GENERAL

1. ALL QUANTITIES ARE CONSIDERED APPROXIMATE AND ARE FOR ESTIMATING PURPOSES ONLY.
2. THE CONTRACTOR SHALL INCLUDE ALL MATERIALS, TOOLS, EQUIPMENT, LABOR AND APPURTENANT ITEMS TO COMPLETE THE WORK WITHIN THE BID PRICE.
3. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE PRIOR TO BIDDING AND CONSTRUCTION.
4. LEGAL LOAD LIMIT REQUIREMENTS SHALL BE ENFORCED ON ALL STATE HIGHWAYS, CITY STREETS AND COUNTY ROADS.
5. ALL EARTHWORK, CONCRETE, AND ASPHALT WORK TO MEET MDT STANDARDS.
6. ALL SITE WORK MUST BE IN COMPLIANCE WITH CURRENT MONTANA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
7. ALL CONCRETE AND ASPHALT WORK MUST BE IN ACCORDANCE WITH PROJECT GEOTECHNICAL REPORT, TERRACON FEBRUARY 7, 2019.

SAFETY

1. GENERAL CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING AND CONSTRUCTING STABLE TEMPORARY EXCAVATIONS AND SHOULD SHORE, SLOPE OR BENCH THE SIDES OF THE EXCAVATIONS, AS REQUIRED, TO MAINTAIN STABILITY OF BOTH THE EXCAVATION SIDES AND BOTTOM. ALL EXCAVATIONS MUST COMPLY WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS, INCLUDING THE CURRENT OSHA EXCAVATION AND TRENCH SAFETY STANDARDS. CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, WHO MUST ALSO BE SOLELY RESPONSIBLE FOR THE MEANS, METHODS AND SEQUENCING OF CONSTRUCTION OPERATIONS. UNDER NO CIRCUMSTANCES SHOULD THE INFORMATION PROVIDED BE INTERPRETED TO MEAN THAT THE COR IS ASSUMING RESPONSIBILITY FOR CONSTRUCTION SAFETY OF THE CONTRACTOR'S ACTIVITIES. SUCH RESPONSIBILITY IS NOT BEING IMPLIED AND WILL NOT BE INFERRED.
2. EXCAVATION AND SLOPES: IN NO CASE SHOULD SLOPE HEIGHT, SLOPE INCLINATION, OR EXCAVATION DEPTH, INCLUDING UTILITY TRENCH EXCAVATION DEPTH, EXCEED THOSE SPECIFIED IN LOCAL, STATE AND FEDERAL SAFETY REGULATIONS. SPECIFICALLY, THE CURRENT OSHA HEALTH AND SAFETY STANDARDS FOR EXCAVATIONS, 29 CFR PART 1926 MUST BE FOLLOWED. IT IS THE VHA COR'S UNDERSTANDING THAT THESE REGULATIONS ARE BEING STRICTLY ENFORCED AND IF THEY ARE NOT CLOSELY FOLLOWED, THE CONTRACTOR COULD BE LIABLE FOR SUBSTANTIAL PENALTIES.
3. CONTRACTOR MUST CLEARLY MARK AND/OR FENCE ALL OBSTRUCTIONS, EXCAVATIONS AND CONSTRUCTION MATERIALS AND EQUIPMENT. THE PROJECT SUPERINTENDENT (OR A DESIGNATED REPRESENTATIVE) MUST MONITOR THE PROJECT FOR SAFETY CONCERNS AND POTENTIAL HAZARDS AT ALL TIMES.

EXISTING UTILITIES

1. CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES WITH A 48-HOUR ADVANCED NOTICE AND DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND PROPERLY REPAIRING ANY DAMAGED UTILITIES.
2. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE BASED ON RECORDS OF VETERANS AFFAIRS AND FIELD VERIFICATION BY THE MAINTENANCE CREWS. FIELD VERIFICATION OF BURIED GAS, ELECTRIC, TELEPHONE, WATER, SEWER AND CABLE TV LINES ARE BY ELECTRONIC OR MAGNETIC DETECTION METHODS. ALL UTILITY LOCATIONS ARE SUBJECT TO THE ACCURACY OF THE LOCATION METHOD AND ARE SUBJECT TO RELOCATION FROM THE TIME THAT THE DRAWINGS WERE PREPARED. NO EXCAVATION WAS PERFORMED.
3. THE CONTRACTOR MUST NOTIFY THE VHA COR OF ALL UTILITIES ENCOUNTERED DURING CONSTRUCTION AND MUST NOT BACKFILL UNTIL THE CONTRACTOR HAS MADE A RECORD OF ITS TYPE, SIZE AND LOCATION.
4. CONTRACTOR MUST CONTACT THE VHA COR FOR ANY NEEDED LOCATES.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT, ADJUST AND RE-LOCATE ANY UTILITIES INTERFERING WITH THE SPECIFIED CROSS-SECTIONS AND DEPTHS AS DESIGNED IN THE SITE PLAN AND GRADING PLANS.

CONSTRUCTION LIMITS

1. CONTRACTOR MUST RESPECT ALL CONSTRUCTION PERMIT BOUNDARIES AS SHOWN. ALL WORK MUST BE DONE WITHIN THESE BOUNDARIES.
2. ANY WORK OR STORAGE OF MATERIALS OUTSIDE OF THE CONSTRUCTION LIMITS MAY BE DONE ONLY AFTER RECEIVING PERMISSION FROM THE VHA COR. THIS PERMISSION MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO COMMENCING WORK OUTSIDE OF THE ESTABLISHED BOUNDARIES.
3. CONTRACTOR IS FULLY LIABLE FOR THE COST OF ANY DAMAGES TO THE PROPERTY, AS WELL AS ANY COSTS TO REMEDY SUCH CIRCUMSTANCES WITH THE VHA COR.

LIMIT OF DISTURBANCE/RESTORATION

1. ALL DISTURBED AREAS MUST BE RECLAIMED WITH A MINIMUM OF 6" TOPSOIL IN ALL SEEDED AREAS PRIOR TO THE PLACEMENT OF SEED. THE CONTRACTOR MUST SALVAGE EXISTING TOPSOIL FROM AREAS WHERE REMOVED.
2. ALL AREAS OF DISTURBANCE SHALL BE RECLAIMED TO A CONDITION THAT IS EQUAL TO OR BETTER THAN THE ORIGINAL.

GRADING

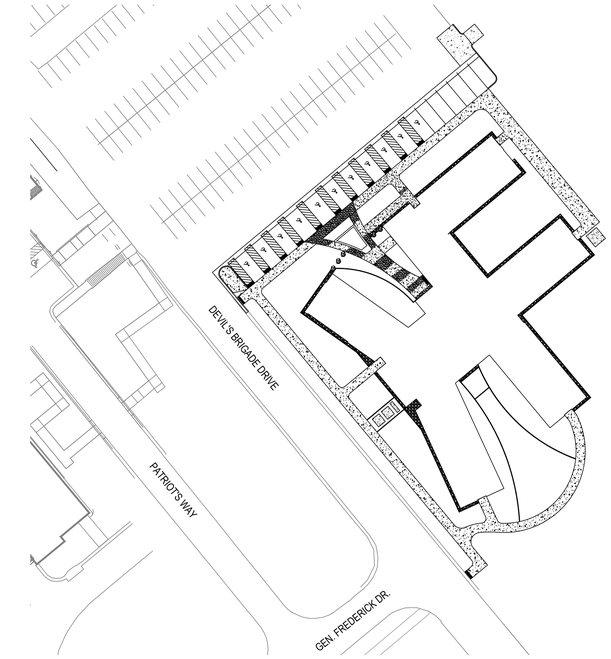
1. SUBGRADE PLACEMENT MUST BE PROOF ROLLED AFTER BEING COMPACTED TO SPECIFIED DENSITIES. PROOF ROLLING MUST BE APPROVED BY THE COR PRIOR TO PLACEMENT OF ANY PAVEMENT.
2. SUBGRADE TO BE COMPACTED TO MDT STANDARDS AND COMPACTION TESTING VERIFIED BY INDEPENDENT TEST AE.

SCHEDULING / ACCESS

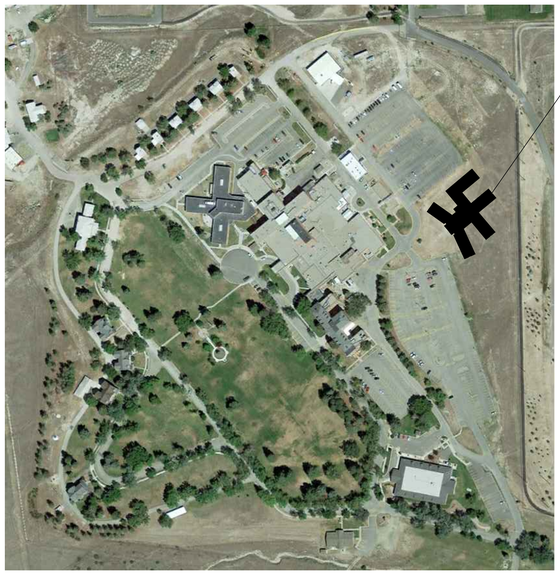
1. CONTRACTOR MUST COORDINATE ALL CONSTRUCTION, SHUTDOWNS, DETOURS AND ANY OTHER OBSTRUCTION OF NORMAL USE OF ROADWAYS AND PARKING LOTS NEAR THE CONSTRUCTION LIMITS WITH THE COR NO LESS THAN 24 HOURS PRIOR TO BEGINNING.

PERMITS

1. CONTRACTOR MUST OBTAIN STORMWATER PERMITS FROM MTDEQ PRIOR TO CONSTRUCTION, IF REQUIRED.
2. CONTRACTOR MUST IMPLEMENT SWPPP PRIOR TO CONSTRUCTION. COSTS ASSOCIATED WITH IMPLEMENTATION OF SWPP WILL BE SUBSIDIARY.
3. CONTRACTOR IS REQUIRED TO OBTAIN MTDEQ CONSTRUCTION DISCHARGE PERMIT, IF NECESSARY.
4. WORK CANNOT COMMENCE UNTIL ABOVE PERMITS ARE OBTAINED.
5. CONTRACTOR IS REQUIRED TO PAY 1.0% EXCISE TAX TO STATE.



1 SITE MAP
SCALE: 1" = 40'
0 10' 20' 40' 80' 120' 160'
North



2 VICINITY MAP
SCALE: NO SCALE
North

Know what's **below**.
Call 811 before you dig.

Issued:	**Date:**

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

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Professional Engineer (Civil) Samuel G. Lundquist 10120 WYOMING 11/05/2020

U.S. Department of Veterans Affairs

Drawing Title CIVIL COVER SHEET	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	**Project Number** 436-114
Approved: Project Director			**Building Number** 173
		Location 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	**Drawing Number** C-001-P1
		Issue Date 08/05/2020 / **Checked** RAG / **Drawn** AJH	

File Path

VA FORM 08 - 6231

SITE ABBREVIATIONS

AB	ANCHOR BOLT
ABAN	ABANDON
ABBRV	ABBREVIATION
ABC	AGGREGATE BASE COURSE
AC	ASPHALTIC CONCRETE
ACP	ASPHALTIC CONCRETE PAVING
ADA	AMERICANS WITH DISABILITIES ACT
ADDM	ADDENDUM
AGGR	AGGREGATE
ALLOW	ALLOWANCE
ALNMT	ALIGNMENT
ALT	ALTERNATE OR ALTITUDE
ALUM	ALUMINUM
AMT	AMOUNT
APPD	APPROVED
APPROX	APPROXIMATE
APPX	APPENDIX
ASB	ASBESTOS
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS
ASI	ARCHITECT'S SUPPLEMENTAL INSTRUCTION
ASPH	ASPHALT
ASSY	ASSEMBLY
AVE	AVENUE
AWG	AMERICAN WIRE GAUGE
AWWA	AMERICAN WATER WORKS ASSOCIATION
B&F	BELL AND FLANGE
B&S	BELL AND SPIGOT
BAL	BALANCE
BC	BACK OF CURB
BCV	BUTTERFLY CHECK VALVE
BDRY	BOUNDARY
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BITUM	BITUMINOUS
BKGD	BACKGROUND
BL	BASE LINE
BLDG	BUILDING
BLR	BOILER
BLT	BUILT
BLVD	BOULEVARD
BM	BEAM OR BENCHMARK
BN	BULLNOSE
BRG	BEARING
BSTR	BOOSTER
BV	BALL VALVE
BW	BOTH WAYS
BWG	BIRMINGHAM WIRE GAUGE
C TO C	CENTER TO CENTER
CALC	CALCULATE
CAP	CAPACITY
CB	CATCH BASIN OR CEMENT BASE
CCTV	CLOSED CIRCUIT TELEVISION
CD	CONSTRUCTION DOCUMENTS OR CONTRACT DOCUMENTS
CDW	CHILLED DRINKING WATER
CDWR	CHILLED DRINKING WATER RETURN
CDWS	CHILLED DRINKING WATER SUPPLY
CEM	CEMENT OR CEMETERY
CF	CONTRACTOR FURNISHED
CFS	CUBIC FEET PER SECOND
CG	CENTER OF GRAVITY
CH	CHANNEL OR CHILLER
CHFR	CHAMFER
CHK	CHECK
CHKV	CHECK VALVE
CI	CAST IRON OR CURB INLET
CIP	CAST-IN-PLACE OR CAST IRON PIPE
CIR	CIRCLE
CJ	CONSTRUCTION JOINT OR CONTROL JOINT
CL	CENTER LINE, CLASS, OR CLOSE
CLASS	CLASSIFICATION
CLL	CONTRACT LIMIT LINE
CLOS	CLOSURE
CLR	CLEAR
cm	CENTIMETER
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNIT
CNCL	CONCEALED
CND	CONDUIT
CNDS	CONDENSATE
CNR	CORNER
CNTOR	CONTACTOR
CO	CERTIFICATE OF OCCUPANCY, CLEANOUT, COMPANY, OR CUTOUT
COL	COLUMN
COMM	COMMUNICATION
CONC	CONCENTRIC OR CONCRETE
CONC FLR	CONCRETE FLOOR
COND	CONDENSER OR CONDITION
CONDN	CONDENSATION
CONF	CONFERENCE
CONSTR	CONSTRUCTION
CONSULT	CONSULTANT
CONT	CONTINUE
CONTR	CONTRACT OR CONTRACTOR
COORD	COORDINATE
COR	CONTRACTING OFFICER'S REPRESENTATIVE
CORR	CORRIDOR
COTG	CLEANOUT TO GRADE
COV	COVER OR CUT OFF VALVE
COV PL	COVER PLATE
CP	CONCRETE PIPE OR CONTROL PANEL
CPLG	COUPLING
CPP	CORRUGATED PLASTIC PIPE
CRCMF	CIRCUMFERENCE
CRN	CROWN
CRP	CONDENSATE RETURN PUMP
CRSI	CONCRETE REINFORCING STEEL INSTITUTE
CRT YD	COURTYARD
CSB	CONCRETE SPLASH BLOCK
CSI	CONSTRUCTION SPECIFICATIONS INSTITUTE
CSP	CONCRETE SEWER PIPE
CSTL	CAST STEEL
CTR	CENTER, CONTOUR, OR COOLING TOWER RETURN
CTRL	CONTROL
CTS	COOLING TOWER SUPPLY
CTV	CABLE TELEVISION
CU	COPPER OR CUBIC
CU FT	CUBIC FEET
CU IN	CUBIC INCH
CU YD	CUBIC YARD
CV	CONTROL VALVE
CW	CLOCKWISE
D	PENNY (NAIL)
DA	DRAINAGE AREA
DAT	DATUM
D-B	DESIGN-BUILD
DBA	UNIT OF SOUND LEVEL
DBL	DOUBLE
DEG	DEGREE
DEL	DELETE
DEMO	DEMOLITION
DEPT	DEPARTMENT
DESCR	DESCRIPTION
DET	DETAIL
DEV	DEVELOPMENT
DHW	DOMESTIC HOT WATER
DI	DROP INLET
DIA	DIAMETER
DIAG	DIAGONAL DIAGRAM
DIAG	DIAGRAM DIAGONAL
DIFF	DIFFERENCE OR DIFFERENTIAL
DIM	DIMENSION
DIP	DUCTILE IRON PIPE
DIR	DIRECTION
DIST	DISTANCE
DIV	DIVISION
DOC	DOCUMENT
DOM	DOMESTIC
DOUG FIR	DOUGLAS FIR
DOZ	DOZEN
DR	DRAIN OR DRIVE
DS	DOWNSPOUT
DSBL	DISABLE
DSGN	DESIGN
DW	DOMESTIC WATER
DWG	DRAWING
DWR	DOMESTIC WATER RETURN OR DRAWER
DWS	DOMESTIC WATER SUPPLY
E	EAST
EA	EACH
EC	EDGE OF CURB
EJ	EXPANSION JOINT
EL	EASEMENT LINE OR ELEVATION
ENGR	ENGINEER
ENTR	ENTRANCE
EOS	EDGE OF SLAB
EP	EDGE OF PAVEMENT (PAVING)
EPA	ENVIRONMENTAL PROTECTION AGENCY
EPT	EXTERNAL PIPE THREAD
EQ	EQUAL
EQL SP	EQUALLY SPACED
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
ERD	EXISTING ROOF DRAIN
ES	EDGE OF SHOULDER
ESMT	EASEMENT
EST	ESTIMATE
EW	EACH WAY
EXCL	EXCLUDE
EXIST	EXISTING
EXP	EXPANSION
EXST GR	EXISTING GRADE
EXT	EXTERIOR
EXT GR	EXTERIOR GRADE
F	FAHRENHEIT, FEMALE, FIRE LINE
F METER	FLOWMETER
F/F	FACE TO FACE
FACIL	FACILITY
FD	FLOOR DRAIN
FES	FLARED END SECTION
FF EL	FINISH FLOOR ELEVATION
FH	FIRE HYDRANT
FIG	FIGURE
FIL	FILLET
FIN	FINISH
FLG	FLANGE
FLL	FLOW LINE
FLR	FLOOR
FLRD	FLARED
FLTR	FILTER
FLUOR	FLUORESCENT
FN	FENCE
FOC	FACE OF CURB
FP	FIRE PROTECTION OR FLAGPOLE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FPW	FIRE PROTECTION WATER SUPPLY
FSP	FIRE STANDPIPE
FSS	FLOW SENSING SWITCH
FT	FEET OR FOOT
FTG	FOOTING
FW	FLOOD WALL
G	GROUND OR NATURAL GAS
G LN	GAS LINE
GA	GAGE
GAL	GALLON
GC	GENERAL CONTRACTOR
GCO	GRADE CLEANOUT
GDR	GUARD RAIL
GEN	GENERATOR
GI	GALVANIZED IRON
GIP	GALVANIZED IRON PIPE
GL	GROUND LEVEL
GOVT	GOVERNMENT
GPD	GALLONS PER DAY
GR BM	GRADE BEAM
GT	GREASE TRAP
GTV	GATE VALVE
GUT	GUTTER
H&CW	HOT AND COLD WATER
HAZ MAT	HAZARDOUS MATERIALS
HB	HOSE BIBB
HC	HANDICAP
HCP	HANDICAPPED
HDPE	HIGH DENSITY POLYETHYLENE
HDR	HEADER
HDWL	HEADWALL
HEX	HEXAGON
HH	HAND HOLE
HNDRL	HANDRAIL
HORIZ	HORIZONTAL
HP	HIGH PRESSURE
HT	HEIGHT
HV	HOSE VALVE
HWY	HIGHWAY
HYD	HYDRANT
HYDR	HYDRAULIC
ID	INSIDE DIAMETER OR INSIDE DIMENSION
IMH	INLET MANHOLE
INCL	INCLUDED
INCR	INCREMENT
INFO	INFORMATION
INSTL	INSTALL
INSTR	INSTRUMENT
INV	INVERT
INV EL	INVERT ELEVATION
IP	IRON PIPE
IPS	IRON PIPE SIZE
IPT	IRON PIPE THREADED
IRREG	IRREGULAR
ISO	ISOMETRIC
IW	IRRIGATION WATER
KWY	KEYWAY
L	ANGLE
LAT	LATITUDE
LF	LINEAR FEET (FOOT)
LIN	LINEAR
LNG	LONGITUDE
LOC	LOCATION
LONG	LONGITUDINAL
LOS	LINE OF SIGHT
LPT	LOW POINT
LS	LUMP SUM
LT	LIGHT
LTG	LIGHTING
MAINT	MAINTENANCE
MATL	MATERIAL
MATV	MASTER ANTENNA TELEVISION SYSTEM
MAX	MAXIMUM
MB	MAIL BOX
MED	MEDIUM
MEMO	MEMORANDUM
MER	MERIDIAN
MFD	MANUFACTURED
MFG	MANUFACTURING
MGT	MANAGEMENT
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MATERIALS LIST
MN	MAGNETIC NORTH
MOD	MODEL OR MODIFY
MON	MONUMENT
MTG	MEETING
MULT	MULTIPLE
MUNIC	MUNICIPAL
N	NORTH
NA	NOT APPLICABLE
NAT	NATURAL
NATL	NATIONAL
NBC	NATIONAL BUILDING CODE
NE	NOT EXCEEDING
NIC	NOT IN CONTRACT
NO	NUMBER
NOM	NOMINAL
NORM	NORMAL
NRCP	NON-REINFORCED CONCRETE PIPE
NTP	NOTICE TO PROCEED
NTS	NOT TO SCALE
OC	ON CENTER
OFD	OVERFLOW DRAIN
OPNG	OPENING
OZ	OUNCE
P	PUMP
PA	PIPE ANCHOR
PAR	PARALLEL
PAT	PATTERN
PB	PULL BOX
PC	POINT OF CURVE
PCA	PORTLAND CEMENT ASSOCIATION
PCC	PRECAST CONCRETE
PCCP	CONCRETE PAVEMENT
PCT	PERCENT
PED	PEDESTAL
PEN	PENETRATE
PERF	PERFORATED
PERIM	PERIMETER
PERM	PERMANENT
PERP	PERPENDICULAR
PG	PRESSURE GAGE OR PROFILE GRADE
PH	PHASE
PHOTO	PHOTOGRAPH
PHWR	PRIMARY HOT WATER RETURN
PHWS	PRIMARY HOT WATER SUPPLY
PI	POINT OF INTERSECTION
PIV	POST INDICATOR VALVE
PK GAR	PARKING GARAGE
PK LOT	PARKING LOT
PL	PROPERTY LINE
PLAS	PLASTIC OR PLASTER
PMPSCT	PUMP SUCTION
PN	PART NUMBER
PNEU	PNEUMATIC
PO	POST OFFICE OR PURCHASE ORDER
POLY	POLYETHYLENE (PLASTIC)
PORT	PORTABLE
POTW	POTABLE WATER
POW LN	POWER LINE
PP	POLYPROPYLENE (PLASTIC)
PR	PUMPED RETURN
PRCST	PRECAST
PREFMD	PREFORMED
PRELIM	PRELIMINARY
PREP	PREPARATION
PREV	PREVIOUS
PRKG	PARKING
PROJ	PROJECT
PROP	PROPERTY
PRV	PRESSURE REGULATOR VALVE OR PRESSURE RELIEF VALVE
PS CONC	PRESTRESSED CONCRETE
PSI	POUNDS PER SQUARE INCH
PSL	PIPE SLEEVE
PT	POST TENSIONED
PT CONC	POST-TENSIONED CONCRETE
PTRV	PRESSURE TEMPERATURE RELIEF VALVE
PV	PAVED
PV RD	PAVED ROAD
PVC	POLYVINYL CHLORIDE (PLASTIC)
QTR	QUARTER
QTY	QUANTITY
QUAD	QUADRANT
QUAL	QUALITY
R	RADIUS OR RANGE
RAD	RADIAN
RC	REINFORCED CONCRETE
RCB	REINFORCED CONCRETE BOX
RCCP	REINFORCED CONCRETE CULVERT PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROAD OR ROOF DRAIN
RDC	REDUCER
REBAR	REINFORCING STEEL BARS
REP	REPAIR
REPL	REPLACE
REQ	REQUIRE
REQD	REQUIRED
RESIL	RESILIENT
RFI	REQUEST FOR INFORMATION
RFP	REQUEST FOR PROPOSAL
ROW	RIGHT OF WAY
RST	REINFORCING STEEL
RT	RIGHT
RV	RELIEF VALVE
RW	ROADWAY
RWL	RAIN WATER LEADER
RWR	RECESSED WASTE RECEPTACLE
SAMP	SAMPLE
SAN	SANITARY
SB	SPLASH BLOCK
SCHED	SCHEDULE
SCP	SCUPPER
SD	STORM DRAIN
SDL	SADDLE
SDMH	STORM DRAIN MANHOLE
SECT	SECTION
SEG	SEGMENT
SEL	SELECT
SEP	SEPARATE
SEP TNK	SEPTIC TANK
SF	SQUARE FOOT (FEET)
SHLDR	SHOULDER
SJ	SCORED JOINT
SLV	SLEEVE
SM	SILTY SAND
SMH	STEAM MANHOLE
SMP	SUMP PUMP
SOV	SHUT OFF VALVE
SP	STANDPIPE OR SUMP PIT
SP EL	SPOT ELEVATION
SPEC	SPECIFICATION
SPKLR	SPRINKLER
SPLY	SUPPLY
SPR	SPRINKLER LINE
SQ	SQUARE
SQ IN	SQUARE INCH
SQ YD	SQUARE YARD
SR	STEAM RETURN
SS	SANITARY SEWER, STEAM SUPPLY, OR STORM SEWER
SSP	STAINLESS STEEL PIPE
SST	STAINLESS STEEL
ST	STREET
ST W	STORM WATER
STA	STATION
STD	STANDARD
STIR	STIRRUP
STM	STEAM
SUCT	SUCTION
SUPT	SUPPORT
SURF	SURFACE
SURV	SURVEY
SUTK	SUMP TANK
SW	SIDEWALK
SWG	SEWAGE
SWR	SEWER
SYM	SYMBOL
T&M	TIME AND MATERIALS
TAN	TANGENT
TBM	TEMPORARY BENCHMARK
TB-XX	TEST BORING-XX (E.G., TB-01)
TCP	TRAFFIC CONTROL PLAN
TD	TRENCH DRAIN
TE	TOP ELEVATION
TEL	TELEPHONE
TEMP	TEMPORARY
THK	THICKNESS
THRU	THROUGH
TMH	TOP OF MANHOLE
TN	TRUE NORTH
TNL	TUNNEL
TO	TOP OF ___
TO FDN	TOP OF FOUNDATION
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE OR TOP OF CURB
TOC FTG	TOP OF CONCRETE FOOTING
TOC WALL	TOP OF CONCRETE WALL
TOF	TOP OF FOOTING
TOP	TOP OF PAVEMENT
TOPO	TOPOGRAPHY
TOS	TOP OF SLAB
TP	TELEPHONE POLE
TR	TOP OF RIM
TWR	TREATED WATER RETURN
TWS	TREATED WATER SUPPLY
TYP	TYPICAL
UFC	UNIFORM FIRE CODE
UGND	UNDERGROUND
UNFIN	UNFINISH
UNPV RD	UNPAVED ROAD
UON	UNLESS OTHERWISE NOTED
UP	UTILITY POLE
UPS	UNINTERRUPTIBLE POWER SUPPLY
UTIL	UTILITY
VAR	VARIES
VB	VALVE BOX
VC	VERTICAL CURVE
VCO	VACUUM CLEANER OUTLET
VCT	VITRIFIED CLAY TILE VINYL COMPOSITION TILE
VERT	VERTICAL
VIC	VICINITY
VID	VIDEO
VIF	VERIFY IN FIELD
VOL	VOLUME
W	WASTE, WEST, OR WIDE
W/	WITH
W/O	WITHOUT
WI	WROUGHT IRON
WL	WATER LINE
WLD	WELDED
WM	WATER METER WIRE MESH
WM	WIRE MESH WATER METER
WO	WORK ORDER
WP	WATER PUMP
WT	WATER TABLE
WT EL	WATER ELEVATION
WTR	WATER
WW	WASTE WATER
WW	WASTE WATER WARM WHITE; WIREWAY
XFMR	TRANSFORMER

SITE SYMBOLS - GENERAL

BENCHMARK

CENTER LINE INDICATOR

DEMOLITION LINE

BREAK, ROUND (USER DEFINES SIZE)

BREAK, STRAIGHT (USER DEFINES SIZE)

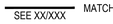
DETAIL INDICATOR

DRAWING BLOCK TITLE WITH GRAPHIC SCALE (SHOWN HALF SCALE)

ELEVATION INDICATOR

IDENTIFICATION DEVICE INDICATOR

KEYNOTE INDICATOR



MATCHLINE FEATURES ABOVE LINE INDICATOR

REVISION INDICATOR (SHOWN WITH CLOUD)

SITE SYMBOLS - CONCRETE/MASONRY

CONCRETE SECTION

CONCRETE PLAN

SITE SYMBOLS - METALS

GRATING, PLAN

GRATING, SECTION

CHECKER PLATE, PLAN

SITE SYMBOLS - EARTHWORK

EARTH, CRUSHED ROCK GRAVEL

EARTH, COMPACTED FILL

EARTHWORK, UNDISTURBED

SAND

EARTHWORK, GRAVEL, POROUS FILL

SITE SYMBOLS - UTILITIES

WATER VALVE

DRAIN LINE PIPE LINE

CAST IRON PIPE LINE

EXISTING STORM DRAIN LINE

STORM DRAIN LINE

COMPRESSED AIR LINE

GAS LINE PIPING

SCREWED GATE VALVE

POWER LINE

EXISTING ELECTRICAL LINE

EXISTING WATER LINE

COMMUNICATIONS LINE

TELEPHONE LINE UTILITY

WATER MANHOLE

WATER LINE, COLD

WATER LINE, HOT

FIRE HYDRANT

FIRE DEPARTMENT CONNECTION

UTILITY POLE

SANITARY MANHOLE

EXISTING SANITARY SEWER

WASTE LINE SANITARY SEWER

UTILITY SANITARY CLEANOUT

ELECTRICAL GUY WIRE

UTILITY ELECTRICAL MANHOLE

Issued:	Date:

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

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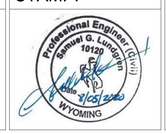
STAMP:



U.S. Department of Veterans Affairs

Drawing Title: ABBREVIATIONS AND SYMBOLS

Approved: Project Director

Phase: 100% CONSTRUCTION DOCUMENTS

Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION

Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636

Issue Date: 08/05/2020

Checked: RAG

Drawn: AJH

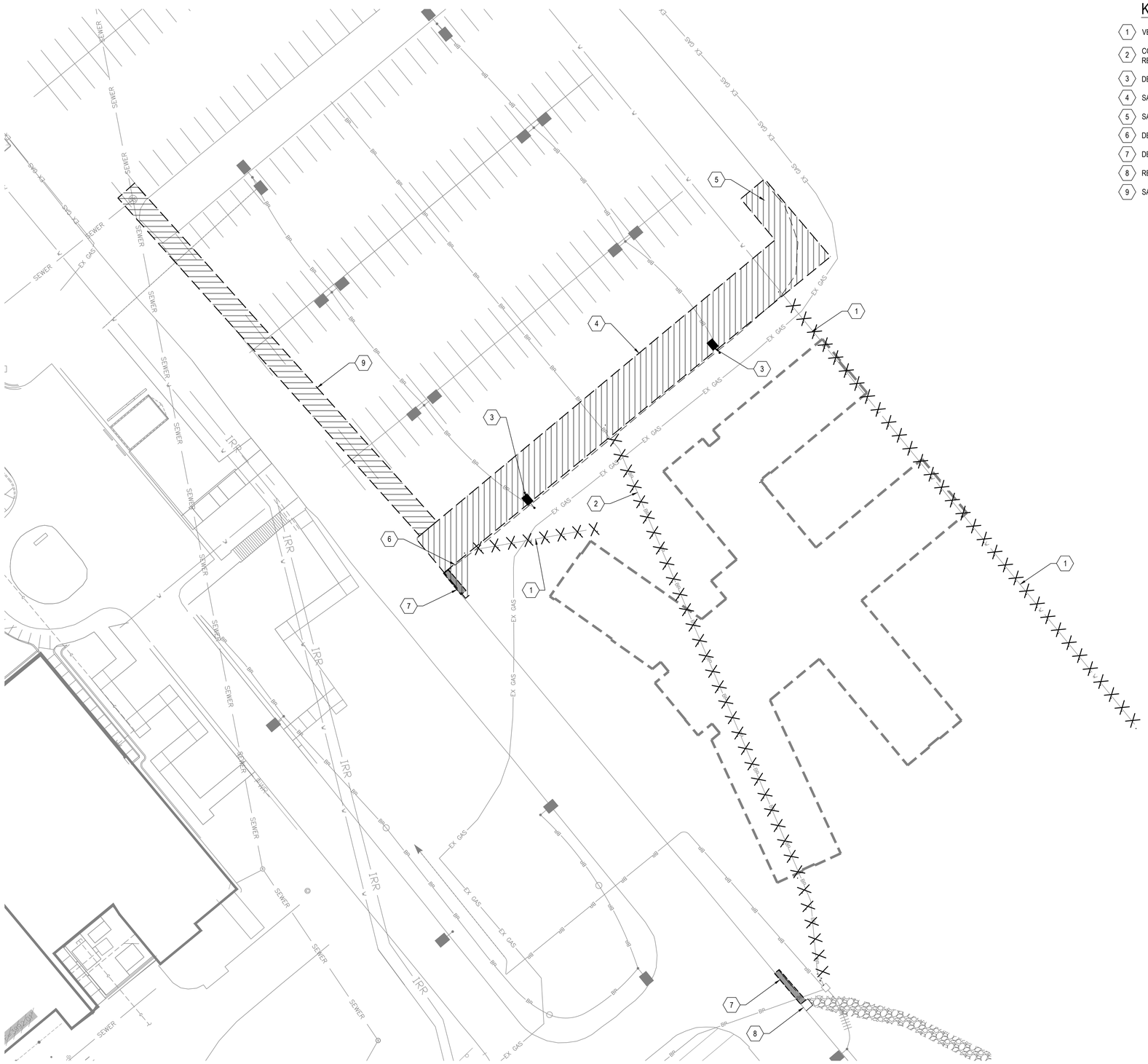
Project Number: 436-114

Building Number: 173

Drawing Number: C-002-P1

File Path

VA FORM 08 - 6231



KEYNOTES:

1. VERIFY AND REMOVE EXISTING ABANDONED WATER LINES AS SHOWN.
2. COORDINATE DEMO OF EXISTING BURIED POWER WITH VHA COR. POWER TO THE STREET AND PARKING LOT LIGHT POLES IS TO REMAIN CONNECTED UNTIL POWER IS TRANSFERRED OVER TO NEW LINE.
3. DEMO EXISTING LIGHT POLES AND CONCRETE BASES.
4. SAW CUT AND REMOVE EXISTING ASPHALT FOR INSTALLATION OF SWALE AND CONCRETE PAVEMENT. SEE CS101-P1.
5. SAW CUT AND REMOVE EXISTING PARKING LOT ASPHALT FOR NEW TRASH ENCLOSURE PAD.
6. DEMO EXISTING CURB AND GUTTER TO MATCH PROPOSED PARKING LOT ENTRY RADIUS ON CS101-P1.
7. DEMO EXISTING CURB AND GUTTER TO MATCH PROPOSED SIDEWALK RAMP AND EXISTING FLOWLINE.
8. REMOVE AND REPLACE CURB TERMINATION WITH SPILLWAY ALIGNED WITH RIPRAP SWALE.
9. SAW CUT AND REMOVE 10' WIDE SECTION TO ACCOMMODATE TRENCHING FOR NEW SANITARY SEWER LINE. SEE CU101-P1.

811 Know what's **below**.
Call 811 before you dig.

LEGEND:

- EXISTING BURIED POWER: BR BR BR
- EXISTING NATURAL GAS: EX GAS EX GAS
- EXISTING DOMESTIC WATER: W
- EXISTING SANITARY SEWER: SEWER
- DEMO EXISTING: X X X X X X X X X X X X
- SAW CUT LINE:
- EXISTING LIGHT POLE:
- DEMO LIGHT POLE:

1 DEMOLITION PLAN
SCALE: 1" = 30'

0 7'-6" 15' 30' 60' 90' 120'

North

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

ARCHITECT/ENGINEERS:

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STAMP:

Professional Engineer (Civil) Samuel G. Lundgren 10120 Date: 7/05/2020 WYOMING

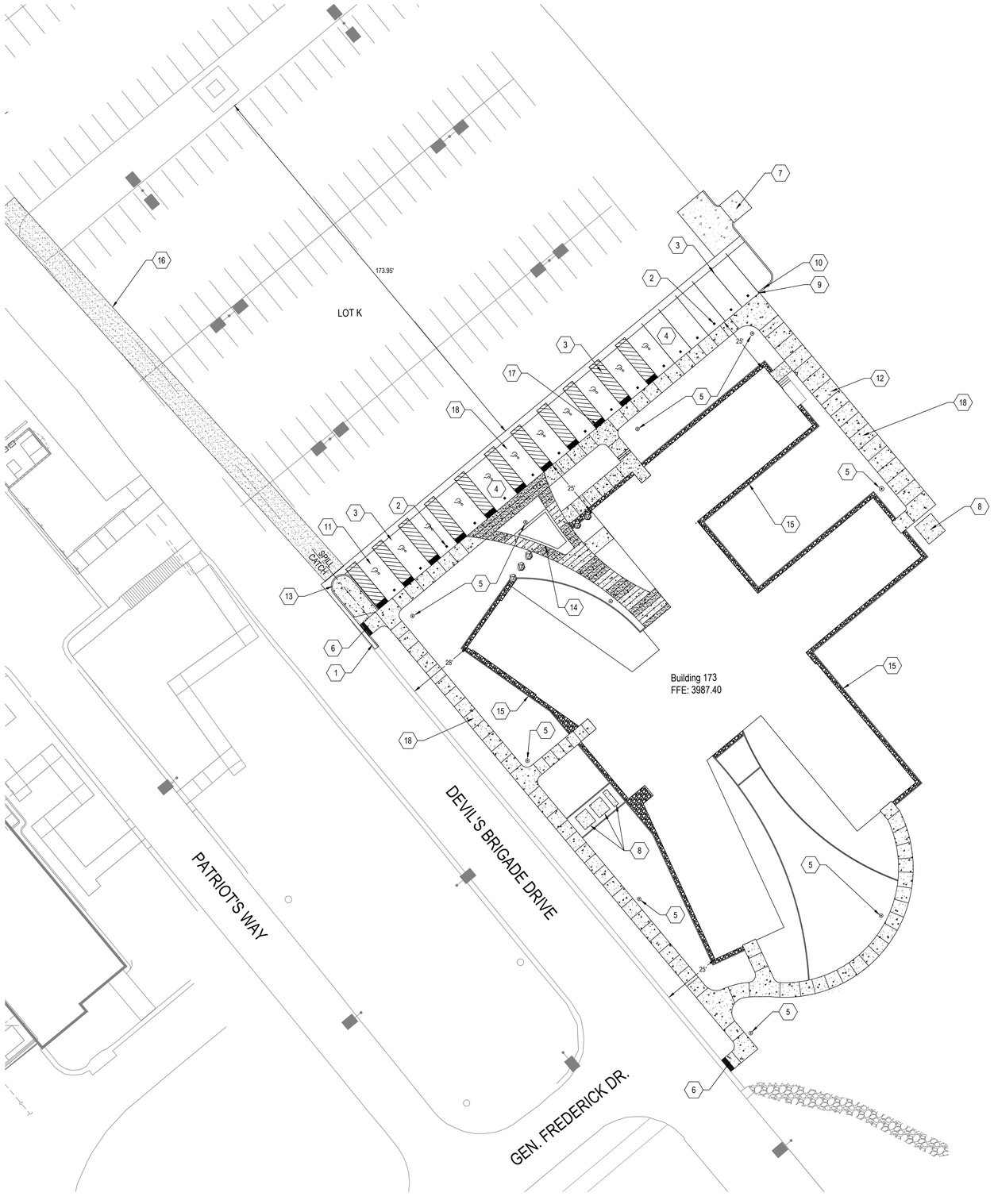
U.S. Department of Veterans Affairs

Issued:	Date:

Drawing Title: SITE DEMOLITION PLAN
Approved: Project Director
Phase: 100% CONSTRUCTION DOCUMENTS
Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION
Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636
Issue Date: 08/05/2020
Checked: RAG
Drawn: AJH
Project Number: 436-114
Building Number: 173
Drawing Number: CD101-P1

File Path

VA FORM 08 - 6231



KEYNOTES:

1. MATCH EXISTING CURB AND GUTTER.
2. FLEXIBLE BOLLARD WITH INTEGRATED 8' SIGN POST AT ALL PARKING SPACES ALONG THE NEW SIDEWALK. SEE DETAIL 4/CS501-P1.
3. STRIPE PARKING LOT ACCORDING TO NEW LAYOUT.
   - 2 - VAN HC (11' X 18')
   - 9 - TYPICAL HC (9' x 18')
   - 6 - STANDARD (9' X 18')
   - 11 - ACCESS AISLES AND DETECTABLE WARNING STRIPS (5' WIDE)
4. NEW CONCRETE PAVEMENT WITH LAYDOWN CURB AND VALLEY GUTTER. SEE DETAIL 4/CS502-P1.
5. NEW SITE LIGHTING IN ACCORDANCE WITH ELECTRICAL DRAWINGS.
6. HANDICAP RAMP.
7. CONCRETE PAD FOR TRASH ENCLOSURE.
8. LOCATIONS AND SIZES OF ALL CONCRETE MECHANICAL AND ELECTRICAL PADS MUST BE COORDINATED BY THE MECHANICAL AND ELECTRICAL CONTRACTORS WITH THE SELECTED EQUIPMENT MANUFACTURER/SUPPLIER AND ARE TO BE APPROVED BY THE VHA COR PRIOR TO PROCEEDING WITH WORK.
9. LONGITUDINAL CONSTRUCTION JOINT WITH DOWELS BETWEEN SIDEWALK AND PARKING WITH SEALANT PER SPECIFICATION 32 05 23.
10. 36" TRANSITION ZONE FROM 6" VERTICAL CURB TO SIDEWALK ELEVATION.
11. CONTRACTION JOINTS PER NOTES ON CS5502-P1.
12. 10' WIDE REINFORCED SIDEWALK PER 02/CS501-P1.
13. CONCRETE CURB CURVE WITH 4'-6" RADIUS TO BACK OF CURB. 10" TRANSITION FROM "CATCH" TO "SPILL" CURBS CENTERED AT DIVIDING LINE SHOWN.
14. PLANT BED SECTION DETAIL REFERENCE 05/CS501.
15. CONCRETE MOW STRIP (TYP.) SECTION DETAIL REFERENCE 06/CS501-P1.
16. PATCH ASPHALT TO MATCH EXISTING; RESTRIPE PARKING AS NECESSARY TO RESTORE PREVIOUS CONDITION.
17. DETECTABLE WARNING STRIPS (5' X 2'). REFERENCE DETAIL 03/CS501-P1.
18. PROVIDE SEALER COMPOUND ON ALL EXTERIOR CONCRETE FLATWORK (TYP).

1 SITE PLAN
SCALE: 1" = 20'
0 5' 10' 20' 40' 60' 80'
North

Issued:	Date:

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

ARCHITECT/ENGINEERS:

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STAMP:

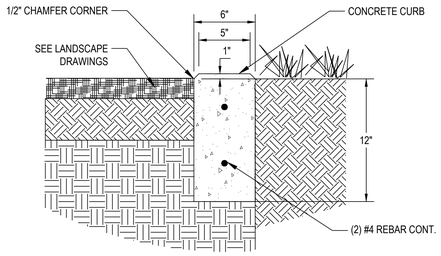
Professional Engineer (Civil) Samuel G. Langdon 10120 WYOMING 8/05/2020

U.S. Department of Veterans Affairs

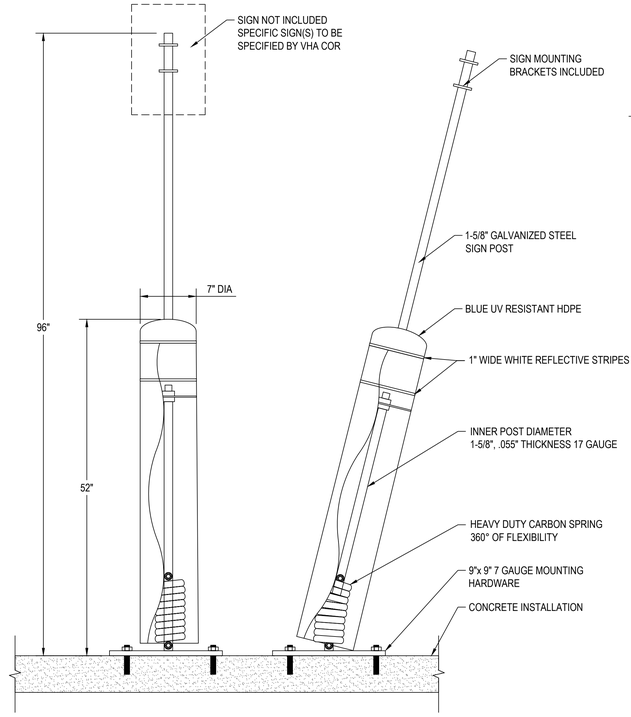
Drawing Title: SITE PLAN	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Building Number: 173
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: MLH	Drawing Number: CS101-P1

File Path

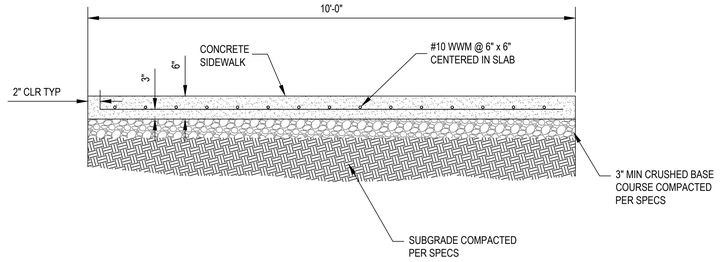
VA FORM 08 - 6231



6 CONCRETE MOW STRIP DETAIL
SCALE: NO SCALE

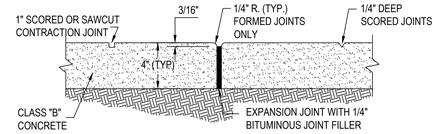


4 FLEXIBLE BOLLARD WITH SIGN POST - CONCRETE INSTALLATION
SCALE: NO SCALE

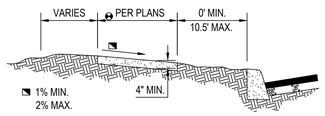


NOTES:
1. EXPANSION AND CONTRACTION JOINTS SHALL BE CONSTRUCTED ACCORDING TO NOTES 1-5 ON DETAIL 01/CS501-P1.
2. CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELLED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.
3. 1/4" DEEP SCORED JOINTS (TYP) SPACED AT 10' OR EQUAL TO SIDEWALK WIDTH.

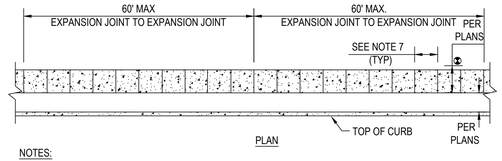
2 REINFORCED CONCRETE SIDEWALK
SCALE: NO SCALE



EXPANSION AND SCORED JOINT DETAIL



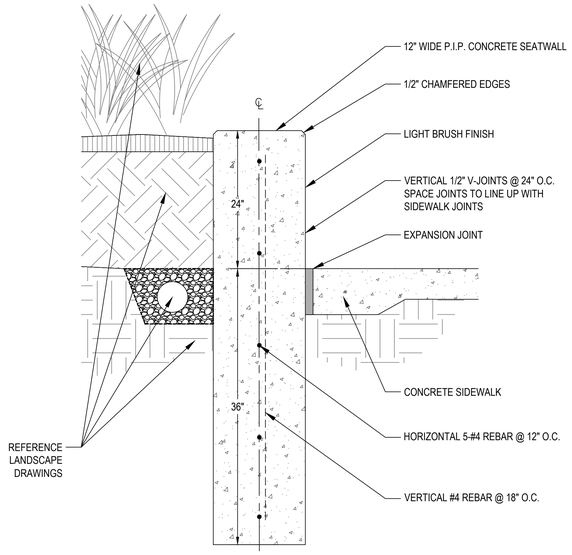
TYPICAL SECTION



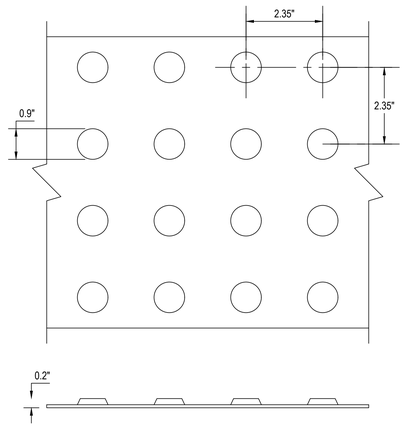
PLAN

NOTES:
1. EXPANSION JOINTS SHALL BE LOCATED WHERE SIDEWALK ABUTS CONCRETE DRIVEWAYS, CURB OR OTHER ADJACENT STRUCTURES.
2. ONE-HALF INCH BITUMINOUS JOINT FILLER SHALL BE INSTALLED AT EXPANSION JOINT LOCATIONS AND SHALL EXTEND THE FULL DEPTH OF THE CONCRETE.
3. 1" DEEP CONTRACTION JOINTS SHALL BE PLACED AT INTERVALS OF APPROXIMATELY 15' OR AT A SPACING THAT MATCHES THE ADJACENT CURB.
4. FORMED CONTRACTION JOINTS SHALL BE FINISHED WITH A TOOL HAVING A 1/4" RADIUS.
5. SCORED JOINTS SHALL BE 1/4" DEEP AND PLACED AT THE SPACING INDICATED FOR THE WIDTH OF SIDEWALK OR MATCH SCORED JOINTS OF ADJACENT CURB.
6. CONCRETE SHALL BE FINISHED BY MEANS OF A FLOAT, STEEL TROWELLED AND BROOMED WITH A FINE BRUSH IN A TRANSVERSE DIRECTION.
7. 1/4" DEEP SCORED JOINTS (TYP) SPACED AT 6' OR EQUAL TO SIDEWALK WIDTH.

1 CONCRETE SIDEWALK
SCALE: NO SCALE



5 PLANT BED WALL DETAIL
SCALE: NO SCALE



3 DETECTABLE WARNING STRIP (TRUNCATED DOMES)
SCALE: NO SCALE

Issued:	Date:

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

ARCHITECT/ENGINEERS:

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VEG 4.11

STAMP:

Professional Engineer (Civil) Samuel G. Lundgren 10120 WYOMING Date: 8/05/2020

U.S. Department of Veterans Affairs

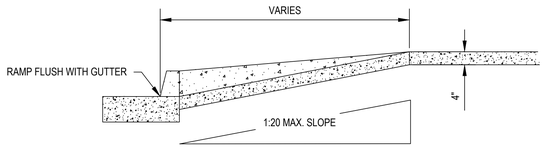
Drawing Title	SITE DETAILS
Phase	100% CONSTRUCTION DOCUMENTS
Project Title	OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION
Project Number	436-114
Building Number	173
Approved: Project Director	
Location	3687 VETERANS DRIVE , FORT HARRISON, MT 59636
Issue Date	08/05/2020
Checked	RAG
Drawn	MLH
Drawing Number	CS501-P1

File Path

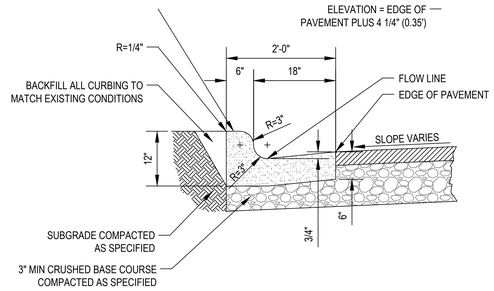
VA FORM 08 - 6231

NOTES:

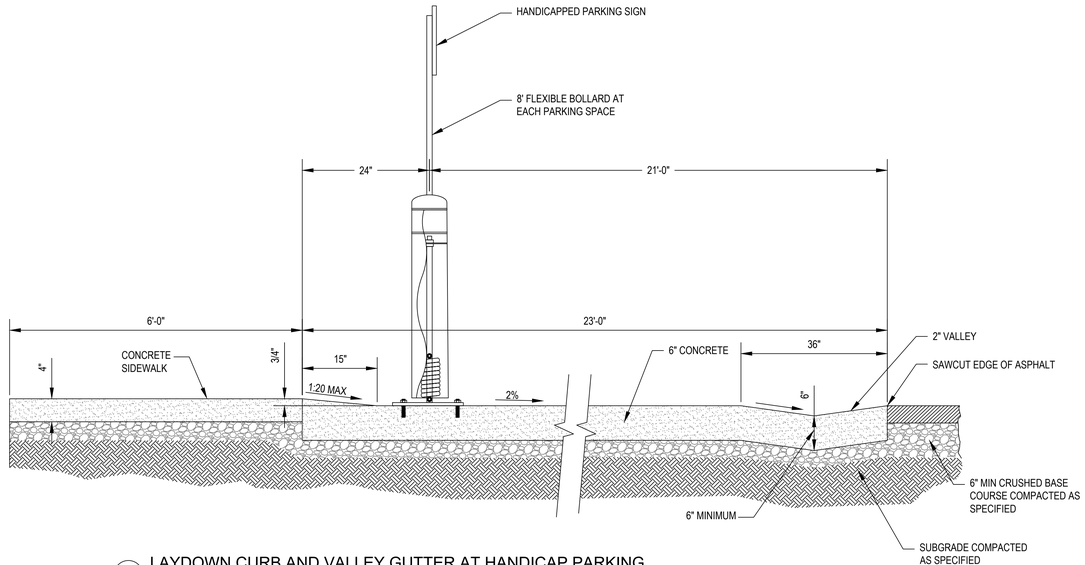
1. ALL EXTERIOR CONCRETE WILL COMPLY WITH SPECIFICATIONS 32 05 12 CEMENT AND CONCRETE FOR EXTERIOR IMPROVEMENTS, 31 20 11 EARTHWORK (SHORT FORM) AND ANY OTHER APPLICABLE SPECIFICATIONS.
2. ALL NEW CONCRETE TO BE SEALED WITH A SEALANT LISTED ON THE MONTANA DEPARTMENT OF TRANSPORTATION QUALIFIED PRODUCTS LIST (DAYTON SUPERIOR WEATHER WORKER 40% J28, OR EQUAL).
3. CONTRACTION JOINTS SHALL BE PLACED EVERY 10 FT IN ACCORDANCE WITH MPWSS 02528. CONTRACTION JOINTS ARE TO BE 1/8" MIN. AND 3/8" MAX IN WIDTH. FORM JOINTS BY SAWING OR SCORING TO A MINIMUM DEPTH OF 1" AND A MAXIMUM DEPTH OF 1 ½". FORM SCORE JOINTS BY A TOOL WHICH WILL LEAVE ROUNDED CORNERS AND DESTROY AGGREGATE INTERLOCK TO A MINIMUM DEPTH OF 1" AND A MAXIMUM DEPTH OF 1 ½".
4. EXPANSION JOINTS OF 1/2" PRE FORMED MASTIC MATERIAL SHALL BE PLACED AT THE FOLLOWING LOCATIONS: PC'S & PT'S OF A CURVE, GRADE BREAKS, JUNCTIONS WITH EXISTING CONCRETE, OPPOSITE TO OR AT EXPANSION JOINTS IN ADJACENT CONCRETE, AT MAXIMUM 300 FT. INTERVALS, 4 IN. ON EITHER SIDE OF A DRAINAGE STRUCTURE AND AT OTHER LOCATIONS AS SPECIFIED BY THE VHA COR.
5. FINISHED PAVEMENT SURFACE SHALL BE 1/8" TO 1/4" ABOVE LIP OF CURB ON STANDARD "CATCH" TYPE CURBS & FLUSH WITH END OF CURB ON STANDARD "SPILL" TYPE CURBS.
6. BASE COURSE BELOW CURB & GUTTER SHALL BE A MINIMUM 3 INCHES THICK OR THE BALANCE OF THE TYPICAL SECTION, WHICH EVER IS GREATER.
7. ALL NEW CURB SHALL BE BACKFILLED IN SUCH A MANNER AS TO MATCH EXISTING OR NEW ADJACENT AREAS.
8. INSTALL REINFORCEMENT AT ALL CONSTRUCTION JOINTS.



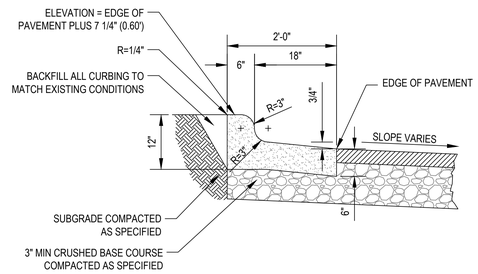
3 HANDICAP CURB RAMP
SCALE: NO SCALE



2 STANDARD CATCH TYPE CURB
SCALE: NO SCALE



4 LAYDOWN CURB AND VALLEY GUTTER AT HANDICAP PARKING
SCALE: NO SCALE



1 STANDARD SPILL TYPE CURB
SCALE: NO SCALE

Issued:	Date:

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

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STAMP:

Professional Engineer (Civil) Samuel G. Lundgren 10120 WYOMING 8/05/2020

U.S. Department of Veterans Affairs

Drawing Title: SITE DETAILS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Building Number: 173
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: MLH	Drawing Number: CS502-P1

File Path

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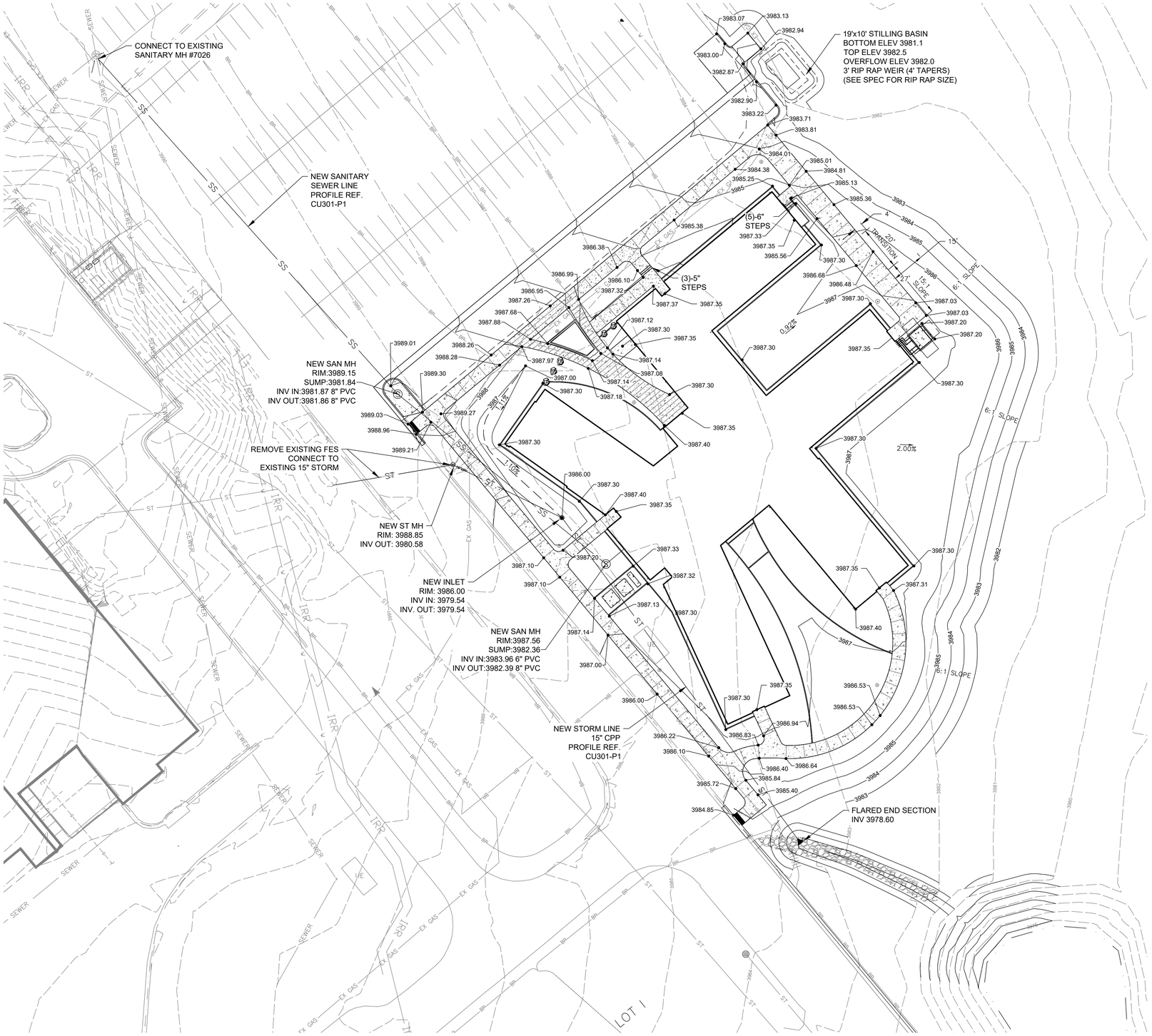

GRADING NOTES

1. GRADING PLAN INDICATES FINISHED GRADES. PROPOSED CONTOURS AND SPOT ELEVATIONS ARE TO FINISHED GRADE.
2. A WATER TRUCK SHALL BE MADE AVAILABLE WITHIN 24 HOURS OF REQUEST FOR DUST CONTROL ON SITE.
3. ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE PROPERTY LIMITS DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR.
4. ANY CONSTRUCTION DEBRIS OR MUD TRACKING IN THE VA RIGHT-OF-WAY RESULTING FROM THIS DEVELOPMENT SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL IMMEDIATELY FIX ANY EXCAVATIONS OR EXCESSIVE PAVEMENT FAILURES CAUSED BY THE DEVELOPMENT AND SHALL PROPERLY BARRICADE THE SITE UNTIL CONSTRUCTION IS COMPLETE.
5. ALL SURFACES NOT RECEIVING PAVEMENT OR OTHER TREATMENT SHALL BE SEEDED AND MULCHED WITH NATIVE VEGETATION (SEE SEED MIX) OR AS APPROVED BY THE VA.
6. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR DURING CONSTRUCTION ACTIVITIES TO RESOLVE CONSTRUCTION PROBLEMS DUE TO CHANGED CONDITIONS OR DESIGN ERRORS ENCOUNTERED BY THE CONTRACTOR DURING THE PROGRESS OF ANY PORTION OF THE PROPOSED WORK. ANY IMPROVEMENTS CONSTRUCTED NOT IN ACCORDANCE WITH THE APPROVED PLANS, OR THE APPROVED REVISED PLANS, SHALL BE REMOVED AND THE IMPROVEMENTS SHALL BE RECONSTRUCTED ACCORDING TO THE APPROVED PLANS.
7. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
8. CONTRACTOR SHALL CONTACT THE VHA COR (406-447-7801) FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
9. ALL EARTHWORK REQUIRED OF THIS CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH SPECIFICATION 31 20 11 EARTHWORK (SHORT FORM) AND ALL OTHER APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS.
10. RUBBISH INCLUDING TIMBER, CONCRETE RUBBLE, TREES, BRUSH, AND ASPHALT SHALL NOT BE BACKFILLED ADJACENT TO ANY OF THE STRUCTURES OR BE IN THE PLACEMENT OF ANY UNCLASSIFIED FILL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND HAULING OF SUCH MATERIALS TO A SUITABLE SPOIL AREA. COSTS ASSOCIATED WITH THE REMOVAL OF SUCH MATERIALS SHALL BE PAID FOR AS DOCUMENTED IN THE PROJECT SPECIFICATIONS.
11. EXCESS EXCAVATION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE. THE COST OF HAULAGE AND SPOILING OF EXCESS EXCAVATED MATERIALS SHALL BE PAID FOR AS DOCUMENTED IN THE PROJECT SPECIFICATIONS.
12. WATER SHALL BE USED AS A DUST PALLIATIVE, AS REQUIRED, AND SHALL BE INCLUDED IN THE COST FOR EARTHWORK ITEM(S). NO SEPARATE PAYMENT WILL BE MADE FOR DUST CONTROL ASSOCIATED WITH THE SITE CONSTRUCTION.
13. SUBGRADE COMPACTION TO BE IN ACCORDANCE WITH MDT STANDARDS AND VERIFIED BY AN INDEPENDENT TESTING FIRM.
14. ALL CURB AND GUTTER ARE TO MATCH EXISTING (STANDARD "CATCH" TYPE CURB ON SHEET CS502-P1). STANDARD HANDICAP RAMP LAYDOWN CURB ALONG ENTRANCE SIDEWALK (SEE SITE PLAN).
15. COMPACTION UNDER PAVED AREAS SHALL BE IN ACCORDANCE TO SPECIFICATION 31 20 11 EARTHWORK (SHORT FORM).
16. NO RUBBLE OR DEBRIS SHALL BE PLACED IN THE BACKFILL UNDER ANY OF THE PROPOSED BUILDINGS OR WITHIN FIVE (5) FEET OF A BUILDING FOOTPRINT. PROPERLY GRADED RUBBLE MAY BE USED IN SOME LOCATIONS AS SPECIFIED AND VERIFIED BY THE ENGINEER.
17. CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE SITE PRIOR TO BIDDING TO VERIFY SITE CONDITIONS.
18. CONTRACTOR IS RESPONSIBLE FOR PROVIDING EROSION CONTROL MEASURES AS APPROVED AND/OR REQUIRED BY THE MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY.
19. ALL EROSION CONTROL WILL BE DONE IN CONFORMANCE WITH APPLICABLE STANDARDS. SEE SHEET CG201-P1 FOR INITIAL GESC PLAN.
20. ALL GRADING SHALL BE IN CONFORMANCE WITH THE GEOTECHNICAL REPORT ENTITLED GEOTECHNICAL ENGINEERING REPORT - OUTPATIENT MENTAL HEALTH FACILITY PREPARED BY TERRACON DATED FEBRUARY 7, 2019 (TERRACON PROJECT NO. C4185062)
21. BASE MAPPING GENERATED FROM FIELD SURVEY (PROJECT NO. 17350) PERFORMED BY ROBERT PECCIA & ASSOCIATES, DATED MAY, 2018.
22. EROSION CONTROL BLANKETS OR EQUIVALENT TO BE PLACED ON SLOPES STEEPER THAN 6:1 FOR SLOPE STABILIZATION REF. SPECIFICATIONS 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.
23. ALL SPOT ELEVATIONS ARE TO FLOW LINE UNLESS OTHERWISE NOTED.
24. 10:1 SLOPE FOR 20' AROUND BUILDING PERIMETER (EXCEPT IN SIDEWALK LOCATIONS). THEN DAYLIGHT TO EXISTING GRADE AT 4:1.
25. SUGRADE TO BE COMPACTED TO MDOT STANDARDS AND COMPACTION VERIFIED BY INDEPENDENT TESTING AGENCY.

Know what's **below**.
Call 811 before you dig.

1 GRADING PLAN
SCALE: 1" = 20'
0 5' 10' 20' 40' 60' 80'

True North

Issued:	Date:

File Path

VA FORM 08 - 6231

CONSULTANTS:

ARCHITECT/ENGINEERS:

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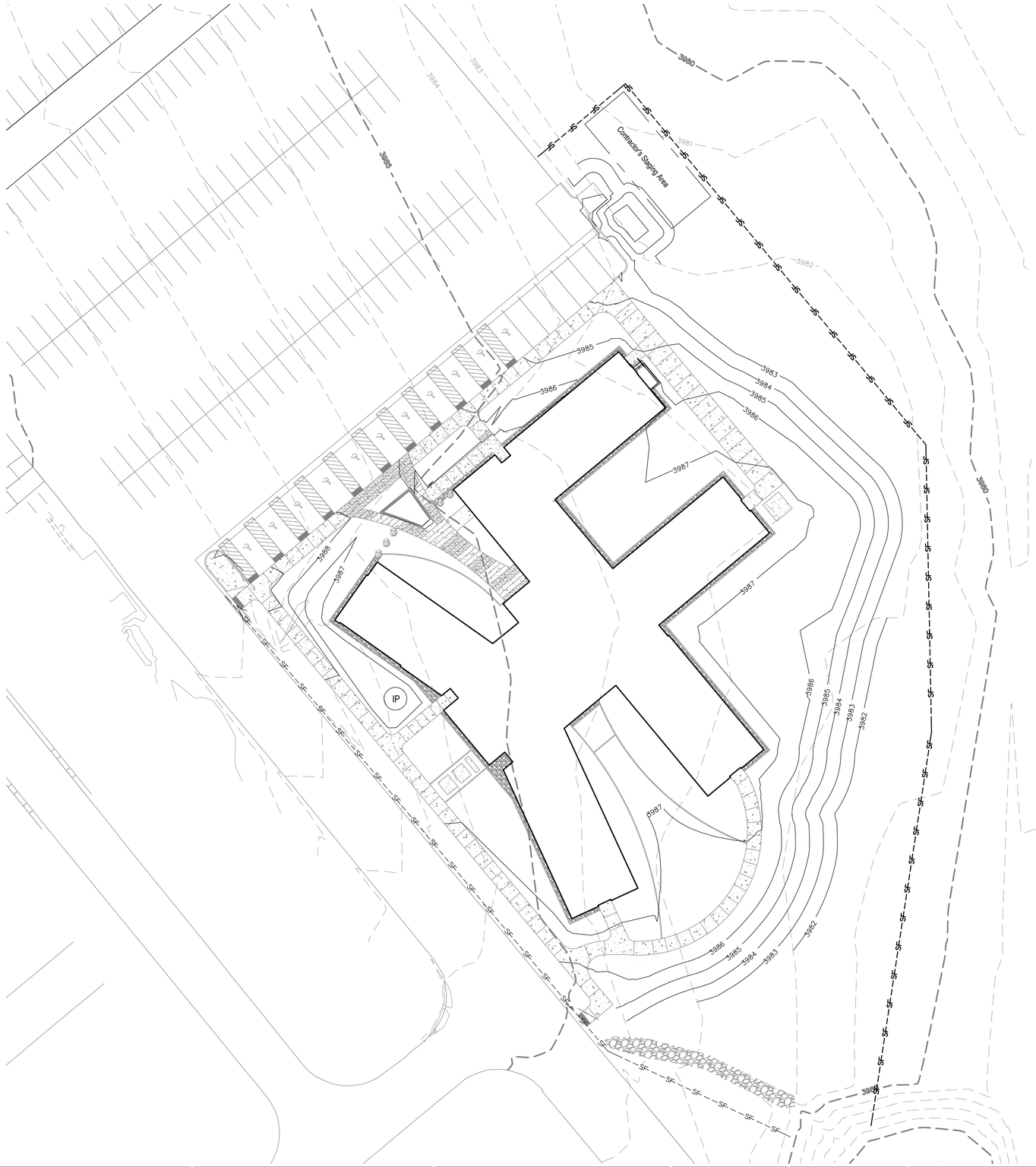
VEG 4.11

STAMP:

Professional Engineer (Civil) Samuel G. Lundgren 10129 WYOMING 8/05/2020

U.S. Department of Veterans Affairs

Drawing Title: GRADING PLAN	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director			Building Number: 173
		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Drawing Number: CG101-P1
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: AJH	



EROSION CONTROL CONSTRUCTION SEQUENCE:

ITEMS MUST OCCUR IN THE ORDER LISTED, AND NOT CONCURRENTLY WITHOUT PRIOR COR APPROVAL.

1. HOLD A PRE-CONSTRUCTION MEETING WITH VHA COR, VHA STAFF, OPERATORS, AND ENGINEERS.
2. CLEARING AND GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
3. INSTALLATION OF PERIMETER CONTROLS (E.G., SILT FENCE).
4. INSTALLATION OF REMAINING EROSION CONTROL MEASURES PER CG501.
5. CLEARING AND GRUBBING OF SITE (SEDIMENT AND EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED) IN PREPARATION FOR CONSTRUCTION PHASE 1.
6. INSTALLATION OF STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
7. INSTALLATION OF BUILDING AND SITE IMPROVEMENTS.
8. PERMANENT/FINAL SITE STABILIZATION.
9. REMOVAL OF TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED WITH APPROVAL FROM THE VHA COR.
10. REMOVE EXISTING RIP RAP UPSTREAM OF DETENTION POND AND CLEAR IT OF CONSTRUCTION DEBRIS AND SEDIMENT. REPLACE RIP RAP, ADDING MATERIAL AS NECESSARY TO ACCOMMODATE PREDICTED DRAINAGE INTO POND.
11. UPON COMPLETION OF CONSTRUCTION, THE DETENTION POND MUST BE CLEARED OF SEDIMENT AND CONSTRUCTION DIRT AND DEBRIS.

MAINTENANCE OF SEDIMENT AND EROSION CONTROL MEASURES MUST CONTINUE UNTIL THE SITE IS PERMANENTLY STABILIZED AND THE CONTROLS ARE REMOVED.

EROSION CONTROL LEGEND

SF SILT FENCE

IP INLET PROTECTION

1 EROSION CONTROL PLAN
SCALE: 1" = 20'

0 5' 10' 20' 40' 60' 80'

North

Issued:	Date:

CONSULTANTS:

Quality Consulting. Resourceful Management.

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Professional Engineer (Civil) Samuel G. Lunsford 10120 WYOMING
Date: 8/05/2020

U.S. Department of Veterans Affairs

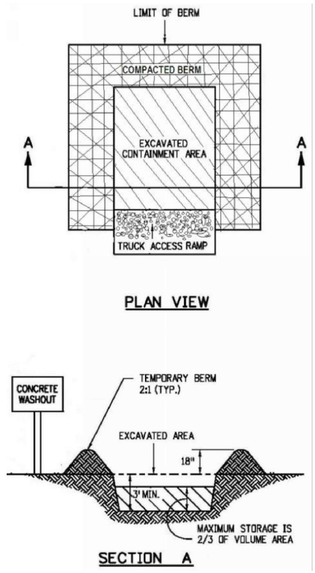
Drawing Title: EROSION CONTROL PLAN	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Building Number: 173
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: AJH	Drawing Number: CG201-P1

File Path

VA FORM 08 - 6231

EROSION CONTROL NOTES:

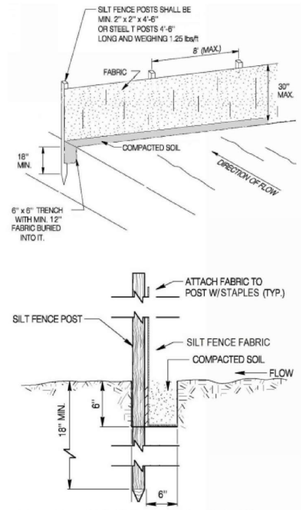
EROSION CONTROL DETAILS ARE FROM THE *MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY STORM WATER MANAGEMENT DURING CONSTRUCTION FIELD GUIDE FOR BEST MANAGEMENT PRACTICES.* ADDITIONAL BMPS MAY BE REQUIRED DURING CONSTRUCTION. CONFIRM SELECTION FROM FIELD GUIDE WITH EOR AND/OR VHA COR BEFORE IMPLEMENTATION.



4 CONCRETE WASHOUT

SCALE: NO SCALE

SILT FENCE (con.)



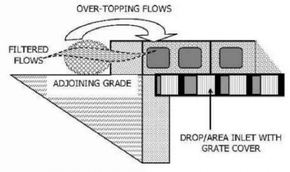
Adapted from WYDOT Temp. Erosion Control Measures

2 SILT FENCE

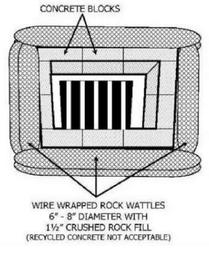
SCALE: NO SCALE

TYPICAL INLET PROTECTION INSTALLATION
FOR DROP/AREA INLET LOCATIONS

NOT TO SCALE

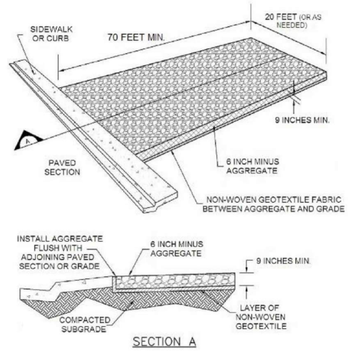


NOTE: ADDITIONAL LAYERS OF CONCRETE BLOCKS AND ROCK WATTLES CAN BE ADDED, BASED ON ANTICIPATED FLOWS.



3 INLET PROTECTION

SCALE: NO SCALE



1 VEHICLE TRACKING PAD

SCALE: NO SCALE

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CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

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U.S. Department of Veterans Affairs

Drawing Title: EROSION CONTROL DETAILS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Building Number: 173
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: AJH	Drawing Number: CG501-P1

File Path

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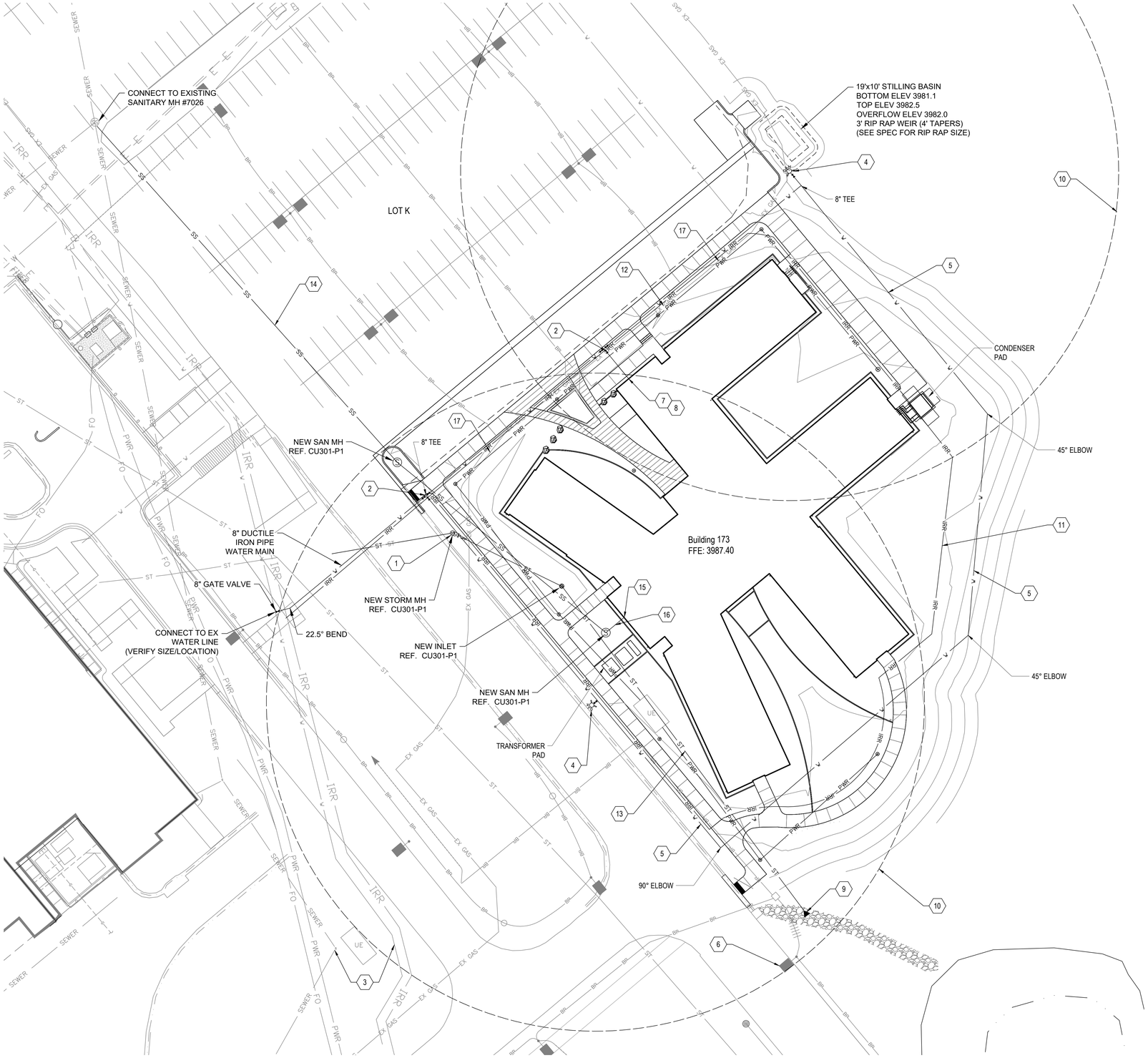

KEYNOTES:

1. CLEAN AND CONNECT EXISTING 15" CPP TO 24" STORM MANHOLE. CONTINUE 15" CPP TO AREA INLET AND THEN TO DETENTION POND. SEE PROFILE ON CU301-P1.
2. WATER VALVE VAULT BOX (TYP.) SEE DETAIL ON SHEET 08/CU501-P1.
3. UTILITIES SHOWN WEST OF DEVIL'S BRIGADE DRIVE WILL HAVE BEEN RELOCATED DURING CONSTRUCTION OF BUILDING 172. CONFIRM LOCATION WITH AS-BUILT DRAWINGS AND SITE INVESTIGATION. THE LOCATIONS SHOW ON THIS DRAWING ARE FOR REPRESENTATION ONLY.
4. INSTALL HYDRANTS PER DETAIL 06/CS501-P1.
5. 8" MECHANICAL JOINT DUCTILE IRON PIPE DOMESTIC WATER LOOP. REFERENCE SPECIFICATION 33 10 00 WATER CONSTRUCTION. CONSTRUCT THRUST BLOCKS AT JOINTS IN ACCORDANCE WITH DETAIL 05/CS501-P1.
6. COORDINATE WITH VHA COR FOR CONSTRUCTION PHASING ON POWER LINE RELOCATION. THE POWER TO THE LIGHTS ACROSS DEVIL'S BRIGADE DRIVE IS TO BE RELOCATED BEFORE DEMOLISHING EXISTING LINES RUNNING BENEATH BUILDING FOOTPRINT. SEE CD101-P1.
7. THE NATURAL GAS CONNECTION TO THE BUILDING IS TO BE COORDINATED WITH THE FT HARRISON VA CAMPUS. THEY ARE THE OWNER OF THE UTILITY AND WILL PROVIDE METERING AND PRESSURE REDUCTION DETAILS.
8. 4" DOMESTIC WATER CONNECTION OFF MAIN LOOP TO MECHANICAL ROOM. SPLIT INTO FIRE AND DOMESTIC SUPPLY INSIDE MECHANICAL ROOM.
9. DAYLIGHT 15" CPP STORM PIPE TO EXISTING RIP RAP SWALE
10. CIRCLE REPRESENTS A 150' RADIUS OF COVERAGE AROUND EACH FIRE HYDRANT.
11. 2" PVC IRRIGATION LOOP PER LANDSCAPE DRAWINGS.
12. VERIFY LOCATION OF HIGH PRESSURE NATURAL GAS MAIN AND HAND DIG POST HOLES AS NECESSARY.
13. PROPOSED 15" CPP STORM LINE. SEE SHEET CU301-P1 FOR ELEVATIONS. REFERENCE SPECIFICATION 33 40 00 STORM SEWER UTILITIES.
14. PROPOSED SANITARY SEWER LINE. SEE CU301-P1 FOR ELEVATIONS. REFERENCE SPECIFICATION 33 30 00 SANITARY SEWER UTILITIES.
15. PIPE SLEEVE THROUGH FOUNDATION. SEE DETAIL 02/CU502-P1
16. INSULATE 11' OF 8" SEWER DRAIN PVC IN AREA BETWEEN BUILDING AND SANITARY MANHOLE. INSULATION WRAP TO BE 1½" POLYSTYRENE; R-VALUE OF 7.5.
17. REFERENCE DETAIL 04/CU502-P1 FOR PARTIAL UTILITY LAYOUT IN THIS AREA.

Know what's **below**.
Call 811 before you dig.

LEGEND:

- EXISTING BURIED POWER
- NEW BURIED POWER
- EXISTING NATURAL GAS
- NEW NATURAL GAS
- EXISTING DOMESTIC WATER
- NEW DOMESTIC WATER
- EXISTING SANITARY SEWER
- NEW SANITARY SEWER
- EXISTING STORM LINE
- NEW STORM LINE
- EXISTING LIGHT POLE
- NEW LIGHT POLE
- NEW FIRE HYDRANT
- NEW VALVE

1 UTILITY PLAN
SCALE: 1" = 20'

0 5' 10' 20' 40' 60' 80'

True North

CONSULTANTS:

ARCHITECT/ENGINEERS:

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Professional Engineer (Civil) Samuel G. Lundgren 10122 WYOMING 3/05/2020

U.S. Department of Veterans Affairs

Drawing Title	UTILITY PLAN
Phase	100% CONSTRUCTION DOCUMENTS
Project Title	OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION
Project Number	436-114
Building Number	173
Approved: Project Director	
Location	3687 VETERANS DRIVE , FORT HARRISON, MT 59636
Issue Date	08/05/2020
Checked	RAG
Drawn	AJH
Drawing Number	CU101-P1

Issued: Date:

File Path:

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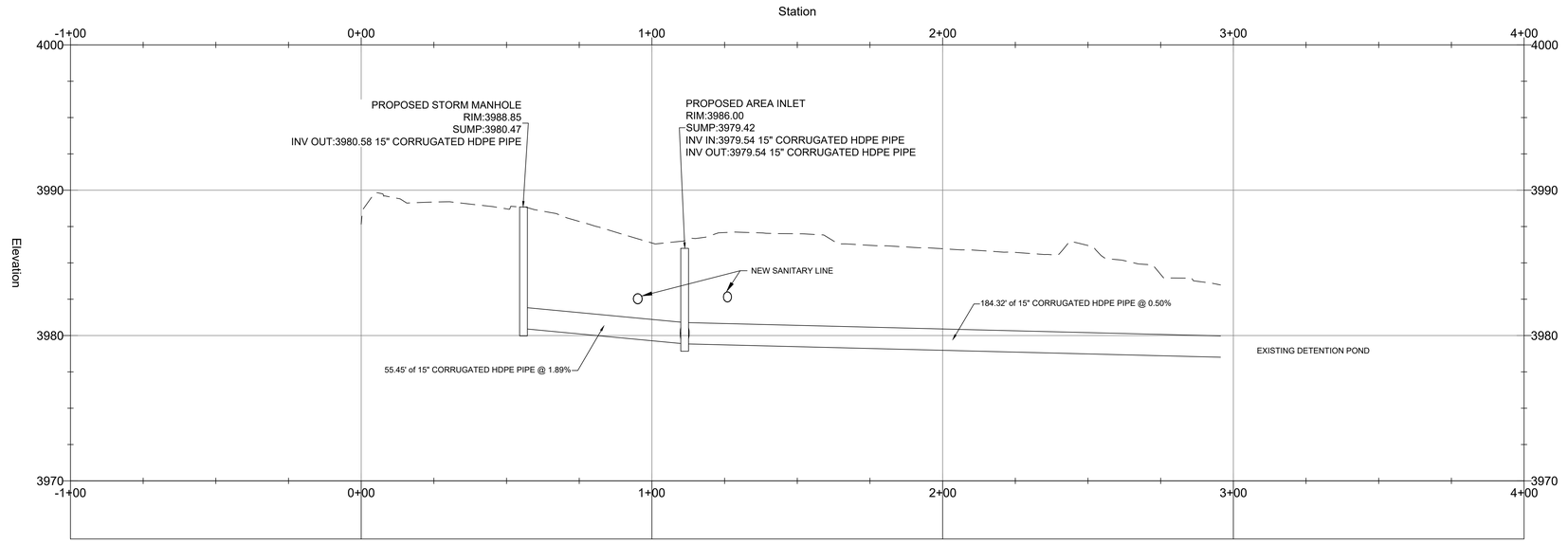
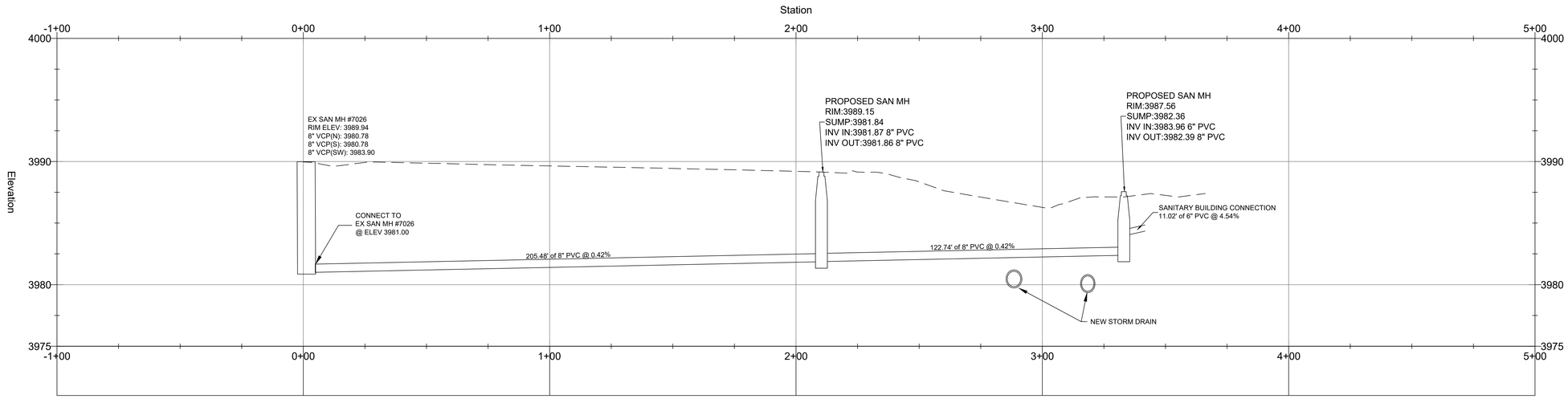
STORM SEWER PROFILE



2 STORM SEWER PROFILE
SCALE: NO SCALE

SANITARY SEWER PROFILE



1 SANITARY SEWER PROFILE
SCALE: NO SCALE

CONSULTANTS:

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STAMP:

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Samuel G. Lundgren
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WYOMING
5/05/2020

U.S. Department of Veterans Affairs

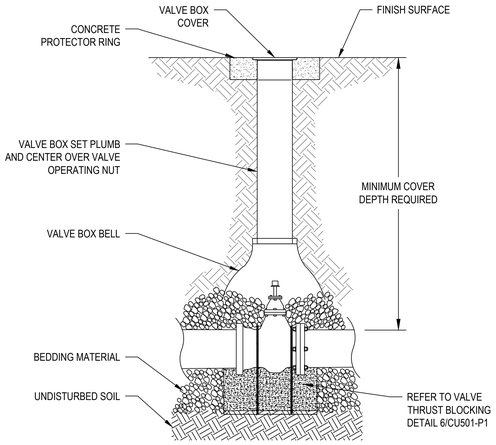
Drawing Title: UTILITY PROFILES	Phase: 100% CONSTRUCTION DOCUMENTS
Approved: Project Director	

Project Title	OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION
Location	3687 VETERANS DRIVE , FORT HARRISON, MT 59636
Issue Date	08/05/2020
Checked	RAG
Drawn	AJH
Project Number	436-114
Building Number	173
Drawing Number	CU301-P1

Issued:	Date:

File Path

VA FORM 08 - 6231

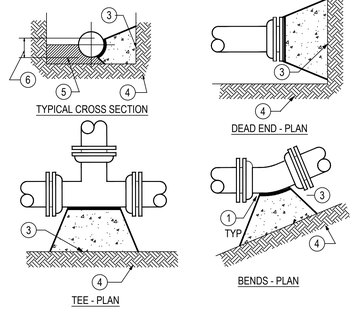


8 VALVE BOX DETAIL
NTS

NOTES:
1. BOND BREAKER 10 MIL POLYETHYLENE PLASTIC
2. FOR 250 PSI INTERNAL PIPE PRESSURE, MULTIPLY AREAS BY 1.4
3. MINIMUM BEARING SURFACE AREA - SQ. FT. (FOR 150 PSI INTERNAL PIPE) BASED ON 3,000 PSF SOIL BEARING CAPACITY.

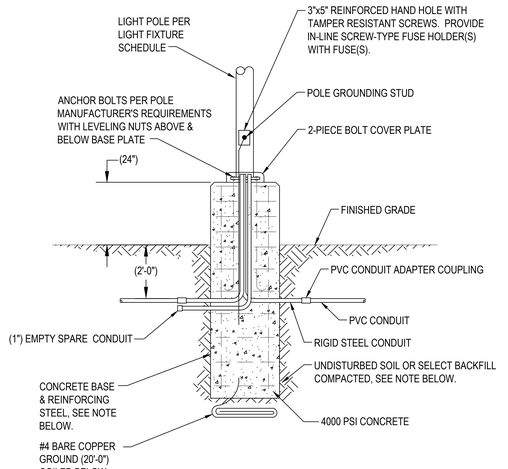
SIZE OF PIPE	BENDS 11 1/4 °	22 1/2 °	45 °	90 °	TEE or DEAD END
4"	1.00	1.00	1.00	2.00	1.50
6"	1.00	1.25	2.25	4.25	3.00
8"	1.00	2.00	4.00	8.00	5.25
12"	2.25	4.50	8.75	12.00	11.25
16"	3.75	7.50	14.50	27.00	19.00
20"	5.00	10.00	19.50	35.50	25.00

4. UNDISTURBED EARTH
5. BEDDING MATERIAL
6. 2/3 OD PIPE



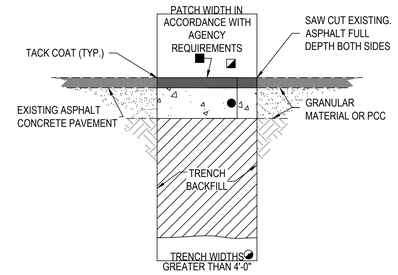
THRUST BLOCK NOTES:
1. CONCRETE SHALL BE 3,000 PSI MIN.
2. CONCRETE FOR THRUST BLOCKING SHALL BE KEPT FAIRLY DRY, THUS MAKING THE CONCRETE WEDGE SHAPE MORE EASILY FORMED WITH THE WIDEST PART (BLOCKING AREA) AGAINST UNDISTURBED SOIL.
3. NO CONCRETE SHALL COVER ANY BOLTS OR GLANDS.
4. ALL FITTINGS AND ACCESSORIES TO BE WRAPPED WITH 10 MIL POLYETHYLENE PRIOR TO POURING BLOCKING.
5. VOLUME OF THRUST BLOCKING SHALL BE AS SHOWN ON THE THRUST BLOCKING SCHEDULE.
6. THRUST BLOCKING SHALL BE INSTALLED PER HELENA PUBLIC WORKS SPECIFICATIONS.

6 CONCRETE THRUST BLOCKS
NTS



GENERAL NOTES:
1. BACKFILL, CONCRETE, REINFORCING STEEL, AND ANCHOR BOLTS ARE SHOWN FOR REFERENCE ONLY.
2. REFER TO SPECIFICATIONS SECTION 26 56 00 FOR MOUNTING AND LEVELING REQUIREMENTS.
3. CONCRETE BASE SHALL BE MINIMUM 18" DIAMETER AND SHALL BE A MINIMUM 4' DEEP. VERIFY EXACT REQUIREMENTS WITH STRUCTURAL ENGINEER OR POLE MANUFACTURER PRIOR TO CONSTRUCTION.

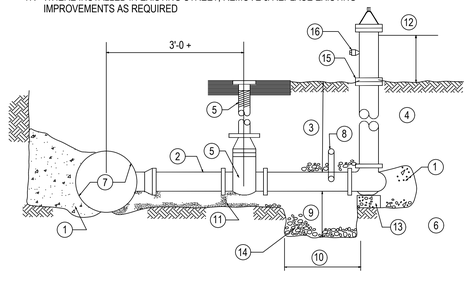
4 POLE BASE DETAIL - TURF AREAS
NTS



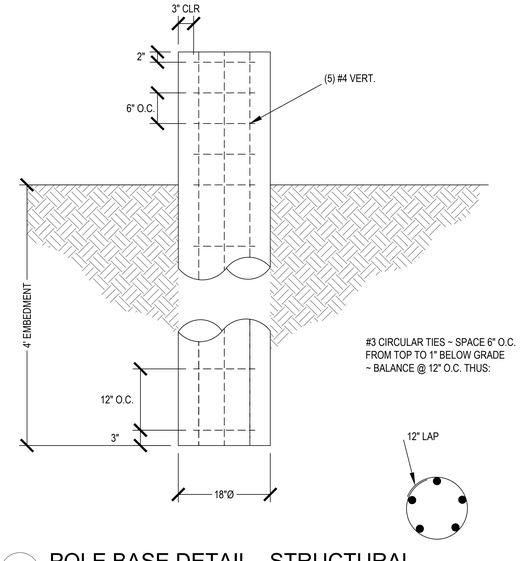
- ◒ FOR TRENCH WIDTHS 4' OR LESS REFER TO VA STANDARD DETAIL 32 12 16-01 "TYPE 1 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ◪ 2" MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- ■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6'.
- ● 4" MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER. PORTLAND CEMENT CONCRETE (PCC) THICKNESS EQUAL TO EXISTING. REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

2 TYPE 2 UTILITY TRENCH PATCH
NTS

NOTES:
1. CONCRETE THRUST BLOCK
2. HYDRANT LINE - 6"
3. MINIMUM COVER, SEE SPECIFICATIONS
4. BACKFILL, SEE SPECIFICATIONS
5. VALVE BOX & GATE VALVE
6. DO NOT BLOCK FIRE HYDRANT DRAIN WITH BASE
7. WATER MAIN - 8"
8. WHERE MAIN DEADENDS AT FIRE HYDRANT BETWEEN VALVE BOX & FIRE HYDRANT
9. 2'-0"
10. 3'-6"
11. BEDDING, SEE SPECIFICATIONS
12. 5'-0" UNOBSTRUCTED AREA AROUND FIRE HYDRANT: 1'-6" BEHIND
13. CONCRETE BLOCK BASE
14. HYDRANT DRAIN PIT, 27 CUBIC FEET OF 1 1/2" WASHED ROCK
15. BREAKABLE FLANGE 2" ABOVE GROUND SURFACE
16. FACE NOZZLE TO TRAVELED WAY
17. WHERE INSTALLED IN EXISTING STREET, REMOVE & REPLACE EXISTING IMPROVEMENTS AS REQUIRED



7 FIRE HYDRANT DETAIL
NTS



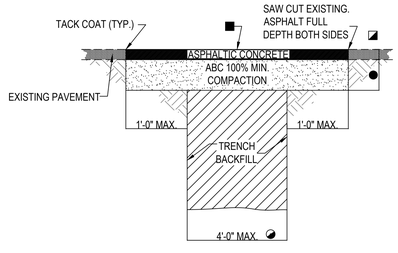
5 POLE BASE DETAIL - STRUCTURAL
NTS

1. MATERIAL AND COMPACTION REQUIREMENTS FOR PIPE BEDDING/SHADING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS FOR THE APPLICABLE UTILITY PIPE.
2. TRENCH BACKFILL SHALL COMMENCE 1 FOOT ABOVE THE TOP OF PIPE AND SHALL BE PER SPECIFICATION SECTION 31 20 11.
3. BACKFILL COMPACTION REQUIREMENTS SHALL BE PER SECTION 31 20 11.
4. THE 1 FOOT TRENCH "SHOULDER" AREAS SHALL BE DELETED FOR TYPE 2 TRENCHES.
5. ABC SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16.
6. PORTLAND CEMENT CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 05 23.
7. ASPHALTIC TACK MATERIAL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16.
8. ASPHALTIC CONCRETE SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16 FOR THE TYPE SPECIFIED.
9. BITUMINOUS SURFACE TREATMENT (CHIP SEAL) SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 32 12 16 FOR THE TYPE SPECIFIED.
10. LOAD TRANSFER DOWELS FOR JOINTS TRANSVERSE TO THE ROADWAY CENTERLINE SHALL BE SMOOTH STEEL DOWELS IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION XXX. DOWELS SHALL BE SIZED AND SPACED AS FOLLOWS:

PCCP THICKNESS SPACING	DOWEL SIZE	DOWEL LENGTH	DOWEL
6"	#5 [No. 16]	12"	18"
7"	#6 [No. 19]	15"	15"
8"	#8 [No. 19]	15"	12"
10"	#10 [No. 19]	15"	12"

11. DEFORMED TIE BARS SHALL BE USED IN TRENCH PATCHES LONGITUDINAL TO THE ROADWAY CENTERLINE WHEN THE TRENCH LENGTH IS GREATER THAN 50 FEET. TIE BARS SHALL BE 24 INCHES LONG. DEFORMED #4 [No. 13] BARS FOR PCCP LESS THAN 8 INCHES THICK AND #5 [No. 16] BARS IF 8 INCHES THICK OR MORE. TIE BARS SHALL BE PLACED 30 INCHES CENTER-TO-CENTER.
12. HOLES SHALL BE DRILLED 1 FOOT INTO THE EXISTING SLAB FOR TIE BARS AND 7 INCHES FOR DOWELS. HOLES SHALL BE OF A DIAMETER SUFFICIENT TO ACCOMMODATE THE TIE BAR ANCHORAGE OR DOWEL CAP. TIE BARS SHALL BE ANCHORED WITH AN APPROVED HIGH VISCOSITY EPOXY.
13. IF THE CONCRETE SLAB REMAINING NEXT TO A LONGITUDINAL OR TRANSVERSE JOINT IS LESS THAN 6 FEET AT ITS NARROWEST WIDTH, REMOVE AND REPLACE THE EXISTING CONCRETE TO THE JOINT.

3 UTILITY TRENCH GENERAL NOTES
NTS



- ◒ FOR TRENCH WIDTHS EXCEEDING 4' [1219mm] REFER TO VA STANDARD DETAIL 32 12 16-02 "TYPE 2 UTILITY TRENCH PATCH". FOR TRENCH WHERE PORTLAND CEMENT CONCRETE (PCC) PAVEMENT EXISTS, REFER TO 32 12 16-03 "TYPE 3 UTILITY TRENCH PATCH".
- ◪ 2" MINIMUM OR THICKNESS OF EXISTING PAVEMENT WHICHEVER IS GREATER.
- ■ BITUMINOUS SURFACE TREATMENT (CHIPSEAL) REQUIRED ONLY FOR LONGITUDINAL TRENCHES WITH WIDTHS GREATER THAN 6'.
- ● 4" MINIMUM ABC OR THICKNESS OF EXISTING GRANULAR BASE COURSE MATERIALS (E.G. ABC & SELECT MATERIAL) WHICHEVER IS GREATER. REFER TO VA STANDARD DETAIL 32 12 16-04 "UTILITY TRENCH PAVEMENT PATCH NOTES" FOR ADDITIONAL INFORMATION.

1 TYPE 1 UTILITY TRENCH PATCH
NTS

Issued:	Date:

CONSULTANTS:

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ARCHITECT/ENGINEERS:

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STAMP:

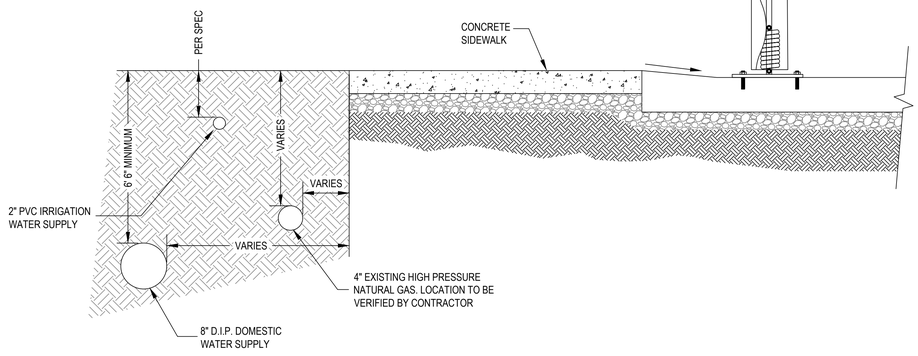
Professional Engineer (Civil) Samuel G. Longden 10120 WYOMING 8/05/2020

U.S. Department of Veterans Affairs

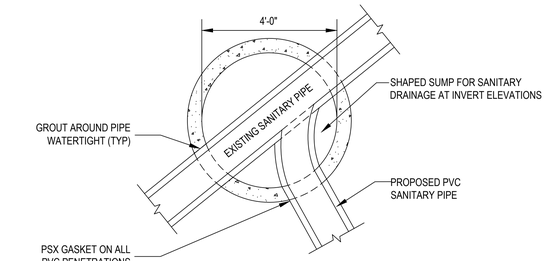
Drawing Title: UTILITY DETAILS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Building Number: 173
		Issue Date: 08/05/2020 / Checked: RAG / Drawn: AJH	Drawing Number: CU501-P1

File Path

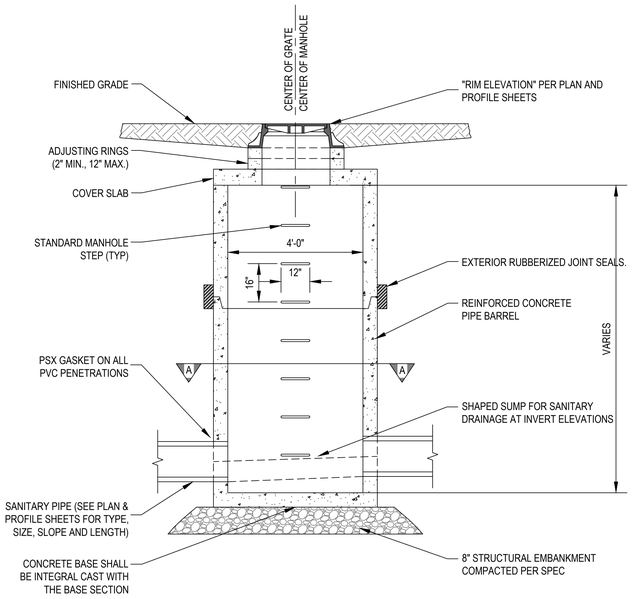
VA FORM 08 - 6231



4 SIDEWALK UTILITY SECTION
NTS



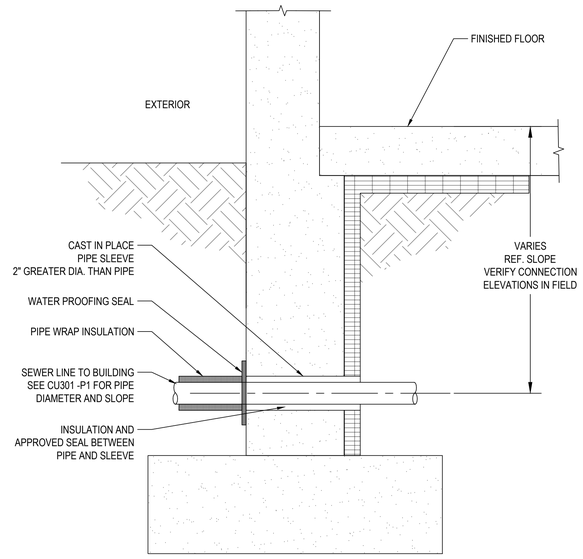
SECTION A-A



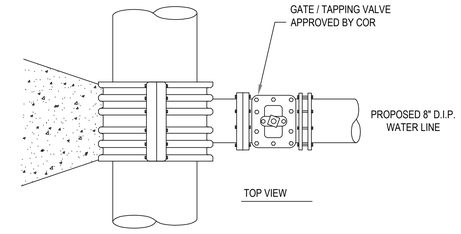
NOTES:

1. MANHOLE RING AND GRATE SHALL BE D&L FOUNDRY C-1172 OR APPROVED EQUAL.
2. AS DESIGNED AND LAID OUT, GRATES ARE TO BE CENTERED ON MANHOLE BARREL.
3. ALL JOINTS BETWEEN MANHOLE SECTIONS, ADJUSTING RINGS, AND MANHOLE FRAME SHALL BE WATERTIGHT. JOINT MATERIAL SHALL BE "RAM-NEK" OR EQUAL.
4. PRECAST REINFORCED CONCRETE MANHOLES SHALL CONFORM TO ASTM C-478.
5. ALL HOLES IN NEW MANHOLES SHALL BE CAST OR CORED.
6. ADJUST FRAME AND GRATE TO MATCH FINISH GRADE AT MANHOLE LOCATION.
7. ALL MANHOLES SHALL BE CONSTRUCTED TO HANDLE HS-20 LOADING.
8. EXTERIOR RUBBERIZED JOINT SEALS, MEETING ASTM C-877 TYPE II WITH A MINIMUM WIDTH OF 9".
9. PSX GASKET SHALL BE USED ON ALL PVC PIPE PENETRATIONS.
10. WATERPROOF MANHOLE RINGS & LIDS ARE REQUIRED ON MANHOLES LOCATED IN GUTTER LINES, FLOW LINES, OR OUTSIDE THE ROADWAY.
11. SANITARY SEWER MANHOLE LIDS IN LANDSCAPED AREAS SHALL BE SLOPED TO DRAIN AWAY FROM LID.
12. SECTION A-A SHOWS PROPOSED CONNECTION AT EXISTING SANITARY MANHOLE. CONNECTION TO EXISTING MANHOLES WILL BE DRILLED AT SPECIFIED INVERT ELEVATION.

3 SANITARY MANHOLE DETAIL
NTS



2 FOUNDATION PIPE SLEEVE
NTS



NOTES:
1. CONCRETE SHALL NOT CONTACT BOLTS OR ENDS OF MECHANICAL JOINT FITTINGS.
2. SEE THRUST BLOCK DETAIL 6/CU501-P1 FOR AREA OF CONCRETE REQUIRED.

1 WATER MAIN TAPPING DETAIL
NTS

Issued:	Date:

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VA FORM 08 - 6231

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

ARCHITECT/ENGINEERS:

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VEG 4.11

STAMP:

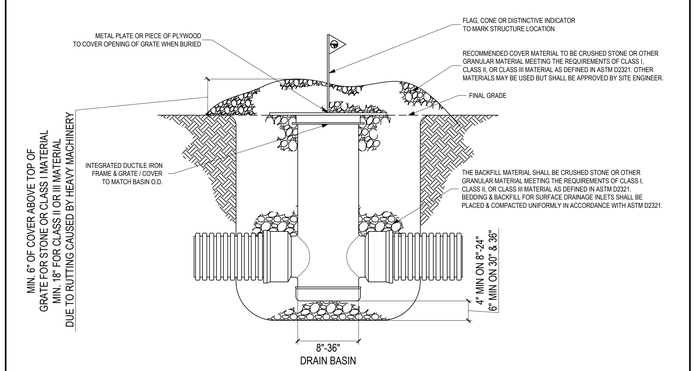
Professional Engineer (Civil) Samuel G. Lundgren 10129 WYOMING Date: 3/05/2020

U.S. Department of Veterans Affairs

Drawing Title: UTILITY DETAILS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: OUTPATIENT MENTAL HEALTH / EDUCATION ADDITION	Project Number: 436-114
Approved: Project Director			Building Number: 173
		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636	Drawing Number: CU502-P1
		Issue Date: 10/14/2019 / Checked: RAG / Drawn: AJH	

NYLOPLAST DRAIN BASIN CONSTRUCTION PROTECTION DETAIL - OPTION 1

(BURIED STRUCTURE DETAIL)



1. GRATES/SOLID COVER SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. IN THE EVENT A BASIN IS DAMAGED DURING CONSTRUCTION, RISER SECTIONS CAN BE USED FOR FIELD REPAIRS.
4. COVER MATERIAL SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION OR APPROVED BY SITE ENGINEER. MATERIAL SHALL BE ABLE TO SUPPORT VEHICLE TRAFFIC AND SHALL COVER THE STRUCTURE A MINIMUM OF 6".

DRAWN BY	NMH	MATERIAL	
DATE	10-02-18		
APPD BY	NMH	PROJECT NO./NAME	
DATE	10-02-18		
DWG SIZE	A	SCALE 1:20	SHEET 1 OF 1

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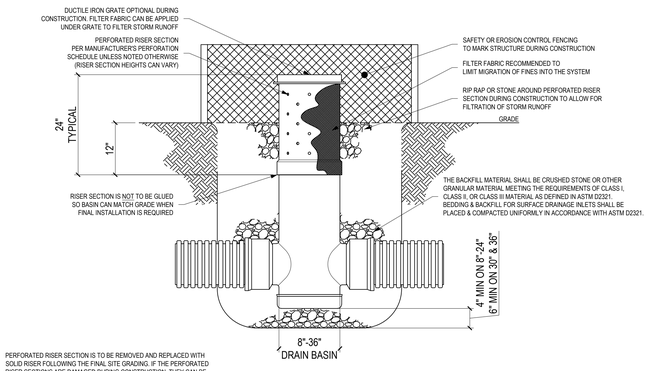
TITLE: DRAIN BASIN CONSTRUCTION PROTECTION DETAIL

DWG NO. 7001-110-552 REV A

NYLOPLAST DRAIN BASIN CONSTRUCTION PROTECTION DETAIL - OPTION 2

(EROSION CONTROL STRUCTURE DETAIL)



1. PERFORATED RISER SECTION IS TO BE REMOVED AND REPLACED WITH SOLID RISER FOLLOWING THE FINAL SITE GRADING. IF THE PERFORATED RISER SECTIONS ARE DAMAGED DURING CONSTRUCTION, THEY CAN BE EASILY REPLACED WITH MINIMAL DAMAGE TO MAIN BASIN BODY / BASE SECTION.
2. FRAMES & GRATES/SOLID COVERS ARE TO BE INSTALLED ONCE EROSION CONTROL STRUCTURE IS NO LONGER NEEDED.
3. PERFORATION SCHEDULE WILL MEET NYLOPLAST SPECIFICATIONS OUTLINED IN DRAWING 7001-110-008 UNLESS NOTED OTHERWISE.
4. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. IN THE EVENT A BASIN IS DAMAGED DURING CONSTRUCTION, RISER SECTIONS CAN BE USED FOR FIELD REPAIRS.

DRAWN BY	NMH	MATERIAL	
DATE	10-02-18		
APPD BY	NMH	PROJECT NO./NAME	
DATE	10-02-18		
DWG SIZE	A	SCALE 1:20	SHEET 1 OF 1

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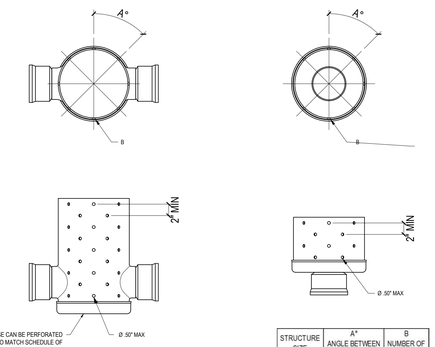
TITLE: CONSTRUCTION EROSION CONTROL DRAIN BASIN DETAIL

DWG NO. 7001-110-553 REV A

PERFORATION SCHEDULE



STRUCTURE SIZE	A° ANGLE BETWEEN HOLES	B NUMBER OF HOLES
8"	90°	4
10"	90°	4
12"	60°	6
15"	60°	6
18"	45°	8
24"	45°	8
30"	36°	10
36"	30°	12

*36" Structure Size for Drain Basin only

1. PERFORATIONS SHOULD NOT BE ON OR WITHIN 1" OF ADAPTERS
2. HOLES SHOULD BE STAGGERED EVERY OTHER ROW, AS SHOWN.
3. TO PREVENT BLOCKAGE OF PERFORATIONS, BASIN SHOULD BE WRAPPED IN AN ENGINEER APPROVED GEO-TEXTILE FABRIC.
4. PERFORATIONS CANNOT BE INSTALLED IN 36" BASIN REDUCING CONE.

DRAWN BY	CJA	MATERIAL	
DATE	7-20-99		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	11-2-18		
DWG SIZE	A	SCALE NTS	SHEET 1 OF 1

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TITLE: NYLOPLAST STRUCTURE PERFORATION SCHEDULE

DWG NO. 7001-110-006 REV E

Section 2721

Engineered Surface Drainage Products

GENERAL

PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS

The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for structure sizes 8", 10", 12", 15", 18", 24", 30" and 36" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast. 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION

The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

DRAWN BY	CJA	MATERIAL	
DATE	3-10-00		
REVISED BY	NMH	PROJECT NO./NAME	
DATE	02-21-18		
DWG SIZE	A	SCALE 1:1	SHEET 1 OF 1

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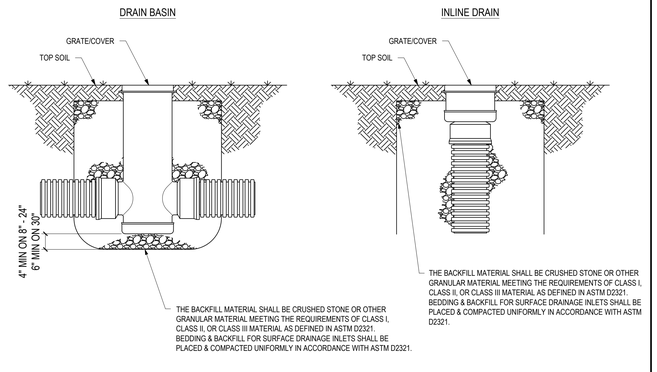
TITLE: 8 IN - 36 IN DRAIN BASIN SPECIFICATIONS

DWG NO. 7001-110-011 REV J

NON TRAFFIC INSTALLATION



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

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TITLE: DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION

DWG NO. 7001-110-111 REV E

NOTES:

STORM SEWER STRUCTURES TO BE NYLOPLAST OR APPROVED EQUAL BY EOR AND/OR VHA COR.

Issued:	Date:

CONSULTANTS:

JPJ Quality Consulting. Resourceful Management.

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STAMP:

Professional Engineer (Civil) Samuel G. Lundgren 10120 WYOMING 31/05/2020

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Approved: Project Director					Building Number: 173
		Location: 3687 VETERANS DRIVE , FORT HARRISON, MT 59636			Drawing Number: CU503-P1
		Issue Date: 08/05/2020	Checked: RAG	Drawn: AJH	

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