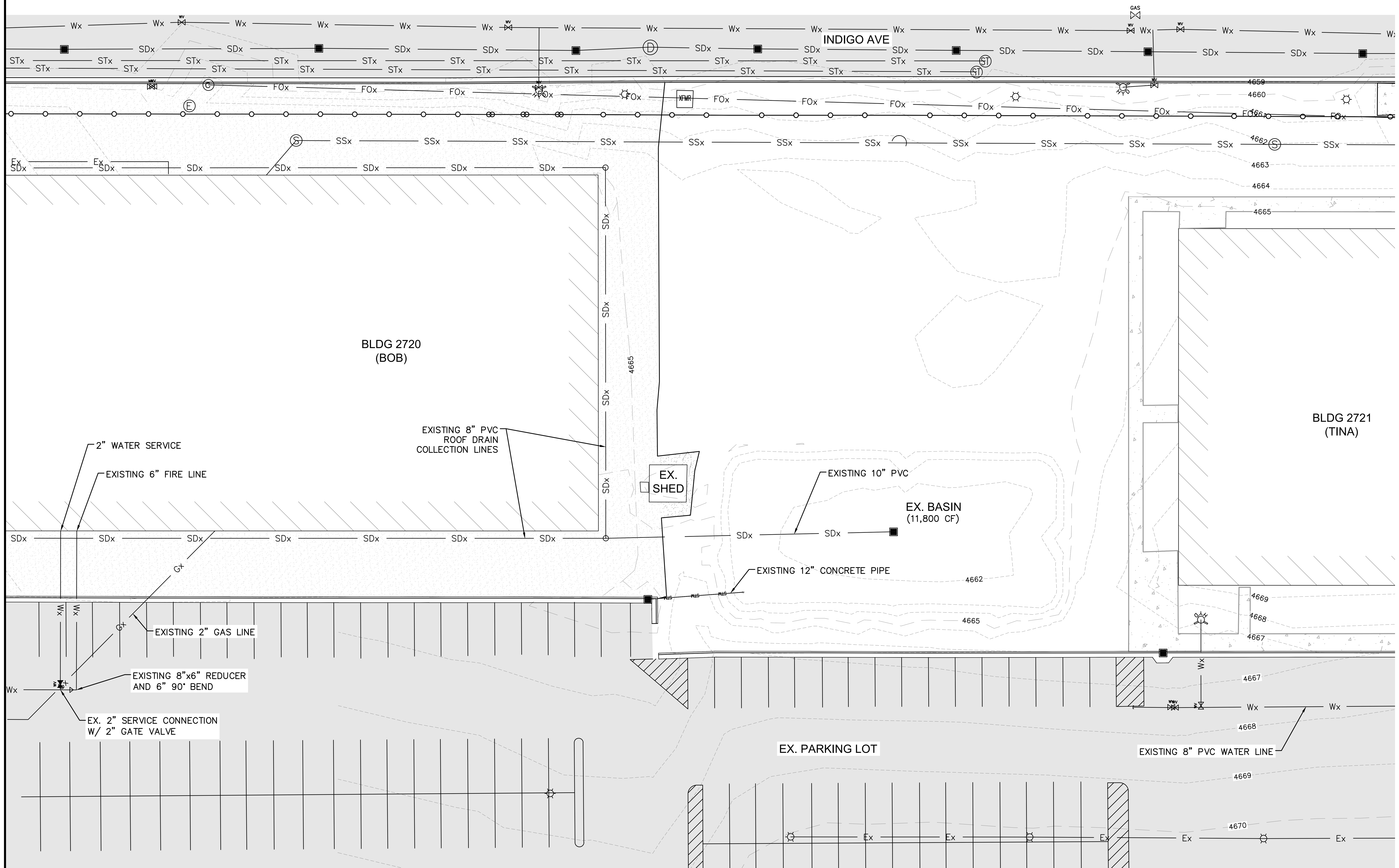


LEGEND

5134	EX. CONTOURS
Wx	EX. WATER LINE
SSx	EX. SEWER LINE
SDx	EX. STORM DRAIN LINE
Gx	EX. GAS LINE
DFRx	EX. FUEL LINE
DFSx	EX. FUEL LINE
JPFSx	EX. FUEL LINE
JPFRx	EX. FUEL LINE
STx	EX. STEAM LINE
OHPx	EX. OVERHEAD POWER
UGPx	EX. UNDERGROUND POWER
	EX. CHAIN LINK FENCE
S	EX. SEWER MANHOLE
D	EX. STORM DRAIN MANHOLE
E	EX. ELECTRICAL MANHOLE
C	EX. COMMUNICATION MANHOLE
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. CATCH BASIN
WV	EX. WATER VALVE
	EX. FIRE HYDRANT
XFMR	EX. TRANSFORMER
	EX. CONCRETE
	EX. ASPHALT PAVEMENT
	EX. LANDSCAPE GRAVEL

GENERAL NOTES

1. CONTRACTOR TO VERIFY POINTS.
2. IF THE SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SCALE PRINT. REDUCE SCALE ACCORDINGLY.
3. WEST ACCESS ROAD TO REMAIN OPEN AT ALL TIMES. CONTRACTOR TO PHASE WORK AND COVER OPEN TRENCHING AS NECESSARY.
4. THE ENGINEER HAS MADE EXTENSIVE EFFORT TO LOCATE ALL EXISTING UTILITY LINES POSSIBLE FROM RECORDS PROVIDED BY OTHERS AND EVIDENCE IN THE FIELD. HOWEVER, THE COMPLETENESS OR ACCURACY OF THE LOCATIONS SHOWN CANNOT BE GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR POT HOLING UTILITY CROSSINGS WITHIN THE FIRST 30 DAYS OF CONSTRUCTION.

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft. Horiz.
(22" X 34")
1 inch = 40 ft. Horiz.
(11" X 17")

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER
No. 177530
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT	CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925	SITE CODE: --
OTHER PROJECT NO. 7596233 KRSM200806	ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER SCOTT ARNOLD	

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

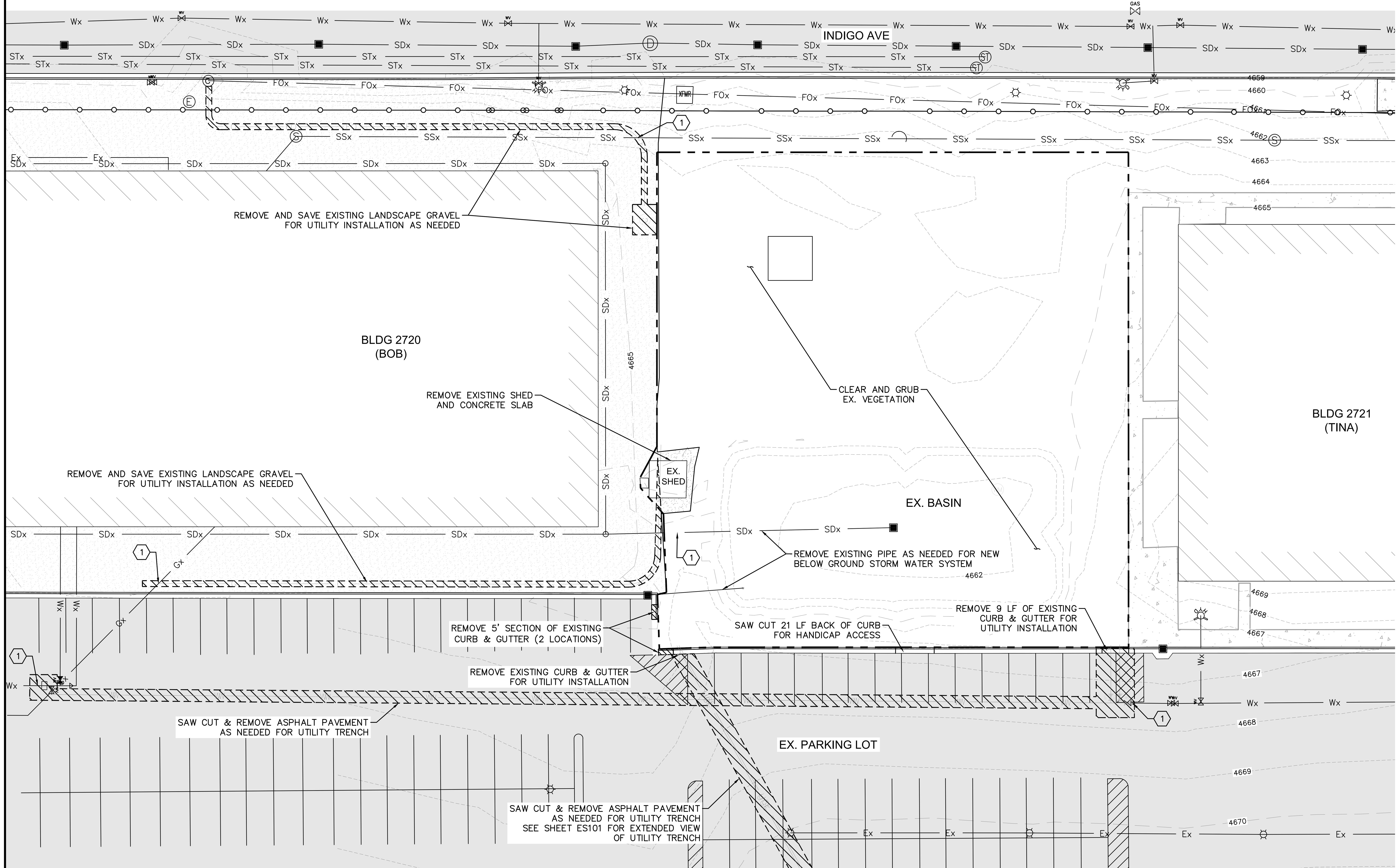
HAFB 309th SOFTWARE ENGINEERING FACILITY

EXISTING CONDITIONS

CS101

SHEET 9 OF 123

100% DESIGN



LEGEND

- 5134 — EX. CONTOURS
- Wx — EX. WATER LINE
- SSx — EX. SEWER LINE
- SDx — EX. STORM DRAIN LINE
- Gx — EX. GAS LINE
- DFRx — EX. FUEL LINE
- DFSx — EX. FUEL LINE
- JPFSx — EX. FUEL LINE
- JPFRx — EX. FUEL LINE
- STx — EX. STEAM LINE
- OHPx — EX. OVERHEAD POWER
- UGPx — EX. UNDERGROUND POWER
- EX. CHAIN LINK FENCE
- EX. SEWER MANHOLE
- EX. STORM DRAIN MANHOLE
- EX. ELECTRICAL MANHOLE
- EX. COMMUNICATION MANHOLE
- EX. UTILITY POLE
- EX. LIGHT POLE
- EX. CATCH BASIN
- EX. WATER VALVE
- EX. FIRE HYDRANT
- EX. TRANSFORMER
- EX. CONCRETE
- EX. ASPHALT PAVEMENT
- EX. LANDSCAPE GRAVEL

GENERAL NOTES

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KEY NOTES

1. HYDRO-EXCAVATE TO LOCATE EXISTING UTILITY

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft. Horiz.
(22" X 34")
1 inch = 40 ft. Horiz.
(11" X 17")

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO: 1043925
SITE CODE: -
OTHER PROJECT NO: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

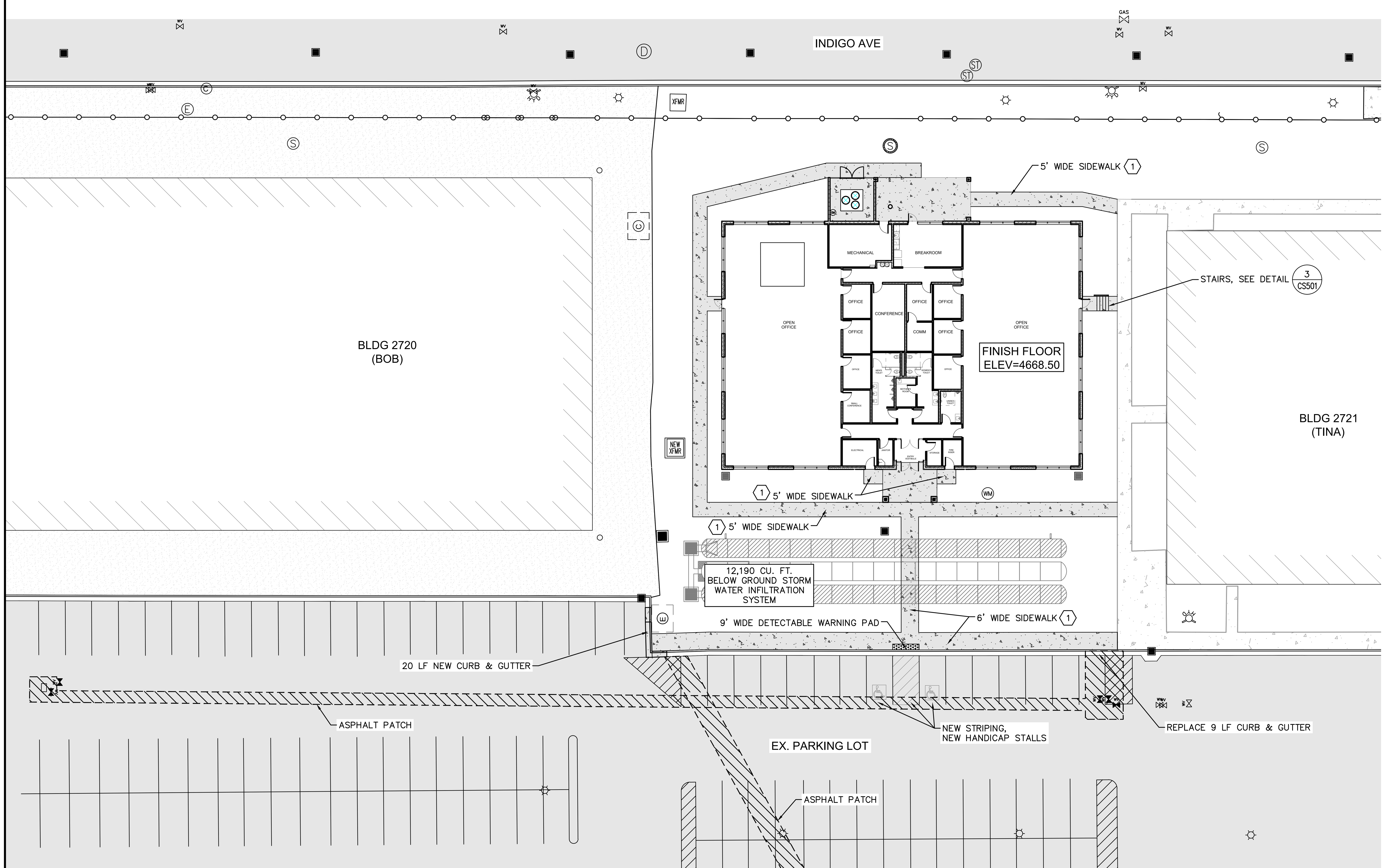
HAFB 309th SOFTWARE ENGINEERING FACILITY

DEMOLITION PLAN

CS102

SHEET 10 OF 123

100% DESIGN



LEGEND

5134	EX. CONTOURS
Wx	EX. WATER LINE
SSx	EX. SEWER LINE
SDx	EX. STORM DRAIN LINE
Gx	EX. GAS LINE
DFRx	EX. FUEL LINE
DFSx	EX. FUEL LINE
JPFSx	EX. FUEL LINE
JPFRx	EX. FUEL LINE
STx	EX. STEAM LINE
OHPx	EX. OVERHEAD POWER
UGPx	EX. UNDERGROUND POWER
	EX. CHAIN LINK FENCE
S	EX. SEWER MANHOLE
D	EX. STORM DRAIN MANHOLE
E	EX. ELECTRICAL MANHOLE
C	EX. COMMUNICATION MANHOLE
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. CATCH BASIN
WV	EX. WATER VALVE
	EX. FIRE HYDRANT
XFMR	EX. TRANSFORMER
	EX. CONCRETE
	EX. ASPHALT PAVEMENT
	EX. LANDSCAPE GRAVEL
S	NEW SEWER MANHOLE
	NEW WATER VALVE
C	NEW COMMUNICATION MANHOLE
NEW XFMR	NEW ELECTRICAL TRANSFORMER
	NEW STORM DRAIN BOX
W	NEW WATER LINE
S	NEW SEWER LINE
G	NEW GAS LINE
SD	NEW STORM DRAIN LINE
	NEW CONCRETE

GENERAL NOTES

1. CONTRACTOR TO VERIFY POINTS.
2. IF THE SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SCALE PRINT. REDUCE SCALE ACCORDINGLY.
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KEY NOTES

1. NEW 4" THICK CONCRETE SIDEWALK DETAIL 1/CS501

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft. Horiz.
(22" X 34")
1 inch = 40 ft. Horiz.
(11" X 17")

DATE | APPR | MARK | DESCRIPTION

LICENSED PROFESSIONAL ENGINEER
No. 177830
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO.: 1043925
SITE CODE: -
OTHER PROJECT NO.: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

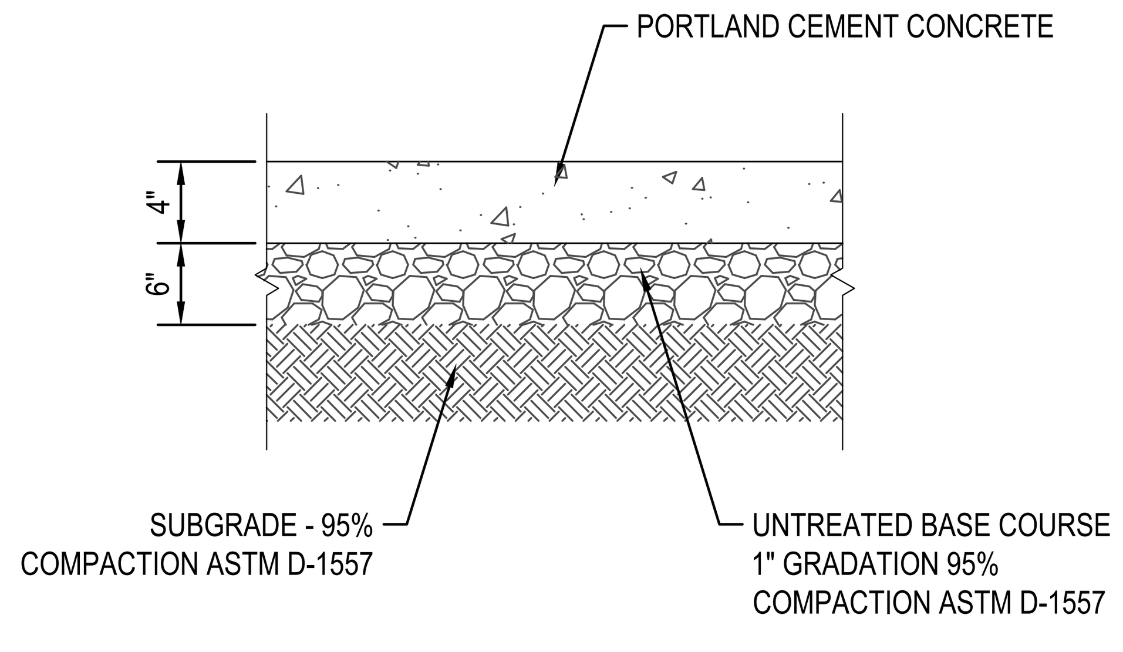
HAFB 309th SOFTWARE ENGINEERING FACILITY

SITE PLAN

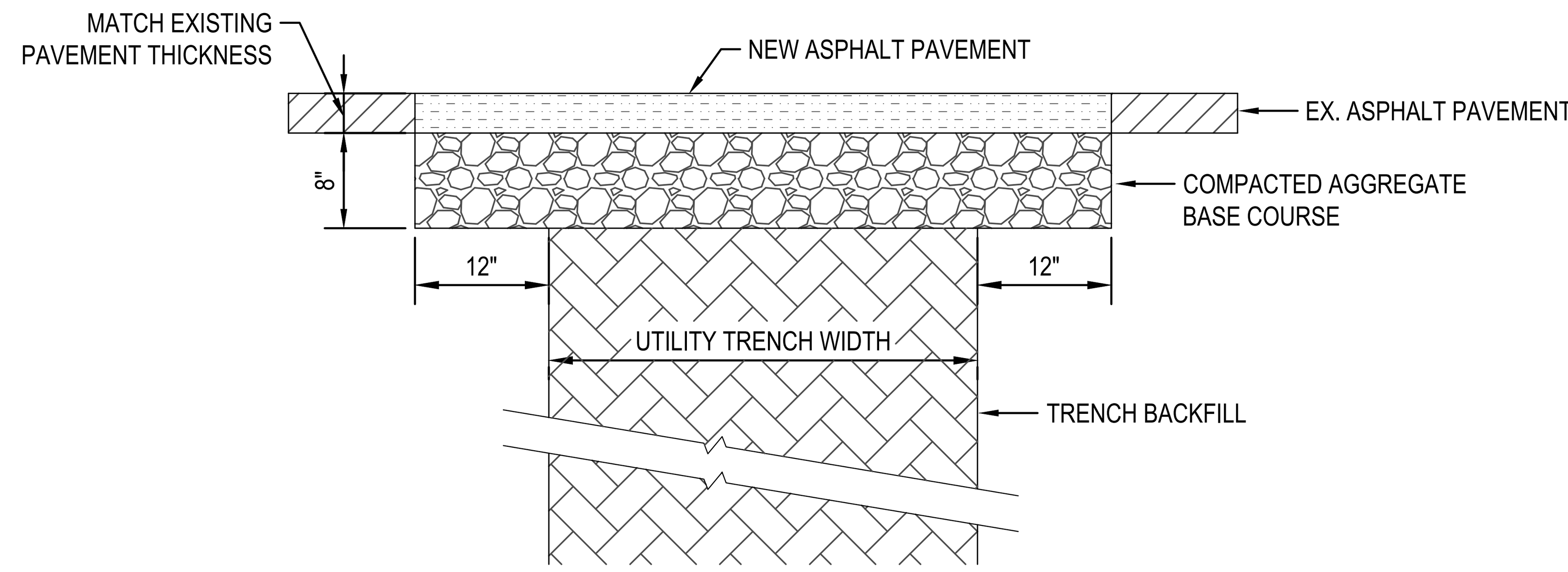
CS103

SHEET 11 OF 123

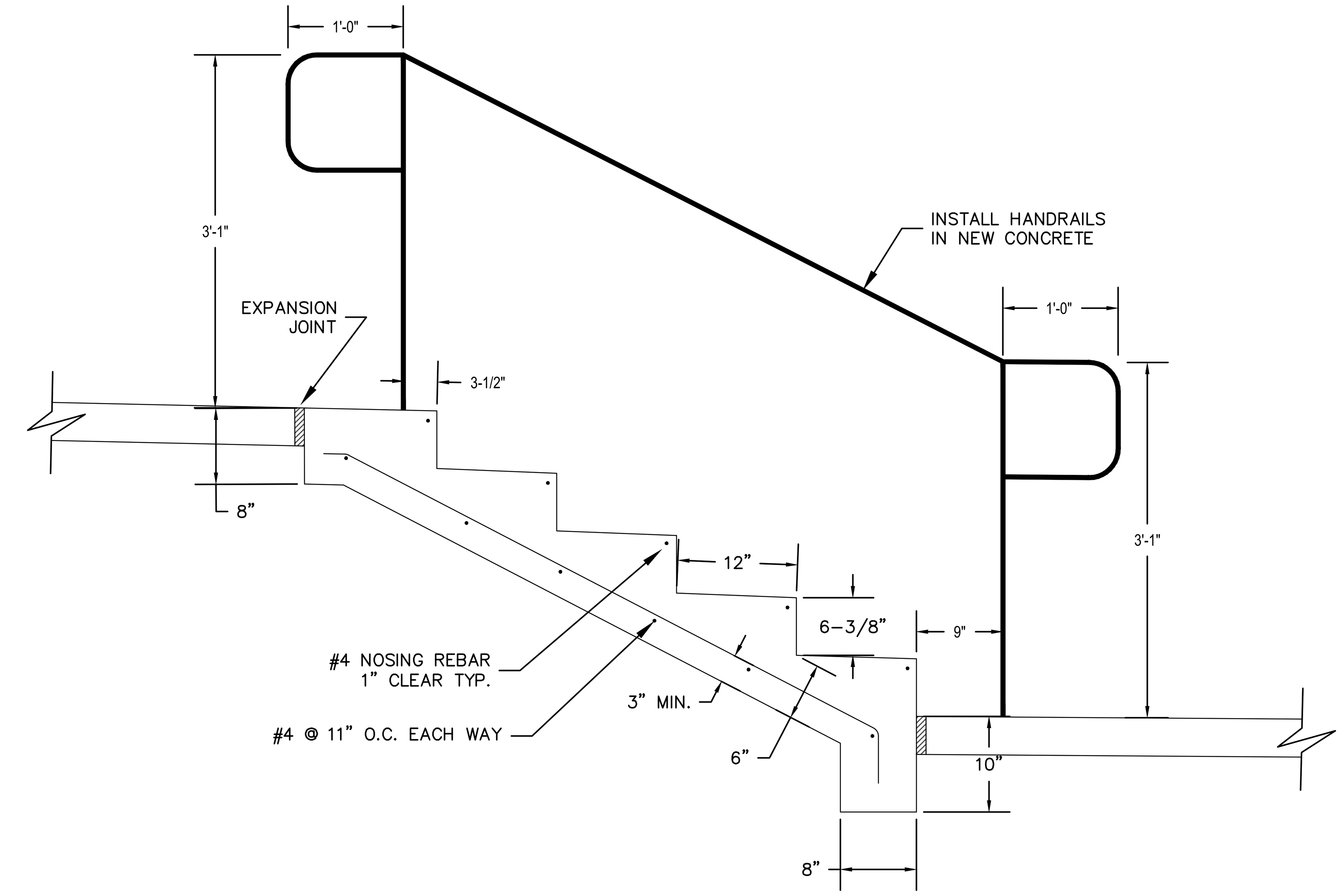
100% DESIGN



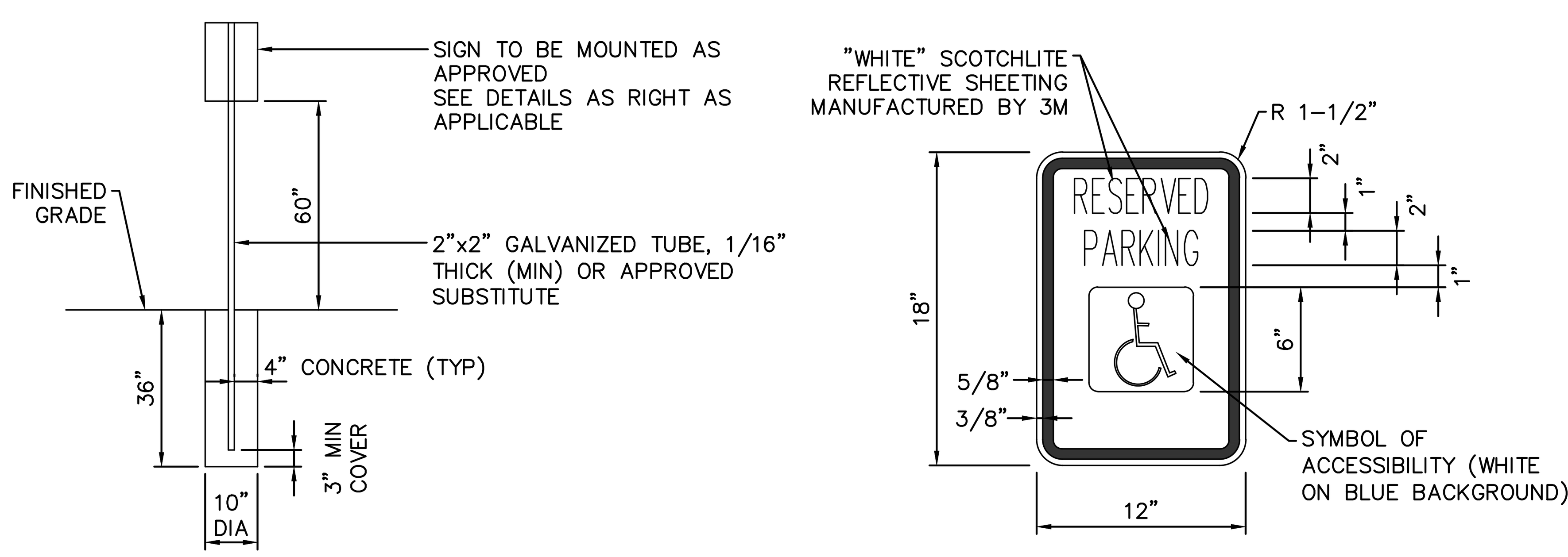
1 4" THICK CONCRETE SIDEWALK
NO SCALE



2 ASPHALT PATCH
NO SCALE



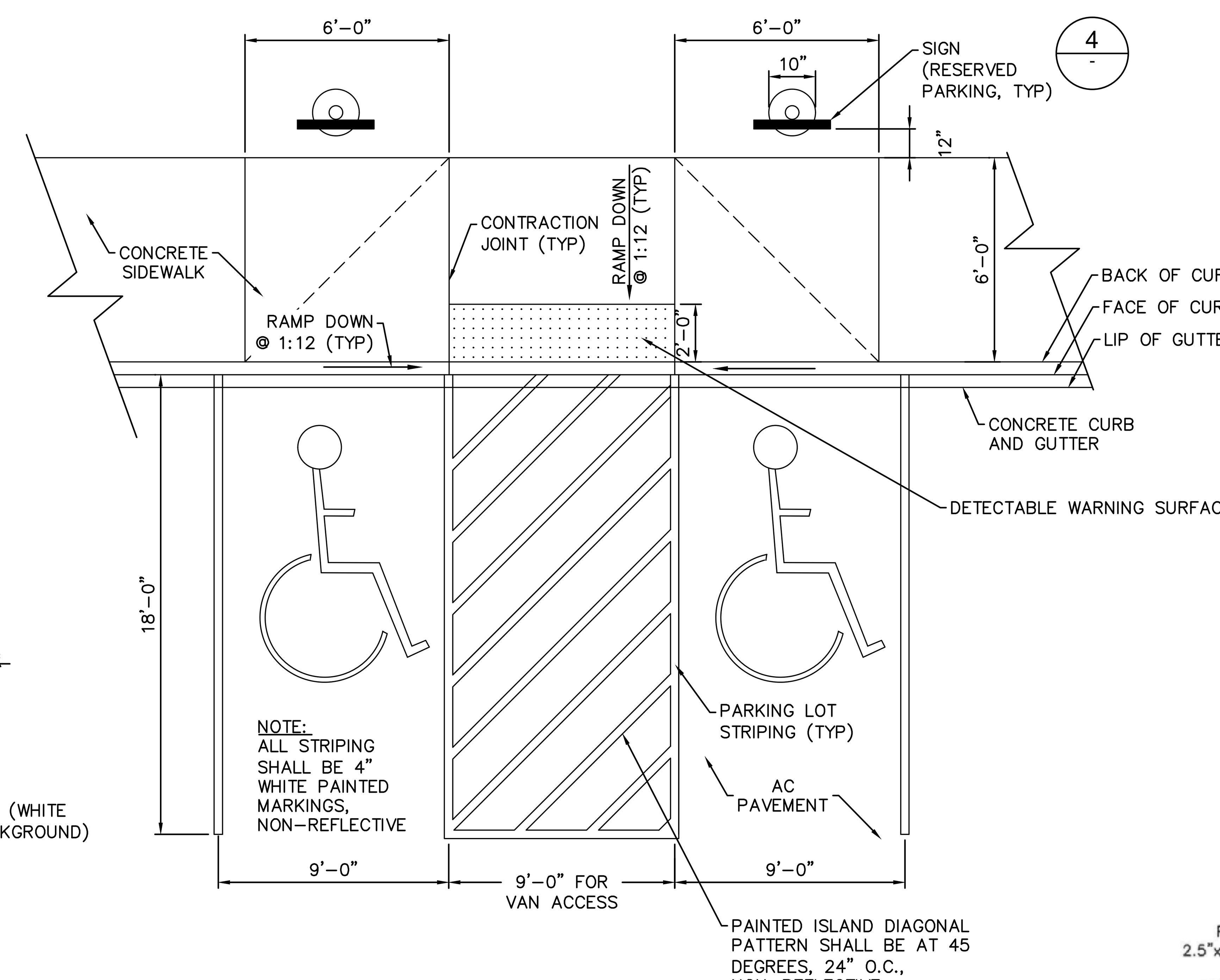
3 STAIR DETAIL
NO SCALE



NOTES:

1. SIGN POST SHALL BE INSTALLED 12" FROM BACK OF CURB AND CENTERED IN FRONT OF PARKING STALL. FOR PARALLEL PARKING SPACES, SIGN SHALL BE CENTERED IN MIDDLE OF STALL.
2. SIGN SHALL BE FABRICATED IN CONFORMANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
3. LETTERS AND SYMBOLS SHALL BE "WHITE" SCOTCHLITE REFLECTIVE SHEETING.
4. SEE SIGN DETAILS ON THIS SHEET FOR SPECIFIC SIGN LOCATIONS AND TEXT.

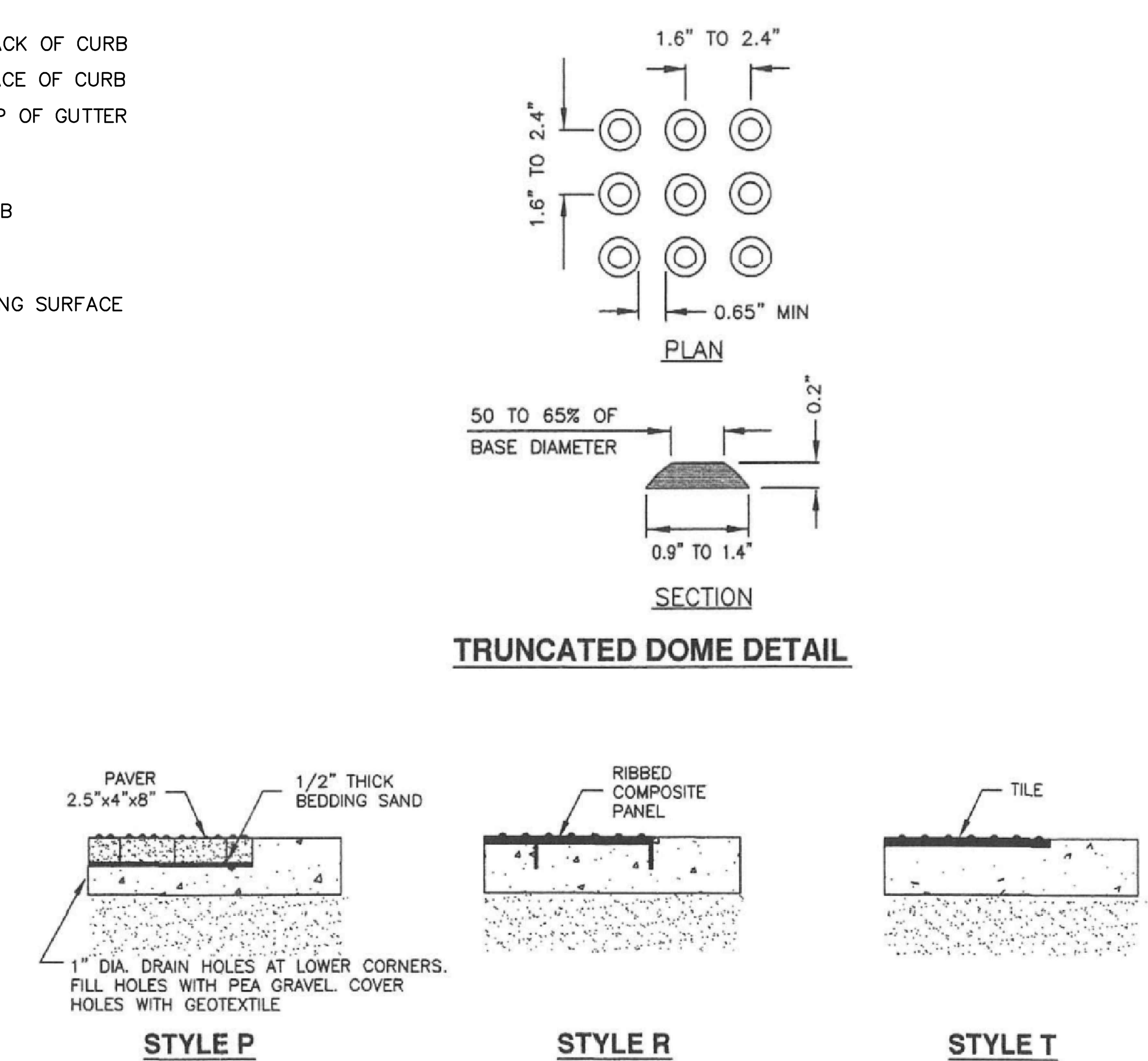
4 SIGN
NO SCALE



NOTES:

1. DETECTABLE WARNING SURFACE ONLY PRESENT ADJACENT TO DIAGONALLY STRIPED AREAS.
2. SIGN SHALL INCLUDE THE INTERNATIONAL SYMBOL FOR ACCESSIBILITY.

5 ACCESSIBLE PARKING SPACES
NO SCALE



6 DETECTABLE WARNING SURFACE
NO SCALE

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER
No. 177830
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925
SITE CODE: -
OTHER PROJECT NO. 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

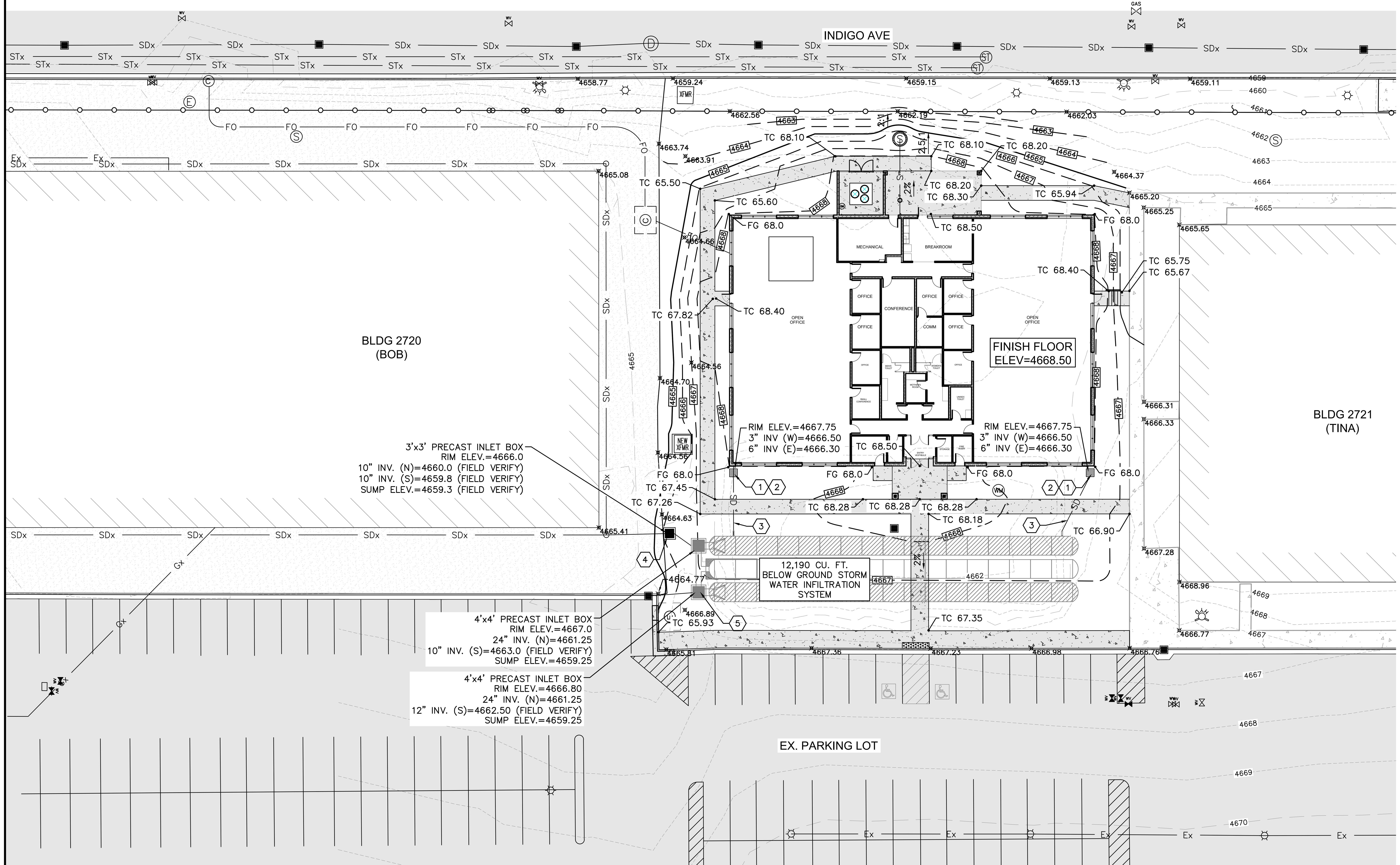
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CS501

SHEET 12 OF 123

100% DESIGN



LEGEND

5134	EX. CONTOURS
Wx	EX. WATER LINE
SSx	EX. SEWER LINE
SDx	EX. STORM DRAIN LINE
Gx	EX. GAS LINE
DFRx	EX. FUEL LINE
DFSx	EX. FUEL LINE
JPFSx	EX. FUEL LINE
JPFRx	EX. FUEL LINE
STx	EX. STEAM LINE
OHPx	EX. OVERHEAD POWER
UGPx	EX. UNDERGROUND POWER
	EX. CHAIN LINK FENCE
S	EX. SEWER MANHOLE
D	EX. STORM DRAIN MANHOLE
E	EX. ELECTRICAL MANHOLE
C	EX. COMMUNICATION MANHOLE
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. CATCH BASIN
	EX. WATER VALVE
	EX. FIRE HYDRANT
XFMR	EX. TRANSFORMER
	EX. CONCRETE
	EX. ASPHALT PAVEMENT
	EX. LANDSCAPE GRAVEL
×4757.88	EX. SPOT ELEVATION
S	NEW SEWER MANHOLE
	NEW WATER VALVE
C	NEW COMMUNICATION MANHOLE
NEW XFMR	NEW ELECTRICAL TRANSFORMER
	NEW STORM DRAIN BOX
W	NEW WATER LINE
S	NEW SEWER LINE
G	NEW GAS LINE
SD	NEW STORM DRAIN LINE
	NEW CONCRETE
57.80	FINISHED GRADE SPOT ELEVATION

GENERAL NOTES

1 CONTRACTOR TO VERIFY POINTS.

2 IF THE SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SCALE PRINT. REDUCE SCALE ACCORDINGLY.

3 WEST ACCESS ROAD TO REMAIN OPEN AT ALL TIMES. CONTRACTOR TO PHASE WORK AND COVER OPEN TRENCHING AS NECESSARY.

4 THE ENGINEER HAS MADE EXTENSIVE EFFORT TO LOCATE ALL EXISTING UTILITY LINES POSSIBLE FROM RECORDS PROVIDED BY OTHERS AND EVIDENCE IN THE FIELD. HOWEVER, THE COMPLETENESS OR ACCURACY OF THE LOCATIONS SHOWN CANNOT BE GUARANTEED. CONTRACTOR IS RESPONSIBLE FOR POT HOLING UTILITY CROSSINGS WITHIN THE FIRST 30 DAYS OF CONSTRUCTION.

GRADING NOTES

1 CONTRACTOR TO PROVIDE TEMPORARY STORM WATER RUN-OFF BARRIER TO PREVENT RUN-OFF FROM EXISTING PARKING AREA FROM REACHING SITE DURING CONSTRUCTION. PROVIDE AND MAINTAIN STORM WATER POLLUTION PREVENTION WITH FABRIC OR HAY BALES TO CATCH BASINS UNTIL SITE IS COMPLETED.

KEY NOTES

1 2'X2' POLYPROPYLENE STORM DRAIN BOX W/ GRATE

2 CONNECT ROOF DRAIN TO STORM DRAIN BOX

3 CONNECT 6" PIPE TO STORM WATER INFILTRATION SYSTEM

4 CONNECT EX. 10" PIPE TO STORM WATER INFILTRATION SYSTEM

5 CONNECT EX. 12" PIPE TO STORM WATER INFILTRATION SYSTEM

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft. Horiz.
(22" X 34")
1 inch = 40 ft. Horiz.
(11" X 17")

DESCRIPTION | DATE | APPR | MARK

LICENSED PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925
SITE CODE: -
OTHER PROJECT NO. 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

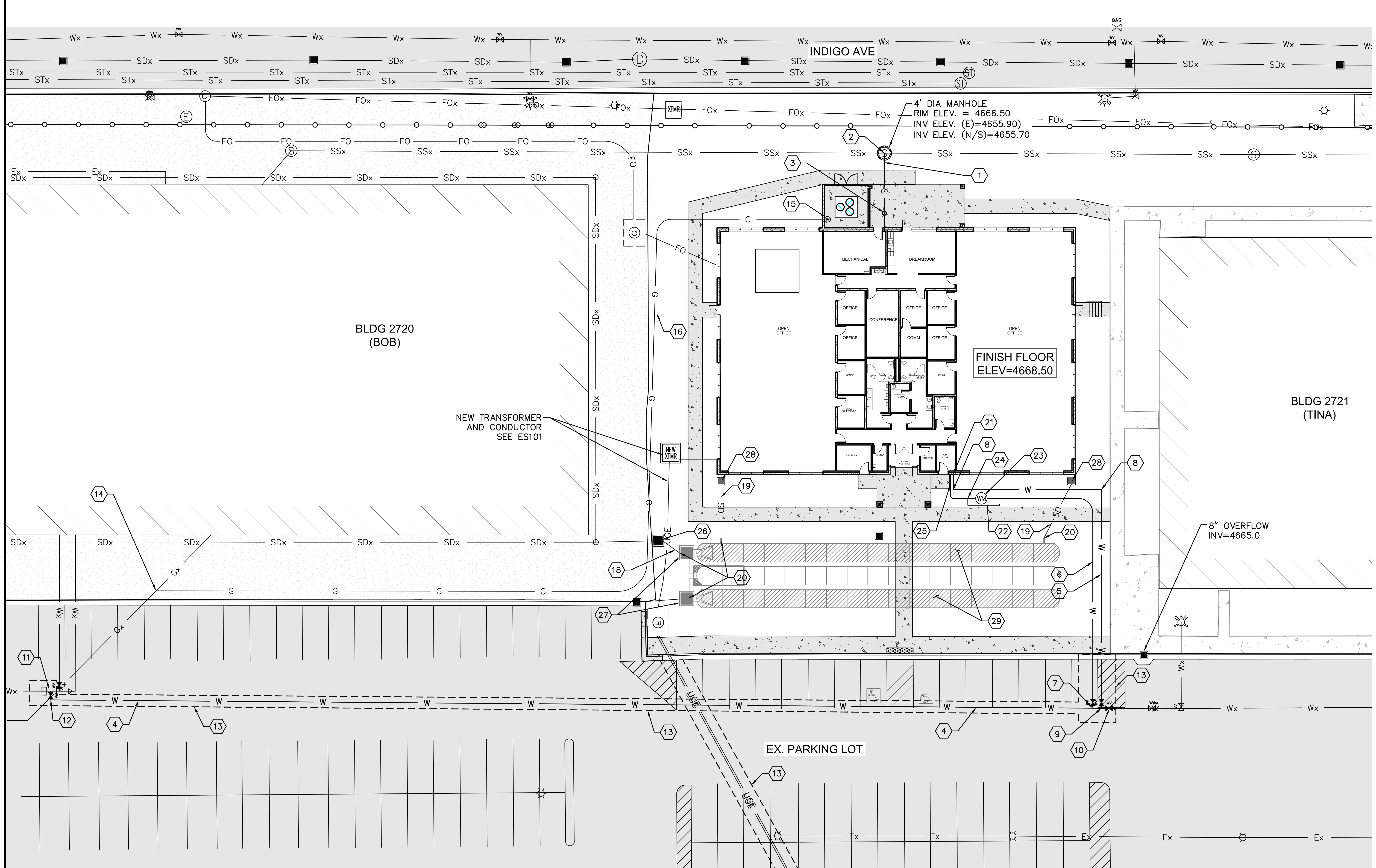
HAFB 309th SOFTWARE ENGINEERING FACILITY

GRADING PLAN

CG101

SHEET 13 OF 123

100% DESIGN



LEGEND

5134	EX. CONTOURS
Wx	EX. WATER LINE
SSx	EX. SEWER LINE
SDx	EX. STORM DRAIN LINE
Gx	EX. GAS LINE
DFRx	EX. FUEL LINE
DFSx	EX. FUEL LINE
JPFSx	EX. FUEL LINE
JPFRx	EX. FUEL LINE
STx	EX. STEAM LINE
OHPx	EX. OVERHEAD POWER
UGPx	EX. UNDERGROUND POWER
	EX. CHAIN LINK FENCE
	EX. SEWER MANHOLE
	EX. STORM DRAIN MANHOLE
	EX. ELECTRICAL MANHOLE
	EX. COMMUNICATION MANHOLE
	EX. UTILITY POLE
	EX. LIGHT POLE
	EX. CATCH BASIN
	EX. WATER VALVE
	EX. FIRE HYDRANT
XFMR	EX. TRANSFORMER
	EX. CONCRETE
	EX. ASPHALT PAVEMENT
	EX. LANDSCAPE GRAVEL
	NEW SEWER MANHOLE
	NEW WATER VALVE
	NEW COMMUNICATION MANHOLE
NEW XFMR	NEW ELECTRICAL TRANSFORMER
	NEW STORM DRAIN BOX
W	NEW WATER LINE
S	NEW SEWER LINE
G	NEW GAS LINE
SD	NEW STORM DRAIN LINE
	NEW CONCRETE

KEY NOTES

1. 6" SDR35 PVC SEWER
2. 4' DIA CAST-IN-PLACE SEWER MANHOLE (SEE UTILITY NOTE 4)
3. 6" SEWER LATERAL AND CLEAN OUT (BLDG SCOPE OF WORK)
4. 8" C900 PVC WATER LINE (SEE UTILITY NOTE 4)
5. 6" C900 PVC FIRE WATER LINE (SEE UTILITY NOTE 4)
6. 2" CTS POLY WATER SERVICE LINE (SEE UTILITY NOTE 4)
7. 2" WATER SERVICE CONNECTION W/ 2" VALVE (SEE UTILITY NOTE 4)
8. 6" 90° BEND (SEE UTILITY NOTE 4)
9. 8"x6" TEE WITH 6" GATE VALVE (SEE UTILITY NOTE 4)
10. CONNECT TO EXISTING WATER LINE W/ 8" GATE VALVE (SEE UTILITY NOTE 4)
11. CONNECT TO EXISTING 8" PVC W/ 8"x8" TEE, (1) 8" GATE VALVE, (1) 8" LONG SLEEVE. (SEE UTILITY NOTE 4)
12. 8" 90° BEND (SEE UTILITY NOTE 4)
13. ASPHALT PATCH
14. CONNECT TO EXISTING 2" GAS LINE
15. GAS METER
16. 2" GAS LINE
17. 8" C900 PVC STORM DRAIN OVERFLOW
18. 10" SDR35 PVC
19. 6" PVC STORM DRAIN
20. CONNECT TO BELOW GROUND STORM SYSTEM
21. WALL MOUNTED PIV AND FDC

GENERAL NOTES

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2. IF THE SHEET IS LESS THAN 22" x 34" IT IS A REDUCED SCALE PRINT. REDUCE SCALE ACCORDINGLY.
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UTILITY NOTES

1. THRUST BLOCKS FOR ALL UNDERGROUND FIRE SUPPRESSION LINES SHALL BE LEFT UNCOVERED FOR 24 HOURS TO ALLOW FOR INSPECTION BY FIRE PROTECTION SPECIALIST. PHOTOS DO NOT MEET THE REQUIREMENT.
2. PATCH AND REPAIR ANY DISTURBED EXISTING SITE FEATURES TO ORIGINAL CONDITION.
3. POT HOLING WITHIN 30 DAYS OF UTILITY CONFLICTS. CONTRACTOR TO VERIFY.
4. WATER AND SEWER CONSTRUCTION NOT IN CONTRACT SCOPE . TO BE COMPLETED BY AMERICAN WATER CONTRACTOR.

KEY NOTES CONT...

22. 1" WATER LINE FOR IRRIGATION
23. 2" WATER METER (BLDG SCOPE OF WORK), SHALL COMPLY WITH HAFB BASE FACILITY STANDARD SECTION 6.5
24. 2"x1" TEE (BLDG SCOPE OF WORK)
25. 2" CTS POLY WATER SERVICE LINE (BLDG SCOPE OF WORK)
26. 3'x3' PRECAST INLET BOX AND OVERFLOW W/ GRATE
27. 4'x4' PRECAST INLET BOX W/ GRATE
28. 2'x2' POLYPROPYLENE STORM DRAIN BOX W/ GRATE
29. 12,190 CU. FT. BELOW GROUND STORM WATER INFILTRATION SYSTEM. SEE DETAIL SHEETS CU509 – CU514

GRAPHIC SCALE

0 10 20 40

(IN FEET)
1 inch = 20 ft. Horiz.
(22" X 34")
1 inch = 40 ft. Horiz.
(11" X 17")

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER
No. 177830
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO.: 1043925
SITE CODE: -
OTHER PROJECT NO.: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

HAFB 309th SOFTWARE ENGINEERING FACILITY

UTILITY PLAN

CU101

SHEET 14 OF 123

100% DESIGN

GENERAL WATER AND SEWER CONSTRUCTION NOTES

1. APPROVAL OF THIS PLAN SHALL NOT CONSTITUTE A COMMITMENT FOR SERVICE OR AN AUTHORIZATION TO BEGIN THE SITE UTILITY SYSTEM CONSTRUCTION. THE APPLICANT SHALL BE REQUIRED TO OBTAIN A DIG PERMIT FROM THE INSTALLATION PRIOR TO THE START OF CONSTRUCTION ACTIVITIES.
2. THE APPLICANT SHALL OBTAIN ALL NECESSARY PERMITS FROM ANY FEDERAL, STATE, AND/OR LOCAL PERMIT AUTHORITY HAVING JURISDICTION OVER ANY PHASE OF CONSTRUCTION ASSOCIATED WITH THE INSTALLATION OF THIS SITE UTILITY SYSTEM.
3. THE CONTRACTOR SHALL NOTIFY THE AMERICAN WATER UTILITY MANAGER AT LEAST 48 HOURS PRIOR TO COMMENCING CONSTRUCTION.
4. BACKFLOW PREVENTION DEVICES ARE REQUIRED ON ALL CONNECTIONS TO THE EXISTING WATER SYSTEM. BACKFLOW PREVENTERS INSTALLED INSIDE ANY BUILDING SHALL REMAIN UNDER THE OWNERSHIP AND MAINTENANCE RESPONSIBILITY OF THE GOVERNMENT UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL AMERICAN WATER FACILITIES AND OTHER UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER AND AMERICAN WATER OF ANY DISCREPANCIES FOUND IN THE FIELD OR ON THE DRAWINGS PRIOR TO CONSTRUCTION. ANY DEVIATIONS FROM THE CONSTRUCTION PLANS SHALL NEED TO BE APPROVED IN WRITING BY AMERICAN WATER.
6. ALL WATER AND SANITARY SEWER CONSTRUCTION MATERIALS AND APPURTENANCES MUST ADHERE TO THE FULL REQUIREMENTS AS PUT FORTH IN AMERICAN WATER MILITARY SERVICES GROUP'S STANDARD SPECIFICATIONS FOR CONSTRUCTION OF WATER AND WASTEWATER FACILITIES, DESIGN GUIDE FOR WATER AND WASTEWATER FACILITIES, AND STANDARD CONSTRUCTION DETAILS.
7. A PROFESSIONAL ENGINEER, REGISTERED IN THE STATE WHERE CONSTRUCTION IS TAKING PLACE, SHALL BE RESPONSIBLE FOR GENERAL OVERSIGHT AND OBSERVATION OF THE SITE UTILITY SYSTEM INSTALLATION FOR COMPLIANCE WITH AMERICAN WATER STANDARDS AND TESTING REQUIREMENTS.
8. THE FOLLOWING TESTS SHALL BE ADMINISTERED BY THE CONTRACTOR AND WITNESSED AND REPORTED BY THE APPLICANT'S ENGINEER OR AGENT:
   - > WATER – CHLORINE RESIDUAL
   - > WATER – HYDROSTATIC
   - > SEWER – MANDREL
   - > SEWER (GRAVITY) – AIR TEST
   - > SEWER (FM/ PRESSURE) – HYDROSTATIC
   - > SEWER (MANHOLE)– VACUUM TEST

   ALL TESTING EQUIPMENT SHALL BE FURNISHED BY THE SITE UTILITY CONTRACTOR.
9. WATER CONNECTION – CONNECTION OF THE SITE UTILITY WATER SYSTEM TO THE EXISTING AMERICAN WATER WATER DISTRIBUTION SYSTEM IS PROHIBITED UNTIL THE CHLORINE RESIDUAL AND BACTERIOLOGICAL TESTS AS WELL AS THE REQUIRED HYDROSTATIC TESTS HAVE BEEN PERFORMED AND THE RESULTS REPORTED. THE APPLICANT SHALL SUBMIT THE TEST RESULTS TO THE AMERICAN WATER UTILITY MANAGER OR PROJECT ENGINEER FOR APPROVAL.
10. CONNECTION OF THE SITE UTILITY SEWER SYSTEM TO THE EXISTING AMERICAN WATER SANITARY SEWER SYSTEM IS PROHIBITED UNTIL ALL APPLICABLE TESTS HAVE BEEN PERFORMED AND SATISFACTORY RESULTS VERIFIED, AND THE RESULTS FOUND TO COMPLY WITH ALL AW REQUIREMENTS. THE APPLICANT SHALL SUBMIT REPORTS TO THE AMERICAN WATER UTILITY MANAGER OR PROJECT ENGINEER.
11. SHOP DRAWINGS SHALL BE SUBMITTED TO AW FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION.
12. ELECTRONIC FINAL AS–BUILT DRAWINGS PREPARED BY A REGISTERED PROFESSIONAL ENGINEER, COMPATIBLE WITH AMERICAN WATER'S GIS SYSTEM, SHALL BE SUBMITTED TO AMERICAN WATER. THE AS–BUILT DRAWING SHALL REFLECT ANY FIELD CHANGES AND INDICATE "TIES" FOR THE LOCATION OF VALVES, BENDS, MANHOLES, FIRE HYDRANTS, APPURTENANCES, ETC.
13. THE CONTRACTOR SHALL NOT OPERATE ANY VALVES LOCATED ON THE EXISTING DISTRIBUTION SYSTEM. REQUESTS TO OPERATE VALVES MUST BE SUBMITTED TO THE AMERICAN WATER UTILITY MANAGER 48 HOURS IN ADVANCE.
14. ALL MATERIALS SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
15. WHEN A WATER MAIN AND A SEWER LINE ARE IN A PARALLEL ALIGNMENT, THE WATER MAIN SHALL NOT BE INSTALLED WITHIN TEN FEET (10') OF THE SEWER LINE. WHEN A WATER MAIN AND SEWER LINE ARE IN A PERPENDICULAR CROSSING ALIGNMENT, THE WATER MAIN SHALL NOT BE INSTALLED WITHIN TWO FEET (2') OF THE SEWER LINE AND NO WATER MAIN JOINTS SHALL BE ALLOWED WITHIN TEN FEET (10') OF THE SEWER LINE. SEPARATION DISTANCES MEASURED EDGE–TO–EDGE. IF REQUIRED CLEARANCES CAN NOT BE MAINTAINED, CONCRETE ENCASEMENT SHALL BE REQUIRED,
16. SCHEDULE 40 AND SCHEDULE 80 PVC PIPE ARE NOT PERMITTED UNDER ANY CIRCUMSTANCES.

REVISIONS
1/12 – MSG EDITS
7/14 – MSG EDITS
1/16 – MSG EDITS
1/18 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
STANDARD WATER AND SEWER CONSTRUCTION NOTES

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER®

DRAWN BY Z. ALAM
PROJECT ENG'R PDK
APPROVED

DATE 04–30–2010
PROJECT N/A

USE DIMENSIONS ONLY
SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

MSG–ST–01

FINAL

MSG–ST–01

1 GENERAL WATER & SEWER NOTES - PAGE 1
NO SCALE

GUIDELINES FOR VARIANCES

1. THE AMERICAN WATER CAPITAL PROJECT MANAGER AND HIS DESIGNATED REPRESENTATIVES MAY ALLOW VARIANCES TO THE DESIGN STANDARDS AND STANDARD DETAILS WHEN STRICT ADHERENCE WOULD LESS ADEQUATELY PROVIDE FOR THE DEVELOPMENT, MAINTENANCE, EFFICIENCY, AND EFFECTIVENESS OF THE WATER AND SEWER UTILITIES. ANY VARIANCE GRANTED SHALL ENSURE THAT THE OBJECTIVES AND INTENT OF THE THE ORIGINAL DESIGN STANDARD OR STANDARD DETAIL TO WHICH THE VARIANCES IS GRANTED ARE SUBSTANTIALLY MET.
2. VARIANCES MAY BE ALLOWED WHEN:

   2.1. A SUBSTITUTION FOR A CHANGE IN STANDARD MATERIAL RESULTS IN THE USE OF A MATERIAL WHICH CAN BE CLEARLY DEMONSTRATED TO BE EQUAL TO OR OF SUPERIOR QUALITY;

   2.2. A STRICT ADHERENCE TO A DESIGN STANDARD OR STANDARD DETAIL WOULD BE IMPRACTICAL OR IMPOSSIBLE BECAUSE OF FIELD CONDITIONS SUCH AS EXISTING UTILITY FACILITIES;

   2.3. AN EMERGENCY SITUATION PROHIBITS STRICT ADHERENCE TO A DESIGN STANDARD OR STANDARD DETAIL;

   2.4. AT THE DISCRETION OF THE AW CAPITAL PROJECT MANAGER.

REVISIONS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
GUIDELINES FOR VARIANCES

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER®

DRAWN BY J. DERUSSO
PROJECT ENG'R J. DERUSSO
APPROVED

DATE 01–26–2012
PROJECT N/A

USE DIMENSIONS ONLY
SCALE N.T.S.

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MSG–ST–01A

FINAL

MSG–ST–01A

2 GENERAL WATER & SEWER NOTES - PAGE 2
NO SCALE

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER
No. 177530
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT	CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925	SITE CODE: --
OTHER PROJECT NO. 7596233 KRSM200806	ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER SCOTT ARNOLD	

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

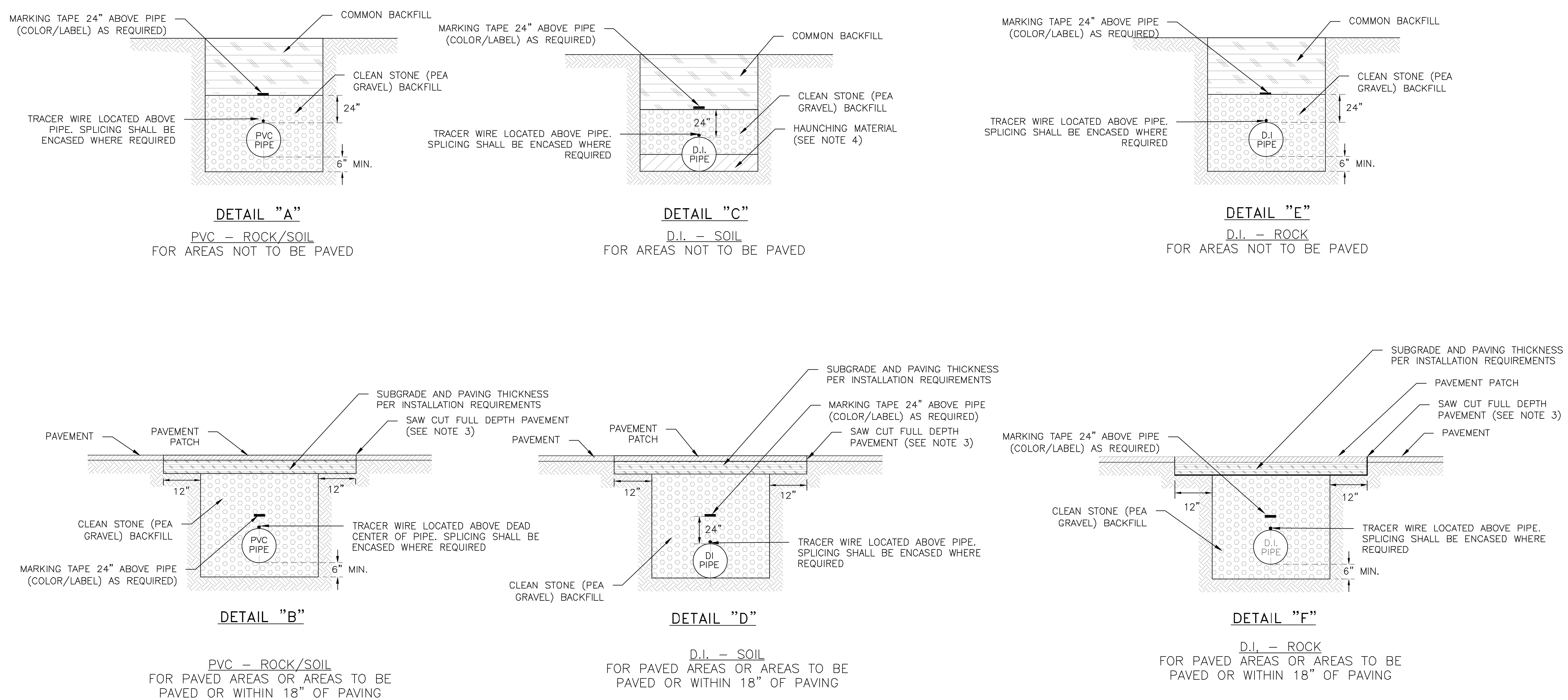
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU501

SHEET 15 OF 123

100% DESIGN



GENERAL NOTE:

1. CAUTION MUST BE EXERCISED TO ENSURE PROPER PLACEMENT OF EMBEDMENT MATERIAL UNDER THE HAUNCHES OF THE PIPE.
2. POLYETHYLENE ENCASING ON ALL D.I. – PIPE, FITTINGS, VALVES & APPURTENANCES.
3. IF EDGE OF SAW CUT IS <= 4LF FROM CURB LINE, REMOVE PAVEMENT TO CURB.
4. STONE BACKFILL TO BE MECHANICALLY COMPACTED IN 6"–12" LIFTS.
5. REFER SPECIFICATION SECTIONS FOR DESCRIPTION OF BACKFILL AND BEDDING MATERIAL.
6. ALL SEWER LINES < 24" REQUIRE TAPE 2' ABOVE PIPE.
7. TYPICAL TRENCH WIDTH SHALL BE PIPE O.D.+2'.

REVISIONS
1/16 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
TRENCH RESTORATION DETAIL

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER

DRAWN BY J. DERUSSO
PROJECT ENG'R PDK
APPROVED

DATE 05–17–2010
PROJECT N/A

USE DIMENSIONS ONLY
SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

MSG–ST–02–HAFB

FINAL

MSG–ST–02–HAFB

1 WATER LINE TRENCH SECTIONS
NO SCALE

DATE	APPR	MARK	DESCRIPTION

LICENSED PROFESSIONAL ENGINEER
No. 177930
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO.: 1043925
SITE CODE: -
OTHER PROJECT NO.: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

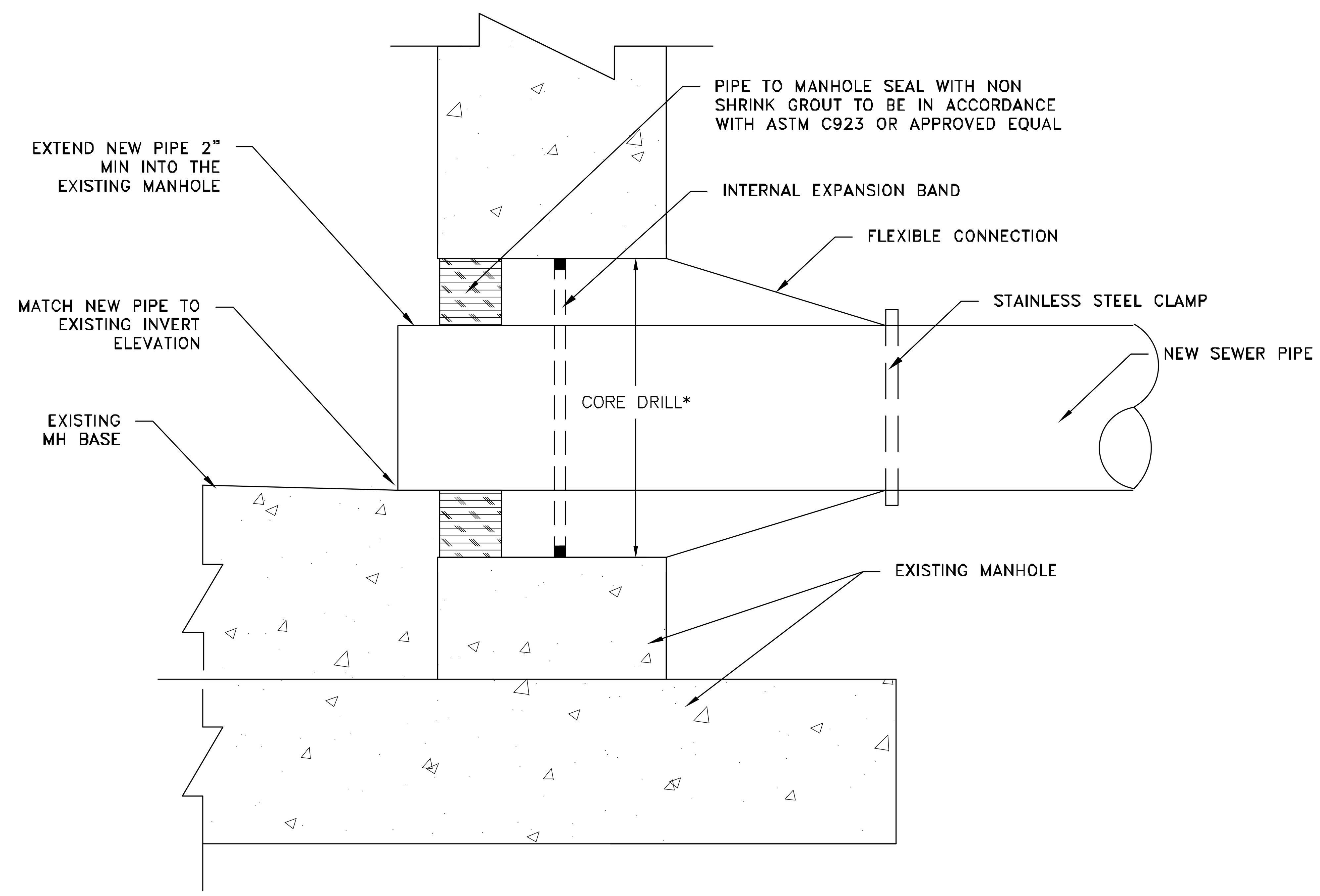
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU502

SHEET 16 OF 123

100% DESIGN



CONNECTION TO EXISTING MANHOLE

NOTES:

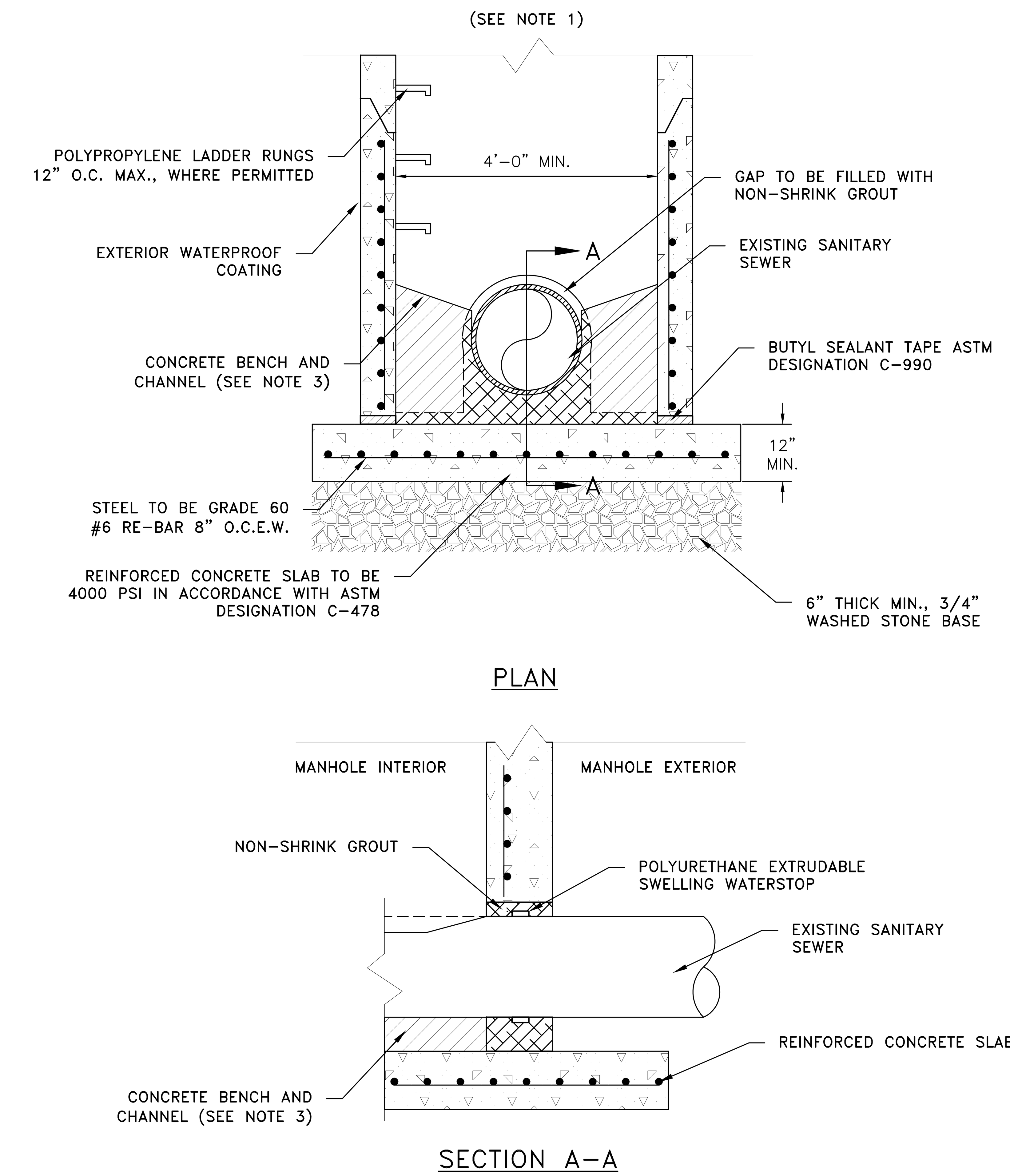
1. CORE DRILL NEW PIPE OPENING.
2. INSERT NEW FLEXIBLE CONNECTOR.
3. AFTER INSERTION OF NEW PIPE, MANHOLE SHALL BE VACUUM TESTED IN ACCORDANCE WITH SPECIFICATIONS.

* BRICK MANHOLES CAN NOT BE CORE DRILLED

REVISIONS	AMERICAN WATER MILITARY SERVICES GROUP CIVIL CONNECTION TO EXISTING MANHOLE DETAIL
6/13 – MSG EDITS	AMERICAN WATER MILITARY SERVICES GROUP MT LAUREL, NJ 08054
01/16 – MSG EDITS	AMERICAN WATER M.S.G. 330 FELLOWSHIP ROAD MT LAUREL, NJ 08054 — AMERICAN WATER
	DRAWN BY J. ABRERA PROJECT ENG'R PDK APPROVED — DATE 04-30-2010 PROJECT N/A — USE DIMENSIONS ONLY SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — MSG-WW-12

FINAL MSG-WW-12

1 CONNECTION TO EXISTING MANHOLE
NO SCALE



DOGHOUSE MANHOLE

NOTES:

1. SEE PRECAST STANDARD MANHOLE DETAIL FOR TYPICAL INSTALLATION.
2. PRECAST MANHOLE SECTIONS TO BE IN ACCORDANCE WITH ASTM DESIGNATION C478.
3. SOLID CONCRETE BENCH AND CHANNEL TO BE CONSTRUCTED BY CONTRACTOR.
4. EXTERIOR COATING NOT REQUIRED IN TEXAS..

REVISIONS	AMERICAN WATER MILITARY SERVICES GROUP CIVIL DOGHOUSE MANHOLE DETAIL
1/12 – MSG EDITS	AMERICAN WATER MILITARY SERVICES GROUP CAMDEN, NJ 08102
6/13 – MSG EDITS	AMERICAN WATER M.S.G. 1 WATER STREET CAMDEN, NJ 08102 — AMERICAN WATER
	DRAWN BY Z. ALAM PROJECT ENG'R PDK APPROVED — DATE 04-30-2010 PROJECT N/A — USE DIMENSIONS ONLY SCALE N.T.S.
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FINAL MSG-WW-11

2 PRECAST MANHOLE
NO SCALE

DESCRIPTION | DATE | APPR | MARK

LICENSED PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925
SITE CODE: -
OTHER PROJECT NO. 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

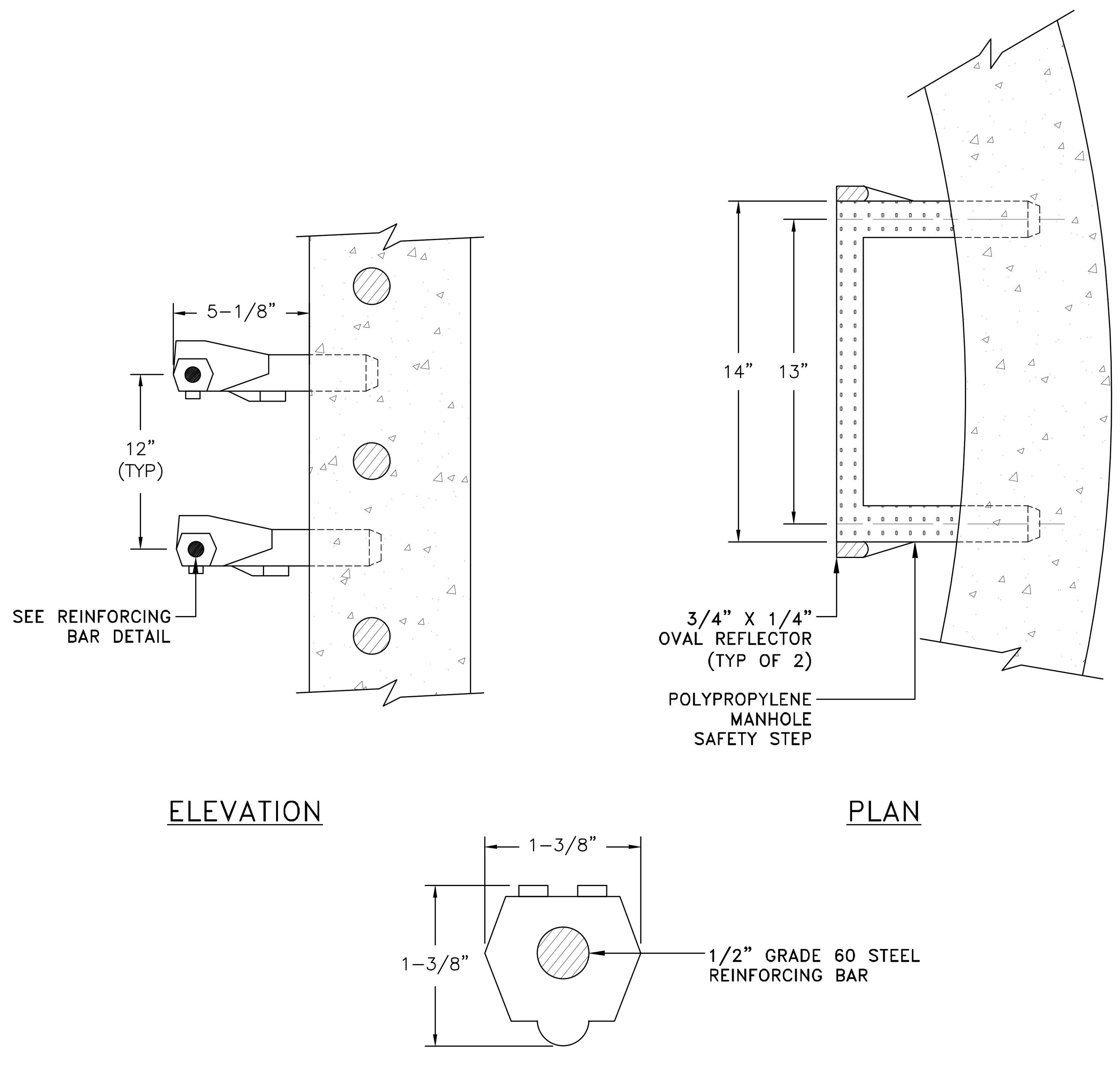
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU503

SHEET 17 OF 123

100% DESIGN



MANHOLE STEPS DETAIL

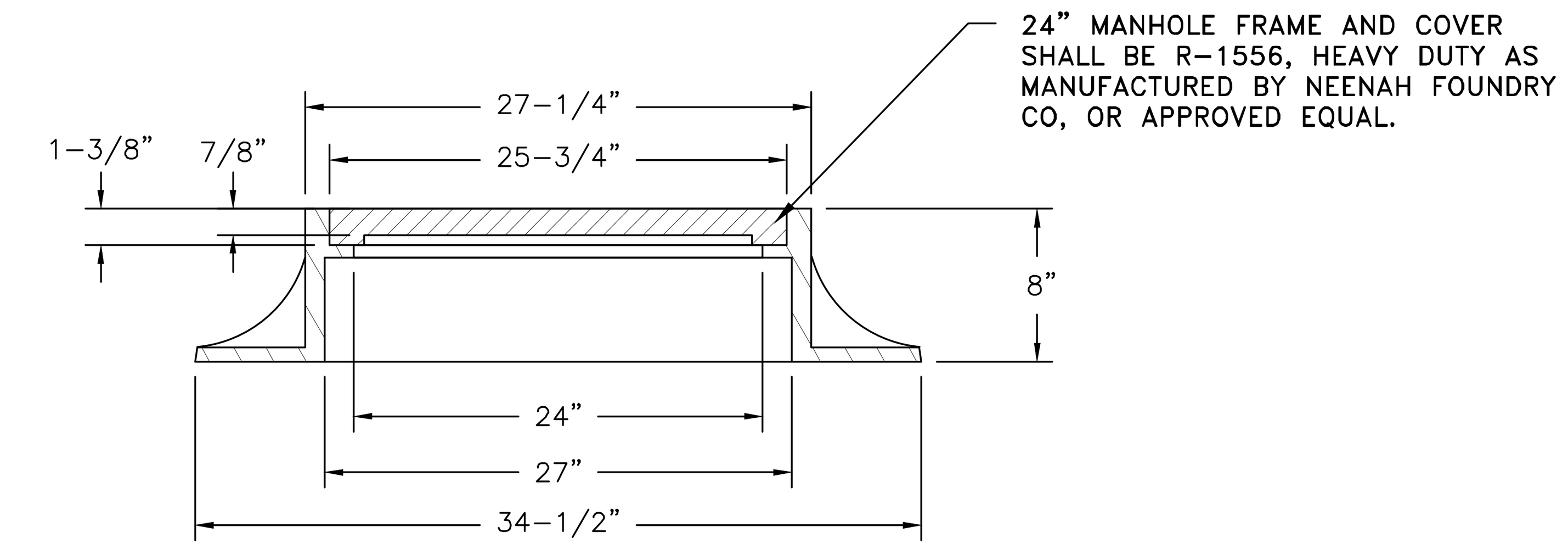
NOTES:

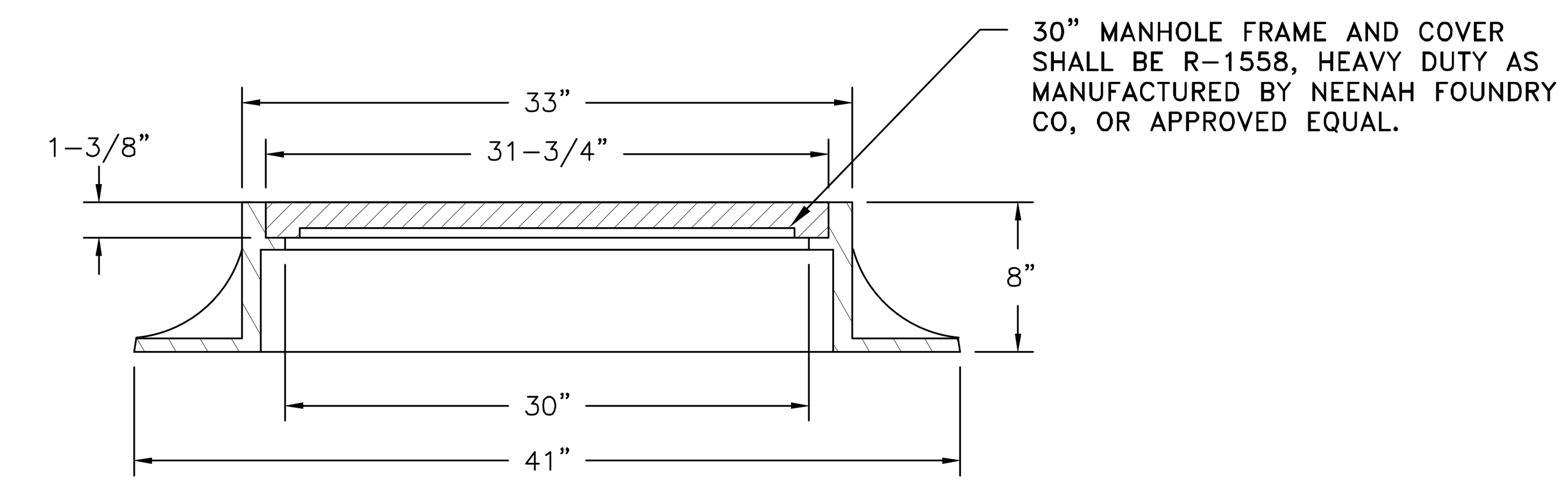
1. MANHOLE STEPS ARE NOT PERMITTED IN TEXAS AND OKLAHOMA.
2. ALL STEPS MUST MEET ASTM C-478 AND ASSHTO M-199 SPECIFICATIONS, POLYPROPYLENE ASTM D-40104, THE 1/2" GRADE 60 DEFORMED REINFORCING BAR ASTM-A-615.
3. INSTALLATION METHOD MUST RESIST 1,500 LB HORIZONTAL PULL OUT FORCE AND 500 LB VERTICAL LOAD.
4. LOCATE STEPS OVER BENCH WHENEVER POSSIBLE (NOT OVER THE MAIN).

REVISIONS	
6/13 - MSG EDITS	AMERICAN WATER MILITARY SERVICES GROUP CIVIL MANHOLE STEPS DETAIL
	AMERICAN WATER MILITARY SERVICES GROUP MT LAUREL, NJ 08054
	AMERICAN WATER M.S.G. 330 FELLOWSHIP ROAD MT LAUREL, NJ 08054 AMERICAN WATER DRAWN BY Z. ALAM PROJECT ENG'R J. DERUSSO DATE 04-30-2010 USE DIMENSIONS ONLY APPROVED PROJECT N/A SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES | MSG-WW-13

FINAL MSG-WW-13

1 MANHOLE STEPS
NO SCALE





MANHOLE FRAME AND COVER DETAIL

NOTE:

24" MANHOLE OPENING IS NOT PERMITTED IN TEXAS.

REVISIONS	
	AMERICAN WATER MILITARY SERVICES GROUP CIVIL MANHOLE FRAME AND COVER DETAIL
	AMERICAN WATER MILITARY SERVICES GROUP MT LAUREL, NJ 08054
	AMERICAN WATER M.S.G. 330 FELLOWSHIP ROAD MT LAUREL, NJ 08054 AMERICAN WATER DRAWN BY Z. ALAM PROJECT ENG'R J. DERUSSO DATE 04-30-2010 USE DIMENSIONS ONLY APPROVED PROJECT N/A SCALE N.T.S.
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FINAL MSG-WW-14

2 MANHOLE FRAME AND COVER
NO SCALE

DESCRIPTION DATE APPR MARK

LICENSED PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925
SITE CODE: -
OTHER PROJECT NO. 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

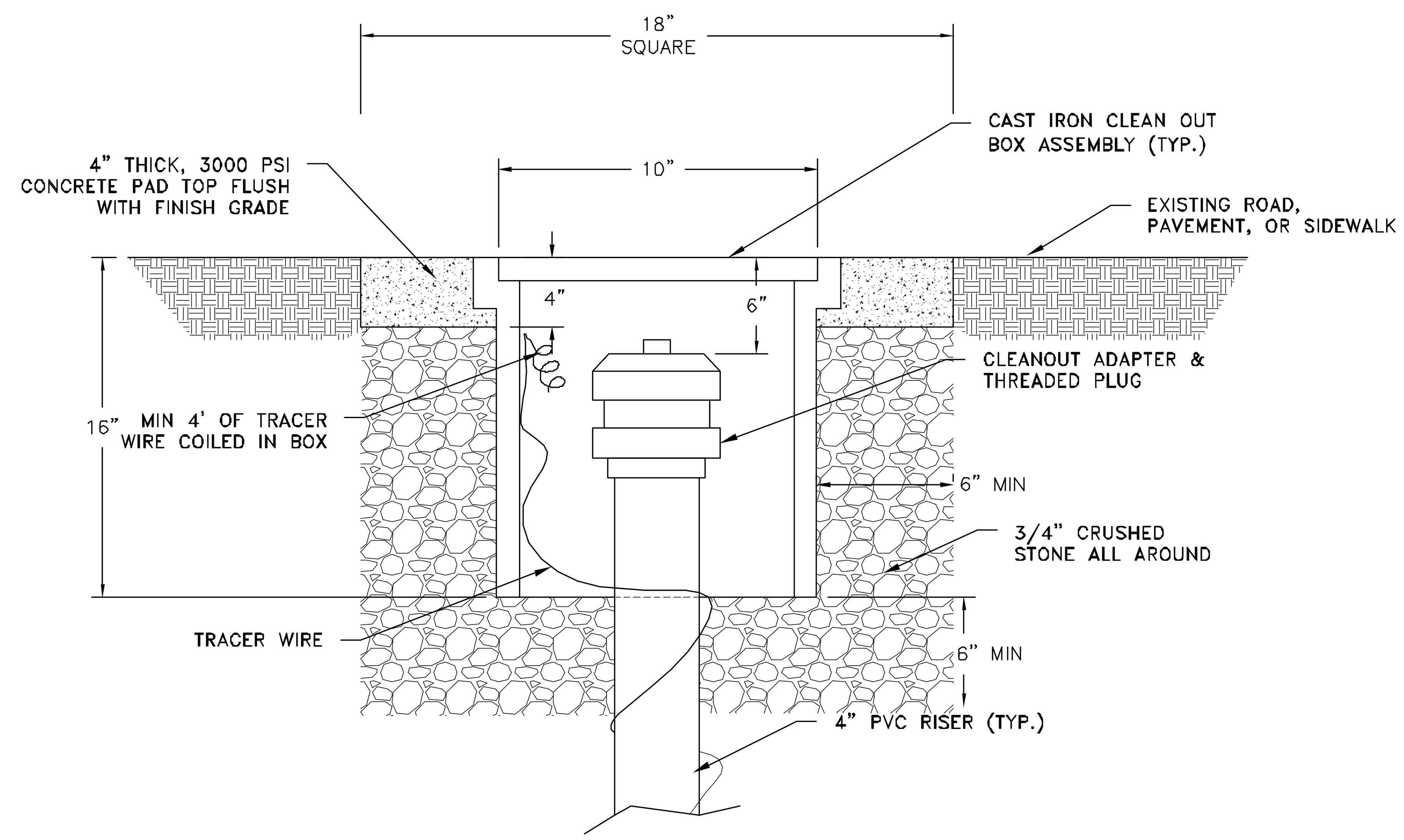
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU504

SHEET 18 OF 123

100% DESIGN

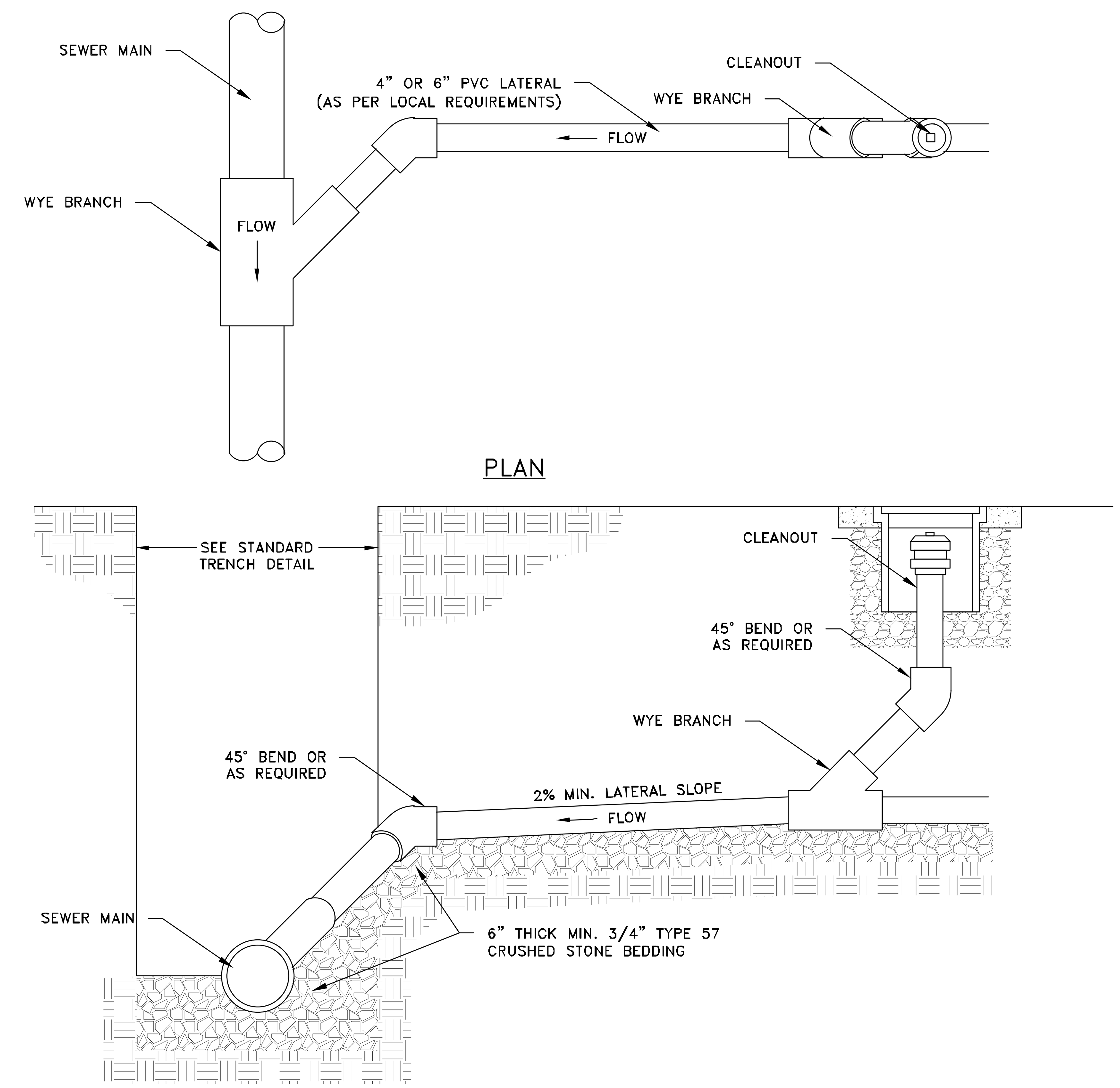


CLEANOUT DETAIL

REVISIONS	AMERICAN WATER MILITARY SERVICES GROUP CIVIL CLEANOUT DETAIL
1/12 – MSG EDITS	AMERICAN WATER MILITARY SERVICES GROUP MT LAUREL, NJ 08054
6/13 – MSG EDITS	AMERICAN WATER M.S.G. 330 FELLOWSHIP ROAD MT LAUREL, NJ 08054 AMERICAN WATER
01/16 – MSG EDITS	DRAWN BY J. ABRERA PROJECT ENG'R J. DERUSSO DATE 05-03-2010 USE DIMENSIONS ONLY APPROVED PROJECT N/A SCALE N.T.S.
	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — MSG-WW-07

FINAL MSG-WW-07

1 CLEANOUT DETAIL
NO SCALE



SANITARY SEWER LATERAL

REVISIONS	AMERICAN WATER MILITARY SERVICES GROUP CIVIL SANITARY SEWER LATERAL DETAIL
1/12 – MSG EDITS	AMERICAN WATER MILITARY SERVICES GROUP MT LAUREL, NJ 08054
6/13 – MSG EDITS	AMERICAN WATER M.S.G. 330 FELLOWSHIP ROAD MT LAUREL, NJ 08054 AMERICAN WATER
7/14 – MSG EDITS	DRAWN BY Z. ALAM PROJECT ENG'R J. DERUSSO DATE 05-03-2010 USE DIMENSIONS ONLY APPROVED PROJECT N/A SCALE N.T.S.
1/16 – MSG EDITS	USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES — MSG-WW-16

FINAL MSG-WW-16

2 SANITARY SEWER LATERAL
NO SCALE

DESCRIPTION | DATE | APPR | MARK

STEVEN L. JACKSON
No. 177830
5/10/2022
LICENSED PROFESSIONAL ENGINEER
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO: 1043925
SITE CODE: -
OTHER PROJECT NO: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

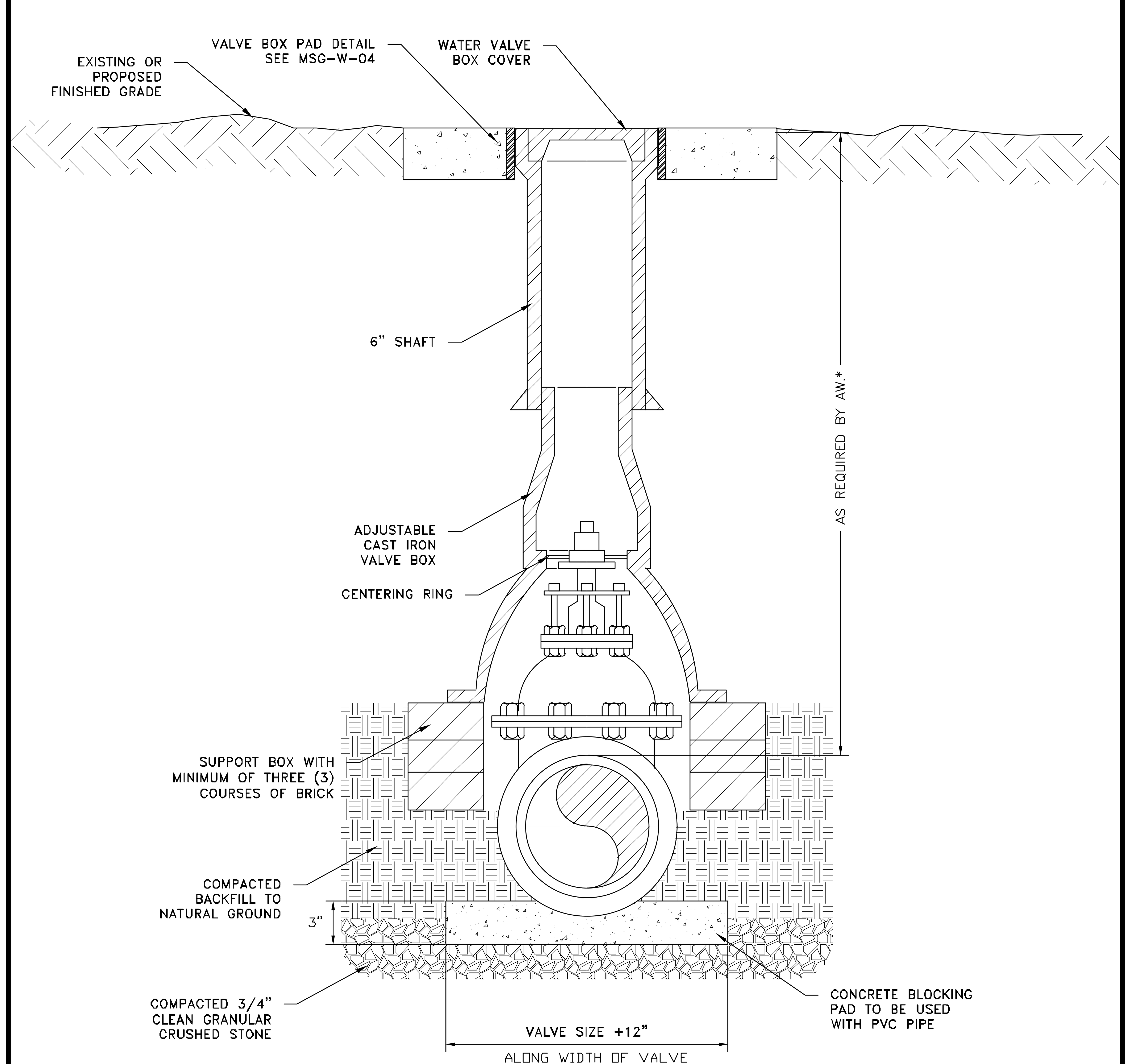
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU505

SHEET 19 OF 123

100% DESIGN



GATE VALVE AND VALVE BOX

* MINIMUM COVER BASED ON PROJECT LOCATION	
DEPTH COVER	LOCATION
36"	AL, IL, IA, MD, OK, KS, TX, CA & VA
42"	NJ
48"	UT

REVISIONS
6/13 – MSG EDITS
7/14 – MSG EDITS
1/16 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
GATE VALVE AND VALVE BOX
DETAIL

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER

DRAWN BY J. ABRERA
PROJECT ENG'R J. DERUSSO DATE 05-03-2010 USE DIMENSIONS ONLY
APPROVED PROJECT N/A SCALE N.T.S.

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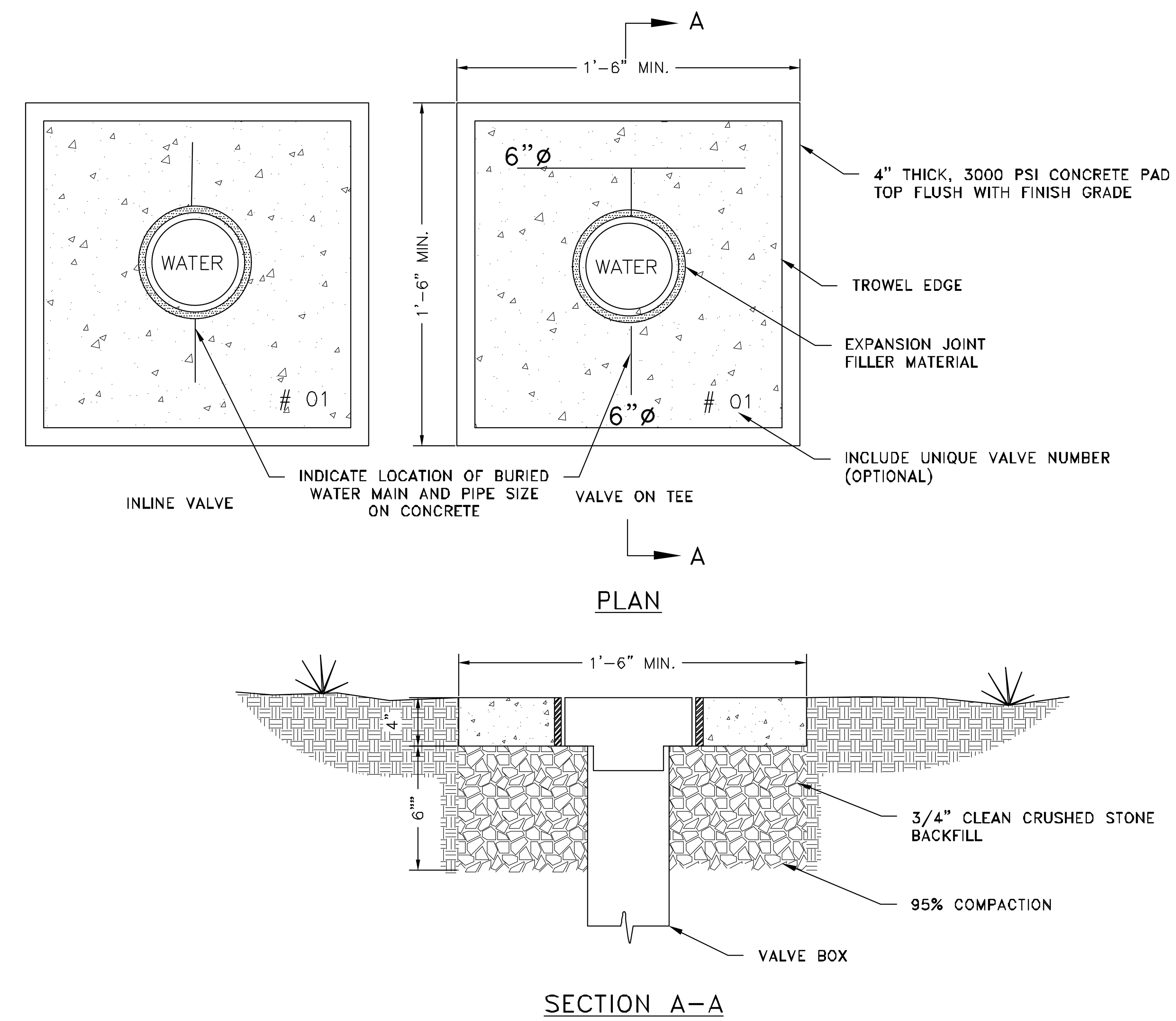
FINAL MSG-W-03



CONCRETE VALVE BOX PAD DETAIL

NOTE:

1. IF PAD IS NOT TO BE POURED IMMEDIATELY AFTER VALVE BOX INSTALLATION, HOLE SHOULD BE BACKFILLED TO GRADE WITH 3/4" CLEAN CRUSHED STONE BACKFILL.

REVISIONS
REV 1 – 6/22/10
6/13 – MSG EDITS
7/14 – MSG EDITS
1/16 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
CONCRETE VALVE BOX PAD
DETAIL

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER

DRAWN BY J. ABRERA
PROJECT ENG'R PDK DATE 05-03-2010 USE DIMENSIONS ONLY
APPROVED PROJECT N/A SCALE N.T.S.

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FINAL MSG-W-04

1 GATE VALVE AND VALVE BOX
NO SCALE

2 CONCRETE VALVE BOX PAD
NO SCALE

DESCRIPTION	DATE	APPR	MARK

PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO. 1043925
SITE CODE: -
OTHER PROJECT NO. 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

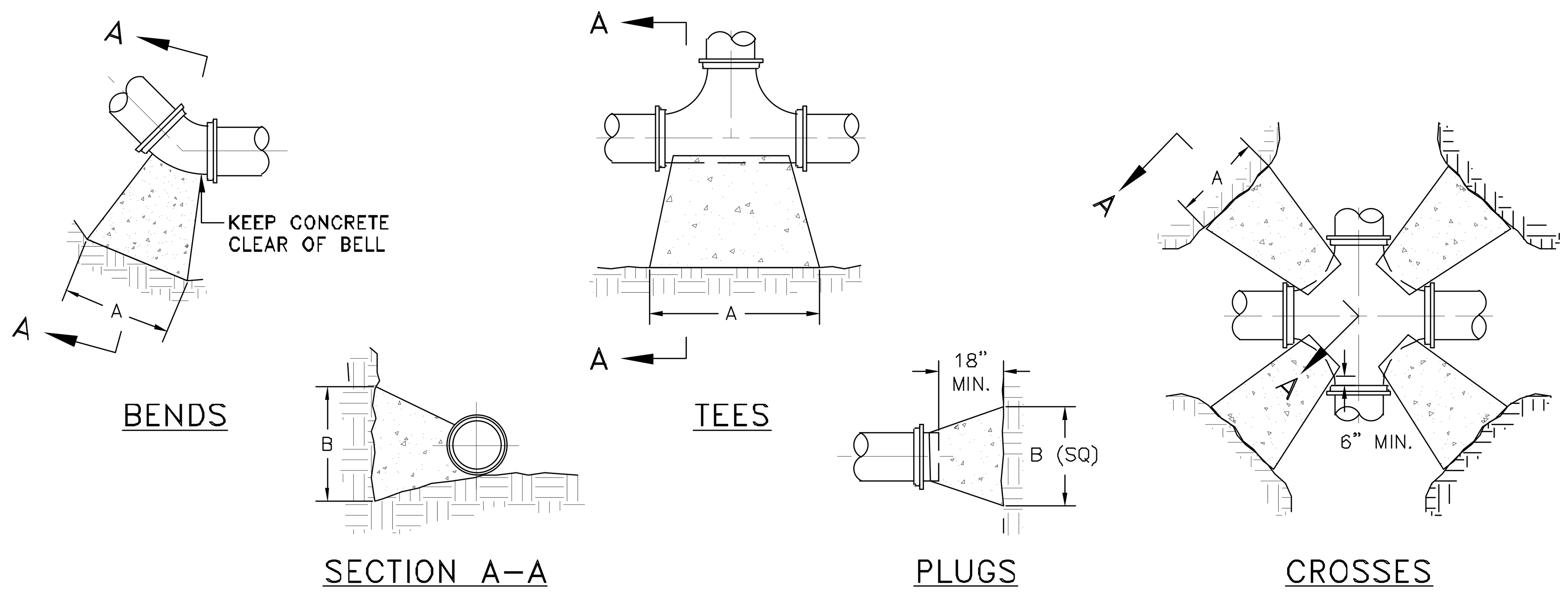
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU506

SHEET 20 OF 123

100% DESIGN



REQUIRED BEARING AREA ON UNDISTURBED SOIL AND TYPICAL DIMENSIONS															
SIZE	CROSSES/90° BENDS			45° BENDS			11-1/4° BENDS			22-1/2° BENDS			TEES & PLUGS		
	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"	AREA SQ. FT.	"A"	"B"
6"	4.0	32"	18"	2.2	18"	16"	0.6	5"	18"	1.1	9"	18"	2.8	23"	18"
8"	7.0	42"	24"	3.8	23"	24"	1.0	6"	24"	2.0	12"	24"	5.0	30"	24"
10"	11.0	53"	30"	6.3	30"	30"	1.6	8"	30"	3.1	15"	30"	8.0	38"	30"
12"	16.1	64"	36"	10.0	40"	36"	2.2	9"	36"	4.4	18"	36"	11.3	45"	36"
14"	21.6	74"	42"	12.5	43"	42"	3.0	10"	42"	6.0	21"	42"	15.5	53"	42"
16"	28.3	85"	48"	17.7	53"	48"	4.0	12"	48"	7.7	23"	48"	20.1	60"	48"

* SURFACE AREA OF BEARING SOIL IS PROVIDED FOR 200 PSI MAXIMUM PRESSURE (INCLUDING SURGE) AND 2000 PSF SOIL BEARING. IF PRESSURE IS HIGHER OR SOIL BEARING IS POTENTIALLY LOWER, CONSULT THE ENGINEER FOR ADJUSTMENTS.

NOTES:

1. COVER OVER TOP OF PIPE SHALL BE BELOW THE FROST LINE OR 30" MINIMUM, 72" MAXIMUM ACCORDING TO REGULATORY REQUIREMENTS. IF GRADING PLANS RECEIVED BY THE ENGINEER/OWNER WITH THE REQUEST FOR WATER MAIN LAYOUT INDICATE ADJUSTMENTS TO EXISTING GRADE, THEN PIPE SHALL BE INSTALLED TO MEET MINIMUM AND MAXIMUM COVER FROM PROPOSED GRADES SHOWN ON THE SAID PLANS.
2. THRUST BLOCKS SHALL BE BUILT AGAINST UNDISTURBED SOIL WITH ADEQUATE BACKING TO PREVENT MOVEMENT OF FITTING.
3. NO THRUST BLOCKS TO BE PLACED IN SEWER LATERAL DITCHES.
4. THRUST BLOCKING MUST FIT WITHIN THE EASEMENT.
5. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED BASED ON 150 PSI STATIC PRESSURE, PLUS 50 PSI WATER HAMMER AND 2000 PSF SOIL BEARING.
6. POLYETHYLENE ENCASEMENT IS REQUIRED ON ALL D.I. PIPE AND FITTINGS.
7. THRUST BLOCKING SHALL BE PERFORMED SUCH THAT PIPE JOINTS AND BOLTS ARE ACCESSIBLE.
8. SUFFICIENT CLEARANCE SHALL BE ALLOWED BETWEEN CONCRETE AND BOLTS FOR FUTURE MAINTENANCE.
9. ALL ANCHOR BOLTS SHALL BE STAINLESS STEEL, MINIMUM 3/4" DIAMETER.
10. ALL M.J. AND FLG. FITTINGS TO RECEIVE THRUST BLOCKS SHALL BE WRAPPED IN POLYWRAP. CONTRACTOR SHALL ENSURE THAT POLYWRAP EXTENDS FAR ENOUGH BEYOND THE FITTING TO ENCLOSE ALL BOLTS WITHIN THE POLYWRAP.
11. THRUST BLOCKING DETAILS ARE SHOWN HERE FOR TYPICAL INSTALLATIONS. IN SOME CASES, ADDITIONAL RESTRAINT MAY BE REQUIRED.
12. PORTLAND CEMENT CONCRETE USED FOR THRUST BLOCKS SHALL BE MIN 3000 PSI CONCRETE.
13. FOR UNSTABLE SOIL CONDITIONS, CHECK WITH ENGINEER FOR THRUST BLOCK DIMENSIONS.
14. FOR MAIN SIZES GREATER THAN 16", SEE ENGINEER FOR THRUST BLOCK DIMENSIONS.

THRUST BLOCK DETAIL

REVISIONS
1/16 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
THRUST BLOCK
DETAILS

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

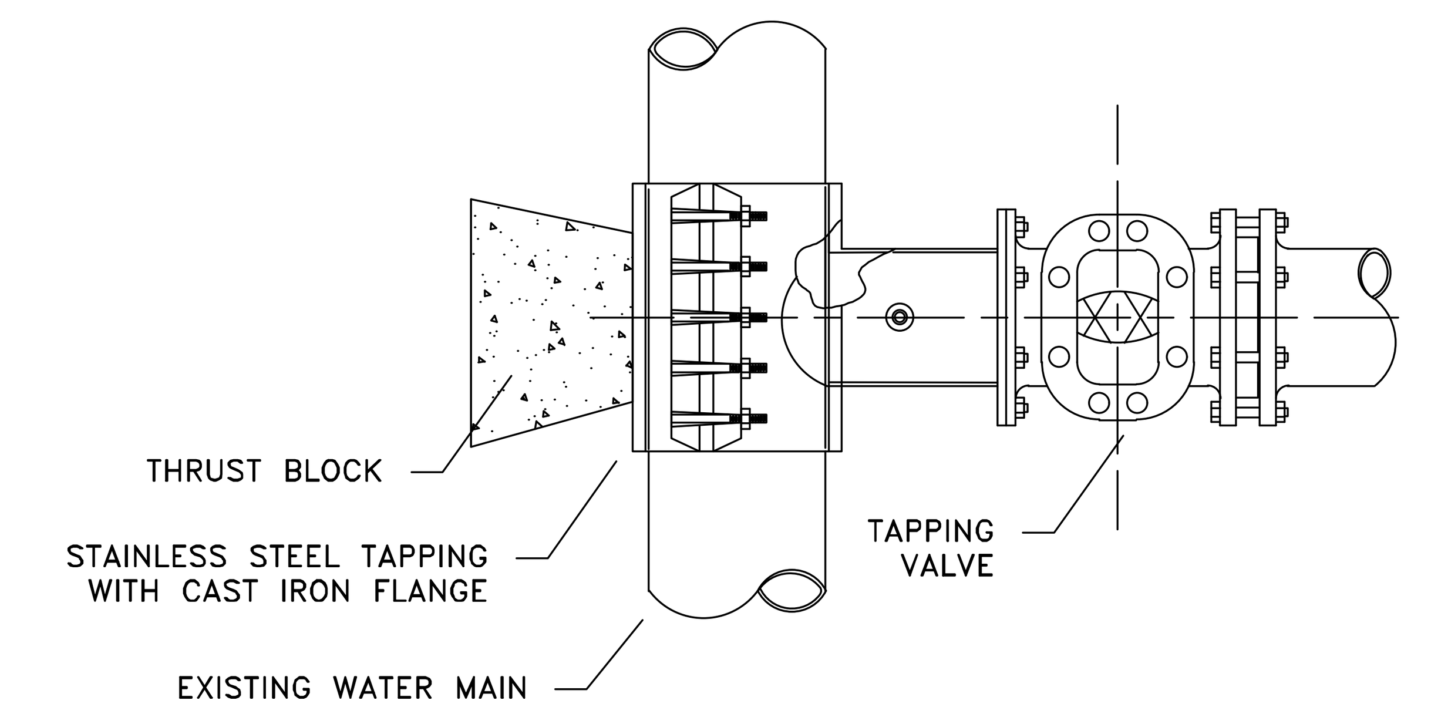
AMERICAN WATER

DRAWN BY Z. ALAM
PROJECT ENG'R J. DERUSSO DATE 05-03-2010 USE DIMENSIONS ONLY
APPROVED PROJECT N/A SCALE N.T.S.

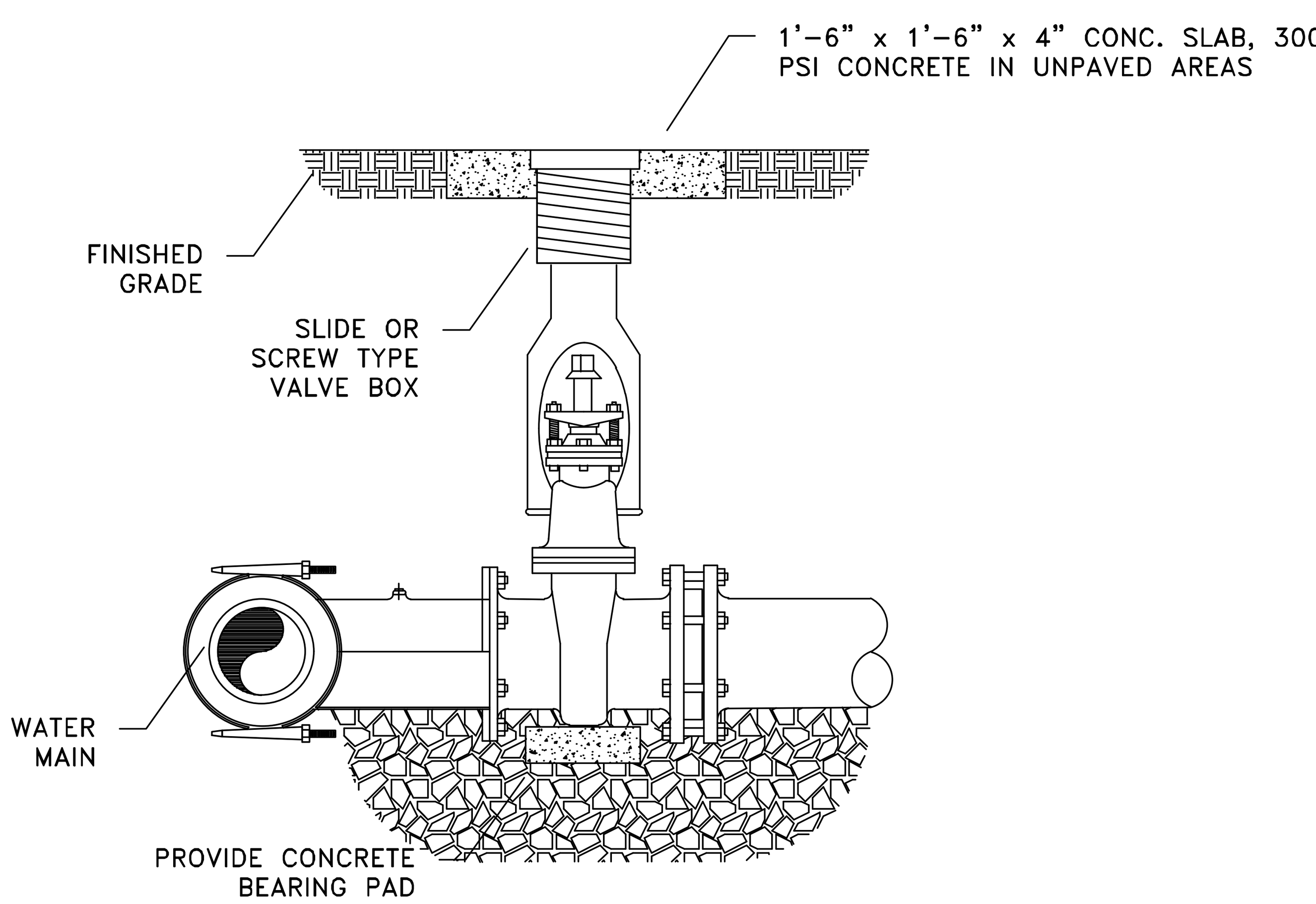
USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES | MSG-W-08

FINAL MSG-W-08

1 THRUST BLOCK
NO SCALE



PLAN



PROFILE

TAPPING SLEEVE AND VALVE DETAIL

NOTE:

1. AMERICAN WATER PERMITS SIZE ON SIZE TAPPING OF WATER MAIN CONNECTIONS FOR UP TO 12" DIAMETER MAINS.
2. SIZE ON SIZE TAPS ARE NOT PERMITTED ON MAINS LARGER THAN 12" IN DIAMETER. CUT-IN TEES SHALL BE REQUIRED.

REVISIONS
1/12 – MSG EDITS
6/13 – MSG EDITS
1/17 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
TAPPING SLEEVE & VALVE
DETAIL

AMERICAN WATER MILITARY SERVICES GROUP
CAMDEN, NJ 08102

AMERICAN WATER M.S.G.
1 WATER STREET
CAMDEN, NJ 08102

AMERICAN WATER

DRAWN BY J. ABRERA
PROJECT ENG'R PDK DATE 05-03-2010 USE DIMENSIONS ONLY
APPROVED PROJECT N/A SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES | MSG-W-06

FINAL MSG-W-06

2 TAPPLING SLEEVE & VALVE DETAIL
NO SCALE

DESCRIPTION DATE APPR MARK

STEVEN L. JACKSON No. 177830 5/10/2022 LICENSED PROFESSIONAL ENGINEER STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO.: 1043925
SITE CODE: -
OTHER PROJECT NO.: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

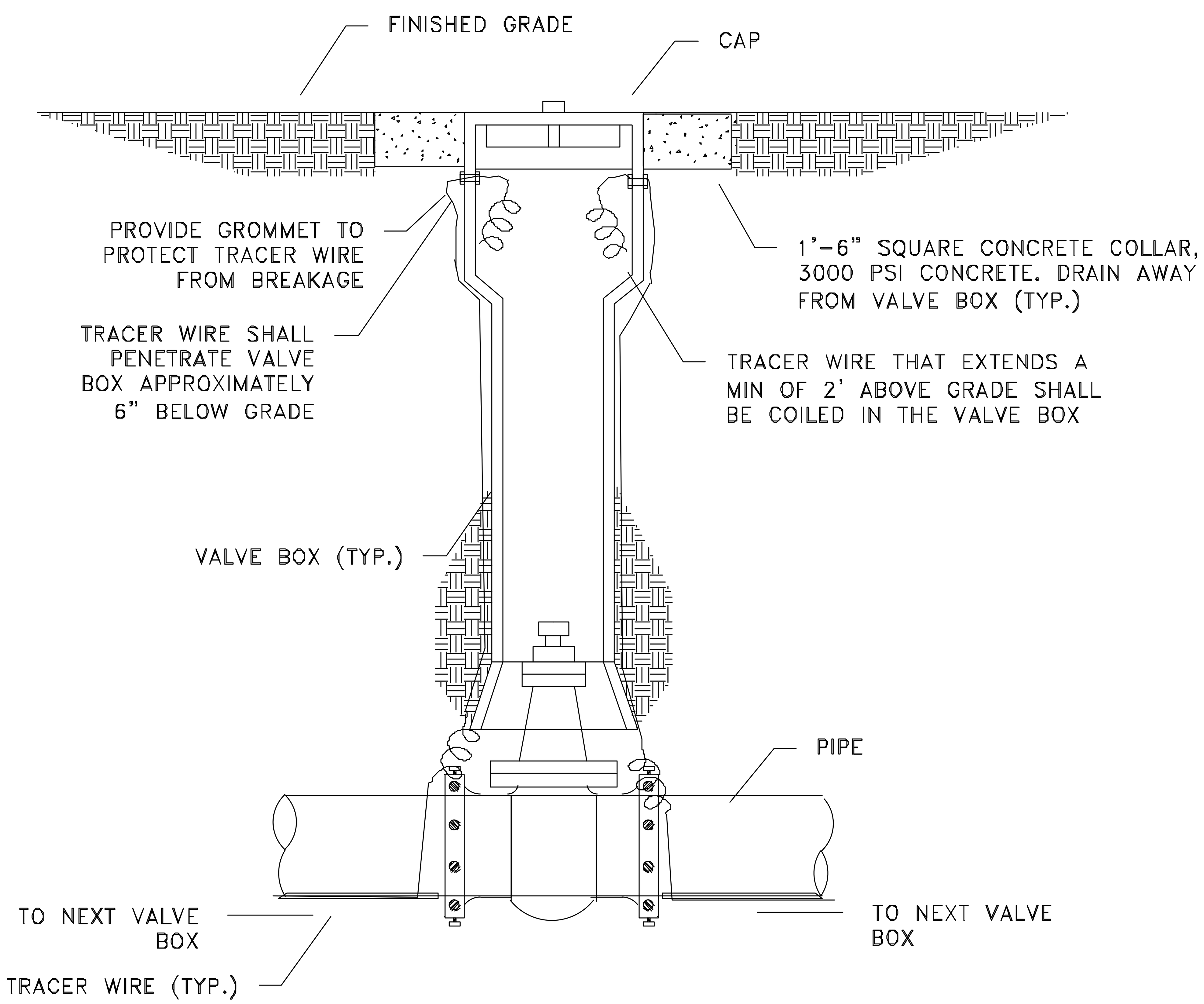
HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

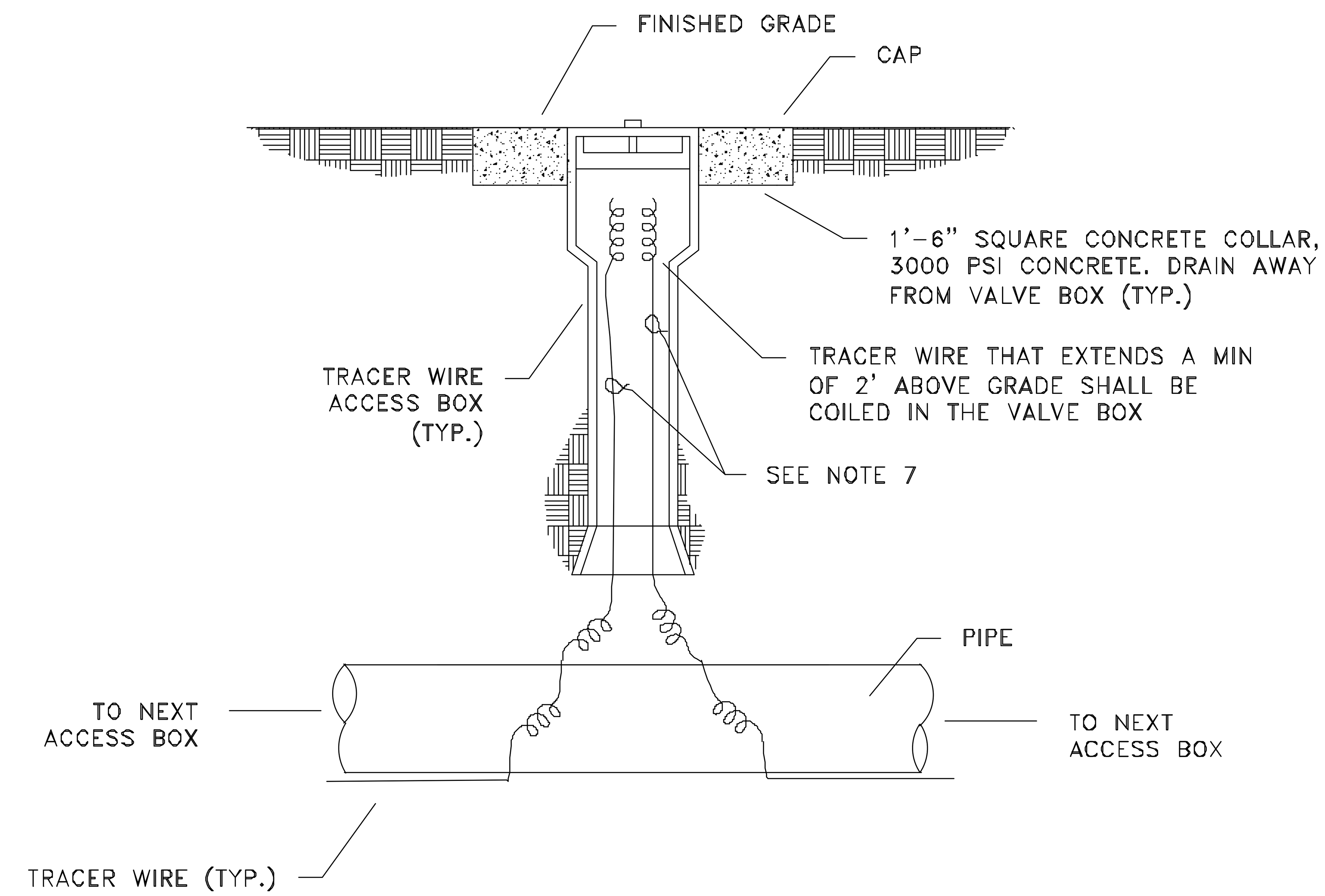
CU507

SHEET 21 OF 123

100% DESIGN



TYPICAL TRACER WIRE VALVE BOX INSTALLATION



NOTE: FOR USE WITH THE SANITARY SEWER SYSTEM AND OTHER APPLICATIONS WHERE VALVE BOXES ARE NOT TYPICALLY PRESENT.

TYPICAL TRACER WIRE ACCESS BOX INSTALLATION
NON VALVE LOCATIONS

TRACER WIRE INSTALLATION

NOTES:

1. TRACER WIRE SHALL BE TIED INTO EVERY VALVE, BLOW-OFF, ARV, AND OTHER DEVICES OR CHANGES IN DIRECTION. PROVIDE ONE TRACER WIRE TEST STATION AT MINIMUM INTERVALS AS PRESCRIBED IN AMERICAN WATER'S DESIGN GUIDE.
2. TRACER LEADS SHALL BE INSTALLED IN APPROVED CURB BOXES OR TRACER WIRE ACCESS BOXES. ACCESS BOX STYLE (LIGHT DUTY, DRIVEWAY, OR ROADWAY) SHALL BE DETERMINED BY BOX LOCATION.
3. CURB BOXES SHALL BE INSTALLED FLUSH WITH GROUND AND LOCATED OVER PIPE LINE TO WHICH TRACER LEAD IS ATTACHED.
4. TRACER LEADS SHALL HAVE ADEQUATE SLACK THROUGHOUT THE INSTALLATION TO REDUCE BREAKAGE FROM PULLING.
5. TRACER WIRE THAT EXTENDS A MIN OF 2' ABOVE GRADE SHALL BE COILED IN THE VALVE BOX AND WIRES SHALL BE PROPERLY CONNECT TO THE VALVE BOX PER MANUFACTURERS SPECIFICATIONS, ALL TRACER WIRES SHALL BE OF #12 TW SOLID COPPER WIRE.
6. EARTH AROUND VALVE BOXES SHALL BE THOROUGHLY COMPACTED AT THE TIME OF INSTALLATION, SUBCONTRACTOR SHALL MAKE ADJUSTMENTS FOR FINAL GRADING, SODDING, PAVING, AND RESTORATION AT THE COMPLETION OF EACH PROJECT. SUBCONTRACTOR SHALL PROTECT THE LEADS, BOXES, AND ALL TRACER WIRES THROUGHOUT THE PROJECT. SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL WATER AND WASTEWATER UTILITY LOCATIONS THROUGHOUT THE PROJECT AND UNTIL APPROVED AND ACCEPTED BY AMERICAN WATER.
7. PROVIDE ONE TRACER LEAD IN EACH DIRECTION UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL CONFIRM THE REQUIREMENT FOR CONCRETE COLLARS WITH AW PRIOR TO CONSTRUCTION.

REVISIONS
1/12 – MSG EDITS
6/13 – MSG EDITS
7/14 – MSG EDITS
1/16 – MSG EDITS

AMERICAN WATER MILITARY SERVICES GROUP
CIVIL
TRACER WIRE INSTALLATION DETAIL

AMERICAN WATER MILITARY SERVICES GROUP
MT LAUREL, NJ 08054

AMERICAN WATER M.S.G.
330 FELLOWSHIP ROAD
MT LAUREL, NJ 08054

AMERICAN WATER®

DRAWN BY J. ABRERA
PROJECT ENG'R J. DERUSSO
APPROVED

DATE 05-03-2010
PROJECT N/A

USE DIMENSIONS ONLY
SCALE N.T.S.

USE APPROVED DRAWINGS ONLY FOR CONSTRUCTION PURPOSES

MSG-W-05

FINAL

MSG-W-05

1 TRACER WIRE INSTALLATION
NO SCALE

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APPR	
MARK	

LICENSED PROFESSIONAL ENGINEER
No. 177530
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

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CU508
SHEET 22 OF 123

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PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

ADS Advanced Drainage Systems, Inc.

ADS SiteAssist™
FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

HAFB 309 SWEG

HILL AFB, UT

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 OR #4.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER No. 177530 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

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75TH CIVIL ENGINEER GROUP

HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU509

SHEET 23 OF 123

100% DESIGN

PROPOSED LAYOUT

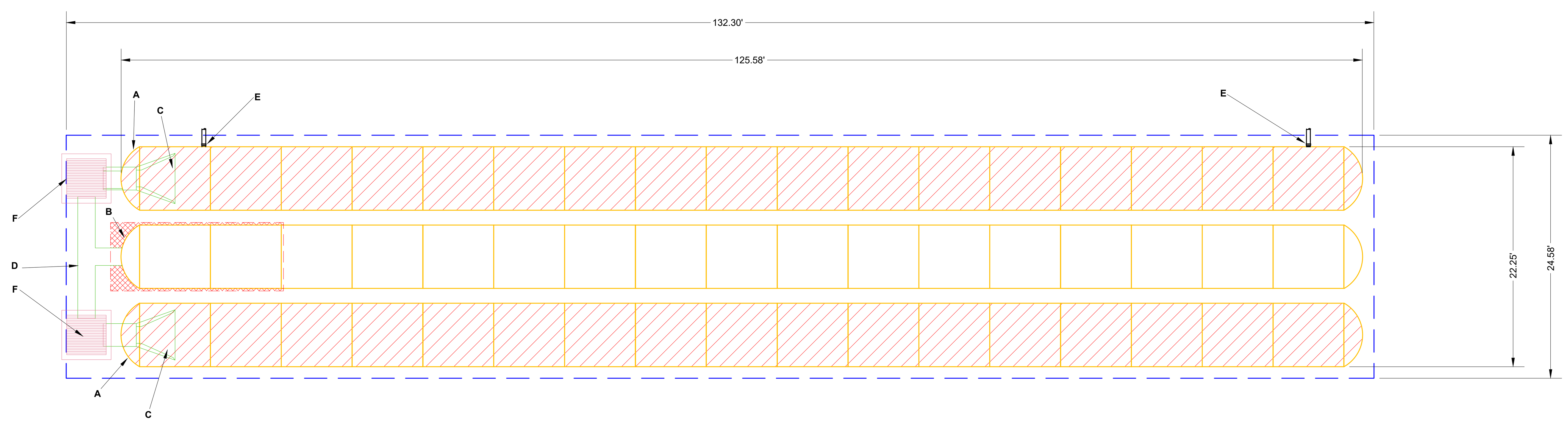
51	STORMTECH MC-3500 CHAMBERS
6	STORMTECH MC-3500 END CAPS
12	STONE ABOVE (in)
24	STONE BELOW (in)
40	STONE VOID
12200	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)
3252	SYSTEM AREA (SF)
313.8	SYSTEM PERIMETER (ft)

PROPOSED ELEVATIONS

MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	4673.17
MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	4667.17
MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	4666.67
MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	4666.67
MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	4666.67
TOP OF STONE:	4666.00
TOP OF MC-3500 CHAMBER:	4665.00
4" INSERTA TEE INVERT:	4661.75
24" ISOLATOR ROW PLUS INVERT:	4661.42
24" ISOLATOR ROW PLUS INVERT:	4661.42
24" ISOLATOR ROW PLUS INVERT:	4661.42
18" x 18" BOTTOM MANIFOLD INVERT:	4661.40
BOTTOM OF MC-3500 CHAMBER:	4661.25
BOTTOM OF STONE:	4659.25

*INVERT ABOVE BASE OF CHAMBER

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	18" BOTTOM CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
FLAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MC350024RAMP (TYP 3 PLACES)		
MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
INSERTA TEE	E	6" DIAMETER INSERTA TEE	6.00"	
CONCRETE STRUCTURE	F	48"x48" PRECAST CONCRETE STORM DRAIN BOX WITH GRATED INLET		



ISOLATOR ROW PLUS (SEE DETAIL/TYP 2 PLACES)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

BED LIMITS

NOTES

- MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE.
- DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.
- THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET.
- THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR DETERMINING THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS PROVIDED.
- **NOT FOR CONSTRUCTION:** THIS LAYOUT IS FOR DIMENSIONAL PURPOSES ONLY TO PROVE CONCEPT & THE REQUIRED STORAGE VOLUME CAN BE ACHIEVED ON SITE.

HILL AIR FORCE BASE
HILL AFB, UT
DATE:
DRAWN: WA
PROJECT #:
CHECKED: N/A

DATE | DRW | CHK | DESCRIPTION

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

0 15' 30'

SHEET 2 OF 6

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75TH CIVIL ENGINEER GROUP

HAFB 309th SOFTWARE ENGINEERING FACILITY
CIVIL DETAILS

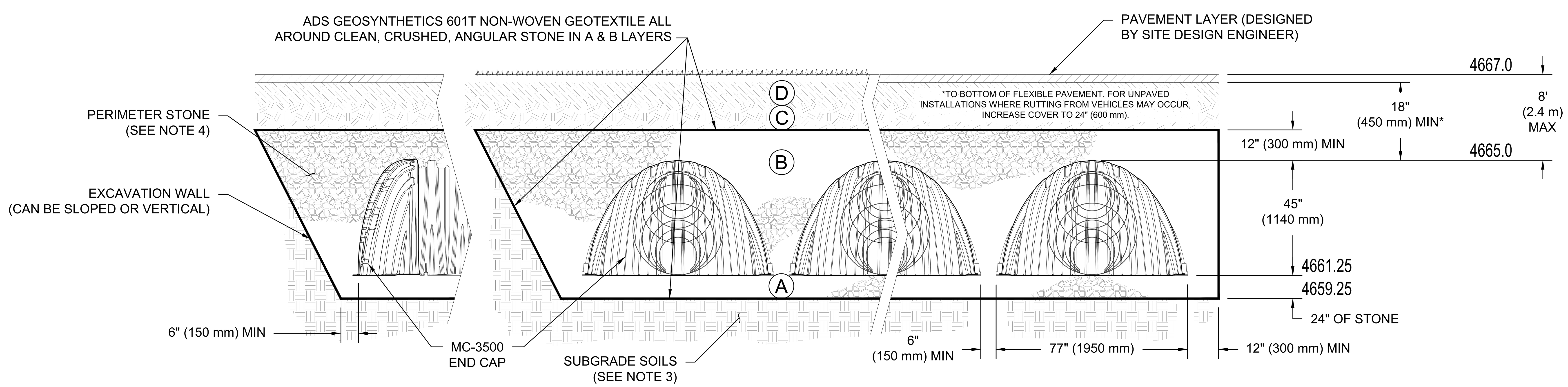
CU510

100% DESIGN

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

MATERIAL LOCATION		DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145[1] A-1, A-2-4, A-3 OR AASHTO M43[1] 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	NO COMPACTION REQUIRED.
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43[1] 3, 4	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.



NOTES:

1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
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3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

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StormTech®
Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

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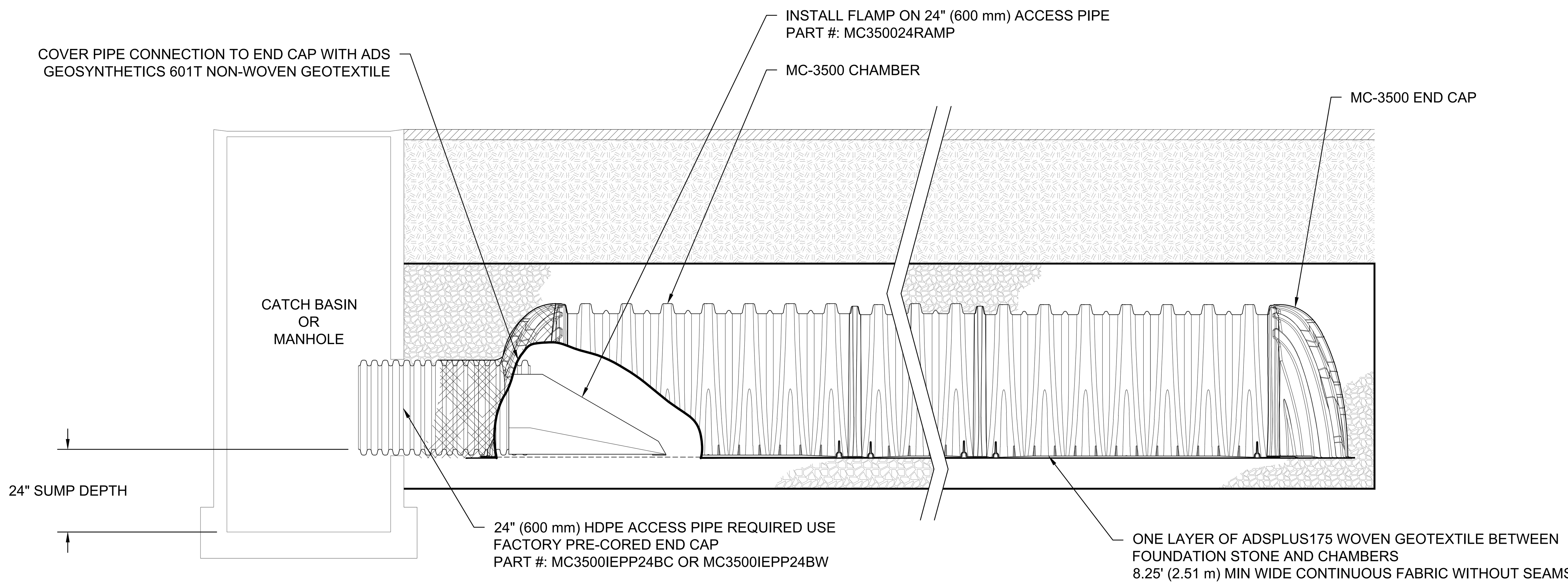

MC-3500 ISOLATOR ROW PLUS DETAIL

NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

HILL AIR FORCE BASE
HILL AFB, UT

DATE: | DRAWN: WA
PROJECT #: | CHECKED: N/A

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DATE	DRW	CHK	DESCRIPTION

StormTech® Chamber System
888-892-2694 | WWW.STORMTECH.COM

ADS
4640 TRUEMAN BLVD
HILLIARD, OH 43026
1-800-733-7473

SHEET 4 OF 6

DESCRIPTION	DATE	APPR	MARK

STEVEN L. JACKSON, No. 177830, 5/10/2022, LICENSED PROFESSIONAL ENGINEER, STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO: 1043925
SITE CODE: --
OTHER PROJECT NO: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
BASE PROJECT MANAGER: SCOTT ARNOLD

DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

HAFB 309th SOFTWARE ENGINEERING FACILITY

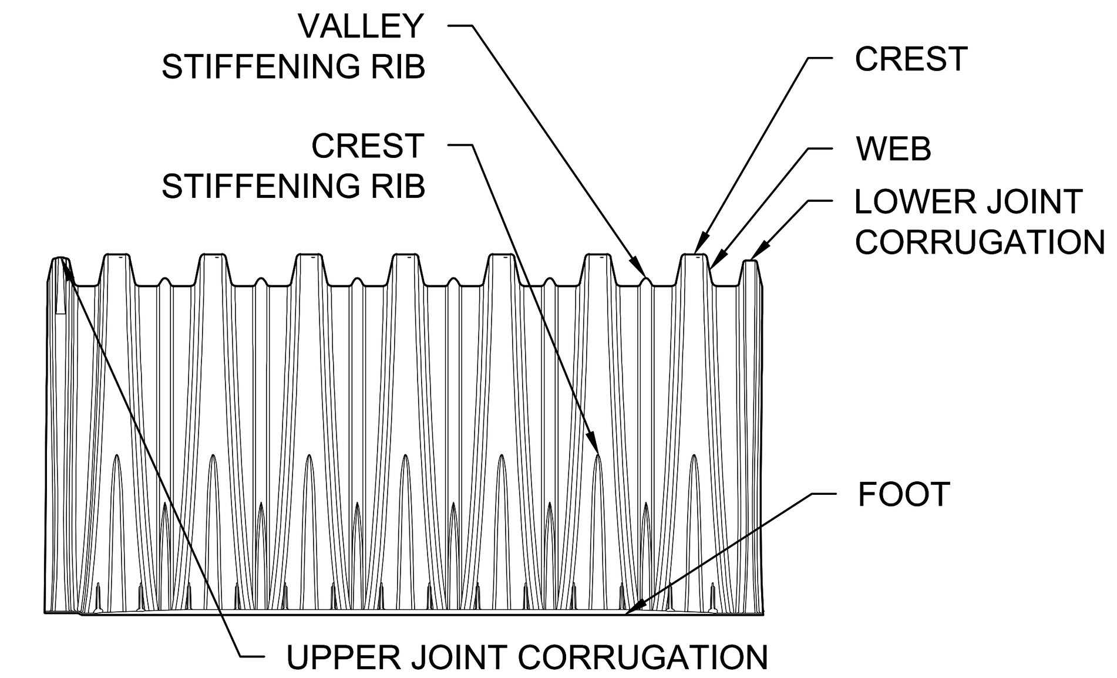
CIVIL DETAILS

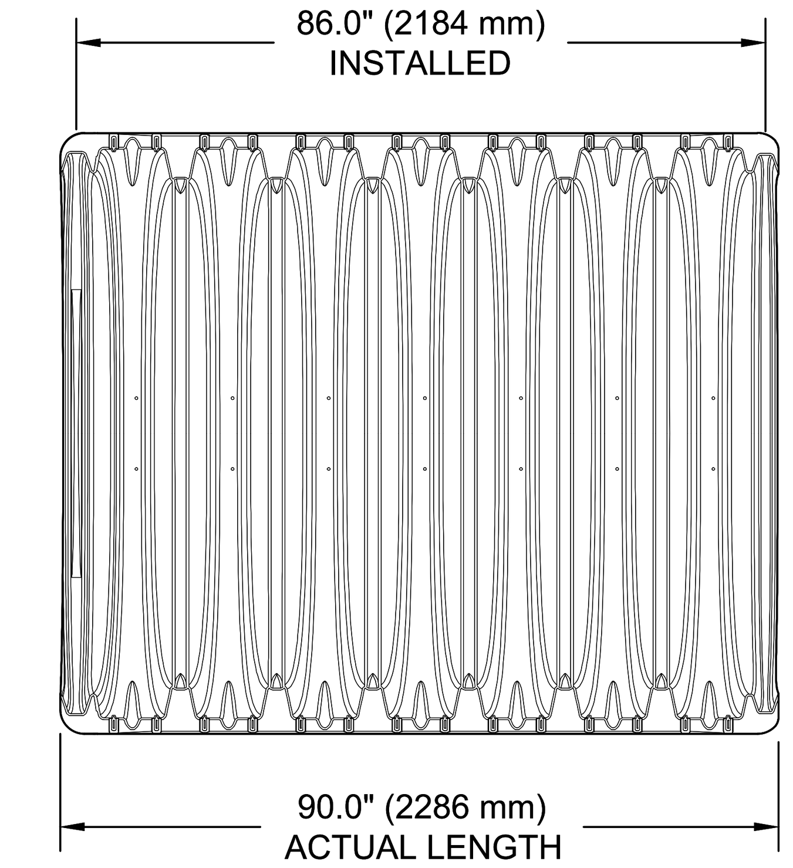
CU512

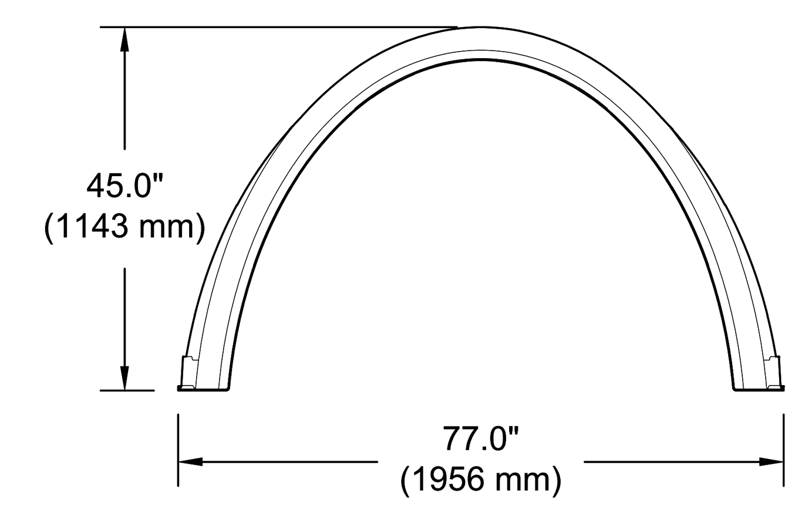
SHEET 26 OF 123

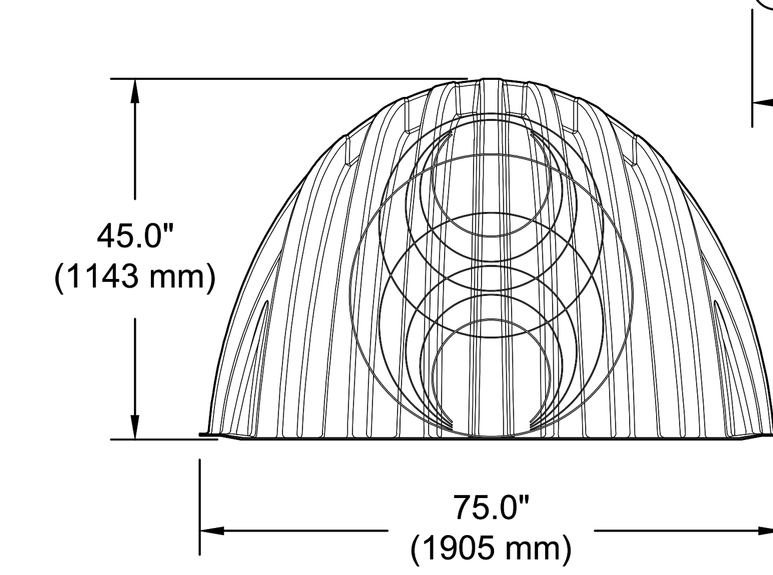
100% DESIGN

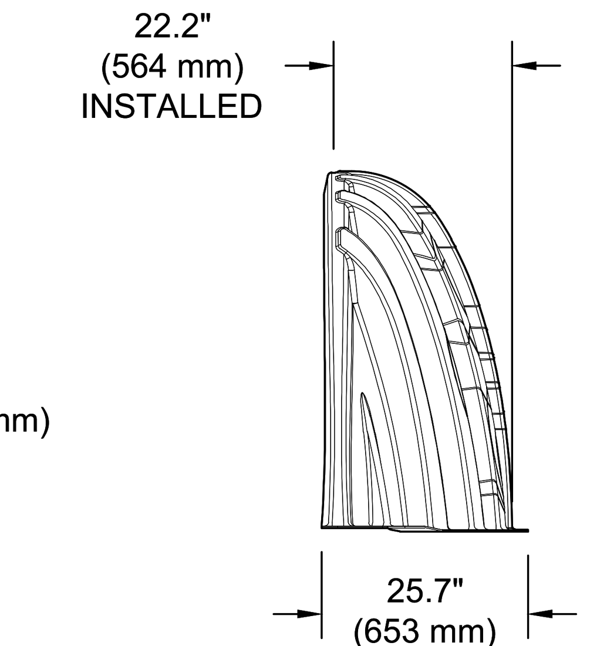
MC-3500 TECHNICAL SPECIFICATION
NTS











NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

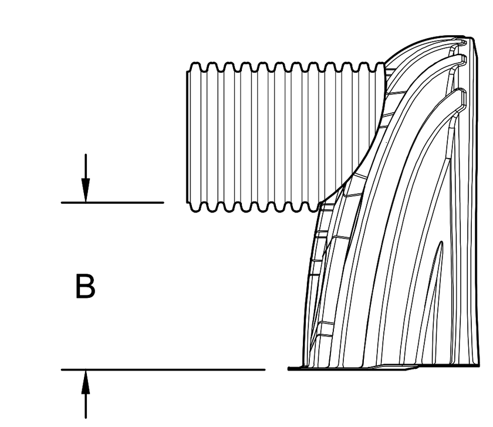
SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.9 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

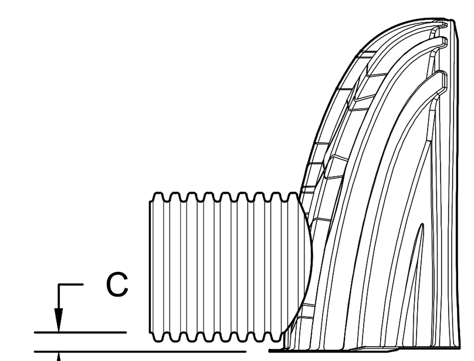
*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.21" (844 mm)	---
MC3500IEPP06B		---	0.66" (17 mm)
MC3500IEPP08T	8" (200 mm)	31.16" (791 mm)	---
MC3500IEPP08B		---	0.81" (21 mm)
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	---
MC3500IEPP10B		---	0.93" (24 mm)
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	---
MC3500IEPP12B		---	1.35" (34 mm)
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	---
MC3500IEPP15B		---	1.50" (38 mm)
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	---
MC3500IEPP18TW			
MC3500IEPP18BC		---	1.77" (45 mm)
MC3500IEPP18BW			
MC3500IEPP24TC	24" (600 mm)	14.48" (368 mm)	---
MC3500IEPP24TW			
MC3500IEPP24BC		---	2.06" (52 mm)
MC3500IEPP24BW			
MC3500IEPP30BC	30" (750 mm)	---	2.75" (70 mm)

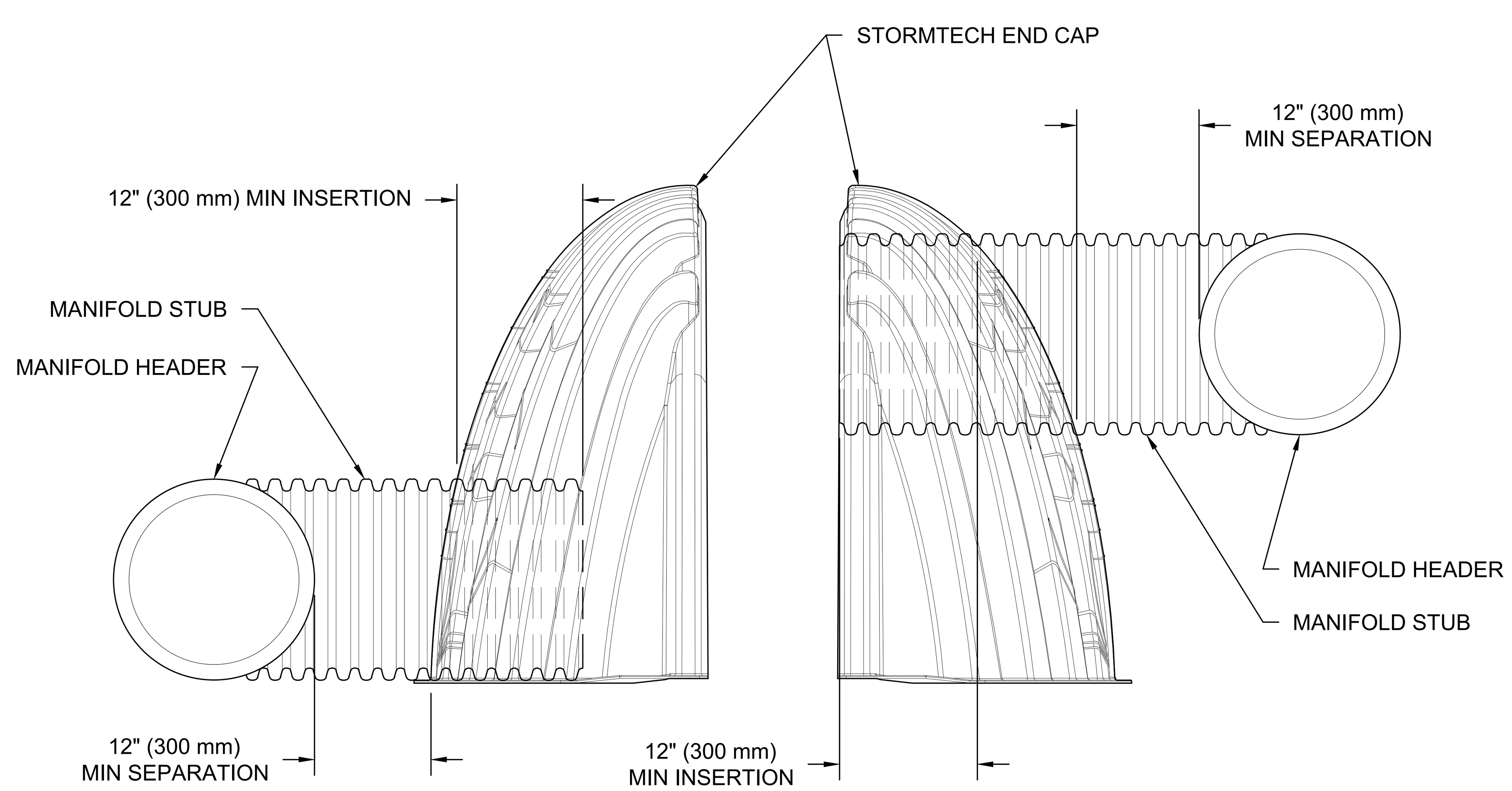
NOTE: ALL DIMENSIONS ARE NOMINAL





CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 15-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ON THE MC-3500 END CAP CUT IN THE FIELD ARE NOT RECOMMENDED FOR PIPE SIZES GREATER THAN 10" (250 mm). THE INVERT LOCATION IN COLUMN 'B' ARE THE HIGHEST POSSIBLE FOR THE PIPE SIZE.

MC-SERIES END CAP INSERTION DETAIL
NTS



NOTE: MANIFOLD STUB MUST BE LAID HORIZONTAL FOR A PROPER FIT IN END CAP OPENING.

HILL AIR FORCE BASE
HILL AFB, UT
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ADS
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HILLIARD, OH 43026
1-800-733-7473

SHEET
5 OF 6

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER
No. 177830
STEVEN L. JACKSON
5/10/2022
STATE OF UTAH

DESIGNED BY: S. PRITCHETT
CHECKED BY: S. JACKSON
CAPITAL PROJECT NO.: 1043925
SITE CODE: --
OTHER PROJECT NO.: 7596233 KRSM200806
ISSUE DATE: 05/10/2022
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DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

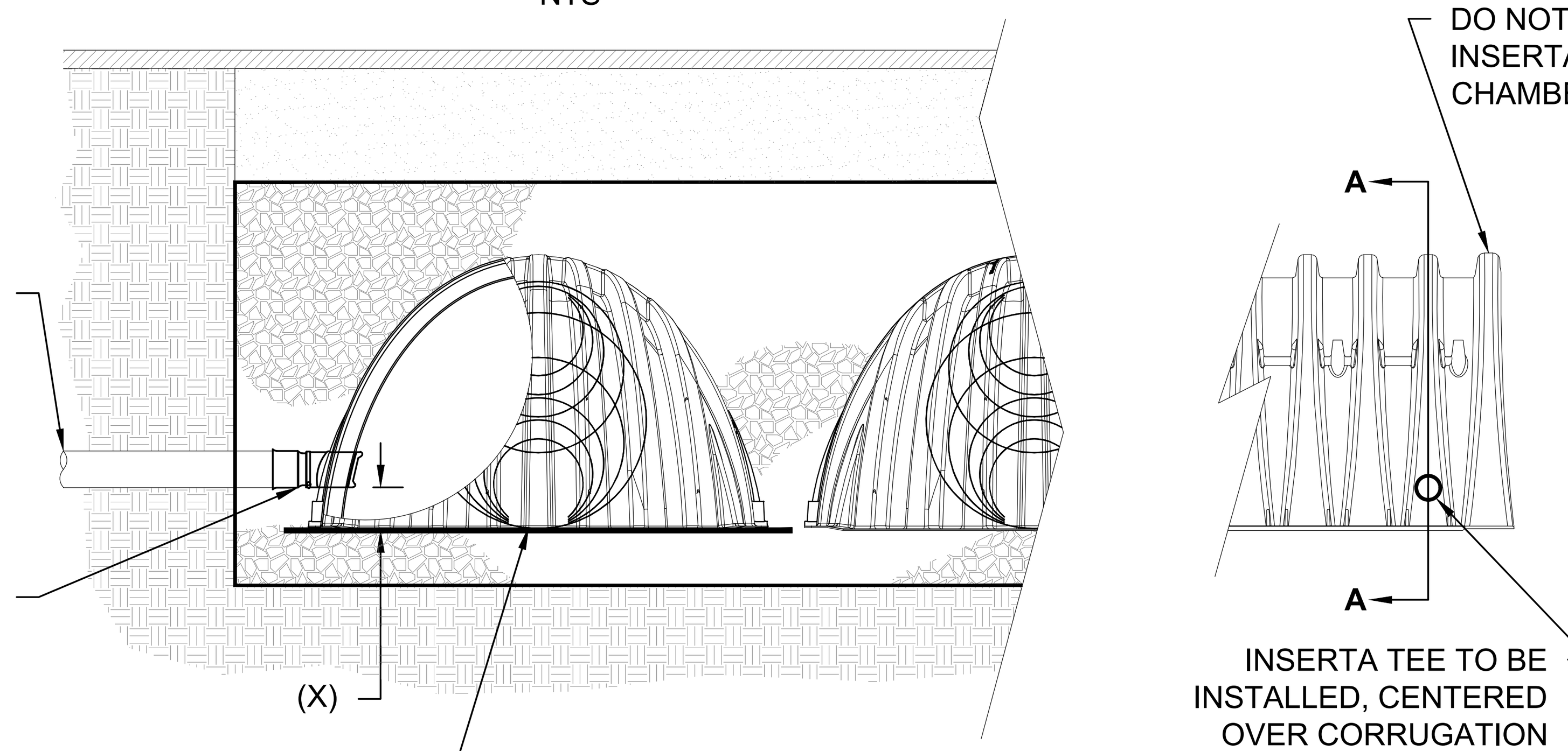
HAFB 309th SOFTWARE ENGINEERING FACILITY
CIVIL DETAILS

CU513

100% DESIGN

INSERTA TEE DETAIL

NTS



SECTION A-A

SIDE VIEW

CHAMBER	MAX DIAMETER OF INSERTA TEE	HEIGHT FROM BASE OF CHAMBER (X)
SC-310	6" (150 mm)	4" (100 mm)
SC-740	10" (250 mm)	4" (100 mm)
DC-780	10" (250 mm)	4" (100 mm)
MC-3500	12" (300 mm)	6" (150 mm)
MC-4500	12" (300 mm)	8" (200 mm)
INSERTA TEE FITTINGS AVAILABLE FOR SDR 26, SDR 35, SCH 40 IPS GASKETED & SOLVENT WELD, N-12, HP STORM, C-900 OR DUCTILE IRON		

NOTES:

- PART NUMBERS WILL VARY BASED ON INLET PIPE MATERIALS. CONTACT STORMTECH FOR MORE INFORMATION.
- CONTACT ADS ENGINEERING SERVICES IF INSERTA TEE INLET MUST BE RAISED AS NOT ALL INVERTS ARE POSSIBLE.

HILL AIR FORCE BASE
HILL AFB, UT
DATE:
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CHECKED: N/A

DATE	DRW	CHK	DESCRIPTION

Inserta Tee®
Lateral Connection

ADS
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SHEET
6 OF 6

DESCRIPTION	DATE	APPR	MARK

LICENSED PROFESSIONAL ENGINEER No. 177830 STEVEN L. JACKSON 5/10/2022 STATE OF UTAH

DESIGNED BY: S. PRITCHETT
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HAFB 309th SOFTWARE ENGINEERING FACILITY

CIVIL DETAILS

CU514

SHEET 28 OF 123

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