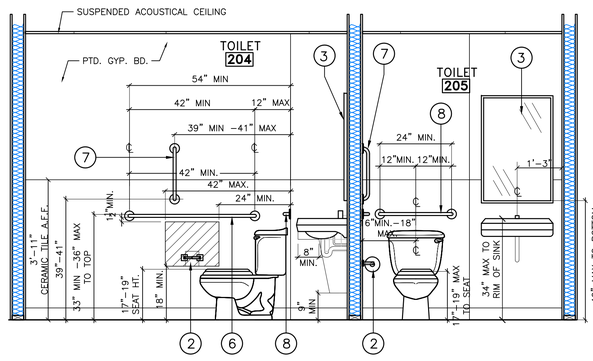
SCALE: 1/2"=1'-0"



9 A-16 **TOILET ROOM ELEVATION**

BOROUGH BUILDING

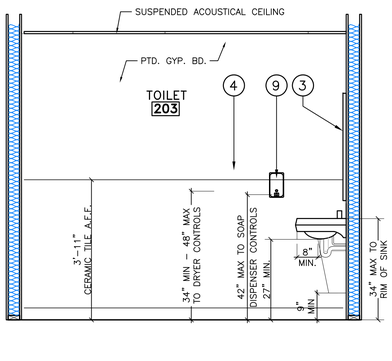
SCALE: 1/2"=1'-0"



10 A-16 **TOILET ROOM ELEVATION**

BOROUGH BUILDING

SCALE: 1/2"=1'-0"



11 A-16 **TOILET ROOM ELEVATION**

BOROUGH BUILDING

SCALE: 1/2"=1'-0"

LINN ARCHITECTS
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1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-9258

TOILET ROOM PLANS & ADA REQUIREMENTS
NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS		
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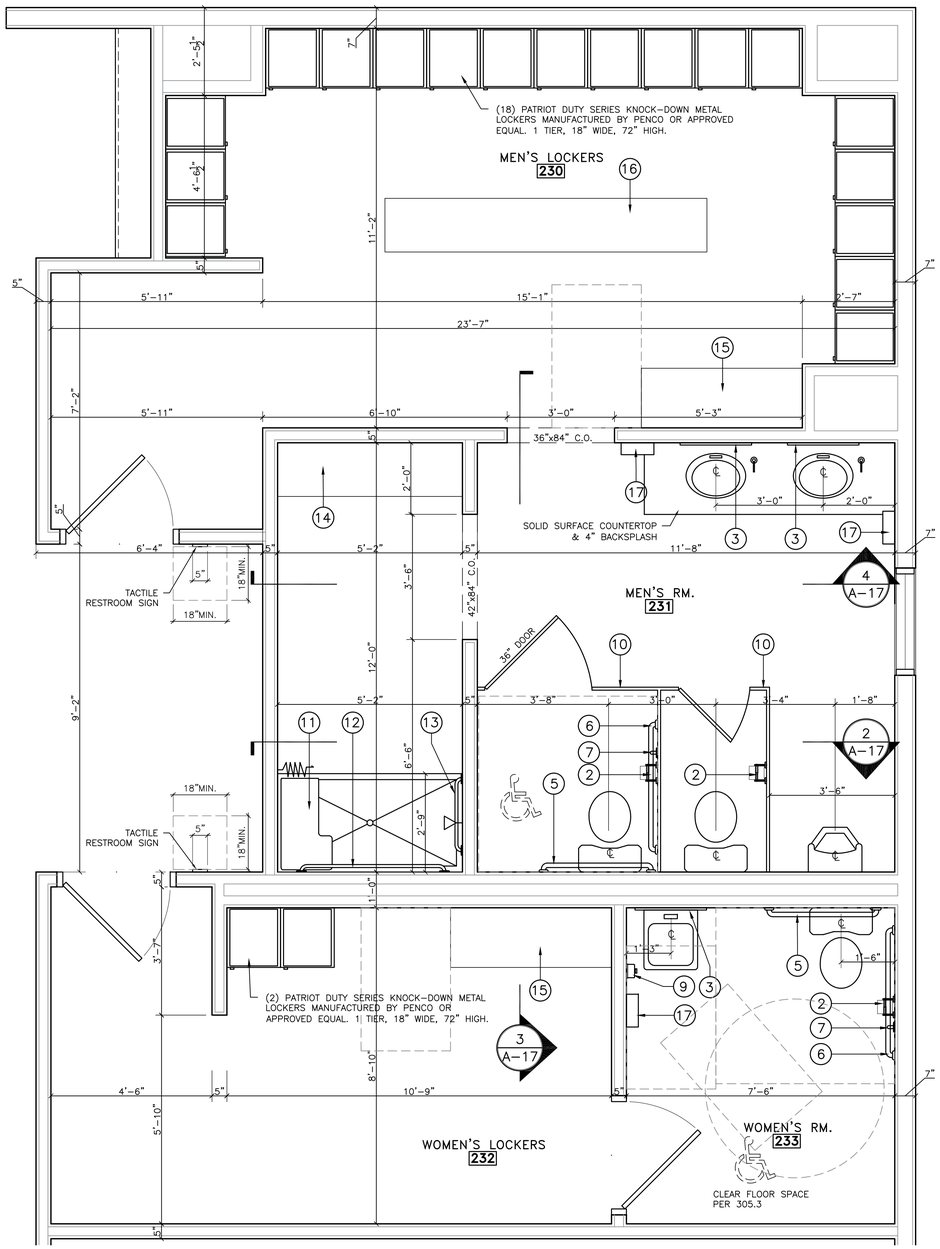
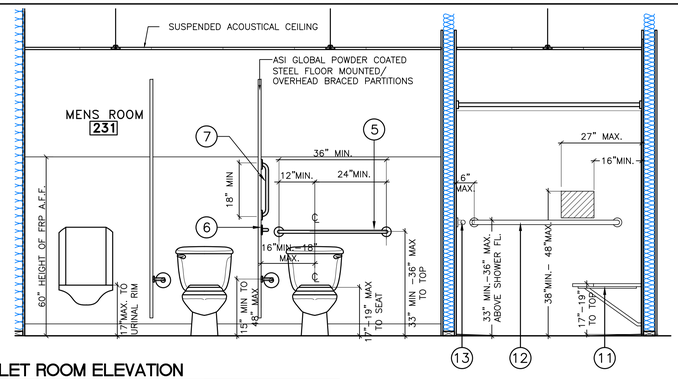
SHEET NO. A-16

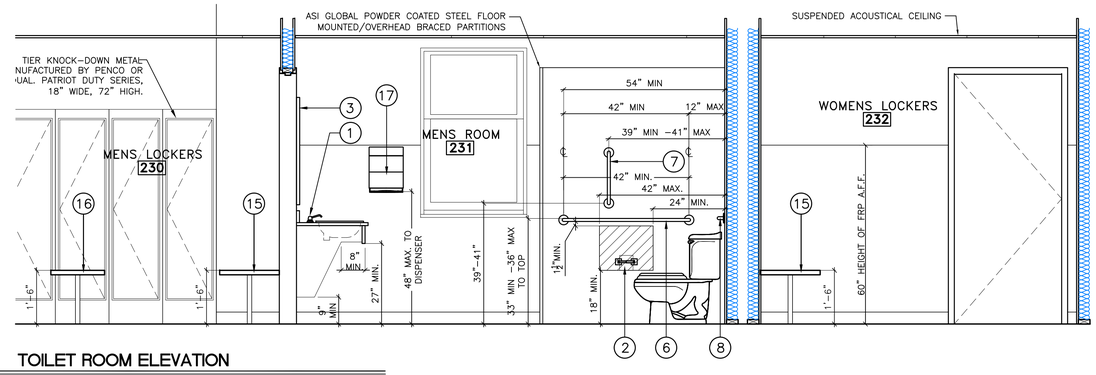
SHEET OF



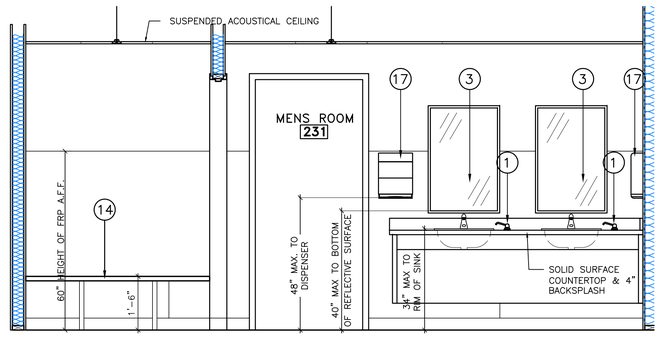
1 A-17 **ENLARGED TOILET ROOM PLAN**
BOROUGH BUILDING SCALE: 1/2"=1'-0"



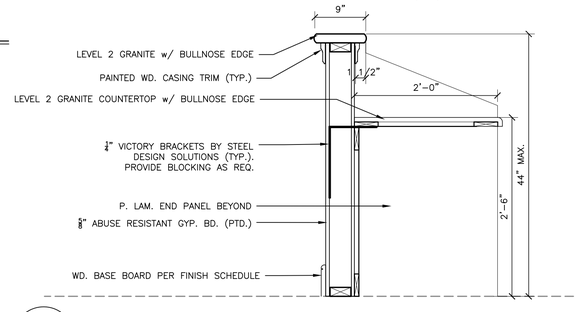
2 A-17 **TOILET ROOM ELEVATION**
BOROUGH BUILDING SCALE: 1/2"=1'-0"



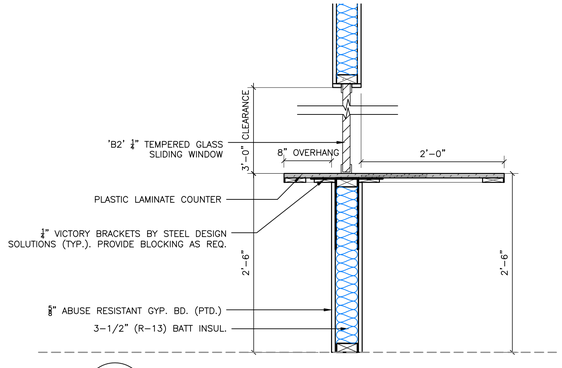
3 A-17 **TOILET ROOM ELEVATION**
BOROUGH BUILDING SCALE: 1/2"=1'-0"



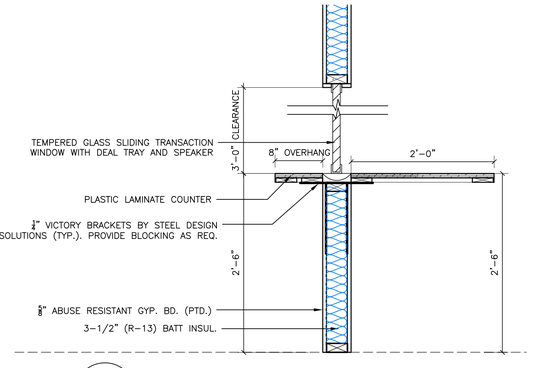
4 A-17 **TOILET ROOM ELEVATION**
BOROUGH BUILDING SCALE: 1/2"=1'-0"



5 A-17 **CASEWORK DTL. @ COUNCIL CHAMBERS**
BOROUGH BUILDING SCALE: 1"=1'-0"



6 A-17 **CASEWORK DTL. @ SECRETARY RM. #206**
BOROUGH BUILDING SCALE: 1"=1'-0"



7 A-17 **CASEWORK DTL. @ CORRIDOR #235**
BOROUGH BUILDING SCALE: 1"=1'-0"

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TEL: 610-566-7044
FAX: 610-566-9258

PROPOSED TOILET ROOMS & ELEVATIONS
NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

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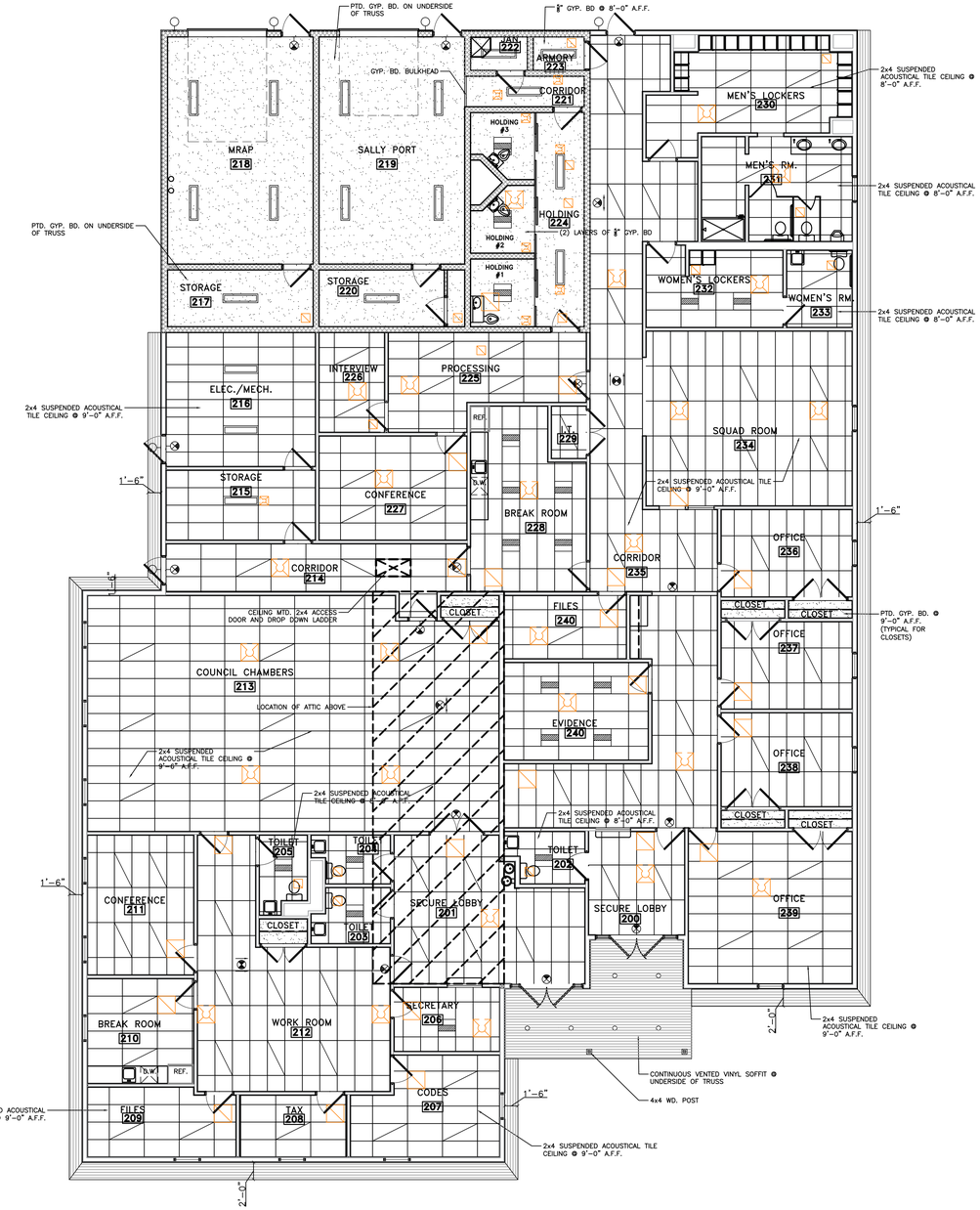
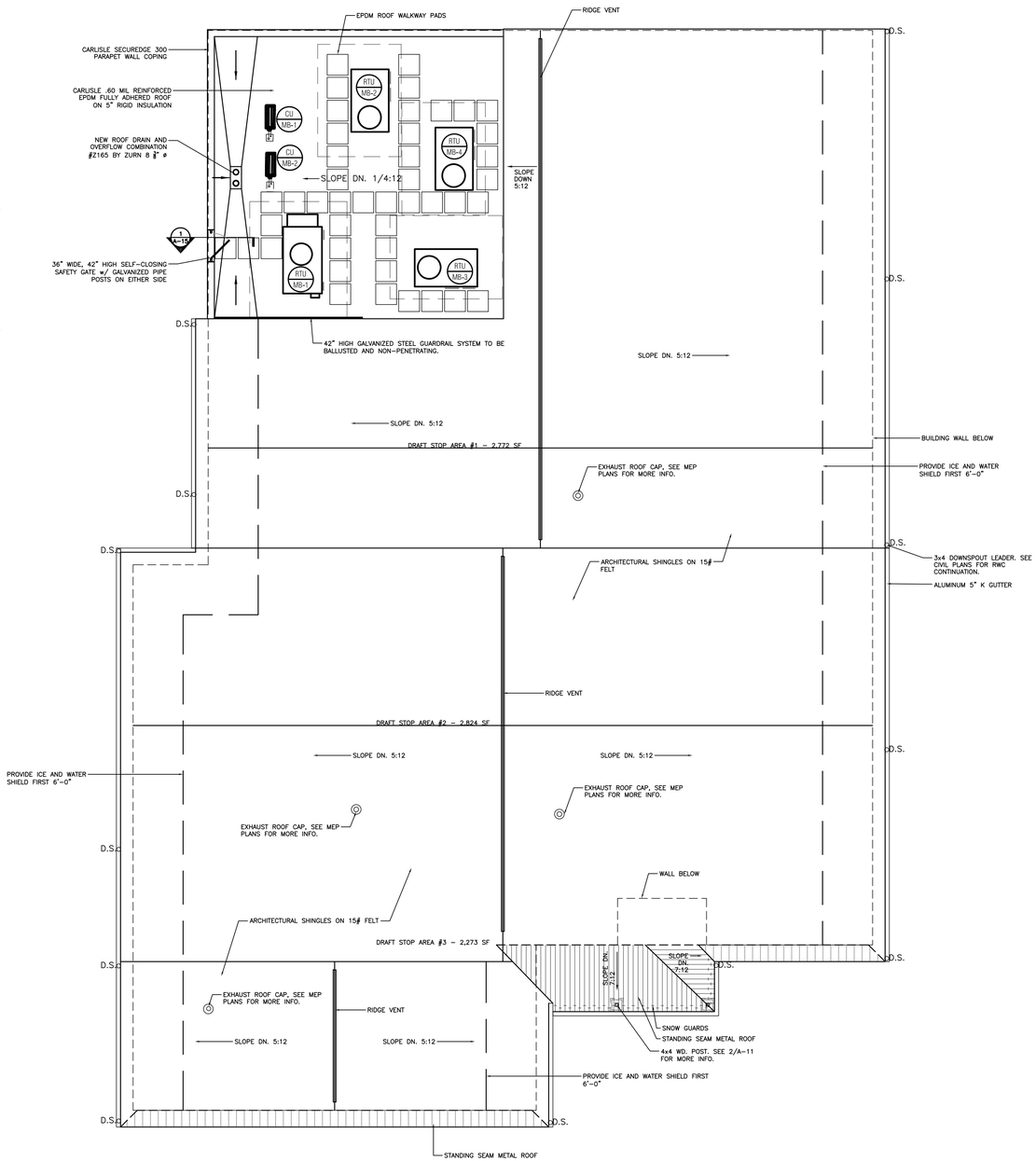
SHEET NO. A-17 SHEET OF



1 A-18 **REFLECTED CEILING PLAN**

BOROUGH BUILDING SCALE: 1/8"=1'-0"



2 A-18 **PROPOSED ROOF PLAN**

BOROUGH BUILDING SCALE: 1/8"=1'-0"

REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA ROBERT J. LINN JR. RA-009431-X
LICENSE NO. RA-009431-X

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-9258

RCP & ROOF PLAN - BOROUGH BLDG.

NEW MUNICIPAL BUILDINGS - BOROUGH BUILDING

BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE: 1/8"=1'-0"
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. A-18 SHEET OF

INTERIOR ROOM FINISH SCHEDULE

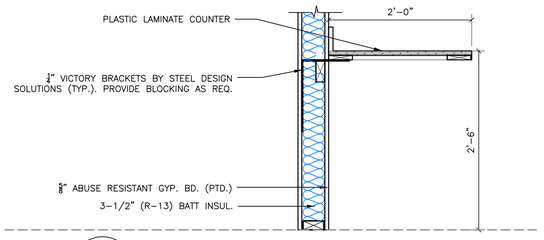
#	ROOM NAME	FLOORS: VCT 1	FLOORS: VCT 2	FLOORS: CERAMIC FLOOR TILE 2	FLOORS: WALK-OFF CARPET TILE 2	FLOORS: CARPET TILE 2	FLOORS: NONE	BASES: CERAMIC BASE TILE 2	BASES: 4" VINYL	BASES: WOOD BASE	BASES: NONE	WALLS: G.W.B. PAINTED	WALLS: CMU PAINTED	WALLS: CERAMIC WALL TILE 2	WALLS: FRP	WALLS: WOOD CHAIR RAIL	WALLS: M.R. GYP. BD.	WALLS MTG.	CEILINGS: 2X4 ACT 1	CEILINGS: GYP. BD.	CEILINGS: ABUSE RESISTANT GYP. BD	CEILINGS MTG.	REMARKS
200	SECURE LOBBY				●				●			●							●			9'-0"	
201	SECURE LOBBY				●				●			●							●			9'-0"	
202	TOILET			●				●				●		●				60"	●			8'-0"	
203	TOILET			●				●				●		●				60"	●			8'-0"	
204	TOILET			●				●				●		●				60"	●			8'-0"	
205	TOILET			●				●				●		●				60"	●			8'-0"	
206	SECRETARY					●			●			●							●			9'-0"	
207	CODES					●			●			●							●			9'-0"	
208	TAX					●			●			●							●			9'-0"	
209	FILES					●			●			●							●			9'-0"	
210	BREAK ROOM	●							●			●							●			9'-0"	
211	CONFERENCE					●				●		●				●			●			9'-0"	CHAIR RAIL MTD. 30" A.F.F.
212	WORK ROOM					●			●			●							●			9'-0"	
213	COUNCIL CHAMBERS					●				●		●				●			●			9'-0"	CHAIR RAIL MTD. 30" A.F.F.
214	CORRIDOR					●			●			●							●			9'-0"	
215	STORAGE								●			●							●			9'-0"	
216	ELEC./MECH.						●		●			●							●			9'-0"	
217	STORAGE						●				●		●							●		–	
218	MRAP						●				●		●							●		–	
219	SALLY PORT						●				●		●							●		–	
220	STORAGE						●				●		●							●		–	
221	CORRIDOR						●				●		●							●		–	
222	JANITOR						●				●		●							●		8'-0"	
223	ARMORY	●									●		●							●		8'-0"	
224	HOLDING						●				●		●								●	–	ABUSE RESISTANT GYP. BD. @ CLG.
225	PROCESSING	●							●			●							●			9'-0"	
226	INTERVIEW	●							●			●							●			9'-0"	
227	CONFERENCE					●			●			●							●			9'-0"	
228	BREAK ROOM	●							●			●							●			9'-0"	
229	I.T.					●			●			●							●			9'-0"	
230	MEN'S LOCKERS			●				●				●							●			8'-0"	
231	MEN'S ROOM			●				●							●			60"	●			8'-0"	
232	WOMEN'S LOCKERS			●				●				●							●			8'-0"	
233	WOMEN'S ROOM			●				●							●			60"	●			8'-0"	
234	SQUAD ROOM					●			●			●							●			9'-0"	
235	CORRIDOR					●			●			●							●			9'-0"	
236	OFFICE					●			●			●							●	●		9'-0"	
237	OFFICE					●			●			●							●	●		9'-0"	
238	OFFICE					●			●			●							●	●		9'-0"	
239	OFFICE					●			●			●							●	●		9'-0"	
240	EVIDENCE					●			●			●							●			9'-0"	
241	FILES					●			●			●							●			9'-0"	

MATERIAL SPECIFICATIONS

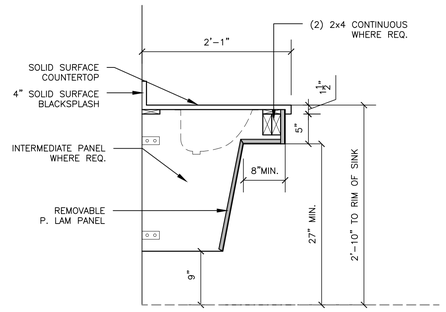
ITEM	MANUFACTURER	STYLE OR CATALOG #	COLOR	REMARKS
FLOORS				
VCT 1	TARKETT	12"x12"x1/8"	TO BE SELECTED	
VCT 2	TARKETT	12"x12"x1/8"	TO BE SELECTED	
CERAMIC TILE 2	DALTILE	12x12	TO BE SELECTED	
CARPET TILE 2	PATCRAFT	24x24	TO BE SELECTED	PROVIDE $30/SF ALLOWANCE FOR MATERIAL
WALK-OFF CARPET TILE 2	PATCRAFT	24x24/WALK RIGHT IN II	TO BE SELECTED	
BASE				
CERAMIC BASE TILE 2	DALTILE	4" COVE BASE	TO BE SELECTED	
VINYL	TARKETT	4" VINYL COVE	TO BE SELECTED	
WD. BASE BOARD	–		TO BE SELECTED	
WALLS				
CERAMIC WALL TILE 2	DALTILE	4x4 WALL TILE	TO BE SELECTED	
PAINT WALLS	SHERWIN WILLIAMS	EGG SHELL FINISH	TO BE SELECTED	
PAINT DOOR FRAMES	SHERWIN WILLIAMS	SEMI GLOSS FINISH	TO BE SELECTED	
FRP	CRANE COMPOSITES	GLASBORD	TO BE SELECTED	
WD. CHAIR RAIL	–	PRE PRIMED/FINGER-JOINTED/SATIN FINISH	TO BE SELECTED	
CEILING				
2x4 ACOUSTICAL TILE 1	ARMSTRONG	ULTIMA TEGULAR TILE	#1901 WHITE	w/ PRELUDE XL 15/16 GRID

NOTES:

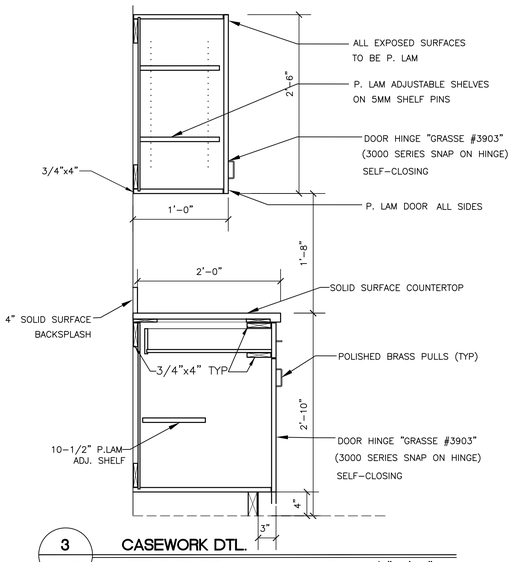
1) ALL FINAL FINISH SELECTIONS (COLORS, MATERIALS, ETC.) TO MATCH EXISTING, AND TO BE REVIEWED AND APPROVED BY OWNER
2) PROVIDE MOISTURE RESISTANT GYP. BOARD AT TOILET ROOM AND JANITOR CLOSET WALLS
3) ALL INTERIOR WOOD DOORS TO BE STAINED AND FRAMES TO BE PAINTED – COLOR TO MATCH EXISTING.
4) ALL NEW WALLS TO BE PAINTED WITH (1) COAT OF PRIMER/SEALER AND (2) COATS OF PAINT. EXPOSED BLOCK SHALL RECEIVE BLOCK FILLER AND (1) COAT OF PAINT.
5) ALL CARPET BASED ON PATCRAFT MODULAR STYLES, CONTACT TODD GOLDEN @ 610-312-8677
6) ALL WOOD BASE AND TRIM TO BE PAINT GRADE.



1 A-20 CASEWORK ELEVATION @ SQUAD RM. #234
BOROUGH BUILDING SCALE: 1/2"=1'-0"



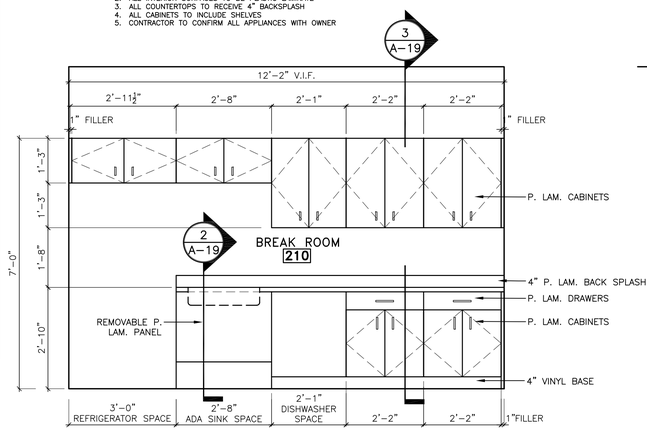
2 A-19 TYPICAL SINK SECTION
BOROUGH BUILDING SCALE: 1"=1'-0"



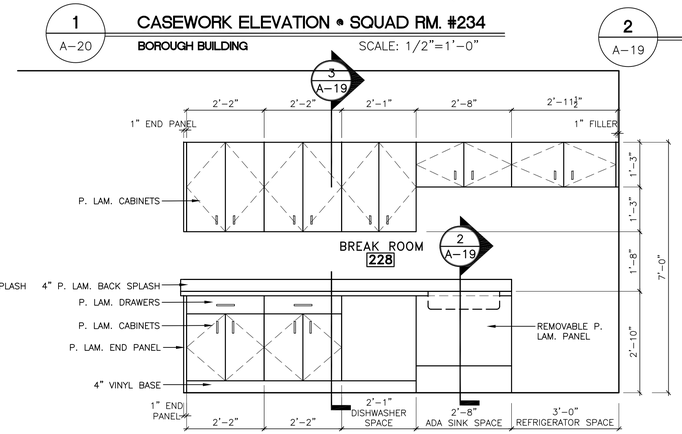
3 A-19 CASEWORK DTL.
BOROUGH BUILDING SCALE: 1/2"=1'-0"

CASEWORK NOTES:

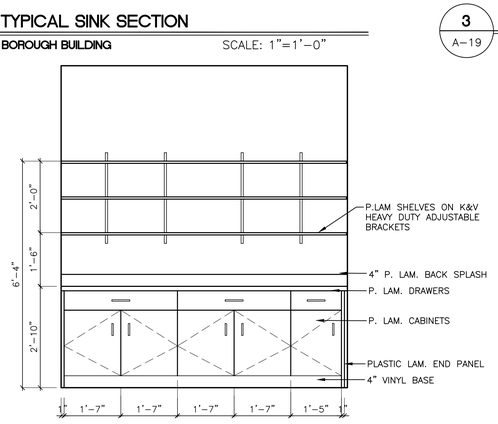
1. ALL EXPOSED SURFACES TO BE PLASTIC LAMINATE
2. ALL INTERIOR SURFACES TO BE PLASTIC LAMINATE
3. ALL COUNTERTOPS TO RECEIVE 4" BACKSPLASH
4. ALL CABINETS TO INCLUDE SHELVES
5. CONTRACTOR TO CONFIRM ALL APPLIANCES WITH OWNER



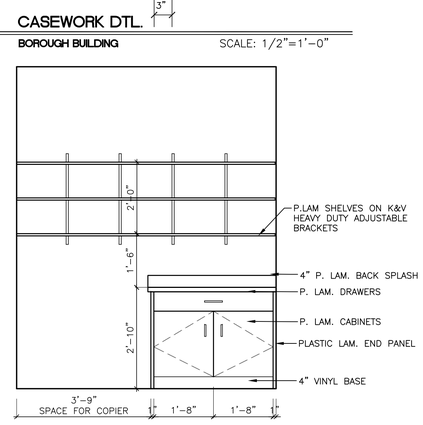
4 A-19 CASEWORK ELEV. @ BREAK RM #210
BOROUGH BUILDING SCALE: 1/2"=1'-0"



5 A-19 CASEWORK ELEV. @ BREAK RM #228
BOROUGH BUILDING SCALE: 1/2"=1'-0"



6 A-19 CASEWORK ELEV. @ SQUAD RM. #234
BOROUGH BUILDING SCALE: 1/2"=1'-0"



7 A-19 CASEWORK ELEV. @ CORRIDOR #235
BOROUGH BUILDING SCALE: 1/2"=1'-0"

LINN ARCHITECTS
ARCHITECTURE
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1140 N. PROVIDENCE ROAD
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INTERIOR FINISH SCHED. & CASEWORK DETAILS
NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DATE 8/26/19
SCALE 1/8"=1'-0"
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. A-19 SHEET OF

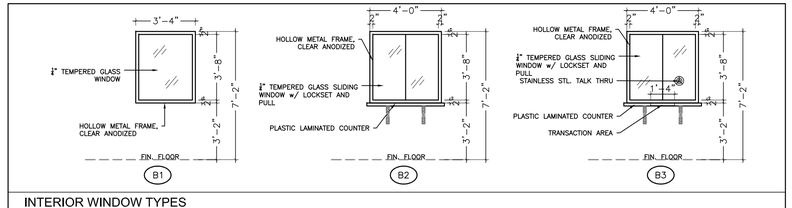
HARDWARE ITEM SCHEDULE – BOROUGH BLDG.

	ITEM NUMBER	DESCRIPTION	FINISH	MANUFACTURER
HINGES	1A	TA714FT	US26D	MCKINNEY
	1B	TA386 FT NRP	US32D	MCKINNEY
	1C	147	626	RIXSON
	1D	M19	626	RIXSON
	1E	TA386 FT QC NRP (ELEC.)	US32D	MCKINNEY
	1F	TA314 FT NRP	US32D	MCKINNEY
	1G	TA786 FT	US26D	MCKINNEY
	1H	TA786 FT QC	US26D	MCKINNEY
	1I	TA714FT QC	US26D	MCKINNEY
LOCK SET	2A	DG3 8204 CRNJ MK (STOREROOM)	US26D	SARGENT
	2B	DG3 8204 CRNJ MK (OFFICE)	US26D	SARGENT
	2C	DG3 8237 CRNJ MK (CLASSROOM)	US26D	SARGENT
	2D	8293 CRNJ (DUMMY)	US26D	SARGENT
	2E	RM3301–24 (PULL)/RM1030H (PUSH)	US32D	ROCKWOOD
	2F	RM2240–48 (PULL)	US32D	ROCKWOOD
	2G	DG3 M1–82271 (B/F)IPS CRNJ MK	US26D	SARGENT
	2H	49 8265 CRNJ	US26D	SARGENT
EXIT DEVICES	3A	DG3 16 MD/WD8610 106 MK	US32D	SARGENT
	3B	DG3 16 MD/WD8610 MK	US32D	SARGENT
	3C	(12) MD/WD8610	US32D	SARGENT
	3D	DG3 (12) NB8713 ETNJ MK	US32D	SARGENT
	3E	DG3 (12) M1–8876 (B/F) IPS ETNJ MK (CARD READER)	US32D	SARGENT
	3F	DG3 (12) 8804 MK	US32D	SARGENT
CLOSERS	4A	10–X36 (SURFACE)	630	RIXON
	4B	MC 281 O/P9	EN	SARGENT
	4C	DA MC 281 O/P9	EN	SARGENT
BOLT	5A	DG3 4877 MK	US26D	SARGENT
KICK	6A	K1050 10" HIGH CSK BEV	US32D	ROCKWOOD
SWEEPS	7A	3452CNB x LENGTH REQUIRED	–	PEMKO
THRESHOLD	8A	273x3AFG MSES25SS	–	PEMKO
	8B	346CxDOOR WIDTH + 4" (RAIN GUARD)	–	PEMKO
	8C	TILE TO CARPET TRIM	ALUM.	–
	8D	EV2322	–	PEMKO
LATCHES	9A	592	US26D	ROCKWOOD
ASTRAGAL	10A	29324CNB TKSP8	–	PEMKO
STOPS	11A	RM861/RM855	US26D	ROCKWOOD
	11B	1–X36	630	RIXSON
GASKETING	12A	S44BL	–	PEMKO
	12B	29313CPK TKSP8	–	PEMKO
	12C	217AV TKSP8	–	PEMKO
	12D	29313AFG MSES25SS	–	PEMKO
WIRING	13A	QC–C (AS NEEDED)	–	MCKINNEY
POWER	14A	AQD4–8C8R2	–	SECURITRON

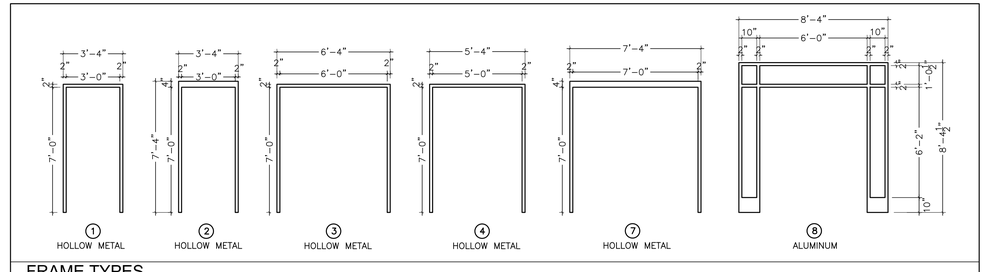
DOOR AND FRAME SCHEDULE

DOOR NO.	SIZE W	SIZE H	SIZE T	DOOR TYPE	DOOR MAT.	DOOR CORE	DOOR GLASS	DOOR FOB	FRAME TYPE	FRAME MAT.	FRAME DETAILS HEAD & JAMB	FIRE RATING LAB.	HINGES QT.	HINGES ITEM	LOCKS QT.	LOCKS ITEM	EXIT DEVICES QT.	EXIT DEVICES ITEM	CLOSERS QT.	CLOSERS ITEM	BOLT QT.	BOLT ITEM	KICK PLATE QT.	KICK PLATE ITEM	SWEEPS QT.	SWEEPS ITEM	THRESHOLD QT.	THRESHOLD ITEM	LATCH QT.	LATCH ITEM	ASTRAGAL QT.	ASTRAGAL ITEM	STOPS QT.	STOPS ITEM	GASKETING QT.	GASKETING ITEM	WIRING QT.	WIRING ITEM	POWER QT.	POWER ITEM	DOOR NO.	REMARKS
																																											GASKETING BY ALUM. DOOR SUPPLIER
200–1	(2)3°	7°	1¾	D	ALUM.	INSUL.	TEMP.		8	ALUM.			2/2	1C/1D	2	2A	1/1	3A/3B	2	4B					2	7A	1	8A					2	11B									200–1	
200–2	3°	7°	1¾	C	WD	SC	WIRE	●	1	HM			2/1	1G/1H			1	3E	1	4B			2	6A									1	11A	1	12A	1	13A	1	14A	200–2	PROVIDE ONE–WAY GLASS
201–1	(2)3°	7°	1¾	D	ALUM.	INSUL.	TEMP.		7	ALUM.			2/2	1C/1D	2	2A	1/1	3A/3B	1	4A					2	7A	1	8A					2	11B									201–1	
201–2	3°	7°	1¾	C	WD	SC	WIRE		1	HM			3	1A	1	2C			1	4B			2	6A									1	11A									201–2	
201–3	(2)3°	7°	1¾	B	WD	SC	WIRE		3	HM			6	1A	4	2F			2	4B			4	6A									2	11A									201–3	
202–1	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2H											1	8D					1	11A									202–1	UNDERCUT DOOR 1"
203–1	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2H											1	8D					1	11A									203–1	UNDERCUT DOOR 1"
204–1	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2H											1	8D					1	11A									204–1	UNDERCUT DOOR 1"
205–1	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2H											1	8D					1	11A									205–1	UNDERCUT DOOR 1"
206–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			1	6A																			206–1	
207–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			1	6A																			207–1	
208–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			1	6A																			208–1	
209–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			1	6A																			209–1	
210–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			2	6A											1	11A							210–1	
211–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			2	6A											1	11A							211–1	
212–1	(2)3°	7°	1¾	A	WD	SC			4	HM			6	1A	2	2D			2	4A	1	5A	2	6A					1	9A													212–1	
212–2	3°	7	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2C			1	4B			2	6A									1	11A									212–2	
213–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			3	1A	1	2C			1	4B			2	6A									1	11A									213–1	
213–2	(2)3°	7°	1¾	A	WD	SC			3	HM			6	1A	2	2D			2	4A	1	5A	2	6A					1	9A													213–2	
214–1	3°	7°	1¾	B	HM	INSUL.	WIRE		1	HM			3	1B	1	2F	1	3F	1	4B					1	7A	1/1	8A/8C					1	11A	1	12B							214–1	
214–2	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2B			1	4B			2	6A			1	8D					1	11A									214–2	
215–1	3°	7°	1¾	A	WD	SC			1	HM			3	1A	1	2C			1	4B			1	6A									1	11A									215–1	
216–1	3°	7°	1¾	A	HM	INSUL.			1	HM			3	1A	1	2A			1	4B					1	7A	1	8A/8B					1	11B	1/2	12B/12C							216–1	
217–1	3°	7°	1¾	A	HM	INSUL.			2	HM			3	1A	1	2C			1	4B			1	6A									1	11A									217–1	
218–1	3°	7°	1¾	C	HM	INSUL.	WIRE	●	2	HM			2/1	1F/1E	1	2G			1	4B					1	7A	1/1	8A/8C					1	11B	1	12D	1	13A	1	14A	218–1	
219–1	3°	7°	1¾	C	HM	INSUL.	WIRE	●	2	HM			2/1	1F/1E	1	2G			1	4B					1	7A	1/1	8A/8C					1	11B	1	12D	1	13A	1	14A	219–1	
220–1	3°	7°	1¾	A	HM	INSUL.			2	HM			3	1A	1	2A			1	4B			2	6A									1	11A									220–1	
220–2	3°	7°	1¾	A	HM	INSUL.			2	HM			3	1A	1	2A			1	4B			2	6A									1	11A									220–2	
222–1	3°	7°	1¾	A	HM	INSUL.			2	HM			3	1A	1	2A			1	4B			2	6A									1	11A									222–1	UNDERCUT DOOR 1"
223–1	3°	7°	1¾	A	HM	INSUL.		●	2	HM			2/1	1A/1I			1	3E	1	4B			2	6A			1	8D					1	11A	1	12A	1	13A	1	14A	223–1	
224–1	3°	7°	1¾	B	HM	INSUL.	WIRE	(2)●	2	HM			2/1	1A/1I			1	3E	1	4C			2	6A									1	11A	1	12A	1	13A	1	14A	224–1	
225–1	3°	7°	1¾	B	HM	INSUL.	WIRE	(2)●	2	HM			2/1	1A/1I			1	3E	1	4B			2	6A			1	8D					1	11A	1	12A	1	13A	1	14A	225–1	
225–2	3°	7°	1¾	B	HM	INSUL.	WIRE	●	1	HM			2/1	1A/1I			1	3E	1	4B			2	6A									1	11A	1	12A	1	13A	1	14A	225–2	PROVIDE ONE–WAY GLASS
226–1	3°	7°	1¾	C	WD	SC	WIRE		1	HM			3	1A	1	2B			1	4B			2	6A									1	11A									226–1	PROVIDE ONE–WAY GLASS
227–1	3°	7°	1¾	B	WD	SC	WIRE		1	HM			2/1	1A/1I			1	3E	1	4B			2	6A			1	8D					1	11A	1	12A	1	13A	1	14A	227–1	
228–1	3°	7	1¾	B	WD	SC	WIRE	●	1	HM			2/1	1A/1I			1	3E	1	4C			2	6A			1	8D					1	11A	1	12A	1	13A	1	14A	228–1	
229–1	(2)3°	7	1¾	A	WD	SC			4	HM			6	1A	2	2D			2	4A	1	5A	2	6A					1	9A													229–1	
230–1	3°	7	1¾	A	WD	SC			1	1HM	HM		3	1A	1	2E			1	4C			1	6A			1	8D					1	11A									230–1	
232–1	3°	7	1¾	A	WD	SC			1	HM			3	1A	1	2E			1	4C			2	6A			1	8D					1	11A									232–1	
233–1	3°	7	1¾	A	WD	SC			1	HM			3	1A	1	2H																	1	11A									233–1	
235–1	3°	7	1¾	C	HM	INSUL.	WIRE	●	2	HM			2/1	1B/1E			1	3E	1	4B			2	6A	1	7A	1/1	8A/8C					1	11A			1	13A	1	14A	235–1	
236–1	3°	7	1¾	B	HM	INSUL.	WIRE	●	2	HM			2/1	1A/1I			1	3E	1	4B			2	6A	1	7A	1/1	8A/8C					1	11A			1	13A	1	14A	236–1	
236–2	(2)3°	7	1¾	A	WD	SC			3	HM			6	1A	2	2D													2	9A			2	11A									236–2	
237–1	3°	7	1¾	B	HM	INSUL.	WIRE	●	1	HM			2/1	1A/1I			1	3E	1	4B													1	11A			1	13A	1	14A	237–1	
237–2	(2)3°	7	1¾	A	WD	SC			3	HM			6	1A	2	2D													2	9A			2	11A									237–2	
238–1	3°	7	1¾	B	HM	INSUL.	WIRE	●	1	HM			2/1	1A/1I			1	3E	1	4B													1	11A			1	13A	1	14A	238–1	
238–2	(2)3°	7	1¾	A	WD	SC			3	HM			6	1A	2	2D													2	9A			2	11A									238–2	
239–1	3°	7	1¾	B	HM	INSUL.	WIRE	●	1	HM			2/1	1A/1I			1	3E	1	4B													1	11A			1	13A	1	14A	239–1	
239–2	(2)3°	7	1¾	A	WD	SC			3	HM			6	1A	2	2D													2	9A			2	11A									239–2	
240–1	3°	7	1¾	A	HM	INSUL.	WIRE		1	HM			2/1	1A/1I	1	2A	1	3E	1	4B													1	11A			1	13A	1	14A	240–1	
241–1	3°	7	1¾	A	HM	INSUL.	WIRE		1	HM			3	1A	1	2A			1	4B													1	11A									241–1	

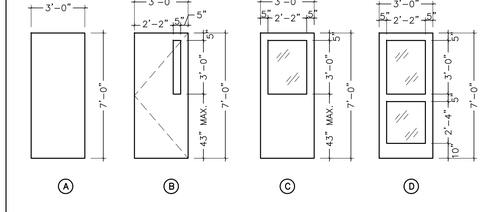
NOTES:
1.) COORDINATE FINAL KEYING WITH OWNER.
2.) COORDINATE ALL POWER SUPPLY WITH CONTRACTOR AND OWNER.



INTERIOR WINDOW TYPES
BOROUGH BUILDING



FRAME TYPES
BOROUGH BUILDING



DOOR TYPES
BOROUGH BUILDING

DOOR NOTES:

1. ALL DOORS TO BE PROVIDED WITH LEVER HANDLES
2. ALL HOLLOW METAL DOORS TO BE 16 GAUGE. ALL EXTERIOR HOLLOW METAL FRAMES TO BE 14 GAUGE. ALL HOLLOW METAL FRAMES SHALL BE PROVIDED WITH REINFORCING AT THE HINGE, JAMB, STRIKE, AND CLOSER LOCATIONS. HOLLOW METAL FRAMES IN FRAME OPENINGS SHALL BE KNOCKDOWN FRAMES.
3. ALL HOLLOW METAL DOORS AND FRAMES SHALL BE PAINTED, SEE FINISH SCHEDULE. ALL WOOD DOORS TO BE STAIN GRADE.
4. ALL DOORS SHALL RECEIVE SILENCER PADS AT HM FRAME. PROVIDE ROCKWOOD #608 OR #609
5. ALL EXTERIOR HM DOORS AND FRAMES SHALL RECEIVE FACTORY APPLIED A60 GALVANIZED FINISH. PROVIDE FIELD APPLIED GALVANIZED FINISH AS A RESULT OF FIELD PREPARATION AND/OR HARDWARE INSTALLATION.
6. ALL RATED DOORS TO HAVE UL LABELS
7. THRESHOLDS, WEATHERSTRIPPING & SWEEPS TO BE INSTALLED PER MANF. INSTRUCTIONS
8. DOOR TYPE "D" –MEDIUM STILE AND 10" BOTTOM RAIL, 1" INSULATING TEMPERED GLASS
9. OWNER TO SUPPLY AND INSTALL WIRING AND POWER SUPPLY FOR NEW CARD READERS. CONTRACTOR RESPONSIBLE FOR PREPPING DOOR AND FRAMES FOR KEY FOBS AND CONDUIT LOCATIONS.
10. ALL EXTERIOR DOOR WINDOW PANES TO BE TINTED
11. ALL PUSH/PULL HARDWARE TO INCLUDE SIGN MOUNTED ON BOTH SIDES OF DOOR

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-9258

REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR BIDDING	8/26/19

DOOR & HARDWARE SCHEDULE
NEW MUNICIPAL BUILDINGS – BOROUGH BUILDING
BOROUGH OF TRAINER
TOWNSHIP LINE RD.
TRAINER PA, 19061

DATE 8/26/19
SCALE 1/8"=1'–0"
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. A–20 SHEET OF

GENERAL NOTES

CODES & STANDARDS

1. INTERNATIONAL BUILDING CODE - 2015 IBC
2. AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10
3. AMERICAN CONCRETE INSTITUTE - ACI 318-14
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC 360-10
5. AMERICAN WELDING SOCIETY - AWS D1.4/D1.4M-2011
6. INTERNATIONAL MASONRY INSTITUTE TMS 402-13/ACI 530-13/ASCE 5-13, TMS 602-13/ACI 530.1-13/ASCE 6-13
7. ASTM STANDARDS FOR THE MATERIALS SPECIFIED

DESIGN & STRUCTURAL CRITERIA

1. PROJECT LOCATION/LOCAL JURISDICTION: TRAINER BOROUGH, PA
2. RISK CATEGORY: CATEGORY II - FOR DETERMINATION OF LOADING, IMPORTANCE & OTHER STRUCTURAL ENGINEERING DESIGN FACTORS.
3. SOIL DESIGN CRITERIA
   - 3.1. FROST DEPTH: 36 INCHES
   - 3.2. ALLOWABLE BEARING PRESSURE: 1500 PSF (ASSUMED)
   - 3.3. COEFFICIENT OF FRICTION: .35
   - 3.4. ACTIVE EARTH PRESSURE: 35 PSF/FT
   - 3.5. AT-REST EARTH PRESSURE: 60 PSF/FT
   - 3.6. PASSIVE EARTH PRESSURE: 400 PSF/FT
4. DEAD LOADS
   - 4.1. COLLATERAL ROOF DEAD LOAD: 5 PSF
   - 4.2. INTERIOR STUD WALL DEAD LOAD: 8 PSF
   - 4.3. CMU WALL DEAD LOAD: 45 PSF
   - 4.4. LOW ROOF DEAD LOAD: 17 PSF
5. LIVE LOADS
   - 5.1. ROOF LIVE LOAD: 20 PSF
   - 5.2. FLOOR LIVE LOAD: 100 PSF
6. WIND DESIGN CRITERIA
   - 6.1. BASIC WIND SPEED: Vult = 115 MPH
   - 6.2. EXPOSURE B
   - 6.3. INTERNAL PRESSURE COEFFICIENT: +/- 0.18
   - 6.4. COMPONENT & CLADDING WIND PRESSURES: SEE DETAIL 2/S1.1
7. SEISMIC DESIGN CRITERIA
   - 7.1. Ss = 0.2g, S1 = 0.06g
   - 7.2. SITE SOIL CLASSIFICATION: D
   - 7.3. SDS = 0.213g, SD1 = 0.096g
   - 7.4. SEISMIC DESIGN CATEGORY B
   - 7.5. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
   - 7.6. LATERAL FORCE-RESISTING SYSTEMS:
     - 7.6.1. EAST-WEST: STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE, R = 3, Cs = 0.071
     - 7.6.2. NORTH-SOUTH: INTERMEDIATE REINFORCED MASONRY SHEAR WALLS, R = 4, Cs = 0.053
8. SNOW DESIGN CRITERIA
   - 8.1. GROUND SNOW LOAD (Pg): 20 PSF
   - 8.2. DESIGN ROOF SNOW LOAD (Pf): 14 PSF
   - 8.3. MINIMUM FLAT ROOF SNOW LOAD: 20 PSF
   - 8.4. EXPOSURE FACTOR, Ce: 1.0 (EXPOSURE B)
   - 8.5. THERMAL FACTOR, Ct: 1.0
   - 8.6. IMPORTANCE FACTOR, Is: 1.0
   - 8.7. ROOF SLOPE FACTOR, Cs: 1.0
   - 8.8. DRIFTING: N/A
   - 8.9. UNBALANCED: SEE DETAIL 1/S1.1
9. DEFLECTION
   - 9.1. ROOF TOTAL LOAD: L/240
   - 9.2. ROOF LIVE LOAD: L/360
   - 9.3. FLOOR TOTAL LOAD: L/240
   - 9.4. FLOOR LIVE LOAD: L/360
   - 9.5. LATERAL SYSTEMS: L/180

MISCELLANEOUS

1. REFERENCE ARCHITECT DRAWINGS FOR EQUIPMENT LOCATION AND ORIENTATION ON THE SITE. THE CONTRACTOR AND SUB-TRADES SHALL FURNISH ALL REQUIRED MATERIAL, LABOR, EQUIPMENT AND PERFORM ALL WORK AS NECESSARY, AS INDICATED ON THE PROJECT DOCUMENTS, OR AS REASONABLY INFERRED TO EXECUTE THE SCOPE OF WORK FOR A PROPERLY FINISHED, COMPLETE JOB.
2. THE QUALITY OF WORKMANSHIP SHOULD BE SET AND SUPERVISED BY THE CONTRACTOR TO PASS BUILDING DEPT. OR ENGINEER INSPECTION FOR ROUGH CONSTRUCTION. THE LEVEL OF QUALITY AND TOLERANCE SHOULD BE APPROPRIATE FOR THE INSTALLED ELEMENT TO RECEIVE THE NEXT IN-LINE FINISH ASPECT OF CONSTRUCTION.
3. THE PURPOSE OF PROJECT DRAWINGS IS TO DEPICT THE OVERALL SCOPE OF THE PROJECT. THE PROJECT DRAWINGS HAVE BEEN DEVELOPED TO SHOW A LEVEL OF DETAIL WITH THE OBJECTIVE OF PLAN CHECK APPROVAL AND ISSUANCE OF A BUILDING PERMIT. THIS MODERATE LEVEL OF DETAIL SHOULD ALLOW FOR A VARIETY OF STANDARD CONSTRUCTION METHODS AND SEQUENCES. THE PROJECT DRAWINGS ARE INTENDED TO COMPLY WITH THE ORDINANCES, RULES AND REGULATIONS OF THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
4. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNOLOGIES, SEQUENCES AND PROCEDURES.
5. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
6. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.
7. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. THEY SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY IF THEY CHOOSE AN OPTION AND THEY SHALL COORDINATE ALL DETAILS.
8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
9. TYPICAL DETAILS ARE NOT CUT ON DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.
10. WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
11. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH RELATED WORK.
12. VISITS TO THE JOBSITE BY THE ENGINEER TO OBSERVE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT THEY ARE THE GUARANTORS OF THE CONTRACTOR'S WORK, NOR SUPERVISION, NOR SAFETY AT THE JOBSITE.
13. REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. REVIEW OF SUCH SHOP DRAWINGS BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR CORRECTNESS OF DIMENSIONS, FABRICATION DETAILS, SPACE REQUIREMENTS, AND ERRORS IN THE SHOP DRAWINGS, OR FOR DEVIATIONS FROM THE CONTRACT DRAWINGS OR SPECIFICATIONS UNLESS THE CONTRACTOR HAS SPECIFICALLY CALLED ATTENTION TO SUCH DEVIATIONS IN WRITING BY A LETTER ACCOMPANYING THE SHOP DRAWINGS AND THE ENGINEER APPROVES SUCH CHANGE OR DEVIATION IN WRITING.
14. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK THAT CONFORMS TO THE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY.
15. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, SLABS, STEEL DECKS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF STRUCTURAL ENGINEER THROUGH ARCHITECT.
16. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
17. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS ONLY.

MATERIALS

STRUCTURAL STEEL	W & WT	ASTM A992, Fy = 50 KSI
	CHANNEL & ANGLE	ASTM A36, Fy = 36 KSI
	PLATES	ASTM A36, Fy = 36 KSI
	HSS SQ OR RECT	ASTM A500, GR B, Fy = 46 KSI
	HSS ROUND	ASTM A500. GR B, Fy = 42 KSI
CONCRETE	ALL (U.N.O.)	PORTLAND CEMENT ASTM C150 TYPE II W/C RATIO = 0.45 MAXIMUM 28 DAY f'c = 4,000 PSI SLUMP RANGE = 3-5 INCHES AIR CONTENT = 4.5 - 7.5% 3/4" MAXIMUM NORMAL WEIGHT AGGREGATE
REINFORCING BARS		ASTM A615, GRADE 60 (NON-WELDABLE) ASTM A-1064 (WELDED WIRE REINF)
ANCHOR RODS		ASTM F1554, GRADE 36
HIGH STRENGTH BOLTS		ASTM A325N
BOLTS		ASTM A307, GALVANIZED PER ASTM A153 (ONLY WHERE NOTED ON PLANS)
HEADED STUD ANCHORS		ASTM A108
WELD METAL		E70XX ELECTRODE
ADHESIVE ANCHORS	MASONRY	HILTI "HIT HY-70" OR SIMPSON STRONG-TIE "SET-XP" ANCHORING ADHESIVE
	CONCRETE	HILTI "HIT HY-200" OR SIMPSON STRONG-TIE "SET-XP"
	ALL	ASTM A36 ALL-THREAD WITH CHISEL POINT
COLD FORMED STEEL		STEEL STUDS, ASTM A653, 18 GA. Fy = 33 KSI U.N.O.
MASONRY		CMU BLOCK: NORMAL WEIGHT, F'c = 2000 PSI MORTAR: PORTLAND CEMENT/LIME, TYPE M OR S GROUT: F'c = 2000 PSI (28 DAYS) WALL COMPRESSIVE STRENGTH = F'M = 2000 PSI (28 DAYS)

CONCRETE

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE". ALL REINFORCING SHALL CONFORM TO THE CRSI SPECIFICATIONS & HANDBOOK. CONCRETE PLACEMENT SHALL MEET ALL COLD WEATHER AND HOT WEATHER REQUIREMENTS OUTLINED IN ACI 306 & 305 RESPECTIVELY.
2. ADDITION OF WATER TO THE BATCH FOR MATERIAL WITH INSUFFICIENT SLUMP WILL NOT BE PERMITTED, UNLESS THE SUPPLIER HAS SPECIFICALLY WITHHELD WATER FROM THE BATCH AT THE PLANT. IN SUCH CASE THE MIX DESIGN AND TRUCK TICKET MUST CLEARLY STATE THE MAXIMUM AMOUNT OF WATER THAT CAN BE ADDED TO THE BATCH ON SITE. IN NO CASE SHALL THE DESIGN WATER TO CEMENTITIOUS MATERIAL RATIO BE EXCEEDED.
3. CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE A SLUMP OF 4" +/- 1", TO BE FIELD VERIFIED, PRIOR TO ADDING ADMIXTURE, AND NOT EXCEEDING 8" AT PLACEMENT.
4. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, INCLUDING SLABS ON GRADE AT 2'-0" OC AROUND UNDER-FLOOR DUCTS AND SLAB EDGES, REINFORCING, KEYS, ETC. MECHANICALLY VIBRATE ONLY THE TOP 5 FEET OF CAISSON CONCRETE. REVIBRATE TOP OF CAISSON 15 MINUTES AFTER PLACING CONCRETE.
5. IF CONCRETE IS PLACED BY THE PUMP METHOD, SUPPORTS SHALL BE PRODUCED FOR THE HOSE. THE HOSE SHALL NOT BE ALLOWED TO CONTACT THE REBAR OR TENDONS. THIS REQUIREMENT IS MANDATORY. DISCHARGE SHALL BE DIRECTED SO AS TO PREVENT DISPLACEMENT OF REBAR, TENDONS, OR ACCESSORIES.
6. REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS AND THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
7. ALL HOOKS ON ALL BARS SHALL BE STANDARD 90 DEGREE HOOKS UNLESS SHOWN OTHERWISE.
8. REINFORCING STEEL SHALL NOT BE BENT OR STRAIGHTENED IN A MANNER INJURIOUS TO THE CONCRETE OR STEEL.
9. ALL REINFORCING TO BE WELDED SHALL BE WELDED IN ACCORDANCE WITH AWS D1.4. NO TACK WELDING OF REINFORCING BARS IS ALLOWED WITHOUT PRIOR REVIEW OF PROCEDURE BY STRUCTURAL ENGINEER.
10. ALL CONDUITS, GROUND WIRES, DRAINS, ANCHOR BOLTS, OTHER EMBEDDED ITEMS, ETC. SHALL BE IN PLACE BEFORE CONCRETE PLACEMENT.
11. REINFORCING LAP SPLICES IN CONCRETE SHALL BE PER TYPICAL DETAIL UNLESS NOTED OTHERWISE. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.
12. ALL FIELD BENDING OF REINFORCING SHALL BE STANDARD 90 DEGREE HOOKS AS DEFINED IN CURRENT ACI 318 UNLESS NOTED OR DETAILED OTHERWISE.
13. WHEN TOTAL NUMBER OF REINFORCING BARS IS SHOWN ON DESIGN DRAWINGS AND SPACING IS NOT SPECIFIED, BARS SHALL BE EQUALLY SPACED.
14. DETAILS OF REINFORCING NOT SHOWN IN THESE PLANS SHALL BE DONE IN ACCORDANCE WITH ACI 315 AND ACI 318.
15. DRILLED PIER CONCRETE SHALL BE CHANNELED TO FREE FALL DOWN THE SHAFT WITHOUT STRIKING THE REINFORCING OR THE SIDES OF THE SHAFT. MAXIMUM HEIGHT OF FREE-FALL IS 10'-0".
16. ALL SLABS-ON-GRADE SHALL HAVE CONTROL JOINTS CUT IN CONCRETE WITHIN 8 HOURS OF PLACEMENT AT A SPACING NO GREATER THAN 10' O.C.E.W. (U.N.O. ON PLANS).

PRE-ENGINEERED METAL BUILDINGS

1. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. BUILDING SHALL BE DESIGNED FOR ALL APPLICABLE LOADING CONDITIONS REQUIRED BY THE 2015 INTERNATIONAL BUILDING CODE.
3. CONTRACTOR SHALL VERIFY THAT THE GEOMETRIC SIZE OF ALL STEEL FRAME CONCRETE SUPPORTS ARE ADEQUATE TO ACCOMMODATE THE METAL BUILDING COLUMN BASE PLATES, WITH CONSIDERATION FOR MANUFACTURER REQUIRED CLEARANCES. ANY REQUIRED INCREASES IN SIZES OF FOUNDATION SHALL BE AT THE EXPENSE AND RESPONSIBILITIES OF THE CONTRACTOR. ANY CHANGES TO THE FOUNDATION SHALL BE APPROVED BY THE ENGINEER.
4. CONTRACTOR TO COORDINATE ALL PENETRATIONS THROUGH THE WALLS OF THE METAL BUILDING WITH ARCHITECTURAL AND MECHANICAL.

FOUNDATION AND SOIL PREPARATION

SITE GRADING AND EXCAVATIONS

1. A GEOTECHNICAL ENGINEERING EVALUATION REPORT HAS NOT BEEN CONDUCTED FOR THIS PROJECT. THE CONTRACTOR IS THEREFORE RESPONSIBLE THAT ALL BUILDING CODE REQUIREMENTS ARE MET AND IN COMPLIANCE WITH THE LOCAL JURISDICTION. THE FOLLOWING NOTES ARE TYPICAL AND SHALL NOT GOVERN SITE SPECIFIC REQUIREMENTS.
2. CONFORM TO IBC CHAPTER 18 "SOILS AND FOUNDATIONS".
3. ALL TOPSOIL AND ORGANIC MATERIAL, ASPHALT, CONCRETE AND RELATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROPOSED BUILDING AND PAVEMENT AREAS AND ANY AREAS TO RECEIVE SITE GRADING FILL. FOR PLANNING PURPOSES, A MINIMUM STRIPPING THICKNESS OF 6 INCHES IS RECOMMENDED. THICKER STRIPPING DEPTHS MAY BE WARRANTED TO REMOVE ALL DETRIMENTAL ORGANICS AS DETERMINED ONCE ACTUAL STRIPPING OPERATIONS ARE PERFORMED.
4. ALL FILL AND BACKFILL SHALL BE NON-EXPANSIVE, FREE OF ORGANICS AND DEBRIS AND SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS FOR FINE-GRAINED SOILS AND NOT EXCEEDING 12 INCHES FOR GRANULAR SOILS. ALL FILL AND BACKFILL SHALL BE COMPACTED TO THE FOLLOWING PERCENTAGES OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 OR EQUIVALENT (E.G. ASTM D4253-D4254).
   - 5.1. BELOW FOUNDATIONS OR SPREAD FOOTINGS..... 95%
   - 5.2. BELOW SLAB-ON-GRADE CONSTRUCTION..... 95%
   - 5.3. BELOW STREETS, PARKING LOTS, OR OTHER PAVED AREAS..... 95%
   - 5.4. GENERAL LANDSCAPING OR NONSTRUCTURAL AREAS..... 92%
   - 5.5. UTILITY TRENCH BACKFILL, TO WITHIN 2 FEET OF SURFACE..... 95%
5. IMPORTED STRUCTURAL FILL SHOULD BE NON-EXPANSIVE, FREE OF ORGANICS AND DEBRIS, AND SELECTED PER THE FOLLOWING GRADATION REQUIREMENTS:

SCREEN OR SIEVE SIZE	PERCENT PASSING BY WEIGHT
3-INCH	100
1 1/2-INCH	80-100
3/4-INCH	60-100
NO. 4	25-60
NO. 200	12 MAXIMUM

SPREAD FOOTING FOUNDATIONS

1. BOTH INTERIOR AND EXTERIOR FOOTINGS SHALL BEAR ON THE PROPERLY COMPACTED NATIVE SOILS. AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF WAS USED FOR ALL FOOTINGS.
2. SOILS DISTURBED BELOW THE PLANNED DEPTHS OF FOOTING EXCAVATIONS SHALL EITHER BE RECOMPACTED OR BE REPLACED WITH SUITABLE COMPACTED BACKFILL APPROVED BY THE GEOTECHNICAL ENGINEER.
3. THE BOTTOM OF THE FOOTING EXCAVATIONS SHALL BE FREE OF COBBLES AND BOULDERS TO AVOID STRESS CONCENTRATIONS ACTING ON THE BASE OF THE FOOTINGS.
4. A REPRESENTATIVE OF THE PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE ALL FOOTING EXCAVATIONS AND BACKFILL PHASES PRIOR TO THE PLACEMENT OF CONCRETE FORMWORK.

FLOOR SLABS AND EXTERIOR FLATWORK

1. FOR NORMALLY LOADED, SLAB-ON-GRADE CONSTRUCTION, A MINIMUM 6-INCH CUSHION COURSE CONSISTING OF FREE-DRAINING, CRUSHED GRAVEL SHOULD BE PLACED BENEATH THE SLABS AND COMPACTED TO A MINIMUM OF 95 PERCENT DENSITY PER ASTM D698 (OR EQUIVALENT PER ASTM D4253-D4254). THIS MATERIAL SHOULD CONFORM TO SECTION 02235 OF MPWSS AND INCORPORATE A MAXIMUM PARTICLES SIZE OF 3/4-INCH. PRIOR TO PLACING THE CUSHION COURSE, THE UPPER SIX INCHES OF SUBGRADE SHOULD BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D698.

MASONRY

1. MASONRY WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
2. HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE I.
3. F'm FOR DESIGN IS 2000 PSI.
4. ALL UNITS SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE.
5. VERTICAL REINFORCING (UNLESS NOTED OTHERWISE):

   PLACE BAR IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL, WITH ONE BAR AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARING, JAMBS AND EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48" O.C.. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY AMERICAN WIRE TIE PRODUCTS COMPANY (OR EQUAL). DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90 DEGREE HOOKED DOWELS TO MATCH VERTICAL REINFORCING.

6. HORIZONTAL REINFORCING (UNLESS NOTED OTHERWISE):

   PLACE (2) #4 BARS IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT ROOF AND ELEVATED FLOOR LINES, AT TOP OF PARAPET OR TOP OF FREE-STANDING WALL - PLACE THESE BARS CONTINUOUS THROUGH CONTROL JOINTS. OTHERWISE, WRAP MASTIC TAPE FOR 1'-6" EACH SIDE OF CONTROL JOINT. PROVIDE BENT BARS, TO MATCH HORIZONTAL BOND BEAM REINFORCING, AT CORNERS AND WALL INTERSECTIONS TO MAINTAIN BOND BEAM CONTINUITY. STAGGER ALTERNATE SPLICES A MINIMUM OF 4'-0".

   PROVIDE STANDARD WEIGHT (NO. 9 GAUGE WIRE) DUR-O-WALL OR DUR-O-WIRE LADDER TYPE JOINT REINFORCING AT 16" O.C. IN MASONRY WALLS. LAP JOINT REINFORCING 6" MINIMUM.

7. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING. PROVIDE CLEANOUTS IF GROUT POUR EXCEEDS 5'-0" IN HEIGHT. IF CLEANOUTS ARE PROVIDED, GROUT POUR MAXIMUM HEIGHT = 12'-0", IN LIFTS NOT TO EXCEED 6'-0".
8. UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0".
9. (2) #4 HORIZONTAL BARS SHALL BE PLACED AT THE BOTTOM OF ALL MASONRY OPENINGS GREATER THAN 9" WIDE IN FULLY GROUTED CELLS WITH HORIZONTAL LINTEL REINFORCING AT THE TOP OF ALL OPENINGS (AS INDICATED IN THE LINTEL SCHEDULE). REBAR SHALL EXTEND 24" MINIMUM BEYOND OPENINGS.
10. (1) #5 VERTICAL REBAR SHALL BE PLACED IN FULLY GROUTED CELLS ON EACH SIDE OF OPENINGS GREATER THAN 9" WIDE. REBAR AND GROUTED CELLS SHALL EXTEND THE FULL HEIGHT OF THE WALL FROM DIAPHRAGM TO DIAPHRAGM.
11. REBAR SPLICE LENGTHS SHALL BE 64 BAR DIAMETERS.

STEEL JOISTS

1. ALL JOISTS SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE STANDARD SPECIFICATIONS OF THE STEEL JOIST INSTITUTE AND OSHA REGULATIONS.
2. JOIST SIZES ARE AS INDICATED ON PLAN. TYPICAL CALLOUTS ARE AS FOLLOWS:

   TYPICAL STEEL JOIST - 24K# (SIZED BASED ON APPLICABLE LOADS)

   DESIGN JOISTS AND BRIDGING FOR NET WIND UPLIFT AS SHOWN ON FRAMING PLAN NOTES.
3. ALL JOISTS SHALL BE CAMBERED PER SJI SPECIFICATIONS.
4. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND SEALED CALCULATIONS FOR REVIEW PRIOR TO MANUFACTURE. SUBMITTAL SHALL INCLUDE CALCULATIONS FOR ALL JOIST SHOES WHERE BEARING LENGTH IS LESS THAN 4" AT LH SERIES JOISTS OR 2 1/2" FOR K SERIES JOISTS. CALCULATIONS SHALL INCLUDE DEAD AND LIVE LOAD DEFLECTIONS. STRESS RATIOS FOR INDIVIDUAL MEMBERS IN THE CALCULATIONS SHALL NOT EXCEED 1.00. SHOP DRAWINGS AND CALCULATIONS SHALL INCLUDE DETAILS OF ANY OPTIONAL FIELD SPLICES AND IF HIGH STRENGTH BOLTS OR COMPLETE PENETRATION WELDS ARE UTILIZED. CONTRACTOR SHALL RETAIN AN INDEPENDENT TESTING LABORATORY FOR TESTING AND CERTIFICATION.
5. LIVE LOAD DEFLECTIONS SHALL BE LIMITED TO SPAN/360 AT SIMPLE SPAN FLOOR MEMBERS AND SPAN/240 AT SIMPLE SPAN ROOF MEMBERS.
6. ALL CONCENTRATED LOADS TO STEEL JOISTS SHALL OCCUR WITHIN 8" OF A PANEL POINT. TO ACCOUNT FOR ADDITIONAL CONCENTRATED LOADS, MANUFACTURER SHALL ADD ADDITIONAL WEB MEMBERS AS REQUIRED AND ADJUST CHORD AND WEB SIZES ACCORDINGLY, BUT SHALL NOT ALTER DEPTH OF JOISTS.
7. WHERE CROSS BRIDGING INTERFERES WITH MECHANICAL INSTALLATIONS, REMOVE THIS CROSS BRIDGING AFTER ROOF/FLOOR DECK IS IN PLACE AND REPLACE WITH HORIZONTAL ANGLES L2x2x3/16 AT TOP AND BOTTOM CHORDS. COORDINATE WITH JOIST MANUFACTURER.

LEGEND AND ABBREVIATIONS

AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ACI	AMERICAN CONCRETE INSTITUTE	HSA	HEADED STUD ANCHOR
		HSS	HOLLOW STRUCT STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	IBC	INTERNATIONAL BUILDING CODE
ALT	ALTERNATE	INT	INTERIOR
APPROX	APPROXIMATE	L	STEEL ANGLE
ARCH	ARCHITECTURAL	LG	LIGHT GAUGE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIAL	LLV	LONG LEG VERTICAL
		LONG	LONGITUDINAL
@	AT	MAX	MAXIMUM
BLDG	BUILDING	MCJ	MASONRY CONTROL JOINT
BLK'G	BLOCKING	MECH	MECHANICAL
BM	BEAM	MFR	MANUFACTURER
BOC	BOTTOM OF CONCRETE	MIN	MINIMUM
BOF	BOTTOM OF FOOTING	MISC	MISCELLANEOUS
BOS	BOTTOM OF STEEL/SLAB	NO. OR #	NUMBER
BOT	BOTTOM OF	(N)	NEW
BRG	BEARING	NTS	NOT TO SCALE
BTB	BACK TO BACK	OC	ON CENTER
BTWN	BETWEEN	OCEF	ON CENTER EACH FACE
C	STEEL CHANNEL	OCEW	ON CENTER EACH WAY
CFS	COLD FORMED STEEL	OPP	OPPOSITE
CIP	CAST IN PLACE	OWJ	OPEN WEB JOIST
CJ	CONTROL JOINT	PEMB	PRE-ENGINEERED METAL BUILDING
℄ OR CL	CENTER LINE		
CMU	CONCRETE MASONRY UNIT	PLCS	PLACES
COL	COLUMN	PL	PLATE
CONC	CONCRETE	PREFAB	PREFABRICATED
CONN	CONNECTION	PT	PRESSURE TREATED
CONT	CONTINUOUS	REF	REFERENCE
DEMO	DEMOLISH	REINF	REINFORCEMENT
DET	DETAIL	REQ'D	REQUIRED
DF	DOUGLAS FIR	REV	REVISION/REVISED
ø OR DIA	DIAMETER	SCH OR SCHED	SCHEDULE
DIM	DIMENSION	SFE	SUBFLOOR ELEVATION
DJ	DOUBLE JOIST	SHT	SHEET
DWG	DRAWING	SIM	SIMILAR
EA	EACH	SOG	SLAB-ON-GRADE
EA WAY OR EW	EACH WAY	SPCS OR SPA	SPACE(S)
EF	EACH FACE	SPEC	SPECIFICATION(S)
EJ	EXPANSION JOINT	SQ	SQUARE
EL OR ELEV	ELEVATION	STD	STANDARD
EMBED	EMBEDMENT	STRUCT	STRUCTURAL
ENG	ENGINEER	SYM	SYMMETRICAL
EOR	ENGINEER OF RECORD	T&B	TOP & BOTTOM
EQ	EQUAL	THRU	THROUGH
EXIST OR (E)	EXISTING	TOB	TOP OF BEAM
EXP	EXPANSION	TOC	TOP OF CONCRETE
EXT	EXTERIOR	TOF	TOP OF FOOTING
FDT OR FND	FOUNDATION	TOS	TOP OF STEEL/SLAB
FF	FINISH FLOOR	TOW	TOP OF WALL
FLR	FLOOR	TRANS	TRANSVERSE
FTG	FOOTING	TYP	TYPICAL
GA	GAUGE	VIF	VERIFY IN FIELD
GALV	GALVANIZED	VERT	VERTICAL
GEN	GENERAL	UNO	UNLESS NOTED OTHERWISE
		W/	WITH
		WF	WIDE FLANGE
		WP	WORKING POINT
		WT	WEIGHT

CONCRETE

CONCRETE MASONRY UNIT

STEEL IN SECTION

1 / S1.0 — SECTION OR DETAIL DESIGNATION SYMBOL; SHEET NUMBER WHERE SECTION OR DETAIL IS SHOWN

ELEVATION NOTED

X — FLAG NOTE

1 — REVISION SPECIFIED

STEEL LEGEND

UP OR DOWN — STAIR IDENTIFICATION

XXXX — INDICATES COLUMN

BPX — INDICATES BASE PLATE, SEE SCHEDULE Sx.x

PRELIMINARY PERMIT/BID SET

REGISTERED PROFESSIONAL
MARY E. BARFIELD
ENGINEER
PE084736

REV	DATE	Revision Description

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DESIGNED BY: MEB
QUALITY CHECK: PMH
DATE: 8-26-19
JOB NO: M18-073
FIELDBOOK:

TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

GENERAL STRUCTURAL NOTES

SHEET S1.0

STRUCTURAL STEEL

1. DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360).
2. IF IT IS NECESSARY TO SPLICE ANY MEMBER, SPLICE LOCATIONS ARE SUBJECT TO REVIEW BY STRUCTURAL ENGINEER. SPLICES SHALL BE FULL PENETRATION WELDED AND TESTED. INDICATE ALL SPLICE LOCATIONS AND WELDING PROCEDURES ON SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION.
3. ALL BEAMS SHALL BE ERECTED WITH THE NATURAL CAMBER UPWARDS.
4. ALL BOLTS, ANCHOR BOLTS, EXPANSION/ADHESIVE ANCHORS, ETC. SHALL BE INSTALLED WITH STEEL WASHERS.
5. ALL WELDING BY WELDERS HOLDING VALID CERTIFICATES AND HAVING CURRENT EXPERIENCE IN TYPE OF WELD SHOWN ON THE DRAWINGS OR NOTES, CERTIFICATES SHALL BE THOSE ISSUED BY AN INDEPENDENT TESTING AGENCY.
6. ALL WELDING PER AMERICAN WELDING SOCIETY STANDARDS. SHOP WELDS OR FIELD WELDS SHALL BE SHOWN ON SHOP DRAWINGS.
7. SLAG SHALL BE REMOVED FROM ALL COMPLETED WELDS, AND THE WELD AND ADJACENT BASE METAL SHALL BE CLEANED BY BRUSHING OR OTHER SUITABLE MEANS. WELDED JOINTS SHALL NOT BE PAINTED UNTIL AFTER WELDING HAS BEEN COMPLETED AND THE WELD ACCEPTED. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED.
8. ALL FIELD WELDING OF STRUCTURAL ATTACHMENTS TO BEAMS OR OTHER MEMBERS SHALL BE PERFORMED WITH THE MEMBER POSITIONED TO ELIMINATE BENDING STRESSES IN THE AREA OF THE WELD.
9. BEAMS HAVING FLANGE(S) COPED LONGER THAN LENGTH OF CONNECTION ANGLE(S) OR THE FLANGE AND WEB COPED TO A DEPTH GREATER THAN REQUIRED FOR NORMAL FLANGE THICKNESS PLUS FILLET SHALL HAVE THE WEB REINFORCED TO CARRY LOAD UNLESS CONNECTION DESIGN COMPUTATIONS PROVE REINFORCEMENT UNNECESSARY.
10. STRUCTURAL STEEL MEMBERS SHALL BE IDENTIFIED WITH ERECTION MARKS THAT ARE CLEARLY DISCERNABLE THROUGH SHOP GALVANIZING OR PAINTING.
11. ALL REFERENCE TO HEADED STUDS SHALL INDICATE AUTOMATIC WELDED HIGH STRENGTH HEADED STUDS (NELSON OR EQUIVALENT). STUDS SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST EDITION OF THE "RECOMMENDED PRACTICES FOR STUD WELDING" AND THE "STRUCTURAL WELDING CODE" PUBLISHED BY THE AMERICAN WELDING SOCIETY. CONFORMANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL QUALITY CONTROL TESTING PROVISIONS OF THE AFOREMENTIONED PUBLICATIONS.
12. ALL WELDS AND WELDING PROCEDURES SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF AISC AND AWS WELDING PROCEDURES AND CODES AS OUTLINED IN THE SPECIFICATIONS. SPECIAL ATTENTION SHALL BE GIVEN TO PROPER HEAT TEMPERATURE REQUIREMENTS.
13. ALL WELDING DONE BY E70 SERIES LOW HYDROGEN RODS. USE E80 SERIES FOR ASTM A706 REINFORCING BARS.

CONNECTION

1. ALL BOLTED FIELD CONNECTIONS SHALL BE MADE WITH HIGH STRENGTH BOLTS UNLESS NOTED OTHERWISE. ALL BOLTED CONNECTIONS SHALL BE MADE WITH A MINIMUM OF TWO BOLTS, U.N.O.
2. ALL HIGH STRENGTH BOLTS SHALL BE 7/8" DIAMETER UNLESS NOTED OTHERWISE.
3. BOLTS SHALL BE BEARING TYPE UNLESS NOTED OTHERWISE.
4. HIGH STRENGTH BOLTS SHALL BE TIGHTENED ACCORDING TO AISC "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
5. ALL SHOP CONNECTIONS SHALL BE WELDED.
6. ALL WELDED CONNECTIONS SHALL BE SEAL WELDED WITH 1/8" FILLET WELDS FOR GALVANIZING.
7. IF THE SIZE OF A FILLET WELD IS NOT SHOWN ON THE DRAWINGS, PROVIDE THE MINIMUM FILLET WELD AS SHOWN IN TABLE J2.4 OF THE AISC SPECIFICATION.
8. BRACING CONNECTIONS SHALL HAVE TWO BOLT CONNECTIONS AT EACH END UNLESS NOTED OTHERWISE ON THE DRAWINGS. BRACING CONNECTIONS SHALL BE DESIGNED FOR THE SHEAR CAPACITY OF THE BOLTS WITH THE BRACING MEMBER IN TENSION. THE WORK POINT SHALL BE AT THE CENTERLINE OF THE BEAM AND COLUMN UNLESS NOTED OTHERWISE.
9. ALL GUSSET PLATES SHALL BE 3/8" MINIMUM THICKNESS UNLESS NOTED OR DETAILED OTHERWISE.
10. GUSSET PLATES FOR VERTICAL DIAGONAL BRACING SHALL CONNECT TO BOTH THE BEAM AND COLUMN UNLESS NOTED OR DETAILED OTHERWISE.

DEFERRED SUBMITTALS

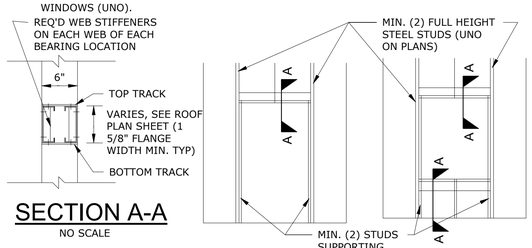
1. DEFERRED SUBMITTALS ARE THOSE PORTIONS FOR THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.
2. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD THROUGH THE ARCHITECT AND GENERAL CONTRACTOR WITHIN 6 WEEKS OF AWARD OF CONTRACT TO THE GENERAL CONTRACTOR. ONCE THE SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS, THE ENGINEER OF RECORD WILL FORWARD THEM TO THE ARCHITECT WITH A NOTATION INDICATION THAT THEY ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE ARCHITECT WILL FORWARD THE DEFERRED SUBMITTAL DOCUMENTS TO THE GENERAL CONTRACTOR WHO WILL MAINTAIN ONE SET ON SITE FOR REFERENCE BY THE CITY INSPECTOR. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
3. ITEMS THAT ARE SUBMITTED FOR CONSIDERATION AS DEFERRED SUBMITTALS ARE AS FOLLOWS:
   - 3.1. PRE-ENGINEERED METAL BUILDING
   - 3.2. STRUCTURAL FILL MATERIAL
   - 3.3. CONCRETE MIX DESIGN
   - 3.4. OPEN WEB STEEL JOISTS

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER AND MUST RECEIVE APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING MATERIALS:
   - 1.1. CONCRETE MIX DESIGN
   - 1.2. REBAR TYPE & LOCATION
   - 1.3. BOLTS AND ANCHOR BOLTS
   - 1.4. PRE-ENGINEERED METAL BUILDING & CALCULATIONS WITH P.E. STAMP IN THE STATE IN WHICH THE PROJECT IS LOCATED
2. THE GENERAL CONTRACTOR WILL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMISSION. ANY SHOP DRAWINGS OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.
3. ANY SHOP DRAWING NOT CHECKED AND INITIALED BY THE SUPPLIER/DETAILER PRIOR TO SUBMITTING FOR ARCHITECTURAL AND ENGINEERING REVIEW, WILL BE RETURNED WITHOUT REVIEW.
4. THE CONSTRUCTION DOCUMENTS MAY NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.
5. ELECTRONIC FILES OF CONSTRUCTION DOCUMENTS WILL NOT BE MADE AVAILABLE FOR USE AS SHOP DRAWINGS.

COLD-FORMED STEEL STUD NOTES

1. ALL STEEL STUDS SHALL HAVE 1 5/8" WIDE FLANGES WITH 1/2" LIP LENGTH MINIMUM. ALL EXTERIOR STUDS SHALL BE 6" DEEP AT A MINIMUM, UNLESS NOTED OTHERWISE.
2. ALL COLD-FORMED PRODUCTS SHALL BE MADE FROM SHEET STEEL MEETING ASTM A1003/A1003m STRUCTURAL GRADE, G60 METALLIC COATING, AND HAVE A MINIMUM YIELD STRENGTH OF 33 ksi.
3. ALL STEEL STUDS AND HEADERS SHALL CONFORM TO AND BE INSTALLED ACCORDING TO THESE SPECIFICATIONS AND PLANS AND ALSO THE MANUFACTURER'S RECOMMENDED PROCEDURES.
4. COORDINATE ALL FRAMING AS NECESSARY WITH ARCHITECTURAL CONDITIONS AND DIMENSIONS.
5. ABOVE ALL WINDOWS WITH BRICK VENEER ABOVE, INSTALL 4x4x1/4" STEEL ANGLE, BEARING 1'-0" ON BRICK EACH SIDE, AND SCREWED TO HEADER WITH (2)#10 SCREWS @ 6" OC.
6. ALL DOORS AND WINDOWS AROUND THE PERIMETER OF THE BUILDING IN THE EXTERIOR STUD WALL AREAS ONLY (i.e. MINIMAL VERTICAL LOADS), SHALL CONTAIN THE FOLLOWING BOX STUD SYSTEM AS A HEADER FOR DOORS AND WINDOWS AND A SILL BEAM FOR WINDOWS (UNO).



SECTION A-A
NO SCALE

DOOR

WINDOW

7. LATERAL BRACING OF STUDS REQUIRED AT 4'-0" MAX. VERTICAL SPACING. THIS BRACING SHALL BE EITHER 1 1/2" 18 GAUGE STRAP BOTH SIDES, OR 18 GAUGE COLD ROLLED U-CHANNEL THRU PUNCHED HOLES AND INSTALLED PER MANUFACTURER'S REQUIREMENTS FOR A FULLY BRACED SYSTEM..
8. #8 TEK SCREWS SHALL BE USED AT ALL CONNECTIONS UNLESS NOTED OTHERWISE.
9. STEEL STUDS SHALL BE 18 GAUGE AND SPACED @ 16" OC MAXIMUM, UNLESS NOTED OTHERWISE ON THE PLANS. CLEAR SPAN HEIGHT OF STUDS SHALL BE 13'-6".

STEEL ROOF DECKING

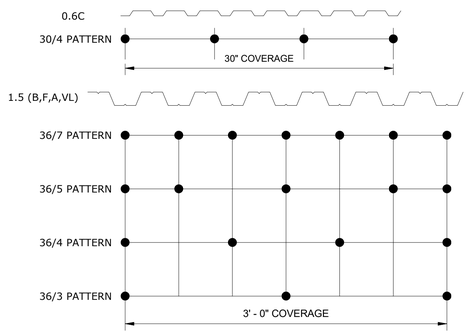
1. STEEL ROOF DECK SHALL COMPLY WITH I.C.B.O. REPORT 2078 (VERCO MANUFACTURING CO.), I.C.B.O. REPORT 3415 (VULCRAFT), I.C.B.O. REPORT 2757 (ASC STEEL DECK) OR HAVE CURRENT I.C.B.O. APPROVAL.
2. DECK PROPERTIES:

DEPTH	1 1/2"
WIDTH	36
GAUGE	22
MINIMUM YIELD STRESS	33,000 PSI (ASTM A653)
MINIMUM +S	0.192 IN³ PER FOOT OF WIDTH
MINIMUM I	0.173 IN⁴ PER FOOT OF WIDTH
SPAN MINIMUM	2 SPAN
MINIMUM DIAPHRAGM SHEAR CAPACITY	150 PLF
FINISH	GALVANIZED

3. DECK ATTACHMENT:

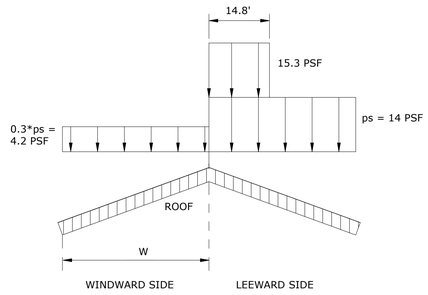
SPACING	ATTACHMENT TO SUPPORTING MEMBERS
36/3	HILTI X-HSN 24 FASTENERS AT SUPPORTING
	MINIMUM (1) S-SLC 01 M HWH SIDELAP CONNECTOR PER SHEET

4. SHEETS SHALL HAVE LAPPED ENDS. MINIMUM LAP = 2".
5. 2" MINIMUM BEARING AT ALL SUPPORTS.
6. NO PRESENT SUSPENDED LOADS ARE TO BE SUPPORTED BY THE STEEL DECK.
7. THE FIRST SHEET OF STEEL DECK ADJACENT AND PARALLEL TO WALLS & PERIMETER MEMBERS SHALL BE FULL PANEL WIDTH SHEETS.
8. ALL WELDING SHALL BE PERFORMED BY WELDERS EXPERIENCED IN LIGHT GAUGE STEEL DECK WORK. ALL WELDING DONE BY E60XX (MINIMUM) SERIES RODS.



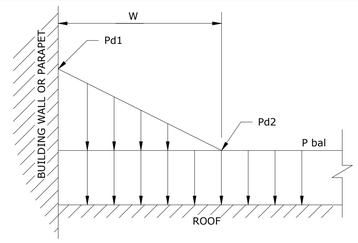
TYPICAL FASTENER LAYOUT

5 TYPICAL METAL DECK FASTENING
DO NOT SCALE



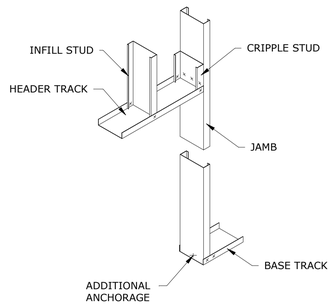
NOTE: TO BE USED FOR PEMB ROOF DESIGN.

1 UNBALANCED SNOW LOAD
DO NOT SCALE

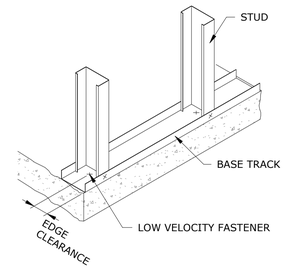


DRIFT	Pbal (PSF)	Pd1 (PSF)	Pd2 (PSF)	W
LOW ROOF GRID D	14	47	0	11'-4"
LOW ROOF PARAPET	14	27	0	8'-3"

2 SNOW LOAD WITH DRIFT DETAIL
DO NOT SCALE



3 DOOR - NON-LOAD BEARING SINGLE TRACK HEADER SINGLE JAMB
DO NOT SCALE



4 BOTTOM TRACK ANCHORAGE LOW VELOCITY FASTENER
DO NOT SCALE

ZONE	EFFECTIVE WIND AREA (A_e)		
	10 ft²	100 ft²	500 ft²
ROOF 1	+13.7/-21.8	+10.0/-19.8	+10.0/-19.8
ROOF 2	+13.7/-37.9	+10.0/-27.8	+10.0/-27.8
ROOF 3	+13.7/-56.0	+10.0/-44.0	+10.0/-44.0
ROOF OVERHANG 2	-44.4	-44.4	-44.4
ROOF OVERHANG 3	-74.6	-50.4	50.4
WALL 4	+23.8/-25.8	+20.2/-22.2	+17.7/-19.8
WALL 5	+23.8/-31.9	+20.2/-24.7	+17.7/-19.8

NOTES:
1. (+) AND (-) DENOTES PRESSURES TOWARDS AND AWAY FROM SURFACES, RESPECTIVELY.
2. LINEAR INTERPOLATION FOR OTHER EFFECTIVE AREAS ARE PERMITTED.
3. VALUES PER ASCE 7-10 CHAPTER 28, PART 2.
4. DIMENSION "a" = 8.95 FT.
5. TABLE INTENDED TO BE USED FOR PEMB COMPONENTS & CLADDING DESIGN.

6 COMPONENTS & CLADDING WIND PRESSURES
DO NOT SCALE

PRELIMINARY PERMIT/BID SET

REGISTERED PROFESSIONAL
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PE084736

REV	DATE	Revision Description

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DRAWN BY:	BMS
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TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

GENERAL STRUCTURAL NOTES

SHEET S1.1

STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTION AND TESTING SHALL BE PROVIDED BY THE OWNER IN ACCORDANCE WITH CHAPTER 17 OF THE 2015 IBC.
2. ALL SPECIAL INSPECTORS SHALL BE UNDER THE SUPERVISION OF A REGISTERED CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE WORK IS TO BE PERFORMED. ALL INSPECTIONS SHALL BE PERFORMED BY EXPERIENCED PERSONNEL MEETING THE REQUIREMENTS OF THE IBC AND AC291 "ACCREDITATION CRITERIA FOR SPECIAL INSPECTION AGENCIES" AND SHALL BE APPROVED BY THE LICENSED ENGINEER OF RECORD.
3. SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WORK OF A MINOR NATURE AS APPROVED BY THE BUILDING OFFICIAL, NOR ARE THEY REQUIRED FOR GROUP U OCCUPANCIES.
4. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK AS OUTLINED IN 1704.4 OF THE IBC.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY AT LEAST TWO WORKING DAYS PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT THE REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.
6. SPECIAL INSPECTIONS SHALL BE REQUIRED FOR PROPOSED WORK THAT IS, IN THE OPINION OF THE BUILDING OFFICIAL, UNUSUAL IN ITS NATURE, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING EXAMPLES: CONSTRUCTION MATERIALS AND SYSTEMS THAT ARE ALTERNATIVES TO MATERIALS AND SYSTEMS PRESCRIBED BY THE IBC, UNUSUAL DESIGN APPLICATIONS OF MATERIALS PRESCRIBED IN THE IBC, AND MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE IBC OR IN STANDARDS REFERENCED BY THE IBC.

SPECIAL INSPECTIONS FOR MASONRY

1. MASONRY CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6 **LEVEL A QUALITY ASSURANCE** PROGRAM REQUIREMENTS.

SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION

1. SPECIAL INSPECTIONS OF THE STEEL FABRICATION PROCESS SHALL NOT BE REQUIRED WHERE THE FABRICATOR DOES NOT PERFORM ANY WELDING, THERMAL CUTTING OR HEATING OPERATION OF ANY KIND AS PART OF THE FABRICATION PROCESS. IN SUCH CASES, THE FABRICATOR SHALL BE REQUIRED TO SUBMIT A DETAILED PROCEDURE FOR MATERIAL CONTROL THAT DEMONSTRATES THE FABRICATOR'S ABILITY TO MAINTAIN SUITABLE RECORDS AND PROCEDURES SUCH THAT, AT ANY TIME DURING THE FABRICATION PROCESS, THE MATERIAL SPECIFICATION, AND GRADE FOR THE MAIN STRESS-CARRYING ELEMENTS ARE CAPABLE OF BEING DETERMINED. MILL TEST REPORTS SHALL BE IDENTIFIABLE TO THE MAIN STRESS-CARRYING ELEMENTS WHEN REQUIRED BY THE APPROVED CONSTRUCTION DOCUMENTS.
2. STRUCTURAL STEEL - SPECIAL INSPECTION FOR STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC 360.
3. STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL - SPECIAL INSPECTION FOR STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE TABLE SHOWN.
4. COLD-FORMED STEEL - WELDING INSPECTION AND WELDING INSPECTOR QUALIFICATIONS FOR COLD-FORMED STEEL FLOOR AND ROOF DECKS SHALL BE IN ACCORDANCE WITH AWS D1.3.
5. REINFORCING STEEL - WELDING INSPECTION AND WELDING INSPECTOR QUALIFICATIONS FOR REINFORCING STEEL SHALL BE IN ACCORDANCE WITH AWS D1.4 AND ACI 318.
6. COLD-FORMED STEEL TRUSSES SPANNING 60 FEET OR GREATER - WHERE A COLD-FORMED STEEL TRUSS CLEAR SPAN IS 60 FEET OR GREATER, THE SPECIAL INSPECTOR SHALL VERIFY THAT THE TEMPORARY INSTALLATION RESTRAINT/BRACING AND THE PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACING ARE INSTALLED IN ACCORDANCE WITH THE APPROVED TRUSS SUBMITTAL PACKAGE.

TABLE 1705.3
REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

APPLIES	TYPE	CONT	PERIODIC	REFERENCED STANDARD [a]	IBC REFERENCE
X	1. INSPECT REINFORCEMENT, INCLUDING PRESTRESSING TENDONS, AND VERIFY PLACEMENT	-	X	ACI 318: CH, 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
	2. REINFORCING BAR WELDING: a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706; b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND c. INSPECT ALL OTHER WELDS.	- X	X X X	AWS D1.4 ACI 318: 26.6.4	-
X	3. INSPECT ANCHORS CAST IN CONCRETE.	-	X	ACI 318: 17.8.2	-
X	4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS[b] a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.	 X 	 X	 ACI 318: 17.8.2.4 ACI 318: 17.8.2	-
X	5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: CH. 19, 26.4.3, 26.4.4	1904.1, 1904.2,
X	6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C 172 ASTM C 31 ACI 318: 26.4, 26.12	1908.2, 1908.3 1908.10
X	7. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
X	8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
	9. INSPECT PRESTRESSED CONCRETE FOR: a. APPLICATION OF PRESTRESSING FORCES; AND b. GROUTING OF BONDED PRESTRESSING TENDONS.	X X	- -	ACI 318: 26.10	-
	10. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS.	-	X	ACI 318: CH. 26.8	-
	11. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS.	-	X	ACI 318: 26.11.2	-
X	12. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)	-

a. WHERE APPLICABLE, SEE ALSO SECTION 1705.12, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.
b. SPECIFIC REQUIREMENTS FOR SPECIAL INSPECTION SHALL BE INCLUDED IN THE RESEARCH REPORT FOR THE ANCHOR ISSUED BY AN APPROVED SOURCE IN ACCORDANCE WITH 17.8.2 IN ACI 318, OR OTHER QUALIFICATION PROCEDURES. WHERE SPECIFIC REQUIREMENTS ARE NOT PROVIDED, SPECIAL INSPECTION REQUIREMENTS SHALL BE SPECIFIED BY THE REGISTERED DESIGN PROFESSIONAL AND SHALL BE APPROVED BY THE BUILDING OFFICIAL PRIOR TO THE COMMENCEMENT OF THE WORK.

TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

APPLIES	VERIFICATION AND INSPECTION TASK	CONT	PERIODIC
X	1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
X	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
X	3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		X
X	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
X	5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

SPECIAL INSPECTIONS FOR STEEL

APPLIES	INSPECTION TASK	FREQUENCY	
		CONT	PERIODIC
	1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS:		
X	a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARD SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS		X
X	b. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED INSPECTION OF ADHESIVE ANCHORS		
X	2. INSPECTION OF ADHESIVE ANCHORS		X
	3. INSPECTION OF HIGH-STRENGTH BOLTING (REF AISC 360, SEC. M2.5):		
X	a. SNUG-TIGHT JOINTS		X
X	b. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-0F-NUT WITH MATCHMARKING, TWIST-OFF BOLT, OR DIRECT TENSION INDICATOR.		X
X	c. PRETENSIONED AND SLIP-CRITICAL JOINTS USING TURN-0F-NUT WITHOUT MATCHMARKING OR CALIBRATED WRENCH	X	
	4. MATERIAL VERIFICATION OF STRUCTURAL STEEL:		
X	a. FOR STRUCTURAL STEEL, IDENTIFICATION MARKINGS TO CONFORM TO AISC 360.		X
X	b. MANUFACTURER'S CERTIFIED MILL TEST REPORTS		X
	5. MATERIAL VERIFICATION OF WELD FILLER MATERIAL:		
X	a. IDENTIFICATION MARKINGS TO CONFORM TO AWS SPECIFICATION IN THE APPROVED CONSTRUCTION DOCUMENTS		X
X	b. MANUFACTURER'S CERTIFICATION OF COMPLIANCE REQUIRED		X
	6. INSPECTION OF WELDING:		
X	a. STRUCTURAL STEEL		
X	1) COMPLETE AND PARTIAL JOINT PENETRATION GROOVE WELDS	X	
X	2) MULTI-PASS FILLET WELDS	X	
X	3) SINGLE PASS FILLET WELDS > 5/16"	X	
X	4) PLUG AND SLOT WELDS	X	
X	5) SINGLE PASS FILLET WELDS < 5/16"		X
	7. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH APPROVED CONSTRUCTION DOCUMENTS:		
X	a. DETAILS SUCH AS BRACING AND STIFFENING		
X	b. MEMBER LOCATIONS		
X	c. APPLICATION OF JOINT DETAILS AT EACH CONNECTION		

TABLE 1705.2.2
REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL

APPLIES	VERIFICATION AND INSPECTION	CONT	PERIODIC	REFERENCED STANDARD
	1. MATERIAL VERIFICATION OF COLD-FORMED STEEL DECK:			
X	a. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARDS SPECIFIED IN THE APPROVED CONSTRUCTION DOCUMENTS.		X	APPLICABLE ASTM MATERIAL STANDARDS
X	b. MANUFACTURER'S CERTIFIED TEST REPORTS.		X	
X	2. INSPECTION OF WELDING:			
	a. COLD-FORMED STEEL DECK:			
	1) FLOOR AND ROOF DECK WELDS.		X	AWS D1.3
	b. REINFORCING STEEL:			
	1) VERIFICATION OF WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706.		X	AWS D1.4 ACI 318: SECTION 3.5.2
	2) REINFORCING STEEL RESISTING FLEXURAL AND AXIAL FORCES IN INTERMEDIATE AND SPECIAL MOMENT FRAMES, AND BOUNDARY ELEMENTS OF SPECIAL STRUCTURAL WALLS OF CONCRETE AND SHEAR REINFORCEMENT.	X		
	3) SHEAR REINFORCEMENT.	X		
	4) OTHER REINFORCING STEEL.		X	

SPECIAL INSPECTIONS FOR MASONRY

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT

VERIFICATION OF f'm AND f'AAC IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE

APPLIES	INSPECTION TASK	FREQUENCY		FREQUENCY	
		CONT.	PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
X	1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS		X		Art 1.5
	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	a. PROPORTIONS OF SITE-PREPARED MORTAR		X		Art 2.1, 2.6 A
X	b. CONSTRUCTION OF MORTAR JOINTS		X		Art 3.3 B
	c. GRADE AND SIZE OF PRE-STRESSING TENDONS AND ANCHORAGES		X		Art 2.4 B, 2.4 H
X	d. LOCATION OF REINFORCEMENT, CONNECTORS AND PRE-STRESSING TENDONS AND ANCHORAGES		X		Art 3.4, 3.6 A
	e. PRE-STRESSING TECHNIQUE		X		Art 3.6 B
	f. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X (b)	X (c)		Art 2.1 C
	3. PRIOR TO GROUTING, VERIFY THE FOLLOWING ARE IN COMPLIANCE:				
X	a. GROUT SPACE		X		Art 3.2 D, 3.2 F
X	b. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRE-STRESSING TENDONS AND ANCHORAGES		X	SEC. 1.16	Art 2.4, 3.4
X	c. PLACEMENT OF REINFORCEMENT, CONNECTORS AND PRE-STRESSING TENDONS AND ANCHORAGES		X	SEC. 1.16	Art 3.2 E, 3.4, 3.6 A
X	d. PROPORTIONS OF SITE-PREPARED GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS		X		Art 2.6 B, 2.4, G.1.b
X	e. CONSTRUCTION OF MORTAR JOINTS		X		Art 3.3 B
	4. VERIFY DURING CONSTRUCTION:				
	a. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X		Art 3.3 F
X	b. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X	SEC. 1.16.4.3 1.17.1	
	c. WELDING OF REINFORCEMENT	X		SEC. 2.1.7.7.2 3.3.3.4 8.3.3.4(b)	
X	d. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))		X		Art 1.8 C, 1.8 D
	e. APPLICATION AND MEASUREMENT OF PRE-STRESSING FORCE	X			Art 3.6 B
	f. PLACEMENT OF GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X			Art 3.5, 3.6 C
	g. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X (b)	X (c)		Art 3.3 B.8
X	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X		Art 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.b.3, 1.4 B.3.1.4 B.4

a. FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE
b. REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) IF AAC MASONRY
c. REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) IF AAC MASONRY

PRELIMINARY PERMIT/BID SET

REGISTERED PROFESSIONAL
MARY E. BARFIELD
ENGINEER
PE084736

REV	DATE	Revision Description

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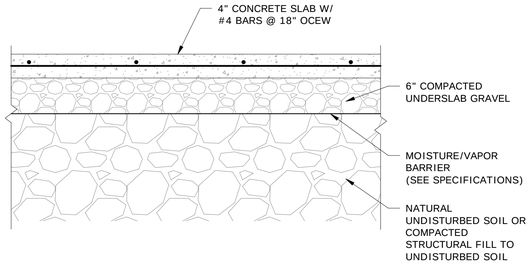
DRAWN BY: BMS
DESIGNED BY: MEB
QUALITY CHECK: PMH
DATE: 8-26-19
JOB NO: M18-073
FIELDBOOK:

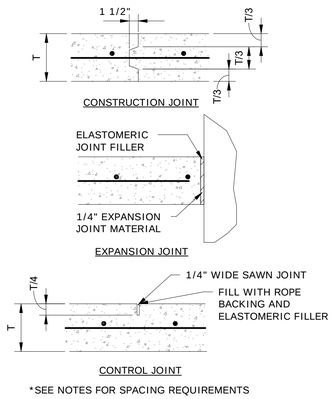
TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

SPECIAL INSPECTIONS

SHEET S1.2

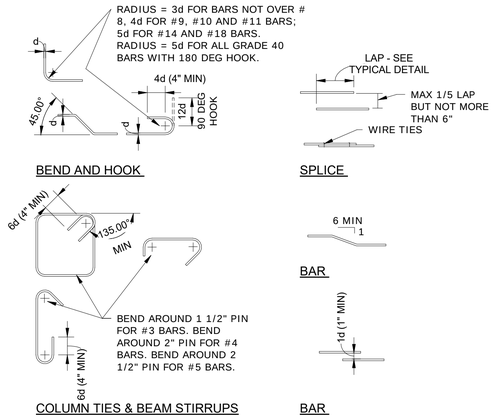


1 TYPICAL SLAB-ON-GRADE SECTION
DO NOT SCALE

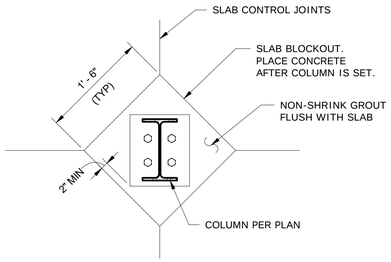


*SEE NOTES FOR SPACING REQUIREMENTS

2 CONCRETE SLAB JOINT DETAILS
DO NOT SCALE



3 TYP CONC REINF BAR DETAILS
DO NOT SCALE



4 TYPICAL BLOCKOUT DETAIL
DO NOT SCALE

CONCRETE	FINISH
FORMED SURFACES	
BEAM AND SLABS	POINT AND PATCH
EXTERIOR WALLS ABOVE GRADE	SACKED FINISH
EXTERIOR WALLS BELOW GRADE	ROUGH FORM FINISH
INTERIOR WALLS - EXPOSED	SACKED FINISH
INTERIOR WALLS - COVERED	POINT AND PATCH
UNFORMED SURFACES	
INTERIOR SLABS	TROWEL FINISH, HARDENED AND POLISHED
EXTERIOR SLABS ON GRADE	BROOM FINISH
EXTERIOR SLABS BELOW GRADE	FLOAT FINISH

5 CONCRETE FINISH SCHEDULE
DO NOT SCALE

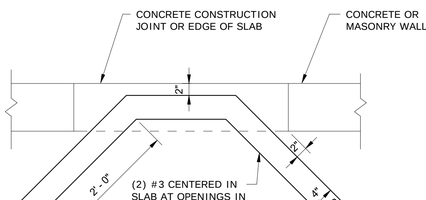
CAST-IN-PLACE (NONPRESTRESSED) CONCRETE	CONCRETE COVER
CAST AGAINST & EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER No. 6 THROUGH No. 18 BARS No. 5 BAR, W31 OR D31 WIRE, AND SMALLER	2" 1-1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND SLABS, WALLS, JOISTS No. 14 AND No. 18 BARS No. 11 BAR AND SMALLER BEAMS, COLUMNS PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS SHELLS, FOLDED PLATE MEMBERS No. 6 BAR AND LARGER No. 5 BAR, W31 OR D31 WIRE, AND SMALLER	 1-1/2" 3/4" 1-1/2" 3/4" 1/2"

6 REINFORCING CONCRETE COVER
DO NOT SCALE

BAR SIZE	CONCRETE	
	HORIZ & VERT	TOP
#3	1'-7"	2'-1"
#4	2'-1"	2'-9"
#5	2'-7"	3'-5"
#6	3'-1"	4'-1"
#7	4'-6"	5'-11"
#8	5'-2"	6'-9"
#9	5'-10"	7'-7"
#10	6'-7"	8'-6"

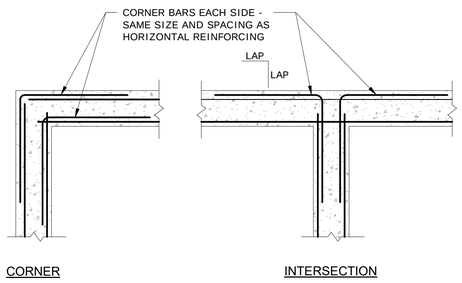
NOTES:
1. FOR REINFORCING WITH EPOXY COATING, MULTIPLY LAP LENGTH SHOWN BY 1.5.
2. CONCRETE LAP LENGTHS ARE CLASS "B" BASED ON F'C=4,000 PSI WITH COVER REQUIREMENTS INDICATED AND BAR SPACING AT LEAST TWO BAR DIAMETERS.
3. TOP BAR LAPS ARE HORIZONTAL LAPS WHERE MORE THAN 12" OF FRESH CONCRETE IS PLACED BELOW THE BARS.
4. TOP BAR LAP LENGTHS MAY BE USED AT ALL LOCATIONS IN CONCRETE AT THE CONTRACTOR'S DISCRETION.

7 TYP. REINFORCING SPLICE LENGTHS
DO NOT SCALE

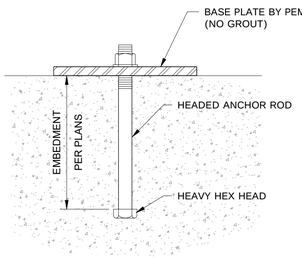


TYPICAL SPLICE IN LEDGER ANGLE AT PERIMETER OF ROOF OR FLOOR
8
DO NOT SCALE

9 PLAN CORNER REINFORCING
DO NOT SCALE



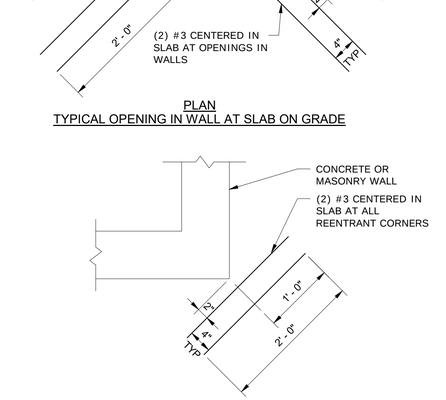
10 PLAN CORNER REINFORCING
DO NOT SCALE



ANCHOR ROD NOTES

1. ANCHOR ROD LOCATIONS AND DIAMETERS ARE PER BUILDING MANUFACTURER.
2. ALL ANCHOR RODS SHALL BE EITHER HEADED OR DOUBLE NUT WITH 1/4"x2"x2" STEEL WASHER.
3. MINIMUM EMBEDMENT:
   3.1. 3/4"ø RODS = 8"
   3.2. 1-1/4" ø RODS = 12"
4. ANCHOR RODS SHALL BE ASTM F1554 GR 36 MATERIAL.
5. ANCHOR NUTS SHALL BE INSTALLED SNUG TIGHT.

11 TYPICAL ANCHOR ROD NOTES & DETAIL
DO NOT SCALE



TYPICAL REENTRANT CORNER REINFORCING IN SLAB-ON-GRADE
12
1" = 1'-0"

PRELIMINARY PERMIT/BID SET

REGISTERED PROFESSIONAL
MARY E. BARFIELD
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REV	DATE	Revision Description

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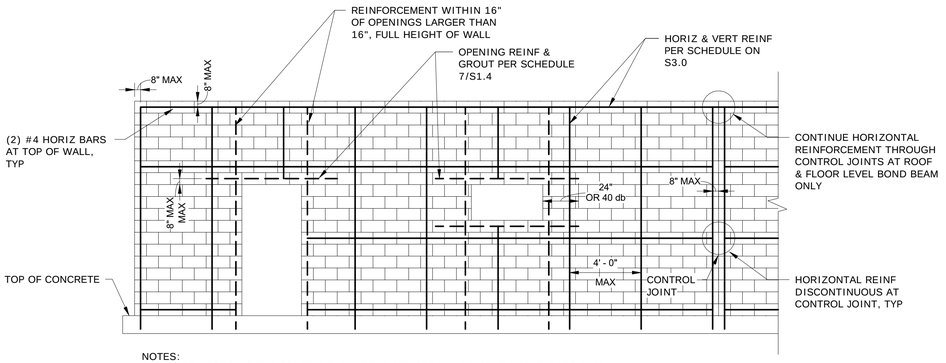
DRAWN BY:	BMS
DESIGNED BY:	MEB
QUALITY CHECK:	PMH
DATE:	8-26-19
JOB NO:	M18-073
FIELDBOOK:	

TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

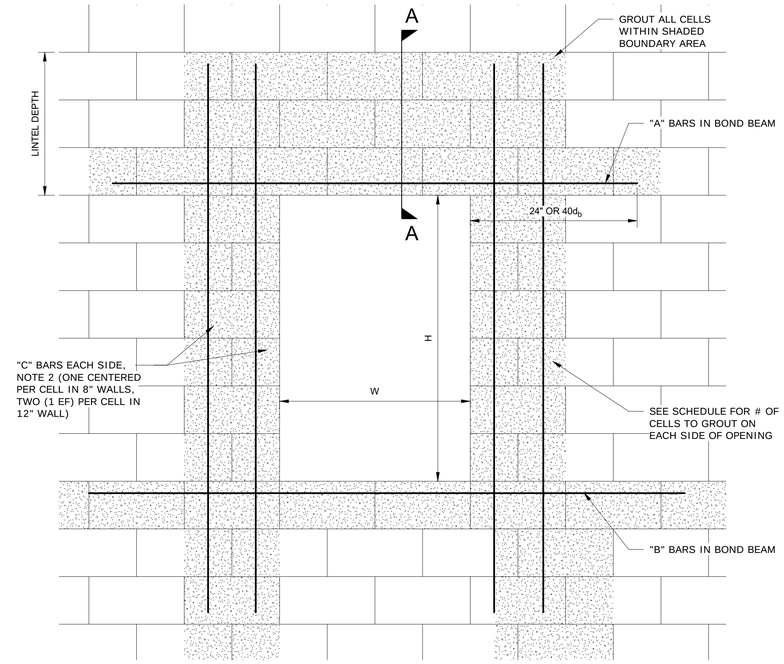
TYPICAL DETAILS

SHEET S1.3

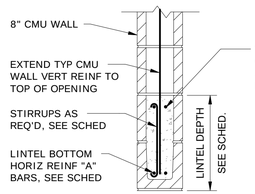


NOTES:
1. LAP REINFORCING PER SCHEDULE. STAGGER SPLICES IN ADJACENT HORIZ. BARS 2'-0".
2. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL REINFORCING.
3. SEE DETAIL 9/S1.4 FOR ADDED REINFORCING AT WALL INTERSECTIONS AND CORNERS.

1 TYPICAL CMU WALL DETAIL
1/4" = 1'-0"



SECTION A-A

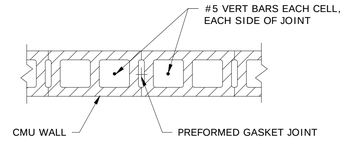


8" LINTEL SECTION

8" WALLS							
MARK	W	LINTEL DEPTH	STIRRUPS	"A" BARS	"B" BARS	"C" BARS	# CELLS TO GROUT (NOTE 4)
L1	≤3'-4"	8"	-	(1) #5	(1) #5	(1) #6	ONE
L2	>3'-4" <=7'-0"	16"	#3 @ 16" [	(2) #5	(1) #5	(2) #6	TWO
L3	>7'-0"	24"	#3 @ 16" [	(2) #5	(1) #5	(2) #6	TWO

NOTES:
1. USE BAR QUANTITIES AND SIZES GIVEN IN LINTEL SCHEDULE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. EXTEND "C" BARS 2'-8" MIN BEYOND TOP AND BOTTOM OF OPENING, EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
3. "A" AND "B" BARS SHALL EXTEND 2'-8" EACH SIDE OF THE OPENINGS.
4. SEE SCHEDULE FOR NUMBER OF CELLS TO GROUT ON EACH SIDE OF THE OPENING.
5. GROUT ALL CELLS OVER OPENING TO LINTEL DEPTH INDICATED IN SCHEDULE.
6. CELLS SHOWN TO BE GROUTED ARE MINIMUM. GROUT ALL CELLS AS SHOWN IN TYPICAL CMU WALL DETAIL.
7. DO NOT SOLID GROUT WALLS UNLESS SPECIFICALLY INDICATED.

7 CMU LINTEL SCHEDULE
12" = 1'-0"



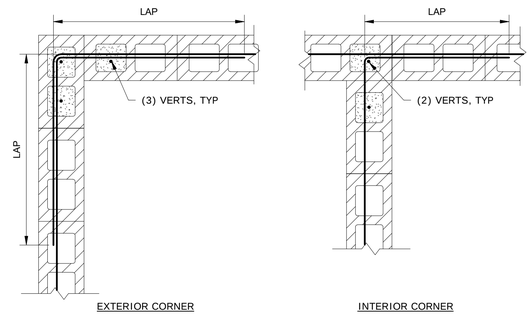
NOTES:
1. CUT ALL HORIZ REINF @ WALL JOINT EXCEPT @ TOP BOND BEAM.
2. SEE PLANS & ARCH ELEVATIONS FOR LOCATIONS.

5 MASONRY CONTROL JOINT DETAIL
DO NOT SCALE

BAR SIZE		MASONRY		
		MINIMUM MASONRY COVER		
IN-LB	AREA (IN^2)	2"	3"	6"
#3	0.11	1'-3"	1'-0"	1'-0"
#4	0.20	2'-2"	1'-5"	1'-0"
#5	0.31	3'-4"	2'-3"	1'-2"
#6	0.44	6'-2"	4'-2"	2'-1"
#7	0.60	8'-5"	5'-7"	2'-10"
#8	0.79	16'-1"	8'-5"	4'-3"

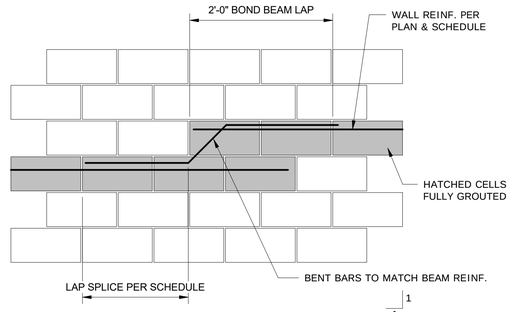
NOTES
1. BASED ON COMPRESSIVE STRENGTH OF MASONRY, f'm = 1500 PSI.
2. TABLE APPLICABLE FOR BARS IN TENSION OR COMPRESSION.
3. CLEAR SPACING BETWEEN ADJACENT REINFORCEMENT SPLICES SHALL NOT BE LESS THAN MIN. MASONRY COVER OR $9d_b$.

6 MASONRY REINFORCING BAR SPLICE LENGTHS
DO NOT SCALE



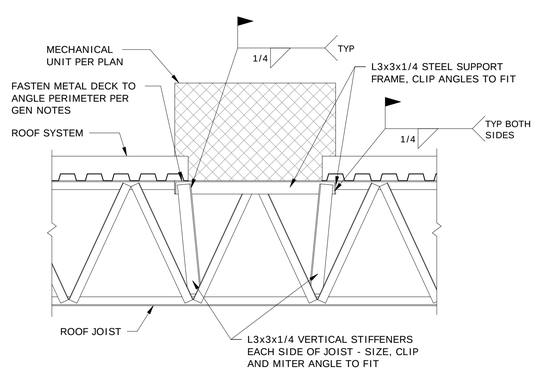
NOTES:
1. LAP 48 BAR DIAMETERS OR 2'-8" MIN UNLESS NOTED OTHERWISE.
2. PROVIDE A STANDARD HOOK EACH END ON ANY HORIZONTAL BAR LESS THAN 6'-0" IN LENGTH.

9 TYPICAL CMU WALL CORNERS
1" = 1'-0"

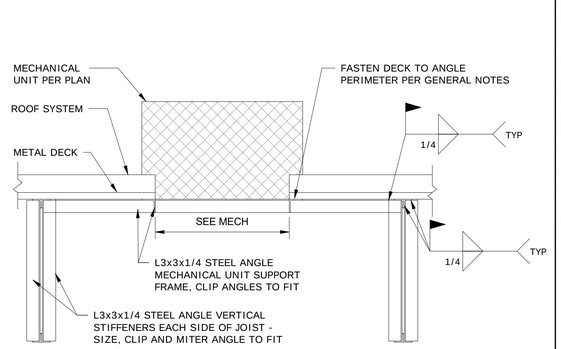


NOTE: SLOPE BOND BEAMS AT ROOF LINE WHERE REQUIRED FOR LEDGER ANGLE ATTACHMENT.

10 BOND BEAM STEP
DO NOT SCALE



11 MECHANICAL OPENING DETAIL
DO NOT SCALE



12 MECHANICAL OPENING DETAIL
DO NOT SCALE

PRELIMINARY PERMIT/BID SET

REGISTERED PROFESSIONAL
MARY E. BARFIELD
ENGINEER
PE064736

REV	DATE	Revision Description

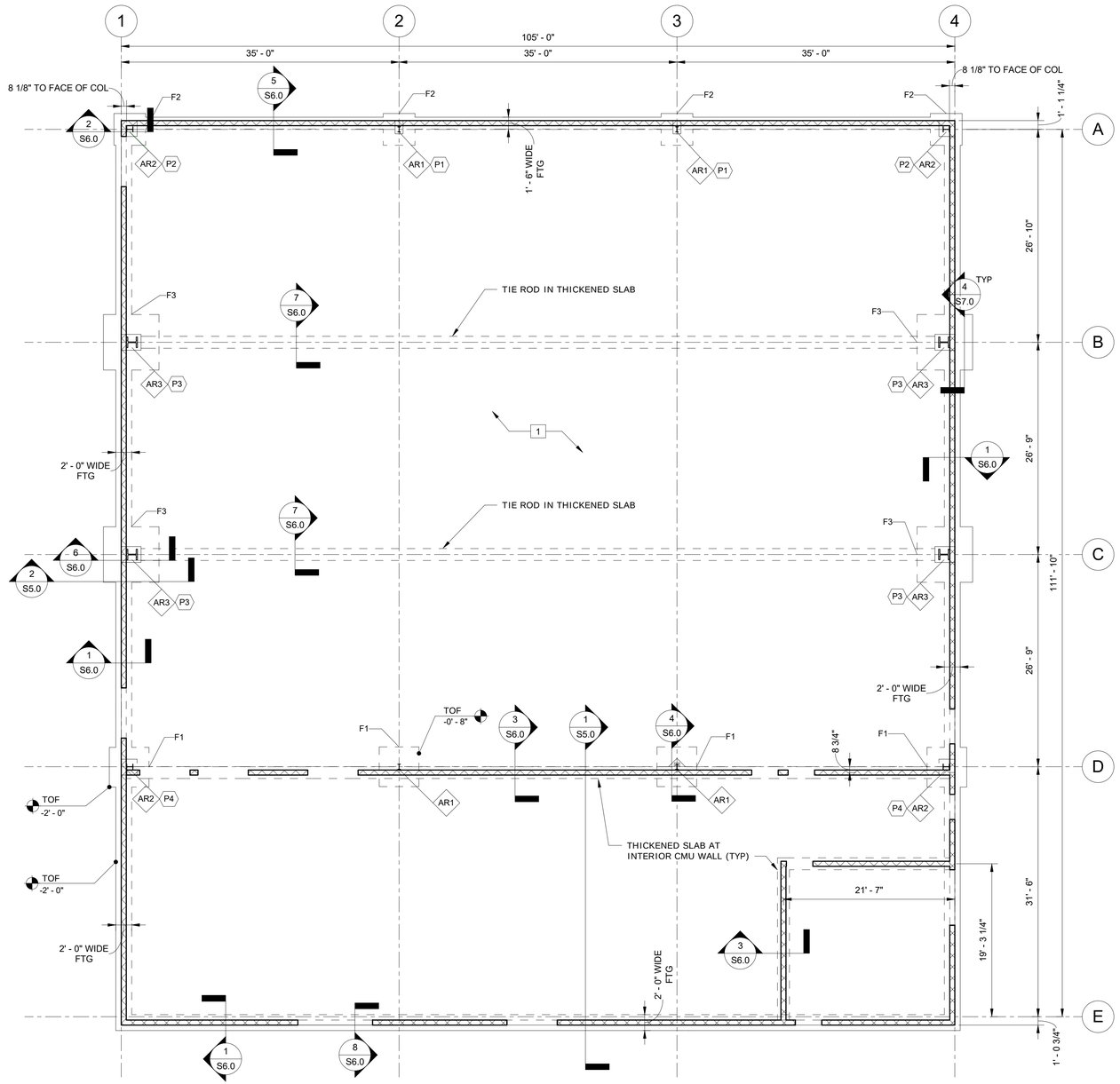
TD&H Engineering
610.565.3492 • tdhengineering.com
105 CHESLEY DR., SUITE 203 • MEDIA, PENNSYLVANIA 19063

DRAWN BY:	BMS
DESIGNED BY:	MEB
QUALITY CHECK:	PMH
DATE:	8-26-19
JOB NO:	M18-073
FIELDBOOK:	

TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

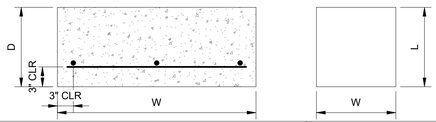
TYPICAL DETAILS

SHEET S1.4



1 FOUNDATION PLAN
1/8" = 1'-0"

FOOTING (F) SCHEDULE
--PRELIMINARY--



MARK	DIMENSION			REINFORCEMENT
	WIDTH (W)	LENGTH (L)	DEPTH (D)	
F1	5'-0"	5'-0"	1'-0"	(6) #5 BARS E.W.
F2	4'-0"	4'-0"	1'-0"	(4) #5 BARS E.W.
F3	7'-0"	7'-0"	1'-0"	(7) #5 BARS E.W.

ANCHOR ROD SCHEDULE
--PRELIMINARY--

MARK	ANCHOR RODS (F1554 GR. 36)	ASSUMED BASE PLATE SIZE
AR1	(4) 3/4"Ø X 8" EMBED	PL3/4X8"X10" W/ 4" MIN. ANCHOR SPACING
AR2	(4) 3/4"Ø X 8" EMBED	PL3/4X8"X12" W/ 4" MIN. ANCHOR SPACING
AR3	(6) 1-1/4"Ø W/ 12" EMBED	PL1X26"X16" W/ 2@5" X 8" ANCHOR SPACING. PROVIDE (3) HOLES FOR TIE-ROD CONN.

LEGEND

AR# ASSUMED ANCHOR ROD & BASE PLATE CONFIGURATION, SEE SCHEDULE THIS SHEET

P# PEDESTAL, SEE DETAIL 9/S6.0

F# FOOTING, SEE SCHEDULE THIS SHEET

FLAG NOTES

1 4" CONCRETE SLAB-ON-GRADE PER TYPICAL DETAIL 1/S1.3

GENERAL NOTES

1. **FOUNDATION DESIGN IS INTENDED TO BE USED FOR BID/PERMIT PURPOSES ONLY. PRE-ENGINEERED METAL BUILDING DESIGNER SHALL PROVIDE ACTUAL FORCES TO ENGINEER TO VERIFY AND/OR REVISE FOUNDATION DESIGN ACCORDINGLY. ADDITIONALLY, ACTUAL BEARING DEPTHS OR SIZES OF FOOTINGS MAY BE MODIFIED DUE TO THE RESULTS OF THE GEOTECHNICAL INVESTIGATION. PRELIMINARY DESIGN IS BASED ON ASSUMPTIONS AS STATED IN THE GENERAL STRUCTURAL NOTES SHEET S1.0.**
2. DIMENSIONS HAVE BEEN FURNISHED BY THE ARCHITECT. IF THERE ARE ANY DISCREPANCIES CONTACT ENGINEER THROUGH ARCHITECT.
3. FOR GENERAL STRUCTURAL NOTES SEE SHEETS S1.0 & S1.1.
4. FOR TYPICAL DETAILS SEE SHEETS S1.1, S1.3 & S1.4.
5. FOUNDATION DETAILS ON SHEET S6.0.

PRELIMINARY PERMIT/BID SET

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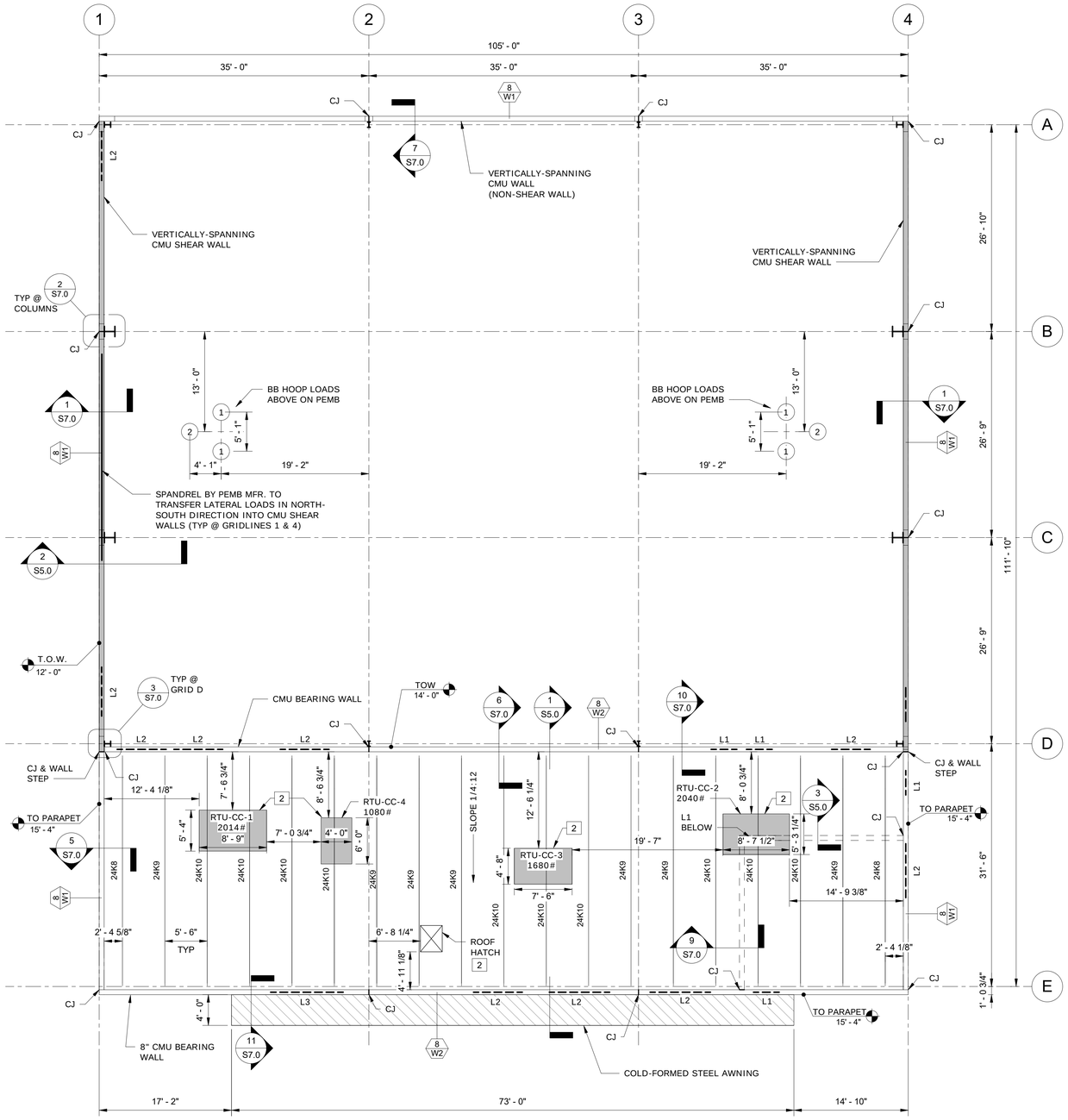
FOUNDATION PLAN

SHEET S2.0



1 FRAMING PLAN
1/8" = 1'-0"

CMU WALL REINFORCING SCHEDULE

MARK	VERTICAL	HORIZONTAL
W1	#5 BARS @ 48" O.C.	(2) #4 BARS IN FULLY GROUTED BOND BEAM AT ROOF LEVEL & TOP OF WALL. STANDARD WEIGHT (NO. 9) LADDER OR WIRE JOINT REINFORCEMENT @ 16" O.C.
W2	#5 BARS @ 24" O.C.	

NOTES:
1. ALL WALLS 8" NOMINAL CMU BLOCK.
2. FULLY GROUT WALLS BELOW GRADE.
3. REINFORCE AT CORNERS AND OPENINGS PER TYPICAL DETAILS ON SHEET S1.4.

LEGEND

- #/W# — CMU WALL NOMINAL THICKNESS / WALL REINFORCEMENT PER SCHEDULE
- CJ — MASONRY CONTROL JOINT PER DETAIL 5/S1.4
- CMU SHEAR WALL FOR PEMB
- L# — CMU LINTEL PER SCHEDULE 7/S1.4
- (#) — BASKETBALL HOOP (EZ-FOLD TB-25S, OR EQUAL) CEILING-SUSPENDED, REAR-FOLDING, REAR-BRACED, TO BE HUNG FROM PEMB STRUCTURE. CONTRACTOR TO VERIFY LOAD DISTRIBUTION AND LOCATION WITH ACTUAL EQUIPMENT INSTALLED. ESTIMATED LOADS AS FOLLOWS (APPROX 3305 LBS TOTAL):

	(1)	(2)
PLAYING POSITION:	1157 LBS.	992 LBS.
FOLDING POSITION:	640 LBS.	1278 LBS

FLAG NOTES

1 1.5B22 GA. METAL ROOF DECK. FASTEN PER GENERAL NOTES

2 PROVIDE ANGLE PERIMETER FRAMING BELOW RTU CURBS & OPENING PERIMETERS PER DETAILS 11 & 12 ON SHEET S1.4. CONTRACTOR TO VERIFY SIZE, LOCATION AND PLACEMENT WITH MECHANICAL AND/OR ARCHITECTURAL DRAWINGS. **NOTE: IF ACTUAL UNIT WEIGHTS INSTALLED ARE GREATER THAN THOSE SHOWN, CONTACT ENGINEER.

GENERAL NOTES

1. DIMENSIONS HAVE BEEN FURNISHED BY THE ARCHITECT. IF THERE ARE ANY DISCREPANCIES CONTACT ENGINEER THROUGH ARCHITECT.
2. FOR GENERAL STRUCTURAL NOTES SEE SHEETS S1.0 & S1.1.
3. FOR TYPICAL DETAILS SEE SHEETS S1.1, S1.3 & S1.4.
4. FRAMING DETAILS ON SHEET S7.0.
5. OPEN WEB STEEL JOIST SIZES HAVE BEEN SELECTED BASED ON ROOF DEAD LOADS INCLUDING RTUS, MINIMUM ROOF SNOW LOAD, AND SNOW DRIFTS PER TYPICAL DETAIL.
   A. JOIST MANUFACTURER / CONTRACTOR TO PROVIDE JOIST BRIDGING AS REQUIRED BY SJI SPECIFICATIONS.
   B. JOISTS SHALL BE DESIGNED FOR 10 PLF NET WIND UPLIFT (ASD LOAD COMBINATION 0.6D + 0.6W).

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL MARY E. BARFIELD ENGINEER PE084736

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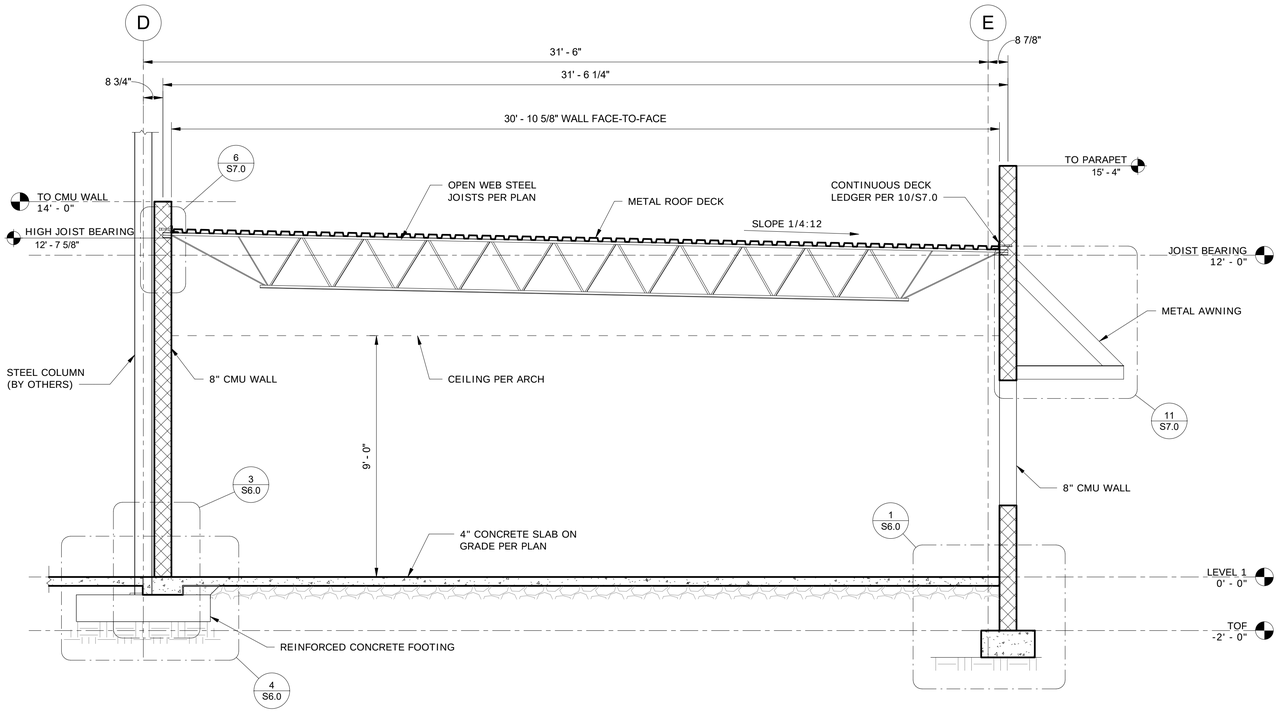
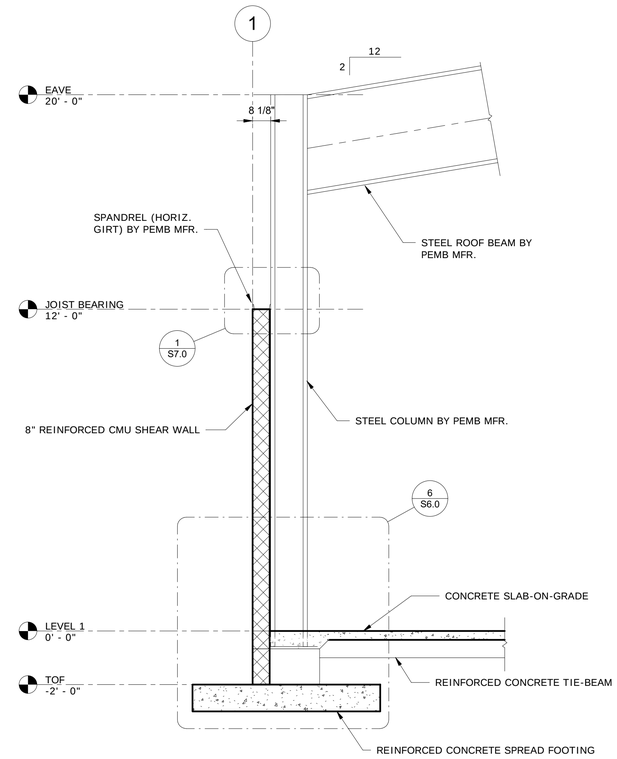
FRAMING PLAN

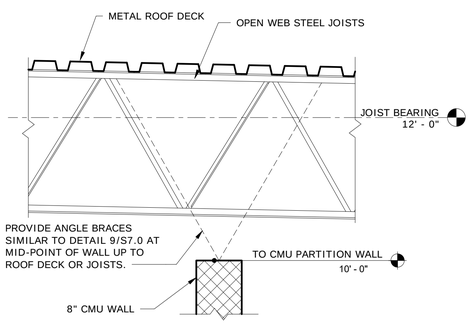
SHEET S3.0



1 FRONT BUILDING SECTION
3/8" = 1'-0"



2 WALL SECTION AT PEMB
3/8" = 1'-0"



3 JOIST AT WALL
1" = 1'-0"

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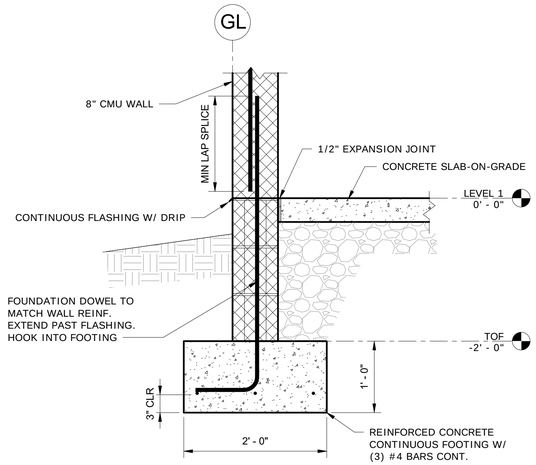
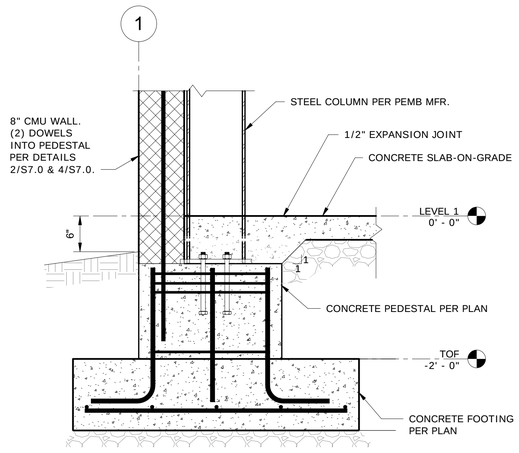
BUILDING SECTIONS

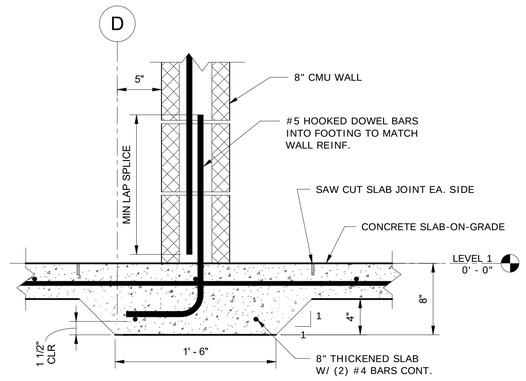
SHEET S5.0



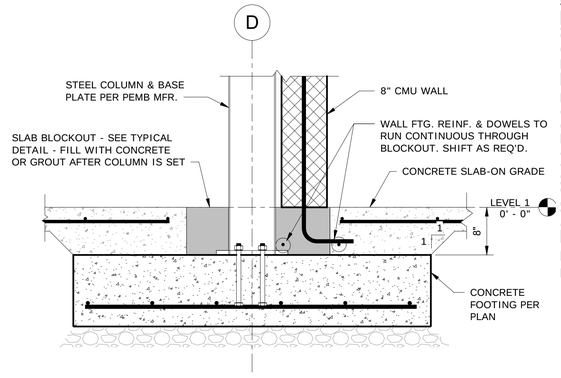
1 CMU SHEAR WALL FOOTING
1" = 1'-0"



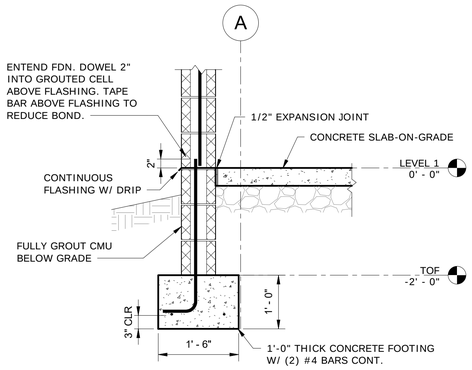
2 TYPICAL COLUMN FOOTING
1" = 1'-0"



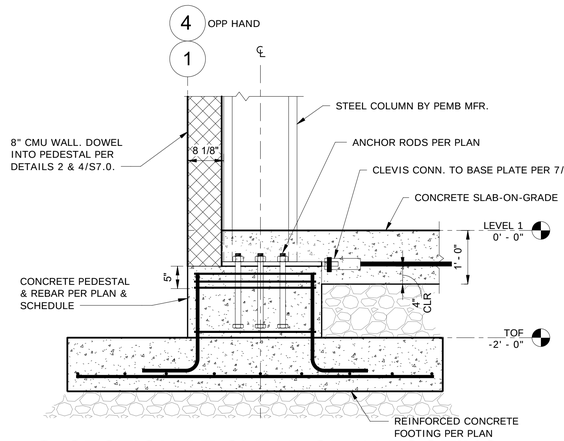
3 INTERIOR CMU WALL FOOTING
1 1/2" = 1'-0"



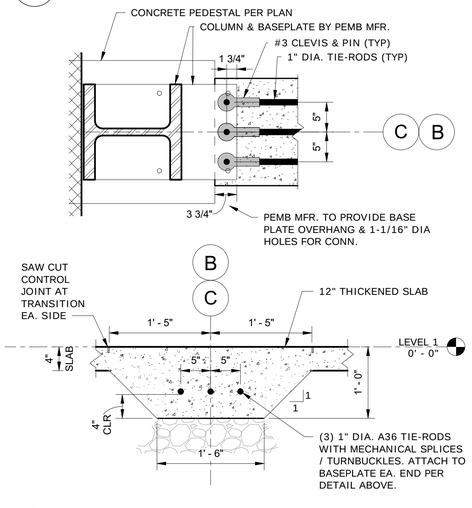
4 INTERIOR COLUMN FOOTING
1" = 1'-0"



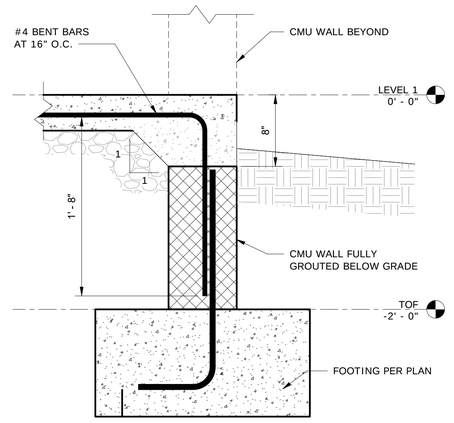
5 CMU WALL FOOTING (GRID A)
3/4" = 1'-0"



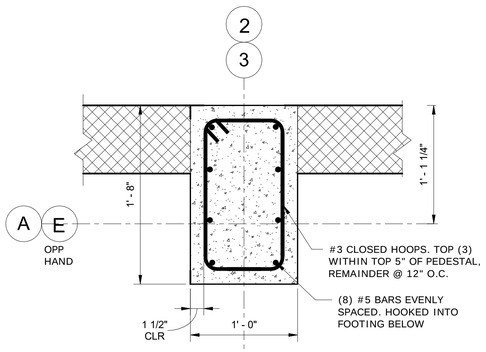
6 SECTION AT CLEAR SPAN FOOTING
3/4" = 1'-0"

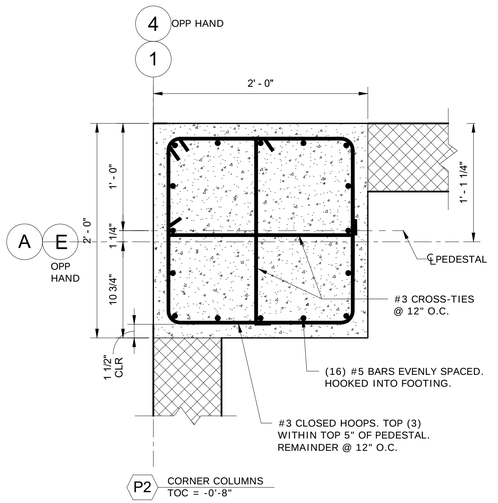


7 TIE ROD DETAIL
1" = 1'-0"

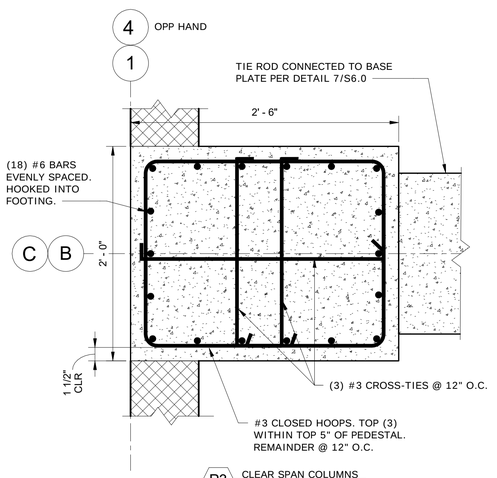


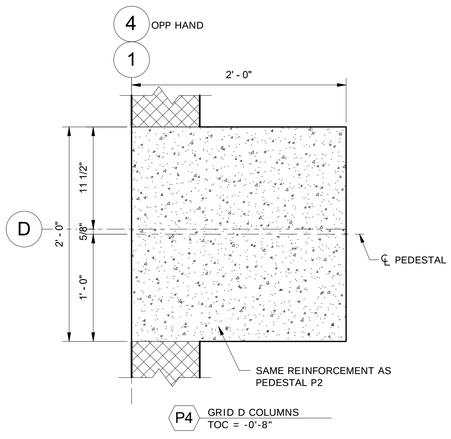
8 WALL @ OPENING
1 1/2" = 1'-0"





9 PEDESTAL SCHEDULE
1 1/2" = 1'-0"





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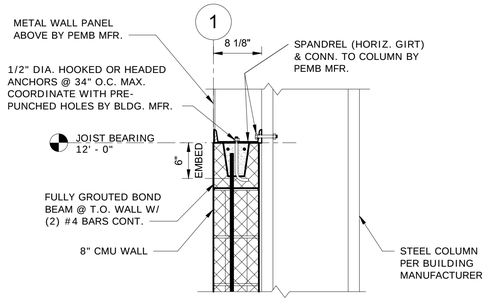
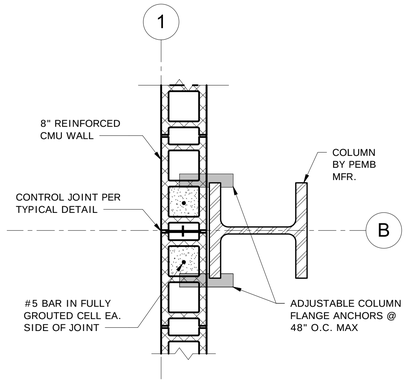
FOUNDATION SECTIONS AND DETAILS

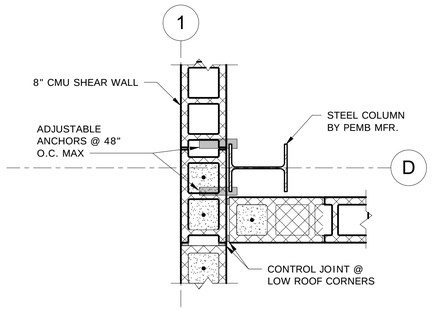
SHEET S6.0



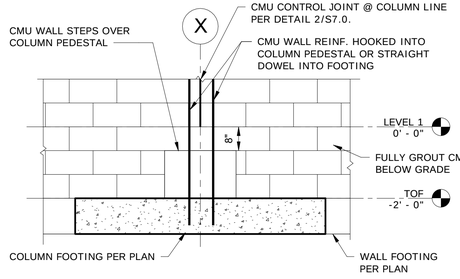
1 TOP OF CMU WALL AT GIRT
1" = 1'-0"



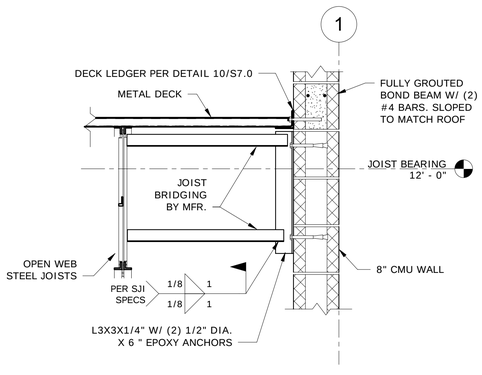
2 CMU WALL AT COLUMN
1" = 1'-0"



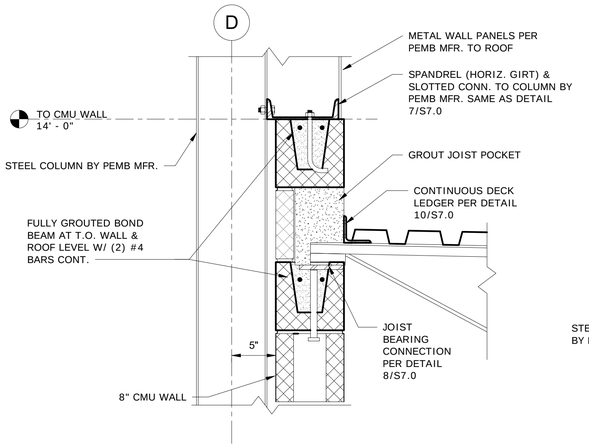
3 CMU WALL CORNER
1" = 1'-0"



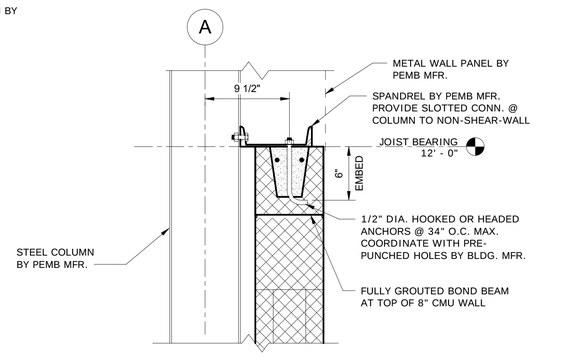
4 CMU WALL AT PEDESTAL
1/2" = 1'-0"



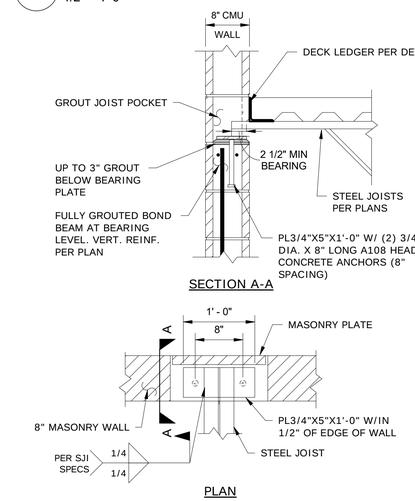
5 JOIST PARALLEL TO CMU WALL
1" = 1'-0"



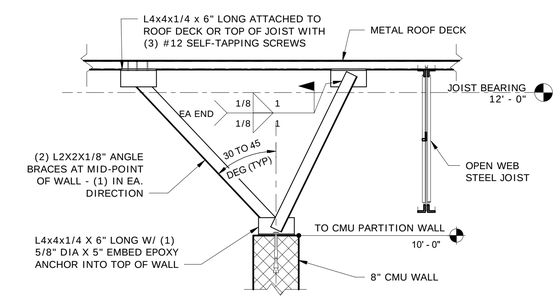
6 TOP OF INTERIOR CMU WALL
1 1/2" = 1'-0"



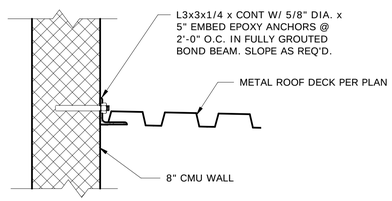
7 TOP OF CMU WALL - GRID A
1 1/2" = 1'-0"



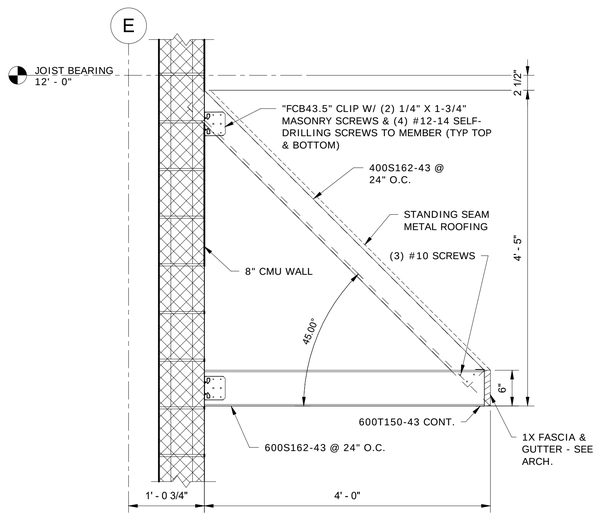
8 JOIST BEARING DETAIL
1" = 1'-0"



9 NON-LOAD-BEARING WALL BRACING
1" = 1'-0"



10 TYPICAL DECK LEDGER
1 1/2" = 1'-0"



11 AWNING SECTION
1" = 1'-0"

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DRAWN BY:	BMS
DESIGNED BY:	MEB
QUALITY CHECK:	PMH
DATE:	8-26-19
JOB NO:	M18-073
FIELDBOOK:	

TRAINER BOROUGH COMMUNITY CENTER
TRAINER BOROUGH, PA 19061

FRAMING SECTIONS AND DETAILS

SHEET **S7.0**

GENERAL NOTES

CODES & STANDARDS

1. INTERNATIONAL BUILDING CODE - 2015 IBC
2. AMERICAN SOCIETY OF CIVIL ENGINEERS - ASCE 7-10
3. AMERICAN CONCRETE INSTITUTE - ACI 318-14
4. AMERICAN INSTITUTE OF STEEL CONSTRUCTION - AISC 360-10
5. AMERICAN WELDING SOCIETY - AWS D1.4/D1.4M-2011
6. NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION - NDS 2015
7. INTERNATIONAL MASONRY INSTITUTE TMS 402-13/ACI 530-13/ASCE 5-13, TMS 602-13/ACI 530.1-13/ASCE 6-13
8. ASTM STANDARDS FOR THE MATERIALS SPECIFIED

DESIGN & STRUCTURAL CRITERIA

1. PROJECT LOCATION/LOCAL JURISDICTION: TRAINER BOROUGH, PA
2. RISK CATEGORY: CATEGORY II - FOR DETERMINATION OF LOADING, IMPORTANCE & OTHER STRUCTURAL ENGINEERING DESIGN FACTORS.
3. SOIL DESIGN CRITERIA
   - 3.1. FROST DEPTH: 24 INCHES
   - 3.2. ALLOWABLE BEARING PRESSURE: 1500 PSF (ASSUMED)
   - 3.3. COEFFICIENT OF FRICTION: .35
   - 3.4. ACTIVE EARTH PRESSURE: 30 PSF/FT
   - 3.5. AT-REST EARTH PRESSURE: 60 PSF/FT
   - 3.6. PASSIVE EARTH PRESSURE: 250 PSF/FT
4. DEAD LOADS
   - 4.1. TOTAL SLOPED ROOF DEAD LOAD: 17 PSF
   - 4.2. FLAT ROOF COLLATERAL DEAD LOAD: 17 PSF
   - 4.3. INTERIOR WALL DEAD LOAD: 8 PSF
   - 4.4. EXTERIOR WOOD WALL DEAD LOAD: 12 PSF
   - 4.5. EXTERIOR 8" CMU WALL DEAD LOAD: 45 PSF
5. LIVE LOADS
   - 5.1. ROOF LIVE LOAD: 20 PSF
   - 5.2. FLOOR LIVE LOAD: 100 PSF
   - 5.3 ATTIC LIVE LOAD: 20 PSF
   - 5.4 FLAT ROOF LIVE LOAD: 60 PSF (ACCOUNTS FOR RTU & SNOW DRIFT LOADING)
6. WIND DESIGN CRITERIA
   - 6.1. BASIC WIND SPEED: Vult = 115 MPH
   - 6.2. EXPOSURE B
   - 6.3. INTERNAL PRESSURE COEFFICIENT: +/- 0.18
   - 6.4. COMPONENT & CLADDING WIND PRESSURE: SEE TABLE ON SHEET S1.3
7. SEISMIC DESIGN CRITERIA
   - 7.1. Ss = 0.2g, S1 = 0.06g
   - 7.2. SITE SOIL CLASSIFICATION: D
   - 7.3. SDS = 0.213g, SD1 = 0.096g
   - 7.4. SEISMIC DESIGN CATEGORY B
   - 7.5. SEISMIC DESIGN RESPONSE COEFFICIENT: Cs = 0.061
   - 7.6. ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE
   - 7.7. LATERAL FORCE RESISTING SYSTEM = COMBINED BEARING WALL SYSTEM: LIGHT-FRAMED WOOD SHEAR WALLS SHEATHED WITH PANELS RATED FOR SHEAR RESISTANCE & INTERMEDIATE REINFORCED MASONRY SHEAR WALLS, R=3.5 USED FOR DESIGN
8. SNOW DESIGN CRITERIA
   - 8.1. GROUND SNOW LOAD (Pg): 20 PSF
   - 8.2. DESIGN SLOPED ROOF SNOW LOAD: 14 PSF
   - 8.3. EXPOSURE FACTOR, Ce: 1.0
   - 8.4. THERMAL FACTOR, Ct: 1.0
   - 8.5. IMPORTANCE FACTOR, Is: 1.0
   - 8.6. ROOF SLOPE FACTOR (5:12 ROOFS ONLY), Cs: 0.7
   - 8.7. EXPOSURE B, PARTIALLY EXPOSED
   - 8.8. DRIFTING: SEE SHEET S1.3
   - 8.9. UNBALANCED: SEE SHEET S1.3
9. DEFLECTION
   - 9.1. ROOF TOTAL LOAD: L/240
   - 9.2. ROOF LIVE LOAD: L/360
   - 9.3. LATERAL SYSTEMS: L/180

MISCELLANEOUS

1. REFERENCE ARCHITECTURAL DRAWINGS FOR EQUIPMENT LOCATION AND ORIENTATION ON THE SITE. THE CONTRACTOR AND SUB-TRADES SHALL FURNISH ALL REQUIRED MATERIAL, LABOR, EQUIPMENT AND PERFORM ALL WORK AS NECESSARY, AS INDICATED ON THE PROJECT DOCUMENTS, OR AS REASONABLY INFERRED TO EXECUTE THE SCOPE OF WORK FOR A PROPERLY FINISHED, COMPLETE JOB.
2. THE QUALITY OF WORKMANSHIP SHOULD BE SET AND SUPERVISED BY THE CONTRACTOR TO PASS BUILDING DEPT. OR ENGINEER INSPECTION FOR ROUGH CONSTRUCTION. THE LEVEL OF QUALITY AND TOLERANCE SHOULD BE APPROPRIATE FOR THE INSTALLED ELEMENT TO RECEIVE THE NEXT IN-LINE FINISH ASPECT OF CONSTRUCTION.
3. THE PURPOSE OF PROJECT DRAWINGS IS TO DEPICT THE OVERALL SCOPE OF THE PROJECT. THE PROJECT DRAWINGS HAVE BEEN DEVELOPED TO SHOW A LEVEL OF DETAIL WITH THE OBJECTIVE OF PLAN CHECK APPROVAL AND ISSUANCE OF A BUILDING PERMIT. THIS MODERATE LEVEL OF DETAIL SHOULD ALLOW FOR A VARIETY OF STANDARD CONSTRUCTION METHODS AND SEQUENCES. THE PROJECT DRAWINGS ARE INTENDED TO COMPLY WITH THE ORDINANCES, RULES AND REGULATIONS OF THE JURISDICTION IN WHICH THE BUILDING IS LOCATED.
4. THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNOLOGIES, SEQUENCES AND PROCEDURES.
5. CONSTRUCTION MATERIAL SHALL BE SPREAD OUT IF PLACED ON FRAMED FLOORS OR ROOF. LOAD SHALL NOT EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
6. WHERE REFERENCE IS MADE TO VARIOUS TEST STANDARDS FOR MATERIALS, SUCH STANDARDS SHALL BE THE LATEST EDITION AND/OR ADDENDUM.
7. OPTIONS ARE FOR CONTRACTOR'S CONVENIENCE. THEY SHALL BE RESPONSIBLE FOR ALL CHANGES NECESSARY IF THEY CHOOSE AN OPTION AND THEY SHALL COORDINATE ALL DETAILS.
8. NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO SPECIFIC DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT.
9. TYPICAL DETAILS ARE NOT CUT ON DRAWINGS, BUT APPLY UNLESS NOTED OTHERWISE.
10. WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
11. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE STRUCTURAL ENGINEER BEFORE PROCEEDING WITH RELATED WORK.
12. VISITS TO THE JOBSITE BY THE ENGINEER TO OBSERVE CONSTRUCTION DO NOT IN ANY WAY MEAN THAT THEY ARE THE GUARANTORS OF THE CONTRACTOR'S WORK, NOR SUPERVISION, NOR SAFETY AT THE JOBSITE.
13. REVIEW OF SHOP DRAWINGS BY THE ENGINEER IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. REVIEW OF SUCH SHOP DRAWINGS BY THE ENGINEER SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR CORRECTNESS OF DIMENSIONS, FABRICATION DETAILS, SPACE REQUIREMENTS, AND ERRORS IN THE SHOP DRAWINGS, OR FOR DEVIATIONS FROM THE CONTRACT DRAWINGS OR SPECIFICATIONS UNLESS THE CONTRACTOR HAS SPECIFICALLY CALLED ATTENTION TO SUCH DEVIATIONS IN WRITING BY A LETTER ACCOMPANYING THE SHOP DRAWINGS AND THE ENGINEER APPROVES SUCH CHANGE OR DEVIATION IN WRITING.
14. THE CONTRACTOR IS RESPONSIBLE FOR SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK THAT CONFORMS TO THE REGULATIONS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY AND HEALTH STANDARDS FOR THE CONSTRUCTION INDUSTRY.
15. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADES, DRAWINGS AND SUBCONTRACTORS PRIOR TO CONSTRUCTION. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, SLABS, STEEL DECKS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF STRUCTURAL ENGINEER THROUGH ARCHITECT.

GENERAL NOTES, CONTINUED

16. ANY ENGINEERING DESIGN PROVIDED BY OTHERS AND SUBMITTED FOR REVIEW SHALL BEAR THE SEAL OF A CIVIL OR STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED.
17. CONTRACTOR SHALL COORDINATE ALL DIMENSIONS AND ELEVATIONS SHOWN ON STRUCTURAL DRAWINGS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS. DO NOT SCALE DRAWINGS, USE FIGURED DIMENSIONS ONLY.

CONCRETE

1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "STANDARD SPECIFICATIONS FOR STRUCTURAL CONCRETE" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE". ALL REINFORCING SHALL CONFORM TO THE CRSI SPECIFICATIONS & HANDBOOK. CONCRETE PLACEMENT SHALL MEET ALL COLD WEATHER AND HOT WEATHER REQUIREMENTS OUTLINED IN ACI 306 & 305 RESPECTIVELY.
2. ADDITION OF WATER TO THE BATCH FOR MATERIAL WITH INSUFFICIENT SLUMP WILL NOT BE PERMITTED, UNLESS THE SUPPLIER HAS SPECIFICALLY WITHHELD WATER FROM THE BATCH AT THE PLANT. IN SUCH CASE THE MIX DESIGN AND TRUCK TICKET MUST CLEARLY STATE THE MAXIMUM AMOUNT OF WATER THAT CAN BE ADDED TO THE BATCH ON SITE. IN NO CASE SHALL THE DESIGN WATER TO CEMENTITIOUS MATERIAL RATIO BE EXCEEDED.
3. CONCRETE CONTAINING SUPERPLASTICIZING ADMIXTURE SHALL HAVE A SLUMP OF 4" +/- 1", TO BE FIELD VERIFIED, PRIOR TO ADDING ADMIXTURE, AND NOT EXCEEDING 8" AT PLACEMENT.
4. MECHANICALLY VIBRATE ALL CONCRETE WHEN PLACED, INCLUDING SLABS ON GRADE AT 2'-0" OC AROUND UNDER-FLOOR DUCTS AND SLAB EDGES, REINFORCING, KEYS, ETC. MECHANICALLY VIBRATE ONLY THE TOP 5 FEET OF CAISSON CONCRETE. REVIBRATE TOP OF CAISSON 15 MINUTES AFTER PLACING CONCRETE.
5. IF CONCRETE IS PLACED BY THE PUMP METHOD, SUPPORTS SHALL BE PRODUCED FOR THE HOSE. THE HOSE SHALL NOT BE ALLOWED TO CONTACT THE REBAR OR TENDONS. THIS REQUIREMENT IS MANDATORY. DISCHARGE SHALL BE DIRECTED SO AS TO PREVENT DISPLACEMENT OF REBAR, TENDONS, OR ACCESSORIES.
6. REINFORCING SHALL BE CONTINUOUS AROUND ALL CORNERS AND THROUGH CONSTRUCTION JOINTS UNLESS SHOWN OTHERWISE.
7. ALL HOOKS ON ALL BARS SHALL BE STANDARD 90 DEGREE HOOKS UNLESS SHOWN OTHERWISE.
8. REINFORCING STEEL SHALL NOT BE BENT OR STRAIGHTENED IN A MANNER INJURIOUS TO THE CONCRETE OR STEEL.
9. ALL CONDUITS, GROUND WIRES, DRAINS, ANCHOR BOLTS, OTHER EMBEDDED ITEMS, ETC. SHALL BE IN PLACE BEFORE CONCRETE PLACEMENT.
10. REINFORCING LAP SPLICES IN CONCRETE SHALL BE PER TYPICAL DETAIL UNLESS NOTED OTHERWISE. ALL SPLICE LOCATIONS ARE SUBJECT TO APPROVAL. PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.
11. ALL FIELD BENDING OF REINFORCING SHALL BE STANDARD 90 DEGREE HOOKS AS DEFINED IN CURRENT ACI 318 UNLESS NOTED OR DETAILED OTHERWISE.
12. WHEN TOTAL NUMBER OF REINFORCING BARS IS SHOWN ON DESIGN DRAWINGS AND SPACING IS NOT SPECIFIED, BARS SHALL BE EQUALLY SPACED.
13. DETAILS OF REINFORCING NOT SHOWN IN THESE PLANS SHALL BE DONE IN ACCORDANCE WITH ACI 315 AND ACI 318.
14. ALL SLABS-ON-GRADE SHALL HAVE CONTROL JOINTS CUT IN CONCRETE WITHIN 8 HOURS OF PLACEMENT AT A SPACING NO GREATER THAN 10' O.C.E.W. (U.N.O. ON PLANS).

MATERIALS

STRUCTURAL STEEL	W & WT	ASTM A992, Fy = 50 KSI
	CHANNEL & ANGLE	ASTM A36, Fy = 36 KSI
	PLATES	ASTM A36, Fy = 36 KSI
	HSS SQ OR RECT	ASTM A500, GR B, Fy = 46 KSI
	HSS ROUND	ASTM A500. GR B, Fy = 42 KSI
CONCRETE	ALL (U.N.O.)	PORTLAND CEMENT ASTM C150 TYPE II W/C RATIO = 0.45 MAXIMUM 28 DAY f'c = 4,000 PSI SLUMP RANGE = 3-5 INCHES AIR CONTENT = 4.5 - 7.5% 3/4" MAXIMUM NORMAL WEIGHT AGGREGATE
REINFORCING BARS		ASTM A615, GRADE 60 (NON-WELDABLE) ASTM A706, GRADE 60 (WELDABLE) ASTM A-1064 (WELDED WIRE REINF)
ANCHOR RODS		ASTM F1554, GRADE 36
HIGH STRENGTH BOLTS		ASTM A325N
BOLTS		ASTM A307, GALVANIZED PER ASTM A153 (ONLY WHERE NOTED ON PLANS)
HEADED STUD ANCHORS		ASTM A108
WELD METAL		E70XX ELECTRODE
ADHESIVE ANCHORS	MASONRY	HILTI "HIT HY-70" OR SIMPSON STRONG-TIE "SET-XP" ANCHORING ADHESIVE
	CONCRETE	HILTI "HIT HY-200" OR SIMPSON "SET-XP"
	ALL	ASTM A36 ALL-THREAD WITH CHISEL POINT
WOOD		2x4 STUDS, D.F. STUD 2x4 STUDS AND LARGER, D.F. #2 WALL SHEATHING, 24/16 OSB, EXPOSURE 1. ROOF AND FLOOR SHEATHING, 48/24 CDX PLYWOOD
COLD FORMED STEEL		STEEL STUDS, ASTM A653, 18 GA. Fy = 33 KSI U.N.O.
MASONRY		CMU BLOCK: NORMAL WEIGHT, F'c = 1900 PSI MORTAR: PORTLAND CEMENT/LIME, TYPE M OR S GROUT: F'c = 2000 PSI (28 DAYS) WALL COMPRESSIVE STRENGTH = F'M = 1900 PSI (28 DAYS)

FOUNDATION AND SOIL PREPARATION

SITE GRADING AND EXCAVATIONS

1. A GEOTECHNICAL ENGINEERING EVALUATION REPORT HAS NOT BEEN CONDUCTED FOR THIS PROJECT. THE CONTRACTOR IS THEREFORE RESPONSIBLE THAT ALL BUILDING CODE REQUIREMENTS ARE MET AND IN COMPLIANCE WITH THE LOCAL JURISDICTION. THE FOLLOWING NOTES ARE TYPICAL AND SHALL NOT GOVERN SITE SPECIFIC REQUIREMENTS.
2. CONFORM TO IBC CHAPTER 18 "SOILS AND FOUNDATIONS".
3. ALL TOPSOIL AND ORGANIC MATERIAL, ASPHALT, CONCRETE AND RELATED CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE PROPOSED BUILDING AND PAVEMENT AREAS AND ANY AREAS TO RECEIVE SITE GRADING FILL. FOR PLANNING PURPOSES, A MINIMUM STRIPPING THICKNESS OF 6 INCHES IS RECOMMENDED. THICKER STRIPPING DEPTHS MAY BE WARRANTED TO REMOVE ALL DETRIMENTAL ORGANICS AS DETERMINED ONCE ACTUAL STRIPPING OPERATIONS ARE PERFORMED.
4. ALL FILL AND BACKFILL SHALL BE NON-EXPANSIVE, FREE OF ORGANICS AND DEBRIS AND SHALL BE APPROVED BY THE PROJECT GEOTECHNICAL ENGINEER. ALL FILL SHALL BE PLACED IN UNIFORM LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS FOR FINE-GRAINED SOILS AND NOT EXCEEDING 12 INCHES FOR GRANULAR SOILS. ALL FILL AND BACKFILL SHALL BE COMPACTED TO THE FOLLOWING PERCENTAGES OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698 OR EQUIVALENT (E.G. ASTM D4253-D4254).
   - 5.1. BELOW FOUNDATIONS OR SPREAD FOOTINGS..... 95%
   - 5.2. BELOW SLAB-ON-GRADE CONSTRUCTION..... 95%
   - 5.3. BELOW STREETS, PARKING LOTS, OR OTHER PAVED AREAS..... 95%
   - 5.4. GENERAL LANDSCAPING OR NONSTRUCTURAL AREAS..... 92%
   - 5.5. UTILITY TRENCH BACKFILL, TO WITHIN 2 FEET OF SURFACE..... 95%
5. IMPORTED STRUCTURAL FILL SHOULD BE NON-EXPANSIVE, FREE OF ORGANICS AND DEBRIS, AND SELECTED PER THE FOLLOWING GRADATION REQUIREMENTS:

SCREEN OR SIEVE SIZE	PERCENT PASSING BY WEIGHT
3-INCH	100
1 1/2-INCH	80-100
3/4-INCH	60-100
NO. 4	25-60
NO. 200	12 MAXIMUM

SPREAD FOOTING FOUNDATIONS

1. BOTH INTERIOR AND EXTERIOR FOOTINGS SHALL BEAR ON THE PROPERLY COMPACTED NATIVE SOILS. AN ALLOWABLE SOIL BEARING PRESSURE OF 1,500 PSF WAS USED FOR ALL FOOTINGS.
2. SOILS DISTURBED BELOW THE PLANNED DEPTHS OF FOOTING EXCAVATIONS SHALL EITHER BE RECOMPACTED OR BE REPLACED WITH SUITABLE COMPACTED BACKFILL APPROVED BY THE GEOTECHNICAL ENGINEER.
3. THE BOTTOM OF THE FOOTING EXCAVATIONS SHALL BE FREE OF COBBLES AND BOULDERS TO AVOID STRESS CONCENTRATIONS ACTING ON THE BASE OF THE FOOTINGS.
4. A REPRESENTATIVE OF THE PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE ALL FOOTING EXCAVATIONS AND BACKFILL PHASES PRIOR TO THE PLACEMENT OF CONCRETE FORMWORK.

FLOOR SLABS AND EXTERIOR FLATWORK

1. FOR NORMALLY LOADED, SLAB-ON-GRADE CONSTRUCTION, A MINIMUM 6-INCH CUSHION COURSE CONSISTING OF FREE-DRAINING, CRUSHED GRAVEL SHOULD BE PLACED BENEATH THE SLABS AND COMPACTED TO A MINIMUM OF 95 PERCENT DENSITY PER ASTM D698 (OR EQUIVALENT PER ASTM D4253-D4254). THIS MATERIAL SHOULD CONFORM TO SECTION 02235 OF MPWSS AND INCORPORATE A MAXIMUM PARTICLES SIZE OF 3/4-INCH. PRIOR TO PLACING THE CUSHION COURSE, THE UPPER SIX INCHES OF SUBGRADE SHOULD BE COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY PER ASTM D698.

MASONRY

1. MASONRY WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 530, "BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES".
2. HOLLOW CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C90, GRADE N, TYPE I.
3. F'm FOR DESIGN IS 1900 PSI.
4. ALL UNITS SHALL BE LAID IN RUNNING BOND UNLESS NOTED OTHERWISE.
5. VERTICAL REINFORCING (UNLESS NOTED OTHERWISE):

   PLACE #5 (8" WALL) BAR IN CENTER OF GROUT AT CENTER OF WALL, CONTINUOUS FULL HEIGHT OF WALL, WITH ONE BAR AT ALL CORNERS, INTERSECTIONS, WALL ENDS, BEAM BEARING, JAMBS AND EACH SIDE OF CONTROL JOINTS AND AT INTERVALS NOT TO EXCEED 48" O.C.. TIE AT 8'-0" VERTICALLY, WITH SINGLE WIRE LOOP TIE BY AMERICAN WIRE TIE PRODUCTS COMPANY (OR EQUAL). DOWEL ALL VERTICAL REINFORCING TO FOUNDATION WITH STANDARD 90 DEGREE HOOKED DOWELS TO MATCH VERTICAL REINFORCING.
6. HORIZONTAL REINFORCING (UNLESS NOTED OTHERWISE):
   - PLACE (2) #5 BARS IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT ROOF AND ELEVATED FLOOR LINES.
   - PLACE #5 BAR IN MINIMUM 8" DEEP GROUTED CONTINUOUS BOND BEAM AT TOP OF PARAPET OR TOP OF FREE-STANDING WALL.
   - PLACE THESE BARS CONTINUOUS THROUGH CONTROL JOINTS. WRAP MASTIC TAPE FOR 1'-6" EACH SIDE OF CONTROL JOINT. PROVIDE BENT BARS, TO MATCH HORIZONTAL BOND BEAM REINFORCING, AT CORNERS AND WALL INTERSECTIONS TO MAINTAIN BOND BEAM CONTINUITY. STAGGER ALTERNATE SPLICES A MINIMUM OF 4'-0".
   - PROVIDE STANDARD WEIGHT (NO. 9 GAUGE WIRE) DUR-O-WALL OR DUR-O-WIRE LADDER TYPE JOINT REINFORCING AT 16' O.C. IN MASONRY WALLS. LAP JOINT REINFORCING 6" MINIMUM.
7. MECHANICALLY VIBRATE GROUT IN VERTICAL SPACES IMMEDIATELY AFTER POURING. PROVIDE CLEANOUTS IF GROUT POUR EXCEEDS 5'-0" IN HEIGHT. IF CLEANOUTS ARE PROVIDED, GROUT POUR MAXIMUM HEIGHT = 12'-0", IN LIFTS NOT TO EXCEED 6'-0".
8. UNLESS NOTED OTHERWISE ON THE PLANS, PLACE CONTROL JOINTS IN MASONRY WALLS SUCH THAT NO STRAIGHT RUN OF WALL EXCEEDS 24'-0".
9. MASONRY LINTELS AND OPENINGS PER TYPICAL DETAIL.
10. REBAR SPLICE LENGTHS SHALL BE PER TYPICAL DETAIL.

LEGEND AND ABBREVIATIONS

AB	ANCHOR BOLT	HORIZ	HORIZONTAL
ACI	AMERICAN CONCRETE INSTITUTE	HSA	HEADED STUD ANCHOR
		HSS	HOLLOW STRUCT STEEL
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	IBC	INTERNATIONAL BUILDING CODE
ALT	ALTERNATE	INT	INTERIOR
APPROX	APPROXIMATE	L	STEEL ANGLE
ARCH	ARCHITECTURAL	LG	LIGHT GAUGE
ASTM	AMERICAN SOCIETY FOR TESTING MATERIAL	LLV	LONG LEG VERTICAL
		LONG	LONGITUDINAL
@	AT	MAX	MAXIMUM
BLDG	BUILDING	MCJ	MASONRY CONTROL JOINT
BLK'G	BLOCKING	MECH	MECHANICAL
BM	BEAM	MFR	MANUFACTURER
BOC	BOTTOM OF CONCRETE	MIN	MINIMUM
BOF	BOTTOM OF FOOTING	MISC	MISCELLANEOUS
BOS	BOTTOM OF STEEL/SLAB	NO. OR #	NUMBER
BOT	BOTTOM OF	(N)	NEW
BRG	BEARING	NTS	NOT TO SCALE
BTB	BACK TO BACK	OC	ON CENTER
BTWN	BETWEEN	OCEF	ON CENTER EACH FACE
C	STEEL CHANNEL	OCEW	ON CENTER EACH WAY
CFS	COLD FORMED STEEL	OPP	OPPOSITE
CIP	CAST IN PLACE	OWJ	OPEN WEB JOIST
CJ	CONTROL JOINT	PEMB	PRE-ENGINEERED METAL BUILDING
℄ OR CL	CENTER LINE	PLCS	PLACES
CMU	CONCRETE MASONRY UNIT	PL	PLATE
COL	COLUMN	PREFAB	PREFABRICATED
CONC	CONCRETE	PT	PRESSURE TREATED
CONN	CONNECTION	REF	REFERENCE
CONT	CONTINUOUS	REINF	REINFORCEMENT
DEMO	DEMOLISH	REQ'D	REQUIRED
DET	DETAIL	REV	REVISION/REVISED
DF	DOUGLAS FIR	SCH OR SCHED	SCHEDULE
ø OR DIA	DIAMETER	SFE	SUBFLOOR ELEVATION
DIM	DIMENSION	SHT	SHEET
DJ	DOUBLE JOIST	SIM	SIMILAR
DWG	DRAWING	SOG	SLAB-ON-GRADE
EA	EACH	SPCS OR SPA	SPACE(S)
EA WAY OR EW	EACH WAY	SPEC	SPECIFICATION(S)
EF	EACH FACE	SQ	SQUARE
EJ	EXPANSION JOINT	STD	STANDARD
EL OR ELEV	ELEVATION	STRUCT	STRUCTURAL
EMBED	EMBEDMENT	SYM	SYMMETRICAL
ENG	ENGINEER	T&B	TOP & BOTTOM
EOR	ENGINEER OF RECORD	THRU	THROUGH
EQ	EQUAL	TOB	TOP OF BEAM
EXIST OR (E)	EXISTING	TOC	TOP OF CONCRETE
EXP	EXPANSION	TOF	TOP OF FOOTING
EXT	EXTERIOR	TOS	TOP OF STEEL/SLAB
FDT OR FND	FOUNDATION	TOW	TOP OF WALL
FF	FINISH FLOOR	TRANS	TRANSVERSE
FLR	FLOOR	TYP	TYPICAL
FTG	FOOTING	VIF	VERIFY IN FIELD
GA	GAUGE	VERT	VERTICAL
GALV	GALVANIZED	UNO	UNLESS NOTED OTHERWISE
GEN	GENERAL	W/	WITH
		WF	WIDE FLANGE
		WP	WORKING POINT
		WT	WEIGHT

CONCRETE

CONCRETE MASONRY UNIT

STEEL IN SECTION

1 / S1.0 — SECTION OR DETAIL DESIGNATION SYMBOL; SHEET NUMBER WHERE SECTION OR DETAIL IS SHOWN

ELEVATION NOTED

X — FLAG NOTE

1 — REVISION SPECIFIED

STEEL LEGEND

UP OR DOWN — STAIR IDENTIFICATION

XXXX — INDICATES COLUMN

BPX — INDICATES BASE PLATE, SEE SCHEDULE Sx.x

ISSUED FOR BID

REV	DATE	Revision Description

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PE064736

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TRAINER BOROUGH MUNICIPAL BUILDING
TRAINER BOROUGH, PA 19061

GENERAL STRUCTURAL NOTES

SHEET **S1.0**

WOOD

1. ALL WOOD TO BE CONSTRUCTED USING STANDARD PRACTICES. LATEST EDITION OF NATIONAL DESIGN SPECIFICATION (NDS) APPLIES.
2. PROVIDE ALL ACCESSORY ITEMS FOR ENGINEERED WOOD PRODUCTS (BLOCKS, CLIPS, STRAPS, STIFFENERS, ETC.) DESIGNED BY THE MANUFACTURER AS REQUIRED.
3. FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS FOR INSTALLATION OF ALL ENGINEERED WOOD PRODUCTS AND ALL FRAMING CONNECTORS, HANGERS AND ANCHORS.
4. PROVIDE FULL BEARING FOR ALL FRAMING MEMBERS UNLESS SHOWN OTHERWISE. ALL FRAMING TO BE DF #2 OR BETTER (UNO). ALL GLUE LAMINATED BEAMS (GLB) SHALL BE 24F-V4 (24F-V8 FOR CANTILEVER SPANS) AND AC V12 FOR EXPOSED APPLICATIONS UNLESS BEAM IS PROTECTED FROM WEATHER THEN 24F IS ACCEPTABLE.
5. BEARING AND SHEAR WALLS TO HAVE 8d NAILS @ 6" OC AT EDGE AND 12" OC IN FIELD, FULLY BLOCKED. ALL OPENINGS TO HAVE 8d NAILS @ 3" OC ALL AROUND, UNO ON SHEAR WALL PLANS.
6. ROOF TRUSSES SHALL BE DESIGNED BY OTHERS AND BE SEALED BY A PROFESSIONAL ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED.
7. ALL TRUSSES AND OVERHANGS TO BE CONNECTED TO WALLS WITH SIMPSON H1 CLIPS.
8. ROOF TRUSSES AND MONOTRUSSES SHALL BE PRESSED-PLATE LUMBER, DESIGNED BY OTHERS AND SUBMITTED TO THE ENGINEER FOR APPROVAL.
9. PLACE FLOOR AND ROOF SHEATHING WITH FACE GRAIN PERPENDICULAR TO THE SUPPORTS AND JOINTS STAGGERED OVER SUPPORTS. PLACE WALL SHEATHING WITH FACE GRAIN VERTICAL.
10. ALL TIMBER SHALL BE CONSTRUCTED ACCORDING TO MINIMUM STANDARDS OUTLINED IN CHAPTER 23 OF THE 2015 IBC INCLUDING USING THE FASTENING SCHEDULE EXCEPT AS NOTED DIFFERENTLY ON PLANS.
11. ALL ROOF AND FLOOR SHEATHING SHALL BE CDX PLYWOOD. ALL WALL SHEATHING SHALL BE ORIENTED STRAND BOARD. WALL SHEATHING SHALL EXTEND AND ATTACH TO THE TOP AND BOTTOM OF THE WALL TOP AND BOTTOM HORIZONTAL PLATES (RESPECTIVELY). NO HORIZONTAL JOINT OF THE PLYWOOD CAN BE WITHIN 2' OF THE TOP OR BOTTOM PLATE.
12. TYPICAL ROOF SHEATHING SHALL BE MIN 15/32" THICK APA SPAN RATED CD-X PLYWOOD NAILED W/ 8d @ 6" OC AT SHEET EDGES AND 12" OC FIELD.
13. ALL NAILS SHALL BE COMMON NAILS UNO.
14. ALL METAL FASTENERS AND CONNECTORS IN CONTACT WITH P.T. WOOD SHALL BE GALVANIZED.
15. ALL LUMBER IN CONTACT WITH GROUND, CONCRETE OR EXPOSED TO WEATHER SHALL BE PRESSURE TREATED. ALL METAL EXPOSED TO WEATHER OR IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE STAINLESS STEEL, HOT DIPPED GALVANIZED (MIN G180) OR OTHERWISE PROTECTED AGAINST CORROSION.
16. BRACE STUD WALLS UNTIL ALL PLYWOOD SUB-FLOOR, FLOOR TRUSSES, ROOF TRUSSES AND SHEAR PANELS ARE IN PLACE.

SHOP DRAWINGS

1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER AND MUST RECEIVE APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING MATERIALS:
   - 1.1. CONCRETE MIX DESIGN
   - 1.2. REBAR TYPE & LOCATION
   - 1.3. ALL TIMBER MATERIALS (MEMBERS, SHEATHING) AND THEIR USE FOR THIS PROJECT.
   - 1.4. ROOF PLAN LAYOUT
   - 1.5. BOLTS AND ANCHOR BOLTS
   - 1.6. TIMBER CONNECTION ACCESSORIES
   - 1.7. PRE-ENGINEERED TIMBER TRUSS LAYOUT & CALCULATIONS WITH P.E. STAMP IN THE STATE IN WHICH THE PROJECT IS LOCATED
2. THE GENERAL CONTRACTOR WILL REVIEW AND STAMP ALL SHOP DRAWINGS AND PRODUCT DATA FOR CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS PRIOR TO SUBMISSION. ANY SHOP DRAWINGS OR PRODUCT DATA NOT REVIEWED AND STAMPED BY THE GENERAL CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.
3. ANY SHOP DRAWING NOT CHECKED AND INITIALED BY THE SUPPLIER/DETAILER PRIOR TO SUBMITTING FOR ARCHITECTURAL AND ENGINEERING REVIEW, WILL BE RETURNED WITHOUT REVIEW.
4. THE CONSTRUCTION DOCUMENTS MAY NOT BE REPRODUCED FOR USE AS SHOP DRAWINGS.
5. ELECTRONIC FILES OF CONSTRUCTION DOCUMENTS WILL NOT BE MADE AVAILABLE FOR USE AS SHOP DRAWINGS.

DEFERRED SUBMITTALS

1. DEFERRED SUBMITTALS ARE THOSE PORTIONS FOR THE DESIGN WHICH ARE NOT SUBMITTED AT THE TIME OF PERMIT APPLICATION AND WHICH ARE TO BE SUBMITTED TO THE BUILDING OFFICIAL WITHIN A SPECIFIED PERIOD.
2. SUBMITTAL DOCUMENTS FOR DEFERRED SUBMITTAL ITEMS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD THROUGH THE ARCHITECT AND GENERAL CONTRACTOR WITHIN 6 WEEKS OF AWARD OF CONTRACT TO THE GENERAL CONTRACTOR. ONCE THE SUBMITTAL DOCUMENTS HAVE BEEN FOUND TO BE IN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS, THE ENGINEER OF RECORD WILL FORWARD THEM TO THE ARCHITECT WITH A NOTATION INDICATION THAT THEY ARE IN GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING. THE ARCHITECT WILL FORWARD THE DEFERRED SUBMITTAL DOCUMENTS TO THE GENERAL CONTRACTOR WHO WILL MAINTAIN ONE SET ON SITE FOR REFERENCE BY THE CITY INSPECTOR. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THE SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.
3. ITEMS THAT ARE SUBMITTED FOR CONSIDERATION AS DEFERRED SUBMITTALS ARE AS FOLLOWS:
   - 3.1. PREFABRICATED WOOD TRUSSES
   - 3.2. STRUCTURAL FILL MATERIAL
   - 3.3. CONCRETE MIX DESIGN

STATEMENT OF SPECIAL INSPECTIONS

1. SPECIAL INSPECTION AND TESTING SHALL BE PROVIDED BY THE OWNER IN ACCORDANCE WITH CHAPTER 17 OF THE 2015 IBC.
2. ALL SPECIAL INSPECTORS SHALL BE UNDER THE SUPERVISION OF A REGISTERED CIVIL OR STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE WORK IS TO BE PERFORMED. ALL INSPECTIONS SHALL BE PERFORMED BY EXPERIENCED PERSONNEL MEETING THE REQUIREMENTS OF THE IBC AND AC291 "ACCREDITATION CRITERIA FOR SPECIAL INSPECTION AGENCIES" AND SHALL BE APPROVED BY THE LICENSED ENGINEER OF RECORD.
3. SPECIAL INSPECTIONS ARE NOT REQUIRED FOR WORK OF A MINOR NATURE AS APPROVED BY THE BUILDING OFFICIAL, NOR ARE THEY REQUIRED FOR GROUP U OCCUPANCIES.
4. EACH CONTRACTOR RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND OR SEISMIC FORCE RESISTING SYSTEM SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK AS OUTLINED IN 1704.4 OF THE IBC.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE SPECIAL INSPECTOR OR SPECIAL INSPECTION AGENCY AT LEAST TWO WORKING DAYS PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT THE REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.
6. SPECIAL INSPECTIONS SHALL BE REQUIRED FOR PROPOSED WORK THAT IS, IN THE OPINION OF THE BUILDING OFFICIAL, UNUSUAL IN ITS NATURE, SUCH AS, BUT NOT LIMITED TO THE FOLLOWING EXAMPLES: CONSTRUCTION MATERIALS AND SYSTEMS THAT ARE ALTERNATIVES TO MATERIALS AND SYSTEMS PRESCRIBED BY THE IBC, UNUSUAL DESIGN APPLICATIONS OF MATERIALS PRESCRIBED IN THE IBC, AND MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN THE IBC OR IN STANDARDS REFERENCED BY THE IBC.

SPECIAL INSPECTIONS FOR MASONRY

1. MASONRY CONSTRUCTION SHALL BE INSPECTED AND VERIFIED IN ACCORDANCE WITH TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530.1/ASCE 6 **QUALITY ASSURANCE LEVEL A** PROGRAM REQUIREMENTS.

TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

APPLIES	VERIFICATION AND INSPECTION	CONT	PERIODIC	REFERENCED STANDARD	IBC REFERENCE
X	1. INSPECTION OF REINFORCING STEEL. INCLUDING PRE-STRESSING TENDONS, AND PLACEMENT		X	ACI 318: 3.5, 7.1-7.7	1910.4
X	2. INSPECTION OF REINFORCING STEEL WELDING IN ACCORDANCE WITH TABLE 1705.2.2, ITEM 2b			AWS D1.4 ACI 318: 3.5.2	
X	3. INSPECTION OF ANCHORS CAST IN CONCRETE WHERE ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED		X	ACI 318: 8.1.3, 21.1.8	1908.5, 1909.1
X	4. INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS		X	ACI 318: 3.8.6, 8.1.3, 21.1.8	1909.1
X	5. VERIFYING USE OF REQUIRED DESIGN MIX		X	ACI 318: CH.4, 5.2-5.4	1904.2, 1910.2, 1910.3
X	6. AT THE TIME FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X		ASTM C 172 ASTM C 31 ACI 318: 5.6, 5.8	1910.10
X	7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X		ACI 318: 5.9, 5.10	1910.6, 1910.7, 1910.8
X	8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES		X	ACI 318: 5.11-5.13	1910.9
	9a. INSPECTION OF PRE-STRESSED CONCRETE: APPLICATION OF PRE-STRESSED FORCES	X		ACI 318: 18.20 ACI 318: 18.18.4	
	9b. INSPECTION OF PRE-STRESSED CONCRETE: GROUTING OF BONDED PRE-STRESSING TENDONS IN THE SEISMIC FORCE-RESISTING SYSTEM	X		ACI 318: 18.20 ACI 318: 18.18.4	
	10. ERECTION OF PRECAST CONCRETE MEMBERS		X	ACI 318: CH. 16	
	11. VERIFICATION OF IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS		X	ACI 318: 6.2	
X	12. INSPECTION FORM-WORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED		X	ACI 318: 6.1.1	

TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

APPLIES	VERIFICATION AND INSPECTION TASK	CONT	PERIODIC
X	1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.		X
X	2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL.		X
X	3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.		X
X	4. VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	
X	5. PRIOR TO PLACEMENT OF COMPACTED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.		X

SPECIAL INSPECTIONS FOR MASONRY

VERIFICATION OF SLUMP FLOW AND VISUAL STABILITY INDEX (VSI) AS DELIVERED TO THE PROJECT SITE IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.5 B.1.b.3 FOR SELF-CONSOLIDATING GROUT

VERIFICATION OF f'm AND f'AAC IN ACCORDANCE WITH SPECIFICATION ARTICLE 1.4 B PRIOR TO CONSTRUCTION, EXCEPT WHERE SPECIFICALLY EXEMPTED BY THIS CODE

APPLIES	INSPECTION TASK	FREQUENCY CONT.	FREQUENCY PERIODIC	TMS 402/ ACI 530/ ASCE 5	TMS 602/ ACI 530.1/ ASCE 6
X	1. VERIFY COMPLIANCE WITH THE APPROVED SUBMITTALS		X		Art 1.5
	2. AS MASONRY CONSTRUCTION BEGINS, VERIFY THAT THE FOLLOWING ARE IN COMPLIANCE:				
X	A. PROPORTIONS OF SITE-PREPARED MORTAR		X		Art 2.1, 2.6 A
X	B. CONSTRUCTION OF MORTAR JOINTS		X		Art 3.3 B
	C. GRADE AND SIZE OF PRE-STRESSING TENDONS AND ANCHORAGES		X		Art 2.4 B, 2.4 H
X	D. LOCATION OF REINFORCEMENT, CONNECTORS AND PRE-STRESSING TENDONS AND ANCHORAGES		X		Art 3.4, 3.6 A
	E. PRE-STRESSING TECHNIQUE		X		Art 3.6 B
	F. PROPERTIES OF THIN-BED MORTAR FOR AAC MASONRY	X (b)	X (c)		Art 2.1 C
	3. PRIOR TO GROUTING, VERIFY THE FOLLOWING ARE IN COMPLIANCE:				
X	A. GROUT SPACE		X		Art 3.2 D, 3.2 F
X	B. GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS, AND PRE-STRESSING TENDONS AND ANCHORAGES		X	SEC. 1.16	Art 2.4, 3.4
X	C. PLACEMENT OF REINFORCEMENT, CONNECTORS AND PRE-STRESSING TENDONS AND ANCHORAGES		X	SEC. 1.16	Art 3.2 E, 3.4, 3.6 A
X	D. PROPORTIONS OF SITE-PREPARED GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS		X		Art 2.6 B, 2.4, G.1.b
X	E. CONSTRUCTION OF MORTAR JOINTS		X		Art 3.3 B
	4. VERIFY DURING CONSTRUCTION:				
X	A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS		X		Art 3.3 F
X	B. TYPE, SIZE AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES, OR OTHER CONSTRUCTION		X	SEC. 1.16.4.3 1.17.1	
	C. WELDING OF REINFORCEMENT	X		SEC. 2.1.7.7.2 3.3.3.4 8.3.3.4(b)	
X	D. PREPARATION, CONSTRUCTION, AND PROTECTION OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40°F (4.4°C)) OR HOT WEATHER (TEMPERATURE ABOVE 90°F (32.2°C))		X		Art 1.8 C, 1.8 D
	E. APPLICATION AND MEASUREMENT OF PRE-STRESSING FORCE	X			Art 3.6 B
X	F. PLACEMENT OF GROUT AND PRE-STRESSING GROUT FOR BONDED TENDONS IS IN COMPLIANCE	X			Art 3.5, 3.6 C
	G. PLACEMENT OF AAC MASONRY UNITS AND CONSTRUCTION OF THIN-BED MORTAR JOINTS	X (b)	X (c)		Art 3.3 B.8
X	5. OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS, AND/OR PRISMS		X		Art 1.4 B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.b.3, 1.4 B.3.1.4 B.4

a. FREQUENCY REFERS TO THE FREQUENCY OF INSPECTION, WHICH MAY BE CONTINUOUS DURING THE TASK LISTED OR PERIODICALLY DURING THE LISTED TASK, AS DEFINED IN THE TABLE
b. REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) IF AAC MASONRY
c. REQUIRED FOR THE FIRST 5000 SQUARE FEET (465 SQUARE METERS) IF AAC MASONRY

TABLE 1705.5
VERIFICATION AND INSPECTION OF WOOD

APPLIES	VERIFICATION AND INSPECTION	CONT.	PERIODIC	REFERENCED STANDARD
X	1. FABRICATION PROCESS OF PREFABRICATED WOOD STRUCTURAL ELEMENTS AND ASSEMBLIES SHALL BE IN ACCORDANCE WITH IBC 1704.2.5 AND LOCAL AMENDMENTS.		X	
	2. INSPECT WOOD STRUCTURAL PANEL SHEATHING CONSTRUCTION FOR THE FOLLOWING:			
X	a. GRADE AND THICKNESS SHOWN ON APPROVED BUILDING PLANS		X	
X	b. NOMINAL SIZE OF FRAMING MEMBERS AT ADJOINING PANEL EDGES, PER APPROVED BUILDING PLANS		X	
X	c. NAIL OR STAPLE DIAMETER AND LENGTH, PER APPROVED BUILDING PLANS		X	
X	d. NUMBER OF FASTENER LINES AND THE SPACING BETWEEN FASTENERS IN EACH LINE AND AT EDGE MARGINS, PER APPROVED BUILDING PLANS		X	
	3. TRUSSES OVER 60 FT, VERIFY THE FOLLOWING:			
X	a. TEMPORARY INSTALLATION RESTRAINT/BRACING PER APPROVED TRUSS SUBMITTAL		X	
X	b. PERMANENT INDIVIDUAL TRUSS MEMBER RESTRAINT/BRACINGS INSTALLED PER APPROVED TRUSS SUBMITTAL		X	

ISSUED FOR BID

REV	DATE	Revision Description

MARY E. BARFIELD
REGISTERED PROFESSIONAL
ENGINEER
PE084736

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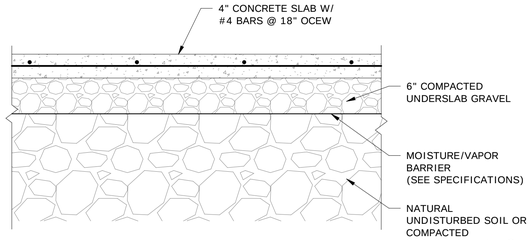
DRAWN BY: BMS
DESIGNED BY: MEB
QUALITY CHECK: PMH
DATE: 8-26-19
JOB NO: M18-072
FIELDBOOK:

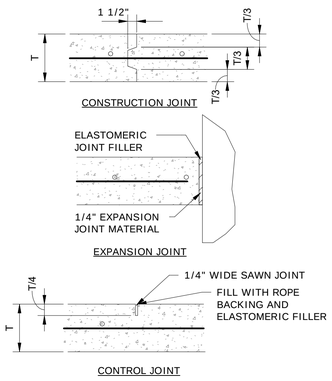
TRAINER BOROUGH MUNICIPAL BUILDING
TRAINER BOROUGH, PA 19061

GENERAL STRUCTURAL NOTES

SHEET S1.1

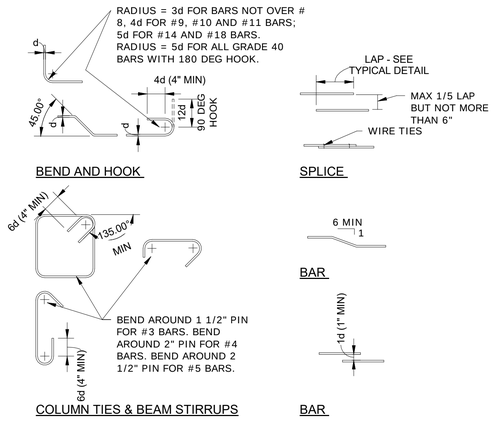


1 TYPICAL SLAB-ON-GRADE SECTION
DO NOT SCALE

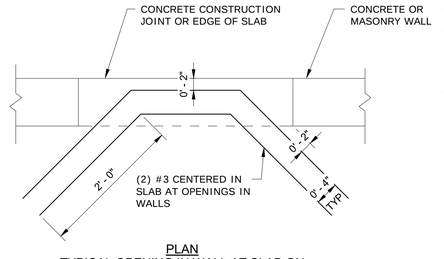


*SEE NOTES FOR SPACING REQUIREMENTS

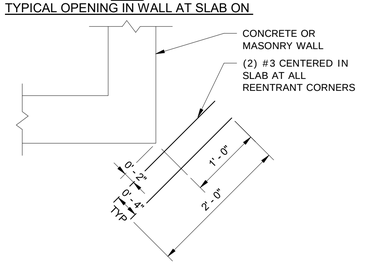
2 CONCRETE SLAB JOINT DETAILS
DO NOT SCALE



3 TYP CONC REINF BAR DETAILS
DO NOT SCALE



PLAN
TYPICAL OPENING IN WALL AT SLAB ON



PLAN
TYPICAL AT REENTRANT CORNER REINFORCING IN SLAB ON

4 TYPICAL REENTRANT CORNER REINFORCING IN SLAB-ON-GRADE
1" = 1'-0"

CONCRETE	FINISH
FORMED SURFACES	
BEAM AND SLABS	POINT AND PATCH
EXTERIOR WALLS ABOVE GRADE	SACKED FINISH
EXTERIOR WALLS BELOW GRADE	ROUGH FORM FINISH
INTERIOR WALLS - EXPOSED	SACKED FINISH
INTERIOR WALLS - COVERED	POINT AND PATCH
UNFORMED SURFACES	
INTERIOR SLABS	TROWEL FINISH, HARDENED AND POLISHED
EXTERIOR SLABS ON GRADE	BROOM FINISH
EXTERIOR SLABS BELOW GRADE	FLOAT FINISH

5 CONCRETE FINISH SCHEDULE
DO NOT SCALE

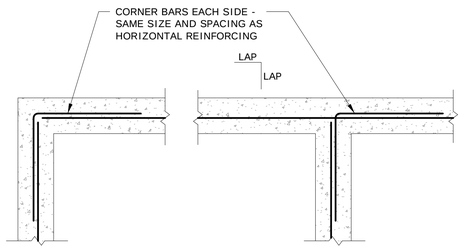
CAST-IN-PLACE (NONPRESTRESSED) CONCRETE	CONCRETE COVER
CAST AGAINST & EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER No. 6 THROUGH No. 18 BARS No. 5 BAR, W31 OR D31 WIRE, AND SMALLER	2" 1-1/2"
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND SLABS, WALLS, JOISTS No. 14 AND No. 18 BARS No. 11 BAR AND SMALLER BEAMS, COLUMNS PRIMARY REINFORCEMENT, TIES, STIRRUPS, SPIRALS SHELLS, FOLDED PLATE MEMBERS No. 6 BAR AND LARGER No. 5 BAR, W31 OR D31 WIRE, AND SMALLER	 1-1/2" 3/4" 1-1/2" 3/4" 1/2"

6 REINFORCING CONCRETE COVER
DO NOT SCALE

BAR SIZE	CONCRETE	
IN-LB	HORIZ &	TOP
#3	1'-7"	2'-1"
#4	2'-1"	2'-9"
#5	2'-7"	3'-5"
#6	3'-1"	4'-1"
#7	4'-6"	5'-11"
#8	5'-2"	6'-9"
#9	5'-10"	7'-7"
#10	6'-7"	8'-6"

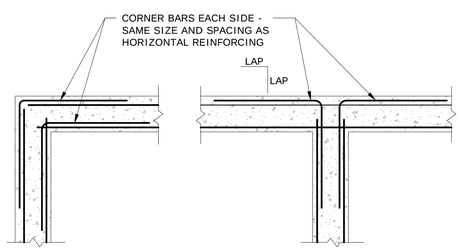
NOTES:
1. FOR REINFORCING WITH EPOXY COATING, MULTIPLY LAP LENGTH SHOWN BY 1.5.
2. CONCRETE LAP LENGTHS ARE CLASS "B" BASED ON F'C=4,000 PSI WITH COVER REQUIREMENTS INDICATED AND BAR SPACING AT LEAST TWO BAR DIAMETERS.
3. TOP BAR LAPS ARE HORIZONTAL LAPS WHERE MORE THAN 12" OF FRESH CONCRETE IS PLACED BELOW THE BARS.
4. TOP BAR LAP LENGTHS MAY BE USED AT ALL LOCATIONS IN CONCRETE AT THE CONTRACTOR'S DISCRETION.

7 TYP. REINFORCING SPLICE LENGTHS
DO NOT SCALE



CORNER INTERSECTION

9 PLAN CORNER REINFORCING
DO NOT SCALE



CORNER INTERSECTION

10 PLAN CORNER REINFORCING
DO NOT SCALE

ISSUED FOR BID

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MARY E. BARFIELD
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PE084736

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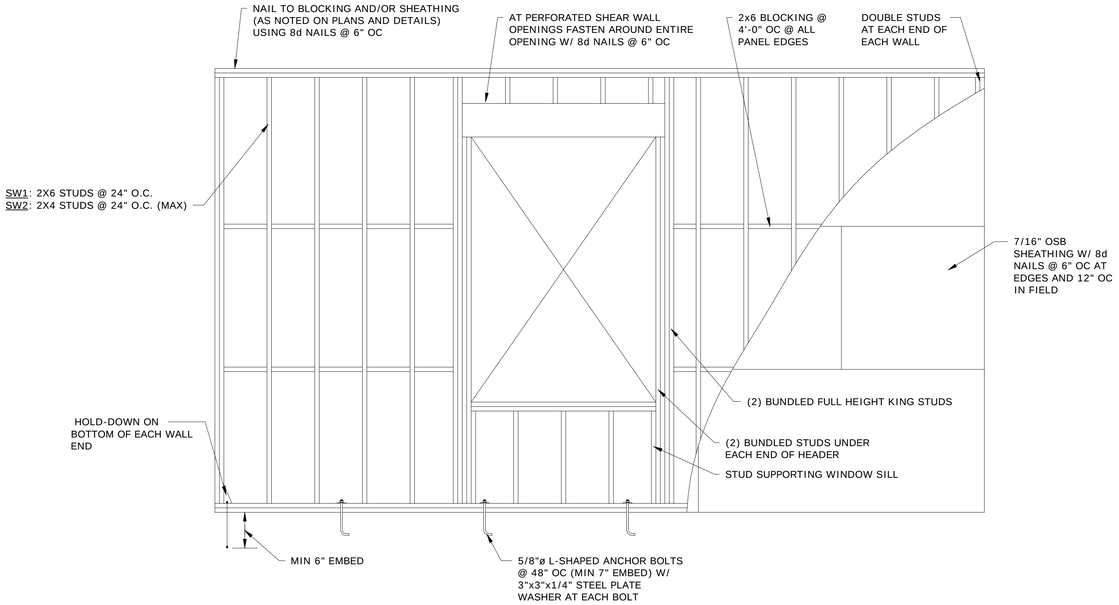
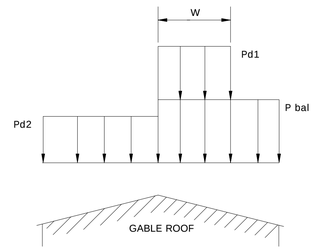
TRAINER BOROUGH MUNICIPAL BUILDING
TRAINER BOROUGH, PA 19061

TYPICAL DETAILS

SHEET **S1.2**

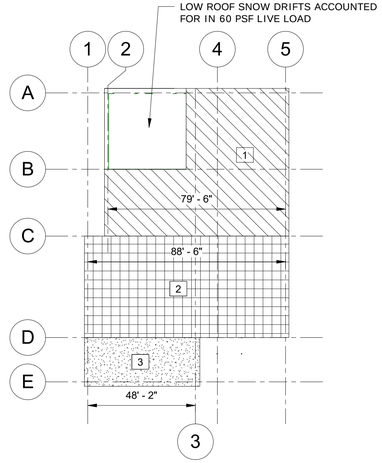


1 TYPICAL WOOD SHEARWALL DETAIL
DO NOT SCALE

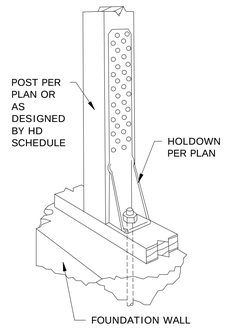


DRIFT	Pbal (PSF)	Pd1 (PSF)	Pd2 (PSF)	W
1	14	19.8	4.2	8'-0"
2	14	21	4.2	8'-6"
3	14	14.4	4.2	5'-8"

4 UNBALANCED SNOW DRIFT DETAIL
12" = 1'-0"

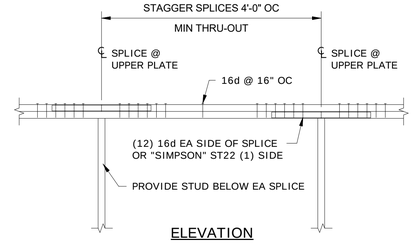


NOTE: THIS DETAIL INTENDED TO BE USED BY TRUSS MANUFACTURER FOR DRIFT& UNBALANCED SNOW LOAD DESIGN.



HOLDOWN SCHEDULE		
MARK	ANCHOR	HOLDDOWN
HD1	5/8" HEAVY HEX HEAD ANCHOR WITH 6" EMBED OR 5/8" A36 THREADED ROD DRILLED AND EPOXIED INTO CONCRETE, 6" EMBED	HDU2-SDS2.5 OR EQUAL CAPABLE OF 3075# UPLIFT

2 HOLDOWN SCHEDULE & DETAIL
DO NOT SCALE



3 TOP PLATE SPLICE DETAIL
DO NOT SCALE

ZONE	EFFECTIVE WIND AREA (A_e)		
	10 ft²	100 ft²	500 ft²
ROOF 1	+13.7/-21.8	+10.0/-19.8	+10.0/-19.8
ROOF 2	+13.7/-37.9	+10.0/-27.8	+10.0/-27.8
ROOF 3	+13.7/-56.0	+10.0/-44.0	+10.0/-44.0
ROOF OVERHANG 2	-44.4	-44.4	-44.4
ROOF OVERHANG 3	-74.6	-50.4	50.4
WALL 4	+23.8/-25.8	+20.2/-22.2	+17.7/-19.8
WALL 5	+23.8/-31.9	+20.2/-24.7	+17.7/-19.8

NOTES:
1. (+) AND (-) DENOTES PRESSURES TOWARDS AND AWAY FROM SURFACES, RESPECTIVELY.
2. LINEAR INTERPOLATION FOR OTHER EFFECTIVE AREAS ARE PERMITTED.
3. VALUES PER ASCE 7-10 CHAPTER 28, PART 2.

6 COMPONENTS & CLADDING WIND PRESSURES
12" = 1'-0"

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MARY E. BARFIELD
ENGINEER
PE084736

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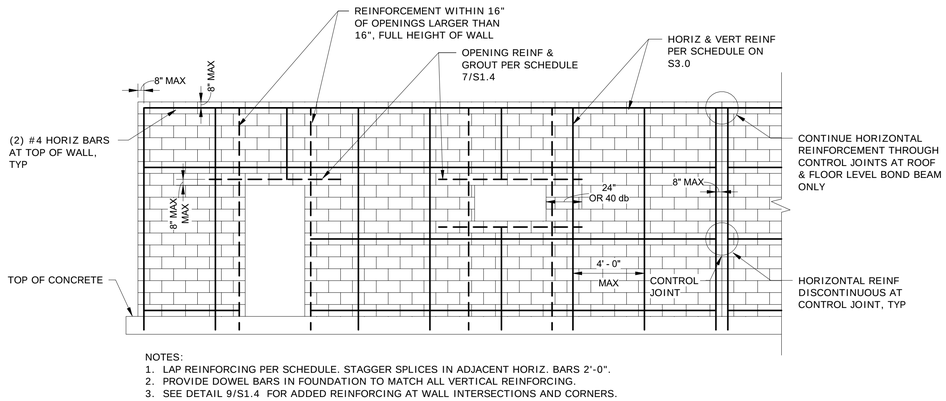
QUALITY CHECK:	PMH
DATE:	8-26-19
JOB NO:	M18-072
FIELDBOOK:	

TRAINER BOROUGH MUNICIPAL BUILDING
TRAINER BOROUGH, PA 19061

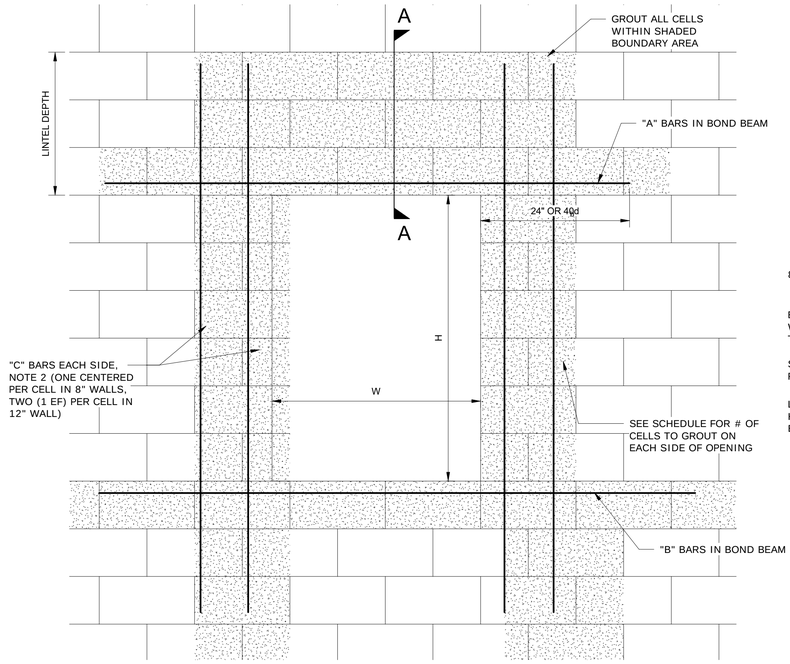
TYPICAL DETAILS

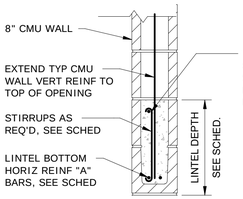
SHEET S1.3



NOTES:
1. LAP REINFORCING PER SCHEDULE. STAGGER SPLICES IN ADJACENT HORIZ. BARS 2'-0".
2. PROVIDE DOWEL BARS IN FOUNDATION TO MATCH ALL VERTICAL REINFORCING.
3. SEE DETAIL 9/S1.4 FOR ADDED REINFORCING AT WALL INTERSECTIONS AND CORNERS.

1 TYPICAL CMU WALL DETAIL
DO NOT SCALE





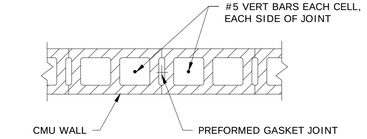
8" LINTEL SECTION

SECTIONS A-A

8" WALLS						
W	LINTEL DEPTH	STIRRUPS	"A" BARS	"B" BARS	"C" BARS	# CELLS TO GROUT
≤2'-8"	8"	-	(1) #5	(1) #5	(1) #5	ONE
>2'-8" <6'-0"	16"	#3 @ 16" [	(2) #5	(1) #5	(2) #5	TWO
>6'-0" <8'-0"	24"	#3 @ 8" [	(2) #5	(2) #5	(2) #5	TWO
>8'-0" ≤12'-0"	32"	#3 @ 8" [	(2) #5	(2) #5	(2) #5	TWO

NOTES:
1. USE BAR QUANTITIES AND SIZES GIVEN IN LINTEL SCHEDULE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
2. EXTEND "C" BARS 2'-8" MIN BEYOND TOP AND BOTTOM OF OPENING, EXCEPT THAT WHEN "H" OR "W" EXCEEDS 2'-0", "C" BARS SHALL EXTEND FULL HEIGHT.
3. "A" AND "B" BARS SHALL EXTEND 2'-8" EACH SIDE OF THE OPENINGS.
4. GROUT ALL CELLS OVER OPENING TO LINTEL DEPTH INDICATED IN SCHEDULE.
5. CELLS SHOWN TO BE GROUTED ARE MINIMUM. GROUT ALL CELLS AS SHOWN IN TYPICAL CMU WALL DETAIL.
6. DO NOT SOLID GROUT WALLS UNLESS SPECIFICALLY INDICATED.

7 TYPICAL CMU LINTEL DETAIL AND SCHEDULE
12" = 1'-0"



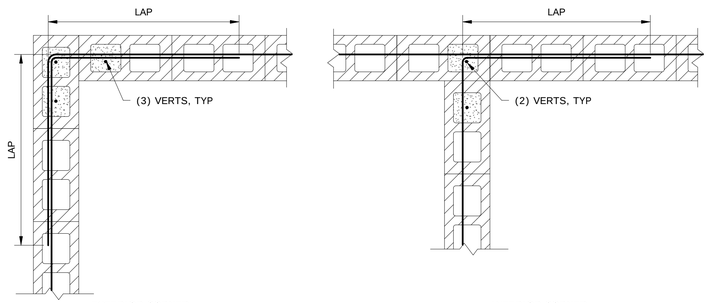
NOTES:
1. CUT ALL HORIZ REINF @ WALL JOINT EXCEPT @ TOP BOND BEAM.
2. SEE PLANS & ARCH ELEVATIONS FOR LOCATIONS.

5 MASONRY CONTROL JOINT DETAIL
DO NOT SCALE

BAR SIZE		MASONRY		
IN-LB	AREA (IN²)	MINIMUM MASONRY COVER		
		2"	3"	6"
#3	0.11	1'-3"	1'-0"	1'-0"
#4	0.20	2'-2"	1'-5"	1'-0"
#5	0.31	3'-4"	2'-3"	1'-2"
#6	0.44	6'-2"	4'-2"	2'-1"
#7	0.60	8'-5"	5'-7"	2'-10"
#8	0.79	16'-1"	8'-5"	4'-3"

NOTES
1. BASED ON COMPRESSIVE STRENGTH OF MASONRY, f'm = 1500 PSI.
2. TABLE APPLICABLE FOR BARS IN TENSION OR COMPRESSION.
3. CLEAR SPACING BETWEEN ADJACENT REINFORCEMENT SPLICES SHALL NOT BE LESS THAN MIN. MASONRY COVER OR 9d.

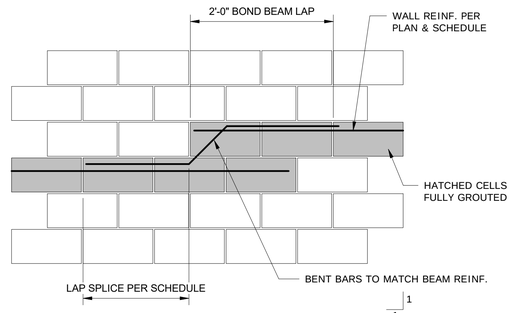
6 MASONRY REINFORCING BAR SPLICE LENGTHS
DO NOT SCALE



SINGLE MAT PLAN

NOTES:
1. LAP 48 BAR DIAMETERS OR 2'-8" MIN UNLESS NOTED OTHERWISE.
2. PROVIDE A STANDARD HOOK EACH END ON ANY HORIZONTAL BAR LESS THAN 6'-0" IN LENGTH.

9 TYPICAL CMU WALL CORNERS
DO NOT SCALE



NOTE: SLOPE BOND BEAMS AT ROOF LINE WHERE REQUIRED FOR LEDGER ATTACHMENT.

11 BOND BEAM STEP
DO NOT SCALE

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TYPICAL DETAILS

SHEET S1.4

TABLE 2304.9.1
FASTENING SCHEDULE

CONNECTION	FASTENING (a,m)	LOCATION
1. JOIST TO SILL OR GIRDER	3 - 8d COMMON (2 1/2"x0.131") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	TOENAIL
2. BRIDGING TO JOIST	2 - 8d COMMON (2 1/2"x0.131") 2 - 3" x 0.131" NAILS 2 - 3" 14 GAGE STAPLES	TOENAIL EACH END
3. 1"x6" SUBFLOOR OR LESS TO EACH JOIST	2 - 8d COMMON (2 1/2"x0.131")	FACE NAIL
4. WIDER THAN 1"x6" SUBFLOOR TO EACH JOIST	3 - 8d COMMON (2 1/2"x0.131")	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	2 - 16d COMMON (3 1/2"x0.162")	BLIND AND FACE NAIL
6. SOLE PLATE TO JOIST OR BLOCKING	16d (3 1/2"x0.135") AT 16" O.C. 3" x 0.131" NAILS AT 8" O.C. 3" 14 GAGE STAPLES AT 12" O.C.	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL	3 - 16d (3 1/2"x0.135") AT 16" O.C. 4 - 3" x 0.131" NAILS AT 16" O.C. 4 - 3" 14 GAGE STAPLES AT 16" O.C.	BRACED WALL PANELS
7. TOP PLATE TO STUD	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	END NAIL
8. STUD TO SOLE PLATE	4 - 8d COMMON (2 1/2"x0.131") 4 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	TOENAIL
	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	END NAIL
9. DOUBLE STUDS	16d (3 1/2"x0.135") AT 24" O.C. 3" x 0.131" NAILS AT 8" O.C. 3" 14 GAGE STAPLES AT 8" O.C.	FACE NAIL
10. DOUBLE TOP PLATES	16d (3 1/2"x0.135") AT 16" O.C. 3" x 0.131" NAILS AT 12" O.C. 3" 14 GAGE STAPLES AT 12" O.C.	TYPICAL FACE NAIL
DOUBLE TOP PLATES	8 - 16d COMMON (3 1/2"x0.162") 12 - 3" x 0.131" NAILS 12 - 3" 14 GAGE STAPLES	LAP SPLICE
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	3 - 8d COMMON (2 1/2"x0.131") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	TOENAIL
12. RIM JOIST TO TOP PLATE	8d (2 1/2"x0.131") AT 6" O.C. 3" x 0.131" NAILS AT 6" O.C. 3" 14 GAGE STAPLES AT 6" O.C.	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16d COMMON (3 1/2"x0.162")	16" O.C. ALONG EDGE
15. CEILING JOISTS TO PLATE	3 - 8d COMMON (2 1/2"x0.131") 5 - 3" x 0.131" NAILS 5 - 3" 14 GAGE STAPLES	TOENAIL
16. CONTINUOUS HEADER TO STUD	4 - 8d COMMON (2 1/2"x0.131")	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	3 - 16d COMMON (3 1/2"x0.162") MIN, TABLE 2308.10.4.1 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	3 - 16d COMMON (3 1/2"x0.162") MIN, TABLE 2308.10.4.1 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES	FACE NAIL
19. RAFTER TO PLATE (SEE SECTION 2308.10.4, TABLE 2308.10.1)	3 - 8d COMMON (2 1/2"x0.131") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	2 - 8d COMMON (2 1/2"x0.131") 2 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	FACE NAIL
21. 1"x8" SHEATHING TO EACH BEARING	3 - 8d COMMON (2 1/2"x0.131")	FACE NAIL
22. WIDER THAN 1"x8" SHEATHING TO EACH BEARING	3 - 8d COMMON (2 1/2"x0.131")	FACE NAIL
23. BUILT-UP CORNER STUDS	16d COMMON (3 1/2"x0.162") 3" x 0.131" NAILS 3" 14 GAGE STAPLES	24" O.C. 16" O.C. 16" O.C.
24. BUILT-UP GIRDER AND BEAMS	20d COMMON (4"x0.192") AT 32" O.C. 3" x 0.131" NAILS AT 24" O.C. 3" 14 GAGE STAPLES AT 24" O.C.	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	2 - 20d COMMON (4"x0.192") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	FACE NAIL AT ENDS AND AT EACH SPLICE
25. 2" PLANKS	16d COMMON (3 1/2"x0.162")	AT EACH BEARING
26. COLLAR TIE TO RAFTER	3 - 10d COMMON (3"x0.148") 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES	FACE NAIL
27. JACK RAFTER TO HIP	3 - 10d COMMON (3"x0.148") 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES	TOENAIL
	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	FACE NAIL
28. ROOF RAFTER TO 2-BY RIDGE BEAM	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	TOENAIL
	2 - 16d COMMON (3 1/2"x0.162") 3 - 3" x 0.131" NAILS 3 - 3" 14 GAGE STAPLES	FACE NAIL
29. JOIST TO BAND JOIST	3 - 16d COMMON (3 1/2"x0.162") 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES	FACE NAIL

TDH 11705

TABLE 2304.9.1 - CONT.
FASTENING SCHEDULE

CONNECTION	FASTENING (a,m)		LOCATION
30. LEDGER STRIP	3 - 16d COMMON (3 1/2"x0.162") 4 - 3" x 0.131" NAILS 4 - 3" 14 GAGE STAPLES		FACE NAIL AT EACH JOIST
31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD (b) SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	1/2" AND LESS	6d (c,l) 2 3/8"x0.113" NAIL (n) 1 3/4" 16 GAGE (o)	
	19/32" TO 3/4"	8d (d) OR 6d(e) 2 3/8"x0.113" NAIL (p) 2" 16 GAGE (p) 8d (c)	
	7/8" TO 1" 1 1/8" TO 1 1/4"	10d (d) OR 8d (e)	
SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING)	3/4" AND LESS 7/8" TO 1" 1 1/8" TO 1 1/4"	6d (e) 8d (e) 10d (d) OR 8d (e)	
32. PANEL SIDING (TO FRAMING)	1/2" OR LESS 5/8"	6d (f) 8d (f)	
33. FIBERBOARD SHEATHING (g)	1/2"	NO. 11 GAGE ROOFING NAIL (h) 6d COMMON NAIL (2"x0.113") NO. 16 GAGE STAPLE (i)	
	25/32"	NO. 11 GAGE ROOFING NAIL (h) 8d COMMON NAIL (2 1/2"x0.131") NO. 16 GAGE STAPLE (i)	
34. INTERIOR PANELING	1/4" 3/8"	4d (j) 6d (k)	

FOR SI: 1 INCH = 25.4 mm.

a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.
b. NAILS SPACED AT 6 INCHES ON CENTER AT EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS EXCEPT 6 INCHES AT SUPPORTS WHERE SPANS ARE 48 INCHES OR MORE. FOR NAILING OF WOOD STRUCTURAL PANEL AND PARTICLEBOARD DIAPHRAGMS AND SHEAR WALLS, REFER TO SECTION 2305. NAILS FOR WALL SHEATHING ARE PERMITTED TO BE COMMON, BOX OR CASING.
c. COMMON OR DEFORMED SHANK (6d - 2"x0.113"; 8d - 2 1/2"x0.131"; 10d - 3"x0.148").
d. COMMON (6d - 2"x0.113"; 8d - 2 1/2"x0.131"; 10d - 3"x0.148").
e. DEFORMED SHANK (6d - 2"x0.113"; 8d - 2 1/2"x0.131"; 10d - 3"x0.148").
f. CORROSION-RESISTANT SIDING (6d - 1 7/8"x0.106"; 8d - 2 3/8"x0.128") OR CASING (6d - 2"x0.099"; 8d - 2 1/2"x0.113") NAIL.
g. FASTENERS SPACED 3 INCHES ON CENTER AT EXTERIOR EDGES AND 6 INCHES ON CENTER AT INTERMEDIATE SUPPORTS, WHEN USED AS STRUCTURAL SHEATHING. SPACING SHALL BE 6 INCHES ON CENTER ON THE EDGES AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS FOR NONSTRUCTURAL APPLICATIONS.
h. CORROSION-RESISTANT ROOFING NAILS WITH 7/16 INCH DIAMETER HEAD AND 1 1/2 INCH LENGTH FOR 1/2 INCH SHEATHING AND 1 3/4 INCH LENGTH FOR 25/32 INCH SHEATHING.
i. CORROSION-RESISTANT STAPLES WITH NOMINAL 7/16 INCH CROWN OR 1 INCH CROWN AND 1 1/4 INCH LENGTH FOR 1/2 INCH SHEATHING AND 1 1/2 INCH LENGTH FOR 25/32 INCH SHEATHING. PANEL SUPPORTS AT 16 INCHES (20 INCHES IF STRENGTH AXIS IN THE LONG DIRECTION OF THE PANEL, UNLESS OTHERWISE MARKED).
j. CASING (1 1/2"x0.080") OF FINISH (1 1/2"x0.072") NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
k. PANEL SUPPORTS AT 24 INCHES. CASING OR FINISH NAILS SPACED 6 INCHES ON PANEL EDGES, 12 INCHES AT INTERMEDIATE SUPPORTS.
l. FOR ROOF SHEATHING APPLICATIONS, 8d NAILS (2 1/2"x0.113") ARE THE MINIMUM REQUIRED FOR WOOD STRUCTURAL PANELS.
m. STAPLES SHALL HAVE A MINIMUM CROWN WIDTH OF 7/16 INCH.
n. FOR ROOF SHEATHING APPLICATIONS, FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.
o. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS FOR SUBFLOOR AND WALL SHEATHING AND 3 INCHES ON CENTER AT EDGES, 6 INCHES AT INTERMEDIATE SUPPORTS FOR ROOF SHEATHING.
p. FASTENERS SPACED 4 INCHES ON CENTER AT EDGES, 8 INCHES AT INTERMEDIATE SUPPORTS.

10 WOOD FASTENING SCHEDULE
DO NOT SCALE

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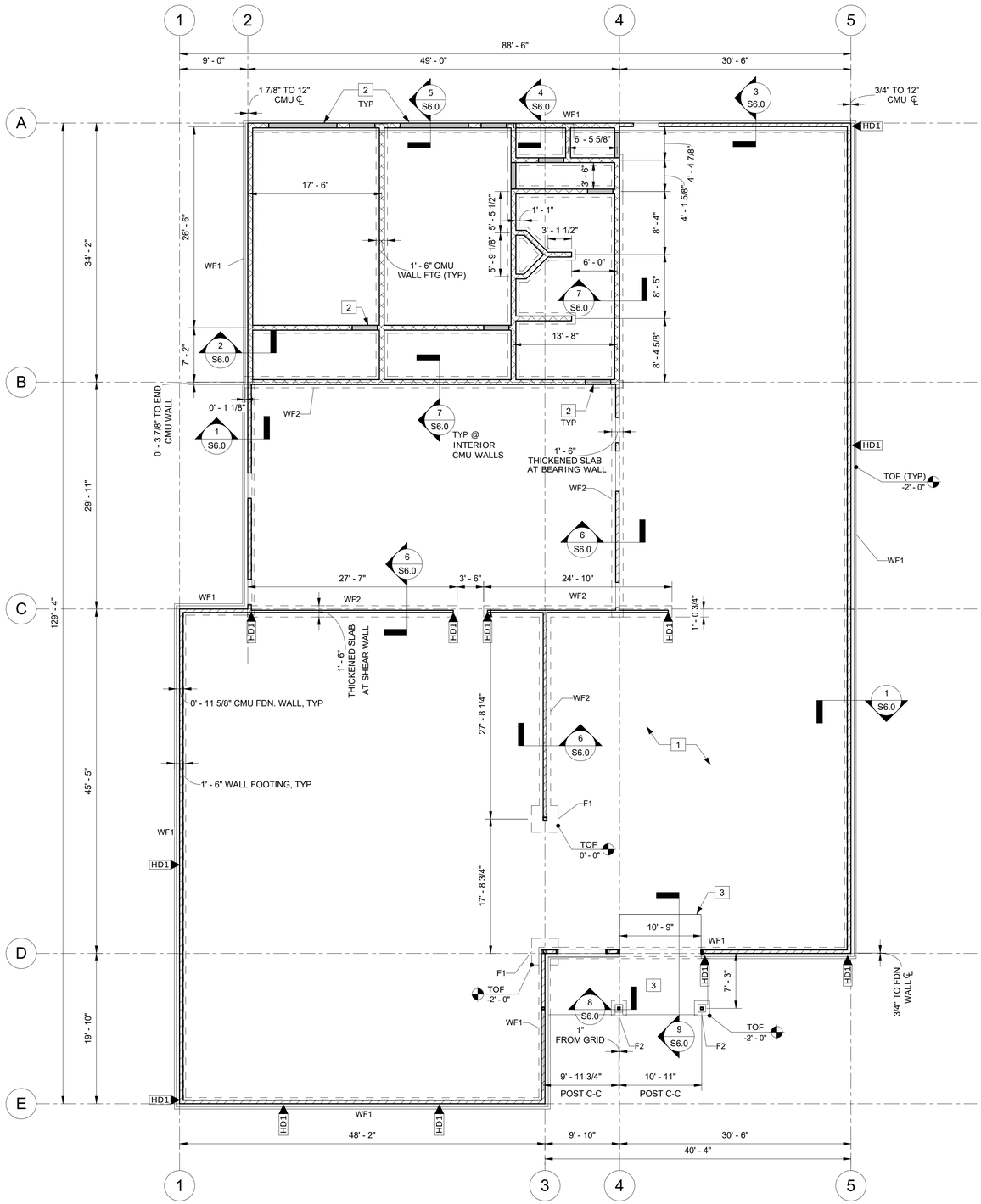
TYPICAL DETAILS

SHEET S1.5



1 FOUNDATION PLAN
1/8" = 1'-0"

FLAG NOTES

1. 4" CONCRETE SLAB-ON-GRADE W/ #4 BARS @ 18" O.C E.W
2. HOLD DOWN CMU 1 COURSE AT DOORS
3. SLOPE EXTERIOR SLAB AWAY FROM BUILDING AT ENTRANCE

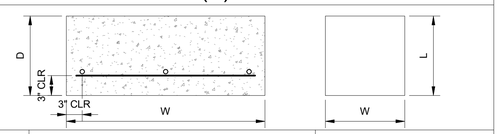
GENERAL NOTES

1. DIMENSIONS HAVE BEEN PROVIDED TO ENGINEER THROUGH ARCHITECT.

LEGEND

HD1 WOOD SHEAR WALL HOLD DOWN PER SCHEDULE S1.3

FOOTING (F) SCHEDULE



MARK	DIMENSION	REINFORCEMENT
ALL WALL FOOTINGS	1'-6" WIDE X 1'-0" D	(2) #4 BARS CONT.
F1	3'-6" L X 3'-6" W X 12" D	(4) #4 BARS EACH WAY
F2	2'-0" L X 2'-0" W X 12" D	(2) #4 BARS EACH WAY

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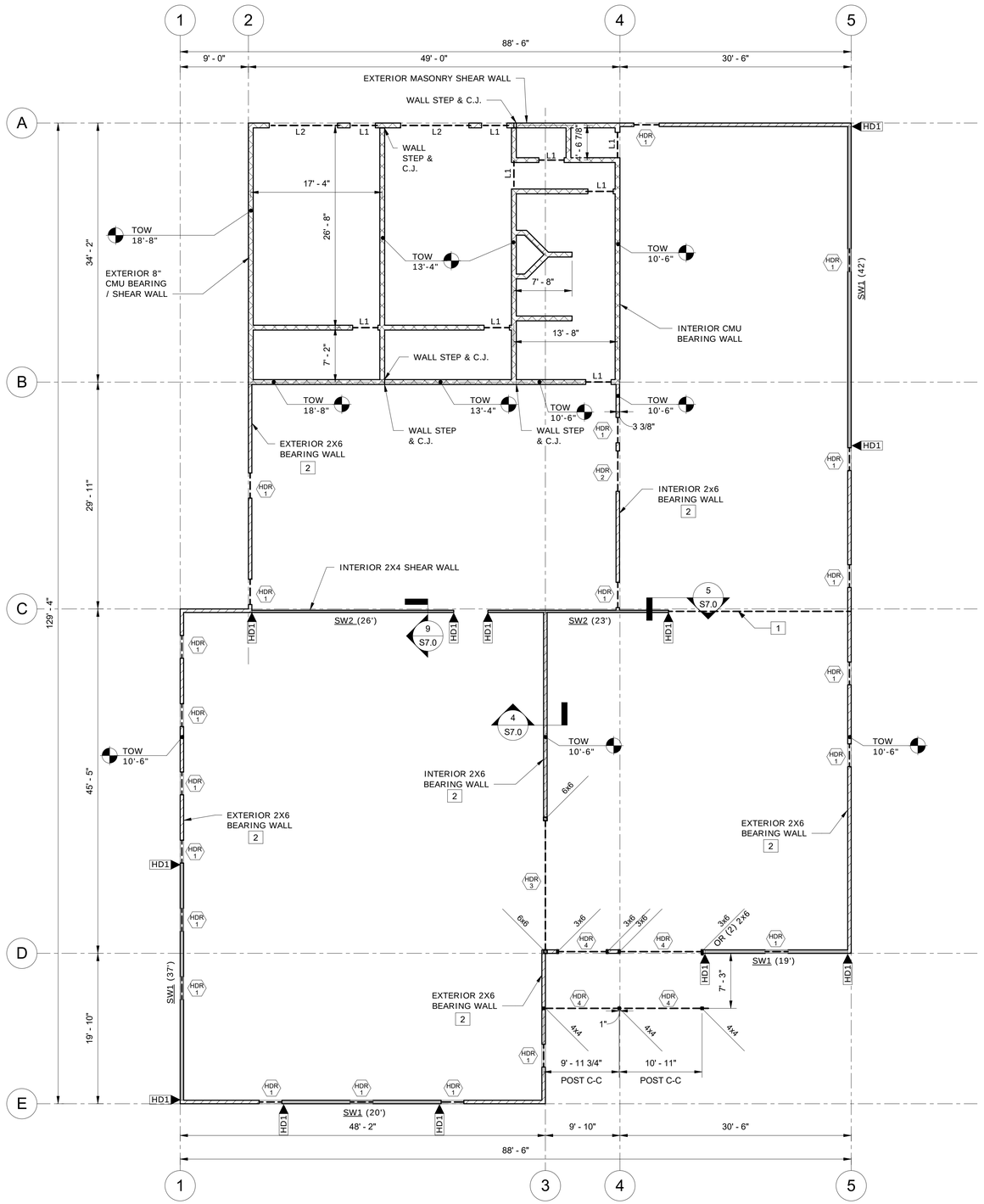
FOUNDATION PLAN

SHEET S2.0



1 FRAMING PLAN
1/8" = 1'-0"

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GENERAL NOTES

1. ALL EXTERIOR (EXPOSED) WOOD PT, U.N.O.
2. DIMENSIONS HAVE BEEN PROVIDED TO ENGINEER BY ARCHITECT.

FLAG NOTES

1 TRUSS TO ACT AS DRAG STRUT FOR SHEAR WALL BOTTOM CHORD TENSION/COMPRESSION FORCE OF 1.3 KIPS (ASD)

2 CONSTRUCT BEARING WALLS WITH 2X6 @ 24" O.C MAX AND W/ BLOCKING @ 4'-0" O.C VERT.

LEGEND

SWX (LENGTH IN FT)	WOOD SHEAR WALL PER DETAIL 1/S1.3.
HD1	WOOD SHEAR WALL HOLD DOWN PER DETAIL 2/ S1.3
LX	CMU LINTEL PER SCHEDULE 1/S1.4
XXX	TIMBER POST

HEADER SCHEDULE

MARK	SIZE	GRADE	REMARKS
HDR 1	(2) 2x8	DF-L NO. 1/NO. 2	SPANS LESS THAN 3'-6"
HDR 2	(3) 2x12	DF-L NO. 1/NO. 2	SPANS BETWEEN 3'-6" TO 6'-0"
HDR 3	5.25"X16"	PARALLAM PSL 2.0E	
HDR 4	(2) 2X12	DF-L NO.2	PRESSURE/PRESERVATIVE TREATED AT EXPOSED PORCH LOCATIONS

CMU WALL REINFORCING SCHEDULE

VERTICAL	HORIZONTAL
#5 BARS @ 48" O.C.	(2) #4 BARS IN FULLY GROUTED BOND BEAM AT TOP OF WALL. AND BEARING LOCATIONS. STANDARD WEIGHT (NO. 9) LADDER OR WIRE REINFORCEMENT @ 16" O.C.

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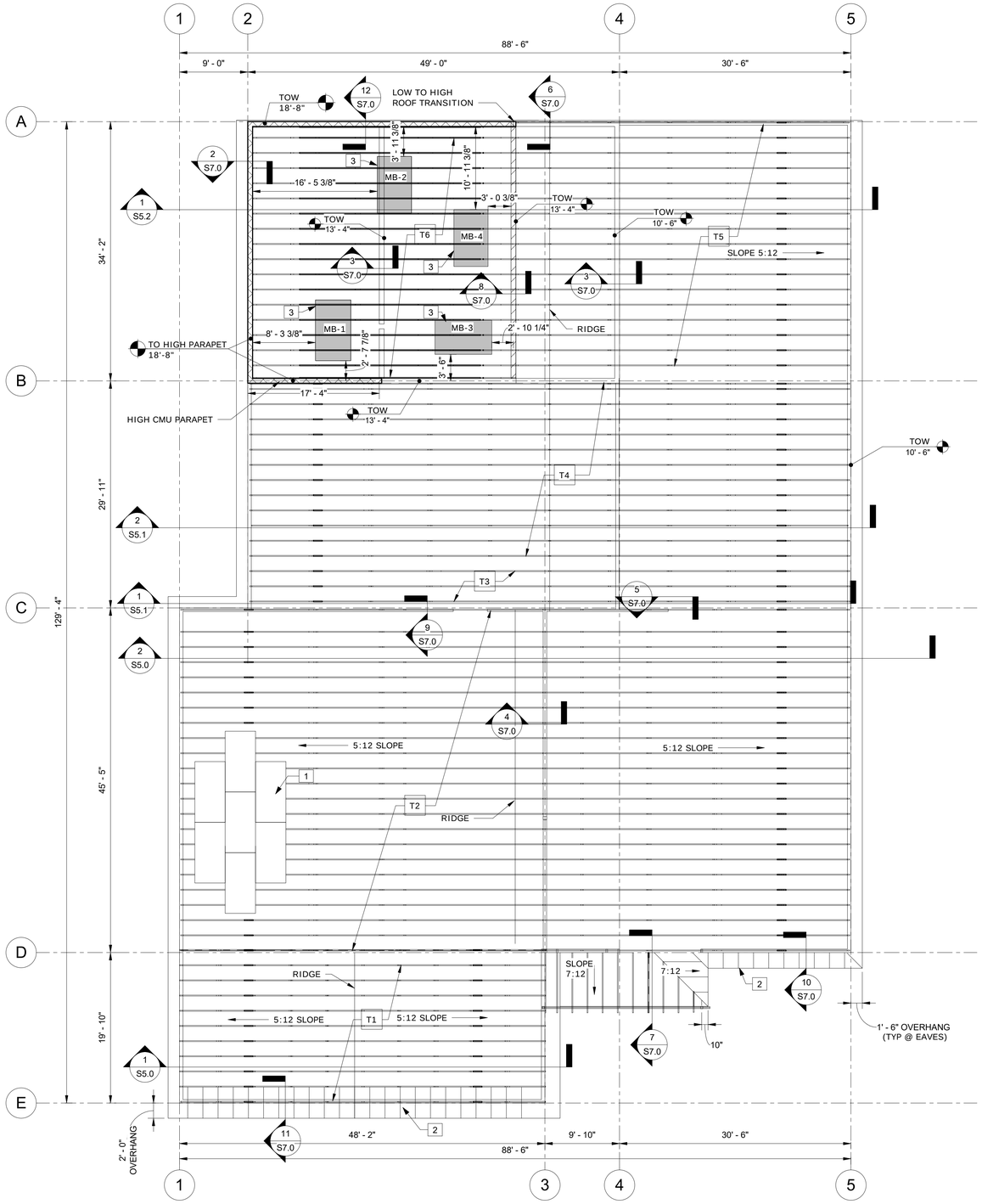
MAIN FLOOR FRAMING PLAN

SHEET S3.0



1 ROOF FRAMING PLAN
1/8" = 1'-0"

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105 CHESLEY DR., SUITE 203 • MEDIA, PENNSYLVANIA 19063

DRAWN BY:	BMS
DESIGNED BY:	MEB
QUALITY CHECK:	PMH
DATE:	8-26-19
JOB NO:	M18-072
FIELDBOOK:	

GENERAL NOTES

1. WOOD TRUSSES TO BE DESIGNED BY OTHERS (DEFERRED DESIGN SUBMITTAL). TRUSS DESIGNER TO FOLLOW GENERAL OUTLINE AND LOADING REQUIREMENTS SHOWN HERE. TRUSS DESIGNER SHALL DETERMINE BRIDGING AND BRACING REQUIREMENTS (TEMPORARY & PERMANENT) TO ENSURE STABILITY OF TRUSSES DURING CONSTRUCTION AND IN SERVICE.

LEGEND

TX WOOD PRE ENGINEEED PRE-FABRICATED TRUSSES @ 2'-0" O.C. TYP. SEE BUILDING SECTION S5.0, S5.1, S5.2 FOR OTHER ATTIC OPENING REQUIREMENTS.

FLAG NOTES

1. 48/24 CDX PLYWOOD SHEATHING. FASTEN TO WOOD TRUSSES W/ 8D NAILS @ 6" O.C AT BOUNDARIES AND SUPPORTING MEMBERS. 12" O.C IN FIELD (UNBLOCKED)
2. EYEBROW PER DETAIL 10/S7.0 SLOPE 6:12
3. PROVIDE SOLID BLOCKING BETWEEN TRUSSES AT RTU LOCATIONS

MECHANICAL EQUIPMENT WEIGHTS

VERIFY ALL SIZES, WEIGHTS AND LOCATIONS OF MECHANICAL EQUIPMENT WITH THE MECHANICAL ENGINEER AND ARCHITECT

RTU MARK	EQUIPMENT WEIGHT	SIZE
MB-1	1760 #	4'-8" X 8'-0"
MB-2 & MB-4	1210 #	4'-6" X 7'-6"
MB-3	1650 #	4'-6" X 7'-6"

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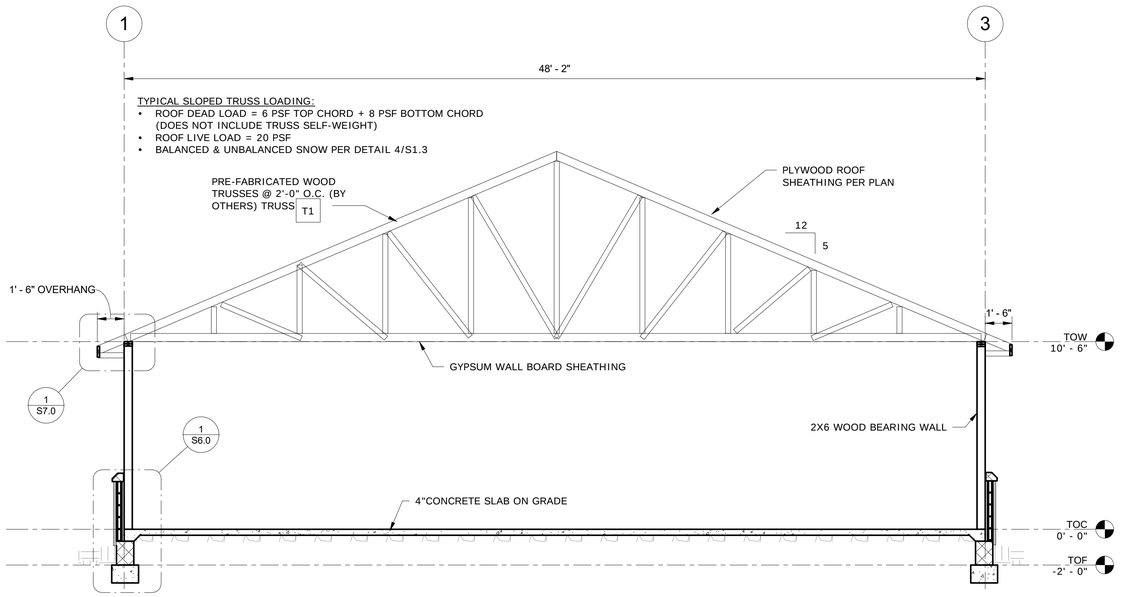
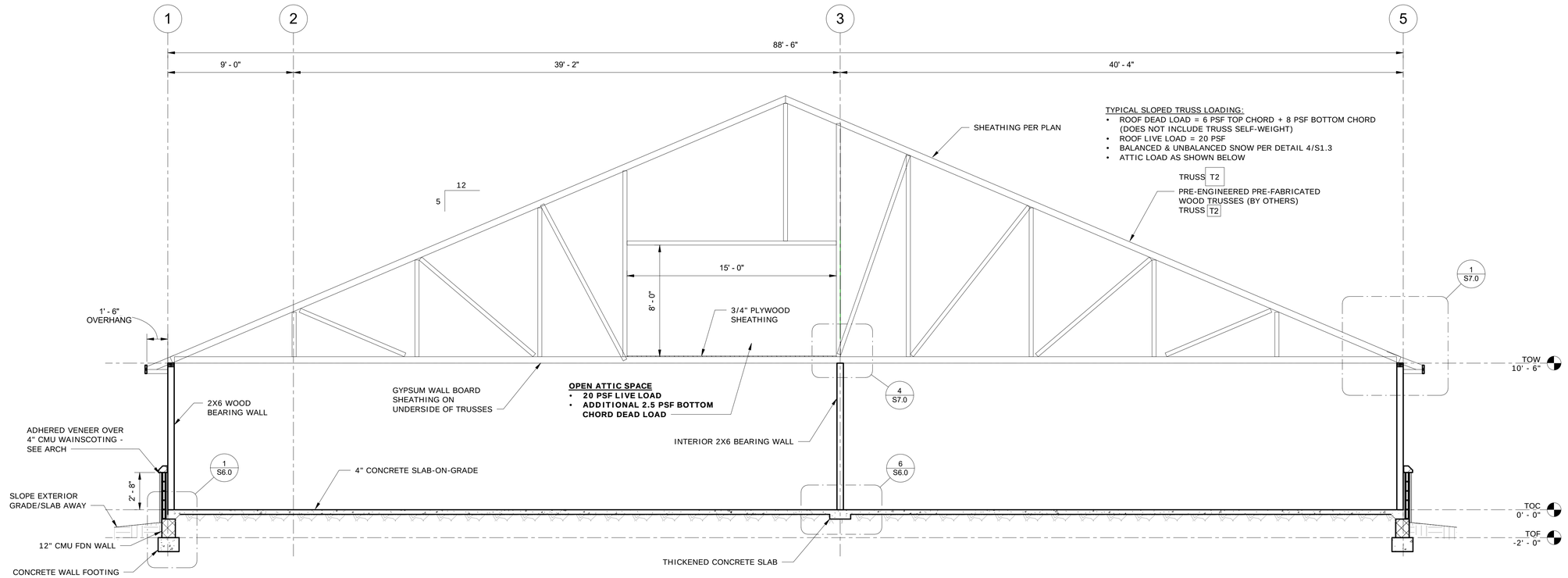
ROOF FRAMING PLAN

SHEET S4.0



1 FRONT BUILDING SECTION
1/4" = 1'-0"



2 BUILDING SECTION AT ATTIC
1/4" = 1'-0"

GENERAL NOTES

1. ACTUAL TRUSS WEB CONFUGURATION TO BE DETERMINED BY TRUSS DESIGNER, BASED ON LOADS PROVIDED IN DETAILS, NOTES AND SECTIONS.
2. PIGGYBACK TRUSSES OR OTHER ERECTION / SHIPPING CONSIDERATIONS ARE ACCEPTABLE PROVIDED FINAL DESIGN INTENT IS FOLLOWED.
3. TEMPORARY AND PERMANENT BRACING SHALL BE DESIGNED BY TRUSS MANUFACTURER.
4. ATTIC OPEN SPACE SHALL BE PROVIDED AS SHOWN.

ISSUED FOR BID

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL
MARY E. BARFIELD
ENGINEER
PE084736

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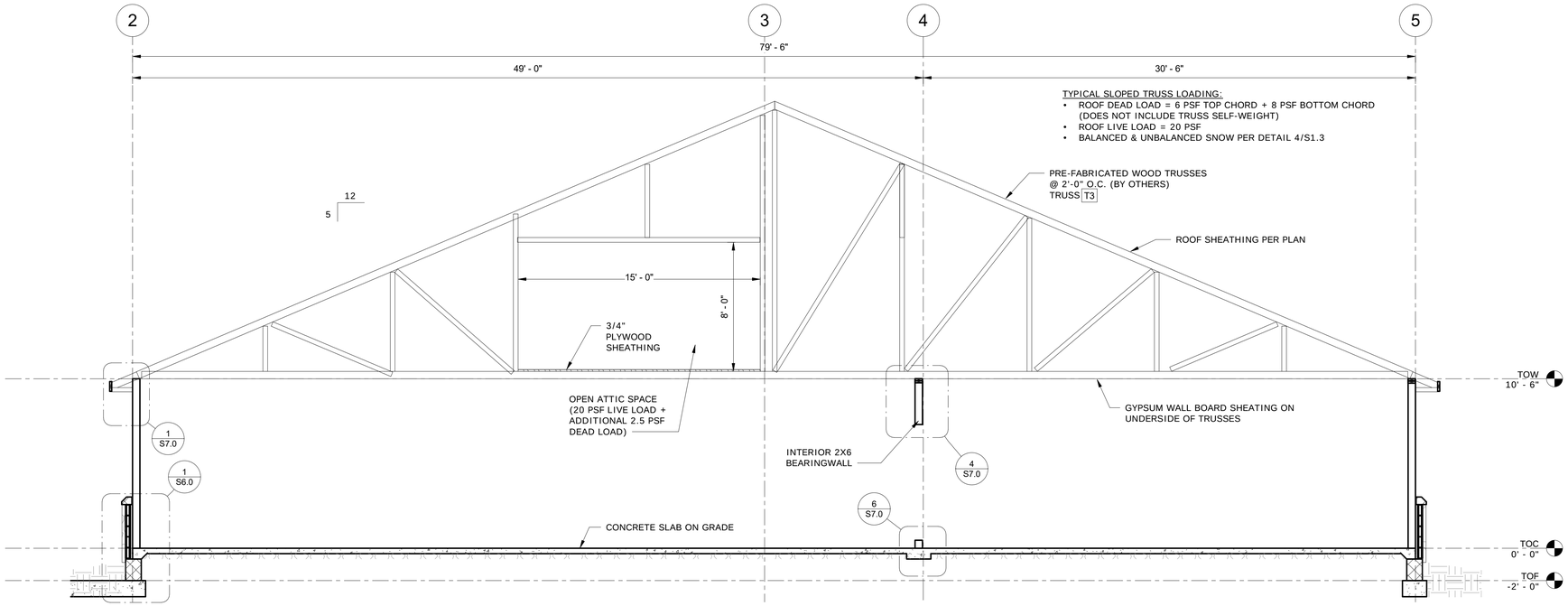
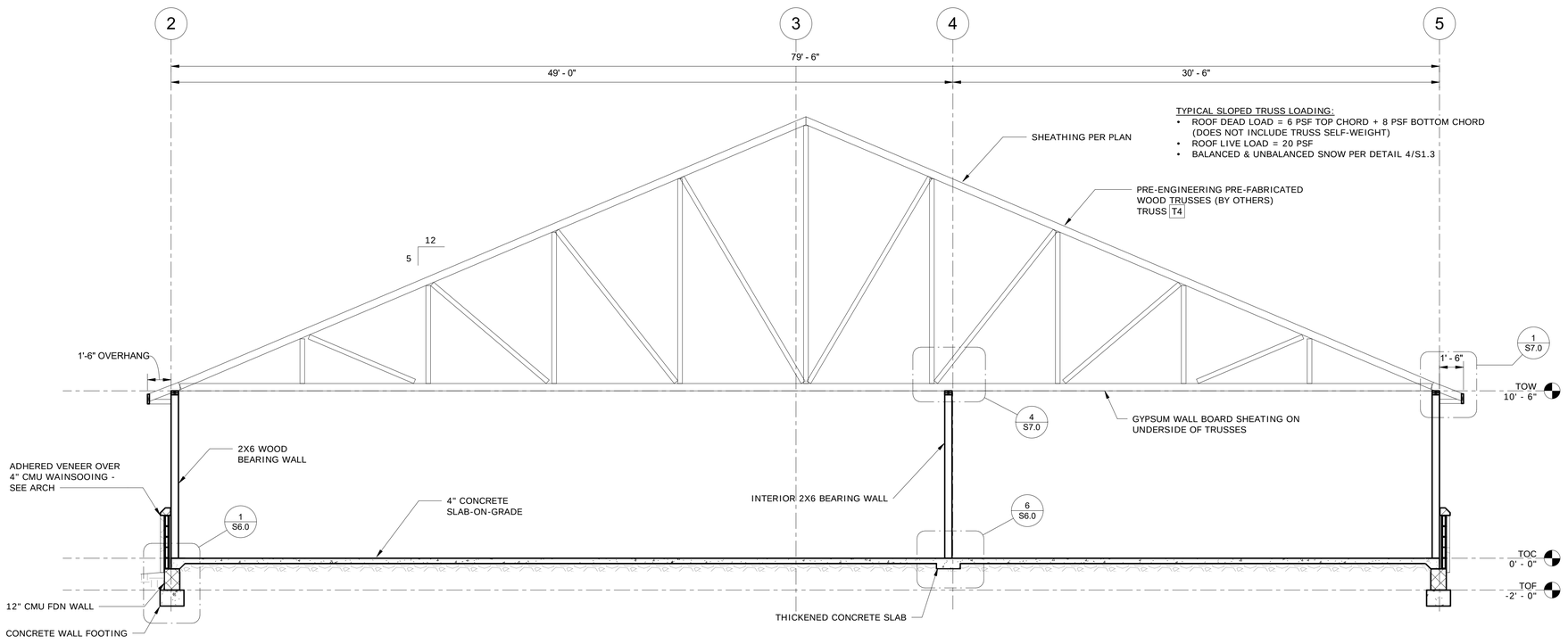
BUILDING SECTIONS

SHEET S5.0



1 ATTIC TRUSS T3
1/4" = 1'-0"



2 BUILDING SECTION AT TRUSS T4
1/4" = 1'-0"

GENERAL NOTES

1. ACTUAL TRUSS WEB CONFUGURATION TO BE DETERMINED BY TRUSS DESIGNER, BASED ON LOADS PROVIDED IN DETAILS, NOTES AND SECTIONS.
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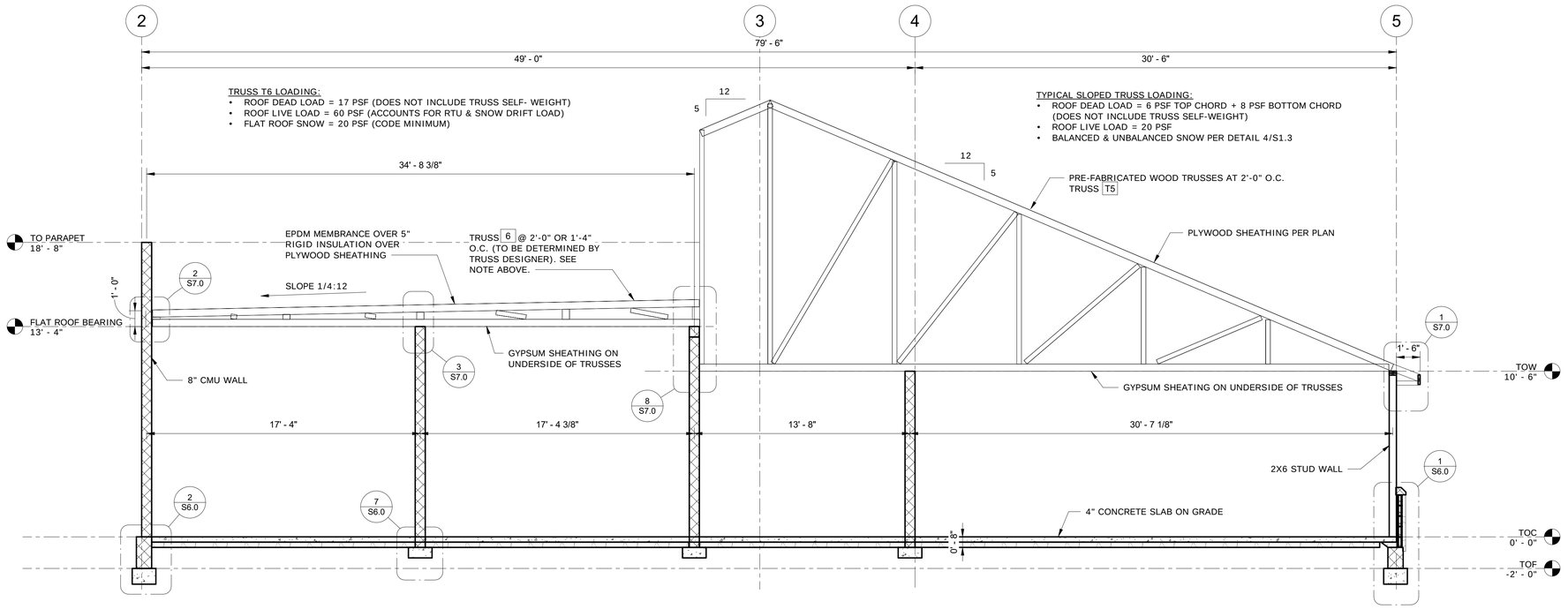
BUILDING SECTIONS

SHEET S5.1



1 BUILDING SECTION AT FLAT ROOF
1/4" = 1'-0"

GENERAL NOTES

1. ACTUAL TRUSS WEB CONFUGURATION TO BE DETERMINED BY TRUSS DESIGNER, BASED ON LOADS PROVIDED IN DETAILS, NOTES AND SECTIONS.
2. PIGGYBACK TRUSSES OR OTHER ERECTION / SHIPPING CONSIDERATIONS ARE ACCEPTABLE PROVIDED FINAL DESIGN INTENT IS FOLLOWED.
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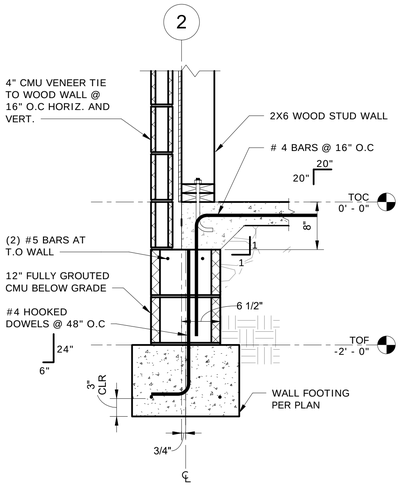
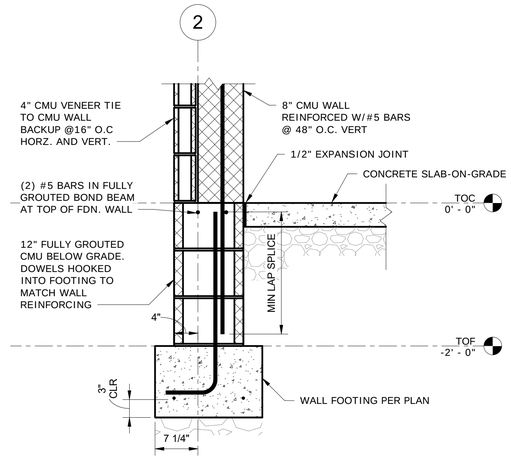
BUILDING SECTIONS

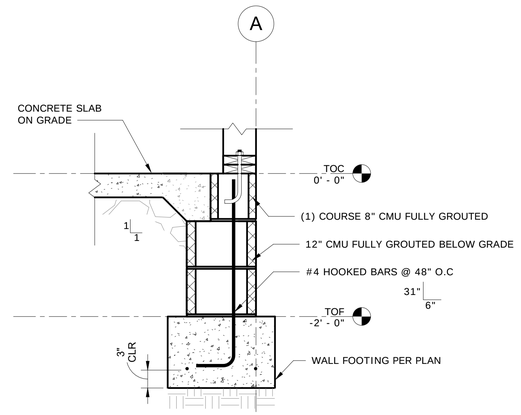
SHEET S5.2



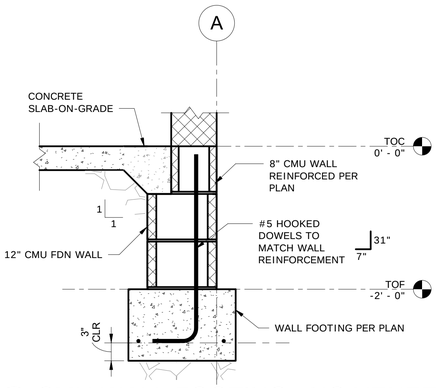
1 TYPICAL STUD WALL AT FOOTING
1" = 1'-0"



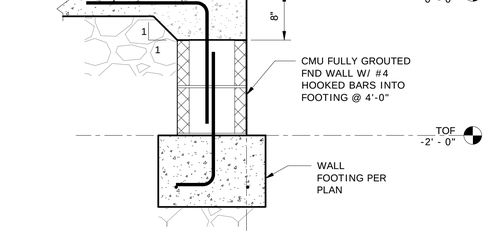
2 TYPICAL EXTERIOR CMU FOOTING
1" = 1'-0"



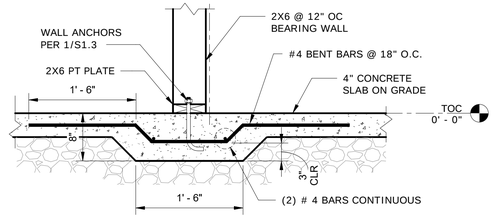
3 WOOD WALL FOOTING - NO VENEER
1" = 1'-0"



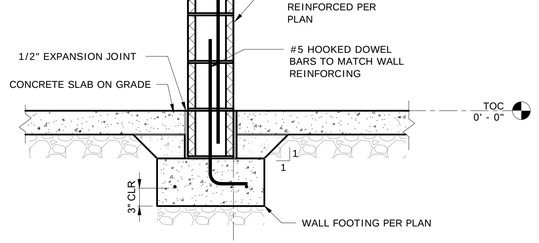
4 CMU WALL FOOTING - NO VENEER
1" = 1'-0"



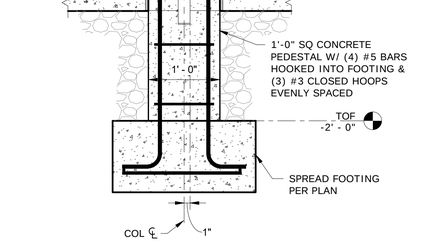
5 SLAB AT OPENING
1" = 1'-0"



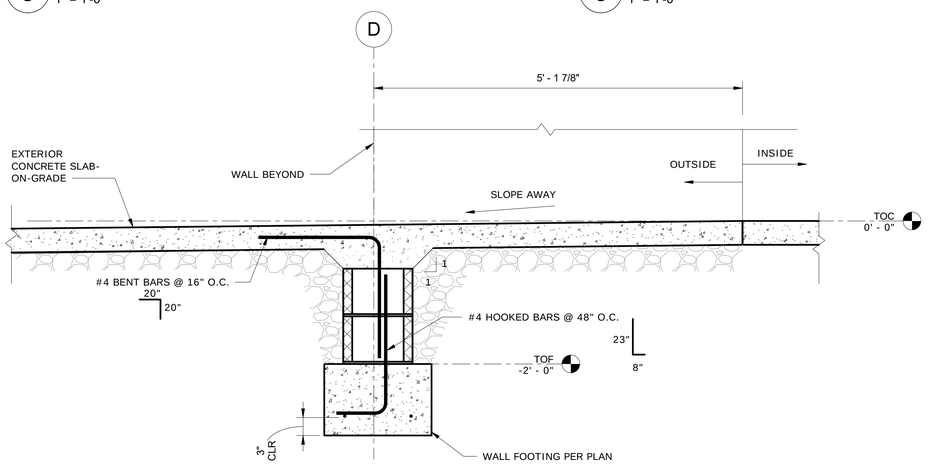
INTERIOR WOOD BEARING/SHEAR WALL FOOTING
6 1" = 1'-0"



7 INTERIOR CMU WALL FOOTING
1" = 1'-0"



8 EXTERIOR POST FOOTING
1" = 1'-0"



9 SLAB AT POLICE ENTRANCE
1" = 1'-0"

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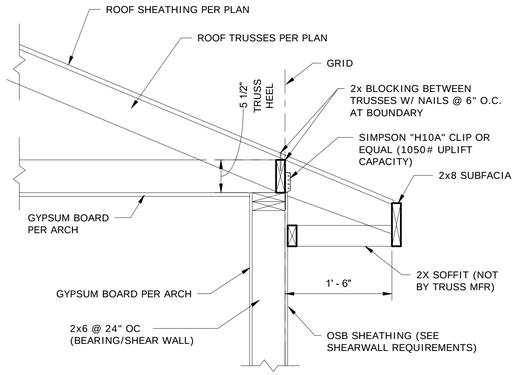
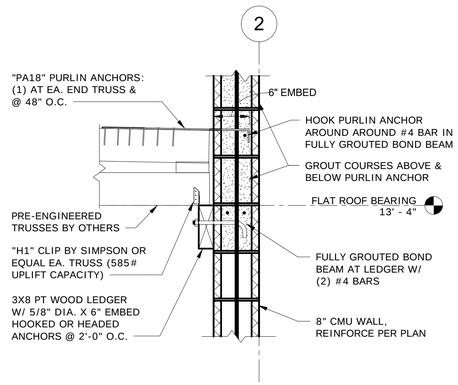
FOUNDATION SECTIONS AND DETAILS

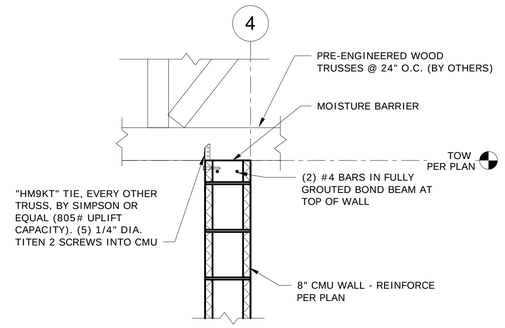
SHEET S6.0



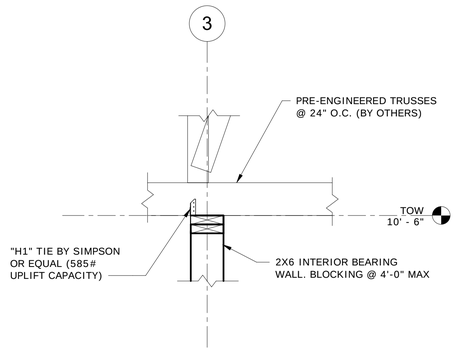
1 TRUSS AT EXTERIOR WOOD WALL
1" = 1'-0"



2 TRUSS AT EXTERIOR CMU WALL
1" = 1'-0"



3 TRUSS @ INTERIOR CMU WALL
1" = 1'-0"



4 TRUSS @ INTERIOR WOOD WALL
1" = 1'-0"

5 DRAG STRUT CONNECTION
1" = 1'-0"

6 TOP OF CMU AT GABLE END
1" = 1'-0"

7 FRAMING AT FRONT PORCH
1/2" = 1'-0"

8 TRUSS TRANSITION DETAIL
1" = 1'-0"

9 TOP OF INTERIOR SHEAR WALL
1 1/2" = 1'-0"

10 "EYEBROW" DETAIL
1" = 1'-0"

11 OUTLOOKERS DETAIL
1 1/2" = 1'-0"

12 JOISTS PARALLEL CMU WALL
1" = 1'-0"

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FRAMING SECTIONS AND DETAILS

SHEET S7.0

GENERAL SPECIFICATIONS

1. DRAWINGS ARE DIAGRAMMATIC. COORDINATE AND DETERMINE FINAL LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
2. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST WITH OWNER ACCEPTANCE TESTING.
3. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
4. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
6. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
7. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPINGAND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
8. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
9. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS IN BID PROPOSAL. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AT LEAST 48 HOURS IN ADVANCE.
10. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
11. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
12. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
13. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
14. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
15. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
16. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
17. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
18. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
19. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
20. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"x12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
21. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
22. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
23. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
24. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
25. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

MECHANICAL DUCTWORK/EQUIPMENT NOTES

1. ALL DUCTWORK SHALL BE IN ACCORDANCE WITH SMACNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION) STANDARDS.
2. PRIOR TO COMMENCING WORK, SHEET METAL SHOP DRAWINGS MUST BE PREPARED AND SUBMITTED FOR REVIEW AND APPROVAL TO THE ARCHITECT/ENGINEER. SHEETMETAL SHOP DRAWINGS SHALL INCLUDE ALL ELEMENTS OF THE EQUIPMENT, DUCTWORK, AIR DEVICES, AND REFLECTED CEILING PLAN FOR COORDINATION OF CRITICAL DIMENSIONS OF ARCHITECTURAL/ STRUCTURAL COMPONENTS.
3. SHEET-METAL FITTINGS SHOWN ARE TO BE PROVIDED. NO SUBSTITUTIONS ALLOWED WITHOUT PRIOR CONSENT FROM ENGINEER AND WILL BE REQUIRED TO BE REPLACED IF INSTALLED.
4. ALL WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AND DUCTS (INCLUDING DIVIDED DUCTS) AND TRANSITIONS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
5. VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. VERIFY AND PROVIDE DUCT TRANSITIONS TO EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATING.
6. SUPPORT ALL EQUIPMENT AND DUCTWORK FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR TERMINAL DEVICES.
8. PROVIDE FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO AIR HANDLING UNITS AN FANS.
9. THE INSIDE OF ALL UNLINED DUCTWORK VISIBLE THROUGH A GRILLE SHALL BE PAINTED FLAT BLACK.
10. PROVIDE FIRE DAMPERS WHERE SHOWN ON DRAWINGS AND/OR WHERE REQUIRED BY NFPA (NATIONAL FIRE PROTECTION ASSOCIATION) 90A. FOR DUCTS THAT PENETRATE FIRE WALLS, FLOORS AND PARTITIONS, PROVIDE SLEEVES WHERE PENETRATIONS ARE NOT PERPENDICULAR TO SURFACE PENETRATION. ENCLOSE DAMPERS IN 10 GAUGE STEEL SLEEVE.
11. INSULATE ALL SUPPLY AIR AND RETURN AIR DUCTWORK WITH R-6 (INSTALLED) FIBROUS GLASS DUCT-WRAP WITH FOIL-DRAFT FLAME RESISTANT VAPOR BARRIER. INSULATION SHALL BE FIRE RATED IN ACCORDANCE WITH ASHRAE (AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS) 90A, 50/25 SMOKE DEVELOPMENT AND FLAME SPREAD REQUIREMENTS.
12. FLEXIBLE DUCT LENGTH SHALL NOT EXCEED 10 FEET. FLEXIBLE DUCT SHALL BE FABRIC COVERED GALVANIZED STEEL HELIX MECHANICALLY LOCKED TO THE FABRIC. THE FABRIC SHALL BE A LAMINATE OF ALUMINUM FOIL FIBERGLASS AND ALUMINIZED POLYESTER WITH VAPOR BARRIER JACKET RATED AT 5500 RPM WITH FLEX MASTER USA TYPE 3 OR EQUAL. INSULATION R-VALUE SHALL MATCH SPECIFIED R-VALUE FOR AIR SYSTEM SERVED.
13. THOROUGHLY CLEAN ALL NEW DUCTWORK AFTER INSTALLATION.
14. VOLUME DAMPERS SHALL BE PROVIDED AT THE BRANCH TAKE-OFF OF THE MAIN AND FOR EACH AIR DEVICE.
15. DUCTWORK SCHEDULE
    A. MEDIUM PRESSURE - SUPPLY DUCTWORK FROM AIR HANDLING UNIT TO VAV BOX SHALL BE 4-INCH W.G. CONSTRUCTION, LEAKAGE CLASS A, SEAL CLASS 12. MATERIAL SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE.
    B. LOW PRESSURE - ALL OTHER SUPPLY AIR, RETURN AIR AND EXHAUST AIR DUCTWORK SHALL BE 2-INCH W.G. CONSTRUCTION, LEAKAGE CLASS B, SEAL CLASS 12. MATERIAL SHALL BE GALVANIZED STEEL UNLESS NOTED OTHERWISE.

MECHANICAL PIPING NOTES

1. PIPE MATERIALS
A. CONDENSATE PIPING:
   3/4" DIAMETER CONDENSATE PIPING HVAC EQUIPMENT 5 TONS AND BELOW
   1" DIAMETER CONDENSATE PIPING UP TO 20 TONS OF CONNECTED COOLING CAPACITY.
   PIPE MATERIAL: TYPE DWV COPPER TUBING
   FITTING MATERIAL: WROUGHT COPPER AND BRONZE SOLDER JOINTS.
   PIPE JOINT: 95- 5 LEAD FREE SOLDER.
B. REFRIGERANT PIPING:
   PIPE MATERIAL: HARD-DRAWN (TEMPERED) COPPER TUBE, TYPE L ACR.
   PIPE JOINT: BRAZED BRAZING MATERIAL SHALL BE SILFOS 15.
2. INSULATION:
A. CONDENSATE DRAINAGE PIPING: 1-INCH THICK FIBERGLASS PIPE INSULATION AND WITH ALL SERVICE JACKET.
B. SUCTION AND LIQUID PIPING SHALL BE INSULATED. INSULATION SHALL BE 1-INCH THICK CLOSED CELL ELASTOMERIC BY ARMACELL INSULATION. WHERE LOCATED OUTDOORS, THE INSULATION SHALL BE FURNISHED WITH A UV RESISTANT COVER.
C. INSULATION SHALL BE BY OWENS CORNING. CERTAIN-TEED OR MANVILLE.
D. INSULATION JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATING OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED.
3. HANGERS, ANCHORS, CLAMPS AND INSERT
A. PROVIDE CAST BRASS SPLIT RING HINGE HANGERS. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES. PREVENT VIBRATION, SECURE PIPING IN PLACE SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINES THREADS.
B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP. UL APPROVED CONCRETE INSERTS SHALL BE PHILLIPS OR APPROVED EQUAL EXPANSION SHIELD. RAMSET OR POWER DRIVEN INSETS WILL NOT BE ALLOWED.
C. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.
4. SLEEVE AND PENETRATIONS
A. PIPE SLEEVES THROUGH FIRE RATED CONSTRUCTION SHALL BE SCHEDULED 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON FIRE RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCAL LONGITUDINAL SEAMS.
B. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATING SHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER WITH APPROVED SEALANT. PACK OR FORM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PRINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.
5. METHODS
A. PITCH PIPING 1 INCH IN 20 FEET, TO ALLOW FOR DRAINING. (UNLESS OTHERWISE NOTED)
B. REFRIGERANT PIPING: ALL PIPING SHALL BE SUPPORTED WITH CUSH A CLAMPS AND STRUT AS MANUFACTURED BY B-LINE, INC. OR APPROVED EQUAL. ALL REFRIGERANT PIPING SHALL BE IN STALLED IN STRICT ACCORDANCE WITH RECOMMENDATIONS OF THE REFRIGERATION EQUIPMENT MANUFACTURED AND SHALL INCLUDE. BUT SHALL NOT BE LIMITED TO, FLEXIBLE CONNECTIONS , VALVES, RELIEF VALVES, EXPANSION VALVES, SOLENOID VALVES, FILTER DRIERS, PIPE INSULATION, FLASHING AND SLEEVES THOUGH WALLS, PROPER SUPPORT OF REFRIGERANT PIPING, AND FULL REFRIGERANT CHARGE. ALL PIPING JOINTS SHALL BE BRAZED WITH SILFOS 15 FILLER METAL AND THE PIPING CHARGED WITH DRY NITROGEN WHILE CONSTRUCTING THE JOINTS PITCH REFRIGERATION PIPING IN DIRECTION OF OIL RETURN TO COMPRESSOR. PROVIDE TRAPS IN SUCTION LINE RISERS WHERE REQUIRED. TRAPS SHALL BE FABRICATED FROM SHORT RADIUS STREET ELLS. ALL OTHER ELLS SHALL BE LONG RADIUS TYPE. SOLENOID VALVES SHALL BE INSTALLED WITH STEMS POINTING UP. AFTER THE REFRIGERANT PIPING HAS BEEN COMPLETED, THE SYSTEM SHALL BE PRESSURE TESTED AT 300 PSI (HIGH SIDE) AND 150 150 PSI (LOW SIDE). THIS PRESSURE SHALL BE MAINTAINED ON THE SYSTEM FOR 12 CONSECUTIVE HOURS WITH NO APPRECIABLE PRESSURE CHANGE. WHILE THE PRESSURE IS APPLIED. THE SYSTEM SHALL BE CHECKED FOR LEAKS. THE SYSTEM SHALL THEN BE EVACUATED TO A MINIMUM VACUUM EQUIVALENT OF 500 MICRONS AND MAINTAINED FOR 12 HOURS. RELEASE VACUUM WITH NITROGEN AND EVACUATE AGAIN. AFTER EVACUATION, THE SYSTEM SHALL BE CHARGED WITH REFRIGERANT IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE EQUIPMENT MANUFACTURER.

HVAC GENERAL NOTES:

1. THERMOSTATS SHALL BE HONEYWELL COMMERCIAL VISION PRO 8000, 7-DAY PROGRAMMABLE WITH OVER-RIDE BUTTON FOR OCCUPANT AFTER HOURS CONTROL AND PASSWORD PROTECTION. INSTALL THERMOSTATS 48" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT. COORDINATE FINAL LOCATION FOR EACH THERMOSTAT WITH ARCHITECT IN FIELD.
2. ALL CONDENSATE DRAIN LINES SHALL BE PIPED FULL SIZE OF UNIT DRAIN OUTLET AND PROVIDED WITH 'P' TRAP. TERMINATE CONDENSATE DRAIN PIPING AT NEAREST DRAIN.
3. EACH ROOFTOP UNIT SHALL HAVE A DUCT SMOKE DETECTOR LOCATED IN THE RETURN AIR STREAM. DUCT SMOKE DETECTOR SHALL DE-ENERGIZE RESPECTIVE UNIT UPON ACTIVATION. DUCT SMOKE DETECTOR SHALL BE PROVIDED AND INSTALLED BY HE MECHANICAL CONTRACTOR. DUCT SMOKE DETECTOR SHALL BE WIRED TO THE FIRE ALARM SYSTEM BY THE ELECTRICAL CONTRACTOR UNDER THE MECHANICAL CONTRACTOR'S SCOPE OF WORK. MECHANICAL CONTRACTOR SHALL COORDINATE ALL WORK WITH THE ELECTRICAL CONTRACTOR.
4. ALL CONTROL AND INTERLOCK WIRING FOR HVAC EQUIPMENT, WHETHER IT BE LINE OR LOW VOLTAGE, SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR.
5. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH NEC.
6. EACH SYSTEM, EACH PIECE OF EQUIPMENT AND EACH AIR DEVICE SHALL BE FULLY TESTED AND BALANCED UPON COMPLETION OF THE INSTALLATION WORK.
7. TESTING AND BALANCING SHALL BE PROVIDED BY A COMPANY SPECIALIZING IN THE TESTING AND BALANCING OF HVAC SYSTEMS. THE TEST AND BALANCE COMPANY SHALL BE A MEMBER OF AABC OR NEBB. BALANCE AIRFLOWS WITHIN 10% OF SCHEDULED AIR FLOWS TO ALL AIR DEVICES. IF AIR FLOW CANNOT BE BALANCED TO WITHIN 10%, PERFORM UP TO TWO PITOT TUBE TRAVERSES, AS DIRECTED BY OWNERS REPRESENTATIVE, TO DETERMINE THE CAUSE OF THE DEFICIENCY. SUBMIT SIX COPIES OF THE BALANCING REPORT FOR REVIEW PRIOR TO FINAL INSPECTIONS.
8. DESIGN CONDITIONS ARE AS FOLLOWS:
   OUTDOOR SUMMER: 91 DEG DB, 75 DEG WB (ASHRAE 1%)
   INDOOR SUMMER: 74 DEG DB, 55% RH
   OUTDOOR WINTER: 11.6 DEG DB (ASHRAE 99.6%)
   INDOOR WINTER: 70 DEB DB

DUCTWORK SYMBOLOGY

SINGLE LINE	ACTUAL CONSTRUCTION
	ELBOW SINGLE THICKNESS TURNING VANES - IN SQUARE ELBOWS, RADIUS ELBOWS PREFERED - SUBJECT TO SPACE CONDITIONS.
	SPLIT OR TAKE-OFF VOLUME DAMPER CONSTANT VOLUME SYSTEM TO VAV TERMINAL UNIT VARIABLE VOLUME SYSTEM 'X' DIMENSIONS SHALL BE 4" (10 CM) MINIMUM. IF A OR B IS GREATER THAN 24" X 6" MINIMUM VOLUME DAMPER SHALL BE IN SHORTER BRANCH.
	TAP TAKE-OFF VOLUME DAMPER SUPPLY ALL TERMINAL DEVICES VOLUME DAMPER RETURN ALL TERMINAL DEVICES
	RISE OR DROP ELEVATION - OFFSET IS VERTICAL PLANE SHALL BE MADE WITH SMOOTH FITTINGS.
	TRANSITION MAXIMUM INCLUDED ANGLE OF TRANSITION SIDES IS 15°
	HORIZONTAL OFFSET OFFSET IN HORIZONTAL PLANE SHALL BE MADE WITH SMOOTH FITTINGS.
PLENUM OVER LINEAR DIFFUSER	CONNECTION TO LINEAR DIFFUSER PLENUM PLENUM OVER DIFFUSER REGULATION OF VOLUME DAMPER SHALL BE ACCESSIBLE THROUGH THE FACE OF DIFFUSER. CONICAL FITTING
FD FIRE RATED WALL	FIRE DAMPER ACCESS DOOR IN DUCT FIRE RATED WALL FD MOUNTING TYPE DEPENDS ON AIR VELOCITIES AND DUCT SIZE - SEE SPECIFICATIONS.
HEATING COIL	HEATING COIL DIRECTION OF FLOW COIL WITH FLANGED CONNECTION ALL AROUND ACCESS DOOR IN DUCT
FLEX DUCT HAND DAMPER	FLEX DUCT FLEX DUCT HAND DAMPER
	EXISTING
	NEW WORK
	REMOVE

GENERAL ABBREVIATIONS

AC	AIR CONDITIONING	HPS	HEAT PUMP LOOP SUPPLY
ACV	AUTOMATIC CONTROL VALVE	HPR	HEAT PUMP LOOP RETURN
AD	ACCESS DOOR	HR	HOUR
ADDL	ADDITIONAL	HWR	HOT WATER RETURN
AFF	ABOVE FINISHED FLOOR	HWS	HOT WATER SUPPLY
AHU	AIR HANDLING UNIT	HZ	HERTZ
AP	ACCESS PANEL	IN	INCHES
ARCH	ARCHITECT	KW	KILOWATT
BHP	BRAKE HORSEPOWER	LAT	LEAVING AIR TEMPERATURE
BOD	BOTTOM OF DUCT	LPR	LOW PRESSURE COND. RETURN
BOP	BOTTOM OF PIPE	LPS	LOW PRESSURE STEAM
CD	CEILING DIFFUSER	LWT	LEAVING WATER TEMPERATURE
CFM	CUBIC FEET PER MINUTE	MAX	MAXIMUM
CL	CENTERLINE	MECH	MECHANICAL
CLG	CEILING	MFR	MANUFACTURER
CO	CLEAN-OUT	MOD	MOTOR OPERATED DAMPER
COL	COLUMN	MIN	MINIMUM
CONN	CONNECTION	MTD	MOUNTED
CONTR	CONTRACTOR	MAV	MANUAL AIR VENT
CW	COLD WATER	N/A	NOT APPLICABLE
CHWS	CHILLED WATER SUPPLY	NC	NORMALLY CLOSED
CHWR	CHILLED WATER RETURN	NIC	NOT IN CONTRACT
CWS	CONDENSER WATER SUPPLY	NO	NUMBER
CWR	CONDENSER WATER RETURN	NTS	NOT TO SCALE
DB	DRY BULB TEMPERATURE	OA	OUTSIDE AIR
DDC	DIRECT DIGITAL CONTROL	OD	OUTSIDE DIAMETER
DIA	DIAMETER	PD	PRESSURE DROP
DIFF	DIFFUSER	PLBG	PLUMBING
DIM	DIMENSION	PSIA	POUNDS PER SQ INCH ABSOLUTE
DN	DOWN	PSIG	POUNDS PER SQ INCH GAUGE
DX	DIRECT EXPANSION	(R)	REMOVE
DL	DOOR LOUVER	REG	REGISTER
(E)	EXISTING	RET	RETURN
EA	EACH	REQ'D	REQUIRED
EAT	ENTERING AIR TEMPERATURE	RG	RETURN GRILLE
EFF	EFFICIENCY	RH	RELATIVE HUMIDITY
EG	EXHAUST GRILLE	(RL)	RELOCATE
ELEC	ELECTRICAL	RM	ROOM
ER	EXHAUST REGISTER	RPM	REVOLUTIONS PER MINUTE
ESP	EXTERNAL STATIC PRESSURE	SA	SOUND ATTENUATOR
EWT	ENTERING WATER TEMPERATURE	SCH	SCHEDULE
EXH	EXHAUST	SCR	SCREEN
EXP	EXPANSION	SD	SMOKE DAMPER
(F)	FUTURE	SF	SQUARE FOOT
FA	FREE AREA	SPECS	SPECIFICATIONS
FD	FIRE DAMPER (W/ ACCESS DOOR)	SR	SUPPLY REGISTER
FLEX	FLEXIBLE	ST	STEAM TRAP
FLRDR	FLOOR DRAIN	STL	STEEL
FPM	FEET PER MINUTE	STM	STEAM
FSD	COMBINATION FIRE/SMOKE DAMPER	SUP	SUPPLY
FT	FEET	TEMP	TEMPERATURE
FURN	FURNISHED	TG	TRANSFER GRILLE
GA	GAUGE	TR	TRANSFER
GAL	GALLONS	TYP	TYPICAL
GALV	GALVANIZED	UC	UNDERCUT DOOR
GC	GENERAL CONTRACTOR	V	VENT
GPM	GALLONS PER MINUTE	VD	VOLUME DAMPER
GR	GRILLE	VFD	VARIABLE FREQUENCY DRIVE
GR	RETURN GRILLE	W	WIDTH
HB	HOSE BIBB CONN W/ CHAINED CAP	W/	WITH
HD	HAND DAMPER	WB	WET BULB TEMPERATURE
HGT	HEIGHT	WG	WATER GAUGE
HP	HORSEPOWER	WWMS	WELD-WIRE MESH SCREEN (1/4")
		W/O	WITHOUT
		Ø	DIAMETER

CALL OUT SYMBOLS

- REVISION NUMBER/INDICATES A REVISED FEATURE
- T — TEMPERATURE SENSOR OR THERMOSTAT
- AVG — AVERAGING TEMPERATURE SENSOR OR THERMOSTAT
- S — VARIABLE SPEED FAN SWITCH
- P — PUMP
- AHU — AIR HANDLING UNIT
- CU — CONDENSING UNIT
- HP — HEAT PUMP
- EH — ELECTRIC HEATER
- FC — FAN COIL UNIT
- UH — UNIT HEATER
- EF — EXHAUST FAN
- SF — SUPPLY FAN
- ACU — AIR CONDITIONING UNIT
- CCH — CHILLER UNIT
- B — BOILER
- SF — SUPPLY FAN

HVAC LEGEND

- MOD/2D — MOTOR OPERATED DAMPER/ 2DNE DAMPER
- HD — HAND DAMPER
- FSD — COMBINATION FIRE SMOKE DAMPER
- FD — SELF CLOSING FIRE DAMPER W/ ACCESS DOOR
- SD — SMOKE DAMPER WITH ACCESS DOOR
- BLANKED FOR 3-WAY BLOW SUPPLY DIFFUSER
- OR — BLANKED FOR 2-WAY BLOW SUPPLY DIFFUSER
- 1-WAY BLOW SUPPLY DIFFUSER
- UC 1" — UNDERCUT DOOR
- LVDR — LOUVERED DOOR
- RETURN OR EXHAUST AIR FLOW
- SUPPLY AIR FLOW
- EXHAUST FAN
- NEW CONNECTION TO EXISTING
- TEMINATION OF DEMOLITION
- CO2D — CARBON DIOXIDE SENSOR
- CO — CARBON MONOXIDE SENSOR
- DP — DIFFERENTIAL PRESSURE SENSOR
- SD — SMOKE DETECTOR ON AC UNITS
- MS — MOTION SENSOR
- BUTTERFLY VALVE
- BALL VALVE
- THERMOMETER
- P — PRESSURE GAUGE
- FLW — FLOW METER

TRAINER BOROUGH MEP - DRAWING INDEX

DRAWING NO.	DRAWING TITLE
M1.0	MECHANICAL NOTES, LEGENDS AND DRAWING INDEX
M2.0	FLOOR PLAN - COMMUNITY CENTER
M2.1	FLOOR PLAN - BOROUGH BUILDING
M2.3	ROOF PLAN-COMMUNITY CENTER/BOROUGH BUILDING
M5.0	MECHANICAL DETAILS
M5.1	MECHANICAL SCHEDULES
P1.0	PLUMBING NOTES, LEGEND, AND SCHEDULES
P1.1	PLUMBING DETAILS
P2.0	SANITARY FLOOR PLANS - COMMUNITY CENTER
P2.1	SANITARY FLOOR PLANS - BOROUGH BUILDING
P3.0	DOMESTIC WATER FLOOR PLANS - COMMUNITY CENTER
P3.1	DOMESTIC WATER FLOOR PLANS - BOROUGH BUILDING
P4.0	PLUMBING SANITARY RISER DIAGRAM
P5.0	PLUMBING DOMESTIC WATER RISER DIAGRAM
P6.0	PLUMBING GAS RISER DIAGRAM
FP1.0	FIRE PROTECTION LEGEND, GENERAL NOTES AND DETAILS
FP2.0	FIRE PROTECTION FLOOR PLAN - COMMUNITY CENTER
FP2.1	FIRE PROTECTION FLOOR PLAN - BOROUGH BUILDING
E1.0	ELECTRICAL NOTES, LEGEND & FIXTURE SCHEDULE
ES1.1	ELECTRICAL - LIGHTING AND POWER
E1.1	ELECTRICAL - DETAILS AND FIRE ALARM RISER
E2.0	FLOOR PLAN-COMMUNITY CENTER
E2.1	FLOOR PLAN-BOROUGH BUILDING
E2.2	ROOF PLAN-COMMUNITY CENTER/BOROUGH BUILDING
E3.0	ELECTRICAL - SINGLE LINES & FEEDER SCHEDULE

ISSUE 08/26/19
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MECHANICAL NOTES, LEGEND & DRAWING INDEX

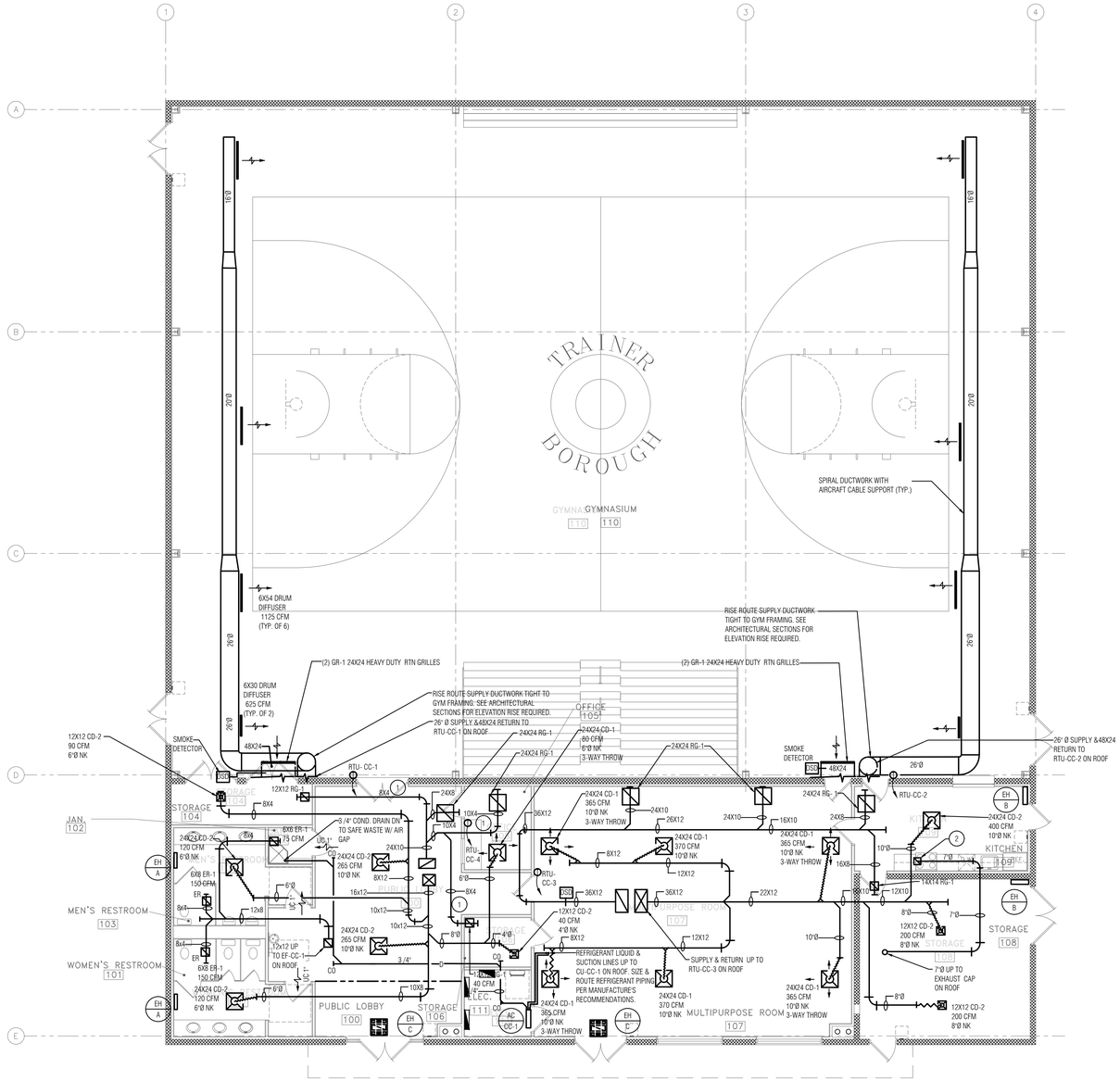
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. M1.0
SHEET OF



1 FLOOR PLAN - COMMUNITY CENTER
M2.0 SCALE - 1/8" = 1'-0"

BRANCH/ FLEX DUCT SIZING SCHEDULE

DUCT SIZE	CFM RANGE	REMARK
6'Ø	0-100	MAX 10' LENGTH. FLEX DUCTWORK APPROVED ON SUPPLY SYSTEMS ONLY. RETURN AND EXHAUST TO BE HARD DUCTED.
8'Ø	101-260	
10'Ø	261-400	
12'Ø	401-600	

GENERAL MECHANICAL CONSTRUCTION NOTES

1. INTEGRAL OPPOSED BLADE DAMPERS SHALL BE PROVIDED AT ALL AIR DEVICES. FINAL SUPPLY AIR DEVICE BALANCING SHALL BE PERFORMED VIA INTEGRAL AIR DEVICE
2. FLEX DUCT WORK LENGTHS SHALL BE LIMITED TO WHAT IS ALL INDICATED ON COVER SHEET DRAWING.
3. ALL DIFFUSERS AND REGISTERS LOCATED IN TOILET ROOMS SHALL BE ALUMINUM CONSTRUCTION.
4. ALL RETURN/EXHAUST REGISTERS SHALL HAVE 45° FIXED BLADES.
5. ALL DUCT SIZES ARE INSIDE DUCT DIMENSIONS.
6. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR TERMINATION LOCATIONS.
7. COORDINATE FINAL BATHROOM EXHAUST FAN LOCATION WITH ARCHITECTURAL PLANS.
8. REFER TO REFLECTED CEILING PLAN FOR FINAL AIR DEVICE LOCATIONS

KEY

RTU-CC-1 — EQUIPMENT TYPE / COMMUNITY CENTER BLDG. FOLLOWED BY EQUIPMENT #

MECHANICAL NOTES:

1. TRANSITION AS REQUIRED TO RETURN GRILLE SIZE.
2. 7"Ø EXHAUST DUCT DN TO RANGE HOOD EXHAUST CONNECTION. TRANSITION AS REQUIRED TO HOOD CONNECTION.

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FLOOR PLAN–COMMUNITY CENTER
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

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DATE: 11/14/18
SCALE: 1/8"=1'-0"
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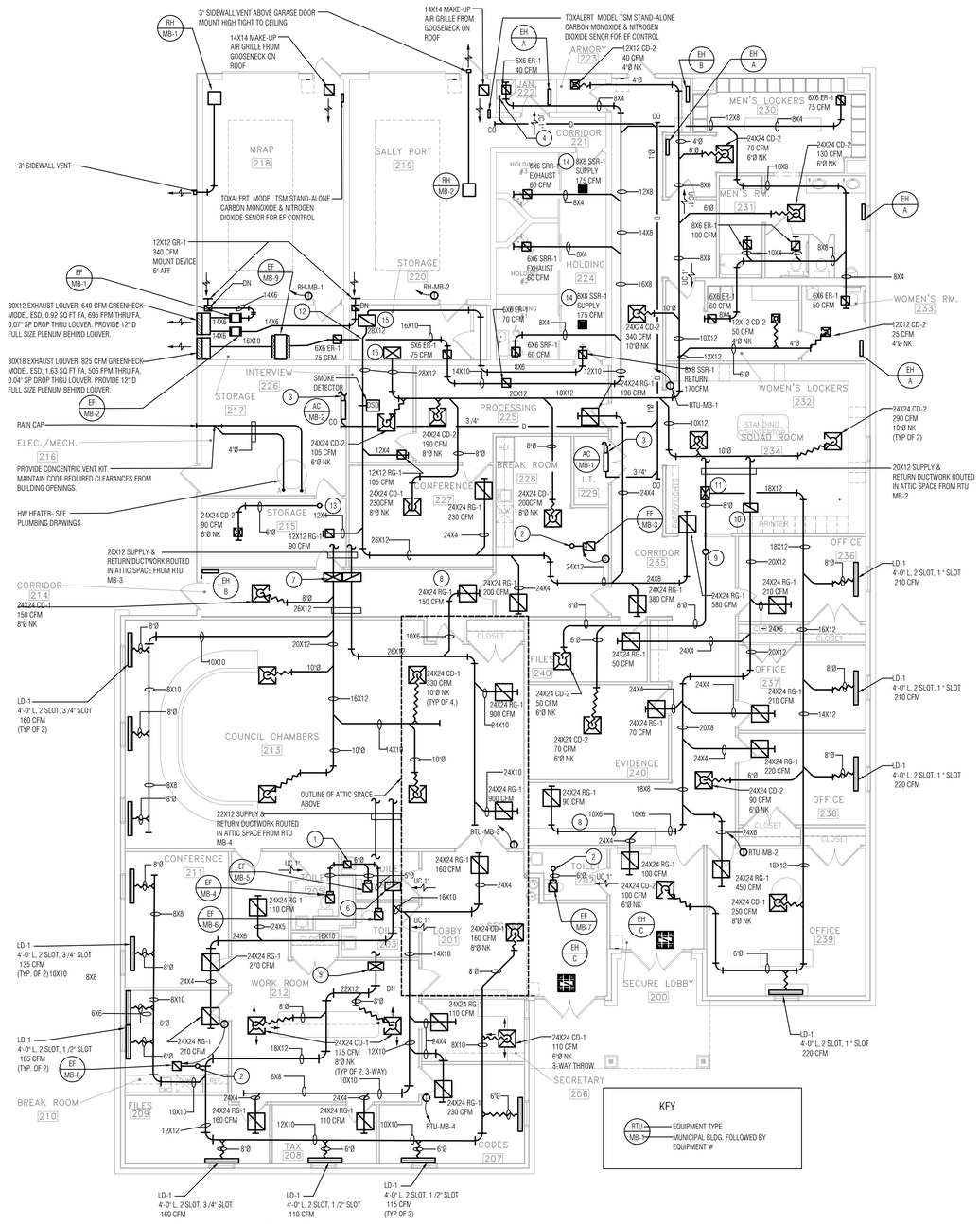
PROJ. NO.: 17214

SHEET NO. M2.0 SHEET OF



1 M2.1 FLOOR PLAN - BOROUGH BUILDING

SCALE - 1/8" = 1'-0"

MECHANICAL NOTES:

1. 10X10 EXHAUST DUCT UP TO SLOPED ROOF CURB W/CAP. SEE ROOF PLAN.
2. 7" EXHAUST DUCT UP TO SLOPED ROOF CURB W/ CAP. SEE ROOF PLAN.
3. REFRIGERANT LIQUID & SUCTION PIPING UP TO CONDENSING UNIT ON FLAT ROOF SECTION. SIZE & ROUTE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
4. 1" CONDENSATE DRAIN TO SAFE WASTE IN JANITOR'S CLOSET W/ AIR GAP.
5. 22X12 SUPPLY DUCT FROM RTU-MB-4 DN TO BELOW ATTIC SPACE.
6. 22X12 RETURN DUCT FROM RTU-MB-4 DN TO BELOW ATTIC SPACE.
7. 26X12 SUPPLY & RETURN DUCTS FROM RTU-MB-3 DN TO BELOW ATTIC SPACE.
8. TRANSITION AS REQUIRED TO RETURN GRILLE SIZE.
9. 8"Ø SUPPLY DUCT FROM RTU-MB-2 DN TO BELOW ATTIC SPACE.
10. 20 X12 RETURN DUCT FROM RTU-MB-2 DN TO BELOW ATTIC SPACE.
11. 18X12 SUPPLY DUCT FROM RTU-MB-2 DN TO BELOW ATTIC SPACE.
12. CROSS EXHAUST & RETURN DUCTWORK IN CLOSET.
13. 6"Ø SUPPLY DUCT FROM ATTIC.
14. 8X8 SUPPLY DUCT FROM ATTIC TO SECURITY SUPPLY REGISTER.
15. 28X12 SUPPLY & RETURN DUCTS FROM RTU-MB-1 ON LOW ROOF.

BRANCH/ FLEX DUCT SIZING SCHEDULE

DUCT SIZE	CFM RANGE	REMARK
6"Ø	0-100	MAX 10' LENGTH. FLEX DUCTWORK APPROVED ON SUPPLY SYSTEMS ONLY. RETURN AND EXHAUST TO BE HARD DUCTED.
8"Ø	101-260	
10"Ø	261-400	
12"Ø	401-600	

GENERAL MECHANICAL CONSTRUCTION NOTES

1. INTEGRAL OPPOSED BLADE DAMPERS SHALL BE PROVIDED AT ALL AIR DEVICES. FINAL SUPPLY AIR DEVICE BALANCING SHALL BE PERFORMED VIA INTEGRAL AIR DEVICE
2. FLEX DUCT WORK LENGTHS SHALL BE LIMITED TO WHAT IS ALL INDICATED ON COVER SHEET DRAWING.
3. ALL DIFFUSERS AND REGISTERS LOCATED IN TOILET ROOMS SHALL BE ALUMINUM CONSTRUCTION.
4. ALL RETURN/EXHAUST REGISTERS SHALL HAVE 45° FIXED BLADES.
5. ALL SUPPLY MAINS SHALL BE LINED WITH 1" INTERNAL LINING. ALL BRANCH DUCTWORK SHALL BE EXTERNALLY WRAPPED.
6. ALL DUCT SIZES ARE INSIDE DUCT DIMENSIONS.
7. REFER TO ARCHITECTURAL ELEVATIONS FOR EXTERIOR TERMINATION LOCATIONS.
8. COORDINATE FINAL BATHROOM EXHAUST FAN LOCATION WITH ARCHITECTURAL PLANS.
9. REFER TO ARCHITECTURAL PLANS FOR FINAL AIR DEVICE LOCATIONS

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FLOOR PLAN–BOROUGH BUILDING
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

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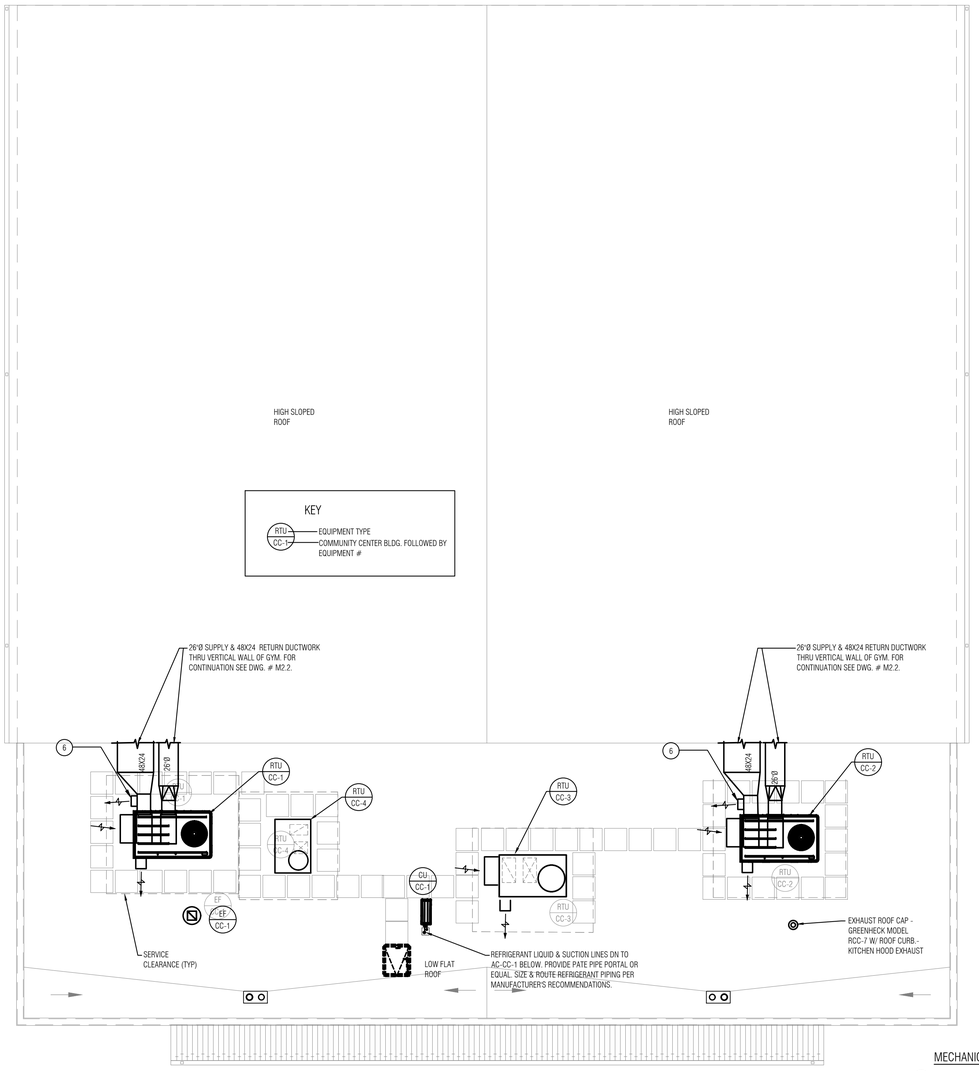
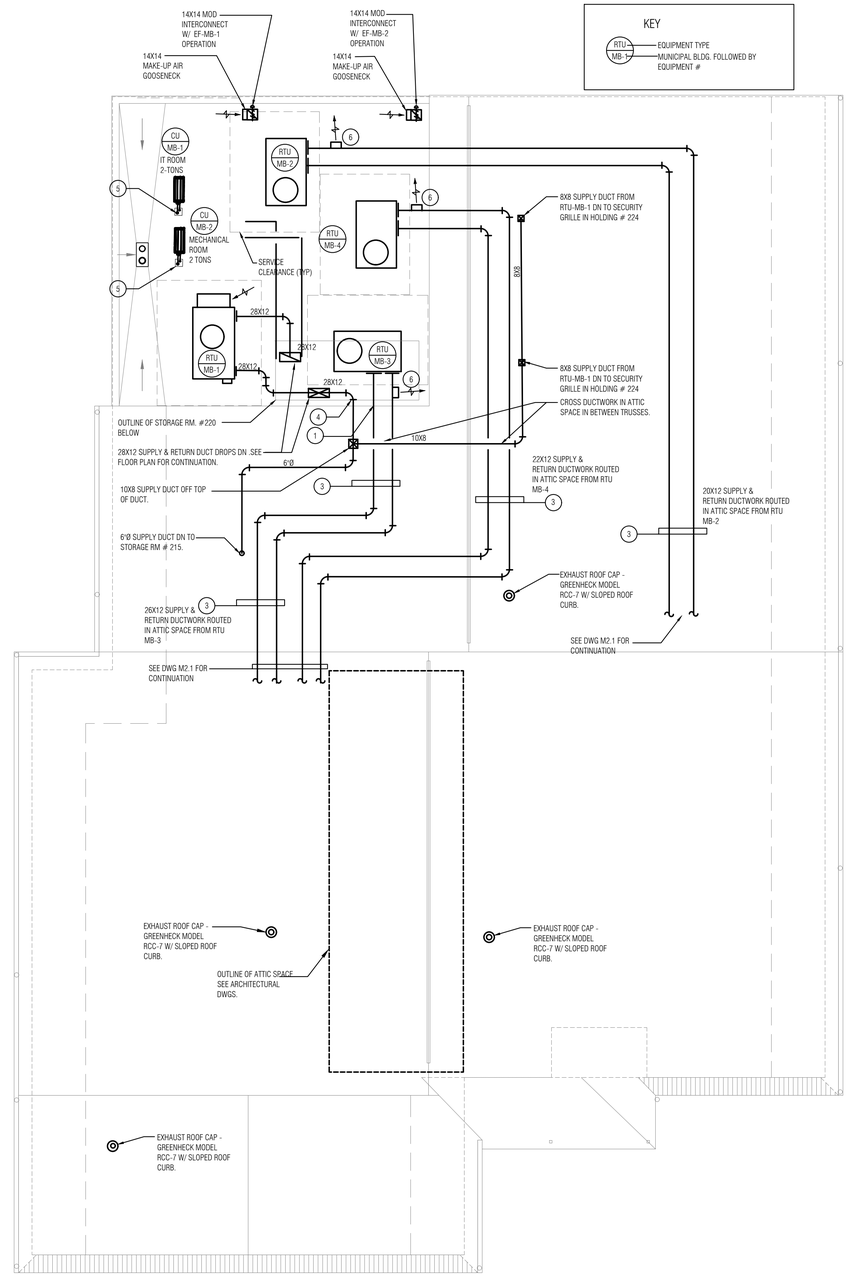
SHEET NO. M2.1 SHEET OF

GENERAL MECHANICAL CONSTRUCTION NOTES- ROOF

1. ALL EXTERIOR DUCTWORK SHALL BE INSULATED WITH R-8 RIGID INSULATION WITH WEATHERPROOF JACKETING.
2. ALL 90 DEGREE DUCT FITTINGS SHALL BE RADIUS ELBOWS OR MITERED JOINTS WITH TURNING VANES.
3. ALL ROOFTOP EQUIPMENT SHALL BE LOCATED A MINIMUM OF 10' FROM THE PARAPET EDGE.
4. ALL ROOFTOP EQUIPMENT SHALL BE MOUNTED ON ROOF CURBS OR EQUIPMENT SUPPORT.
5. MINIMUM EQUIPMENT CLEARANCE IS BASED ON BASIS OF DESIGN. IF SUBSTITUTED EQUIPMENT IS USED, ADJUST PER MANUFACTURERS IOM.
6. PROVIDE MIFAB RUBBER ROOF PIPE SUPPORTS AT 5' CENTERS AND ALL CHANGES IN DIRECTION. SECURE PIPING TO THE SUPPORTS WITH APPROVED STRAPS AND FASTENERS.



1 M2.2 **ROOF PLAN - COMMUNITY CENTER**
SCALE - 1/8" = 1'-0"



2 M2.2 **ROOF PLAN - BOROUGH BUILDING**
SCALE - 1/8" = 1'-0"

MECHANICAL NOTES:

1. ROUTE SUPPLY & RETURN DUCTWORK THRU VERTICAL WALL INTO ATTIC SPACE.
2. PROVIDE CURB HOUSING THAT ALLOWS FOR FLASHING OF DUCTWORK PENETRATIONS OF SLOPED ROOF.
3. ROUTE SUPPLY & RETURN DUCTWORK IN ATTIC SPACE. MC SHALL COORDINATE DUCT WORK ROUTING THRU DIFFERENT TRUSS TYPES (T-1-T-4). ALSO COORDINATE DUCT SIZES WITH ROOF TRUSS MANUFACTURER IN SHOP DRAWING PHASE TO ENSURE DUCT WORK CAN BE ROUTED THRU TRUSS OPENINGS.
4. 12X8 SUPPLY DUCT FROM RTU-MB-1 THRU VERTICAL WALL INTO ATTIC SPACE.
5. REFRIGERANT LIQUID & SUCTION LINES DN TO INDOOR UNIT. SIZE & ROUTE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.
6. BAROMETRIC DAMPER , M.C. SHALL INSTALL ON RETURN DUCTWORK.

LINN ARCHITECTS
ARCHITECTURE
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SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
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ADVANCED ENGINEERING INC
WWW.ADVENGINC.COM
5561 Pennell Road | Media PA 19063

ROOF PLAN—COMMUNITY CENTER/BOROUGH BUILDING

NEW MUNICIPAL BUILDINGS

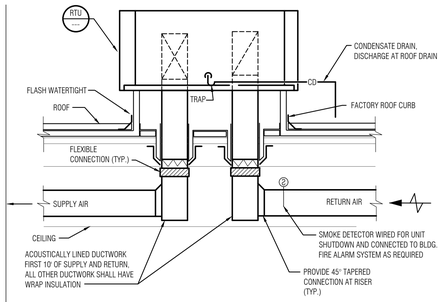
BOROUGH OF TRAINER

TRAINER PA. 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

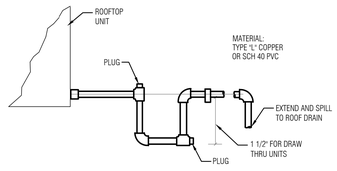
DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. M2.3 SHEET OF



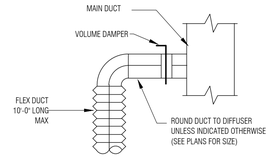
1 M5.0 ROOFTOP UNIT DETAIL

SCALE: NONE



2 M5.0 CONDENSATE TRAP DETAIL

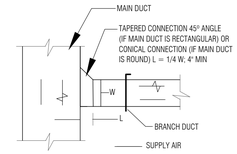
SCALE: NONE



PLAN VIEW

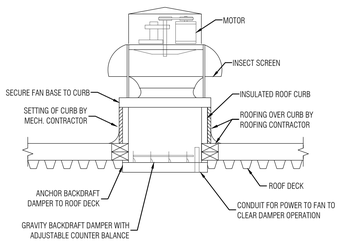
3 M5.0 FLEXIBLE DUCT DETAIL

SCALE: NONE



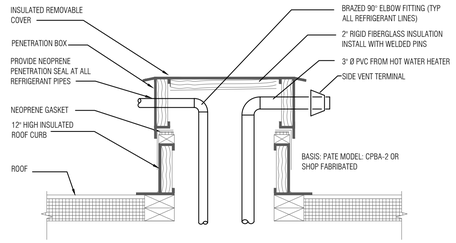
4 M5.0 BRANCH TAKE-OFFS

SCALE: NONE



5 M5.0 ROOF MOUNTED EXHAUST FAN DETAIL

SCALE: NONE



6 M5.0 ROOF - PENETRATION BOX DETAIL

SCALE: NONE

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MECHANICAL DETAILS

NEW MUNICIPAL BUILDINGS

BOROUGH OF TRAINER

TRAINER PA, 19061

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SHEET NO. M5.0

SHEET OF

PACKAGED ROOFTOP AIR CONDITIONING UNIT SCHEDULE

UNIT NO.	TYPE	NOMINAL TONS	AIRFLOW APPLICATION	AIRFLOW	INDOOR SUPPLY FAN						COOLING-DX					INDIRECT FIRED GAS HEAT						FILTER	ELECTRICAL CHARACTERISTICS			EER/ IEER (SEER)	WEIGHT LBS	STANDARD OF DESIGN		REMARKS
					SUPPLY AIR CFM	OUTSIDE AIR CFM	ESP (IN. W.G.)	HP	RPM	MOTOR TYPE	EVAP. FACE VEL. FT/MIN	EAT DB/WB	UNIT LAT DB/WB	TMBH	SMBH	STAGES	EAT F	LAT F	INPUT MBH	OUTPUT MBH	STAGES		MCA	MOCP	VOLT/PHASE/HZ			MFGR.	MODEL	
RTU-CC-1 & 2	DX COOLING WITH GAS HEAT	10	HORIZONTAL	SINGLE ZONE VAV	4000	1000	1.0	2.75	1,447	ECM	240	82/68	61.3/59.2	110.4	90.6	3	52.5	89.8	200	160	2	MERV 8	48	60	208V / 3Ø / 60HZ	12.4/15.2	1700	TRANE	YHC120F3	(1) (2)
RTU-CC-3	DX COOLING WITH GAS HEAT	7.5	DOWNFLOW	CONSTANT VOLUME	3000	660	1.0	2.0	901	ECM	243	80/67	57.24/56.03	105.8	78.6	2	54.6	104.2	200	160	2	MERV 8	44	50	208V / 3Ø / 60HZ	11.2/12.7	1400	TRANE	YSC102H3	(1) (2)
RTU-CC-4	DX COOLING WITH GAS HEAT	3.0	DOWNFLOW	CONSTANT VOLUME	1000	250	1.0	0.75	1,124	ECM	143	80/67	58.07/56.49	35.92	26.78	2	52.5	112.7	80	64.8	2	MERV 8	20	30	208V / 3Ø / 60HZ	12.0/14.0	900	TRANE	YSC036G3	(1) (3)
RTU-MB-1	DX COOLING WITH GAS HEAT	8.73	HORIZONTAL	CONSTANT VOLUME	2400	1000	1.0	2.5	2,383	ECM	421	83.5/69	55.5/55.3	104.8	74.2	-	40.8	102.5	200	160	MODULATING	MERV 8	45.5	70	208V / 3Ø / 60HZ	10.2	1600	TRANE	OABD108D3	(1) (4)
RTU-MB-2	DX COOLING WITH GAS HEAT	4	HORIZONTAL	CONSTANT VOLUME	1400	280	1.25	1.0	1198	ECM	173	78/65	57.9/55.4	45.6	32.5	2	56.0	98.6	80	64	1	MERV 8	30	40	**208V / 3Ø / 60HZ**	(17.5)	1100	TRANE	YHC047E3	(1) (3)
RTU-MB-3	DX COOLING WITH GAS HEAT	6	HORIZONTAL	CONSTANT VOLUME	1950	350	1.0	2.75	959	ECM	158	79/66	55.5/54.3	69.2	50.6	3	57.6	104	120	97.2	1	MERV 8	37.4	50	208V / 3Ø / 60HZ	13.1/15.5	1500	TRANE	YHC074F3	(1) (2)
RTU-MB-4	DX COOLING WITH GAS HEAT	4	HORIZONTAL	CONSTANT VOLUME	1600	200	1.25	1.0	1198	ECM	173	78/65	58.0/55.5	46.0	33.7	2	61.25	98.55	80	64	1	MERV 8	30	40	208V / 3Ø / 60HZ	(17.5)	1100	TRANE	YHC047E3	(1) (3)

(1) 95 DEG OAT

(2) PROVIDE ROOF CURB, FACTORY INSTALLED NON-FUSED DISCONNECT SWITCH, ECON-REF ENTHALPY 0-100% W/ BAROMETRIC DAMPER, MICROPROCESSOR CONTROLS 3PH,DEMAND CONTROL VENTILATION (CO2) 3PH- (CO2) DUCT MOUNTED SENSOR ONLY,HOT GAS REHEAT, HUMIDITY DUCT MOUNTED SENSOR, DIRTY FILTER SWITCH, POWERED WEATHERPROOF GFI OUTLET, 7 DAY PROGRAMMABLE THERMOSTAT, FACTORY INSTALLED RETURN DUCT SMOKE DETECTOR.

(3) PROVIDE ROOF CURB, FACTORY INSTALLED NON-FUSED DISCONNECT SWITCH,ECON-REF ENTHALPY 0-100% W/ BAROMETRIC DAMPER, MICROPROCESSOR CONTROLS 3PH,DEMAND CONTROL VENTILATION (CO2) 3PH- (CO2) DUCT MOUNTED SENSOR ONLY,HOT GAS REHEAT,HUMIDITY DUCT MOUNTED SENSOR, DIRTY FILTER SWITCH, POWERED WEATHERPROOF GFI OUTLET, 7 DAY PROGRAMMABLE THERMOSTAT.

(4) 85.9/66.3 LAT DB/WB REHEAT UNIT, 27.51 BTUH/H MRC, HOT GAS REHEAT - MODULATING, CAPACITY CONTROL-APR VALVE ON 1ST CIRCUIT, 439 STAINLESS STEEL FURNACE; 200MBH (10:1 TURNDOWN NG),MICROPROCESSOR CONTROLS 3PH, DIRTY FILTER SWITCH, TRANE UC600- SPACE CONTROL W/ BACNET W/ DISPLAY, MODULATING OA/RA DAMPER FOR ECONOMIZER CONTROL, CONDENSER HAILGUARD,2" DOUBLE WALL CONSTRUCTION, STAINLESS STEEL DRIP PAN, WEATERPROOF GFI OUTLET,7 DAY PROGRAMMABLE THERMOSTAT, FACTORY INSTALLED DUCT SMOKE DETECTOR. PROVIDE ROOF CURB

AIR DEVICE SCHEDULE

SYMBOL	TYPE	SIZE	SERVICE	MOUNTING	MATERIAL	FINISH	ACCESSORIES	MAX. NC	STANDARD OF DESIGN		REMARKS
									MFGR.	MODEL	
CD-1	PLAQUE	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	WHITE	OBD	25	PRICE	SPD	SQUARE TO ROUND ADAPTER AS REQUIRED.
CD-1	LOUVER	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	WHITE	OBD	25	PRICE	SCD	SQUARE TO ROUND ADAPTER AS REQUIRED.
RG-1	RETURN GRILLE	REFER TO PLAN	RETURN	REFER TO PLAN	ALUMINUM	WHITE	-	25	PRICE	635	3 /4" SPACING 45 ° DEFLECTION
ER-1	EXHAUST REGISTER	REFER TO PLAN	EXHAUST	REFER TO PLAN	ALUMINUM	WHITE	OBD	30	PRICE	635	3 /4" SPACING 45 ° DEFLECTION
DD-1	DRUM LOUVER	REFER TO PLAN	SUPPLY	REFER TO PLAN	STEEL	CUSTOM SELECTED BY ARCHITECT	OBD (HEAVY DUTY)	35	PRICE	HCD	
GR-1	HEAVY DUTY GRILLE	REFER TO PLAN	RETURN	REFER TO PLAN	STEEL	CUSTOM SELECTED BY ARCHITECT	OBD	35	PRICE	96-96FH	3 /4" SPACING 45 ° DEFLECTION
LD-1	LINEAR SLOT DIFFUSER	REFER TO PLAN	SUPPLY	REFER TO PLAN	ALUMINUM	WHITE	OBD	25	PRICE	SDS	BORDER TYPE 15 FOR T-BAR CEILING INSTALLATION, BORDER TYPE 15 FOR T-BAR CEILING INSTALLATION.
SRR-1	SECURITY REGISTER	REFER TO PLAN	SUPPLY/EXHAUST	REFER TO PLAN	STEEL	WHITE	OBD	30	PRICE	MSL	WIRE MESH SCREEN
OA LOUVER	LOUVER	REFER TO PLAN	INTAKE	SURFACE	ALUMINUM	CUSTOM SELECTED BY ARCHITECT	BIRDSCREEN	--	GREENHECK	ESD-435	-

FAN SCHEDULE

UNIT NO.	SERVICE	TYPE	CFM	ESP	HP/ WATTS	RPM	DRIVE	FLA	ELECTRICAL CHARACTERISTICS	WEIGHT	CONTROL	STANDARD OF DESIGN		REMARKS
												MFGR.	MODEL	
EF-CC-1	WOMEN'S BATH RM # 101, JAN CLOS # 102, MEN'S BATH RM. # 103	ROOF MOUNTED CENTRIFIGAL	375	0.5	1 /4 HP	1222	DIRECT	2.85	120V / 1Ø / 60 HZ	35	TIME CLOCK	GREENHECK	G-098-VG	(1)
EF-MB-1	MWRAP # 218	CEILING CABINET	340	0.5	142 W	1350	DIRECT	1.33	120V / 1Ø / 60 HZ	23	TOXALERT MODEL TSM MONITOR	GREENHECK	CSP-A390	(2) (3)
EF-MB-2	SALLEYPORT # 219	CEILING CABINET	340	0.5	142 W	1350	DIRECT	1.33	120V / 1Ø / 60 HZ	23	TOXALERT MODEL TSM MONITOR	GREENHECK	CSP-A390	(2) (3)
EF-MB-3	BREAK RM # 228	CEILING CABINET	100	0.25	15 W	898	DIRECT	0.58	120V / 1Ø / 60 HZ	17	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-4	BATHROOM # 202	CEILING CABINET	100	0.25	9.2 W	772	DIRECT	0.34	120V / 1Ø / 60 HZ	12	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-5	BATHROOM # 203	CEILING CABINET	100	0.25	9.2 W	772	DIRECT	0.34	120V / 1Ø / 60 HZ	12	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-6	BATHROOM # 204	CEILING CABINET	100	0.25	9.2 W	772	DIRECT	0.34	120V / 1Ø / 60 HZ	12	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-7	BATHROOM # 205	CEILING CABINET	100	0.25	9.2 W	772	DIRECT	0.34	120V / 1Ø / 60 HZ	12	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-8	BREAK ROOM # 210	CEILING CABINET	100	0.25	9.2 W	772	DIRECT	0.34	120V / 1Ø / 60 HZ	12	SWITCH	GREENHECK	SP-A110	(2)
EF-MB-9	LOCKER, BATROOMS & HOLDING CELLS	IN-LINE	825	0.75	290 W	1049	DIRECT	7.8	120V / 1Ø / 60 HZ	68	SWITCH	GREENHECK	CSP-A2150	(2)

(1) PROVIDE DISCONNECT SWITCH, INTEGRAL BACKDRAFT DAMPER,ALUMNUM CURB CAP W/ PREPUNCHED MOUNTING HOLES,MOTOR ISOLATED ON SHOCK MOUNTS, CORROSION RESISTANT FASTENERS, BIRDSCREEN, 12" HIGH INSULATED ROOF CURB, MOTOR- VARI-GREEN EC MOTOR WITH DIAL OR 0-10VDC INPUT, CONTROL- DIAL FOR BALANCING, UL/cUL 705 LISTED - "POWER VENTILATORS", JUNCTION BOX MOUNTED & WIRED.

(2) PROVIDE DISCONNECT SWITCH, BACKDRAFT DAMPER, SOLID STATE SPEED CONTROL- FACTORY MOUNTED,VIBRATION HANGERS.

(3) PROVIDE TOXALERT MODEL TSM- CARBON MONOXIDE & NITROGEN DIOXIDE STAND-ALONE SENSOR- DUAL GAS MONITOR TO CONTROL EF ON-OFF ALSO PROVIDE OPTIONS-LCD DISPLAY OF GAS CONCENTRATION IN PPM AND AUDIBLE ALARM AND SILENCE.

ELECTRIC UNIT AND WALL HEATER SCHEDULE

UNIT NO.	MBH	KW	CFM	TYPE	ELECTRICAL CHARACTERISTICS	MFGR	MODEL NO.	REMARKS
EH-A	5.1	1.5	100	WALL MOUNTED	120/1/60	Q-MARK	CWH3150F	(1)
EH-B	10.2	3.0	100	WALL MOUNTED	208/1/60	Q-MARK	AWH4404	(1)
EH-C	10.2	3.0	300	CEILING RECESSED	208/1/60	Q-MARK	CDF-548	(2)

(1) PROVIDE DISCONNECT SWITCH, INTEGRAL THERMOSTAT, RECESSED OR SURFACE MOUNTING FRAME- SEE PLANS.

(2) PROVIDE DISCONNECT SWITCH, RECESSED MOUNTING ENCLOSURE, INTEGRAL THERMOSTAT.

GAS FIRED RADIANT HEATER SCHEDULE

UNIT NO.	GAS INPUT MBH	TYPE	ELECTRICAL CHARACTERISTICS	IGNITION AMPS	RUN AMPS	MFGR	MODEL NO.	REMARKS
RH-MB-1	25	LOW INTENSITY GAS FIRED INFRARED TUBE HEATER	120/1/60	4.8	1	RE-VERBER-RAY	LS3-15-25N	(1)
RH-MB-2	25	LOW INTENSITY GAS FIRED INFRARED TUBE HEATER	120/1/60	4.8	1	RE-VERBER-RAY	LS3-15-25N	(1)

(1) PROVIDE4" SIDEWALL VENT KIT, ANGLE MOUNTING BRACKETS & ALL ASSOCIATED ACCESSORIES FOR A COMPLETE OPERATING SYSTEM.

DUCTLESS SPLIT-SYSTEM HEAT PUMP UNIT SCHEDULE

UNIT NO.	AREA SERVED	TYPE	NOMINAL TONS	SUPPLY AIR	COOLING (1)			HEATING (2)		ELECTRICAL CHARACTERISTICS			WEIGHT (LBS.)		STANDARD OF DESIGN			REMARKS
					TOTAL BTUH	SENS. BTUH	SEER	BTUH	COP	MCA	MOCP	VOLTS/PHASE/HZ	AC	CU	MFGR.	MODEL AC	MODEL HP	
AC/CU-CC-1 AC/CU-MB-1 AC/CU-MB-2	ELECT RM, IT RM. RM. MECHANICAL RM.	WALL MOUNTED	2.0	630	24.000	18,480	21.4	15,700	2.62	19	26	208V / 1Ø / 60HZ	46	153	MITSUBISHI	PKA-A24KA7.TH	PUZ-A24NHA7	(3) (4)
																	∞∞∞	

(1) BASED ON 80 DEG. F DB/67 DEG. F WB RETURN AIR CONDITIONS, 95 DEG. F OUTDOOR.

(2) BASED ON 70 DEG. F INDOOR, 17 DEG. F OUTDOOR.

(3) PROVIDE DISCONNECT SWITCH, LOW AMBIENT CONTROL, PREFABRICATED ROOF PAD, INTERNAL CONDENSATE PUMP, REMOTE WIRED WALL-MOUNTED CONTROLLER.

(4) REFRIGERANT PIPING SHALL BE SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

(5) THE INDOOR UNIT IS POWERED THRU THE OUTDOOR UNIT.

(6) EQUAL BY DAIKIN, LG..

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MECHANICAL SCHEDULES
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

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SHEET NO. M5.1
SHEET OF

PLUMBING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	FIXTURE				TRAP			COLOR	CARRIER	REMARKS
		MFGR	MODEL	TYPE	SIZE	MFGR	TYPE	SUPPLY			
WC-1	ADA WATER CLOSET FLUSH VALVE	MANSFIELD	1319	ELONGATED BOWL, VITREOUS CHINA	1.6 GPF	SLOAN #8111	BATTERY POWERED SENSOR OPERATED FLUSHOMETER	1" SUPPLY	INTEGRAL	WHITE	JR SMITH	SOLID PLASTIC, OPEN FRONT SEAT W/O COVER, COMFORT SEATS #C104C
UR-1	URINAL	ZURN	Z5750-U	WALL HUNG	0.125 GPF	ZURN #ZTR6203-ULF-LL	BATTERY POWERED SENSOR OPERATED FLUSHOMETER	3/4" SUPPLY	INTEGRAL	WHITE	---	---
LAV-1	SELF-RIMMING LAVATORY	ZURN	Z5110	SELF-RIMMING, VITREOUS CHINA	20" X 17"	MOEN #WS84503	SINGLE LEVER CONTROL	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	WHITE	---	PROVIDE TRUEBRO #102W & 105W SUPPLY & WASTE PIPING INSULATION
LAV-2	WALL HUNG LAVATORY	ZURN	Z5350	WALL HUNG, VITREOUS CHINA	19" X 17"	MOEN #WS84503	SINGLE LEVER CONTROL	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	WHITE	---	W/ MCGUIRE OFFSET LAVATORY GRID DRAIN, #PRODRAINWCSAN. PROVIDE TRUEBRO #102W & 105W SUPPLY & WASTE PIPING INSULATION
SHO-1	BARRIER FREE FIBERGLASS SHOWER	BEST BATH	SLRS6036FB7ST	FIBERGLASS SHOWER	60" X 37"	---	---	1/2" SUPPLIES	2" C.B. CAST BRASS	WHITE	---	W/ GRAB BAR, FOLDING SEAT, PRESSURE BALANCE MIXING VALVE W/ LEVER HANDLE, SOAP DISH, CURTAIN, & ROD, T-SHAPED RUBBER WATER STOPPER KIT, THRESHOLD ADAPTOR, BRASS DRAIN.
SK-1	SINGLE BOWL SINK	STERLING	11600-NA	18 GAUGE STAINLESS STEEL	29 1/2" X 15 3/4" X 9 5/16"	MOEN #7565	SINGLE LEVER CONTROL W/PULL DOWN KITCHEN FAUCET	1/2" SUPPLIES, ANGLE STOP, C.B. ESCUTCHEON	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	STAINLESS STEEL	---	PROVIDE INSINKERATOR EVOLUTION SERIES GARBAGE DISPOSAL
MSB-1	MOP SERVICE BASIN	MUSTEE	63M	MOLDED FIBERGLASS	24" X 24" X 10"	MUSTEE #63.600A	WALL MOUNTED SERVICE FAUCET	1/2" SUPPLIES	3" C.B. CAST BRASS	WHITE	---	W/ WALL GUARDS, HOSE AND HOSE HOLDER, MOP HANGER
DF-1	DRINKING FOUNTAIN	HALSEY TAYLOR	OVL-III-SEBP	STAINLESS STEEL	---	---	PRESS BAR	1/2" SUPPLIES	1 1/2" C.B. CAST BRASS W/ CLEANOUT PLUG	STAINLESS STEEL	---	---
PF-1	PENAL FIXTURE	ACORN	1420FA	STAINLESS STEEL	---	---	---	---	---	---	---	---
PF-2	ADA PENAL FIXTURE	ACORN	LR1449	STAINLESS STEEL	---	---	---	---	---	---	---	---

PUMP SCHEDULE

UNIT NO.	SERVICE	LOCATION	GPM	HEAD (FT)	ELECTRIC CHARACTERISTICS	MOTOR HP	MODEL NUMBER	REMARKS
HWRP-1	HOT WATER RECIRC.	ELEC/MECH 216	2.5	1.5'	115 V/ 1Ø	1/33	GRUNDFOS #UP10-16	W/ AQUASTAT, TIME CLOCK & THERMOMETER

HOT WATER HEATER SCHEDULE

UNIT NO.	LOCATION	MFGR	MODEL NO.	STORAGE CAPACITY	HEATING MEDIUM	ELECTRICAL CHARACTERISTICS	INPUT	RECOVERY @ 90° F	REMARKS
HWH-1	PUBLIC RESTROOMS & JANITOR'S CLOSET	BRADFORD WHITE	M-1-WH20L6SS	20 GALLON	ELECTRIC	120V, 1Ø	1.5 kW	7 GPH	W/ FACTORY INSTALLED HEAVY DUTY WALL MOUNTING BRACKET & WATTS #PLT-S-MI 2 GALLON EXPANSION TANK
HWH-2	VARIOUS	BRADFORD WHITE	ES-3000-1-S-10	INSTANTANEOUS	ELECTRIC	120V, 1Ø,3.0 KW	---	---	---
HWH-3	MECH. RM.	BRADFORD WHITE	EF-60T-125-3N(A)	60 GALLON	GAS	120V, 1Ø	125 MBH	145 GPH @ 100°F	W/ WATTS #PLT-S-MI 2-GALLON EXPANSION TANK & IPS CORPORATION WATER HEATER PAN

PLUMBING SPECIALTIES

UNIT NO.	DESCRIPTION	MFGR	MODEL NO.	REMARKS
CO	FLOOR CLEANOUT	JR SMITH	4031	ROUND TOP
CO	WALL CLEANOUT	JR SMITH	4436	FACE OF WALL COVER
OWH-1	OUTSIDE WALL HYDRANT	WATTS	HY42	NON-FREEZE HYDRANT W/ LOOSE KEY
FD-1	FLOOR DRAIN	JR SMITH	2005	PROVIDE TRAP GUARD INSERT
TD-1	TRENCH DRAIN	WATTS	DEAD LEVEL P	PRE-SLOPED POLYPROPYLENE POLYMER TRENCH DRAIN
ROB-1	REFRIGERATOR OUTLET BOX	OATEY	ICE MAKER OUTLET BOX	W/ 1/4 TURN VALVE. PROVIDE FIRE RATED MODEL WHEN LOCATED IN A RATED WALL.
HB-1	INTERIOR HOSE BIB	SIOUX CHIEF	117-22	---
BFP-1	BACKFLOW PREVENTER	WATTS	LF909	---
DSB-1	EXTERIOR DOWNSPOUT BOOT	BARRY CRAFT	B26A	---
GOB-1	GAS OUTLET BOX	OATEY	MODA GAS SUPPLY BOX	W/ 1/4 TURN VALVE. PROVIDE FIRE RATED MODEL WHEN LOCATED IN A RATED WALL.
RD-1	COMBINATION ROOF & OVERFLOW DRAIN	ZURN	Z165	OUTLET SIZE AS INDICATED ON PLAN
DSN-1	DOWNSPOUT NOZZLE	JR SMITH	1770	W/ BIRD SCREEN

PIPE INSULATION MATRIX

FLUID OPERATING TEMPERATURE RANGE (°F)	INSULATION CONDUCTIVITY		NOMINAL PIPE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY Btu x in./(h x ft² x °F)	MEAN RATING TEMPERATURE, °F	LESS THAN 1"	1" TO LESS THAN 1-1/2"	1-1/2" TO LESS THAN 4"	4" TO LESS THAN 8"	8" AND GREATER
141-200	0.25-0.29	125	1.5	1.5	2.0	2.0	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0
LESS THAN 40	0.20-0.26	75	1.0	1.0	1.0	1.0	1.5

LEGEND

AFF	ABOVE FINISHED FLOOR
AP	ACCESS PANEL
ARCH	ARCHITECT
	BALL VALVE
BLDG	BUILDING
	CHECK VALVE
CO	WALL CLEANOUT
CO	FLOOR CLEANOUT
CW	COLD WATER
COND	CONDENSATE
CTE	CONNECT TO EXISTING
	DIRECTION OF SLOPE
DN	DOWN
DWG	DRAWING
ED	EMERGENCY DRAIN
DP, DN	ELBOW DOWN OR DROP
UP	ELBOW UP OR RISE
FLR	FLOOR
FD	FLOOR DRAIN
	FLOW IN DIRECTION OF ARROW
G	GAS
HB	HOSE BIBB W/ VACUUM BREAKER
HW	HOT WATER
HWR	HOT WATER RETURN
140 HW	140
IWR	INDIRECT WASTE RECEPTOR
LAV	LAVATORY
MFR	MANUFACTURER
MSB	MOP SERVICE BASIN
NTS	NOT TO SCALE
	P-TRAP
RAC	RUN ABOVE CEILING
RAF	RUN ABOVE FLOOR
RBF	RUN BELOW FLOOR
RCP	REINFORCED CONCRETE PIPE
RWC	RAIN WATER CONDUCTOR
SAN	SANITARY
DP, DN	TEE LOOKING DOWN
UP	TEE LOOKING UP
TYP	TYPICAL
UR	URINAL
V	VENT
VTR	VENT THRU ROOF
WH	WALL HYDRANT
WC	WATER CLOSET
WDP	WASHING MACHINE DRAIN PAN
2#	HIGH PRESSURE 2 PSI GAS

GENERAL SPECIFICATIONS

1. DRAWINGS ARE DIAGRAMMATIC. COORDINATE AND DETERMINE FINAL LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
2. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST WITH OWNER ACCEPTANCE TESTING.
3. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
4. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
6. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
7. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPING AND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
8. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
9. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER, INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS IN BID PROPOSAL. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AT LEAST 48 HOURS IN ADVANCE.
10. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
11. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
12. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
13. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
14. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
15. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
16. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
17. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
18. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
19. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
20. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"X12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
21. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
22. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
23. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
24. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
25. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION. CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNERS RIGHTS UNDER LAW AND THIS CONTRACT.

GAS PIPING NOTES

1. ALL ABOVE GRADE INTERIOR GAS PIPING SHALL BE BLACK STEEL INTERIOR.
2. ALL BELOW GRADE GAS PIPING SHALL BE BLACK STEEL EXTERIOR (BASIS OF DESIGN) OR TRACPIPE PS-II FLEXIBLE GAS PIPING (ACCEPTABLE ALTERNATE).
3. ALL JOINTS FOR 2# SHALL BE WELDED COUPLING. (NO JOINTS PERMITTED BELOW GRADE)
4. HIGH PRESSURE GAS (2#) PIPE SIZE BASED ON GAS PRESSURE OF 2 PSI W/ A PRESSURE DROP OF 1.0 PSI AND 0.60 SPECIFIC GRAVITY (2009 IFGC TABLE 402. 4(3)). ALL EQUIPMENT WILL REQUIRE LOCAL PRESSURE REGULATORS VENTED TO THE OUTDOORS OR PRESSURE LIMITING DEVICE WHERE APPROVED BY LOCAL AUTHORITY. IF ALTERNATE PIPING MATERIAL IS TO BE USED, CONTRACTOR IS RESPONSIBLE FOR ADJUSTING PIPE SIZE TO MEET THE DESIGN PRESSURE DROP.
5. LOW PRESSURE GAS PIPE SIZE BASED ON SCHEDULE 40 STEEL PIPING WITH GAS PRESSURE LESS THAN 2 PSI W/ A PRESSURE DROP OF 0.3" AND 0.60 SPECIFIC GRAVITY (2009 IFGC TABLE 402. 4(1)). IF ALTERNATE PIPING MATERIAL IS TO BE USED, CONTRACTOR IS RESPONSIBLE FOR ADJUSTING PIPE SIZE TO MEET THE DESIGN PRESSURE DROP.
6. PROVIDE SHUT OFF VALVE, UNION REDUCER(S), DIRT LEG AND ALL FITTINGS REQUIRED AT EACH UNIT. ALL CONNECTIONS SHALL BE FULL SIZE OF EQUIPMENT.
7. GAS PIPING MATERIALS & INSTALLATION TO BE PER INTERNATIONAL FUEL & GAS CODE AND UTILITY REQUIREMENTS.
8. ALL FUEL FIRED EQUIPMENT SHALL HAVE AN EMERGENCY SHUT-OFF.
9. GAS PIPING SERVING RESIDENTIAL APPLIANCES SHALL TERMINATE IN A METAL BOX WITH SHUT-OFF VALVE. TRACPIPE MODEL #FGP-WBTM OR APPROVED EQUAL.
10. PRESSURE REGULATORS SHALL BE MANUFACTURED BY MAXITROL. PROVIDE VENT LIMITER MANUFACTURED BY MAXITROL. REGULATOR SHALL BE INSTALLED IN A HORIZONTAL UPRIGHT POSITION.

PLUMBING GENERAL NOTES

1. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND ALL APPLICABLE LOCAL CODES AND DRAWINGS.
2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW.
3. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
4. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
5. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE & TO ACCESS VALVES AND ALL CONCEALED MECHANICAL EQUIPMENT.
6. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS.
7. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
8. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS. ALL VALVES SHALL BE ACCESSIBLE.
9. SUPPORT ALL EQUIPMENT PIPING FROM BLDG STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
10. RUN PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
11. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
12. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
13. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO RISERS.
14. HORIZONTAL SANITARY PIPING 2 1/2" AND SMALLER TO BE PITCHED A MINIMUM OF 1/4" PER FOOT IN THE DIRECTION OF THE FLOW.
15. HORIZONTAL SANITARY PIPING 3" AND UP TO AND INCLUDING 6" TO BE PITCHED AT A MINIMUM OF 1/8" PER FOOT IN THE DIRECTION OF FLOW.
16. HORIZONTAL SANITARY PIPING GREATER THAN 6" TO BE PITCHED A MINIMUM OF 1/16" PER FOOT IN THE DIRECTION OF FLOW.
17. CLEANOUTS SHALL BE PROVIDED AT THE BASE OF ALL SANITARY AND RAIN WATER VERTICAL STACKS.
18. FLOOR CLEANOUT SHALL BE JR SMITH 4031 SERIES.
19. WALL CLEANOUTS SHALL BE JR SMITH 4436 SERIES.
20. ANY REFERENCE TO ELECTRICAL, PLUMBING AND HVAC CONTRACTORS, NOTED ON THESE DRAWINGS OR STATED IN THE SPECIFICATIONS SHALL NOT BE MISCONSTRUED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL CO-ORDINATE AND PROVIDE A COMPLETE BUILDING WITH COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY SPECIFICATION REFERENCES TO OTHER CONTRACTORS.
21. CONTRACTOR TO VERIFY GAS PRESSURE PRIOR TO BID.

PLUMBING NOTES AND SPECIFICATIONS

1. PIPE MATERIALS
   - A. SERVICE: ABOVE GROUND WATER PIPING
     - PIPE MATERIAL: TYPE L COPPER TUBING ASTM8882 FACTORY.
     - FITTING MATERIAL: WROUGHT COPPER AND BRONZE SOLDER JOINTS.
     - PIPE JOINT: 95-5 LEAD FREE SOLDER
   - B. SERVICE: UNDER GROUND WATER PIPING
     - PIPE MATERIAL: CROSS-LINKED POLYETHYLENE (PEX) CONFORMING TO ASTM F876
     - FITTING MATERIAL: FITTINGS FOR PEX PLASTIC TUBING CONFORMING TO ASTM F 877
     - PIPE JOINT: COMPRESSION
   - C. SERVICE: SANITARY WASTE & VENT
     - PIPE MATERIAL: DWV RATED PVC PIPING
     - FITTING MATERIAL: PVC DRAINAGE PATTERN
     - PIPE JOINT: SOLVENT JOINT OR COUPLING W/ NEOPRENE GASKET BELOW GRADE
2. VALVES
   - A. BALL VALVES 2" AND SMALLER ON WATER SERVICES SHALL BE 2 PIECE ALL BRONZE WITH FULL PORT STAINLESS STEEL BALL, TEFLON SEATS, SOLDER ENDS AND 600 PSI COLD WORKING PRESSURE: JENKINS 902, APOLLO OR WATTS APPROVED EQUAL, UNLESS OTHERWISE NOTED.
3. INSULATION
   - A. INSULATION SHALL BE BY OWENS CORNING, CERTAIN-TEED OR MANVILLE.
   - B. INSULATION, JACKETS AND ADHESIVES SHALL BE FLAME RETARDANT AND SHALL HAVE ASTM E-84 FIRE HAZARD RATINGS OF 25 FLAME SPREAD, 50 SMOKE DEVELOPED AND 50 FUEL CONTRIBUTED,
   - C. DOMESTIC HOT WATER: NEW DOMESTIC HOT WATER PIPING SUPPLY AND RECIRCULATION PIPING SHALL BE INSULATED WITH HEAVY DENSITY FIBERGLASS WITH SELF-SEALING LAP AND ALL SERVICE JACKET. FITTINGS AND VALVES SHALL BE INSULATED WITH TWO LAYERS BLANKET INSULATION WITH PVC COVERS. INSULATION SHALL BE RATED FOR MAXIMUM OPERATING TEMPERATURE OF 450 DEGREES F. REFER TO PIPE INSULATION MATRIX ON THIS SHEET FOR REQUIRED INSULATION THICKNESS.
   - D. DOMESTIC COLD WATER: NEW COLD WATER SUPPLY PIPING, VALVES AND FITTINGS SHALL BE INSULATED AS SPECIFIED FOR HOT WATER SUPPLY PIPING, IN ADDITION, CONTINUOUS VAPOR BARRIER SHALL BE MAINTAINED. REFER TO PIPE INSULATION MATRIX ON THIS SHEET FOR REQUIRED INSULATION THICKNESS.
   - E. RAIN WATER CONDUCTOR: HORIZONTAL RAIN WATER CONDUCTORS SHALL BE INSULATED WITH MINIMUM 1" THICK INSULATION.
4. HANGERS, ANCHORS, CLAMPS AND INSERTS
   - A. PROVIDE CAST BRASS SPLIT RING HINGE HANGERS. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES. PREVENT VIBRATION. SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER RODS SHALL HAVE MACHINE THREADS.
   - B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP. UL APPROVED CONCRETE INSERTS OR PHILLIPS SHALL BE APPROVED EQUAL EXPANSION SHIELD. RAMSET OR POWER DRIVEN INSERTS WILL NOT BE ALLOWED.
   - C. HANGER SPACING SHALL MEET REQUIREMENTS OF STATE AND LOCAL CODES.
5. SLEEVES AND PENETRATIONS
   - A. PIPE SLEEVES THROUGH FIRE RATED CONSTRUCTION SHALL BE SCHEDULE 40 STEEL. SLEEVES THROUGH PARTITIONS AND NON FIRE RATED CONSTRUCTION SHALL BE 26 GAUGE GALVANIZED STEEL WITH LOCAL LONGITUDINAL SEAMS.
   - B. PACKING FOR SLEEVES THAT DO NOT REQUIRE MAINTENANCE OF FIRE RATINGSHALL BE OAKUM, SILICATE FOAM, CERAMIC FIBER WITH APPROVED SEALANT. PACK OR FOAM TO WITHIN ONE INCH OF BOTH WALL SURFACES. SEAL PENETRATION PACKING WITH APPROVED CAULKING AND PAINTABLE WATERPROOF MASTIC SURFACE FINISH OR SILICONE CAULKING.
6. TESTING
   - A. TEST AND ADJUST PLUMBING SYSTEMS AS REQUIRED BY ARCHITECT AND AUTHORITIES THAT HAVE JURISDICTION. PERFORM TEST RECOMMENDED BY MANUFACTURERS OF MATERIAL AND EQUIPMENT; THIS REQUIREMENT MAY BE WAIVED BY ARCHITECT. TEST PLUMBING SYSTEMS UNDER PRESSURE AND HEADS SPECIFIED IN PLUMBING CODES. CLEAN SYSTEMS THOROUGHLY BEFORE TESTING. FIXTURES, EQUIPMENT, PIPE, VALVES AND FITTINGS SHALL BE FREE OF GREASE, METAL CUTTINGS, DIRT AND OTHER FOREIGN MATERIAL. REPAIR STOPPAGE, DISCOLORATION AND DAMAGE TO PARTS OF BUILDING, FINISHES AND FURNISHINGS DUE TO FAILURE TO PROPERLY CLEAN PIPING SYSTEM.
7. DISINFECTION OF WATER SYSTEMS
   - A. WATER PIPING SYSTEMS SHALL BE THOROUGHLY DISINFECTED WITH A SOLUTION CONTAINING NO LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. CHLORINATING MATERIALS SHALL BE EITHER LIQUID CHLORINE OR SODIUM HYPOCHLORITE SOLUTION. SHALL BE INTRODUCED INTO THE SYSTEM AND DRAWN TO ALL POINTS IN THE SYSTEM. DISINFECTION SOLUTION SHALL BE ALLOWED TO REMAIN IN SYSTEM FOR 24 HOURS. DURING THIS TIME, VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER DISINFECTION, SOLUTION SHALL BE FLUSHED FROM THE SYSTEM WITH CLEAR WATER UNTIL RESIDUAL CHLORINE CONTENT IS NO GREATER THAN 2 PARTS PER MILLION.
8. IDENTIFICATION OF PLUMBING SYSTEMS:
   - A. PROVIDE PIPING IDENTIFICATION LABELS AND DIRECTIONAL ARROWS ON ALL PLUMBING SYSTEMS. INSTALL LABELS AT 10' INTERVALS & AT EACH SIDE OF FLOOR & WALL SEPARATIONS.
   - B. PROVIDE VALVE TAGS AT EACH DOMESTIC WATER SHUTOFF VALVE. PROVIDE VALVE TAG INDEX IDENTIFYING VALVE NUMBER, LOCATION AND SERVICE.
9. MISCELLANEOUS
   - A. ALL PLUMBING WORK SHALL BE IN ACCORDANCE WITH THE CURRENT PLUMBING CODE AND ALL APPLICABLE CODES AND STANDARDS
   - B. PROVIDE SHUTOFF VALVES ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. PROVIDE BALL VALVES ON ALL WATER MAIN BRANCHES IN CORRIDORS AND WHERE INDICATED ON DRAWINGS. ALL VALVES SHALL BE ACCESSIBLE.
   - C. PROVIDE VENTS AT HIGH POINTS IN PIPING SYSTEMS AND DRAIN VALVES AT LOW POINTS.
   - D. PROVIDE AT LEAST THREE-ELBOW SWING FOR PIPE TAKE-OFFS TO RISERS.
   - E. PITCH PIPING MINIMUM 1/8" PER 1'-0" TOWARDS DIRECTION OF FLOW TO ALLOW FOR DRAINING.
   - F. FLOOR CLEANOUTS SHALL BE JR SMITH 4031 SERIES.
   - G. WALL CLEANOUTS SHALL BE JR SMITH 4436 SERIES.
   - H. PROVIDE TRAP GUARDS ON ALL FLOOR DRAINS.
   - I. WHERE PIPING (DOMESTIC WATER, SANITARY, VENT, GAS, ETC.) IS LOCATED WITHIN WALLS, PROVIDE NAILER PLATES WHERE PIPING IS LOCATED WITHIN 1 1/2" OF THE FRAMING MEMBER.

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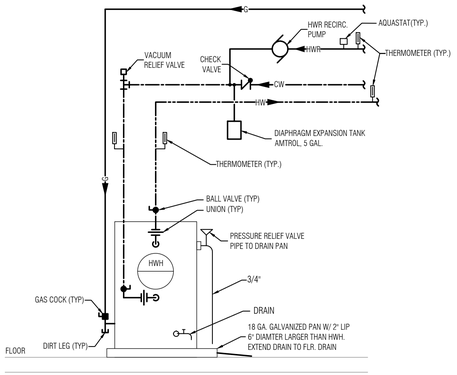
PLUMBING NOTES, LEGEND & SCHEDULES
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

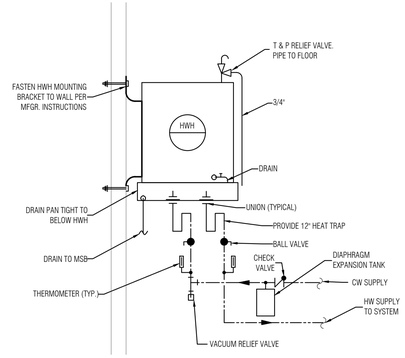
DATE 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY
CHECKED BY
PROJ. NO. 17214

SHEET NO. P1.0
SHEET OF

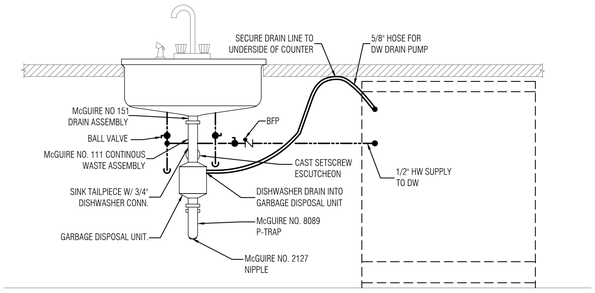


HOT WATER RECIRCULATION PUMP TO BE TIME CLOCK AND AQUASTAT CONTROLLED. WHEN THE TIME CLOCK IS INDEXED TO 'OCCUPIED', RECIRCULATION PUMP TO CYCLE TO MAINTAIN AQUASTAT SET POINT (110 DEG. ADJ). WHEN THE TIME CLOCK IS NDEXED TO UNOCCUPIED, RECIRCULATION PUMP TO BE DE-ENERGIZED.

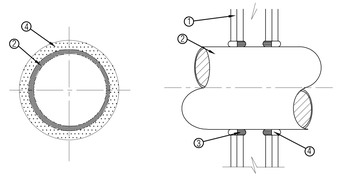
GAS HOT WATER HEATER DETAIL
NO SCALE



WALL MOUNTED HOT WATER HEATER DETAIL
NO SCALE



SINK PIPING W/ DISHWASHER CONNECTION
NO SCALE

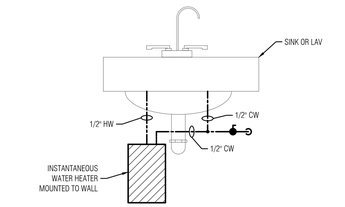


1. FIRE-RATED GYPSUM WALLBOARD.
2. METALLIC PIPE (NOT FOR USE WITH ALUMINUM OR LEAD).
3. FORMING MATERIAL. CERAMIC FIBER OR MINERAL WOOL. PACK AS NECESSARY TO RETAIN FILL MATERIAL.
4. FILL VOID OR CAVITY MATERIAL. FLAME-SAFE TYPE FS OR FST900 SERIES COMPOUND CAULKED OR TROWELLED TO REQUIRED DEPTH.

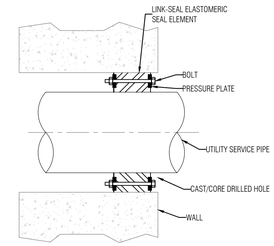
NOTES:
1. SYSTEM DESIGN EVALUATED TO THE TIME TEMPERATURE REQUIREMENTS OF ASTM E110.
2. DESIGN BASED UPON UL CLASSIFIED SYSTEM NO. 230 EVALUATED UL STANDARD 1470 (ASTM EB-14).
3. INSTALL FIRESTOP COMPOUND TO A NET DEPTH THICKNESS OF 1 1/4" MINIMUM (BOTH SIDES).
4. MINIMUM ANGULAR SPACE (BETWEEN PIPE AND SIDE OF OPENING) 3/16 MAX. FT.

1 & 2 HOUR RATED FIRESTOP FOR METALLIC PIPE PENETRATIONS THROUGH GYPSUM WALLBOARD ASSEMBLIES USING FLAME-SAFE FS, FST900 SEROES

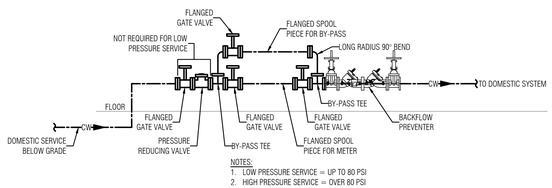
PIPE PENETRATION DETAIL
NO SCALE



WALL MOUNTED HOT WATER HEATER DETAIL
NO SCALE

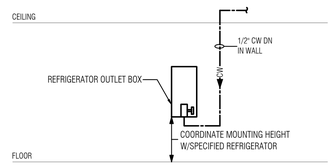


LINK SEAL DETAIL
NO SCALE

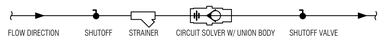


NOTES:
1. LOW PRESSURE SERVICE = UP TO 80 PSI
2. HIGH PRESSURE SERVICE = OVER 80 PSI

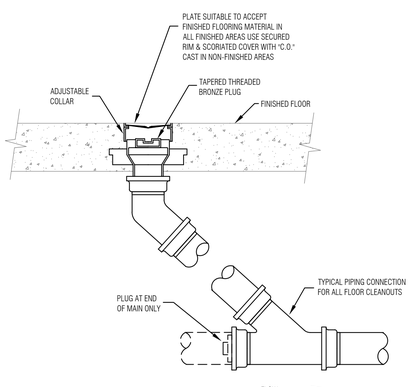
WATER SERVICE ENTRANCE DETAIL
NO SCALE



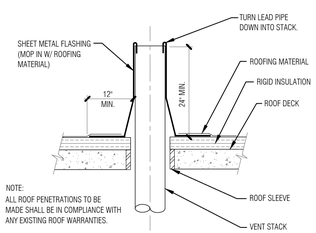
REFRIGERATOR WATER FEED DETAIL
NO SCALE



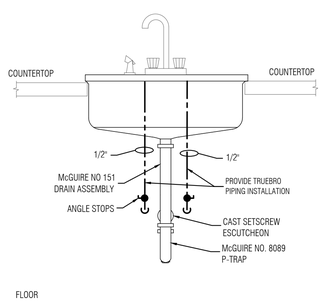
CIRCUIT SOLVER DETAIL
NO SCALE



TYPICAL INTERIOR CLEANOUT DETAIL
NO SCALE



VENT THRU ROOF DETAIL
NO SCALE



LAVATORY/ SINK PIPING DETAIL
NO SCALE

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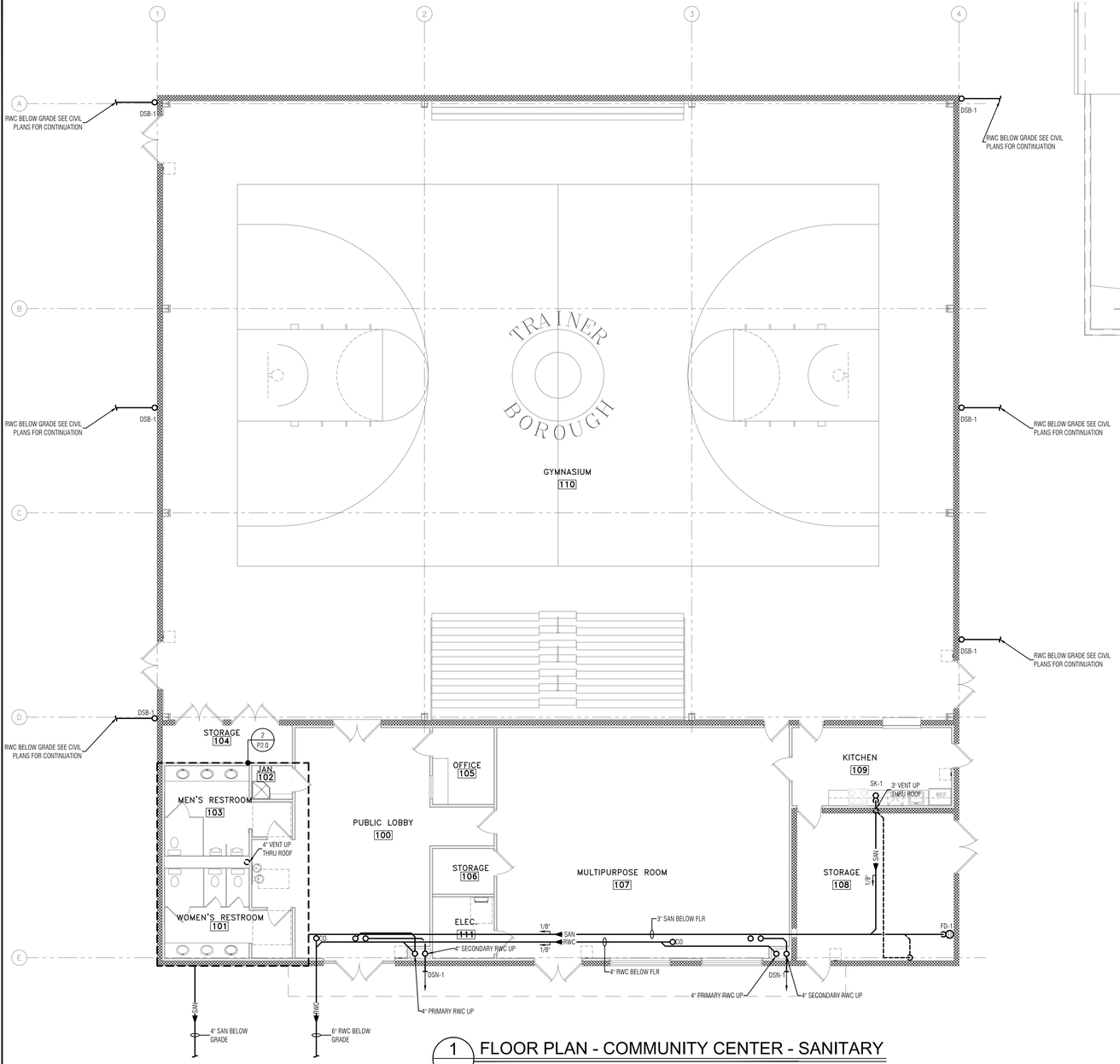
PLUMBING DETAILS
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

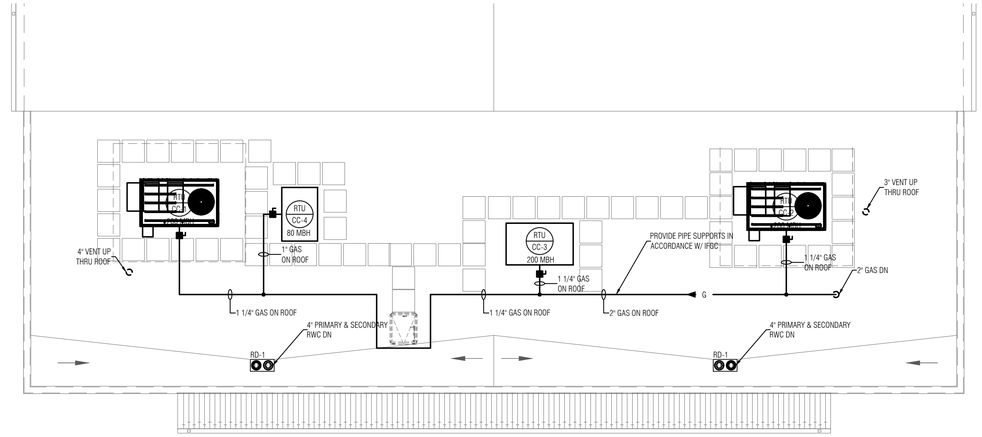
REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

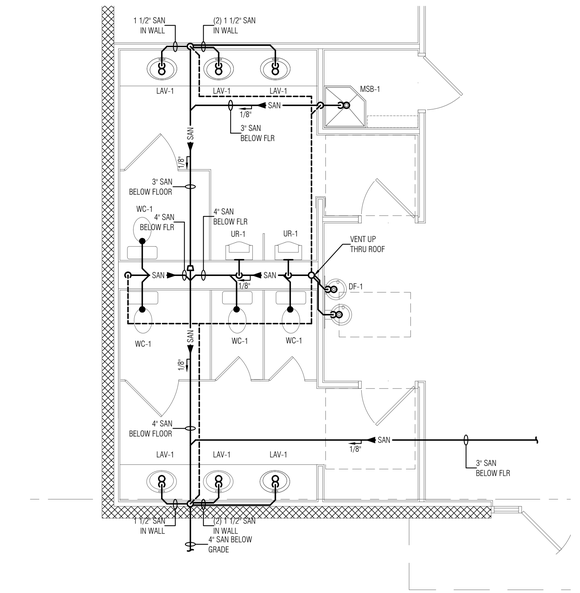
SHEET NO. P1.1
SHEET OF



1 FLOOR PLAN - COMMUNITY CENTER - SANITARY
P2.0 SCALE - 1/8" = 1'-0"



3 PARTIAL ROOF PLAN
P2.0 SCALE - 1/8" = 1'-0"



2 ENLARGED FLOOR PLAN - COMMUNITY CENTER - SANITARY
P2.0 SCALE - 1/4" = 1'-0"

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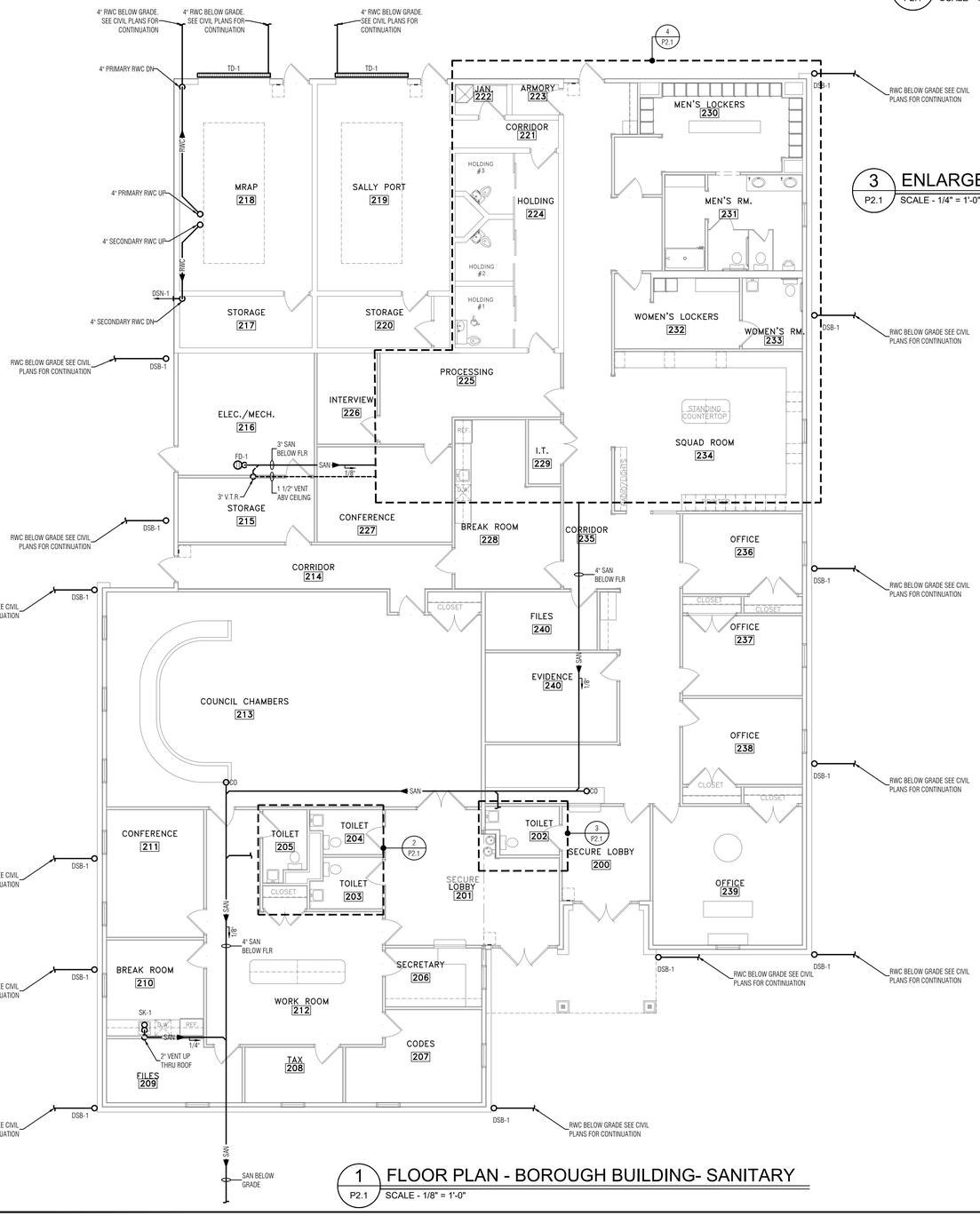
SANITARY FLOOR PLANS—COMMUNITY CENTER
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

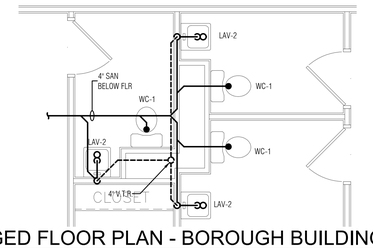
REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

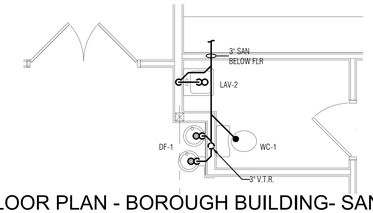
SHEET NO. P2.0 SHEET OF



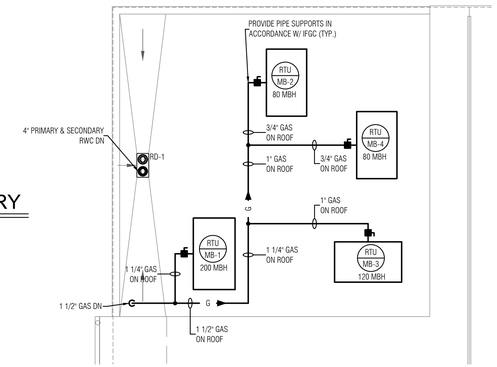
1 FLOOR PLAN - BOROUGH BUILDING- SANITARY
P2.1 SCALE - 1/8" = 1'-0"



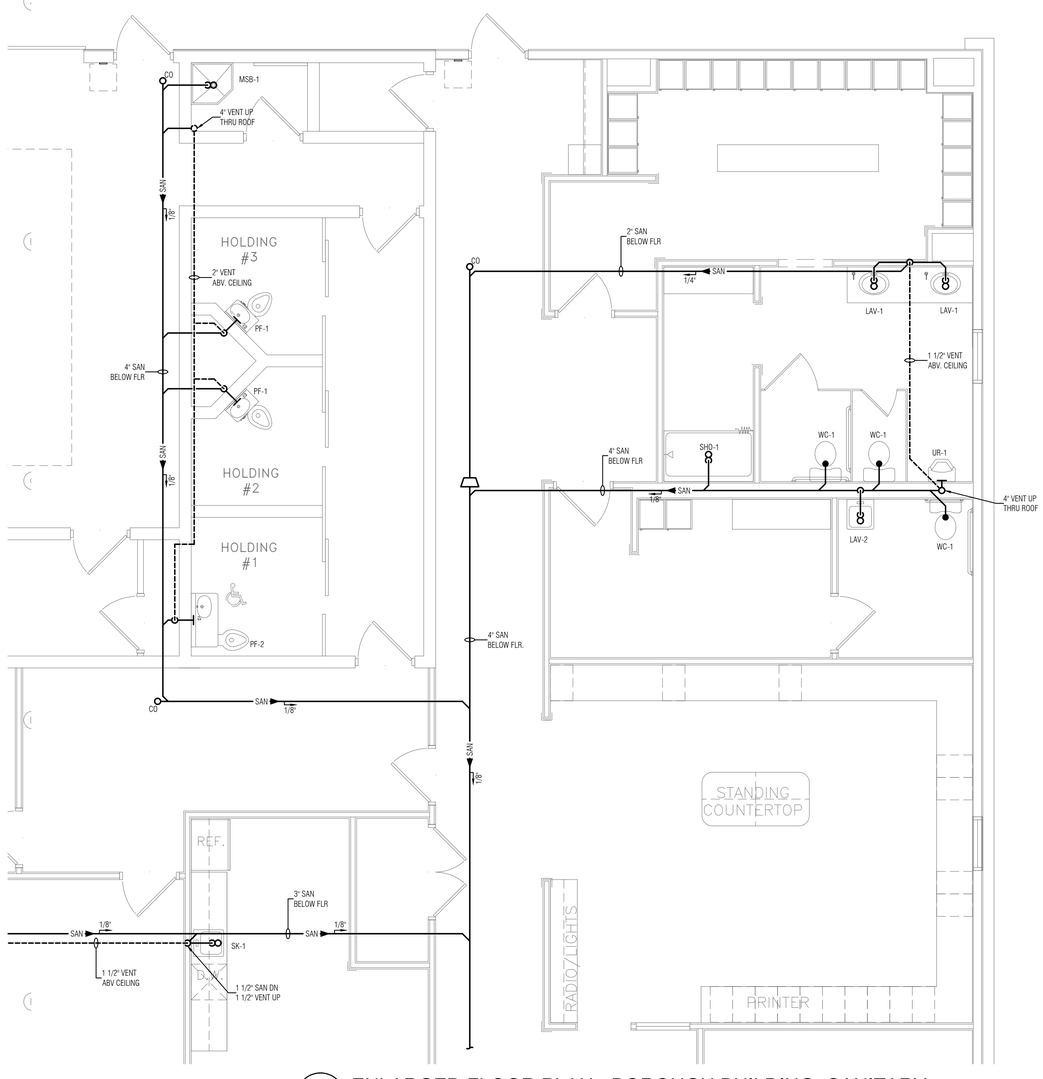
2 ENLARGED FLOOR PLAN - BOROUGH BUILDING- SANITARY
P2.1 SCALE - 1/4" = 1'-0"



3 ENLARGED FLOOR PLAN - BOROUGH BUILDING- SANITARY
P2.1 SCALE - 1/4" = 1'-0"



5 PARTIAL ROOF PLAN
P2.1 SCALE - 1/8" = 1'-0"



4 ENLARGED FLOOR PLAN - BOROUGH BUILDING- SANITARY
P2.1 SCALE - 1/4" = 1'-0"

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SANITARY FLOOR PLANS–BOROUGH BUILDING

NEW MUNICIPAL BUILDINGS

BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
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DATE: 11/14/18
SCALE: 1/8"=1'-0"
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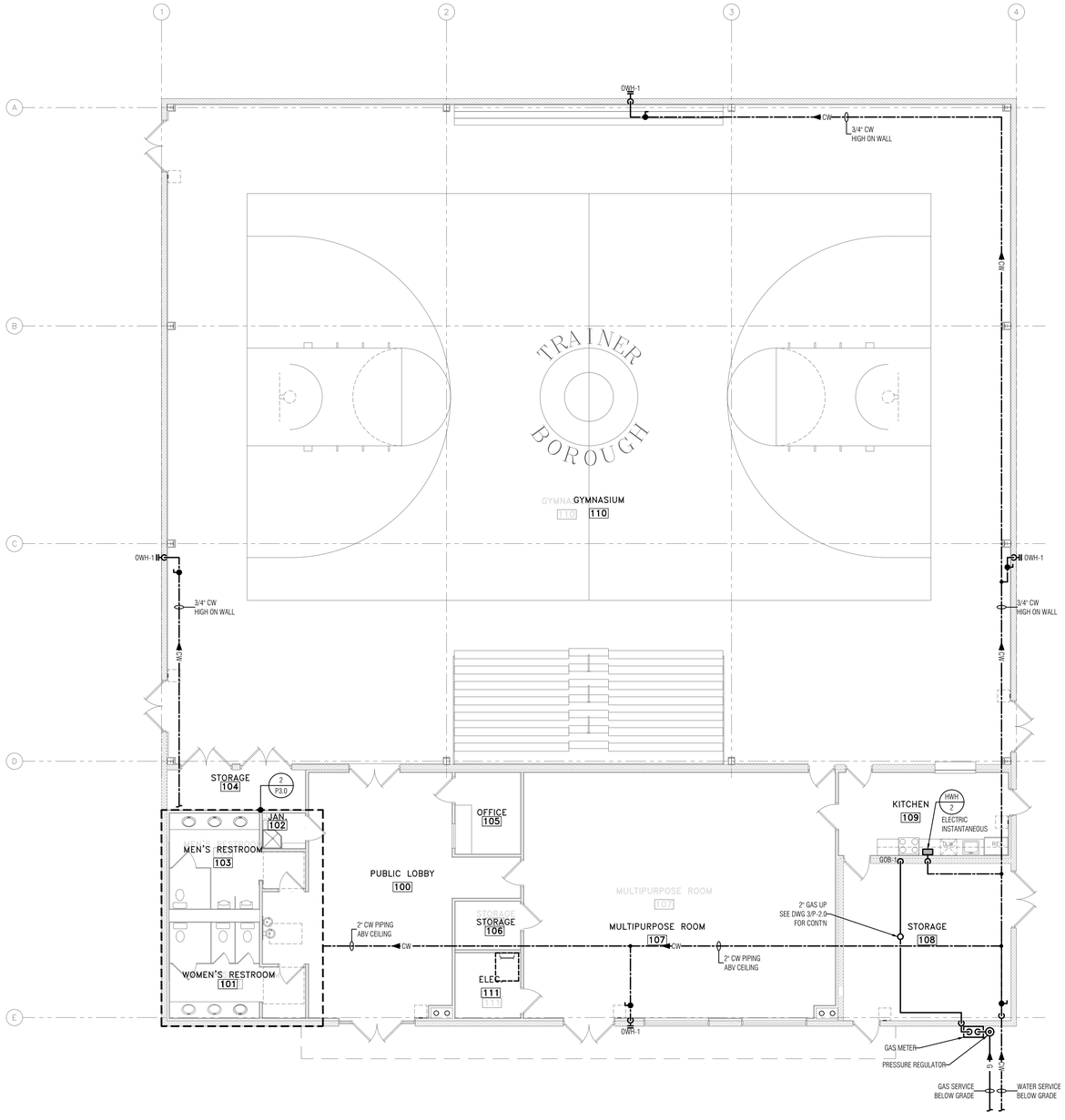
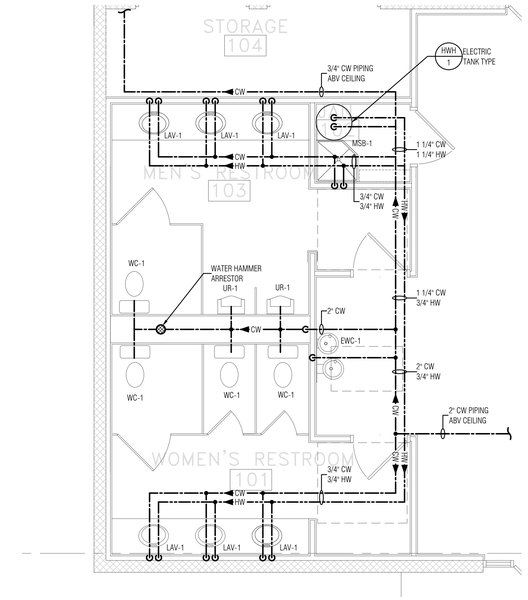
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. P2.1 SHEET OF



1 FLOOR PLAN - COMMUNITY CENTER - DOMESTIC WATER
P3.0 SCALE - 1/8" = 1'-0"



2 ENLARGED FLOOR PLAN - COMMUNITY CENTER - DOMESTIC WATER
P3.0 SCALE - 1/4" = 1'-0"

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DOMESTIC WATER FLOOR PLANS—COMMUNITY CENTER

NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
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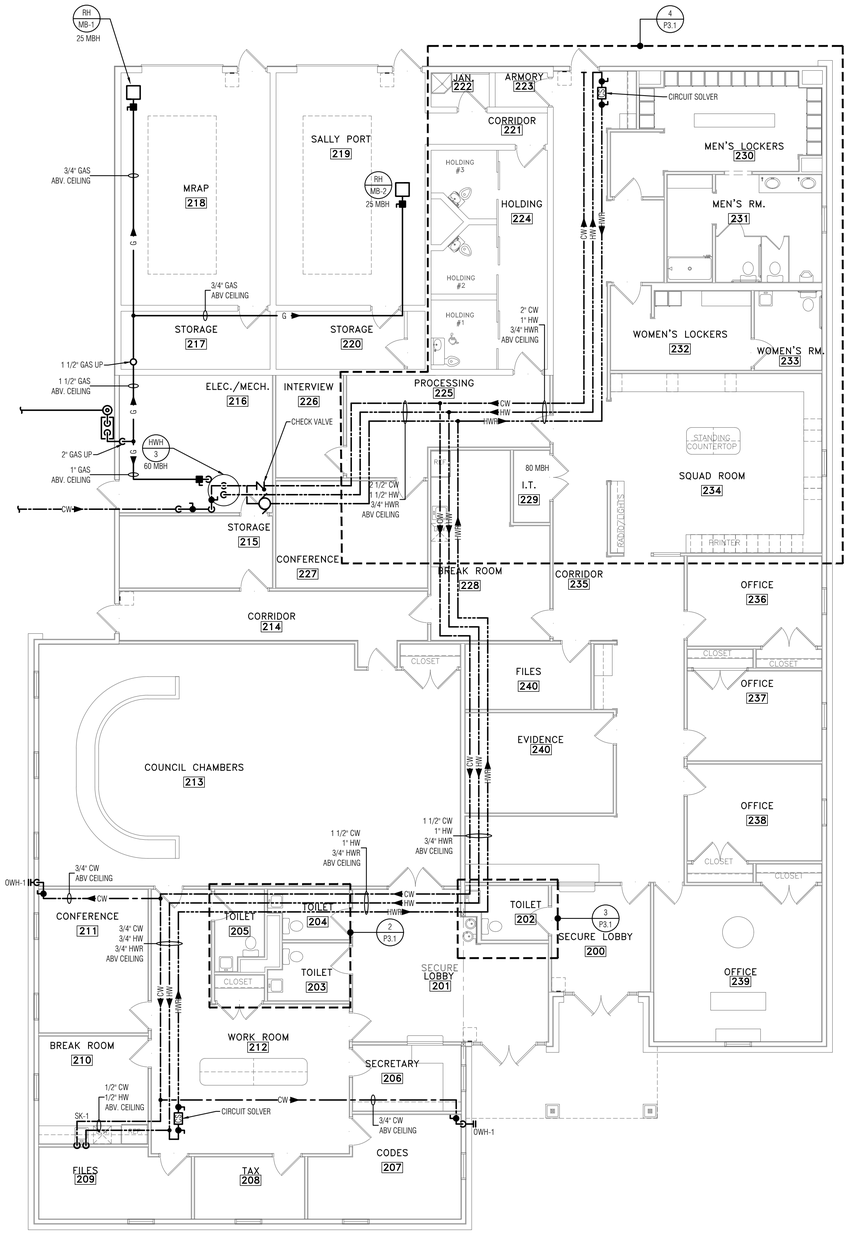
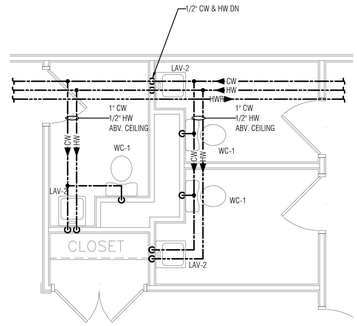
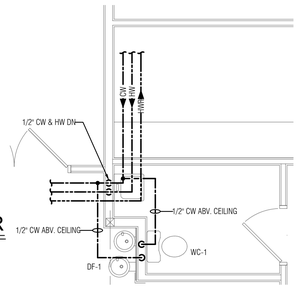
SHEET NO. P3.0 SHEET OF



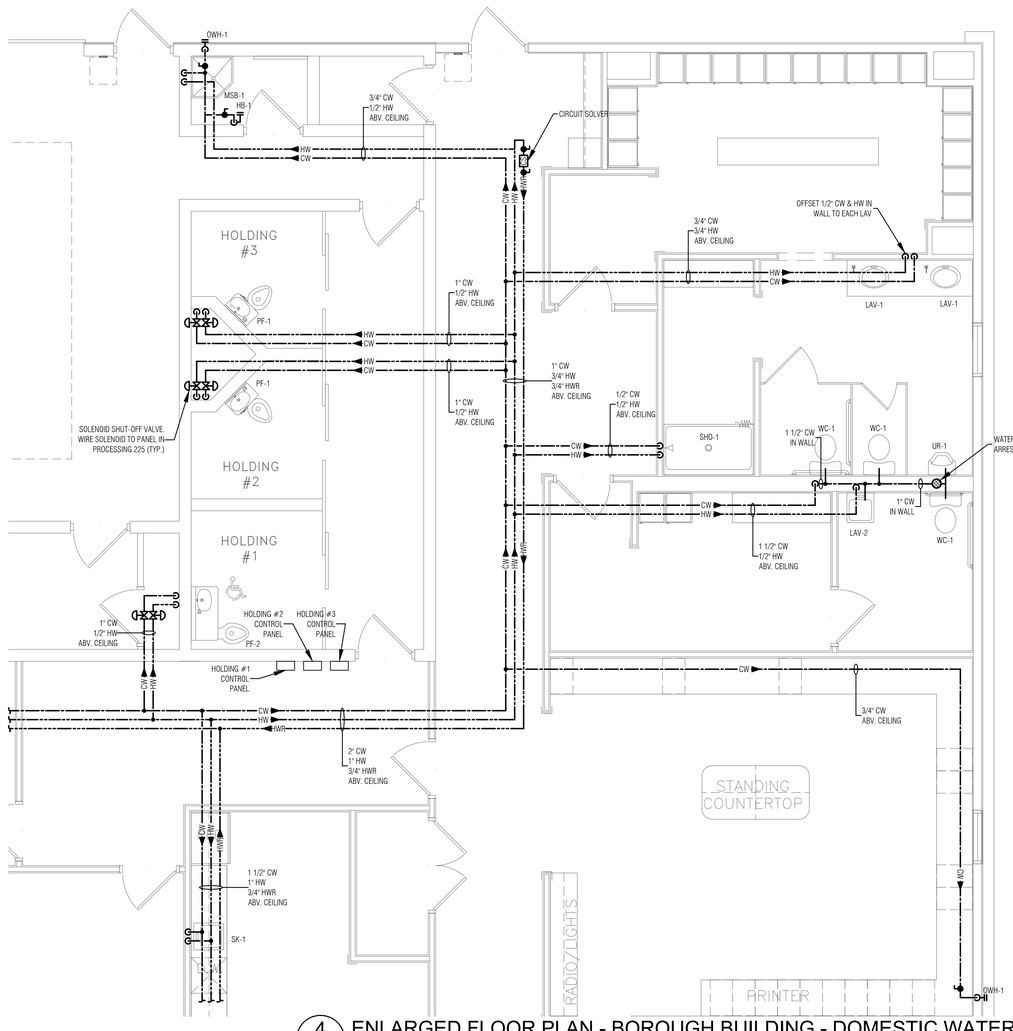
1 FLOOR PLAN - BOROUGH BUILDING - DOMESTIC WATER
P3.1 SCALE - 1/4" = 1'-0"



2 ENLARGED FLOOR PLAN - BOROUGH BUILDING - DOMESTIC WATER
P3.1 SCALE - 1/4" = 1'-0"



3 ENLARGED FLOOR PLAN - BOROUGH BUILDING - DOMESTIC WATER
P3.1 SCALE - 1/4" = 1'-0"



4 ENLARGED FLOOR PLAN - BOROUGH BUILDING - DOMESTIC WATER
P3.1 SCALE - 1/4" = 1'-0"

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DOMESTIC WATER FLOOR PLANS–BOROUGH BUILDING
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SHEET NO. P3.1
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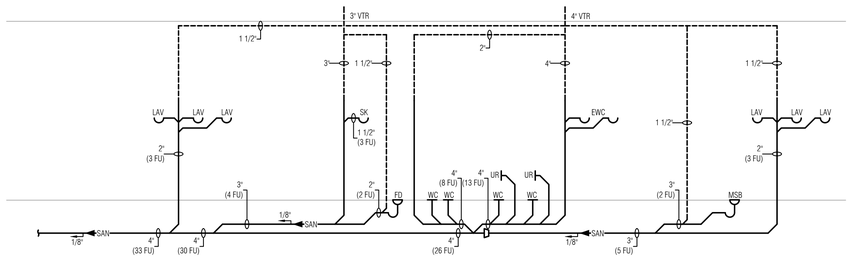

1 P4.0 PLUMBING SANITARY RISER DIAGRAM - COMMUNITY CENTER

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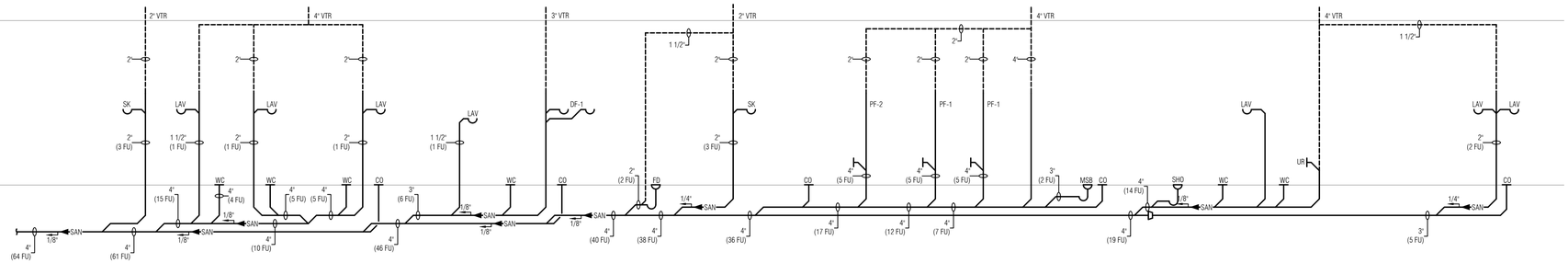

2 P4.0 PLUMBING SANITARY RISER DIAGRAM - BOROUGH BUILDING

SCALE: N.T.S.

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PLUMBING SANITARY RISER DIAGRAM

NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER

TRAINER PA, 19061

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DATE: 11/14/18
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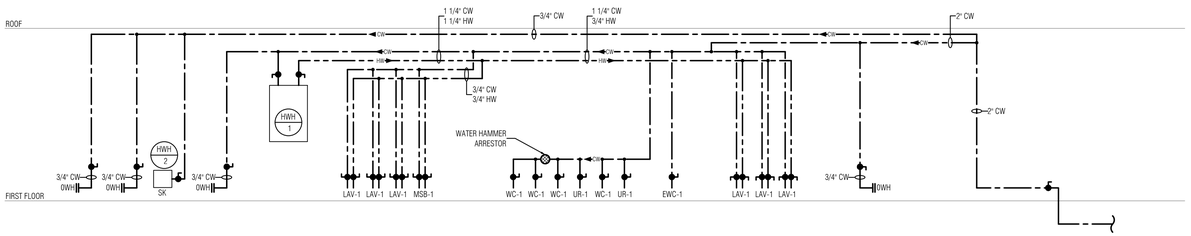
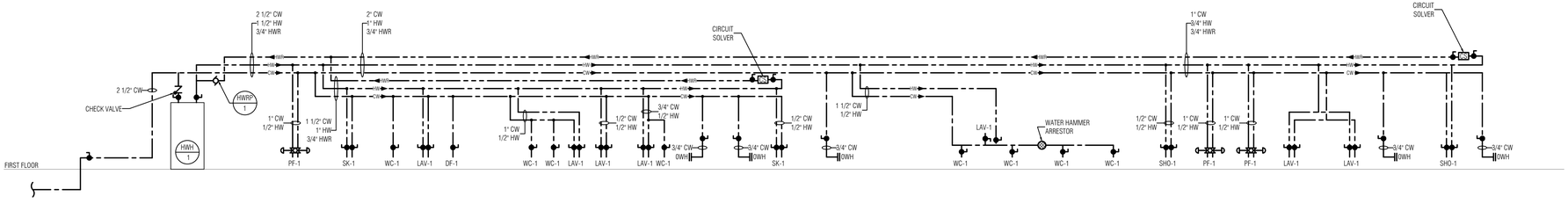
SHEET NO. P4.0 SHEET OF



1 P5.0 PLUMBING DOMESTIC WATER RISER DIAGRAM - COMMUNITY CENTER

SCALE: N.T.S.



2 P5.0 PLUMBING DOMESTIC WATER RISER DIAGRAM - BOROUGH BUILDING

SCALE: N.T.S.

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PLUMBING DOMESTIC WATER RISER DIAGRAM

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BOROUGH OF TRAINER

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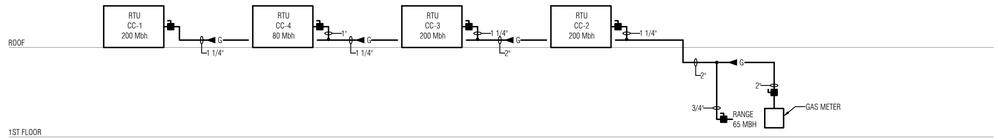
SHEET NO. P5.0 SHEET OF

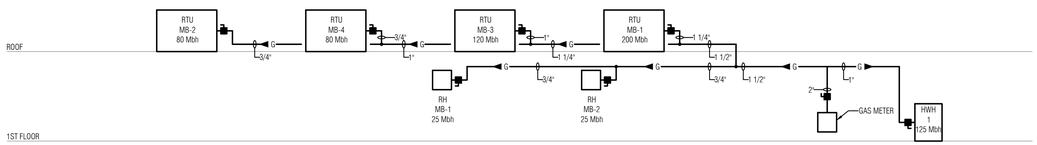


GAS PIPING CALCULATION (COMMUNITY CENTER)						
GAS TYPE	INLET PRESSURE	PRESSURE DROP	SPECIFIC GRAVITY	LENGTH	TOTAL CONNECTED LOAD	PIPE SIZE*
NATURAL	LESS THAN 2 PSI	0.3" W.C.	0.60	90'	745 Mbh	2"

*GAS PIPING SIZED PER 2015 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1)

1 P6.0 PLUMBING GAS RISER DIAGRAM - COMMUNITY CENTER

SCALE: N.T.S.



GAS PIPING CALCULATION (COMMUNITY CENTER)						
GAS TYPE	INLET PRESSURE	PRESSURE DROP	SPECIFIC GRAVITY	LENGTH	TOTAL CONNECTED LOAD	PIPE SIZE*
NATURAL	LESS THAN 2 PSI	0.3" W.C.	0.60	60'	655 Mbh	2"

*GAS PIPING SIZED PER 2015 INTERNATIONAL FUEL GAS CODE TABLE 402.4(1)

2 P6.0 PLUMBING GAS RISER DIAGRAM - BOROUGH BUILDING

SCALE: N.T.S.

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PLUMBING GAS RISER DIAGRAM

NEW MUNICIPAL BUILDINGS

BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS		
NO.	DESCRIPTION	DATE
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DRAWN BY:
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PROJ. NO.: 17214

SHEET NO. P6.0 SHEET OF

GENERAL SPECIFICATIONS

1. DRAWINGS AND SPECIFICATIONS FORM COMPLIMENTARY REQUIREMENTS. PROVIDE WORK SPECIFIED AND NOT SHOWN, AND WORK SHOWN BUT NOT SPECIFIED AS THOUGH EXPLICITLY REQUIRED BY BOTH. ALTHOUGH WORK IS NOT SPECIFICALLY SHOWN OR SPECIFIED, PROVIDE SUPPLEMENTARY OR MISCELLANEOUS ITEMS, APPURTENANCES, DEVICES AND MATERIALS OBVIOUSLY NECESSARY FOR A SOUND, SECURE AND COMPLETE INSTALLATION.
2. THE DRAWINGS AND SPECIFICATIONS INDICATE A PERFORMANCE SPECIFICATION FOR BIDDING PURPOSES FOR FIRE PROTECTION AND FIRE ALARM SYSTEMS. AWARDED CONTRACTORS ARE RESPONSIBLE FOR DETAILED DESIGN AND PREPARATION OF SIGNED AND SEALED ENGINEERING DOCUMENTS FOR REVIEW/APPROVAL FROM OWNERS INSURANCE CARRIER AND LOCAL AUTHORITY HAVING JURISDICTION.
3. DRAWINGS ARE DIAGRAMMATIC. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
4. ADDRESS QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE AWARD OF CONTRACT. OTHERWISE, ARCHITECTS INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
5. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR. PRIOR TO FINAL OWNER ACCEPTANCE TESTING, PROVIDE PERSONNEL TO ASSIST IN 24 HOURS OF ACCEPTANCE TESTING.
6. PRIOR TO COMMENCING WORK, SHEET METAL SHOP DRAWINGS OF ALL *COMMON AREA/AMENITY SPACES* MUST BE PREPARED AND SUBMITTED FOR REVIEW AND APPROVAL TO THE ARCHITECT/ENGINEER. SHEETMETAL SHOP DRAWINGS SHALL INCLUDE ALL ELEMENTS OF THE EQUIPMENT, DUCTWORK, AIR DEVICES, AND REFLECTED CEILING PLAN FOR COORDINATION OF CRITICAL DIMENSIONS OF ARCHITECTURAL/ STRUCTURAL COMPONENTS.
7. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS
8. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ARCHITECT FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME. FOR SUBMITTAL REVIEW SHALL BE ALLOWED.
9. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA FOR INTENDED SERVICE.
10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF WORK, AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
11. COORDINATE WORK OF THIS SECTION WITH THAT OF OTHER SECTIONS.
12. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES, AND LAW OF LOCAL, STATE, AND FEDERAL GOVERNMENTS, AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
13. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE HIS WORK WITH THAT OF ALL OTHER TRADES, INCLUDING (BUT NOT LIMITED TO), ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL ARCHITECTURE. OFFSETS IN PIPING AND OFFSETS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
14. DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED, SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE OR OTHER CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED AS A RESULT OF THE CHANGES NEEDED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT INCLUDING THE WORK OF OTHER TRADES.
15. EACH CONTRACTOR IS RESPONSIBLE FOR ITS CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF ITS NEW WORK. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
16. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
17. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS, AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS. MATERIALS AND EQUIPMENT SHALL BE NEW AND INSTALLED ACCORDING TO MANUFACTURERS INSTRUCTIONS AND RECOMMENDATIONS, SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
18. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW SLEEVES THROUGH CONCRETE FLOORS AND FIRE RATED WALLS OR PARTITIONS WITH UL RATED ASSEMBLIES WITH EQUAL FIRE RATING. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS.
19. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE, AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
20. ALL MATERIALS AND EQUIPMENT SHALL BE NEW UNLESS NOTED OTHERWISE.
21. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
22. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
23. SHOP DRAWINGS MUST BE SUBMITTED, REVIEWED AND APPROVED PRIOR TO INSTALLATION OF EQUIPMENT/MATERIALS
24. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
25. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT THAT REQUIRES INSPECTION, REPLACEMENT OR REPAIR. ACCESS PANELS SHALL BE A MINIMUM OF 12" X 12" OR AS NEEDED FOR APPROPRIATE ACCESS. TO BE SUPPLIED TO GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS IN RATED ASSEMBLIES SHALL BE ACUDOR FW-5050. ACCESS PANELS IN NON-RATED DRYWALL CEILINGS SHALL BE WIND-LOCK "STEALTH". ACCESS PANELS IN NON-RATED WALLS SHALL BE ADJUDOR UF-5000.
26. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
27. ALL EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND COMBUSTIBILITY.
28. AS WORK PROGRESSES AND FOR DURATION OF CONTRACT, MAINTAIN COMPLETE SET OF PRINTS OF CONTRACT DRAWINGS AT JOB SITE AT ALL TIMES. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
29. DO NOT SUPPORT EQUIPMENT FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT AND PIPING FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
30. RUN PIPING/WIRING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
31. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING/WIRING.
32. ANY REFERENCE TO ELECTRICAL, PLUMBING AND HVAC CONTRACTORS, NOTED ON THESE DRAWINGS OR STATED IN THE SPECIFICATIONS SHALL NOT BE MISCONSTRUED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE BUILDING WITH COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY SPECIFICATION REFERENCES TO OTHER CONTRACTORS.
33. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OF CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY, REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD. PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER GUARANTEED AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

GENERAL NOTES - FIRE PROTECTION

1. THE DRAWINGS AND SPECIFICATIONS INDICATE A PERFORMANCE SPECIFICATION FOR THE FIRE PROTECTION SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING A COMPLETE AND OPERATING SYSTEM IN COMPLIANCE WITH THE APPLICABLE NFPA CODES. AWARDED CONTRACTOR IS RESPONSIBLE FOR DETAILED DESIGN AND PREPARATION OF SIGNED AND SEALED ENGINEERING DOCUMENTS FOR REVIEW/APPROVAL FROM THE OWNERS INSURANCE CARRIER AND LOCAL AUTHORITY HAVING JURISDICTION.
2. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SPRINKLER SHOP DRAWINGS, HYDRAULIC CALCULATIONS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ENGINEER FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. SCHEDULE AT LEAST TEN WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME. FOR SUBMITTAL REVIEW.
3. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS OF THIS SECTION.
4. SPRINKLER PIPE SIZES ARE TO BE CALCULATED HYDRAULICALLY BY THE FIRE PROTECTION CONTRACTOR.
5. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEADS AND ASSOCIATED PIPING LOCATIONS WITH THE ARCHITECT PRIOR TO COMMENCING WORK IN FINISHED AREAS.
6. THE CONTRACTOR SHALL COORDINATE SPRINKLER HEAD LOCATIONS WITH LIGHTING LAYOUT, DUCTWORK AND PIPING AND OTHER TRADES PRIOR TO ROUGH-IN.
7. SEISMIC: WHERE REQUIRED SUBMIT WORKING PLANS, REVIEWED, SIGNED AND STAMPED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE IN WHICH THE PROJECT IS LOCATED, CERTIFYING THAT THE PLANS MEETS ALL SEISMIC REQUIREMENTS ESTABLISHED BY AUTHORITIES.
8. BEFORE STARTING WORK IN A PARTICULAR AREA OF THE PROJECT, VISIT SITE AND EXAMINE CONDITIONS UNDER WHICH WORK MUST BE PERFORMED INCLUDING PREPARATORY WORK DONE UNDER OTHER SECTIONS OR CONTRACTS BY OWNER. REPORT CONDITIONS THAT MIGHT AFFECT WORK ADVERSELY IN WRITING THROUGH THE CONTRACTOR TO THE ARCHITECT/ENGINEER. DO NOT PROCEED WITH WORK UNTIL DEFECTS HAVE BEEN CORRECTED AND THE CONDITIONS ARE SATISFACTORY. COMMENCEMENT OF WORK SHALL INDICATE ACCEPTANCE OF EXISTING CONDITIONS.
9. ALL SPRINKLER HEADS IN ACOUSTICAL DROP CEILINGS SHALL BE CENTERED IN TILE.

FIRE PROTECTION NOTES

1. PIPE AND FITTINGS
   - A. PIPE SHALL MEET APPLICABLE ANSI OR ASTM STANDARDS AND SHALL HAVE MANUFACTURER'S NAME AND STANDARD MARKED ON EACH LENGTH. JOINTS SHALL MEET APPLICABLE ANSI OR ASTM STANDARDS. WHERE ANSI OR ASTM STANDARD DOES NOT EXIST, JOINTS AND FITTINGS SHALL BEAR UL LISTED SYMBOL.
   - B. SERVICE: LIGHT HAZARD ABOVE GROUND WET-PIPE SPRINKLER (2 1/2" AND BELOW).
     PIPE MATERIAL: CPVC (CHLORINATED POLYVINYL CHLORIDE), ASTM D1784
     FITTING MATERIAL: CPVC, ASTM F437 & ASTM F438.
     PIPE JOINT: SOLVENT CEMENT, ASTM F656 & ASTM F493
   - C. SERVICE: ORDINARY HAZARD ABOVE GROUND WET-PIPE SPRINKLER (2 1/2" AND BELOW).
     PIPE MATERIAL: WELDED AND SEAMLESS STEEL PIPE, SCHEDULE 40, ASTM A53.
     FITTING MATERIAL:: MALLEABLE IRON, CLASS 150, ANSI B 16.3
     PIPE JOINT: THREADED OR VICTAULIC
   - D. SERVICE: ABOVE GROUND WET-PIPE SPRINKLER (3" AND LARGER":
     PIPE MATERIAL: WELDED AND SEAMLESS STEEL PIPE, SCHEDULE 40, ASTM A53
     FITTING MATERIAL:: MALLEABLE IRON, CLASS 150, ANSI B16.3.
     PIPE JOINT: THREADED OR VICTAULIC
2. HANGERS, ANCHORS, CLAMPS, AND INSERTS
   - A. HANGERS SHALL MEET NFPA STANDARDS. PROVIDE ADJUSTABLE SWIVEL RIGHTS FOR PIPING 3" AND SMALLER. SUPPORT PIPING FROM BUILDING STRUCTURE TO MAINTAIN REQUIRED GRADE AND PITCH OF PIPE LINES, PREVENT VIBRATIONS, SECURE PIPING IN PLACE. SECURE HANGERS TO INSERTS WHERE PRACTICAL. HANGER TODS SHALL HAVE MACHINE THREADS.
   - B. HANGER RODS SHALL BE CONNECTED TO BEAM CLAMP. UL-APPROVED CONCRETE INSERTS OR PHILIPS OR APPROVED EQUAL EXPANSION SHIELDS. RAMSET OR POWER DRIVEN INSETS WILL NOT BE ALLOWED.
   - C. HANGER SPACING SHALL MEET REQUIREMENT OF STATE AND LOCAL CODES. PIPE SUPPORTS, VERTICAL AND HORIZONTAL, SHALL NOT BEAR ON SLEEVES.
3. SPRINKLER HEADS
   - A. PROVIDE UL-LISTED AND FM APPROVED FUSIBLE LINK SPRAY SPRINKLER HEADS
   - B. HEADS SHALL HAVE ORDINARY DEGREE TEMPERATURE RATINGS.
   - C. SPRINKLER HEADS SHALL BE RELOCATED OR ADDED TO PROVIDE ADEQUATE COVERAGE THROUGHOUT ALL AREAS IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 13.
   - D. WHERE SPRINKLER HEADS ARE SUBJECT TO PHYSICAL DAMAGE PROVIDE PROTECTIVE WIRE GUARD.
4. SPRINKLER SYSTEM INSTALLATION
   - A. WORK SHALL BE NEAT AND RECTILINEAR. PIPING SHALL RUN CONCEALED. WORK SHALL BE PROPERLY AND EFFECTIVELY PROTECTED AND PIPE OPENING SHALL BE TEMPORARILY CLOSED TO PREVENT CONSTRUCTION AND DAMAGE BEFORE COMPLETION.
5. CONTINUITY OF SERVICES
   - A. NOTIFY THE "AUTHORITY HAVING JURISDICTION" WHEN SHUTDOWNS OF EXISTING SYSTEMS ARE NECESSARY.
6. TESTS
   - A. TEST SPRINKLER SYSTEM AS REQUIRED IN NFPA CODE, OWNERS INSURANCE CARRIER, AND AGENCIES THAT HAVE JURISDICTION.
   - B. NOTIFY ARCHITECT AND AGENCIES THAT HAVE JURISDICTION TESTS ARE TO BE MADE. TEST SPRINKLER PIPING AND MAKE WATERTIGHT BEFORE CONCEALMENT. TEST SHALL BE WITNESSED BY THE INSURANCE UNDERWATERS REPRESENTATIVE, THE MUNICIPAL INSPECTOR AND A REPRESENTATIVE OF THE ARCHITECT.
   - C. SPRINKLER SYSTEM SHALL BE TESTED TO HYDROSTATIC TEST OF 200 PSI IN ACCORDANCE WITH NFPA REQUIREMENTS
   - D. IF INSPECTION OR TEST SHOWS DEFECTS, SUCH DEFECTIVE WORK OR MATERIAL, SHALL BE REPLACED AND INSPECTED AND TESTS SHALL BE REPEATED UNTIL WORK IS ACCEPTED. REPAIRS TO PIPING SHALL BE MADE WITH NEW MATERIAL
7. CLEANING
   - A. CLEAN INSTALLATION THOROUGHLY UPON COMPLETION TO REMOVE GREASE, CUTTINGS, DIRT AND OTHER FOREIGN MATERIALS. REPAIR STOPPAGES, DISCOLORATION AND DAMAGE THAT RESULT FROM FAILURE TO CLEAN PIPING PROPERLY WITHIN CONTRACT PRICE.

SPRINKLER SCHEDULE

SYMBOL	TYPE	TEMPERATURE RATING	ORIFICE DIAMETER	FINISH	BASIS OF DESIGN MANUFACTURER & MODEL #	REMARKS	ACCEPTABLE MFGR.
⊠	CONCEALED PENDANT	155° F	1/2"	WHITE	TYCO SERIES RFII	QUICK RESPONSE. THERMO-SENSITIVE GLASS BULB SPRAY SPRINKLER, CONCEALED SPRINKLER COVER. FOR USE IN AREAS WITH CEILINGS.	VICTAULIC, VIKING, RELIABLE
●	INSTITUTIONAL PENDANT	165° F	1/2"	CHROME PLATED	TYCO TGP-PH2	STANDARD RESPONSE. THERMO-SENSITIVE SPRAY SPRINKLER. FOR USE IN HOLDING AREA	VICTAULIC, VIKING, RELIABLE
⊙	UPRIGHT	155° F	1/2"	WHITE	TYCO TY-FRB	QUICK RESPONSE. THERMO-SENSITIVE GLASS BULB SPRAY SPRINKLER. FOR USE IN AREAS WITHOUT CEILINGS. IN GYMNASIUM, PROVIDE SPRINKLER GUARDS.	VICTAULIC, VIKING, RELIABLE

SPRINKLER SYSTEM DESIGN DATA

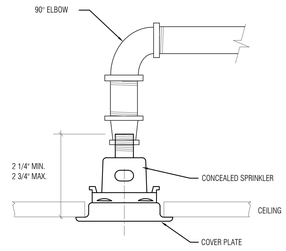
OCCUPANCY	NFPA HAZARD CLASSIFICATION	SPRINKLER CRITERIA GPM / SQ.FT.	SPRINKLER TEMPERATURE
OFFICES, GYMNASIUM	LIGHT HAZARD	0.10 / 1500	155° F
MECHANICAL / ELECTRICAL ROOM	ORDINARY HAZARD	0.15 / 1500	155° F

FIRE PROTECTION ABBREVIATIONS
(NOT ALL ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT)

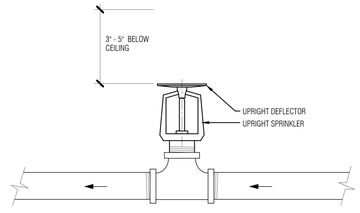
COMP	COMPRESSOR
CV	CHECK VALVE
DIPS	DOUBLE INTERLOCKED PREACTION SPRINKLER SYSTEM
DN	DOWN
DR	DRAIN RISER
DSS	DRY PIPE SPRINKLER SYSTEM
DWG	DRAWING
(E)	EXISTING
FD	FLOOR DRAIN
FS	FLOW SWITCH
GPM	GALLONS PER MINUTE
GV	GATE VALVE
MIN	MINIMUM
(N)	NEW
NTS	NOT TO SCALE
O/G-1	ORDINARY HAZARD - GROUP 1
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH (GAUGE)
SQ.FT.	SQUARE FOOT
SPKR	SPRINKLER
TS	TAMPER SWITCH
WF	WATER FLOW DETECTOR
SP	WET PIPE SPRINKLER SYSTEM

FIRE PROTECTION SYMBOLS
(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

SYMBOL	DESCRIPTION
	WATERFLOW DETECTOR
	BACKFLOW PREVENTER
	DRY PIPE VALVE
	PREACTION DELUGE VALVE
	PREACTION CONTROL PANEL
	PREACTION ALARM HORN WITH FLASHING LIGHT
	SYSTEM CONTROL VALVE
	CHECK VALVE
	SOLENOID RELEASE VALVE
	PRESSURE GUAGE
	3-WAY ALARM TEST SHUT OFF VALVE
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	POINT OF CONNECTION BETWEEN EXISTING AND TO BE REMOVED WORK
DSP	DRYPIPE SPRINKLER SYSTEM
DE	DELUGE SPRINKLER SYSTEM
SP	WET SPRINKLER SYSTEM
	DIRECTION OF FLOW



CONCEALED SPRINKLER HEAD INSTALLATION DETAIL
NO SCALE



UPRIGHT SPRINKLER HEAD INSTALLATION DETAIL
NO SCALE

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
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ADVANCED ENGINEERING INC
WWW.ADVENGINC.COM
556i Pennell Road | Media PA 19063

FIRE PROTECTION NOTES, LEGEND & SCHEDULES

NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER

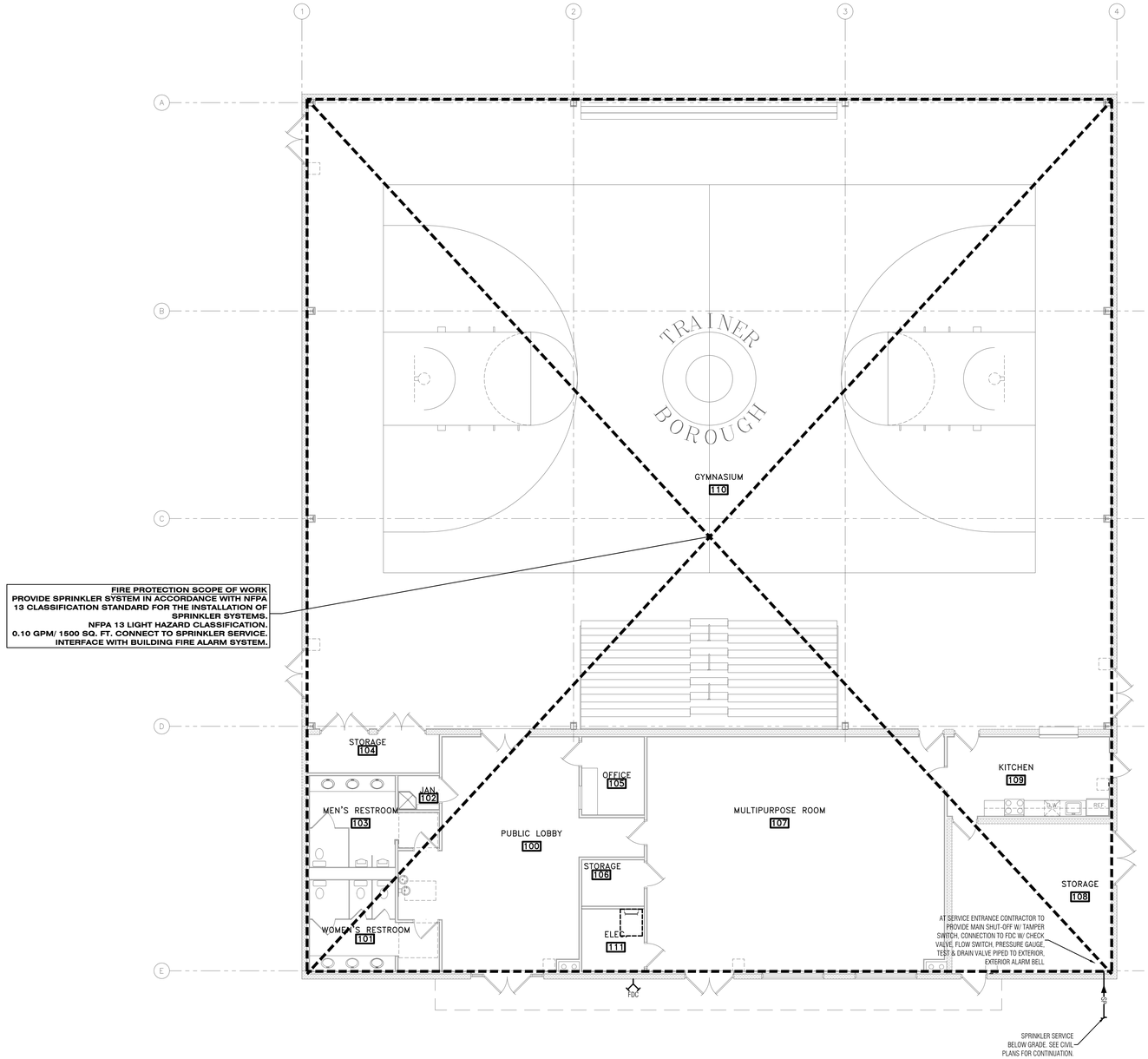
TRAINER PA, 19061

REVISIONS

NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO.
FP1.0
SHEET OF



1 FP3.0 FIRE PROTECTION FLOOR PLAN - COMMUNITY CENTER

SCALE - 1/8" = 1'-0"

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FIRE PROTECTION FLOOR PLAN – COMMUNITY CENTER

NEW MUNICIPAL BUILDINGS

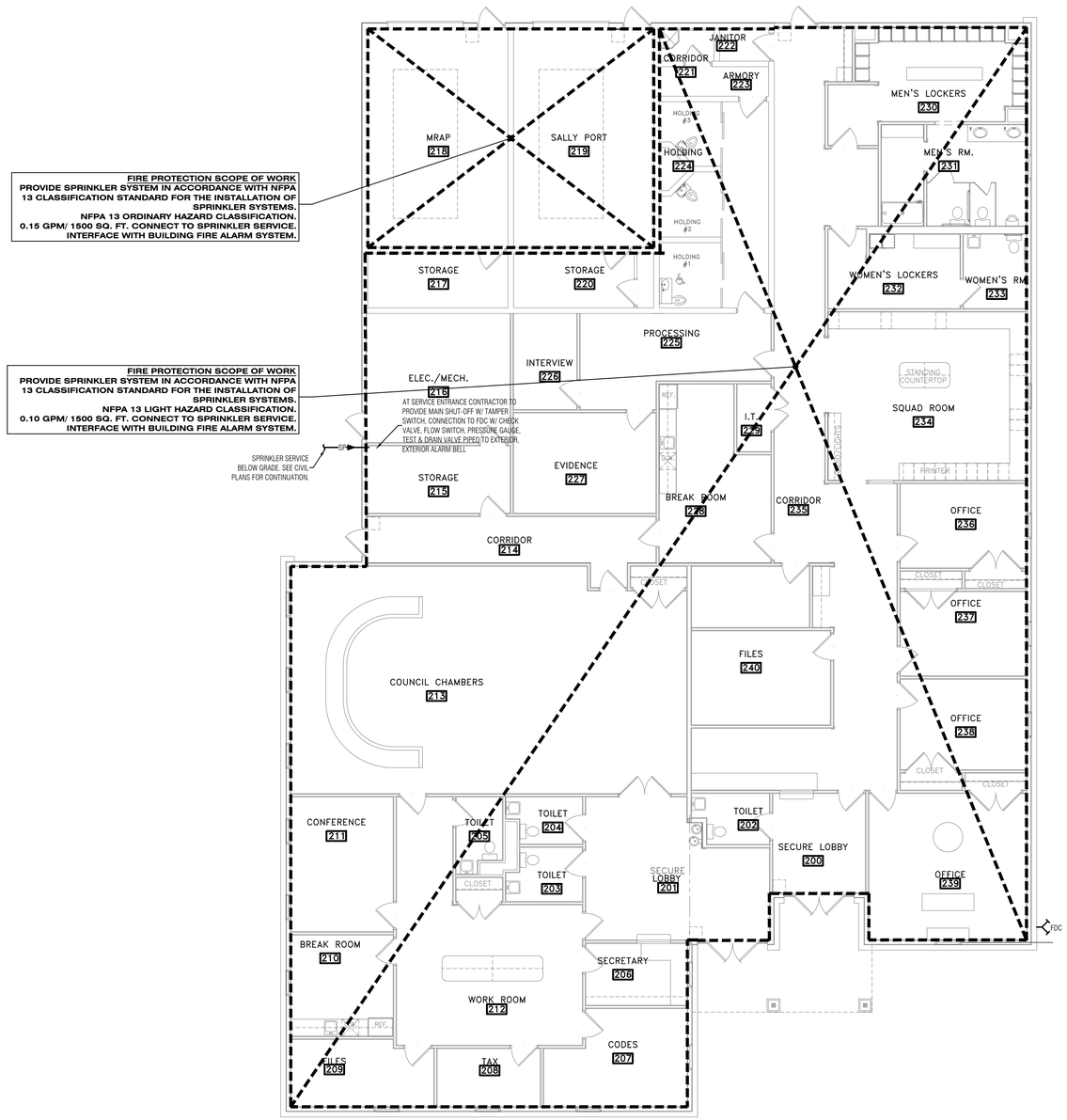
BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS		
NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. FP2.0 SHEET OF



1 FP2.1 FIRE PROTECTION FLOOR PLAN - BOROUGH BUILDING

SCALE - 1/8" = 1'-0"

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FIRE PROTECTION FLOOR PLAN – BOROUGH BUILDING

NEW MUNICIPAL BUILDINGS

BOROUGH OF TRAINER

TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. FP2.1 SHEET OF

GENERAL SPECIFICATIONS

1. DRAWINGS ARE DIAGRAMMATIC: THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL COMPONENTS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE AND DETERMINE FINAL LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. COORDINATE WITH ARCHITECTURAL DRAWINGS AND OTHER TRADES.
2. ADDRESS ALL QUESTIONS REGARDING DRAWINGS TO ARCHITECT IN WRITING BEFORE SUBMITTING BID PROPOSAL. OTHERWISE, ARCHITECT'S INTERPRETATION OF MEANING AND INTENT OF DRAWINGS SHALL BE FINAL.
3. THE INTENTION IS FOR INSTALLATION OF COMPLETE AND OPERATING SYSTEMS. NOT EVERY COMPONENT REQUIRED IS SHOWN. THE CONTRACTOR SHALL INCLUDE ALL COMPONENTS NORMALLY ASSOCIATED WITH THE PARTICULAR SYSTEM. THE SYSTEM SHALL BE FULLY COMMISSIONED AND SIGNED OFF BY AN OFFICER OF THE RESPECTIVE CONTRACTOR PRIOR TO FINAL OWNER ACCEPTANCE TESTING. PROVIDE PERSONNEL TO ASSIST WITH OWNER ACCEPTANCE TESTING.
4. GIVE NOTICES, FILE PLANS, OBTAIN PERMITS AND LICENSES, PAY FEES AND BACK CHARGES, AND OBTAIN NECESSARY APPROVALS FROM AUTHORITIES THAT HAVE JURISDICTION AS REQUIRED TO PERFORM WORK IN ACCORDANCE WITH ALL LEGAL REQUIREMENTS AND WITH THE DESIGN DOCUMENTS.
5. PRIOR TO COMMENCING WORK, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND EQUIPMENT DATA FOR MATERIALS AND EQUIPMENT TO THE ARCHITECT FOR REVIEW AND APPROVAL. MATERIALS AND EQUIPMENT SHALL NOT BE INSTALLED BEFORE SHOP DRAWINGS ARE REVIEWED AND APPROVED. AT LEAST TEN (10) WORKING DAYS, EXCLUSIVE OF TRANSMITTAL TIME, SHALL BE ALLOWED FOR SUBMITTAL REVIEW.
6. MATERIALS AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES (UL) AND APPROVED BY ASME AND AGA, AS APPLICABLE, FOR INTENDED SERVICE.
7. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES REQUIRED FOR SAFE EXECUTION AND COMPLETION OF THE WORK AND FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
8. ALL MATERIALS, EQUIPMENT AND METHOD OF INSTALLATION SHALL BE ACCORDANCE WITH THE STANDARDS, REGULATIONS, CODES, ORDINANCES AND LAW OF LOCAL, STATE AND FEDERAL GOVERNMENTS AND OTHER AUTHORITIES THAT HAVE LAWFUL JURISDICTION.
9. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE WORK UNDER THIS CONTRACT WITH THAT OF ALL OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, ELECTRICAL, HVAC, SPRINKLER, PLUMBING, STRUCTURAL AND GENERAL CONSTRUCTION. OFFSETS IN DUCTWORK, PIPINGAND CONDUITS AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
10. DEVIATION FROM CONTRACT DOCUMENTS, OR PROPOSED SUBSTITUTION OF MATERIALS OR EQUIPMENT FOR THOSE SPECIFIED, SHALL BE REQUESTED IN SEPARATE LETTER, WHETHER DEVIATIONS ARE DUE TO FIELD CONDITIONS, STANDARD SHOP PRACTICE OR OTHER CAUSE. THE CONTRACTOR IS RESPONSIBLE FOR ANY COSTS INCURRED AS A RESULT OF CHANGES NEEDED TO ACCOMMODATE THE SUBSTITUTED EQUIPMENT, INCLUDING THE WORK OF OTHER TRADES.
11. EACH CONTRACTOR IS RESPONSIBLE FOR CUTTING AND PATCHING REQUIRED FOR THE INSTALLATION OF NEW WORK UNDER THIS CONTRACT. CUTTING AND PATCHING SHALL BE COMPLETED IN A NEAT AND WORKMANLIKE MANNER. PATCHING MATERIALS SHALL MATCH EXISTING MATERIALS TO THE GREATEST EXTENT POSSIBLE. PROVIDE TOUCH-UP TO MATCH EXISTING SURROUNDING AREAS OF CUTTING AND PATCHING WORK.
12. INTERRUPTIONS TO EXISTING SERVICES AND SYSTEMS SHALL BE AS SHORT AS POSSIBLE AND AT A TIME AND DURATION APPROVED BY THE OWNER. INCLUDE ALL PREMIUM TIME ASSOCIATED WITH INTERRUPTIONS IN BID PROPOSAL. INTERRUPTIONS SHALL BE SCHEDULED WITH OWNER AT LEAST 48 HOURS IN ADVANCE.
13. CONTRACTOR SHALL COORDINATE ITS RESPECTIVE CEILING MOUNTED EQUIPMENT AND DEVICES WITH OTHER TRADE CONTRACTORS PRIOR TO INSTALLATION TO AVOID CONFLICTS.
14. ALL DEMOLITION WORK SHALL BE COORDINATED WITH OWNER'S REPRESENTATIVE, ARCHITECT, ENGINEER AND GENERAL CONTRACTOR. ALL DEBRIS SHALL BE CLEANED AND REMOVED FROM THE SITE BY END OF EACH WORK DAY. PRIOR TO DISPOSAL OF EQUIPMENT AND MATERIALS, TURN OVER TO THE OWNER ANY REMOVED EQUIPMENT AND MATERIALS REQUESTED BY THE OWNER.
15. WORK SHALL BE EXECUTED IN A WORKMANLIKE MANNER AND SHALL PRESENT A NEAT, RECTILINEAR APPEARANCE WHEN COMPLETED.
16. MAINTAIN MAXIMUM HEAD ROOM AT ALL TIMES. DO NOT RUN PIPES, DUCTS AND CONDUIT EXPOSED UNLESS SHOWN AND NOTED TO BE EXPOSED ON DRAWINGS.
17. MATERIALS AND EQUIPMENT SHALL BE NEW, UNLESS NOTED OTHERWISE, AND INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS SO THAT COMPLETED INSTALLATION SHALL OPERATE SAFELY AND EFFICIENTLY.
18. EACH RESPECTIVE CONTRACTOR SHALL FIRE STOP ALL NEW AND EXISTING OPENINGS THROUGH FIRE RATED FLOORS, WALLS AND CEILINGS WITH UL ASSEMBLIES OF EQUAL RATING. FIELD VERIFY EXISTING CONDITIONS BEFORE SUBMITTING BID PROPOSAL.
19. COORDINATE ALL ROOF PENETRATIONS WITH WORK OF OTHER TRADES. ALL PENETRATIONS SHALL BE SEALED WATERTIGHT. COORDINATE FLASHING REQUIREMENTS TO MAINTAIN ROOF WARRANTY.
20. ANY INTERFERENCE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE OR ARCHITECT AND SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF THE WORK INVOLVED.
21. MANUFACTURERS' MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
22. SUBSTITUTED PRODUCTS SUBMITTED AND APPROVED FOR USE THAT NECESSITATE CHANGES TO THE WORK OF OTHER TRADES OF CONTRACT SHALL BE COORDINATED AND ARRANGED BY THE CONTRACTOR WHO SUBMITTED THE SUBSTITUTION WITHOUT ADDITIONAL COST TO THE OWNER.
23. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTION.
24. EACH RESPECTIVE CONTRACTOR SHALL PROVIDE PROPER ACCESS TO EQUIPMENT AND COMPONENTS THAT REQUIRE INSPECTION, MAINTENANCE AND POSSIBLE REPAIR. ACCESS PANELS SHALL BE MINIMUM 12"X12" OR AS NEEDED FOR PROPER ACCESS. ACCESS PANELS SHALL BE FURNISHED BY THIS CONTRACTOR AND TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
25. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL APPLICABLE EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.
26. AS WORK PROGRESSES AND FOR DURATION OF CONSTRUCTION, MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS AT THE JOBSITE. RECORD WORK COMPLETED AND ALL CHANGES FROM ORIGINAL CONTRACT DRAWINGS CLEARLY AND ACCURATELY INCLUDING WORK INSTALLED AS A MODIFICATION OR ADDITION TO THE ORIGINAL DESIGN TURN OVER ALL OPERATING MANUALS, MAINTENANCE MANUALS, AND "AS BUILT" DRAWINGS TO OWNER AT CONCLUSION OF CONSTRUCTION.
27. DO NOT SUPPORT EQUIPMENT, DUCTWORK, PIPING, CONDUIT OR DEVICES FROM SUSPENDED CEILINGS. SUPPORT ALL EQUIPMENT, DUCTWORK, PIPING, CONDUIT AND DEVICES FROM BUILDING STRUCTURE TO PROVIDE A VIBRATION FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT.
28. ANY REFERENCE TO MECHANICAL, PLUMBING, FIRE PROTECTION OR ELECTRICAL CONTRACTORS NOTED ON THE DRAWINGS SHALL NOT BE INTERPRETED AS AN INTENTION TO DEFINE SEPARATE CONTRACTORS FOR THE RESPECTIVE WORK. THE GENERAL CONTRACTOR SHALL COORDINATE AND PROVIDE A COMPLETE INSTALLATION WITH COMPLETE MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL SYSTEMS, REGARDLESS OF ANY REFERENCES TO OTHER TRADE CONTRACTORS.
29. GUARANTEE WORK OF THIS CONTRACTOR IN WRITING FOR A PERIOD OF ONE YEAR FROM THE DATE OF OWNER'S ACCEPTANCE OR CERTIFICATE OF SUBSTANTIAL COMPLETION. PROMPTLY REPAIR OR REPLACE DEFECTIVE MATERIALS, EQUIPMENT, WORKMANSHIP AND INSTALLATIONS THAT DEVELOP DEFECTS WITHIN THIS PERIOD, PROMPTLY AND TO OWNERS SATISFACTION, CORRECT DAMAGE CAUSED IN MAKING NECESSARY REPAIRS AND REPLACEMENTS UNDER THIS GUARANTEE AT NO ADDITIONAL COST TO OWNER. SUBMIT GUARANTEE TO ARCHITECT BEFORE FINAL PAYMENT IS MADE. STATEMENT OF GUARANTEE REQUIREMENTS SHALL NOT BE INTERRUPTED TO LIMIT OWNER'S RIGHTS UNDER LAW AND THIS CONTRACT.

PER N.F.P.A. & A.D.A. CODE REQUIREMENTS — WALL-MOUNTED CLOCKS, PROGRAM BELLS, FIRE ALARM AUDIBLE AND VISUAL DEVICES (OR AS SHOWN ON ARCHITECTURAL DETAILS)

10'-0" — EXIT SIGNS, BATTERY UNITS AND EMERGENCY REMOTE HEADS (OR 6" BELOW FINISHED CEILING TO TOP OF FIXTURE)

CENTERED ABOVE DOOR OR WINDOW OPENING — WARNING AND SIGNALING FIXTURES/SIGNS.

6'-6" — TOP OF FLUSH AND SURFACE MOUNTED ELECTRICAL PANELBOARDS, TELEPHONE CABINETS, OR FIRE ALARM CABINETS.

6'-3" — TOP OF BACK-MOUNTED WALL EXIT FIXTURES (NOT MOUNTED ABOVE DOORS)

6'-0" — TOP OF HIGHEST ELECTRICAL SAFETY DISCONNECT SWITCHES, MAGNETIC STARTERS, CONTACTORS.

4'-6" — WALL MOUNTED TELEPHONES AND PAY STATIONS, THERMOSTATS (3'-6" AT HANDICAP LOCATIONS).

3'-6" — WALL MOUNTED ELECTRICAL LIGHT SWITCHES, MANUAL MOTOR STARTERS, FIRE ALARM PULL STATIONS, AND WALL MOUNTED WIREMOLD. OBTAIN MOUNTING HEIGHT APPROVAL FROM BUILDING INSPECTOR PRIOR TO ROUGHING IN LIGHT SWITCHES.

3'-0" — ADA UNIT INTERCOM. CENTER OF "CALL" BUTTON.

2'-0" — ELECTRICAL RECEPTACLE WITHIN ELECTRICAL/MECHANICAL SPACES AND ELEVATOR ROOMS.

1'-6" — ELECTRICAL RECEPTACLES, TELEPHONE OUTLETS, COMPUTER OUTLETS UNLESS IN WIREMOLD, OR OTHERWISE NOTED.

0'-8" — BOTTOM OF EXIT SIGN ADJACENT TO DOOR (WHERE REQUIRED) FINISHED FLOOR

TYPICAL STANDARD MOUNTING HEIGHTS DETAIL

NO SCALE

NOTES:
1. MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED. IN MASONRY WALL CONSTRUCTION THE ABOVE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
2. THE ABOVE MOUNTING HEIGHTS SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS OR SPECIFICATIONS.

ABBREVIATIONS

A	AMPS	IG	ISOLATED GROUND
ABV.	ABOVE	J.B.	JUNCTION BOX
A.F.F.	ABOVE FINISHED FLOOR	KVA	KILOVOLT-AMPERE
A.F.G.	ABOVE FINISHED GRADE	KW	KILOWATT
A.H.U.	AIR HANDLER UNIT	M.C.	MECHANICAL CONTRACTOR
C/B	CIRCUIT BREAKER	MCB	MAIN CIRCUIT BREAKER
C.H.	CABINET HEATER	MECH.	MECHANICAL
CLG.	CEILING	MLO	MAIN LUGS ONLY
D.E.	DUAL ELEMENT (TIME DELAY)	MOD	MOTOR OPERATED DOOR
DWG	DRAWING	MTD.	MOUNTED
E.B.H.	ELECTRIC BASEBOARD HEATER	N.L.	NIGHT LIGHTING
E.C.	ELECTRICAL CONTRACTOR	P.C.	PLUMBING CONTRACTOR
E.F.	EXHAUST FAN	PLG	PLUMBING
EM	INDICATES LIGHT FIXTURE WIRED TO EMERGENCY CIRCUIT	P.S.	PAY STATION
E.P.O.	EMERGENCY POWER-OFF PUSHBUTTON SWITCH	R.T.U.	ROOF TOP UNIT
EUH	ELECTRIC UNIT HEATER	SLD	SINGLE LINE DIAGRAM
EWC	ELECTRIC WATER COOLER	SP/ST	SINGLE POLE/SINGLE THROW
EWH	ELECTRIC WALL HEATER	S/S	SAFETY SWITCH (DISCONNECT SWITCH)
EXIST.	EXISTING	SW.	SWITCH
FACP	FIRE ALARM CONTROL PANEL	T/C	TIME CLOCK
FATB	FIRE ALARM TERMINAL BOX	UH	UNIT HEATER
FSD	FIRE SMOKE DAMPER	U.O.N.	UNLESS OTHERWISE NOTED
FU.	FUSE (OR FUSED)	V	VOLTS
G.C.	GENERAL CONTRACTOR	VAV	VARIABLE AIR VOLUME
G.F.I.	GROUND FAULT INTERRUPT	WP	WEATHERPROOF
GND.	GROUND	XFMR.	TRANSFORMER
HP	HORSE POWER	(E)	EXISTING TO REMAIN
HTR.	HEATER	(R)	REMOVE EXISTING
HVAC	HEATING, VENTILATING, & AIR CONDITIONING	(RL)	RELOCATED EXISTING
HWH	HOT WATER HEATER		

ELECTRICAL SYMBOLS

- 2'X4' RECESSED LED FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X4' RECESSED LED FIXTURE CONNECTED TO EMERGENCY (EM) AND/OR NIGHT LIGHT (NL) CIRCUIT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X2' RECESSED LED FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- 2'X2' RECESSED LED FIXTURE CONNECTED TO EMERGENCY (EM) AND/OR NIGHT LIGHT (NL) CIRCUIT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- PENDANT MOUNTED LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- RECESSED DOWNLIGHT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- RECESSED WALL/WASHER DOWNLIGHT, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCHING
- WALL MOUNTED LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED LINEAR LED LIGHT FIXTURE. "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED INDUSTRIAL LED STRIP LIGHT FIXTURE, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION, "a" INDICATES SWITCH CONTROL
- CEILING OR WALL MOUNTED SINGLE FACE EXIT SIGN, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- CEILING OR WALL MOUNTED DOUBLE FACE EXIT SIGN, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- CEILING OR WALL MOUNTED EXIT SIGN WITH INTEGRAL EMERGENCY LIGHT HEADS, "X" INDICATES TYPE, ARROWS AS INDICATED ON PLANS. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- WALL MOUNTED EMERGENCY BATTERY PACK WITH (2)-LIGHT HEADS, "EM" INDICATES TYPE. CONNECT TO LOCAL LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING UNLESS OTHERWISE NOTED
- WALL OR CEILING MOUNTED TWIN REMOTE EMERGENCY LIGHT "EM" INDICATES TYPE, "WP" INDICATES WEATHERPROOF.
- FIRE ALARM SMOKE DETECTOR
- FIRE ALARM DUCT SMOKE DETECTOR
- FIRE ALARM HEAT DETECTOR
- CEILING MOUNTED 125V., COMBINATION SMOKE DETECTOR/HORN-STROBE
- CARBON MONOXIDE DETECTOR,CEILING MOUNTED 125V
- FIRE ALARM SPEAKER
- FIRE ALARM PULL STATION
- FIRE ALARM STROBE
- FIRE ALARM HORN/STROBE
- FIRE ALARM DOOR HOLD OPEN DEVICE
- FIRE ALARM WATER FLOW SWITCH
- FIRE ALARM TAMPER SWITCH
- FIRE ALARM ADDRESSABLE INPUT MODULE
- FIRE ALARM ADDRESSABLE CONTROL MODULE

- 125V., 20A TOGGLE SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A DOOR JAMB SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A CEILING FAN SPEED SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A 3-WAY TOGGLE SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A BATHROOM EXHAUST FAN TIMER SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
- CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR
- 125V., 20A SIMPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
- 125V., 20A DUPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. ALL DWELLING UNIT RECEPTACLES SHALL BE TAMPER RESISTANT IN ACCORDANCE WITH NEC ART 406.11." + " INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH
- 125V., 20A DUPLEX GFCI RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. " + " INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH. "WP" INDICATES WEATHERPROOF ENCLOSURE
- CEILING MOUNTED 125V., 20A DUPLEX RECEPTACLE
- CEILING MOUNTED 125V., 20A DOUBLE DUPLEX RECEPTACLE.
- 125V., 20A DOUBLE DUPLEX RECEPTACLE MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED.
- 125V., 20A DUPLEX RECEPTACLE WITH BOTTOM RECEPTACLE CONNECTED TO WALL SWITCH, MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED. " + " INDICATES MOUNTED AT 42" AFF OR 6" ABOVE COUNTER OR BACKSPLASH
- LOCKING OR NONLOCKING NEMA RECEPTACLE AS NOTED
- COMBINATION POWER/DATA FLOOR FLUSH MOUNTED BOX OR POKE-THRU DEVICE. REFER TO PLANS FOR TYPE AND DEVICE CONFIGURATION
- FURNITURE WHIP AND FEED (COORDINATE REQUIREMENTS) P = POWER D = DATA
- CEILING MOUNTED JUNCTION BOX
- WALL MOUNTED JUNCTION BOX
- 125V., 20A MOTOR RATED SWITCH MOUNTED AT 42" AFF UNLESS OTHERWISE NOTED.
- DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- FUSED DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- MOTOR STARTER, SIZE AS INDICATED ON PLAN
- COMBINATION MOTOR STARTER AND DISCONNECT SWITCH, SIZE AS INDICATED ON PLAN
- ELEVATOR CONTROLLER. REFER TO "ELEVATOR CONTROL SWITCH" NOTE ON THIS PLAN FOR ADDITIONAL INFORMATION
- CABLE TV OUTLET
- VOICE COMMUNICATION OUTLET
- DATA COMMUNICATION OUTLET
- VOICE & DATA COMMUNICATION OUTLET
- INTERCOM STATION
- DOOR BELL/INTERCOM STATION
- POWER OPERATED DOOR SYSTEM

- 2#12 & 1#12GND. IN 3/4" CONDUIT CONCEALED IN WALL OR CEILING UNLESS OTHERWISE NOTED
- 2#12 & 1#12GND. IN 3/4" CONDUIT RUN IN OR UNDER CONCRETE SLAB UNLESS OTHERWISE NOTED
- 2#12 & 1#12GND. IN 3/4" CONDUIT RUN EXPOSED UNLESS OTHERWISE NOTED
- P1-3 — 2#12 & 1#12GND. IN 3/4" CONDUIT, UNLESS OTHERWISE NOTED, HOME RUN TO PANEL, "P1" INDICATES PANEL NAME, "3" INDICATES CIRCUIT BREAKER POSITION
- PANELBOARD, SURFACE MOUNTED
- PANELBOARD, FLUSH MOUNTED
- TRANSFORMER, SIZE, TYPE AND RATING AS INDICATED ON PLAN
- COPPER GROUND BAR, SIZE AS INDICATED ON PLAN
- COPPER GROUND CONDUCTOR, SIZE AS INDICATED ON PLAN
- PLAN NOTE CALLOUT
- CEILING MOUNTED PADDLE FAN, "A" INDICATES TYPE, "2" INDICATES CIRCUIT BREAKER POSITION
- NEW CONNECTION TO EXISTING
- TERMINATION OF DEMOLITION
- MOLDED CASE CIRCUIT BREAKER
- DRAWOUT CIRCUIT BREAKER
- DRAWOUT CIRCUIT BREAKER MEDIUM VOLTAGE
- FUSED SWITCH
- FUSE
- GROUND CONNECTION
- ELECTRIC INTERLOCK SWITCH
- JUNCTION OR PULL BOX, SIZE AS INDICATED ON PLAN
- PANELBOARD, SIZE, TYPE AND RATING AS INDICATED ON PLAN
- METER AND SOCKET
- MOTOR OR MOTORIZED EQUIPMENT. NUMBER INDICATES HORSEPOWER (HP)
- FURNITURE FEED
- CARD READER
- WIRELESS RADIO LINK
- WIRELESS RADIO LINK

SWITCHES, COVERPLATES AND RECEPTACLES BASIS OF DESIGN:
COMMERCIAL - DEVICES SHALL BE WHITE WITH A METAL STAINLESS STEEL COVERPLATE
RESIDENTIAL-DEVICE COLOR BY ARCHITECT WITH A MATCHING COVERPLATE

COMMON AREA, BACK OF HOUSE & AMENITY AREA LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER & MODEL NUMBER	SPECIFIED BY	VOLTAGE	LAMP TYPE	LAMP WATTAGE	DIMMABLE	COLOR TEMP	MOUNTING	COMMENTS
A1	2'X'2' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-40L-SDP-EZ1-LP835	AEI	120	LED	32	YES	3500K	RECESSED	
B1	2'X'4' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-60L-SDP-EZ1-LP835	AEI	120	LED	48	YES	3500K	RECESSED	
B2	2'X'4' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-72L-SDP-EZ1-LP835	AEI	120	LED	61	YES	3500K	RECESSED	
B3	2'X'4' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-85L-SDP-EZ1-LP835	AEI	120	LED	74	YES	3500K	RECESSED	
B4	2'X'4' LOW PROFILE RECESSED CENTER-BASKET TROFFER	LITHONIA LIGHTING 2BLT4-48L-SDP-EZ1-LP835	AEI	120	LED	38	YES	3500K	RECESSED	
C1	2' LED STRIP LIGHT	LITHONIA LIGHTING CLX-L48-7000LM-SEF-FDL-MVOLT-GZ10-35K-80CRI	AEI	MVOLT	LED	64	YES	3500K	PENDANT/ SURFACE	
C2	2' LED STRIP LIGHT	LITHONIA LIGHTING CLX-L48-7000LM-SEF-FDL-MVOLT-GZ10-35K-80CRI	AEI	MVOLT	LED	49	YES	3500K	PENDANT/ SURFACE	
C3	2' LED STRIP LIGHT	LITHONIA LIGHTING CLX-L48-5000LM-SEF-FDL-MVOLT-GZ10-35K-80CRI	AEI	MVOLT	LED	35	YES	3500K	PENDANT/ SURFACE	
D	2' I-BEAM CONFIGURABLE LED HIGH BAY FIXTURE	LITHONIA LIGHTING IBG-10000LM-SEF--ACL-MD-MVOLT-GZ10-35K-70CRI-WGX	AEI	MVOLT	LED	150	YES	3500K	PENDANT	
H1	1'X4' HAZARDOUS LOCATION LED LUMINAIRE	KURTZON TLN12-R-1X4-2JU-EDR-840-UNV	AEI	MVOLT	LED	73	YES	4000K	RECESSED	
H2	2'X2' HAZARDOUS LOCATION LED LUMINAIRE	KURTZON TLN12-R-2X2-1JU-EDR-840-UNV	AEI	MVOLT	LED	55	YES	4000K	RECESSED	
E	4" ROUND OPEN DOWNLIGHT	LITHONIA LIGHTING LDN4-35/10-DWM-L15-120-GZ10	AEI	120	LED	13	YES	3500K	RECESSED	
X1	EDGE-LIT LED EXIT SIGN, PROVIDE SINGLE OR DOUBLE FACE AS INDICATED ON PLANS, PROVIDE CHEVRONS AS INDICATED ON PLANS, GREEN	LITHONIA EDG-W1-LG-EL (SINGLE FACE) EDG-W-2-G-EL (DUAL FACE)	AEI	120	LED	3.8	NO	3000K	SURFACE	
X2	TWO ENGINER EMERGENCY LIGHTING FIXTURE	LITHONIA WSG LED 2 700 MA 3000K SK2 120	AEI	120	LED				SURFACE	
SITE A	SITE AREA LUMINAIRE	LITHONIA DSXO LED P1 30K TFTM MVOLT DBLXD	AEI	208	LED	38	NO	3000K	SURFACE	ADD PHOTOCELL OPTION DLL127F1.5JU
SITE B	SITE AREA LUMINAIRE	LITHONIA DSXO LED P1 30K TFM MVOLT DBLXD	AEI	120	LED	38	NO	3000K	SURFACE	ADD PHOTOCELL OPTION DLL127F1.5JU

LIGHTING FIXTURE SCHEDULE NOTES
1. REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS) FOR THE CEILING TYPE AND EXACT LOCATION OF ALL LIGHT FIXTURES.

PANEL RP1 (BOROUGH BUILDING)

VOLTAGE: 120/208 V. 3φ . 4W
MAIN: 150AMP MCB
NEUTRAL: 100%
A/C RATING:

LOCATION: ELECTRICAL AND MECH ROOM
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (VA) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	2/0#2	20/1	RECEPTACLES - COUNCIL CHAMBERS	540			720			RECEPTACLES - BREAK ROOM 210	20/1	2/0#2	2
3	2/0#2	20/1	RECEPTACLES - COUNCIL CHAMBERS		720			1240		RECEPTACLES - BREAK ROOM 210	20/1	2/0#2	4
5	2/0#2	20/1	RECEPTACLES - COUNCIL CHAMBERS			540			1240	RECEPTACLES - BREAK ROOM 210	20/1	2/0#2	6
7	2/0#2	20/1	RECEPTACLES - ELEC/MECH & STOR.	720			700			RECEPTACLES - BREAK ROOM 210	20/1	2/0#2	8
9	2/0#2	20/1	RECEPTACLES - BREAK ROOM 205		720			1000		RECEPTACLES - OFFICE ,STORAGE	20/1	2/0#2	10
11	2/0#2	20/1	RECEPTACLES - BREAK ROOM 205			600			800	RECEPTACLES - COPIER	20/1	2/0#2	12
13	2/0#2	20/1	RECEPTACLES - BREAK ROOM 205	1000			900			RECEPTACLES - WORKROOM	20/1	2/0#2	14
15	2/0#2	20/1	RECEPTACLES - BREAK ROOM 205		1000			900		RECEPTACLES - WORKROOM	20/1	2/0#2	16
17	2/0#2	20/1	RECEPTACLES - IT ROOM 209			360			550	RECEPTACLES - WATER COOLER	20/1	2/0#2	18
19	2/0#2	20/1	RECEPTACLES - IT ROOM 209	360			100			METAL DETECTOR	20/1	2/0#2	20
21	2/0#2	20/1	RECEPTACLES - CORRIDOR		540			1080		RECEPTACLES - SECURE CORRIDOR	20/1	2/0#2	22
23	2/0#2	20/1	RECEPTACLES - RADIO AND LIGHTS			1080			800	RECEPTACLES - COPIER	20/1	2/0#2	24
25	2/0#2	20/1	RECEPTACLES - PROCESS & INTERV	900			50			SOLENOID VALVE	20/1	2/0#2	26
27	2/0#2	20/1	RECEPTACLES - SALLY & MMAP		720			50		SOLENOID VALVE	20/1	2/0#2	28
29	2/0#2	20/1	RECEPTACLES - CONF 227			540			50	SOLENOID VALVE	20/1	2/0#2	30
31		20/1	SPARE							BATTERY CHARGER	20/1	2/0#2	32
33		20/1	SPARE							SPARE	20/1		34
35		20/1	SPARE							SPARE	20/1		36
37	100/4	100/3	PANEL RP2	5000						SPACE			38
39	100/4	100/3			5000					SPACE			40
41						5000				SPACE			42
			SUB TOTAL KVA	8.92	8.7	3.32	2.47	4.37	3.44	SUB TOTAL KVA			

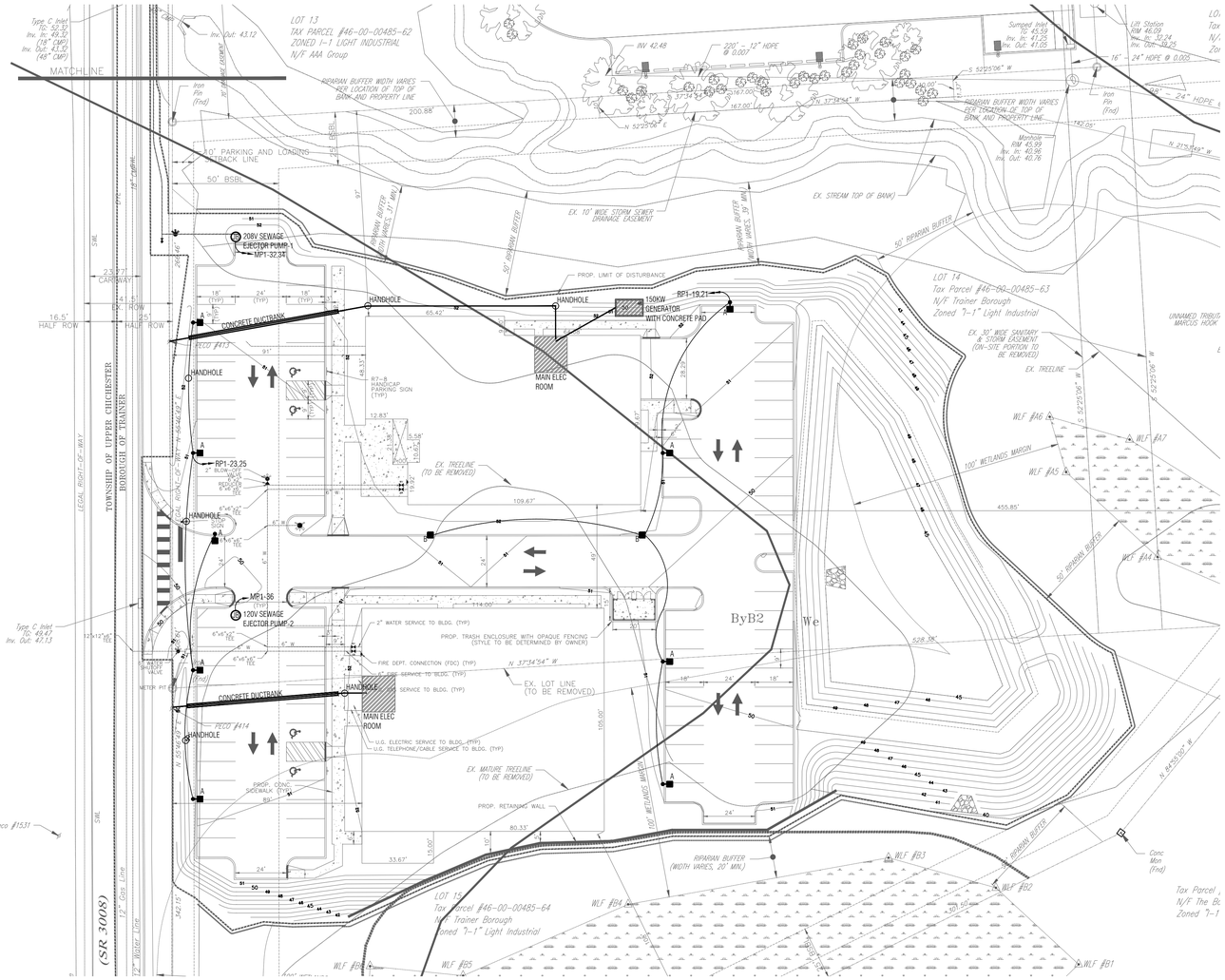
TOTAL CONNECTED VA LOAD 30.7 KVA
TOTAL CONNECTED AMPERE LOAD 85.3 A

PANEL RP2 (BOROUGH BUILDING)

VOLTAGE: 120/208 V. 3φ . 4W
MAIN: 100AMP MCB
NEUTRAL: 100%
A/C RATING:

LOCATION: ELECTRICAL AND MECH ROOM
MOUNTING: SURFACE

CKT NO.	WIRE ID	CB AMP/POLE	DESCRIPTION	LOAD (VA) A	B	C	A	B	C	DESCRIPTION	CB AMP/POLE	WIRE ID	CKT NO.
1	2/0#2	20/1	EH - A

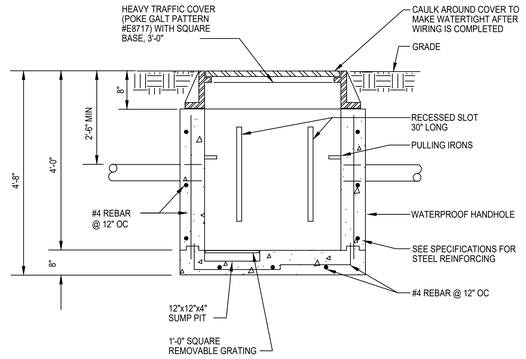


1 SITE PLAN - ELECTRICAL POWER AND LIGHTING

ES1.1 SCALE - 1/8" = 1'-0"

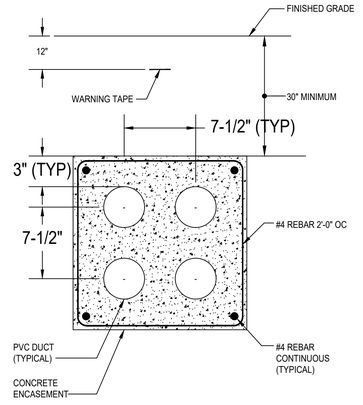
SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#10 & 1#10GND - 3/4"C U/ON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#10 & 1#10GND
2. ALL SITE LIGHTING SHALL BE 208V. SITE LIGHTING WIRING SHALL BE #10 MINIMUM. ALL CIRCUITED TO BOROUGH BUILDING PANEL RP1, VIA ASTRONOMICAL TIME CLOCK LOCATED IN ELECTRICAL ROOM..
3. ALL WIRING UNDER DRIVEABLE SURFACES SHALL BE ENCASED IN CONCRETE DUCTBANK. DIRECT BURIED CABLE IS ACCEPTABLE FOR LIGHTING CIRCUITS.
4. ALL SITE PUMPS CONTROLLER SHALL BE WIRED TO PANEL MP1 IN BOROUGH BUILDING. COORDINATE EXACT LOCATIONS AND POWER REQUIREMENTS WITH SITE CIVIL AND PLUMBING CONTRACTOR.
5. PROVIDE HAND HOLES FOR DIRECT BURIAL FEEDS TO LIGHTING FIXTURES AND PUMP FEEDERS BACK TO ELECTRICAL ROOM.
6. REFER TO CIVIL DRAWINGS FOR FIXTURE TYPES, MOUNTING DETAILS AND INSTALLATION INSTRUCTION.



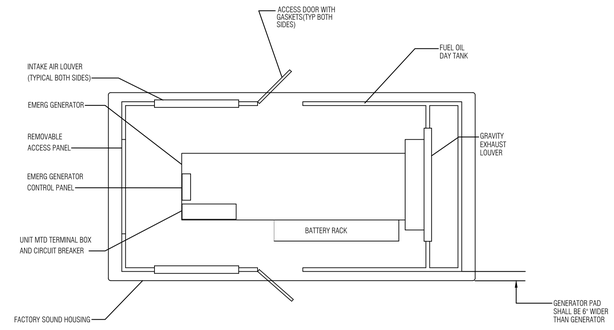
2 DETAIL - SECTION VIEW - HANDHOLE

ES1.1 NOT TO SCALE



3 DETAIL - DUCTBANK 2x2

ES1.1 NOT TO SCALE



1 OUTDOOR GENERATOR ENCLOSURE - PLAN VIEW

NO SCALE

NOTES:

1. PROVIDE RECESSED SLOT CHANNELS AND CABLE SUPPORTS AS REQUIRED.

LINN ARCHITECTS
ARCHITECTURE
ENGINEERING
SITE PLANNING
INTERIOR DESIGN
1140 N. PROVIDENCE ROAD
MEDIA, PENNSYLVANIA 19063
TEL: 610-566-7044
FAX: 610-566-3258

ADVANCED ENGINEERING INC
www.ADVENGINC.com
5561 Pennell Road | Media PA 19063

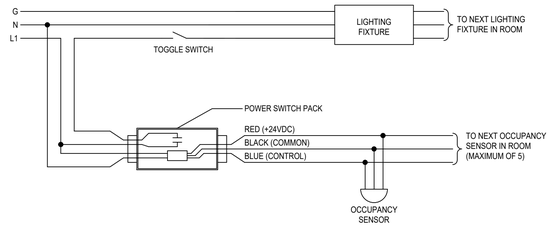
ELECTRICAL – LIGHTING AND POWER
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

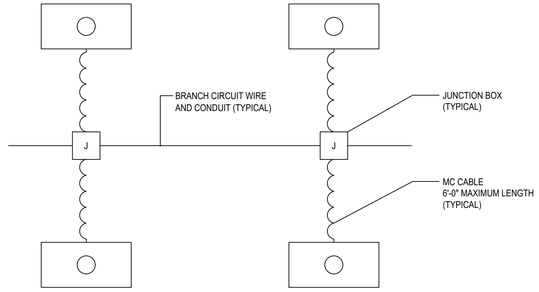
DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. ES1.1 SHEET OF

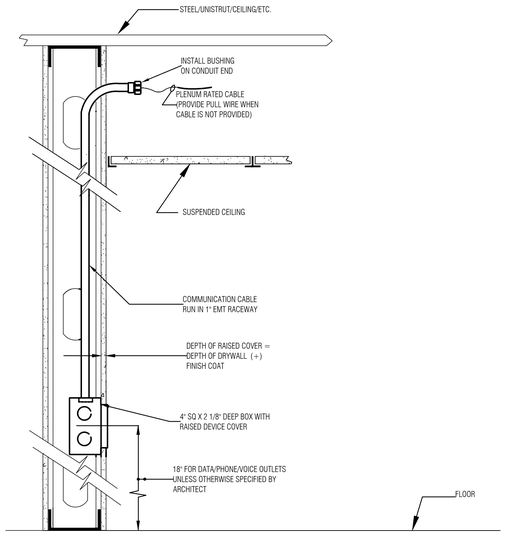
1 DETAIL - NAMPLATE
E300 SCALE - NONE



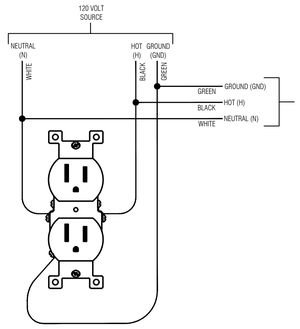
2 WIRING DIAGRAM - CEILING MOUNTED OCCUPANCY SENSOR
E300 SCALE - NONE



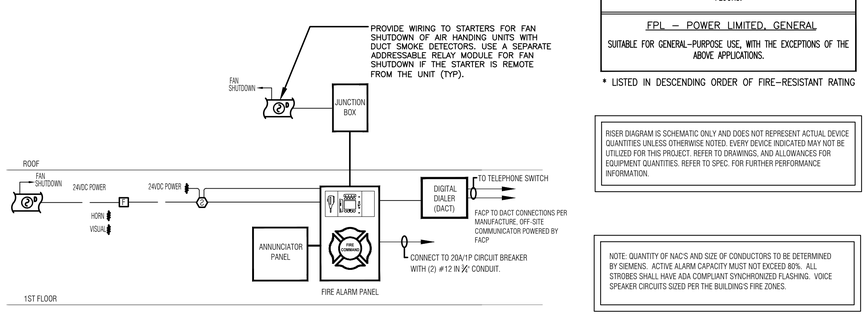
3 DETAIL - LIGHTING FIXTURE WIRING
E300 SCALE - NONE



4 DETAIL - DEVICE INSTALLATION
E300 SCALE - NONE



5 DETAIL - DUPLEX RECEPTACLE WIRING
E300 SCALE - NONE



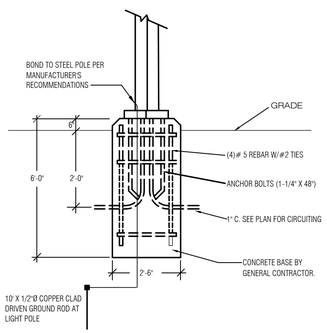
6 DETAIL - FIRE ALARM RISER
E300 SCALE - NONE

FREE-AIR NFPA 72 CABLE DESIGNATIONS*
FPLP – POWER LIMITED, PLENUM SPACE SUITABLE FOR USE IN DUCTS, PLENUMS, AND OTHER SPACE USED FOR ENVIRONMENTAL AIR.
FPLR – POWER LIMITED, RISER SUITABLE FOR USE IN VERTICAL SHAFT RUNS OR WIRE RUNS BETWEEN FLOORS.
FPL – POWER LIMITED, GENERAL SUITABLE FOR GENERAL-PURPOSE USE, WITH THE EXCEPTIONS OF THE ABOVE APPLICATIONS.

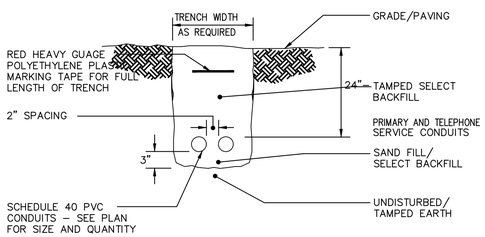
* LISTED IN DESCENDING ORDER OF FIRE-RESISTANT RATING

RISER DIAGRAM IS SCHEMATIC ONLY AND DOES NOT REPRESENT ACTUAL DEVICE QUANTITIES UNLESS OTHERWISE NOTED. EVERY DEVICE INDICATED MAY NOT BE UTILIZED FOR THIS PROJECT. REFER TO DRAWINGS, AND ALLOWANCES FOR EQUIPMENT QUANTITIES. REFER TO SPEC. FOR FURTHER PERFORMANCE INFORMATION.

NOTE: QUANTITY OF NAC'S AND SIZE OF CONDUCTORS TO BE DETERMINED BY SIEMENS. ACTIVE ALARM CAPACITY MUST NOT EXCEED 80%. ALL STROBES SHALL HAVE ADA COMPLIANT SYNCHRONIZED FLASHING. VOICE SPEAKER CIRCUITS SIZED PER THE BUILDINGS FIRE ZONES.



7 LIGHT POLE BASE DETAIL
SCALE: N.T.S.



8 TYPICAL SECTION DIRECT BURIED CONDUITS
SCALE: N.T.S.

LINN ARCHITECTS
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ELECTRICAL – DETAILS AND FIRE ALARM RISER
NEW MUNICIPAL BUILDINGS
BOROUGH OF TRAINER
TRAINER PA, 19061

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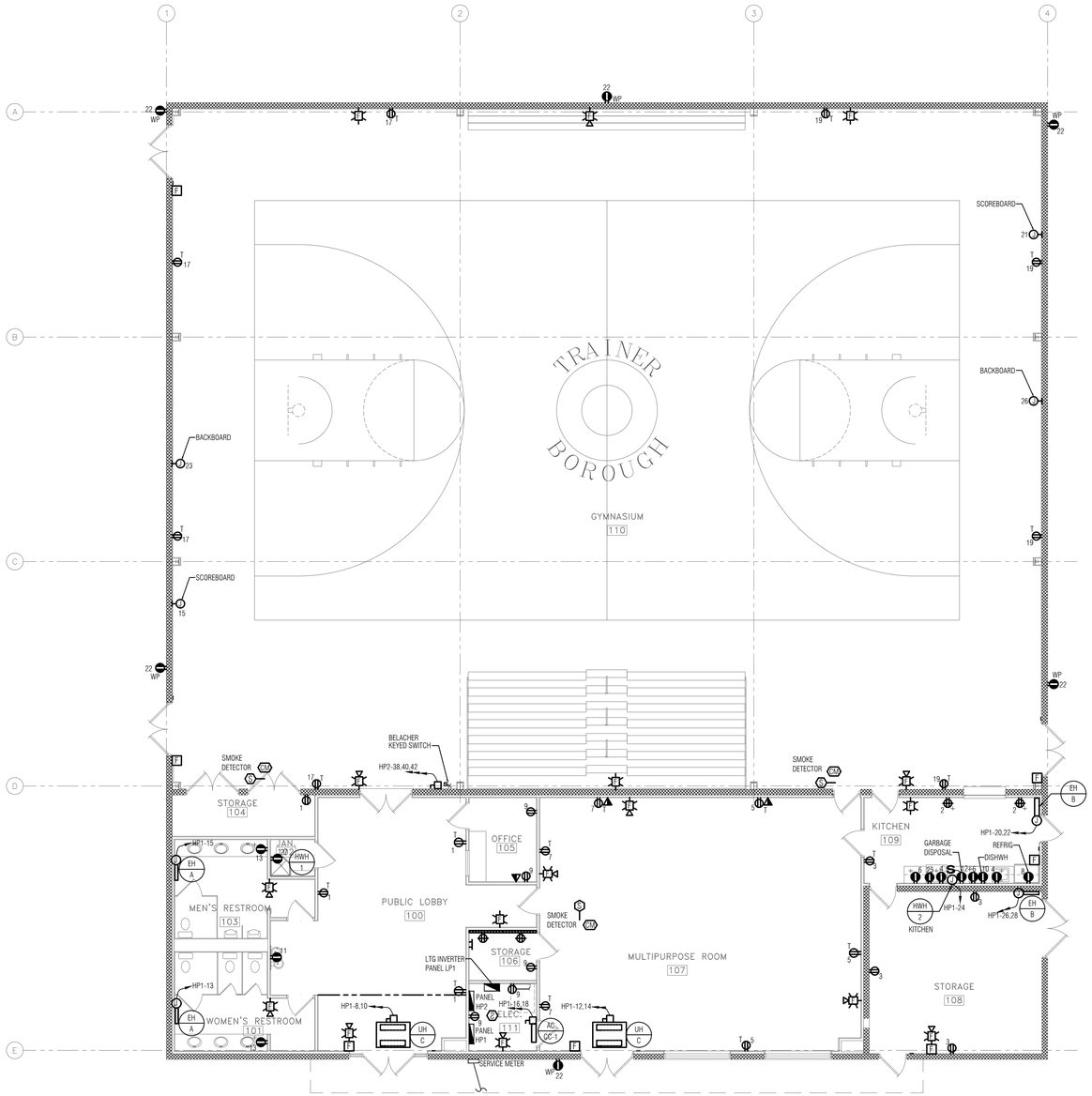
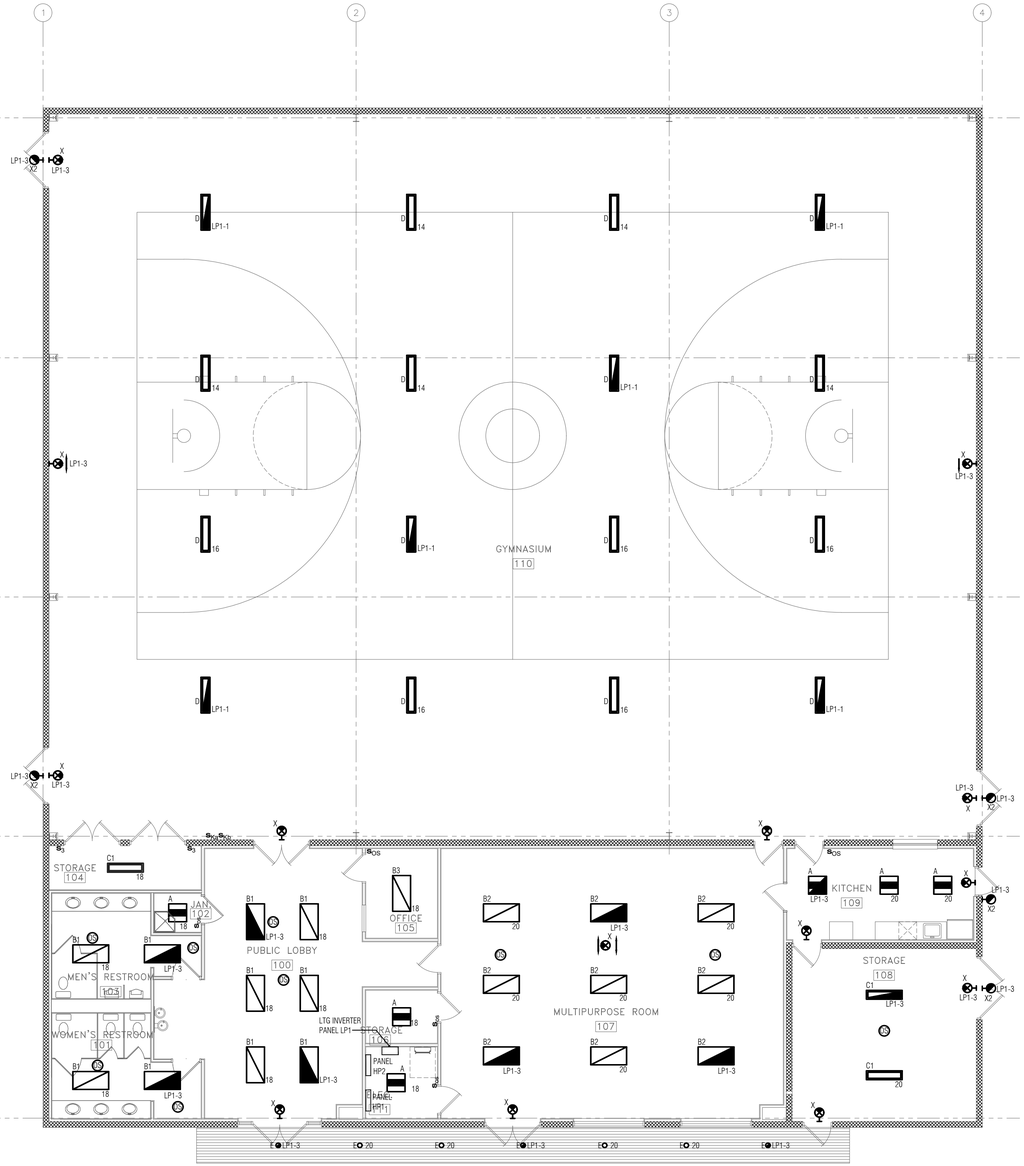
CHECKED BY:
PROJ. NO: 17214

SHEET NO. E1.1
SHEET OF





SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#12 & 1#12GND - 3/4"C UON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#12 & 1#12GND
2. 3/4"C UON. ROUTE ALL BRANCH CIRCUITS TO PANEL INDICATED IN ROOM UON. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL WIRE SIZES.
3. PROVIDE GFI RECEPTACLES FOR ALL RECEPTACLES LOCATED WITHIN 6 FEET OF SINKS.
4. REFER TO APPROPRIATE TRADE DRAWINGS FOR EXACT LOCATION OF HVAC, PLUMBING, AND ARCHITECTURAL EQUIPMENT.
5. COORDINATE THE EXACT LOCATION OF RECEPTACLES AND TELECOMMUNICATION DEVICES WITH FURNITURE, MILLWORK AND EQUIPMENT.
6. TOILET ROOM EXHAUST FANS SHALL BE CONNECTED TO LIGHTING CIRCUIT AND LIGHTING OCCUPANCY SENSOR IN ROOM.
7. ALL BRANCH CIRCUITS SHOWN ARE TO PANELBOARD 'HP2', UNLESS NOTED OTHERWISE.

1 / E2.0 — FLOOR PLAN - COMMUNITY CENTER - POWER
SCALE - 1/8" = 1'-0"

2 / E2.0 — FLOOR PLAN - COMMUNITY CENTER - LIGHTING
SCALE - 1/8" = 1'-0"

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FLOOR PLAN–COMMUNITY CENTER
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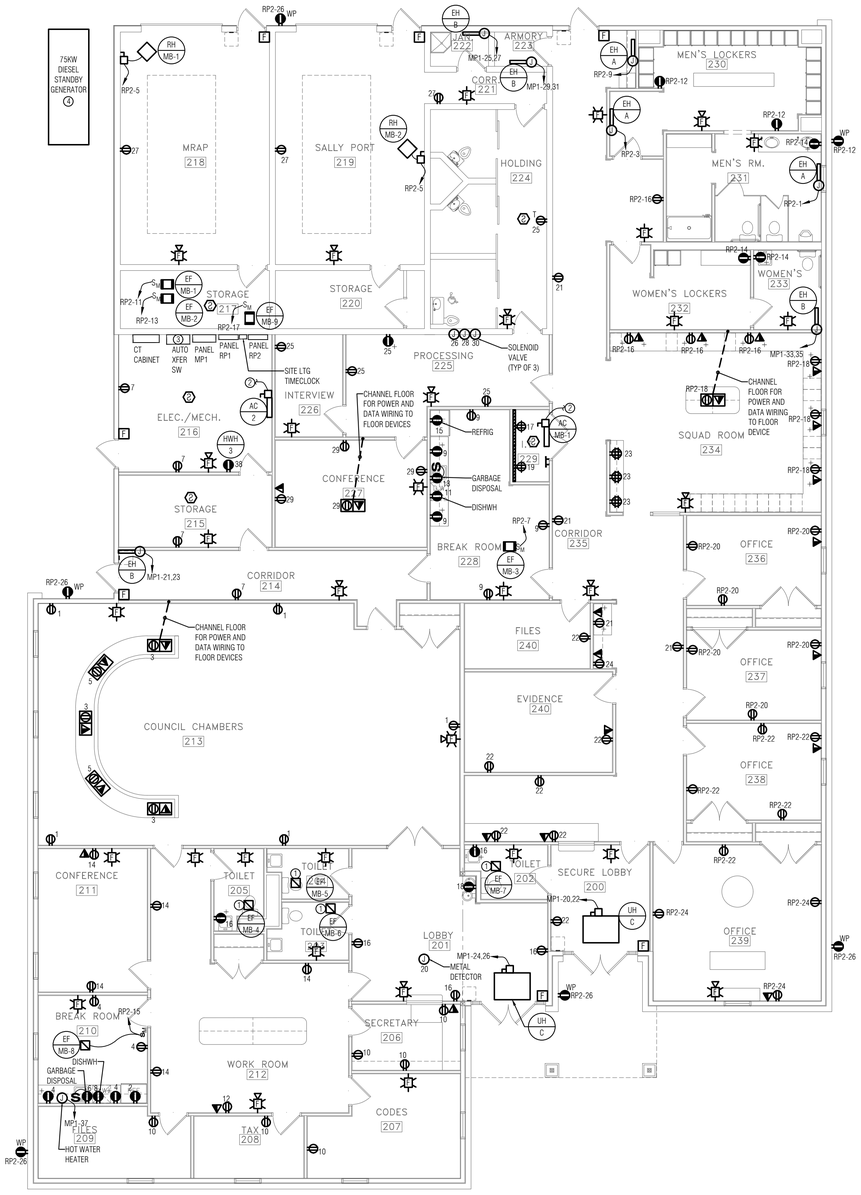
SHEET NO. E2.0
SHEET OF



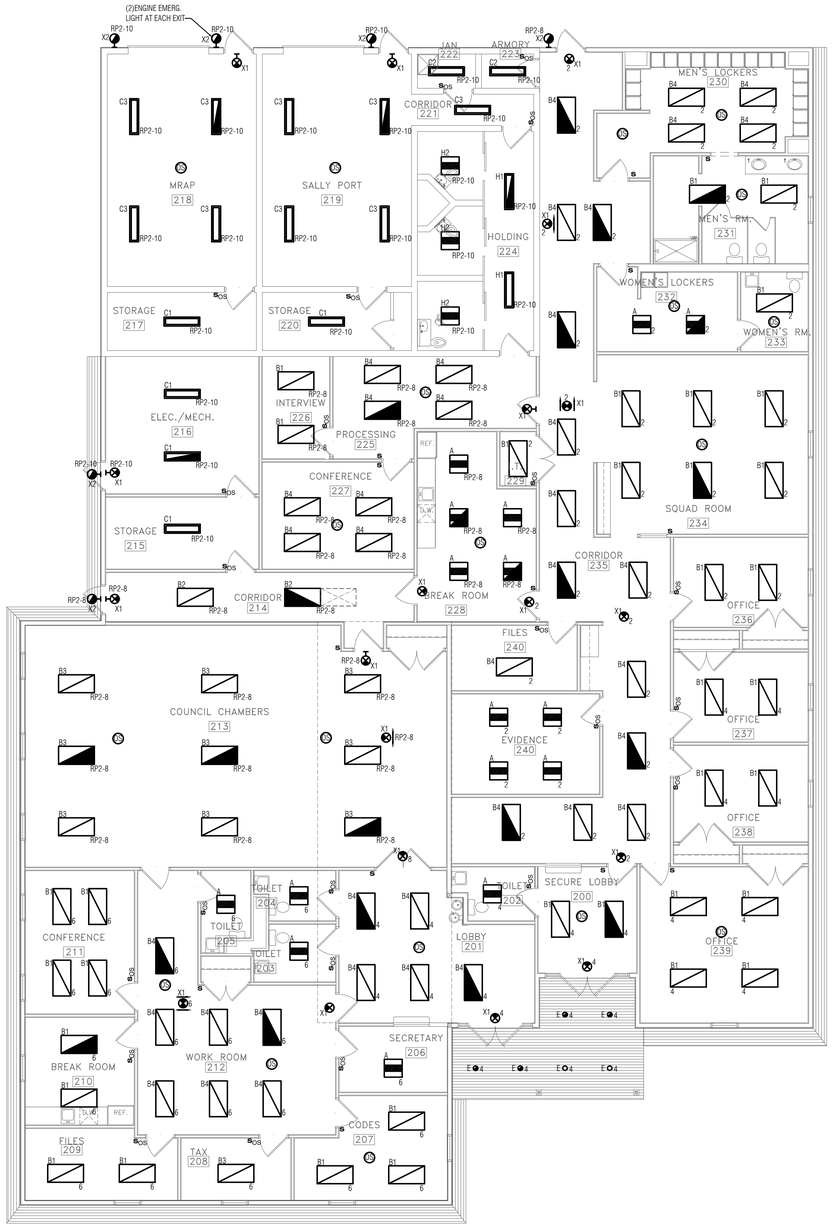
1 FLOOR PLAN - BOROUGH BUILDING- POWER
E2.1 SCALE - 1/8" = 1'-0"

SHEET NOTES:

1. ALL SINGLE PHASE BRANCH CIRCUITING SHALL BE 2#12 & 1#12GND - 3/4"C UON. ALL THREE PHASE BRANCH CIRCUITING SHALL BE 3#12 & 1#12GND 3/4"C UON. ROUTE ALL BRANCH CIRCUITS TO PANEL INDICATED IN ROOM UON. REFER TO SINGLE LINE DIAGRAM FOR ADDITIONAL WIRE SIZES.
2. PROVIDE GFI RECEPTACLES FOR ALL RECEPTACLES LOCATED WITHIN 6 FEET OF SINKS.
3. REFER TO APPROPRIATE TRADE DRAWINGS FOR EXACT LOCATION OF HVAC, PLUMBING, AND ARCHITECTURAL EQUIPMENT.
4. COORDINATE THE EXACT LOCATION OF RECEPTACLES AND TELECOMMUNICATION DEVICES WITH FURNITURE, MILLWORK AND EQUIPMENT.
5. ALL BRANCH CIRCUITS ARE TO PANEL RP1, UNLESS OTHERWISE NOTED

PLAN NOTES:

1. CONNECT TOILET ROOM EXHAUST FAN TO LIGHTING BRANCH CIRCUIT AND LIGHTING CONTROL SWITCH IN ROOM.
2. AC-1 SHALL BE POWERED FROM THE ROOFTOP CONDENSER UNIT. PROVIDE CONTROL CONDUIT WITH PULL STRING. ROUTING OF POWER AND CONTROL CONDUIT SHALL BE COORDINATED WITH MECHANICAL CONTRACTOR.
3. SERVICE RATED AUTOMATIC TRANSFER SWITCH, 208V 3-PHASE, 4-POLE NORMAL SOURCE SHALL BE DIRECT FROM PECO SERVICE AND ALTERNATE FROM 75KVA EMERGENCY GENERATOR. PROVIDE 250W4 CONNECTIONS TO EACH. PROVIDE CONTROL WIRES AS REQUIRED TO EMERGENCY GENERATOR.
4. 75KVA DIESEL EMERGENCY GENERATOR, 208V 3-PHASE, 4-POLE IN SOUND ATTENUATED WEATHERPROOF ENCLOSURE. GENERATOR SHALL INCLUDE BASE TANK WITH CAPACITY FOR 3 DAYS OF SERVICE AT FULL LOAD. PROVIDE CONCRETE BASE PAD AS REQUIRED.



2 FLOOR PLAN - BOROUGH BUILDING- LIGHTING
E2.1 SCALE - 1/8" = 1'-0"

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FLOOR PLAN–BOROUGH BUILDING
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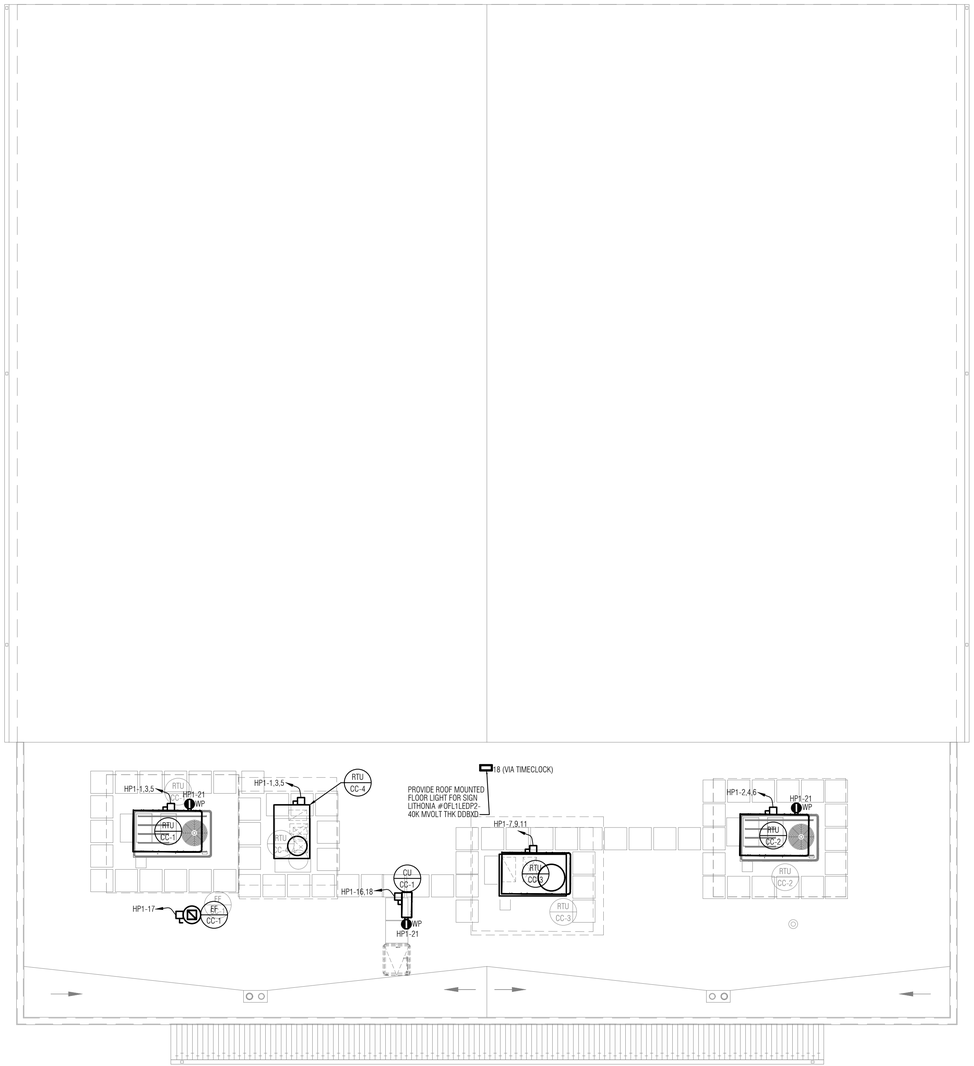
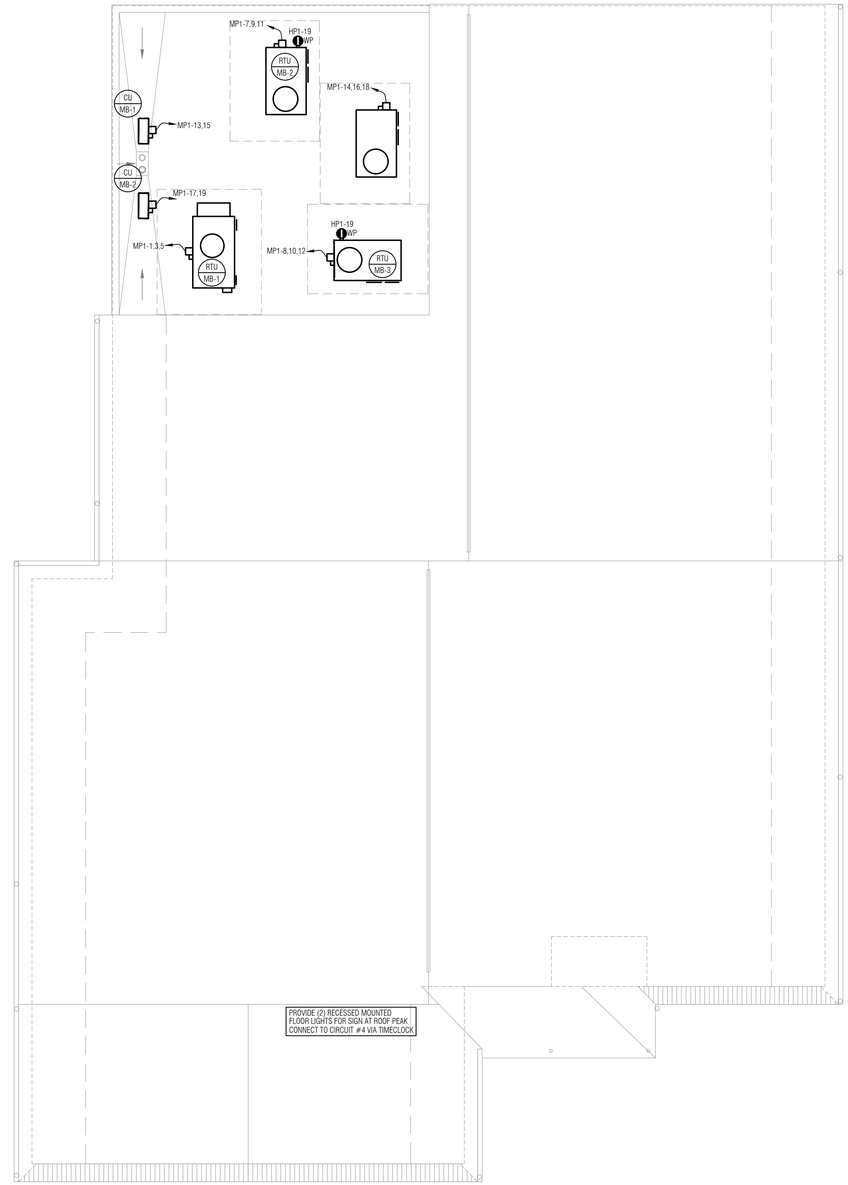
SHEET NO. E2.1 SHEET OF



1 ROOF PLAN - COMMUNITY CENTER
E2.2 SCALE - 1/8" = 1'-0"



2 ROOF PLAN - BOROUGH BUILDING
E2.2 SCALE - 1/8" = 1'-0"

N

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ROOF PLAN—COMMUNITY CENTER/BOROUGH BUILDING
NEW MUNICIPAL BUILDINGS
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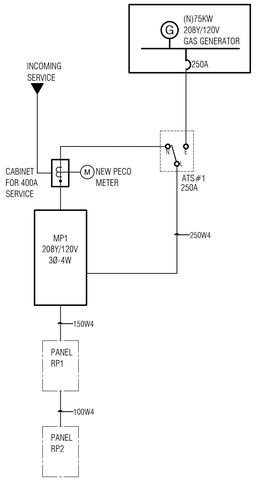
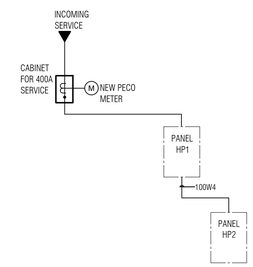
SHEET NO. E2.2 SHEET OF



7 E300 SLD - BOROUGH BUILDING

SCALE - NONE



8 E300 SINGLE LINE- COMMUNITY CENTER

SCALE - NONE

BRANCH & FEEDER CIRCUIT SCHEDULE

COPPER (CU)				ALUMINUM (AL)			REMARKS	COPPER (CU)				ALUMINUM (AL)			
WIRE ID	# OF WIRES	GROUND	CONDUIT	# OF WIRES	GROUND	CONDUIT		WIRE ID	# OF WIRES	GROUND	CONDUIT	# OF WIRES	GROUND	CONDUIT
20W2	2# 12	1# 12 G.	3/4"C	2# 10	1# 12 G.	3/4"C	(1)	60W4	4# 6	1# 10 G.	1"C	4# 4	1# 8 G.	1"C
30W2	2# 12	1# 10 G.	3/4"C	2# 8	1# 8 G.	3/4"C	(1)	70W4	4# 4	1# 8 G.	1 1/2 "C	4# 2	1# 6 G.	1 1/2 "C
35W2	2# 8	1# 10 G.	3/4"C	2# 8	1# 8 G.	3/4"C	(1)	80W4	4# 4	1# 8 G.	1 1/2 "C	4# 2	1# 6 G.	1 1/2 "C
40W2	2# 8	1# 10 G.	3/4"C	2# 8	1# 8 G.	3/4"C	(1)	90W4	4# 2	1# 8 G.	1 1/2 "C	4# 2	1# 6 G.	1 1/2 "C
45W2	2# 8	1# 10 G.	1"C	2# 6	1# 8 G.	1"C	(1)	100W4	4# 2	1# 8 G.	1 1/2 "C	4# 1	1# 6 G.	1 1/2 "C
50W2	2# 8	1# 10 G.	1"C	2# 6	1# 8 G.	1"C	(1)	110W4	4# 2	1# 6 G.	2"C	4# 1/0	1# 6 G.	2"C
60W2	2# 6	1# 10 G.	1"C	2# 4	1# 8 G.	1"C		125W4	4# 1	1# 6 G.	2"C	4# 2/0	1# 6 G.	2"C
70W2	2# 4	1# 8 G.	1 1/2 "C	2# 2	1# 6 G.	1 1/2 "C		150W4	4# 1/0	1# 6 G.	2"C	4# 3/0	1# 6 G.	2"C
80W2	2# 4	1# 8 G.	1 1/2 "C	2# 2	1# 6 G.	1 1/2 "C		175W4	4# 2/0	1# 6 G.	2"C	4# 4/0	1# 4 G.	2"C
90W2	2# 2	1# 8 G.	1 1/2 "C	2# 2	1# 6 G.	1 1/2 "C		200W4	4# 4/0	1# 6 G.	2"C	4-250KCMIL	1# 4 G.	2 1/2"C
100W2	2# 2	1# 8 G.	1 1/2 "C	2# 1	1# 6 G.	1 1/2 "C		225W4	4# 4/0	1# 4 G.	2 1/2"C	4-300 KCMIL	1# 4 G.	2 1/2"C
20W3	3# 12	1# 12 G.	3/4"C	3# 10	1# 10 G.	3/4"C	(1)	250W4	4-250 KCMIL	1# 4 G.	2 1/2"C	4-350 KCMIL	1# 4 G.	2 1/2"C
25W3	3# 12	1# 10 G.	3/4"C	3# 10	1# 8 G.	3/4"C	(1)	300W4	4-350 KCMIL	1# 4 G.	2 1/2"C	4-500 KCMIL	1# 2 G.	3"C
30W3	3# 8	1# 10 G.	3/4"C	3# 8	1# 8 G.	3/4"C	(1)	350W4	4-500 KCMIL	1# 3 G.	3"C	(2) 4#4/0	(2) 1# 2 G.	(2) 2"C
40W3	3# 8	1# 10 G.	1"C	3# 8	1# 8 G.	1"C	(1)	400W4	4-600 KCMIL	1# 3 G.	3 1/2"C	(2) 4-250 KCMIL	(2) 1# 1 G.	(2) 2 1/2"C
50W3	3# 8	1# 10 G.	1"C	3# 6	1# 8 G.	1"C	(1)	450W4	(2) 4#4/0	(2) 1# 2 G.	(2) 2"C	(2) 4-300 KCMIL	(2) 1# 1 G.	(2) 2 1/2"C
60W3	3# 6	1# 10 G.	1"C	3# 4	1# 8 G.	1"C		500W4	(2) 4-250 KCMIL	(2) 1# 2 G.	(2) 2 1/2"C	(2) 4-350 KCMIL	(2) 1# 1/0 G.	(2) 2 1/2"C
70W3	3# 4	1# 8 G.	1 1/2 "C	3# 2	1# 6 G.	1 1/2 "C		600W4	(2) 4-350 KCMIL	(2) 1# 2 G.	(2) 3"C	(2) 4-500 KCMIL	(2) 1# 2/0 G.	(2) 3"C
80W3	3# 4	1# 8 G.	1 1/2 "C	3# 2	1# 6 G.	1 1/2 "C		700W4	(2) 4-250 KCMIL	(2) 1# 2 G.	(2) 2 1/2"C	(2) 4-350 KCMIL	(2) 1# 1/0 G.	(2) 2 1/2"C
90W3	3# 2	1# 8 G.	1 1/2 "C	3# 2	1# 6 G.	1 1/2 "C		800W4	(2) 4-600 KCMIL	(2) 1# 1/0 G.	(2) 4"C	(3) 4-400 KCMIL	(3) 1# 3/0 G.	(3) 3 1/2"C
100W3	3# 2	1# 8 G.	1 1/2 "C	3# 1	1# 6 G.	1 1/2 "C		1000W4	(3) 4-400 KCMIL	(2) 1# 2/0 G.	(2) 3"C	(3) 4-600 KCMIL	(3) 1# 4/0 G.	(3) 4"C
110W3	3# 2	1# 8 G.	2"C	3# 1/0	1# 6 G.	2"C		1200W4	(3) 4-600 KCMIL	(2) 1# 3/0 G.	(2) 4"C	(4) 4-500 KCMIL	(4) 250 KCMIL	(3) 3 1/2"C
125W3	3# 1	1# 6 G.	2"C	3# 2/0	1# 6 G.	2"C		250XW4	4-250 KCMIL	1# 2 G.	2 1/2"C	4-350 KCMIL	1# 1/0 G.	(2) 3"C
150W3	3# 1/0	1# 6 G.	2"C	3# 3/0	1# 6 G.	2"C		400XW4	4-600 KCMIL	1# 1/0 G.	3"C	(2) 4-250 KCMIL	(2) 1# 3/0 G.	(2) 3"C
175W3	3# 2/0	1# 6 G.	2"C	3# 4/0	1# 4 G.	2"C		600XW4	(2) 4-350 KCMIL	(2) 1# 2/0 G.	(2) 3"C	(2) 4-500 KCMIL	(2) 1# 4/0 G.	(3) 3 1/2"C
200W3	3# 3/0	1# 6 G.	2"C	3-250KCMIL	1# 4 G.	2 1/2"C		800XW4	(2) 4-600 KCMIL	(2) 1# 3/0 G.	(2) 4"C	(3) 4-400 KCMIL	(3) 250 KCMIL	(3) 3"C
225W3	3# 4/0	1# 4 G.	2 1/2"C	3-300 KCMIL	1# 4 G.	2 1/2"C		1000XW4	(3) 4-400 KCMIL	(3) 1# 3/0 G.	(3) 3 1/2"C	(3) 4-600 KCMIL	(3) 250 KCMIL	(3) 3 1/2"C
250W3	3-250 KCMIL	1# 4 G.	2 1/2"C	3-350 KCMIL	1# 4 G.	2 1/2"C		1200XW4	(3) 4-600 KCMIL	(3) 1# 3/0 G.	(3) 4"C	(4) 4-500 KCMIL	(4) 250 KCMIL	(3) 3 1/2"C
300W3	3-350 KCMIL	1# 4 G.	2 1/2"C	3-500 KCMIL	1# 2 G.	3"C		1600XW4	(4) 4-600 KCMIL	(4) 1# 3/0 G.	(4) 4"C	(5) 4-600 KCMIL	(5) 250 KCMIL	(3) 4"C
350W3	3-500 KCMIL	1# 3 G.	3"C	(2) 3#4/0	(2) 1# 2 G.	(2) 2"C		2000XW4	(5) 4-600 KCMIL	(5) 1# 3/0 G.	(5) 4"C	(6) 4-600 KCMIL	(6) 250 KCMIL	(3) 4"C
400W3	3-600 KCMIL	1# 3 G.	3 1/2"C	(2) 3-250 KCMIL	(2) 1# 1 G.	(2) 2 1/2"C								
450W3	(2) 3#4/0	(2) 1# 2 G.	(2) 2"C	(2) 3-300 KCMIL	(2) 1# 1 G.	(2) 2 1/2"C								
500W3	(2) 3-250 KCMIL	(2) 1# 2 G.	(2) 2 1/2"C	(2) 3-350 KCMIL	(2) 1# 1/0 G.	(2) 2 1/2"C								
20W4	4# 12	1# 12 G.	3/4"C	4# 10	1# 10 G.	3/4"C								
25W4	4# 12	1# 10 G.	3/4"C	4# 10	1# 8 G.	3/4"C								
30W4	4# 8	1# 10 G.	3/4"C	4# 8	1# 8 G.	3/4"C								
40W4	4# 8	1# 10 G.	1"C	4# 8	1# 8 G.	1"C								
50W4	4# 8	1# 10 G.	1"C	4# 6	1# 8 G.	1"C								

NOTE: (#) DENOTES NUMBER OF SETS OF WIRES & CONDUITS

###W##

- DENOTES NUMBER OF PHASE/LINE & NEUTRAL CONDUCTORS WIRE, X DENOTES SEPARATELY DERIVED SYSTEMS, SERVICES AND TRANSFORMER SECONDARIES
- CONDUCTORS AMPERE VALUE

NOTES

(1) ROMEX IS ACCEPTABLE FOR APARTMENT UNIT BRANCH CIRCUIT WIRING.

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TRAINER PA, 19061

REVISIONS NO.	DESCRIPTION	DATE
	ISSUED FOR BID	8/26/19

DATE: 11/14/18
SCALE: 1/8"=1'-0"
DRAWN BY:
CHECKED BY:
PROJ. NO.: 17214

SHEET NO. E3.0

SHEET OF