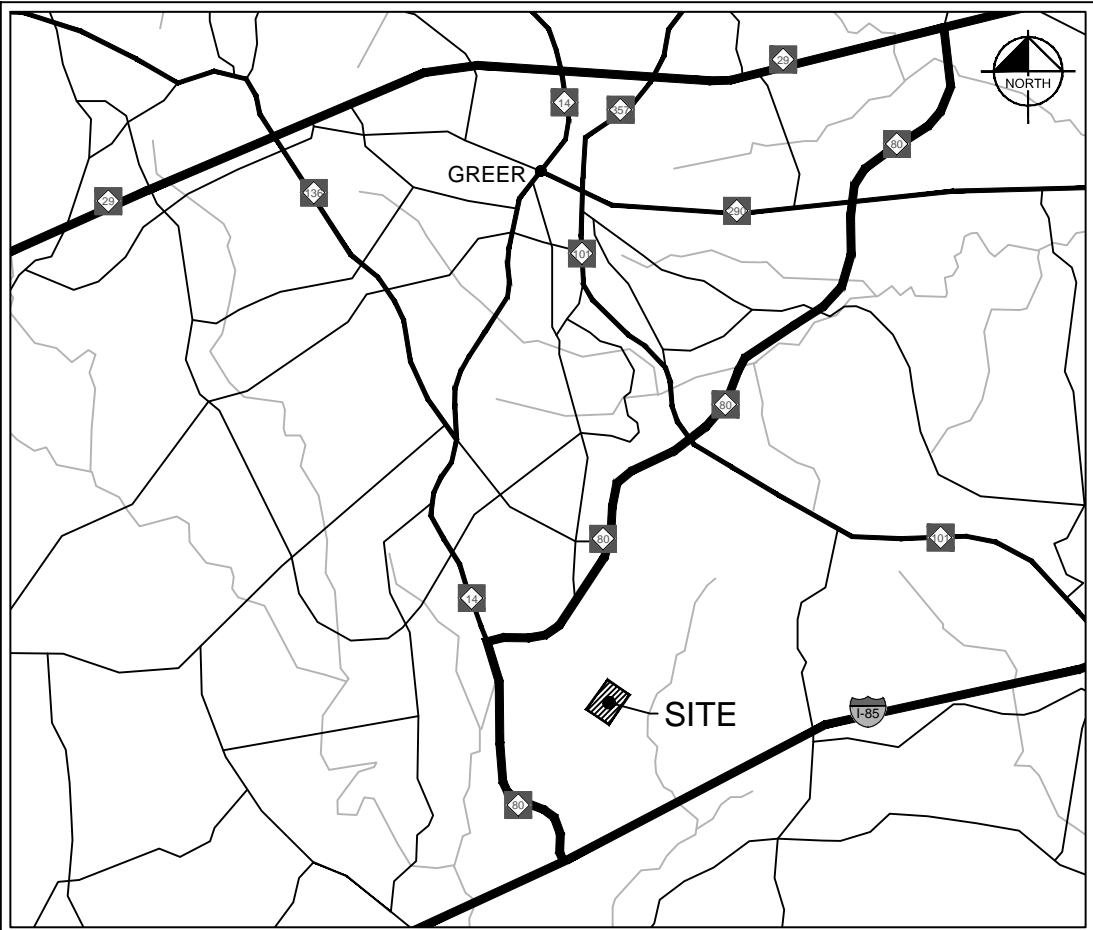


GREENVILLE-SPARTANBURG INTERNATIONAL AIRPORT

GREER, SOUTH CAROLINA

100% DESIGN PLANS FOR UTILITY UPGRADE - WATER SYSTEM NOVEMBER 25, 2024



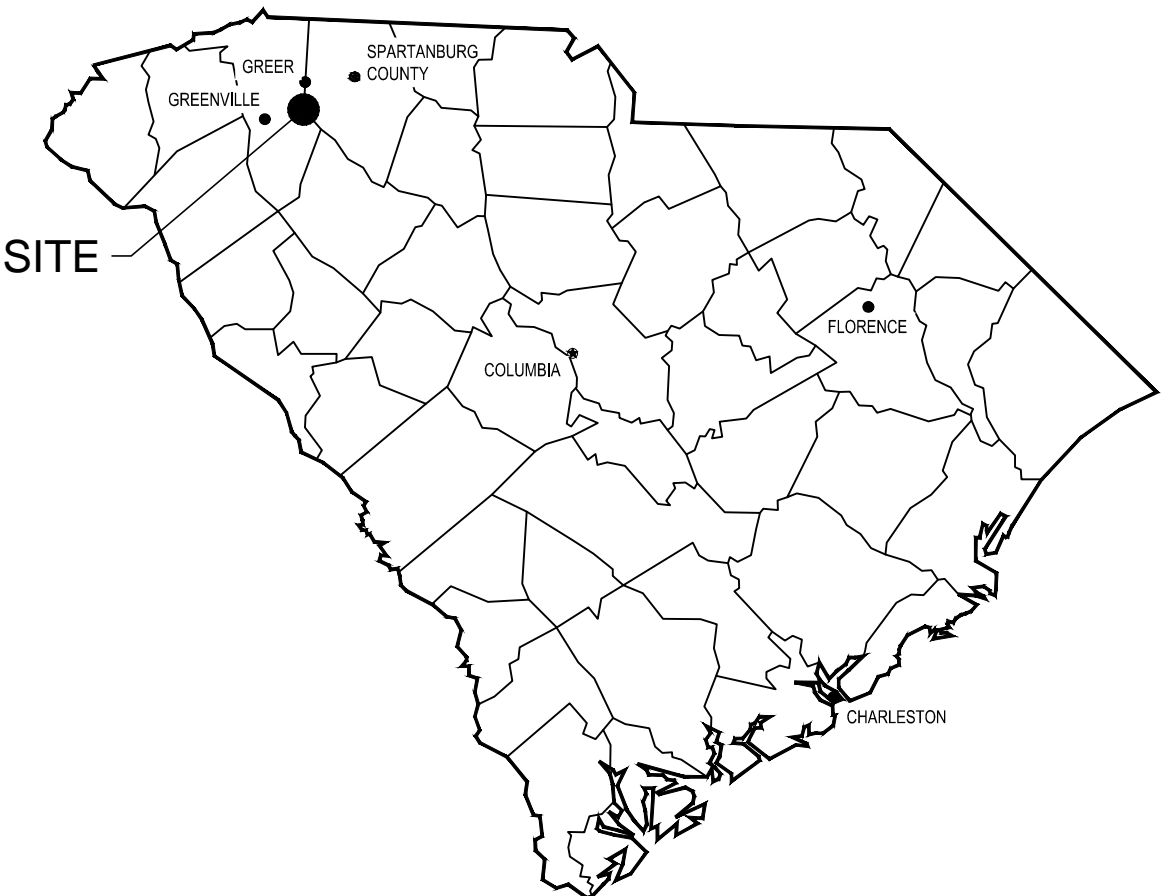
SITE LOCATION MAP

NOT TO SCALE

NOTES:

ATTENTION IS DRAWN TO THE FACT THAT THE SCALE OF THESE DRAWINGS MAY HAVE BEEN DISTORTED DURING REPRODUCTION PROCESS.

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GSP INTERNATIONAL
AIRPORT
ROGER MILLIKEN FIELD

PROJECT OWNER AND CONSULTANT INFORMATION

OWNER:

GREENVILLE SPARTANBURG
AIRPORT DISTRICT
2000 GSP DRIVE, SUITE 1
GREER, SC 29651
(864) 655-5399

CONTACT: SHAHEER HAKIM

ENGINEER:

KIMLEY-HORN AND ASSOCIATES, INC.
802 GERVAIS STREET, SUITE 201,
COLUMBIA, SC 29201
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CONTACT: JUSTIN GOBBEL, P.E.

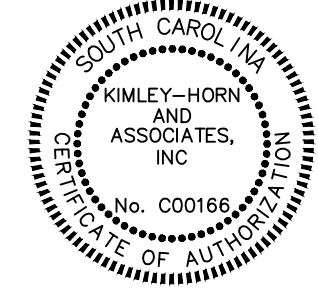
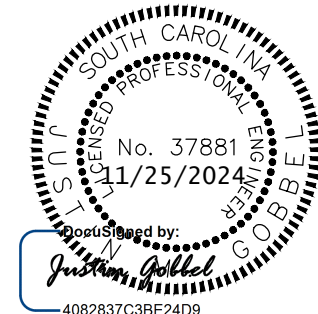
SURVEYOR:

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CONTACT: KENT HUDSON

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KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024	SCALE	AS SHOWN	SAM	JJE	JMG

SHEET TITLE

COVER SHEET

PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
G-000



SUMMARY OF QUANTITIES - BID ALTERNATE 1					
ITEM NO.	SPEC. SECTION	ITEM DESCRIPTION	UNIT	EST. QUANTITY	AS-BUILT QUANTITY
1	C-100	MOBILIZATION	LS	1	
2	C-105	RPR FIELD OFFICE	MO	3	
4	01 55 26	TRAFFIC CONTROL (ROADWAY)	LS	1	
5	M-102	MAINTENANCE OF TRAFFIC AND TEMPORARY CONSTRUCTION ITEMS (AIRFIELD)	LS	1	
6	C-102	TEMPORARY FILTER SOCK	LF	3,395	
8	C-102	TEMPORARY SEDIMENT TUBE INLET PROTECTION TYPE A	EA	15	
9	02 41 13	REMOVE AND DISPOSE WATER MAIN	LF	2,150	
10	02 41 13	GROUT ABANDONED WATER MAIN	LF	390	
11	33 11 00	FURNISH AND INSTALL 8" DIP WATER MAIN BY TRENCHING	LF	3,275	
12.1	33 11 00	8" GATE VALVE AND BOX	EA	4	
12.2	33 11 00	6" GATE VALVE AND BOX	EA	1	
13.2	33 11 00	RELOCATION OF FLUSH MOUNTED FIRE HYDRANT	EA	1	
13.3	33 11 00	RECONNECTION OF EXISTING FIRE HYDRANT TO NEW WATER MAIN	EA	1	
14	33 05 07	FURNISH AND INSTALL 8" DIP WATER MAIN BY JACK AND BORE INCLUDING CASING PIPE	LF	735	
15.5	33 11 00	8" CONNECTION TO EXISTING WATER MAIN AT SOUTH SIDE OF COMMERCIAL AIRCRAFT RAMP	LS	1	
15.6	33 11 00	8" CONNECTION TO EXISTING WATER MAIN AT NORTH SIDE OF TAXIWAY L2	LS	1	
15.7	33 11 00	8" CONNECTION TO EXISTING WATER MAIN AT NORTH SIDE OF TAXIWAY L3	LS	1	
15.8	33 11 00	8" CONNECTION TO EXISTING WATER MAIN AT GSP DRIVE AT GENERAL AVIATION HANGAR	LS	1	
15.9	33 11 00	8" CONNECTION TO EXISTING WATER LINES AT GENERAL AVIATION HANGARS	LS	1	
16.1	33 11 00	8" DIP WATER MAIN STUB	EA	1	
17	31 23 33	UNDERCUT EXCAVATION / BACKFILL WITH STABILIZATION STONE FOR UTILITY TRENCH	CY	75	
18	31 23 33	SELECT BACKFILL FOR UTILITY TRENCH	CY	175	
19	31 23 16.26	ROCK EXCAVATION FOR UTILITY TRENCH	CY	250	
21	T-904	SODDING	SY	7,850	
22.1	T-905	TOPSOIL (OBTAINED ON SITE OR REMOVED FROM STOCKPILE)	CY	875	
22.2	T-905	TOPSOIL (FURNISHED FROM OFF THE SITE)	CY	225	
23.1	P-620	REMOVAL OF EXISTING AIRFIELD MARKINGS	SF	1,275	
23.2	P-620	TAXIWAY PAINTING WITH TYPE I GLASS BEADS	SF	1,275	
23.3	P-620	TAXIWAY PAINTING WITH NO GLASS BEADS	SF	3,500	

PROJECT		SHEET TITLE		KHA PROJECT		KIMLEY-HORN & ASSOCIATES, INC.		DATE		BY	
UTILITY UPGRADE - WATER SYSTEM		SHEET INDEX AND SUMMARY OF QUANTITIES		013881015		© 2024 KIMLEY-HORN AND ASSOCIATES, INC.		11/25/2024			
PREPARED FOR		SCALE AS SHOWN		DATE		No. 37851		COLUMBIA, SC 29201			
GSP INTERNATIONAL AIRPORT		DESIGNED BY SAM		11/25/2024		No. 000166		PHONE: 803-403-8558			
100% DESIGN PLANS		DRAWN BY JJE				No. 000166		WWW.KIMLEY-HORN.COM			
SPARTANBURG COUNTY, SOUTH CAROLINA		CHECKED BY JMG				No. 000166					
SHEET NUMBER		G-001									

- ALL WORK AND MATERIALS SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, LOCAL, AND AIRPORT REGULATIONS AND CDES AND O.S.H.A. STANDARDS.
- THIS PROJECT IS WITHIN AN AREA OF CONTINUOUS LARGE JET AIRCRAFT OPERATIONS. ALL CONSTRUCTION ACTIVITIES SHALL BE CONDUCTED IN A MANNER ACCEPTABLE TO GSP AND THE FEDERAL AVIATION ADMINISTRATION (FAA) TO PROVIDE ACCEPTABLE LEVELS OF SAFETY FOR ALL AIRPORT OPERATIONS. PERIODIC MEETINGS WILL BE HELD TO COORDINATE THE ACTIVITIES OF THIS CONTRACT WITH OTHER AIRPORT OPERATIONS. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT ITS EMPLOYEES, EQUIPMENT, AND WORK IN PROGRESS FROM AIRCRAFT NOISE AND JET ENGINE BLAST. REFER TO PROJECT SAFETY AND SECURITY NOTES ON SHEET G-003 FOR ADDITIONAL INFORMATION.
- ALL NECESSARY LICENSES AND PERMITS SHALL BE OBTAINED BY THE CONTRACTOR AT ITS EXPENSE, UNLESS PREVIOUSLY OBTAINED BY THE OWNER AND PROVIDED AT THE PRECONSTRUCTION CONFERENCE.
- DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR WRITTEN CONSENT OF THE OWNER, OWNER'S REPRESENTATIVE, OR ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
- THE OWNER RESERVES THE RIGHT TO REJECT MATERIAL OR WORK WHICH DOES NOT CONFORM TO THE CONTRACT DOCUMENTS. REJECTED WORK SHALL BE REMOVED OR CORRECTED AT THE EARLIEST TIME POSSIBLE AT THE CONTRACTOR'S EXPENSE.
- COORDINATES SHOWN ON THESE PLANS ARE BASED ON THE SOUTH CAROLINA STATE PLANE COORDINATE SYSTEM (NAD 83).
- THE CONTRACTOR SHALL PROVIDE ALL STAKEOUT SURVEY. ANY EXISTING STAKEOUT SHALL NOT BE USED BY THE CONTRACTOR.
- SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION SHOWN ON THE CONTRACT DRAWINGS WERE TAKEN FROM SURVEYS PERFORMED BY CES GROUP ENGINEERS, LLP, RECORD DRAWINGS, AND GIS. ALL INFORMATION IS TO BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. SURVEY CONTROL POINTS ARE SHOWN ON PROJECT LAYOUT PLAN ON SHEET G-100.
- HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING SHOWN UTILITIES ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE SIZE, DEPTH, MATERIAL AND LOCATION OF ALL EXISTING UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS PRIOR TO CONSTRUCTION AND TO TAKE STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THE PLANS; HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER AND OWNER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. PRIOR TO DIGGING ON AND OFF SITE AND THROUGHOUT CONSTRUCTION, THE CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED BY "SC 811". THE CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES WHOSE UTILITIES ARE NOT LOCATED BY "SC 811" FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND/OR REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR TO EXISTING CONDITIONS AT THE CONTRACTOR'S EXPENSE.
- BURIED TELEPHONE AND CATV CABLES (FIBER OPTICS AND CONVENTIONAL) ARE KNOWN TO VARY DUE TO INSTALLATION METHODS. CONTRACTOR SHALL COORDINATE WORK WITH CONFLICTING TELEPHONE AND CATV CABLES AS NECESSARY FOR REMOVAL AND INSTALLATION OF WATER LINES. UTILITY COORDINATION SHALL BE INCLUDED IN THE CONTRACTOR'S PROJECT SCHEDULE AND IT IS THE EXPLICIT RESPONSIBILITY OF THE CONTRACTOR TO ASSUME THAT THE PROJECT SCHEDULE INCLUDES THE NECESSARY RELOCATION. THE CONTRACTOR SHALL NOT BE PAID ADDITIONALLY FOR THIS COORDINATION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY SHOULD ANY FIELD CONDITIONS BE ENCOUNTERED THAT VARY FROM THE INFORMATION PROVIDED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH UTILITY PROVIDERS AS REQUIRED FOR TRENCH EXCAVATION. ALL COST OF SUCH WORK SHALL BE PAID BY THE CONTRACTOR.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS TO REMAIN. THE CONTRACTOR SHALL REPAIR ALL EXISTING FEATURES THAT ARE DAMAGED DURING CONSTRUCTION TO THE EXISTING OR BETTER CONDITION AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT IRRIGATION SYSTEM TO REMAIN. THE CONTRACTOR SHALL REPAIR ALL IRRIGATION COMPONENTS THAT ARE DAMAGED DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO IRRIGATION PIPES, WIRES, SENSORS, VALVES, SPRAY HEADS, DRIP LINES, ETC. TO THE EXISTING OR BETTER CONDITION AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT EXISTING LANDSCAPING AND TREES TO REMAIN. THE CONTRACTOR SHALL REPAIR ALL EXISTING LANDSCAPING AND TREES THAT ARE DAMAGED DURING CONSTRUCTION TO THE EXISTING OR BETTER CONDITION AT CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS, IRON PINS, AND PROPERTY CORNERS DURING CONSTRUCTION.
- CONTRACTOR SHALL NOT DISTURB EXISTING PAVEMENTS TO REMAIN. ALL NEW UTILITIES TO BE LOCATED UNDER EXISTING PAVEMENTS TO REMAIN SHALL BE BORED UNDER PAVEMENT.
- THE CONTRACTOR SHALL EMPLOY ALL NECESSARY BARRICADES, SIGNS, FENCES, FLASHING LIGHTS, TRAFFIC CONTROL, ETC. FOR MAINTENANCE AND PROTECTION OF TRAFFIC AS REQUIRED BY THE SOUTH CAROLINA DEPT. OF TRANSPORTATION (SCDOT), SPARTANBURG COUNTY, AND GSP AIRPORT DISTRICT.
- LANE AND SHOULDER CLOSURES SHALL BE IN ACCORDANCE WITH SCDOT AND AIRPORT REQUIREMENTS.
- CONTRACTOR AGREES TO REPAIR ANY DAMAGE TO THE PUBLIC RIGHT-OF-WAY IN ACCORDANCE WITH THE STANDARDS OF THE SCDOT, SPARTANBURG COUNTY, AND GREENVILLE COUNTY.
- CONTRACTOR SHALL MAINTAIN A MEANS FOR ACCESS TO EACH PROPERTY AT ALL TIMES.
- DURING CONSTRUCTION, EMERGENCY VEHICLE ACCESS AND ACCESS TO FIRE HYDRANTS SHALL BE MAINTAINED AT ALL TIMES.
- ALL MATERIAL CLEARED AND GRUBBED BY THE CONTRACTOR IN ORDER TO CONSTRUCT THE WORK, SUCH AS VEGETATION, ETC., SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE PROPERLY DISPOSED OF OFF-SITE AT A STATE APPROVED DISPOSAL SITE.
- EROSION AND SEDIMENTATION CONTROL DEVICES SHALL BE INSTALLED ACCORDING TO SPARTANBURG COUNTY AND SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) SEDIMENT AND EROSION CONTROL STANDARDS AND AS DIRECTED BY THE ENGINEER. ALL DEVICES SHALL BE MAINTAINED SUCH THAT THEY FUNCTION AS INTENDED. AFTER COMPLETION OF THE PROJECT THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL DEVICES WHERE A GOOD STAND OF GRASS HAS BEEN ESTABLISHED AND EROSION IS NO LONGER EVIDENT. REMOVAL OF THE REMAINDER OF THE EROSION CONTROL DEVICES SHALL OCCUR AS OTHER AREAS ARE ESTABLISHED. REMOVAL OF THE EROSION CONTROL DEVICES SHALL BE PERMITTED ONLY WITH THE PRIOR APPROVAL OF THE ENGINEER. REFER TO EROSION CONTROL PLAN ON SHEET C-100 FOR ADDITIONAL NOTES AND DETAILS.
- EXISTING VEGETATION AND GROUND COVER OUTSIDE THE LIMITS OF DISTURBANCE AND CLEARING LIMITS AS SHOWN ON THE DRAWINGS SHALL BE PROTECTED FROM DAMAGE. ANY DISTURBANCE BEYOND THESE LIMITS CAUSED BY CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EXISTING OR BETTER CONDITION AT CONTRACTOR'S EXPENSE.
- ANY AREAS THE CONTRACTOR UTILIZES FOR STOCKPILING SHALL HAVE ADEQUATE EROSION CONTROL MEASURES INSTALLED PER THE SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (SCDHEC) SEDIMENT SEDIMENT AND EROSION CONTROL HANDBOOK.
- CONTRACTORS OPERATING CONSTRUCTION VEHICLES AND EQUIPMENT ON THE AIRPORT MUST BE PREPARED TO EXPEDITIOUSLY CONTAIN AND CLEAN-UP SPILLS RESULTING FROM FUEL OR HYDRAULIC FLUID LEAKS. CONTRACTOR SHALL COMPLY WITH SECTION 12 OF THE GREENVILLE-SPARTANBURG AIRPORT DISTRICT CONSTRUCTION SAFETY AND SECURITY GUIDELINES FOUND IN THE APPENDIX OF THE PROJECT MANUAL FOR SPILL CLEAN UP AND WASTE DISPOSAL PROCEDURES.
- CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (CURRENT EDITION) DURING THE PERFORMANCE OF THIS WORK.
- THE CONTRACTOR IS ADVISED THAT OTHER CONSTRUCTION MAY BE IN PROGRESS DURING ALL OR PART OF THIS PROJECT. CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE WORK OF OTHER ONGOING PROJECTS AT THE AIRPORT.

- THE CONTRACTOR SHALL CONSTRUCT DOMESTIC WATER AND FIRE PROTECTION SYSTEM PER THE GOVERNING JURISDICTIONAL AGENCY REQUIREMENTS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE ACCORDANCE WITH THE SHOWN, DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
2. PIPE ALIGNMENT SHOWN IS BASED ON STANDARD FITTINGS AVAILABLE. JOINT DEFLECTIONS SHALL NOT EXCEED 75 PERCENT OF MANUFACTURER'S RECOMMENDED DEFLECTION. CONTRACTOR SHALL ADJUST PIPELINE ALIGNMENT AND DEFLECT JOINTS AS NECESSARY TO ACCOMMODATE THE STANDARD BENDS SHOWN.
3. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIPED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS AND SPECIFICATIONS.
4. ALL PHASES OF INSTALLATION, INCLUDING UNLOADING, TRENCHING, LAYING AND BACK FILLING, SHALL BE DONE IN A FIRST CLASS WORKMANLIKE MANNER. ALL PIPE AND FITTINGS SHALL BE CAREFULLY STORED FOLLOWING MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE COATING OR LINING IN ANY DUCTILE IRON PIPE FITTINGS. ANY PIPE OR FITTING WHICH IS DAMAGED OR WHICH HAS FLAWS OR IMPERFECTIONS WHICH, IN THE OPINION OF THE ENGINEER, OWNER, OR RPR, RENDERS IT UNFIT FOR USE, SHALL NOT BE USED. ANY PIPE NOT SATISFACTORY FOR USE SHALL BE CLEARLY MARKED AND IMMEDIATELY REMOVED FROM THE JOB SITE, AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. WATER FOR FIRE FIGHTING SHALL BE AVAILABLE FOR USE PRIOR TO COMBUSTIBLES BEING BROUGHT ON SITE.
6. UNDERGROUND LINES SHALL BE SURVEYED BY A STATE OF SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR PRIOR TO BACK FILLING.
7. CONTRACTOR SHALL PERFORM, AT OWN EXPENSE, ALL INSPECTION, TESTING, DISINFECTION, AND BACTERIOLOGICAL SAMPLING OF WATER LINES REQUIRED BY THE SPECIFICATIONS. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE OWNER AND JURISDICTIONAL AGENCY AS REQUIRED. REFER TO THE FOLLOWING SPECIFICATION SECTIONS:
 - 31 23 33 FOR TRENCH BEDDING AND BACKFILL TESTING
 - 33 01 10.58 FOR DISINFECTION OF WATER LINES
 - 33 01 12 FOR INSPECTION AND TESTING OF WATER LINES
8. UNLESS OTHERWISE INDICATED, ALL EXISTING GRADE ELEVATIONS SHOWN IN THE PROFILES ARE ALONG THE PIPE CENTERLINE.
9. MINIMUM PIPE COVER FOR WATER LINES SHALL BE 3 FEET UNLESS LESS COVER IS SPECIFICALLY APPROVED BY THE ENGINEER.
10. THE UTILITY TRENCH WIDTHS SHALL BE IN STRICT ACCORDANCE WITH THE TRENCH EXCAVATION DETAILS SHOWN ON THE PLANS.
11. TRENCHES SHALL BE CLOSED AT THE END OF EACH WORK DAY.
12. REFER TO THE DETAILS SHOWN ON THE PLANS AND SPECIFICATIONS FOR MINIMUM LATERAL AND VERTICAL SEPARATION BETWEEN NEW WATER LINE AND EXISTING UTILITIES.
13. CONTRACTOR SHALL MAINTAIN CONTINUOUS WATER SERVICE TO EXISTING FACILITIES THROUGHOUT CONSTRUCTION. ANY NECESSARY SERVICE INTERRUPTIONS SHALL BE PRECEDED BY A 72 HOUR ADVANCE NOTICE TO THE AIRPORT AND/ OR UTILITY PROVIDER.
14. ALL NEW DUCTILE IRON PIPE SHALL BE PRESSURE CLASS 350, PIPE AND FITTINGS SHALL BE RESTRAINED, UNLESS OTHERWISE SHOWN.

1. THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF CHANGES IN THE CONTRACT DOCUMENTS THROUGHOUT CONSTRUCTION CAPTURING DATA FROM THE WATER LINE RUN AS WELL AS ANY EXISTING UTILITY UNCOVERED.
2. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER AND OWNER A DIGITAL COPY, AS WELL AS AUTOCAD 2013 OR LATER FILE, OF THE COMPLETE RECORD DRAWINGS. AUTOCAD FILE SHALL COMPLY WITH GSP CAD STANDARDS. RECORD DRAWINGS SHALL REFLECT AS-BUILT CONDITION AND CLEARLY SHOW THE ACTUAL INSTALLED LOCATION, DEPTH, SIZE, AND ELEVATIONS OF THE UTILITIES. RECORD DRAWINGS SHALL BE PREPARED, STAMPED, AND SIGNED BY A SOUTH CAROLINA REGISTERED SURVEYOR. THE RECORD DRAWINGS SHALL VERIFY ALL DESIGN INFORMATION INCLUDED ON THE DESIGN PLANS OF THE SAME NAME.

<p>WATER / SEWER / NATURAL GAS GREER COMMISSION OF PUBLIC WORKS 301 McCall STREET GREER, SC 29650 KEVIN REARDON (864) 848-5500 KEVIN.REARDON@GREERCPW.COM</p>	<p>POWER DUKE ENERGY 808 DUNCAN REIDVILLE ROAD DUNCAN, SC 29334 WILLIAM SCOTT (864) 439-5989 WILLIAM.SCOTT5@DUKE-ENERGY.COM</p>
<p><u>AT&T</u> MGR OSP PLNG & ENG DESIGN CONSTRUCTION & ENGINEERING - SE 471 GARLINGTON RD GREENVILLE, SC 29615 GREG EVANGELESTA (864) 255-3849 GREG.EVANGELESTA@ATT.COM</p>	<p><u>FAA TECH OPS</u> MARTY DUVALL (864) 607-8949 MARTY.DUVALL@FAA.GOV ERNIE SOWERS (704) 297-5138 ROBERT.SOWERS@FAA.GOV</p>

SPARTANBURG COUNTY	GREENVILLE COUNTY	SCDHEC
9039 FAIRFOREST ROAD	301 UNIVERSITY RIDGE	301 UNIVERSITY RIDGE
SPARTANBURG, SC 29301	SUITE S-3300	SUITE S-3300
AZRIEL GONZALES (864) 595-5333	GREENVILLE, SC 29601	GREENVILLE, SC 29601
AGONZALES@SPARTANBURGCOUNTY.ORG	DANANE WRIGHT (864) 467-4610	STEVE FOX (803) 898-4426
	DWRIGHT@GREENVILLECOUNTY.ORG	FOXSC@DHEC.SC.GOV

GSP AIRPORT OPERATIONS CENTER
(AOC) 24-HR EMERGENCY CONTACT
POLICE, FIRE, EMS
(864) 848-6246

AC	ASPHALT CONCRETE, ACRE
A/C	AIRCRAFT
ALT	ALTERNATE
AOA	AIRCRAFT OPERATIONS AREA
ARFF	AIRCRAFT RESCUE AND FIRE FIGHTING
ATCT	AIR TRAFFIC CONTROL TOWER
BC	BEGINNING OF CURVE
BM	BENCH MARK
BL	BUILDING RESTRICTION LIMIT
CB	CATCH BASIN
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CIP	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONST	CONSTRUCT, CONSTRUCTION
COORD	COORDINATE
CSO	CONTRACTOR SECURITY OFFICER
CSP	CORRUGATED STEEL PIPE
CSPSP	CONSTRUCTION SAFETY AND PHASING PLAN
CY	CUBIC YARD
DEB	DIRECT EARTH BURIED
DIA	DIAMETER
DWG	DRAWING
E	EAST, EASTING
EA	EACH
EG	EXISTING GRADE
ELEV	ELEVATION
ENG	ENGINEER, ENGINEERING
EP/EOP	EDGE OF PAVEMENT
EQ	EQUAL
EX	EXIST
EXP JT	EXPANSION JOINT
FAA	FEDERAL AVIATION ADMINISTRATION
FAR	FEDERAL AVIATION REGULATION
FBO	FIXED-BASE OPERATOR
FG	FINISHED GRADE
FL	FLOW LINE
G/A	GENERAL AVIATION
GSE	GROUND SERVICE EQUIPMENT
GSP	GREENVILLE-SPARTANBURG INTERNATIONAL AIRPORT
HP	HIGH POINT
HOR	HORIZONTAL
ID	INSIDE DIAMETER
IN	INVERT ELEVATION
JB	JUNCTION BOX
JT	JOINT
L	LENGTH
LF	LINEAR FEET
LP	LOW POINT
LS	LUMP SUM
LT	LEFT
MAX	MAXIMUM
MES	MITERED END SECTION
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MONTH
MON	MONUMENT
MOT	MAINTENANCE OF TRAFFIC
MULT	MULTIPLE
MSL	MEAN SEA LEVEL
N	NORTH, NORTHING
NIC	NOT IN CONTRACT
NO	NUMBER
NPDES	NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFSET
PAPI	PRECISION APPROACH PATH INDICATOR
PB	PULL BOX
PC	POINT OF CURVATURE
PCC	PORTLAND CEMENT CONCRETE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POC	POINT OF CURVE
PT	POINT OF TANGENT
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PVMT	PAVEMENT
PVT	POINT OF VERTICAL TANGENCY
PSI	POUNDS PER SQUARE INCH
Q	RATE OF FLOW IN CFS
R	RADIUS
RB	REBAR
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
REINF	REINFORCED, REINFORCEMENT
ROFA	RUNWAY OBJECT FREE AREA
RP	RADIUS POINT
RPR	RESIDENT PROJECT REPRESENTATIVE
RPZ	RUNWAY PROTECTION ZONE
RSA	RUNWAY SAFETY AREA
RT	RIGHT
RWY,R/W	RUNWAY
SD	STORM DRAIN
SEC	SECTION
SECP	SEDIMENT AND EROSION CONTROL PLAN
SF	SQUARE FEET
SIDA	SECURITY IDENTIFICATION DISPLAY AREA
SPEC	SPECIFICATIONS
SS	SANITARY SEWER
STA	STATION
STD	STANDARD
SWPPP	STORM WATER POLLUTION PREVENTION PLAN
SY	SQUARE YARD
TBM	TEMPORARY BENCH MARK
TOFA	TAXIWAY OBJECT FREE AREA
TOPO	TOPOGRAPHY
TSA	TAXIWAY SAFETY AREA/TRANSPORTATION SECURITY ADMINISTRATION
TWY,T/W	TAXIWAY
TYP	TYPICAL
VAR	VARIABLE, VARIABLE
VC	VERTICAL CURVE
VERT	VERTICAL
VOL	VOLUME
W/	WITH



SHEET NUMBER	PROJECT	SHEET TITLE	KHA PROJECT 013881015	DATE 11/25/2024	SCALE AS SHOWN	DESIGNED BY SAM	DRAWN BY JE	CHECKED BY JMG	PROJECT UTILITY UPGRADE - WATER SYSTEM	GENERAL NOTES	KIMLEY-HORN AND ASSOCIATES, INC. 802 GERVAIS STREET, SUITE 201, COLUMBIA, SC 29201 PHONE: 803-403-8558 WWW.KIMLEY-HORN.COM	No. 37881 11/25/2024	SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 000166 EXPIRATION DATE OF AUTHORITY 12/31/2025	KIMLEY-HORN AND ASSOCIATES, INC. 802 GERVAIS STREET, SUITE 201, COLUMBIA, SC 29201 PHONE: 803-403-8558 WWW.KIMLEY-HORN.COM	No.	REVISIONS	DATE	BY

CONTRACTOR SHALL BE FAMILIAR WITH THE FOLLOWING FAA SAFETY PROVISIONS AND IMPLEMENT THESE REQUIREMENTS DURING CONSTRUCTION. THE LATEST COPIES OF THESE GUIDELINES CAN BE OBTAINED FROM THE ENGINEER OR ON-LINE AT ([HTTP://WWW.FAA.GOV/REGULATIONS_POLICIES](http://www.faa.gov/regulations_policies)).

- FAA ADVISORY CIRCULAR AC 150/5370-2G, "OPERATIONAL SAFETY ON AIRPORTS DURING CONSTRUCTION"
- FAA ADVISORY CIRCULAR AC 150/5210-5D, "PAINTING, MARKING AND LIGHTING OF VEHICLES USED ON AN AIRPORT"
- CODE OF FEDERAL REGULATIONS, 14 CFR PART 77, "SAFE EFFICIENT USE AND PRESERVATION OF THE NAVIGABLE AIRSPACE"
- FAA ADVISORY CIRCULAR AC 150/5210-24, "AIRPORT FOREIGN OBJECT DEBRIS (FOD) MANAGEMENT"
- FAA ADVISORY CIRCULAR AC 150/5200-18C, "AIRPORT SAFETY SELF-INSPECTION"
- AC 150/5200-33B - HAZARDOUS WILDLIFE ATTRACTANTS ON OR NEAR AIRPORTS

2. CONTRACTOR SHALL COMPLY WITH GSP'S CONSTRUCTION SAFETY AND SECURITY GUIDELINES MANUAL, INCLUDED IN THE APPENDIX OF THE PROJECT MANUAL.

3. CONTRACTOR SHALL COMPLY WITH THE CONSTRUCTION SAFETY AND PHASING PLAN ASSOCIATED WITH THE CONSTRUCTION PROJECT AND ENSURE THAT CONSTRUCTION PERSONNEL ARE FAMILIAR WITH SAFETY PROCEDURES AND REGULATIONS ON THE AIRPORT.

4. CONTRACTOR SHALL PROVIDE A POINT OF CONTACT TO GSP OPERATIONS WHO WILL COORDINATE AN IMMEDIATE RESPONSE TO CORRECT ANY CONSTRUCTION-RELATED ACTIVITY THAT MAY ADVERSELY AFFECT THE OPERATIONAL SAFETY OF THE AIRPORT.

5. CONTRACTOR SHALL PROVIDE A SAFETY OFFICER/CONSTRUCTION INSPECTOR FAMILIAR WITH AIRPORT SAFETY TO MONITOR CONSTRUCTION ACTIVITIES.

6. CONTRACTOR SHALL RESTRICT MOVEMENT OF CONSTRUCTION VEHICLES TO CONSTRUCTION AREAS BY FLAGGING AND BARRICADING OR PROVIDING ESCORTS, AS APPROPRIATE.

7. CONTRACTOR SHALL ENSURE THAT NO EMPLOYEES, EMPLOYEES OF SUBCONTRACTORS OR SUPPLIERS, OR OTHER PERSONS ENTER ANY PART OF THE AIR OPERATIONS AREAS (AOA) FROM THE CONSTRUCTION SITE UNLESS AUTHORIZED.

8. CONTRACTOR EMPLOYEES SHALL PARK AND SERVICE ALL CONSTRUCTION VEHICLES IN AN AREA DESIGNATED BY THE RPR. EMPLOYEES SHALL ALSO PARK CONSTRUCTION VEHICLES OUTSIDE THE TAXIWAY OBJECT FREE AREA (TOFA) WHEN NOT IN USE BY CONSTRUCTION PERSONNEL (E.G., OVERNIGHT, ON WEEKENDS, OR DURING OTHER PERIODS WHEN CONSTRUCTION IS NOT ACTIVE).

9. CONTRACTOR PERSONNEL ENGAGED IN ACTIVITIES INVOLVING UNESCORTED OPERATION IN AIRCRAFT MOVEMENT AREAS SHALL BE TRAINED AND CERTIFIED BY GSP OPERATIONS, SHALL OBSERVE THE PROPER PROCEDURES FOR COMMUNICATIONS, AND SHALL MONITOR ATC COMMUNICATIONS.

10. CONTRACTOR SHALL PROMINENTLY MARK OPEN TRENCHES AND EXCAVATIONS AT THE CONSTRUCTION SITE WITH RED OR ORANGE FLAGS, AS APPROVED BY THE RPR, AND LIGHT THEM WITH RED LIGHTS DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS.

11. EXCAVATIONS AND OPEN TRENCHES ARE NOT PERMITTED WITHIN THE TSA OF A TAXIWAY WHILE THE TAXIWAY IS OPEN. IF THE TAXIWAY MUST BE OPENED BEFORE EXCAVATIONS ARE BACKFILLED, COVER THE EXCAVATIONS APPROPRIATELY. COVERINGS FOR OPEN TRENCHES OR EXCAVATIONS MUST BE OF SUFFICIENT STRENGTH TO SUPPORT THE WEIGHT OF THE HEAVIEST AIRCRAFT OPERATING ON THE TAXIWAY AND APRON.

12. CONTRACTOR SHALL SEPARATE THE CONSTRUCTION SITE AND AREAS IN WHICH NO PART OF AN AIRCRAFT MAY ENTER BY USING LOW-PROFILE BARRICADES THAT ARE MARKED WITH DIAGONAL, ALTERNATING ORANGE AND WHITE STRIPES AND RED LIGHTS.

13. STOCKPILED MATERIALS AND EQUIPMENT STORAGE ARE NOT PERMITTED WITHIN THE TOFA OF AN OPERATIONAL TAXIWAY. LOCATION OF STOCKPILED MATERIALS AND EQUIPMENT STORAGE SHALL BE COORDINATED AND APPROVED BY THE RPR PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL ENSURE THAT STOCKPILED MATERIALS AND EQUIPMENT ADJACENT TO THESE AREAS ARE PROMINENTLY MARKED AND LIGHTED DURING HOURS OF RESTRICTED VISIBILITY OR DARKNESS. THIS INCLUDES DETERMINING AND VERIFYING THAT MATERIALS ARE STORED AT AN APPROVED LOCATION TO PREVENT FOREIGN OBJECT DAMAGE AND ATTRACTION OF WILDLIFE.

14. CONTRACTOR MAY NOT USE OPEN-FLAME WELDING OR TORCHES UNLESS ADEQUATE FIRE SAFETY PRECAUTIONS ARE PROVIDED AND THE RPR HAS APPROVED THEIR USE.

15. WASTE AND LOOSE MATERIALS, COMMONLY REFERRED TO AS FOD, ARE CAPABLE OF CAUSING DAMAGE TO AIRCRAFT LANDING GEARS, PROPELLERS, AND JET ENGINES. CONTRACTOR SHALL NOT LEAVE OR PLACE FOD ON OR NEAR ACTIVE AIRCRAFT MOVEMENT AREAS. MATERIALS TRACKED ONTO THESE AREAS MUST BE CONTINUOUSLY REMOVED DURING CONSTRUCTION. CONTRACTOR SHALL ALSO CAREFULLY CONTROL AND CONTINUOUSLY REMOVE WASTE OR LOOSE MATERIALS THAT MIGHT ATTRACT WILDLIFE.

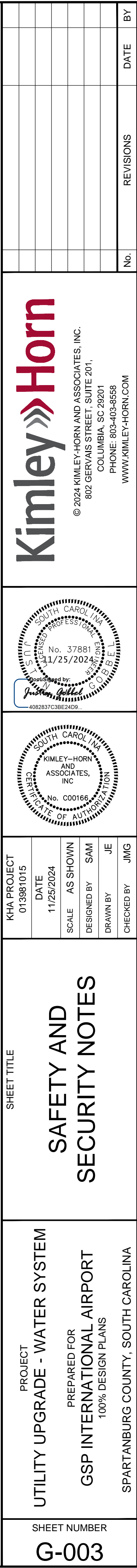
16. ALL CONTRACTOR EQUIPMENT OPERATING IN THE AOA SHALL BE IDENTIFIED BY THREE-FOOT (3') SQUARE ORANGE AND WHITE FLAGS WHENEVER SUCH VEHICLE AND EQUIPMENT ARE OPERATING ON THE AOA. ALL VEHICLES DRIVEN ON THE AOA ARE REQUIRED TO HAVE AN AIRPORT ISSUED AOA DECAL AFFIXED TO THE LOWER CORNER OF THE WINDSHIELD ON THE DRIVER'S SIDE OF THE VEHICLE. CONSTRUCTION EQUIPMENT THAT WILL NOT LEAVE THE AOA DAILY OR VEHICLES BEING ESCORTED ARE NOT REQUIRED TO HAVE AN AOA STICKER. IN ADDITION, ALL VEHICLES AND EQUIPMENT SHALL DISPLAY A COMPANY LOGO IN AT LEAST 4-INCH LETTERS AFFIXED ON EACH SIDE OF SUCH VEHICLES AND EQUIPMENT. DURING THE HOURS BETWEEN SUNSET AND SUNRISE AND AT ALL TIMES WHEN VISIBILITY IS IMPAIRED, VEHICLES AND MOBILE EQUIPMENT SHALL ALSO BE EQUIPPED WITH A FLASHING AMBER BEACON LIGHT MOUNTED ON THE TOP OF THE VEHICLE OR EQUIPMENT. BEACON LIGHTS SHALL PROVIDE:

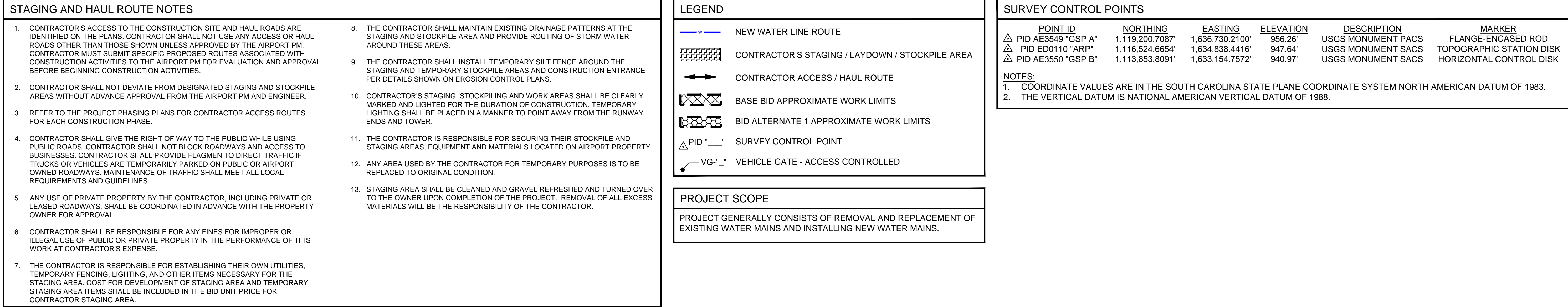
- a. THREE HUNDRED AND SIXTY DEGREE (360°) AZIMUTH COVERAGE.
- b. EFFECTIVE INTENSITY IN THE HORIZONTAL PLANE NOT LESS THAN 40 OR MORE THAN 400 CANDELAS.
- c. BEAM SPREAD MEASURED TO 1/10 PEAK INTENSITY EXTENDING FROM 10 DEGREES TO 15 DEGREES ABOVE THE HORIZONTAL.
- d. SIXTY TO NINETY FLASHES PER MINUTE.




17. DURING PERIODS OF SEVERE WEATHER CONDITIONS OR OTHER OPERATIONAL EMERGENCIES, THE RPR MAY DIRECT THE CONTRACTOR TO RELINQUISH AREAS UNDER CONSTRUCTION AND TO PREPARE THE AREAS FOR AIRCRAFT OPERATIONS. IN THIS EVENT THE RPR WILL SO DIRECT THE

18. NO VEHICULAR TRAFFIC SHALL BE ALLOWED ON AIRCRAFT MOVEMENT AREAS (RUNWAYS, TAXIWAYS OR AIRCRAFT PARKING APRON).
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACTIONS OF EMPLOYEES AND SUBCONTRACTORS. PERSONNEL WHO DO NOT ABIDE BY AIRPORT RULES AND REGULATIONS ARE SUBJECT TO PROSECUTION AND OR MONETARY FINES.
20. ALL ACCIDENTS CAUSING PERSONAL INJURY OR PROPERTY DAMAGE SHALL BE REPORTED TO THE RPR / AIRPORT PM IMMEDIATELY. THE CONTRACTOR(S) SHALL PROVIDE, AT THE SITE, SUCH EQUIPMENT AND MEDICAL FACILITIES AS ARE NECESSARY TO SUPPLY FIRST AID SERVICE TO ANYONE WHO MAY BE INJURED IN CONNECTION WITH THE PERFORMANCE OF THE WORK, WHETHER ON OR ADJACENT TO THE SITE. IN ADDITION, IF DEATH OR SERIOUS INJURIES OR SERIOUS DAMAGES ARE CAUSED, THE ACCIDENT SHALL BE REPORTED IMMEDIATELY BY TELEPHONE TO THE AIRPORT OPERATIONS CENTER AT (864) 648-6246.
21. THE CONTRACTOR'S EMPLOYEES, MUST HAVE A VALID GOVERNMENTAL IDENTIFICATION ON THEIR PERSON AT ALL TIMES. FAILURE TO COMPLY WITH THESE REQUIREMENTS WILL RESULT IN THE EMPLOYEE BEING ESCORTED OFF THE AOA AND FINES MAY BE IMPOSED AT THE CONTRACTOR'S EXPENSE.
22. ANY DELAY IN CONSTRUCTION OF PROJECT DUE TO VIOLATION OF FEDERAL AND/OR AIRPORT REGULATIONS SHALL BE ABSORBED BY THE CONTRACTOR.
23. CONTRACTOR WILL NOT BE ALLOWED TO USE ANY OF THE EXISTING TAXIWAY OR RAMPS, OTHER THAN WHAT IS SPECIFICALLY AUTHORIZED BY THE RPR / AIRPORT PM.
24. CONTRACTOR IS REQUIRED TO HAVE A PERSON ON CALL 24-HOURS A DAY, 7 DAYS A WEEK FOR EMERGENCY MAINTENANCE OF AIRPORT HAZARD LIGHTING AND BARRICADES. CONTRACTOR MUST FILE THE CONTACT PERSON'S NAME WITH THE RPR / AIRPORT PM.
25. CONTRACTOR SHALL PROVIDE AN EMERGENCY NOTIFICATION LIST (24-HOUR CONTACT LIST) TO THE RPR / AIRPORT PM WHICH IDENTIFIES THE PROJECT MANAGER AND ALL SUBCONTRACTOR SUPERVISORS/LEADS.
26. ALL TAXIWAY CLOSURE REQUESTS MUST BE SUBMITTED TO THE RPR 72 HRS IN ADVANCE OF THE REQUESTED CLOSURE PERIOD. THE REQUEST MUST INDICATE THE AREAS NEEDED AND A SCHEDULE OF OPERATIONS AND TIME(S) REQUIRED FOR OPERATIONS WITHIN THE AREA.
27. ALL TAXIWAY CLOSURE REQUESTS ARE CONTINGENT ON REVIEW AND APPROVAL BY THE RPR, AIRPORT PM AND GSP OPS AND WIND AND WEATHER AVAILABILITY. THE AIRPORT RESERVES THE RIGHT TO SHIFT ANY APPROVED CLOSURE PERIODS TO ALLEVIATE AIRCRAFT CONGESTION WHEN WEATHER CONDITIONS DICTATE.

- CONSTRUCTION WILL OCCUR WITHIN THE AIRCRAFT OPERATIONS AREA (AOA). THIS IS A SECURE AREA WITH RESTRICTED ACCESS. THE CONTRACTOR WILL BE REQUIRED TO MEET ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THIS AREA AT ALL TIMES. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FAMILIARIZE THEMSELVES WITH ALL REQUIREMENTS FOR ENTERING AND OPERATING IN THE AOA.
2. IT IS REQUIRED THAT THE CONTRACTOR SHALL COMPLY WITH ALL SECURITY REQUIREMENTS SPECIFIED HEREIN AND IN THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL DESIGNATE TO THE RPR IN WRITING THE NAME OF ITS "CONTRACTOR SECURITY OFFICER" (CSO). THE CSO SHALL REPRESENT THE CONTRACTOR ON THE SECURITY REQUIREMENTS OF THE CONTRACT. THE CSO FOR THIS PROJECT MAY BE THE PROJECT SUPERINTENDENT/SUPERVISOR. THE CSO SHALL BE REQUIRED TO FAMILIARIZE THEMSELVES WITH REQUIREMENTS OF OPERATING WITHIN THE AIRFIELD AND APPLICABLE RULES AND REGULATIONS. THE CSO SHALL BE RESPONSIBLE FOR BRIEFING ALL CONTRACTOR PERSONNEL ON THESE REQUIREMENTS AND, FROM TIME TO TIME, OTHER SECURITY PROVISIONS ADOPTED BY GSP. ALL NEW CONTRACTOR EMPLOYEES SHALL BE BRIEFED ON THESE REQUIREMENTS PRIOR TO WORKING IN THE CONSTRUCTION AREA.
3. ALL CONTRACTOR'S MATERIAL ORDERS FOR DELIVERY TO THE SITE MUST BE ESCORTED BY THE CONTRACTOR. THIS WILL PRECLUDE DELIVERY TRUCKS FROM ENTERING INTO THE AIRPORT OR TAKING SHORT-CUTS THROUGH THE PERIMETER GATES AND ENTERING INTO AIRPORT OPERATIONS AREAS INADVERTENTLY.
4. THE MATERIAL STORAGE AREA, EQUIPMENT STORAGE AREA, PARKING AREA AND OTHER AREAS DEFINED AS REQUIRED FOR THE CONTRACTOR'S EXCLUSIVE USE DURING CONSTRUCTION SHALL BE AS SHOWN ON THE PROJECT DRAWINGS OR AS DIRECTED BY THE RPR / AIRPORT PM. THE CONTRACTOR MAY ERECT, MAINTAIN AND REMOVE AT COMPLETION OF THE PROJECT AROUND THE PERIMETER OF THESE AREAS SUITABLE FENCING, MARKING AND/OR WARNING DEVICES VISIBLE FOR DAY/NIGHT USE.
5. IDENTIFICATION OF PERSONNEL: ALL EMPLOYEES, AGENTS, VENDORS, INVITEES, ETC. OF THE CONTRACTOR OR SUBCONTRACTORS REQUIRING ACCESS TO THE PROJECT SITE OR STAGING AREA, IN ACCORDANCE WITH THE GSP SECURITY PROGRAM, WILL BE REQUIRED TO DISPLAY AIRPORT ISSUED IDENTIFICATION OR BE ESCORTED. SUPERVISORS SHALL BE BADGED WITH A GSP SIDA BADGE. AT THE COMPLETION OF THE CONTRACT ALL BADGES WILL BE RETURNED TO THE AIRPORT OR A PER BADGE CHARGE WILL BE ASSESSED FOR ALL BADGES NOT RETURNED. AS PART OF THE BADGE APPLICATION PROCESS, EACH APPLICANT WILL BE FINGERPRINTED FOR USE IN A CRIMINAL HISTORY RECORDS CHECK (CHRC) AND TSA SECURITY THREAT ASSESSMENT (STA). ANY PERSON WHOSE CRIMINAL RECORD REVEALS OFFENSES LISTED BY TSA AS DISQUALIFYING OFFENSES WILL BE DENIED A BADGE AND WILL BE PROHIBITED FROM THE PROJECT SITE. ALL REQUIRED PAPERWORK AND ID BADGE APPLICATIONS SHALL BE SUBMITTED A MINIMUM OF THREE (3) WEEKS BEFORE ISSUANCE OF ANY BADGE. CONTRACTOR PERSONNEL REQUIRING AIRPORT ISSUED BADGES ARE RESPONSIBLE FOR ATTENDING SIDA TRAINING AND COMPLETING SECURITY BADGE APPLICATIONS, WHICH WILL INCLUDE AIR/GROUND RADIO, TAXIWAY AND AIRPORT FAMILIARIZATION. THERE WILL BE A CHARGE FOR THE CHRC AND STA BACKGROUND CHECK AND FINGERPRINTING PROCESS, THE COST OF WHICH SHALL BE INCIDENTAL TO MOBILIZATION. ALL EMPLOYEES, AGENTS, VENDORS, INVITEES, ETC. OF THE CONTRACTOR OR SUBCONTRACTORS HAVING ACCESS TO THE AOA UNDER ESCORT SHALL CONSPICUOUSLY WEAR EITHER SHIRT AND/OR HARD HAT THAT IDENTIFIES THE PERSON TO THE PROJECT AND EMPLOYER.
6. IDENTIFICATION OF VEHICLES: THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN A LIST OF CONTRACTOR AND SUB-CONTRACTOR VEHICLES AUTHORIZED TO OPERATE ON THE SITE. VEHICLE PERMITS SHALL BE ASSIGNED IN A MANNER IN WHICH TO ASSURE POSITIVE IDENTIFICATION OF THE UNIT AT ALL TIMES. IN LIEU OF ISSUING INDIVIDUAL PERMITS, THE CSO CAN REQUIRE EACH VEHICLE TO DISPLAY A LARGE COMPANY SIGN ON BOTH SIDES OF THE VEHICLE AND ISSUE TO THE RPR / AIRPORT PM, A CURRENT LIST OF COMPANIES AUTHORIZED TO ENTER AND CONDUCT WORK ON THE AIRPORT. CONTRACTOR EMPLOYEE PERSONAL VEHICLES ARE NOT ALLOWED ON THE AIRFIELD AT ANY TIME.
7. THE PRIME CONTRACTOR SHALL COORDINATE HAUL ROUTE AND ACCESS OPERATIONS WITH ALL OTHER SUB-CONTRACTORS UTILIZING THE SAME ROUTES.
8. CONTRACTOR'S ACCESS TO THE CONSTRUCTION SITE WITHIN THE AOA WILL BE THROUGH THE VEHICULAR ACCESS GATES AS SHOWN ON THE PHASING PLANS BY SCANNING THEIR AIRPORT ISSUED BADGE TO THE ACCESS CONTROL SYSTEM. VEHICLES ACCESSING AN AOA GATE MUST REMAIN WITH THE GATE UNTIL IT IS SECURE. VEHICLE GATES MUST CLOSE BEFORE THE NEXT VEHICLE MAY BADGE THROUGH.
9. NO VEHICLES, EQUIPMENT OR MATERIAL MAY BE PARKED OR STOCKPILED WITHIN 10 FEET OF ANY AIRPORT FENCING; PERMANENT OR TEMPORARY; EQUIPMENT AND MATERIAL STAGING MUST BE APPROVED BY THE AIRPORT PROJECT MANAGER AND RPR.
10. THE CONTRACTOR SHALL MAINTAIN A LIST OF ALL AUTHORIZED PROJECT PERSONNEL AND IT SHALL BE SUBMITTED TO GSP PRIOR TO BEGINNING WORK.





SHEET NUMBER	PROJECT	SHEET TITLE	KHA PROJECT 013881015 DATE 11/25/2024 SCALE AS SHOWN DESIGNED BY SAM DRAWN BY JE CHECKED BY JMG	 	 <p>© 2024 KIMLEY-HORN AND ASSOCIATES, INC. 802 GERVAIS STREET, SUITE 201, COLUMBIA, SC 29201 PHONE: 803-403-8558 WWW.KIMLEY-HORN.COM</p>	No.	REVISIONS	DATE	BY
G-100	UTILITY UPGRADE - WATER SYSTEM PREPARED FOR GSP INTERNATIONAL AIRPORT 100% DESIGN PLANS SPARTANBURG COUNTY, SOUTH CAROLINA	PROJECT LAYOUT PLAN							



1. PHASING SHOWN IS BASED ON GSP OPERATIONAL REQUIREMENTS. CONTRACTOR TO SUBMIT DETAILED CONSTRUCTION SCHEDULE, SAFETY PLAN COMPLIANCE DOCUMENT AND CONSTRUCTION PHASING PLAN CONFORMING TO THE CONTRACT DOCUMENTS FOR ENGINEER APPROVAL PRIOR TO ISSUANCE OF A NOTICE-TO-PROCEED.
2. DESCRIPTIONS OF WORK LISTED WITHIN EACH PHASE PLAN ARE INTENDED TO PROVIDE GENERAL GUIDANCE ON THE SCOPE OF WORK WITHIN EACH WORK AREA, AND ARE NOT TO BE CONSIDERED ALL-INCLUSIVE. SEE ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR COMPLETE DESCRIPTION OF WORK REQUIRED.
3. THE CONTRACTOR SHALL REVIEW THE PROPOSED LOCATION OF BARRICADES AND MAINTENANCE OF TRAFFIC (MOT) DEVICES WITH THE AIRPORT PROJECT MANAGER, RPR, AND AIRPORT OPERATIONS A MINIMUM OF 3 WORKING DAYS PRIOR TO THE COMMENCEMENT OF EACH PHASE.
4. SPECIAL ACCESS REQUIREMENTS AND OPERATING LIMITATIONS ARE REQUIRED INSIDE THE SECURITY FENCE. THE CONTRACTOR SHALL DELINEATE WORK LIMITS WITHIN THESE AREAS AS PER PHASING PLAN. CONFINED CREW, EQUIPMENT AND MATERIALS OUTSIDE OF OBJECT FREE AREAS (OFA) WHEN A TAXIWAY IS ACTIVE.
5. CONTRACTOR TO PERFORM SITE INVESTIGATION AND LOCATION OF ALL UTILITIES, INCLUDING AIRFIELD ELECTRICAL AND COMMUNICATIONS INFRASTRUCTURE, A MINIMUM OF 3 WORKING DAYS PRIOR TO ENTERING EACH PHASE OF WORK. CONTRACTOR TO COORDINATE WITH AIRPORT PROJECT MANAGER, RPR, AIRPORT OPERATIONS, AND AIRPORT MAINTENANCE FOR ACCESS A MINIMUM OF TWO (2) WEEKS PRIOR TO ENTERING EACH SUBSEQUENT WORK AREA.

GENERAL PHASE DESCRIPTIONS

PHASE 0 - ANTICIPATED DURATION OF 30-45 DAYS PRIOR TO PHASE 1 AND ISSUANCE OF NTP. CONTRACTORS MOBILIZATION, EQUIPMENT PROCUREMENTS, PROJECT SCHEDULE, SAFETY PLAN COMPLIANCE DOCUMENT, STAGING AREA, CONSTRUCTION PERMITTING BY THE CONTRACTOR, CONTRACTOR SECURITY BADGING AND DRIVER TRAINING, SUBMITTALS, ORDERING OF LONG-LEAD ITEMS, ETC.

PHASE 1A - THIS PHASE INCLUDES WORK REQUIRED TO INSTALL NEW WATER LINE FROM THE WATER TANK TO THE CENTER CARGO WATER MAIN. ALL WORK DURING THIS PHASE WILL TAKE PLACE OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.

PHASE 1B - THIS PHASE INCLUDES WORK REQUIRED TO INSTALL NEW AND REMOVE EXISTING WATER LINE FROM GSP DRIVE TO THE FUEL FARM AREA. GSP DRIVE WILL REMAIN OPEN DURING THIS PHASE. EMPLOYEE LOT AND FUEL FARM ACCESS ROADS WILL REMAIN OPEN DURING THIS PHASE. ALL WORK DURING THIS PHASE WILL TAKE PLACE OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.

PHASE 2A - THIS PHASE INCLUDES WORK REQUIRED TO INSTALL NEW AND REMOVE EXISTING WATER LINE BETWEEN TAXIWAY L3 AND TAXIWAY L5 AND ALONG THE G/A APRON TO THE GSP DRIVE WATER MAIN. TAXIWAYS, G/A APRON, AND GSP DRIVE WILL REMAIN OPEN DURING THIS PHASE. WORK DURING THIS PHASE WILL TAKE PLACE INSIDE AND OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.

PHASE 2B - THIS PHASE INCLUDES WORK REQUIRED TO INSTALL NEW WATER LINE FROM TAXIWAY L2 AROUND THE COMMERCIAL AIRCRAFT APRON. TAXIWAY L2 AND THE COMMERCIAL AIRCRAFT APRON WILL REMAIN OPEN DURING THIS PHASE. ALL WORK DURING THIS PHASE WILL TAKE PLACE INSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.

PROJECT SCHEDULE

PROJECT CONSTRUCTION PHASE	CONTRACT DURATION (CALENDAR DAYS)	LIQUIDATED DAMAGES FOR CONTRACT DURATION OVERRUN
PHASE 1	60	N/A
PHASE 2	90	N/A
BASE BID	60	\$1,500 PER CALENDAR DAY
BASE BID + BID ALTERNATE 1	150	\$1,500 PER CALENDAR DAY

NOTES:

1. DURATIONS SHOWN ARE REPRESENTED IN CONTRACT CALENDAR DAYS
2. UNLESS OTHERWISE INDICATED, THE SPECIFIC DATES AND WORK HOURS FOR THE ASSOCIATED PHASES SHALL BE COORDINATED AT LEAST 3-WEEKS PRIOR TO COMMENCING WORK WITH THE ENGINEER.
3. THE CONTRACTOR MAY WORK ON PHASES 1A AND 1B CONCURRENTLY TO MEET THE ALLOTTED CONTRACT DURATION.
4. THE CONTRACTOR MAY WORK ON PHASES 2A AND 2B CONCURRENTLY TO MEET THE ALLOTTED CONTRACT DURATION.

PROJECT PHASING LEGEND

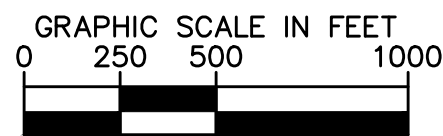
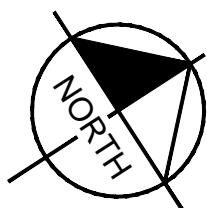
PHASE 1A

PHASE 1B

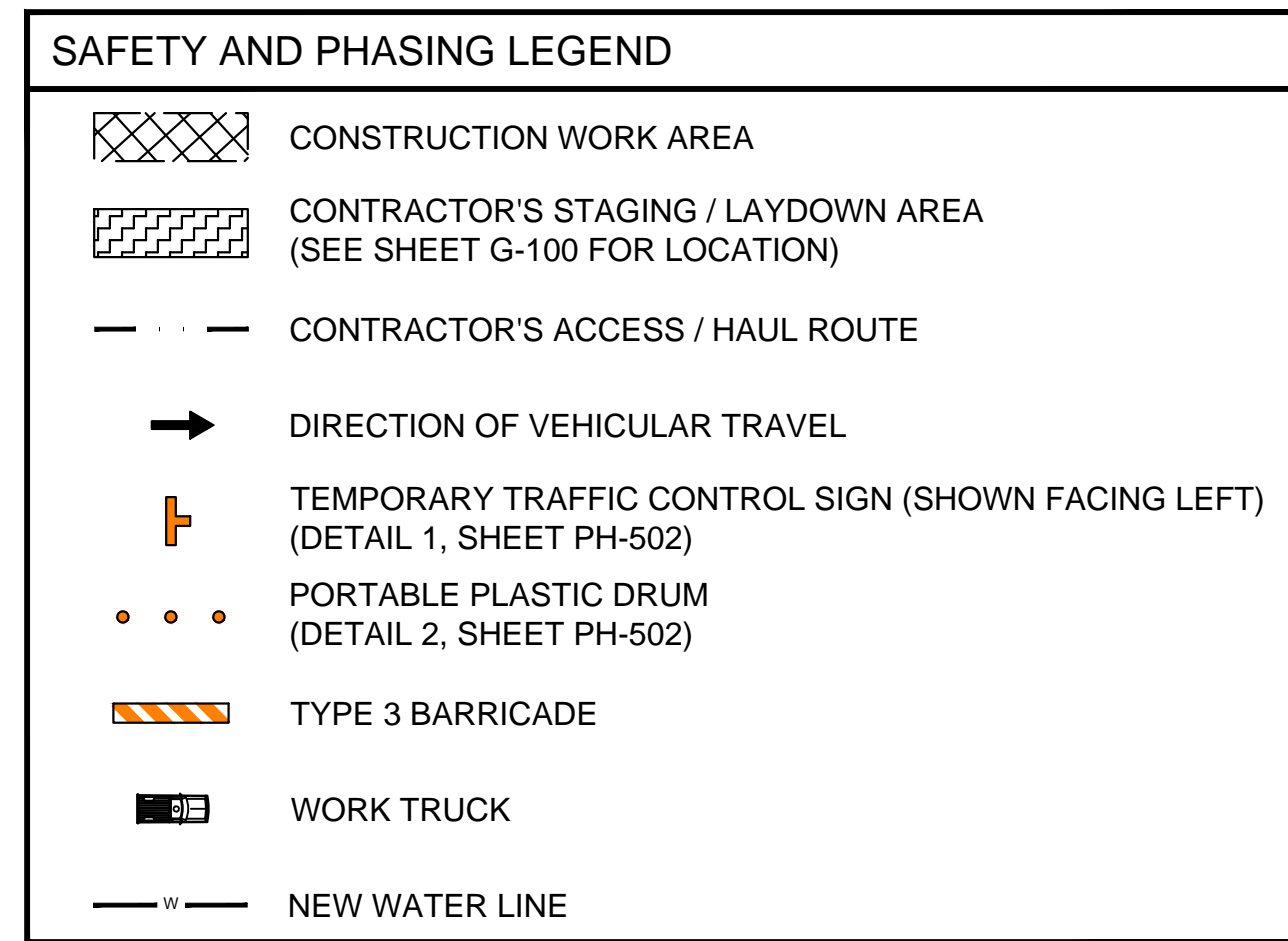
PHASE 2A

PHASE 2B

— W — NEW WATER MAIN



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SAFETY AND PHASING NOTES	
1.	REFER TO SHEET PH-502 FOR ROADWAY TRAFFIC CONTROL NOTES AND DETAILS.

1. INSTALL TRAFFIC CONTROL MEASURES
2. INSTALL EROSION CONTROL MEASURES
3. INSTALL NEW WATER LINE
4. RESTORE PERMANENT GRASSING
5. REMOVE TRAFFIC CONTROL MEASURES

1. WORK LIMITS INCLUDE UNPAVED AREA FROM THE WATER TANK TO THE CENTER CARGO WATER MAIN.
2. ALL WORK DURING THIS PHASE WILL TAKE PLACE OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.
3. MAXIMUM EQUIPMENT HEIGHT SHALL NOT EXCEED 20-FT ABOVE GROUND LEVEL (AGL).

The diagram shows a cross-section of a road with a centerline labeled "ROAD ϕ ". Two orange and white striped portable plastic drums are positioned on either side of the centerline. The distance from the centerline to each drum is 12'. The distance between the two drums is 10' MIN. A downward arrow is on the left side of the centerline, and an upward arrow is on the right side. A dashed line represents the "EXISTING PAVEMENT". A solid line with a cross-hatch pattern represents the "CONTRACTOR'S UTILITY TRENCH". A label "PORTABLE PLASTIC DRUM" points to one of the drums.

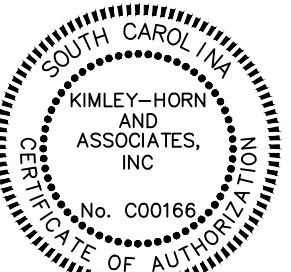
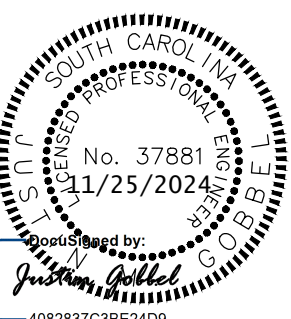
GRAPHIC SCALE IN FEET



A horizontal scale bar with alternating black and white segments. The segments are labeled 0, 50, 100, and 200.



Kimley»»Horn
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KHA PROJECT 013981015	DATE 11/25/2024	SCALE	AS SHOWN
		DESIGNED BY	SAM
		DRAWN BY	JE
		CHECKED BY	JMG

SHEET TITLE

SAFETY AND PHASING PLAN - PHASE 1A

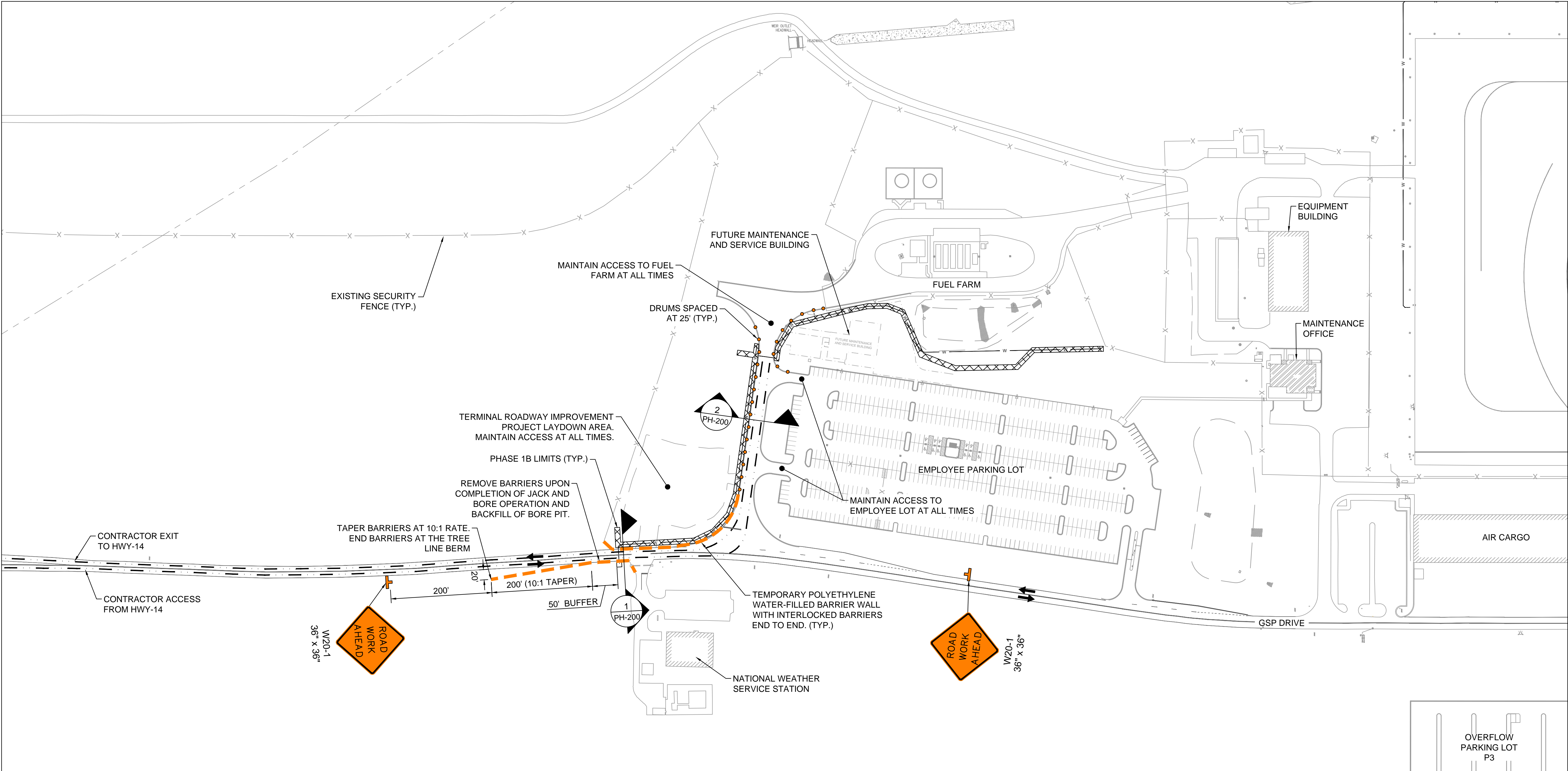
PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
PH-100

Drawing name: K:\ATL_Aviation\Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\PH-200 - PHASING PLAN 1B.dwg PH-200 Nov 25, 2024 2:33pm by: justin.gbbel

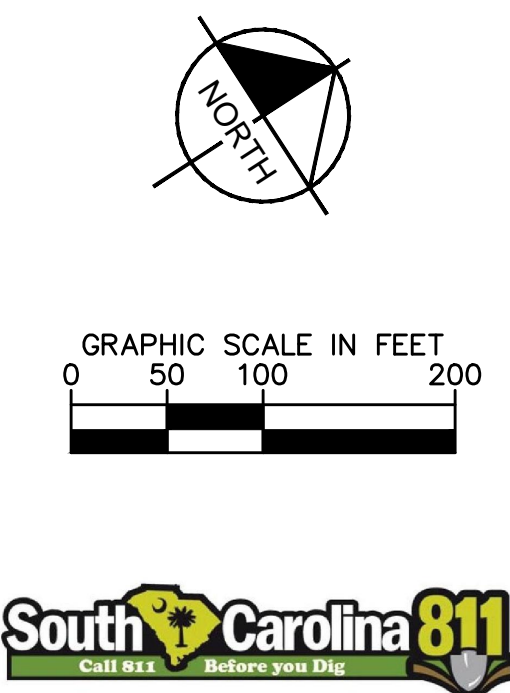
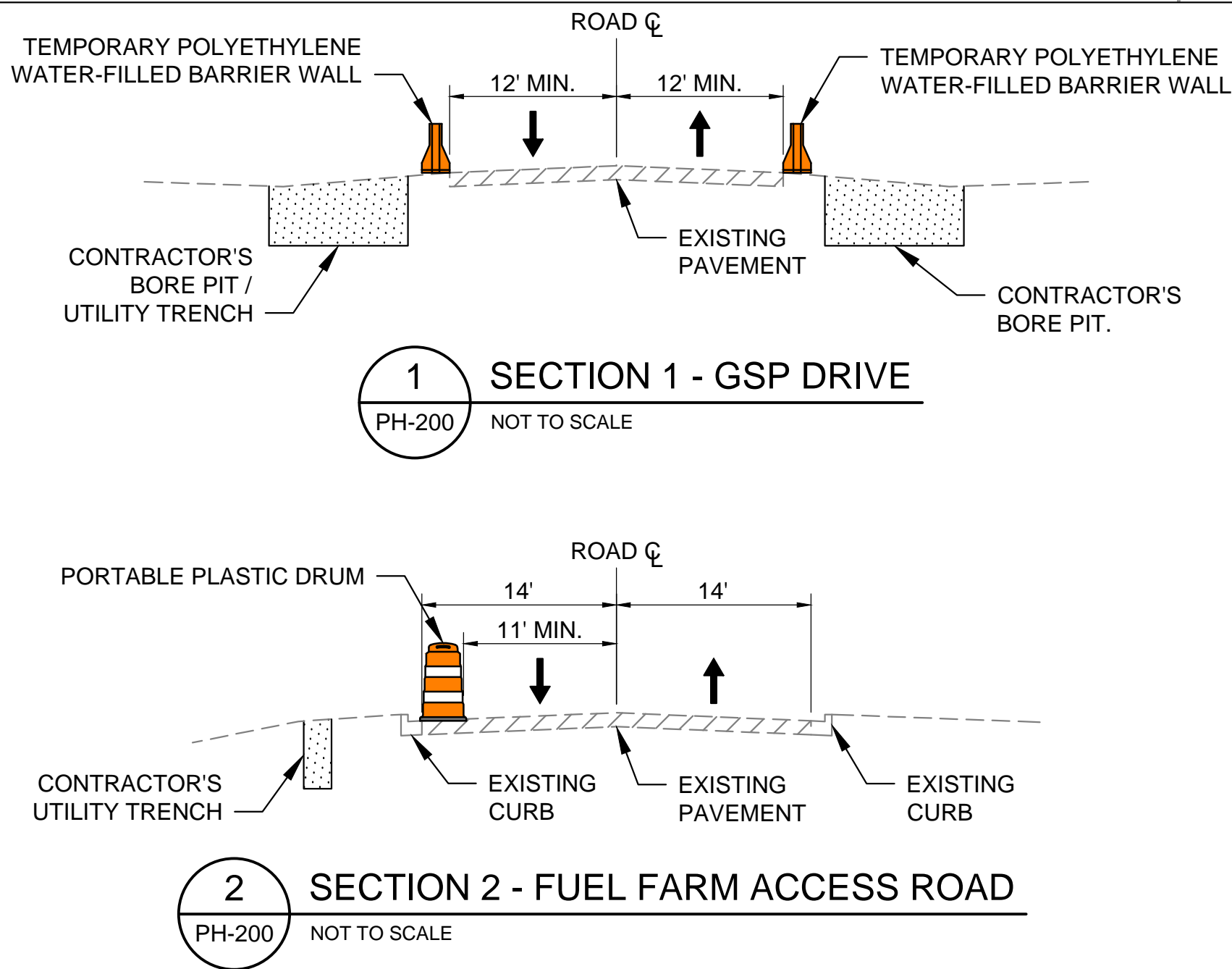


SAFETY AND PHASING LEGEND	
	CONSTRUCTION WORK AREA
	CONTRACTOR'S STAGING / LAYDOWN AREA (SEE SHEET G-100 FOR LOCATION)
	CONTRACTOR'S ACCESS / HAUL ROUTE
	DIRECTION OF VEHICULAR TRAVEL
	TEMPORARY TRAFFIC CONTROL SIGN (SHOWN FACING LEFT) (DETAIL 1, SHEET PH-502)
	PORTABLE PLASTIC DRUM (DETAIL 2, SHEET PH-502)
	TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL (DETAIL 3, SHEET PH-502)
	NEW WATER LINE

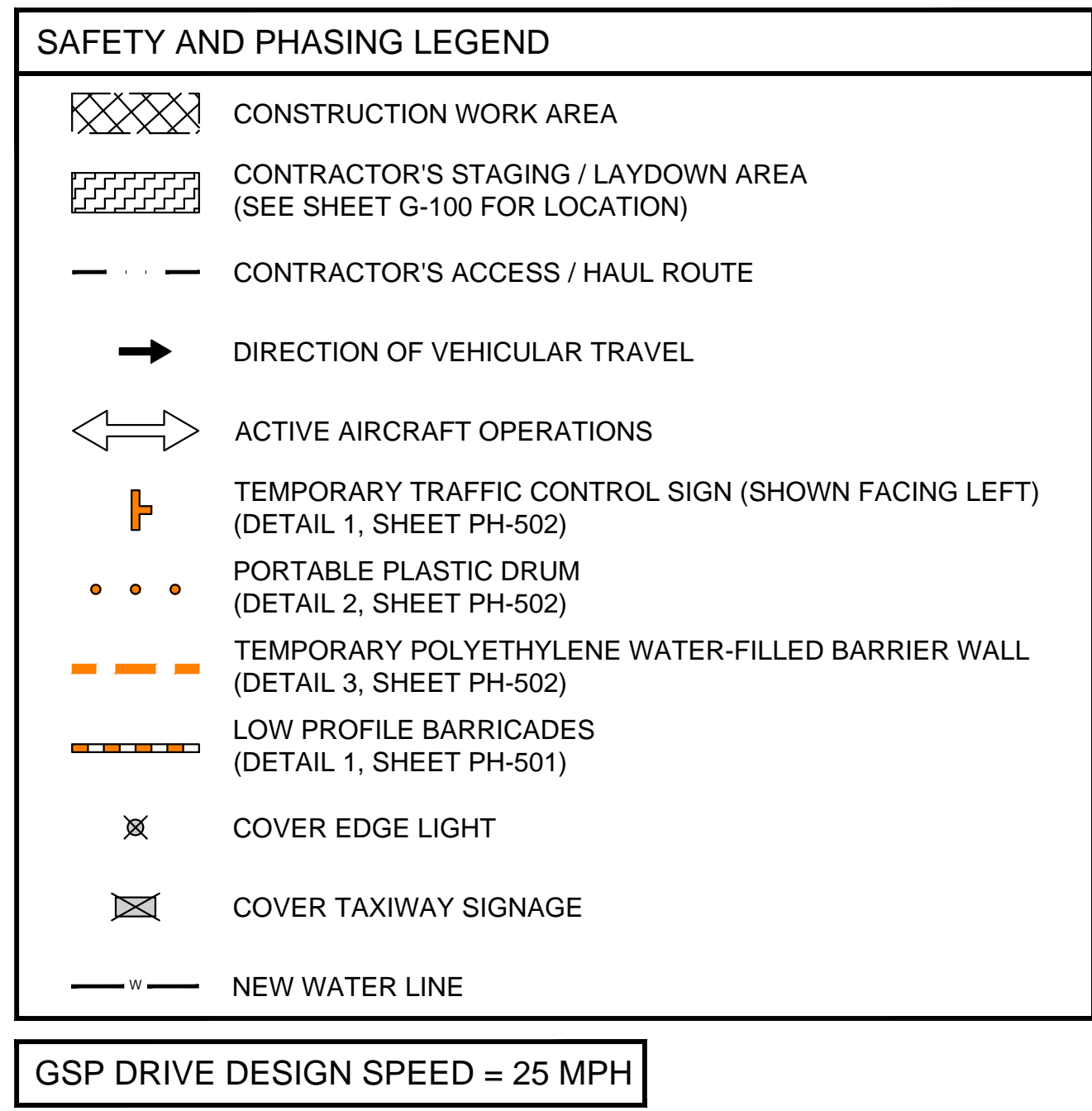
GSP DRIVE DESIGN SPEED = 45 MPH

SAFETY AND PHASING NOTES	
1. REFER TO SHEET PH-502 FOR ROADWAY TRAFFIC CONTROL NOTES AND DETAILS.	
PHASE 1B WORK ACTIVITIES	
1. INSTALL TRAFFIC CONTROL MEASURES	
2. INSTALL EROSION CONTROL MEASURES	
3. INSTALL NEW WATER LINE	
4. RESTORE PERMANENT GRASSING	
5. REMOVE TRAFFIC CONTROL MEASURES	

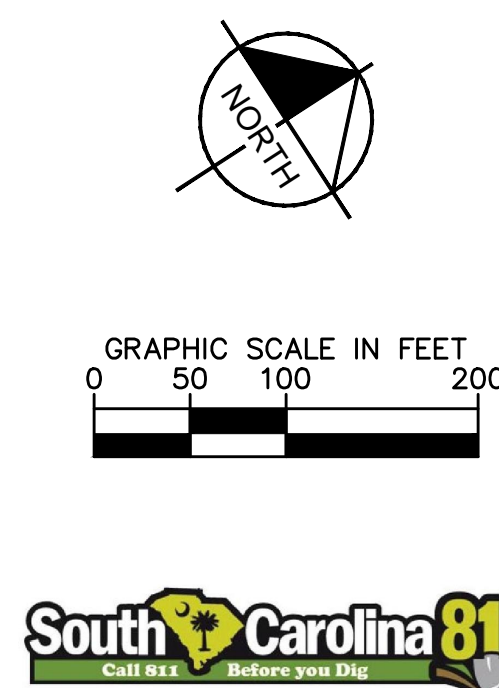
PHASE 1B WORK LIMITS	
1. WORK LIMITS INCLUDE UNPAVED SHOULDER OF FUEL FARM ACCESS ROAD, UNPAVED SHOULDER OF GSP DRIVE ADJACENT TO THE NATIONAL WEATHER SERVICE STATION, AND UNPAVED AREA BETWEEN THE EMPLOYEE PARKING LOT AND FUEL FARM.	
2. ALL WORK DURING THIS PHASE WILL TAKE PLACE OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT.	
3. MAXIMUM EQUIPMENT HEIGHT SHALL NOT EXCEED 20-FT ABOVE GROUND LEVEL (AGL).	
PHASE 1B ROADWAY COORDINATION / STATUS	
1. AOA PAVEMENTS AND ACCESS ROUTES WILL REMAIN OPEN AT ALL TIMES DURING THIS PHASE.	
2. GSP DRIVE, FUEL FARM, AND EMPLOYEE PARKING LOT WILL REMAIN OPEN AT ALL TIMES DURING THIS PHASE.	

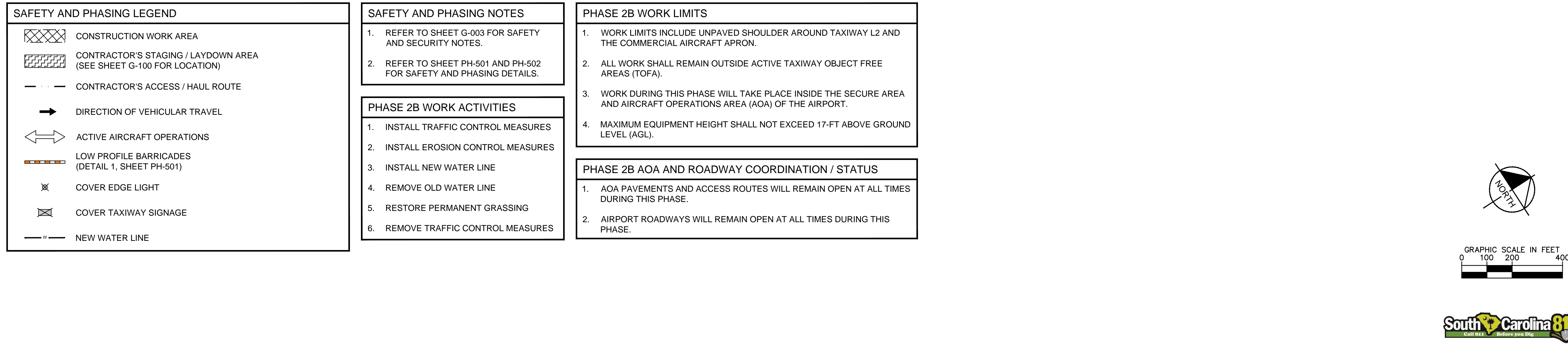


PROJECT		SHEET NUMBER	
UTILITY UPGRADE - WATER SYSTEM		PH-200	
PREPARED FOR		SHEET NUMBER	
GSP INTERNATIONAL AIRPORT		PH-200	
100% DESIGN PLANS		SHEET NUMBER	
SPARTANBURG COUNTY, SOUTH CAROLINA		PH-200	
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|---|
| <p>PHASE 2A WORK LIMITS</p> <ol style="list-style-type: none"> 1. WORK LIMITS INCLUDE UNPAVED SHOULDER BETWEEN TAXIWAY L3 AND TAXIWAY L5 AND THE UNPAVED SHOULDER OF THE G/A APRON TO THE GSP DRIVE WATER MAIN. 2. ALL WORK SHALL REMAIN OUTSIDE ACTIVE TAXIWAY OBJECT FREE AREAS (TOFA). 3. WORK DURING THIS PHASE WILL TAKE PLACE BOTH INSIDE AND OUTSIDE THE SECURE AREA AND AIRCRAFT OPERATIONS AREA (AOA) OF THE AIRPORT. 4. MAXIMUM EQUIPMENT HEIGHT SHALL NOT EXCEED 17-FT ABOVE GROUND LEVEL (AGL). |
| <p>PHASE 2A AOA AND ROADWAY COORDINATION / STATUS</p> <ol style="list-style-type: none"> 1. WORK WILL REQUIRE TEMPORARY CLOSURE OF TAXIWAY "L4" FOR A PORTION OF THIS PHASE. CONTRACTOR TO COORDINATE CLOSURE WITH GSP OPERATIONS AND LIMIT CLOSURE TO MINIMUM DURATION NECESSARY TO INSTALL PORTION OF WATER LINE WITHIN THE TAXIWAY "L4" OBJECT FREE AREA. 2. TAXIWAY "L" AND THE G/A APRON WILL REMAIN OPEN FOR AIRCRAFT OPERATIONS AT ALL TIMES DURING THIS PHASE. 3. GSP DRIVE AND G/A HANGAR PARKING LOT WILL REMAIN OPEN AT ALL TIMES DURING THIS PHASE. |



[illegible]



- 1 LOW PROFILE BARRICADE (TYPE I)
PH-501 NOT TO SCALE



- 2 VEHICLE FLAG DETAIL
PH-501 NOT TO SCALE



- 3 TAXIWAY CENTERLINE MARKING
PH-501 NOT TO SCALE

[illegible]

ALL TRAFFIC CONTROL DEVICES, INCLUDING INSTALLATION SHALL BE OF THE SIZE, TYPE, COLOR, SHAPE, MOUNTING HEIGHT, LOCATION, AND MESSAGE AS DESCRIBED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", W/ CURRENT REVISIONS (MUTCD) AND STATE OF SOUTH CAROLINA MUTCD SUPPLEMENT.

2. PRIOR TO BEGINNING CONSTRUCTION OPERATIONS IN EACH PHASE OR SUBPHASE, ALL TEMPORARY CONSTRUCTION BARRIERS, SIGN LIGHTS, CONES, FENCE, ETC. SHALL BE IN PLACE AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.

3. FOR CONSTRUCTION AREAS LEFT UNATTENDED, THE CONTRACTOR SHALL ENSURE THAT THESE AREAS ARE PROPERLY BARRICADED.

4. THE CONTRACTOR SHALL COVER ANY EXISTING SIGNS THAT MAY CONFLICT WITH THE TRAFFIC CONTROL PLAN SIGNING AS DIRECTED BY THE ENGINEER.

5. NOTHING IN THIS PLAN IS INTENDED TO SUPERSEDE OR RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF INSTALLING APPROPRIATE TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE CURRENT MUTCD.

6. PORTABLE SIGN SUPPORT MOUNTED ADVANCE SIGNS ARE TO BE INSTALLED NO LESS THAN 6 FEET FROM THE EDGE OF AN ADJACENT TRAVEL LANE WHEN THE SHOULDER IS EARTH AND NO PAVED SHOULDER EXISTS. IN THOSE AREAS WITH CURB AND GUTTER, INSTALL THE PORTABLE SIGN SUPPORT MOUNTED ADVANCE SIGNS NO LESS THAN 2 FEET FROM THE FACE OF THE CURB.

7. SPACINGS INDICATED ARE FOR NORMAL CONDITIONS. ADJUSTMENTS MAY BE REQUIRED DUE TO HORIZONTAL AND/OR VERTICAL ALIGNMENTS OR OTHER SIGHT DISTANCE RESTRICTIONS.

8. ALL SIGNS SHALL HAVE A MINIMUM MOUNTING HEIGHT OF 7 FEET FROM THE GROUND TO THE BOTTOM OF THE SIGN MOUNT ALL SIGNS SUCH THAT THEY ARE STRAIGHT AND LEVEL AND THE FACE OF THE SIGNS ARE PERPENDICULAR TO THE SURFACE OF THE ROADWAY.

9. PORTABLE SIGN SUPPORTS SHALL BE WEIGHTED WITH SANDBAGS OR OF EQUIVALENT MEANS NECESSARY TO SECURE AGAINST WIND. SANDBAGS SHALL BE CHECKED VISUALLY FOR SIGNS OF WEAR AND TEAR ON A DAILY BASIS. SANDBAGS SHALL BE REPLACED WHEN DEEMED APPROPRIATE BY THE RPR, ENGINEER, OR OWNER.

10. REFLECTORIZE ALL ORANGE ADVANCE SIGNS AND ALL ORANGE AREAS OF A MULTI-COLORED ADVANCE SIGN WITH A FLUORESCENT ORANGE COLORED PRISMATIC REFLECTIVE SHEETING WHERE THE SIGNS ARE TO BE ORANGE. ALSO, REFLECTORIZE ALL WHITE ADVANCE SIGNS AND ALL WHITE AREAS OF A MULTI-COLORED ADVANCE SIGN WITH A WHITE COLORED PRISMATIC REFLECTIVE SHEETING WHERE THE SIGNS ARE TO BE WHITE. SUPPLEMENT EACH ADVANCE WARNING SIGN WITH TWO ORANGE FLAGS.

11. SIGNS SHOULD BE PROPERLY MAINTAINED FOR CLEANLINESS, VISIBILITY, RETROREFLECTIVITY, AND CORRECT POSITIONING. SIGNS THAT HAVE LOST SIGNIFICANT LEGIBILITY SHOULD BE PROMPTLY REPLACED WHEN DEEMED APPROPRIATE BY THE RPR, ENGINEER, OR OWNER.

12. ALL TRAFFIC CONTROL DEVICES, INCLUDING 36" CONES, OVERSIZED CONES, PORTABLE PLASTIC DRUMS, BARRICADES, PORTABLE SIGN SUPPORTS, SIGN SUBSTRATUMS, TRUCK MOUNTED ATTENUATORS, BREAKAWAY SYSTEMS FOR GROUND MOUNTED SIGN SUPPORTS, ETC., SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY SCDOT. ALL APPROVED TRAFFIC CONTROL DEVICES ARE INCLUDED ON THE "APPROVED PRODUCTS LIST FOR TRAFFIC CONTROL DEVICES IN WORK ZONES". THIS LIST MAY BE ACCESSED ON SCDOT'S WEB SITE AT: www.dot.state.sc.us.

13. REFLECTORIZE ALL DRUMS AND BARRICADES WITH A TYPE III HIGH INTENSITY REFLECTIVE SHEETING UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

14. THE TYPE III BARRICADES SHALL BE 3 FEET WIDE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

15. THE CONTRACTOR SHALL CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCR OACH ONTO THE LANE ADJACENT TO THE CLOSED LANE OR THE LANE ADJACENT TO SHOULDER WORK AREA. MAINTAIN A MINIMUM 10 FT WIDE TRAVEL LANE AT ALL TIMES. THE CONTRACTOR SHALL PLACE, MAINTAIN, AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY.

16. THE AIRPORT RESERVES THE RIGHT TO RESTRICT CONSTRUCTION OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE SCDOT STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS, AND/OR THE ENGINEER.

17. USE OF TEMPORARY TRAFFIC CONTROL DEVICES, SUCH AS BARRICADES, DRUMS, SIGNS, ETC., SHALL BE LIMITED TO THE IMMEDIATE AREAS OF CONSTRUCTION WHERE A HAZARD IS PRESENT. THESE DEVICES, WHEN NOT IN USE, SHALL BE STORED AWAY FROM THE ROADWAY WORK AREA AS DIRECTED BY THE OWNER. THESE DEVICES SHALL BE REMOVED FROM THE CONSTRUCTION WORK ZONE WHEN THE OWNER DETERMINES THEY ARE NO LONGER NEEDED.

18. INSTALL AND PLACE THE APPROACH TAPERS AND THE BARRIER ENDS OF A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM THAT DOES NOT HAVE AN ACCEPTANCE LETTER FROM THE FEDERAL HIGHWAY ADMINISTRATION APPROVING THE WATER-FILLED BARRIER WALL SYSTEM TO ACT AS ITS OWN END PROTECTION AS FOLLOWS:

APPROACH TAPERS - TAPER THE APPROACH TAPER OF A LINE OF A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM ADJACENT TO A TRAVEL LANE AWAY FROM THE TRAVEL LANE AT THE FIRST PRACTICAL OPPORTUNITY. INSTALL THE TAPERS AT THE FOLLOWING RATES:

DESIGN SPEED	TAPER RATE	MINIMUM CLEARANCE
40 & BELOW	8:1	15 FEET
45 & ABOVE	10:1	30 FEET

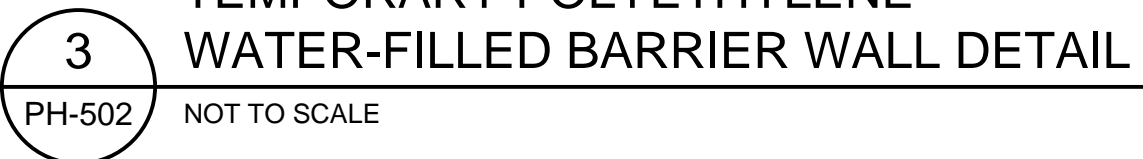
BARRIER ENDS - MINIMIZE THE HAZARD OF A BARRIER END BY PROTECTING THE END OF THE BARRIER, TERMINATING THE BARRIER SUCH THAT IT IS INACCESSIBLE TO VEHICLES OR TERMINATING THE BARRIER AT OR IN EXCESS OF THE MINIMUM CLEARANCE DISTANCES FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE.

PORTABLE TERMINAL IMPACT ATTENUATORS - A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM CAN BE SHIELDED BY AN APPROVED PORTABLE TERMINAL IMPACT ATTENUATOR.

COORDINATING TERMINATION WITH EXISTING FEATURES - A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM CAN BE MADE INACCESSIBLE TO VEHICLES BY EXTENDING THE LINE OF BARRIER BEHIND A DITCH LINE. A TREE LINE OR OTHER NATURAL OBSTRUCTION OR BY EXTENDING THE LINE OF BARRIER INTO A CUT SLOPE, BEHIND GUARDRAIL. A BRIDGE RAIL OR OTHER EXISTING HIGHWAY FEATURE. PLACEMENT OF NONCOMPACTED FILL DIRT IN FRONT OF A BARRIER END FOR PROTECTION OF THE BARRIER END IS PROHIBITED.

CLEARANCE DISTANCES - ON A TANGENT SECTION AND ON THE INSIDE OF A CURVE WITH A DESIGN SPEED OF 40 MPH OR LESS AND WITH ROADSIDE SLOPES OF 10 : 1 OR FLATTER, A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM MAY BE TERMINATED WITH A MINIMUM CLEARANCE DISTANCE OF 15 FEET VIA AN 8 : 1 TAPER FROM THE NEAR OF AN OPPOSING TRAVEL LANE TO THE BARRIER END, ON A TANGENT SECTION AND ON THE OUTSIDE OF A CURVE WITH A DESIGN SPEED OF 45 MPH OR GREATER, A TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL SYSTEM MAY BE TERMINATED WITH A MINIMUM CLEARANCE DISTANCE OF 30 FEET VIA A 10 : 1 TAPER FROM THE NEAR EDGE OF AN OPPOSING TRAVEL LANE TO THE BARRIER END.

19. THE COST OF FURNISHING AND MAINTAINING ROADWAY TRAFFIC CONTROL DEVICES SHALL BE INCLUDED IN THE CONTRACTORS BID UNIT COST FOR ITEM 01 55 26 TRAFFIC CONTROL (ROADWAY).



TEMPORARY POLYETHYLENE WATER-FILLED BARRIER WALL NOTES:

-
- Diagram illustrating the components and dimensions of a Type C Steady Burn Amber Warning Light assembly:
- TYPE C STEADY BURN AMBER WARNING LIGHT**: The top component, which is a circular light with a yellow center and an orange outer ring, mounted on a bracket.
 - 18" MIN.**: Dimension indicating the minimum height from the top of the light to the top of the barrel.
 - 6" WHITE REFLECTIVE STRIPE**: Two horizontal reflective stripes on the orange barrel.
 - 36" MIN.**: Dimension indicating the minimum height of the barrel.
 - BASE**: The circular base on which the barrel sits.

1. PORTABLE PLASTIC DRUMS SHALL BE PLACED IN POSITION AS SHOWN ON PLANS. EACH DRUM SHALL INCLUDE A 10-POUND PREFORMED WEIGHT TO SECURE AGAINST WIND. PAYMENT SHALL BE FULL COMPENSATION FOR FURNISHING BARRELS (INCLUDING LIGHTING AND WEIGHTING EQUIPMENT) AND PLACEMENT AND REMOVAL AS REQUIRED.
2. SPACING INDICATED ON THE PLANS ARE FOR NORMAL CONDITIONS. INSTALL THE PORTABLE PLASTIC DRUMS THE MAXIMUM DISTANCE FROM THE NEAR EDGE OF THE ADJACENT TRAVEL LANE WHILE PROVIDING SUFFICIENT SPACE TO CONDUCT THE WORK. ADJUSTMENTS MAY BE REQUIRED DUE TO VARIOUS SITE CONDITIONS. MAINTAIN THE TRAVEL LANE WIDTHS AND THE MINIMUM 2 FOOT OFFSET DISTANCE BETWEEN THE FACE OF THE DRUM AND THE NEAR EDGE OF THE ADJACENT TRAVEL LANE UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL REPLACE USED DRUMS WITH NEW DRUMS AT ANY TIME THEIR VISIBILITY IS REDUCED BY AGING OR DAMAGE AS DIRECTED BY THE RPR, ENGINEER OR OWNER.
4. A TYPE C STEADY BURN AMBER WARNING LIGHT SHALL BE PROVIDED AT A MINIMUM OF EVERY OTHER DRUM. THE CONTRACTOR SHALL HAVE REPLACEMENT LIGHTS ON SITE AND SHALL REPLACE LIGHTS WITHIN ONE HOUR OF NOTIFICATION BY THE RPR, ENGINEER OR OWNER.
5. DRUMS AND LIGHTS SHALL COMPLY WITH ALL NCHRP REPORT 350 REQUIREMENTS AND SHALL BE APPROVED BY SCDOT.

PH-502 NOT TO SCALE



- ## GENERAL GRASSING NOTES

- ## Permanent Seeding - Upstate

GENERAL EROSION AND SEDIMENT CONTROL NOTES

- ### EROSION CONTROL LEGEND

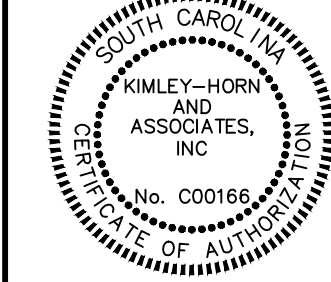
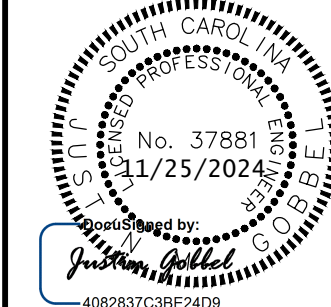


NOTE
1. DETAIL SHOWN IS FOR EROSION CONTROL PURPOSES ONLY.
REFER TO WATER LINE TRENCH AND BEDDING DETAILS ON
SHEET C-250 FOR TRENCH AND BEDDING REQUIREMENTS.

NOT TO SCALE



KIMLEY-HORN AND ASSOCIATES, INC.
GERVAIS STREET, SUITE 201,
COLUMBIA, SC 29201
PHONE: 803-403-8558
WWW.KIMLEY-HORN.COM



KHA PROJECT 013981015	DATE 11/25/2024	SCALE AS SHOWN	DESIGNED BY SAM	DRAWN BY JE	CHECKED BY IMG
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EROSION CONTROL NOTES

PROJECT

UTILITY UPGRADE - WATER SYSTEM

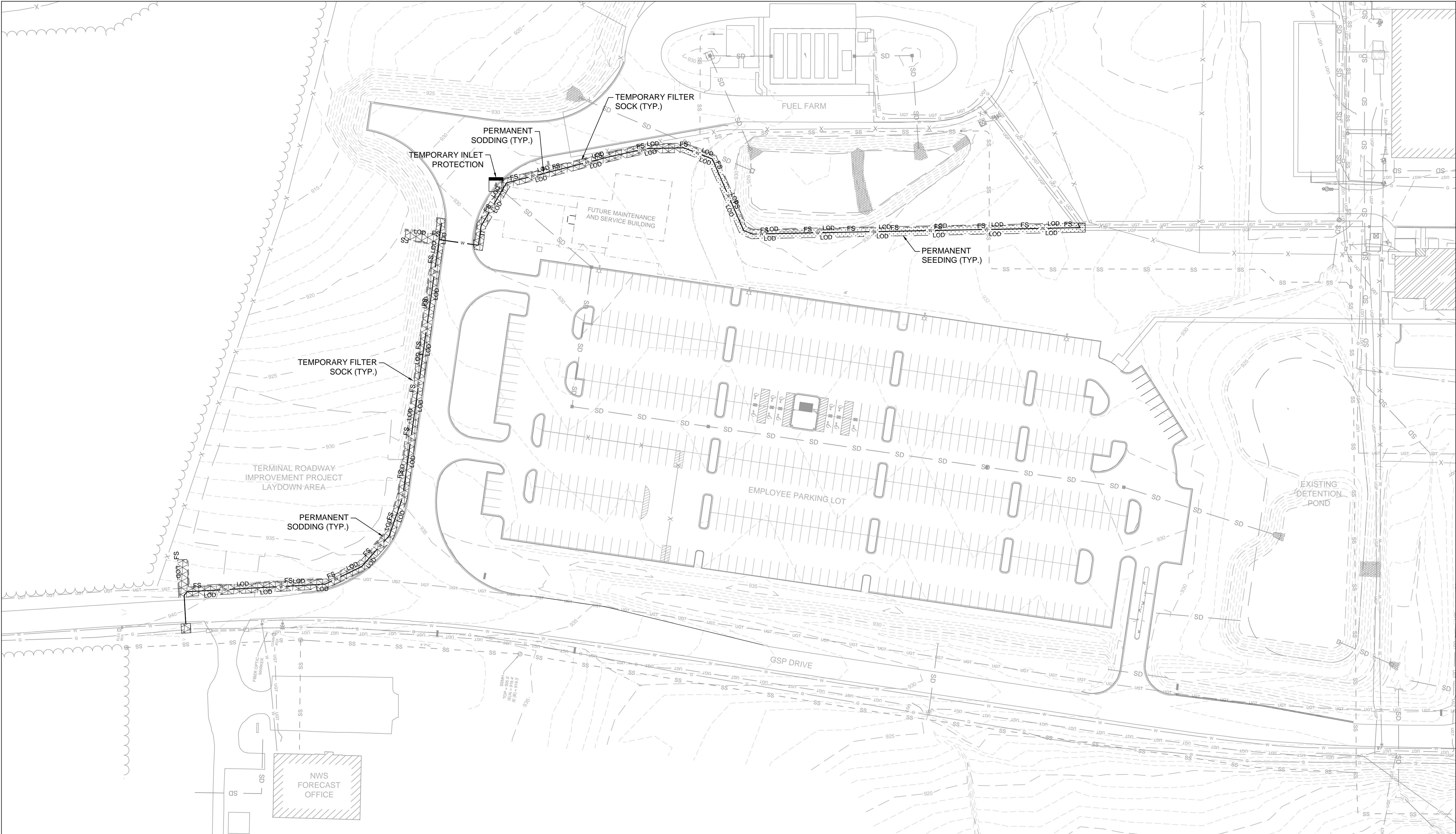
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CGSP INTERNATIONAL AIRPORT
100% DESIGN BY ANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER

C-100

Drawing name: K:\ATL_Aviation\Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-101 - EROSION CONTROL PLAN.dwg C-101 Nov 25, 2024 2:35pm by justin.gobbel



EROSION CONTROL PLAN NOTES

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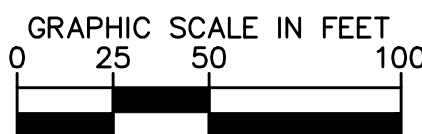
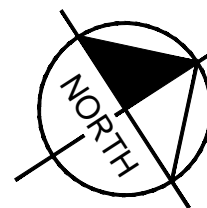
- SEE SHEET C-100 GENERAL EROSION CONTROL NOTES.
- SEE SHEET C-110 FOR EROSION CONTROL DETAILS.
- CONTRACTOR SHALL REVIEW, UNDERSTAND AND IMPLEMENT ALL REQUIRED EROSION AND SEDIMENT CONTROL MEASURES PRIOR TO ANY DISTURBANCE.
- ALL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING, BUT NOT LIMITED TO: STONE CONSTRUCTION ENTRANCE, FILTER SOCK, AND INLET PROTECTION SHALL BE REMOVED AT THE COMPLETION OF CONSTRUCTION. EROSION AND SEDIMENT CONTROL MEASURES MUST MEET SCDHEC REQUIREMENTS PRIOR TO SUBSTANTIAL COMPLETION INCLUDING THE COMPLETE REMOVAL OF SEDIMENTATION AND REPAIRS TO ANY MEASURES THAT ARE DAMAGED.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING FINAL STABILIZATION.

GENERAL EROSION CONTROL CONSTRUCTION SEQUENCING:

- INSTALL TEMPORARY FILTER SOCKS AND INLET PROTECTION.
- BEGIN INSTALLATION OF WATER LINE. MAINTAIN AND ADJUST ALL FILTER SOCKS AND INLET PROTECTION THROUGHOUT EARTHWORK ACTIVITIES TO MAINTAIN DRAINAGE PATTERNS.
- AS AREAS ARE BROUGHT TO FINISHED GRADE, CONTRACTOR TO INSTALL FINAL GRASSING AND STABILIZE ALL SLOPES PER THE EROSION CONTROL NOTES AND DETAILS.
- ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL, U.S. DEPT. OF AGRICULTURE, AND SPARTANBURG COUNTY CODE OF ORDINANCES.

EROSION CONTROL PLAN LEGEND

- EXISTING CONTOUR
- LIMITS OF DISTURBANCE
- FILTER SOCK
- INLET PROTECTION (IMPERVIOUS AREAS)
- SEDIMENT TUBE INLET PROTECTION TYPE A
- PERMANENT SODDING
- PERMANENT SEEDING

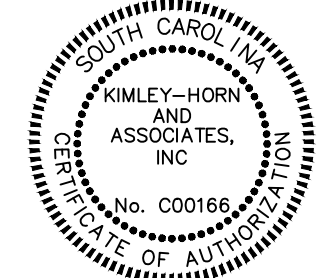
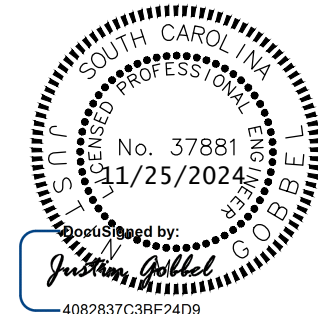


SHEET TITLE

EROSION CONTROL PLAN (BASE BID)

PROJECT
UTILITY UPGRADE - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-101



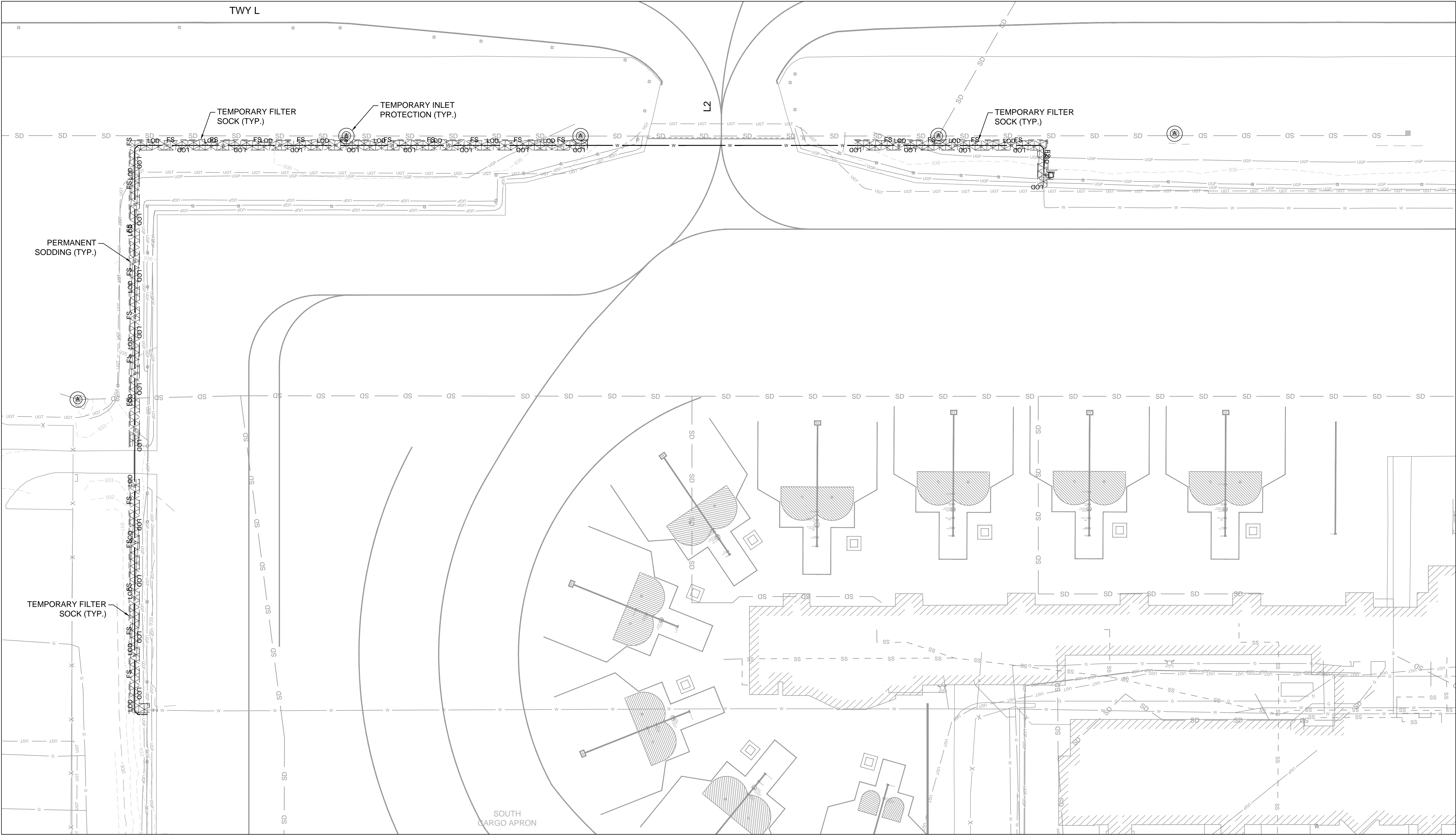
KHA PROJECT 013981015	DATE 11/25/2024
SCALE AS SHOWN	DESIGNED BY SAM
	DRAWN BY JE
	CHECKED BY JMG

Kimley»Horn

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PHONE 803-403-6558
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REVISIONS	No.	DATE	BY

Drawing name: K\ATL_Aviation\Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-101 - EROSION CONTROL PLAN.dwg C-102 Nov 25, 2024 2:35pm by justin.gobbel



EROSION CONTROL PLAN NOTES

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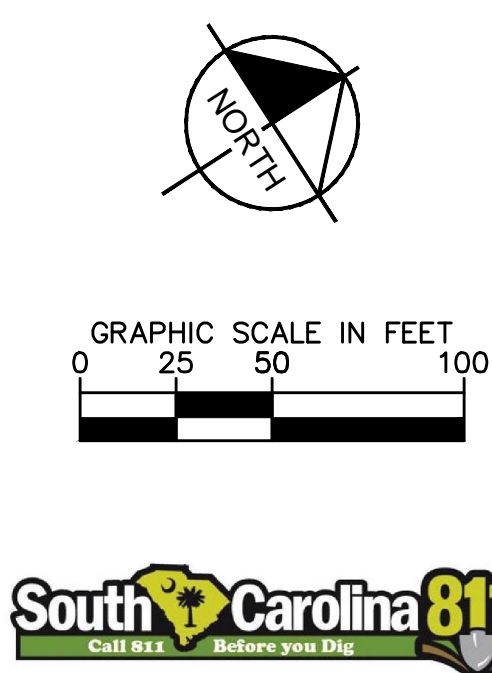
- SEE SHEET C-100 GENERAL EROSION CONTROL NOTES.
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- CONTRACTOR IS RESPONSIBLE FOR OBTAINING FINAL STABILIZATION.

GENERAL EROSION CONTROL CONSTRUCTION SEQUENCING:

- INSTALL TEMPORARY FILTER SOCKS AND INLET PROTECTION.
- BEGIN INSTALLATION OF WATER LINE. MAINTAIN AND ADJUST ALL FILTER SOCKS AND INLET PROTECTION THROUGHOUT EARTHWORK ACTIVITIES TO MAINTAIN DRAINAGE PATTERNS.
- AS AREAS ARE BROUGHT TO FINISHED GRADE, CONTRACTOR TO INSTALL FINAL GRASSING AND STABILIZE ALL SLOPES PER THE EROSION CONTROL NOTES AND DETAILS.
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EROSION CONTROL PLAN LEGEND

- 930 — EXISTING CONTOUR
- LOD — LIMITS OF DISTURBANCE
- FS — FILTER SOCK
- [Symbol] INLET PROTECTION (IMPERVIOUS AREAS)
- [Symbol] SEDIMENT TUBE INLET PROTECTION TYPE A
- [Symbol] PERMANENT SODDING
- [Symbol] PERMANENT SEEDING



SHEET TITLE

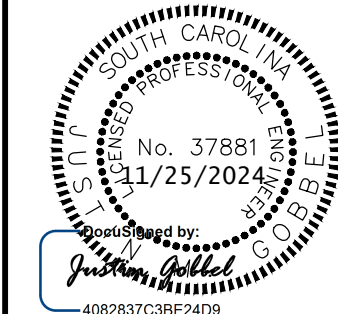
EROSION CONTROL PLAN (BID ALT. 1)

PROJECT - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-102

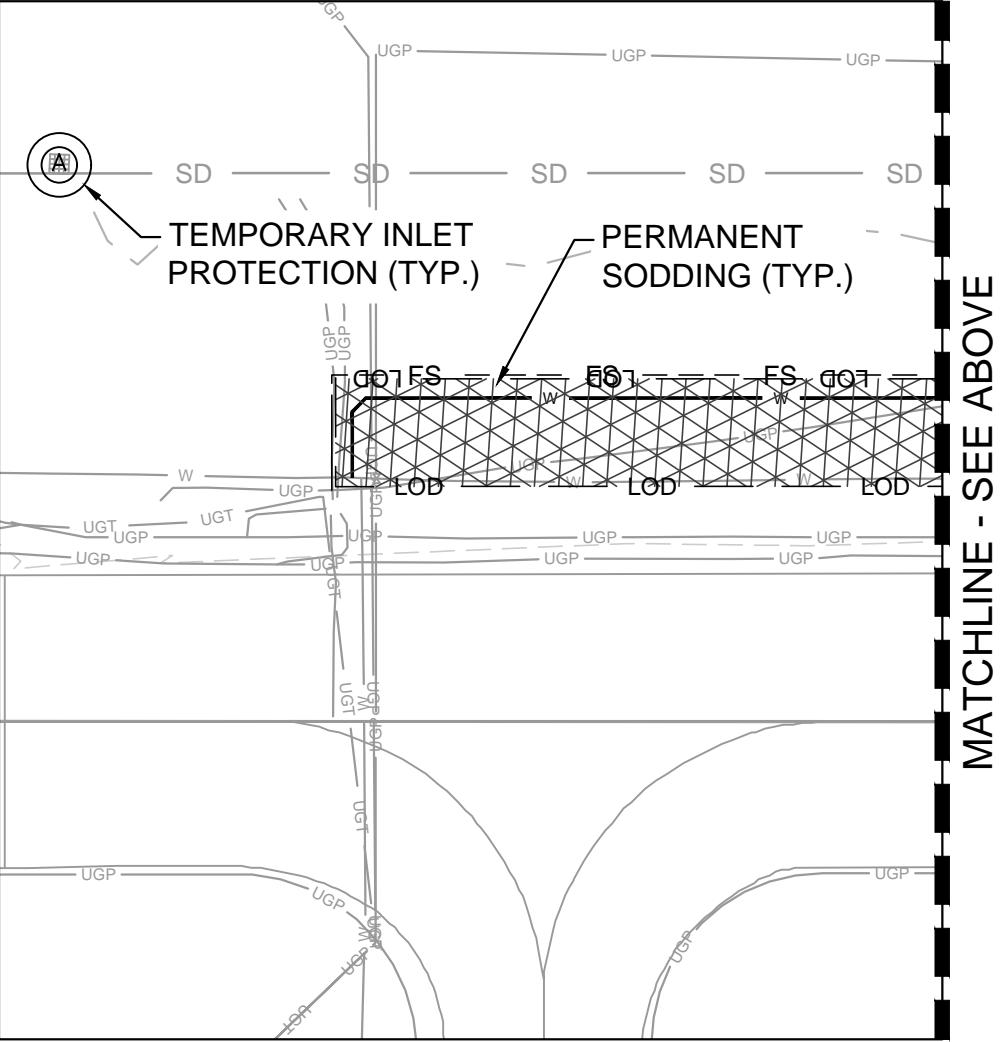
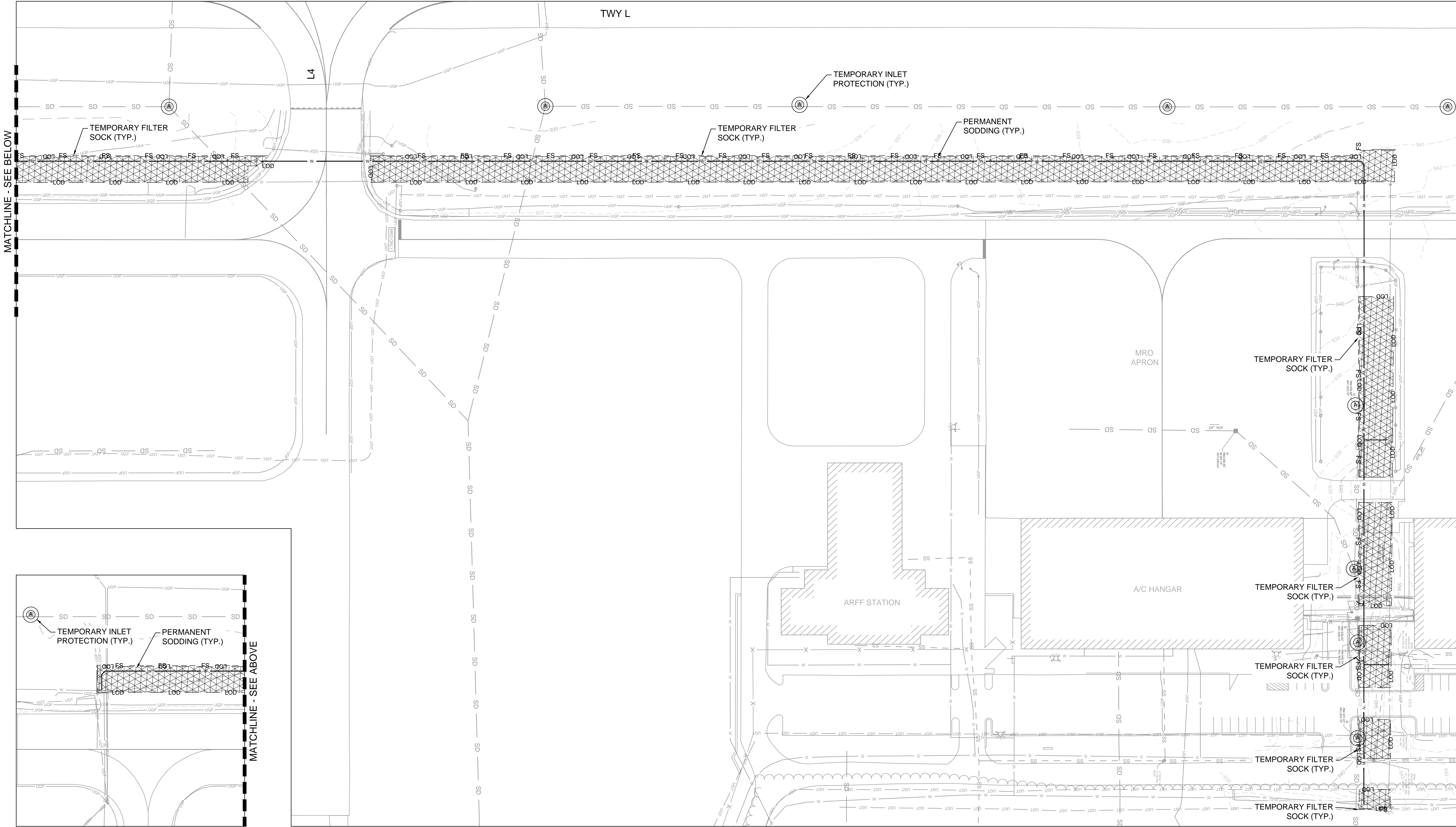
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PHONE 803-403-8558
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KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024	AS SHOWN	SAM	JE	JMG

No.	REVISIONS	DATE	BY



EROSION CONTROL PLAN NOTES

NOTES:

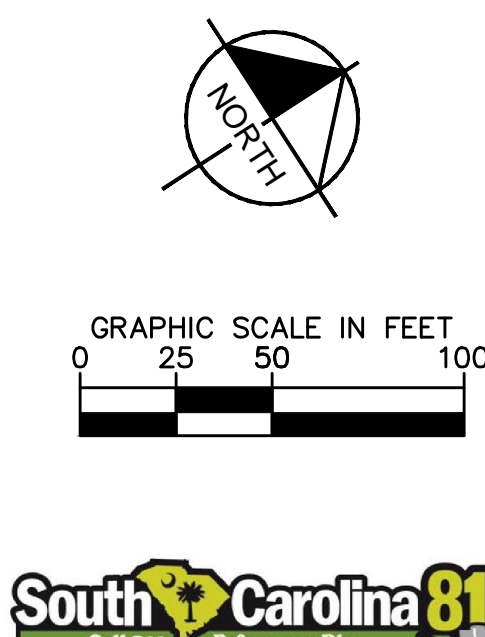
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- CONTRACTOR IS RESPONSIBLE FOR OBTAINING FINAL STABILIZATION.

GENERAL EROSION CONTROL CONSTRUCTION SEQUENCING:

- INSTALL TEMPORARY FILTER SOCKS AND INLET PROTECTION.
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EROSION CONTROL PLAN LEGEND

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- (A) SEDIMENT TUBE INLET PROTECTION TYPE A
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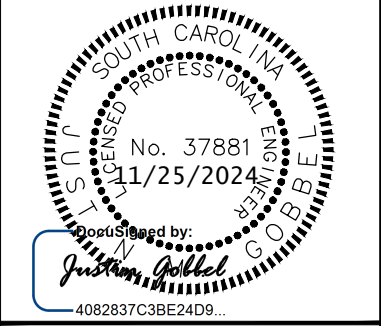
SHEET TITLE

EROSION CONTROL
PLAN (BID ALT. 1)

PROJECT
UTILITY UPGRADE - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

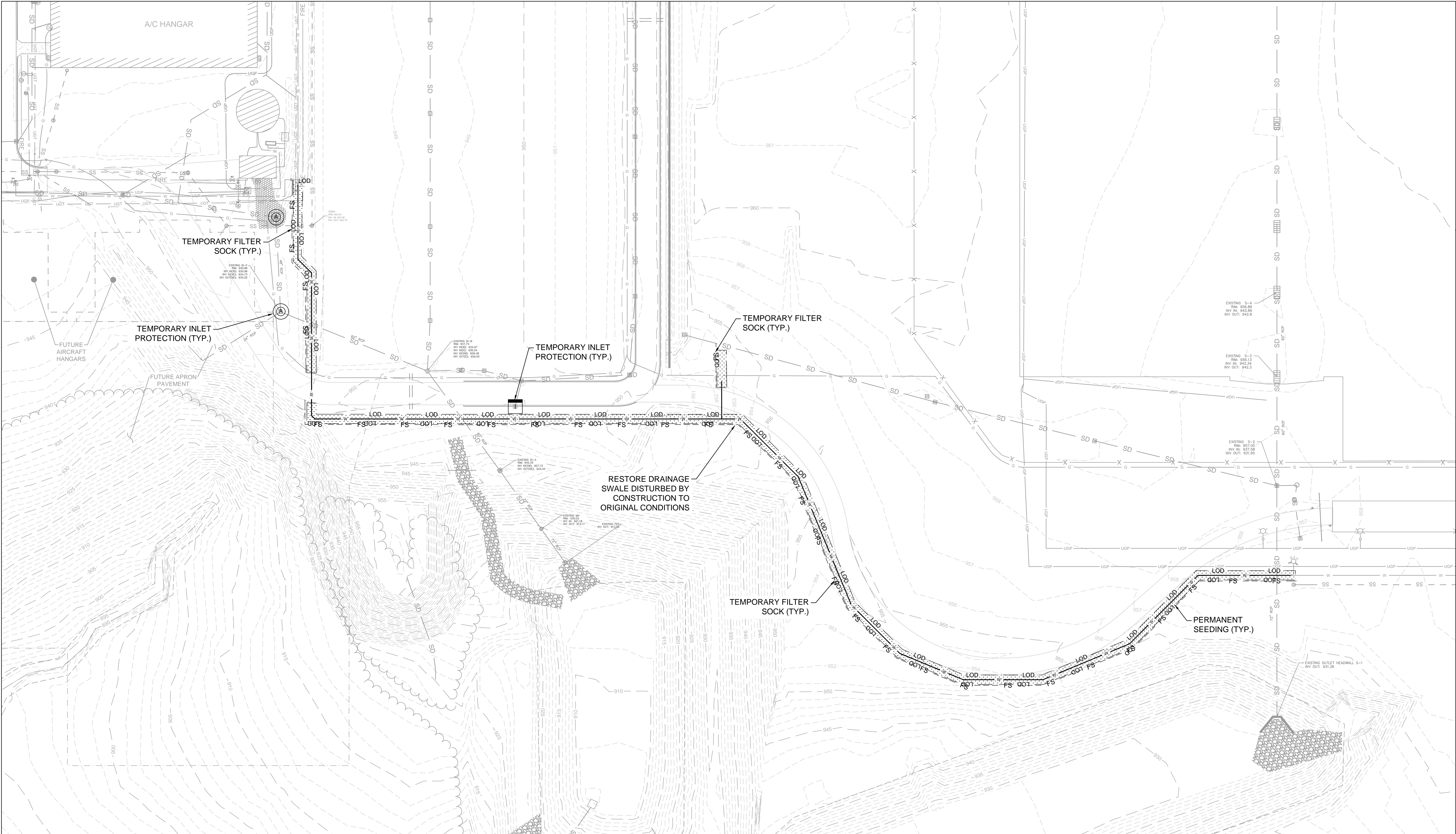
SHEET NUMBER
C-103

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KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024	AS SHOWN	SAM	JE	JMG

REVISIONS	DATE	BY
No.		



EROSION CONTROL PLAN NOTES

NOTES:

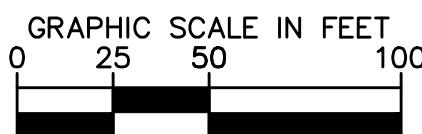
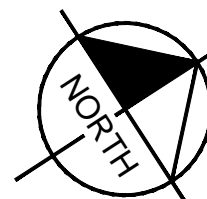
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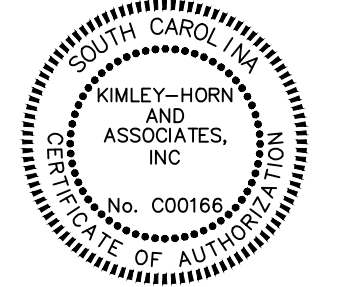
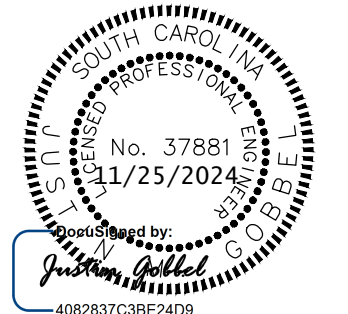
EROSION CONTROL PLAN (BASE BID)

PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-104



KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	SAM	DRAWN BY	JE	CHECKED BY	JMG
013981015	11/25/2024								

PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

PROJECT
UTILITY UPGRADE - WATER SYSTEM

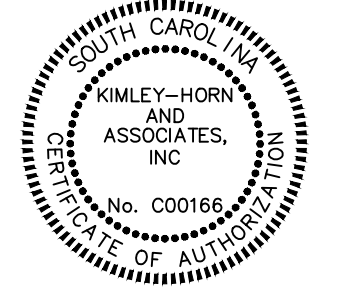
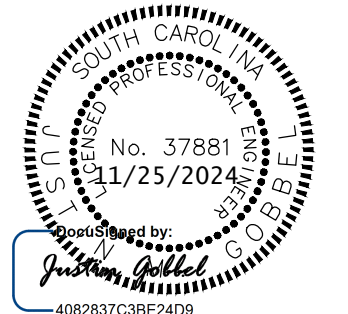
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100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-104

Kimley-Horn

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KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	SAM	DRAWN BY	JE	CHECKED BY	JMG
013981015	11/25/2024								

PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

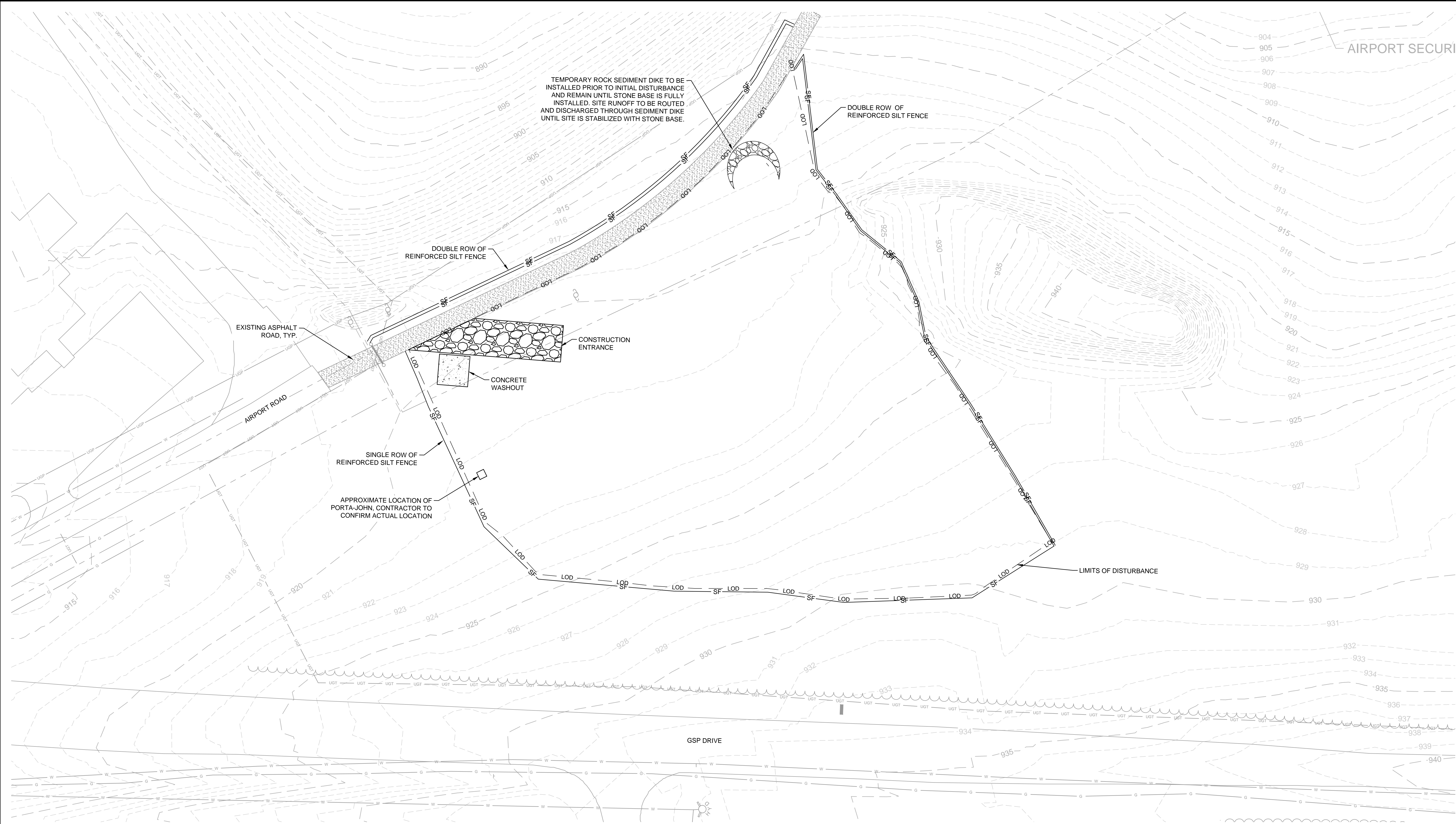
PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-104

Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\Plan\Sheets\C-105 - EROSION CONTROL PLAN STAGING AREA.dwg C-105 Nov 25, 2024 2:36pm by: Justin Gobbel



EROSION CONTROL PLAN NOTES

NOTES:

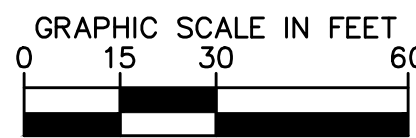
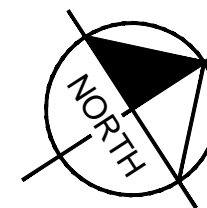
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- CONTRACTOR IS RESPONSIBLE FOR OBTAINING FINAL STABILIZATION.

GENERAL EROSION CONTROL CONSTRUCTION SEQUENCING:

- INSTALL CONSTRUCTION ENTRANCE AND CONCRETE WASH OUT. CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT THE BEGINNING OF THE PROJECT AND MAINTAINED FOR THE DURATION OF THE PROJECT. ALL ADJACENT PAVED ROADS SHALL BE CLEANED OF DEBRIS AND SEDIMENT BY THE CLOSE OF BUSINESS EACH DAY. CLEANING DURING THE DAY MAY BE NECESSARY FOR ROADWAYS SHOWING DEBRIS COLLECTION.
- INSTALL TEMPORARY SILT FENCE.
- BEGIN SITE CLEARING AND GRUBBING AND ROUGH GRADING EARTHWORK ACTIVITIES.
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EROSION CONTROL PLAN LEGEND

- EXISTING CONTOUR
- LIMITS OF DISTURBANCE
- SILT FENCE
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT



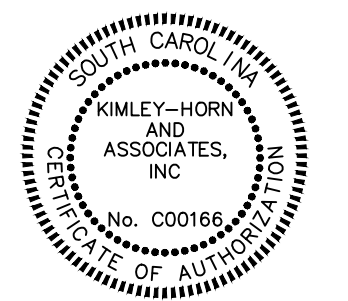
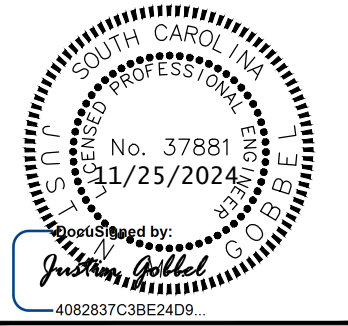
SHEET TITLE

EROSION CONTROL PLAN STAGING AREA - PHASE I

PROJECT
UTILITY UPGRADE - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER

C-105



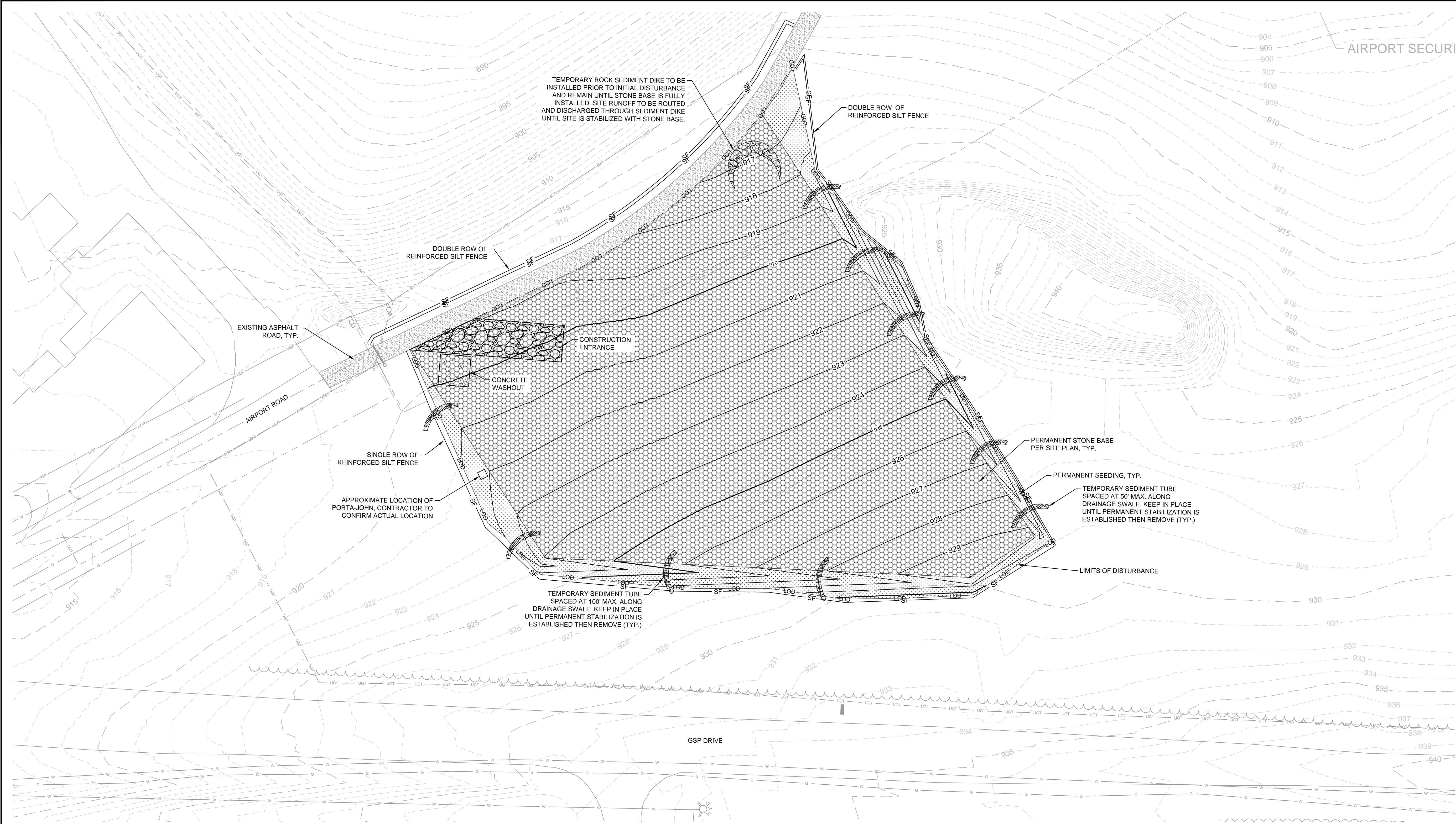
KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024	1"=40'	1"=40'	JMG	JMG	JMG

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Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\Plan\Sheets\C-106 - EROSION CONTROL PLAN STAGING AREA.dwg C-106 Nov 25, 2024 2:36pm by: Justin Gobbal



EROSION CONTROL PLAN NOTES

GENERAL NOTES:

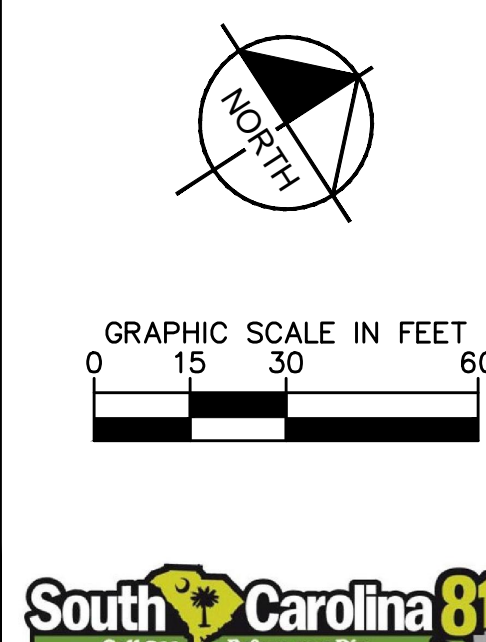
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- CONTRACTOR IS RESPONSIBLE FOR OBTAINING FINAL STABILIZATION.

GENERAL EROSION CONTROL CONSTRUCTION SEQUENCING:

- MAINTAIN CONSTRUCTION ENTRANCE AND CONCRETE WASH OUT.
- MAINTAIN TEMPORARY SILT FENCE.
- FINISH SITE CLEARING AND GRUBBING AND EARTHWORK ACTIVITIES.
- INSTALL PERMANENT GROUND STABILIZATION WITH STONE BASE PER SITE PLAN.
- AS AREAS ARE BROUGHT TO FINISHED GRADE, CONTRACTOR TO INSTALL FINAL GRASSING AND STABILIZE ALL SLOPES PER THE EROSION CONTROL NOTES AND DETAILS.
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EROSION CONTROL PLAN LEGEND

- EXISTING CONTOUR
- LIMITS OF DISTURBANCE
- FILTER SOCK
- CONSTRUCTION ENTRANCE
- CONCRETE WASHOUT
- PERMANENT SEEDING
- PERMANENT STONE BASE PER SITE PLAN



SHEET TITLE

EROSION CONTROL
PLAN STAGING AREA -
PHASE II

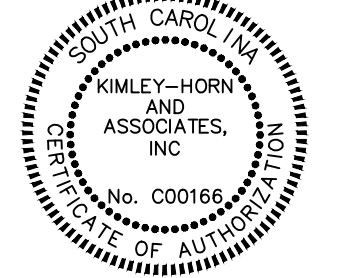
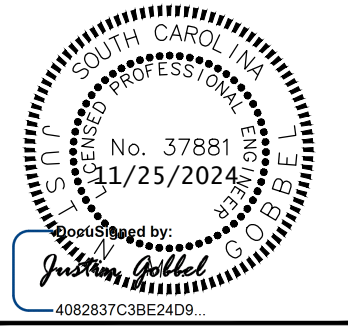
PROJECT
UTILITY UPGRADE - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER

C-106

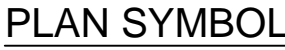
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KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024	AS SHOWN	SAM	JE	JMG

No.	REVISIONS	DATE	BY



- GENERAL NOTES:

1. SEDIMENT TUBES ARE ELONGATED TUBES OF COMPACTED GEOTEXTILES, CURLED EXCELSIOR WOOD, NATURAL COCONUT FIBER, OR HARDWOOD MULCH. STRAW, PINE NEEDLE, AND LEAF MULCH-FILLED SEDIMENT TUBES ARE NOT PERMITTED.
2. THE OUTER NETTING OF THE SEDIMENT TUBE SHOULD CONSIST OF A SEAMLESS, HIGH-DENSITY POLYETHYLENE PHOTO-DEGRADABLE MATERIALS TREATED WITH ULTRAVIOLET STABILIZERS OR A SEAMLESS, HIGH-DENSITY POLYETHYLENE NON-DEGRADABLE MATERIAL.
3. SEDIMENT TUBE DIAMETERS SHALL RANGE FROM 18-INCHES TO 24-INCHES. SEDIMENT TUBES WITH SMALLER DIAMETERS ARE PROHIBITED WHEN USED AS INLET PROTECTION.
4. CURLED EXCELSIOR WOOD, OR NATURAL COCONUT PRODUCTS THAT ARE ROLLED UP TO CREATE A SEDIMENT TUBE ARE NOT ALLOWED.
5. SEDIMENT TUBES SHOULD BE STAKED USING WOODEN AK STAKES (2-INCH X 2-INCH) OR STEEL POSTS (STANDARD "U" OR "T" SECTIONS WITH A MINIMUM WEIGHT OF 1.25 POUNDS PER FOOT) AT A MINIMUM OF 48-INCHES IN LENGTH PLACED ON 2-FOOT CENTERS.
6. INSTALL ALL SEDIMENT TUBES TO ENSURE THAT NO GAPS EXIST BETWEEN THE SOIL AND THE BOTTOM OF THE TUBE. MANUFACTURER'S RECOMMENDATIONS SHOULD ALWAYS BE CONSULTED BEFORE INSTALLATION.
7. THE ENDS OF ADJACENT SEDIMENT TUBES SHOULD BE OVERLAPPED 6-INCHES TO PREVENT FLOW AND SEDIMENT FROM PASSING THROUGH THE FIELD JOINT.
8. SEDIMENT TUBES SHOULD NOT BE STACKED ON TOP OF ONE ANOTHER.
9. EACH SEDIMENT TUBE SHOULD BE INSTALLED IN A TRENCH WITH A DEPTH EQUAL TO 1/5 THE DIAMETER OF THE SEDIMENT TUBE.
10. INSTALL STAKES AT A DIAGONAL FACING INCOMING RUNOFF.

INSPECTION & MAINTENANCE:

1. THE KEY TO FUNCTIONAL INLET PROTECTION IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.
2. REGULAR INSPECTIONS OF SEDIMENT TUBE INLET PROTECTION SHALL BE CONDUCTED ONCE EVERY CALENDAR WEEK AND, AS RECOMMENDED, CONTINUOUSLY 24-HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2-INCH OR MORE OF PRECIPITATION. DOCUMENTATION OF INSPECTIONS SHALL BE PROVIDED TO OWNER AND ENGINEER FOR RECORD.
3. ATTENTION TO SEDIMENT ACCUMULATIONS IN FRONT OF THE SEDIMENT TUBE IS EXTREMELY IMPORTANT. ACCUMULATED SEDIMENT SHOULD BE CONTINUALLY MONITORED AND REMOVED WHEN NECESSARY.
4. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES 1/3 THE HEIGHT OF THE SEDIMENT TUBE. WHEN A SUMP IS INSTALLED IN FRONT OF THE INLET PROTECTION, SEDIMENT SHALL BE REMOVED WHEN IT FILLS APPROXIMATELY 1/3 THE DEPTH OF THE SUMP.
5. REMOVED SEDIMENT SHALL BE PLACED IN STOCKPILE STORAGE AREAS OR SPREAD THINLY ACROSS DISTURBED AREA. STABILIZE THE REMOVED SEDIMENT AFTER IT IS RELOCATED.
6. LARGE DEBRIS, TRASH, AND LEAVES SHOULD BE REMOVED FROM IN FRONT OF TUBES WHEN FOUND.
7. INLET PROTECTION STRUCTURES SHOULD BE REMOVED AFTER THE DISTURBED AREAS ARE PERMANENTLY STABILIZED. REMOVE ALL CONSTRUCTION MATERIAL AND SEDIMENT, AND DISPOSE OF THEM PROPERLY. GRADE THE DISTURBED AREA TO THE ELEVATION OF THE DROP INLET STRUCTURE CREST. STABILIZE ALL BARE AREAS IMMEDIATELY.



CONCRETE WASHOUT NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD AND APPROVED BY THE RPR.
2. TEMPORARY WASHOUT AREA MUST BE LOCATED MORE THAN 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
3. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
4. INSPECT CONCRETE WASHOUT AREA WEEKLY AND CLEAN OUT CONCRETE WASHOUT AREA THEN 50% FULL.
5. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT AREA SHALL BE REMOVED AND LEGALLY DISPOSED OFF SITE.
6. GROUND DISTURBED BY THE REMOVAL OF THE CONCRETE WASHOUT AREA SHALL BE BACKFILLED, REPAIRED, AND STABILIZED.



TYPE A - SEDIMENT TUBE INLET PROTECTION DETAIL

C-110 / NOT TO SCALE



NOTES:

1. REMOVE THE GRATE FROM THE CATCH BASIN.
2. STAND GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE GRATE INTO THE UNIT SO THAT THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. THE GRATE SHOULD BE CRADLED BETWEEN THE UPPER AND LOWER STRAPS.
3. HOLDING THE LIFTING STRAPS, INSERT THE GRATE INTO THE INLET, BEING CAREFUL THAT THE GRATE REMAINS IN PLACE AND BEING CAREFUL NOT TO DAMAGE THE UNIT.
4. REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM THE VICINITY OF UNIT AFTER EACH STORM EVENT.
5. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE UNIT. IF THE UNIT IS MORE THAN 1/3 FULL OF ACCUMULATED SEDIMENT, THE UNIT MUST BE EMPTIED.
6. TO EMPTY THE UNIT USING THE LIFTING STRAPS LIFT THE UNIT OUT OF THE INLET AND REMOVE THE DUMPING STRAP. TRANSPORT THE UNIT TO AN APPROPRIATE LOCATION FOR REMOVAL OF CONTENTS. HOLDING THE DUMPING STRAPS ON THE BOTTOM OF THE UNIT, TURN THE UNIT UPSIDE DOWN, EMPTING THE CONTENTS. REINSTALL UNIT AS ABOVE.

NOTE:

SEDIMENT TUBE USED FOR AREAS WHERE
INLET IS IN PERVIOUS AREAS. INLET
SEDIMENT CONTROL DEVICE USED FOR
AREAS LOCATED IN IMPERVIOUS PAVEMENT
AREAS SUBJECT TO VEHICULAR TRAFFIC.



- 3

NOT TO SCALE



- FILTER SOCK DETAIL NOTES:

1. FILTER SOCK ARE TO BE ELONGATED TUBES OF COMPACTED GEOTEXTILES, CURLED EXCLESIOR WOOD, NATURAL COCONUT FIBER, OR HARDWOOD MULCH, STRAW, PINE NEEDLE, AND LEAF MULCH-FILLED. SEDIMENT TUBES ARE NOT PERMITTED.
2. THE OUTER NETTING OF THE FILTER SOCK SHOULD CONSIST OF SEAMLESS, HIGH-DENSITY POLYETHYLENE PHOTODEGRADABLE MATERIALS TREATED WITH ULTRAVIOLET STABILIZERS OR A SEAMLESS, HIGH-DENSITY POLYETHYLENE NON-DEGRADABLE MATERIAL.
3. FILTER SOCK SHALL BE FILTREXX SILTSOXX OR APPROVED EQUIVALENT


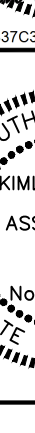

FILTER SOCK INSTALLATION NOTES:

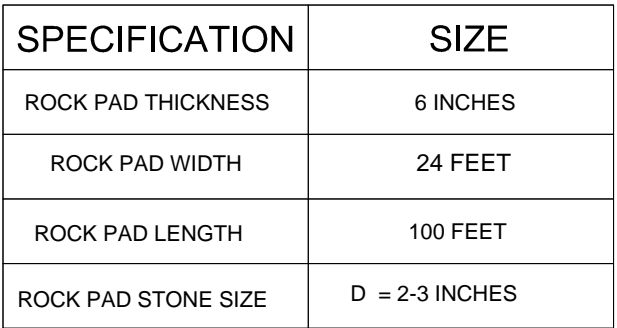
1. FILTER SOCK SHALL BE PLACED AT LOCATIONS INDICATED ON PLANS AND IN A MANNER AS DIRECTED BY THE RPP OR ENGINEER.
2. PERIMETER CONTROL SHOULD BE INSTALLED PARALLEL TO THE BASE OF THE SLOPE OR OTHER DISTURBED AREA.
3. THE EFFECTIVE SOCK HEIGHT IN THE FIELD FOR THE 12" DIAMETER SOCK IS 9.5" HIGH.
4. STAKES SHOULD BE INSTALLED THROUGH THE MIDDLE OF THE PERIMETER CONTROL, ON 10 FT CENTERS, USING NOMINAL 2 IN BY 2 IN BY 3 FT WOODEN STAKES. IN THE EVENT STAKING IS NOT POSSIBLE, I.E., WHEN PERIMETER CONTROL IS USED ON HIGHLY COMPACTED SOILS OR IMPERVIOUS SURFACES, SAND BAGS (OR EQUIVALENT) MAY BE USED TO STABILIZE SOCK, AS LONG AS EFFECTIVE HEIGHT IS NOT COMPROMISED. ON IMPERVIOUS SURFACES, CONCRETE BLOCKS (OR EQUIVALENT) MAY BE USED BEHIND THE PERIMETER CONTROL TO HELP STABILIZE DURING RAINFALL/RUNOFF EVENTS.
5. ALTERNATIVELY, STAKES MAY BE INSTALLED DIRECTLY BEHIND THE SOCK AT A 90-DEGREE ANGLE TO LEVEL GROUND (REGARDLESS OF SLOPE ANGLE), WHERE STAKES ARE IN DIRECT CONTACT WITH THE DOWNSLOPE SIDE OF SOCK. IF HIGH RUNOFF OR SEDIMENT ACCUMULATION IS EXPECTED, STAKING THROUGH THE SOCK MAY BE REQUIRED.
6. STAKING DEPTH FOR SAND AND SILT LOAM SOILS SHALL BE 12 IN MINIMUM.
7. STRAIGHTEN OR POSITION THE SOCK AS NEEDED ON THE GROUND, ENSURING THERE IS GOOD GROUND CONTACT AND NO VOID SPACES UNDER THE SOCK.
8. DO NOT DRAG SOCK ACROSS ROUGH SURFACES.

FILTER SOCK MAINTENANCE & DISPOSAL NOTES:

1. THE CONTRACTOR SHALL REMOVE SEDIMENT AT THE BASE OF THE UPSLOPE SIDE OF THE PERIMETER WHEN ACCUMULATION HAS REACHED 1/2 OF THE EFFECTIVE HEIGHT OF THE SOCK, OR AS DIRECTED BY THE RPR OR ENGINEER. ALTERNATIVELY, A NEW PERIMETER CONTROL SOCK CAN BE PLACED ON TOP OF AND SLIGHTLY BEHIND THE ORIGINAL ONE CREATING MORE SEDIMENT STORAGE CAPACITY WITHOUT SOIL DISTURBANCE.
2. PERIMETER CONTROL SHALL BE MAINTAINED UNTIL DISTURBED AREA ABOVE THE DEVICE HAS BEEN PERMANENTLY STABILIZED AND CONSTRUCTION ACTIVITY HAS CEASED.
3. THE FILTER SOCK AND MEDIA WILL BE REMOVED AND DISPOSED OFF-SITE ONCE DISTURBED AREA HAS BEEN PERMANENTLY STABILIZED, CONSTRUCTION ACTIVITY HAS CEASED, OR AS DETERMINED BY THE ENGINEER.

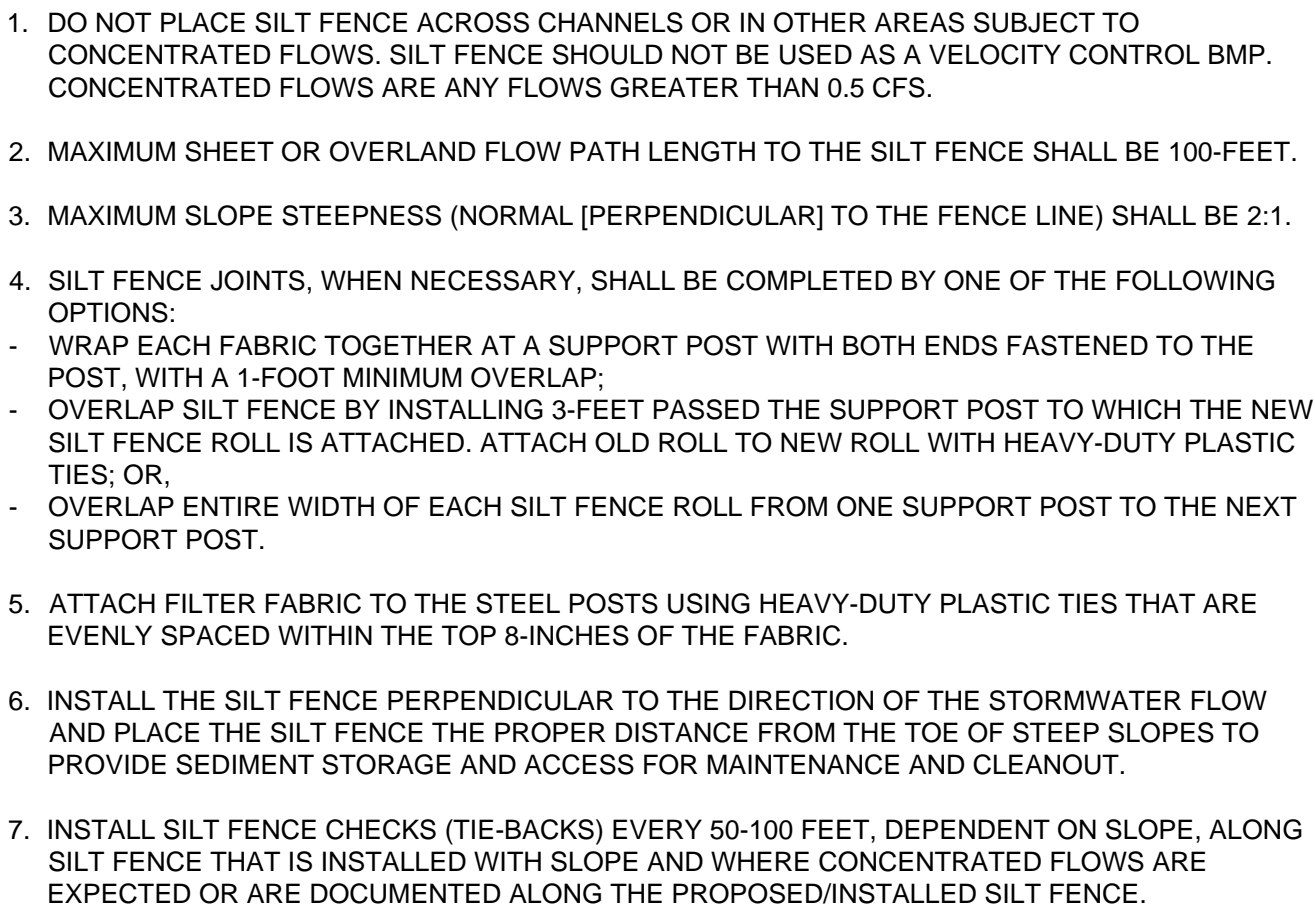


PROJECT UTILITY UPGRADE - WATER SYSTEM	SHEET TITLE EROSION CONTROL DETAILS	KHA PROJECT 013881015 DATE 11/25/2024 SCALE AS SHOWN DESIGNED BY SAM DRAWN BY JE CHECKED BY JMG	 	 <p>© 2024 KIMLEY-HORN AND ASSOCIATES, INC. 802 GERVAIS STREET, SUITE 201, COLUMBIA, SC 29201 PHONE: 803-403-8658 WWW.KIMLEY-HORN.COM</p>	No.	REVISIONS	DATE	BY
SHEET NUMBER C-110								

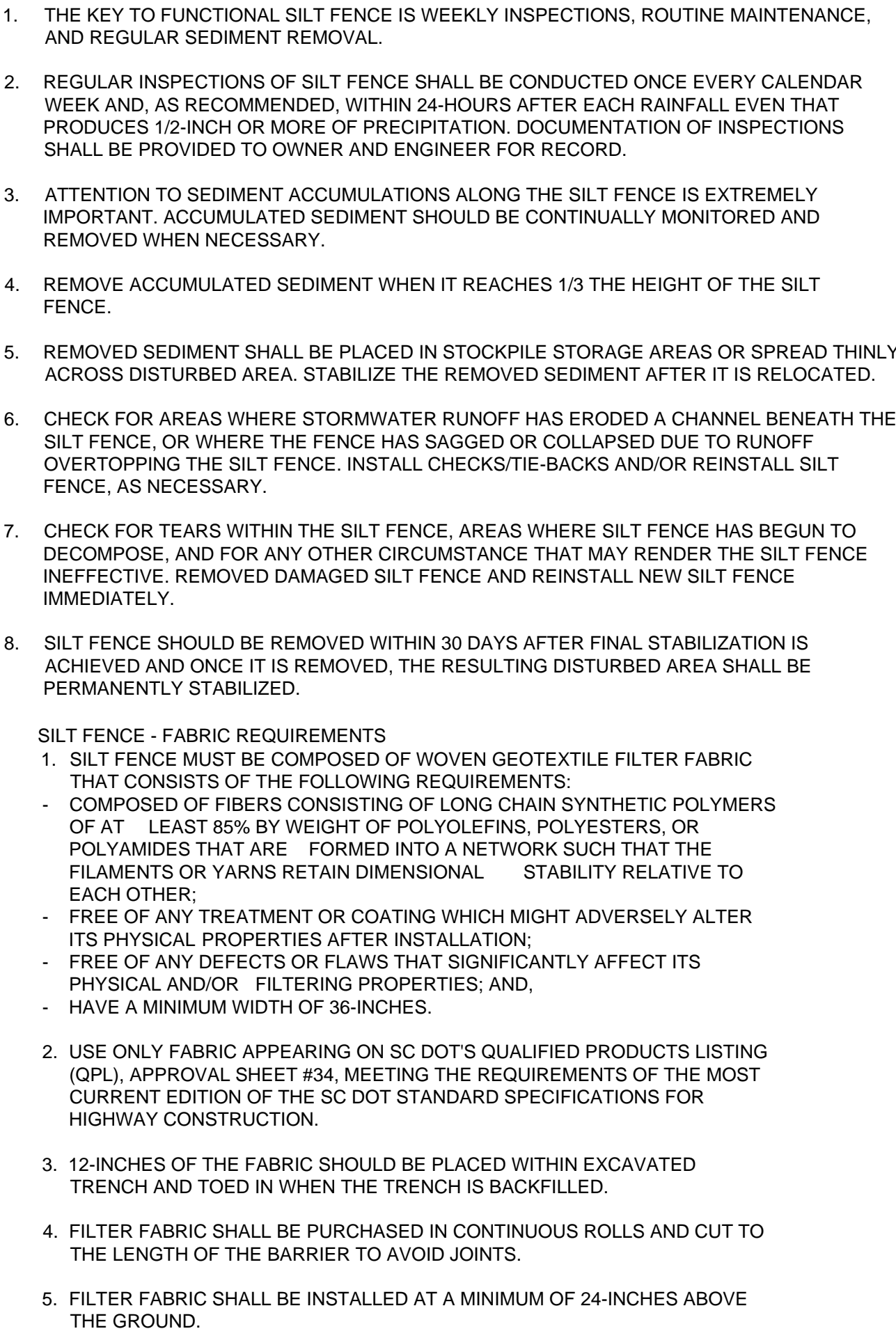


1. STABILIZED CONSTRUCTION ENTRANCES SHOULD BE USED AT ALL POINTS WHERE TRAFFIC WILL EGRESS/INGRESS A CONSTRUCTION SITE ONTO A PUBLIC ROAD OR ANY IMPERVIOUS SURFACES, SUCH AS PARKING LOTS.
2. INSTALL A NON-WOVEN GEOTEXTILE FABRIC PRIOR TO PLACING ANY STONE.
3. INSTALL A CULVERT PIPE ACROSS THE ENTRANCE WHEN NEEDED TO PROVIDE POSITIVE DRAINAGE.
4. THE ENTRANCE SHALL CONSIST OF 2-INCH TO 3-INCH D50 STONE PLACED AT A MINIMUM DEPTH OF 6-INCHES.
5. MINIMUM DIMENSIONS OF THE ENTRANCE SHALL BE 24-FEET WIDE BY 100-FEET LONG, AND MAY BE MODIFIED AS NECESSARY TO ACCOMMODATE SITE CONSTRAINTS.
6. THE EDGES OF THE ENTRANCE SHALL BE TAPERED OUT TOWARDS THE ROAD TO PREVENT TRACKING AT THE EDGE OF THE ENTRANCE.
7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN OR OTHER SEDIMENT TRAPPING STRUCTURE.
8. LIMESTONE MAY NOT BE USED FOR THE STONE PAD.

1. THE KEY TO FUNCTIONAL CONSTRUCTION ENTRANCES IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR SEDIMENT REMOVAL.
2. REGULAR INSPECTIONS OF CONSTRUCTION ENTRANCES SHALL BE CONDUCTED ONCE EVERY CALENDAR WEEK AND, AS RECOMMENDED, WITHIN 24-HOURS AFTER EACH RAINFALL EVENT THAT PRODUCES 1/2-INCH OR MORE OF PRECIPITATION. DOCUMENTATION OF INSPECTIONS SHALL BE PROVIDED TO OWNER AND ENGINEER FOR RECORD.
3. DURING REGULAR INSPECTIONS, CHECK FOR MUD AND SEDIMENT BUILDUP AND PAD INTEGRITY. INSPECTION FREQUENCIES MAY NEED TO BE MORE FREQUENT DURING LONG PERIODS OF WET WEATHER.
4. RESHAPE THE STONE PAD AS NECESSARY FOR DRAINAGE AND RUNOFF CONTROL.
5. WASH OR REPLACE STONES AS NEEDED AND AS DIRECTED BY SITE INSPECTOR. THE STONE IN THE ENTRANCE SHOULD BE WASHED OR REPLACED WHENEVER THE ENTRANCE FAILS TO REDUCE THE AMOUNT OF MUD BEING CARRIED OFF-SITE BY VEHICLES. FREQUENT WASHING WILL EXTEND THE USEFUL LIFE OF STONE PAD.
6. IMMEDIATELY REMOVE MUD AND SEDIMENT TRACKED OR WASHED ONTO ADJACENT IMPERVIOUS SURFACES BY BRUSHING OR SWEEPING. FLUSHING SHOULD ONLY BE USED WHEN THE WATER CAN BE DISCHARGED TO A SEDIMENT TRAP OR BASIN.
7. DURING MAINTENANCE ACTIVITIES, ANY BROKEN PAVEMENT SHOULD BE REPAIRED IMMEDIATELY.
8. CONSTRUCTION ENTRANCES SHOULD BE REMOVED AFTER THE SITE HAS REACHED FINAL STABILIZATION. PERMANENT VEGETATION SHOULD REPLACE AREAS FROM WHICH CONSTRUCTION ENTRANCES HAVE BEEN REMOVED, UNLESS AREA WILL BE CONVERTED TO AN IMPERVIOUS SURFACE TO SERVE POST-CONSTRUCTION.



1. SILT FENCE POSTS MUST BE 48-INCH LONG STEEL POSTS THAT MEET, AT A MINIMUM, THE FOLLOWING PHYSICAL CHARACTERISTICS.
 - COMPOSED OF A HIGH STRENGTH STEEL WITH A MINIMUM YIELD STRENGTH OF 50,000 PSI.
 - INCLUDE A STANDARD "T" SECTION WITH A NOMINAL FACE WIDTH OF 1.38-INCHES AND A NOMINAL "T" LENGTH OF 1.48-INCHES.
 - WEIGH 1.25 POUNDS PER FOOT ($\pm 8\%$)
2. POSTS SHALL BE EQUIPPED WITH PROJECTIONS TO AID IN FASTENING OF FILTER FABRIC.
3. STEEL POSTS MAY NEED TO HAVE A METAL SOIL STABILIZATION PLATE WELDED NEAR THE BOTTOM WHEN INSTALLED ALONG STEEP SLOPES OR INSTALLED IN LOOSE SOILS. THE PLATE SHOULD HAVE A MINIMUM CROSS SECTION OF 17-SQUARE INCHES AND BE COMPOSED OF 15 GAUGE STEEL, AT A MINIMUM. THE METAL SOIL STABILIZATION PLATE SHOULD BE COMPLETELY BURIED.
4. INSTALL POSTS TO A MINIMUM OF 24-INCHES, A MINIMUM HEIGHT OF 1- TO 2- INCHES ABOVE THE FABRIC SHALL BE MAINTAINED, AND A MAXIMUM HEIGHT OF 3 FEET SHALL BE MAINTAINED ABOVE THE GROUND.
5. POST SPACING SHALL BE AT A MAXIMUM OF 6-FEET ON CENTER.



1. SILT FENCE MUST BE COMPOSED OF WOVEN GEOTEXTILE FILTER FABRIC THAT CONSISTS OF THE FOLLOWING REQUIREMENTS:
 - COMPOSED OF FIBERS CONSISTING OF LONG CHAIN SYNTHETIC POLYMERS OF AT LEAST 85% BY WEIGHT OF POLYOLEFINS, POLYESTERS, OR POLYIMIDES THAT ARE FORMED INTO A NETWORK SUCH THAT THE FILAMENTS OR YARNS RETAIN DIMENSIONAL STABILITY RELATIVE TO EACH OTHER;
 - FREE OF ANY TREATMENT OR COATING WHICH MIGHT ADVERSELY ALTER ITS PHYSICAL PROPERTIES AFTER INSTALLATION;
 - FREE OF ANY DEFECTS OR FLAWS THAT SIGNIFICANTLY AFFECT ITS PHYSICAL AND/OR FILTERING PROPERTIES; AND,
 - HAVE A MINIMUM WIDTH OF 36-INCHES.
2. USE ONLY FABRIC APPEARING ON SC DOT'S QUALIFIED PRODUCTS LISTING (QPL), APPROVAL SHEET #34, MEETING THE REQUIREMENTS OF THE MOST CURRENT EDITION OF THE SC DOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.

3. 12-INCHES OF THE FABRIC SHOULD BE PLACED WITHIN EXCAVATED TRENCH AND TOED IN WHEN THE TRENCH IS BACKFILLED.
4. FILTER FABRIC SHALL BE PURCHASED IN CONTINUOUS ROLLS AND CUT TO THE LENGTH OF THE BARRIER TO AVOID JOINTS.
5. FILTER FABRIC SHALL BE INSTALLED AT A MINIMUM OF 24-INCHES ABOVE THE GROUND.

C-111) NOT TO SCALE

C-111) NOT TO SCALE

Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\Plan\Sheets\C-150 - STAGING AREA SITE PLAN.dwg C-150 Nov 25, 2024 2:37pm by: justin.gbbel

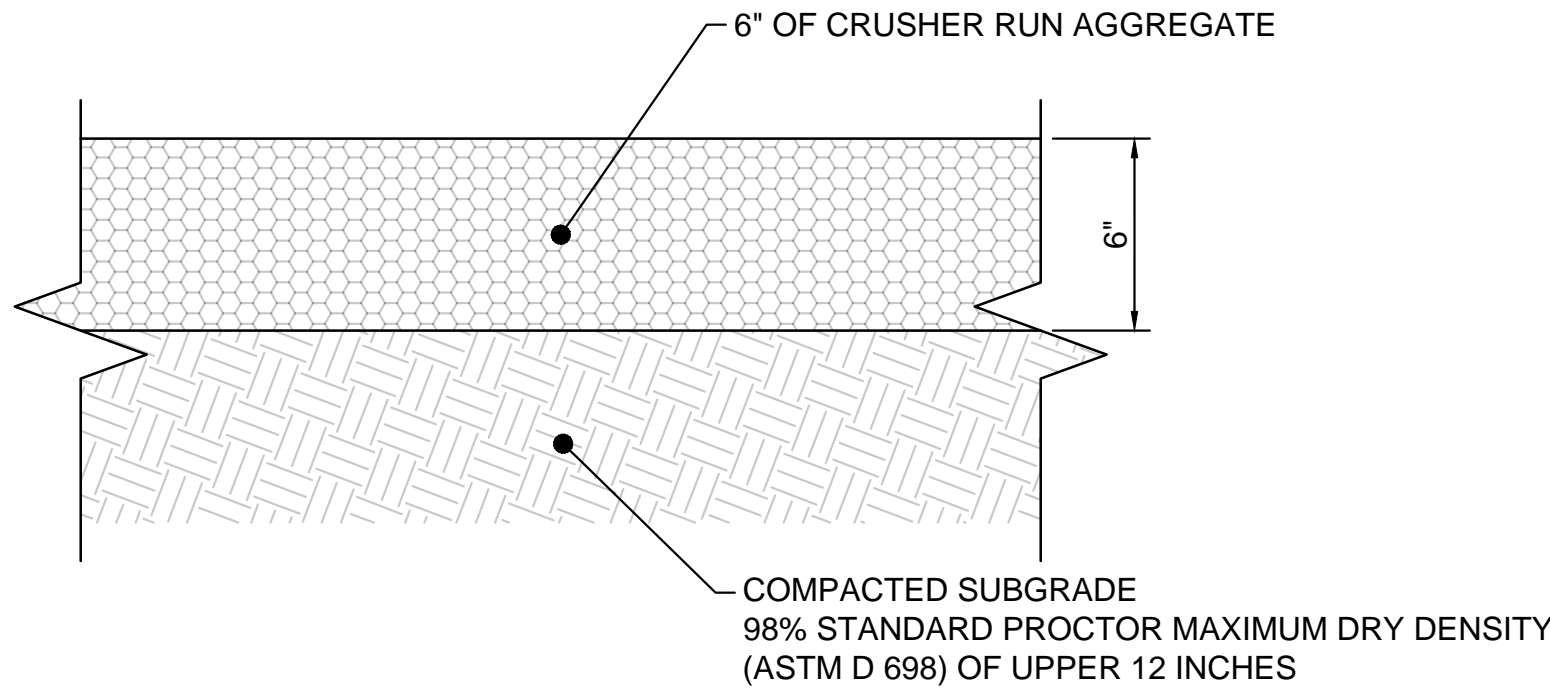


STAGING AREA PLAN LEGEND

- NEW STONE BASE
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- FINISH GRADE MAJOR CONTOUR
- FINISH GRADE MINOR CONTOUR

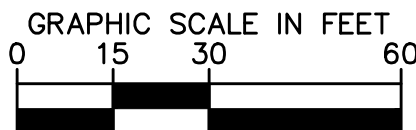
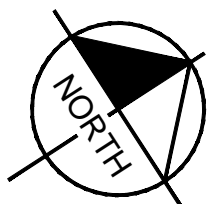
STAGING AREA PLAN NOTES

- EXISTING AND FINISH GRADE CONTOURS ARE DISPLAYED AT 1-5 FOOT INTERVALS UNLESS OTHERWISE NOTED.
- EXISTING GRADE SHOWN ARE FROM AIRPORT LIDAR DATA FROM 2019. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO LAND DISTURBANCE OF STAGING AREA.
- CONTRACTOR SHALL PHYSICALLY VIEW AND UNDERSTAND EXISTING SITE CONDITIONS PRIOR TO SUBMITTING BID.
- AT THE END OF THE PROJECT CONTRACTOR SHALL REFRESH STONE BASE MATERIAL, CLEAN SITE, AND TURN OVER SITE TO THE OWNER.



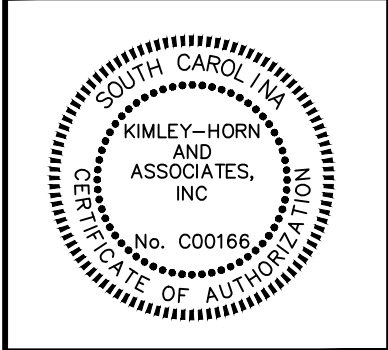
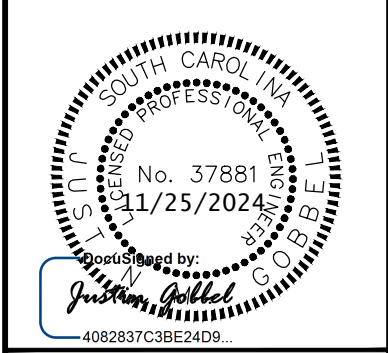
NOTE:
CONTRACTOR SHALL SUBMIT CERTIFIED MATERIAL PROPERTIES INCLUDING GRADATION OF AGGREGATE TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO CONSTRUCTION.

1 STAGING AREA STONE BASE SECTION
NOT TO SCALE



REVISIONS				No.	DATE

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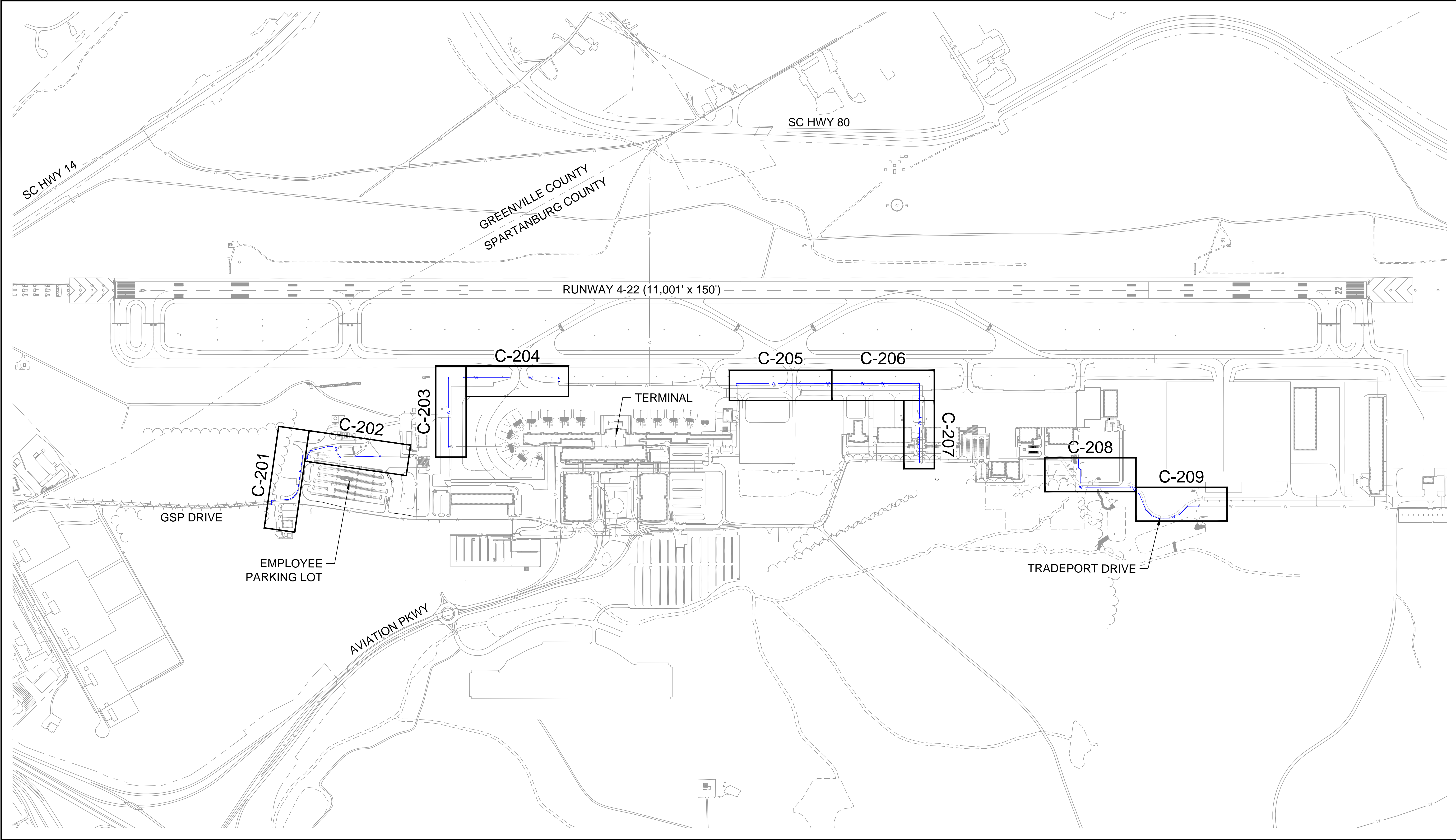
KHA PROJECT	DATE	SCALE	AS SHOWN	DESIGNED BY	DRAWN BY	CHECKED BY
013981015	11/25/2024			SAM	JE	JMG

SHEET TITLE
STAGING AREA SITE
PLAN

PROJECT
UTILITY UPGRADE - WATER SYSTEM
PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-150

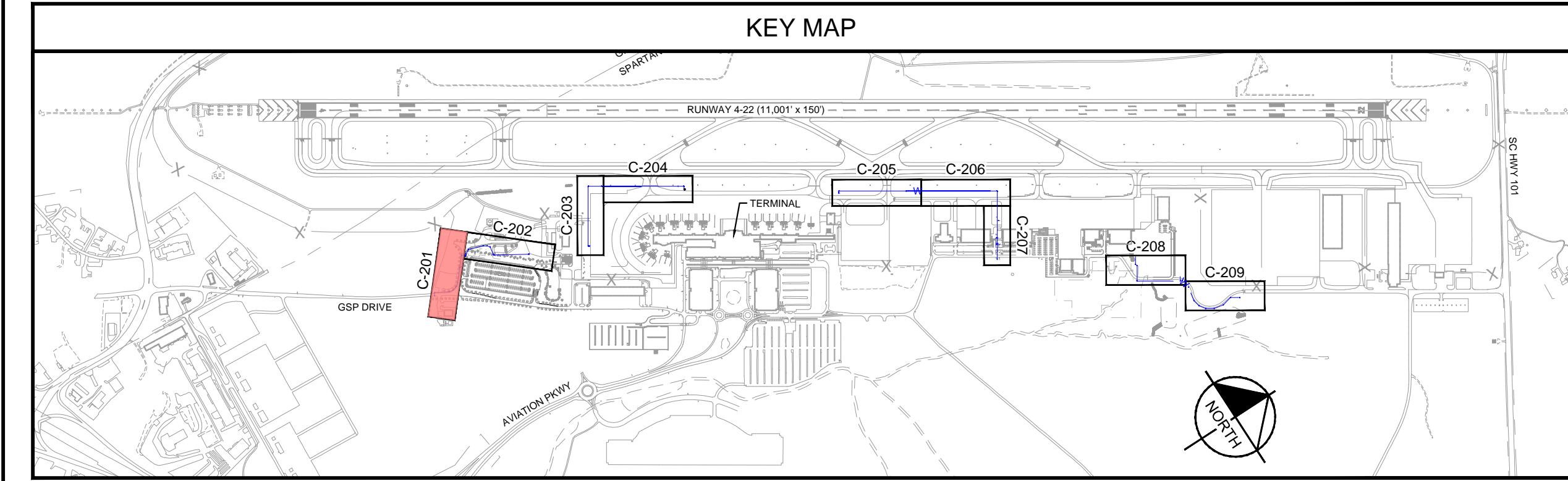
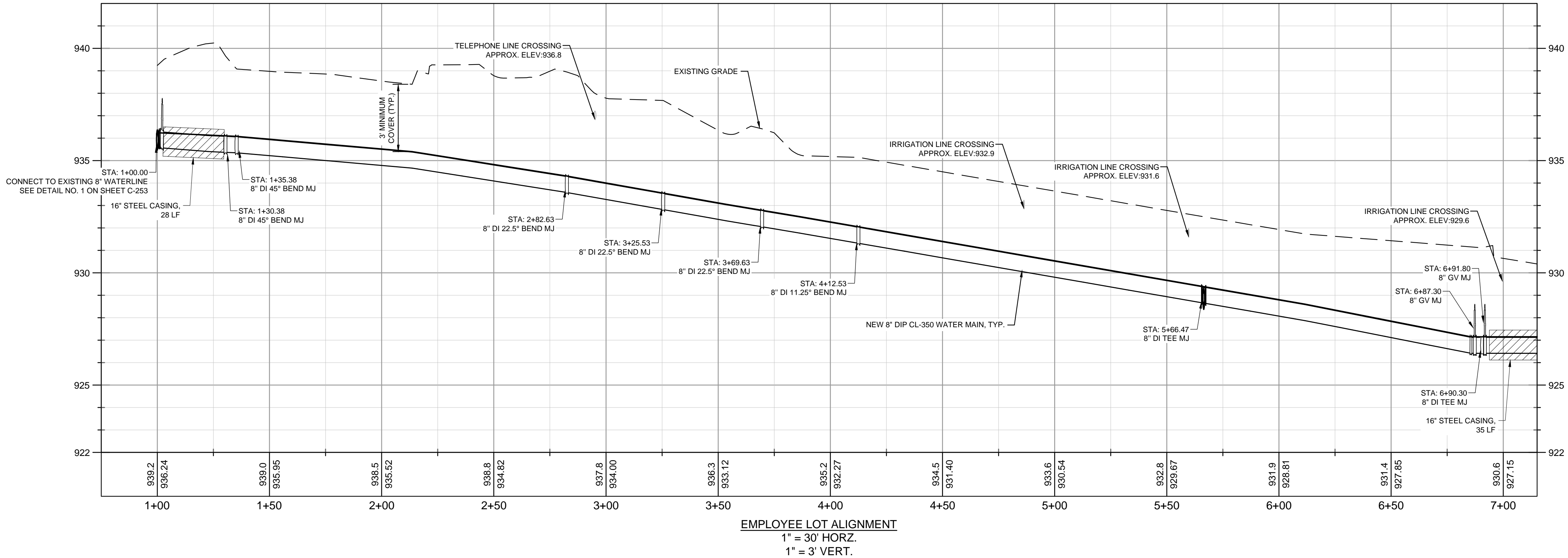
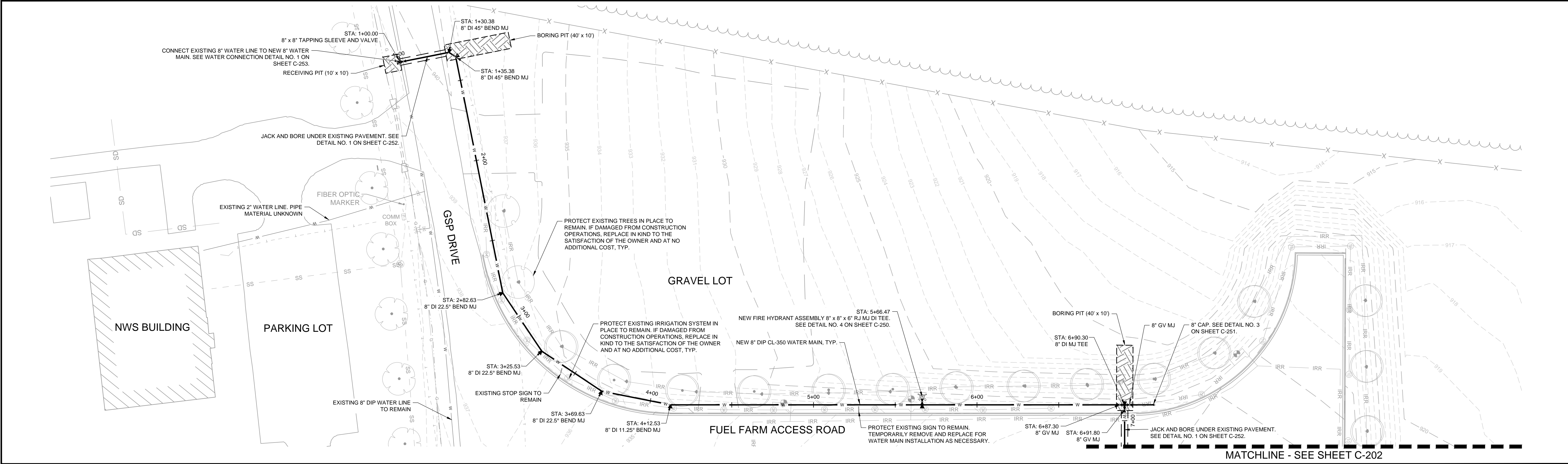
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PROJECT UTILITY UPGRADE - WATER SYSTEM		SHEET NUMBER C-200	
PREPARED FOR GSP INTERNATIONAL AIRPORT 100% DESIGN PLANS		SHEET TITLE OVERALL PLAN SHEET	
SPARTANBURG COUNTY, SOUTH CAROLINA		KHA PROJECT 013981015	
		DATE 11/25/2024	
		SCALE AS SHOWN	
		DESIGNED BY SAM	
		DRAWN BY JJE	
		CHECKED BY JMG	
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		REVISIONS	
		DATE	
		BY	

Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-201 - PLAN AND PROFILE LAYOUT.dwg C-201 Nov 25, 2024 2:38pm by: justin.gobbel

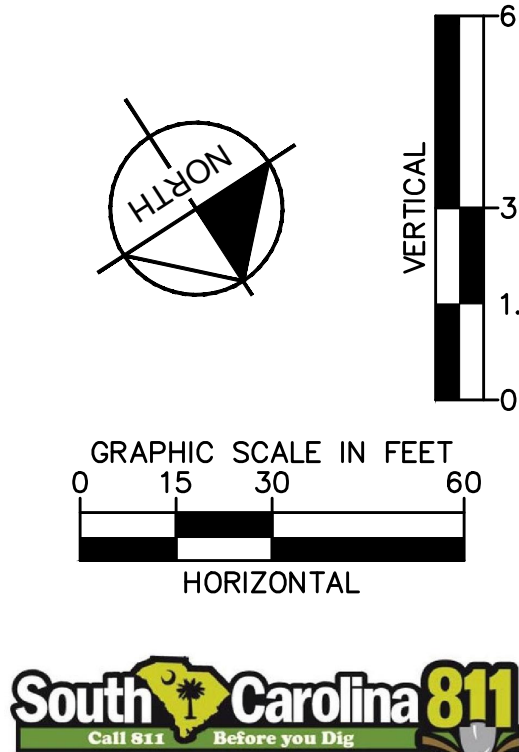


WATER LINE NOTES

- REFER TO SHEET G-001 FOR PROJECT GENERAL NOTES.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS.
- CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS AND WATER LINE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
- EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION BETWEEN MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL ELEVATIONS MAY VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
- ELEVATIONS OF EXISTING WATER LINES HAVE BEEN ASSUMED TO BE 3' BELOW THE EXISTING GRADES. ACTUAL DEPTH MAY VARY.
- IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
- COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
- ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

WATER LINE LEGEND

- | | |
|-----|---|
| G | EXISTING GAS LINE |
| OHP | EXISTING OVERHEAD POWER |
| OHT | EXISTING OVERHEAD TELEPHONE |
| SS | EXISTING SANITARY SEWER |
| SD | EXISTING STORM DRAIN |
| UGP | EXISTING UNDERGROUND POWER |
| UGT | EXISTING UNDERGROUND TELEPHONE |
| W | EXISTING WATER LINE |
| W | EXISTING TREE |
| W | EXISTING WAYFINDING SIGN |
| W | NEW WATER LINE |
| W | NEW WATER VALVE |
| W | NEW / RELOCATED FIRE HYDRANT |
| W | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



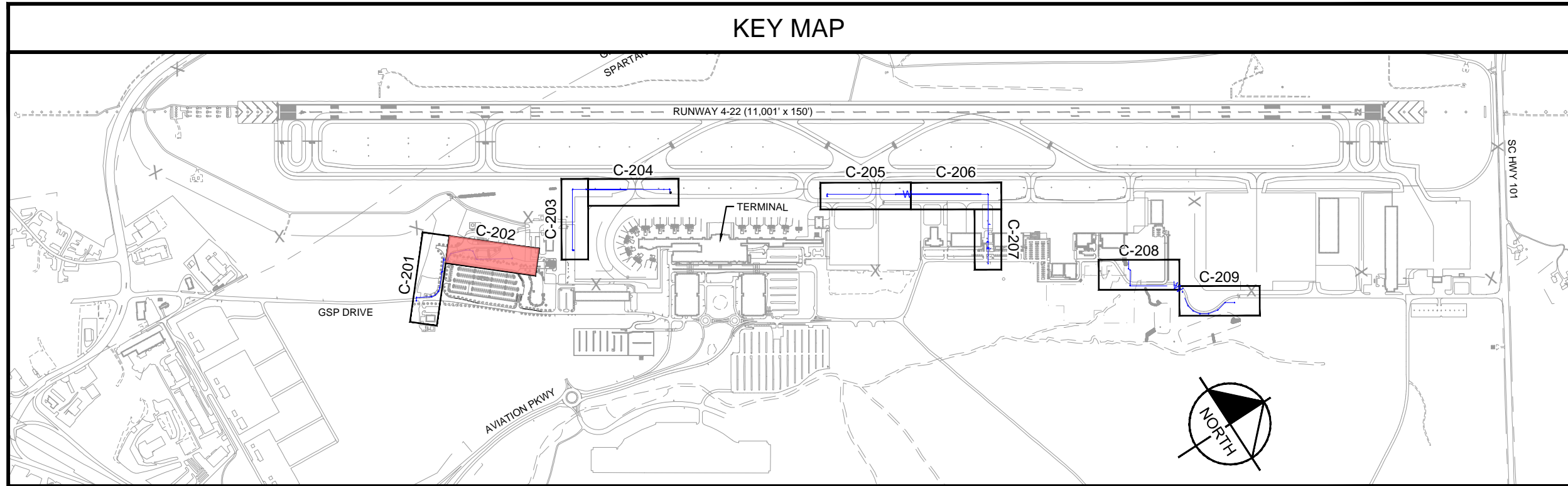
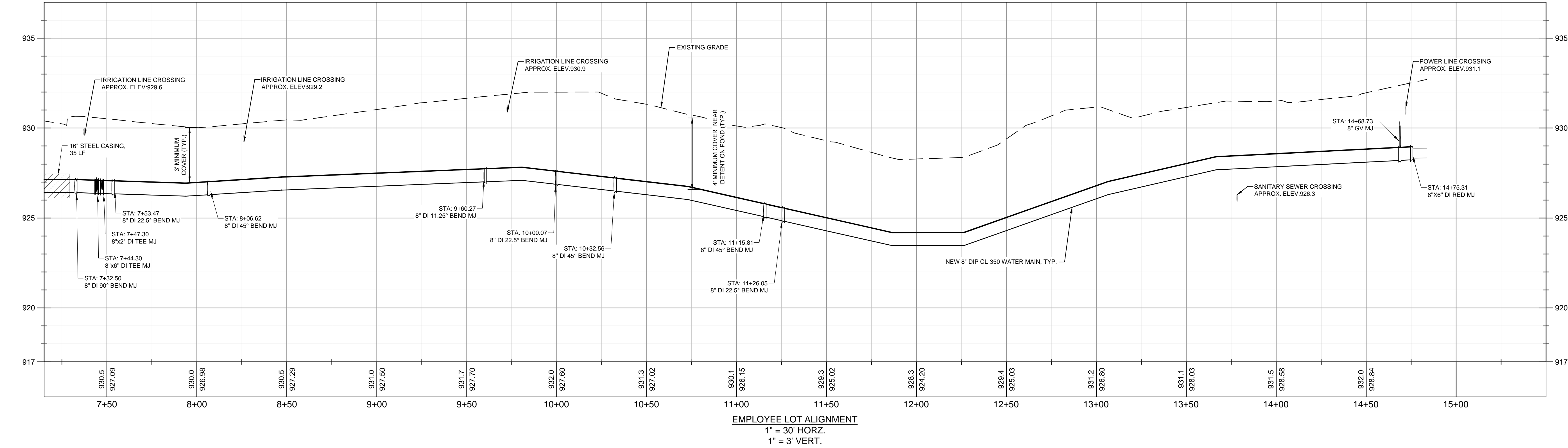
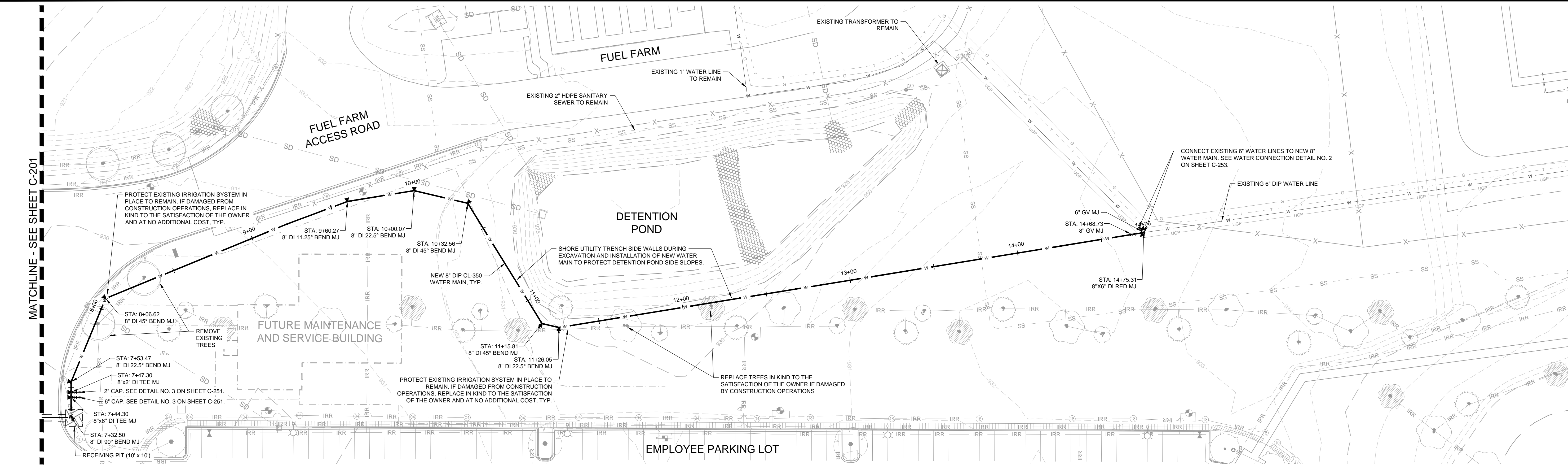
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UTILITY UPGRADE - WATER SYSTEM		06/28/2024		37881		11/25/2024	
PREPARED FOR		AS SHOWN		DESIGNED BY		DRAWN BY	
GSP INTERNATIONAL AIRPORT		SAM		JJE		JMG	
100% DESIGN PLANS							
SHEET NUMBER							
C-201							

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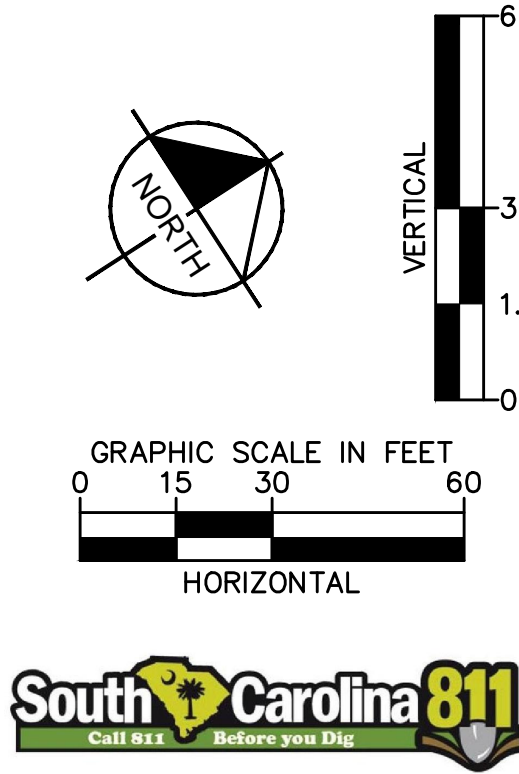
WATER LINE NOTES

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- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS.
- CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS AND WATER LINE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
- EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION BETWEEN MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL ELEVATIONS MAY

- VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
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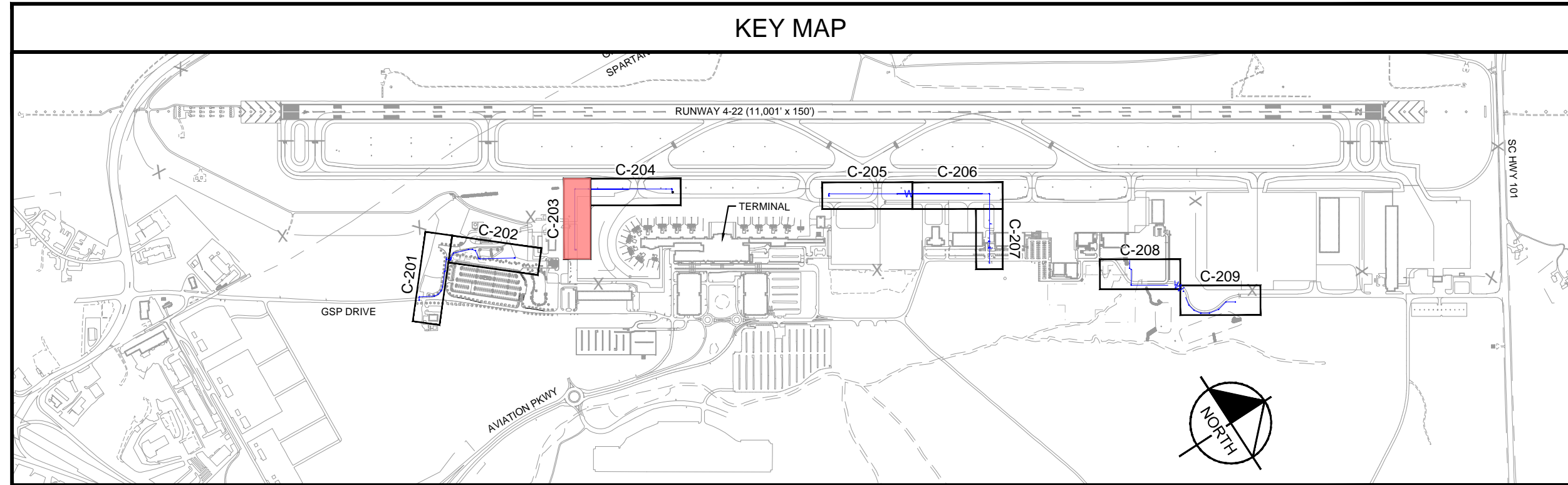
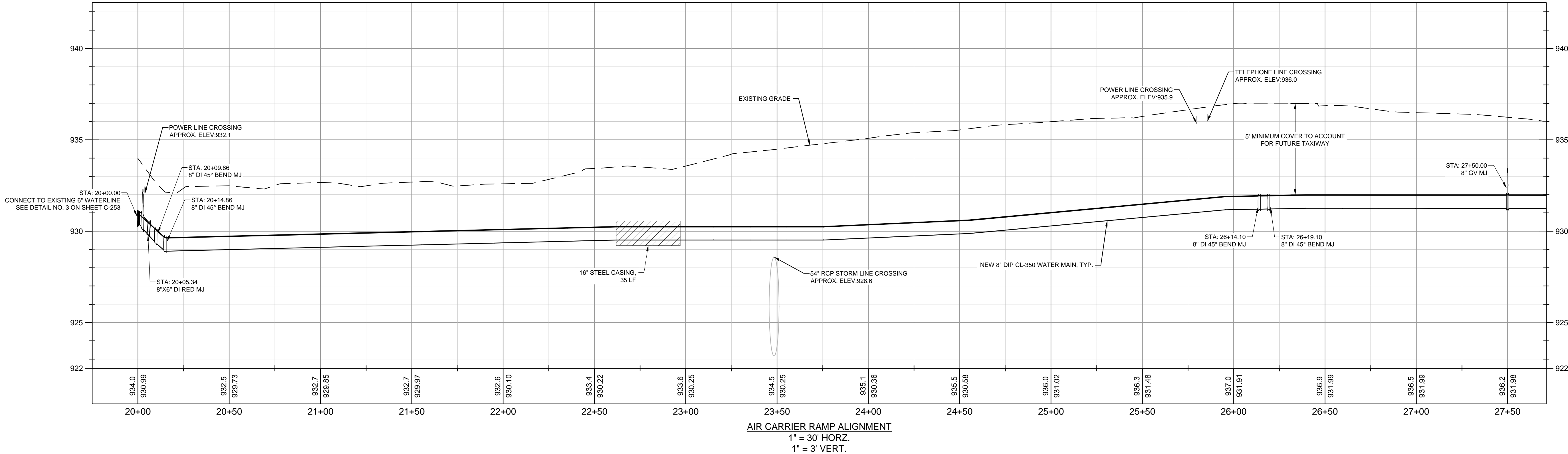
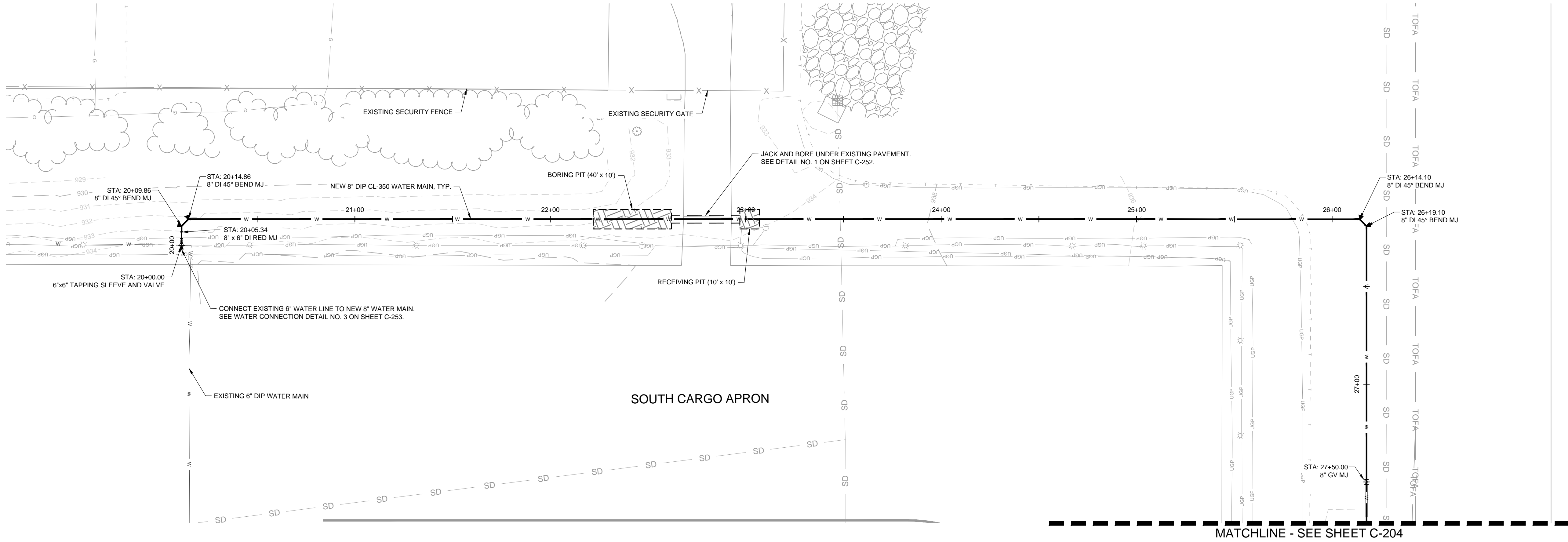
WATER LINE LEGEND

- | | |
|-----|---|
| G | EXISTING GAS LINE |
| CHP | EXISTING OVERHEAD POWER |
| CHT | EXISTING OVERHEAD TELEPHONE |
| SS | EXISTING SANITARY SEWER |
| SD | EXISTING STORM DRAIN |
| UGP | EXISTING UNDERGROUND POWER |
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| W | EXISTING WATER LINE |
| W | EXISTING TREE |
| W | EXISTING WAYFINDING SIGN |
| W | NEW WATER LINE |
| W | NEW WATER VALVE |
| W | NEW / RELOCATED FIRE HYDRANT |
| W | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



PROJECT - WATER SYSTEM		SHEET NUMBER	
UTILITY UPGRADE - WATER SYSTEM		C-202	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
LAYOUT (SHEET 2 OF 9)		BASE BID	
SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
LAYOUT (SHEET 2 OF 9)		BASE BID	
SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
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GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
LAYOUT (SHEET 2 OF 9)		BASE BID	
SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
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GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
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GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
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LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
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DRAWN BY		JMG	
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013981015		06/28/2024	
SCALE		AS SHOWN	
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SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
LAYOUT (SHEET 2 OF 9)		BASE BID	
SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY		JMG	
CHECKED BY		JMG	
KHA PROJECT		DATE	
013981015		06/28/2024	
SCALE		AS SHOWN	
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KHA PROJECT		DATE	
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DRAWN BY		JMG	
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SHEET TITLE		PLAN AND PROFILE	
LAYOUT (SHEET 2 OF 9)		BASE BID	
PROJECT		SOUTH CAROLINA	
GSP INTERNATIONAL AIRPORT		SPARTANBURG COUNTY, SOUTH CAROLINA	
PREPARED FOR		DESIGNED BY	
GSP INTERNATIONAL AIRPORT		SAM	
100% DESIGN PLANS		JE	
DRAWN BY			

Drawing name: K:\ATL_Aviation\Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-201 - PLAN AND PROFILE LAYOUT.dwg C-203 Nov 25, 2024 2:38pm by: justin.gobbel

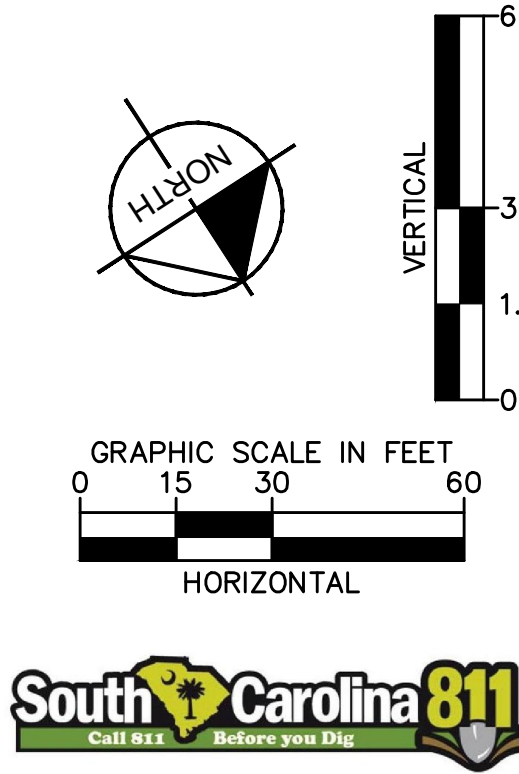


WATER LINE NOTES

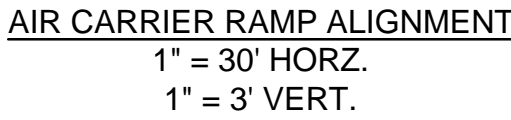
- REFER TO SHEET G-001 FOR PROJECT GENERAL NOTES.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS.
- CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS AND WATER LINE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
- EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION BETWEEN MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL ELEVATIONS MAY VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
- ELEVATIONS OF EXISTING WATER LINES HAVE BEEN ASSUMED TO BE 3' BELOW THE EXISTING GRADES. ACTUAL DEPTH MAY VARY.
- IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
- COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
- ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

WATER LINE LEGEND

- | | |
|-----|---|
| G | EXISTING GAS LINE |
| OHP | EXISTING OVERHEAD POWER |
| OHT | EXISTING OVERHEAD TELEPHONE |
| SS | EXISTING SANITARY SEWER |
| SD | EXISTING STORM DRAIN |
| UGP | EXISTING UNDERGROUND POWER |
| UGT | EXISTING UNDERGROUND TELEPHONE |
| W | EXISTING WATER LINE |
| W | EXISTING TREE |
| W | EXISTING WAYFINDING SIGN |
| W | NEW WATER LINE |
| W | NEW WATER VALVE |
| W | NEW / RELOCATED FIRE HYDRANT |
| W | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



PROJECT - WATER SYSTEM		SHEET NUMBER C-203	
UTILITY UPGRADE - WATER SYSTEM		PREPARED FOR GSP INTERNATIONAL AIRPORT 100% DESIGN PLANS	
SHEET TITLE PLAN AND PROFILE LAYOUT (SHEET 3 OF 9) (BID ALT. 1)		KHA PROJECT 013981015	
DATE 06/28/2024		SCALE AS SHOWN	
DESIGNED BY SAM		DRAWN BY JE	
CHECKED BY JMG		KIMLEY-HORN AND ASSOCIATES, INC. No. 000166 STATE OF SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 37881 11/25/2024	
KIMLEY-HORN AND ASSOCIATES, INC. 802 GERVAIS STREET, SUITE 201, COLUMBIA, SC 29201 PHONE 803-403-6558 WWW.KIMLEY-HORN.COM		REVISIONS	
No.		DATE	
BY			



1. REFER TO SHEET G-001 FOR PROJECT GENERAL NOTES.
2. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS.
3. CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS AND WATER LINE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
4. EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION BETWEEN MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL ELEVATIONS MAY

- VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
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- COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
- ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

	EXISTING GAS LINE
	EXISTING OVERHEAD POWER
	EXISTING OVERHEAD TELEPHONE
	EXISTING SANITARY SEWER
	EXISTING STORM DRAIN
	EXISTING UNDERGROUND POWER
	EXISTING UNDERGROUND TELEPHONE
	EXISTING WATER LINE
	EXISTING TREE
	EXISTING WAYFINDING SIGN
	NEW WATER LINE
	NEW WATER VALVE
	NEW / RELOCATED FIRE HYDRANT
	WATER MAIN FITTINGS WITH THROST BLOCKING AND RESTRAINING JOINTS



Kimley»»Horn

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802 GERAVALS STREET, SUITE 201,
COLUMBIA, SC 29201
PHONE 803-403-8558
WWW.KIMLEY-HORN.COM



KHA PROJECT 013981015	DATE 06/28/2024
SCALE	AS SHOWN
DESIGNED BY	SAM
DRAWN BY	JE
CHECKED BY	JMG

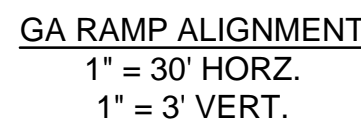
SHEET TITLE: **PLAN AND PROFILE
LAYOUT (SHEET 4 OF 9)
(BID ALT. 1)**

PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT
100% DESIGN PLANS

SPARTANBURG COUNTY, SOUTH CAROLINA

SHEET NUMBER
C-204



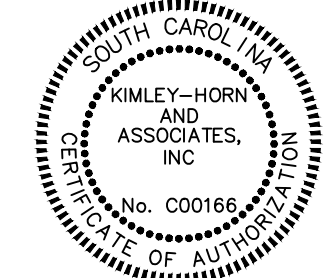
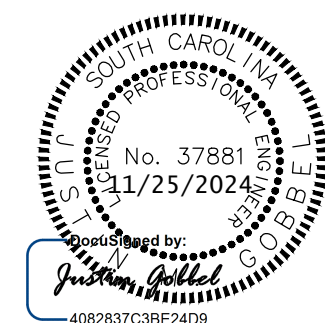
1. REFER TO SHEET G-001 FOR PROJECT GENERAL NOTES.
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4. EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION FROM MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL FI EVATIONS MAY

5. ELEVATIONS OF EXISTING WATER LINES HAVE BEEN ASSUMED TO BE 3' BELOW THE EXISTING GRADES. ACTUAL DEPTH MAY VARY.
6. IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
7. COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
8. ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

	G	EXISTING GAS LINE
	OHP	EXISTING OVERHEAD POWER
	OHT	EXISTING OVERHEAD TELEPHONE
	SS	EXISTING SANITARY SEWER
	SD	EXISTING STORM DRAIN
	UGP	EXISTING UNDERGROUND POWER
	UGT	EXISTING UNDERGROUND TELEPHONE
	W	EXISTING WATER LINE
		EXISTING WYFINDING SIGN
	W	DEMOLISH AND REMOVE WATER LINE
		GROUT FILL ABANDONED WATER LINE
	W	NEW WATER LINE
		NEW WATER VALVE
		NEW / RELOCATED FIRE HYDRANT
		WATER MAIN FITTINGS WITH THRUST BLOCKS OR RESTRAINING JOINTS



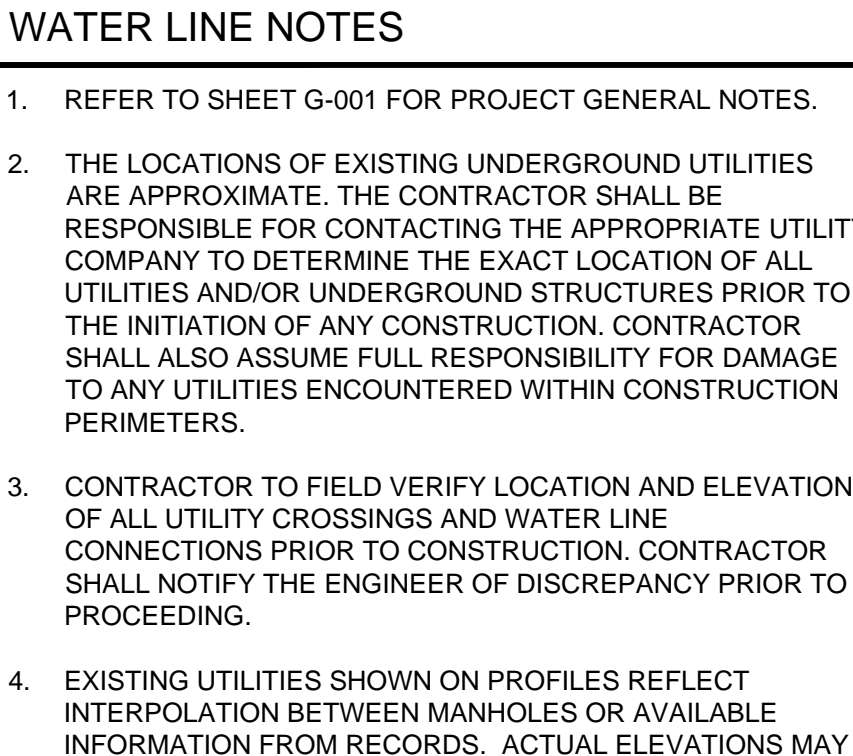
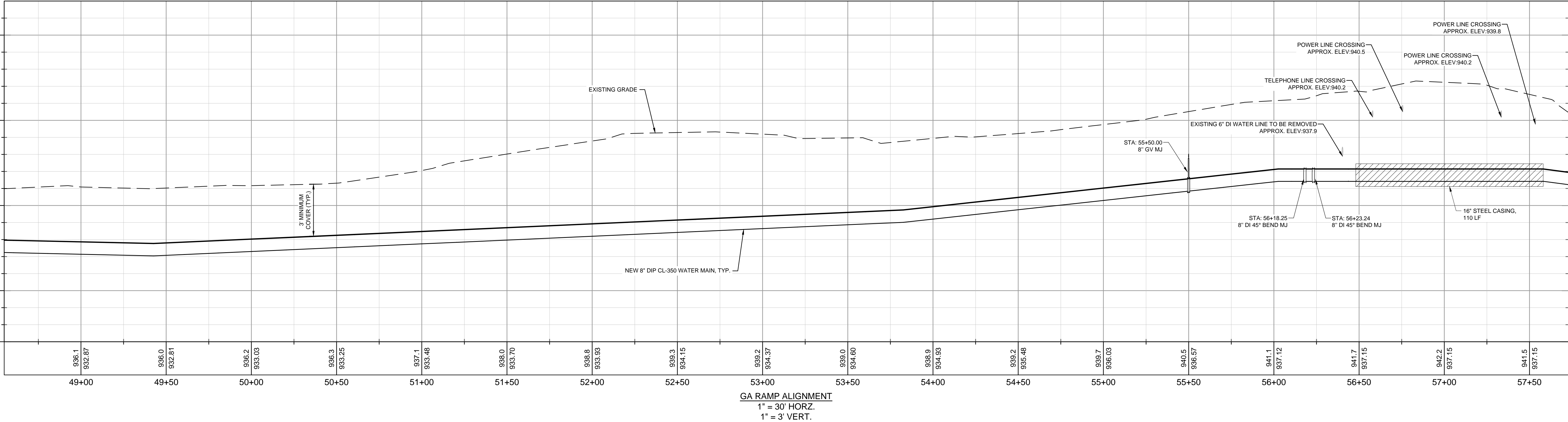
Kimley»Horn
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802 GERVAS STREET, SUITE 201,
COLUMBIA, SC 29201
PHONE: 803-403-8558
WWW.KIMI_EYHORN.COM



KHA PROJECT 013981015	DATE 06/28/2024	SCALE	AS SHOWN
		DESIGNED BY	SAM
		DRAWN BY	JE
		CHECKED BY	JMG

SHEET TITLE 56
**PLAN AND PROFILE
LAYOUT (SHEET 5 OF 9)
(BID ALT. 1)**

PROJECT UTILITY UPGRADE - WATER SYSTEM	SHEET NUMBER C-205
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- VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
- ELEVATIONS OF EXISTING WATER LINES HAVE BEEN ASSUMED TO BE 3' BELOW THE EXISTING GRADES. ACTUAL DEPTH MAY VARY.
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 - COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
 - ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

A graphic scale in feet showing 0, 15, 30, and 60 feet. Below the scale is the label "HORIZONTAL". To the right of the scale is a vertical scale with alternating black and white segments, labeled "VERTICAL" and with markings at 0, 1, 3, and 6.

GRAPHIC SCALE IN FEET

0 15 30 60

HORIZONTAL

VERTICAL

0 1 3 6

NORTH

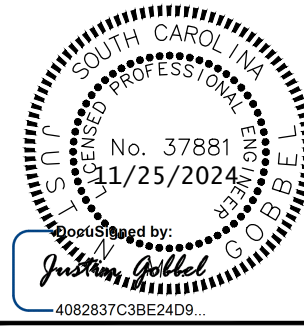
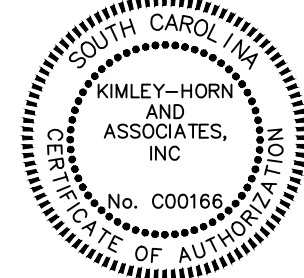
PROJECT
UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR
GSP INTERNATIONAL AIRPORT

100% DESIGN PLANS
SPARTANBURG COUNTY, SOUTH CAROLINA

PLAN AND PROFILE
LAYOUT (SHEET 6 OF 9)
(BID ALT. 1)

KHA PROJECT 013981015	DATE 06/28/2024
SCALE	AS SHOWN
DESIGNED BY	SAM
DRAWN BY	JE
CHECKED BY	JMG

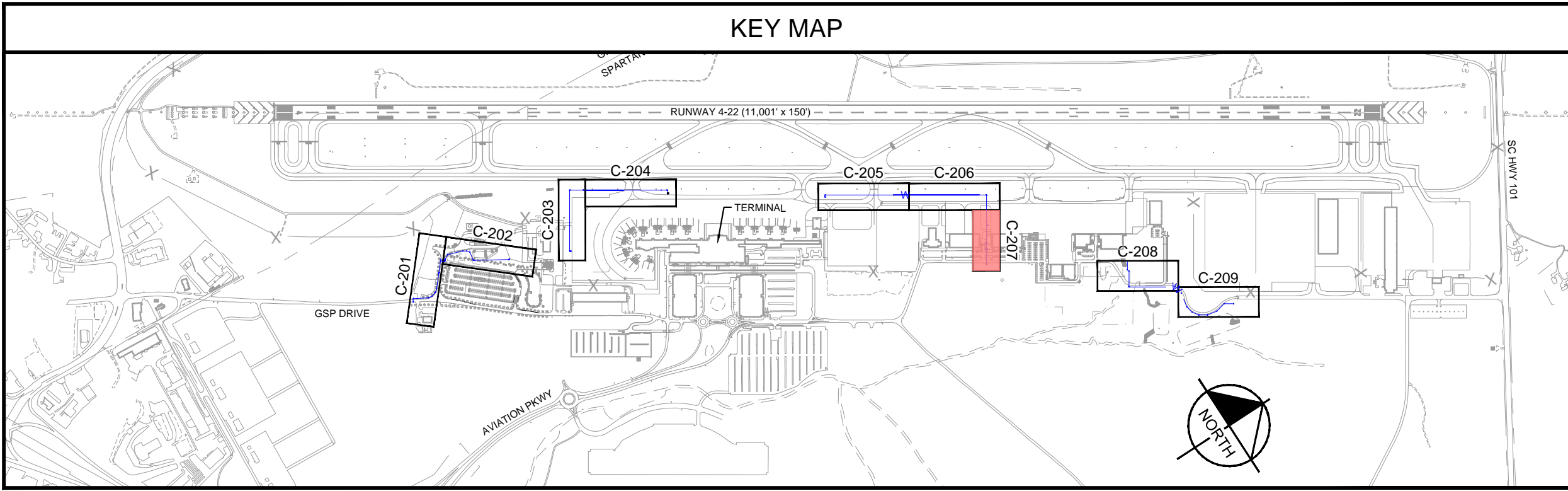


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COLUMBIA, SC 29201
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Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-201 - PLAN AND PROFILE LAYOUT.dwg C-207 Nov 25, 2024 2:39pm by: justin.gobbel



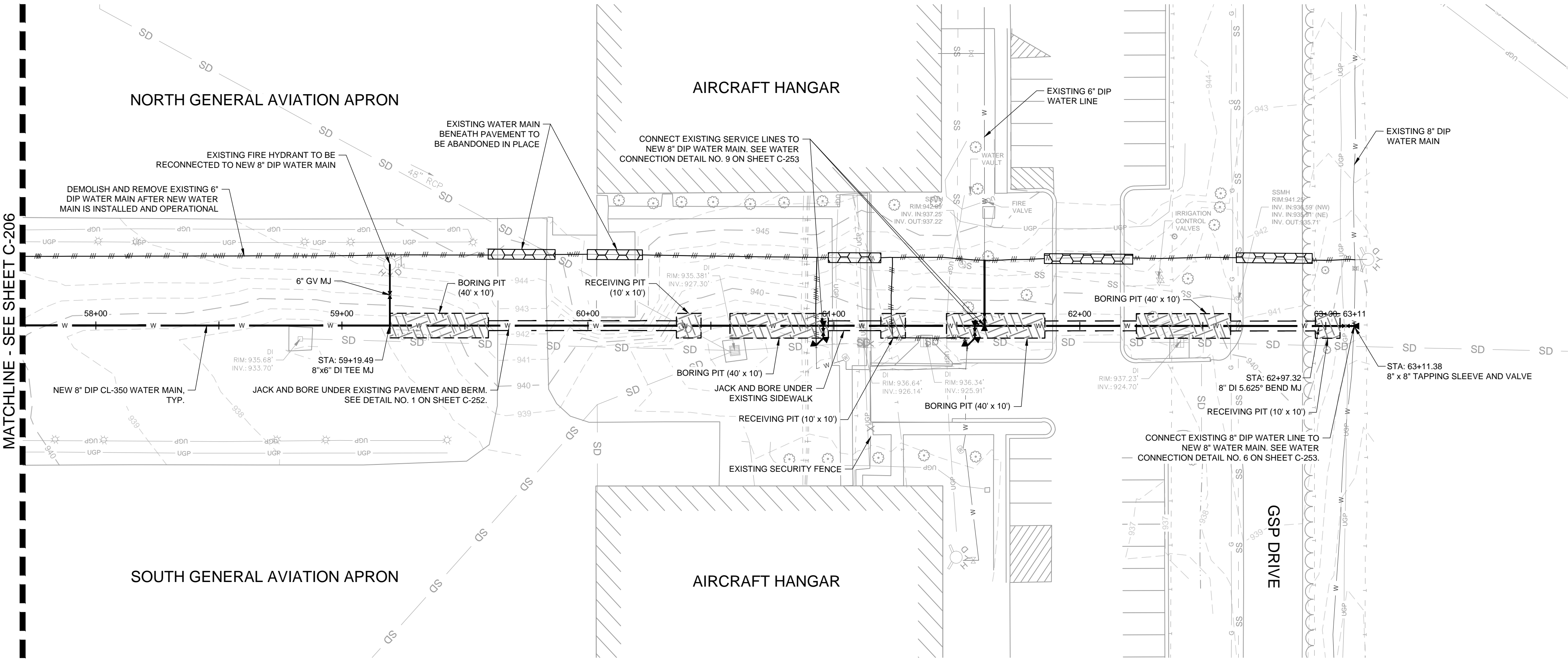
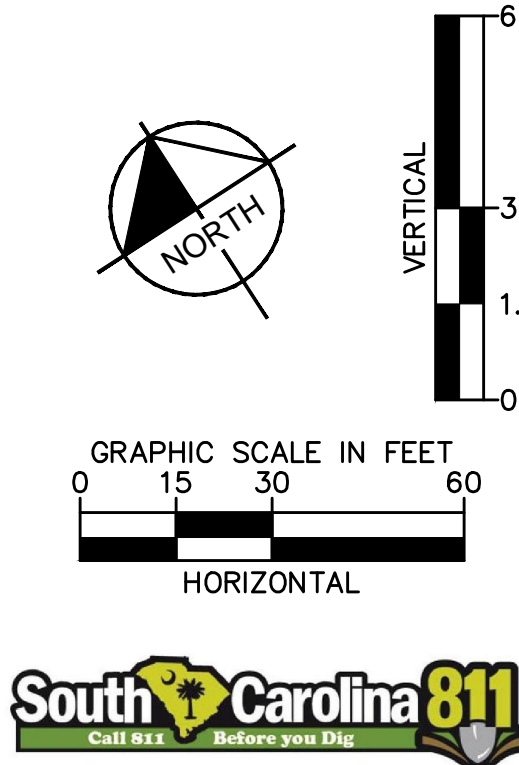
WATER LINE NOTES

- REFER TO SHEET G-001 FOR PROJECT GENERAL NOTES.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE APPROPRIATE UTILITY COMPANY TO DETERMINE THE EXACT LOCATION OF ALL UTILITIES AND/OR UNDERGROUND STRUCTURES PRIOR TO THE INITIATION OF ANY CONSTRUCTION. CONTRACTOR SHALL ALSO ASSUME FULL RESPONSIBILITY FOR DAMAGE TO ANY UTILITIES ENCOUNTERED WITHIN CONSTRUCTION PERIMETERS.
- CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF ALL UTILITY CROSSINGS AND WATER LINE CONNECTIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF DISCREPANCY PRIOR TO PROCEEDING.
- EXISTING UTILITIES SHOWN ON PROFILES REFLECT INTERPOLATION BETWEEN MANHOLES OR AVAILABLE INFORMATION FROM RECORDS. ACTUAL ELEVATIONS MAY

- VARY SUBSTANTIALLY. CONTRACTOR TO FIELD VERIFY PRIOR TO INSTALLING NEW WATER MAIN.
- ELEVATIONS OF EXISTING WATER LINES HAVE BEEN ASSUMED TO BE 3' BELOW THE EXISTING GRADES. ACTUAL DEPTH MAY VARY.
 - IF ANY CONFLICTS, DISCREPANCIES, OR ANY OTHER UNSATISFACTORY CONDITIONS ARE DISCOVERED, EITHER ON THE CONSTRUCTION DOCUMENTS OR FIELD CONDITIONS, THE CONTRACTOR MUST NOTIFY THE ENGINEER IMMEDIATELY AND SHALL NOT COMMENCE FURTHER OPERATION UNTIL THE CONFLICTS, DISCREPANCIES, OR OTHER UNSATISFACTORY CONDITIONS ARE RESOLVED.
 - COVER ON ALL WATER LINES SHALL BE A MINIMUM OF 3'.
 - ELEVATIONS AT BASE OF PROFILE GRID REFLECT EXISTING GRADE AND TOP OF PIPE ELEVATIONS.

WATER LINE LEGEND

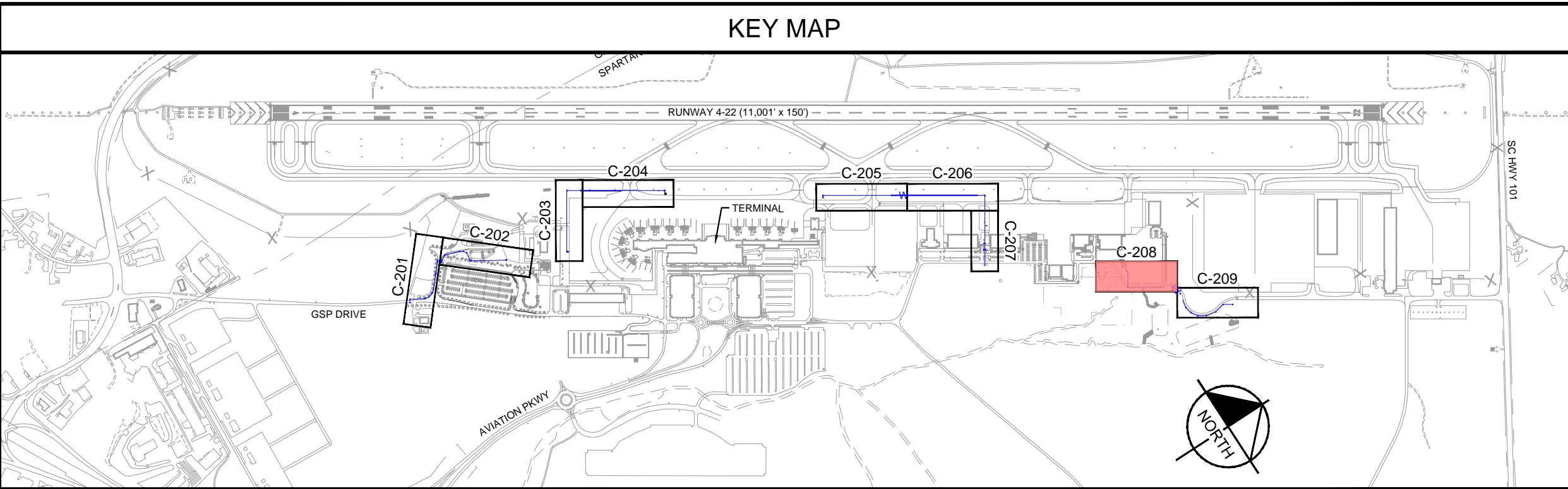
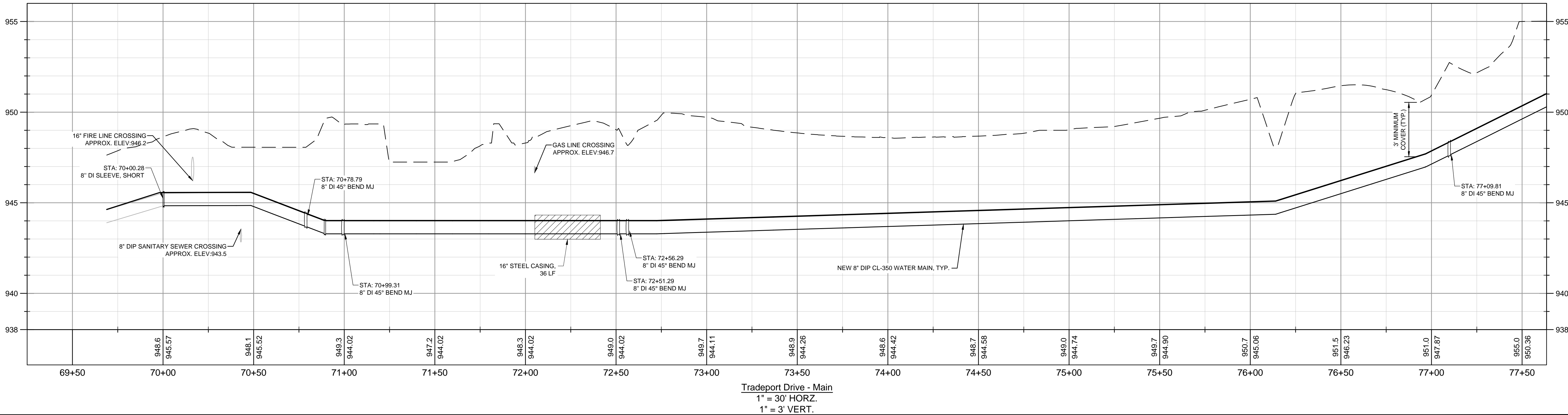
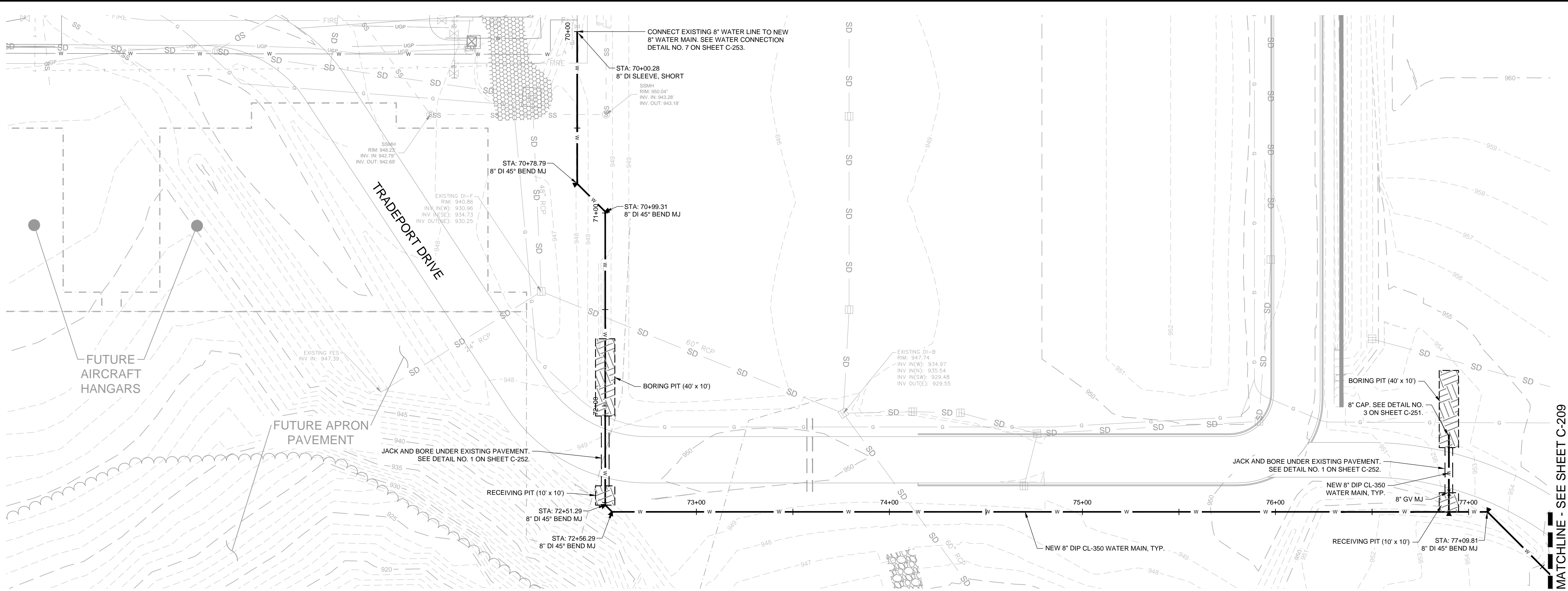
- | | |
|--|---|
| | EXISTING GAS LINE |
| | EXISTING OVERHEAD POWER |
| | EXISTING OVERHEAD TELEPHONE |
| | EXISTING SANITARY SEWER |
| | EXISTING STORM DRAIN |
| | EXISTING UNDERGROUND POWER |
| | EXISTING UNDERGROUND TELEPHONE |
| | EXISTING WATER LINE |
| | EXISTING WAYFINDING SIGN |
| | DEMOLISH AND REMOVE WATER LINE |
| | GROUT FILL ABANDONED WATER LINE |
| | NEW WATER LINE |
| | NEW WATER VALVE |
| | NEW / RELOCATED FIRE HYDRANT |
| | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



PROJECT		UTILITY UPGRADE - WATER SYSTEM	
PREPARED FOR		GSP INTERNATIONAL AIRPORT	
100% DESIGN PLANS		SPARTANBURG COUNTY, SOUTH CAROLINA	
SHEET NUMBER		C-207	
KHA PROJECT		013981015	
DATE		06/28/2024	
SCALE		AS SHOWN	
DESIGNED BY		SAM	
DRAWN BY		JE	
CHECKED BY		JMG	
SHEET TITLE		PLAN AND PROFILE LAYOUT (SHEET 7 OF 9) LAYOUT (SHEET 7 OF 9) (BID ALT. 1)	
KIMLEY-HORN AND ASSOCIATES, INC.		No. 000166	
SOUTH CAROLINA PROFESSIONAL ENGINEER		No. 37881	
11/25/2024		No. 37881	
REVISIONS		No.	
DATE		BY	

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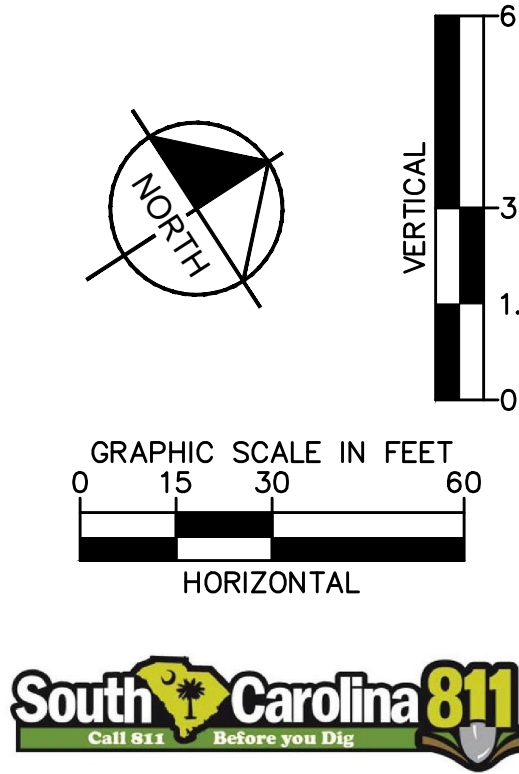


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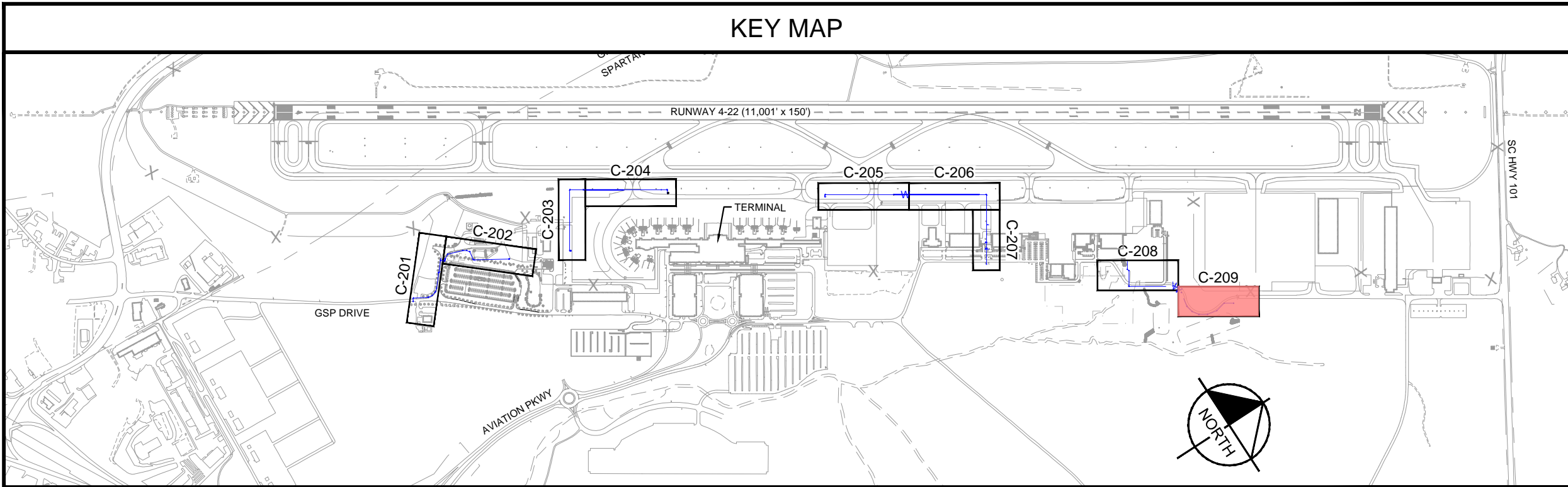
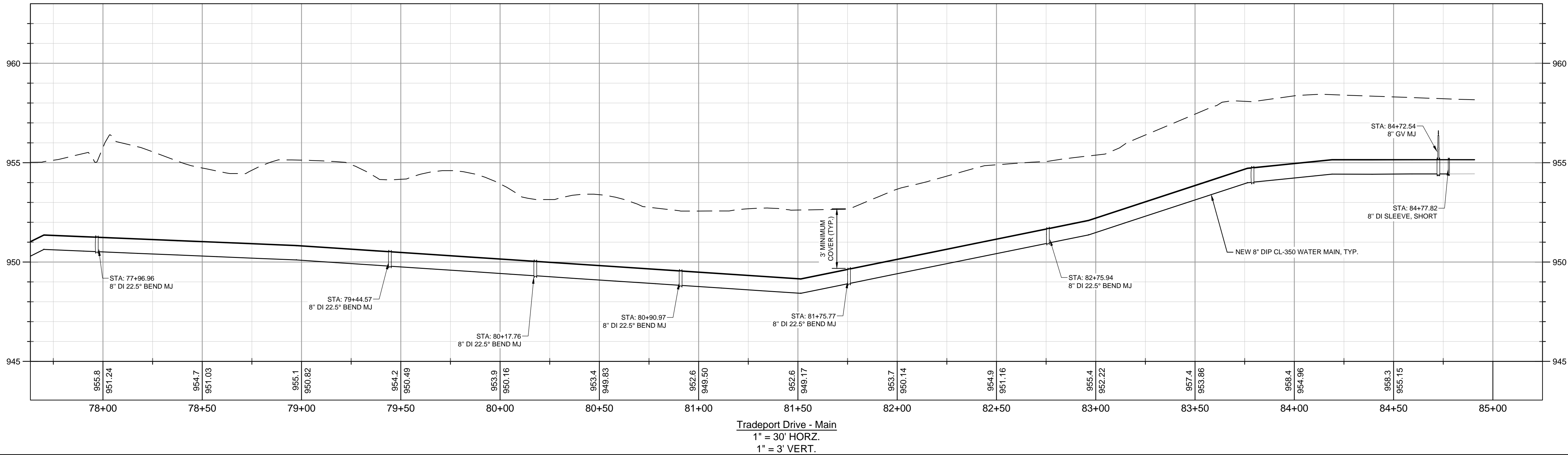
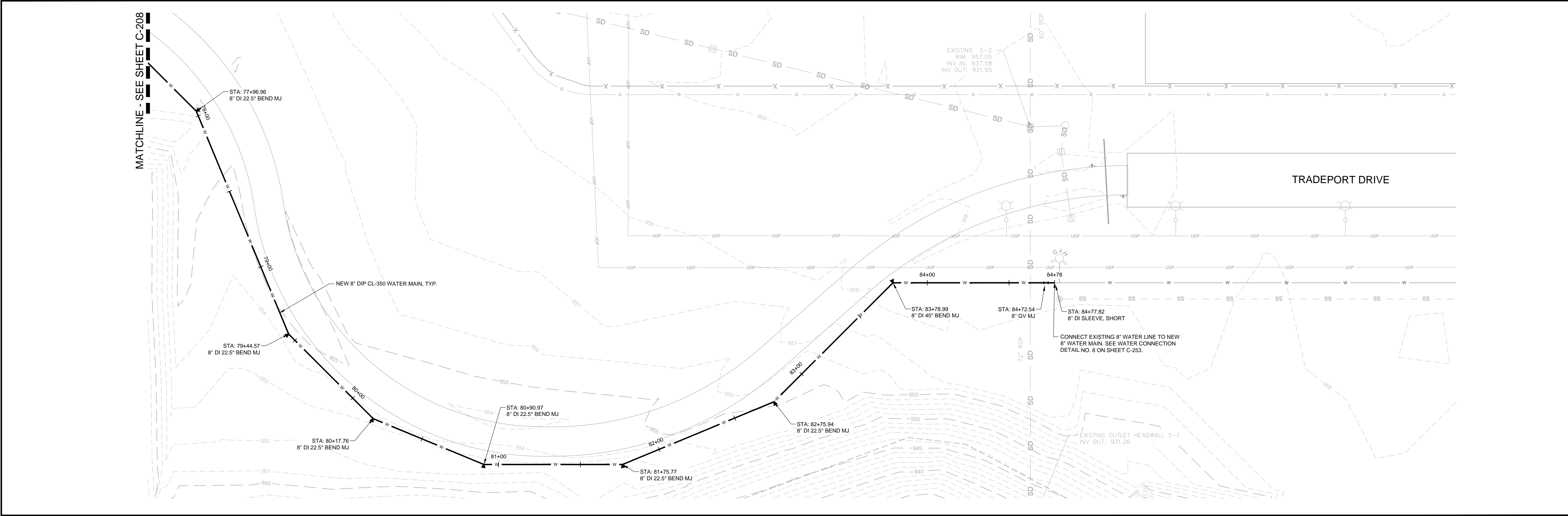
WATER LINE LEGEND

- | | |
|--|---|
| | EXISTING GAS LINE |
| | EXISTING OVERHEAD POWER |
| | EXISTING OVERHEAD TELEPHONE |
| | EXISTING SANITARY SEWER |
| | EXISTING STORM DRAIN |
| | EXISTING UNDERGROUND POWER |
| | EXISTING UNDERGROUND TELEPHONE |
| | EXISTING WATER LINE |
| | EXISTING TREE |
| | EXISTING WAYFINDING SIGN |
| | NEW WATER LINE |
| | NEW WATER VALVE |
| | NEW / RELOCATED FIRE HYDRANT |
| | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



PROJECT		UTILITY UPGRADE - WATER SYSTEM	
PREPARED FOR		GSP INTERNATIONAL AIRPORT	
100% DESIGN PLANS		SPARTANBURG COUNTY, SOUTH CAROLINA	
SHEET NUMBER		C-208	
KHA PROJECT		013981015	
DATE		06/28/2024	
SCALE		AS SHOWN	
DESIGNED BY		SAM	
DRAWN BY		JE	
CHECKED BY		JMG	
SHEET TITLE		PLAN AND PROFILE LAYOUT (SHEET 8 OF 9) (BASE BID)	
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REVISIONS		BY	
No.		DATE	

Drawing name: K:\ATL_Aviation\ Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-201 - PLAN AND PROFILE LAYOUT.dwg C-209 Nov 25, 2024 2:40pm by: justin.gobbel

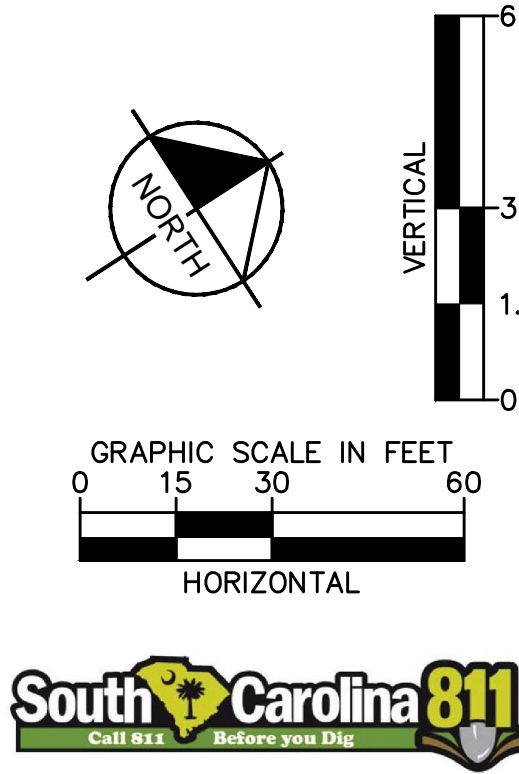


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WATER LINE LEGEND

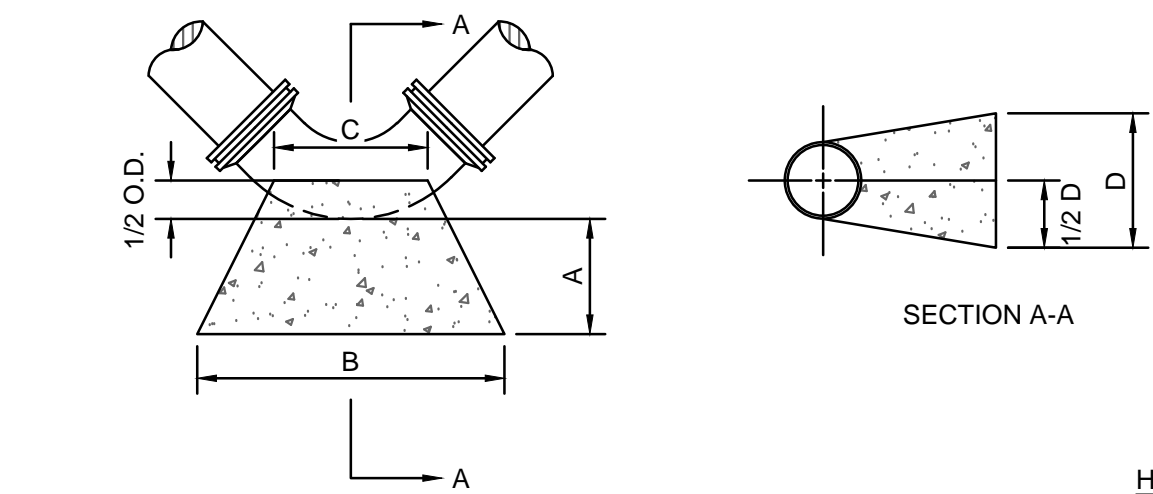
- | | |
|-----|---|
| G | EXISTING GAS LINE |
| CHP | EXISTING OVERHEAD POWER |
| OHT | EXISTING OVERHEAD TELEPHONE |
| SS | EXISTING SANITARY SEWER |
| SD | EXISTING STORM DRAIN |
| UGP | EXISTING UNDERGROUND POWER |
| UGT | EXISTING UNDERGROUND TELEPHONE |
| W | EXISTING WATER LINE |
| W | EXISTING TREE |
| W | EXISTING WAYFINDING SIGN |
| W | NEW WATER LINE |
| W | NEW WATER VALVE |
| W | NEW / RELOCATED FIRE HYDRANT |
| W | WATER MAIN FITTINGS WITH THRUST BLOCKING AND RESTRAINING JOINTS |



PROJECT		DATE		SCALE		DESIGNED BY		DRAWN BY		CHECKED BY	
013981015		06/28/2024		AS SHOWN		SAM		JE		JMG	
UTILITY UPGRADE - WATER SYSTEM											
PREPARED FOR											
GSP INTERNATIONAL AIRPORT											
100% DESIGN PLANS											
SPARTANBURG COUNTY, SOUTH CAROLINA											
SHEET NUMBER											
C-209											
KIMLEY-HORN											
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REVISIONS											
DATE											
BY											

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Drawing name: K:\ATL_Aviation\Production\013981015 - GSP Waterline Design\02 - CAD\PlanSheets\C-250 - CONSTRUCTION DETAILS.dwg C-250 Nov 25, 2024 2:40pm by: justin.gobbel



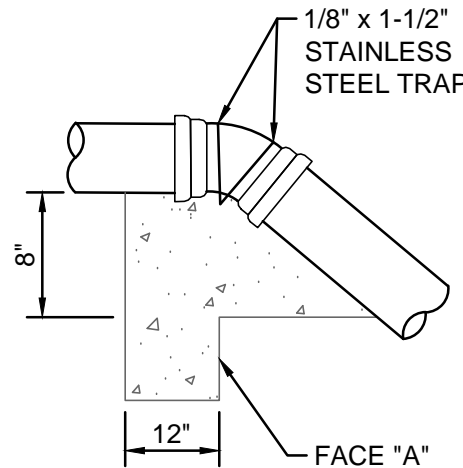
MINIMUM DIMENSIONS FOR CONCRETE BLOCKING						
FITTING	PIPE SIZE	A	B	C	D	VOL (CY)
11 1/4"	6"	1'-0"	2'-0"	4"	1'-0"	0.05
	8"	1'-0"	2'-0"	5"	1'-0"	0.05
22 1/2"	6"	1'-0"	2'-0"	6"	1'-0"	0.05
	8"	1'-0"	2'-0"	7"	1'-0"	0.05
45°	6"	1'-0"	2'-0"	7"	1'-0"	0.05
	8"	1'-0"	2'-0"	7"	2'-0"	0.10
90°	6"	1'-0"	2'-0"	1'-0"	2'-0"	0.11
	8"	2'-0"	3'-0"	1'-2"	2'-6"	0.37
TEES & PLUGS	6"	1'-0"	2'-0"	10'	1'-6"	0.08
	8"	1'-9"	2'-6"	1'-1"	2'-0"	0.23

HORIZONTAL & VERTICAL CONCRETE THRUST BLOCK DESIGN DATA:

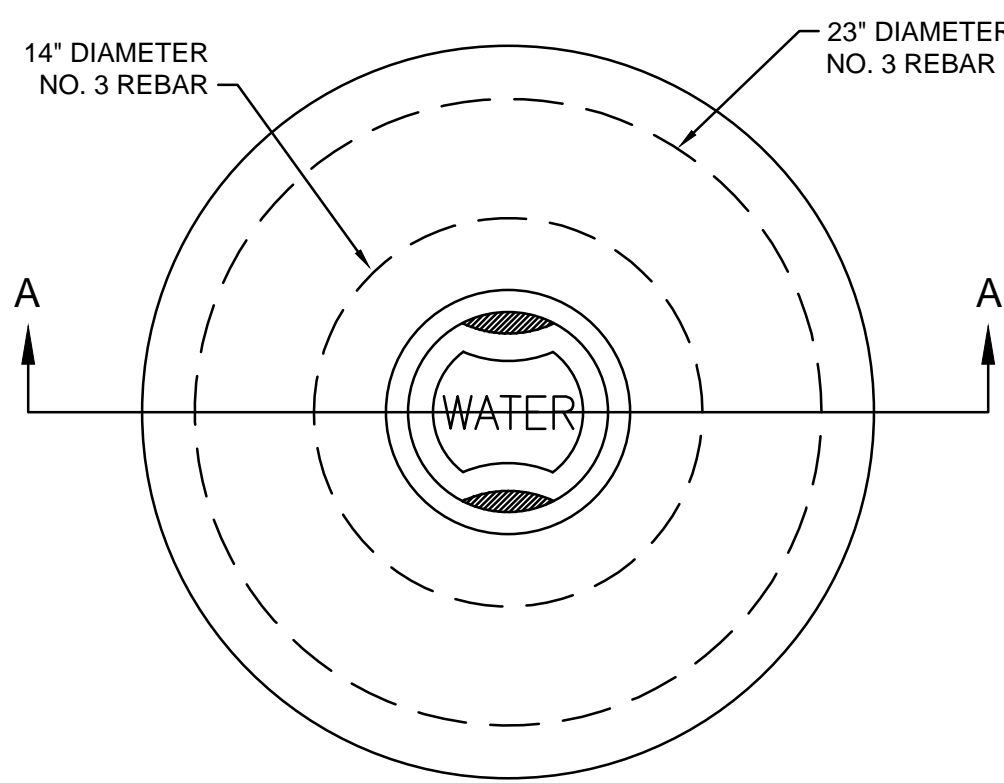
- DIMENSIONS OF THRUST BLOCK IN FEET BASED ON 2,000 POUNDS PER SQUARE FOOT (PSF) SOIL BEARING PRESSURE AND 200 POUNDS PER SQUARE INCH (PSI) TEST PRESSURE. ACTUAL INSIDE DIAMETER OF DUCTILE IRON PIPE, CLASS 51 USED AS STANDARD.

HORIZONTAL & VERTICAL CONCRETE THRUST BLOCK NOTES:

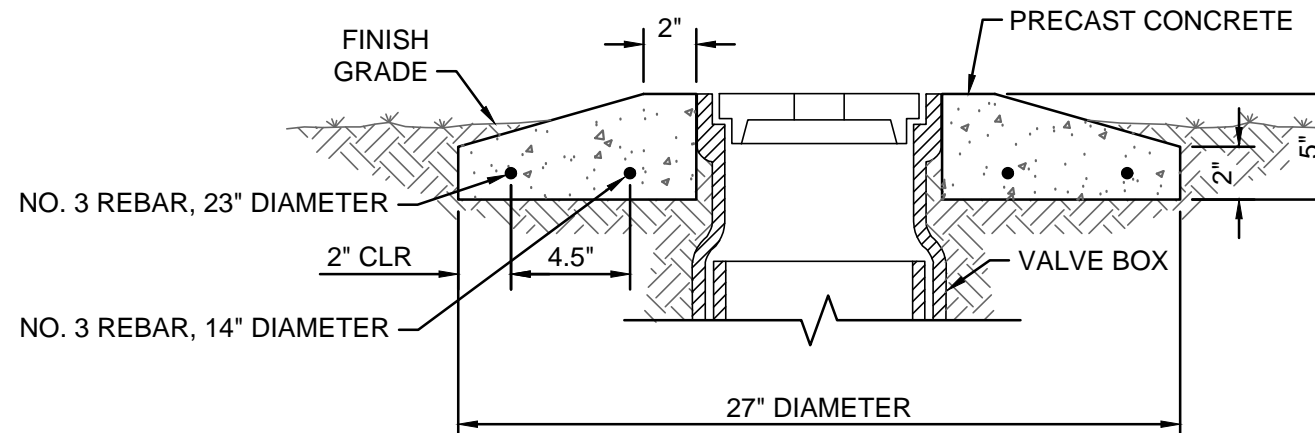
- FOR PIPE SIZES LESS THAN 6", USE MINIMUM DIMENSIONS LISTED IN THE TABLE FOR 6" PIPE SIZE.
- NOTIFY ENGINEER IF A PIPE LARGER THAN THOSE LISTED IN THE TABLE IS TO BE INSTALLED.
- CONCRETE THRUST BLOCK SHALL BE POURED AGAINST UNDISTURBED SOIL.
- CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. HIGH EARLY STRENGTH CONCRETE SHALL BE USED.
- PROTECT FITTINGS, GLANDS, AND BOLTS FROM CONTACT WITH CONCRETE BY USE OF POLYWRAP TO FACILITATE FUTURE REMOVAL.



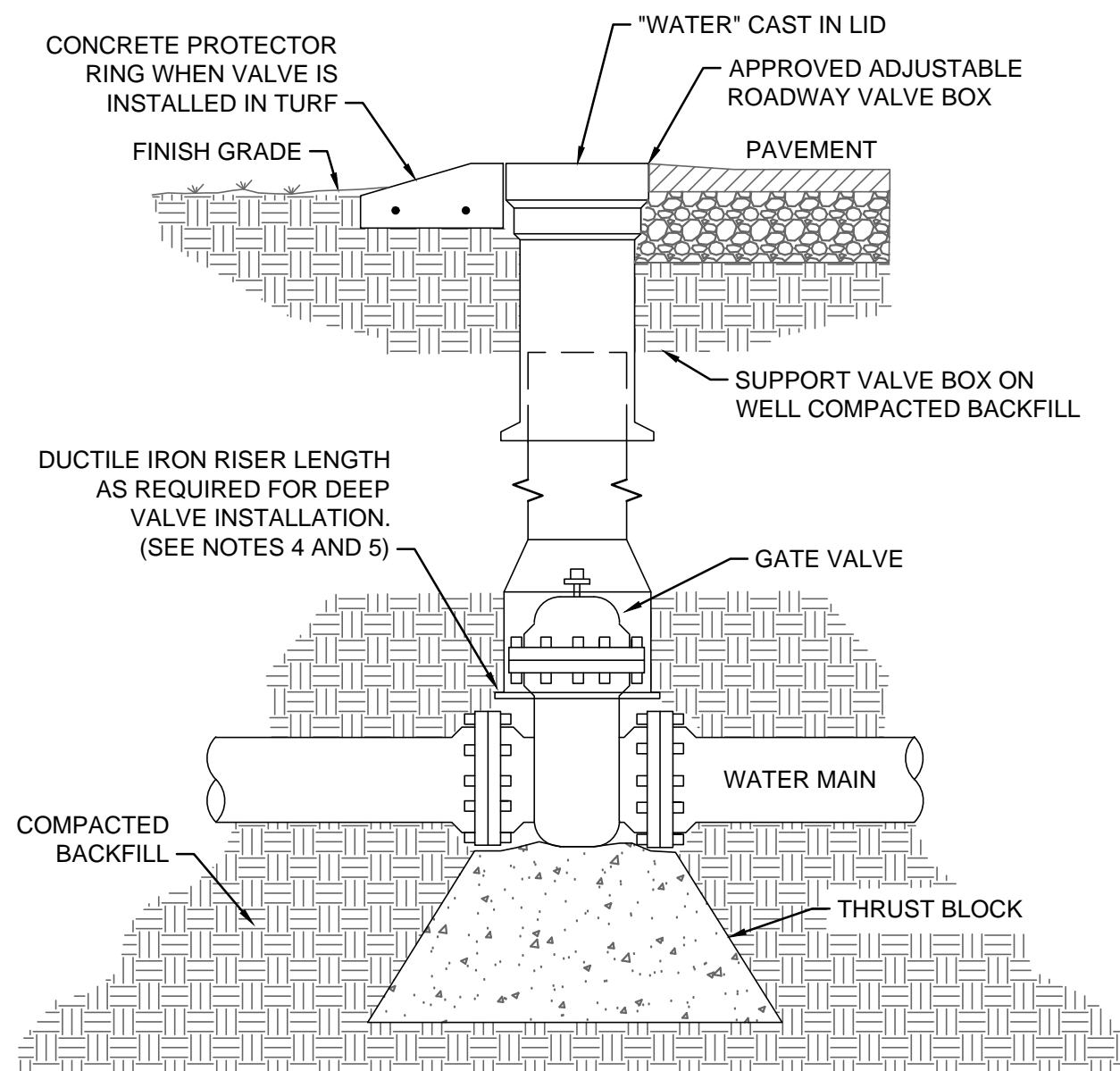
DEFLECTION ANGLE			
PIPE SIZE	22-1/2"	45°	90°
6"	1.0'	1.5'	2.2'
8"	1.2'	2.0'	4.0'



STANDARD VALVE BOX PROTECTOR - PLAN VIEW



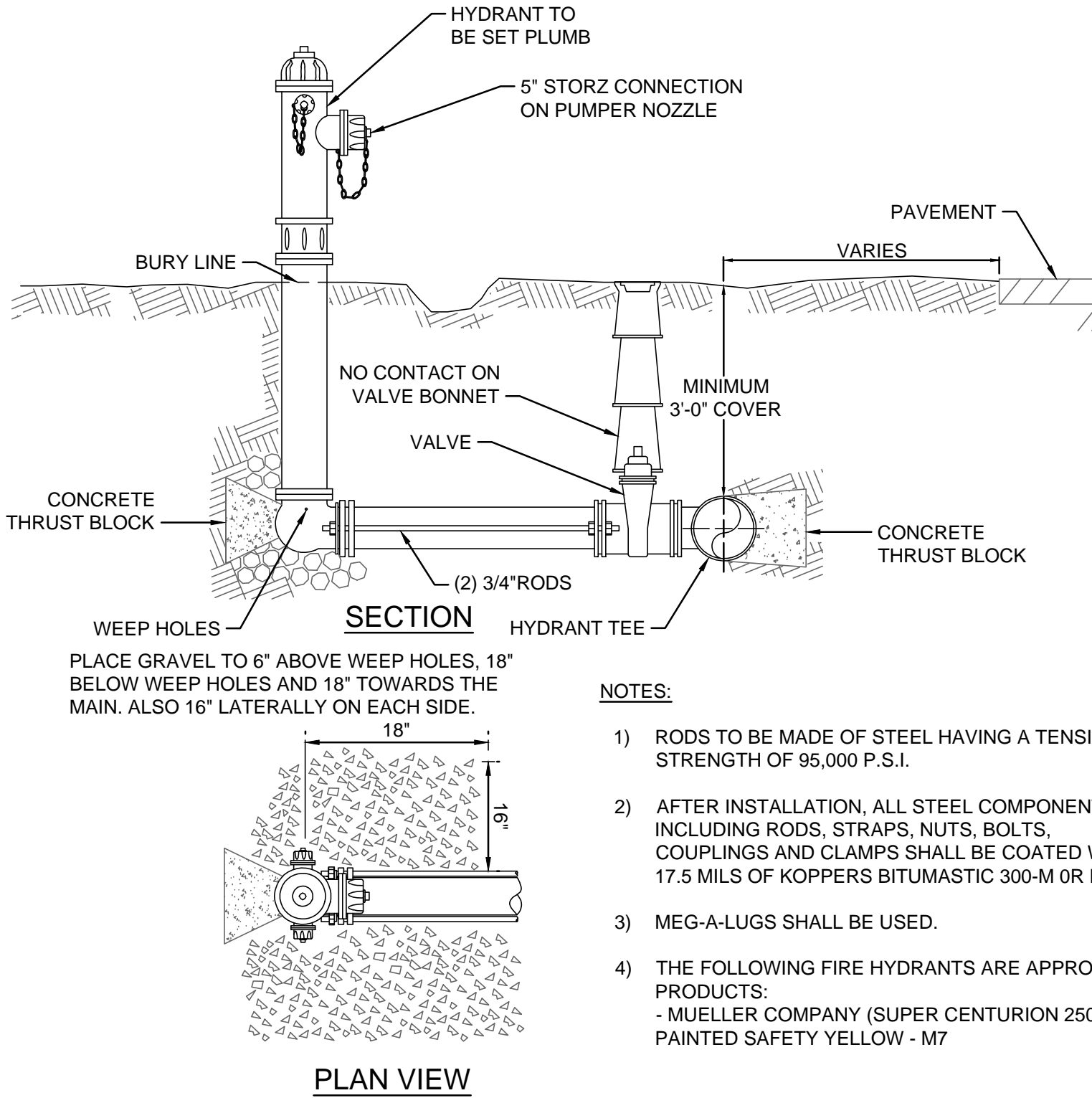
STANDARD VALVE BOX PROTECTOR - SECTION A-A



STANDARD VALVE BOX DETAIL

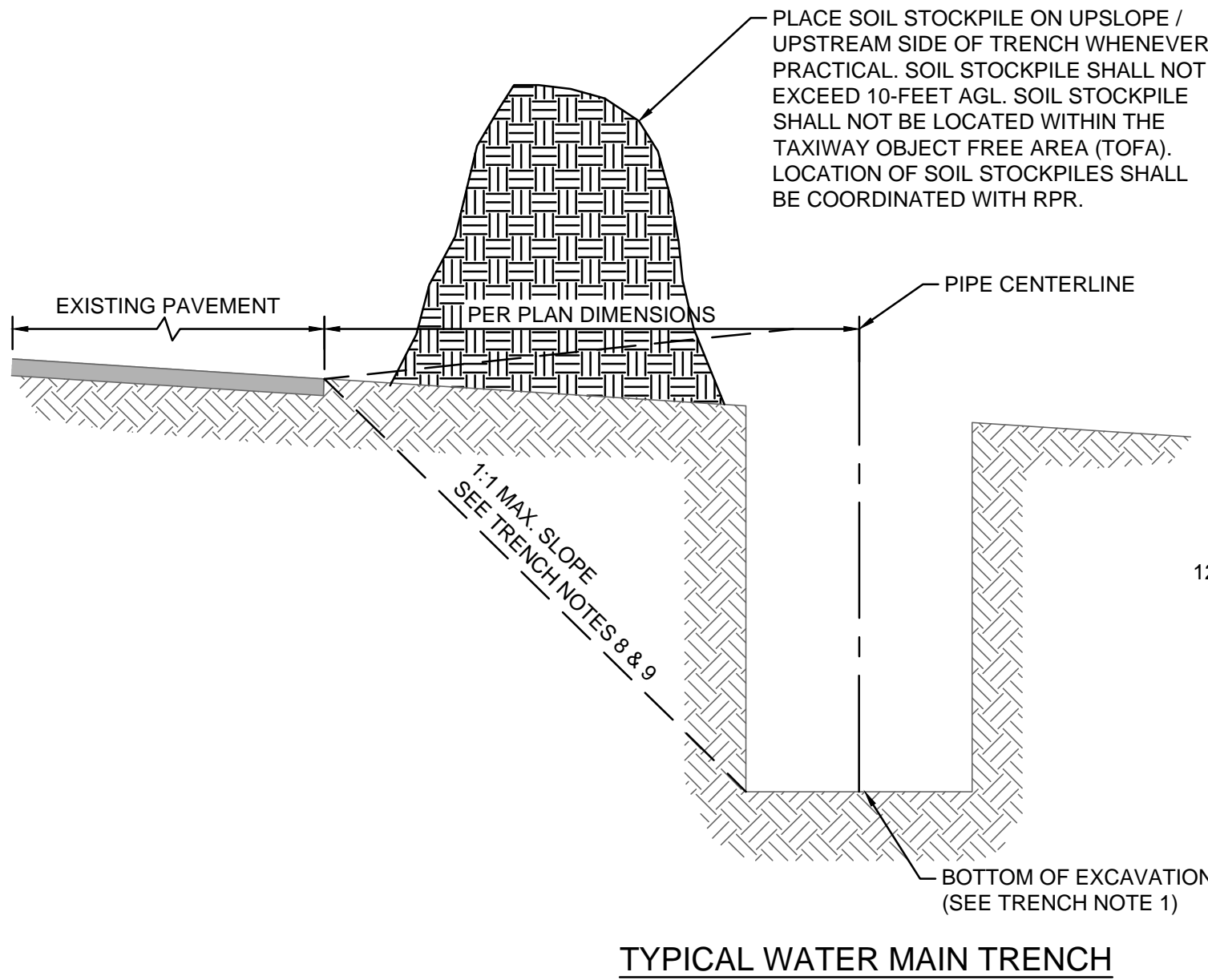
NOTES:

- CENTER VALVE BOX OVER OPERATING NUT TO ENSURE FREE VALVE OPERATION.
- USE 6" RISER PIPE ON 4" AND 6" VALVES.
- USE 8" RISER PIPE ON 8" VALVES AND LARGER.
- DO NOT ALLOW VALVE BOX OR RISER TO REST ON ANY PORTION OF VALVE.
- RISER LENGTH AS REQUIRED WITH VALVE BOX ADJUSTED FULLY DOWN. VALVE BOX SHALL BE ADJUSTED UP TO MATCH FINISH PAVEMENT ELEVATION OR 1" ABOVE FINISH GRADE IN TURF AREA.
- THE FOLLOWING VALVE BOXES ARE APPROVED PRODUCTS:
-LID CASTING TO BE TYLER UNION #6850 SERIES, 5-1/4" DROP LID OR APPROVED EQUIVALENT.
-BODY CASTING TO BE TYLER UNION #6855 SERIES, 5-1/4" SHAFT, SLIP OR SCREW TYPE, OR APPROVED EQUIVALENT.

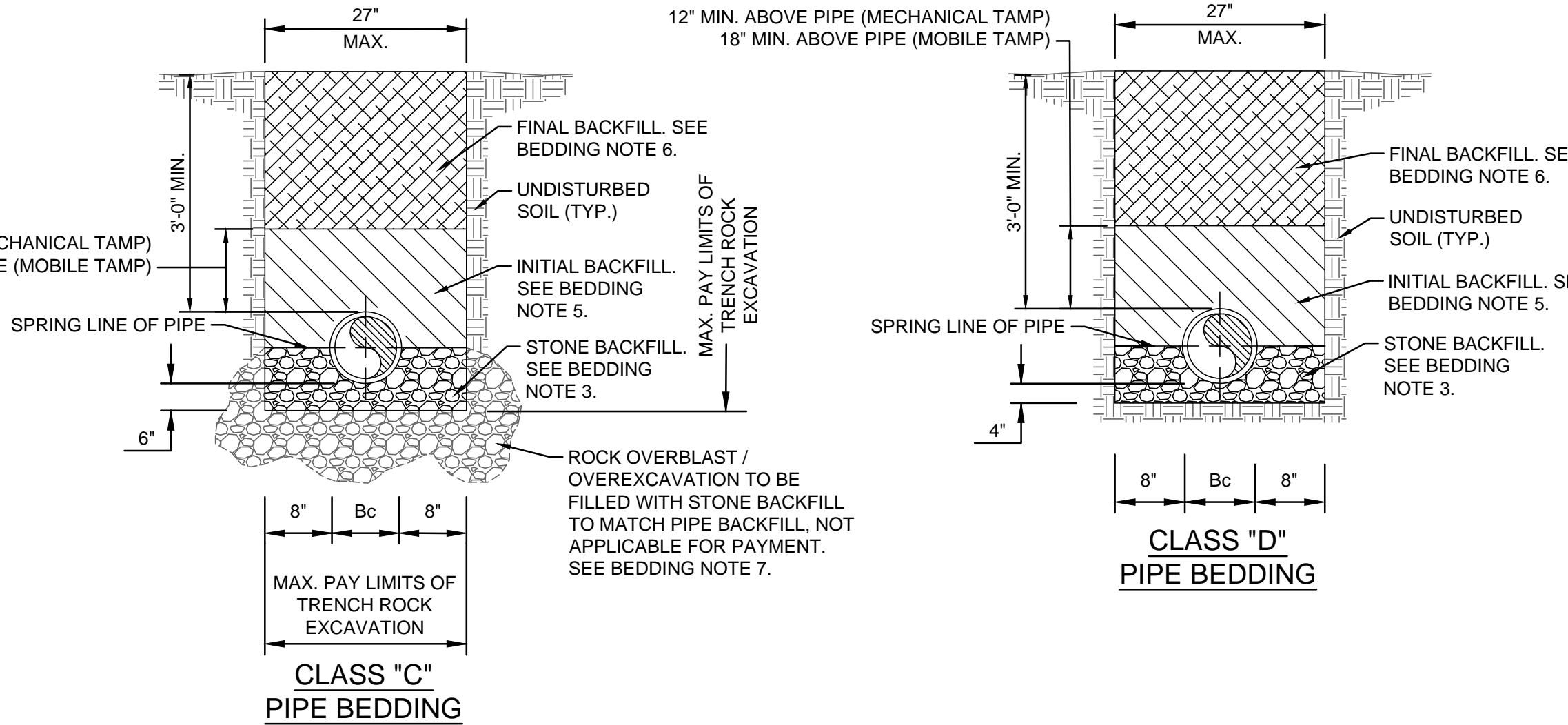


NOTES:

- RODS TO BE MADE OF STEEL HAVING A TENSILE STRENGTH OF 95,000 P.S.I.
- AFTER INSTALLATION, ALL STEEL COMPONENTS, INCLUDING RODS, STRAPS, NUTS, BOLTS, COUPLINGS AND CLAMPS SHALL BE COATED WITH 17.5 MILS OF KOPPERS BITUMASTIC 300-M OR EQUAL.
- MEG-A-LUGS SHALL BE USED.
- THE FOLLOWING FIRE HYDRANTS ARE APPROVED PRODUCTS:
- MUELLER COMPANY (SUPER CENTURION 250)
PAINTED SAFETY YELLOW - M7



TYPICAL WATER MAIN TRENCH

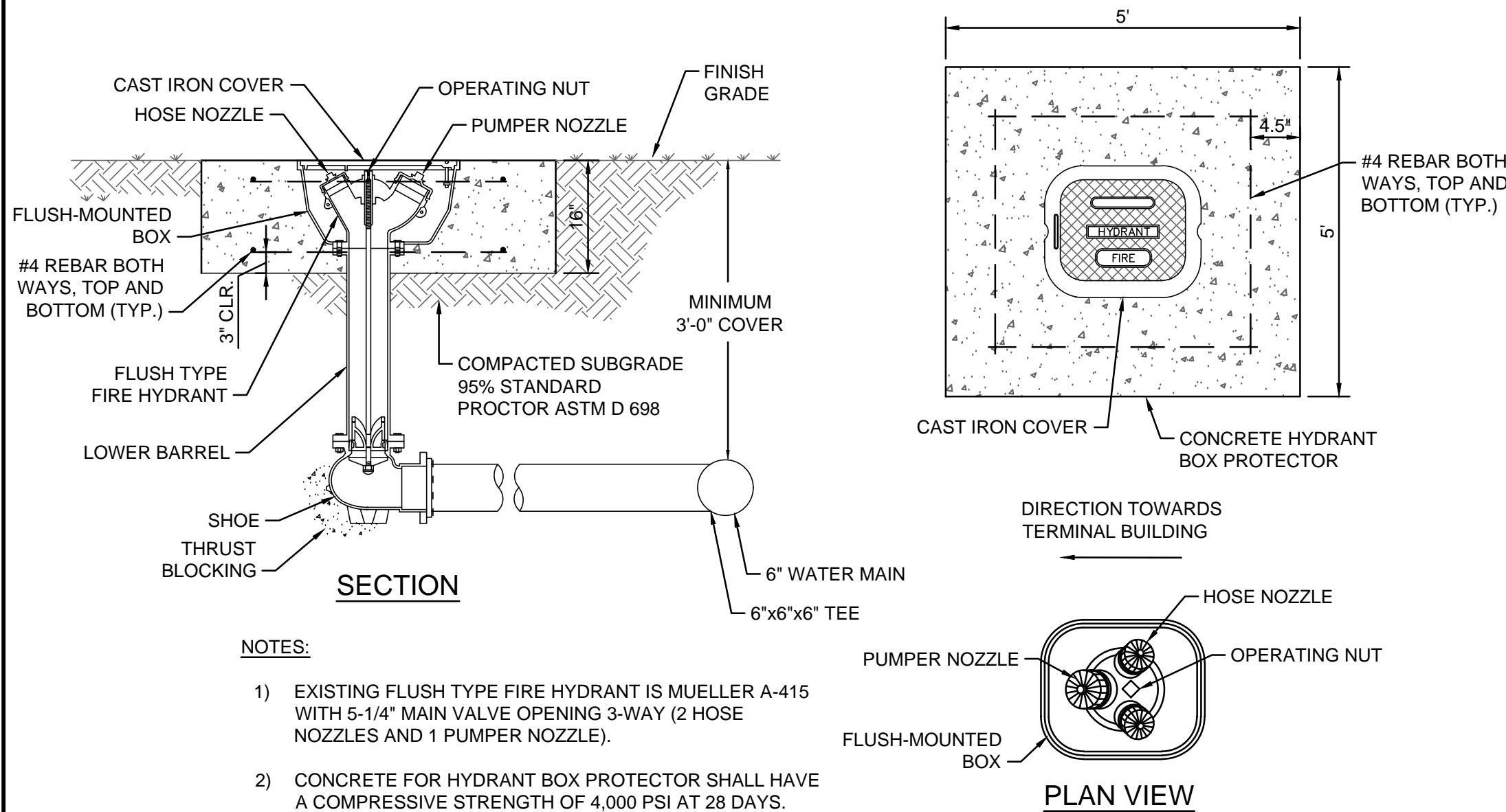


BEDDING NOTES:

- PRESSURIZED LINES SHALL BE CLASS "D" UNLESS LAYING IN CLASSIFIED ROCK OR WET CONDITIONS, THEN USE CLASS "C" WITH 6" OF WASHED STONE.
- COMPACTION TEST WILL BE MADE ON BACKFILL SOILS BY CONTRACTOR AT THE DIRECTION OF THE ENGINEER. USING ATSM 698, STANDARD PROCTOR, 98% COMPACTION IS REQUIRED IN ALL PAVED AREAS. 95% COMPACTION IS REQUIRED IN ALL OTHER AREAS UNLESS OTHERWISE NOTED. REFER TO SPECIFICATION SECTION 31 23 33 FOR COMPACTION TEST REQUIREMENTS.
- STONE BACKFILL SHALL BE WASHED CRUSHED STONE OR GRAVEL CONFORMING TO ATSM C33 (ALSO S.C. DOT) SIZE NO. 67 OR 6M WITH SIZE RANGE OF NO. 4 TO 3/4".
- STABILIZATION STONE SHALL BE PROVIDED AS NEEDED TO OBTAIN A STABILIZED TRENCH BOTTOM, IN ADDITION TO STONE BEDDING SHOWN HEREIN.
- INITIAL BACKFILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES. PLACED IN UNIFORM LAYERS NOT MORE THAN 8" THICK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D698 STANDARD PROCTOR; WASHED CRUSHED STONE OR GRAVEL PER BEDDING NOTE 3 MAY BE SUBSTITUTED FOR ALL OR PART OF COMPACTED BACKFILL.
- FINAL BACKFILL SHALL BE FINELY DIVIDED JOB EXCAVATED MATERIAL FREE FROM DEBRIS, ORGANIC MATERIAL AND STONES. PLACED IN UNIFORM LAYERS NOT MORE THAN 6" THICK AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D698 STANDARD PROCTOR. WHERE EXCAVATIONS CUT THROUGH PAVEMENTS, CURBS, DRIVEWAYS AND SIDEWALKS, AND UNDER OR ADJACENT TO STRUCTURES, BACKFILL SHALL BE COMPACTED TO 98% MAXIMUM DENSITY AS DETERMINED BY ASTM D698 STANDARD PROCTOR. IF EXCAVATED MATERIAL IS TOO WET OR UNSUITABLE, AN APPROVED FILL MATERIAL WILL BE SUBSTITUTED. NO ROCKS 3" IN ANY DIMENSION.
- ROCK EXCAVATION FOR PIPE TRENCHING SHALL ONLY BE MEASURED FOR PAYMENT FOR THE TRENCH WIDTH AND DEPTH BELOW THE BOTTOM OF THE PIPE IN ACCORDANCE WITH THE CLASS C BEDDING DETAIL AND DIMENSIONS SHOWN ABOVE. EXCAVATED ROCK IN PIPE TRENCHING BEYOND THESE DEFINED LIMITS WILL NOT BE MEASURED FOR PAYMENT.

6 TYPICAL WATER MAIN TRENCH AND BEDDING DETAIL
C-250 NOT TO SCALE

4 TYPICAL FIRE HYDRANT INSTALLATION DETAIL
C-250 NOT TO SCALE



NOTES:

- EXISTING FLUSH TYPE FIRE HYDRANT IS MUELLER A-415 WITH 5-1/4" MAIN VALVE OPENING 3-WAY (2 HOSE NOZZLES AND 1 PUMPER NOZZLE).
- CONCRETE FOR HYDRANT BOX PROTECTOR SHALL HAVE A COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS.

5 RELOCATION OF EXISTING FLUSH MOUNTED FIRE HYDRANT DETAIL
C-250 NOT TO SCALE

PROJECT

UTILITY UPGRADE - WATER SYSTEM

PREPARED FOR

GSP INTERNATIONAL AIRPORT

100% DESIGN PLANS

SHEET NUMBER

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DATE

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SHEET TITLE

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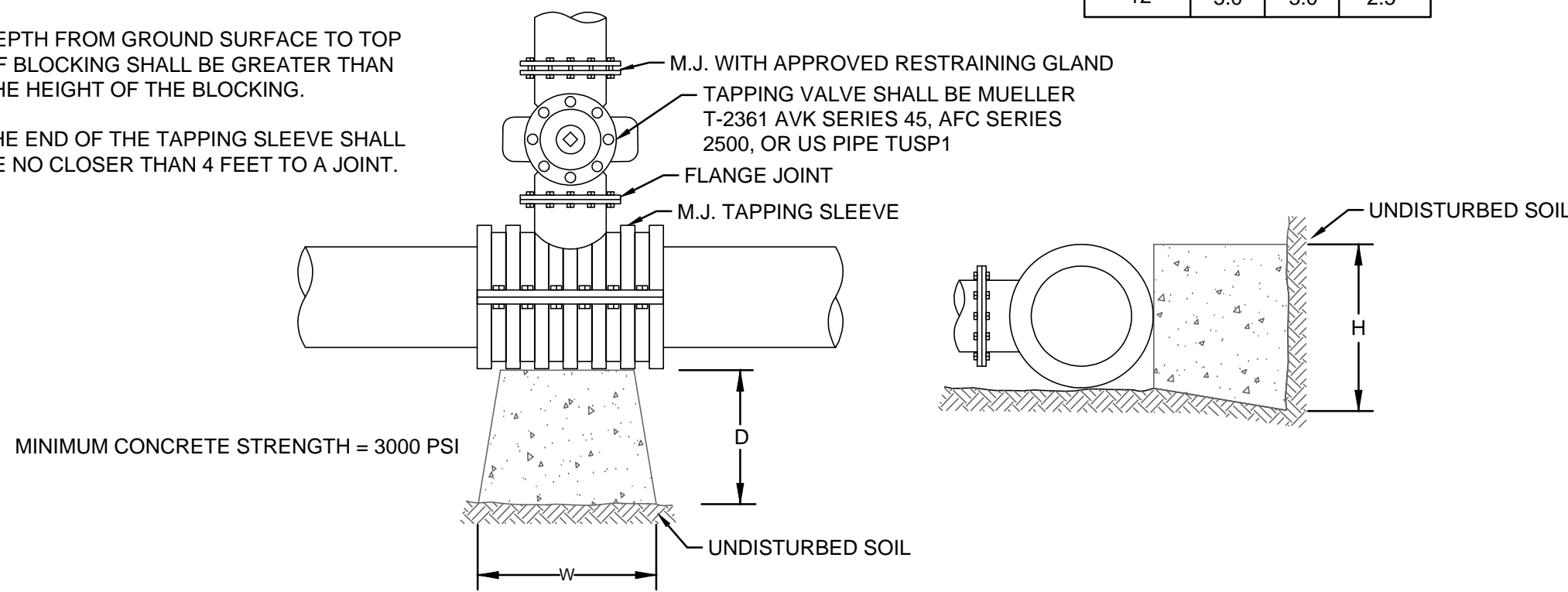
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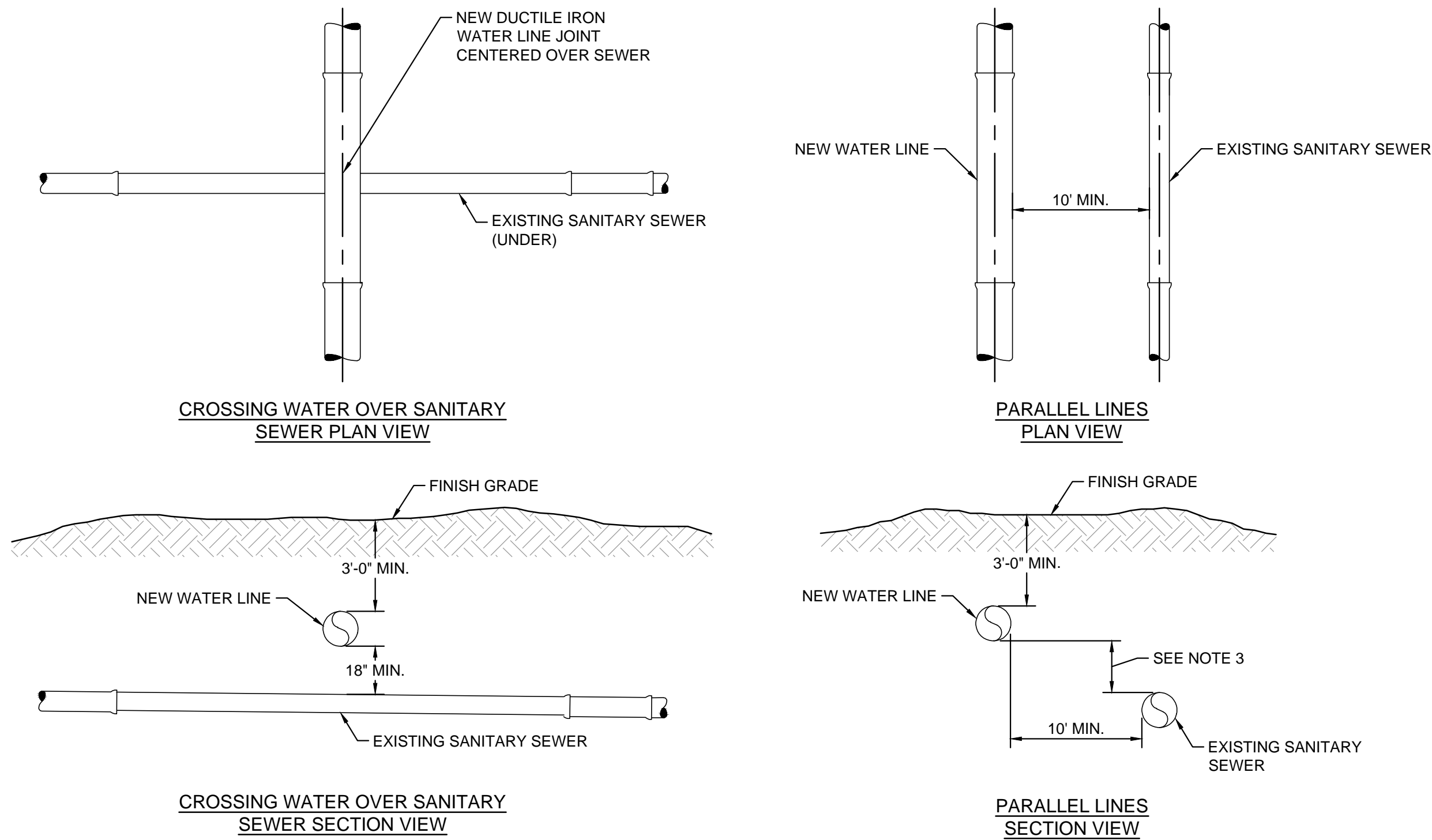
AS SHOWN

1. TAPPING SADDLES ARE NOT ALLOWED FOR MAIN-ON-MAIN TAPS.
2. THE FOLLOWING TAPPING SLEEVES ARE APPROVED PRODUCTS:
 - 4" THROUGH 24" - MUELLER H-615 OR AMERICAN FLOW CONTROL SERIES 2800.
 - 30" THROUGH 36" - AMERICAN FLOW CONTROL SERIES 2800 OR JCM 414FABRICATED MECHANICAL JOINT WITH FUSION BONDED EPOXY COATING.

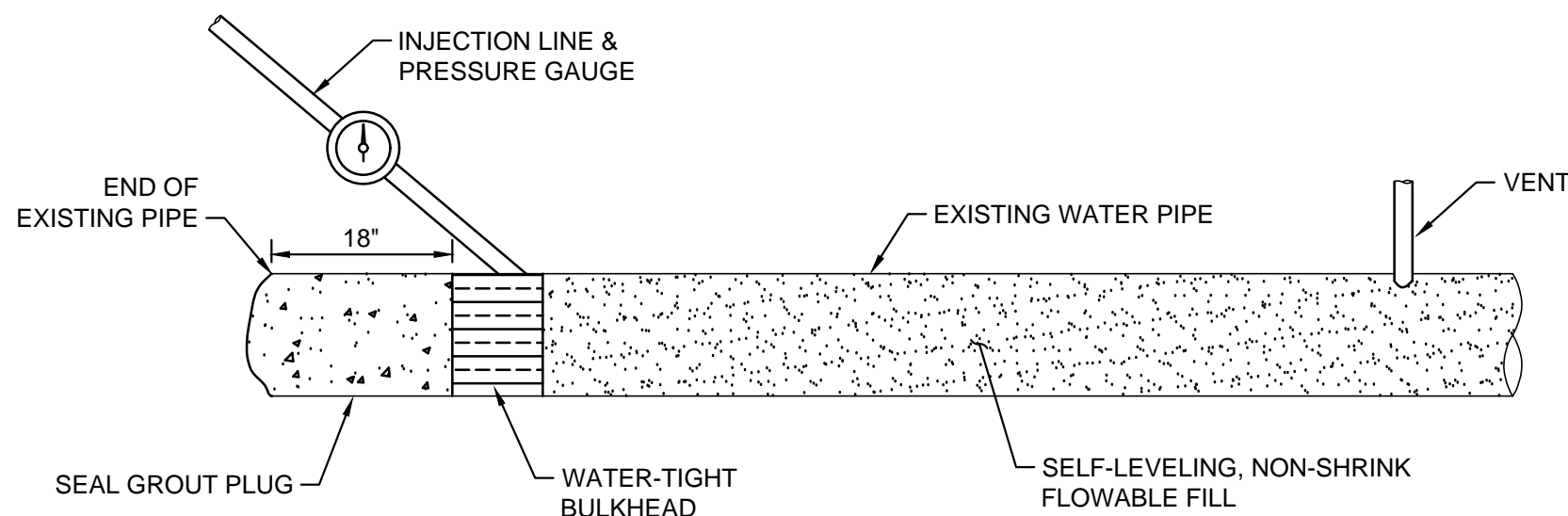
3. USE THRUST BLOCKING ONLY FOR WET TAPS UNLESS OTHERWISE APPROVED BY ENGINEER.
4. DEPTH FROM GROUND SURFACE TO TOP OF BLOCKING SHALL BE GREATER THAN THE HEIGHT OF THE BLOCKING.
5. THE END OF THE TAPPING SLEEVE SHALL BE NO CLOSER THAN 4 FEET TO A JOINT.



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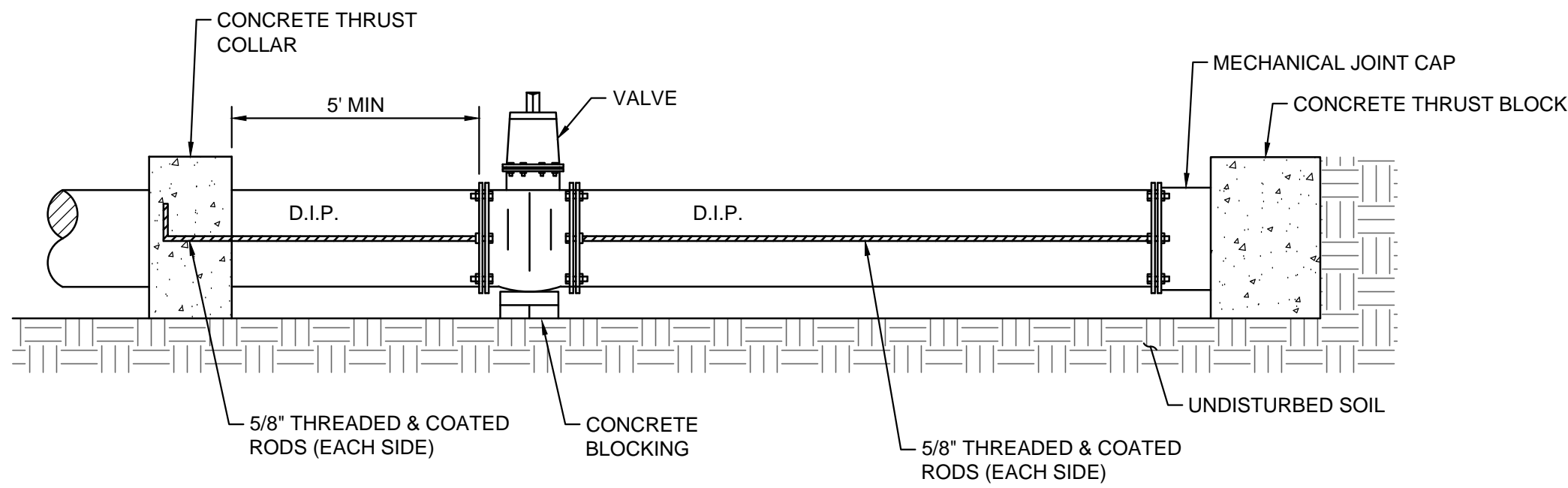


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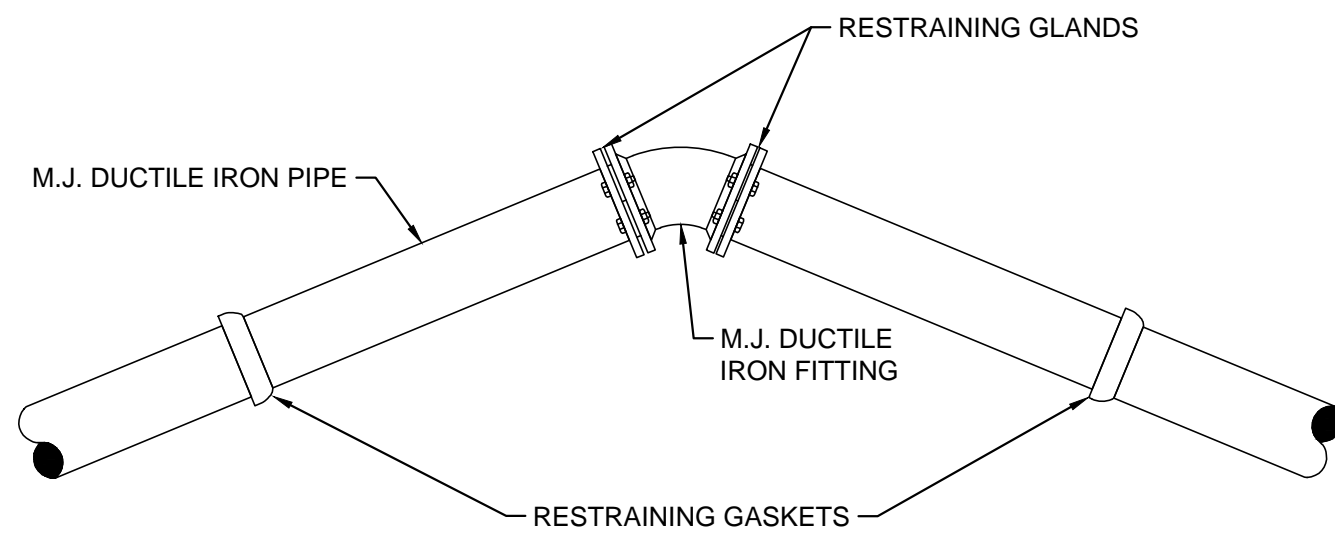


- NOTES:**
1. REFER TO SPECIFICATION SECTION 02 41 13 - REMOVAL OR ABANDONMENT OF WATER MAINS WHERE APPLICABLE.
 2. ENTIRE LENGTH OF ABANDONED PIPE TO BE FILLED BY PRESSURE GROUTING.
 3. MAKE CUTS, INSTALL BULKHEADS, AND VENTS TO ALLOW FOR AIR RELEASE.
 4. EXISTING VALVES SHALL BE TURNED TO THE CLOSED POSITION. REMOVE GATE WELL AND REPLACE WITH COMPACTED FILL.

C-251 / NOT TO SCALE

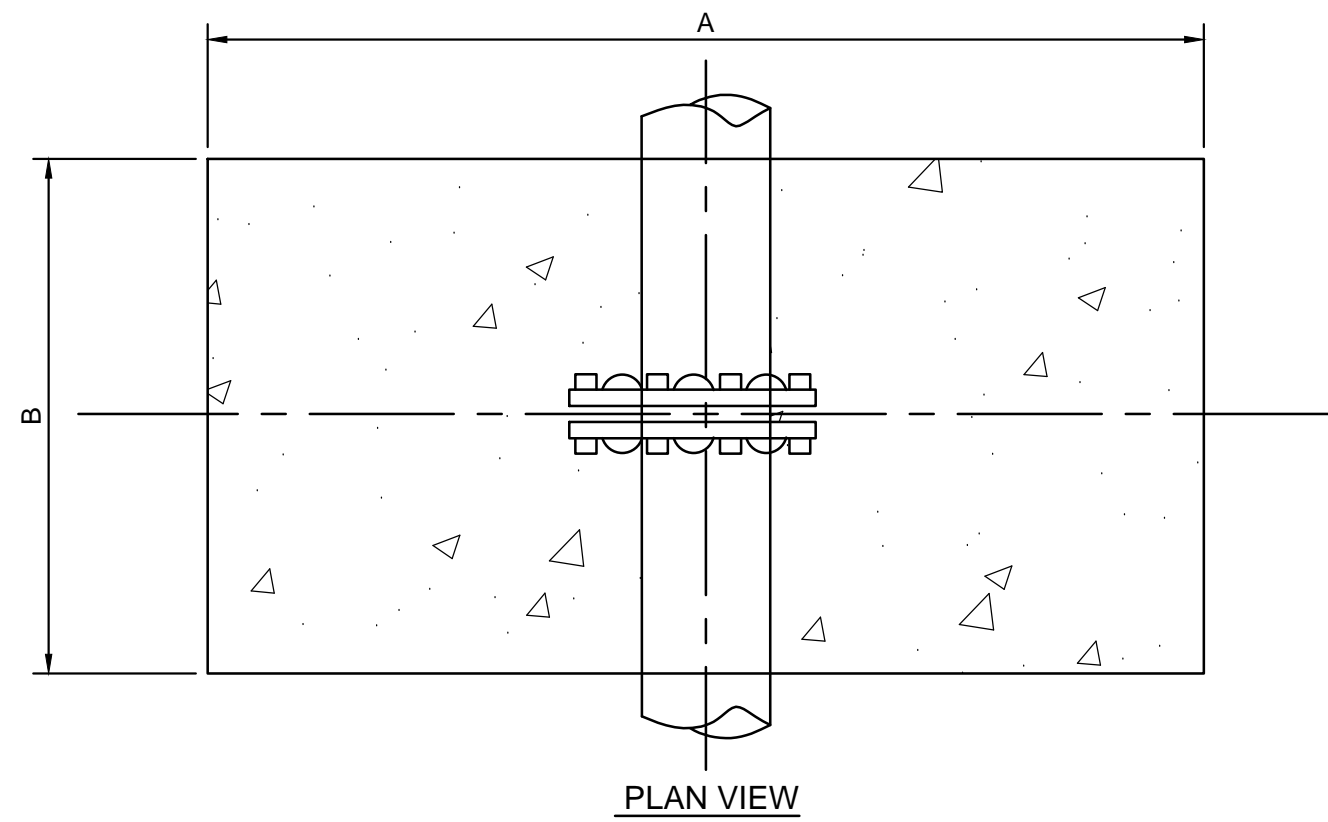


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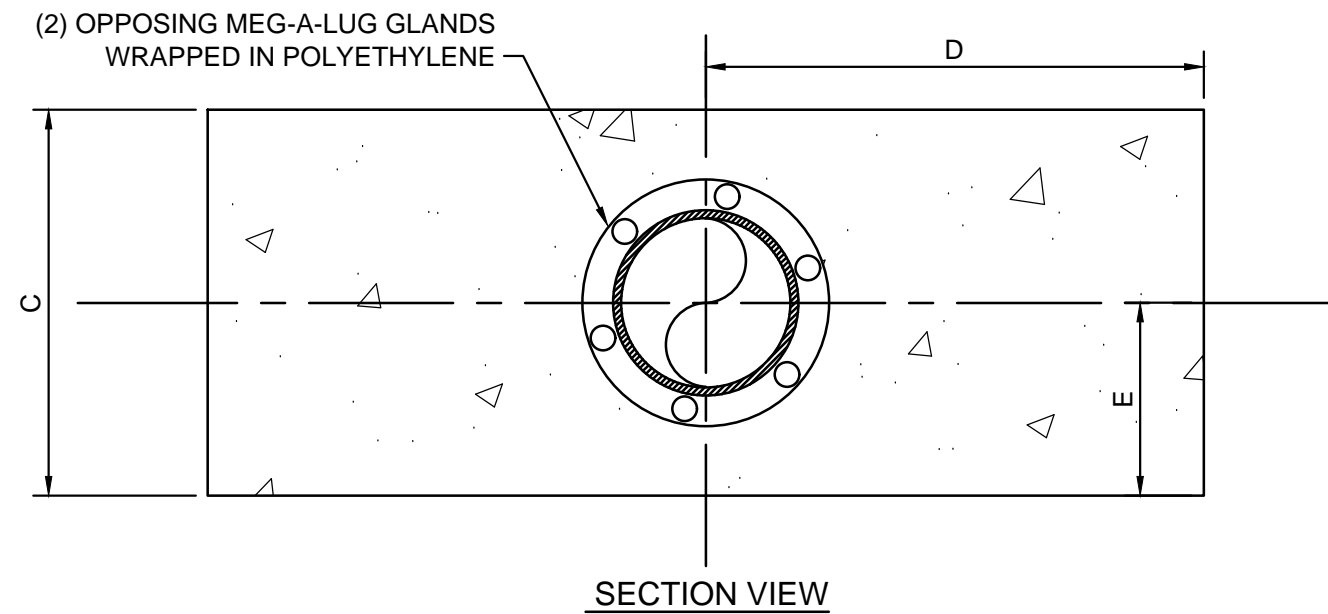


- NOTES:**
1. ALL JOINTS SHALL BE RESTRAINED.
 2. THE FOLLOWING RESTRAINING GLANDS AND GASKETS ARE APPROVED PRODUCTS:
FOR DUCTILE IRON PIPE
 - AMERICAN CAST IRON PIPE - FAST GRIP, FLEX-RING, FIELD FLEX-RING, OR LOCK-RING
 - US PIPE - TR FLEX OR FIBER LOK 350 GASKETS
 - GRIFFIN PIPE - SNAP-LOK RESTRAINED JOINT, OR TALON RJ GASKET
 - EBAA - MEGALUG RESTRAINT GLAND
 - FORD - SERIES 1400 RESTRAINT GLAND
 - SIGMA - ONE-LOK SERIES SLD RESTRAINT GLAND
 - MCWANE - SURE STOP 350 RESTRAINT GASKET**FOR PVC PIPE**
 - EBAA MEGALUG SERIES 2000PV
 - FORD SERIES 1500 WILL BE USED ON EXISTING PVC PIPE

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PLAN VIEW



SECTION VIEW

PIPE SIZE	A	B	C	D	E	CY.	WELDED THRUST COLLAR MINIMUM RATING
4"	3'-0"	2'-0"	1'-6"	1'-6"	0'-8"	0.33	4,500 LBS
6"	4'-0"	2'-0"	1'-6"	2'-0"	0'-9"	0.44	9,300 LBS
8"	4'-6"	2'-0"	2'-0"	2'-3"	1'-0"	0.67	16,000 LBS

- NOTES:**
1. DIMENSIONS OF CONCRETE COLLARDS BASED ON 2,000 POUNDS PER SQUARE FOOT (PSF) SOIL BEARING.
 2. SPECIFICATIONS OF MEGA-LUGS SHALL CONFORM TO THE PIPE MANUFACTURER'S SUPPLIED SHOP DRAWINGS, WHICH SHALL INDICATE A THRUST RATING NOT LESS THAN 16,000 POUNDS.
 3. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 POUNDS PER SQUARE INCH (PSI) AT 28 DAYS. "HIGH EARLY" STRENGTH CONCRETE SHALL BE USED.
 4. FOR PIPE DIAMETERS LESS THAN 4", USE 4" DIAMETER THRUST RATING.

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FIG. 1 COMPLETED JOINT BEFORE OFFSET

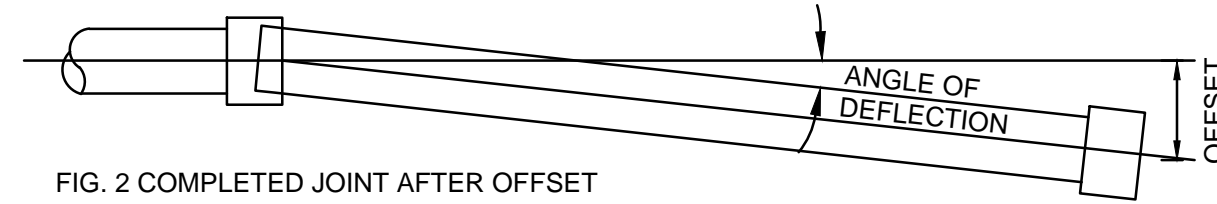


FIG. 2 COMPLETED JOINT AFTER OFFSET

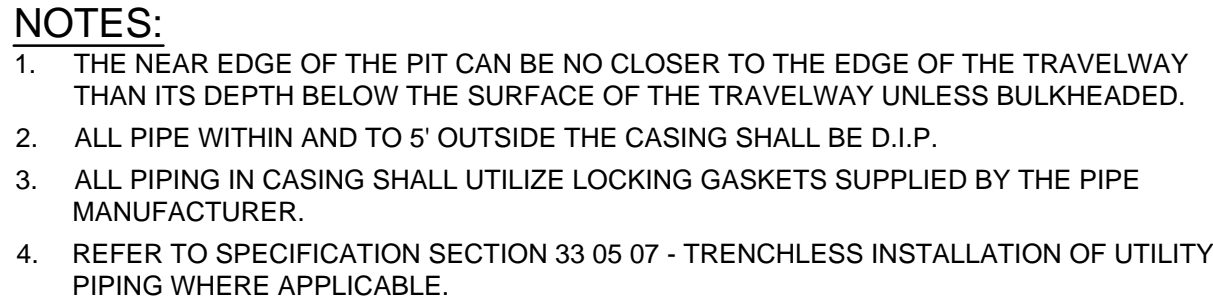
SLIP JOINT				
PIPE SIZE	NOMINAL PIPE LENGTH	ANGLE OF DEFLECTION	MAXIMUM OFFSET	RADIUS OF CURVATURE
INCHES	FEET	DEGREES	INCHES	FEET
6	20	7	19.0	230
8	20	5	19.0	230

MECHANICAL JOINT				
PIPE SIZE	NOMINAL PIPE LENGTH	ANGLE OF DEFLECTION	MAXIMUM OFFSET	RADIUS OF CURVATURE
INCHES	FEET	DEGREES	INCHES	FEET
6	20	7	19.0	160
8	20	5	19.0	220

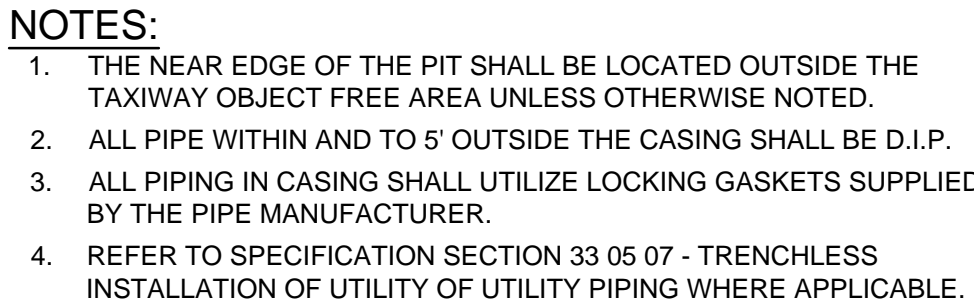
- NOTES:**
1. ALL JOINTS MUST BE ASSEMBLED AS SHOWN IN FIG. 1 BEFORE MAKING DEFLECTION.
 2. TABLE ASSUMES STANDARD BELLS.
 3. PIPE OFFSETS AND DEFLECTIONS SHALL MEET INSTALLATION REQUIREMENTS PER APPROVED PIPE MANUFACTURER'S SPECIFICATIONS.

MAXIMUM ALLOWABLE OFFSETS AND DEFLECTIONS FOR DUCTILE IRON WATER MAINS

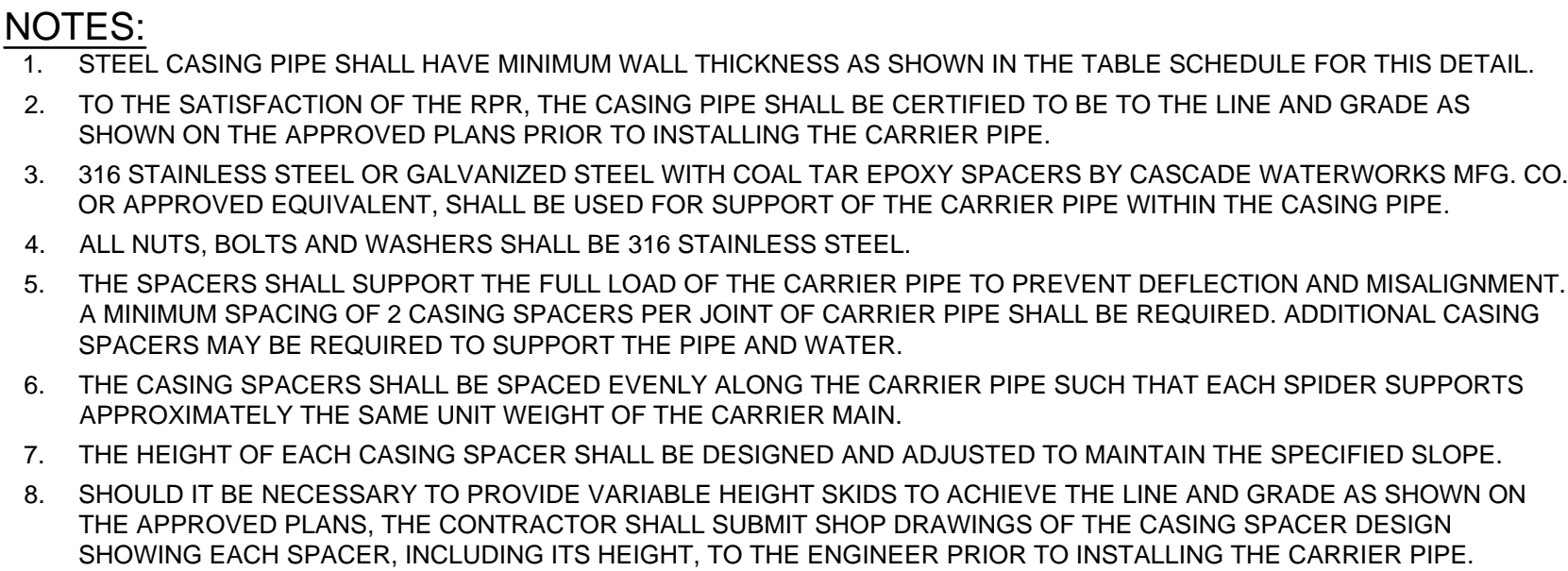
7 IRON WA
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1 CASING
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2 CASING
C-252 NOT TO SCALE



3 STEEL C
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