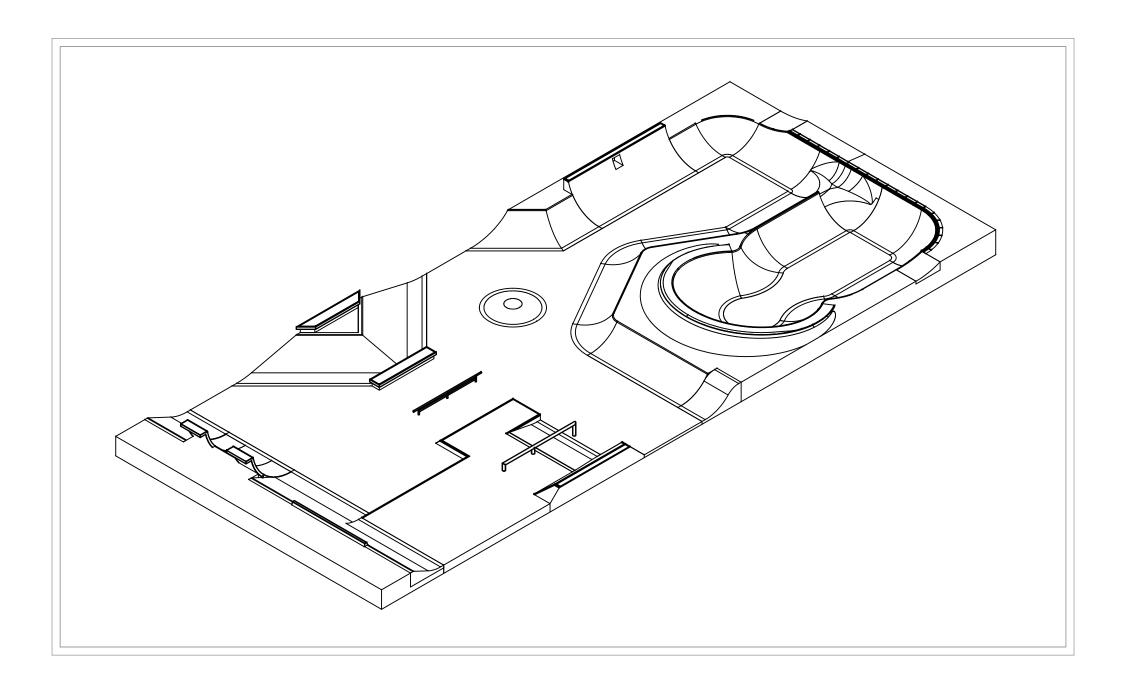
CONSTRUCTION PLAN SET PREPARED FOR SNUG HARBOR SKATEPARK



CITY OF HIGHLANDS, NJ

PLAN DATE IDENTIFIER

November 2, 2022

DATE OF LAST REVISIONS

VICINITY MAP LOCATION MAP PROJECT LOCATION profession Record Table (part State) Table (part State) NORTH Record Record

PROJECT INFORMATION

OWNER/ DEVELOPER BOROUGH OF HIGHLANDS, NJ 42 SHORE DRIVE

HIGHLANDS, NJ 07732

SITE ADDRESS
SNUG HARBOR AVE & BAY AVE
HIGHLANDS, NJ 07732

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SK11.2	CONSTRUCTION DETAILS
	Know what's below.
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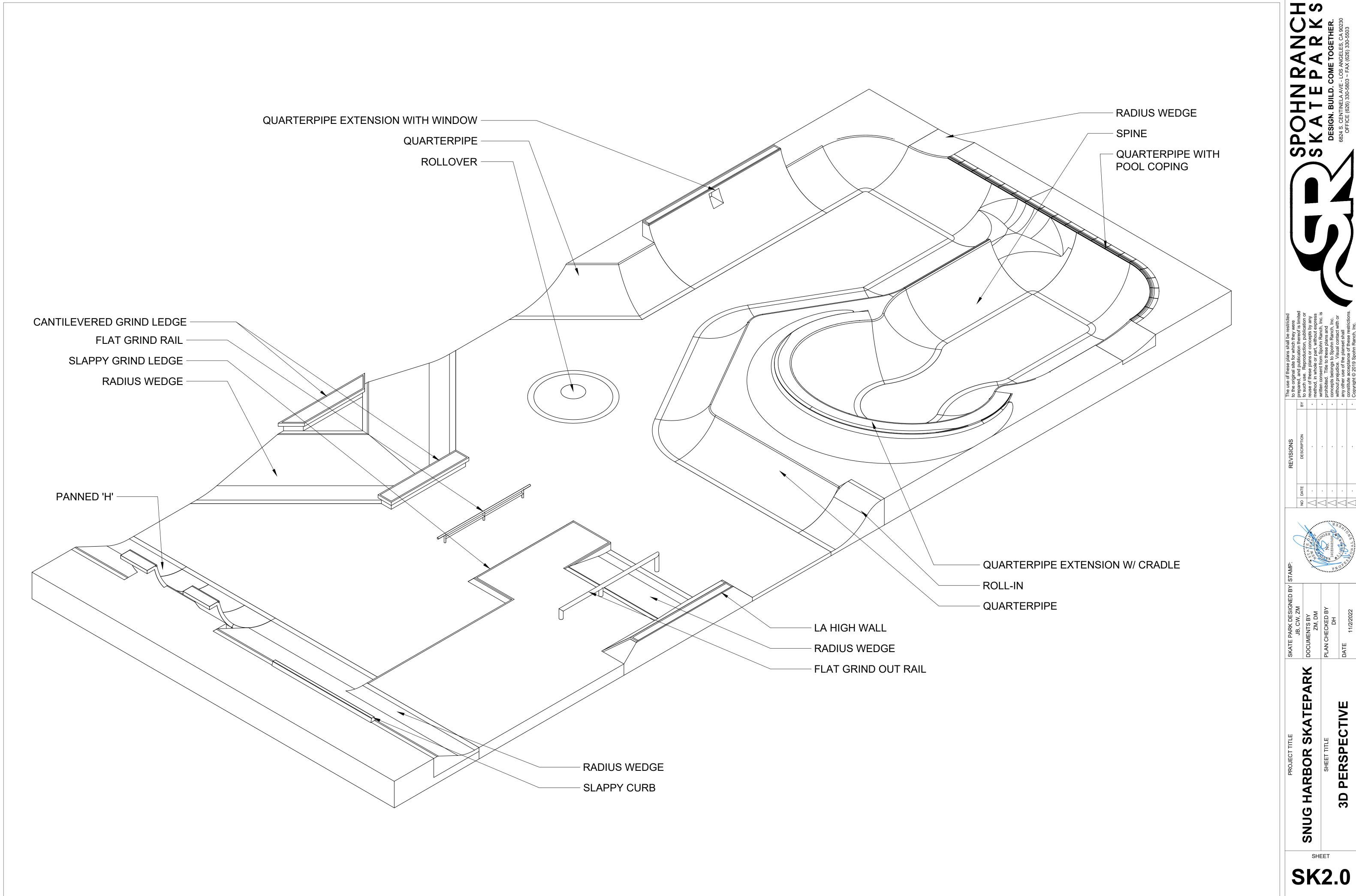
STATE OF THE OF THE

SKATE PARK DESIGNED BY
JB, CW, ZM
DOCUMENTS BY
ZM, DM
PLAN CHECKED BY
DH

RBOR SKATEPAL

SNUG HARBO

SK1.0



GENERAL NOTES

DESIGN CRITERIA

- 1. THESE GENERAL NOTES APPLY UNLESS NOTED OTHERWISE ON CONSTRUCTION DRAWINGS.
- COMPLY WITH CURRENT LOCAL BUILDING CODE EXCEPT AS NOTED HEREIN.
- 3. TESTING SERVICES: OWNER TO BEAR ALL ASSOCIATED COSTS FOR TESTING SERVICES. COORDINATE THE FOLLOWING TESTING WITH THE OWNER SELECTED TESTING AGENCY (IF REQUIRED BY THE PROJECT SPECIFICATIONS):
- A. MATERIAL EVALUATIONS TESTS FOR CONCRETE MIX, AGGREGATE BASE, SUBGRADE, AND STRUCTURAL FILL.
- B. INSPECTION OF STRUCTURAL FILL PLACEMENT AND COMPACTION.
- C. INSPECTION OF FINAL SUBGRADE.
- D. BASE MATERIAL COMPACTION TEST FOR EVERY 2500 S.F. OF CONCRETE FLATWORK IN SKATEPARK AREA TO ENSURE 95% COMPACTION IN ACCORDANCE WITH CIVIL ENGINEERING SPECIFICATIONS AND TESTING AGENCY RECOMMENDATIONS.

EARTHWORK

- 1. ESTABLISH AND MAINTAIN REQUIRED LINES AND GRADE ELEVATIONS.
- 2. REMOVE UPPER FOUR TO SIX INCHES OR MORE OF TOPSOILS CONTAINING SURFICIAL VEGETATION, GRASS, ROOTS, AND ORGANIC MATERIAL FROM WITHIN AND TO A POINT AT LEAST FIVE FEET BEYOND THE BUILDING LINES/SKATEPARK LIMITS. THESE SOILS ARE GENERALLY NOT CONSIDERED SUITABLE FOR RE-USE AS STRUCTURAL FILL AND SHOULD BE STOCKPILED IN DESIGNATED AREAS BEYOND THE CONSTRUCTION LIMITS, OR REMOVED FROM THE SITE. COORDINATE STOCKPILE LOCATION WITH OWNER. IF REMOVED FROM SITE, DISPOSE OF IN A LEGAL MANNER.
- 3. COMPACT THE EXPOSED SUBGRADE ACROSS THE SITE TO ESTABLISH A FIRM AND UNYIELDING SURFACE. UNDER SUPERVISION OF CITY PROVIDED GEOTECHNICAL ENGINEER, PROOF-ROLL EXPOSED SUBGRADES WITH CONSTRUCTION EQUIPMENT TO ASSIST IN THE EVALUATION OF THE SUBGRADES ACROSS THE SITE. IF UNSTABLE AREAS ARE DETECTED, AN INITIAL ATTEMPT SHOULD BE MADE TO AERATE (12 INCHES MIN.) AND DENSIFY THE SUBGRADE BY RECOMPACTION WHERE NATURAL MOISTURE CONTENTS ARE AT APPROPRIATE LEVELS. IF THIS PROCEEDURE IS INEFFECTIVE. THE DISTURBED SOILS SHOULD BE UNDERCUT AND REPLACED WITH CLEAN FILL AND/OR STABILIZING MATERIALS. COMPACT TO AT LEAST 90% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 STANDARD PROCTOR METHOD. FILL AND CONSOLIDATE DEPRESSED AREAS. A FIRM, NON-YIELDING SUBGRADE SHOULD BE ESTABLISHED PRIOR TO PROCEEDING WITH FILL PLACEMENT.
- 4. SOIL COMPACTION SHALL BE ACHIEVED BY MEANS OF PNEUMATIC TIRE ROLLERS, HOE PACKS, RIDE-ON DRUM ROLLER OR OTHER MECHANICAL TAMPERS (PLATE, RAMMER, OR WALK BEHIND ROLLER).
- 5. PROVIDE STRUCTURAL FILL AS REQUIRED TO MEET PROPOSED SUBGRADE ELEVATIONS IN ACCORDANCE WITH GRADING PLAN.
- 6. BUILD UP SUBGRADE USING STOCKPILED MATERIAL AND/OR APPROVED MATERIAL WITH LOW PLASTICITY. THE FILL SHOULD BE PLACED IN LIFTS THIN ENOUGH TO ATTAIN THE SPECIFIED COMPACTION LEVEL THROUGHOUT THE ENTIRE LIFT THICKNESS. PRIOR TO COMPACTION, MOISTURE CONDITION AS NEEDED. COMPACT EACH LIFT TO AT LEAST 90 PERCENT OF ASTM D698.
- 7. THE EARTHWORK SHALL BE DONE UNDER SUPERVISION OF A SOILS ENGINEER RETAINED BY THE OWNER (IF REQUIRED BY THE PROJECT), WHO SHALL VERIFY ABOVE SPECIFICATIONS FOR THE SUPPORT OF SLAB ON GRADE AND FOR THE CONTROL OF SOIL SWELLING. FIELD DENSITY TESTS TO DETERMINE THE LEVEL OF COMPACTION BEING ACHIEVED IN THE FILL SHALL BE PERFORMED ON EACH LIFT AT THE BEGINNING OF FILL PLACEMENT AND AT A FREQUENCY MUTUALLY AGREED UPON BY THE PROJECT TEAM FOR THE REMAINDER OF THE PROJECT.
- 8. EXCAVATION AND COMPACTION OF FILL SHALL EXTEND TO MINIMUM 2' FEET BEYOND SKATE PARK FOOTPRINT.
- 10. PROCEED WITH SUB-BASE AS REQUIRED ONLY AFTER NONCONFORMING CONDITIONS HAVE BEEN CORRECTED AND SUBGRADE HAS BEEN INSPECTED. A FIRM, NON-YIELDING SUBGRADE SHOULD BE ESTABLISHED PRIOR TO BASE COURSE PLACEMENT.
- 11. PROVIDE THE SPECIFIED DEPTH OF COMPACTED AGGREGATE BASE MATERIAL IF REQUIRED. COMPACT AGGREGATE BASE TO 90% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698 STANDARD PROCTOR METHOD IF REQUIRED.
- 12. PROCEED WITH CONCRETE ONLY AFTER NONCONFORMING CONDITIONS HAVE BEEN CORRECTED, SUBGRADE HAS BEEN INSPECTED, AND FORMWORK AND FIELD MOCK-UPS HAVE BEEN REVIEWED.
- 13. A SOILS REPORT DOES NOT EXIST FOR THIS PROJECT.
 OWNER SHALL RETAIN A SOILS ENGINEER IF SO REQUIRED
 BY THE PROJECT, TO VERIFY EXCAVATIONS FOR ASSUMED
 ALLOWABLE SOIL BEARING, LOW SETTLEMENT AND SWELL
 POTENTIAL, AND TO MAKE ANY ADDITIONAL
 RECOMMENDATIONS.

FORMS

1. FORM MATERIALS: PLYWOOD, METAL, METAL-FRAMED PLYWOOD, OR OTHER APPROVED PANEL-TYPE MATERIALS

- FREE FROM DEFECTS AND DISTORTION, AND TO PROVIDE FULL-DEPTH, CONTINUOUS, STRAIGHT, SMOOTH EXPOSED SURFACES.
- 2. USE FLEXIBLE OR CURVED FORMS AS REQUIRED TO PROVIDE VERTICAL AND HORIZONTAL RADII AS INDICATED IN THE DRAWINGS.
- 3. PROVIDE 2" NOMINAL THICKNESS, SURFACED PLANK WOOD FORMS FOR STRAIGHT SECTIONS. USE FLEXIBLE METAL, 1" LUMBER, OR PLYWOOD FORMS FOR RADIUS BENDS. DO NOT OVERLAP FORMS, CREATING AN OFFSET FINISHED EDGE.
- 4. FORM-RELEASE AGENT: COMMERCIALLY FORMULATED FORM-RELEASE AGENT THAT WILL NOT BOND WITH, STAIN, OR ADVERSELY AFFECT CONCRETE SURFACES AND WILL NOT IMPAIR SUBSEQUENT TREATMENTS OF CONCRETE SURFACES.
- 5. EDGE FORMS AND SCREED CONSTRUCTION
- A. SET, BRACE, AND SECURE EDGE FORMS, BULKHEADS, AND INTERMEDIATE SCREED GUIDES FOR PAVEMENT TO REQUIRED LINES, GRADES, AND ELEVATIONS. INSTALL FORMS TO ALLOW CONTINUOUS PROGRESS OF WORK.
- B. CLEAN FORMS AFTER EACH USE AND COAT WITH FORM RELEASE AGENT TO ENSURE SEPARATION FROM CONCRETE WITHOUT DAMAGE.

REINFORCING

- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60. FOR REINFORCING THAT IS TO BE WELDED, CONFORM TO ASTM A706 GRADE 60. USE ASTM A-108 GRADE 60 FOR ALL WELDED ANCHORS.
- 2. JOINT DOWEL BARS: PLAIN STEEL DOWELS, ASTM A 615/A 615M, GRADE 60. CUT BARS TRUE TO LENGTH WITH ENDS SQUARE AND FREE OF BURRS.
- 3. SLIP DOWEL SLEEVES ARE ACCEPTABLE, SUCH AS SPEED DOWELS BY GREENSTREAK, INC., OR APPROVED EQUAL.
- 4. BAR SUPPORTS: BOLSTERS, CHAIRS, SPACERS AND OTHER DEVICES FOR SPACING, SUPPORTING, AND FASTENING REINFORCEMENTS BARS, AND DOWELS IN PLACE. MANUFACTURE BAR SUPPORTS ACCORDING TO CRSI'S "MANUAL OF STANDARD PRACTICE" FROM STEEL WIRE, PLASTIC, OR PRECAST CONCRETE OR FIBER-REINFORCED CONCRETE OF GREATER COMPRESSIVE STRENGTH THAN CONCRETE.
- 5. ALL REINFORCING BARS TO BE DEFORMED. CLEAR CONCRETE COVERAGES TO ANY REINFORCING INCLUDING TIES ARE AS FOLLOWS:
- A. 2" FORMED CONCRETE EXPOSED TO EARTH OR WEATHER.
- B. 1" SLABS AND JOISTS NOT EXPOSED TO WEATHER.
- C. 1-1/2" ALL OTHER.
- 6. SMALLER CLEARANCES PERMISSIBLE FOR PRECAST OR PRESTRESSED.
- 7. TENSION LAP SPLICES IN CONCRETE: UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING:
 - A. #3, 9"; #4, 12". 30X DIAMETER FOR TOP BARS
- B. MINIMUM CLEAR COVER FOR SPLICED REINFORCING IS GREATER THAN ONE BAR DIAMETER, AND MINIMUM CLEAR SPACING IS GREATER THAN TWO BAR DIAMETERS. SPLICE BOTTOM BAR OVER SUPPORTS AND TOP BAR AT MIDSPAN ONLY. WHERE BARS ARE SHOWN SPLICED, THEY MAY RUN CONTINUOUS AT CONTRACTOR'S OPTION.

CONCRETE

- 1. PROVIDE MIX DESIGNS THAT WILL MEET THE MINIMUM REQUIREMENTS LISTED HEREIN:
- A. MINIMUM 28-DAY STRENGTH: 4000 PSI
- B. TYPE I/II CEMENT
- C. SMALL TO MEDIUM AGGREGATE (1" MAX.)
- D. WATER/CEMENT RATIO OF .45 OR LESS
- E. MIX DESIGNS CONTAINING FLY ASH: THE AMOUNT OF FLY ASH USED SHALL NOT EXCEED 20% BY WEIGHT OF THE COMBINED WEIGHT OF FLY ASH PLUS CEMENT.
- F. AIR ENTRAINMENT NOT TO EXCEED 3%.
- DO NOT INSTALL CONCRETE WORK OVER SATURATED, MUDDY, OR FROZEN SUBGRADE.
- BARRICADES AS REQUIRED FOR PROTECTION OF PROJECT WORK AND PUBLIC SAFETY.

 4. MECHANICALLY VIBRATE ALL CONCRETE FLATWORK WHEN

PROTECT ADJACENT WORK AND PROVIDE TEMPORARY

- PLACED, EXCEPT THAT SLABS ON GRADE AND SLABS ON DECK NEED TO BE VIBRATED ONLY AROUND EMBEDDED ITEMS.
- 5. CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED PER THE ACI CODE, WHEN REQUIRED BY THE PROJECT. FREQUENCY= 1 SET OF CYLINDERS PER 50 CY'S PLACED. OWNER TO BEAR ALL COSTS.

- 6. ALL REINFORCING, INCLUDING DOWELS AND ANCHOR BOLTS, SHALL BE SECURELY TIED IN LOCATION BEFORE PLACING CONCRETE OR GROUT. DOWELS WILL NOT BE ALLOWED TO BE "STABBED" IN.
- 7. IN AN EFFORT TO CONTROL SHRINKAGE AND QUALITY, FLATWORK/FLOORS SHOULD BE PLACED IN SECTIONS OF 25 CY'S OR LESS.
- 8. CONDUITS, PIPES, AND SLEEVES EMBEDDED IN CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ACI 6.3.

CONCRETE PLACEMENT

- 1. CONSOLIDATE CONCRETE BY MECHANICAL VIBRATING EQUIPMENT SUPPLEMENTED BY HAND-SPADING, RODDING OR TAMPING. USE EQUIPMENT AND PROCEDURES TO CONSOLIDATE CONCRETE ACCORDING TO RECOMMENDATIONS IN ACI 309R.
- A. CONSOLIDATE CONCRETE ALONG FACE OF FORMS AND ADJACENT TO TRANSVERSE JOINTS WITH AN INTERNAL VIBRATOR. KEEP VIBRATOR AWAY FROM JOINT ASSEMBLIES, REINFORCEMENT, OR SIDE FORMS. USE ONLY SQUARE-FACED SHOVELS FOR HAND-SPREADING AND CONSOLIDATION. CONSOLIDATE WITH CARE TO PREVENT DISLOCATING REINFORCEMENT, DOWELS, AND JOINT DEVICES.
- 2. COLD WEATHER PLACEMENT: COMPLY WITH ACI 306.1 AND AS FOLLOWS. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH THAT COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES.
- A. WHEN AIR TEMPERATURE HAS FALLEN TO OR IS EXPECTED TO FALL BELOW 40 DEG F, UNIFORMLY HEAT WATER AND AGGREGATES BEFORE MIXING TO OBTAIN A CONCRETE MIXTURE TEMPERATURE OF NOT LESS THAN 50 DEG F AT POINT OF PLACEMENT.
- B. DO NOT USE FROZEN MATERIALS OR MATERIALS CONTAINING ICE OR SNOW.
- C. DO NOT USE CALCIUM CHLORIDE, SALT, OR OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS, UNLESS OTHERWISE SPECIFIED AND APPROVED IN MIX DESIGNS.
- 3. HOT-WEATHER PLACEMENT: PLACE CONCRETE ACCORDING TO RECOMMENDATION IN ACI 305R AND AS FOLLOWS WHEN HOT-WEATHER CONDITIONS EXIST:
- A. COOL INGREDIENTS BEFORE MIXING TO MAINTAIN CONCRETE TEMPERATURE AT TIME OF PLACEMENT BELOW 100 DEG FAHRENHEIT. CHILLED MIXING WATER OR CHOPPED ICE MAY BE USED TO CONTROL TEMPERATURE, PROVIDED WATER EQUIVALENT OF ICE IS CALCULATED TO TOTAL AMOUNT OF MIXING WATER. USING LIQUID NITROGEN TO COOL CONCRETE IS CONTRACTORS OPTION.
- B. FOG-SPRAY FORMS, REINFORCEMENT STEEL, AND SUBGRADE JUST BEFORE PLACING CONCRETE. KEEP SUBGRADE MOISTURE UNIFORM WITHOUT STANDING WATER. SOFT SPOTS. OR DRY AREAS.
- 4. FINISH: ALL EXPOSED CONCRETE SURFACES ARE TO BE HARD STEEL TROWEL FINISH UNLESS OTHERWISE NOTED. TROWEL UNTIL ALL VISIBLE POURS ARE CLOSED. CEASE TROWELING BEFORE SURFACE BECOMES GLOSSY. DO NOT BROOM FINISH AND DO NOT TROWEL BURN SURFACE.
- a. ALL EDGE TOOLING SHOULD BE 1/8 INCH RADIUS UNLESS OTHERWISE SPECIFIED.

 COLOR: ALL CONCRETE SURFACES ARE TO BE NATURAL
- 5. COLOR: ALL CONCRETE SURFACES ARE TO BE NATURAL GRAY COLOR UNLESS OTHERWISE NOTED. MINOR VARIATIONS IN APPEARANCE OF COLORED CONCRETE, WHICH ARE SIMILAR TO NATURAL VARIATIONS IN COLOR AND APPEARANCE OF UNCOLORED CONCRETE, ARE ACCEPTABLE. DO NOT BROOM FINISH AND DO NOT TROWEL BURN SURFACE.

CONCRETE PROTECTION AND CURING

- 1. GENERAL: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. COMPLY WITH ACI 306.1 FOR COLD-WEATHER PROTECTION AND FOLLOW RECOMMENDATIONS IN ACI 305R FOR HOT-WEATHER PROTECTION DURING CURING. KEEP MOIST FOR NECESSARY AMOUNT OF TIME TO REACH CONCRETE STRENGTH AND INHIBIT MOISTURE LOSS AFTER PLACING.
- 2. EVAPORATION RETARDANT: WATERBORNE,
 MONOMOLECULAR FILM FORMING, MANUFACTURED FOR
 APPLICATION TO FRESH CONCRETE, SUCH AS EUCOBAR
 EVAPORATION RETARDANT BY THE EUCLID CHEMICAL
 COMPANY. APPLY EVAPORATION RETARDANT TO CONCRETE
 SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE
 MOISTURE LOSS BEFORE AND DURING FINISHING
 OPERATIONS. APPLY TO EXPOSED SURFACE OF CONCRETE
 ACCORDING TO MANUFACTURERS WRITTEN INSTRUCTIONS
 AS NECESSARY.
- 3. BEGIN CURING AFTER FINISHING CONCRETE, BUT NOT BEFORE FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.
- 4. CURING METHODS: CURE CONCRETE BY CURING COMPOUND, MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, OR A COMBINATION OF THESE AS FOLLOWS:
- A. CURING COMPOUND: MEET REQUIREMENTS OF MANUFACTURER'S CURRENT PRINTED APPLICATION INSTRUCTIONS AND COVERAGE RATE CHART. FOR HORIZONTAL APPLICATIONS, IMMEDIATELY APPLY AFTER ALL SURFACE WATER HAS DISAPPEARED AND THE CONCRETE SURFACE IS HARD ENOUGH TO WALK

- ON. FOR VERTICAL APPLICATIONS, APPLY IMMEDIATELY AFTER REMOVING THE CONCRETE FORMS. APPLY IN A UNIFORM AND CONTINUOUS MANNER. AVOID OVER-APPLICATION OR PUDDLING OF CURING COMPOUND. PROTECT SURFACE FROM WATER, ADJACENT SHOTCRETE WORK, AND DEBRIS.
- B. MOISTURE CURING: KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH THE FOLLOWING MATERIALS:
 - WATER.CONTINUOUS WATER-FOG SPRAY.
 - ABSORPTIVE COVER, WATER SATURATED, AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES, OVERLAP SEAMS MIN. 6" BETWEEN ADJACENT ABSORPTIVE COVERS.
- C. MOISTURE-RETAINING-COVER CURING:
 COVER CONCRETE SURFACES WITH
 MOISTURE-RETAINING COVER FOR CURING CONCRETE,
 PLACED IN WIDEST PRACTICABLE WIDTH, WITH SIDES
 AND ENDS LAPPED AT LEAST 6 INCHES.

CURING MATERIALS

- 1. ABSORPTIVE COVER:
 AASHTO M 182, CLASS 2, BURLAP CLOTH MADE FROM JUTE
 OR KENAF, WEIGHING APPROXIMATELY 90Z./SQ. YD. DRY.
- MOISTURE-RETAINING COVER:
 ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET (BUR LENE).
- 3. WATER: POTABLE.
- 4. CURING COMPOUND: ASTM C-309, CLEAR, WATER-BASED, NO VOLATILE, NON-STAINING, MEMBRANE-FORMING, COMPATIBLE WITH SUBSEQUENT CONCRETE TREATMENTS. ACCEPTABLE PRODUCT: W.R. MEADOWS 1100-CLEAR, OR APPROVED EQUAL.

JOINT MATERIALS

- 1 EXPANSION AND ISOLATION JOINT FILLER STRIPS:
 EXPANSION JOINT MATERIALS SHALL BE FLEXIBLE
 POLYETHYLENE CLOSED CELL FOAM OR SIMILAR AND
 SUPPLIED BY CONCRETE CONTRACTOR. DECK-O-FOAM OR
 EQUIVALENT.
- 2 EXPANSION JOINT SEALANT: SIKAFLEX 1A NS TG POLYURETHANE ELASTOMERIC SEALANT, OR APPROVED EQUAL. COLOR OF CAULK SHOULD RESEMBLE NATURAL COLOR OF CONCRETE (ALUMINUM GRAY OR LIMESTONE).
- 3 SAW CUT JOINT SEALANT: SIKAFLEX-1C SL HIGH PERFORMANCE, SELF-LEVELING, 1-PART POLYURETHANE SEALANT, OR APPROVED EQUAL. COLOR OF CAULK SHOULD RESEMBLE NATURAL COLOR OF CONCRETE (ALUMINUM GRAY OR LIMESTONE)

JOINTS

- 1. GENERAL: CONSTRUCT CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGINGS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED.
- 2. EXPANSION JOINTS: FORM EXPANSION JOINTS OF SPECIFIED JOINT-FILLER STRIPS WHERE INDICATED
- A. LOCATE EXPANSION JOINTS AS INDICATED ON DRAWINGS.
- B. EXTEND JOINT FILLERS FULL WIDTH AND DEPTH OF JOINT
- INSTALL DOWEL BARS AND SUPPORT ASSEMBLIES AT JOINTS WHERE INDICATED. LUBRICATE OR ASPHALT-COAT ONE-HALF DOWEL LENGTH TO PREVENT CONCRETE BONDING TO ONE SIDE OF JOINT.
- 4. CONTROL JOINTS: FORM WEAKENED-PLANE JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTROL JOINTS FOR A DEPTH AS INDICATED IN THE DRAWINGS (GENERALLY 1/3 OF THE PAVEMENT THICKNESS), AS FOLLOWS:
- A. SAWED JOINTS: FORM CONTROL JOINTS WITH POWER SAWS EQUIPPED WITH SHATTERPROOF ABRASIVE OR DIAMOND-RIMMED BLADES. CUT 1/8 INCH WIDE JOINTS INTO CONCRETE WHEN CUTTING ACTION WILL NOT TEAR, ABRADE, OR OTHERWISE DAMAGE SURFACE AN BEFORE DEVELOPING RANDOM CONTRACTION CRACKS. EARLY SAW CUTS ARE APPROXIMATELY 1 INCH DEEP, REGARDLESS OF PAVEMENT THICKNESS. REFER TO CONTROL JOINT GUIDE DRAWING OF PLAN SET IF APPLICABLE.
- B. IF SKATEPARK PROJECT DESIGN UTILIZES POURED STEPS, CONTROL JOINTS MUST BE CUT 3 4 FEET FROM THE EDGE OF THE TOP STEP.
- 5. POST CURE DETAIL WORK (AS NEEDED): GRIND SMOOTH ANY INCONSISTENCIES IN THE FINISH OR HIGH SPOTS BETWEEN POURS.

METALS

1. FURNISH MATERIALS AND PERFORM LABOR REQUIRED TO EXECUTE THIS WORK AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS NECESSARY TO COMPLETE THE CONTRACT, INCLUDING, BUT NOT LIMITED TO BOWL STEEL

- COPING, LEDGE STEEL EDGING, HANDRAILS, AND GRIND RAILS.
- 2. USING SKILLED WORKERS, FORM AND FABRICATE ITEMS OF WORK AS INDICATED AND AS REQUIRED TO MEET INSTALLATION CONDITIONS. MAKE PROVISIONS TO CONNECT WITH OR RECEIVE THE WORK OF OTHER TRADES.
- . USE MATERIALS OF SIZE AND THICKNESS SHOWN OR, IF NOT SHOWN, OF REQUIRED SIZE AND THICKNESS TO PRODUCE STRENGTH AND DURABILITY IN THE FINISHED PRODUCT.
- 4. UNLESS OTHERWISE INDICATED, WELD OR BOLT CONNECTIONS BETWEEN MEMBERS. WHERE POSSIBLE, CONCEAL CONNECTIONS ON THE FINISHED WORK. FIT OR MITER EXPOSED JOINTS TO HAIRLINE TOLERANCE OR USE WELDED JOINTS. ON FINISHED SURFACES, GRIND ALL WELDS SMOOTH AND FLUSH WITH BASE METAL.
- 5. WELD CONNECTIONS WHICH ARE NOT TO BE LEFT AS EXPOSED JOINTS, BUT CANNOT BE SHOP WELDED BECAUSE OF SHIPPING SIZE LIMITATIONS.
- 6. CAP ALL EXPOSED TUBE OR PIPE ENDS. USE SIZE AND THICKNESS OF MATERIAL SHOWN. PROPERLY FIT AND WELD CAP AT JOINT, GRIND WELD SMOOTH AND FLUSH WITH BASE METAL.
- 7. BEND PIPE OR TUBING WITHOUT COLLAPSING OR DEFORMING THE WALLS, SO AS TO PRODUCE A SMOOTH UNIFORM CURVED SECTION AND MAINTAIN UNIFORM SECTIONAL SHAPE.
- 8. WHERE ITEMS ARE TO BE IMBEDDED IN CONCRETE OR MASONRY, PROVIDE WELDED-ON ANCHORS OR LUGS AS INDICATED OR REQUIRED.
- 9. PROVIDE TEMPORARY BRACING OR ANCHORS IN FORMWORK FOR ITEMS WHICH ARE TO BE BUILT INTO CONCRETE OR SIMILAR CONSTRUCTION.
- 10. FASTENING TO IN-PLACE CONSTRUCTION: PROVIDE ANCHORING DEVICES AND FASTENERS WHERE NECESSARY FOR SECURING MISCELLANEOUS METAL FABRICATIONS TO IN-PLACE CONSTRUCTION INCLUDING THREADED FASTENERS FOR CONCRETE INSERTS, OR OTHER CONNECTORS AS REQUIRED.
- 11. GALVANIZING REPAIR--USE A HIGH ZINC DUST CONTENT PAINT FOR RE-GALVANIZING WELDS IN GALVANIZED STEEL. HOT GALVANIZED SOLDER IS ALSO ACCEPTABLE. USE RUST-OLEUM COLD GALVANIZING COMPOUND SPRAY, OR SIMILAR.
- 12. ALL WELDING SHALL CONFORM TO REQUIREMENTS OF AWS STANDARDS. ALL WELDING SHALL BE SHIELDED METAL ARC WELDING. WELDS IN FINISH WORK SHALL BE FILLED OUT FLUSH, GROUND AND DISTRESSED.
- 13. ASTM A-36 FOR C, MC, ANGLES, AND PLATES.
- 14. ASTM A-53 GRADE B OR A-500 GRADE B OR A-501 GRADE B FOR STEEL PIPES.
- 15. ASTM A-123 STANDARD SPECIFICATION FOR ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS
- 16. ASTM A-780 STANDARD PRACTICE FOR REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS.

SUPPLEMENTARY NOTES

- 1. THESE CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE IMPROVEMENTS, WORKERS, AND OTHER PERSONS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, MEANS AND METHODS, BRACING, SHORING, FORMS, SCAFFOLDING, GUYING OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD ELEMENTS IN PLACE DURING CONSTRUCTION. OBSERVATION VISITS TO THE SITE BY THE ENGINEER SHALL
- OPTIONS AND SUBSTITUTIONS (APPROVED BY OWNER/SKATEPARK DESIGNER/ARCHITECT) ARE FOR CONTRACTOR'S CONVENIENCE. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ALL CHANGES AND ADDITIONAL COSTS NECESSARY AND SHALL COORDINATE ALL DETAILS WITH SKATEPARK DESIGNER THROUGH PRIME CONTRACTOR.

NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.

- 3. ANY ENGINEERING DESIGN PROVIDED BY CONTRACTOR OR OTHERS AND SUBMITTED FOR REVIEW SHALL BE WET SIGNED AND STAMPED BY AN INSURED REGISTERED STRUCTURAL OR CIVIL ENGINEER LICENSED IN THE STATE OF WHICH THE PROJECT IS LOCATED, IF REQUIRED BY CITY OR COUNTY.
- 4. UNLESS NOTED OTHERWISE, DETAILS ON CONSTRUCTION DRAWINGS ARE TYPICAL AS INDICATED BY CUTS, REFERENCES, OR TITLES. ALL DETAILS SHOWN SHALL BE IMPORTED INTO THE PROJECT AT ALL APPROPRIATE LOCATIONS, WHETHER SPECIFICALLY INDICATED OR NOT. TYPICAL DETAILS MAY OR MAY NOT BE REFERENCED ON THE DOCUMENTS, BUT SHALL APPLY AT ALL LOCATIONS, UNLESS NOTED OTHERWISE. WHERE NO DETAIL CUTS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK SHOWN ELSEWHERE ON THE PROJECT. FOR BIDDING PURPOSES, WHERE ANY SHOWN MEMBER OR STRUCTURAL ELEMENT IS NOT SIZED ON THE DOCUMENTS, THE LARGEST SIMILAR MEMBER USED IN THE PROJECT SHALL BE UTILIZED.
- 5. ALL DIMENSIONS AND ELEVATIONS SHOWN ON CONSTRUCTION DRAWINGS SHALL BE VERIFIED WITH ARCHITECTURAL DRAWINGS (IF REQUIRED BY THE PROJECT). RESOLVE ALL DISCREPANCIES WITH SKATEPARK

DESIGNER AND PRIME CONTRACTOR PRIOR TO START OF CONSTRUCTION. DO NOT SCALE DRAWINGS.

- 6. CONTRACTOR SHALL ESTABLISH AND VERIFY IN FIELD ALL EXISTING CONDITIONS AFFECTING NEW CONSTRUCTION. CONTACT SKATEPARK DESIGNER AND PRIME CONTRACTOR IMMEDIATELY IF EXISTING CONDITIONS ARE NOT AS DEPICTED IN DRAWINGS.
- 7. *SKATE FEATURE DESIGN AND LAYOUT ARE THE RESPONSIBILITY OF THE SKATEPARK DESIGNER.

PAVEMENT TOLERANCES

 CONTRACTOR MUST ACHIEVE POSITIVE DRAINAGE FOR ALL SURFACES WITHIN THE SKATEPARK AREA WHENEVER POSSIBLE.

REPAIRS AND PROTECTION

- 1. REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE, OR DOES NOT MEET REQUIREMENTS IN THIS SECTION. THE CONTRACTOR SHALL FIX ALL CRACKS AND DISPLACEMENTS LARGER THAN 3/16" UP TO THE PROJECT COMPLETION.
- 2. PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 14 DAYS AFTER PLACEMENT. WHEN CONSTRUCTION TRAFFIC IS PERMITTED, MAINTAIN PAVEMENT AS CLEAN AS POSSIBLE BY REMOVING SURFACE STAINS AND SPILLAGE OF MATERIALS AS THEY
- 3. MAINTAIN CONCRETE PAVEMENT OF FREE STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL

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OF 16

SHOTCRETE SPECIFICATIONS

PART 1- GENERAL

1.1 SUMMARY

- A. SPECIALTY CONSTRUCTION:
- A.A. DESCRIPTION: SHOTCRETE APPLICATION, CUTTING, SCULPTING AND FINISH WORK HAS BEEN DEEMED AS SPECIALTY CONSTRUCTION WORK WITHIN THE CONSTRUCTION DOCUMENTS. ALL WORK RELATED TO THE SPECIALTY CONSTRUCTION SHALL BE COORDINATED BY THE PROJECT ENGINEER, AND THE PRE-QUALIFIED SPECIALTY CONTRACTOR, PRIOR TO THE START OF CONSTRUCTION.

1.2 QUALITY ASSURANCE

- A. STANDARDS: COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE FOLLOWING CODES AND STANDARDS, EXCEPT AS HEREIN MODIFIED:
- A.A. AMERICAN CONCRETE INSTITUTE (ACI): 506, CHAPTER 13, WET METHOD. CHAPTER 5, SHOTCRETE CREW
- A.B. ASTM: "AMERICAN SOCIETY FOR TESTING MATERIALS"

1.3 REFERENCE STANDARDS

- A. ACI 305- RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING.
- B. ACI 306- RECOMMENDED PRACTICE FOR COLD WEATHER CONCRETING.
- C. ASTM C33- CONCRETE AGGREGATES
- D. ASTM C94- READY-MIXED CONCRETE
- E. ASTM C143- TEST FOR SLUMP OF PORTLAND CEMENT CONCRETE
- F. ASTM C150- PORTLAND CEMENT
- G. ASTM C260- AIR-ENTRAINING ADMIXTURES FOR CONCRETE H. ASTM C494- CHEMICAL ADMIXTURES FOR CONCRETE
- I. ASTM C618- FLY ASH AND RAW OR CALCINED NATURAL POZZOLANS FOR USE IN PORTLAND CEMENT CONCRETE.

1.4 JOB CONDITIONS

- A. COORDINATION:
 - A.A. COORDINATE SCHEDULES OF CONCRETE WORK TO ALLOW ADEQUATE TIME FOR INSTALLATION OF OTHER RELATED WORK.
- A.B. VERIFY THAT ANCHOR BOLTS AND OTHER EMBEDDED STEEL ITEMS TO BE CAST INTO CONCRETE ARE PROPERLY PLACED.
- A.C. COORDINATE EARTHWORK AND SOILS REPORT RECOMMENDATIONS WITH PLACEMENT REQUIREMENTS.
- A.D. COORDINATE WITH FORM-WORK AND FINISHES SECTIONS TO PROVIDE FINISH FLOORLEVELNESS AND FLATNESS AS SPECIFIED HEREIN. SLOPE TO DRAINS AT GRADES AND PERCENT SLOPE SHOWN IN THE CONSTRUCTION DRAWINGS.

PART 2- SHOTCRETE WORK

2.1 SHOTCRETE MIX DESIGN

- A. PROVIDE MIX DESIGNS THAT WILL MEET THE MINIMUM REQUIREMENTS LISTED HEREIN:
- A.A. MINIMUM 28-DAY STRENGTH: 4000 PSI
- A.B. TYPE I/II CEMENT
- A.C. SMALL AGGREGATE (1/2" MAX.)
- A.D. WATER/CEMENT RATIO OF .45 OR LESS
- A.E. AIR ENTRAINMENT NOT TO EXCEED 3%
- B. MIX DESIGNS FOR SHOTCRETE CONTAINING FLY ASH: THE AMOUNT OF FLY ASH USED SHALL NOT EXCEED 20% BY WEIGHT OF THE COMBINED WEIGHT OF FLY ASH PLUS

2.2 CONCRETE APPLICATION EQUIPMENT

- A. FOR WET MIX SHOTCRETE:
- A.A. MIXING EQUIPMENT: CAPABLE OF THOROUGHLY MIXING AGGREGATE, CEMENT AND WATER IN SUFFICIENT QUANTITY TO MAINTAIN CONTINUOUS PLACEMENT.
- A.B. AIR SUPPLY: CLEAN AIR ADEQUATE FOR MAINTAINING SUFFICIENT NOZZLE VELOCITY FOR PARTS OF WORK, AND FOR SIMULTANEOUS OPERATION OF BLOW PIPE FOR CLEANING AWAY REBOUND.
- A.C. DELIVERY EQUIPMENT: CAPABLE OF DISCHARGING AGGREGATE-CEMENT-WATER MIXTURE ACCURATELY, UNIFORMLY, AND CONTINUOUSLY THROUGH DELIVERY HOSE.

PART 3- EXECUTION

3.1 INSPECTION

- A. EXAMINATION: EXAMINE CONCRETE FORMWORK AND VERIFY THAT IT IS TRUE TO LINE AND DIMENSION, ADEQUATELY BRACED AGAINST VIBRATION, AND CONSTRUCTED TO PERMIT ESCAPE OF AIR AND REBOUND BUT TO PREVENT LEAKAGE DURING SHOTCRETING. CORRECT DEFICIENCIES.
- B. NOTIFICATION: NOTIFY OTHER TRADES INVOLVED IN AMPLE TIME TO PERMIT THE PROPER INSTALLATION OF THEIR WORK. COOPERATE IN SETTING SUCH WORK.
- C. EXISTING SURFACES: EXAMINE EXISTING CONCRETE SURFACES FOR UNSOUND MATERIAL. CORRECT DEFICIENCIES.

3.2 PREPARATION FOR INSTALLATION OF CONCRETE

A. FORMS: USE A FORM-COATING MATERIAL ON REMOVABLE FORMS TO PREVENT ABSORPTION OF MOISTURE AND TO PREVENT BOND WITH SHOTCRETE.

3.3 CONCRETE BATCHING AND MIXING

A. PROPORTIONS: MIX PROPORTIONS SHALL BE CONTROLLED BY WEIGHT BATCHING.

B. SCHEDULING: CONCRETE SHALL NOT EXCEED A TEMPERATURE OF 100 DEGREES FAHRENHEIT AT TIME OF PLACEMENT UNLESS PRE-APPROVED BY THE PROJECT ENGINEER.

3.4 CONCRETE PLACEMENT

- A. PLACEMENT: USE SUITABLE DELIVERY EQUIPMENT AND PROCEDURES THAT WILL RESULT IN SHOTCRETE IN PLACE MEETING THE REQUIREMENTS OF THIS SPECIFICATION. DETERMINE OPERATING PROCEDURES FOR PLACEMENT IN, EXTENDED DISTANCES, AND AROUND ANY OBSTRUCTIONS WHERE PLACEMENT VELOCITIES AND MIX CONSISTENCY MUST BE ADJUSTED.
- B. PLACEMENT TECHNIQUES:
- B.A. CONTROL THICKNESS, METHOD OF SUPPORT, AIR PRESSURE, AND/OR WATER CONTENT OF SHOTCRETE TO PRECLUDE SAGGING OR SLOUGHING OFF. DISCONTINUE SHOTCRETING OR PROVIDE SUITABLE MEANS TO SCREEN THE NOZZLE STREAM IF WIND OR AIR CURRENTS CAUSE SEPARATION OF THE NOZZLE STREAM DURING PLACEMENT.
- B.B. HOLD NOZZLE AS PERPENDICULAR TO SURFACE AS WORK WILL PERMIT, TO SECURE MAXIMUM COMPACTION WITH MINIMUM REBOUND.
- B.C. IN SHOTCRETING WALLS, BEGIN APPLICATION AT BOTTOM. ENSURE WORK DOES NOT SAG.
- B.D. LAYERING:
 - B.D.A. BUILD UP LAYERS BY MAKING SEVERAL PASSES OF NOZZLE OVER WORK AREA.
 - B.D.B. MAKE SURE SURFACE IS ADEQUATELY ROUGH TO WHICH, AFTER HARDENING, ADDITIONAL LAYERS 3.17 CURING MATERIALS OF SHOTCRETE ARE TO BE BONDED.
 - B.D.C. DAMPEN SURFACE (ACHIEVE SATURATED SURFACE DRY (SSD) CONDITION) JUST PRIOR TO APPLICATION OF SUCCEEDING LAYERS.
 - B.D.D. ALLOW EACH LAYER OF SHOTCRETE TO TAKE INITIAL SET BEFORE APPLYING SUCCEEDING LAYERS.
 - B.D.E. USE RADIAL TEMPLATES TO INSURE EXACT RADII FROM FLAT BOTTOM OF BOWL/PIPE TO FACE OF COPING. TEMPLATE SHALL BE FABRICATED FROM STEEL OR 3/4" MINIMUM PLYWOOD. CHECK EVERY HORIZONTAL FOOT WHEN APPLYING SHOTCRETE FOR CONFORMANCE OF INTENDED WALL RADII. BRACE TEMPLATE AND PLACE LEVELS AT ARC TO TANGENT CONNECTIONS TO INSURE NO KINKS WILL BE FORMED. KINKS AT THE BOTTOM OF BOWLS WILL NOT BE ACCEPTABLE. SLUMPING OF THE SHOTCRETE CAUSING COPING SETBACK WILL NOT BE ACCEPTABLE.
 - B.D.F. REMOVE ANY REBOUND OR ACCUMULATED LOOSE AGGREGATE FROM SURFACES TO BE COVERED PRIOR TO PLACING THE INITIAL OR ANY 3.19 CRACKING SUCCEEDING LAYERS OF SHOTCRETE. REBOUND SHALL NOT BE USED AS AGGREGATE.
- B.E. PLACEMENT AROUND REINFORCEMENT: B.E.A. HOLD THE NOZZLE AT SUCH DISTANCE AND
- ANGLE TO PLACE MATERIALS BEHIND REINFORCEMENT BEFORE ANY MATERIAL IS ALLOWED TO ACCUMULATE ON ITS FACE.
- B.F. ACCESS: ALLOW EASY ACCESS TO SHOTCRETE SURFACES FOR SCREEDING AND FINISHING, PERMITTING UNINTERRUPTED APPLICATION.

3.14 REMOVAL OF SURFACE DEFECTS IN CONCRETE

A. GENERAL: REMOVE AND REPLACE SHOTCRETE WHICH LACKS UNIFORMITY, EXHIBITS SEGREGATION. HONEYCOMBING, OR LAMINATION, OR WHICH CONTAINS ANY DRY PATCHES, SLUGS, VOIDS OR POCKETS. REMOVE DEFECTIVE AREAS.

3.15 SHOTCRETE FINISH

- A. FINISH: ALL EXPOSED SHOTCRETE SURFACES ARE TO BE HARD STEEL TROWEL FINISH UNLESS OTHERWISE NOTED. TROWEL UNTIL ALL VISIBLE POURS ARE CLOSED. CEASE TROWEL BEFORE GLASS FORMS ON SURFACE. DO NOT BROOM FINISH AND DO NOT BURN SURFACE.
- B. GRINDING THE SURFACES WILL NOT BE AN ACCEPTABLE MEANS OF ACHIEVING THE INTENDED RADII/ANGLE.
- C. COLOR: ALL SHOTCRETE SURFACES ARE TO BE NATURAL GRAY COLOR UNLESS OTHERWISE NOTED. MINOR VARIATIONS IN APPEARANCE OF COLORED CONCRETE, WHICH ARE SIMILAR TO NATURAL VARIATIONS IN COLOR AND APPEARANCE OF UNCOLORED CONCRETE, ARE ACCEPTABLE. DO NOT BROOM FINISH AND DO NOT TROWEL BURN SURFACE.
- D. DURING THE CURING PERIOD, CONCRETE SHALL BE MAINTAINED AT A TEMPERATURE ABOVE 40 DEGREES FAHRENHEIT AND IN MOIST CONDITION. FOR INITIAL CURING, CONCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR 24 HOURS AFTER PLACEMENT IS COMPLETE. FINAL CURING SHALL CONTINUE FOR SEVEN DAYS AFTER PLACEMENT. COVER CONCRETE WITH POLYETHYLENE PLASTIC TO MAINTAIN TEMPERATURE IF NECESSARY. LAP SEAMS IN THE PLASTIC 6" AND WEIGH DOWN.
- E. THE CONTRACTOR SHALL FIX ALL CRACKS AND DISPLACEMENTS LARGER THAN 3/16" UP TO THE PROJECT COMPLETION.

3.16 CONCRETE PROTECTION AND CURING

- 1. NERAL: PROTECT FRESHLY PLACED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE COLD OR HOT TEMPERATURES. COMPLY WITH ACI 306.1 FOR COLD-WEATHER PROTECTION AND FOLLOW RECOMMENDATIONS IN ACI 305R FORHOT-WEATHER PROTECTION DURING CURING. KEEP MOIST FOR NECESSARY AMOUNT OF TIME TO REACH CONCRETE STRENGTH AND INHIBIT MOISTURE LOSS AFTER PLACING.
- 2. EVAPORATION RETARDANT: WATERBORNE, MONOMOLECULAR FILM FORMING, MANUFACTURED FOR APPLICATION TO FRESH CONCRETE, SUCH AS EUCOBAR EVAPORATION RETARDANT BY THE EUCLID CHEMICAL COMPANY, APPLY EVAPORATION RETARDANT TO CONCRETE SURFACES IF HOT, DRY, OR WINDY CONDITIONS CAUSE MOISTURE LOSS BEFORE AND DURINGFINISHING OPERATIONS. APPLY TO EXPOSED SURFACE OF CONCRETE ACCORDING TO MANUFACTURERS WRITTEN INSTRUCTIONS AS NECESSARY.
- 3. BEGIN CURING AFTER FINISHING CONCRETE, BUT NOT BEFORE

- FREE WATER HAS DISAPPEARED FROM CONCRETE SURFACE.
- 4. CURING METHODS: CURE CONCRETE BY CURING COMPOUND, MOISTURE CURING, MOISTURE-RETAINING-COVER CURING, OR A COMBINATION OF THESE AS FOLLOWS:
- A. CURING COMPOUND: MEET REQUIREMENTS OF MANUFACTURER'S CURRENT PRINTED APPLICATION INSTRUCTIONS AND COVERAGE RATE CHART. FOR HORIZONTAL APPLICATIONS, IMMEDIATELY APPLY AFTER ALL SURFACE WATER HAS DISAPPEARED AND THE CONCRETE SURFACE IS HARD ENOUGH TO WALK ON. FOR VERTICAL APPLICATIONS, APPLY IMMEDIATELY AFTER REMOVING THE CONCRETE FORMS. APPLY IN A UNIFORM AND CONTINUOUS MANNER. AVOID OVER-APPLICATION OR PUDDLING OF CURING COMPOUND. PROTECT SURFACE FROM WATER, ADJACENT SHOTCRETE WORK, AND DEBRIS.
- B. MOISTURE CURING: KEEP SURFACES CONTINUOUSLY MOIST FOR NOT LESS THAN SEVEN DAYS WITH THE FOLLOWING MATERIALS:
- B.A. WATER.
- B.B. CONTINUOUS WATER-FOG SPRAY.
- B.C. ABSORPTIVE COVER, WATER SATURATED, AND KEPT CONTINUOUSLY WET. COVER CONCRETE SURFACES AND EDGES, OVERLAP SEAMS MIN. 6" BETWEEN ADJACENT ABSORPTIVE COVERS.
- C. MOISTURE-RETAINING-COVER CURING:
- C.A. COVER CONCRETE SURFACES WITH MOISTURE-RETAINING COVER FOR CURING CONCRETE, PLACED IN WIDEST PRACTICABLE WIDTH, WITH SIDES AND ENDS LAPPED AT LEAST 6 INCHES.

1. ABSORPTIVE COVER:

- AASHTO M 182, CLASS 2, BURLAP CLOTH MADE FROM JUTE OR KENAF, WEIGHING APPROXIMATELY 90Z./SQ. YD. DRY.
- 2. MOISTURE-RETAINING COVER:
- ASTM C 171, POLYETHYLENE FILM OR WHITE BURLAP-POLYETHYLENE SHEET (BUR LENE).
- 3. WATER: POTABLE.
- 4. CURING COMPOUND: ASTM C-309, CLEAR, WATER-BASED, NO VOLATILE, NON-STAINING, MEMBRANE-FORMING, COMPATIBLE WITH SUBSEQUENT CONCRETE TREATMENTS. ACCEPTABLE PRODUCT: W.R. MEADOWS 1100-CLEAR, OR APPROVED EQUAL

3.18 CONCRETE JOINTS

- A. CLEANING: THE ENTIRE JOINT SHALL BE THOROUGHLY CLEANED AND WETTED PRIOR TO THE APPLICATION OF ADDITIONAL SHOTCRETE.
- B. REINFORCEMENT: MAKE JOINTS PERPENDICULAR TO THE MAIN REINFORCEMENT. CONTINUE REINFORCEMENT ACROSS JOINTS.

- A. SAW CUT CONTROL JOINTS AND CONSTRUCTION JOINTS MAY BE SHOWN IN THE CONSTRUCTION DRAWINGS FOR DIAGRAMMATIC PURPOSES ONLY. THE CONTRACTOR MAY, WITH APPROVAL OF THE SKATEPARK DESIGNER, RECOMMEND AND DETAIL ADDITIONAL JOINTS TO HELP PREVENT CRACKING.
- B. THE CONTRACTOR SHALL FIX ALL CRACKS AND DISPLACEMENTS LARGER THAN 3/16" UP TO PROJECT COMPLETION.



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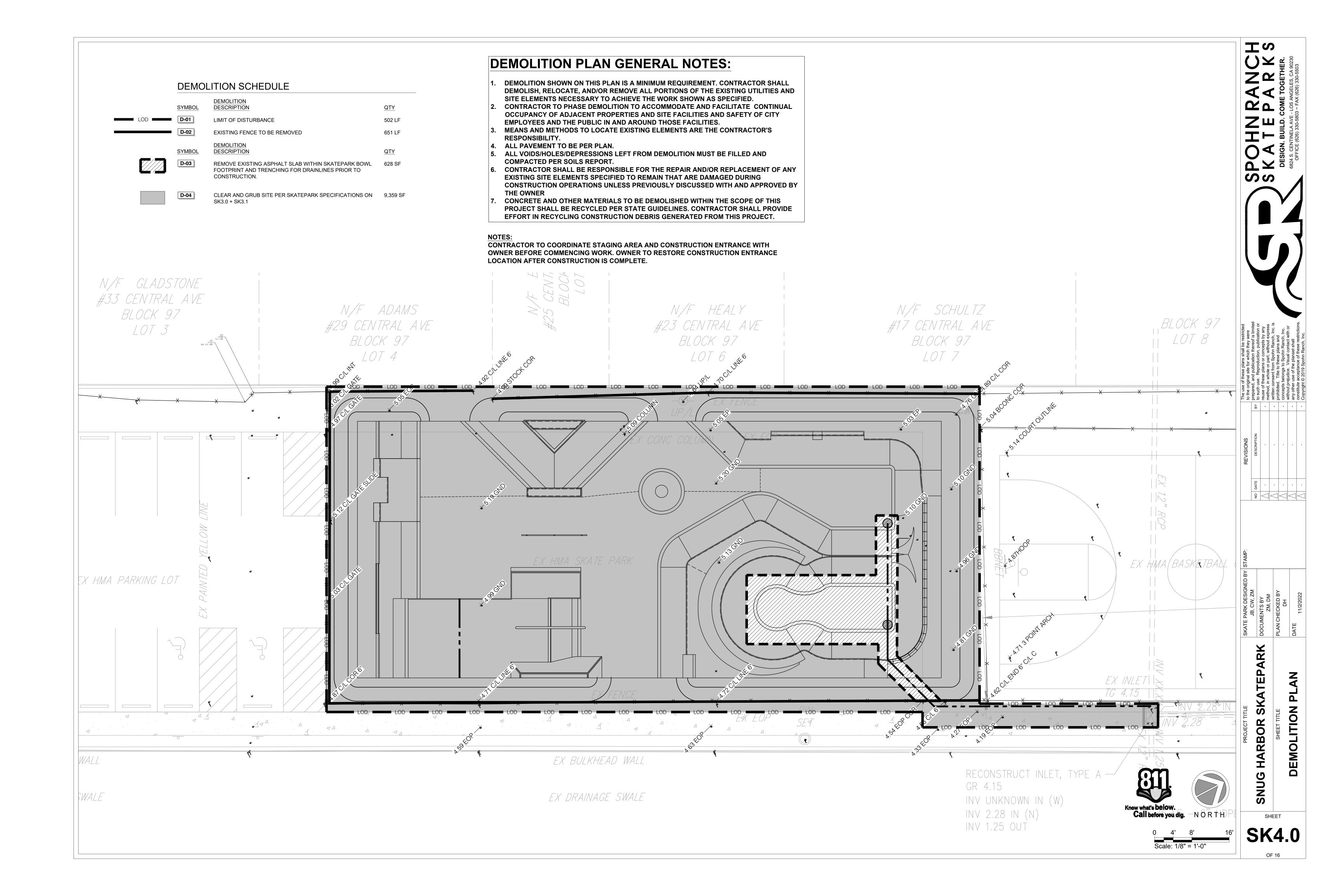
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OF 16



INFORMATION SCHEDULE DETAIL SYMBOL DESCRIPTION SECTION (SP-01) 4" THICK CONCRETE FLATWORK SK11.0 (SP-02) QUARTERPIPE 15/SK11.0 R, Y (SP-03) QUARTERPIPE EXTENSION 1/SK11.1 S, W, X (SP-04) QUARTERPIPE WITH POOL COPING 16/SK11.0 U (SP-05) RADIUS WEDGE 2/SK11.1 A, I, N, V (SP-06) SPINE 3/SK11.2 T (SP-07) PANNED H 6/SK11.1 B, C (SP-08) ROLLOVER 4/SK11.1 P (SP-09) BANK TO SLAPPY CURB 2/SK11.2 D, E (SP-10) LA HIGH WALL 8/SK11.1 J, K, L (SP-11) ROLL-IN 1/SK11.2 Q (SP-12) SLAPPY GRIND LEDGE 3/SK11.1 F

CANTILEVERED GRIND LEDGE

FLAT GRIND RAIL

FLAT GRIND OUT RAIL

5/SK11.1 M, O

9/SK11.1 AA

7/SK11.1

(SP-13)

(SP-14)

	SYMBOL	DESCRIPTION	<u>QTY</u>	DETA
EJ EJ EJ	H-04	EXPANSION JOINT	220 LF	
CJ KJ CJ KJ	H-05	COLD JOINT / KEY JOINT	713 LF	
	H-06	SAWCUT	729 LF	
SC CJ SC CJ	H-07	SC/CJ	31 LF	
	H-08	TURNDOWN EDGE AT FINISH SURFACE	117 LF	
	(H-09)	TURNDOWN EDGE AT FINISH GRADE	334 LF	

JOINTING SCHEDULE

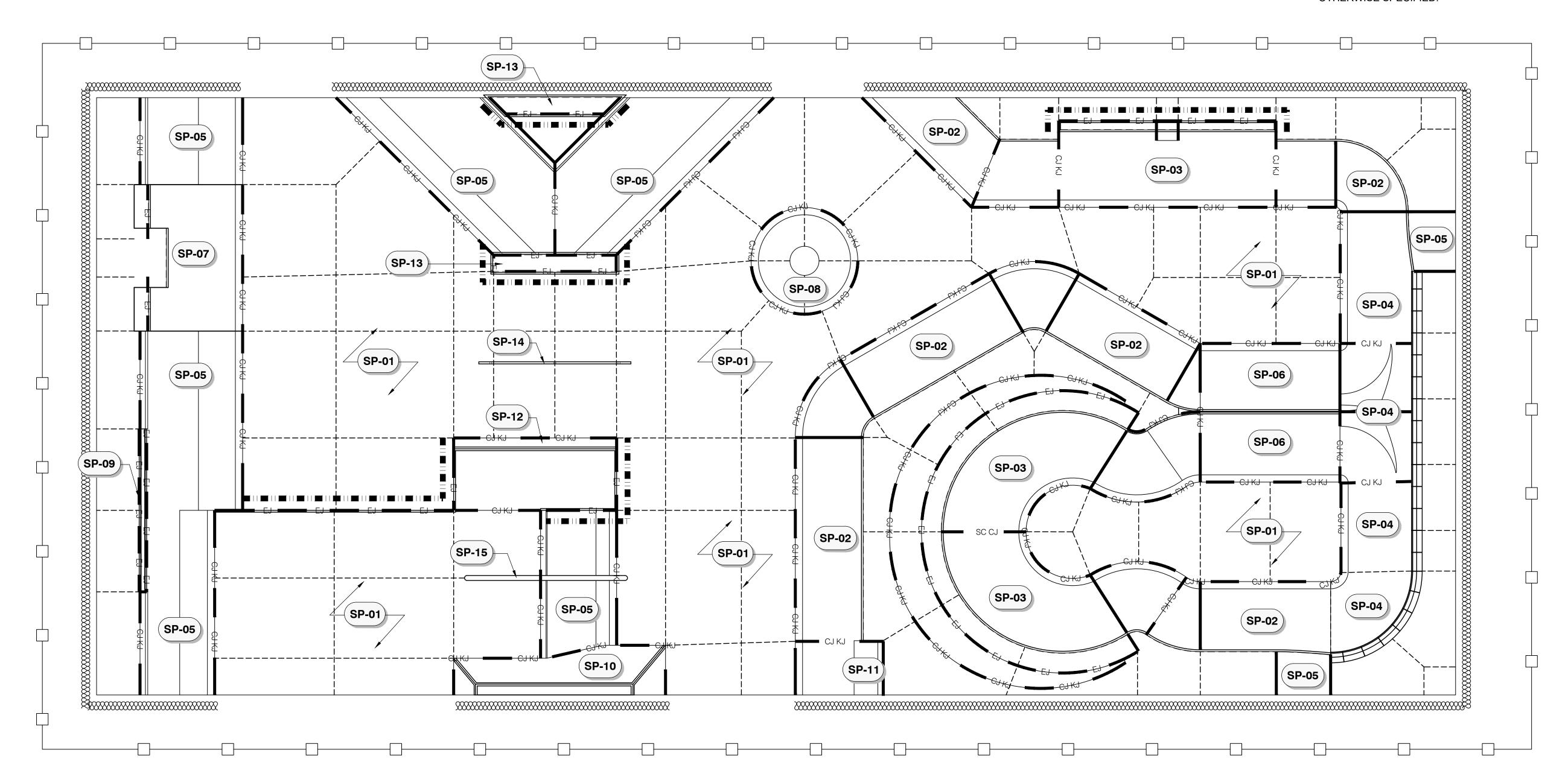
**JOINT PLAN HAS BEEN DEVELOPED TO PROVIDE GUIDANCE NOTES: TO THE CONTRACTOR FOR THE USE OF SAW CUTS, COLD & EXPANSION JOINTS. ACTUAL FIELD VARIANCES WILL TAKE PRECEDENCE OVER THIS GUIDE. CONTRACTOR SHALL CUT SLAB AS NEEDED TO MINIMIZE CRACKING.

ALIGN SAW CUTS WITH EXPANSION AND COLD JOINTS AND START FROM CORNERS WHERE POSSIBLE TO PREVENT EXCESS CRACKING. SAW CUTS SHALL BE NO MORE THAN 10' X 12' AND/OR NOT TO EXCEED 120 SQUARE FEET AND A 2:1 MAX. RATIO BETWEEN SAW CUTS AND COLD OR EXPANSION JOINTS.

ALL SAW CUTS TO BE FILLED WITH SELF-LEVELING POLYURETHANE SEALANT AND TOOLED FLAT. MASK ALL SAW CUT/CONSTRUCTION JOINT EDGES TO PROTECT SURROUNDING CONCRETE FROM EXCESS SEALANT. EXPANSION JOINTS TO BE FILLED WITH POLYURETHANE BASED NON- SAGGING ELASTOMERIC SEALANT AND TOOLED FLAT. COLOR OF CAULK SHOULD RESEMBLE COLOR OF CONCRETE (ALUMINUM GRAY OR SIMILAR)

** PROVIDE 1/8" TOOLED EDGES TO JOINTS - SEE TYPICAL DETAILS & CONSTRUCTION SPECIFICATIONS FOR JOINT **INFORMATION & INSTALLATION**

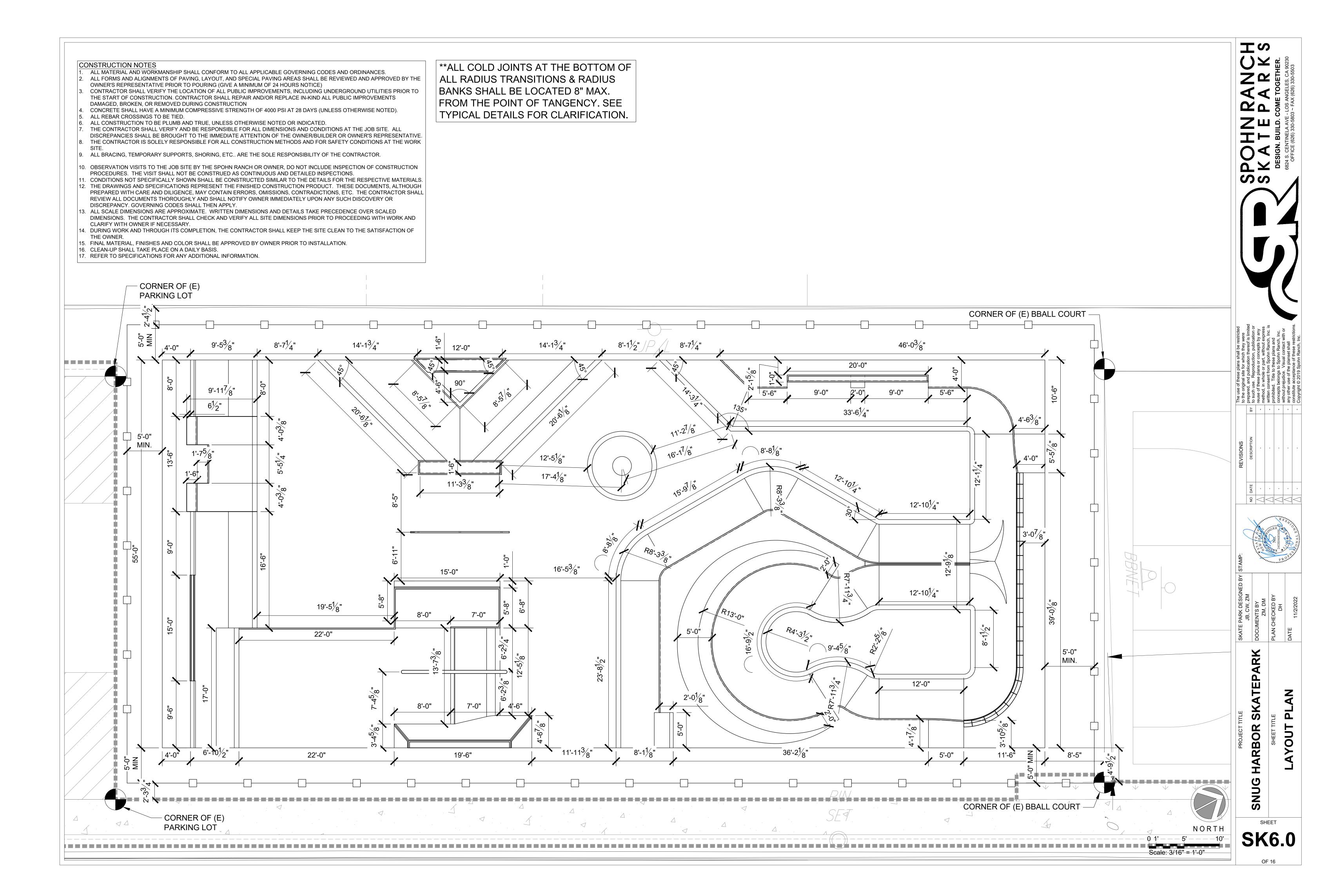
- 1. SEE SHEET SK8.0 FOR COLOR PLAN.
- 2. THE SLAB CONFIGURATION, NOTES, LOCATION OF EXPANSION JOINTS, COLD JOINTS, SAW CUTS, DETAIL REFERENCES, AND APPLICABLE DETAILS HAVE BEEN INCLUDED FOR CLARITY. JOINTS AND DETAILS SHOWN ARE FOR THE SKATEPARK ONLY.
- SUGGESTED ORDER OF CONSTRUCTION FOR CONCRETE ELEMENTS WITHIN THE SKATEPARK FOOTPRINT:
- A. SUBSURFACE DRAINAGE
- B. SUBGRADE PREP GRADE, MOISTURE CONDITION, AND COMPACT SKATEPARK FOOTPRINT TO +/- .1' OF SPECIFIED SUBGRADE ELEVATIONS.
- C. FINE GRADING
- D. LEDGES AND MANUAL PADS
- E. BANKS AND TRANSITIONS F. GRIND RAIL FOOTING INSTALLATION
- G. FLOOR SLAB/FLATWORK
- 4. ALL EXPOSED CONCRETE AND SHOTCRETE SURFACES TO BE NATURAL GRAY IN COLOR WITH HARD STEEL TROWEL FINISH UNLESS OTHERWISE SPECIFIED.





OF 16

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COLOR SCHEDULE

DESCRIPTION

COLORED CAST-IN-PLACE CONCRETE TO BE `MESA BEIGE` SRI 2,618 SF 42-52 BY E & A SUPPLY OR APPROVED EQUAL

76 SF

799 SF

(H-02)

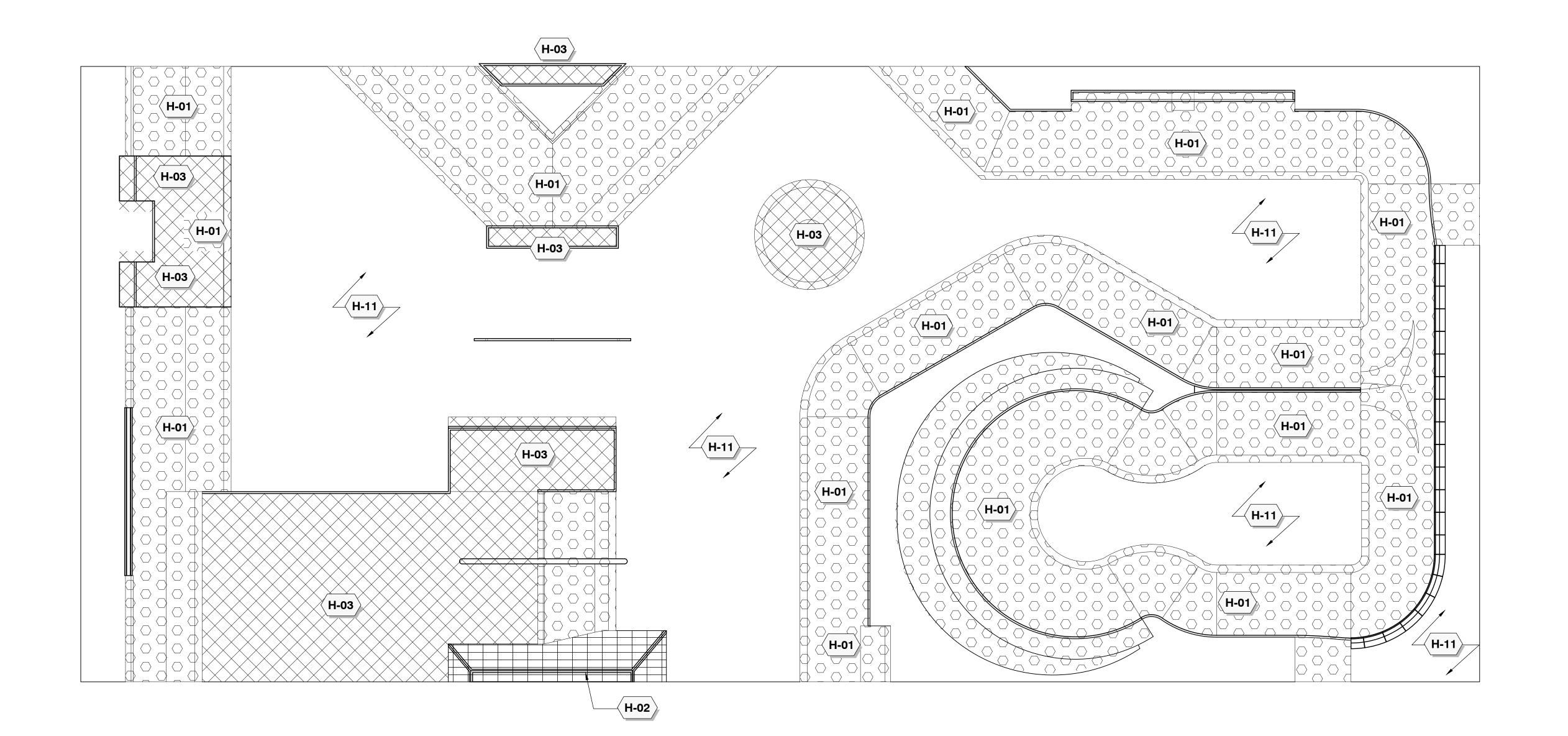
COLORED CAST-IN-PLACE CONCRETE TO BE BRICK STAMPED 'MESA BEIGE' SRI 42-52 BY E & A SUPPLY OR APPROVED EQUAL

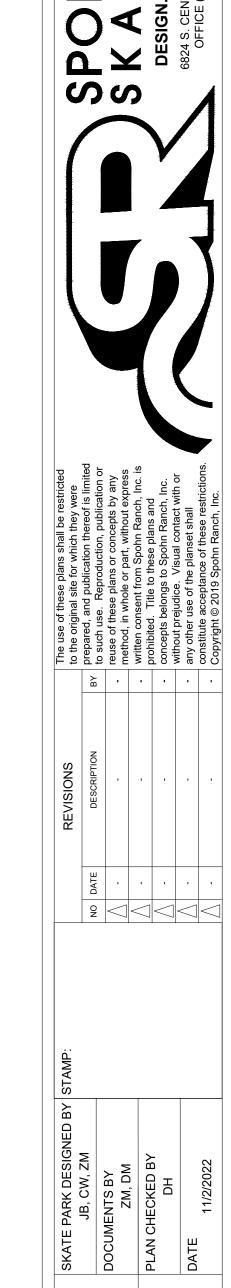
(H-03) COLORED CAST-IN-PLACE CONCRETE TO BE `LET`S ROLL CHARCOAL` BY E & A SUPPLY OR APPROVED EQUAL

ALL OTHER CAST-IN-PLACE CONCRETE TO BE NATURAL GRAY IN

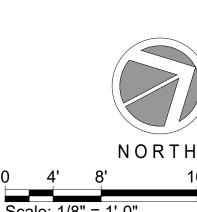
NOTE:

- 1. CONCRETE COLOR AVAILABLE FROM EA PIGMENTS 1-631-366-3980 OR SIMILAR.
- 2. FINISH: ALL EXPOSED CONCRETE SURFACES ARE TO BE HARD STEEL TROWEL FINISH UNLESS OTHERWISE NOTED. TROWEL UNTIL ALL VISIBLE PORES ARE CLOSED. CEASE TROWELING BEFORE SURFACE BECOMES GLOSSY. DO NOT BROOM FINISH AND DO NOT TROWEL BURN SURFACE.
- 3. REFER TO STEEL PLAN ON SHEET SK9.0 FOR STEEL FINISH.



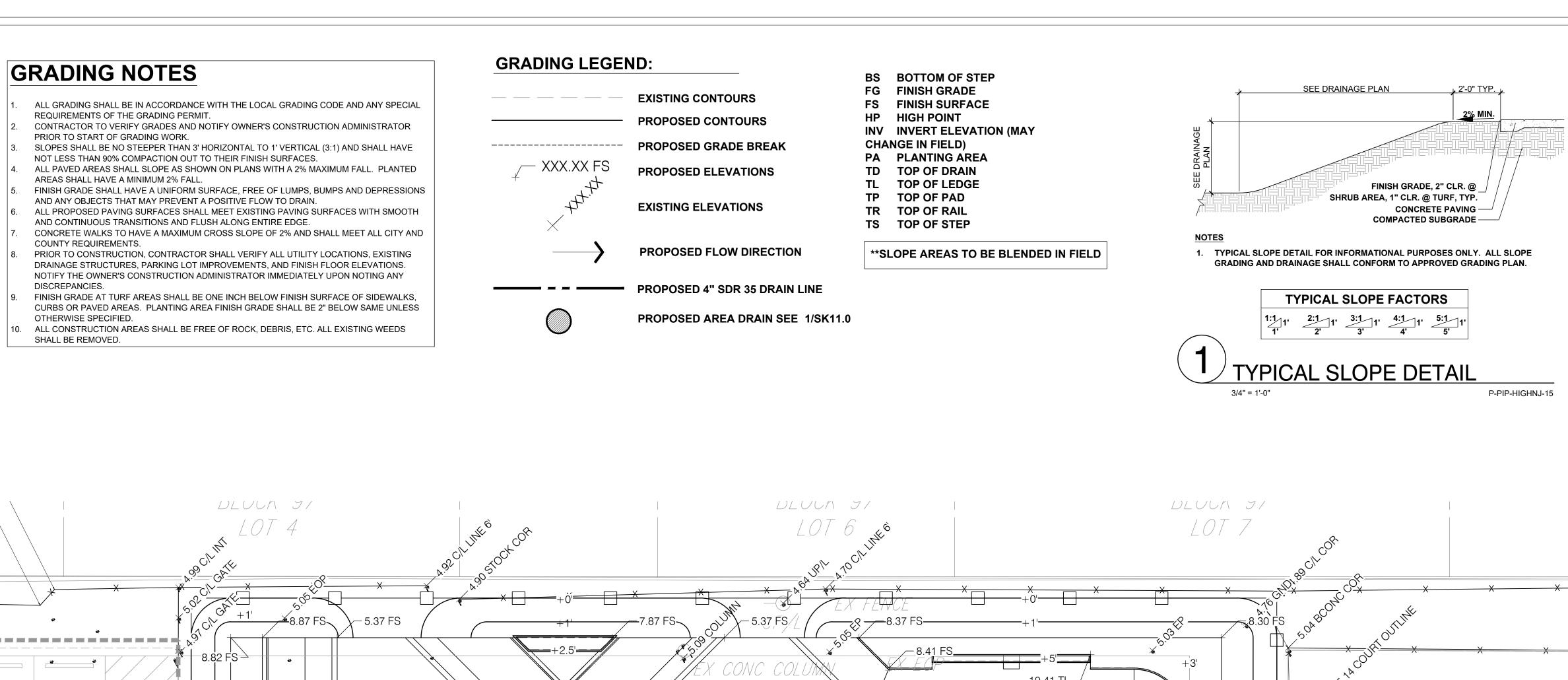


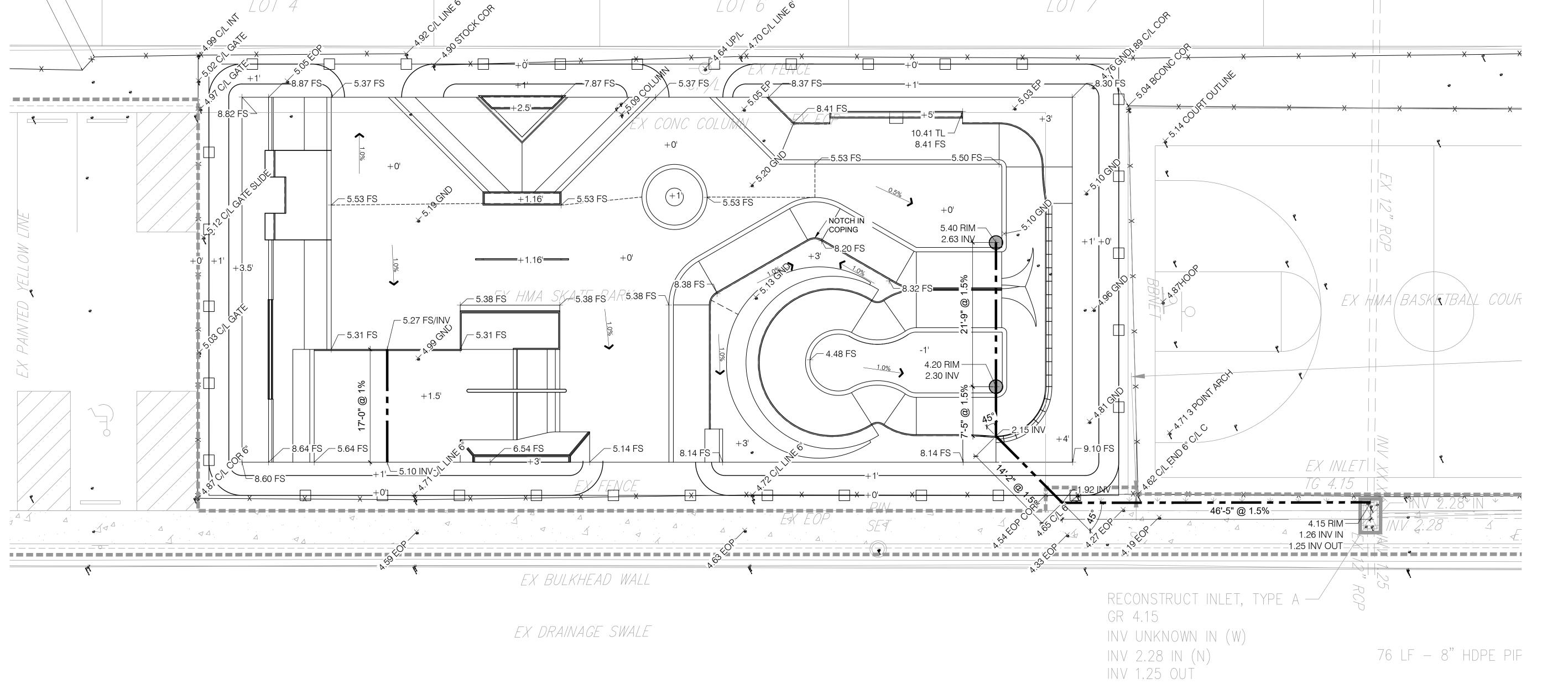
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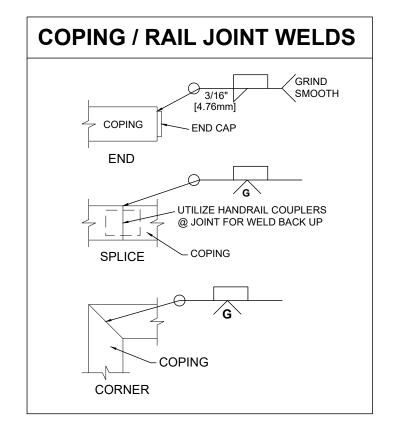


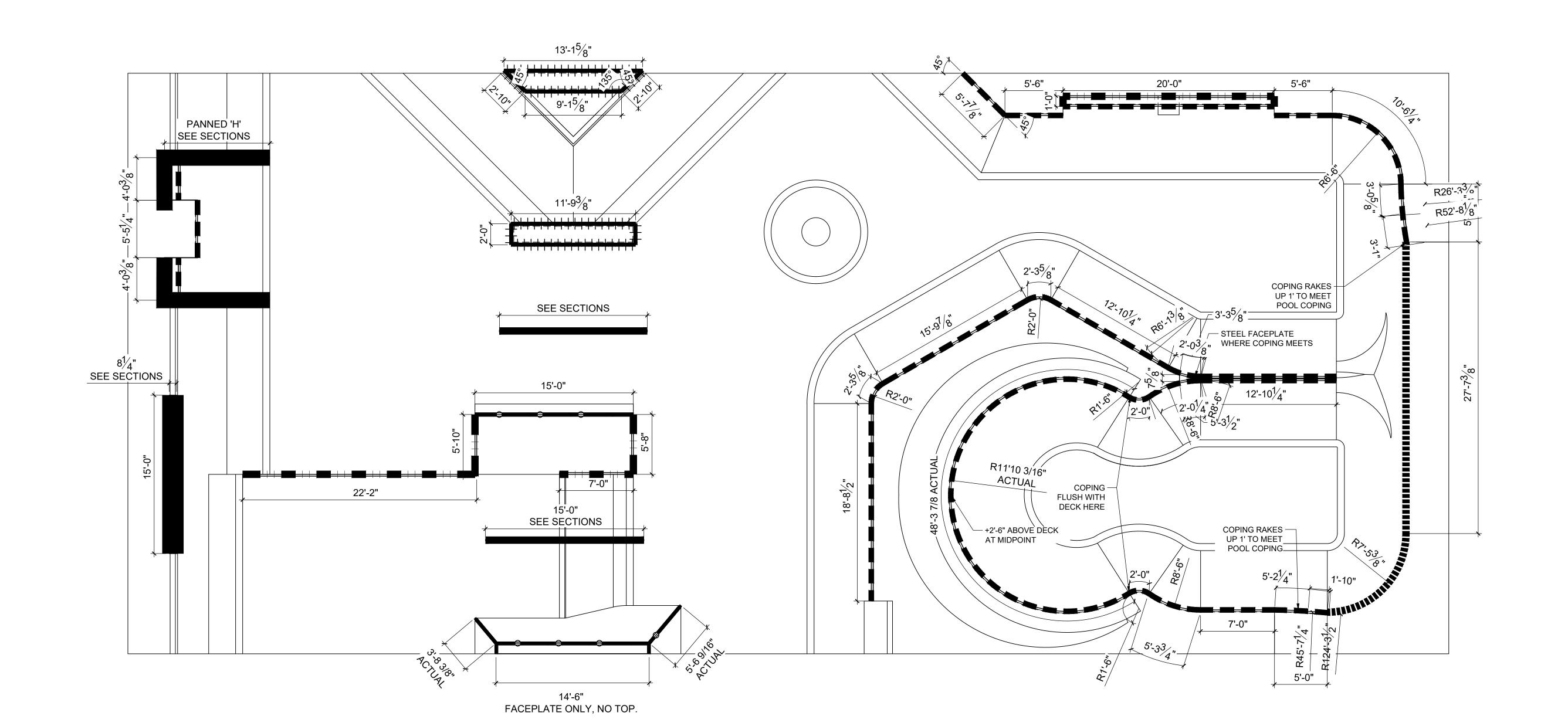


STEEL SCHEDULE								
SYMBOL	DESCRIPTION	QTY	DETAIL	FINISH				
S-01	2-3/8" O.D. SCH. 40 STEEL COPING	220 LF	11/SK11.0	HOT DIPPED GALVANIZED				
S-02	1.5" X 2" X 3/16" THK. STEEL EDGING	62 LF	12/SK11.0	POWDER COAT RAL #5012				
S-03	2" STEEL STRAP	39 LF	13/SK11.0	POWDER COAT RAL #5012				
S-04	2" X 5" X 3" X .125" THK. CANTILEVER STEEL EDGING	56 LF	14/SK11.0	POWDER COAT RAL #5012				
S-05	GRIND RAIL	29 LF	7/SK11.1 9/SK11.1 10/SK11.1	POWDER COAT RAL #5012				
S-06	PANNED STEEL	57 LF	6/SK11.1 2/SK11.2	POWDER COAT RAL #5012				
S-07	POOL COPING	39 LF	17/SK11.0					

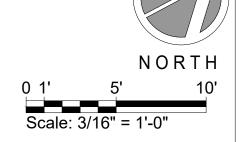
NOTES:

- STEEL FINISH TO BE HOT DIPPED GALVANIZED OR POWDER COATED RAL #5012 (LIGHT BLUE) AS INDICATED IN LEGEND FINISH.
- 2. FINISH MUST OCCUR AFTER ALL WELDING IS COMPLETE.
- 3. CAP ALL EXPOSED TUBE OR PIPE ENDS AND ROUND ALL SHARP EDGES.
- 4. ALL WELDS TO BE ALL AROUND.
- 5. GRIND ALL WELDS SMOOTH BEFORE FINISHING.
- 6. FABRICATE STEEL GRIND EDGES IN LONG SECTIONS THAT WILL WORK FOR SHIPPING AND REDUCE THE NUMBER OF WELDS IN THE FIELD.
- 7. CLEAN METAL EDGES AFTER PLACEMENT OF CONCRETE.
- 8. POWDER COATING REPAIR USE AN APPROPRIATELY COLOR MATCHED POWDER COAT TOUCH-UP SPRAY PAINT ON WELDED OR DAMAGED POWDER COATED SURFACES.
- 9. HOT DIPPED GALVANIZE REPAIR FIELD WELDS SHALL BE GROUND SMOOTH AND TREATED WITH COLD GALVANIZING SPRAY.
- 10. SEE SHEET SK3.0 FOR SKATEPARK STEEL SPECIFICATIONS





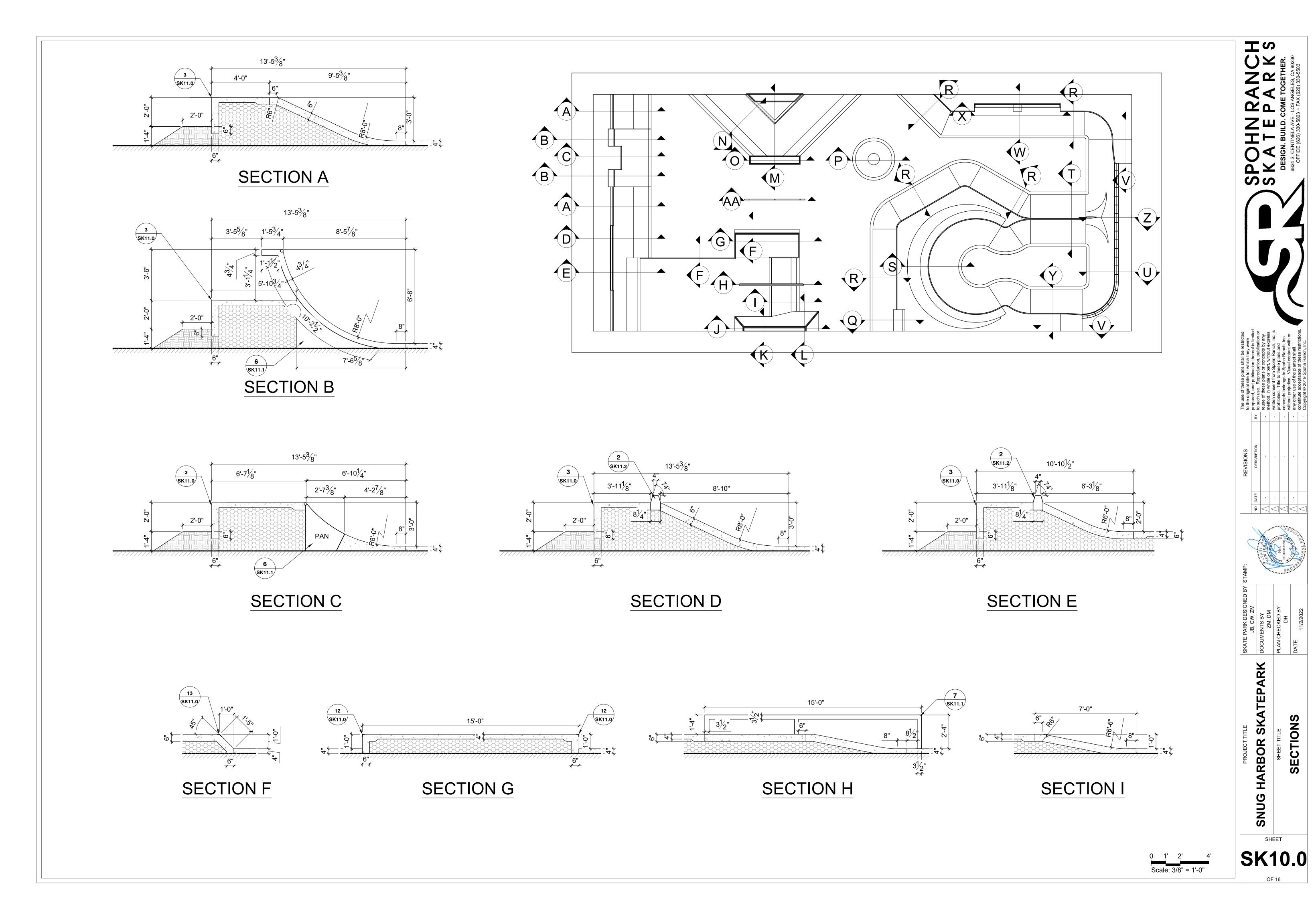


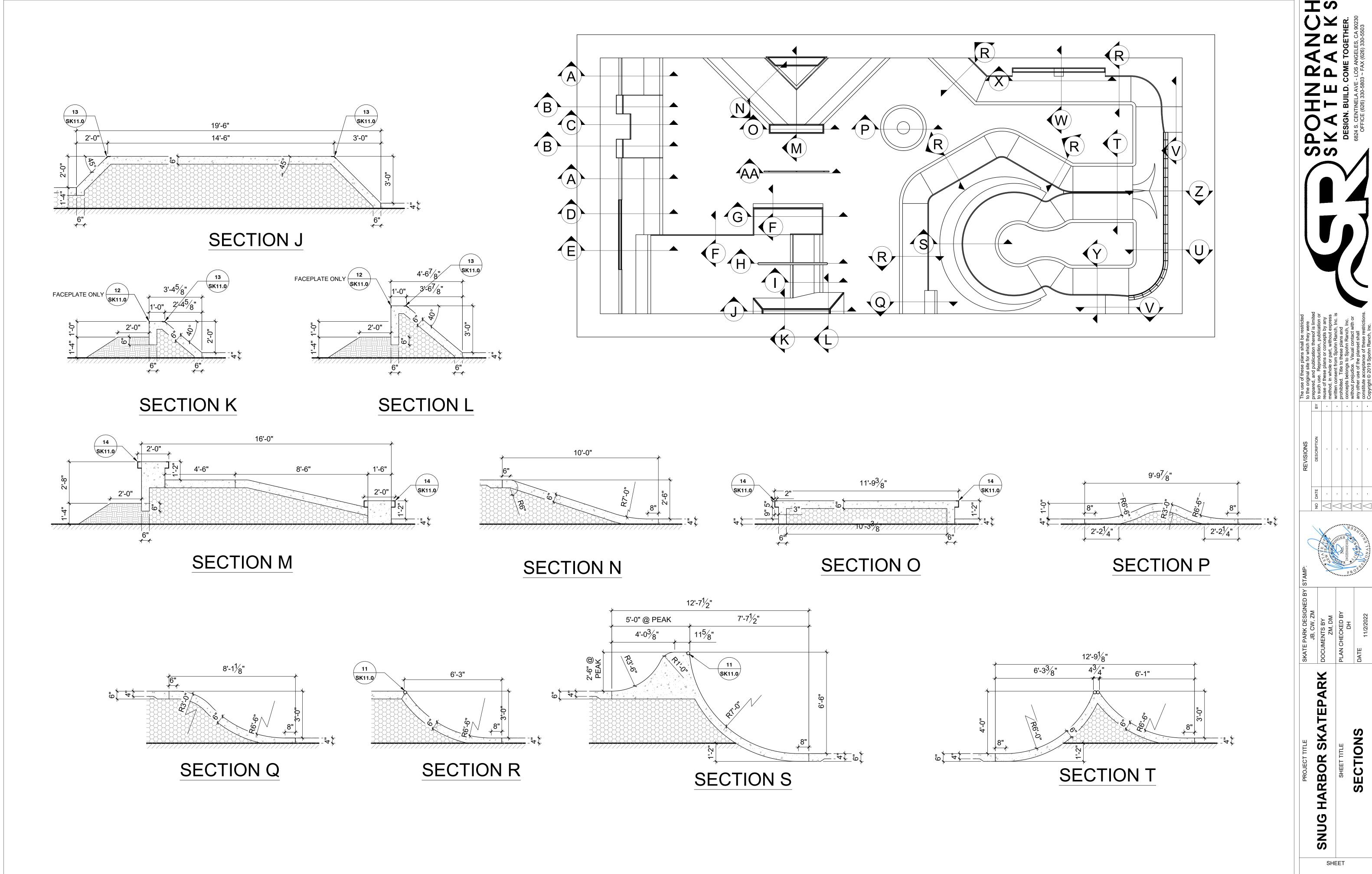


SK9.0
OF 16

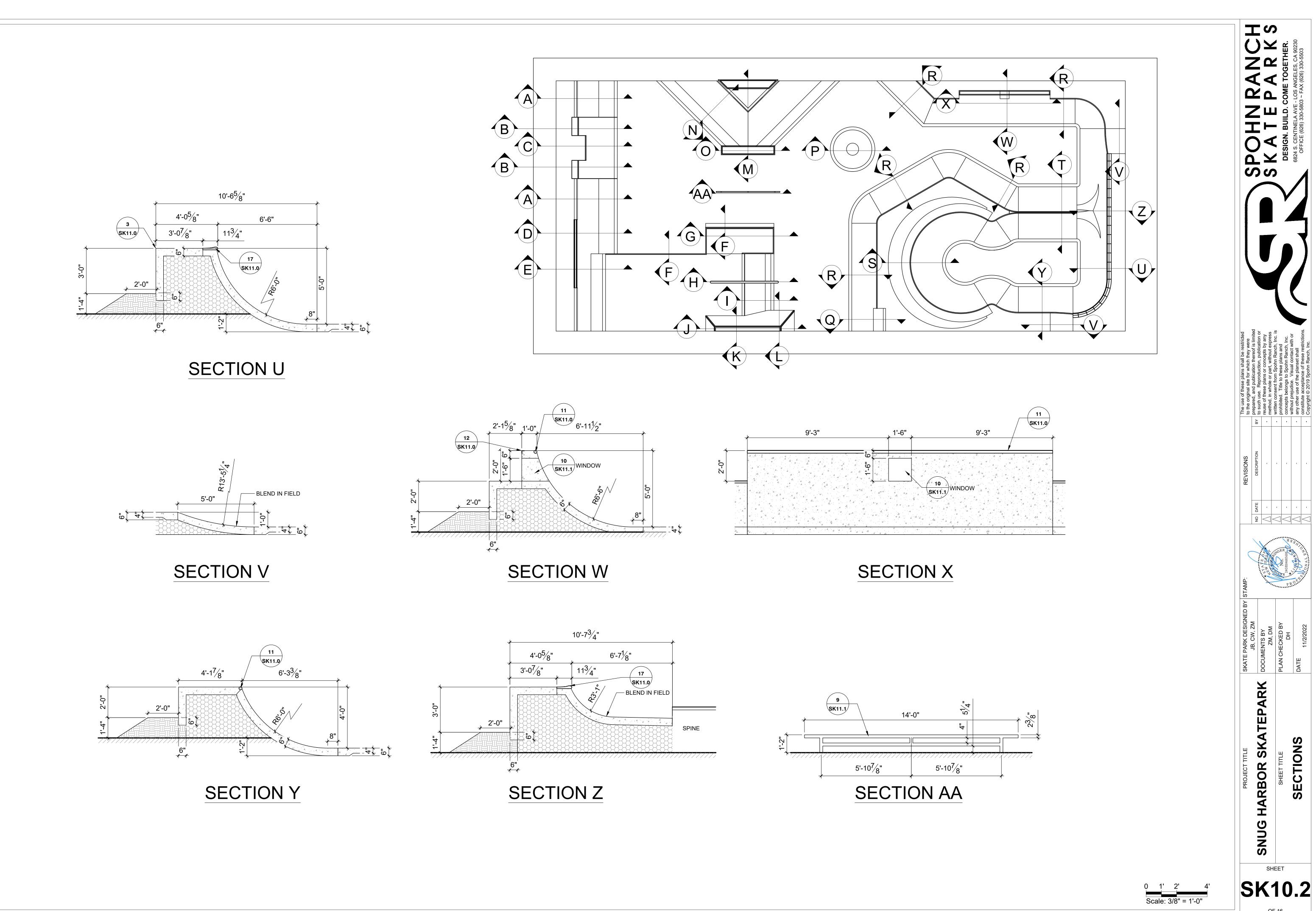
HARBOR SKATEPARK

TS

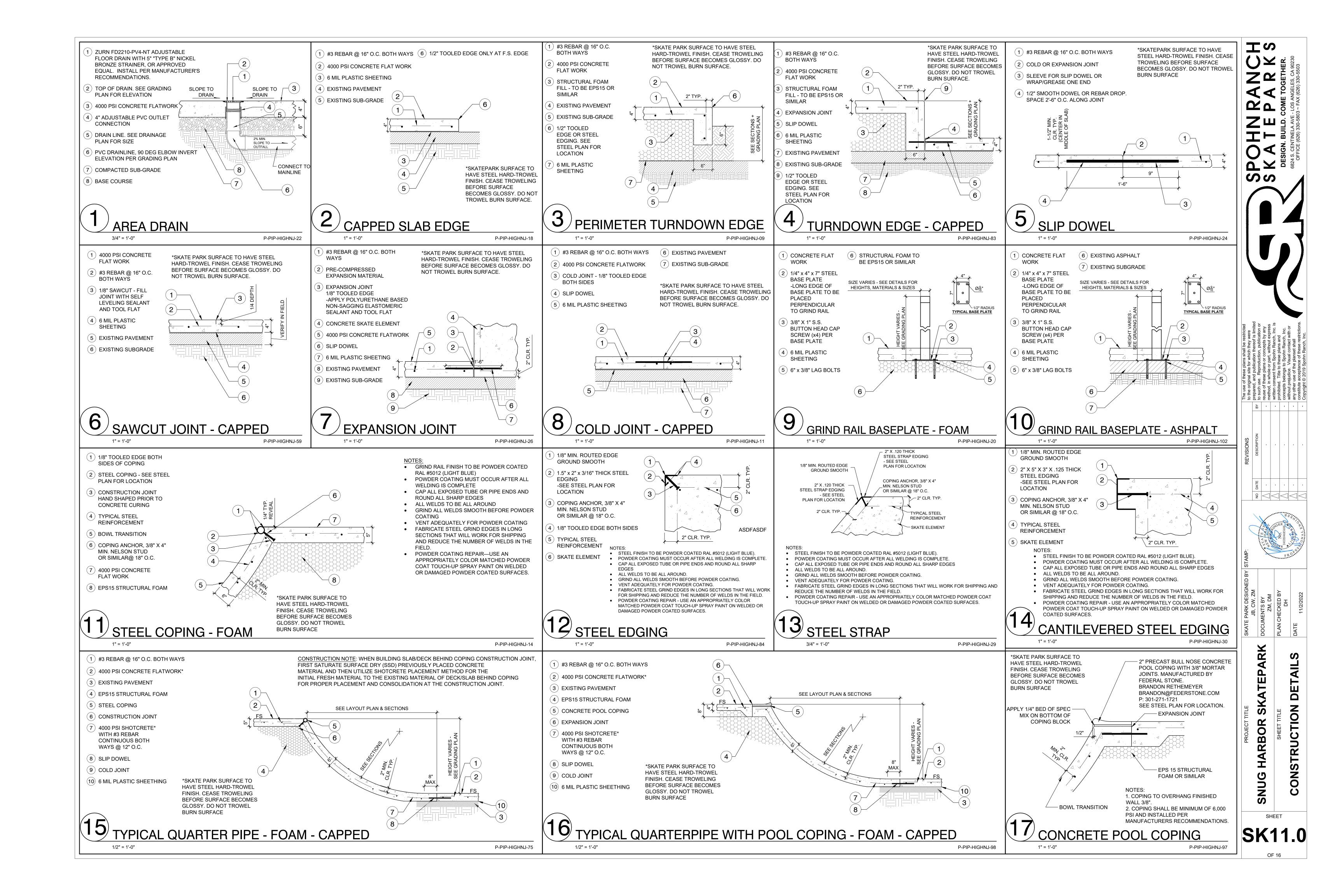


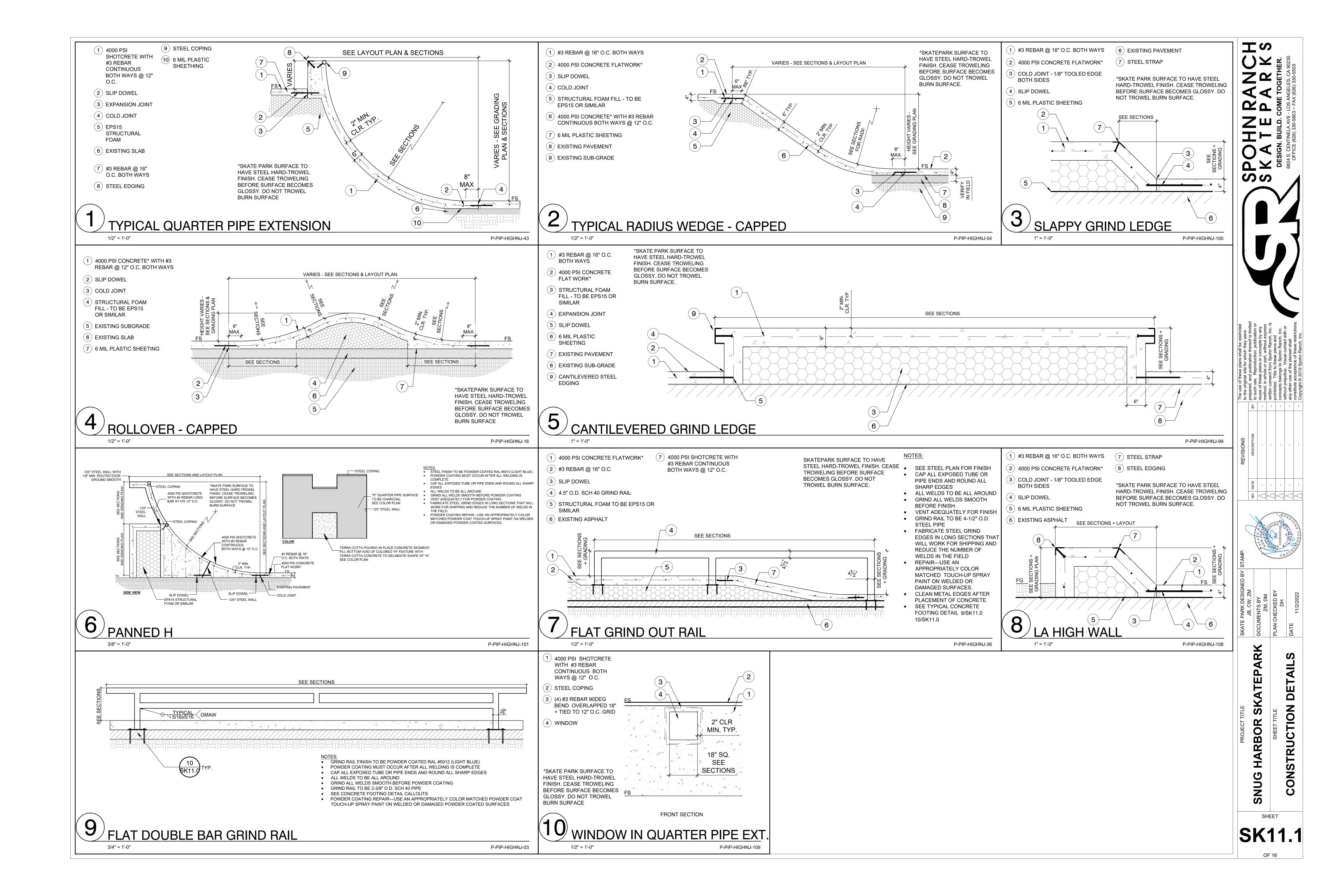


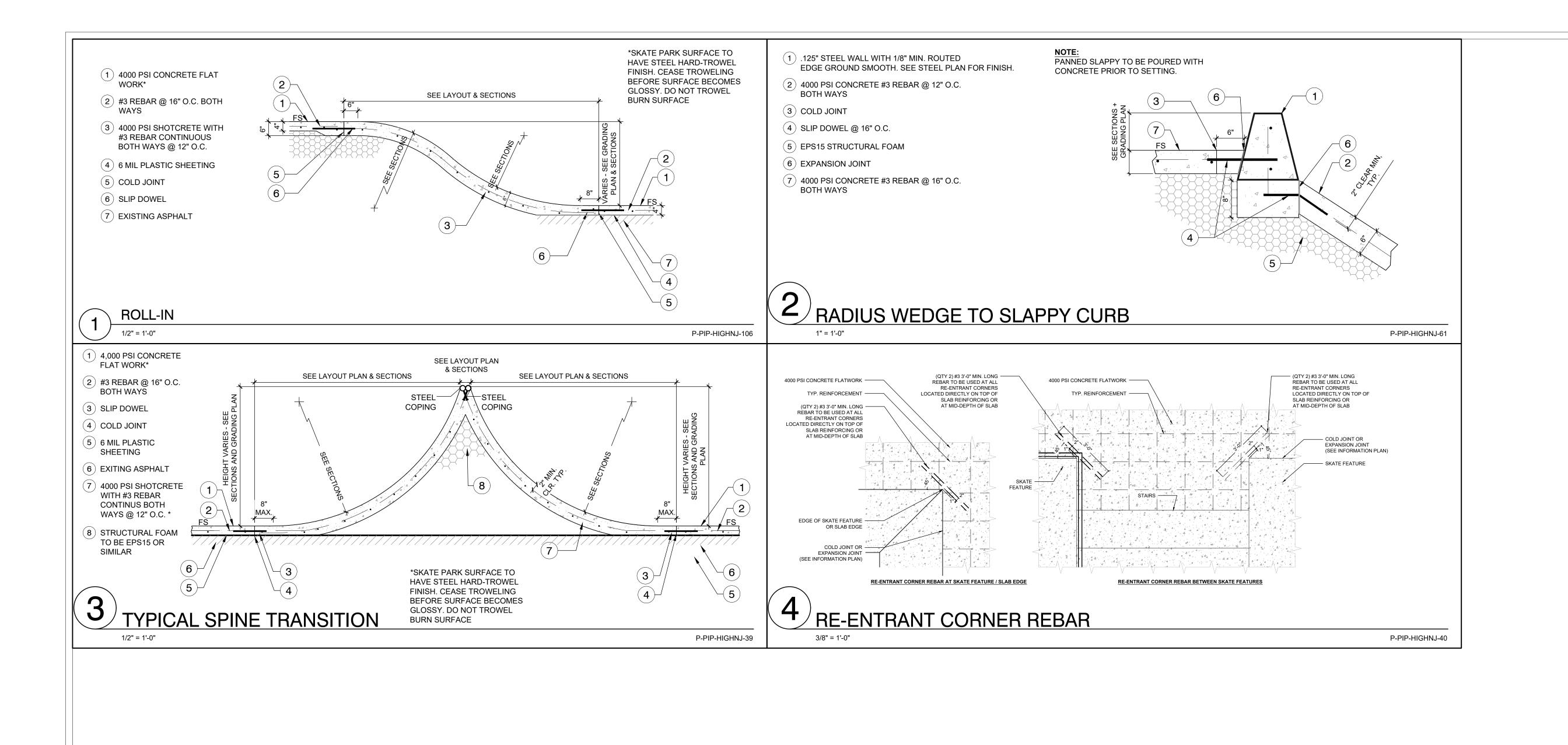
SK10.1



SECTIONS







CONSTRUCTION DETAILS